An Analysis of Risk Management in Social Infrastructure Public Private Partnerships (PPPs)

By

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A thesis submitted in fulfilment of the requirements for the Research Higher Degree of PhD at the University of Newcastle, Australia

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DECLARATION: STATEMENT OF ORIGINALITY

The thesis contains no material which has been accepted for the award of any other degree or diploma in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text. I give consent to the final version of my thesis being made available worldwide when deposited in the University’s Digital Repository, subject to the provisions of the Copyright Act 1968.

__________________________________________

Marcus Charles Jefferies
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ABSTRACT

The overall aim of this thesis is to examine the perceptions of public and private sector stakeholders in social infrastructure Public-Private Partnership (PPP) schemes in order to develop a framework of risk factors. The theoretical framework developed from reviewing relevant literature is tested against organisational data from Australian companies who bid for PPPs and further refined via case study data from current Australian PPP projects. The outcomes of the comparison are discussed and project specific risk factor frameworks are established.

Public Private Partnerships (PPPs) are long-term contractual arrangements between the public and private sectors, whereby resources and risk are shared for the purpose of developing public infrastructure. The last three decades have seen the evolution of PPPs as an alternative procurement method to traditional methods of delivering public infrastructure. Constant and competing demands for public sector investment for new infrastructure has prompted Australian governments to increasingly turn to the private sector to form partnerships in the construction, ownership and operation of infrastructure assets. This has become a major challenge for all stakeholders, as government alone cannot meet provision, however, the emergence of PPPs provides an alternate means for developing infrastructure at a rate that maintains and allows growth without directly impacting upon the government’s budgetary constraints. The concepts of PPPs are without doubt extremely complex arrangements, which bring to the construction sector risks not experienced previously.

The majority of key historical work into risk factors of public-private sector joint ventures has been within the field of BOT (Build-Operate-Transfer) and BOOT (Build-Own-Operate-Transfer) projects. In Australia, BOT and BOOT are early forerunners of procurement methods that are now commonly defined as PPPs. The research addresses a knowledge gap in the analysis of the various phases of PPP schemes, particularly for the provision of ‘social’ infrastructure projects. Although few PPP schemes have reached the transfer stage of the cycle, due the common 20-30 year operational period, there are sufficient projects in their operational phase to facilitate such analysis.
There is considerable growth potential for PPPs given that the New South Wales Government has developed policies to expand the application of PPPs to include social infrastructure. A key argument for Governments to procure projects using PPPs is that the process would deliver better overall value for all the stakeholders, including the broader community. Social infrastructure projects are characterised as generally being smaller in scale than economic infrastructure projects and, by their very nature, also tend to be complex, particularly in terms of ongoing involvement with the community. Australian social infrastructure PPPs must allow for the private sector to utilise its expertise and gain a broader scope of work and an increased transfer of responsibility (risk).

Current opinion supports the contention that recent social infrastructure projects in Australia are not always true partnerships and there is a clear need to reduce the ‘tokenism’ of Australian PPPs. The Public Sector needs to make PPPs more attractive to the Private Sector and clarify the identification of risk in order to transfer more responsibility to the Private Sector. Notwithstanding some of the current challenges with PPPs, the number of proposed projects is on the increase and there are a number of private sector players who are willing to bid in this environment.

The case study projects have shown significant evidence of managing the risk factors and fulfilling successful risk management required for a sustainable operation. Each project is an example of how both Government and private industry is attempting to meet Australia’s need for social infrastructure in the new millennium. Finally, there is general acceptance that social PPPs are part of the procurement landscape in Australia. Therefore, continued research into PPPs is vital to ensure the development of sustainable procurements methods that offer greater rewards for both public and private sector stakeholders, and in particular, the community at large.
PREAMBLE

Before formally introducing the thesis, the author believes that it is important to demonstrate evidence that the work submitted for this thesis is a significant contribution to the current body of knowledge at PhD level.

During the enrolment period, and contributing to the subsequent development of this thesis, the author has published the following publications that bear direct relevance to the thesis topic:


The presentation and publication of this work demonstrates that it has been reviewed, accepted and recognised internationally. The process of publishing work during the thesis enrolment period has allowed the author to gain on-going feedback from academic peers, researchers and professionals alike.
THE STRUCTURE OF THIS THESIS

Chapter One - Introduction

The first chapter introduces the thesis topic, by stating the research problem and providing some background and justification to the pursuit of such research. This chapter forms an important foundation from which the balance of the study extends, giving the reader an introduction to the problem and the overall aim of thesis. The objectives of the research listed within this chapter indicate the issues that the study aims to address.

Chapter Two - Literature Review

This chapter addresses the literature related to the topic of study. From the comprehensive review of related literature, analysis is made of the key issues and themes identified, ending ultimately in the development of a risk factor framework. The literature review aims to satisfy several of the broader thesis objectives. It initially raises the reader’s awareness of the topic beyond that provided within the introduction and establishes the level of research previously carried out within the topic area. The literature review familiarises the reader with the PPP concept and locates the topic within the context of this thesis. The literature review, in the form of a theoretical framework, establishes the key risk factor issues and examples of successful risk management identified from historical and current research.

Chapter Three - Research Method

The methodology explored within this thesis serves to clarify and justify the research strategy, plan and the structure of the thesis. It can be described as the operational framework of the entire research. After reviewing the literature the risk factor framework is tested by applying it to the case study projects. The data collection process was divided into two main stages and this is explained and justified in detail in this chapter. Stage 1 involved case studies at *organisational level* and Stage 2 involved case studies at *project level*. This involved the compilation and analysis of information provided by the case study organisations and project participants. Collection of data is
performed by way of multi-stage semi-structure interview process with key project personnel that focused on the risk factor framework developed from the literature review.

Chapter Four - Case Study: Stage 1

This chapter focuses on the case study results at organisational level (Stage 1). The chapter describes in detail the themes that emerged during the interview process with participants representing the main organisations involved in bidding for PPPs in Australia. As well as identifying specific issues relating to PPPs, particularly social infrastructure projects, Stage 1 of the case study process also presents a detailed map of all PPP projects undertaken in Australia from 1988-2013. The results of this chapter helped to contextualise PPPs within the procurement landscape in Australia and lay the foundations for Stage 2 of the case study, which narrowed the focus down to individual PPP projects.

Chapter Five – Case Study: Stage 2

This chapter focuses on the case study results at project level (Stage 2). The culmination of reviewing contract summaries, project documentation and interviews with key project from each of the case study projects is provided in this chapter. The initial section of each case study project is used to describe background information on each of the projects before subsequent detailed analysis and summary of results is provided. A review of project documentation allowed for the initial compilation of project specific risk factors. The interview process further expanded and then refined these issues and allowed for the development of risk identification, risk allocation and successful risk management. Significant comments from the interview process have been incorporated throughout the relevant analysis sections of this chapter and are presented as supporting ‘case examples’ that help to clarify key issues. Results are then summarised by presenting them in tabular form with some brief supporting discussion for key issues that describe successful examples of risk management. The framework differs somewhat from the one developed when reviewing the literature in that actual projects and participants (organisations) are identified.
Chapter Six - Discussion

Further discussion of the key issues is presented in this chapter. Therefore, comparisons between the risk frameworks established during both the review of the literature and the case study process are drawn. Differences or disparity between both the theory and case study results are discussed and there is also comparative discussion between the case study projects themselves.

Chapter Seven - Conclusions and Recommendations

Conclusions are drawn from the research of the thesis. Issues are drawn from the findings of the literature (theoretical framework) and the relevant case study project data, i.e. the themes that emerged during Stage 1 (organisation level) and the risk factor frameworks for the case study projects (Stage 2). Recommendations for further research are identified along with the application of the thesis findings.

References

A supporting list of thesis references is provided and presented using the Harvard System.

Appendices

Relevant appendices are provided as further support and information for the reader. They contain information on ethics approval and include key issues from the contract summary and planning documents from each the case study projects.
1.0 CHAPTER ONE: INTRODUCTION

1.1 BACKGROUND TO THE RESEARCH

The research aim of the study is to identify and analyse the Risk Factors of the Public-Private Partnership (PPP) procurement system in the provision of social infrastructure. A massive demand for investment in infrastructure has been caused by rapid urbanization and a growing population in many countries, including Australia (World Bank, 2012). With regards to risk, facets such as risk identification, risk analysis, risk allocation, and risk management are considered.

There is a strong body of opinion to support the concerns of the private sector that current social infrastructure projects in Australia are not true partnerships. The public sector needs to make PPPs more attractive to the private sector and clarify the risk identification in order to transfer more responsibility to the Private Sector. This issue is supported by recent industry criticism of PPPs concerning the ‘narrowness’ of the scope of work that is offered to the private sector. In reality, PPP project costs relating to finance, building design, construction, maintenance and waste management amount to less than 15% of the total life cycle cost of the enterprise (Curnow et al, 2005).

Over the last 20 years or so, various research has been conducted into the field of risk management of various public-private sector joint venture (JV) projects, particularly the Build-Operate-Transfer (BOT) and Build-Own-Operate-Transfer (BOOT) approaches, in developing countries (Tiong, 1990, 1995; Tiong et al 1992; McCarthy and Tiong, 1991; Nielsen, 1997; Donnelly, 1997; Tam and Leung, 1999; Wang et al, 1998a, 1998b, 2000; Kumaraswamy and Morris, 2002; Ofori, 2006; Toor and Ogunlana, 2008; Noor, 2011). Research in Australia has also focused on early models of PPP, or even other forms of relationship contracting such as Alliances, and often more specifically on economic infrastructure projects, such as toll-roads, bridges, tunnels et al (Shepherd, 1999; Angeles and Walker, 2000; Grimsey and Lewis, 2002; Jefferies and Gameson, 2002; Jefferies, et al, 2002; Jefferies and Chen, 2004; Duffield, 2005; English, 2005; Ng and Loosemore, 2007; Phillips, 2007; Phibbs, 2008; Jefferies et al 2010; Mills, et al 2011). However, there has been little research to date that has focused specifically on
the management of risk, or indeed success, factors of social infrastructure PPP projects in Australia.

1.1.1 The Increase in PPP-type Schemes

The PPP method is a current innovation in construction procurement. This system has been implemented both globally and within the Australian Construction Industry. The rise in popularity is mentioned by McDermott (1999), who states that a significant development in construction procurement has been the rapid increase in the use of PPP arrangements. There is a growing trend for governments and other clients in the construction industry to place major projects into the private sector (Angeles and Walker, 2000). This notion is further supported by Hardcastle et al (2005) who identify Public-Private Partnerships (PPPs) as being increasingly used to provide public facilities and services.

PPPs are a natural progression from both the Build-Own-Operate (BOO) contracts such as the 1986 Gateway Motorway and Bridge in Brisbane and the Build-Own-Operate-Transfer (BOOT) contracts such as the 1992 Sydney Harbour Tunnel (Jefferies et al, 2002; Jordan and Stillwell, 2004). Duffield (2005) has classified Australian PPPs into ‘first’ and ‘second’ generation with the first generation of PPPs primarily motivated by the public sector gaining access to private sector expertise via finance provision and risk transfer, whereas in the second generation of PPPs the public sector has attempted to retain direct control of ‘core services’.

In making a fine distinction between PFPs (publicly financed partnerships) and PFIs (partnerships involving private financing) Jones (2003) groups operating franchises such as BOOT projects under PFIs, and longterm service agreements, such as project alliances and DCM (design, construct and maintain) projects under PFPs. Overall, using Jones’s terminology, PFIs still dominate the PPP sector in Australia.

In essence, the analysis of the historical development of PPPs in Australia by Jones (2003) and Duffield (2005) are in accordance with each other. This research builds upon their findings and is important given the recent trend by Governments to increase their PPP portfolios. The construction industry must continue to work in partnership with
Government and forge relationships, even with other industries, that offer clients complete solutions. This is particularly relevant with regards to innovative methods of financing projects. One example of procurement innovation involving both Government and private industry is that of PPP.

1.1.2 Procurement Definitions

At this initial stage, it is important to offer a definition for the term ‘procurement’. As defined by Turner (1990), procurement is the act of obtaining, acquiring or securing. As an activity in industry it has come to mean the tendering and selection systems required to obtain anything from paper clips to power stations with organisations now having facilities departments and/or procurement managers to look at these requirements. It is now common to work with a procurement officer or project manager in order to agree on the holistic requirements for given projects.

A simple, yet effective definition of ‘building procurement’ as is offered by Masterman (1992) as the organisational structure adopted by the client for the management of the design and construction of a building project. Lenard and Mohsini (1998) go one step further in their offering of a procurement definition by identifying it as a strategy to satisfy client’s development and/or operational needs with respect to the provision of constructed facilities for a discrete life-cycle”.

In progressing on from the generic definition of building (or construction) related procurement, it is important to define the specific procurement approach that is the subject of investigation in this thesis, i.e. PPP. One of the problems with a PPP is with its very definition. Definitions tend to depend on a commentator’s own particular perspective and, range from the very general to the quite particular. A general definition is provided by Akintoye et al (2003), where Public Private Partnerships (PPPs) are defined as a long-term contractual arrangement between a public sector agency and a private sector concern whereby resources and risk are shared for the purpose of developing a public facility.
PPPs are a means of public sector procurement using private sector finance and best practice. PPPs can involve design, construction, financing, operation and maintenance of public infrastructure and facilities, or the operation of services, to meet public needs. They are often privately financed and operated on the basis of revenues received for the delivery of the facility and/or services. Key to this is the ability of the private sector to provide more favourable long-term financing options than may be available to a government entity and to secure financing in a much quicker time frame (NCPPP, 2003). Such contracts are long-term in nature and typically 25-30 years. The Australian PPP market is maturing and according to Duffield (2005), PPPs in Australia are now described as being in their second generation of development.

In terms of further defining and clarifying PPPs, Argy, Lindfield, Stimson and Hollingsworth (1999) make the following useful distinctions between types of PPPs:

- hard economic infrastructure e.g. roads
- soft economic infrastructure e.g. financial institutions
- hard social infrastructure e.g. hospitals
- soft social infrastructure e.g. social security

This research is mainly directed at hard social PPPs as outlined by Argy et al (1999).

According to Jefferies, McGeorge and Chen (2007), a PPP consortium is defined as a temporary organisation with a complex network of stakeholders each with competing goals and objectives. Coupled with the additional complexities of social infrastructure projects, where clients and building users are so varied, this reinforces the fact that a PPP by its very nature and structure is among the most interdisciplinary approaches of all procurement methods.

PPPs address the common faults that are associated with public sector procurement such as high construction costs, construction overruns, operational inefficiencies, poor design and community dissatisfaction. PPPs are founded on transfer of risk from the public to the private sector under circumstances where the private sector is best placed to manage risk (Mustafa, 1999). PPPs are being established as an effective method of overcoming costs associated with the provision and maintenance of infrastructure. According to
Grimsey and Lewis (2002), one aspect of the PPP which is particularly appealing to the government is the shift of risks from the public sector to the private sector consortium even though this requires a profit incentive to the consortium.

1.1.3 Innovation in Procurement

The implementation of innovative methods and techniques require change. A suitable catalyst for change within the construction industry is often driven by Government in the form of legislation or incentives. As with both the Latham (1994) and Egan (1998) Reports in the UK, a New South Wales (NSW) Government Report, ‘Construct NSW: Seizing Opportunities to Build a Better Construction Industry’ (1998), outlined a framework that to assist the NSW construction industry to meet the challenges and take advantage of the opportunities in the coming years. The NSW Government wants the construction industry to strengthen its capabilities and achieve its potential. The Government is committed to work with all sectors of the industry to bring about the development of a more competitive, productive and safe industry. Construct NSW is an integrated framework of strategies to assist industry to achieve its potential (NSW Government, 1998).

Subsequently, the NSW Government (2001) developed its ‘Working With Government’ White Paper, which attempted to further capture this opportunity to increase the benefits and comment on the issues and concerns held by the private sector that may impede development. These guidelines draw on a similar initiative by the Victorian Government, ‘Partnerships Victoria’, which was produced with the intention of ensuring that the financial and efficiency benefits that private sector involvement can provide without compromising community needs (Victorian Government, 2001). This has helped to broaden relationships between the public and private sectors and lead to the formulation of new policies. The Council of Australia Governments endorsed the National Public Private Partnership Policy and Guidelines on 29 November 2008. All Australian, State and Territory Government agencies now apply the National Policy and Guidelines. The National Policy and Guidelines effectively replaced previously existing policy and guidelines in those jurisdictions (Australian Government, 2008).
The goals set out in the guidelines will only be achieved if the industry shares this vision, accepts the challenge, lifts its performance levels, and embraces innovative practice. The construction industry must take up the challenge and work in partnership with Government and forge other relationships that offer clients complete solutions and even receive input from other industries especially with regards to innovative methods of financing projects.

PPP is a current example of procurement innovation involving both Government and private industry. Australia has seen a growing trend for governments and other clients in the construction industry to place major projects into the private sector (Angeles and Walker, 2000; Duffield, 2005; Jefferies, 2006; McGeorge et al. 2008; Jefferies and Lau, 2010). The private sector is playing an increasingly important role in this trend that has partly arisen out of a necessity for the development of infrastructure to be undertaken at a rate that maintains growth, reduces public spending and allows for successful risk management. This in turn has become a major challenge for many countries, and particularly so where it is evident that these provisions cannot be met by government alone, as they have typically been in the past.

1.1.4 Adopting the PPP Approach

The emergence of PPP schemes, as a response to this challenge, provides a means for developing the infrastructure of a country without directly impacting on the government’s budgetary constraints. With the PPP family of procurement options an alliance or joint venture group forms to provide a facility for a client for which the client makes a concession agreement to fund the facility until that facility’s ownership is transferred to the client. In the past this arrangement has been more common for infrastructure projects rather than buildings because the concession allows for tolls or other payments to be made by end-users to cover the cost of both procuring the facility and its operation (Walker et al., 2000). However, Relationship Contracting approaches, such as PPPs or Alliances, have been used more recently for building projects, such as the National Museum in Canberra (Walker and Hampson, 2003) and various social infrastructure projects such as hospitals, schools and prisons (Duffield, 2005; Jefferies and McGeorge, 2009).
Many countries have now embarked on infrastructure projects procured via PPP or the use of similar methods. The scheme is now widely practiced and spreads among a diverse range of countries from Australia, Canada, Hong Kong, UK and the US to countries like India, Malaysia, Mexico, Thailand and the Philippines (Walker & Smith, 1995; Walker and Hampson, 2003; Grimsey and Lewis, 2004; Quiggin, 2005; Bult-Spiering and Dewulf, 2006; Walker and Rowlinson, 2008). Most of these projects are financed on a limited recourse basis and built and operated as private ventures under project agreements involving the host government.

Many of the infrastructure partnerships between public and private sectors in the past are yet to provide evidence of successful completion, since few of the concession periods have expired. Therefore, the aim of this thesis is to examine perceptions of PPP schemes in order to establish a framework of risk and critical success factors that can be tested and developed against a case study undertaken on current projects.

It became evident several decades ago that governments globally had major shortcomings in funding public works. The fundamental influences from these issues are what have developed the trends towards privatisation and more specifically infrastructure procurement strategies such as PPP.

1.1.5 Public-Private Sector Partnerships in New South Wales

The NSW Government has an enviable reputation for working with the private sector in the provision of public infrastructure – particularly in relation to road, rail and Olympic infrastructure. The government has provided guidelines in its publication ‘Guidelines for Private Sector Participation in the Provision of Public Infrastructure’, which is reviewed regularly. Since the last evaluation there has been considerable international attention towards partnerships between the private and public sectors. A review of these partnerships is timely.

Prior to the endorsement of the National PPP Guidelines in 2008 the NSW Government (2001) developed its ‘Working With Government’ guidelines which were produced with the intention of ensuring that the financial and efficiency benefits that private sector involvement can provide without compromising community needs. These
guidelines were further updated in 2006. This helped to broaden relationships between the public and private sectors and lead to the formulation of new policies at both State and Federal level.

In 2012 the NSW Government produced a revised set of guidelines, simply titled ‘NSW Public Private Partnerships Guidelines’. These guidelines superseded the NSW 2006 ‘Working with Government’ guidelines provided a transparent mechanism to competitively pursue innovative solutions to deliver improved services and better value for money with a greater emphasis on risk transfer, encouraging innovation and whole-of-life asset management. Ultimately, in NSW, for any public infrastructure project with a total estimated capital value exceeding A$100 million, PPP must be assessed as a potential procurement method having regard to value for money drivers (NSW Government, 2012).

1.1.6 Infrastructure Development Challenge

There are connections between a country’s economy and successful infrastructure development. For instance, according to the World Bank (1994), infrastructure can support economic growth and make development environmentally sustainable. A growing number of countries are now demanding alternatives, especially options involving the private sector (World Bank, 2005).

The last two decades have seen the evolution of PPPs as an alternative procurement method to traditional methods of delivering public infrastructure. Competing demands for public sector investment for new infrastructure has prompted Australian governments to increasingly turn to the private sector to form partnerships in the construction, ownership and operation of infrastructure assets (PPPs). This has become a major challenge for both public and private sector stakeholders but the emergence of PPPs provides an alternate means for developing infrastructure using private sector expertise.

Growing economies and rapid urbanisation have created a huge demand for new infrastructure. According to Mitrovic (1999) many countries have recognised that the
public sector is not strong enough to finance change and they are turning to the private sector to join in the construction, ownership and operation of national infrastructure assets. This trend in public-private sector partnerships is supported by McDermott (1999) and Curnow et al (2005) who see governments as having to obtain private sector finance for infrastructure projects which have previously been a drain on public sector finances.

The huge demand for new infrastructure combined with the issue of reduced public sector investment has, according to Mitrovic (1999), led to Governments turning to the private sector to form partnerships in the construction, ownership and operation of national infrastructure assets. Governments are now frequently obtaining private sector finance for infrastructure projects due to this shortfall in public sector funds.

Therefore, the importance of infrastructure as a trigger for both economic and urban growth cannot be underestimated. Infrastructure can support economic growth, reduce poverty, and make development environmentally sustainable. According to the World Bank (1995) there are current problems, with inefficient public sector monopolies widely blamed for the ineffective provision of infrastructure services and a growing number of countries are now demanding alternatives, especially options involving the private sector.

The key to successful PPP infrastructure projects is the identification and evaluation of the risks involved, followed by their allocation to the parties most able and willing to accept them (McDermott, 1999; Jefferies, 2006; Walker and Rowlinson, 2008; Love et al, 2011; and Regan et al, 2011). The analysis of risk, and indeed success factors, is vital given the Australian Government’s increased emphasis on the development of public-private sector partnerships in order to procure both social and economic infrastructure.

1.1.7 Private Sector Participation in the Procurement of Public Works

Private sector input takes many forms. The simplest is a service or management contract by which private contractors assume responsibility for operations and maintenance. Contracts typically are of short duration but offer the advantage of higher efficiency.
The private partner can assume a longer term and greater responsibility through lease contracts, in which systems are leased and operated by private firms. The responsibility for investment and financing remains with the public sector in this case. In taking private sector participation a step further, fuller efficiency gains are possible through long-term concessions and ‘build-own-operate-transfer’ schemes. Here the private partner not only finances new works but constructs and operates them for indefinite or specified periods of time (World Bank, 1995).

The World Bank has placed full support behind increasing private sector involvement in a country’s infrastructure provision. They have made clear their intentions that with projects the World Bank plans to finance, the package shall be designed from the outset in such a way that will facilitate private sector participation whenever the government chooses (World Bank, 2005).

Underlying these issues is the fact that procurement logic must change. According to Miller (1999), procurement strategy should recognise explicitly what generations of experience has already taught, that innovations enter the infrastructure portfolio through each of the individual segments in the procurement process (design, construction, finance, operation, maintenance) and through combinations of these segments (D&B, DBO, BOT, PPP).

PPPs appear to be the vehicle for continued finance and construction of infrastructure. Measuring the success of this type of project to date and identifying the various risks involved in order to achieve optimum success is still somewhat uncharted. McDermott (1999); Rowlinson (1999); Salzman and Mohamed (1999a and 1999b); Jefferies and Gameson (2002); McGeorge et al (2006); Jefferies (2006); Walker and Rowlinson (2008); and Love et al (2011) all state that the key to successful PPP infrastructure projects is the successful identification, evaluation and allocation of the risks involved.

This issue of identifying, evaluating and allocating risks in PPP projects in order to achieve project success provides sound support for the key theme of this thesis.
1.1.8 History of PPP Projects

In order to fully understand the concept, it is important to have a very clear grasp of the history and development of public-private sector joint ventures such as PPP. This form of public-private partnership is clearly not a recent form of infrastructure procurement.

History records that the Industrial Revolution began when Abraham Darby first smelted coke in 1709. Urbanisation and the need for associated infrastructure were to follow. Governments of the time had only rudimentary tax arrangements primarily to service heads of state. Infrastructure was therefore left to individuals to finance and build. The canals and railroads of Europe and later those in the America’s, China and Japan were also procured this way (Smith, 1999).

A key historical development in the funding of infrastructure then occurred from the late 1700’s. According to Smith (1999) tax generated from the Industrial Revolution meant that Governments were now able to fund their own infrastructure. But, where large undertakings were suggested, the concession or franchise arrangement was adopted. The need for water distribution initiated the first concession being granted in 1782 to the Perrier Brothers in Paris.

The use of concession contracts declined in industrialised countries as the initial infrastructure was completed. The wonder of the age, the 195 km Suez Canal opened for navigation on 17 November, 1869 (Smith, 1999). The Suez Canal Company was empowered by the Egyptian government to build and operate the canal. Finance was provided by European capital with Egyptian financial support, and a concession to design, construct and operate this revenue producing facility was expected (Levy 1996). The project agreement for the procurement of the 195km Suez Canal was based around a 99 year concession contract (Walker & Smith, 1995).

Industrial countries generally funded new infrastructure between the late 1800’s and the 1970’s from their respective fiscal resources. However, a series of influences emerged in the late 1970’s which placed pressures on this established system for both developed & developing countries. The infrastructures of ‘developed’ countries such as those of Western Europe, North America, Japan and Australia are under strain from two
principal influences. Firstly, the existing and limited infrastructure is unable to keep pace with the growth of the country and secondly, the demand for health and welfare facilities due to an ageing population. The problems and challenges for ‘newly industrialised countries’ such as Malaysia, Hong Kong, Taiwan, Mexico and South Africa are caused by a population explosion placing heavy demand on an already limited infrastructure (Walker and Smith, 1995).

Most Australian commentators such as Jones (2003), Duffield (2005), Malone (2005) Walker (2003), Jordan & Stilwell (2004) and Evans & Bowman (2005) trace PPPs back to the late 1980s as a natural progression from Build Own Operate (BOO) contracts such as the Gateway Motorway and Bridge, Brisbane (completed 1986) and Build Own Operate Transfer (BOOT) contracts such as the Sydney Harbour Tunnel (completed 1992). In his paper ‘Evaluating what is new in the PPP pipeline’ published in 2003, Jones lists, in chronological order, a schedule of some 48 major Australian PPP projects from 1986 onwards. In this schedule all projects from 1986 to 1999 are PFIs with PFPs emerging, for the first time, in 2000. Overall, using Jones’s terminology, PFIs still dominate the PPP sector.

Some of the key historical developments in public-private sector joint venture infrastructure projects are highlighted below:

- Industrial Revolution (1709)
- Water Distribution - Perrier Bros, Paris (1782)
- Suez Canal (1869)
- Manchester Ship Canal (1894)
- Cross Harbour Tunnel, Hong Kong (1972)
- Toronto Airport, Canada (1980’s)
- Dartford Bridge, UK (1991)
- Sydney Harbour Tunnel (1992)
- Western Harbour Crossing, Hong Kong (1997)
- Urban Water Supply, China (2006)
The Suez Canal experience demonstrated that the concept of private sector participation in infrastructure provision is not a new idea. It is, however, only in the last two decades that PPP concepts have become high on many government agendas. Angeles and Walker (2000); Jones (2003); and Duffield (2005) identify Australian examples of the PPP approach that include the Sydney Harbour Tunnel, M4 and M5 tollways in NSW, Southern Cross train station in Melbourne, the Ord River Hydro-Electric Scheme in Western Australia and Brisbane’s Airport-City train link. A summation of key events in the development of PPPs in Australia is provided in Chapter 2.

1.1.9 Infrastructure and Innovation

According to Van Tongeren and Doree (1997) the construction industry is notorious for its lack of innovativeness. The structure of the construction industry is summarised by such terms as fragmentation, segmentation and segregation. Industry culture is thought of as opportunistic, hostile, antagonistic and conflictive. Their research argues that the main reason for the lack of innovation is that the construction industry lacks real producers who develop products and compete with each other.

This distinct lack of competition and failure of the industry to re-invent itself helps to justify the significance of the problems of inappropriate or blinkered procurement choice that in turn affects the ongoing aim of improved project performance. Yet procurement and the integration of innovation are key to project success.

There is an obvious link between innovation and procurement, hence the need for continuous development of new models in order to deliver and maintain infrastructure growth in times of limited finance. This is supported by Katsanis et al. (1997), who identify procurement as the most important determinant of the outcome of the process. This is especially relevant as project complexity and market dynamics have made it necessary for owners to seek alternative methods, including the PPP approach.
The construction industry in Australia has traditionally operated within the two totally separate domains of both the public and private sectors with interaction between them only occurring when absolutely necessary. The construction industry is now learning from other industries and indeed from the history of early infrastructure development in forming on-going partnerships between the public and private sectors.

According to Miller (1997) procurement systems are the conduit through which innovative methods, techniques and technologies for infrastructure facilities have been introduced. He examines how procurement strategies for both project delivery and finance affect the nature and source of innovation. This is tested within the hypothesis that choice of project delivery and financial method has a profound impact on the existence and source of innovation in infrastructure systems by dramatically changing the nature and sequence of the elements associated with design, finance, construction, operation and maintenance of the project. The case studies (West Harbour Crossing in Hong Kong, Highway 407 in Toronto and US Grants project for Wastewater Treatment Plants) indicate that the relationship between the procurement method and innovation is strong. The cases indicate that early procurement planning plays a critical role in the way in which the government gains access to innovative ideas, methods and conduct in the Engineering Procurement Construction (EPC) sector, both public and private.

In the PPP procurement process, innovation is sought in fundamentally different ways and through different channels. Competition occurs later in the procurement process and covers a significantly enlarged scope. Tenders are required to compete for combined functions of design, finance, construction, maintenance and operations, a competition that expressly values innovation in each of these areas and in the integration of one or more of these areas. The opportunity to package basic project elements differently is a driving factor for innovation in the PPP approach (Miller, 1997).

If innovation is to produce fundamental improvements in quality, cost and time of the delivery of public infrastructure projects, then the procurement method will need to be structured to produce competition that focuses on these improvements. A procurement system which openly embraces innovation sends a powerful signal to the private sector that government recognises that continued public-private co-operation is essential to
sustainable self-adjusting improvements in infrastructure facilities and services (Miller, 1997). According to Angeles and Walker (2000), one way of meeting future procurement demands will be to develop better project delivery systems. A growing view is that new and innovative systems will continuously be used. These include Design and Build schemes, extending their scope to Design-Build-Finance-Operate, which will be similar in many ways to PPP schemes.

Encouraging and rewarding innovation in delivery and long term operation of infrastructure facilities and services is becoming a major goal of modern procurement systems, particularly as public budgets prove to be inadequate to meet current infrastructure needs (Jefferies, 2006). To institutionalise innovation and public procurement processes, government needs to rethink the procurement planning processes, conduct searching pre-solicitation analyses and tailor resulting procurement processes to fit particular projects (Miller, 1997).

Angeles and Walker (2000) report that the future of construction over the next 10-20 years will be influenced by the restructuring and re-engineering of the various processes in the construction industry. This will be aimed at achieving improved quality and performances through the integration of project processes and management of supply chains. The move away from traditional procurement systems will have significant effects on innovation. Because the traditional process, such as design-bid-build, does not allow for intellectual property and knowledge externalities by contractors in their tenders, there is a perverse disincentive to innovate (de Valence, 2001). With the increase of non-traditional procurement methods, such as PPP, this disincentive is removed and firms can appropriate the benefits of innovation and research and development. This situation will be expected to lead to the use of new forms of procurement of major projects such as PPP schemes (Rowlinson, et al, 2006; McGeorge et al, 2008).

1.1.10 Social Infrastructure PPPs

According to Jefferies and McGeorge (2009), the application of the PPP approach to social infrastructure is a relatively recent trend and many of the projects currently under consideration by various State Governments are for social PPP projects. However,
many of these projects will only gain approval depending upon the perceived risks and returns to both the public and private sectors (Curnow, et al, 2005; Jefferies and McGeorge, 2009).

As previously discussed, there is a body of opinion that suggests that the scope of work needs to be enlarged to make Social Infrastructure PPPs more attractive to the private sector (Curnow et al, 2005). Current models restrict the involvement of the private sector during the operational stages of a PPP, however, given the growing expertise and diversification of private sector stakeholders they are keen to be heavily involved at this stage. Jefferies et al, (2006) claim that if a comparison is made between a large teaching hospital (social PPP) and a tollway (economic PPP) then the contrast in terms of complexity of operation and interaction between the private sector operator and the users is quite marked. In the hospital situation, staff costs will represent at least 90% of the total annual operating costs and by comparison, staff costs within a tollway are minimal with the majority of expenditure being maintenance. Increased involvement at this stage would provide the private sector with greater business opportunity.

According to Jefferies and McGeorge (2008), whilst both types of PPP do carry a number of public and private sector risks, the potential for risk over the operating period would appear to be greater in social PPPs than for economic PPPs. For instance, the operational life cycle of hospitals is difficult to predict due to technological advances that can mean that the future of health care and its demand on hospital buildings is largely unknown.

1.2 THE AIM OF THE THESIS

The overall aim of this thesis is to examine perceptions of social infrastructure Public-Private Partnerships (PPPs) in order to develop a risk factor framework. The framework was established by producing a theoretical model that tested via a 2-stage case study approach of both PPP project organisations and specific PPP projects.
1.3 RATIONALE FOR THE STUDY

The majority of key historical work into risk management of public-private sector joint ventures (JV), such as PPP, has been within the field of BOT (Build-Operate-Transfer) andBOOT (Build-Own-Operate-Transfer) projects (Tiong, 1990; McCarthy and Tiong, 1991; Tiong et al, 1992; Tam et al, 1994; Walker and Smith, 1995; Levy, 1996; Ogunlana, 1997; Tiong and Alum, 1997; Ma et al, 1998; Wang et al, 2000; Kumaraswamy and Morris, 2002; Ofori, 2006; Toor and Ogunlana, 2008; Noor, 2011). Although similarities abound, there are key variations between the BOT/PPP procurement method and the development of PPPs ensuring that risk and success factors vary due to fundamental differences in the models of each approach.

The research addresses a knowledge gap in the analysis of the various phases of PPP schemes, but has specific focus on the bidding stage. PPP allows for an alternative method of financing a project and achieving acceptable economy. There is a need to analyse the effectiveness of this form of procurement innovation through its complete project cycle within the context of the Australian Construction Industry. Few PPP projects have reached the component, or transfer, stage of the cycle, yet there are sufficient projects in their operational phase to facilitate such analysis. The product fills a knowledge gap in understanding the risk and CSF based upon a theoretical framework established from international PPP projects and tested on several case studies within the Australian Construction Industry. Subsequently, the frameworks are developed accordingly.

In support of this project, Angeles and Walker (2000); Walker and Hampson (2003); Grimsey and Lewis (2004); Jefferies (2006); Walker and Rowlinson (2008); Jefferies and Lau (2010); Brewer et al (2012) all state that research programmes concerning the analysis of new project delivery systems such as PPP schemes will be needed and essential for the whole construction industry in the new millennium.

In summary, the rationale for this thesis, is supported by the following key issues:

- Many of the infrastructure partnerships between public and private sectors in the past are yet to provide evidence of successful completion, since few of the
concession periods have expired (Walker & Smith, 1995; Jefferies, 2004; Brewer et al 2012).

- Rapid increase in the use of PPP (McDermott, 1999; Walker and Peters, 2000; Li, 2003; Grimsey and Lewis, 2004; Li et al 2005a; Li et al 2005b; Jefferies, 2006; Chan et al 2010).
- PPP is a current attempt to meet the latest infrastructure challenge (Walker, et al, 2000; Grimsey and Lewis, 2004; Walker and Rowlinson, 2008).
- Current social infrastructure projects in Australia are not true partnerships (Shepherd, 1999; Curnow et al, 2005; McGeorge et al, 2008; Jefferies and Lau, 2010).
- The bidding/tender stage of the PPP process sets the scene for the project and in particular this is where a significant aspect of risk management takes place and the commercial structure of the operation is negotiated (UNIDO, 1996; Jefferies, 2006; Jefferies and Mcgeorge, 2009).
- The key to successful PPP infrastructure projects is the identification and evaluation of the risks involved, followed by their allocation to the parties most able and willing to accept them (McDermott, 1999; Jefferies and McGeorge, 2009).
- Current work relating to the identification of successful risk management should be periodically reviewed (Rowlinson, 1999; Jefferies 2006).
- Risk and success should be considered together, as a factor can be described in not only a negative sense or risk factor, but also in a positive sense or success factor (Salzmann and Mohamed, 1999a and 1999b; Jefferies, 2004; Li et al 2005a; Li et al 2005b; Jefferies, 2006).

1.4 RESEARCH QUESTION

One simple research questions is posed:

1. What are the Risk Factors of Social Infrastructure PPP Procurement Schemes and how can they be successfully managed?
1.4.1 The Process for Answering the Research Question:

- Identify risk factors of PPP projects from the literature.
- From the results of the literature review establish a theoretical framework of risk factors.
- Test the framework via the 2-stage case study process. Firstly at organisational level and then secondly at project level (using contract documentation and the interview process).
- Identify the various risk management issues from the case study process.
- Identify how the management of these risks are successfully achieved.
- Refine the framework(s) to make it project specific.
- Compare theory (literature) with current practice (case study).

1.5 RESEARCH OBJECTIVES

It is important to establish a number of research objectives in order to provide a framework to ultimately satisfy the overall research aim. The objectives of this thesis are to:

A. Identify and define the basic characteristics of PPP projects, provide an overview of the concept aims and identify successful advances in the approach and reasons for the surge in popularity. The initial theme centres around PPP projects generally but then focuses towards social infrastructure.
B. Establish a theoretical framework of risk factors for PPP projects by reviewing current literature.
C. Test the risk factor frameworks developed from the literature against ‘real’ project data, via the case study process at both organisational and project level.
D. Refine the frameworks to make them project specific and compare theory with practice.
E. Provide a framework of successful risk management using innovative PPP stakeholder organisations and benchmark PPP projects as a support tool.
1.6 RESEARCH PROBLEM

PPP projects are inherently complex arrangements. These arrangements involve a myriad of stakeholders that includes government, construction and design professionals, financiers and investors, insurers and other strategic partners. Further to this, the agreements are required to address all levels of risk, particularly across the construction and operation phases of the project.

Previous studies into pubic-private joint ventures, concerned with the issue of risk (Tiong, 1990; Woodward et al, 1992; Tam et al, 1994; Walker and Smith, 1995; Wang et al, 1998a; Salzmann and Mohamed, 1999a; Kumaraswamy and Morris, 2002; Ofori, 2006; Toor and Ogunlana, 2008; Noor, 2011) and even success factors (Tiong et al, 1992; Keong et al, 1997; Tiong and Alum, 1997; Salzmann and Mohamed, 1999a; Rowlinson, 1999; McGeorge et al (2006); Zou et al (2008); Zeng and Tiong, 2010), have seen the identification of key issues, and in some cases developed risk and success frameworks, but none of these factors or frameworks have been tested on a current social infrastructure projects.

There is therefore a clear research gap. This is supported by McDermott (1999); Jefferies 2006; Jefferies and McGeorge (2009), who state that the key to successful PPP infrastructure projects is the identification and evaluation of the risks involved, followed by their allocation to the parties most able and willing to accept them.

Further support, in the area of risk management, is the need to carry out periodic review and constantly update them (Rowlinson, 1999; Grimsey and Lewis, 2004; and Jefferies, 2006) then the development and testing of an established theoretical model or framework is important to the ongoing management and measurement of risk. Subsequently, this will ensure continued construction project success, with specific relevance to current innovative public-private sector partnership procurement models.

1.7 RESEARCH PROBLEM STATEMENT

The following problem statement has been developed from the rationale, objectives and research problem of this thesis. It is important to define a single research problem
statement in order to set a realistic framework or boundary in order to satisfy the thesis aim and to narrow the scope of research at the level undertaken. The following research problem statement has been developed:

*In the complex procurement method of PPP, an established framework of risk factors is necessary for the purpose of periodic review and to subsequently test on current social PPP projects in order to further develop the frameworks in a ‘real world’ context.*

### 1.8 LIMITATIONS OF THE RESEARCH

The limitations of this study are considered as the limits to which the study shall extend in order to obtain the required information to assess the research problem (Leedy and Omrod, 2010). They are listed as follows:

- The literature addresses public-private sector partnerships from several perspectives (BOO, BOT, PFI, PPP et al). Where possible, greater emphasis has been placed on the more common acronym of PPP. The literature also addresses international PPP projects, however, where applicable reference has been made to PPP projects in Australia.
- The research method was appropriate for the study, however, there are minor limitations. To extrapolate conclusions from a limited sample size into the wider population (applicable to all PPP projects) would be methodologically inappropriate. The wider population would require more extensive testing.
- The results of the research are linked to the discussions between the researcher and the project(s) stakeholders within the interview process and conclusions may not apply to circumstances of other situations. However, the methodology for the study is sound and may be used to analyse similar projects. In addition, the intention of the research was to identify, analyse and understand the issues surrounding the developed risk factor framework and methodology.
- Senior project management, i.e. those deemed appropriate in terms of experience in tender, contractual and financial issues were involved in the interview process. The involvement of ‘day to day’ site personnel was considered
inappropriate in relation to the thesis objectives and the complicated contractual and financial nature of PPP projects.

- The case study process focuses on Australian social infrastructure projects as opposed to economic projects.

1.9 SUMMARY OF THE INTRODUCTORY ISSUES

The risk factor issues that are identified by reviewing relevant literature in this thesis leads to the development of a theoretical framework that is tested in current social infrastructure PPP projects. The case study helps to determine if procurement systems such as PPP are indeed increasing in use, as key industry stakeholders from both public and private sectors are involved, and if so, how they are developing and subsequently leading to continued innovation in the Australian construction industry.

With the first research objective of this thesis in mind, the introductory chapter of this thesis considered the definition and historical development of PPP. From that point, discussion focused on the various infrastructure challenges faced by today’s public and private sector participants and the innovation introduced in order to meet these challenges. The PPP concept, supported by its many historical predecessors (BOT, PPP et al) was then discussed in order to analyse their various phases and characteristics. With PPP systems being of a highly complex nature, analysis of contractual arrangements and methods of financing are justifiably discussed in detail.

PPP projects are becoming increasingly common throughout the world as a means of providing infrastructure to a country without directly impacting on the sovereign finances of that country. The PPP procurement scheme requires an organisation to be involved in the finance, design and construction of an infrastructure facility, then operate, and possibly own, that facility for a stipulated period of time, and then transfer operation/ownership free of charge back to the Government at the end of the concession period (Salzmann and Mohamed, 1999b; Walker and Hampson, 2000; Jefferies, 2006; Jefferies and Lau, 2010; Brewer et al, 2012)
The growing acceptance of alternative project delivery and finance methods, such as PPP, implies that government’s will be faced with strategic choices as to use ‘public’ or ‘private’ mechanisms, or a combination of the two, in the provision of infrastructure facilities (McGeorge et al, 2008; Jefferies and McGeorge, 2009). Miller (1999); Jefferies (2004); and McGeorge et al (2008) state that purely public and purely private delivery mechanisms are unreliable, unstable and averse to innovation.

Therefore, sustainable improvement in infrastructure will be achieved through a procurement strategy that encourages individuals and firms to innovate, encourages technology developers and investors to enter the process and one which is simple and easy for participants to understand. A flexible and reliable public-private procurement strategy is required if broader questions related to economic and environmental issues are to be addressed.

Concession-based procurement methods, such as PPP, provide government’s with private sector financial input and expertise to design, construct, finance, operate and maintain facilities. As Walker et al (2000); Jefferies (2004); Grimsey and Lewis (2004); Jefferies and McGeorge (2009); and Jefferies et al (2013) confirm, PPP schemes provide a means for developing the infrastructure of a country without directly impacting on the government’s budgetary constraints.
2.0 CHAPTER TWO: LITERATURE REVIEW

2.1 OVERVIEW OF THE LITERATURE REVIEW

The overall aim of this thesis is to examine perceptions of PPP schemes in order to establish a framework of risk. This identifies the various risk factors of PPP and also establish how these risks are successfully managed.

This chapter addresses the literature related to the topic of study. From this comprehensive review of related literature, analysis is made of the key issues and themes identified, ending ultimately in the development of a hypothesised risk and success factor framework.

The literature review aims to satisfy several of the broader thesis objectives. It initially raises the reader’s awareness of the topic beyond that provided within the introduction and establishes the level of research previously carried out on the topic area. The form of this chapter is exactly what the name suggests – a review of relevant literature. A review is not a summary. It is a critical evaluation of the relevance of the literature for the research project in accordance with the work of Haywood and Wragg (1982); Runeson and Skitmore (1999); and Fellows and Liu (2008).

From the literature, analysis is be made of the key issues and themes relevant to the risk management of PPPs, and a framework is developed. The latter part of the research, discussed in subsequent chapters, then concentrates on testing and developing the framework compiled at the literature review stage.

The second research objective of the study is to identify and analyse both the risk factors of PPPs. With regards to risk, facets such as risk identification, risk analysis, risk allocation, and risk management are considered. Success factor issues are also discussed as Salzmann and Mohammed (1999a; 1999b) consider it important that both risk and success are considered together, and discussion in this area includes the application of success factors within construction projects, including PPP schemes. The chapter concludes with the identification of key historical risk factors that are presented in the form of a theoretical framework. The establishment of this framework is vital in order to
have a model to test within current PPP projects, and if necessary, to subsequently refine the framework after reflecting upon the case study data.

2.1.1 Background

There is a strong body of opinion to support the concerns of the private sector that current social infrastructure projects in Australia are not true partnerships (Shepherd, 1999; Curnow et al, 2005; McGeorge et al, 2008; Jefferies and Lau, 2010; Jefferies et al, 2013). The public sector needs to make PPPs more attractive to the private sector and clarify the risk identification in order to transfer more responsibility to the Private Sector. This issue is supported by recent industry criticism of PPPs concerning the ‘narrowness’ of the scope of work that is offered to the private sector. In reality, PPP project costs relating to finance, building design, construction, maintenance and waste management amount to less than 15% of the total life cycle cost of the enterprise. The following Figure 1 illustrates the limited nature of current private sector participation in PPPs.

Figure 1: Private Sector Participation in PPPs (Curnow, et al, 2005)

As a result, the private sector is frustrated with the high transaction costs of PPPs, which offer only a marginal increase in scope of business opportunity. This is in stark contrast to opportunities that are available in the much lower cost-to-bid ratio of more traditional procurement models. Governments are looking for significant increases in
efficiency through the PPP process, but no matter how well the 15% of the enterprise available to the private sector is organised, it is not going to make up for inefficient management in the remaining 85%. This has led to the decision by a number of major construction contractors to withdraw from the PPP process.

Additionally Shepherd (1999) and Jefferies and McGeorge (2008) argue that there are fundamental reasons for the need to review the PPP process, these reasons include:

– Lack of flexibility in the evolution of the project where the host authority must juggle competing bidders and keep them on the same baseline, often while simultaneously processing an environmental impact statement.

– Current arrangements lack flexibility in operation whether it be extending or widening a tollway or conversion of a power plant.

– High transaction costs in taking at least two fully developed and underwritten bids to the finishing line (e.g. Melbourne City Link incurred external costs of $24Million at financial close).

– PPPs need to allow the private sector to utilise its expertise and gain a broader scope of work and an increased transfer of risk and responsibility.

As illustrated by the above comments, measuring the success of PPPs and identifying the risk exposure by the various stakeholders has been, to date, largely problematic. There is some evidence to suggest that the growth of PPPs in Australia would be accelerated if the concerns highlighted above could be addressed particularly in terms of the high transaction costs associated with the bidding process. The inability of the Private Sector to win enough projects to offset the significant cost of bidding for more complex tenders such as PPP projects appears to have had an adverse influence on the construction industry (e.g. reduction of company share-values, company mergers and take-overs).

PPPs are normally linked to large-scale projects that, in many cases, have a high public profile. Because of this, the risks associated with PPPs are often perceived to be
correspondingly higher than for more conventional forms of contractual relationships. However, irrespective of the form of contractual relationship there are two critical risk management issues that emerge during the bidding stage of any project. These have been identified from previous work by Tiong (1990); Walker & Smith (1995); and Jefferies and McGeorge (2008) as:

1) **Legal** - legislative framework, project agreement, tax, laws.

2) **Financial** - bid process, form of financing, evaluation, commercial investors, ownership, rates of return.

According to Jones (2003); Curnow et al (2005); Duffiled (2005); McGeorge et al (2008); and Jefferies et al (2010) social infrastructure projects are characterised as generally being smaller in scale than economic infrastructure projects (motorways, bridges, tunnels etc.) and, by their very nature, also tend to be complex, particularly in terms of ongoing involvement with the community. Thus, private sector bidders for social infrastructure PPP projects are often presented with a situation where the financial rewards are less and the operational demands are more complex than for economic PPP projects. Potential private sector stakeholders for social infrastructure PPPs are often presented with a situation where government policy, such as risk allocation, toward the sharing of the business operation is a restricting factor for the development of a successful revenue stream. Australian examples of social infrastructure PPPs must allow for the private sector to utilise its expertise and gain a broader scope of work and an increased transfer of responsibility (risk).

### 2.2 THE PPP CONCEPT

#### 2.2.1 Project Finance

Chege and Rwelamila (2001) state that the major difference between the financing of PPP projects and the more conventional approaches is that lenders have only the project’s expected cashflows to indicate its economic viability. These projects are mainly funded through the technique known as ‘project finance’. Project finance helps new investment by structuring the finance around the projects own operating cashflow and assets, without additional sponsor guarantees. Further, the technique is able to
alleviate investment risk and raise finance at a relatively low cost to the benefit of the sponsor and investor alike.

Project finance varies from project to project and country to country as each project has its own unique mix of debt and equity. According to Walker and Smith (1995) there are three conception characteristics that relate to all PPP related finance vehicles:

1. Government unwilling or unable to provide refurbished or new infrastructure
2. Identification of an omnipotent need
3. Funding bodies comprehensively convinced of the potential for commercial success

When considering the above, with (1) and (2) in place, (3) will follow. Unfortunately the global demand for infrastructure monies outstrips the available funding, which in some way goes towards explaining why PPP’s flourish in some countries and not others. The fiscal surpluses of Switzerland, Norway, Singapore, Japan et al., preclude PPP concepts simply because direct government borrowings are cheaper to put in place. Conversely, cash-strapped UK, US, Thailand, Philippines and indeed Australia, are countries where the three crucial conception characteristics are particularly heightened and therefore private project funding can generally find a role. The developer and the sponsor must package the financial formula. Their stand-alone project has a large hole of early development and construction debt. Early injection of equity reduces this debt without incurring interest payments but comes with the trade-off that investors will push for higher tolls to maximise dividends. This pressure may be seen to act as adding risk to the viability of the revenue stream predictions and therefore, a balance, unique to the project in question, has to be attained. Typically the proportion of equity is much smaller than the loans, and the lenders will seek to impose guarantees against cost overruns and construction completion dates (Walker and Smith, 1995).

Project finance techniques have been applied in the US for the development of commercial real estate, and were further developed in the 1970’s in North Sea oil and gas projects. Now they are commonly used in PPP arrangements, typically for infrastructure projects. In PPP schemes, the financing of infrastructure is very different to the financing of a shopping centre for example. In equipment or real estate financing,
the lender’s primary security is the capital value of the asset. Toll roads or power plants, on the other hand, have uncertain capital value and a very limited potential for resale. Therefore, the lender’s primary security are the contracts supporting the project and the certainty of the revenue stream set out in the project agreement (UNIDO, 1996; Delmon, 2005).

In practice, most PPP projects are financed on a limited or, in some cases, a non-recourse basis. Non, or limited recourse financing is a financing structure in which the main source of debt repayment or equity return is the assets or returns that result from the project. The lender is relying on the project assets and cash flows for repayment and debt service. The deals are called ‘limited recourse’ when the sponsors’ liability is limited to the amount they invested in the project if it fails, or ‘non-recourse’ when the sponsors have no liability for project failure. The non-recourse approach is only used in cases where the project is clearly capable of supporting the debt (Walker & Smith 1995).

According to Delmon (2005) there are two basic stages to project financing of PPP schemes. During the first stage, construction, the lenders provide the finance progressively as the project is designed, built and commissioned. This way lenders can verify the completion of each stage before releasing more funds. After construction, lenders will need to verify completion before the final drawdown can be made and this drawdown should be of sufficient size to provide an incentive for the construction contractor to ensure proper completion. Completion represents the end of certain guarantees provided by the construction contractor, including liquidated damages for late completion, and may also signal the end of and lender recourse that may have been possible to the shareholders assets (such limited recourse may be required until construction completion or the end of the first year of operation).

The second stage, during operation, is when the lenders are repaid from the project revenues. The most common repayment method being one that is in accordance with the repayment schedule. The amount repaid can be based on equal monthly rates, a percentage of the project’s cash flow, a percentage of the project’s revenue for output or a rate per unit of output. Repayments can also be based on unequal amounts, based on
calculations of projected income and maintenance needs, maintenance periods during which income may be increased/decreased in peak/off-peak periods (Delmon, 2000).

Figure 2 below provides a schematic layout of the relationship of the principal parties to a PPP project, with specific regard to the typical financing responsibilities.

Figure 2: Schematic layout of the relationship (financing responsibilities) of the principal parties to a PPP project (Walker & Smith, 1995)

As mentioned earlier, the consortium is granted a concession to operate the facility for an agreed period of time, after which it is then required to be transferred back to the state. This reliance on a future stream of income as a reward for investors led the PPP method to be advocated mainly for schemes for which there was a clearly defined income source, for example, a tolled road, bridge or tunnel. However, this has changed in recent years, with the PPP strategy being adopted for the construction of prisons, hotels, telecommunications systems, the processing of water and waste-water and the use of coal, gas and oil for power generation. In the UK, it is now government policy to require all public sector projects to be market tested for private finance before the public purse is opened (McDermott, 1999).
2.2.2 The Development of PPPs

One of the problems with a PPP is with its very definition. Definitions tend to depend on a commentator’s own particular perspective and, range from the very general to the quite particular. A general definition is provided by Akintoye et al (2003), where Public Private Partnerships (PPPs) are defined as a long-term contractual arrangement between a public sector agency and a private sector concern whereby resources and risk are shared for the purpose of developing a public facility. PPPs are considered to be a form of Relationship Contracting, which according to Cheung et al (2005), is based on a recognition of and striving for mutual benefits and win-win scenarios through more cooperative relationships between the parties. Relationship contracting embraces and underpins various approaches, such as partnering, alliancing, joint venturing, PPPs, and other collaborative working arrangements and better risk sharing mechanisms. Relationship contracts are usually long-term, develop and change over time, and involve substantial relations between the parties.

As previously discussed, an understanding of the development of public-private partnerships is important in order to understand its concept. The history of PPP, according to McDermott (1999), is that the concept was first established more than a century ago to construct canals and railroads and was sought by governments as a means of obtaining private sector financing for projects.

According to Smith (1999), the phrase ‘BOOT’ (Build-Own-Operate-Transfer), one of the first types of PPP, describes the earliest concession model, although the late Turkish Prime Minister, Targut Ozal, is popularly cited as originating the phrase in the 1980’s in connection with proposals for the construction of power plants in Turkey. In the PPP model, ownership of the utility rests with the concessionaires until the end of the concession period, at which point both ownership and operating rights are transferred free of charge to the host government.

There are several forms of public-private joint venture, in Australia, historically, the two most common methods are those of BOT and PPP, of which there is a distinct difference between them. In adapting Walker & Smith’s (1995) attempt to explain the key difference between the two methods the following description has been developed:
When a private sector group has a concession to build and toll (operate) a motorway project for say 20 years (before transferring back to government), this is a BOT. If, however, their concession also allowed them to own, build and rent say warehouse space for the concession period of 20 years (take ownership as well as operate the facility) at certain locations along the motorway then the contractual arrangement in place is described as a BOOT agreement.

With the PPP procurement option, an alliance or joint venture group forms to provide a facility for a client for which the client makes a concessions agreement to fund the facility until that facility’s ownership is transferred to the client. This arrangement is more common for infrastructure projects because the concession allows for tolls or other payments to be made by the end-users to cover the cost of both procuring and operating the facility. If the entity proposing the design solution is responsible for maintaining and operating the facility then they will have the incentive to reduce long term costs and thus develop a highly cost effective product over the product life cycle (Smith, 1999). Recent projects in Australia have seen the PPP approach used for projects that extend beyond the traditional infrastructure type (roads, bridges et al) such as sports stadia and entertainment centres.

Most PPP projects are first identified by the host government. In advertising or requesting for proposals, the host government asks for bids to have a particular project delivered on a PPP basis. It is also possible, although less common, for a project opportunity to first be identified by a private consortium, who then propose it to the host government (UNIDO, 1996). In PPP projects, contractors become involved, normally as part of the consortium, to guarantee involvement in the construction work. In consideration for raising the finance for the project, the consortium would be granted a concession to operate the facility for an agreed period of time, after which the function is required to be transferred back to the state (McDermott, 1999).
2.2.3 The Origins of PPPs in Australia

Most Australian commentators such as Jones (2003), Duffield (2005), Malone (2005), Walker (2003), Jordan & Stilwell (2004) and Evans & Bowman (2005) trace PPPs back to the late 1980s as a natural progression from Build Own Operate (BOO) contracts such as the Gateway Motorway and Bridge, Brisbane (completed 1986) and Build Own Operate Transfer (PPP) contracts such as the Sydney Harbour Tunnel (completed 1992).

Jones (2003) makes a fine distinction between Publicly Financed Partnerships (PFPs) and Partnerships involving Private Financing (PFIs).

Under these, Jones groups the following:

<table>
<thead>
<tr>
<th>PFPs</th>
<th>PFIs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long term service agreements</td>
<td>Operating franchises</td>
</tr>
<tr>
<td>DCM (design, construct and maintain) projects</td>
<td>Provision of tailored accommodation</td>
</tr>
<tr>
<td></td>
<td>PPP projects</td>
</tr>
</tbody>
</table>

In his paper ‘Evaluating what is new in the PPP pipeline’ published in 2003, Jones lists, in chronological order, a schedule of some 48 major Australian PPP projects from 1986 onwards. In this schedule all projects from 1986 to 1999 are PFIs with PFPs emerging, for the first time, in 2000. Overall, using Jones’s terminology, PFIs still dominate the PPP sector.

Duffield (2005) has classified Australian PPPs into ‘first’ and ‘second’ generation with the release of the Victorian Government policy document ‘Partnerships Victoria’ being the watershed between the two generations. The difference between Duffield’s first and second-generation PPPs is that in Duffield’s view:
First-generation: primarily motivated by the public sector gaining access to private capital and the transfer of new full project risks

Second-generation: State Governments sought to retain direct control of ‘core’ services and to involve the private sector in amongst other things, value for money outcomes

(Yates and Sashegyi, 2001)

Quiggin (2005) also subscribes to the view that the ‘Partnerships Victoria’ policy document was a watershed in the development in Australia of PPPs, and that, by and large, this document is representative of the approach adopted by other states.

In essence Jones, Duffield and Quiggins’ analysis of the historical development of PPPs in Australia is generally in accord. Duffield’s (2005) review of Australian PPP projects is the more recent than Jones (2003). Duffield lists, second-generation projects, some 36 PPP projects, with the project status (as at the 7th January 2005) ranging from the expression of interest (EOI) phase through to operating phase.

The following table, Table 1, presents a summation of key events in the development of PPPs in Australia from the 1980’s onwards and illustrates the first and second-generation divide.

<table>
<thead>
<tr>
<th>1980’s</th>
<th>1990’s 1ST GENERATION OF PPP’S</th>
<th>2001 to date 2ND GENERATION PPP’s</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980-90’s Australia Governments embrace economic liberalism in order to improve efficiencies</td>
<td>1996: National Competition Policy, supported by Competition Principles Agreement endorsed by all Australian Governments.</td>
<td>2002: NSW Government publishes a ‘State Infrastructure Strategic Plan’; SA Government releases PPP Policy &amp; establish PPP Unit in Treasury. WA releases ‘Partnerships for Growth’ was released as the Policies and Guidelines for</td>
</tr>
<tr>
<td>Year</td>
<td>Event</td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>-------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>1983</td>
<td>Australian dollar floated on international money markets - first step to deregulating the national economy</td>
<td></td>
</tr>
<tr>
<td>1987</td>
<td>NY stock market crash - ripple effect in Aust. ends the speculation boom that had followed the deregulation of the economy.</td>
<td></td>
</tr>
<tr>
<td>1988</td>
<td>NSW first documented formal procedures &amp; controls governing private sector participation.</td>
<td></td>
</tr>
<tr>
<td>1990's</td>
<td>Corporate liberalism emerges in Government. An ideological shift towards Government playing more of a managerial role. A number of privatizations &amp; outsourcing take place across Australia.</td>
<td></td>
</tr>
<tr>
<td>1990</td>
<td>Airport Link Company collapses six months after Sydney’s airport rail link is opened, becoming one of Australia’s first PPP projects to fail.</td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td>TAS. Government releases a policy statement, and guidelines, on private sector participation in the provision of public infrastructure</td>
<td></td>
</tr>
<tr>
<td>2002</td>
<td>Intergenerational report released with the Budget papers (Treasury 2002) warned that net Government spending will need to rise by 5% of GDP by 2041-42 to fund the same standard of services &amp; level of benefits.</td>
<td></td>
</tr>
<tr>
<td>2003</td>
<td>National PPP Forum held; Victoria ’Fitzgerald’ review; NSW ’Parry Inquiry’ recommends public debt used only when all other funding options have been fully explored.</td>
<td></td>
</tr>
<tr>
<td>2005</td>
<td>Local Governments propose to use PPP model for a number of urban revitalisation projects, such as Parramatta, Liverpool in NSW.</td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td>NSW Parliamentary Inquiry into Cross City Tunnel &amp; PPPs. NSW &amp; Victoria announce continued use of PPPs as well as increase use of public debt to meet infrastructure shortfall.</td>
<td></td>
</tr>
<tr>
<td>2008</td>
<td>National PPP Guidelines prepared and endorsed by Infrastructure Australia and various State, Territory &amp; Commonwealth Governments. The Guidelines set a national framework for the procurement of PPPs.</td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>NSW Government produces PPP guidelines to complement National Guidelines but to also provide stakeholders with NSW specific requirements for PPP procurement.</td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td>Proposed PPP reforms in response to changing market conditions, new fiscal challenges, private sector concerns and public’s increasing demand for new infrastructure.</td>
<td></td>
</tr>
</tbody>
</table>

Table 1: Key Events & Initiatives in the Development of PPPs in Australia

2.2.4 The PPP Process

The following table (Table 2) is used to identify the key factors of the PPP process and is adapted from Walker and Smith (1995) who used a similar table to compare the
differences between the commonly understood ‘Design and Build’ method and the then recent and less understood innovation of the ‘BOT’ approach:

<table>
<thead>
<tr>
<th>Factors</th>
<th>Public-Private Partnership</th>
</tr>
</thead>
<tbody>
<tr>
<td>Procurement</td>
<td>Consortium undertakes to finance, design, build and operate a project and return ownership to the government after a fixed concession period</td>
</tr>
<tr>
<td>Suitability</td>
<td>Used where the completed project can generate revenue such as tolls for repayment of loans and profits thereafter</td>
</tr>
<tr>
<td>Contract</td>
<td>Concession agreement made between government and concession company encompassing design and build obligations</td>
</tr>
<tr>
<td>Finance</td>
<td>Born by projects sponsors of the concession company from equity and loans</td>
</tr>
<tr>
<td>Contract Sum</td>
<td>Fixed-price lump-sum turnkey contract agreed between concession company and contractor</td>
</tr>
<tr>
<td>Payments</td>
<td>Contractor (usually himself a project sponsor) receives interim payments from the concession company, which will not have revenue until the project is completed and in operation</td>
</tr>
<tr>
<td>Risks (political, financial and technical)</td>
<td>Shared among project sponsors without recourse to government. Government can step in if they fail to complete the project as stipulated</td>
</tr>
<tr>
<td>Time for Completion</td>
<td>Completion guarantee by concession company. Government can take over the project if concession company fails to complete on time. Contractor liable for liquidated damages for delay</td>
</tr>
<tr>
<td>Ownership</td>
<td>Project company (private sector) takes total ownership of the facility for the duration of the concession period. It belongs to them, so they manage the profit/loss during the ownership stage and corresponding operational period.</td>
</tr>
<tr>
<td>Operation</td>
<td>By concession company or an operator, who is usually a project sponsor</td>
</tr>
<tr>
<td>Defects</td>
<td>Born by the turnkey contractor or the concession company</td>
</tr>
<tr>
<td>Maintenance beyond Defects Liability Period (DLP)</td>
<td>Born by concession company within the concession period</td>
</tr>
<tr>
<td>Transfer</td>
<td>Facility is transferred back to the host government at the end of the project agreement or concession period</td>
</tr>
</tbody>
</table>

*Table 2: Key Factors of the PPP method of project procurement*
2.2.5 Phases and Characteristics of a PPP Project

In analysing a PPP project from conception to completion of the concession period, there are a number of very different phases. These phases present varying challenges and risks across stages of feasibility, construction and then operation. The United Nations Industrial Development Organisation (UNIDO) identified ‘Phases of a BOT Project’ during preparation of their Infrastructure Development Guidelines (UNIDO, 1996) and the following issues have been identified using their table and also those of the Commonwealth Government of Australia (2008) as the basis for further development in order to make the list specific to the more recent and commonly understood PPP approach:

1. Identification - identify project; define form of financing; preliminary feasibility study; assign project manager and team; government decision.

2. Government Preparation for Tendering - procurement procedure; prequalification of tenderers; project agreement; tender documents; bid evaluation criteria.

3. Sponsor’s Preparation to Bid - form consortium/possibly project company; feasibility study; identification of potential partnership; submit bid package.

4. Selection – evaluate bids; clarifications/adjustments; project award.

5. Development - form project company; equity contributions; loan agreements; financial closing; construction contract; supply contract; off-take contract; insurance contract; operation and maintenance agreement.

6. Implementation - construct facility and install equipment; testing and commissioning; acceptance; technology transfer and capability; building; evaluation.

7. Ownership - the additional stage of ‘Ownership’ would be inserted before that of the ‘Operational’ stage in a PPP project. These two stages would, in effect, run concurrently. The project company responsible for overseeing the operation of the facility would take ownership of the project until the end of the concession period under the terms of the project agreement.

8. Operation - during the concession period; inspection; training; technology transfer and capability; building.
Identify the project
At the outset, the need for a particular project must be identified. It is common for investment in infrastructure projects to be planned and regulated by the host government. Since the government defines long-term economic goals and identifies intermediate development targets, their medium to long term strategies offer a reliable clue as to what projects will take top priority. The host government will then focus on the possibility of satisfying that need using one or another form of financing. A preliminary feasibility study carried out on the scheme will analyse the project size, location, technical options, environmental screening and potential revenue stream (Tam et al, 1994; Jefferies and Chen, 2004).

Preparing the bid
Several procurement procedures are available to the host government within concession agreements. These include competitive bidding, sole source procurement or a form of limited tender system. It is common for the competitive bidding option to be used in conjunction with a requirement for all potential investors to endure a pre-qualification process. In requesting proposals from potential investors, it is of extreme importance that the invitation is clear in terms of project definition, size, timing and performance. Similarly the government’s criteria for the award of the contract needs to be clear and realistic, and committed toward giving a direction on the project within a certain timeframe. If these issues are not addressed, then the potential investors will have great difficulty in submitting realistic and useful proposals, and may be discouraged from pursuing the process (UNIDO, 1996; Commonwealth of Australia, 2008).

Forming a consortium
Upon identifying a particular project under the PPP procurement strategy, the investor needs to establish partners or form a consortium in preparing a responsive bid. Tam et al (1994), summarised the following considerations necessary in short-listing potential partners:
• Consensus of business goals and objectives among partners
• Possession of political influence
• Willingness to provide equity
• In the case of an equipment supplier, possession of economically and technically proven equipment
• In the case of a contractor, possession of project management skill and willingness to take on construction of the project
• Access to financing sources

Evaluating the bids
The government will evaluate the various bids submitted in response to the request for proposals and select the successful tenderer. This phase sometimes involves a stage of notifying a ‘preferred tenderer’ which would then allow the parties to refine the offer further and possibly negotiate from the starting point of the first offer.

According to UNIDO (1996), from their experience with public-private sector schemes:

“Choosing the most suitable project consortium is usually the single greatest determinant of the success or failure of PPP-type projects.”

Contractual agreement
Upon finalisation of the project agreement, the successful consortium is then in a position to make definite commitments among themselves in forming and structuring the project company. Equity contributions necessary for project realisation and establishment will need to be made, whilst sponsors can further discussions with potential lenders, contractors and suppliers in obtaining more definite commitments on terms and prices. On reaching contractual agreement and understanding with all project stakeholders, the project will proceed to financial closing. This is the date on which the lenders and equity investors advance the funds for detailed design, construction and purchase of equipment immediately necessary for the project (UNIDO, 1996; Commonwealth of Australia, 2008).
Implementing the project

The project implementation phase typically commences upon financial closing of the project and ends when the project has passed the specified completion tests, such that acceptance is granted by both the project company and the host government (UNIDO, 1996). In a PPP arrangement the project company takes complete ownership of the facility until the end of the concession period in conjunction with the project agreement.

Operation

The operational phase is typically of the longest duration, as it extends from construction completion and subsequent ownership through the full period of the concession agreement. The project company operates the facility, either directly or through a contracted operator, and maintains the facility in conformity with the criteria set forth in the project agreement. Lenders, investors and the host government have extensive rights to receive reports and carry out inspections of the facilities so as to ensure that operation and maintenance are being expedited as required or agreed. The basis of a project-financed scheme is that revenue or fees received during the operation of the facility allow the project company to recover the investments, service debt and therefore make a profit (UNIDO, 1996; Commonwealth of Australia, 2008).

Transfer of ownership

The final phase of the concept is the transfer of ownership of the project to the host government at the end of the concession period. In a successful scheme, the concession period gives the project company the opportunity to receive revenue from the project sufficient to achieve payment of interest on the project debt; repayment of the project debt; repayment of the equity investment of the project sponsors and any other equity partners; pay a reasonable return (including a reasonable profit) to the equity investors to compensate them for the use of their capital and the risk they have undertaken. The project company’s rights in the project are also transferred to the host government, normally free of any charge. At the transfer date the host government needs to ensure that the project has been properly maintained and that enough training and technology transfer have occurred for the government to be able to continue to operate the project successfully (UNIDO, 1996; Commonwealth of Australia, 2008).
In certain instances, and in accordance with the current trend and continuation of public-private sector joint ventures, the host government may find it advantageous for one of the following options to occur, such that continued operation exists, possibly being more efficient than if the government or public sector were to take control:

1. Negotiate an extension of the concession period with the project company
2. Negotiate a new operating contract with the project company
3. Invite tender submissions for a new concession period

2.2.6 Contractual Arrangements for PPP Projects

Each phase involves a number of contractual documents and arrangements, which together forms the contract package for the project. One of the biggest challenge in structuring a PPP project to recognise all parties and the risks faced, and therefore to provide a mechanism for the assignment and management of those risks.

The following diagram (Figure 3), in Delmon (2000), details the contractual arrangements in place for a typical PPP project. The structure, however, would require variance in certain situations to suit the political and physical project environment such as ownership and sources of finance.

![Figure 3: Contractual Arrangements for a typical PPP Project (Delmon, 2000).](image)
Tiong (1990) describes a typical contractual network for a PPP project as having the project company legally constituted in the host country at the centre of the agreement. The project company will need to establish contractual relationships in the anticipation of the length of the recession which would typically be 30 years for infrastructure projects. In addition to this concession agreement with the host government or agency, loan agreements with the banks, shareholders agreements with investors, off-take contracts with the users of the facility, operation agreements with the operators and construction contracts with the builders all need formulation.

2.3 THE PPP MODEL AND THE AUSTRALIAN MARKET

PPPs are seemingly becoming deeply embedded as an integral part of Government procurement strategies. As discussed by Hodge and Greve (2005), very large commitments are being made with the private sector by various Governments under the aegis of PPPs. In Australia this will have amounted to A$20 billion from the period of 2003 to 2008 (Gray 2002; cited in Hodge and Greve 2005). According to Jefferies and McGeorge (2008) there are a range of views regarding the benefits of a shift to a PPP procurement model for Australia. Concerns related to market size with only a limited number of companies of sufficient capacity to bid for a PPP, in turn restricting the efficient development of the PPP model and true competition.

Whilst not universal, views mirrored the apprehensions of critics such as Quiggin (2004) and Sheil (2003) that PPPs represent a form of privatisation. Here opinions differed as to whether they were advantageous or otherwise to companies and communities. A degree of frustration existed regarding the ‘advantages’ of a PPP procurement process: “purely a dollar driven competition rather than a value competition, as often talked about by the spin doctors”.

According to Regan et al (2011) the Australian PPP policy approach possesses several characteristics that distinguish it from other OECD countries. These include:
• A full bid process with formal expression of interest and request for tender stages. The process from announcement of the project to financial close in Australia averages 14 months.

• Average project size is large by international standards with the recent desalination project in Melbourne valued at AUS $3.2 billion, and the River City motorway and the Airport Link toll road projects valued at AUS $2.9 billion and AUS $3.5 billion, respectively. In a relatively small domestic market, deal flow is slow and bid costs are high. Both of these factors contribute to reduced depth in bid markets over time.

• A focus on value for money measurement, design, and innovation in both delivery and operational phases of the undertaking.

• Many consortia are initially led by financial institutions with contractors assuming a subordinated role.

• Most PPP investment is provided by domestic and foreign fund managers and recent toll road projects raised money on the Australian Securities Exchange.

2.3.1 Characteristics of PPP Projects

In discussion about the nature of social PPP projects, Jefferies and McGeorge (2009) state that comparisons were typically made against economic infrastructure projects. Key features and differentials are identified below.

Social infrastructure projects:

• Smaller in scale
• Project types include schools, hospitals
• High level of political and operational complexity
• Risk associated with facility performance
• Revenue streams via Government agreements

Economic infrastructure projects:

• Larger in scale
• Project types include motorways, tunnels
• Lower level of political and operational complexity
• Risk associated mainly with technical issues associated with engineering projects
• Revenue streams via direct toll payments

The public sector must make PPPs more attractive to the private sector and clarify the identification of risk in order to transfer more responsibility to the private sector. In relation to commercially viable value-adding, Government typically restrict the outsourcing of services to ‘non-core’ services such as administration, catering and cleaning. There appears to be some conflict in the division of ‘core’ and ‘non-core’, the example being given – the employment of nurses, many of whom are employed in hospitals via private enterprise agencies. A branch of a consortium could undertake such a function (Jefferies and McGeorge, 2009).

2.3.2 The Emergence of Social PPPs

Jefferies and McGeorge (2009) established a compilation of all PPP projects from 1986 to date in Australia. This compilation (see Table 3) includes all projects listed by Jones (2003) and Duffield (2005).
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**Key**
E = Economic Infrastructure
S = Social Infrastructure
U = Urban Renewal & associated Infrastructure

*Table 3: Total Break-up of PPP Project Types Across the States*

The data demonstrates (with a few exceptions) that the application of the PPP approach to social infrastructure PPPs is a relatively recent trend. Many of the projects currently since 2006 are for social PPP projects, some of which are still in the ‘pipeline’ at stages such as ‘expressions of interest’ and ‘feasibility’ and whether or not these projects progress to fruition will largely depend on the perceived risks and returns to both the public and private sectors.
2.3.3 Barriers and Practical issues Related to PPPs

There are many barriers when considering the use of a PPP strategy. The following list has been developed using issues identified by the Australian Council for Infrastructure Development Limited (2003); Curnow et al (2005); McGeorge et al (2008):

- **Tax reform.** Section 51AD of the Australian Tax Act is a serious barrier to many PPP projects. Rectification of this could pave the way for further use and implementation of PPP arrangements e.g. shadow tolling as a form of payment for infrastructure services is currently restricted, if not prohibited, under 51AD as it currently stands.

- **Whole of Government approach.** Strong central Government control has led to a lack of consistency in PPPs. To ensure PPPs succeed the consistency must be driven at the highest levels of Government.

- **Lack of suitable skills in Government agencies.** Agencies may not have the skills or experience to ensure a successful project. Greater training and experience will overcome these.

- **High participation costs.** High bidding costs viewed as the most prominent barrier to entry. It has been indicated that tender costs are up to six times higher than that of traditional procurement arrangements. Therefore it is unlikely smaller contractors will be able to participate due to high tender costs.

- **High project values.** The majority of PPP projects are larger than those for which many small contractors can realistically aspire to bid for.

- **High risk.** One of the fundamental requirements of a PPP is that the private sector must genuinely assume risk. Due to this high volume of risk many smaller companies would not be equipped to handle such large risk, which would prevent them from entering the PPP market.
– **Lack of credibility and contacts.** The PPP process invariably involves a contractor working in a consortium with partners from outside of the construction industry. This is an effective barrier to smaller contractors as they are less likely to have external contacts to form a PPP consortium.

### 2.4 RISK

As risk, and more specifically the identification of risk factors associated with PPP projects, forms the basis of the problem to be investigated in this thesis, it is important to look at the fundamentals of risk itself and subsequently risk identification and management. This is of particular importance as Uher (1994) identifies that the application of risk management in construction has been sporadic.

Risk exists whenever the future is not known with certainty, meaning risk is ever present (Fone and Young, 2000). According to Smith et al (2006) risk management provides a system by which project risks can be identified, assessed and managed. This is critical in construction and more so in the complex contractual arrangements of PPPs. This is a significant issue with regards to this thesis as many of the concession periods of PPP projects have not as yet elapsed, so the future is very much uncertain. Managing for the future and identifying risks is crucial for project viability, and ultimately, success.

#### 2.4.1 Defining the Issue of Risk

According to Smith (1999) the word ‘risk’ originated from the French word ‘risque’, and began to appear in England, it its anglicised form, around 1830, when it was used in insurance transactions. The Concise Oxford Dictionary (1999) defines ‘risk’ simply as “a situation involving exposure to danger or loss”.

Chapman (1991) also makes a link to exposure. He defines ‘risk’ as exposure to the possibility of economic and financial loss or gain, physical damage or injury, or delay as a consequence of the uncertainty associated with pursuing a particular course of action.
When considering construction, Smith (1999) indicates that risk exists when a decision is expressed in terms of a range of possible outcomes and when probabilities can be attached to the outcomes.

From a list of fundamental risk elements, Fone and Young (2000) subsequently establishes a working definition:

“Risk is a characteristic of our world that is present when certainty is absent. Obviously, risk is the variability of outcomes around an expectation; while subjectively, risk is our attitude towards or perception of risk – which is influenced by uncertainty, personal, social, and cultural factors, and the risk’s relationship to the larger environment (its context).”

The definition is far from elegant, but is a useful signal that risk management will not merely manage the probabilities and outcomes, but also manage uncertainty and attitudes towards risk. Risk management may have broader social, or even ethical, considerations that are not easily defined in a narrow assessment of risk.

Within the context of management and economics of construction projects, Raftery (1996), identifies a working definition as:

“Risk and uncertainty characterise situations where the actual outcome for a particular event or activity is likely to deviate from the estimate or forecast value”.

2.5 RISK MANAGEMENT

According to Uher (1994) risk and uncertainty are present in all aspects of construction work, irrespective of the size, complexity, location, resources or speed of construction of the project. Risks associated with a construction project must be first identified, then analysed and finally responded to. This strategy was first discussed by Raftery (1996) and more recently supported by Loosemore et al (2006) and can be seen in the following figure (Figure 4):
2.5.1 Managing Risk in the Public Sector

The above issues consider risk very much from a private sector perspective of construction projects. When considering the public sector, particularly important when the research problem of this thesis revolves around risk issues in public-private sector joint ventures, Fone and Young (2000), identifies that risks do have unique properties in the public sector. First, the organisations facing risk are unique in their own right; public sector bodies have numerous legal, social, and political attributes not seen in the private sector. Second, many of the public risks are unique and can be handled only by public institutions (Fone and Young, 2005). Risk is a multi-faceted, textured concept and means different things in different situations.

According to Jefferies and Chen (2004), there has been greater importance placed on the need for incorporating risk management in the project procurement process. Risk management is the process taken to identify potential risks, analyse their consequences and implement suitable responses, which ensure that projects are completed successfully (Loosemore et al, 2006).

2.5.2 Risk Identification

Risk identification is an important step prior to risk analysis. In order to correctly manage risks through analysis, comprehensive identification at the preliminary stage is
required (Salzmann and Mohamed 1999a; Jefferies and Gameson, 2002; Jefferies and Chen 2004; Jefferies, 2006). This supports the development of the theoretical framework established during the review of the literature, which becomes the proposition that will be tested in current Australian PPP projects. The framework can then be refined in order to make it project (case study) specific. Subsequently, the revised framework, that would have been exposed to a periodic review of risk factors, can then be used and applied to other PPP projects, particularly during the ‘key’ preliminary, or negotiation, stages of development.

2.5.3 The Management of Risk in Procurement

In further support of this, and in making a subsequent connection with the issue of procurement, Akintoye and Taylor (1997) state that managing risk in an integral part of the procurement process.

Due to recent changes in the nature of asset planning and procurement strategies undertaken by Australian Governments, there has been greater importance placed on the need for incorporating risk management in project developments (Jefferies and Chen, 2004). The NSW Government Department of State and Regional Development first published its ‘Guidelines for Private Sector Participation in the Provision of Public Infrastructure’ in October 1997. These guidelines, and their subsequent revisions, confirm the shift in attitudes toward asset planning and procurement by stating:

“The government aims to maximise private investment in infrastructure to the extent that this results in net benefits to the community beyond those from public provision. It also strives to promote an efficient allocation of risk between the public and private sectors to parties best able to manage them”.


These changes have indeed opened new avenues to the government for the procurement of buildings and infrastructure. The utilisation of the PPP concept is an example of the increased acceptance of these alternative forms of procurement.
According to Salzmann and Mohamed (1999b), within the PPP consortium there are many risks that need to be addressed in order to ensure that investment into the project is viable. These risks are heightened in international PPP projects (Jefferies, 2004) as they depend on a combination of commercial, political and economic factors. The potential risks and rewards for an international PPP project are therefore great.

2.5.4 Risk Management in Construction

Several authors have identified various benefits from the risk management approach in construction. Raftery (1996) established the following list:

- There is an overall reduction in risk exposure.
- Pre-planning should lead to the use of pre-evaluated and prompt responses to any risks which do materialise.
- More explicit decision making on the project.
- Clearer definition of specific risks associated with particular projects.
- Full use is made of the skill and experience of project personnel.
- Good documentation ensures that corporate knowledge of project risks accumulates over time and does not remain with individuals.
- Situations where there is little, no or unreliable data are not ones where it is not possible to carry out the analysis, they are situations where the analysis is more, not less, important.

Smith (1999) summarises some similar rewards from the risk management process:

- Project issues are clarified, understood and considered from the start.
- Decisions are supported by thorough analysis.
- The definition and structure of the project are continually monitored.
- Clearer understanding of specific risks associated with a project.
- Build-up of historical data to assist future risk management procedures.

Loosemore et al (2006) define a new era for risk in the 21st century, mainly due to the fact that risk management is now no longer merely discussed amongst ‘business’
literature but due to recent global atrocities, such as September 11 terrorist attacks in New York and bombings in Bali, London and Mumbai, then risk is very much embedded in everyday life.

2.6 RISK IN PPP PROJECTS

Many countries now see private finance models as the solution to their infrastructure problems and as a result there is an increasing use of PPP procurement, or its variations, worldwide.

2.6.1 Stakeholder Risk

Edum-Fotwe, et al (1997) assessed contractor risk with financial ratios as part of the client’s procurement strategy. The client’s investment in construction is very often a one-off experience, which involves a large investment in a physical asset and substantial capital outlay. The size of the investment exposes the client to risks, which are mainly managed through the application of contractual conditions and of equal importance in managing risks is the choice of procurement system to deliver the project. Construction clients need to become more attuned in such a high-risk industry to the potential of failure of companies whose services they engage.

Ogunlana (1997) highlights a major neglect (or risk) of PPP schemes is often the creditability of the host government as a contract partner. If the host government dithers, or fails to deliver promises, at any stage of process, the sponsors are left with a project that is unable to live up to economic promise. He uses the Elevated Tollway Project in Bangkok, as an example, where, the government was unable to meet its obligation under the contract promptly, and as a result the sponsor experienced financial difficulties. To successfully manage risk in PPP projects there must more of a focus on the responsibilities of the host government and how to deal with government inabilities or unwillingness to meet contractual obligations. In addition, political climate, regulatory and legal policies and the transparency of government operations determine the success or failures of PPP schemes.
The Victorian Government has recognised a need for private investment and has consequently developed a programme termed the ‘New Prisons Project’ (NPP). This NPP programme has attempted to strengthen its relationship with the private sector by using a PPP approach. Upon the involvement of the private sector in these projects, the formal responsibility for the management of risk is significantly transferred to the private participants (Confoy et al 1999; Love et al, 2000).

All construction projects expose the stakeholders to certain types of risk. The degree of risk that a contractor is exposed to depends significantly upon the type of contractual arrangement that is undertaken. The wider the scope of work, the more risks that may be assumed. For example, a design and construct contractor can be assuming more risks than a contractor tendering to a fully documented architect’s design. Beyond this, the promoters of a PPP project are faced with a vast array of risks, many of which they would not encounter under a traditionally procured public sector project (Walker & Smith 1995; Jefferies and Chen, 2004; Yuan et al 2010).

It appears critical to the success of any project that, before the project agreement is signed, all participants have identified the risks and implemented measures to distribute, mitigate or manage them. According to UNIDO (1996) much of the analysis of risk associated with a PPP scheme, is concerned with the transfer of risk from the public to the private sector. Risks in infrastructure projects are heightened by the large capital outlays, long lead and development times, technical difficulties presented by such projects and, in the case of PPP projects, with lenders and investors having to rely exclusively on the project cash flow for their return.

2.6.2 Risk in Project Finance

The reluctance of banks to lend in some countries without government guarantees represents a major problem in arranging finance for large scale projects. In addressing the issue, the export guarantee agencies of various countries, as well as international financial institutions such as the World Bank, increasingly provide protection against political and exchange risks where commercial insurance is very expensive and capital market hedging instruments are not available.
A number of infrastructure loan institutions provide finance as well as project advisory services for projects in their respective regions. Finance from these institutions is known as a multilateral agency loan. According to Walker and Smith (1995) the institutions include: The International Finance Corporation; The European Development Bank; The Asian Development Bank; The Inter-American Development Bank; The African Development Bank; The World Bank; and The Multilateral Investment Guarantee Agency (MIGA).

In September 1994, the World Bank replaced its extended co-financing facility (ECO) by bank guarantees to be used for infrastructure financing. These guarantees are designed to cover specific risks (the partial risk guarantee) or part of the financing (the partial credit guarantee). A partial risk guarantee covers risks arising from the non-performance of host government obligations spelt out in agreements with the project company or from force majeure events resulting in debt service default to the lenders. A partial credit guarantee covers all events of non-payment for a designated part of the financing scheme with the exception of equity capital. It typically extends maturities beyond what private creditors could otherwise provide (UNIDO, 1996).

While project finance methods, such as PFI in the UK and PPP in Australia, have still continued from strength to strength, the size of these projects appears to be dropping. Unions have stressed voices of concern about the cost and distortion caused by these project finance approaches (Delmon, 2005). At the other end of the public-private stakeholder divide, private sector contractors are frustrated with the high bid costs of private finance procurement models (Curnow, et al, 2005).

2.7 IDENTIFICATION OF RISK IN PPP SCHEMES

It is difficult to generalise about the risk characteristics of PPP infrastructure projects, given that each host country, each infrastructure sector, and indeed each specific project has it’s own risk profile. Notwithstanding this, the development of a broad-based framework listing all relevant general issues, is seen to have good application at the planning, conceptual and bid stages of such projects.
2.7.1 Identifying Individual Risk Factors

Many authors have focused upon identifying individual risk factors in PPP projects. The problems however with this research, as suggested by Salzmann and Mohamed (1999a), is that since the various author’s lists are based on different definitions, categories and studies, the risk factors developed are not totally comprehensive and applicable across the spectrum.

In aiming to develop a comprehensive list of general risk factors applicable to PPP projects, various previous research is considered. It was Tiong (1990) who initiated much of the research into risk, and indeed success, factors inherent in PPP projects. Literature frequently refers to his work, and in many cases finds its foundations on the technical, financial and political risk categories first described by him. Tiong (1990) considered the political category of risk to be the most significant and difficult to manage. Tam and Leung (1999) agreed with the assessment of ‘political risk’ as being the most difficult to deal with and at the same time identified ‘technical risk’ as being comparatively the easiest to manage.

Cheung et al (2012) build on the work of both Jefferies et al (2002) and Li (2003). In doing so they extend the issues of PPP risk factors on Li’s UK-based study and likewise Jefferies et al’s Australian-based research by including Hong Kong in their study. However, the limits of an empirical questionnaire are exposed with no exploration of qualitative data, hence resulting in a study that merely confirms previous historical PPP risk factors even though there is useful a form of international comparison.

2.8 RISK CATEGORIES

Much of the research into risk factors in PPPs has, and still does, refer to the work of UNIDO (1996). They divide risks into two broad categories for the purposes of risk identification:
1. General (or country) risks, which are associated with the political, economic and legal environment of the host country and over which the project sponsors have little or no control.

2. Specific project risks, which to some extent are controllable by the project sponsors. (UNIDO, 1996)

Raftery (1996) finds it useful to work closely with the project team and to explicitly consider at least three separate areas:

1. Risks internal to the project, by breaking the project down into major work packages.
2. Risks external to the project and emanating from the business and physical environment.
3. Consider the client, the project, the project team and the quality of the documentation form the perspectives of the various contractors in anticipation of sources of claims.

Ma et al (1998) provided additional development and identified five main risk categories under the headings of political, construction and completion, market and revenue, operating and financial risks. The authors suggest that the identification, management and allocation of these risks is best served by the undertaking of comprehensive feasibility studies.

Kerf et al (1998) developed risk categories in more detail and identified the following:

1. Design Risk
2. Construction Risk
3. Operating Cost Risk
4. Revenue Risk
5. Financial Risk
6. Force Majeure Risk
7. Performance Risk
8. Environmental Risk
Loosemore et al, (2006) state that the way to identify risks is to use a checklist compiled from experiences on previous projects. They provide a list that is not exhaustive but one that can be used to develop and continually update based upon one’s own experiences. Their list contains eight broad risk categories which each contain several sub-categories that can be used as a starting point for general risk categorisation in construction, including for projects using procurement approaches such as PPP. The eight broad categories identified by Loosemore et al (2006) are:

1. Technology
2. Human
3. Environmental
4. Commercial and Legal Relationships
5. Management Systems
6. Economic/Financial
7. Business partners/Stakeholders
8. Political

It is these broad risk categories that many researchers have used as the starting point for developing specific risk factor frameworks.

2.8.1 Financial, Political and Technical Risks

Walker and Smith (1995) acknowledge that previous research into risk analysis associated with PPP projects, often begins by categorising under the three headings posed by Tiong (1990) - financing risks, political risks and technical risks. Their research takes the issue a step further and resulted in the following risk factors being identified (Table 4):
Financing Risks  *Foreign Exchange and Interest Rate Fluctuations*: Foreign exchange being most relevant to developing countries which have to import equipment and materials using foreign currencies for settlement. The income arising from the operation of the facility may be in local currency.

*Market Risks*: Changes in market price, demand and sources of raw material supply

*Income Risks*: Possibly resulting from increased competition or from over-optimistic revenue/usage forecasts

*Cost Overrun Risk*: Construction costs possibly exceeding original estimates

Political Risks  *Sovereign Risks*: Possibly arising out of a change of government composition or change in legislation

*Instability Risks*: Ranges from labour unrest and embargo of construction equipment to outright expropriation

Technical Risks  *Construction Difficulties*: latent conditions or breakdown in equipment

*Completion Delays*: Delays to the project may be caused by various reasons including poor interface co-ordination, late design changes or inclement weather

*Operation Risks*: Resulting from equipment breakdown, defective work or poor training of operators

| Table 4: PPP Project Risk Factors (Walker and Smith 1995) |

Levy (1996) reiterated many of the general risks and also suggests that changes in demographics over the concessionary period may substantially affect revenue. A favourable example is described in that of the UK’s Dartford River Tunnel Crossing, while a negative example is demonstrated in that of one of the Hong Kong Harbour Tunnel projects suffered from under-subscription. He also suggests that consumers may balk at paying the infrastructure usage fees set by the host government in conjunction with the concessionaire. An example of a Mexican tollway is described whereby the fees were about eight times higher per mile than comparable rates in the United States. This then resulted in increased toll jumping.

Wang et al (2000) identified about fifty risks in six broad categories, but the majority of the findings focused on the Political, Financial and Technical risks within the context of BOT-type power station projects in China.
2.8.2 The Five P’s of Risk

Tam et al (1994) built on the three main risk areas by Tiong (1990) and Walker and Smith (1995) and developed a “Five P’s” framework for the successful launching of the BOT approach to PPPs in the South East Asian power industry. Their observations tend to be echoed throughout all identified phases of the PPP process in suggesting that successful venture planning and execution involves consideration of ‘Project’, ‘Partner’, ‘Pattern’, ‘Profitability’ and ‘Protection’. In developing the “Five P’s”, they identify risk factors of political opposition, underdeveloped legal framework, underdeveloped fiscal framework, corruption and political instability. However, the framework developed is more a consideration of success factors as opposed to managing risk. The “Five P’s” was developed further by Zeng and Tiong (2010) who added categories that integrated areas of safety, environmental and quality risks that, in many ways, were driven by meeting legislative requirements.

2.8.3 Global and Elemental Risks

Woodward et al (1992) divided PPP project risks into the classifications of global and elemental risks. Elemental risks are those specific to a particular project and global risks have a wider range of influence.

**Global risks**
1. Political - Government, technology
2. Legal - Framework, type of agreement
3. Commercial - Market, input, currency
4. Environmental - Impact, ecological

**Elemental risks**
1. Technical - Physical conditions, construction, design, technology
2. Operational - Operation, maintenance, training
3. Financial - Form of financing, evaluation, ownership, return, currency
4. Revenue - Demand, toll/tariff, development
Woodward (1995) still used these broad categories of global and elemental risks but added that the increasing complexity of infrastructure projects created greater risk exposure for project stakeholders and Jin (2012) supported this by also adding that the need for developing project by project risk profiles and subsequent risk allocation was needed for project success.

This logic, although using different terms, is similar to that produced by UNIDO (1996) where General (or Country) risks and Specific Project risks were identified.

### 2.8.4 Risk Checklists and Frameworks

UNIDO (1996) attempted the development of a ‘risk check-list’, after dividing risks generally into two broad categories for the purposes of identification, namely general (or country) risks and specific project risks. The following table (Table 5) summarises the outcome:

<table>
<thead>
<tr>
<th>GENERAL (OR COUNTRY) RISKS</th>
<th>Country commercial risks</th>
<th>Country legal risks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Political risks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Political support risks</td>
<td>Currency inconvertibility risks</td>
<td>Changes in laws and regulations</td>
</tr>
<tr>
<td>Taxation risks</td>
<td>Foreign exchange risks</td>
<td>Law enforcement risk</td>
</tr>
<tr>
<td>Nationalisation risks</td>
<td>Devaluation risks</td>
<td>Calculating compensation delay</td>
</tr>
<tr>
<td>Forced buy-out risks</td>
<td>Inflation risks</td>
<td></td>
</tr>
<tr>
<td>Cancellation of concession</td>
<td>Interest rate risks</td>
<td></td>
</tr>
<tr>
<td>Import/export restrictions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Failure to obtain approvals</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SPECIFIC PROJECT RISKS</th>
<th>Construction/completion risks</th>
<th>Operating risks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development risks</td>
<td>Delay risk</td>
<td>Associated infrastructure risks</td>
</tr>
<tr>
<td>Planning delay risks</td>
<td>Cost overrun risks</td>
<td>Technical risks</td>
</tr>
<tr>
<td>Approval risks</td>
<td>Re-performance risk</td>
<td>Demand risk (volume and price)</td>
</tr>
<tr>
<td>Transnational risks</td>
<td>Completion risk</td>
<td>Supply risk (volume and price)</td>
</tr>
<tr>
<td></td>
<td>Force Majeure risk</td>
<td>Cost escalation risks</td>
</tr>
<tr>
<td></td>
<td>Loss or damage to work</td>
<td>Management risks</td>
</tr>
<tr>
<td></td>
<td>Liability risk</td>
<td>Force Majeure risk</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Loss/damage to project facilities</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Liability risk</td>
</tr>
</tbody>
</table>

Table 5: Risk checklist for PPP projects (UNIDO, 1996)

As indicated by the types of risks listed under the previous categories, general or country risks refer to factors such as a country’s economic growth, it’s political environment, tax code, legal system and currency exchange regime. These are all
factors that the project sponsors have little or no control over. Specific project risks include items such as the management capabilities of the project sponsors, and are risks that to some extent are controllable or manageable by the project sponsors.

In noting the absence of a definitive list of risk factors applicable across PPP projects generally, Salzmann and Mohamed (1999a) identified the need for development of a comprehensive risk framework. As previous lists of risk factor identification were based on different definitions, categories and studies, then these lists were not totally comprehensive across the broad spectrum. Subsequently, the development of their framework was done in such a manner as to include every possible aspect where risk may emanate from a PPP scheme. They saw it appropriate for the development of two risk frameworks, where categories are formed according to where the factors’ influence is first encountered. The first framework lists those factors present throughout the feasibility to building stage, and is referred to by the authors as the development or ‘build’ phase. The second framework presents factors encountered throughout the ‘own, operate and transfer’ stages, and is referred to by the authors as the operations phase.

Each framework identifies ‘superfactor’ groupings of host country, investors, project and project organisation and management. From these ‘superfactor’ groupings are listed ‘subfactors’ which are considered not only to present inherent risks, but also to highlight crucial areas where attention should be focused. Although the number of identifiable subfactors decreases from the development phase to the operations phase, this does not diminish the impact of the risks posing a threat to the project. It is rather due to a lessening of the amount of activities being undertaken and the personnel and companies involved (Salzmann & Mohamed, 1999a).

Salzmann and Mohamed’s (1999a) models are an attempt to encompass available published material on the BOT/BOOT approach to PPPs, however, the frameworks have not been tested on a current PPP projects, particularly for social infrastructure. The development stage framework is represented in the following figure (Figure 5):
Generic PPP checklists are now fairly commonplace, particularly amongst Government produced guidelines and frameworks. Various researchers have also produced periodic and revised versions that tend to be country-specific and much of the PPP literature catalogues this. For instance, Li et al (2005a) use several generic models of risk categorisation in their study on risk allocation on UK PFI/PPP projects by building on the work of Li (2003). The checklist they use takes a meta-classification approach on the basis of three risk levels comprising macro, meso and micro levels. The macro level comprises risks external to the project itself; meso level includes risks sourced within the boundaries of the project; and the micro level represents risks found in the
stakeholder relationships. Within each of these high risk grouping levels there are sub-category groups and individual risk factors. This research was designed to specifically focus on the UK PFI approach which differs to current PPP methods in Australia.

In their development of a life cycle risk management framework for economic PPP projects, Zou et al (2008) found that properly assessing risks (under the categories of financial, political and public's acceptance/rejection), ensures value for money and helps to protect the public interests which are essential in PPP infrastructure projects. This can only be achieved through optimal risk identification, assessment, allocation and management from a life cycle perspective that successfully balances the interests between not only the public and private partners but also the end users of the asset. Furthermore, it is also important to continuous monitor the risks and develop proactive risk response strategies throughout the project life cycle of PPPs. This supports the need for periodic review of risk in PPP projects and according to McGeorge et al (2008) is even more critical given the complex and politically sensitive nature of social infrastructure PPP projects.

2.9 RISK ALLOCATION

The risk factors need to be allocated and managed efficiently to ensure the success of a PPP project.

2.9.1 The Allocation and Structure of Risk

UNIDO (1996) suggests the following three overriding considerations when designing the risk allocation and management structure of a PPP project:

1. Efficiency gains and the cost of the project in its entirety should decide any risk allocation. The host government naturally wants to transfer most risks to that of the private sector, whilst similarly, the private sector is anxious to reduce its’ exposure. A particular risk should be borne by the party most suited to deal with it.
2. The financial structure of the project must ensure that all substantial project risks are identified and allocated and also managed by a combination of financial resources and firm contractual commitments.

3. The risk structure has to be sufficiently sound to cope with a combination of pessimistic scenarios for the project.

Under these considerations, it is common for the private project sponsors to bear risks that are familiar to them, whereby they are in a position to best control or manage the risk. These include most development risks, construction and completion risks and operating risks. The sponsors will however, hesitate to agree bearing responsibility for uninsurable risks that are difficult to measure and outside their control. Walker and Smith (1995); UNIDO (1996); Ma et al (1998); Li et al (2005a); Zeng and Tiong (2010) identify some examples of these risks to include political risks, country commercial risks, indeterminate demand risks and uninsurable force majeure risks. There are cases where Government still wishes to transfer some of these risks to the private sector, and in doing so must accept higher costs as a consequence.

At the uppermost level, basic risk allocation for the individual PPP project should be defined in the project agreement between the project company and the host government awarding the concession. According to UNIDO (1996) and The World Bank (2005; 2012) the process of risk mitigation and allocation generally entails distribution of the risk between the project sponsors and other parties. This will typically involve numerous agreements and forms of contract including the following:

1. The shareholders agreement
2. Credit agreements with project lenders
3. Design and Construction contract (often on a turnkey basis)
4. Equipment supply contracts
5. Long term materials supply contracts where applicable
6. Off-take contract with the project’s long term output purchaser (if applicable), or a tariff agreement with the relevant regulatory authority
7. Operations and maintenance contract with the project operator
In this process, the project sponsors are actually evaluating the level of acceptability of each risk and then allocating to the different, and perhaps better equipped, parties involved.

Zou et al (2008) studied three economic PPPs, namely Sydney Cross City Tunnel, Sydney Airport Railway Link and China Fu-De Highway projects, and discussed the important risk factors and issues governing the success of PPP projects in order to develop a life cycle risk allocation and management framework for PPP infrastructure projects. They emphasize that the issue of risk transfer can be misleading as value for money requires equitable risk allocation between the public and private sector partners, and there may be an inherent conflict between the public sector’s need to demonstrate the value for money versus the private sector’s need for robust revenue streams to support the financing arrangement.

Proper risk allocation is of absolute importance to ensure success of PPP projects. According to Zou et al, (2008) stress the importance of putting efforts on a continuous life-cycle risk identification and allocation. Further, protecting the public interests and allowing the private partners to gain reasonable return on their investments are essential for achieving value for money in PPP projects, which can only be viable through optimal risk allocation and balance of interests between the public and private sectors.

2.10 RISK ANALYSIS

The term ‘analysis’ is the estimation of what will happen if an alternative course of action is selected and the process of analysing risks provides an understanding and awareness of the impact of risk on decision problems (Raftery, 1996; Smith, 1999; Loosemore et al, 2005). The importance of a comprehensive risk analysis in projects as complex as that encountered under large PPP infrastructure projects should not be under-estimated.

2.10.1 Advantages of the Risk Analysis Technique

Walker and Smith (1995) identify the following objectives and benefits of risk analysis:
1. Establishes financial and technical feasibility
2. Formulation of more realistic plans in terms of cost estimates and programmes
3. Anticipates the magnitude of the possible impact that may be caused by the contingent factors
4. Parties can seek better allocation of the risks through the agreement of the likes of equitable contract clauses.
5. A more positive and rational risk-taking attitude results from a carefully prepared risk analysis as the risk takers know where they stand.

According to Grimsey and Lewis (2002), risk evaluation of PPPs is complex and therefore requires detailed risk analysis from different perspectives of both the public and private sector entities. Undertaking the risk management process using a structured risk analysis technique provides the PPP project stakeholders with an opportunity to maximize value for money and leads to improvements in strategic management, governance, operational management and financial management (Partnerships BC, 2006).

The analysis of risk embraces techniques of both a qualitative and quantitative nature. Each technique is described below:

2.10.2 Quantitative Risk Analysis

According to Walker and Smith (1995) quantitative risk analysis is a process involving mathematical models and analytical techniques to evaluate and quantify the impact of risks on the final cost and timescale of projects. There are a number of different techniques available and the choice of which technique to apply is dependent on the type and size of project, the availability and accuracy of information or data, the cost of the analysis, time constraints and the experience or expertise of the analysts.

Quantitative risk analysis techniques have been used by several researchers when analysing PPP projects. Grimsey and Lewis (2002) use a case study of a water treatment plant in Scotland whereby the technique used firstly identified the project risks and then looked at the nature and quantum of the risks from different stakeholder perspectives.
Quantitative risk analysis is performed on risks that have been prioritized by the qualitative risk analysis process as potentially and substantially impacting the project. Quantitative risk analysis is conducted to quantify risks in terms of both cost and time impact. Two alternative levels of quantitative risk analysis may be undertaken:

- **Formula-based analysis** using a simple formula to calculate average risk impact using minimum, maximum and most likely cost and schedule impacts;
- **Monte Carlo simulation** using specialized software for Monte Carlo simulation of expected cost and schedule impacts to get a range of aggregate risk values along with their probabilities.

A risk workshop is an effective tool for gaining expert input into the quantification of risk probability and potential impact. Quantitative risk analysis allows an agency to carry out a Value for Money (VfM) assessment during the pre-procurement phase, as well as after bids is received. A quantitative risk analysis may also be helpful in developing key contract terms (US Government, 2012).

### 2.10.3 Qualitative Risk Analysis

The technique involves the identification of main risk sources and assessment of their consequences on cost, time and performance. This process typically relies initially on the use of a risk checklist and then on the mixed use of intuitive judgement, brainstorming meetings and the experiences of the risk analysts (Walker and Smith 1995).

This chapter has already been identified that lenders and investors to a PPP project are particularly concerned about the political stability of the host country in which the project is located. Most banks and multinational corporations have developed some form of country risk analysis, whereby they attempt to recognise the potential for exposure to these risks.

As far as analysing political risk, the qualitative approach of risk assessment relies on the experience of experts who have the knowledge and analytical ability to assess the different political risk factors. Checklists are commonly used which contain
comprehensive questions and/or statistics about the country. They assist in preparing data, which forms the basis for final judgement by the experts.

Walker and Smith (1995) identify the following issues that would be included:

1. Economic
2. Strategy
3. Foreign exchange generation
4. Opposition groups
5. External factors

According to the US Government (2012), Qualitative risk analysis includes methods for prioritizing the identified risks for further action. It assesses the priority of identified risks using their probability of occurrence, the corresponding impact on project objectives if the risks do occur, as well as other factors, such as the time frame and risk tolerance of the project. A typical qualitative assessment based on the process used by the Virginia Department of Transport involved workshop participants being asked to carry out a qualitative risk valuation for each risk using their professional judgment and experience from previous projects. The valuation was carried out by categorising risks based on their probability of occurring and their impact on cost and schedule.

The qualitative approach to risk analysis supports the qualitative method applied to the research of this thesis. According to Runeson and Skitmore (1999) qualitative research means the interpretation of data to establish appropriate variables and correspondence rules which can form a theory. In this interpretation, qualitative research concerns the generation of concepts and classifications in order to establish patterns in the data from which relationships may be established.

To support this, Yin (2009) noted that the case study method used in qualitative research is an appropriate application where the case in question represents an extreme or unique case or that the situation has not previously been the subject of detailed scientific investigation, as is the case with the projects investigated as part of the case study section of this thesis and in particular given the operational stage of each project. Also, case studies retain the holistic and meaningful characteristics of events such as the
managerial process, for instance PPP procurement. These issues are discussed in more
detail in the Research Method Chapter.

As the issue of risk and its’ subsequent allocation and management form an integral part
of a PPP project agreement, then it is important to consider the various risks of both the
public and private sector participants.

2.11 PUBLIC AND PRIVATE SECTOR RISK

2.11.1 Risk Typically Borne by the Public Sector

When a government first embarks on a project procured by the PPP approach, it may be
necessary for a certain level of government support to be given towards minimum levels
of demand and therefore revenue. Most project related risks can be transferred to the
private sector, however the risks of demand and revenue could in some facilities, expose
the private sector to more risk than deemed acceptable. The level and type of risk borne
by the public sector tends to be an important indication to the financial community and
therefore potential investors, of the government’s commitment to the project.

According to UNIDO (1996), Governments may bear or share the identified risks
through performance guarantees, stand-by loan arrangements or compensation
provisions that would include various assurances such as certain minimum purchases
being made, at certain prices, thus assuring certain levels of project revenue.

According to Smith (1999), if the purchaser of off-take contracted services is a
creditworthy public utility (e.g. power, water and sewerage treatment projects) then the
project company normally accepts these risks and passes them to the project lenders. If
the revenues are paid by the public (for e.g. toll roads or electricity charges) the project
company takes a much higher risk on revenue generation. The lenders may seek to have
part of the risk passed on to the government by means of guarantees for a minimum
demand and therefore revenue level, or by stand-by loans. The demand and revenue
risks could also be mitigated by a governmental undertaking over competition issues.
For example an undertaking may be given that, depending on the project type, no
alternative road, airport or energy source will compete with the project for a specified period (Walker and Smith, 1995).

Political risks of delays and cost increases caused by the government or their authorities, including delays in obtaining required approvals, permits and licenses, are normally considered to be borne by the government. Some agreements allow for prolongation of the concession period in the event of these things occurring. Risk associated with taxes, tariffs or customs duties being increased or imposed as part of a general increase or imposition is sometimes addressed in the project agreement by way of a compensation clause. This means that the ultimate risk of cost consequence remains with the public sector. As no government can give the guarantee that such taxes or duties will not be imposed or increased, and if there is no such compensation clause, then the project company assumes the risk by adding informed cost estimates into their feasibility (UNIDO, 1996).

There appears to be fairly common agreement on the types of risks allocated to the public sector on PPPs. Given that one of the main aims of a PPP from a Government perspective is to transfer as much of the manageable risk to the private sector stakeholders in a PPP (McGeorge et al, 2008) then this is not surprising. According to Bracey and Moldovan (2006) the Public sector should carry the follow risks in a PPP project:

- **Political Risk**: potential changes in public policy;
- **Bankruptcy Risk**: private company declares bankruptcy while working on a contract;
- **Closure Risk**: inability of the bidding party to reach financial closure; and
- **Land Risk**: expropriation and eminent domain issues, difficulties acquiring land.

Failure to mitigate these risks also leads to losses for the public sector. Indeed, there are instances where the ability of the public sector to manage risk from the outset of a project depends on the private sector’s capacity to manage its risks well. For example, if the private sector fails to reach financial closure on a deal, the public sector has to start...
the procurement process over and invest more time and energy in securing a new service provider. The public sector can mitigate some risk by selecting only a reputable team from the list of bidders. If risks are not mitigated by the public sector, the business and investment community may lose confidence in the government. While not all risks taken on by the government appear to be quantifiable, the government can suffer a loss equal to the dollar equivalent of the total value of the economic benefits and public goods brought in by the planned project if the private sector drops out (Bracey and Moldovan, 2006).

2.11.2 Risk Typically Borne by the Private Sector

The public sector will obviously want sponsors to bear a significant part of the project risks. Walker and Smith (1995); UNIDO (1996); Smith (1999) identify four types of risk typically borne by the project sponsors through the project company:

Construction and completion risks
This category includes the responsibility for all project development costs, construction cost overruns and the cost of delays.

Operating risks
The risks of a failure to operate or maintain the project in accordance with the project agreement are borne by the sponsors. The sponsors may manage these risks by transferring part of them to the Operations and Maintenance (O & M) operator of the project via the O & M agreement. To ensure that the project operator is performing satisfactorily, government, sponsors and lenders normally require monitoring and measurement of its performance.

Supply risks
It is typical for the project company and subsequently the project sponsors, to bear the supply risks associated with the project. To protect themselves from these risks, they usually enter into contracts to secure long-term supplies of basic inputs of the appropriate quality at stable prices (e.g. supply of raw materials and fuel on a long term basis, an appropriate price escalation formula to allow for such factors as inflation and exchange rate movements et al).
Currency and interest rate risk

A range of capital market instruments such as options, futures and swaps is available for the management and hedging of currency and interest rate risks. Where there are many capital market participants, each party seeks to transform its risk exposure into one that matches its own risk-reward profile. This exists when complimentary pairs of participants can achieve their desired risk-reward profile by swapping their respective exposures.

Bracey and Moldovan (2006) support these risks assumed by private sector but provide further clarification:

- **Design, Construction and Maintenance Risk**: includes the day to day operational and management risks, delays in acquiring permits, problems with subcontractors, completions risk, cost and schedule overruns;
- **Demand/Revenue Risk**: includes unexpectedly high or low demand compared to initial market assessments;
- **Political Risk**: changes in Government, changes in public policy, corruption and favouritism, lack of sanctity of contract, and arbitration difficulties;
- **Currency Risk**: unexpected and severe depreciation or appreciation of currency that affect the service providers ability to pay investors.

Bracey and Moldovan (2006) state that risks can occur at various stages in the overall process of formalizing a PPP agreement. During the initial competition and award phase, many challenges may arise for both parties. The private sector may face delays caused by the lack of administrative capacity on the public sector’s side to deal efficiently with the process of evaluation and awarding contracts. This must be taken into consideration at the negotiation phase and appropriate guidelines for conduct must be clearly outlined in the contract. The private sector also faces political risk at the competition and award phase in the form of corruption and favoritism. According to the World Bank (2005) a study in the transport sector estimated that the typical number of bidders for a concession of a greenfield project in the transport sector is two or three.
In the construction phase of the project it is estimated that six companies control 50 percent of global the market and sixteen share 90 percent of construction projects. This evidence clearly shows that favoritism is taking place and that there is a lack of competition in the market. During the initial process another problem that private firms and consortia encounter is the lack of sanctity of contracts in developing countries. This is often a disincentive to do business with governments in these countries. The political risk resulting from frequent changes in government can lead to confusion, poor communication, and a poor exchange of information An incoming government may have a different opinion of the concessionaire than the outgoing government had, and thus, its perception or opinion of the project may change. Risks associated with investors misinterpreting market demand and production costs have been relatively rare. However, on large scale projects in transport and telecommunications, it happens more frequently than in other sectors. There are also cases where the private firm or consortium will purposely and strategically underestimate market demand when they expect that there will be a need for renegotiations in the future. One possible reason for this is if the firm underestimates market demand, they can have a lower cost bid which may increase its likelihood of winning the contract, and later demand increased funds due to special circumstances (Bracey and Moldovan, 2006).

2.12 SUMMARY OF RISK FACTORS

A summary of the key risk issues from previous literature is necessary in order to satisfy the second research objective of this thesis, i.e. ‘to establish a theoretical framework of risk for PPP projects’. The following list of risk factors summaries these issues established from the review of the literature:

2.12.1 Risk Factors Identified from the Review of the Literature

The following is a summary list of risk factors identified during the review of the literature:

- Foreign Exchange Rate Fluctuations
- Interest Rate Fluctuations
- Market
At the uppermost level, basic risk allocation for the individual PPP project is defined in the project agreement between the project company and the host government awarding the concession.

The importance of comprehensive risk analysis in projects as complex as that encountered under large PPP infrastructure projects should not be under-estimated and has the benefits of helping to establish financial and technical feasibility, parties can seek better allocation of the risks through the agreement of suitable and equitable contract clauses and insurance and a more positive and rational risk-taking attitude.
results from a carefully prepared risk analysis, since the risk takers know where they stand.

Though technical expertise is important, the evolving world market place of risk management services now allows risk managers to access a wide range of technical capabilities previously unavailable. Thus, management expertise is growing in importance as the hallmark of a successful risk manager (Fone and Young, 2000; Loosemore et al, 2006; Zou et al, 2008; McGeorge and Zou, 2013).

Although the difference between project success and disaster is more complex than managing or not managing risk (Smith, 1999), it appears that the track record of successful projects would have been greatly improved if more companies had included risk as an integral part of the project control and quality system.

2.13 SUCCESS FACTORS

2.13.1 Success and the Concept of Critical Success Factors (CSF)

In order to consider the issue of critical success factors it is important to first define success within the context of this thesis and the research problem.

The Concise Oxford Dictionary (1999) defines success as “the achievement of something planned or attempted” and also simply as “impressive achievement”.

Taking this definition a step further in order to tie the issue of success within the confines of a project, Mitrovic (1999) sees success, or more explicitly a successful project, as one that means ‘success to all stakeholders’. This definition is adopted for use within the context of this research project.

The issue of success is very closely related to the issue of risk. So much so in fact that they are inter-related particularly in terms of the influence they each have upon one another. This relationship between risk and success is supported by Salzmann and Mohamed (1999a) who suggested that risk and success factors should be considered
together, due to the point that a factor can be described in not only a negative sense (risk factor), but also in a positive sense (success factor).

The concept of “Critical Success Factors” (CSF) was developed by Rockart and the Sloan School of Management with the phrase first used in the context of information systems and project management. Rockart defines CSF as:

“Those few key areas of activity in which favourable results are absolutely necessary for a particular manger to reach his or her own goals…those limited number of areas where things must go right” (Rockart, 1982).

Morledge and Owen (1999) developed the concept of CSF to identify certain weaknesses associated with the practical application of Rockart’s method. They identified six main areas of weakness which are listed below:

1. Subjectivity
2. Bias
3. Human inability to process complex information
4. Change in relation to surrounding environments; time dependency
5. Imprecise definitions; generalisation
6. Qualitative performance measures.

Since the concept of CSF was developed over 20 years ago, several authors have developed the definition and key issues. From research to date, and to put the issue of CSF within the context of this research project, CSF are the events that occur during the project, which have a direct influence on the success of the project.

Sanvido et al (1992) explain that the completion of a project is achieved through a combination of several events and interactions from all participants that are involved within the particular project. They state that certain factors are more critical to project success than others and that these factors are called critical project success factors.
Research into CSF has been performed for several decades although according to Sanvido et al (1992), the construction industry is mainly unchanged and has only a marginally better understanding of the factors that make projects successful.

To develop the issue of success within the context of CSF it is necessary at this stage to reflect back upon research to date. In particular, the actual definition of ‘success’ when referring to CSF, which is somewhat indecisive. The following definitions and discussions of success reinforce this belief.

“...results much better than expected or normally observed in terms of cost, schedule, quality, safety and participant satisfaction…” (Ashley, 1987).

“...having everything turned out as hoped...anticipating all project requirements and having sufficient resources to meet needs in a timely manner…” (Tuman, 1986).

“The project is considered an overall success if the project meets the technical specifications and/or mission to be performed” (de Wit, 1986).

From these previous definitions variable views can be identified. Ashley (1987) believes that success is performing better than anticipated, Tuman (1986) notes that success is when something turns out as expected, and Sanvido et al (1992) conclude that all the participants within projects will have their own viewpoint of success.

2.14 CRITICAL SUCCESS FACTORS IN CONSTRUCTION

Recent research tends to take a relationship-based approach to the issue of CSF. For instance, Rowlinson (1999) states that critical success factors are those fundamental issues inherent in the project which must be maintained in order for team-working to take place in an efficient and effective manner. They require day to day attention and operate throughout the life of the project.

As far as infrastructure projects are concerned the issue of success may be very different for each of the individual stakeholders, particularly when considering the very complex
nature of the project organisation. According to Mitrovic (1999) the success of these projects will be evaluated on the basis of how the project contributes to the business objectives of each participant, as well as how it addresses the wider society objectives. The objectives may differ and even be conflicting.

When narrowing the scope somewhat, previous research into CSF for general construction projects has been a topic of great interest. Pinto and Slevin (1987) examined five researchers (Sayles, et al, 1971; Martin, 1976; Baker et al, 1983; Cleland et al, 1983; and Locke, 1984) attempting to determine the critical factors for a successful project and determined, through patterns of responses, the emergence of some general factors. These general factors were specific points that were raised by two or more of the tabulated results from the researchers. Pinto and Slevin (1987) came up with nine general CSF from their analysis:

1. Clearly Defined Goals
2. Competent Project Manager
3. Top Management Support
4. Competent Project Team Members
5. Sufficient Allocation
6. Adequate Communication Channels
7. Control Mechanisms
8. Feedback Capabilities
9. Responsiveness to Clients

Sanvido et al (1992) also performed a study on CSF for construction projects. The justification of this research was to define and identify the critical factors that produce successful projects. By identifying the CSF of construction projects, Sanvido et al (1992) state that it would ultimately lead to avoiding unsuccessful projects, identify good projects worth pursuing and highlight problems on current projects leading to corrective action.
Sanvido et al (1992) came up with results that indicated there were seven success factors. From these seven factors that were identified, four were viewed as critical. These CSF include:

1. A well organised, cohesive facility team to manage, plan, design, construct and operate the facility. Team chemistry was typically developed by common goals and activities.
2. A series of contract that allows & encourages the various specialists to behave as a team without conflicts of interest and differing goals. These contracts must allocate risk and reward in the correct proportions
3. Experience in the management, planning, design, construction and operations of similar facilities.
4. Timely, valuable optimisation information from the owner, user, designer, contractor and operator in the planning and design phases of the facility.

Chen (2000) carried out a review of project success factors and summarised them in a complexity perspective as follows:

1. Project success is a time-dependent and multi-dimensional concept. There is no single dimension that can measure overall project success to the satisfaction of every project stakeholder.
2. Success criteria are those used by project stakeholders to judge the performance of a project.
3. Success criteria are subject to different perceptions by different project participants.
4. Different success criteria are relevant at different stages of the project life cycle.
5. Success factors are those that contribute to the performance of a project.
6. Different success factors are perceived to be important for different stages of the project life cycle.
7. Different success factors are perceived to be important for projects with different attributes.
8. Critical Success Factors are the few key factors or functions that should be carried out well in order to ensure success.
9. Critical Success Factors that were identified for construction projects by various researchers can be summarised under the following headings:

- project objectives (clarity of the strategic and operational needs of the project and the commitment of the project team to the objectives);
- project team performance (including issues of leadership, cohesiveness, goal directedness, experience of and interactions among participants);
- information optimisation (timely and adequate communication of information among project team participants);
- control systems (adequate monitoring and appropriate intervention to handle deviations from plans).

The following list of CSF identified by Rowlinson (1999) attempts to represent the strategic issues in Success Factor research that have been discussed over the past 20 years:

- Understanding of team interdependence;
- Cohesion;
- Trust;
- Enthusiasm;
- Communication;
- Project mission;
- Top management support;
- Project schedule and plans;
- Client consultation;
- Personnel recruitment, selection and training;
- Technical tasks;
- Client acceptance;
- Monitoring and feedback;
- Trouble shooting;
- Conflict resolution; and
- Team management.
These factors are not applicable to all projects, may have more relevance for some projects, and indeed countries, than others, but they are relevant when considering holistic project criteria and in particular the procurement selection process. Rowlinson (1999) recognises some of these limitations in that he suggests that the list should be periodically reviewed. This view was supported by Phua and Rowlinson (2004), Jefferies (2006); and Ng et al (2012).

2.15 SUCCESS FACTOR FRAMEWORKS

Success Factors in general construction projects allow projects to assess their performance and evaluate their project constituents comparatively to the critical factors. A framework of success factors (or CSF) is vital for successful project planning and negotiation and they can also be used to develop individual and common project goals which must be identified at the outset. This issue is supported by McCabe (2001), who states that CSF provide a focus for what people will be aiming to achieve in order to ensure that the mission is successful within the period that has been allotted. This issue of goal setting and project planning is further supported by Bendell et al. (1987) who identify CSF as representing a small number of key indicators which, provided they are showing satisfactory progress towards targets, the organisation will generally be seen to be succeeding in its task of quality improvement.

Critical success factors are therefore vital for managers engaging in improvement of their organisation, as they indicate how much progress is being made in particular areas (McCabe, 2001). Subsequently, this links CSF with the issue of benchmarking and further justifies the identification and application of CSF in the form of a theoretical framework as vital towards the management and measurement of success in the multifaceted stages of construction project areas that include planning, negotiation, finance, design, construction, operation et al. CSFs have also been used to inform the risk management process particularly during the project implementation stages (Salzman and Mohammed, 1999a; Rowlinson, 1999; Jefferies at al, 2002; Jefferies, 2004; Jefferies; 2006; Yaraghi and Langhe, 2011).
2.16 PPP SCHEMES AND PROJECT SUCCESS

A number of authors have compiled lists of factors they consider critical to the success of project procurement under PPP or similar concepts. In order for these to be established and tested within a CSF framework they are summarised in the following list:

- Developed legal, fiscal and economic frameworks (Tiong, 1990; Keong et al 1997; Jefferies, 2004; Li et al, 2005b; Zhang, 2005)
- Avoiding delays and cost overruns (Tiong and Alum, 1997; Zhang, 2005)
- Feasibility study (Keong et al, 1997)
- Project management ability (Tiong et al, 1992; Salzmann and Mohamed 1999a; 1999b; Li et al, 2005b; Zhang, 2005)
- Having a local partner (Salzmann and Mohamed, 1999a; Jefferies, 2004)
- Existing infrastructure (Keong et al, 1997; Jefferies, 2004)
- Political stability and support (Tiong, 1990; Keong et al, 1997; Jefferies, 2004; Li et al, 2005b; Zhang, 2005)
- Environmental impact (Tiong and Alum, 1997)
- Innovation in technical solutions (Tiong et al, 1992; Tiong and Alum, 1997; Zhang, 2005)
- Favourable inflation, exchange and interest rates (Tiong, 1990; Zhang, 2005)
- Financial capability and support (Tiong et al, 1992; Tiong and Alum, 1997; Jefferies, 2004; Li et al, 2005b; Zhang, 2005)

Jefferies (2006) identified the following factors considered critical to the success of project procurement under PPP, or similar, concepts:

- Developed legal and economic framework
- Favourable inflation, exchange and interest rates
- Financial capability and support
- Technical innovation
- Appropriate risk allocation
• Avoiding delays and cost overruns
• Comprehensive feasibility study
• Existing infrastructure
• Political stability and support
• A well prepared Environmental Impact Statement
• Expertise
• Local partner(s)
• Shared authority
• Transparency
• Commitment
• Strong private consortium
• Developing a culture of partnership
• Bid/Tender process

More recent studies have confirmed these CSFs but have tended to focus on developing countries such as China (Chan et al 2010; Zhao et al, 2010; Xu et al, 2011; Ke et al, 2012), Malaysia (Jamali, 2004; Rashid et al, 2006; Ismail and Rashid, 2007), and Nigeria (Yahaya, 2008; Babatunde, 2012; World Bank, 2012). Other than various Government guidelines which have been recently updated by both the Victorian and New South Wales Government’s (NSW, 2012; VIC, 2013), research into both CSF and indeed risk management into Australian PPPs has been limited despite the ongoing criticism.

2.17 SUMMARY OF CSF

2.17.1 CSF Identified from the Review of the Literature

As with the issue of risk factors, a summary of the CSF from previous literature is necessary in order to satisfy the second research objective of this thesis, i.e. ‘to establish a theoretical framework of risk and CSF for PPP projects’. The following list of CSF factors summaries these issues established from the review of the literature:

• Developed legal/fiscal/economic framework
• Feasibility study
• Project management ability
• Local partner(s)
• Existing infrastructure
• Political stability and support
• Environmental impact
• Favourable inflation, exchange and interest rates
• Financial capability and support
• PPP experience/expertise
• Favourable inflation, exchange and interest rates
• Financial capability and support
• Technical innovation
• Financial innovation
• Appropriate risk allocation
• Avoiding delays and cost overruns
• Comprehensive feasibility study
• A well prepared Environmental Impact Statement
• Expertise
• Shared authority
• Transparency
• Commitment
• Strong private consortium
• Developing a culture of partnership
• Bid/Tender process

The above list is supported in the research of Tiong et al (1992) when assessing CSF for winning PPPs, particularly BOT/PPP contracts in China, Tam et al (1994) in their “Five P’s” model for success in concession contracts, UNIDO (1996) in its’ “Guidelines for Success in BOT type Projects”, Jefferies (2006) in his study of CSF for PPP projects in Australia and finally, Salzmann and Mohamed (1999a) and (1999b) who suggest that risk and success factors should be considered together.
Therefore, CSF are vital for managers engaging in improvement of their organisation, as they indicate how much progress is being made in particular areas (McCabe, 2001; Jefferies, 2006).

## 2.18 RISK FACTOR THEORETICAL FRAMEWORK

The following table, or theoretical framework, contains a detailed summary of the key risk issues identified in the review of the literature. It forms the first stage of the ‘test’ part of the thesis, in that these issues are tested via the case study part of the research. The table represents the propositions that have emerged during the review of the relevant literature. The risk factor framework also incorporates some critical success factors, in order to consider them together, and in particular provide examples of successful approaches to managing risk factors. Much of the research into construction procurement (Tiong, 1990; 1995; Salzmann and Mohammed, 1999a, 1999b; Kwok et al 2000; Jefferies et al, 2002; Rashid et al, 2006, Jefferies, 2006; Zhao et al, 2010; Xu et al, 2011; World Bank, 2012), and in particular when focusing on approaches such as PPP, suggest that risk and success issues should be considered together, hence the structure and format of the following tables.

The ‘crosses’ (×) in the table indicate which particular risk factor is applicable to the relevant party managing or bearing the risk factor(s) in question. The following (Table 6) acts as the reference framework that is tested via the case study part of this thesis:
### Table 6: Risk Factor Framework (including parties allocated/managing risk factor) developed from the review of the related literature

<table>
<thead>
<tr>
<th>RISK FACTOR</th>
<th>Project Company</th>
<th>Private Sector Contractor(s)</th>
<th>Public Sector</th>
<th>RISK MANAGEMENT TECHNIQUE (including success factor examples)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction Time Overrun</td>
<td>✗</td>
<td>✗</td>
<td></td>
<td>Time overrun has a consequence to project company in terms of delayed operation and may lead to possible liquidated damages. Main contractor also bears risk with possible consequence of damages.</td>
</tr>
<tr>
<td>Construction Cost Overrun</td>
<td></td>
<td>✗</td>
<td></td>
<td>Main contractor typically bears the risk by way of fixed price-lump sum contract.</td>
</tr>
<tr>
<td>Design Risk</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>Substantial risk is transferred to the contractor by way of D&amp;C contract. Government and project company still carry some risk in that the design brief is correctly prepared or interpreted.</td>
</tr>
<tr>
<td>Operational Cost Overrun</td>
<td></td>
<td>✗</td>
<td></td>
<td>Risk is typically borne by the private sector operator under the terms and conditions of the Operations and/or Maintenance Agreement. Also involves a general cost escalation risk (over typical 20-30 year concession period) borne by private sector.</td>
</tr>
<tr>
<td>Unforeseen difficulty/ Latent conditions</td>
<td></td>
<td>✗</td>
<td></td>
<td>Latent conditions are risks typically transferred to the private sector and those associated with construction are passed onto the contractor.</td>
</tr>
<tr>
<td>Changes in Taxes/</td>
<td></td>
<td></td>
<td></td>
<td>A risk factor that the private sector is most reluctant to and generally</td>
</tr>
<tr>
<td>RISK FACTOR</td>
<td>RISK ALLOCATION: PARTY RESPONSIBLE FOR MANAGING THE RISK FACTOR</td>
<td>RISK MANAGEMENT TECHNIQUE (including success factor examples)</td>
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<td></td>
<td>Project Company</td>
<td>Private Sector Contractor(s)</td>
<td>Public Sector</td>
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</tr>
<tr>
<td></td>
<td>Consortium /Operator</td>
<td>Main Contractor, Sub-contractors, Suppliers et al</td>
<td>Host Government</td>
<td></td>
</tr>
<tr>
<td>Laws</td>
<td>×</td>
<td></td>
<td>×</td>
<td>does not bear.</td>
</tr>
<tr>
<td>Market Risk - Revenue Demand Change (e.g. toll/tariff control)</td>
<td>×</td>
<td></td>
<td></td>
<td>A market risk typically borne by the project company or its operator. Some PPP type projects (e.g. Chinese power plants) guarantee certain demand and price levels, therefore reducing revenue risk.</td>
</tr>
<tr>
<td>Market risk - Revenue or Income Change (e.g. demographic change)</td>
<td>×</td>
<td></td>
<td></td>
<td>Comprehensive feasibility investigation, realistic forecasts and allowances for contingent factors are methods of managing the risk. Risk does remain as social and economic change in an area is likely throughout a 20-30 year concession period.</td>
</tr>
<tr>
<td>Tender/Bidding Risk</td>
<td>×</td>
<td></td>
<td></td>
<td>Private sector typically bears the risk of time/cost associated with the feasibility of a bid preparation and presentation. Some initiatives involve partial reimbursement for tender preparation costs and the nominating of preferred tenderer status soon after initial bids and evaluations to avoid discouraging tenderers.</td>
</tr>
<tr>
<td>Corruption</td>
<td></td>
<td></td>
<td>×</td>
<td>A risk possibly more evident in some South East Asian cases. At a government or project company level, corruption may result in the discouragement of tenderers or investors.</td>
</tr>
<tr>
<td>RISK FACTOR</td>
<td>Project Company</td>
<td>Private Sector Contractor(s)</td>
<td>Public Sector</td>
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<tr>
<td>Project Company</td>
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<tr>
<td>Consortium /Operator</td>
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<tr>
<td>Main Contractor, Sub-contractors, Suppliers et al</td>
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<tr>
<td>Host Government</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Political Backdown - failure to honour agreement or guarantees</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>The project agreement will identify this risk possibility and leave provision for indemnification or recourse for the private sector. The occurrence does cause concern for the private sector and with complicated resolution procedures will inevitably have cost implications on the project company (e.g. tollways in Thailand).</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Existing Infrastructure</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The facility may depend on other infrastructure for its’ supply (e.g. toll roads) which may not be entirely adequate or existing infrastructure may be seen as a threat/competition.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Raw Material Supply</td>
<td>✓</td>
<td>❌</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Risk generally borne by the operator of the facility where raw material is required to create the product, e.g. coal power station. Mitigation sometimes via long term supply contracts.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inflation, Foreign Exchange or Interest Rates</td>
<td>✓</td>
<td>❌</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Risk borne by the private sector parties. Risk can be insured against or managed by use of capital market instruments - swaps, options, futures et al.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financing</td>
<td>✓</td>
<td>❌</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The essence of the PPP concept is ‘project finance’. Feasibilities must result in revenue collection over the concession period to be adequate for interest payment, debt repayment and sufficient profit margin. Private sector bears the risk that their feasibility on financing predictions are optimistic. Risk exists also in that sufficient interest and then support from potential investors/financiers is found.</td>
<td></td>
<td></td>
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<tr>
<td>RISK FACTOR</td>
<td>Project Company</td>
<td>Private Sector Contractor(s)</td>
<td>Public Sector</td>
<td>RISK MANAGEMENT TECHNIQUE (including success factor examples)</td>
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<td>-----------------------------</td>
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<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td>Country Risk</td>
<td>✗</td>
<td></td>
<td></td>
<td>Investing in certain countries involves greater risk where instability or lack of financial strength is evident. A ‘country rating’ is sometimes developed based on issues such as GDP, growth rate, currency stability/strength, inflation and interest rates.</td>
</tr>
<tr>
<td>Force Majeure/ Natural Disaster</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>A risk through the entire project life. Responsibility shifts between the construction phase (Contractor) and the operational phase (Operator/Government). Risk can be partially mitigated by insurance cover.</td>
</tr>
<tr>
<td>Operation and Maintenance [O&amp;M] Failure</td>
<td>✗</td>
<td></td>
<td></td>
<td>Risk is typically borne by the private sector operator under the terms and conditions of the operational and maintenance agreement.</td>
</tr>
<tr>
<td>Market Competition</td>
<td>✗</td>
<td></td>
<td>✗</td>
<td>Risk is assessed by the private sector during feasibility stages. Assurances/Limitation on competition is sometimes introduced by the host government in an effort to reduce private sector concerns in bearing the risk.</td>
</tr>
<tr>
<td>Industrial Relations</td>
<td>✗</td>
<td>✗</td>
<td></td>
<td>Any time and cost consequences of an industrial relations issue are borne by the project company. During the construction/development phase this risk would be borne by the head contractor.</td>
</tr>
<tr>
<td>Project Performance</td>
<td>✗</td>
<td>✗</td>
<td></td>
<td>Can have a significant effect on the efficiency in operation of the project. Ultimate effect of inefficient operation may result in lower revenue collection.</td>
</tr>
<tr>
<td>RISK FACTOR</td>
<td>Project Company</td>
<td>Private Sector Contractor(s)</td>
<td>Public Sector</td>
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<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td>Operational Safety Regulations/Public Liability</td>
<td></td>
<td>×</td>
<td></td>
<td>Risk becomes the responsibility of the O&amp;M contractor(s).</td>
</tr>
<tr>
<td>Warranties and Guarantees</td>
<td>×</td>
<td>×</td>
<td></td>
<td>Some transfer procedures of PPP stipulate warranty requirements for a certain period of time post-transfer. This provision may serve as a motive for ensuring adequate ‘up-keep’ in the final stages of the concession period. Risk is likely to be transferred to the facility operator.</td>
</tr>
<tr>
<td>Project Lifespan or Life Cycle</td>
<td>×</td>
<td></td>
<td>×</td>
<td>Risk exists for the project company in that over the project lifespan or concession period new technology or competition may introduce an element of obsolescence. At transfer stage the government may be taking ownership of a largely outdated facility.</td>
</tr>
<tr>
<td>Operating Expenses</td>
<td></td>
<td>×</td>
<td></td>
<td>The O&amp;M contractor(s) typically bears the consequence of changes in operating costs resulting from issues such as materials, wages et al. Long term material supply contracts mitigate the risk of possible material price increases.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>A carefully prepared Environmental Impact Statement (EIS) will</td>
</tr>
<tr>
<td>RISK FACTOR</td>
<td>RISK ALLOCATION: PARTY RESPONSIBLE FOR MANAGING THE RISK FACTOR</td>
<td>RISK MANAGEMENT TECHNIQUE (including success factor examples)</td>
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<tr>
<td></td>
<td>Project Company &lt;br&gt; Consortium /Operator &lt;br&gt; Private Sector Contractor(s) &lt;br&gt; Main Contractor, Sub-contractors, Suppliers et al</td>
<td>Public Sector &lt;br&gt; Host Government</td>
<td>assist in bid and approval. Risk of poor environmental management or bad environmental site choice may be a private or public sector risk depending on arrangements.</td>
<td></td>
</tr>
<tr>
<td>Environmental Impact Issues</td>
<td>×</td>
<td>×</td>
<td>The promise of an efficient approval processes assists likelihood of success. Slow and inefficient approvals are a risk often borne by the project company.</td>
<td></td>
</tr>
<tr>
<td>Approval Process – Efficient/ Complication in Negotiations</td>
<td>×</td>
<td>×</td>
<td>Technical innovation can be a solution to overcoming project complexity. The complexity may be a risk if there is a lack of experience.</td>
<td></td>
</tr>
<tr>
<td>Technical Innovation/ Project Complexity</td>
<td>×</td>
<td>×</td>
<td>Often a risk (gamble) borne by the project company by the fact that they are undertaking a project. A well prepared framework results in a CSF that all parties must be aware of.</td>
<td></td>
</tr>
<tr>
<td>Underdeveloped Legal/Fiscal/ Economic Framework</td>
<td>×</td>
<td>×</td>
<td>Most significant and difficult area of risk to manage. By virtue of the concession period all PPP projects will see changes in administration, a risk that the private sector gambles on in accepting exposure. Greater political stability and support aids success. Indicated by many authors to be the most significant and most difficult area of risk to manage.</td>
<td></td>
</tr>
<tr>
<td>RISK FACTOR</td>
<td>Project Company</td>
<td>Private Sector Contractor(s)</td>
<td>Public Sector</td>
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<tr>
<td>Project Company</td>
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<tr>
<td>Private Sector Contractor(s)</td>
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</tr>
<tr>
<td>Public Sector Host Government</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environmental Impact Issues</td>
<td>✗</td>
<td>✗</td>
<td></td>
<td>A well prepared Environmental Impact Statement (EIS) will assist in the bidding process.</td>
</tr>
<tr>
<td>Approval - efficient or complicated negotiations</td>
<td>✗</td>
<td></td>
<td></td>
<td>Efficient approval process assists the likelihood of success.</td>
</tr>
<tr>
<td>Technical Innovation/Complex Project</td>
<td>✗</td>
<td>✗</td>
<td></td>
<td>Technical innovation can be a solution to overcoming project complexity.</td>
</tr>
<tr>
<td>Developed Legal and Economic Framework</td>
<td>✗</td>
<td></td>
<td></td>
<td>Is a critical success factor which all parties must be aware of yet is sometimes a ‘gamble’ borne by the project company in undertaking a project.</td>
</tr>
<tr>
<td>Selecting the Right Project</td>
<td>✗</td>
<td></td>
<td></td>
<td>Not all projects are suited to PPP procurement. Both private and public sectors need to find agreement in the advantages PPP would offer a project/parties over other methods.</td>
</tr>
<tr>
<td>Existing Joint Ventures or Strategic Alliances</td>
<td>✗</td>
<td></td>
<td></td>
<td>This experience or network is viewed favourably. Also, a local partner(s) in an international PPP contributes greatly toward success. Experience may be viewed in terms of country (previous host country) and at what level (international/national consequence).</td>
</tr>
<tr>
<td>Organisation Size, resources and</td>
<td></td>
<td></td>
<td></td>
<td>Proven experience and adequate resource to expedite such contracts relaxes government concern in the award of the project. The factor</td>
</tr>
<tr>
<td>RISK FACTOR</td>
<td>Project Company</td>
<td>Private Sector Contractor(s)</td>
<td>Public Sector</td>
<td>RISK MANAGEMENT TECHNIQUE (including success factor examples)</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-----------------</td>
<td>------------------------------</td>
<td>---------------</td>
<td>----------------------------------------------------------------</td>
</tr>
<tr>
<td>management ability</td>
<td>✗</td>
<td></td>
<td></td>
<td>also broaches issues of level and availability of local/national knowledge and expertise.</td>
</tr>
<tr>
<td>Trust</td>
<td></td>
<td></td>
<td>✗</td>
<td>Government will feel more comfortable in awarding the project if the sponsors are known and trusted.</td>
</tr>
<tr>
<td>Community Support</td>
<td>✗</td>
<td>✗</td>
<td></td>
<td>Strong community support can only assist the project’s likelihood of success. It may result also in a quicker and more efficient approval process.</td>
</tr>
<tr>
<td>Feasibility Studies</td>
<td>✗</td>
<td>✗</td>
<td></td>
<td>Comprehensive feasibility is critical to the project success from both public and private perspective.</td>
</tr>
<tr>
<td>Transfer of Technology</td>
<td>✗</td>
<td></td>
<td>✗</td>
<td>The technology transfer benefits associated with a PPP proposal may assist with government and local support, thus raising success likelihood.</td>
</tr>
<tr>
<td>Financial Capability/</td>
<td></td>
<td></td>
<td></td>
<td>Critical to the success of the project. The need exists also for the project company to be able to account for contingency factors.</td>
</tr>
<tr>
<td>Credibility of Investor</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consortium Structure</td>
<td></td>
<td></td>
<td></td>
<td>The structure forms the foundation for all risk management and contributes significantly to the project’s likely success. Importance of</td>
</tr>
<tr>
<td>RISK FACTOR</td>
<td>Project Company</td>
<td>Private Sector Contractor(s)</td>
<td>Public Sector</td>
<td>RISK MANAGEMENT TECHNIQUE (including success factor examples)</td>
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<td>---------------</td>
<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>Consortium /Operator</td>
<td>Main Contractor, Sub-contractors, Suppliers et al</td>
<td>Host Government</td>
<td>local participation and representation is vital.</td>
</tr>
<tr>
<td>Avoiding Delays/ Cost Over-runs</td>
<td>✗</td>
<td>✗</td>
<td></td>
<td>Delivering the project on time within budget will avoid liquidated damages.</td>
</tr>
<tr>
<td>Existing Infrastructure</td>
<td>✗</td>
<td></td>
<td>✗</td>
<td>The facility may depend upon existing infrastructure for its supply (road/rail network as transport to a stadium/venue or existing toll roads) or a lack of similar existing infrastructure may mean lack of competition.</td>
</tr>
<tr>
<td>Special Bid Features</td>
<td>✗</td>
<td>✗</td>
<td></td>
<td>Examples of project innovation in either design, construction, finance or operation.</td>
</tr>
</tbody>
</table>
A comprehensive risk management analysis is vital in complex PPP projects and helps to establish financial feasibility, set the parameters for the bidding process and allow for improved risk allocation through the development of suitable and appropriate contract clauses.

Management expertise is growing in importance as the hallmark of a successful risk manager. Although the difference between project success and failure is more complex than managing risk, successful projects embrace risk management as an integral part of their project feasibility, control and operational systems. Likewise, critical success factors are vital for managers engaging in improvement of their organisation, as they indicate how much progress is being made in areas such as the successful management of project risk factors.
3.0 CHAPTER THREE: RESEARCH METHOD

3.1 THE RESEARCH METHOD

The overall aim of the thesis is to examine perceptions of PPP schemes in order to develop a framework of risk factors for the successful delivery of social infrastructure PPP projects.

The objectives of the thesis will be achieved by utilising the following research methods:

1. Reviewing Relevant Literature:

A comprehensive review of related literature has been conducted. From this literature review, analysis is be made of the key issues and themes identified leading to the development of a general risk factor framework. In reviewing relevant literature, risk, and indeed success, factors are identified and subsequent frameworks are established.

2. Testing the Theoretical Framework against the Case Studies:

The risk factor framework is tested by applying it to a two-stage case study approach. Stage 1 of the data collection process involves a case study at organisational level (i.e. interviews with senior management personnel from various organisations that were selected to be part of this study due to their experience in PPP projects). Stage 2 of the data collection process involves case study research at project level (i.e. 4 current social infrastructure PPP project were selected after conducting stage 1 of the case study research). Stage 2 of the case study research process consists of 4 major and current social infrastructure projects procured under the PPP concept. Four (4) case studies were chosen as all of the projects involved the same over-riding public sector participant (NSW State Government) but each one had a very different other level of public sector governance in the form of the Department of Public Works and Services (at the initial project stages was via the Olympic Coordination Authority) for ANZ Stadium (Stadium Australia) and the Allphones Arena (Sydney Superdome) in Sydney;
NSW Department of Health for the Mater Hospital, Newcastle; and the City of Ryde Council for Top Ryde Centre, Sydney. It was thought that the various learning experiences from the first project (ANZ Stadium), would be reflected upon and incorporated into the subsequent projects given the same public sector entity was involved. Hence the rational for multiple case projects in an attempt to capture these learning experiences while they are still very much fresh in the mind of the project participants as each project has only recently, but at different times, entered their operations stage(s). This case study research will involve compilation and analysis of information provided by the consortiums, including a brief review of key relationships and contract agreements to help determine the risk profile.

3. Data Collection and Analysis:

Collection of data within the case study stage(s) of this research is performed by way of a semi-structured three-stage interview process with key personnel involved at organisational level and project level from both from the Public and Private Sectors. Interviews focus on the risk factor framework developed from the literature review, such that comment and possible further development can be drawn to refine and create project specific frameworks.

A qualitative approach is used for the analysis of data collected from the case study. Comparisons between the frameworks developed from both the review of the literature and those established via the case study process are drawn and subsequent comparison is discussed between the projects in question. Differences or disparity between the projects are given particular consideration.

4. Results:

A discussion of the themes, problems and issues identified in both the review of the literature review and the case study stage of the research are presented. The results are discussed in detail and presented in tables representing the risk factor framework. The results are supported by a conclusion of the research findings with recommendations for further research.
3.2 RESEARCH GAP

In reviewing the relevant literature, several research or knowledge gaps were identified in the following areas:

- **Risk management in Australian Public-Private Partnerships.**
- **PPP projects other than economic infrastructure (roads, rail, bridges, tunnels et al), i.e. social infrastructure.**
- **Risk factor frameworks** that can be applied, or at least act as a guide, particularly during the key negotiation stages when bidding for social infrastructure projects procured by the PPP method.

These research gaps formed the basis for a response that was based around a case study of current Australian social infrastructure PPPs. The following strategy was developed to respond to the research gaps:

- Current PPP stakeholders were identified. This was done at both public (government clients) and private sector (PPP tenderers) level.
- Current Australian PPP projects were identified.
- The list of identified PPP projects was then refined in order to avoid economic infrastructure projects (such as roads, bridges et al) and to subsequently concentrate on non-traditional, or social infrastructure, PPP projects (such as sporting venues, hospitals, shopping centres et al).
- It was then decided to localise the research by identifying projects that were within a reasonable travelling distance to the researcher’s main place of work and study, i.e. within New South Wales.
- As the identified case study organisations and projects were not previously subject to any detailed scientific investigation, it was considered appropriate to investigate risk factors, and indeed examples of successful risk management, as any established framework would form the basis for subsequent decision making both within the existing projects and on future projects of this nature.
• The response to the research gap led the researcher to concentrate on social infrastructure PPP projects in NSW. Current non-traditional social infrastructure facilities of this nature, such as sports stadia, are very different to previous PPP experiences in NSW, while also being nationally and internationally high profile. The other projects, being a major hospital was the first healthcare project to be procured in NSW using the PPP approach and the Top Ryde project, was the first PPP in NSW where the local authority, i.e. City of Ryde Council, was the main public sector entity as opposed to State Government.

3.3 RESEARCH METHODOLOGIES – JUSTIFICATION OF THE METHOD

In achieving the research aim and objectives, it is fundamental to the research project that clear and concise methodology is considered. As stated by Fellows and Liu (2008):

“Research methodology refers to the principles and procedures of logical thought processes which are applied to a scientific investigation.”

When undertaking any research project the choice of qualitative or quantitative methodology must be made with each having an impact on the process by which data is collected, analysed, discussed and presented. Understanding the nature of the proposed research and the difference in each research paradigm will help to determine which methodology is appropriate to this research.

3.3.1 Nature of the Research

The study is inquiry, or action, research into a complex phenomenon i.e. public-private sector social infrastructure projects procured under the PPP procurement system. Action research is an interactive inquiry process that balances problem solving actions implemented in a collaborative context with data-driven collaborative analysis or research to understand underlying causes enabling future predictions about organizational or strategic change (Reason & Bradbury, 2007). More specifically, in this case it is research identifying the basic characteristics of social PPPs, reasons for its surge in popularity, and identifying and analysing risk factors and issues of successful
risk management. The research is performed within the context of firstly *organisational* and secondly *project* based *case studies*.

### 3.3.2 Methodologies

With the quantitative approach there is the assumption that there is only one reality, whereas the qualitative approach assumes that there are many equally viable realities that are constructed from individuals’ perspectives. The goal of quantitative research is to reduce the problem by focusing on pieces of reality and then predicting and controlling the aspects of phenomenon. Alternatively, the goal of qualitative studies is to study simple realities as a whole so that there is an increased understanding of the problem (Csete and Albrecht, 1994).

Qualitative methods generally reflect a naturalist epistemology and strongly reject the notion that science can generate objective knowledge about the social reality of the world. Such proponents support the belief that the social reality of the world can only be truly understood from the point of view of the individual participating in that reality (Bryman, 1984; Lincoln and Gubba, 2005; Fuller, et al 2011). Qualitative research, therefore, may be seen as a methodology in which procedures are not strictly formalised and entails the adoption of a more philosophical approach to the research (Mouton and Marais, 1990; Amare, 2004; Fuller et al, 2011).

The fundamental principles of qualitative research are provided below and based upon previous definitions by Patton (1980); Strauss and Corbin (1990); Lincoln and Guba (2005); Barrett and Sutrisna (2009); and Denzin and Lincoln (2011):

- Qualitative researchers study things in their natural settings, attempting to make sense of, or interpret, phenomenon in terms of the meanings people bring to them.
- Qualitative research involves the studied use and collection of a variety of empirical materials – case study, personal experience, introspective, life story, interview, observational, historical, inter-actional and visual texts – that describe routine phenomenon and problematic moments in the lives of organisations and individuals.
• Qualitative research is any kind of research that produces findings not arrived by means of statistical procedures or other means of quantification.

• Qualitative data comprises both detailed descriptions of situations, events and interactions via direct quotes from people about their experiences, attitudes and beliefs. This data is collected in an open-ended narrative that does not seek to make them fit into predetermined, standardised categories characterised by a typical test or questionnaire.

Easterby-Smith et al (2008) appropriately identify qualitative research methods as those techniques which are interpretive and seek to describe, translate and come to terms with the meaning, not the frequency, of certain naturally occurring phenomena in the social world.

3.3.3 Why is a Qualitative Method Appropriate?

Recent management research has been characterised by the debate on the adequacy of research methods that are utilised in the social sciences (Morgan and Smircich, 1980; Cunliffe, 2010). Gill and Johnson (1991) argue that the social reality of managerial problems are too complex to be reduced to the simple casual relationships between variables. Whilst quantitative research is noted for its objectivity, rigour and concern with the issues of reliability, validity and mechanistic efficiency, qualitative research provides a different and richer understanding of the complexities inherent in any management scenario. Furthermore, it requires subjectivity and depth, and concerns itself more with the richness and relevance of the environment influencing the problem area, the inter-relationships between the participants to any management structure. Typically, qualitative research findings are presented in a descriptive format which is in contrast to the tabular and statistical format of quantitative research findings (Hall, 1998; Easterby-Smith et al, 2008).

Qualitative research is a field of inquiry in its own right and it crosses disciplines, fields and subject matter (London, 1997). Seymour and Rooke (1995), and Rooke et al (1997) state that all problems faced by the construction industry are social in nature thereby making the traditional scientific approaches totally inappropriate in their application to construction-related research. The failure on the part of researchers to take into account
the human social processes inherent in the construction industry that has resulted in a
mismatch between the research undertaken and the reality of the construction industry.

As Fellows and Liu (2008) state, increasing recognition of the value and
appropriateness of qualitative studies has emerged in the fields of engineering and
construction management. This may be in acknowledgement of the potential of such
methods to get beneath the manifestations of problems and issues which are subject of
quantitative studies, and thereby facilitate appreciation and understanding of basic
causes and principles notably, behaviours.

According to Csete and Albecht, (1994) there are two processes of research: inductive
and deductive. An inductive approach was considered appropriate for this study as the
phenomenon being studied is a new situation and is intrinsically context-bound. In this
mode of research broadly stated questions, as opposed to hypotheses, and categories,
rather than variables, emerge from the study participants.

It is appropriate to consider the issue of risk within a qualitative research study.
Qualitative risk analysis is a technique which involves the identification of main risk
sources and assessment of their consequences on the likes of cost, time and
performance. This process typically relies initially on the use of a risk checklist and then
on the mixed use of intuitive judgement, brainstorming meetings and the experiences of
the risk analysts (Walker and Smith 1995; Jefferies and Chen, 2004; Yuan et al 2010).

The qualitative approach to risk analysis supports the qualitative method applied to the
research of this thesis. According to Runeson and Skitmore (1999) qualitative research
means the interpretation of data to establish appropriate variables and correspondence
rules which can form a theory. In this interpretation, qualitative research concerns the
generation of concepts and classifications in order to establish patterns in the data from
which relationships may be established. Within this thesis, frameworks
(concepts/classifications) have been established from reviewing the relevant literature
and are then tested via the case study in order to make them project specific (establish
patterns).
3.3.4 Strategies of Inquiry

After setting the broad framework for the research, the next phase involves a focus on the purpose of the study and the research questions. More specifically, what information will most appropriately answer the research questions and which strategies are most effective for obtaining it.

Apart from a broad strategy of inductive approach there are various strategies of inquiry possible within the qualitative paradigm (Denzin and Lincoln, 2011). The social phenomenology strategy of inquiry is one that allows the researcher to interpret and explain human action and thought as it happens and through an understanding of the subjective nature of life and real world situations. This approach is particularly relevant to this study as the model (framework) proposed is creating a new situation and the participant’s actions within the new situation require interpretation through an understanding of PPP systems unique historical and situational context. An acceptance of the subjective nature of real world situations is required. This strategy was adopted for this study.

A qualitative research methodology, therefore, will be used to identify the risk factors for social infrastructure PPPs from the case study projects analysed in this thesis.

3.3.5 Rationale for the Research Method

A brief summary of the rationale for the adopted research method is provided below:

- Yin (2009) noted that the case study method is an appropriate application where the case in question represents an extreme or unique case or that the situation has not previously been the subject of detailed scientific investigation.
- Given the fragmented nature of the construction industry, the many forms of PPP procurement and its variations, and the ‘unique’ nature of commercial infrastructure projects in general, it is not possible to study either a ‘typical’ project or a group of projects which represent the entire application.
- Eisenhardt (1989) suggests that the case study is a research strategy which focuses on the dynamics present within single systems and can involve single or multiple cases.
• A case study investigates a contemporary phenomenon within its real life context (Miles and Huberman, 1994).
• Case studies retain the holistic and meaningful characteristics of events such as the managerial process (Yin, 2009).

In short the methodology can be seen as the strategy, the plan and the structure of conducting a research project.

3.4 RESEARCH PLAN

3.4.1 The Reference Framework

From the literature, analysis is made of the key issues and themes relevant to the successful management of risk factors in social infrastructure PPPs and a summary framework of risk factors is developed. The latter part of the research, discussed in subsequent chapters, concentrates on testing the theoretical framework via the case study process.

3.4.2 Opting For A Case Study Approach

The third objective of the thesis is to ‘test’ the risk factor framework developed from the literature against ‘real’ project data in order to compare theory with current practice.

According to Leedy and Omrod (2010), the nature of the data and the problem for research dictate the research method. From the assessment of the thesis problem and available data, the specific method design that has been selected for this study is a Case Study within the Australian Construction Industry. The Case Study approach to research has been used extensively in several academic fields and is often implemented within research to describe a particular situation, test theory or to generate theory.

3.4.3 The Use of a 2-Stage Case Study Approach and Multiple Case Study Projects

The first stage of the case study process involved research at organisational level. The number of organisations, or stakeholders, involved in bidding for PPP projects in Australia is relatively small due to the complex nature of these projects. Therefore, at
this first stage of case study research, four (4) private sector organisations were selected to take part in the organisational case study process. All of these companies represent the main players in not only bidding for Australian PPP projects, but also leading this bidding, or tender, process. At the second stage, Four (4) case study projects were chosen as all projects involved the same public sector participants (The NSW State Government). Other public sector organisational bodies were involved with each project having slightly different representation at this level due to the nature and type of project being procured. Private sector stakeholders from each of the projects were also selected to be part of this 2nd stage of case study research at project level. Given the timing of each project, it was also thought that the various learning experiences from the first to the fourth project, particularly during the key negotiation stage, would be reflected upon and incorporated into the subsequent project. Hence, the rational for 4 case projects is an attempt to capture these learning experiences while they are still very much fresh in the mind of the public sector project participants and indeed the private sector ones as many of which were involved in bidding for each project.

3.4.4 Using the Case Study Approach for this Research Project

The case study approach was taken as it is a method that can be applied to many varied industries, including Construction Management. Yin (2003) supports this approach and describes how the use of this design method has been adapted extensively in a variety of disciplines. The case study approach can capture and understand a past event, person or movement, by a thorough and detailed descriptive analysis, in this case the use of a 2-stage case study process (at both organisational and project level) and a multi-stage interview process with various PPP stakeholders and project participants. The case study approach taken indicates why a particular project decision was taken, how it was implemented and the subsequent result.

The case study approach retains the holistic and meaningful characteristics of events that may or may not have been directly observable, such as managerial processes themselves. This is supported by Stake (2005); Yin (2009); and Denzin and Lincoln (2011) and is particularly relevant to the construction management process where various events and decisions are not always documented as the work proceeds.
3.4.5 Understanding the Case Study Approach

Yin, (2009) argues that the following technical definition of the case study strategy not only helps us to understand case studies, but also distinguishes them from the other research strategies available:

“A case study is an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when

- the boundaries between phenomenon and context are not clearly evident;
- and in which
- multiple sources of evidence are used”

In the context of this thesis the following questions are answered by way of the case study:

- ‘What are the most significant risk factors confronting the project from any perspective?’
- ‘What are the most significant factors affecting the success of the project initially at the bid stage, the subsequent negotiation process, construction stage and now in the operational phase?’
- Who is responsible for managing the various risk factors and how is this achieved?
- ‘On reflection, would the participants expect any different approach or other measures to be taken by any of the parties?’

The above questions clearly align themselves with Connaughton’s (1997) case study definition which states that all types of case study will attempt to illuminate a decision or set of decisions and determine why were they taken and implemented. In analysing Yin’s (2009) ‘technical’ definition against the research proposed, it is also clear that each of the case study features are evident in the research as follows:

- The case study process will investigate a developed framework established from the review of the related literature within its real life context.
• This investigation overlaps between its boundaries and context. It is not an experiment where attention can be focused on just a few variables, via ‘control’ of the context, in for example, a laboratory environment.

• Multiple sources of evidence (reports, project documentation, contracts and interviews) will be used.

In this respect the research being undertaken satisfies both definitions provided for the case study.

In their consideration of research methods, particularly within the construction field, Fellows and Liu (2008) stated that,

“Case studies may be selected on the basis of their being representative with similar conditions to those used in statistical sampling to achieve a representative sample, to demonstrate particular facets of the topic, or to show the spectrum of the alternatives. Case study research may combine a variety of data collection methods, with the vehicle or medium of study being the particular case, manifestation or instance of the subject.”

3.4.6 Limitations of the Case Study Approach

A case study yields deep, but narrow results (Fellows and Liu, 2008). However, with this comment in mind and its application to this research the following statement is drawn:

It is this case study approach that allows the identification of issues at the core level required, in an attempt to identify common strands that can be classified as risk factors in the PPP approach. This is accomplished by using a 2-stage case study approach, first at organisation level and second at project level. Additionally, a 3-stage interview process is implemented with core project participants who were involved at all stages of the decision making process. Using the theoretical framework as a starting point for the interview process, in order to test the key risk factor and success issues, common issues could be identified and continuing discussion would identify why a particular decision was made and what the subsequent results were.
The possibility of the case study results being ‘narrow’ is accepted in that they are restricted to the case study projects in question. The development of a ‘perfect’ PPP model applicable to ‘all’ infrastructure projects is not the aim of this research. Indeed this is difficult if not impossible given the complex, fragmented and unique characteristics of individual construction projects.

While limitations of case study approach are well documented and include numerous threats to internal validity (Popham, 1993; Denzin and Lincoln, 2011) and obvious limitation in generalisability, the advantages of a case study approach are that it enables comparison of different perspectives and illuminates views and experiences (Thomson, 1998). This is of particular relevance in the case study projects in that the perspectives of the public sector participants were very different to those of the private sector participants. For example, the public sector was mainly concerned with the short-term aspects of each project (e.g. the timely opening and immediate operation of the two sporting venues and the Mater hospital, and the opening of commercial and community facilities at the Top Ryde Centre) where as the various private sector participants are primarily concerned with the long term financial viability of the projects in question (i.e. long-term commercial viability and revenue stream during the operational stages).

3.4.7 Using Case Studies to Establish a Risk Factor Frameworks Using the Interview Technique

The case study process serves to test the validity of the risk factor framework developed from the literature review, and provides for further refinement and development as a sound foundation applicable to PPP projects in general. Validity of the theoretical frameworks is tested in that the vehicle for the ‘test’ are current, major social infrastructure PPP projects that are among the most recent and high profile projects of this nature within Australia. This practice based research method involves analysis and description of a ‘real life’ situation, in the form of not only the major organisations involved in bidding for PPP projects but also four current PPP projects, to promote greater understanding and application. This case study process contributes uniquely to our knowledge of various risk factors and successful management phenomena by identifying key issues from both public and private sectors of the project participants.
Support in using various resources for this case study, such as project participants, data archives, contract summary documents et al, is provided by Kumar (2011) who comments on the flexibility of the case study approach in that ‘the case’ can be a person, group, episode, process, community or society. This also supports the choice with regards to this thesis of case study in using current construction ‘PPP’ projects in that they represent both a process and a group, and at the same time allowing the researcher to focus on specific project related issues.

The use of an extensive 2-stage case study approach and multi-stage interview process with senior management project participants was deemed appropriate in order to extract the most relevant data. This is supported by Stake (2005); Easterby-Smith et al (2008); Kumar (2011) who identify that the most fundamental of all qualitative research methods is that of in-depth interviewing. This is explored further in the ‘Data Collection’ section of this chapter.

3.5 CASE STUDY RESEARCH DESIGN

Having determined that the research lends itself to a case study approach, one must consider its design.

In the case of this thesis, the case study process involved two major stages. Stage 1 involved case studies at organisational level with the majority of major private sector companies involved in bidding for PPP projects in Australia (Leighton, Thiess, Baulderstone, Bilfinger-Berger). Stage 2 then focused on case studies at project level, ie current social infrastructure PPPs procured at various stages over the last 10 years or so. It was determined that the use of these two stages of case study design would offer a greater depth of results as opposed to a single project study.

The public sector participants were the same over-arching body (i.e. New South Wales Government) and consisted of a similar make-up in project team. This also made it easier to obtain project data (project records and interviews) as a relationship between the researcher and the public sector representatives had already been established during the first stage of the case study process. The key reason behind the ‘two-stage’ approach
to the case study process was that as the organisations involved in bidding for PPPs were first identified and then a more detailed analysis of specific projects could then be carried out as identified at the first stage. When the project agreement for Stadium Australia (ANZ Stadium) was signed the negotiation process for the Sydney SuperDome (Allphones Arena) project immediately followed and it was thought that the issues from the first project (identifications of problems, key risk and success factor issues et al) would be reflected upon and considered during the process of the second project. This tender, or bidding, process was then further reflected upon at State Government level with subsequent PPPs such as the Mater Hospital redevelopment in Newcastle and the development of the Top Ryde Centre in North-West Sydney. This would allow for further refinement and ‘up to the minute’ review of the risk factors and success management frameworks.

There is a common perception that multiple case studies are more robust. This is supported by Yin (2003); Stake (2005); and Denzin and Lincoln (2011) who note that the multiple case study approach is based on comparison and contrast. Yin (2009) also suggests that the case study approach be used where the case in question represents an extreme or unique case (all the construction projects used for case studies in thesis are indeed unique) and where the situation has not previously been the subject of detailed scientific investigation (according to senior management from both public and private sector participants this is indeed the case both at organisational and project level) given the current timing of this research and the operational stage at which each project is at.

3.5.1 Area of Analysis

The sampling of various units (project participants) within the case study is an area of research that is not well defined. It has been suggested by Yin (2009) that the typical criteria associated with sampling is irrelevant, and that the researcher should decide the necessary or sufficient number of units for the study. Eisenhardt (1989) suggests that a number between 4 and 10 is reasonable.

After considering the case study approach, and particularly the fact that senior management from both the public and private sectors who were involved in day to day decision making were selected, a minimum of sixteen (16) units will be sampled at
Stage 1 (organisational level – 4 interview participants from each organisation) and sixteen (16) units at Stage 2 (project level – 4 interview participants from each project) of the 2-stage case study approach. This having been deemed satisfactory by the researcher and also being in accordance with the views of Eisenhardt (1989); Miles and Huberman (1994); Eisenhardt and Graebner (2007); and Yin (2009). In order to concentrate on key risk issues and the successful management of risk, the sampled units were deemed satisfactory as the participants in question had direct experience of the issues that arose and how these issues were identified and managed both at organisation level (stage 1) and project level (stage 2). Further support is added by the fact that the process involves an in-depth 3-stage interview process at both case study stages with each project participant and therefore allowing greater discussion of key issues.

The primary units of analysis in the 2-stage case study process are construction organisations involved in bidding for PPP projects (stage 1) and the construction projects themselves (stage 2), in particular identifying the risk factors and successful management issues associated with PPP procurement systems. As discussed, participants in the interview process were senior management representatives from both the public and private sectors of each project.

3.5.2 Linking of Data to Propositions

This process lacks serious development in previous case study related literature, however, both Stake (2005) and Yin (2009) state that this process lays the foundations for later analysis. For this study, data collected from each of the interviews (and project data records) is both described and presented as a theoretical framework in tabular form with supporting qualitative discussion.

The theoretical framework can be easily compared between the case study projects and also with those issue identified when reviewing the literature to form the reference framework. This reference framework provided the key, relevant issues from historical data that could subsequently be tested via current PPP organisations and projects in order to update the risk factor framework and it is this that is vital to the future success of similar Public-Private Partnerships. It was thought that tabular form was most appropriate in order to clearly identify the various risk issues, which project participant
was responsible for managing the issue in question and how these issues were successfully managed.

3.5.3 Criteria for Interpreting the Findings

The issues arising from the project data records and the interview process are tested against the findings of the literature. The key issues identified in the reference framework are tested in current PPP projects by discussing them during the 3-stage interview process at both Stage 1 and Stage 2 case study levels. The issues established from historical data are presented to all participants for discussion in order to determine if they are still relevant and if indeed they had an impact on the projects in question.

It is important to note that this study aims to firstly (stage 1) assess four (4) private sector organisations who lead the collective stakeholders involved in the bidding process for PPP projects specific PPP projects and then perform further analysis on four (4) current social infrastructure PPP projects by exploring and identifying the key risk management issues within each level of the case study research. Therefore, the results of the case study process provides support for a widespread representation of PPP organisations and projects as only four construction companies and four projects are being sampled. However, given that Stage 1 of the case study process involved participants (organisations) from the vast majority of private sector participants involved in bidding for Australian PPPs then the study is a fair representation of current practice. This study aimed to identify and expand upon issues and not provide comparable frequencies of occurrence.

The conduct of a multiple case study can require extensive resources and time beyond the means of a single student or independent research investigator (Yin, 2009). This concern is held in high regard, especially given the complex nature of PPP projects where considerable effort must be placed in simply understanding the structures and arrangements that exist. Given the fragmented nature of the construction industry, the many forms of PPP procurement and its variations, and the ‘unique’ nature of economic and social infrastructure projects in general, it is not possible to study either a ‘typical’ project or a group of projects that represent the entire application.
Depending upon the detail of inquiry a single case study was deemed not adequate for a research project at PhD level. Runeson and Skitmore (1999) state that a PhD should make ‘a significant contribution’ to the relevant field of research. However, they also state that ‘significance’ must not be taken out of context. The PhD thesis should demonstrate a significant level of skill in initiating, planning, executing and presenting research, and although there should be some change in science, it need not be something that changes the science in a ‘significant’ way. The PhD is about research training and the thesis should demonstrate research skills at the highest level, including data collection. Therefore, on consideration of the factors mentioned above, a compromise between single and multiple studies (i.e. a two-stage case study process with multiple levels of investigation at each stage) is deemed appropriate by the researcher for a thesis at PhD level.

3.5.4 Developing the Case Study

The research design is the logical sequence that connects empirical data produced by research to the study’s initial research questions and ultimately to its conclusions (London, 1997). Effective design will avoid the situation whereby the collected data does not address the initial research questions (Stake, 2005; Yin, 2009).

The five component model of case study research design

In considering Yin’s (2009) five-component model of case study research design, the following has been developed:

1. The study’s questions:

As the case study strategy is most appropriate for “how” and “why” questions, the initial task is to clarify precisely the nature of the study question. This component is fulfilled through consideration of the thesis aim and objectives stated at the beginning of the research.

The particular questions and statements posed in the case study have been developed as follows:
• What are the risk factors and successful risk management techniques of PPP projects from the review of literature?
• From the results of the literature review establish a theoretical framework of risk factors.
• Test the framework within the case study process (using project documentation and the interview process) both at organisation and project level.
• What are the various risk factors from the case study process?
• How are the management of these risks are successfully achieved?
• Refine the framework(s) to make it project specific.
• Compare theory (literature) with current practice (case study projects).

2. *The Propositions:*

To a significant extent, the risk factor framework developed from the literature review becomes the basis for the propositions for the case study. From the review of the related literature, a number of propositions have been developed to test.

Risk Factors identified from reviewing the literature have been identified in the research propositions below:

- **The Financing Risks** for social infrastructure PPPs are: bidding process; tender assessment/benchmarking; foreign exchange and interest rate fluctuations, market risks, income risks, cost overrun risk; legal framework; and prior PPP expertise.
- **The Political Risks** for social infrastructure PPPs are sovereign risks, instability risks; and transparency.
- **The Technical Risks** for social infrastructure PPPs are construction difficulties; completion delays; and operational risks.

3. *Unit(s) of analysis (defining what the “case” is):*

Within the field of construction management research there appears to be a limited number of strategies and techniques which are favoured and in use for soft
management research (Simister, 1994; Fuller et al, 2011). Recent trends indicate that more and more studies within the construction management field draw from the social sciences (London, 1996; McDermott, 1999; Phua and Rowlinson, 2004).

The actual case is an “analysis of risk factors”. The study of this case is proposed to be undertaken within the context of 2 stages of case study design, i.e. Stage 1 involving four organisations involved in bidding for PPPs and Stage 2 involves four major Australian infrastructure projects procured via the PPP procurement method, i.e. Sydney’s Olympic Stadium (ANZ Stadium), Sydney’s Superdome Multi-Purpose Arena (Allphones Arena), Newcastle’s Mater Hospital and Ryde’s Top Ryde Centre in NW Sydney.

4. **The logic linking the data to the propositions:**

This is the first of the data analysis steps. Comparisons between the frameworks established from both the literature and the case study process will be drawn. Differences or disparity between the two will be given particular consideration.

Strategies for data collection within qualitative research methods vary according to the research problem. They can include interviews (individual, group, focus, structured/non-structured), direct field observations, analysis of documents (diaries, letters, autobiographies, forms of contract et al) or the use of visual material or personal experience (Denzin and Lincoln, 2011).

5. **The criteria for interpreting the findings:**

Stake (2005); Yin (2009); Denzin and Lincoln (2011) all comment with regard to analytic strategy for the analysis of case study data seems particularly relevant and suggest that much depends on an investigator’s own style of rigorous thinking, along with the sufficient presentation of evidence and careful consideration of alternative interpretations. Interpretation of the findings is by way of the revised risk frameworks (see the Case Study Results section of this thesis) established during the interview.
process for each project. The analysis of this data is via the subsequent discussion of these results (see the Case Study, Results and Discussion Chapters of this thesis).

In this instance, with little separating the fourth and fifth components of Yin’s (2009) research design, the framework comparison (discussion) will form the basis for interpretation of findings.

3.6 THE METHOD OF DATA COLLECTION

3.6.1 Interviewing

In-depth interviewing is the most fundamental of all qualitative research methods (Easterby-Smith et al, 2008). Where more detailed exploration is required and the purpose of the interview is to understand the meanings interviewees attach to issues and situations in contexts that are not structured in advance by the researchers assumptions, then an interview that is far less structured is needed. This technique was adopted at both stages of the case study part of this thesis. A semi-structured approach provided the framework for discussion, the reference or theoretical framework acting as a starting point for discussion, with the interviewee encouraged to expand on issues raised.

This allowed the researcher to probe deeply to uncover new clues, open up new dimensions of a problem and to identify accurate and inclusive accounts that are based on personal experience. This approach is supported by Burgess (2005).

Jones (1985) indicates that there is no such thing as pre-suppositionless research and in preparing for interviews, researchers will have some broad questions in mind. This influenced the degree of structure and the subsequent semi-structured process.

The use of the interview process is supported by Kumar (2011), who identifies several advantages with the interview process:

1. The interview is more appropriate for complex situations
2. It is useful for collecting in-depth information
3. Information can be supplemented
4. Questions can be explained
5. Interviewing has a wider application

These issues support the use of interviews in this thesis as the PPP procurement method is indeed very complex, in-depth information is required both from project stakeholders and data archives, complex questions and issues raised from the theoretical framework can be explained and information can be supported by project records and on-site issues as the process will be conducted in the project work place.

Simister (1994) used a case study strategy and collected data through individual interviews. The premise behind such an approach, as with this study, is that the data currently exists. With regards to the case study projects in question, data relating to risk factors, and indeed successful risk management, at the key stages of the PPP process data did exist as the projects in question had already completed the finance, design and construction stages and the facilities were currently operational.

3.6.2 Collection of Case Study Evidence

Collection of Case Study Evidence for the case study was proposed via several methods:

- A review of company and project documentation and reports provided by the consortium stakeholders, government office and general project literature to assist in identifying risk management factors and issues.

- A review of key relationships and contract agreements will determine the risk profile, such that a framework similar to that in the literature review can be developed. An informal 3-stage interview process with key personnel (both at Stage 1/organisation and Stage 2/project levels) involved in the PPP process to further refine the framework. Interviews focused on the risk factor framework developed from the literature review, such that comment and possible further development can be made.
Analysis of the research will be carried out in a qualitative manner. As argued by Fellows and Liu (2008), the qualitative approach to research, allows the study to get beneath the manifestations of problems and issues which are subject of quantitative studies, and thereby, to facilitate appreciation and understanding of basic causes and principles.

The primary area of analysis for the thesis research is the 2-Stage case study process of firstly organisations involved in bidding for PPPs (Stage 1) and then specific PPP projects (Stage 2). Underpinning the study is a series of semi-structured interviews that were conducted with both public and private sector senior management participants from both organisational participants and then project participants. Supporting the data from the interview process is relevant project documentation from each organisation and then each project, such as contractual and financial data records.

In this respect, analysis of the research will involve the following:

- Comparisons between the frameworks developed from both the review of the literature and the case study process are drawn. Differences or disparity between the two are given particular consideration.
- A discussion of the themes, problems and issues identified in both the literature review and the case study process.

3.7 PILOT STUDY

Prior to conducting the interview process, two stages of pilot studies were performed to refine the interview format. During the first pilot study questions were put, during a discussion, to a person holding a senior management position within the Australian Construction Industry (i.e. a Senior Project Manager within the Department of Public Works and Services, Newcastle, NSW) who has experience in Public-Private Partnerships and other joint ventures where the public sector client utilised the private sector to deliver assets and services. The actual wording of the questions was assessed in order not to bias the outcome of the interviews and avoid confusing or misleading questions. The wording was edited so as to make the questions clear and concise and
conform to a semi-structured interview process. The first pilot study revealed that a complex form of questioning could lead not only to confused responses, but also interviewee irritation. The second pilot study was performed with the researcher’s primary thesis supervisor to determine if the revised methods from the initial pilot were appropriate. This study indicated the need for further alterations, though minor, to some question structures and word phrasing.

3.8 ETHICS

Prior to data collection, ethics approval was sought from the University of Newcastle’s Human Research Ethics Committee (HREC). It is crucial to the success of any research project that the correct procedures are implemented and documented. HREC approval was sought and the process was implemented after establishing the review of the literature and establishing the theoretical framework of risk factors. An application form, along with an information sheet, consent form and other supporting documentation, such as a list of interview questions, was lodged with the University Research Branch in early 2006. After feedback from the committee and some subsequent amendments, approval was granted on 15th March, 2006 (HREC Approval Number: H-198-0306). A variation to the project, to allow additional data from Stage 2 of the case study process to be included, was subsequently approved on 15th November, 2010 (See Appendix One for more details).

3.9 THE SEMI-STRUCTURED 3-STAGE INTERVIEW PROCESS

3.9.1 Project Participants

The participants that were selected for interview within the case study process included:

*Stage 1 (Organisational Case Studies):*

1. Leighton Contractors
2. Thiess
3. Baulderstone Contractors
4. Bilfinger-Berger
Stage 2 (Project Case Studies):
1. ANZ Stadium
2. Allphones Arena
3. Mater Hospital
4. Top Ryde Centre

The following diagram (Fig 6) outlines the research methodology used for this thesis.
**Review of recent literature**

Review of related literature to generate risk factor framework. The analysis identified key issues and themes of PPP projects.

**Pilot Study**

*First Stage:* Research Method presented to a senior manager within the Australian Construction Industry (i.e. a Senior Project Manager within the Department of Public Works and Services, who has experience in Public-Private Partnerships). The Research Method, particularly the design of the interview questions, were the focus for this stage.

*Second Stage:* Revised Research Method presented to the candidates primary PhD Supervisor and revised accordingly.

**Research Method – Case Study Process (1)**

*Stage 1 (Organisational level):* Analysis of project documentation and semi-structured interviews conducted with nominated experts & relevant support staff from each of the 4 case study organisations (x4 interview participants per organisation). Interviews conducted over series of stages (3) to establish dialogue between researcher and participants and gain both qualitative and quantitative data (in the form of bid cost data). Further information gained from this stage of the interview process helped to establish/confirm the specific case study projects that would be used as part of Stage 2 (project level case study research).

**Quantitative Data**

Data collected to establish the costs of bidding for PPP projects.

**Qualitative Data**

Data collected via a 3-stage semi-structured interview process focusing on key risk management themes identified from literature review. Interview participant’s views and key concerns documented & used to corroborate bid costs and discuss the risk factor framework.

**Research Method – Case Study Process (2)**

*Stage 2 (PPP Project level):* Analysis of project documentation and semi-structured interviews conducted with nominated experts & relevant support staff from each of the 4 case study projects (x4 interview participants per project). Interviews conducted over series of stages (3) to establish dialogue between researcher and participants and gain qualitative data based around the risk factor framework. Risk factor framework was refined and case study projects used to propose successful risk management framework for the delivery of social infrastructure PPPs.

**Qualitative Data**

Data collected via a 3-stage semi-structured interview process focusing on key risk management themes identified from literature review. Interview participant’s views and key concerns documented & used to discuss the risk factor framework.

**Analysis of Case Study Data**

**Quantitative**

Qualitative data of bid costs analysed using descriptive statistics

**Qualitative**

Qualitative data analysed using combination of content analysis and grounded theory to group the findings.

**Risk Framework & Industry Workshop**

Research findings compiled into risk factor framework and validated as an on-going process via industry workshops.

*Figure 6: Research Method*
Stage 2 interview participants

Project 1: Stadium Australia/ANZ Stadium

1. **Public Sector participant, NSW State Government, Department of Public Works: Director of Stadia**

The *Director of Stadia* was responsible within the NSW Government for all the development and commercial aspects of the project. This included any ongoing developments/modifications to the stadium; any rearrangement of the commercial structures within the project groups; and any re-negotiation of those structures or arrangements; or any dialogue between the private sector stakeholders and the government on commercial issues. He has been involved in every stage of the development and operation of the stadium since project inception and the bidding process, through to project finance and the design and construct stages and the early stages of stadium operation.

2. **Public Sector participant, NSW State Government, Department of Public Works: Deputy Director of Stadia**

The *Deputy Director of Stadia* acted in a primary support role to the Director of Stadia. In particular this focused on the commercial structures within the project. He has been involved in most stages of the development of the stadium but plays a primary role in monitoring the current operation of the stadium.

3. **Private Sector participant, Brookfield-Multiplex: Construction and Finance Director**

The *Construction and Finance Director* has significant experience in managing both construction activities and overseeing the finance and bidding stages of major projects. He is a key member of the private sector consortium and his involvement in Stadium Australia began at the negotiation stage and continued
through the bidding process to the design and construction stage. He also oversaw the redevelopment of the Stadium into its recent re-configuration.

4. Private Sector participant, Stadium Australia Management (SAM):
   Director

The Director of SAM has played various senior roles in the stadium since it opened in March 1999. He has significant experience in operating several sporting stadiums and entertainment centres. He is a key member of the private sector organisation that oversees the strategic and operational aspects of ANZ Stadium.

Project 2: Sydney Superdome/Allphones Arena

1. Public Sector participant, NSW State Government, Department of Public Works: Director of Stadia

The Director of Stadia was responsible within the NSW Government for all the development and commercial aspects of the Superdome. As with Stadium Australia, this included any ongoing developments/modifications to the stadium; any rearrangement of the commercial structures within the project groups; and any re-negotiation of those structures or arrangements; or any dialogue between the private sector stakeholders and the government on commercial issues. He has been involved in every stage of the development and operation of the stadium since project inception and the bidding process, through to project finance and the design and construct stages and the early stages of stadium operation.

2. Public Sector participant, NSW State Government, Department of Public Works: Deputy Director of Stadia

The Deputy Director of Stadia acted in a primary support role to the Director of Stadia. In particular this focused on the bidding/tender stages of this project. He now plays a primary role in monitoring the current operation of the arena.
3. Private Sector participant, Abi Group: Senior Construction Finance Manager

The Construction Finance Manager has a professional background as both a Solicitor and Engineer. He has been involved with Abi Group for over 25 years, predominantly dealing with the financial structuring of projects and legal issues. Prior to the SuperDome project, he has previous experience of public-private sector partnerships such as the M2 Tollway in Sydney. He was a key member of the private sector negotiation team and represents the project consortium from the perspective of contractor (Abi Group) and the initial facility operator (Millennium PLC).

4. Private Sector participant, AEG Ogden (Allphones Arena Management): Director of Operations

The Director of Operations of AEG Ogden has been involved with the operation and management of sporting and entertainment venues for 20 years. He has played a more recent role in the operation of this arena since its acquisition from PBL within the last 3 years. He is a key member of the private sector organisation that oversees the strategic and operational aspects of Allphones arena.

Project 3: Mater Hospital Redevelopment


The GM was responsible within the NSW Government for all the development aspects of the Mater Hospital. He has over 25 years experience in construction project management and contract administration. During the interview process he was supported by the other State Government body, Hunter New England.
Department of Health, who were represented by their Deputy Director. He has been involved in every stage of the development of the hospital from project inception, the bidding process, through to the design and construct stages and operation stages of the hospital.

2. Public Sector participant, NSW State Government’s Project Management/Client Representative, Bovis Lendlease: Senior Project Manager

The client (NSW State Government) used a project management representative in the form of Bovis Lendlease (BLL) to oversee the project’s inception, feasibility, risk profiling, design, construction and early operational stages of the hospital. BLL’s Senior Project Manager was involved in all of these stages with a particular emphasis on developing the contracts and risk profiles.

3. Private Sector participant, Abi Group: Senior Construction Finance Manager

The Construction Finance Manager has a professional background as both a Solicitor and Engineer. He has been involved with Abi Group for over 25 years, predominantly dealing with the financial structuring of projects and legal issues. Prior to the Mater Hospital project, he has previous experience of public-private sector partnerships such as the M2 Tollway and Sydney SuperDome in Sydney. He was a key member of the private sector negotiation team and represents the project consortium from the perspective of design and construct contractor (Abi Group).

4. Private Sector participant, Novacare (Consortium charged with developing the Mater PPP): Project Director

The Novacare Consortium consists of a number of specialist organisations, each charged with certain responsibilities and including Abi Group D&C contractors;
Hastings Funds Management; Honeywell ‘hard’ Facilities Management; and Medirest ‘soft’ Facilities Management. The Project Director of Novacare represented the collective of private sector stakeholders that made up the consortium. He has been involved with the operation and management of various large scale facilities for over 20 years.

Project 4: Top Ryde Redevelopment

1. Public Sector participant, City of Ryde Council (CoR): General Manager

After graduating from University, he started his professional career in the private sector but soon moved into local government as an Environmental Planner with Brisbane City Council. His career in the public sector was fast-tracked and he has held several senior roles in local government, including CEO of Bunbury Council, Deputy CEO of Sydney City Council and since 2004 and for a significant period of the procurement process for Top Ryde he has been the General Manager of City of Ryde (CoR).

The GM was supported in the interview process by the council’s Senior Project Manager, Operations Manager and the Group Manager of Public Works. This level of senior management were involved in strategic decision making with the other PPP stakeholders, daily project management and establishing the project’s risk profile.

2. Public Sector Participant, Road and Traffic Authority (RTA): Director of Network Services

The interviewee was regional manager of the RTA during the procurement of Top Ryde. He is a Mechanical Engineer and started his professional career in local government with the City of Sydney. After obtaining a Masters Degree in Traffic Engineering he entered State Government and when the RTA was
formed in 1989 he was their first Transport Planner. Due to the complexities of Top Ryde, and in particular the traffic solution, in his role as regional manager he was invited by CoR’s GM to be part of the initial strategic project team and help form the triumvirate of the PPP.

3. Private Sector Participant, Defined Developments: Development Director (private sector developer for the project)

He has over 20 years experience in senior construction project management and development roles in the UK, Hong Kong and Australia. He was responsible for driving the project in order to gain approval of the LEP and then developing the vision for Top Ryde and the Integrated Traffic Solution with no risk to the local authority (Council). As the senior representative from the development company, he led the team responsible for providing capital costs and construction activity to benefit CoR. The private sector developer provided infrastructure delivery and maintenance under the PPP.

4. Private Sector Participant, Bovis Lendlease: Senior Development Manager (private sector Design & Construct contractor for the project)

He has spent over 30 years in the private sector in senior project management roles, particularly overseeing design, construction and the fit-out of buildings. During the development of Top Ryde, he was instrumental in delivering the project under the D&C contract that was part of the broader PPP agreement.
3.9.2 First Stage of the Interview Process (Interview 1) [Stage 1 and Stage 2 of the case study process)

The preliminary interviews involved the following introductory questions:

Initially the interviewee was provided with an explanation of the aims and objectives of the research, the researchers current understanding of PPP procurement strategies, and current knowledge on the case study projects/organisations in question and the major project participants involved. This was done to reduce time, avoid repeating the fundamental issues associated with PPPs. Subsequently, project background information was obtained from the participant, including details of their role within their organisation and also the specific project in question and general information on their PPP experiences et al.

This preliminary stage helped to establish a relationship with the interviewee and to develop the structure of the interview process with the questions intended to make the interviewee feel comfortable and willing to discuss the relevant issues further.

The first round interviews performed complement the case study. The interviewed senior managers represent a broad spectrum of those influential in the case study organisations/projects in their respective management roles in the areas of tendering, finance, design, construction and operation. The participants were selected from both the public and private sectors in order to gain a more balanced understanding of the risk factors and success issues from very different sectors of the industry. The participants were selected from the senior management teams of both each organisation and each project. They were chosen as they were responsible for both strategic and day to day decisions that were influenced by risk factors and the successful management of these issues.

Interviews commenced with the 4 senior managers selected from each of the Case Study organisations and PPP projects. This number was chosen mainly because of the availability of senior management from the selected PPP projects and their individual expertise. The participants were also chosen with the research objectives in mind and partly because it was felt that any more than 4 interview participants (from each case
study at both organisation and project level) would be excessive for the needs of a study at this level, particularly when considering the research aim and the 2-stage case study process. The number of interviewees (i.e. 4 per case study organisation/project) is supported by Eisenhardt (1989); Miles and Huberman (1994); Eisenhardt and Graebner (2007); Yin (2009).

All interviewees were emailed a copy of the semi-structured interview questions in advance, so that they could be aware of the basic outline of the interview. Interviewees were also provided with project information sheets and consent forms in accordance with the University of Newcastle’s HREC process (HREC Approval Number: H-198-036). Interviewees were asked if the discussion could be recorded to limit the amount of note taking on behalf of the researcher during the questions time. All of the participants agreed and felt comfortable with the interview being recorded. Interview transcripts were offered to each of the interviewees for review and subsequently approved prior to the data being used in this thesis.

3.9.3 Second Stage Interview Process (Interview 2) [Stage 1 and Stage 2 of the case study process)

The second round, or follow-up, interviews were conducted after the results of the first interviews were compiled. These second round questions, relating to the results found, offered a degree of development to the findings of the research and provided the thesis analysis with greater depth.

The results of the first round interviews were emailed to all of the participants.

Interview 2 provides the researcher’s overview of the review of relevant project documentation obtained from first interview. Also, before reviewing the framework that was established from the review of the literature and project documentation, the significant risk factor questions are asked:

1. ‘What were and perhaps still are the most significant risk factors confronting the organisation or project?’
2. ‘Who is responsible for managing the risk factor(s) in question and how is this successfully achieved?’

This avoids any influence over the factors considered, which may have been present if the framework was provided ‘up front’. The framework is then reviewed in detail with each risk issue discussed for its relevance, management and distribution measures.

The results and discussion of these second round interviews can be seen in the latter chapters of this thesis.

The follow-up, or 2nd Stage interviews, enabled the researcher to get the interviewee to reflect back upon the decision-making process of the project participants and develop and reassess the results. This allowed for comparison with the results of the literature review findings.

3.9.4 Third Stage Interview Process (Interview 3) [Stage 1 and Stage 2 of the case study process]

Interview 3 took the same approach as that used for discussion of risk factors during interview 2:

‘What are, or were, the most significant factors affecting the successful risk management techniques of the organisation or project at the initial bid stage, during the subsequent negotiation process and construction stage and also in the current operational phase?’

Several questions were then asked in probing for successful management of risk:

- ‘Who is responsible for managing the success factor(s) in question and how is this achieved?’

- ‘Why in your opinion was the project bid successful?’
• What are the successful risk management issues during the current operational stage?

Similar to the risk discussions, the framework will then be reviewed in detail with each success issue discussed for its relevance and importance.

General comment is then sought from the interviewee on the comprehensiveness of the developed frameworks.

A further question is then posed:

• ‘On reflection, would you expect any different approach or other measures to be taken by any of the parties?’

Progress of the research will be reviewed after every interview with each of the participants.

3.10 ANALYSING THE DATA

Easterby-Smith et al (2008) argue that research which involves turning qualitative data into numbers, in order to quantify it, spoils the richness of the data and fails to give the holistic view so important in qualitative research. There is great debate as to which of the two basic ways of analysing qualitative data, i.e. ‘content analysis’ (the researcher goes by numbers and frequency) and ‘grounded theory’ (the researcher goes by feel and intuition, aiming to produce common or contradictory themes or patterns from the data which can be used as a basis for interpretation) is more appropriate.

3.10.1 Grounded Theory

Grounded theory provides a more open approach to data analysis which is particularly good for dealing with transcripts. It recognises that dealing with large amounts of non-standard data produced by qualitative studies makes data analysis problematic (Easterby-Smith et al, 2008). Jones (1987) comments that grounded theory works because rather than forcing data within logico-deductively derived assumptions and
categories, research should be used to generate grounded theory, which fits and works because it is derived from the concepts and categories used by social actors to interpret and organise their worlds.

Grounded theory is simply described by Easterby-Smith et al (2008) as being holistic, inductive, closer to the data, open, testing of themes and developing patterns.

Grounded theory assumes that one is working with transcripts of in-depth interviews. The following list identifies and describes the main stages of analysis and are based upon the seven stages established by Easterby-Smith et al (2008) with specific reference to the thesis in question following each point:

1. Familiarisation – the data (interview transcripts) were re-read and the tape recordings were revisited in order to re-familiarise the researcher with the relationship between the interviewer and interviewee and the general attitude of the respondent. This helped to clarify issues in the transcripts with some of the participants.

2. Reflection – this helped identify issues that may have been missed or interpreted incorrectly when the initial transcription took place. This stage helped to establish patterns in the data that identified issues that were unanswered in previous studies and clarified findings that were different.

3. Conceptualisation – At this stage of the process several variables were identified that enabled a clearer understanding of the data. For example, the identification of specific project related risk and critical success factor issues and the subsequent allocation of the project participants who were allocated the management of the factor in question.

4. Cataloguing concepts – this stage involved the labelling of the various risk factors into a database that identified which project party was responsible for managing the issue in question, which interview respondent identified the issue,
and further explanation and clarification given to support the risk or success issue raised.

5. Recoding – this helped to identify if some issues were raised within different contexts and was particularly relevant when dealing with project participants from both State and Local Government (Public Sector) and Project Developers, Contractors and Operators (Private Sector). Risk factor and success issues were redefined at this stage. For instance, the identified risk factor of ‘changes in laws’ was very different when considering both the public and private sectors. The public sector would bear any project specific law or tax changes, yet the private sector would bear general changes, such as the introduction of the Goods and Services Tax (GST).

6. Linking – Variables can now be more clearly linked and a first draft of the project specific risk factor frameworks was established.

7. Re-evaluation – Where some areas (risk and success issues) may appear either over-emphasised or possibly omitted, then further work may be needed. With regards to this study, re-evaluation was in the form of re-writing the first draft of the risk and factor framework after gaining feedback from both the project participants and the thesis supervisor. The re-written frameworks took into account criticisms from those providing feedback and highlighted any contradictions.

3.10.2 The Linking of Data to Propositions

When considering case study research, this process has not been substantially developed in literature. Basically the linking of data to propositions involves any relevant material identified within the literature review being recognised and included within the case study research. Yin (2009) suggests that this process lays the foundation for later analysis of particular issues that were ‘teased’ out during the research.

The relevant material in the literature was developed into a risk and success reference framework. The reference framework acted as a starting point for discussion during the
both stages of the case study interviews. This framework was developed using key historical data from similar PPP-type projects and acted as a foundation for the risk factors framework that was established during the case study interview process.

3.10.3 Criteria for Interpreting the Findings

As mentioned previously the research findings from the study were tested against the findings of the literature (the reference framework). The issues identified from the interview respondents formed the basis of the case study risk framework. When comparing the findings of the case study against that of the reference framework, then current, relevant risk and success factor issues relating to PPP projects can be identified. These issues provide the starting point for risk factors when considering future PPPs. The interpretation of the findings is performed in detail within the following chapters of this thesis.

3.11 JUSTIFICATION FOR SELECTION OF THE CASE STUDY ORGANISATIONS AND PROJECTS

3.11.1 Justification of the Case Study Organisations

1. Leighton Contractors

Established in 1949, Leighton Contractors is the founding company of the Leighton Holdings Group. Today, Leighton Contractors is one of Australia’s most recognised, diverse and established industry leaders. They are an integrated contractor with a substantial footprint across the construction, mining, infrastructure, telecommunications and energy industries. With around 200 project locations across Australia, New Zealand, Papua New Guinea, and Botswana in Africa, and a work in hand of around A$13 billion, they provide a range of total service capabilities – from investment, design and construction, right through to project management, maintenance and facility management. This diversity is what allows us to grow and adapt to the needs of our clients as their business evolves.

Leighton Contractors’ has a specialised Infrastructure Investment team that leads Public Private Partnerships (PPPs) and other privately financed project tenders and
developments, with capabilities as both sponsor and developer. The team works in conjunction with other Leighton Contractors’ Divisions, as well as external technical partners and advisors, to provide clients with comprehensive and innovative project solutions. Operating across a range of industries – from transport and defence to education, health and other social and economic infrastructure – the Infrastructure Investment team works with both the government and the private sector to provide dependable, long-term social and economic infrastructure in the Australian and New Zealand markets.

Projects involve typical PPP-type parameters, such significant financing and equity risk transfer from the client for construction of complex infrastructure, followed by operation and maintenance over an extended period (approximately 30 years). Infrastructure Investment often partners with clients, taking an equity stake of up to 50% in a project. Our investment ensures we work with clients over the life of the project to deliver optimum outcomes. Leighton’s tendered for numerous Australian PPP projects and have bid for and successfully delivered and operated infrastructure projects such as HQ’s for the Australian Defence Department; Gateway upgrade in QLD; M5 East in NSW and most recently on the successful bid for the new Royal Adelaide Hospital Project, Australia’s largest health (social infrastructure) PPP project.

2. Thiess

Thiess are another of Australia’s leading construction, mining and services contractor. From humble beginnings as road construction contractors more than 75 years ago, they have amassed enormous depth and breadth of experience, capabilities, skills and resources. In 1983, Thiess became part of Leighton Holdings Limited – Australia's largest project development and contracting group. Despite this dynamic growth, they maintain Thiess Brothers’ vision from the 1930’s and continue to deliver iconic projects that are shaping Australia’s landscape and also play a pivotal role in building vital infrastructure, promoting the country’s resources sector and providing essential services for our communities. Today they have become a business with more than 17,000 staff and an annual turnover of more than $7 billion.
Their large and diverse portfolio of work spans Australia’s urban and regional centres and extends to Indonesia and India. By delivering whole-of-life services, from initial design through to ongoing operations and facilities management, this integrated offer provides clients with greater value now and into the future.

Thiess has a rich and successful history in bidding for PPP projects and have delivered the Sydney Harbour tunnel; prisons at Junee and Long Bay; Victorian Desalination project; Orange Hospital; and several toll-road networks. Thiess’ most recent involvement in PPPs is a $1 Billion social infrastructure project to extend and refurbish Sydney’s Royal North Shore Hospital. The facility includes the delivery of a nine level 95,000m² Acute Hospital with provision for future vertical expansion; an eight level, 10,000m² Community Health Facility building; building refurbishment; a new seven level multi-level carpark building of 23,000m² and additional works including pedestrian link bridges, roads and civil works, services diversions, demolition and decanting. Also, Thiess’ services business is the Hard Facilities Manager for the $409 million 28 year project period. This contract includes: Building, plant and equipment maintenance and lifecycle replacement.

3. **Baulderstone Contractors**

Manual Hornibrook founded the company in Brisbane 1926 and it quickly developed a reputation as a successful bridge builder. The company’s crowing glory came in the 1970’s with the construction of the iconic Sydney Opera House. Meanwhile, in South Australia, Bert Baulderstone's construction company, founded in 1946, was also developing a strong reputation for innovation, quality and performance. Although initially working in the education and health sectors, it quickly established its status as a leader in bridge building and rail infrastructure. The merger of the two companies in 1985 resulted in the creation of Baulderstone-Hornibrook, and an expansion of its operations overseas into New Zealand, Taiwan, Malaysia, Indonesia, Thailand, Vietnam and China. Eight years later, in 1993, the company was acquired by one of the world's largest construction companies, Bilfinger Berger. In March 2011, Baulderstone joined Lend Lease, after Bilfinger Berger SE completed the sale of its Australian operations to Lend Lease.
Baulderstone, offer the full range of construction services to support clients in both the private and public sector from preconstruction to project closeout and operation and from healthcare to power stations, education facilities to tunnels. Baulderstone employs over 1400 people and deliver a wide variety of construction projects to serve both public and private sector clients and each year they complete over $2 billion in projects. Baulderstone have been involved in several notable PPP projects including Sydney’s Cross City Tunnel; Darwin Prison; Victoria’s Ravenhall prison; North/South Bypass Tunnel of Brisbane’s city motorway; and a major social infrastructure project in the form of the $250Million Royal Women’s Hospital in Melbourne.

4. Bilfinger-Berger

Bilfinger are a multi-national company with almost 60,000 employees and have a turnover of approximately $12Billion. This is a long way from relatively humble beginnings when three traditional German construction companies founded in the late 1800’s form the historical roots of Bilfinger. The Dresdner Bank held a significant stake in each of the three companies and under the aegis of Jürgen Ponto, later the Spokesman of the Bank's Executive Board, the plan evolved in the 1960s to build a large, internationally competitive construction company. After an initial merger in 1969 and an acquisition in the early 1970’s Bilfinger + Berger formed in 1975. Due to changed market conditions, a new strategic course was introduced for the company at the start of the 21st century when it became the Multi Service Group. In 2001 it was renamed Bilfinger Berger AG and, in the years that followed, a series of strong companies in the industrial, power plant, and real-estate service sectors were acquired. At the same time, activities in the construction area underwent a targeted reduction. Bilfinger Berger developed from a construction company to an international engineering and services group involved in building, engineering and infrastructure projects world-wide.

They have been involved in significant PPP projects in Germany and the UK and entered the Australian market in the 1990’s. Bilfinger PI is a specialist PPP sponsor, developer, equity investor and asset manager in Australasia. Beginning with an investment at Docklands in 1997, Bilfinger has invested over $300M equity in Australian PPPs, covering both social and transport infrastructure projects. Their
portfolio includes the Royal Women’s Hospital in Melbourne, the Victorian Correctional Facilities (Marngoneet Correctional Centre and Metropolitan Remand Centre), the Peninsula Link Freeway in Melbourne, and the Darwin Correctional Precinct in the Northern Territory. The company’s Australian construction legacy includes significant infrastructure such as the Graham Farmer Freeway in Perth, the 3rd Runway at Kingsford Smith Airport in Sydney, the CLEM7 tunnel in Brisbane and the Docklands Stadium and Bolte Bridge/CityLink projects in Melbourne amongst others.

3.11.2 Justification of the Case Study Projects

For Stage 2 of the Case Study, participants from the Stage 1 interview process were asked to nominate PPP projects that could be used for detailed risk analysis. The projects selected after an initial nomination process were

1. ANZ Stadium (formerly the Olympic Stadium), Homebush Bay, Sydney, NSW;
2. AllPhones Arena (formerly the Sydney SuperDome) Homebush Bay, Sydney, NSW;
3. Top Ryde Centre, Ryde, Sydney, NSW; and
4. Mater Hospital, Newcastle, NSW.

The ANZ Stadium and AllPhones Arena were projects resulting from Sydney’s successful bid for the 2000 Olympic Games. With the post-Olympic mode construction phases complete in 2002 and buildings now operational under a typical BOOT-type PPP Agreement for over 10 years, the projects are perceived as successful examples of social infrastructure. The contract cost for the stadium was $615 Million and for the SuperDome $280 Million.

Apart from a personal interest in all projects in terms of their complexity and innovative financing structure, the reasons for selecting the Stadium and the SuperDome for the study include:
• They satisfied requirements of being major infrastructure projects procured under the PPP concept. In the main, previous PPP schemes have been used to procure large-scale economic infrastructure developments.

• Information was readily available via the Stage 1 interview participants, or at least via their organisations, and is perhaps assisted by the high profile and topical nature of the projects. The representatives and managers of the projects expressed their willingness to be interviewed and to provide hard, factual information.

• Much of the available literature on the general topic consists of overseas PPP experiences and projects. For obvious geographical reasons, it is more logical to investigate a project that is close to the researcher’s study and work base.

• The projects completed their construction phases in 1999, although the Stadium was reconfigured after the Olympic Games and this construction stage was complete in 2003. Both projects are now almost 12 years into the post-Olympic operation stage, therefore, while most issues are still in the minds of the project participants, both projects have had significant opportunity to demonstrate success from an operational and business model point of view.

The Mater Hospital was the first major healthcare PPP project in NSW and is part of the broader-based Newcastle Strategy which is a 9 year $360Million health infrastructure programme for the Hunter region in NSW. The Mater is now some 5 years into its operational period.

Top Ryde is the first PPP in NSW where the primary public sector stakeholder is the local authority (Council) as opposed to the State Government. It is an $800million upgrade to what was Australia’s first suburban shopping centre. As part of the broader project, Top Ryde also includes significant remodelling of access roads and tunnels, changes to traffic and pedestrian routes on the surrounding arterial roads, and new public buildings (such as a Library) and public open space.
3.12 SUMMARY OF THE RESEARCH METHOD

The expected product of the research helps to identify and define the basic characteristics of a social infrastructure PPP project and provides an overview of the development of the concept and its aims. This enabled identification of successful advances in the approach and reasons for the surge in popularity. The findings are examined to create an overall framework for risk and identify factors for successful risk management. Strategies, provisions and risk management techniques identified within both the organisational and project case studies provide a framework that can be incorporated into the agreements of current projects that attempt to mitigate and distribute risk more fairly. The model can therefore be applied on similar projects when considering risk factors in order to gain maximum project performance on PPP schemes, particularly those delivering social infrastructure.
4.0 CHAPTER FOUR: CASE STUDY STAGE 1

4.1 RESULTS FROM STAGE 1 OF THE CASE STUDY: ORGANISATIONAL LEVEL

The results of this research were developed from semi-structured interviews with Senior Management participants representing the main industry stakeholders involved in the bidding process for PPPs (as described in the Research Method Chapter).

Over the course of the interviews the following themes emerged:

1. The PPP procurement model and the Australian market
2. Characteristics of social PPP projects
3. Design and Construct (D&C) versus Design and Construct in a PPP – Bidding Costs
4. Legal costs
5. Standardisation of documentation
6. Design documentation
7. Innovation
8. Public Sector Comparator (PSC) and Role of Government
9. Lifecycle costs and future proofing
10. Debt and equity
11. Bundling and economies of scale
12. Current Australian PPP projects

These themes are discussed further in the following section.

4.1.1 The PPP Procurement model and the Australian market

As previously discussed, PPPs are seemingly becoming deeply embedded as an integral part of Australian Government procurement strategies. Very large commitments are
being made by Governments and the private sector under PPP agreements and this has amounted to over A$30Billion in the 10 years since 2003.

A range of views were held by the interview respondents regarding the benefits of a shift to a PPP procurement model for Australia. Concerns related to market size with only a limited number of companies of sufficient capacity to bid for a PPP, in turn restricting the efficient development of the PPP model and true competition.

Whilst not universal, views mirrored the apprehensions of some PPP critics in that PPPs represent a form of privatisation. Here opinions differed as to whether they were advantageous or otherwise to companies and communities. A degree of frustration existed regarding the ‘advantages’ of a PPP procurement process:

“purely a dollar driven competition rather than a value competition, as often talked about by the spin doctors”

4.1.2 Characteristics of Social PPP Projects

In discussion with the interviewees as to the nature of social PPP projects, comparisons were typically made against economic infrastructure projects. Key features and differentials are identified in Table 7.
<table>
<thead>
<tr>
<th>Key Features</th>
<th>Social infrastructure</th>
<th>Economic infrastructure</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type of project</strong></td>
<td>Schools, hospitals, prisons, sport stadia, public buildings</td>
<td>Motorways, tollroads, tunnels</td>
</tr>
<tr>
<td><strong>Scale of project</strong> (both in terms of contract cost and physical size)</td>
<td>Smaller</td>
<td>Larger</td>
</tr>
<tr>
<td><strong>Complexity</strong></td>
<td>More complex, especially ongoing involvement with community</td>
<td>Less complex and relatively simple operational agreement</td>
</tr>
<tr>
<td><strong>Risks</strong></td>
<td>Associated with performance of the facility, e.g., major failure in air-conditioning systems, community impact</td>
<td>High construction risk engineering projects (e.g. collapse of Lane Cove Tunnel during tunnelling phase), financial risks can also be high.</td>
</tr>
<tr>
<td><strong>Revenue generation</strong></td>
<td>Rental streams via the Government. Value-adds are sought (e.g. rental space, service contracts)</td>
<td>Direct payments (e.g. from tolls)</td>
</tr>
</tbody>
</table>

*Table 7: Key Features and Differentials Between Social Infrastructure Projects and Economic Infrastructure Projects*

The common view presented was private sector bidders for social PPP projects are frequently faced with lesser financial rewards but more complex operational demands than for economic PPP projects.

There was a strong consensus from the interview participants that the public sector must make PPPs more attractive to the private sector and clarify the identification of risk in order to transfer more responsibility to the private sector. In relation to commercially viable value-adding, Government typically restrict the outsourcing of services to ‘non-core’ services such as administration, catering and cleaning. However there appeared to be some conflict in the division of ‘core’ and ‘non-core’, the example being given – the
employment of nurses, many of whom are employed in hospitals via private enterprise agencies. A branch of a consortium could undertake such a function.

4.1.3 Design and Construct (D&C) versus Design and Construct in a PPP – Bidding Costs

A frequently voiced criticism expressed throughout the research was the issue of the high costs involved in bidding for PPP projects. In order to establish the differences and similarities between the bidding processes in both procurement models, industry partners were asked to provide a hard data breakdown of bidding costs for their respective recent PPP and D&C projects. However, rather than the provision of hard data and definitive analysis of costs, only anecdotal discussion of costs to support claims was provided.

This perhaps is not surprising, and reflects the experiences of commentators such as Hughes at al (2006) where in describing a study on the cost of procurement in the construction industry make reference to ‘impressionistic estimates’ and the “desperate need for robust data” in respect to tendering costs. Therefore whilst the research has been able to collect primary data, much of the corroboration of findings is based on a qualitative rather than a quantitative approach.

The challenges of data collection

Several factors are at play that impact upon the identification of costs of bidding for a specific project and a definitive comparison between the two procurement methods:

- The commercially sensitive nature of the data surrounding PPP bidding
- Complexity of data collection. No clearly defined cost centres exist, therefore internal costs often absorbed into overheads of company rather than assigned to a particular bid. Cost allocation adjustments can occur due to internal relationships within the PPP, this would not occur in a standard D&C.
- Staff turnover and loss of corporate knowledge
– Political sensitivities
– Cost offsetting from one project to another – particularly where a previous project bid has been unsuccessful.

Further complicating a definitive comparison was the complexity of relationships that could exist within a PPP consortium. In particular for construction companies, bidding costs can be determined by position in the Special Project Vehicle (SPV) and arrangements held with other consortium members. Also the fact that contractors often had a D&C type arrangement within the consortium. Such an arrangement is reflective of an emerging trend in Australia, where construction companies operate solely as D&C contractors with no provision of equity. This trend is observed as an attempt by the D&C contractor to minimize costs and risks.

Notwithstanding this shift away from providing equity in the consortium, bidding costs for a D&C/PPP were still perceived as being high and a deterrent to bidding for projects. However as a counterpoint there was also the view that bidding in a highly competitive PPP market could lead to refinement and sharpening of the bidding process. However this is likely to be a costly way to gain experience particularly when bids are not successful.

Figure 7 on the following page illustrates the complexity of the relationships within a PPP and this was established during the interview process.
Figure 7: The Complexity of Commercial Relationships Within A Typical PPP Consortium Structure
Limited Comparative Study

A comparative study of a ‘standard’ D&C and a D&C as part of a PPP has been possible due to the permission given by the interview participants to publish this data. Figure 8 provides an example of the high bid costs (A$9M) for a typical social infrastructure PPP project valued at A$250M.

Figure 8: Typical Bid Costs for $250M PPP Social Infrastructure Project

Note: Bid costs based on the assumption that the bid is successful i.e. to financial closure. If bid is unsuccessful then the financial component, depending on specific circumstances, may be zero.

Factors Driving Higher D&C/PPP Bidding Costs

In summary the research found the general view was that D&C/PPP bidding costs were higher than for a standard D&C. It was suggested that the additional costs of a D&C/PPP bid could be up to 5-10% higher. The key factors believed to be driving these higher costs were:
- Additional legal costs that are incurred during the bid
- The D&C/PPP process is a less well-established system with non-standard contracts and typically a longer duration of bid phase, which in turn drives higher bid costs
- More developed designs in order to secure short-listing in the bid process

4.1.4 Legal Costs

The legal aspects of a PPP include the contracts, the legal entity and the law and regulations that the PPP will be working under (Bult-Spierinh and Dewulf, 2006). Whilst the research was primarily concerned with implications for D&C/PPP contractors when bidding as part of a PPP consortium, it should be noted that legal costs for all consortium entities emerged as dominant theme.

Whilst all acknowledged that legal costs were an inevitable consequence of the construction industry’s highly litigious environment, the dominant view was D&C PPP legal costs were ‘excessively high’. These ‘excessively high’ costs it was claimed, continue to act as a deterrent to some bidders. Though as legal costs are often regarded as non-value added there is perhaps the argument that the issue of legal costs tends to be exaggerated by the construction industry. This is perhaps exacerbated by the fact that social PPP projects tend to be for smaller contract sums and hence attract proportionately higher legal costs. Figure 4 illustrates that legal costs are incurred throughout the major entities of a PPP bid.

Specifically related to the bidding phase of a PPP project there were a number of legal costs identified as ‘unique’ to a PPP. These include:

- Legal advice regarding the establishment of the SPV and the principal
- The legalities of setting up the SPV and also arrangements with sub contractors
- Liaising with the companies to work through the contract marking it up with any queries and assessing the risk in the contract
A number of concerns and criticisms regarding various aspects of PPP contracts emerged, all regarded as playing a part in driving up the legal costs associated with a PPP bid:

- **The lack of standardised contract documentation.** The following section reviews this in further detail.

- **Timeliness.** The length of time spent negotiating the finer legal points of the contracts and whether it actually benefited the project. The belief was held that if there were a future dispute over a contract it would be a brave company that pursued litigation, as the further legal costs could be prohibitive.

- **Efficiency and effectiveness on the focus on the ‘finer points’,** given the economics of long-term legal obligations contained in many PPPs, particularly in contracts of 25 to 30 years.

- **The processes in PPP contracts related to cause and effect,** “often parties will be arguing over something as petty as who is responsible for a dint in the plasterboard after 30 years”.

Current literature backs up these research findings, referring to the extended time spent during the PPP bidding phase negotiating between project advisors and client representatives over the terms and conditions in the contract. These lengthy delays resulting in increasing bidding costs (Bing et al., 2005).

Concern was also voiced in regard to the potential for a conflict of interest to occur in the area of legals. Unlike other professional groups involved in PPP bids, lawyers could be involved with more than one bid at any one time. This concern fuelling the perception that the legal profession get the opportunity to have a ‘double dip of the pie’.

The trepidations conveyed reflect concerns expressed by Evans & Bowman (2005) who point out that the legal framework in which the PPP project operates will be a crucial factor to the success of a PPP model.…“the legal framework within which a PPP
project operates will also be a determinant of the optimal PPP model’ (Evans & Bowman, 2005, p.63)

4.1.5 Standardisation of Documentation

A lack of standardised PPP documentation was cited as a core reason in driving high legal costs. All agreed there was a lack of consistent principles and practices across the various state jurisdictions in terms of guidelines, and that generally, drove costs. Disappointment was expressed that the potential of the National PPP Forum established in 2003, which aimed to standardise many PPP processes had not been realised.

The Fitzgerald Report (Fitzgerald, 2004) recommended that PPP processes should undergo streamlining in order to reduce the costs of tenders and encourage wider bidder participation to increase competition.

Divergent views existed on how best to standardise PPP processes and which model to follow. There was a general concern that international precedents may not reflect the smaller scale of the Australian PPP market. Differences of opinion existed in regards to whether national standardisation could ever be achieved considering the nature of the Australian federal system (in contrast to the UK where standardisation was implemented under a more centralised Government system).

However the UK PPP model, in which legal / contractual documents have been standardised, was viewed as the reference point for those who recommend standardising documentation for Australian PPP models. There was general consensus that a reduction in transaction costs could result from standardised templates such as those in the UK. It is worth noting however that despite the introduction of templates in the UK, the transaction costs are “high and appear likely to remain relatively so despite the development of templates” (Public Accounts & Estimates Committee Report on Private Investment in Public Infrastructure 2006, p.84). This was also reflected in experiences of the UK PPP market where despite the standardised documentation in place, legal costs did not reduce. These experiences raised the question, would the associated cost of implementing standardised documentation be too prohibitive considering the relatively limited Australian PPP market?
**Recent Government Agency Initiatives**

On a positive, during the period of this research, recognition needs to be given to the significant work done by Government agencies to standardise some of their PPP processes based upon previous experiences and feedback from the private sector. All were in accord that all levels of Government appear to be committed to refining contractual negotiations, in order to reduce extended legal debates which are not only costly for the contractors involved but also for Government.

Examples of initiatives included work undertaken by the NSW Department of Health to standardise legal documentation based on previous PPP project experiences that included the Newcastle Mater Hospital, Long Bay Hospital and Correctional Facility projects.

Despite general consensus that the lack of standardisation was costly, particularly at the initial bidding stage, there were some concerns that a tightly standardised approach could restrict flexibility and innovation, features often cited as major strengths of PPPs.

**4.1.6 Design Documentation**

Objections existed in regards to the high level of documentation required for PPP bids, viewed as inevitably increasing bid costs. Figures provided on a Defence Headquarters project saw approximately $100,000 spent on printing costs alone.

High levels of documentation were related to the requirement to provide duplicate copies. The majority view was that the duplicate copies required were unlikely to be reviewed, and a suggestion made, that electronic copies in the form of a CD would be a preferable approach. In addition to this requirement, the expectation by the Government for PPP bids to submit near completed design documentation was seen as a key driver in higher bid costs.

Variations between states and even Government agencies were observed to exist on the level of documentation required from tenderers. NSW was considered more prescriptive
in their design requirements, where the Mater Hospital, the schools bid and prison bids used a more standardised design.

### 4.1.7 Innovation

One of the ‘advantages’ written of PPPs is the notion they can encourage innovation (Jefferies, 2003) A range of views were held as to what constituted innovation:

- Financial innovation and streamlining of projects
- Design and construction innovation
- Used interchangeably with the term “unique” in relation to one-off projects. The Victorian PPP market was discussed as marked by ‘one-off’ type projects that sought to achieve world-class facility status, such as the Melbourne Royal Children’s Hospital.

Greater innovation was linked to higher bid costs and higher risk – a factor that required assessment in terms of the financial benefit to the company. Additionally a higher financial loss can be incurred if a bid is not successful. The PPP and innovation linkage was disputed by some, citing instead that PPPs and the role of Government had caused an undue concentration on the bottom line:

> “a dollar competition rather than a value competition”

This view is debated in the public domain as the following quotation from the Age quoted in Millar shows:

> “Another prominent architect, Kerstin Thompson, says that through PPPs, the Government invariably concentrates on the bottom line. As developers cater to the Government’s financial dictates, projects are ‘stripped’ and good design and environmental innovation suffer”

(Millar, 2005)
4.1.8 Public Sector Comparator (PSC) and the role of Government

The PSC is prepared by the Government to assess what the predicted costs of a project would be if completed under a traditional procurement method by the public sector (Grimsey and Lewis, 2004). It is then used as a benchmark tool in order to assess whether the Government is getting Value For Money (VFM) and to “compare traditional procurement with the procurement by concessions and to define the price/quality ratio.” (Bult-Spiering and Dewulf, 2006, p.99)

The PSC affects all the consortium entities:

- D&C
- FM provider
- Finance
- SPV

The PSC purports to provide a benchmark for the complete project life cycle and although the cost to design and construct is only one part of the project life cycle it plays an important part in determining whether the bid is won or lost. It is worth remembering that whilst the PSC refers to the bid price it may have some influence on the cost of bidding. For example, there may be commercial pressure to develop designs fully in order to improve the chances of winning and bid and also to improve the accuracy of costing.

A wide range of views in relation to the value and effectiveness of the public sector comparator (PSC) were expressed. On the one hand the PSC was regarded as a beneficial tool to guide decisions and ensure Government accountability. Whilst on the other hand, the PSC was deemed arbitrary and subjective, and consequently of limited value.

Concerns Relating to the PSC
That PSC criteria could be manipulated to produce a result that cast the public sector client in a favourable light. These comments are indicative of the current debate both nationally and internationally by commentators and industry representatives regarding the usefulness and accuracy of the PSC (Corner, 2005, Grimsey and Lewis, 2005, Broadbent et al., 2003, Fitzgerald, 2004, Public Accounts Committee, 2006).

The failure to take into account risk of failure in the PSC (English, 2005).

Issues surrounding the public release of the PSC (Grimsey and Lewis, 2005). The failure of some jurisdictions to fully disclose the PSC was particularly criticised. The dominant belief, that the process of withholding the PSC was counterproductive, that it increased bidding costs and it would be more beneficial for a project outcome that the PSC was open for general comment.

Disquiet at the differences between Australia’s various jurisdictions in relation to the PSC. There was agreement that there should be more consistency in how the PSC is formulated, used and disclosed, ranging from total secrecy to an open general policy of release. Some jurisdictions, such as the Commonwealth and South Australia, do not have a general rule on releasing the PSC. In contrast Victoria, Tasmania and the Australian Capital Territory do have a general rule against full disclosure of the PSC and in Western Australia until the contract is executed the PSC remains confidential (Public Accounts Committee, 2006).

Without the requirement to disclose the PSC, Government does not have to justify how PSC costing was derived.

Bidders required to bid ‘blind’ when Government authorities withhold the PSC during negotiation stage.

Unduly influences the size and scope of projects and whether or not a project proceeds. Criticism in current literature supports this notion that the PSC can be used incorrectly as a pass/ fail test despite the…”many uncertainties involved in the
calculation and the fact that the numbers could have been manipulated to obtain the desired results.” (Bult-Spiering and Dewulf, 2006, p.100).

- **Substantial re-design and re-issuing of documentation can occur** when project scope changes to meet the PSC. This can incur notable additional expense and rarely are bidders provided with any compensation.
- **Any unmet expectations of end users due to these reduced scope change present challenges to the consortium.** In this situation, ongoing consultation with user groups is required affecting the timeframe and associated cost of bid finalisation significantly.

Rather than the use of the PSC as a pass/ fail test, it was proposed that if bid prices from interested bidders were consistently higher than a particular PSC, the PSC required revision to increase its accuracy. The accuracy of the PSC is limited and prone to error due to the complexity of the financial modelling; “dependent on uncertain forecasts...a great deal depends on assumptions about the time cost of money, i.e. the discount rate.” (Hodge & Greve 2005, p.50).

A shift towards partial disclosure of the PSC in States that currently withhold the information is evident with the recent recommendations made in February 2006 by the Victorian Department of Treasury and Finance to present the PSC early in the bid phase in an effort to reduce bidding costs. Nevertheless the Department of Treasury & Finance has since further qualified the status of this recommendation stating… “the aim of the presentation is not to disclose the detailed costing of the PSC, rather to further clarify the Governments expectations.” (Public Accounts Committee, 2006, p.76)

It is notable that despite the trepidations outlined above, there was agreement of a requirement for a benchmark tool for assessing lifecycle costs and realistic cost effectiveness that took this into account. Bult-Spiering and Dewulf (2006) note that a positive outcome of the introduction of the PSC has been a significant cultural change in Governments where public agencies now need to consider not only the immediate building costs but also are required to examine the total lifecycle of the project and which procurement method will develop real cost-effectiveness.
There was general frustration with the role of Government, though some of this could be related to the fact that although ostensibly in partnership, Governments and consortiums are often diametrically opposed in terms of desired outcomes. An example provided was the Leighton’s Spencer Street project. Here the Government was pleased with the project outcome whereas Leighton’s regarded it as a costly failure from a construction perspective.

Other specific problems cited in the interview process included:

- **Failure on the part of the Government to be strategic.** Possibly due to Government inexperience in the machination of financial arrangements of this nature.

- **Lack of Government stakeholder experience.** Often people involved do not understand the experience required. There was a strong preference to have an experienced resource to develop the brief in order to increase process efficiency, eliminating the frequent requirement for re-work. An example provided here was Health & Corrective Services.

- **In-efficient reinvention of bid conditions and contractual clauses.**

- **Over reliance on costly advisors.** There was the perception that advisors do NOT have any vested interest in timely conclusion of the bid process, in fact the reverse. In addition there is the view that initial procurement phases were supported by advice supplied to the Government by consultants selected on the basis of having submitted the lowest fees for service. This may result in Government not receiving advice from experts whose fees are higher but whose charges are related to their degree of expertise in the field. Therefore may not always get the BEST advice.

- **Lack of clarity in regards to ongoing 30-year contract periods as stipulated by Government.** The question remains that if the consortium falls apart and the
Government steps in, will the Government implement their right to retrieve costs? The legal costs and insurance costs would be extremely high.

- **Government dictated by belief that maintaining AAA rating at all costs is good fiscal policy.**

- **Risk management via contract clauses that ‘reserves the right to get out of the contract at any stage’**.

### 4.1.9 Lifecycle Costs and Future Proofing

In a PPP a consortium has to design, construct and maintain the facility for the duration of the project that can run over a 25-30 year period. Lifecycle analysis becomes important during the design process of a PPP project in an attempt to predict or accommodate future events. Operation risk however is notoriously difficult to predict. An example cited referred to the operation risk of the functioning of a hospital. Here changing usage patterns for the facility could dramatically alter due to policy decisions or shifts in demography beyond the normal demographic forecasts.

Advances in health were often seen to result in a new hospital no longer being fit for purpose in a period of 9-15 years. The following is an example of a typical lifecycle of a hospital facility:

- **Project concept to construction completion**: 3 years
- **Establish ‘smooth-running’ of the facility**: 3 years
- **Optimum period of running efficiency**: 3-4 years
- **Run down period**: 3 years

The interview process identified the term ‘future proofing’ which is used to describe the process of trying to anticipate future developments to minimise negative consequences or conversely maximise potential opportunities. This was perceived as problematic particularly in relation to social PPPs as this type of project is usually initiated at
Government level and therefore difficult to predict future infrastructure at this level. However, a more optimistic view advocated the requirement to make educated deductions about possible building changes in the future to accommodate growing / new needs. To illustrate this point, the case of the Royal Women’s Hospital in Melbourne was discussed. In this instance the brief specifically required that extras floors should be accommodated into the design. It was noted though that unless the brief specifically states the requirement for these allowances then the bid costs would be higher if these allowances were made (and not requested).

Growing Government support for PPPs was viewed as related to the inclusion of long-term maintenance for the life of the contract. The Government was observed as more interested in the facilities management (FM) component of a PPP bid than the D&C component. The FM component is characteristically the highest cost in a PPP bid, i.e. the maintenance of a facility over a 25-30 year period compared to the initial smaller construction cost. Governments commonly specify that the facility be working at the end of the contract as it was the outset. However, bidders, being mindful of the need for future proofing a facility, accept that components of a facility may become redundant, a factor that needs to be built into long term planning. It was noted that on a standard D&C bid that the Government was less concerned about the issue of lifecycle costs, for example in the case of Bathurst hospital.

The coverage of costs associated with lifecycle analysis is usually borne by the Facility Maintenance (FM) provider, however sometimes the FM provider disputes this. Typically, the building contractor will spend time and money in the assessment or review of lifecycle costs. The Long Bay Correctional Centre bid submitted by Thiess was used as an example. Here disagreement arose between Thiess (the contractor) and Transfield (the FM) over who should have responsibility for the provision of lifecycle cost analysis.

As the FM component is typically the highest cost of a bid, the FM provider can be a risky partner in the SPV. A high financial loss can be incurred if the facility maintenance costs have not been accurately gauged, and as has been discussed above – this can be a difficult task.
Facilities management was viewed as the area where there exists potential for long term innovation. In the case of facility maintenance, the view held by some, was this was the reason that PPP projects may not always be in the best interest of the project or community. In some cases it was perceived that the owner of the facility may have an interest in the maintenance but the investor may not.

4.1.10 Debt and Equity

As previously discussed in the review of bidding costs, there has been a shift from the practice of construction companies investing substantial equity into PPP projects to the provision of construction services underpinned by much smaller investment sums in the project.

Common practice reported is for banks and specialist equity providers for example Bilfinger Berger to put up the majority of the finance. Such a shift was viewed as a safer and natural progression, enabling construction companies to remain focused on their area of expertise – construction management rather than financial and investment.

The following other issues relating to debt and equity were also raised during the interview process:

- Debt funds PPP projects, usually 90% debt and 10% equity
- Banks and bondholders provide the debt
- Financial institutions will usually require construction companies to carry some of the ‘hurt money’ (i.e. if the bid is not successful)
- Tollway constructions tend to have a greater proportion of equity
- The entrance of superannuation funds into the market has become a significant factor in terms of fund provision
- Bonds provide another method of financing, for example in the case of the Royal Women’s Hospital
4.1.11 Bundling and Economies of Scale

Bundling is a term frequently used in relation to PPP contracts. In the literature there exist a couple of different definitions for the term. Firstly, a contract where maintenance and construction is combined:

“This integration (bundling) within a long term partnership framework provides financial motivation for the project company to think beyond the design stage and build in energy reducing and waste minimising features that may cost more initially but result later in lower operating and running costs, and so deliver cost effectiveness over time”

(Grimsey and Lewis, 2004, p.1)

The second usage of the term ‘bundling’ was a reference to the practice of constructing more than one facility under the one contract. An example provided was the NSW first schools PPP contract where nine schools were ‘bundled’ into the one contract to create an economy of scale and a greater incentive for consortiums to bid. There were diverse views from the interviewees as to whether there were indeed advantages with this practice. A summary follows:

‘Advantages’

– Bundling of smaller projects into a sizeable project encourages larger firms to bid
– Enables some of the smaller construction companies to bid – possibly helping keep bids competitive via increased numbers of bidders
– More standardised projects, e.g. schools – problems of construction of one school could be offset with others that generate revenue
– (In a relatively immature market, with design heavily standardised) Enables smaller firms and Governments to “cut their teeth on these projects”
– Risk can be spread over a number of the bundled projects and therefore had the potential to reduce risk.
‘Disadvantages’

- This type of bundling can be complex, from both contractual and technical points of view, and therefore still not enough incentive for larger companies to bid on when considering the business opportunities.
- Lack of real cost savings if there are diverse localities within a bundled project.

4.1.12 Current Australian PPP Projects

Part of Stage 1 of the case study process involved mapping all Australian PPP projects undertaken from 1988. This is seen as the start of a key period both in terms of Government policy beginning to encourage the use of PPPs and the start of some major infrastructure projects in Australia. In the main, the data illustrates that the application of the PPP approach to social infrastructure PPPs is a relatively recent trend. However many of the projects currently under consideration are for social PPP projects. Whether or not these projects progress to fruition will largely depend on the perceived risks and returns to both the public and private sectors. The number of proposed social PPP projects in Australia is on the increase and there are a number of private sector players who are willing to bid in this environment, regardless of perceived risk and reward issues. The interview process at organisational level allowed for the development of the following table, Table 8, which maps PPP projects from the late 1980’s until the present.
<table>
<thead>
<tr>
<th>Year</th>
<th>Gov</th>
<th>Type</th>
<th>Project</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1988</td>
<td>NSW</td>
<td>E</td>
<td>Sydney Monorail</td>
<td>Completed – now in operational stage</td>
</tr>
<tr>
<td>1988</td>
<td>QLD</td>
<td>E</td>
<td>Logan Motorway</td>
<td>Completed – now in operational stage</td>
</tr>
<tr>
<td>1992</td>
<td>NSW</td>
<td>E</td>
<td>Sydney Harbour Tunnel</td>
<td>Completed – now in operational stage</td>
</tr>
<tr>
<td>1992</td>
<td>NSW</td>
<td>E</td>
<td>M4 Tollway</td>
<td>Completed – now in operational stage</td>
</tr>
<tr>
<td>1992</td>
<td>NSW</td>
<td>E</td>
<td>M5 Tollway</td>
<td>Completed – now in operational stage</td>
</tr>
<tr>
<td>1993</td>
<td>NSW</td>
<td>S</td>
<td>Junee Correctional Centre</td>
<td>Contract awarded 1991. First correctional facility in Australia to be designed, constructed &amp; managed by the private sector under a single contractual arrangement. Opened &amp; completed 1993 by Australasian Correctional Services Pty Ltd (Wackenhut Corrections Corporation, ADT Australia &amp; Thiess Contractors Pty Limited)</td>
</tr>
<tr>
<td>1995</td>
<td>SA</td>
<td>S</td>
<td>Modbury Hospital</td>
<td>First privately managed public hospital in SA. Awarded to Healthscope Ltd.</td>
</tr>
<tr>
<td>1996</td>
<td>NSW</td>
<td>E</td>
<td>Prospect Water Filtration Plant</td>
<td>Completed – now in operational stage</td>
</tr>
<tr>
<td>1996</td>
<td>NSW</td>
<td>E</td>
<td>Redbank Power Station</td>
<td>Completed – now in operational stage</td>
</tr>
<tr>
<td>1996</td>
<td>NSW</td>
<td>S</td>
<td>Port Macquarie Hospital</td>
<td>Completed – now in operational stage</td>
</tr>
<tr>
<td>1996</td>
<td>NSW</td>
<td>S</td>
<td>Hawkesbury Hospital</td>
<td>Planning for new hospital commenced 1989. Whilst detailed planning was undertaken &amp; work began on site, capital funds were not allocated to the program past this early stage ($6 million expended). NSW Department of Health identified the new hospital for “privatisation” in 1992. 1993 EOI for the development process were called from not-for-profit organisations. Five expressions of interest were received, short-listed to two. Contract awarded to Catholic Health Care Services. Fletcher Construction Limited, commenced work on site in February 1995 &amp; site was “handed over” to Catholic Healthcare at the beginning of June 1996.</td>
</tr>
<tr>
<td>1996</td>
<td>VIC</td>
<td>S</td>
<td>Women’s Correctional Facility, Deer Park</td>
<td>1994, private sector consortium selected as preferred tenderer to build, own &amp; operate new facility. Arrangements for the establishment of the correctional centre were finalised in June 1995.</td>
</tr>
<tr>
<td></td>
<td>VIC</td>
<td>S</td>
<td>Metropolitan Women’s Correctional Centre</td>
<td>1994, private sector consortium selected as preferred tenderer to build, own &amp; operate new facility. Arrangements for the establishment of the correctional centre were finalised in June 1995.</td>
</tr>
<tr>
<td>1997</td>
<td>NSW</td>
<td>E</td>
<td>M2 Hills Motorway</td>
<td>Completed</td>
</tr>
<tr>
<td>1997</td>
<td>NSW</td>
<td>E</td>
<td>Pyrmont Light Rail</td>
<td>Completed. Contract awarded to Pyrmont Light Rail Company Pty Limited (PLRC) &amp; Sydney Light Rail</td>
</tr>
<tr>
<td>Year</td>
<td>Gov</td>
<td>Type</td>
<td>Project</td>
<td>Status</td>
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</tr>
<tr>
<td>1997</td>
<td>VIC</td>
<td>S</td>
<td>Port Phillip Prison Metropolitan Men’s Prison,</td>
<td>1995, project brief issued for the design, construction &amp; operation. Tender submissions were received from 3 bidders. 1996, the Government advised the bidders that their submissions did not meet all the criteria of the project brief &amp; resubmit their bid. Successful bidder 1996, Australian Correctional Facilities Pty Ltd (Fletcher Construction Australia &amp; Group 4 Correction Services Pty Ltd financier Dresdner Australia Ltd). Total cost to the consortium of $60 million, funded from $55 million debt financing &amp; $5 million equity contributions. Completed 1997</td>
</tr>
<tr>
<td>1997</td>
<td>WA</td>
<td>S</td>
<td>Peel Health Campuses</td>
<td>Contract with Health Solutions (WA) Pty Ltd for the management of services at Peel Health Campus. Part of the site on which the hospital stands is leased to CAMS who contracted Leighton’s Building Company to extend the original hospital building.</td>
</tr>
<tr>
<td>1998</td>
<td>QLD</td>
<td>S</td>
<td>Robina Hospital</td>
<td>Completed – now in operational stage</td>
</tr>
<tr>
<td>1998</td>
<td>VIC</td>
<td>S</td>
<td>Latrobe / Mildura Hospital</td>
<td>Completed – now in operational stage</td>
</tr>
<tr>
<td>1998</td>
<td>WA</td>
<td>S</td>
<td>Joondalup Health Campuses</td>
<td>1998, the Joondalup Health Campus completed. Health Care of Australia (HCoA) provided hospital services to public patients at the Joondalup Health Campus</td>
</tr>
<tr>
<td>1999</td>
<td>NSW</td>
<td>E</td>
<td>Stadium Australia, Olympic Stadium</td>
<td>Completed – now in operational stage</td>
</tr>
<tr>
<td>1999</td>
<td>NSW</td>
<td>E</td>
<td>Superdome, Olympic Park</td>
<td>Completed – now in operational stage</td>
</tr>
<tr>
<td>1999</td>
<td>NSW</td>
<td>E</td>
<td>Picton Regional Sewerage Scheme</td>
<td>Completed – now in operational stage</td>
</tr>
<tr>
<td>2000</td>
<td>NSW</td>
<td>E</td>
<td>Eastern Distributor Toll Road</td>
<td>Completed – now in operational stage</td>
</tr>
<tr>
<td>2000</td>
<td>NSW</td>
<td>E</td>
<td>Sydney Airport Link</td>
<td>Completed – now in operational stage</td>
</tr>
<tr>
<td>Year</td>
<td>Gov</td>
<td>Type</td>
<td>Project</td>
<td>Status</td>
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<tr>
<td>2000</td>
<td>VIC</td>
<td>S</td>
<td>Victorian County Court</td>
<td>Project announced 2000. Awarded to The Liberty Group Pty Ltd consisting of ABN AMRO, NM Rothschild &amp; Sons (Aust) Ltd (financiers), Multiplex Construction Ltd (construction), &amp; Honeywell Limited (facility services). Equity interest has since been sold &amp; the Liberty Group is a wholly owned subsidiary of Challenger Financial Services Group, an Australian property &amp; funds management company. Completed May 2002</td>
</tr>
<tr>
<td>2000</td>
<td>NSW</td>
<td>E</td>
<td>Cronulla wastewater Treatment project</td>
<td>Completed – now in operational stage</td>
</tr>
<tr>
<td>2001</td>
<td>NSW</td>
<td>S</td>
<td>First batch New Schools</td>
<td>Contract awarded 2002 to Axiom Education Pty Ltd ( Hansen Yunken Pty Ltd, St Hilliers Contracting Pty Ltd, ABN Amro Aust. Ltd, Spotless Services Australia Ltd.) Completed 2005</td>
</tr>
<tr>
<td>2001</td>
<td>QLD</td>
<td>E</td>
<td>Brisbane Air train City Link</td>
<td>Completed – now in operational stage</td>
</tr>
<tr>
<td>2001</td>
<td>SA</td>
<td>S</td>
<td>State Aquatic Centre</td>
<td>SA Minister for Sport &amp; Recreation committed the State Government to develop an aquatic centre via a PPP in late 2001 &amp; undertook to provide direct State funding where private investment was not available. Call for EOI from the private sector for the PPP procurement 2004.</td>
</tr>
<tr>
<td>2001</td>
<td>WA</td>
<td>S</td>
<td>Acacia Prison Project</td>
<td>Completed – now in operational stage</td>
</tr>
<tr>
<td>2002</td>
<td>NSW</td>
<td>E</td>
<td>M5 Toll way upgrade</td>
<td>Completed – now in operational stage</td>
</tr>
<tr>
<td>2002</td>
<td>NSW</td>
<td>U</td>
<td>Kogorah Town Centre revitalisation</td>
<td>$55 million contract with the developer Hightade Pty Ltd. Completed 2003</td>
</tr>
<tr>
<td>2002</td>
<td>VIC</td>
<td>E</td>
<td>Southern Cross [Spencer St] Station Redevelopment</td>
<td>Awarded to Civic Nexus consortium, comprising the following partners: ABN Amro Leighton Contractors; Daryl Jackson Architecture; Nicholas Grimshaw &amp; Partners; Honeywell Limited; &amp; Delaware North Australia. Anticipated completion 2006</td>
</tr>
<tr>
<td>2002</td>
<td>VIC</td>
<td>S</td>
<td>Casey Community Hospital [previously know as Berwick Hospital]</td>
<td>Awarded to Progress Health consortium, consisting of ABN AMRO, Multiplex Constructions, architects Silver Thomas Hanley Daryl Jackson &amp; facilities manager Multiplex Asset Management. Completed 2004.</td>
</tr>
<tr>
<td>2003</td>
<td>FED</td>
<td>E</td>
<td>Alice Springs-Darwin railway</td>
<td>Completed – now in operational stage</td>
</tr>
<tr>
<td>Year</td>
<td>Gov</td>
<td>Type</td>
<td>Project</td>
<td>Status</td>
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</tr>
<tr>
<td>2003</td>
<td>NSW</td>
<td>E</td>
<td>Eastern Creek Alternative Waste Technology Facility</td>
<td>Awarded to Global Renewables Eastern Creek Pty Ltd (a subsidiary of Global Renewables Limited). Opened 2004</td>
</tr>
<tr>
<td>2003</td>
<td>NSW</td>
<td>S</td>
<td>Parramatta Police Headquarters</td>
<td>Completed – now in operational stage</td>
</tr>
<tr>
<td>2003</td>
<td>NSW</td>
<td>S</td>
<td>Royal Newcastle Mater Hospital</td>
<td>Awarded to Novacare consortium (Abigroup, Compass Group, Honeywell, &amp; Westpac) &amp; contract signed on November 2005.</td>
</tr>
<tr>
<td>2003</td>
<td>VIC</td>
<td>S</td>
<td>Royal Women’s Hospital Redevelopment Project</td>
<td>Project announced 2003, contract awarded to Royal Women’s Health Partnership comprising Bilfinger Berger BOT (sponsor &amp; equity), Baulderstone Hornibrook (builder), United KG (facility maintenance manager), ANZ &amp; Macquarie Bank (financiers). Completion June 2008</td>
</tr>
<tr>
<td>2003</td>
<td>VIC</td>
<td>S</td>
<td>Partnerships Victoria Correctional Facilities – Remand Centre Raven Hall &amp; Programs Centre Lara</td>
<td>Victorian Correctional Infrastructure Partnership Pty Ltd, consisting of: Bilfinger Berger BOT GmbH (equity); Baulderstone Hornibrook (as the design &amp; construction company); &amp; United KG in conjunction with Baulderstone Services (as facility maintenance managers). The Bank of Scotland is the debt provider. Signed on 23 December 2003, the contract is for a period of 25 years. Facilities expected to be operational in early 2006.</td>
</tr>
<tr>
<td>2004</td>
<td>NSW</td>
<td>S</td>
<td>Newcastle Community Health Centre</td>
<td>Awarded to Austcorp &amp; the contract was signed on September 2005.</td>
</tr>
<tr>
<td>2004</td>
<td>NSW</td>
<td>U</td>
<td>Parramatta Civic Place development</td>
<td>2005/06 Finalising contract with Grocon Developments Pty Ltd. Construction is expected to begin late 2007. Anticipated completion by 2014</td>
</tr>
<tr>
<td>2004</td>
<td>TAS</td>
<td>S</td>
<td>Risdon Prison Redevelopment</td>
<td>Listed as potential PPP project. No longer on PPP Pipeline</td>
</tr>
<tr>
<td>2004</td>
<td>WA</td>
<td>S</td>
<td>Perth Convention &amp; Exhibition Centre</td>
<td>Completed 2004 by Multiplex consortium</td>
</tr>
<tr>
<td>2005</td>
<td>FED</td>
<td>E</td>
<td>National Water Initiative</td>
<td>Pipeline</td>
</tr>
<tr>
<td>2005</td>
<td>FED</td>
<td>S</td>
<td>Mulwala Munities Factory Development</td>
<td>Pipeline</td>
</tr>
<tr>
<td>Year</td>
<td>Gov</td>
<td>Type</td>
<td>Project</td>
<td>Status</td>
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<td>------------------------------------------------------------------------</td>
</tr>
<tr>
<td>2005</td>
<td>NSW</td>
<td>E</td>
<td>Cross City Tunnel</td>
<td>Completed – now in operational stage</td>
</tr>
<tr>
<td>2005</td>
<td>NSW</td>
<td>E</td>
<td>Western Sydney Orbital</td>
<td>Completed – now in operational stage</td>
</tr>
<tr>
<td>2005</td>
<td>NSW</td>
<td>E</td>
<td>Parramatta Transport Interchange</td>
<td>Pipeline</td>
</tr>
<tr>
<td>2005</td>
<td>NSW</td>
<td>E</td>
<td>RailCorp Rolling Stock</td>
<td>Ongoing</td>
</tr>
<tr>
<td>2005</td>
<td>NSW</td>
<td>E</td>
<td>Newcastle Port Multi-Purpose Container Terminal</td>
<td>EOI closed – February 2003. Two short-listed consortia, NovoLink &amp; Bouygues-Newcastle Stevedores, were invited to submit detailed proposals &amp; provide responses August 2005. Call for Detailed Proposals &amp; subsequent evaluation explored a model for private sector investment in building a large-scale multi-purpose terminal on the site. Evaluation determined that there was no suitable privately financed proposal for the site, however there was strong endorsement for the strategic importance of the site &amp; for the development of both general cargo &amp; container trade. Ongoing.</td>
</tr>
<tr>
<td>2005</td>
<td>NSW</td>
<td>S</td>
<td>Second batch New Schools</td>
<td>Project was awarded to Axiom Education NSW No. 2 Pty Ltd (ABN Amro, Babcock &amp; Brown, St Hilliers, Hansen Yuncken, Spotless Services) &amp; the contract was signed on 20 December 2005. Completed and operational.</td>
</tr>
<tr>
<td>2005</td>
<td>NSW</td>
<td>S</td>
<td>Bonnyrigg Public Housing Estate</td>
<td>EOI 2005. 2 consortia short-listed 2006. The following two proponents have been short-listed: Bonnyrigg Partnerships (Becton Group Holdings, Westpac Banking Corporation, Spotless, Property &amp; Facilities Pty Ltd, &amp; St George Community Housing Co-op Ltd); &amp; Sydney West Housing Partnerships (Urban Pacific Limited, Macquarie Bank, Transfield Services, &amp; Hume Community Housing Association). Responses to the Request for Detailed were received on 14 March 2006. Ongoing.</td>
</tr>
<tr>
<td>2005</td>
<td>NSW</td>
<td>S</td>
<td>Minto Public Housing Estate</td>
<td>Pipeline</td>
</tr>
<tr>
<td>2005</td>
<td>NSW</td>
<td>U</td>
<td>Liverpool '2020' development</td>
<td>Pipeline</td>
</tr>
<tr>
<td>2005</td>
<td>NT</td>
<td>E</td>
<td>AustralAsia Railway (Alice Springs to Darwin)</td>
<td></td>
</tr>
<tr>
<td>Year</td>
<td>Gov</td>
<td>Type</td>
<td>Project</td>
<td>Status</td>
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</tr>
<tr>
<td>2005</td>
<td>QLD</td>
<td>E</td>
<td>Brisbane City North-South Bypass Tunnel</td>
<td>Thursday, 27 April 2006 Council announced RiverCity Motorway as the preferred tenderer to build, own &amp; operate NSBT. The RiverCity Motorway consortium includes Leighton Contractors, Baulderstone Hornibrook with Bilfinger Berger Concessions &amp; ABN AMRO. Construction of the NSBT is scheduled to begin later this year, tunnel opened in 2010.</td>
</tr>
<tr>
<td>2005</td>
<td>QLD</td>
<td>E</td>
<td>Brisbane City Councils Airport Road Project</td>
<td>Stage 1 complete. Cross river tunnel in pipeline.</td>
</tr>
<tr>
<td>2005</td>
<td>QLD</td>
<td>E</td>
<td>Gateway Bridge Duplication &amp; Motorway Upgrade</td>
<td>The Expression of Interest stage attracted five consortia &amp; a call for tenders will be issued in September 2005. A contract is expected to be award in third quarter 2006 &amp; construction to commence in late 2006. The new Gateway Bridge operational in 2012.</td>
</tr>
<tr>
<td>2005</td>
<td>QLD</td>
<td>S</td>
<td>Southbank TAFE</td>
<td>30yr concession to Build &amp; Operate awarded April 2005 to Axiom Education QLD. Complete and operational.</td>
</tr>
<tr>
<td>2005</td>
<td>SA</td>
<td>S</td>
<td>Regional Police Station &amp; Court Facilities</td>
<td>Regional Police Stations &amp; Courts (SAPOL/CAA)</td>
</tr>
<tr>
<td>2005</td>
<td>VIC</td>
<td>E</td>
<td>Mitcham-Frankston Freeway project</td>
<td>Connect East (Thiess/John Holland) consortium completed in 2008, now operational.</td>
</tr>
<tr>
<td>2005</td>
<td>VIC</td>
<td>E</td>
<td>Ballarat / Creswick Reclaimed Water Project</td>
<td>Constructed in 2005 and now operational under a 5 year DBO contract.</td>
</tr>
<tr>
<td>2005</td>
<td>VIC</td>
<td>E</td>
<td>Echuca/Ochser Wastewater Treatment Plant</td>
<td>Operational under 25 year contract</td>
</tr>
<tr>
<td>Year</td>
<td>Gov</td>
<td>Type</td>
<td>Project</td>
<td>Status</td>
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</tr>
<tr>
<td>2005</td>
<td>VIC</td>
<td>E</td>
<td>Enviro Altona</td>
<td>This project did not progress as a Partnerships Victoria contract due to the insolvency of the private contractor. The project was structured as a design, build, operate contract with Simon Engineering.</td>
</tr>
<tr>
<td>2005</td>
<td>VIC</td>
<td>S</td>
<td>Box Hill Hospital Car Park</td>
<td>Completed and operational</td>
</tr>
<tr>
<td>2005</td>
<td>VIC</td>
<td>S</td>
<td>Royal Children’s Hospital</td>
<td>Completed in 2011 and now operational</td>
</tr>
<tr>
<td>2005</td>
<td>VIC</td>
<td>S</td>
<td>Royal Melbourne Showground Redevelopment</td>
<td>PPP Solutions, contract was executed on 22 June 2005 &amp; is for a period of 25 years, new showground completed in time for the staging of the 2006 Royal Melbourne Show.</td>
</tr>
<tr>
<td>2005</td>
<td>VIC</td>
<td>U</td>
<td>Melbourne Wholesale Fruit, Vegetable, Flower &amp; Fish Markets Redevelopment</td>
<td>Relocated to Epping with expected completion of 2014/15.</td>
</tr>
<tr>
<td>2005</td>
<td>WA</td>
<td>S</td>
<td>Perth CBD Courts</td>
<td>Awarded to Western Liberty Group, 25yr contract.</td>
</tr>
<tr>
<td>2006</td>
<td>NSW</td>
<td>E</td>
<td>Eurobodalla Shire council: School relocation/retail centre car park</td>
<td>Completed</td>
</tr>
<tr>
<td>2006</td>
<td>NSW</td>
<td>E</td>
<td>Sydney Port Corporation Intermodal logistic Facilities</td>
<td>Ongoing</td>
</tr>
<tr>
<td>2006</td>
<td>NSW</td>
<td>E</td>
<td>Railcorp Southwest Rail Link</td>
<td>Ongoing</td>
</tr>
<tr>
<td>2006</td>
<td>NSW</td>
<td>E</td>
<td>Railcorp Northwest Rail Link</td>
<td>Pipeline</td>
</tr>
<tr>
<td>2006</td>
<td>NSW</td>
<td>E</td>
<td>RailCorp Harbour Link</td>
<td>Pipeline</td>
</tr>
<tr>
<td>2006</td>
<td>NSW</td>
<td>E</td>
<td>Upgrade of Pacific Highway</td>
<td>In progress in various stages (some parts as traditional D&amp;C)</td>
</tr>
<tr>
<td>2006</td>
<td>NSW</td>
<td>E</td>
<td>M4 extension</td>
<td>Ongoing</td>
</tr>
<tr>
<td>2006</td>
<td>NSW</td>
<td>E</td>
<td>Sydney Water Corp – various Recycling initiatives</td>
<td>Ongoing</td>
</tr>
<tr>
<td>2006</td>
<td>NSW</td>
<td>S</td>
<td>Development of a specialist medical centre at Singleton Hospital</td>
<td>The partnership structure is being reviewed.</td>
</tr>
<tr>
<td>2006</td>
<td>NSW</td>
<td>S</td>
<td>TAFE Colleges &amp; New Schools</td>
<td>Ongoing</td>
</tr>
<tr>
<td>2006</td>
<td>NSW</td>
<td>S</td>
<td>Royal North Shore Hospital, Redevelopment Stage 2</td>
<td>First stage completed in 2011, final stage to be completed in 2014. 25-year PPP.</td>
</tr>
<tr>
<td>2006</td>
<td>NSW</td>
<td>S</td>
<td>Orange-Bloomfield Hospital Redevelopment</td>
<td>Completed in 2011 and now operational</td>
</tr>
<tr>
<td>2006</td>
<td>NSW</td>
<td>S</td>
<td>Auburn Health Services Redevelopment</td>
<td>Completed in 2010 and now operational</td>
</tr>
<tr>
<td>2006</td>
<td>NSW</td>
<td>S</td>
<td>Northern Beaches Hospital</td>
<td>Contract awarded with project to be operational in 2018</td>
</tr>
<tr>
<td>Year</td>
<td>Gov</td>
<td>Type</td>
<td>Project</td>
<td>Status</td>
</tr>
<tr>
<td>------</td>
<td>-----</td>
<td>------</td>
<td>---------</td>
<td>--------</td>
</tr>
<tr>
<td>2006</td>
<td>NSW</td>
<td>S</td>
<td>Long Bay Forensic Hospital</td>
<td>Financial close on deal for $130M likely to occur soon with PPP Solutions consortium (Multiplex, Honeywell, Compass Group, &amp; Babcock &amp; Brown) &amp; the contract was signed on 23 January 2006.</td>
</tr>
<tr>
<td>2006</td>
<td>NSW</td>
<td>S</td>
<td>New Court Facilities</td>
<td>Ongoing</td>
</tr>
<tr>
<td>2006</td>
<td>NSW</td>
<td>S</td>
<td>New Correctional Facilities</td>
<td>Ongoing</td>
</tr>
<tr>
<td>2006</td>
<td>NSW</td>
<td>S</td>
<td>Police Station Maintenance</td>
<td>Ongoing</td>
</tr>
<tr>
<td>2006</td>
<td>NSW</td>
<td>S</td>
<td>Living Communities, Around 4 Urban Renewal Projects</td>
<td>Ongoing</td>
</tr>
<tr>
<td>2006</td>
<td>NSW</td>
<td>S</td>
<td>Accommodation Projects for Dep. Of Ageing, Disability &amp; Home Care</td>
<td>Ongoing</td>
</tr>
<tr>
<td>2006</td>
<td>NSW</td>
<td>U</td>
<td>Hawkesbury Council Commercial Sites Windsor</td>
<td>Completed.</td>
</tr>
<tr>
<td>2006</td>
<td>QLD</td>
<td>E</td>
<td>Brisbane City Council’s Hale Street Link Road &amp; Bridge</td>
<td>Operational</td>
</tr>
<tr>
<td>2006</td>
<td>QLD</td>
<td>S</td>
<td>Royal National Association’s Showground’s Redevelopment</td>
<td>Ongoing with stage 1 complete in 2011</td>
</tr>
<tr>
<td>2006</td>
<td>QLD</td>
<td>S</td>
<td>Pharmacy Australia Centre of Excellence</td>
<td>Completed by Baulderstone’s in 2009 and now in operational stage</td>
</tr>
<tr>
<td>2006</td>
<td>QLD</td>
<td>S</td>
<td>Greater Springfield campus</td>
<td>Operational</td>
</tr>
<tr>
<td>2006</td>
<td>QLD</td>
<td>U</td>
<td>Boggo Road Mixed Use Precinct</td>
<td>State Government endorsed a draft Master Plan to redevelop the former Boggo Road Goal site into a major research, business &amp; residential precinct. The Department of State Development, Trade &amp; Innovation worked with various agencies to establish a core of eco science research activities on the site as part of the redevelopment. Ongoing with Leighton as a major stakeholder.</td>
</tr>
<tr>
<td>2006</td>
<td>SA</td>
<td>S</td>
<td>Adelaide’s Women Prison</td>
<td>Complete and operational</td>
</tr>
<tr>
<td>2006</td>
<td>SA</td>
<td>S</td>
<td>Adelaide’s Men’s Prison</td>
<td>Complete and operational</td>
</tr>
<tr>
<td>2006</td>
<td>SA</td>
<td>S</td>
<td>Adelaide Supreme Court</td>
<td>Ongoing - Business Case completed and funding approved by SA Government</td>
</tr>
<tr>
<td>2006</td>
<td>TAS</td>
<td>S</td>
<td>Future Public Housing under consideration</td>
<td>Ongoing</td>
</tr>
<tr>
<td>2006</td>
<td>VIC</td>
<td>E</td>
<td>Cardinia Shire Council: 'Connecting Cardinia' road program</td>
<td>Cardinia Shire Council launched a $17 million project to construct 50km of the shire’s 13 most critical local arterial roads. Operational.</td>
</tr>
<tr>
<td>2006</td>
<td>VIC</td>
<td>S</td>
<td>Victoria’s Women Prison</td>
<td>Complete and operational</td>
</tr>
<tr>
<td>2006</td>
<td>VIC</td>
<td>S</td>
<td>Swinburne University Hawthorn Campus buildings</td>
<td>Completed</td>
</tr>
<tr>
<td>Year</td>
<td>Gov</td>
<td>Type</td>
<td>Project</td>
<td>Status</td>
</tr>
<tr>
<td>------</td>
<td>-----</td>
<td>------</td>
<td>------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>2006</td>
<td>VIC</td>
<td>S</td>
<td>Monash University College of Pharmacy Redevelopment</td>
<td>Operation stages of a 25-year PPP</td>
</tr>
<tr>
<td>2006</td>
<td>VIC</td>
<td>S</td>
<td>Partnerships Victoria Correctional Facilities</td>
<td>Operational</td>
</tr>
<tr>
<td>2006</td>
<td>VIC</td>
<td>S</td>
<td>Affordable Housing</td>
<td>Ongoing</td>
</tr>
<tr>
<td>2006</td>
<td>VIC</td>
<td>S</td>
<td>Supreme Court Redevelopment</td>
<td>Completed in 2009.</td>
</tr>
<tr>
<td>2006</td>
<td>VIC</td>
<td>U</td>
<td>Greensborough Town Centre Redevelopment</td>
<td>Ongoing – currently at various stages of consultation and planning</td>
</tr>
<tr>
<td>2006</td>
<td>VIC</td>
<td>U</td>
<td>Port Phillip ‘Triangle Site’ Redevelopment</td>
<td>Ongoing – community and stakeholder consultation complete in 2012, currently at various planning stages.</td>
</tr>
<tr>
<td>2006</td>
<td>VIC</td>
<td>U</td>
<td>Cardinia Shire Civic centre Construction</td>
<td>Due to open in early 2014</td>
</tr>
<tr>
<td>2006</td>
<td>WA</td>
<td>S</td>
<td>Considering PPP for Health &amp; Aged Care facilities</td>
<td>Ongoing</td>
</tr>
<tr>
<td>2006</td>
<td>ACT</td>
<td>S</td>
<td>ANU Student Accommodation Complex</td>
<td>Complete and operational</td>
</tr>
<tr>
<td>2007</td>
<td>VIC</td>
<td>S</td>
<td>Melbourne Royal Children’s Hospital</td>
<td>25 year BOOT from Nov 2007</td>
</tr>
<tr>
<td>2007</td>
<td>WA</td>
<td>S</td>
<td>Murdoch University Village Campus</td>
<td>Operational in late 2007</td>
</tr>
<tr>
<td>2008</td>
<td>ACT</td>
<td>S</td>
<td>University of Canberra student accommodation</td>
<td>Opened and operational in 2008</td>
</tr>
<tr>
<td>2008</td>
<td>NSW</td>
<td>U</td>
<td>Colongra gas pipeline</td>
<td>Operated by Singapore Power from mid-2008</td>
</tr>
<tr>
<td>2008</td>
<td>QLD</td>
<td>E</td>
<td>BrisConnect road link</td>
<td>Typical BOOT project operational in stages from mid-2008</td>
</tr>
<tr>
<td>2008</td>
<td>QLD</td>
<td>E</td>
<td>Airport link and busway</td>
<td>Thiess/John Holland contract awarded from mid-2008</td>
</tr>
<tr>
<td>2008</td>
<td>QLD</td>
<td>S</td>
<td>Student accommodation at Southbank</td>
<td>Contract awarded in late 2008</td>
</tr>
<tr>
<td>2008</td>
<td>SA</td>
<td>S</td>
<td>6 new schools</td>
<td>Contract awarded in mid-2009 to Hansen Yuncken/Lend Lease consortium</td>
</tr>
<tr>
<td>2009</td>
<td>QLD</td>
<td>S</td>
<td>SE QLD new schools</td>
<td>Leighton consortium awarded contract in mid-2009</td>
</tr>
<tr>
<td>2009</td>
<td>VIC</td>
<td>U</td>
<td>Desalination plant</td>
<td>Contract awarded in Sept 2009</td>
</tr>
<tr>
<td>2010</td>
<td>VIC</td>
<td>S</td>
<td>Ararat Prison</td>
<td>Contract awarded in July 2010</td>
</tr>
<tr>
<td>2010</td>
<td>VIC</td>
<td>E</td>
<td>Peninsula Link</td>
<td>Awarded in mid-2010</td>
</tr>
<tr>
<td>Year</td>
<td>Gov</td>
<td>Type</td>
<td>Project</td>
<td>Status</td>
</tr>
<tr>
<td>------</td>
<td>-----</td>
<td>------</td>
<td>---------</td>
<td>--------</td>
</tr>
<tr>
<td>2011</td>
<td>WA</td>
<td>S</td>
<td>QE Hospital carpark</td>
<td>Contract awarded in July 2011</td>
</tr>
<tr>
<td>2011</td>
<td>NT</td>
<td>S</td>
<td>Darwin Prison</td>
<td>$500M contract awarded to Baulderstone in late 2011</td>
</tr>
<tr>
<td>2011</td>
<td>QLD</td>
<td>U</td>
<td>Gold Coast rapid transit phase 1</td>
<td>Contract awarded in June 2011</td>
</tr>
<tr>
<td>2011</td>
<td>VIC</td>
<td>S</td>
<td>VIC Cancer Centre</td>
<td>Awarded Dec 2011</td>
</tr>
<tr>
<td>2012</td>
<td>QLD</td>
<td>U</td>
<td>New rail rolling stock</td>
<td>Preferred bidder due to be announced in late 2013.</td>
</tr>
<tr>
<td>2012</td>
<td>QLD</td>
<td>S</td>
<td>10 new schools</td>
<td>Request for expressions of interest (RFEOI) closed mid-2013</td>
</tr>
<tr>
<td>2013</td>
<td>NSW</td>
<td>S</td>
<td>Northern Beaches Hospital</td>
<td>Preferred bidder announced in 2014.</td>
</tr>
<tr>
<td>2013</td>
<td>NSW</td>
<td>E</td>
<td>West Connex tollroad lining W.Sydney with Airport</td>
<td>Due to start in 2015</td>
</tr>
<tr>
<td>2013</td>
<td>NSW</td>
<td>E</td>
<td>Sydney Lightrail</td>
<td>Stage 1 construction began in 2012 (Inner West section). South East section currently on public exhibition</td>
</tr>
<tr>
<td>2013</td>
<td>QLD</td>
<td>E</td>
<td>Brisbane cross-river rail tunnel</td>
<td>Ongoing planning stages</td>
</tr>
<tr>
<td>2013</td>
<td>VIC</td>
<td>S</td>
<td>Ravenhall new medium security prison</td>
<td>RFEOI released mid-2013</td>
</tr>
<tr>
<td>2013</td>
<td>VIC</td>
<td>E</td>
<td>Melbourne East-West link stage 1</td>
<td>On public exhibition until December 2013</td>
</tr>
</tbody>
</table>

Table 8: PPP-type projects in Australia since 1988

Key
E  Hard Economic Infrastructure
S  Hard Social Infrastructure
U  Urban Renewal & associated Infrastructure
4.2 SUMMARY OF STAGE 1 OF THE CASE STUDY

In summary, the main findings of Stage 1 of the case study (organisational level) are summarised below:

**Bid Costs**

- A frequently voiced concern expressed throughout the research was the issue of the high costs involved in bidding for PPP projects.
- Additional costs for a D&C/PPP bid believed to be around 5 – 10% higher than a ‘standard’ D&C.
- Several factors impacted upon the identification of costs of bidding for a specific project and a definitive comparison between the two procurement methods. This included commercial sensitivities and complexity of data collection including the lack of clearly defined cost centres.
- Key factors driving higher costs include additional legal fees and non-standardised contracts.

**Legal Costs**

- Legal costs accepted by all as an inevitable consequence of the construction industry’s highly litigious environment however participants viewed D&C PPP costs as ‘excessively high’.
- Legal costs are typically regarded as non value add – therefore is the construction industry exaggerating ‘high legal costs’?
- The time (and hence cost) associated with a contract’s finer legal points, and the lack of standardised contract documentation seen as key in driving up the legal costs associated with a D&C/PPP bid.

**Standardised Documentation**

- Consensus that lack of consistent principles and practices across state jurisdictions was reflected in higher legal costs.
- Divergent views existed on how to best standardise PPP processes and which model to follow.
• Concerns that international precedents may not reflect the smaller scale of the Australian PPP market.
• Significant work is being done by Government agencies to standardise some of their processes based upon previous experiences and feedback from the private sector
• Some caution urged regarding a tightly standardised approach. Envisaged this could impede upon flexibility and innovation, key strengths associated with a PPP.

Design Documentation

• The requirements to supply duplicate copies of documentation and near completed designs are key drivers of higher D&C/PPP bid costs.

Innovation

• A range of views held on what constitutes ‘innovation’.
• Greater innovation linked to higher bid costs and higher risk.
• The PPP and innovation link disputed by some, instead advocating there was an undue concentration on the bottom line.

Public Sector Comparator (PSC) and the Role of Government

• The PSC does have an influence on bidding, e.g. commercial pressure will exist to develop designs fully in order to improve the chance of winning.
• There was agreement of a requirement for a benchmark tool.
• A wide range of views in relation to the value and effectiveness of the PSC were expressed.
• The main concerns with PSCs are the lack of consistency and accuracy in how they are formulated, used and disclosed.
• There is a shift amongst the different jurisdictions towards partial disclosure.
• Concerns exist that PSCs are being unduly used to reduce the size and scope of projects and to determine which ones proceed.
• General frustration exists with the role of Government, though some of this likely to be related to the fact that Governments and consortiums are often diametrically opposed in terms of desired outcomes.

**Lifecycle Costs and Future-proofing**

• Lifecycle analysis is critical during the design process of a PPP project in an attempt to predict or accommodate future events.
• Future proofing perceived as problematic as social PPPs usually initiated at Government level and therefore difficult to predict future infrastructure at this level.
• Growing Government support for PPPs was viewed as related to the inclusion of long-term maintenance for the life of the contract.
• Coverage of lifecycle analysis costs usually born by the FM provider, however this is sometimes disputed and typically building contractors will spend time and money in this area.
• Lifecycle analysis is critical during the design process of a PPP project in an attempt to predict or accommodate future events.
• There has been a shift to construction companies investing much smaller investment sums into PPP projects. This shift was seen as a safer and natural progression, allowing a focus on their area of expertise.
• Banks and specialise equity companies will put up the majority of finance.

In summary there was a very strong consensus from the 16 interview participants at organisational level with regards to the results above. These 16 participants are representatives from organisations who form the various main consortia of bidders for PPP projects in Australia.
5.0 CHAPTER FIVE: CASE STUDY STAGE TWO

5.1 RESULTS FROM STAGE 2 OF THE CASE STUDY: PROJECT LEVEL

In an effort to understand the situation and context surrounding the formation, development and feasibility of Stadium Australia, the Sydney Super-Dome, Top Ryde and the Mater Hospital there is a real need to become familiar with various aspects of what are extremely complex projects. The initial part of each section of this chapter concentrates on the background of each project.

Secondly, the interview process with key project stakeholders from each of the case study projects, i.e. Stadium Australia, the Super-Dome, Top Ryde and the Mater Hospital reveal project specific issues relating to factors for successful risk identification, allocation and management. Significant comments from the interview process have been incorporated throughout the relevant sections of each of the case study projects.

Thirdly, a review of project documentation and a summary of the analyses of the results of each case study project allows for the compilation of project specific risk factor framework. The framework is presented in tabular form for each of the case study projects.

The Research Method Chapter provides further information on the actual interview structure.
5.2 ANZ STADIUM

Figure 9: Olympic mode configuration (Stadium Australia Group 1996a)
5.2.1 Project History

Sydney’s successful bid for the 2000 Olympic Summer Games can be explained through meticulous planning and learning from the unsuccessful Brisbane and Melbourne bids for the 1992 and 1996 Olympics respectively (Burroughs, 1999). Sydney inherited a wealth of knowledge and experience in over 10 years of the Australian Olympic Committee (AOC) planning bids. Key issues in Sydney’s bid were the environmental dimension that became known as the ‘Green Games’ and the inclusion of an Olympic Village, housing all athletes, at the main Olympic site.

Following the announcement on 24th September 1993, that Sydney had won the right to host the games of the XXVII Olympiad, work began on the planning and development of the facilities. The Olympic Co-ordination Authority (OCA) was established on 30 June 1995 by the New South Wales (NSW) State Government, replacing Homebush Bay Corporation (HBC) to oversee the process. The NSW Government issued a call for proposals in August 1994 for private sector investment in the new Olympic stadium facility. This call was framed around a PPP delivery scheme with an intention for the Government to shortlist successful tenderers (Magub and Hampson, 1999).

Multiplex and Hambros led the preferred private sector consortium, known as Australia Stadium 2000, to respond to HBC’s invitation for proposals to design, construct, finance, operate and maintain an Olympic stadium. In January 1995, HBC announced a shortlist of three consortia, including the then named ‘Australia Stadium 2000’ consortium, and a call for detailed proposals was issued in June 1995. It was at this time that Macquarie Bank joined the consortium. In September 1995 Obayashi Corporation also joined the consortium (Stadium Australia Group, 1996a; Sydney Olympic Park Authority, 2002).

In January 1996 negotiations began with the ‘Australia Stadium 2000’ consortium as the preferred proponent to build, finance and operate the Sydney Olympic Stadium (Magub and Hampson, 1999). It was not until August 1996 that the Olympic Co-ordination Authority then awarded the proposal to design, construct and operate the facility to the ‘Australia Stadium 2000’ consortium. The Stadium Australia Trust and
OCA signed the project agreement in September 1996 (Stadium Australia Group, 1996a; Sydney Olympic Park Authority, 2002).

Although the stadium evolved as a result of Sydney’s successful bid for the 2000 Olympics, the project is now being run by Stadium Australia Management (SAM) as a classic PPP scheme. The A$615 million project was capable of seating 110,000 spectators for the Olympic Games, and was reconfigured, following the games, to provide a capacity of 80,000 spectators.

5.2.2 Project Group Structure and Contractual Arrangements

The literature review confirmed the critical importance of a well organised and defined structure for the stakeholders in the PPP project. It also noted the importance of reputation and profile among the participating parties as a success factor in winning the bid. The project structure forms the foundation for risk management and the necessary risk allocation. In the event of a dispute, the legal structure and associated contractual agreements should be defined to a level that allows for the responsibility and resolution procedures that prompt resolution to be achieved.

Key Parties

According to The Stadium Australia Group, (1996a) the following organisations were the key private sector companies that constituted the Australia Stadium 2000 consortium. The organisations are known as ‘founders’ of the joint venture:

- *Multiplex Constructions Pty Limited* (Design and Construction Contractor).


- *Obayashi Corporation* (Head Contractor).

Along with the founding organisations of the joint venture, several commercial investors were identified to participate in the project. The commercial investors are
responsible for various elements of the operation of Stadium Australia. These organisations were also equity subscribers in the Trust and Stadium Australia Management. They include:

- *Ogden IFC* (Facilities Manager).
- *Gardner Merchant* (Caterer).

The list of founding organisations and commercial investors is no doubt impressive, drawing the conclusion that the consortium had a wealth of expertise, considerable experience, high profile and a good reputation. Without doubt, this played a significant role in the consortium’s successful bid.

**5.2.3 Relationships and Contractual Arrangements**

The OCA granted the Stadium Australia Trust the Trust Lease on the completion date of the stadium, being March 1999. The term of the Trust Lease expires on 31 January 2031 or, if the Project agreement is terminated before this date, on the date of termination of the project agreement. On the lease expiry date, the ownership and operational rights of the project transfers to the government (OCA) for nominal consideration. Up until that time, the Trust Lease covers, by lease and exclusive licence, the land on which Stadium Australia is constructed. The Trust Lease does not however cover the precinct or adjacent area. The Trust has in turn granted the sublease and sub-licence over the same land to Stadium Australia Management.

Stadium Australia Management is therefore the operational entity of the group which generates revenue from operation of the facility. From this revenue Stadium Australia Management is required to meet certain operating expenses. The Sublease obliges Stadium Australia Management to make quarterly fixed and variable rental payments to the Trust. The rental income received by the Trust is used to meet payments to the major maintenance reserve, the principal and interest obligations under the debt documents, administration expenses and payment obligations to OCA under the Trust
Lease and the Project Agreement (Stadium Australia Group, 1996a; Sydney Olympic Park Authority, 2002).

The principal legal relationships between the parties described are illustrated in the following figure (Figure 10):

![Figure 10: Legal Structure between initial Key Parties (Stadium Australia Group 1996a)](image)

Beyond this intricate web of legal relationships, the Trust has an appointed Trustee. Perpetual Trustee Company Limited is one of the largest independent trust companies in Australia and has this responsibility. The Trust manager is Tower Hill Investment Managers Limited, a company jointly owned by Hambros and Multiplex (Stadium Australia Group, 1996a).

The complexity of relationships and structure established for the project and subsequent operation is further demonstrated and summarised by the Stadium Australia Group (1996a) and Sydney Olympic Park Authority (2002), in the Contract Summary documents, part of which are located in Appendix Three of this thesis. Appendix Three also contains a Table that provides an overview of the various contracts that make up the broader PPP agreement for Stadium Australia whereby contracts are identified into two categories. ‘Category 1’ contracts are seen as documenting the central commercial structure of the transaction and ‘Category 2’ contracts are considered to be material, but
tend to support or compliment rights or obligations contained in the ‘Category 1’ contracts.

5.2.4 Construction and Developmental Arrangements

The Olympic Coordination Authority (OCA) prepared a Development Application (DA) for Stadium Australia and the surrounding precinct on behalf of the Stadium Trust. The Department of Urban Affairs and Planning gave consent for the application on 8 August 1996. Previous literature identifies the approval stage as both a key risk and success factor area for all parties involved (UNIDO, 1996; Moodley et al, 1997; Salzmann and Mohamed, 1999a; Chen, 2000).

The Trust entered into a Head Contract with Obayashi Corporation that covered the majority of the design, the construction and the fit-out of Stadium Australia. The OCA entered into the OCA Construction Contract, also with Obayashi Corporation, that covered a part of Stadium Australia construction, all of the precinct area and most of the stadium and precinct area reconfiguration after the Olympic Games. Obayashi Corporation in turn, entered into a Design and Construction Agreement with Multiplex that constituted the same scope of work as the Head Contract and the OCA Construction Contract. Multiplex then provided a guarantee and indemnity to the Trust in support of the majority of Obayashi’s design and construction obligations (Stadium Australia Group, 1996a; Sydney Olympic Park Authority, 2002).

5.2.5 Commercial Operation Arrangements

Stadium Australia Management is wholly responsible for the operation, management and maintenance of Stadium Australia and has been the sole operations stakeholder since construction was completed in 1999. It is independent of the Trust and is the recipient of all revenues generated by Stadium Australia. It was a policy or intention of SAM to operate with a small executive group. As such, many of its operational responsibilities are contracted further down the line with the likes of AEG Ogden who specialise in certain aspects of stadium and venue management.
5.2.6 Financing The Project

Financial Innovation
Financing of Stadium Australia was been as unique as the stadium itself. The approach broke a number of financing barriers because of a unique set of structures and an innovative approach. The Stadium Australia Group is a publicly funded group.

According to one of the project participants interviewed for this thesis, the OCA’s Director of Stadia:

“Stadium Australia Management are a publicly listed entity and were founded on their ability to raise both debt and equity. Of the initial A$550 million investment, the public float raised A$350 million. The float was unsuccessful in that it finished short, but from a stadium viewpoint, it didn’t make an enormous difference because the underwriters paid the shortfall.”

The project is stated to have a total development cost of A$615.2 million. This cost includes:

- Design and construction costs of Stadium Australia and the associated precinct area.
- Fit-out costs of the stadium (apart from the fit-out of private suites leased to third parties).
- Reconfiguring the stadium and precinct area after the Olympics.
- Development costs including those incurred during the bid process, design fees, listing and legal fees, stamp duty, financial advisory fees, accounting taxation advice and those to achieve financial close including marketing.
- Pre-opening costs incurred prior to the project completion date.
- Financing costs including equity underwriting fees, debt related fees and costs, funding for a debt service reserve account and capitalised interest on the construction loan facility (Stadium Australia Group, 1996b).
The construction, development, fit-out, financing and pre-opening costs arranged by Stadium Australia Group were to cost $519.1 million. The OCA did incur costs of $76.9 million to cover part of the design and construction costs of Stadium Australia and the majority of post-Olympic re-configuration costs. In addition, the OCA incurred costs of an estimated $19.2 million that covered the design and construction costs of the precinct area and the cost of re-configuring this area after the Olympic Games. It should be noted that in the case of the OCA precinct works, estimated at a contract price of $19.2 million, only half of the scope of work were fixed price items. The balance being ‘schedule of rates’ items for which agreed rates and provisional quantities were given (Stadium Australia Group, 1996b).

The following diagram (Figure 11) illustrates the make-up of project costs as compared to the sources of funds, up to the completion of the Stadium Australia reconfiguration:

![Figure 11: Stadium Australia project costs and fund sources (Stadium Australia Group 1996b)]

**Equity**

Equity funding for the project was raised via gold and platinum investors, founders and commercial investors. The capital structure of the Trust and Stadium Australia
Management was such that at financial close, investors would hold or be obliged or entitled to subscribe for approximately 97.3 million units in the Trust, and an identical number of shares in Stadium Australia Management. The time obligations for payment of these investments were different, with gold and platinum investors (or underwriters take-up) being paid before financial close, while most founders and commercial investors subscriptions were required to be made within 5 days of project completion (Stadium Australia Group, 1996b).

A public offering of gold and platinum investor packages raised equity in the amounts of $344 million and $20.4 million respectively. This was achieved by the issue of 34,400 ‘Gold Packages’ at an issue price of $10,000 each. Similarly, an offering of 600 ‘Platinum Packages’ was made at an issue price of $34,000 each. From these funds the OCA was paid $65 million in consideration for Olympic ticket rights under the Olympic Rights Agreement. A substantial portion of the remaining equity raised was used at financial close of the project in fulfilling the Trustee’s obligations to lodge a cash amount of at least $215 million with the OCA. This cash amount was drawn down by the Trustee progressively to fund the design and construction of the stadium.

Although the public offering closed under subscribed, there was little consequence in terms of equity shortfall to the Trust Manager and Stadium Australia Management. The terms of the Equity Underwriting Agreement stipulated that each of the underwriters, (Bain and Co Corporate Finance, ANZ Securities, Macquarie Underwriting and ABN AMRO) had agreed with the issuers to subscribe for 25% of any shortfall in the issue of gold packages (Stadium Australia Group, 1996c).

As far as security is concerned, in respect of Stadium Australia Group’s performance over the development and construction phase, the OCA had a right, in the event of project agreement termination, to use the funds to complete Stadium Australia and the precinct works. This $215.0 million cash amount lodged at time of financial close was in addition to other securities and completion guarantees required to be given by various parties.
The founders and commercial investors subscribed for stapled securities to the respective amounts of $14.35 million and $21.5 million within 5 days of the project completion date. As Multiplex had already subscribed for a number of securities earlier than this date, the total founders’ subscription was $18.6 million. Founding and Commercial Investors’ stapled securities were issued at a lesser price than that of gold and platinum investors due to the fact that there were no associated membership or Olympic ticket entitlements (Stadium Australia Group, 1996c).

**The Australian Stock Exchange Listing**

The innovative techniques employed on the financing of Stadium Australia helped to break several barriers. These included introducing the first Australian Stock Exchange (ASX)-listed lifestyle product. It was also the first triple-stapled listed product. Most shares on the ASX are simple products which involve straight ownership of equity. Stapled products involve add-ons which are designed to make the overall product more attractive or to suit the particular needs of the project. In the original float offerings, gold and platinum packages involved three things, Olympic tickets, membership entitlements and equity investment, thus the recognition of a triple-stapled product. Each unit in the Trust is stapled to a share in Stadium Australia Management.

**Debt Funding**

The ability to attract equity investors into a PPP project is only a component of the overall financing requirements. Ability to raise debt and attract organisations willing to offer these arrangements is the other significant component. The primary debt funding for Stadium Australia was a Construction Loan Facility and now a Term Loan Facility. ANZ Bank and ABN AMRO agreed to provide an A$161 million Construction Loan Facility to the Trust under the terms of the Construction Loan Facility Terms Sheet.

This loan facility was drawn upon after the cash amount lodged with the OCA had been reduced to zero. The Construction Loan Facility was repaid by the draw-down of the Term Loan Facility and the subscription of equity on or before the project completion date under the Founders’ and Commercial Investors’ Equity Subscription Agreement (Stadium Australia Group, 1996b),
ANZ Bank agreed to provide a $125 million Term Loan Facility having a term of 15 years on the conditions summarised in the Term Loans Facility Terms Sheet. Debt service payments under the term loan facility will be made from the rental income of the Trust in turn received from SAM. In order to reduce risk to the project in terms of interest rate rises, the interest rates on the Construction Loan Facility and the Term Loan Facility were set fixed at financial close for the term of their respective arrangements (Stadium Australia Group, 1996b).

5.2.7 The Project’s Revenue Sources

The financial success of the Trust and SAM depends substantially on their ability to generate corporate hospitality revenues and membership subscriptions. The achievement of these revenue targets depend on the number and type of events held at Stadium Australia. Revenue generated from corporate hospitality and membership subscriptions over the 32-year concession period need to be adequate to cover interest payment, debt repayment, dividends on equity investment, operational costs and ideally provide a sufficient profit margin.

Corporate hospitality revenues are the largest contributor toward operating revenue. Fees from Stadium Australia Club are also expected to be a significant revenue source. These two sources together contribute approximately 65% of the revenue of Stadium Australia Management. Food and beverage sales, merchandising, event rentals and signage rights form another vital part of the operating revenue.

It should be noted that the complete revenue risk does not rest with the Trust and Stadium Australia Management alone. Agreements with the operational contractor AEG Ogden, and the catering contractor Gardner Merchant, stipulate some degree of revenue underwriting responsibilities. Under the Stadium Catering Deed between Stadium Australia Management and Gardner Merchant, the latter will pay Stadium Australia Management a fee based on a percentage of the gross revenue derived from catering services. Under the long-term supplier arrangements with Tooheys and Coca-Cola Amatil each supplier will make payments to Stadium Australia Management.
5.3 RISK ISSUES ENCOUNTERED ON THE STADIUM AUSTRALIA PROJECT

As is the case with all PPP projects, each of the various phases of a project gives rise to different and varying degrees of risk. The interviewees involved in the procurement of Stadium Australia noted that during the prospectus for project identified several risk categories and also described methods employed for their mitigation. Since these risks were noted at the prospectus stage, the consortium had already been successful in bidding for the project and therefore some factors such as bidding risk were no longer an issue.

Case Example

According to a member of the senior management team at Multiplex, the initial, yet crucial, general risk issue with Stadium Australia was that:

“The Government is initially thinking ‘short term’ (stadium opening and operation) whereas the consortium is thinking ‘long term’ (concession period)”.

This issue influenced project planning and strategy throughout all stages of negotiation, construction and operation.

The initial part of this risk consideration section is based around those issues initially raised by the Stadium Australia Group at the prospectus and investment stage. Risk, and indeed success, factor issues identified via the case study are used to refine the frameworks first established while reviewing the literature. Project specific risk frameworks are then established.

The Stadium Australia risk factor framework was complicated by the fact that the Olympic games were of enormous importance and prestige for not only the project stakeholders but also the people of Sydney and Australians in general. Accordingly, the project occupied a very high profile.
Case Example
A member of the Government’s senior management team reflects on the high profile of the project:

“The involvement and interaction of both public and private sectors, the inevitable high level of public scrutiny that was brought to bear because of the Olympic Games and the profile of the project generally, exacerbates the difficulty of an already complex, major infrastructure design, construction and operational project.”

According to Stadium Australia (1996c), the risks were categorised under the following sectors:

- General Project Risks
- Project Delivery
- Olympic Games Tickets and Gold Membership Rights
- Commercial Viability

These risks are now described within the listed categories identified by members of the Stadium Australia Consortium.

5.3.1 General Project Risks

Termination of Project Agreement by OCA
The Project agreement is the key contractual document which regulates the relationship between the Trust and OCA. There is a risk that, if the Project agreement is terminated, the right of the Trust to procure the construction of Stadium Australia, and the right of Stadium Australia Management to occupy and operate the facility following completion of stage 1 will terminate. The circumstances contemplated in the Project Agreement that could result in a premature termination of the Project Agreement are outlined as follows:

- Discretionary Termination by OCA - In view of the importance of the Project and the high public profile it occupies, the OCA had the right, prior to the completion date, to terminate the Project Agreement at any time in its
absolute discretion and without giving any reason. If OCA had exercised this right, it was required to:

- Complete stage 1 of Stadium Australia generally in accordance with the Design Brief.
- Follow through the issue of Olympic tickets.
- Provide to Gold and Platinum members most of the rights which would have been available to them had the Project agreement not been terminated.
- Pay to the trust an amount which is intended to reflect debt costs, net present value of forecast distributions and dividends to shareholders and unit holders, and the cost to the Trust and to Stadium Australia Management of breaking contracts with contractors, financiers and suppliers.

However, it should be noted that the OCA was entitled to apply any balance of the $215 million cash amount paid to it by the trust after financial close towards the completion of stage 1.

- **Trust Default Prior to Completion Date** – The OCA had a right to terminate the Project Agreement prior to the completion of stage 1 where there was a default by the Trust which remained unremedied within the applicable ‘cure period’. An example of these default issues were if Stadium Australia was not completed by 1 June 1999. In the event of termination by the OCA by reason of a Trust default, the OCA will not be liable to pay compensation to the Trust for the cost of breaking contracts with contractors, financiers and suppliers, for debt costs, dividends or distributions.

- **Trust Default After Completion Date** – The OCA has a right to terminate the Project Agreement if Stadium Australia is not operated, maintained and repaired in accordance with agreed standards. Again a reasonable cure period is given to rectify any problems prior to any termination.
• **Building Approvals and Force Majeure** – The OCA maintained a right to terminate the agreement if:
  o A building approval appeal initiated by the Trust is not disposed of in time to meet the Trust’s delivery program.
  o An event of force majeure occurs against which the Trust does not have insurance and was not required by the project agreement to be insured. This also applies if damage is caused to Stadium Australia by a force majeure event which exceeds the cover provided by the applicable insurance policy and, in either case, the OCA and the Trust are unable to reach agreement on terms for rectifying the damage.

5.3.2 Project Delivery Risks

*Construction Delay/Overrun*

The risk was identified and stipulated in the Project Agreement should Stadium Australia not be completed in accordance with the project milestones and/or the completion date of 1st June 1999. If Stadium Australia had not been completed accordingly, liquidated damages would have been payable by the Trust to the OCA under the Project Agreement. Any extension of these dates would only be given in limited circumstances. To an extent, these risks were mitigated by the fact that, under the Head Contract, Obayashi was required to meet the various milestone dates and to actually complete construction of stage 1 by March 1st 1999, three months before the required completion under the project agreement, and more than 18 months before the Olympic opening ceremony. The arrangements meant that liquidated damages were payable by Obayashi to the Trust under the Head Contract and by Multiplex to Obayashi under the Design and Construction Agreement.

Therefore, ultimate responsibility for managing construction, and subsequently any construction related overruns, are borne by the contractor, Multiplex. The risk of ‘cost overrun’ was managed by Obayashi, then Multiplex. The contractor was ultimately responsible for cost overrun by way of the fixed price, lump sum Design and Construct (D & C) contract. The project company was responsible for the cost overrun associated with their initiated changes and variations or for items outside the D & C scope.
Multiplex bore the substantial portion of design risk under the D & C contract. The Government and project company still bear some risk in that the design brief is correctly prepared and interpreted.

Case Example

Construction delay did not effect the Public Sector body (NSW Government) particularly as the construction deadline was several months before the Olympics began. The State Government’s Director of Stadia explains:

“When considering construction time over-run, in this specific case where we’re not running the building, you have to ask yourself the question, if it’s a fortnight late why do we care? That doesn’t mean that we don’t build liquidated damages provisions into the contracts and other such arrangements, but at the end of the day our view is always that the consortium operating the venue has got more to lose by construction time overrun than the Government. The Government is not running the business.”

This is perhaps a fairly unique case, it would be different if delivering a public school via a PPP arrangement for example. In that case, there would be a need to ensure that the school is operational and that staff can teach on a specific date, so construction time over-run becomes important as the government is then the operator of a business inside a building operated by someone else.

**Design Specifications**

A risk was identified that the completed Stadium Australia differed from the conceptual plans provided for in the Design Brief. Detailed design was not finalised until some time after financial close. If the completed Stadium Australia did not comply with the design brief, the OCA had a right to terminate the project agreement.

Design risk was very clear as far as the OCA was concerned. The interview process with the public sector management team indicated that the impact of a design change on construction costs or by operating cost, which are the two main risk areas, is not a risk that the Government will carry. They don’t carry it on the basis that they have already specified the design and performance outcomes.
A member of the Government’s senior management team explains:

“If the roof ends up being constructed out of a different material, it’s still a roof, but if we decided it will cost an extra million dollars a year to maintain, then it’s not a problem for us, it’s a problem for somebody else. Presumably it was chosen because it cost less and somebody within the consortium has performed a life cycle assessment that we pay a million dollars less, then the extra $100,000 a year that we have to maintain it is a sensible financial equation. Assessments like that are made all the time.”

**Project Costs**

The risk was identified if the project would cost more than the cost of the works under the Head Contract and the OCA Construction Contract. In such circumstances, the cost payable by the Trust would increase and the Trust would require additional funds in order to complete construction of the works. Mitigation of the risk was achieved to a fair degree by the following methods:

- Obayashi (and in turn Multiplex) were primarily responsible for cost overruns under the Head Contract. The contract sum payable by the Trust to Obayashi was subject to adjustment only in limited circumstance such as specific variation or acceleration required by the Trust.
- The Independent Engineer on the project provided an opinion that the cost of the works to be carried out were reasonable for the scope of works to be performed.
- The Independent Engineer prepared frequent reports during construction on payment claims and costs to complete the scope of work.
- The OCA construction contract had greater scope for variation of the contract, and in fact half of the scope of work was on agreed rates for provisional quantities. The risk of cost variations in respect of overrun were borne by the OCA.

**Changes to Inflation, Interest Rates and Foreign Exchange**

Any risks associated with inflation, interest rates or foreign exchange are borne by various parties, particularly the private sector consortium. The Works Adjustment Deed had provision for contract adjustments due to interest rate fluctuation between the tendering of the project and 9th September 1996. In order to reduce risk to the project in
terms of interest rate rises, the interest rates on the Construction Loan Facility and the 
Term Loan Facility were set fixed at Financial Close for the term of their respective 
arrangements.

Overrun in Development Costs
A contingency amount of A$1.0 million was included in the funding plan for the 
possible offset of overruns in development costs, pre-opening costs and/or financial 
costs.

Overrun in Pre-Opening Costs
Multiplex, Hambros and Macquarie provided a standby loan of up to $1.0 million to 
cover overruns in the pre-opening costs of Stadium Australia Management.

Post-Olympic Games Reconfiguration
The reconfiguration work included the removal and replacement of part of the north and 
south stands, the construction of roofs over the north and south stands, the removal of 
the athletic track and the relocation of the lower seating bowl. The reconfiguration 
works was originally scheduled to be completed by August 2001. There was a risk that 
this reconfiguration work could interrupt and impact the commercial operations of 
Stadium Australia. To mitigate this risk, the Head Contract required Obayashi to 
undertake the reconfiguration works in such a way as to minimise disruption to the 
operation of Stadium Australia. In order to prevent minimum disruption to stadium 
events, the final part of reconfiguration was not completed until 2003.

Industrial Relations
Any risk relating to industrial relations are borne by Multiplex throughout the 
construction and development phase of the project and the Operations and Maintenance 
(O & M) contractor throughout operational phase. A completion risk existed where 
dates may not have been met due to industrial action. Such an event would have 
allowed the OCA to terminate the Project Agreement and/or make the Trust liable for 
liquidated damages. Some mitigation was provided under the Head Contract where the 
Trust passed the risk of liquidated damages to Obayashi, and then in turn to Multiplex. 
The payment of a special ‘Olympic Project’ site allowance was a further risk mitigation
factor where terms were agreed between Multiplex and the Union before construction began.

**Environmental Risks**

Under the Project Agreement, the Trust bears the risk of contamination on the Stadium Australia construction site. A review of potential contamination risk was undertaken by Sinclair Knight Merz Pty Ltd, which identified a number of soil contamination issues. As a consequence, a remediation action plan was developed to deal with the issues. The remediation action plan was reviewed by the independent Engineer, GHD, who concluded that providing the remediation action plan was effectively carried out, the site would be suitable for the construction of the stadium. Furthermore, the responsibility for effecting the remediation action plan was passed on to Obayashi by the Trust under the Head Contract, who in turn transferred this risk and responsibility to Multiplex under the D & C Agreement.

**Case Example**

A member of the Government’s senior management team explains an issue relevant to environmental risk:

“One area of environmental risk that the OCA was prepared to take on was that of site conditions in relation to contaminated land. There were some contaminated soils on the site, we took on some minor risks associated with contaminated soils knowing that there were actually none on the site of the Stadium. We knew there were none there as we had completed our own extensive surveys and were therefore happy to bear that particular risk.”

The risk of poor environmental management or perhaps a bad choice of site (environmentally) may be a private or public sector risk depending on arrangements and was particularly important given Sydney’s successful bid for the Olympics was partially based around being the ‘Green games’.

**Native Title and Artefacts**

A risk was identified as to tenure and usage with respect to the land upon which Stadium Australia is built. The Government indemnifies the Trust against any native
land claim. If however a claim is based on artefacts or archaeological items found, then the Trust bears this risk. The Project Agreement stipulates that OCA will indemnify the Trust for losses the Trust incurs because of a native title application. If an application had been successful, it would have obviously derogated substantially from the Trust’s rights to use the site. The indemnity did not however, extend to losses incurred by the Trust as a result of a native title application which was materially based on the existence of artefacts on or around the Stadium Australia land. Risks relating to such an application were passed on to Obayashi under the Head Contract and in turn, Multiplex under the D & C Agreement.

In summary, members of both the private sector senior construction management team from Multiplex and senior management from the main public sector stakeholders, i.e. the NSW State Government, confirmed all of the afore-mentioned project delivery risks as being a comprehensive summary.

Case Example
A Senior Construction Manager suggested that the majority of risks in this category were ultimately borne by Multiplex as the D & C Contractor, since the conditions of Obayashi’s head contract with the Trustee were largely mirrored in the D & C agreement. He stated:

“Our perspective, Multiplex bore all the usual risks associated with design and construction, those being time, cost and meeting the brief’s issues.”

5.3.3 Event Tickets and Gold Membership Rights

Gold and Platinum Investors
In terms of their right to Olympic Tickets, these risks included:

• Cancellation, postponement or boycott of the Olympic Games - risk is borne by the investor, as tickets become null and void in the event of cancellation or postponement
• Event Programming - Investor bears the risk that the expected events at Stadium Australia may not be carried out there. Compensation is provided under the Rights Agreement.

5.3.4 Commercial Viability

Access to Stadium Australia/surrounding and supporting infrastructure
It was expected that most spectators would use public transport to travel to and from Stadium Australia, particularly during major events. The State Government is responsible to the Trust for the provision of certain transportation infrastructure to the Homebush Bay area. As the responsible government agency, the State Government, via the OCA, prepared a transportation strategy plan as part of the Homebush Bay Masterplan. The risk identified here was non-completion, i.e. if the plan was not implemented as set out in the Masterplan or not implemented by the completion date. Further risks include travel times to and from Stadium Australia may be extended depending on time of day, mode of transport and the number of people within the Homebush Bay area. The consequences for Stadium Australia of an inadequate support infrastructure are serious, as it impacts upon likely attendance and in turn the attractiveness to potential hirers, resulting in revenue shortfalls.

Competing venues
The risk exists that competitive venues, such as the Sydney Football Stadium (SFS), Sydney Cricket Ground (SCG), Parramatta Stadium or even future stadia, draws hirers and subsequently events away from Stadium Australia. The risk posed by a new competing venue is partially mitigated under the Project Agreement. The OCA has undertaken to enter into good faith negotiations with the Trustee and Stadium Australia Management for compensation in the event that a Government-controlled entity undertakes or assists in the development or redevelopment of a competitive stadium having over 25,000 seats and within 50km of the Homebush Bay area. For any compensation claim to be successful, the new competitive venue must have a material adverse effect on the Trust’s ability to carry out the project, repay debt, make distributions or pay dividends. These arrangements do not protect the Trust or investors
from the risk of private sector sponsored competitive venues in NSW or from venues with less than 25,000 seats or constructed more than 50km from Stadium Australia.

This risk was managed by ensuring that the SFS and the SCG were specifically mentioned in the project agreement, in that they have limitations on the extent to which they can redevelop. For example, the SFS has problems with extending the roof by much more than it currently is and if the government does choose to compete and goes beyond the maximum figure mentioned in the Project Agreement (48,000 seat maximum for the SFS which is currently 42,000) then this would trigger competition, subsequently triggering a range of compensation negotiations.

Case Example
From a Stadium viewpoint, for these negotiations to be successful, the Government’s Director of Stadia explains that:

“It actually has to have an effect on business, so it’s something that we needed to do for the stadium and cover ourselves against any local competition”.

This form of agreement is similar to those that governments tend to negotiate with motorway projects. For instance, where a motorway developer states that if they are going to invest $500 million in a motorway then they do not want competition in the form of another motorway a mile away or so away or where nearby streets are widened to provide similar traffic benefits. Therefore, this arrangement is common in motorway type contracts to provide some sort of protection.

Case Example
As further supporting evidence to guard against competition risk, the Government, through the interview process with their senior management, also state:

“If you are going to have such arrangements then you need to be able to measure them in order to claim compensation. On the stadium there is an opportunity of building more clarity into those competitive provisions, this happened when we renegotiated the stadium agreement to bring AFL to the stadium and to subsequently redevelop in order to house it. So, the very simple deal was that SAM came to the government with the idea that they wanted to redevelop Stadium Australia so it is capable of holding AFL events. They stated that it’s going to cost $’x’, of which we can borrow so much from the bank and get so
much from the AFL, we’ve got so much money ourselves but we also want the government to contribute so much money. Therefore, the OCA looked at the figures and concluded that it made good economic business for the state to contribute to, but also took advantage of the fact that further funds were being sought from the government, so if SAM wants our money, let’s renegotiate the contract conditions to make them a little more liberal on the government, because at the minute they are very onerous, so let’s introduce more clarity”.

Operating revenue

If the type or number of events in the targeted schedule are not met and the price and volume targets for merchandise, food and beverage, signage, event rental and corporate hospitality are not achieved, then the revenue generated from SAM would be reduced. As a result, rates of return for investors and debt repaying ability would be adversely affected.

The interview process identified this as one of the significant risks applicable to the project. The patronage risk of being able to attract the events and the people to the stadium is significant. However, there is a good underlying logic as to why it ought to work in terms of long-term operation. Stadium Australia provided 110,000 seats for the Olympics and 80,000 post-Games. The SFS and SCG seat around 40,000 each. In comparing a 40,000 capacity stadium to one with an 80,000 capacity, the larger stadium achieves much better economies of scale in terms of providing double the capacity while at the same time operating costs are not twice that of the smaller stadium.

Stadium Australia also has to compete with other cities for certain events. This may well effect its’ long term operating viability. The interview process with the Public Sector representative (OCA) identified this. A business such as the stadium has to worry about both local and national competition. For example, when considering a grand final series of a national competition or even international football matches then Stadium Australian is not only competing with SFS or SCG, it is also competing with stadiums/venues in Melbourne, Brisbane et al. Therefore, Stadium Australia has got a different sort of competitive regime and the consortium are not just looking at things that are controlled by the NSW government, but governments in other states too.
Changes in Federal and/or State Law

There may be certain ‘discriminatory’ changes to the laws of New South Wales that have a material adverse effect on the ability of the Trust to carry out the project, to repay debt or to make distributions and pay dividends. If this occurs, the Trust and the OCA must enter into good faith negotiations with a view to enabling the Trust to maintain these abilities and obligations. The Trust and SAM bear the risk of all other changes in law affecting Stadium Australia, including ‘indiscriminate’ law changes except where they involve native title and substantial works (maintenance or structural) that are made necessary by a law change after the commencement of the Sublease.

Finally, the risk consideration component of the Stadium Australia’s investment prospectus, makes mention of an overall ‘documentation risk’ brought about by the number of parties and the complexity of the arrangements which support the project. They raise the possible risk associated with disputes over interpretation or enforceability of obligations of parties, and conclude that an investment in this type of project carries a higher degree of risk than in a conventional equity investment.

During the interview process with the OCA, many of the afore-mentioned risks outlined in the investment prospectus were identified as still relevant and most significant to the venture. Bidding risk was also considered by Multiplex, as one of the most significant issues confronting the project company embarking on such a venture.

Case Example

One of Multiplex’s senior managers explains:

“No enormous amount of money was spent up until financial close. Similarly, a significant amount was spent in the bidding process.”

These costs were expended as the sole risk of the project company and its participants. The project is arguably in its most vulnerable stage up until financial close. Similarly at the bidding stage, the project company is expending significant amounts of money only on the hope of being awarded the right to undertake the project.
The OCA’s partial compensation of the bidding risk component of this issue on subsequent major projects within Sydney Olympic Park was a move to maintain the interest of preferred tenderers against the deterring factor of this risk.

Case Example
The Government’s Stadia Director explains:

“Subsequent to the stadium experience, the OCA introduced an arrangement of compensating the underbidder. The process involved some tenderers being short-listed as preferred proponents and then, if short-listed on the other Olympic projects, such as the SuperDome or Village, tenderers were asked to develop the proposal further and the Government would pay, or compensate them, up to a certain amount.”

In reviewing the documentation, it was noted that the issue of the projects risk profile is exacerbated by the high level of public scrutiny and the profile associated with not only the staging of the 2000 Olympic Games, but also the subsequent operation of such a major piece of infrastructure. This tends to be evidenced by measures and conditions imposed such as extreme completion guarantees, discretionary termination clauses and the $215 million payment to OCA at financial close.

Other risk issues, besides those outlined in the prospectus, were identified during the interview process. They are documented in the Risk Factor Framework and are also explained in more detail below:

5.3.5 Documentation Risk

Stadium Australia Group identified an overall documentation risk as relevant to all parties, (particularly to gold and platinum investors who were perhaps somewhat naive of the structure). It developed because of the large number of parties and the complexity of arrangements supporting the project. Most risk associated with this issue are unique to the Stadium Australia project and are borne by the gold and platinum equity investors.
5.3.6 Financial Risk

Financial risk is managed by the equity investment undertaken by the founders, commercial investors and public investors. Underwriters were forced to take up the balance of the under-subscribed public offering of gold packages.

5.3.7 Bid Preparation Risk

The Project company bears the considerable time and cost consequence associated with bidding risks such as bid feasibility, preparation and subsequent presentation. The nomination of preferred tenderer status after the initial bids were cut to three tenderers attempted to minimise wasted private sector involvement.

5.3.8 Approval Process

In terms of risk involved in the approval process, the promise of efficient processes assists the likelihood of success. Slow and inefficient approvals are a risk borne by the project company. A comprehensive Development Application (DA) was submitted by the State Government and an efficient approval process meant that consent was given within months before the project agreement was signed within the same year.

5.3.9 Technical Innovation

Technical innovation can be a solution to overcoming project complexity. The complexity of the project however may be a risk, especially if there is a lack of experience within the consortium. Innovation was certainly a success factor in winning the project. The financing methods such as the ASX listing broke new barriers and the project design was also very innovative, particularly with regards to remodelling of the stadium and the various environmental and waste management issues.

5.3.10 Taxation Risk

Any risk associated with tax issues is covered in the Project Agreement which states that the project company bears this risk except where a law or tax change is shown to be ‘discriminatory’, i.e. specifically affecting the project, the project and other privately
owned venues within Homebush Bay area, or the project and other competitive stadiums.

5.3.11 Market Risk

All market risk is borne by the project company, but, significant feasibility and market research attempts to mitigate this risk. Some risk is also borne by the likes of Gardner Merchant in their ‘underwriting’ of anticipated catering revenues. Market risk in the form of income or revenue change is managed by a comprehensive feasibility investigation and using realistic forecasts and allowances for contingent factors. Risk does remain in that social and economic change in an area is likely throughout a 30 year concession period. Some mitigation may be provided by way of the project participants partially ‘underwriting’ certain revenues.

5.3.12 Corruption

Corruption risk was assessed as being unlikely as the allocation of responsibility is dealt with by the underlying laws of Australia. Clear and transparent guidelines from the public perspective eased concern with regard to the possibility of corruption. The process was overseen by the government’s ‘due diligence’ auditor.

5.3.13 Political Risk

Political risk was offset by a Government that was very supportive of the project, given the country’s responsibility in staging the Olympic games. By virtue of the concession period however, all PPP projects will see changes in administration and this is a risk that the private sector can ‘gamble’ on in accepting exposure. Greater political stability and support will aid in success and management of risk. Any political backdown or failure to honour guarantee’s was managed by the project agreement making provision for indemnification of the private sector.
5.3.14 Infrastructure Risk

This form of risk was accounted for in that the facility depended upon the construction of adjacent infrastructure such as the new rail station, carparking areas and roads. These were promised by the OCA in accordance with the Homebush Bay Masterplan Transportation Strategy. Existing infrastructure (Sydney Football Stadium, Sydney Cricket Ground and Parramatta Stadium) in the form of competition risk was borne by Project Company.

5.3.15 Material Supply

Any short supply of raw materials was borne by the contractors during the construction stage. Operationally, it is not a likely or major risk with this type of project and long term supply contracts are in place with companies such as Tooheys, Coca-Cola and Ticketek acting as providers.

5.3.16 Country Risk

Country risk was not seen as a key issue as Australia is viewed as a very stable and secure country in which to invest. The risk associated with changes in government or policy are largely with the project company.

5.3.17 Performance

Project performance can have a significant effect on the efficiency during the operation of the project. The ultimate effect of an inefficient operation may result in lower revenue collection. This type of risk is predominantly carried by the majority of the private sector operators.

5.3.18 Operational Risk

Operational risk is typically borne by the private sector operator under the terms and conditions of the operational and maintenance agreement, in this instance AEG Ogden. Gardner Merchant also bears similar risk in the operation and provision of catering services.
5.3.19 Operational Safety

Risk identified with operational safety is significantly the responsibility of the O & M contractor, AEG Ogden, but Multiplex bears some risk in undertaking the D & C contract to provide a facility that is ‘fit for purpose’.

5.3.20 Operational Costs

The O & M contractor typically bears the consequence of changes in operating costs resulting from issues such as materials, wages et al. Long term material supply contracts mitigate the risk of possible material price increases. Operational expenses will ultimately effect revenue and therefore the project company.

The State Government has the right to a discretionary termination of the project agreement in view of the importance of the project and the profile it occupies. The State Government has a right to terminate the project agreement at any time and without reason, such that they could take control.

5.3.21 Transfer of the Facility

Some transfer issues of the PPP procedure stipulates warranty requirements for a certain period of time post-transfer. This provision may serve as a motive for ensuring adequate ‘up-keep’ in the final stages of the concession period. The contractor bears the risk of the usual warranties and structural guarantees.

5.3.22 Lifespan

Lifespan, or facility life cycle risk, exists for the project company in that over the project lifespan or concession period, new technology or competition may introduce an element of obsolescence. At transfer stage the government may be taking ownership of a partly outdated facility. Some other participants (e.g. Gardner Merchant) bear the risk where they actually own various equipment in the facility.
In concluding issues of risk on Stadium Australia, usually, the Main Contractor is in a minor equity role and normally, once the project has been ‘handed over’, then that is the end of their involvement.

Case Example

A member of Multiplex’s senior management team, remarked that this was different on Stadium Australia:

“With Stadium Australia there was continued private sector involvement from the Main Contractor after project completion, for example:

• during the Olympic period there were a number of cases of remodelling for specific events
• reconfiguration post-Olympics (the move from an Olympic Stadium to an All-Purpose Sports Stadium)”

This issue, in effect, has created another ‘zone of project criteria’.

5.4 EXAMPLES OF SUCCESSFUL RISK MANAGEMENT ON STADIUM AUSTRALIA

The procurement of Stadium Australia under the PPP approach is in accordance with the Australian Government’s increased acceptance of alternative forms of project procurement and search for private sector infrastructure investment. Both the literature and case study confirmed the critical importance of consortium structure as a success factor in winning PPP projects and the successful operation of them. The case study identified that the consortium had a wealth of expertise, considerable experience, high profile and a good reputation. This played a significant role in the consortium’s successful bid. The literature stated that the critical importance of a well organised and defined structure for the parties taking a stake in a PPP project. The literature also noted the importance of reputation and profile among the participating parties as a success factor in winning project bids.
The literature stated that:

“…choosing the most suitable project consortium is the single greatest determinant of the success or failure” (UNIDO, 1996).

The case study reflected much of that comment as a member of the Senior Management team of the Stadium Australia private sector consortium identified that:

“A crucial success factor of the project was that team members got on very well in a trusting relationship”.

The following list identifies issues that are necessary for the successful management of risk factors. The way that the case study project was found to address each of the issues follows each point.

5.4.1 Market Concern Regarding Competition and the Flexibility to Adjust to New Markets

The case study revealed Stadium Australia’s flexibility to cater for different or new markets. This is evidenced by the Post-Olympic re-configuration of the layout to allow cricket and football matches. Market concerns in regard to existing competition were not seen as a major threat given the advantages expected in achieving better economies of scale with the larger venue. Some risk mitigation was however offered within the project agreement with regard to limiting the effect of introducing competitive venues within a 50km distance.

5.4.2 Pricing

As the facility may have a degree of monopoly power, the government may wish to regulate fees and charges.

The only concerns revealed by the Stadium Australia case study with regards to pricing are in associated with the operational revenue risk previously described.
5.4.3 Infrastructure

The quality of infrastructure which actually feeds the new facility is an issue. With regards to Stadium Australiia, this factor as an important issue, particularly regarding transportation within the Homebush Bay region. The Transportation Implementation Masterplan outlined the OCA’s responsibilities in providing this infrastructure which the stadium obviously depends on.

5.4.4 Relationships

Relationships with the ‘large’ organisations anticipated to use the facility as a hub or essential part of their operation is important to operational and business success. The Stadium Australia case study revealed agreements with a number of project participants who partially underwrite revenues for the facility. Beyond this, several agreements have been made with organisations such as the National Rugby League for the staging of a minimum numbers of events.

5.4.5 Project Innovation

When considering crucial CSF and the issues as to why the Stadium Australia bid was successful, the issue of innovation was clearly stated.

Case Example

One of OCA’s chief negotiators, reflects upon one key area of innovation:

“When the bidding process begins governments are always hoping for someone to come up with an innovative idea, particularly regarding project finance. The innovation with the successful bid was based around the government requiring 80,000 seats for the Olympic games and the bright idea therefore was the consortium suggesting to build an extra 30,000 seats. They went on to suggest that these extra seats will be paid for by creating a membership scheme. The membership will be equal to the number of additional seats (30,000). On the sale of those memberships we let the potential members (investors) know that the scheme gives them a seat at the Olympic Games and subsequent sorting events. So, SOCOG is actually getting a 110,000 seater capacity stadium for the price of one with a capacity of 80,000. Then after the games we knock the end stands down and revert to a proper stadium.”
There appears to be even a simple form of innovation in the remodelling of the stadium after the Olympic period. The interview process and project documentation has already indicated that the additional seats were paid for, in terms of both construction and demolition, via a membership scheme indicating not only no financial wastage, but even profit. The extra 30,000 seats were not exactly budget seats, but they weren’t serviced highly. Costs were reduced by incorporating a lower level of service that included vertical transportation in the form of concrete steps with no elevators or escalators, a slightly lower level of service in terms of amenity, the seats are out in the open and not undercover and there are slightly fewer toilets. They are cheaper seats, both in terms of construction costs and admissions fees, but are still adequate. They were built as cheaply and as cost effectively as possible and designed, with the reconfiguration process in mind, to be there for 3 years and not 50 years as with the rest of the stadium.

Case Example
This project innovation is further supported by the OCA’s Director of Stadia:

“We got a very clever idea from the Stadium Australia bid, by having an 80,000 seat stadium in the long term that was made cheaper by having a bigger stadium during the Olympic period and in the immediate post-Olympic short term. That’s the clever idea.”

The form of financial innovation allowed investors from all walks of life to become equity participants in the stadium. It also raised $350 million through the structured club of gold and platinum membership.

5.4.6 High Profile Project

Further success in equity raising centred around the prestige of the project. Some of the equity participants in the stadium simply wanted to be involved in Stadium Australia. For instance, the catering contractor wanted to be the caterer in the stadium as they also wanted to form a big presence in Australia and they saw the stadium as the catalyst for this. They were willing to invest some capital up front to have the right to be Stadium Australia’s caterer. The same applied to the soft drink vendor (Coca Cola), the cleaners, the beer supplier et al, who were all willing to invest some capital up front to secure the right to be a part of Stadium Australia. This appears to be a very common model.
Case Example

The OCA’s Director of Stadia supports this and states:

“Due to the fact that it’s ‘Stadium Australia’, the biggest stadium in the country, it’s the Olympic stadium, it’s actually a good marketing tool to be able to state that your company is the official supplier of food and beverages in Stadium Australia. You don’t get that on your average building, so there was a strong ability to leverage off the Olympics in raising capital for the stadium.”

5.4.7 Trust

The interview process with the private sector participants identified a further critical success factor, that of a trusting relationship, perhaps overshadowed only by the innovative ‘winning’ strategy previously described. The key representatives of Hambros and Multiplex were extremely committed, dynamic, aggressive and yet accommodating. Multiplex and Hambros were a very good fit. The team members got on very well and worked together well in a trusting relationship.

This reiterates the success factors of teamwork and complimentary style, consortium structure and general trust as identified in the CSF framework established during the review of the literature.

The OCA’s chief negotiator also provides evidence of the notion of trust, supporting the previous comment, but also stating an adverse argument to the idea of trust in that reputation does not guarantee success.

Case Example

According to the OCA’s Director of Stadia:

“Trust in the sponsor goes without saying, you don’t contract with anyone you don’t know. Having said that, people also come to the negotiation table that have no track record in doing business with government, so you have to measure that. There is a converse argument here, you can actually get snowed under by the size, reliability and the depth of resources in a company and if they decide to use a non-team player on the project then there is a greater chance of failure. For government, it’s far more crucial to
look at these organisations. For instance, what have they’ve actually got in the deal, what have they’ve got to lose, what’s their ‘hurt money’ (i.e. how do they suffer if it goes wrong) and who is in their team, who are their people, what have their people done? This is far more important than saying, well this is a multi-national company, GDP is bigger than Australia. That counts for nothing on this type of project”.

5.4.8 The Project’s Significant Success Factors

During the research interview process all participants identified the following key CSF as significant and vital in order to maintain a sustainable project:

1. The consortium had a wealth of expertise, considerable experience, high profile and a good reputation.
2. An efficient approval process that assisted the stakeholders in a very tight timeframe.
3. Innovation in the financing and equity raising methods meant that the consortium had a very good ‘winning’ strategy. They demonstrated the ability to raise both debt and equity.

5.4.9 Reflection

Asked whether it is likely that given hindsight any of the stakeholders would change their approach, the respondents from Multiplex thought not and qualified this by saying it was easy to state given that the comment comes from within the consortium that actually won the bid. Comment was however made by the State Government’s Director of Stadia, of a different tendering approach taken on subsequent Olympic projects procured under similar methods.

Case Example

The OCA’s Director of Stadia suggests a different strategy:

“In hindsight from a Government (OCA) perspective, instead of selecting a single preferred tenderer as early as we did, we should possibly have taken two consortiums further down the evaluation process in the hope of realising further competition benefits.”
5.5 ALLPHONES ARENA (THE SYDNEY SUPERDOME)

5.5.1 Project Background

Abigroup Ltd was awarded the Multi-Use Arena project (later, and before its opening, renamed the Sydney SuperDome) in July 1997. The arena has gone through several sponsored naming rights since and is currently called ‘AllPhones Arena’ (AEG Ogden, 2013). The PPP scheme was the second largest contract value awarded by the OCA in the infrastructure preparation for the 2000 Sydney Olympic Games. The design and construction of the Sydney SuperDome was completed by Abigroup in conjunction with Obayashi Corporation and the responsibility at the time for the ongoing ownership was vested in the wholly owned Abigroup company, Millennium Ltd.
The Sydney SuperDome is an integral part of the Olympic Park facilities. It is located within the Sports Precinct of the Homebush Bay area, north of the main Olympic stadium (Stadium Australia) and west of the new Sydney Showground (Figure 13).

![Figure 13: Location of the Multi-Use Arena, the adjacent Avenue 2B carpark and the associated public domain works (Abi Group, 2006b)](image)

A member of the Senior management team at Abi Group, describes the Superdome as “…the total event experience for Australia”.

Construction of the arena was completed at the end of August 1999, and the arena has been operational since September 1999. Currently the arena is able to seat up to 20,000 people, depending upon its use, and is able to be reconfigured very quickly, using retractable seating. It is used for major national and international standard indoor sports, including gymnastics, tennis, basketball and ice hockey, and for concerts, in both ‘end stage’ and ‘centre stage’ modes, and for community events.
With 5-10,000 more seats than existing indoor venues in Australia, and the most modern facilities in the country, the arena attracts events that have not previously been attracted to NSW. The arena has been designed to provide excellent sight-lines, comfortable seating, easy access for all, high-quality sound and lighting and high-quality event catering.

5.5.2 Project History

Sydney's successful bid for the 2000 Olympic Games necessitated the construction of the Multi-Use Arena as part of the facilities to be provided at Homebush Bay. In May 1996 the Government issued a Call for Proposals from the private sector for the design, construction financing and operation of the Multi-Use Arena for a 30-year period, with the arena then to revert to the Government.

According to OCA’s chief representative and project negotiator on the SuperDome project, following a review of the five proposals received, three proponents were short-listed by the Government for the next phase:

- The Millennium consortium, sponsored by Abigroup
- The SA2000 consortium, sponsored by Hambros Australia and Multiplex Constructions, and
- The Coliseum consortium, sponsored by Leighton Holdings.

The following overview of the project history of the SuperDome was established during interviews with the OCA’s Director of Stadia (Public Sector) and a member of Abi Group’s senior construction management team (Private Sector):

The OCA issued these short-listed proponents with a ‘Call for Detailed Proposals’ on 26 September 1996, with a closing date of 28 January 1997. On 25 November 1996 the proponents were also invited to submit fixed price proposals for the design and
construction of the adjacent Avenue 2B Carpark. All three consortia submitted proposals for both the Multi-Use Arena and the Avenue 2B Carpark.

On 2 April 1997, following a detailed OCA review of these three proposals, the Olympic Committee of Cabinet authorised the OCA to enter into detailed negotiations with the Millennium and SA2000 consortia and to assess proposals from these two consortia. Both consortia were explicitly advised of the strengths and weaknesses of their proposals to that date, were informed that they had an equal chance of winning the bid, and were invited to submit revised proposals and documentation with a view to being able to enter into contracts by 13 June 1997. A final stage of clarification and negotiation, to resolve and improve the proposals on a number of outstanding issues, was then conducted, with a closing date of 3 July 1997.

All negotiations and assessments were carried out in accordance with previously defined methodologies and were overseen by the OCA's Probity Auditor, Deloitte Touche Tohmatsu. An OCA Assessment and Negotiating Team, assisted by a team of expert advisers, carried out detailed analyses of and negotiations on the evolving proposals, and reported progressively to an Executive Advisory Committee which was responsible, among other things, for making recommendations to the Minister for the Olympics.

Expert advisers contracted to the OCA in the negotiations phase included Westpac Banking Corporation (advice on funding certainty and commercial risks), Hellmuth, Obata & Kassabaum (architectural concepts and advice), Clayton Utz (negotiations strategy, legal advice and the preparation of agreements), Deloitte Touche Tohmatsu (probity auditing) and KPMG Corporate Finance (advice on Government contributions and the project's financial viability).

A detailed final assessment report was completed by the OCA on 14 July 1997.

The OCA’s probity auditor reported on 11 July 1997 that on the basis of the work it had performed and its discussions with relevant OCA staff, the independent advisers and assessors to the process and each proponent, it was not aware of any issues arising that
would lead it to conclude that the evaluation process followed by the OCA had not been conducted in a fair and equitable manner. On 23 July 1997 the Olympic Committee of Cabinet approved the OCA's recommendation that the OCA should contract with the Millennium consortium for it to design, construct, commission, finance and operate the Multi-Use Arena and design, construct and commission the adjacent Avenue 2B Carpark and associated public areas.

The negotiated Project Agreement and most of the other project contracts were executed on 31 July 1997. They became effective on 23 October 1997. Development consents for the arena and carpark under the Environmental Planning and Assessment Act were granted by the Minister for Urban Affairs and Planning on 21 October 1997. Practical completion of the arena was granted by the OCA on 30 August 1999.

5.5.3 Project Statistics

General:
- Total Building Cost: $280 million
- Total Site Size: 70,420 m2
- Total Design & Construction Period: 25 months
- Total Operation Period: 30 years

Arena:
- Total Floor Space: 61,000m2
- Building Footprint: 18,920m2
- Number of Levels: 7 (of which 4 are open to the public)
- Maximum Seating Capacity: 21,006

Carpark:
- Total Car Capacity: 3,500

(ABI Group, 2006a)
5.5.4 Facility Details

The Sydney SuperDome has a building footprint of approximately 20,000 square metres and a total floorspace of approximately 60,000 square metres. The curved form is some 32 metres high (approximately 42 metres including masts) and is clad with manufactured panels and tinted glass. The coronet of slender steel elements on top of the arena bowl is a feature of the facility as the premier indoor sports and entertainment venue within Australia. To the west of the building is the 17.5 metre high, 8 level carpark structure which combines with the SuperDome to reinforce the perimeter of Olympic Plaza.

The Grand Lobby Entrance is a four storey high glazed volume providing an exciting space for the arrival and departure of patrons. This space is naturally lit and creates a heightened sense of anticipation and expectation for the crowd. The lobby has views to the galleries above and directly addresses the grand space of Olympic Boulevard. It provides a place of orientation as the Main Concourse and the grand stairs and escalators to the Upper Concourses lead logically away from this space.

The VIP Entrance Lobby to the north-west caters for patrons approaching from that direction and addresses Olympic Boulevard and Edwin Flack Avenue. There is a vehicular drop-off point for the use of VIPs and people with disabilities. The North-Western entry is also a glazed void to maximise the entry of natural light. Between the main public levels i.e. Upper and Lower Concourses (seating approximately 8,000 on each level) - 2 special floors have been created. The first is a 3,000 seat Club Level incorporating three restaurants and bars, entertainment/convention rooms and personalised in-seat food and beverage service.

The second level, Suites Concourse, includes 56 corporate suites, 54 of 18 seat capacity and two 36 larger party suites. Additionally a 250 seat court view restaurant has been included allowing patrons to eat and view centre court action. The roof's dramatic structure is the result of extensive structural engineering analysis aimed at producing a long-span roof that spreads its load widely to avoid founding problems. The upright
masts and tension cables express the structure and provide the building with a dynamic and athletic signature.

To enhance the functionality and operational flexibility of the Sydney SuperDome a Banquet Hall - approximately 45 metres x 28 metres, has been included. This area operates totally separate to, or integrated with the main arena and is located in the northern section of the building. A major centrally hung gondola incorporates 4 huge videoboards and 4 major scoreboards this being the first such facility in Australia. Television broadcast cabling has been provided to allow picture reproduction to the main videoboards plus 300 television sets situated throughout the building. Additionally the building is set up to allow "plug in" Outside Broadcast van connections for live Television Network Broadcasting.

The functional design of the arena results in flexibility to adapt to various uses, the capacity to quickly change between different sporting and entertainment uses and the capacity to elicit high levels of customer satisfaction through excellent sightlines, comfortable seating, ease of access for all, high quality sound and lighting and high quality event catering. The Sydney SuperDome has been integrated with the adjoining 3500 space carpark, allowing direct access undercover between the two buildings (Abi Group, 2006a; Publishing and Broadcasting Ltd, 2007).

### 5.5.5 Design and Construction

Abigroup assembled its SuperDome team from its’ national resources. Included within this team were construction and building managers, cost planners, architects, contract and systems staff, engineers, administrators and clerks, site managers, foreman, tradesmen and secretarial staff. Abigroup established a project specific Design Office to ensure that the front end design was carried out efficiently and rapidly and appointed Design Managers to each sub-site of the total project. Cox Richardson Architects were commissioned for the architectural design and generated a memorable and imposing building with the assistance of international sports arena architects Devine deFlon Yaeger.
The following parties occupied the Design Office (Olympic Co-ordination Authority, 1999):

- Millennium (Abigroup subsidiary to "own" the Arena)
- Abigroup Contractors (design and construct builder)
- Cox Richardson (architect)
- DdY (specialist sports facility architects)
- Taylor Thompson Whitting (structural engineer)
- Norman Disney Young (services engineer)
- Page Kirkland (quantity surveyors)

According to a member of Abigroups Senior Management team:

“Abigroup designed the Sydney SuperDome as a world class arena which met the requirements of the Olympics and Paralympics, and is thereafter providing a long-term legacy for sport and entertainment in New South Wales. It was the venue for Gymnastics and the Basketball series at the 2000 Olympics, as well as Basketball at the Paralympics.”

Abigroup designed and constructed the SuperDome, the adjoining carpark and the 30,000m2 Public Domain area in a 25-month period with a peak labour force of 660 personnel on site and 25 different consultant teams.

5.5.6 Environmental Initiatives

Abi Group's design and construction process of the SuperDome incorporated the most rigorous environmental standards. These standards not only affected initial construction activities, but also were also implemented into the ongoing operation of the arena. It is one of the most environmentally advanced arenas of its type in the world.

The interview process with Abi Group’s senior management identified that the SuperDome adopted a series of measures to:

- Significantly reduce energy and water consumption
• Minimise the use of PVC and maximise the use of environmentally friendly building materials, including non-toxic paints, cellulose fibre insulation and sound-proofing made from recycled paper
• Use electricity generated from renewable sources, including solar collectors on the arena's roof that will generate up to 70 kW of power
• Encourage patrons to use public transport
• Use finishes and systems selected on the basis of life cycle analyses
• Ensure the arena is built and operated in accordance with an environmental management system
• Minimise indoor air pollution
• Minimise and manage all wastes and maximise waste recycling
• Use only recycled and plantation timbers.

Further detail of these key issues is provided by way of the Abi Group Internet website (Abi Group, 2005a):

*Purchase of Energy Australia’s ‘Pure Energy’*:  
Abigroup has committed the SuperDome to the purchase of Pure Energy from Energy Australia. Pure energy is generated from solar, biomass, wind, or hydroelectric sources and therefore has near zero 'green house effect' impact.

*Generated Solar Energy*:  
Abigroup incorporated the facility for a 70kw solar cell system on the roof of the Banquet Hall to provide "Green Energy" into the main energy grid of New South Wales, thereby "paying back" some of the power drawn from the system. This solar cell is the largest of its kind in Australia and will save the production of 85 tonnes of Carbon Dioxide per annum, which is the equivalent of 280 ha of a mid north coast spotted gum plantation forest cleaning our atmosphere.

*Building Materials:*
A model Environmental Management system was established for the control and monitoring of the design and construction. ECO rating charts were used to select building materials. Roof insulation was made from recycled paper/cellulose which is the equivalent to the recycling of 65,000 Sydney Telephone Books.

**Lighting:**
A computer based Building Management System ensures that energy efficient lighting controls allow lighting to be segmented dependent upon the building use. Additional low loss control gear and high output lamps together with effective management systems ensure lighting efficiency. Extensive use of glazing on the exterior walls of the circulation concourses were used to maximise the use of natural light.

**Minimisation of Water Consumption:**
The design of the hydraulic system achieves a 50% reduction in consumption of potable water over equivalent facilities through the following initiatives:

- Recycling rainwater collection and re-use, via Olympic Park collection system
- Flow control system on all cisterns
- Flush control on all urinals
- AAA rated low water use fittings, appliances and devices

30% of the total water demand is supplied from "Grey Water" via the dual water system which reduces demand on Sydney's potable water supply; the SuperDome uses 36% of the storm water is provides to the Grey Water System.

**Minimisation of PVC Use:**
(Abi Group, 2006a; 2006b)
A commitment to significantly reduce the use of PVC within the Sydney SuperDome has been made by incorporating the following initiatives:

- Eliminating the use of PVC in floor and wall finishes
- Eliminating exposed PVC in public areas
- Eliminating PVC in hydraulic services
- Minimising the need for electrical conduits by designing ducts, cable ways and cable trays
- Eliminating PVC for non-electrical ducts, conduits and pipes

**Waste Management:**

The SuperDome was the first project of its size and nature to set up a direct ‘site to recycler’ waste management system. Waste minimisation procedures were instigated during the construction of the SuperDome and the adjoining Carpark. These procedures resulted in a reduction of dumping to landfill of 98% and was achieved by clever design, project management and the employment of specialist consultants and waste material contractors.

Abigroup also committed the operational stage of the to a strategy of ‘waste to landfill minimisation’ by reduction of packaging material and maximisation of recycling. During the interview process, senior management explained that an efficient and effective system is provided for the collection, storage and removal of waste, including recycling. Sufficient space and accommodation is incorporated into the design to accomplish these objectives. Recycling is accomplished at the point of origin throughout the facility. Targeted recyclables include metal and plastic containers, office paper, cardboard and aluminium containers. Waste is collected on each concourse and transferred by two waste chutes and goods lift to the main garbage room on Event Level for final sorting, compacting and removing.

26,000m³ of waste concrete that was found on site was crushed and reused on site, which is 18% greater than the amount of concrete used in the construction of the SuperDome. 132,993m³ of ground was recycled - this represents landfill volume savings equivalent to 7 times the annual household waste of Auburn Council.

**Mechanical Services:**

(Abi Group, 2006a)

Advanced technological concepts have been incorporated in the provision of the most cost effective, energy efficient mechanical services for the Sydney SuperDome. These specifically include:
• Microclimate air conditioning in the arena allowing only those areas occupied, to be air-conditioned at all times and with the large unoccupied air volume in the upper roof space non-conditioned.
• A computer controlled Building Management System balancing air conditioning levels throughout the building for maximum efficiency.
• Maximum use of natural ventilation when conditions allow (i.e. full fresh air cycle incorporated into the air conditioning system with resultant energy savings).
• “Spill Air” conditioning of the Public Concourse areas.
• USA EPA Award winning energy efficient chillers incorporating refrigerant chosen to provide the most energy efficient solution and the lowest Greenhouse gas effect with insignificant ozone depletion equivalent to only one family's asthma puffers per annum.

5.5.7 The Project Consortium

The private sector consortium that was successful in bidding for the SuperDome was known as the Millennium consortium. Its sponsor, Abigroup, which built the arena, car park and public domain works, contributed $14.85 million in equity to the project. The consortium's debt finance, which, according to the Olympic Co-ordination Authority (1999), was originally to be provided by AIDC Ltd, was subsequently provided by the Bank of Western Australia (BankWest). Others involved in the Millennium consortium include Cox Richardson/Devine de Flon Yaegar (Architects) and Obayashi Corporation (as head contractor for works subcontracted to Abigroup).

Until April 1998 the consortium also included LMI Sydney, a joint venture between Leisure Management International and International Sports Facilities Management, which was to have been responsible for the management, operation and marketing of the arena. These functions were then taken over by Millennium Agent Pty Limited, as agent for a Multi Use Arena Partnership formed by the consortium in June 1997. Millennium Agent and all the partners in this partnership are wholly owned by Abigroup.
The Multi-Use Arena site is owned by the NSW Government through the OCA. After construction, the OCA granted a company established by the Millennium consortium a lease for approximately 31 1/2 years, until 31 January 2031, and this consortium will operate, maintain and repair the arena throughout this period, after which ownership and control of the facility will revert to the Government. The OCA will receive a share of the profits from the arena in the form of rent, provided the returns to the private sector parties exceed a specified threshold (Olympic Co-ordination Authority, 1999).

The completed Avenue 2B Carpark and the public domain works are being operated, maintained and repaired by the Government.

5.5.8 Project Finance

The Olympic Co-ordination Authority (1999), states that the total estimated design, construction, fit-out, commissioning and financing cost of the Multi-Use Arena itself is A$197.2 million, of which the Government will contribute $141,488,000 under the OCA's contracts with the private sector. The Millennium consortium contributed approximately $55.7 Million, of which:

- $14.85 million is equity as described above, which under the contracts was contributed on the 1 April 1999.

- Up to $35.5 million was raised under an amortising debt finance facility provided by BankWest (during the construction phase a BankWest construction debt facility of up to $40.5 million was utilised).

- Some or all of the balance is derived from the arena's operating cash flows, with the arena's operating fund underwritten by Abigroup.

In addition, the Government paid the Millennium consortium $62 million for the planning, design, construction and commissioning of the adjacent Avenue B Carpark and $19.3 million for adjacent "public domain" landscaping and related works.
5.5.9 Project Participants

- **New South Wales Government** (main public sector entity and formerly under the guise of the Olympic Co-ordination Authority/OCA. In 2001 the OCA was replaced by the Sydney Olympic Park Authority);
- **Abi Group** (private sector sponsor of the Millennium consortium);
- **Millennium Agent Pty Limited** (contracted with the State Government to finance, plan, design, construct, commission, lease, operate, maintain and repair the Multi-Use Arena and plan, help to design, construct and commission the adjacent car park and public domain facilities);
- **Millennium Contractors Pty Limited** (contracted with the State Government to design and construct the OCA funded portions of the Multi-Use Arena);
- **AIDC Australia Limited** (provided up to $40.5 million of construction debt finance to the Multi Use Arena Partnership, repaid in January 2001, followed by up to $35.5 million of amortising debt finance over 15 years);
- **Obayashi Corporation** (Head Contractor for the design and construction obligations of Millennium Agent and Millennium Contractors to the State Government, which in turn has sub-contracted these obligations to Abigroup); and
- **LMI Sydney Pty Limited** (responsible to Millennium Agent for carrying out Millennium Agent's operation, maintenance and repair obligations to the State Government during the initial years of the arena's 31 1/2 - year operating term. These functions were then taken over by Millennium Agent Pty Limited).

5.5.10 Contractual Structure

The contractual structure of the project - inasmuch as the contracts potentially affect public sector risks and benefits - is summarised below and a contract structure diagram is provided in Appendix Four of this thesis.
**Multi-Use Arena Project Agreement**

The core contract is the Multi-Use Arena Project Agreement between the OCA and Millennium Agent. This agreement permits and obliges Millennium Agent - which in all the contracts is acting as agent for the Multi Use Arena Partnership under the Partnership Agreement, Multi-Use Arena Partnership to:

- Finance, plan, design, construct and commission the Multi-Use Arena.
- Plan, design, construct and commission the adjacent Avenue 2B Carpark and "public domain" areas, apart from designs to be prepared by the OCA for the Public domain works.
- Operate, maintain and repair the Multi-Use Arena during the term of a lease from the OCA to Millennium Agent, in the form of the Land Lease annexed to the Multi-Use Arena Agreement to Lease, from the completion of the Multi-Use Arena until 31 January 2031 or any earlier termination of the agreement.
- Yield up possession of the Multi-Use Arena to the OCA on 31 January 2031 or any earlier termination of the agreement.

**OCA Works Design and Construction Deed**

The OCA has also entered into the ‘OCA Works Design and Construction Deed’, with Millennium Contractors. The scopes of the arena works to be funded by the OCA under this deed and the arena works to be funded by Millennium Agent under the Project Agreement have been adjusted, to reflect lower interest rates, under the Works Adjustment Deed.

**Multi-Use Arena Design & Construct (D&C) Head-Contract**

Millennium Agent and Millennium Contractors have contracted Obayashi, under the Multi-Use Arena Design & Construct (D&C) Head-Contract, for Obayashi to assume responsibility for their design, construction and commissioning obligations under the Project Agreement and OCA Works Design and Construction Deed. In turn, Obayashi sub-contracted most of its obligations to Abigroup, under the Multi-Use Arena D&C Sub-Contract.
**Multi-Use Arena Deed of Novation**

The Multi-Use Arena Deed of Novation, between the OCA, Millennium Agent, Millennium Contractors, Obayashi and Abigroup, effectively provides that if the Project Agreement is terminated, the NSW Government may step into the shoes of Millennium Agent and Millennium Contractors under the D&C Head-Contract, and/or Obayashi under the D&C Sub-Contract, and deal directly with Obayashi or Abigroup so that construction can continue.

**Agreement to Lease**

Under the Agreement to Lease between the OCA and Millennium Agent, as agent for the Multi Use Arena Partnership, the OCA:

- Granted Millennium Agent and its contractors rights of access to the construction site for the arena, the carpark and the surrounding precinct, and
- Agreed to grant Millennium Agent the Land Lease, for the land occupied by the arena itself, from practical completion of the arena (other than the limited post Olympics works) and the first two phases of the carpark until 31 January 2031 or any earlier termination date.

**Multi-Use Arena Management Agreement**

Millennium Agent's Project Agreement obligations to the OCA to operate, maintain and repair the arena during the term of this lease were mirrored in the Multi-Use Arena Management Agreement between Millennium Agent and LMI Sydney, which was originally going to be the arena's operator. LMI Sydney's performance of its obligations to Millennium Agent under this Management Agreement were guaranteed to Millennium Agent by LMI/HHI, Ltd, doing business as Leisure Management International, in a deed dated 12 August 1997.

The Multi-Use Arena was known as the Sydney SuperDome from its opening in 1999 until 2006 when it was renamed Acer Arena (under a sponsorship naming rights). It has
been known as AllPhones Arena since 2011 and is owned by Nine Entertainment (formerly PBL) and managed by AEG Ogden.

**Multi-Use Arena OCA Deeds of Charge**

Under the Multi-Use Arena OCA Deeds of Charge the partners to the Multi Use Arena Partnership, Millennium Agent and Millennium Contractors, granted the OCA floating charges over all their project assets - ranking second only to the security interests of their debt financier - to secure the obligations of Millennium Agent and Millennium Contractors to the OCA under the key project contracts. Other ‘securities’ required from Millennium Agent are set out in the Project Agreement itself.

**Securities**

A range of securities for Millennium Agent's debt financing arrangements with AIDC are being held by the Security Agent, AIDC Australia, under charges granted by the Multi Use Arena Partnership's partners, Millennium Agent and Millennium Contractors, a Security Trust Deed between Millennium Agent and AIDC Australia and a mortgage of the Land Lease in favour of AIDC Australia under the Multi-Use Arena OCA Consent Deed between the OCA, the Security Agent and Millennium Agent, these financier's securities will have priority over the OCA:s securities under the OCA Deeds of Change. The OCA Consent Deed also regulates the manner in which the parties may exercise their rights if Millennium Agent defaults on its obligations or if the OCA otherwise becomes entitled to terminate the Project Agreement, the Agreement to Lease or the Land Lease.

**Public Authorities (Financial Arrangements) Act Deed of Guarantee**

Under the Public Authorities (Financial Arrangements) Act Deed of Guarantee between the State of NSW, Millennium Agent, the six partners in the Multi Use Arena Partnership, Millennium Contractors, AIDC and AIDC Australia, the State of NSW has unconditionally and irrevocably guaranteed the OCA:s performance under the Project Agreement, the Agreement to Lease, the Land Lease, the OCA Works Design and Construction Deed, the OCA Consent Deed and the OCA Deeds of Charge, and any
other project contracts approved by the Treasurer, to all the other parties to these contracts.

**Equity Commitment Deed**

Under the Equity Commitment Deed Abigroup has promised the OCA that it will not sell down its undertaking in the project without the OCA's consent, and also committed to the debt financier's Security Agent to make its equity commitment to the project and under-write the arena's operating cash flows to 31 December 2000 to the extent of $5.3 million.

**Venue Agreement**

The Venue Agreement, between SOCOG and Millennium Agent, specified the terms on which the arena was made available to SOCOG, rent-free, for the Olympic and Paralympic Games The Commercial Rights Agreement between SOCOG and Millennium Agent regulates various marketing and operational activities.

**Conditions precedent**

The substantive provisions of most of the project contracts outlined above were subject to a series of conditions precedent, and were not to become binding until all of these conditions were either satisfied or waived.

For example, the Project Agreement, the OCA Works Design and Construction Deed, the Agreement to Lease, the OCA Consent Deed, the D&C Head-Contract and the D&C Sub-Contract were subject to the following conditions precedent:

- The execution of all the other 'project documents’, as defined in the agreement and including most of the key contracts outlined above, except for the Land Lease. This condition precedent was satisfied on or before 12 August 1997, when LMI/HHI Ltd's guarantee of LMI Sydney's performance under the Management Agreement was signed.
• The granting of all necessary Ministerial consents, including consent under the Public Authorities (Financial Arrangements) Act.
• The granting of development consents for the arena and carpark in a form not materially different to draft development consents exhibited to the Project Agreement or otherwise in a form acceptable to the parties.
• The receipt by the OCA of $20 million in security bonds.
• The taking out of insurance policies as specified in the agreement and in a form acceptable to the OCA.

• The execution of a Government guarantee of the OCA's obligations under the defined "project documents", in accordance with the Public Authorities (Financial Arrangements) Act.
• An audit, to the satisfaction of the OCA, of a "base case financial model" exhibited to the Project Agreement.
• An agreement by the OCA, Millennium Contractors, Millennium Agent and the private sector debt financier, AIDC, on ‘base swap offer rates’ to be used for interest rate adjustments of the OCA-funded and Multi Use Arena Partnership-funded works and contract price under the OCA Works Design and Construction Deed.

If these conditions precedent had not been either satisfied or waived within four months of the signing of the Project Agreement, or any other period agreed between the OCA and Millennium Agent, either party would have had the right to terminate the Project Agreement and the Agreement to Lease by giving seven days’ notice.

Because all the conditions precedent listed above were satisfied on or before 23 October 1997, the Project Agreement, the OCA Works Design and Construction Deed, the Agreement to Lease, the OCA Consent Deed, the D&C Head-Contract and the D&C Sub-Contract became binding on that date.
5.6 RISK ISSUES ENCOUNTERED ON THE SUPERDOME PROJECT

In the case of the SuperDome, the basic premise is that the NSW government wanted a building that is to provide or fulfil a community need such as a multi-purpose arena. The government is willing to give a plot of land, in the form of a 30 year lease period, to somebody if that group will develop the facility and own and run it for the relevant concession period. Then, at the end of 30 year period, in exchange for having granted a consortium that concession, the building is given back to the Government. That is the simple agreement and the whole risk profile flows from this very simple model.

5.6.1 Building Operation or Patronage Risk

The issue of building operation or patronage risk was identified during the interview process.

Case Example

This is given as a supporting example of this area of risk by the State Government’s Director of Stadia:

“Viable business operation is the backbone and key risk issue of PPP projects. For example, if we have a business that’s projected on 1 million people a year and we only get half a million people, then the Government is not sharing that risk. The Government is not sharing that risk because the OCA has given the Project Company a block of land to build a business on. It’s theirs. If they make a fortune, it’s theirs, if they lose a fortune, it’s theirs too.”

This is in part accurate, as the Government will share in any up side by insisting on having a super profit arrangement which basically states that if the project company starts making millions of dollars, which is not normally the case with public buildings, then the Government will share in these ‘super profits’. Once the profit goes beyond a particular measure of income that may be a proportion of the business plan projections, then the Government will have a formula where some of that profit goes to them.
The Government may ‘step in’ if the consortium’s business performs so poorly that they need to close their doors and basically default on their agreement to provide community access to the facility. Ownership then reverts to the Government. However, in this worse case scenario, the Government has a substantial amount of time to rectify the problem of a poorly performing business.

5.6.2 Raising the Capital

In terms of the various steps that such a consortium would have to complete in order to realise the asset, then they firstly have to raise the money. The inability to finance the project is a consortium risk, therefore, a private sector risk.

5.6.3 Design and Construction

Once the consortium has raised the necessary funds then they have to enter into a building contract with someone to design and build the project.

Case Example

According to a member of the OCA’s senior management team:

“If the consortium gets its sums wrong or negotiates poorly with the contractor or alters the design of the scheme part way through the process creating a lot of variations, then those costs are those of the project consortium. They belong to the private sector, it’s their building.”

The Government wont share in obvious risk issues related to the likes of inclement weather or industrial relations. These are issues that the private sector is better equipped to manage and overcome.
5.6.4 Project Finance

The above issues are the key elements, but they all stem from the very initial idea that states that the Government is providing the private sector project company with a concession to run a business, and if that business fails, the private sector cannot subsequently go back to the Government.

The Government stated on day one of the SuperDome process that the project company had to go away and complete their calculations as to the viability of the business. If there was a shortfall of capital needed to get the project up and going then they could inform the Government what this shortfall is, in a competitive environment, and the Government will subsequently contribute this shortfall.

On the SuperDome the NSW Government had a contribution which was in the order of a A$140 million cash injection, it didn’t come as cash, but as project works, as it is very much a tax driven solution as to how the finances get contributed. The consortium did not have to spend the $140 million directly on the facility, it was a financial contribution to account for funds that the consortium didn’t have to spend in order to make the business viable.

The Government stated that if the consortium calculated the initial ‘shortfall’ figures incorrectly, then they couldn’t go back and ask for more public money. The consortium put together their business projections and engaged with their chosen team. The Government didn’t tell them who to use or how to do their business projections, the Government simply asked how much money they needed to kick start the project and the Government could then contribute towards the project based upon the shortfall calculations. Therefore, if the public sector contribution wasn’t enough, the private sector consortium only had one chance at this type of request for additional funds, and are asked not to come back to the Government for further contributions.”

5.6.5 Infrastructure

One area where the OCA (Government) does take on some risk on the SuperDome is that they needed to ensure and maintain accessibility to the venues within the
Homebush Bay complex. The Government cannot close the roads or the railway line or develop the area in such a nature that it impacts on the business of running the SuperDome. Therefore, they have taken on some obligations with regards to the provision of infrastructure.

This provision doesn’t involve any capacity related transport obligations, for example, in terms of guaranteeing that 30 trains an hour will run. However, the Government must maintain the rail system that is capable of running 30 trains an hour. Therefore, if there is an event at Homebush Bay which demands 30 trains an hour, then the Government will engage to make a commercial arrangement making that possible, providing it’s economical. They have also undertaken to maintain 10,000 car parking spaces. When, or if, parts of the Homebush Bay site is redeveloped, and there is a need to reduce or increase that number of car parking spaces, then the various public and private sector parties have to renegotiate that ‘car-parking provision’ part of the deal.

5.6.6 Competition

The Stadium Australia Project Agreement had some competitive protection arrangements included. If the Government financially facilitated the development of a competing stadium, that would lead to a material impact of the business of the Stadium Australia, then the Government must negotiate with the project company in order to rectify that effect. This may be by means of a cash settlement, or by extending the concession period or through some other concessions. Either way, it’s certainly an obligation on the government, having reaped the benefits of private sector money in the initial deal, if it then initiates something to compete with the facility, then its going to have to pay in some way.

This aspect of the Project Agreement changed on the SuperDome, the interview process with the OCA indicated that the Government was rather unhappy with the ‘competitive protection arrangement’ on Stadium Australia due to its difficulty to administer. So, when the SuperDome deal was negotiated and the private sector consortium made reference to the existing and competing entertainment centre (Sydney Entertainment Centre), the Government recognised that the SuperDome will have to compete with it,
but that the Government was not willing at that stage to do anything about the entertainment centre.

Case Example

According to a member of the OCA’s senior management team:

“The Sydney Entertainment Centre (SEC) exists, it’s trading and it’s very popular with the public, so the consortium had to develop a business plan knowing that the SEC is there competing with them. The Government would not incorporate a ‘non-competitive protection’ agreement. The Government didn’t want any arrangements which stated that if the SEC has more than, say 30 acts a year, then they will compensate the SuperDome project company. Also, if the Government decides to build another entertainment centre, say in Western Sydney, then so be it, they want the total freedom to do whatever the future needs may be.”

This obviously injected some form of uncertainty into the business of the SuperDome. The project company had to ‘cost’ that uncertainty.

Case Example

According to a member of the private sector senior management team:

“This may mean that the project company would have $10 million or so in a secret fund, say a marketing reserve, for the likes of tackling the opposition, or to allow them to incur some heavy start up loses.”

This issue was also highlighted further by the public sector team during the interview process, who stated that, at the negotiation stage, the project company must inform the Government what this ‘reserve fund’ figure is, the Government will then increase its’
contribution by that amount, but, at the same time as being told that that figure, they are also asking the other private sector consortium competitors that same question.

The risk factor of competition, and in particular the competing venues of the SuperDome and the SEC, raises a long-term economic issue in asking the question as to whether a city the size of Sydney support two such venues.

5.6.7 Operations and Maintenance

The SuperDome has a 30 year concession period, up to year 20 there is an Asset Management Plan to address the risk of Operations and Maintenance Failure. The Asset Management Plan is approved by the Government and has a review mechanism. It basically states the various terms, details of repayment, replacement, schedule, cost et al. It also indicates the finances necessary for investing into the sinking fund each year so that when the time comes to carry out a specific maintenance it ensures that there is enough money in the kitty. Up to year 20 the Government is relying on its inspectorial role which also allows for scrutiny and approval of spending out of the fund. After year 20 the Government view is that in the last ten years of the concession period there will be a normal temptation by the operators to let the building run down because it will be handed back at year 30. For example, in year 29 there may not be any major capital replacement program even if it was needed. So, in year 20 the Government will have a regime of inspection measuring performance against the Asset Management Plan and if the view is that it’s not being implemented properly then the Government can insist on a bond being put in place which basically gives them sufficient funds to cover any shortfall in maintenance on building handover”.

Case Example

The interview process with the Government’s Director of Stadia provided the following simple example in support of this approach:

“It is simply a mechanism to try to address normal human nature of not spending $10 million replacing all the plant in the building if it is given back to another party next year. The model is untested and won’t be measured until year 20, but at present we would hope that normal commercial imperatives would lead to the building being well maintained.”
This doesn’t always tend to happen. It is a long period of time and unfortunately 30 years is just outside the life of a lot of very big plant items such as the chillers for air conditioning units and the air handling treatment system which are good for 20-25 years. But, building owners or operators will always attempt squeeze another 5 years out of the plant, so it’s a liability that we have tried to address. We have tried to off set the risk of getting an imperfect product or liability back at the end of the concession period instead of an asset.”

5.6.8 Political Support

With regards to the risk issue of Political support or back down, particularly with regards to business solvency, then the Government may be pressured into stepping in if the project company declares bankruptcy and decides to close the facility forcing government intervention. This issue should be contemplated in the project agreement and the ‘step in’ rights must be extraordinarily clear with a very short timeframe to do address the problem.

Step in rights on the SuperDome project agreement are of a different nature. If the business shuts its doors, starts to struggle or becomes insolvent so that it ceases trading, then the Government has an ability to correct the problem but only after what is called a preliminary cure period. The cure period is to recognise that businesses do get into difficulty, so they may need to close their doors for a couple of months to revitalise their business and to regroup over this cure period. This is obviously very difficult with regards to political infrastructure.

Case Example

According to the OCA’s senior management team:

“Where governments do consider, or actually provide some form of bailout, then this undermines the whole transference of the risk model, and if you do it once, you are probably doing it a lot. Businesses do fail.”
5.6.9 Construction Time Overrun

The Government is not running the building, so late completion has little relevance to the Government. The consortium that is operating the venue has got more to lose by construction time overrun than the Government as they are running the business. Abi Group, as the contractor, must deliver the building on time under the terms of the D & C Contract.

5.6.10 Construction Cost Overrun

The Government is immune to this risk. Subsequently, Obayashi, then Abi Group, were ultimately responsible for any cost overrun by way of the fixed price, lump sum D & C contract. The project company is responsible for any cost overrun associated with their initiated changes and variations or for items outside the D & C scope.

5.6.11 Design Risk

It’s not a risk carried by Government on the basis that they have already specified the design and performance outcomes. Abi Group bore the substantial portion of this risk under the D & C contract and subsequently the various sub-contractors also bear relevant risk.

Case Example

A senior management member of Abi Group, part of the private sector consortium, indicates that it clearly is the private sector that takes the majority of risk allocation:

“Risk issues from design to operation and construction and cost overrun are carried by Abi Group. Abi Group is the project sponsor, equity investor, contractor and operator”.

5.6.12 Changes in Tax and Laws

The government in this case carries the risk where they are specific to the project. If they are general taxes such as GST, then the business bears this risk. The NSW State
Government is trying to set up a regime whereby a developer decides to procure themselves a stadium or arena, the Government gives them some land virtually free of rent for a long period of time and in exchange the operator runs their business. Like any other business, if the law changes, the law changes.

5.6.13 Bidding Risk

The Government paid the loser after two tenderers were led to the latest tendering stage possible. They were paid a pre-specified quantity of money, this was not a re-imbursement of all of their tender costs, which was a significant re-imbursement towards the additional costs of tendering to an extremely late stage. This resulted in improvements in the quality of the two bids that were being prepared in direct competition with each other as the re-imbursement acted as a safety net for both tenderers leading to improvements in the process.

5.6.14 Raw Material Supply

The Government does not bear this risk. For example, if the consortium has designed something out of concrete and concrete suddenly becomes expensive or there was a strike or the quarries flooded, then that’s a risk taken by the developer.

5.6.15 Force Majeure

A risk throughout the entire project life cycle. Responsibility generally shifts between the construction phase (Contractor) and the operational phase (Project Company). The Government has extensive arrangements in the project agreement with regards to force majeure and insurances. There are some instances whereby if an event is uninsurable and the SuperDome is subsequently damaged then there are arrangements as to how the Government buys it back, at what rate it is bought back, whether or not Government buys it back et al.

5.6.16 Environmental Impact Statement

The Government bolted down the environmental outcomes from the SuperDome at the time of the Project Agreement, they were negotiable, but they were documented. The
risk of the environmental issues not being developed is a contractual risk, if they don’t get delivered it’s considered in the same light as a contractor not carrying out part of the contract, for instance completing the roof, they obviously have to conform to the contract and put a roof on.

5.6.17 Approval Process

This was a shared risk. The SuperDome was signed on a draft development conscience, with the deal being that if the actual consent didn’t differ markedly from the draft consent then there was no problem, if it did differ, then the Government would own the problem, and took that risk on board. This was done knowing that those giving the consent were part-government body, and would therefore consider the impact that it had on the NSW Government, but also knowing that the draft conditions were almost bound to be identical to the final conditions. The OCA didn’t expect anyone outside of government to believe them so they took this risk on.

In concluding, one of the factors necessary to successfully manage issues and allocation of risk is that of project expectations. This is particularly difficult when considering the length of time of PPP projects (from project finance through to design and build and the concession period and the subsequent hand over of the facility) and far reaching given that participants are from very different sectors of the industry with their very own and individual expectations.

Case Example

The Government’s Director of Stadia supports this and states:

“In PPP projects where you have a public facility run by a private operator, you have to describe your outcomes. That’s the hardest part in my experience, getting participants to write down their expectations, because they are not used to doing it, so hand in hand with all the complications of PPP issues goes writing down what your individual and stakeholder expectations are.”
5.7 SUCCESSFUL MANAGEMENT OF RISK FACTORS FOR THE SUPERDOME PROJECT

5.7.1 Approval and Negotiation Process

The SuperDome deal was a very streamline process. It came immediately after Stadium Australia, where the Project Agreement was signed only a few months after the tendering negotiation process for the SuperDome started, and enabled reflection of the key issues associated on the stadium to be incorporated into the SuperDome.

Case Example

As the OCA’s Chief Negotiator states:

“The various issues that had been sub-optimal on Stadium Australia, or at least where there was room for improvement, could actually be incorporated into the SuperDome process. This actually made it by world standards a very slick process.”

The issue of the approval and negotiation process is a key CSF in its own right but also has several sub-factors relating to its overall success. Examples of these sub-factors include the production of a clear project brief and the introduction of increased competition into the tendering process. These issue are also discussed.

5.7.2 Clear Project Brief and Client Outcomes

Issues for project success are also linked to both producing a clear project brief and the experience of the client. In this case the Government was very educated and experienced in terms of both the end product and the PPP process. The learning process of negotiating a similar PPP project, Stadium Australia, a matter of a few months earlier, contributed to a successful negotiation process.
5.7.3 Increased Competition During the Tendering Process

The OCA supported the issue of a clear project brief and client outcomes for project success and the interview process highlighted several key ingredients. The Government knew what it wanted, it was documented and published widely, they knew the process they wanted and didn’t deviate from it. The Government knew its time frame, knew that they wanted to run two groups to the very end of the tendering process, knew that they were going to pay the loser, knew that they wanted to publish the design and didn’t deviate from our path.

This process differs dramatically from the one used to negotiate Stadium Australia and similar PPP concession projects. Whereas previously the successful tenderer had been identified at an early stage, with the remaining participants culled from the process, and contracts subsequently signed, the SuperDome process took an entirely different approach by identifying two tenderers and negotiating with them until the very end of the tendering process. As the loser was offered a generous form of reimbursement for entering into the process, the running of the two tenderers as late as possible at the negotiation stage created a very competitive environment that could only offer the Government as good a deal as possible.

Case Example

The process is further explained by the OCA’s Chief Negotiator:

“We gave a lot of information to the two bidding consortiums about our preferred risk profiles, we actually gave them tendering stage draft copies of the main project agreements and documents and stated that this information is not a risk table, this is the contract mark up, the parts you don’t like, at your peril, take them into account and highlight them and mark them up, but remember that you are in a competitive situation and this is a starting point for any negotiations or any knocking out through the tender process.”

So, the CSF in this case was the Government knowing exactly what it wanted, documenting it, informing the tendering consortiums and sticking to it. In other words,
maintaining and abiding by a clear and precise project brief and documentation that was readily available to the tendering consortia.

5.7.4 Business Diversification

The underlying key to success in any PPP project is successful business operation. One area in which financial success can be further enhanced is that of business diversification. The SuperDome’s core business being a multi-use arena is that of staging various sporting and entertainment events. In order to diversify and open up additional markets it also has a number of eating and drinking establishments that are also open on days when there are no events at the SuperDome. This may be particularly profitable on days when events are held elsewhere at Olympic Park, such as the nearby Aquatic Centre or Stadium Australia.

This issue was explained during the interview process with the private sector member, Abi Group. The SuperDome has its Boulevard Cafe and a very large transparent foyer which both open out onto the plaza and so both the reality and the potential is there to integrate some of those inside spaces of the arena into businesses with the outside world. The SuperDome benefits and so do the people who are not even going to the arena for an event, they may just be in Sydney Olympic Park and they want to eat somewhere. These indoor-outdoor aspects integrate the venue with the surrounding precinct and is a key success factor.

5.7.5 Operation of the Facility

Success is not guaranteed by diversification alone, the core business of the SuperDome in attracting events to the arena is the key to ongoing and successful Operation.

A key success factor from an operation viewpoint is that there is a need to want to see an ongoing viable business. However, if the businesses fail, but the venue keeps functioning, then there may be secondary impacts, there are obvious problems, but the very core objective of the government, which is to have an arena where the people can go and watch an event, hasn’t changed.
The SuperDome has had several changes in operational strategy since it opened in 1999. The arena was known as the SuperDome until 2006, when it was renamed Acer Arena as part of a naming rights deal and subsequently purchased by Allphones, hence ‘Allphones Arena’ from September 2011. Millennium, the original operator, experienced mixed success. However, the current operator, AEG Ogden, through various sponsorship agreements and numerous ongoing and one-off promotional events and tenants have turned the Arena into one of the most success businesses of its type anywhere in the world.

Case Example

Successful operation is further explained by AEG Ogden’s Operations Director:

“In 2013 Allphones Arena became the 11th top grossing venue in the world while hosting seven of the top 10 grossing tours. This built upon the success of 2012 whereby supporting sponsorship rights with the likes of American Express, Coca-Cola, Carlton and United Breweries, Nestle, et al all continued.”

5.7.6 Ownership

The issue of ownership appears to be of little significance, as long as the business continues to operate successfully then the matter of facility ownership has no bearing upon the ongoing commercial success of the SuperDome.

Case Example

The OCA’s Director of Stadia explains:

“Owners may come and go, for example, we see this with hotels all the time. You can get one hotel that’s had 10 owners in the last 30 years or so, but the public don’t necessarily know, all they care about is access to the hotel, they don’t really care who owns it. It might be the Hilton today, the Regent tomorrow, and the Four Seasons the next day, but this has little impact on the paying public, it’s the same place. It’s the same issue with the SuperDome, the public is unaffected by who owns and operates the arena all they are
concerned about is that they can go and watch the basketball or a concert, get something to eat and drink and that it doesn’t cost them much more than if they did it at a competing venue.”

This issue of changing ownership is supported to some extent in that the current operators, Nine Entertainment, are the third main owner in the Arena’s relatively short 15 year history. However, some form of business expertise appears to have some impact on success.

Case Example

AEG Ogden’s Operations Director explains:

“It has been well publicised that the original owners of the Arena – Abi Group/Millennium Consortium, had little to no experience in owning and operating a facility of this nature. Their main area of expertise focused on traditional infrastructure projects, including roads, tunnels and some healthcare projects. Post-Olympics, the early years of operation saw the owners struggle with competing venues and being able to secure major anchor tenants and promotional events. When they decided to on-sell the Arena to new owners, Publishing and Broadcasting Ltd (PBL), then the business operation started to improve economically due to the expertise of the new owners. PBL demerged in 2007 and the Arena ended up with new owners, Nine Entertainment. Success continued through to these current owners who are a leading media entertainment group with a presence across television, events and online who have the networks, resources and experience to successful manage an arena of this type.”

Infrastructure Partnerships Australia (2013) state that changed capital market conditions also warrant reconsideration of the financing structures and future ownership models used in PPPs, particularly where adjustments can improve value for money, while maintaining optimal risk transfer to the private sector. This is also further supported by Clayton Utz (2013) who identified that Governments have responded to improvements in PPPs by expressing a desire for more “operator-led” consortia. Limited recourse financing requires the SPV to transfer most risks associated with the operation of the
infrastructure facility to an operator with the expertise and balance sheet strength to manage such risks. Therefore, having accepted such risks, the interests of the operator will conflict with the interests of the equity investors from time to time. If the operator is performing poorly and is unable to lift its performance to an adequate level, they may on-sell the operations of the PPP or the equity investors may wish to appoint a replacement operator.

5.7.7 Trust in the Sponsor

Entering into a contract with any party that is unfamiliar to you is a risk and one that is virtually never taken on board. Some parties can come to the table that have no track record in doing business with government so that also has to be measured. The ability to raise funds and the track records of bigger companies is not necessarily a guarantee for success. The size and the reliability of a company and the depth of resources in a company can be overwhelming, but if they put a poor manager on the project then there will be problems. To Government, it’s more important to look at these organizations in terms of what their involvement is in the deal, what have they got to win, or more importantly lose.

5.7.8 Community Support

This is strong but not necessarily critical. In some cases there may be a reliance on the developer of the business to obtain community support. This is not the case with the SuperDome, where the Government carried out most of the community work. The Olympics is not typical and is not a good example as support for hosting the event was nationwide.

5.8.9 Feasibility Study

The Government would carry out the initial feasibility study in order to know what to ask for. The consortium would obviously be expected to do their own marketing and feasibility studies to check what is viable. If they simply deliver what the Government has asked for then they are taking the operating risk. The Government integrated successful issues from Stadium Australia into the SuperDome process.
5.7.10 Consortium Structure

This has to be clear for a successful project. It also has to survive the tax commissioner, who gives a ruling. In very complex structures there may be concerns as to how and where all the fees are going and whether there aren’t any funds artificially built into the structure to simply extract fees out of the business particularly during the early stages. It is an issue for the Government particularly if it has been asked to make a capital contribution to a shortfall in a business plan as the government should concern itself with where the money is specifically going. Hence a need for transparency.

5.7.11 Why Was the Bid Successful?

The SuperDome had no clever ideas like Stadium Australia with its extra 30,000 seats funded by the various membership schemes. Indeed, it does appear that most PPP projects have no clever ideas, but are successfully driven by streamline financing and stakeholder equity.

Case Example

According to the OCA’s Director of Stadia:

“The Millennium Consortium bid was successful because it had streamline financing and reasonable equity in participants who had more of a risk appetite than average project participants and actually wanted to be in this business.”

So, the successful SuperDome bid had no bright ideas, but the project company had a fairly large appetite for risk. This appetite for risk extended included into wanting to compete with the nearby Sydney Entertainment Centre.

The interview process highlighted that on the SuperDome project there was an enormous appetite for competition with the SEC. Only time will tell whether this was
wise or not, but the Government’s view is that no-one is forcing any consortium to take on this type of project. The Government is providing a business development opportunity, in a competitive environment, if a private sector consortium wants to get involved and are subsequently successful in the bidding process, then the Government is happy to provide the concession. Only time will tell whether the business plan of the group that actually won the SuperDome bid, Millennium, is sound enough to take on the competition. Currently, the business appears to be struggling, but, this is not uncommon in today’s competitive world.

In summarising as to why the Millennium bid was successful, it most closely matched the government’s preferred risk profile.

5.7.12 Reflection

On reflection, one of the senior management team of Abi Group stressed that identifying and selecting the right project is the key towards continued success in PPP projects.

Case Example

A Senior Construction Manager of Abi Group clarifies this by stating:

“To put together a decent proposal for a project the nature of the SuperDome you’re looking at costs of $4-5million. That is a major risk and one that can only be managed by successfully identifying the correct project”.

With regards to the future of Abi Group’s, and indeed Millennium Consortium’s continued involvement in PPP projects of this nature then a change in strategy occurred.

Case Example

Further reflection is provided by one of Abi Group’s senior management team:
“The SuperDome was probably a one-off project for Abi Group in terms of buildings of that nature. The company intends to pursue Social Infrastructure (schools, hospitals, prisons et al), as the majority of the revenue stream is underwritten by Government providing certainty in the business plan, and Economic Infrastructure (roads and tollways such as the Western Sydney Orbital and the M2 Motorway) as there is an almost guaranteed revenue stream”.

The 15 year history of the Arena has seen that Abi Group’s flirtation with owning and operating this type of infrastructure has not been totally successful. While they certainly demonstrated significant success in the finance, design and construction of the project, business ownership and operation was more problematic given their limited expertise in this area. Once ownership changed, firstly to PBL and then to Nine Entertainment, organisations with both significant resources and experience to successfully operate an entertainment facility of this nature, then the Arena has gone from strength to strength.

5.7.13 Future

As far as the SuperDome is concerned, the interview process identifies several strategies that owner/operators had to adopt:

- Develop long term tenancy agreements with sporting bodies such as the National Basketball League
- Pursue relationships with events promoters and continue to develop expertise in events promotion

Strategic Alliances are changing the competitive structure of many industries, including construction, and as companies see their competitors lock arms, it will become increasingly difficult for them to operate alone (Jefferies et al, 2000; Cheung et al, 2005; Walker and Rowlinson, 2008; Jefferies et al, 2012). The interview process supports this and in summing up the future direction of private sector operators such as Abi Group Ltd, one of their senior management team stated that alliances in future PPP’s are necessary for project success.
Case Example

A member of Abi Group’s senior management team explains further:

“Entry costs for major projects are becoming too heavy for one organization to carry. Developing strategic alliances in future and Public Private Partnership’s (PPP’s) with other private sector operatives will be vital so that front-end costs can be shared in projects that are big enough to warrant shared these shared resources”.

Since the SuperDome, Abi Group have entered into several strategic alliances not only with public sector entities, but also with other major private sector operators. For example, these include alliances with Lendlease in their tender for the Western Sydney Orbital project and the Pacific Highway upgrade in NSW; with John Holland for both the Melbourne to Maribyrnong River regional rail link and the Bulk Water Alliance in Canberra; and with Leightons for another section of the Pacific Highway Upgrade in NSW and the Epping to Thornleigh rail track in Sydney.
5.8 MATER HOSPITAL

The New South Wales (NSW) Government in conjunction with the Department of Health have developed an Action Plan for Health NSW incorporating key principles in order to improve the State Health Services. Those principles include better access, greater focus on ambulatory care and community based care, making better use of assets designed for modern service delivery, with the input and support of local communities.

As described (Bovis Lend Lease, 2002) in the Mater Hospital Development Application, implementation of these principles by Hunter Area Health is via the Hunter Strategy – an Area wide strategic resource plan that promotes the effective management of the Area’s finances, people, information technology and physical assets, as well as the effective use of the resources of the private sector. The Hunter Strategy is responsive to compliance with current government policies, business improvements, capital charging and opportunities arising from new developments in information technology, asset maintenance and the transfer of services to non-government sectors.

The second stage of the Hunter Strategy is the Newcastle Strategy (which the Mater Hospital re-development forms 1 of 4 projects) and involves major new upgrade works initiatives by the NSW Government. These projects were to be “originally” procured
under conventional arrangements from the Department of Health’s Capital Works Budgets.

5.8.1 Location

The Newcastle Mater Hospital is located within the Newcastle region of New South Wales, in the suburb of Waratah. The surrounding area is predominantly single storey residences. The existing hospital is benched into the hillside that leads to the adjacent Braye Park. Hunter Water Corporation reservoirs are located on top of the hill.

5.8.2 Previous Use

Prior to the PPP proposal, the Mater was a functioning hospital. However the buildings were outdated and inappropriate for tertiary cancer services, emergency medicine and mental health medicine. Many of the buildings at the Mater were obsolete and it is the preferred option to redevelop the Mater as an integral part of the Newcastle Strategy. The Mater’s services are highly constrained by the poor quality of the built environment. There have been numerous studies over the past twenty years that have clearly established that many of the Mater’s buildings are beyond, or are reaching the end of their economical life. (Bovis Lend Lease 2002, p18)

5.8.3 Administration

Current ownership of the facility is held by the Little Company of Mary Health Care (as an affiliated health organisation) and the hospital continues to provide services to the community in the Catholic tradition. The Calvary Mater Newcastle has an agreement with the Hunter New England Health Service to provide a number and range of health services to “agreed quality standards” (NSW Health, 2004, p.7). These arrangements are completed under a ‘Labour Services Agreement’ whereby public sector funding and public sector health employees (who remain public sector employees of the Hunter New England Area Health Service) are used for clinical purposes. Jointly, these 2 entities provide health care services at the Mater (Hunter New England Health Services, 2009, p2).
5.9 PPP PROCESS WITH THE NSW GOVERNMENT

From the initial concepts envisaged under the Hunter Strategy, more detailed analysis was completed under the Newcastle Strategy and revealed a greater scope of works was required due to “substantial upgrades and demand for additional services…………….which far exceeded the available public funding” (Bovis Lend Lease, 2009). Due to the financial constraints at the time with the existing deficiency in the NSW Health budget, the New South Wales State Government (Department of Health) considered alternatives besides delivering a ‘staged’ Mater Hospital redevelopment using the conventional Capital Works Budgets. In June 2003, the NSW Government entered into an agreement with “the Trustees of the Sisters of Mercy (Singleton), the then owners of the Hospital site” (NSW Health, 2005) for “an Agreement for Lease and Initial Project Agreement for the Redevelopment of the Mater Hospital”. This agreement established the parameters by which a redevelopment could be considered using private funding.

5.9.1 Risk Review

While no certainty on a procurement method had been decided, NSW Health had formulated through workshops as advised on the 28 June 2010 by a Bovis Lend Lease employee (the Governments Procurement Partner) “generic risks likely to be found in the design and construction of health facilities” which were later defined within the Project Definition Plan. The process began in April 2002, when a preliminary risk review was conducted and focused “on the initial processes rather than later delivery risks. The risk review focused on the elements with higher level risk profiles” (Hunter Health, 2002, Section 8, p.2) relative to development, management and delivery of the Mater Project. This process of risk identification was continued through an intensive stakeholder engagement process, with six (6) “key risk area headings identified:

1. Quality of service/Quality of hospital product  
2. Timely delivery/Costs within budget  
3. Disruption to hospital activities during delivery  
4. Urban development  
5. Equality and availability of opportunity  
6. Information and consultation”
The stakeholder engagement process continued and further identified, reviewed and validated the keys risks areas in regards to traditional delivery methods and / or PPP methods by:

• establishing more clearly the consequences of each risk
• developing mitigating actions
• establishing contract strategies, and
• complete the process through to authority approval

Following evaluation of the significant risks by the NSW Government (and under the terms of the Agreement with the Trustees of the Sisters of Mercy [Singleton]), it was considered in August 2003 that the hospital would be procured using a PPP. NSW Health (2004, p.3) has stated that the “Project will be undertaken within the framework of the NSW Health’s ‘Working with Government Policy and Guidelines for Privately Financed Projects’”. NSW Health in establishing a commercial framework for the project wanted to maximise the private sectors role by transferring risks and allow the consortiums to produce “innovative design, engineering, operating and commercial solutions” (NSW Health, 2004, p.3). The ideology of NSW Health appointing a procurement partner would assist in realigning its asset management objectives and still allow the aims of the Newcastle Strategy to be delivered.

5.9.2 Proposed Re-development

The agreement between the NSW Government and the proposed private sector consortium involves over a project term of 28 years the financing, design, construction and commissioning of:

• new hospital buildings;
• refurbishment of the old Mater Hospital;
• transfer of local mental health services onto the site; and
• maintenance of buildings, car-parks and grounds, utility supply and management services etc (operational services).
In addition, the consortium will provide a range of ‘non-clinical services’ (security, catering, cleaning, general services etc) while managing public sector health employees (who remain public sector employees of the Hunter New England Area Health Service) in the operation of some services under a Labour Service Agreement.

The proposed revenue streams from the Government to the private sector are on a monthly ‘performance based’ payment structure which begins when the hospital is operational. The payments relate to the:

- finance (initial project capital investment);
- design, construction, commissioning; and
- maintenance and operation of the hospital including the management of the health sector employees by achieving contractual benchmarks and agreed key performance indicators. As stated by Bovis Lend Lease (2009, p.35), the “monthly service payment (subject to abatement for non-performance) is made up of volume adjustments (catering, clinical waste), energy payments, additional payments (groceries, security guards) and energy payments”.

The Mater Hospital is the first hospital in New South Wales to be built, maintained and operated by the private sector under a PPP, and on completion the Mater redevelopment will be the largest provider of radiation oncology services in New South Wales (Infrastructure Partnerships Australia 2009)

5.9.3 Justifying the PPP Business Case

As part of the rationalisation of the health budgets, the PPP scenario will allow the delivery of all services envisaged for the Mater site “several years earlier” as estimated by NSW Health (2005, p.2) compared with “traditional public sector funding approaches”. NSW Treasury has assessed a number of cost scenarios to determine the ‘value for money’ proposition using the Public Sector Comparator. An approximate capital cost budget at 2005 of $150 million has been estimated to deliver a:

- 176 bed hospital
- new mental health facility
• new radiotherapy facilities
This capital cost budget has been developed by NSW Health as a ‘Reference Project’ (adjusting for risks retained / transferred and neutrality competitive assumptions) for the Public Sector Comparator.

5.9.4 PPP Expression of Interest / Detailed Proposals Process

In October 2003, “a Call for Expressions of Interest” (NSW Health, 2005, p.3) by the NSW Department of Health occurred with 6 consortiums responding at the close in November 2003. An Evaluation Committee assessed the proposals on:

• design and construction experience
• facilities management experience
• structures, risk management and financial experience
• financial experience and financial strategies

by applying a ‘percentage weighting criteria’ to distinguish consortium proposals.
(Source: NSW Health, 2005, pp.3-4)

Three respondents were short-listed to present ‘Detailed Proposals’ with one withdrawing prior to the ‘Request for Detailed Proposals’. The ‘Request for Detailed Proposals’ was issued in August 2004 and in December 2004 two private sector consortiums had lodged bids. Assessment of the ‘Detailed Proposals’ by the Evaluation Committee was broadly based on financial, commercial, technical and services issues, legal and costs parameters (NSW Health, 2005, p.4) which were greater defined by:

• design, construction and commissioning criteria
• service delivery criteria
• commercial criteria
• financial criteria
• additional commercial developments
• probity compliance
• other criteria
Again a percentage weighting criteria was used to distinguish the proposals. However after evaluation of payment and risks, it was concluded that neither proposal had effectively established ‘value for money’ to the Government. It was considered that negotiations should continue to improve the deficiencies within the proposals that had been provided to date, and the preferred bidder needed to satisfy several criteria with a specific focus on:

- “Costs below those of the ‘public sector comparator’
- Compliance with the project’s design requirements, as ‘represented’ by the ‘reference project’ and the project’s technical specifications
- Compliance with the project’s services requirements, in its services and technical specifications
- An ‘acceptable’ risk position, documented in a draft Project Deed”

The interview process revealed that NSW Health and one of the private sector consortia (Novacare) had preferred individual positions in relation to certain risks and whether that risk is considered high, medium or low to the State.

While only ‘Interface Risk, Defects Liability Period, Completion and Inspection Rights’ have been provided as an example and tabulated below, many other risks were identified by both parties such as ‘Building Conditions, Environmental Risk, DA Approval Risks, Refinancing, Design Risks, Step-in-Rights, Insurance, Termination, Tax Risk, Benchmarking / Market Testing etc’.

The re-evaluation of the proposals occurred in June 2005 under the same weighting criteria and in December 2005, it was publicly announced that contracts had been executed between the Government and the ‘Novacare Consortium’. NSW Treasury calculated that the Novacare proposal would provide a ‘net present cost’ saving to the Government of approximately 2% when compared to a traditional public delivered procurement model over the contractual PPP term.
Novacare’s bid price of approximately $378.8 million was exclusive of certain risks. Through negotiations with NSW Treasury, a $1.7 million estimate of those excluded risks was added to the price to allow a comparison with the ‘Public Sector Comparator’.

As identified within the interview process on the 28 June 2010, with Bovis Lend Lease (the Government’s Procurement Partner and representative) it was advised that the final contractual negotiations between the Government and the private sector consortium saw “minimal changes to the risk profile” to what the Government had previous established. As stated “The Governments preferred position ultimately was to allocate the risk to the party who would be best to manage that risk, and determine what proportion of cost was associated to accepting that risk by either party.

As stated by NSW Health (2005, pp.17-18) “the Project Partnership (i.e. Novacare Consortium) have expressly acknowledged in the Project Deed that:

- They bear the risks of carrying out the project’s construction works and providing their services so as not to cause any disruption to the “hospital functions”
- The pre-contractual information covered by this acknowledgement expressly includes an initial survey of existing buildings”, structural report etc. being accurate at the time
- The Government “have assumed no duty of care or other responsibility for this pre-contractual information”
- With exception to the structural report, the Government “will not be liable for any inaccuracy, omission, unfitness, inadequacy or incompleteness in this pre-contractual information”

In entering the Project Deed, the Project Partner (i.e. Novacare Consortium)
- “Have not relied on any pre-contractual information from the” Government
- Acknowledge the management of NSW Health employees under the Labour Services Agreement
• “Have examined the construction and hospital sites and the hospital and have relied solely on their own investigations, assessments, skill, expertise and enquiries concerning all information that is relevant to the project’s risks, contingencies and circumstances and their obligations under the project contracts

• Have been given the opportunity to undertake, and request others to undertake, tests, enquiries and investigations, for design and other purposes

• Have satisfied themselves that they have adequately allowed for the costs of meeting their project obligations, that there is no inconsistency between the project’s Technical Specification and Services Specification and that they can satisfy the requirements of both

• Have relied on their own information concerning all the project’s employment and industrial relations matters” (excluding issues related to the Labour Services Agreement)

• NSW Health “will have no liability for any loss or damage suffered by the Project Partner” (i.e. Novacare Consortium) “as a result of incorrect or inaccurate assumptions by anyone concerning:
  o Existing taxation requirements
  o The availability of taxation rulings
  o Project revenues, or
  o Project costs

• Analogous assumptions of risk have also been accepted by the Project Partner concerning specific aspects of the project, including the accuracy, adequacy and completeness of the project’s Technical Specification and their liability for any design defects in this Specification”
5.9.5 PPP Contracting Parties

The Novacare Consortium is made up of the following parties:

- Westpac - Consortium Leader and Financier
- Medirest - Soft Facilities Management
- Honeywell - Hard Facilities Management
- Abigroup - Design and Construction Contractor

The contractual rights and obligations are specified within the PPP Project Deed. The Project Deed specifies that under the agreements and to ensure to the Government the project’s success and security there are appropriate project:

- Guarantees (by Deed or Deed Poll)
- Cross-guarantees
- Performance obligations (individually and each other)
- Securities
- Tripartite Agreements
- Insurances

These securities are based on the negotiated acceptances of risks on the design, construction, commissioning, provision of hospital operational services and finance of the PPP Mater project. Additionally, the Project Deed stipulates the requirements to manage under the ‘Labour Services Agreement’ the clinical staff, the leases and cross leases, novation, certification and other project stipulated agreements.

5.10 RISK ISSUES ENCOUNTERED ON THE MATER HOSPITAL PROJECT

Prior to procurement selection, and using workshops as the vehicle for discussion, NSW Health formulated risks likely to be found in the design and construction of health facilities which were later defined within the Project Definition Plan. The process began with a preliminary risk review that focused on the initial processes rather than later delivery risks and on the elements with higher level risk profiles relative to development, management and delivery of the Mater Project. This process of risk
identification was continued through an intensive stakeholder engagement process, involving the likes of NSW Health, Hunter-New England Health, Bovis Lend Lease et al, with six (6) key risk area headings identified:

1. Quality of service/Quality of hospital product
2. Timely delivery/Costs within budget
3. Disruption to hospital activities during delivery
4. Urban development
5. Equality and availability of opportunity
6. Information and consultation

With the identification of the key risks area headings, analysis began to evaluate and test the risks and to determine what level of action would be required to mitigate these risks.

Case Example

Bovis Lend Lease’s Senior Project Manager explains:

“The initial key risks identified included costs, quality of service for the hospital, project delivery, uninterrupted continuation of hospital services uninterrupted, the hospital’s aesthetics, ongoing consultation et al………………….this provided a starting point to further test and validate the initial assumptions on risks. Risk frameworks were developed early to clearly establishing risk consequences, who the risk is applicable too and risk mitigation”.

The stakeholder engagement process continued and further identified, reviewed and validated the keys risks areas in regards to traditional delivery methods and/or PPP methods by:

- establishing more clearly the consequences of each risk
- developing mitigating actions
- establishing contract strategies, and
- complete the process through to authority approval
Following evaluation of the significant risks by the NSW Government (and under the terms of the Agreement with the Trustees of the Sisters of Mercy [Singleton]), it was considered in August 2003 that the hospital would be procured using a PPP. NSW Health (2004, p.3) stated that the “Project will be undertaken within the framework of the NSW Health’s ‘Working with Government Policy and Guidelines for Privately Financed Projects’”. NSW Health, in establishing a commercial framework for the project, wanted to maximise the private sectors role by transferring risks and allowing the consortiums to produce “innovative design, engineering, operating and commercial solutions” (NSW Health, 2004, p.3). The ideology of NSW Health appointing a procurement partner would assist in realigning its asset management objectives and still allow the aims of the Newcastle Strategy to be delivered.

The agreement between the NSW Government and the proposed private sector consortium involves over a project term of 28 years the financing, design, construction and commissioning of:

- new hospital buildings;
- refurbishment of the old Mater Hospital;
- transfer of local mental health services onto the site; and
- maintenance of buildings, car-parks and grounds, utility supply and management services et al (operational services).

In addition, the consortium provides a range of ‘non-clinical services’ (security, catering, cleaning, general services et al) while managing public sector health employees (who remain public sector employees of the Hunter New England Area Health Service) under a Labour Service Agreement.

The proposed revenue streams from the Government to the private sector are on a monthly ‘performance based’ payment structure, which begins when the hospital is operational. The payments relate to the:

- finance (initial project capital investment)
- design, construction, commissioning
• maintenance and operation of the hospital including the management of the health sector employees
• by achieving contractual benchmarks and agreed key performance indicators.

Case Example
Bovis Lend Lease’s Senior Project Manager explains:

“Monthly service payment (subject to abatement for non-performance) is made up of volume adjustments (catering, clinical waste), energy payments, additional payments (groceries, security guards) and energy payments.”

The Mater Hospital is the first hospital in New South Wales to be built, maintained and operated by the private sector under a PPP, and on completion the Mater redevelopment was the largest provider of radiation oncology services in New South Wales.

5.10.1 Justifying the PPP Business Case

As part of the rationalisation of the health budgets, the PPP scenario allows the delivery of all services envisaged for the Mater site “several years earlier” as estimated by NSW Health (2005, p.2) compared with “traditional public sector funding approaches”. NSW Treasury has assessed a number of cost scenarios to determine the ‘value for money’ proposition using the Public Sector Comparator. An approximate capital cost budget at 2005 of $150 million has been estimated to deliver a: 176 bed hospital; new mental health facility; and new radiotherapy facilities.

This capital cost budget was developed by NSW Health as a ‘Reference Project’ (adjusting for risks retained / transferred and neutrality competitive assumptions) for the Public Sector Comparator. The following table (Table 9) was established from the interview process with the Government’s Project Management representative, Bovis LendLease.
Table 9: Public Sector Comparator to determine “value for money” comparison with the private sector project delivery

<table>
<thead>
<tr>
<th>Delivery method</th>
<th>Public Sector Comparator (PSC)</th>
<th>Private sector delivery (as Contracted)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PSC best case (95% probability that PSC cost would be higher than this)</td>
<td>PSC likely case (mean of PSC cost estimates)</td>
</tr>
<tr>
<td>Estimated net present value of the financial cost of the project (over 28 years) to the NSW Department of Health</td>
<td>$384.1 m</td>
<td>$388.7 m</td>
</tr>
<tr>
<td>Estimated saving achieved through private sector delivery</td>
<td>0.9%</td>
<td>2.1%</td>
</tr>
</tbody>
</table>

Case Example

Bovis Lend Lease’s Senior Project Manager explains:

“In assessing value for money against the PSC, an assessment is made of the cost of each Proposal and the level of risk transfer achieved in each individual Proposal. The Evaluation Committee pre-determined a significant amount of risks primarily related to either the ‘operational’ part of the PPP or to ‘capital risk’.”
The major components of these risks were identified during the interview process and are summarised in the following table.

<table>
<thead>
<tr>
<th>OPERATION RISK</th>
<th>CAPITAL RISK</th>
</tr>
</thead>
<tbody>
<tr>
<td>The condition of the existing buildings might have been inaccurately assessed, necessitating higher maintenance costs than expected</td>
<td>There might be documentation errors during the design process (poor coordination between specifications and drawings)</td>
</tr>
<tr>
<td>Design and or construction quality might be inadequate, resulting in higher than anticipated maintenance costs</td>
<td>Budget estimates might be exceeded through the design development</td>
</tr>
<tr>
<td>Operating costs and/or industry standards for the provision of services might change over the term of the project</td>
<td>The design might adversely affect clinical functionality</td>
</tr>
<tr>
<td>Occupational Health and Safety standards might be breached during operation</td>
<td>The design might not facilitate appropriate logistics, staging and functionality</td>
</tr>
<tr>
<td>The services performed might not fully meet their specifications</td>
<td>Construction costs might materially change as a result of changes in underlying costs of labour and/or materials</td>
</tr>
<tr>
<td>Security operating costs might have been underestimated</td>
<td>There might be structural failure in the building</td>
</tr>
<tr>
<td>Cleaning operating costs might have been underestimated</td>
<td>Construction might commence later than planned</td>
</tr>
<tr>
<td>The design life of the hospital infrastructure might prove to be shorter than anticipated, resulting in accelerating refurbishment expenses or a failure to meet specified asset handover conditions</td>
<td>Hospital operations (clinical services) might be disrupted during construction</td>
</tr>
<tr>
<td>The delivery of core clinical services might adversely affect the delivery of contracted services by the private sector parties</td>
<td>The buildings might not be fit-for-purpose</td>
</tr>
<tr>
<td>Sub-contractor insolvency</td>
<td></td>
</tr>
</tbody>
</table>

*Table 10: Risks relating to Operation and Capital*

### 5.10.2 PPP Expression of Interest

In the 2003 “Expressions of Interest” by the NSW Department of Health 6 consortiums responded an an Evaluation Committee assessed the proposals on:
• design and construction experience
• facilities management experience
• structures, risk management and financial experience
• financial experience and financial strategies
by applying a ‘percentage weighting criteria’ to distinguish consortium proposals.
(Source: NSW Health, 2005, pp.3-4)

Three respondents were short-listed to present ‘Detailed Proposals’ with one withdrawing prior to the ‘Request for Detailed Proposals’. The ‘Request for Detailed Proposals’ was issued in August 2004 and in December 2004 two private sector consortia had lodged bids. Assessment of the ‘Detailed Proposals’ by the Evaluation Committee was broadly based on financial, commercial, technical and services issues, legal and costs parameters which were greater defined by:
• design, construction and commissioning criteria
• service delivery criteria
• commercial criteria
• financial criteria
• additional commercial developments
• probity compliance
• other criteria
(Source: NSW Health, 2005, pp.4-5)

Again a percentage weighting criteria was used to distinguish the proposals. However, after evaluation of payment and risks, it was concluded that none of the proposals had effectively established ‘value for money’ to the Government.
Case Example

Bovis Lend Lease’s Senior Project Manager explains:

“It was considered that negotiations should continue to improve the deficiencies within the proposals to date, and the preferred bidder needed to satisfy several criteria with a specific focus on:

• Costs below those of the PSC
• Compliance with the project’s design requirements, as represented by the reference project and the project’s technical specifications
• Compliance with the project’s services requirements, in its services and technical specifications
• An acceptable risk position, documented in a draft Project Deed”

NSW Health and Novacare’s preferred individual position in relation to certain risks are discussed in the following section and further detail is also provided in the ‘Risk’ tables.

5.11 SUCCESSFUL MANAGEMENT OF RISK FACTORS ON THE MATER HOSPITAL

5.11.1 Stakeholder expectation

A major risk identified was that of stakeholder expectation and consultation not matching either the process or completed product. This included the likes of the completed asset not being “fit for purpose” and operational changes, work methodology changes, technology changes, had to consider multi users (e.g. Clinical Maintenance etc.). This led to a review of consultation process, the identification of key stakeholders, the co-ordination of various approvals and ongoing consultation with the design management team with a particular focus on both the programme and process map
Case Example
Bovis Lend Lease’s Senior Project Manager explains:

“We developed a series of comprehensive user workshops whereby independent expert consultation was introduced at key project nodes. This led to a continuous peer review process involving stakeholders from several project parties.”

5.11.2 Cost control

Major cost related risks such as control and planning of costs not allowing for accurate and timely decision making, not providing the appropriate information for the level of decision making, lack of cost quality and control skills, cost plan not reflecting local pricing norms and not reflecting the capital versus operational costs requirement were managed by the significant involvement of an independent Quantity Surveyor in the cost process mapping of the project and being made aware of any relevant decisions that could effect cost control.

5.11.3 Interface Risk

The Project Company are responsible for ensuring that the provision of its services does not disrupt the ongoing hospital functions. The Project Company must not, without the prior written consent of the Project Director, modify its work practices or change how it provides the Services in any way which increases the costs to the state government of providing the Hospital Functions or of otherwise operating the Hospital. This risk was mitigated by the hospital operator, Novacare.

Case Example
Novacare’s Senior Project Manager explains:

“Given that the Hospital functions are dynamic, giving priority to them over 28 years may result in the Project Company being impeded in its ability to provide services and we suggested using an ongoing consultative process similar to the Partnering Protocol commonly used by the NSW government, but where accommodating the Hospital Functions results in the Project Company being unable to provide Services, there should
be some kind of relief mechanism so that Nova care are not unfairly penalised where events are out of there control.”

5.11.4 Inspection and Auditing Rights

The State Government requires the Project Company to ensure its Operator and Construction Contractor keep appropriate books of accounts and have its financial statements audited annually. Novacare carried out an amendment of their Project Company obligation to ensure that this risk was managed in accordance with the State Government’s auditing/inspection requirements in mind. Novacare were able to satisfy this obligation by inserting an obligation to keep the relevant accounts and so forth into a clause in the relevant operational contract.

The State government insisted that within 20 business days after each six month period the Project Company must provide various financial information (including unaudited profit and loss statements, cash flow statements, balance sheets etc) and also provide the Project Director with all documents, reports and plans which it provides to the Financiers. However, some these risks were removed from the contract documentation.

Case Example

Novacare’s Senior Project Manager explains:

“Previous PPP projects, such as the NSW Schools program, Spencer Street railway station in Melbourne, Berwick hospital etc did not contain contract documentation that required the Project Company to provide the likes of plans, reports etc. They are provided to Financiers but the process does allow the State to reasonably require the Project Company to provide other information. Also the Berwick Hospital Financier Tripartite Agreement does require the Security Trustee to provide information reasonably required by the Auditor General, Ombudsman or any parliamentary committee. We were quite happy to accept the risk of requests for reimbursement if there was any form of non-compliance on our part”.
5.11.5 Sponsor Risk

Sponsor risk is primarily related to the special purpose vehicle [SPV] (or its subcontractors) not being able to fulfil the PPP contractual obligations with the Government. The reduction to risk is usually via contract clauses or evaluation of the operational processes. The Government bears the risk to ensure the SPV meets its contractual outcomes but can lessen risk by guarantees or retaining an appropriate level of control over changes to ownership of the SPV. The risk to the private sector is the project becoming unviable over the contract period and the financial input being unrecoverable.

Specific risks identified during the interview process included refinancing, indemnity for breach, Insurance, change in ownership, compensation events, and compliance with the tripartite agreement. In entering into the Project Deed the project partners satisfied themselves that they adequately allowed for the costs of meeting their project obligations and the consortium is therefore aware of the financial obligations of the project. The Novacare Consortium was the lowest of the final negotiated Requests for Detailed Proposals and NSW Treasury believed that the Public Sector Comparator was financially sound and robust for the comparison and equated to ‘value for money’ for each transfer of risk.

The NSW Government carefully considered which PPP model to use (i.e. a typical BOOT) and the allocation/validation of risk to which party can best managed that risk was carried out. The NSW Government contractually ensured that if the Novacare Consortium fails then the Government has reduced its financial exposure by ensuring that tripartite deeds and guarantees, debt financing agreements, securities, contractor guarantees, insurances et al have been put in place.

Case Example

Novacare’s Senior Project Manager explains:

“In this instance the NSW Governments has to accept the risk, however it has installed a number of measures to reduce financial exposure:
• the Consortium has acknowledged its financial obligations with acceptance of the Project Deed
• the Government seems to have applied a more robust financial scrutiny to the bidders prices than conducted with earlier PPPs
• the Government seems to have considered other PPP delivery models that reduce risk exposure compared with the previous BOO model that were used and examined.”

5.11.6 Financial Risks

These risks primarily relate to whether in the first instance the project does not achieve finance or secondly the project does not succeed financially and fails. The impact for Government in many instances that it must maintain key services. Where bids seem to be lacking financially, Governments can decrease risk exposure by having the equity and debt completely underwritten. The Governments bears the ultimate risk given if a project fails then it is the expectation of the community (especially relating to social infrastructure) that services are maintained. Risk of failure to the private sector is recovery of financial input.

Specific risks identified during the interview process included refinancing, indemnity for breach, Insurance, change in ownership, compensation events, tripartite agreement compliance. The Government’s main risk related to whether the project consortium had sufficient financial backing and/or that the consortium remains financial for the duration of the contracted term (i.e. 28 years). Novacare’s main financial risks were associated with the completing of operational services and the risk of not meeting the agreed benchmarks and key performance indicators.

In entering the Project Deed the Project Partner Have satisfied themselves that they have adequately allowed for the costs of meeting their project obligations. Again the NSW Government with planning of the Mater Project carefully considered what PPP model to use (i.e. BOOT) and the allocation/validation of risk to which party can best managed that risk. The NSW Government has contractually ensured that if the Novacare Consortium fails then the Government has reduced its financial exposure by
ensuring that tripartite deeds and guarantees, debt financing agreements, securities, contractor guarantees, insurances etc have been put in place. Under the Agreement established by the NSW Government with the ‘Trustees of the Sisters of Mercy (Singleton)’, the Novacare Consortium has a ‘sub-lease’ for 28 years to enable the hospital construction and operation, but the NSW Government pays a nominal rent, rates, land taxes, charges and levies imposed on the leased premises to and on-behalf of Trustees of the Sisters of Mercy (Singleton).

Case Example

Novacare’s Senior Project Manager explains:

“In this instance the NSW Government again has to accept the risk, however it has installed an additional measures to reduce financial exposure above and beyond the obligations of the project deed in that they applied a more robust financial scrutiny to the bidders prices than conducted with earlier PPP projects”

5.11.7 Operating Risk and the Payment Mechanism

Operating risk relates to the services to be delivered under the PPP contract and whether the private sector can deliver those services to appropriate specifications, standards and regulations within the financial parameters of the consortiums bid. The payment mechanism in social infrastructure PPPs requires two main principles, one being performance based (KPIs) and the other dependent on the quality and quantity of services provided. Specific risks identified during the interview process included performance guarantees, defects liability period, completion, inspection rights, step-in-rights, damage, destruction and reinstatement, termination, handover condition risk, change in ownership, change procedure, compensation and relief events, and benchmarking/market testing.

NSW Health’s risk included sub-contractor insolvency; services performed may not meet the specification; and the delivery of core clinical services might adversely affect the delivery of contracted services by the private sector. Novacare’s risk included the
financial risks associated with the completing of operational services and not meeting the agreed benchmarks and key performance indicators.

The project term of 28 years consist of operational services (including maintenance of buildings, car-parks and grounds, utility supply and management services) and non-clinical services (including security, catering, cleaning etc). In entering into the Project Deed the Project Partner acknowledges management of the NSW Health employees under the ‘Labour Services Agreement’ and they must have satisfied themselves that they have adequately allowed for the costs of meeting their project obligations, that there is no inconsistency between the project’s Technical Specification and Services Specification and that they can satisfy the requirements of both. The proposed revenue streams from the Government to the Novacare Consortium are based on a ‘performance based’ payment structure by achieving benchmarks and key performance indicators and relate too:

- finance (for the initial project capital investment)
- design construction and commissioning
- maintenance and duration of the hospital including management of the NSW Health sector employees.

The payment terms also have a clause stipulated for non-performance and abatement of fees.

Case Example
NSW Government’s GM of Public Works explains:

“In this instance the NSW Governments preferred position is maintained (i.e. transferring risk to the private sector) and the Consortium has acknowledged its financial obligations with acceptance of the Project Deed. The Government improved its financial scrutiny and payment system to PPP Consortiums based on performance and non-performance. Early systems lack performance indicators and exposed the Government to adverse risk and PPP failures. The payments system is based on a similar model that has been developed and successfully used for the Casey Community Hospital in VIC. NSW Health established the ‘Labour Services Agreement’ which effectively allowed clinical services to be
delivered by public sector employees, while all non-clinical services are provided by the private sector. This model has also been successfully established in the Casey Community Hospital PPP, while a mix of private and public sectors awards for the same roles and responsibility caused significant issues in Port Macquarie and Latrobe PPPs”

As mentioned above, the payment system failed at the Latrobe Regional Hospital where payments were made on a ‘case-mix funding model’ (public hospitals are funded on the same system) which includes payment for the site and construction, ongoing repairs and debt finance. The private sector failed to apply the case mix appropriately while the Government transferred risk inappropriately to meet value for money benchmarks. BOO type PPP projects such as Latrobe seem to have failed due to the private sector assuming/expecting to deliver services provided previously by the public sector more cost effectively and efficiently. Risk transfer and assumptions need to be better evaluated and analysed by both the public and private sector parties.

By comparison, the Casey Community Hospital where the Government makes 2 separate payments based on construction and finance schedule and also on KPI performance under a BOOT type PPP where arrangements seem to be more effective in delivery of health services (subject to risk transfer) specifically with the Government clearly delivering clinical services.

5.11.8 Asset Ownership

Asset ownership risk relates to maintaining the asset to the requisite standard, including the risk that the cost of maintenance may increase during the term. The major issue is that the asset is subject to fluctuations in value over the contracted period and furthermore the residual value risk of the asset could be worth less than financially modelled at the end of the PPP project. This risk is usually borne by the private sector for the term of the operating/ownership agreement.

Specific risks identified during the interview process included performance guarantees, inspection rights, step-in-rights, indemnity for breach, damage, destruction and
reinstatement, termination, handover condition risk, change in ownership, change procedure, compensation and relief events. The public sector, ie NSW Health, carried the risks that at the end of the 28 year contract period, the asset will return to the ‘Trustees of the Sisters of Mercy (Singleton)’ under the previous agreements established between them and NSW Health and at the end of this period they had to ensure that the asset was operating as it should be under the terms of the agreement. Novacare carried the risk that the design life of the hospital infrastructure might prove to be shorter than anticipated, resulting in accelerating refurbishment expenses or a failure to meet specified asset hand-over conditions.

Case Example

NSW Government’s GM of Public Works explains:

“In this instance the NSW Governments preferred position was also maintained (i.e. transferring risk to the private sector) and the Government only has a lease agreement with the ‘Trustees of the Sisters of Mercy (Singleton)’ for the 28 year contract, whereby upon expiry the asset will revert back to the Trustees of the Sisters of Mercy (Singleton). In comparison, the Port Macquarie Base Hospital the private sector secured ‘public land ownership’ and after 20 years the owner could divest the asset on the open market. At Latrobe Regional Hospital the private consortium was effectively responsible for all essential services of a ‘public hospital’ for 20 years. Additionally, there was 99 year lease negotiated to transfer the land back to the Government, but, this does not include the hospital itself.”

The Casey Community Hospital has an ownership model similar to that of the Mater in that it is leased from the Government for 25 years and at the end of this period ownership reverts to the state.

The NSW Government research and assessed several procurement alternatives for delivering the new hospital (i.e. traditional public sector delivery or a PPP). Upon determining the procurement method as PPP, the scope determined a project term of 28 years for the financing, design, construction and commissioning of new hospital buildings, refurbishment of some existing buildings and transferring of mental health services to the site. Clinical services were to remain the responsibility of NSW Health
while non-clinical (building maintenance, grounds, security, cleaning etc) services were to be completed by the private sector. Payments from the Government for services were based on performance benchmarks. Significant assessment was completed for design risk, construction risks, interface risks and hospital disruption, financial risks etc. to determine the best ‘value for money’ proposal against risk transfer (with the Public Sector Comparator [PSC]). Following a rigorous tender period, the private sector consortium bids were evaluated on financial, commercial, technical and services issues, legal and cost parameters. The final contractual negotiations between the Government and the private sector consortium saw “minimal changes to the risk profile” to what the Government had previously established. Through the PPP process, NSW Treasury calculated that the Novacare proposal would provide a ‘net present cost’ saving to the Government of approximately 2% when compared to a traditional public sector delivered procurement model over the contractual PPP term.
5.12 TOP RYDE

![Figure 15: Aerial Perspective of Top Ryde (City of Ryde, 2012)](image)

5.12.1 Project Background

*Project History*

The original Top Ryde Shopping Centre was built in 1957, being New South Wales’ first regional shopping centre and one of Australia’s earliest. The City of Ryde (CoR) has always had strong historic town centres such as Ryde, West Ryde, Eastwood and Gladesville. Macquarie Park in North Ryde provided technology based organisations with a major precinct centred upon Macquarie University. Subsequently, it was believed the role of the Top Ryde as an important retail and social centre declined over the 1980’s and 1990’s as its infrastructure became outdated with insufficient parking and a limited choice of food and retail outlets. The CoR recognised that the redevelopment was required in order to reduce escape expenditure outside the suburb, increase employment and restore the Town Centre as a social and civic hub.
The Beville Group (i.e. the private sector contractual partner with CoR) purchased the Centre in 2000 and had approached CoR to obtain approval to expand the old Top Ryde shopping Centre on several occasions. Prior to 2004, the Beville Group had a poor relationship with the City of Ryde but again initiated an approach to negotiate planning approval with the new GM of CoR. The proposed expansion of the Town Centre was of such a significant size that an Integrated Traffic Solution (ITS) was required. From that ITS, some of CoR land was required for the underpass system to access the new shopping centre and CoR was approached to sell the land. Eventually planning documents moved through Local Government to State Government, where the new access routes were a key issue for planning approval under LEP.

Defined Developments (DD), established by Bevillesta Pty Ltd (as a subsidiary of the Beville Group) as developer to deliver Top Ryde shopping centre, signed a 49 by 50 year lease for a ‘peppercorn’ rent of $1. Under the terms of the lease, DD wouldn’t pay any significant rent for the land providing they successfully linked CoR Civic Precinct land to the ITS in the form of bridges and underpasses.

Under the *Local Government Amendment (Public Private Partnerships) Act 2004*, the NSW State Government subsequently deemed the project as a ‘PPP’ as the developer was providing free infrastructure to the City of Ryde in the form of rights of way through the underpasses and over the bridges linking CoR land from West to East and enhancing the access solution for CoR ultimately allowing for future redevelopment to be undertaken by CoR.

In March 2005, Bevillesta entered into a management services agreement with Bovis Lend Lease, requiring them to provide design master planning services that combined their in-house architectural expertise together with their cost planning programming and resources. In 2006, the LEP Number 143 was gazetted, which allowed for future growth of Top Ryde City and the surrounding suburbs. Bovis Lend Lease was appointed on a guaranteed maximum price contract to undertake the design and construction of the project. Construction on the Centre commenced in September 2007.

Planning approval was based on the best traffic solution to minimise impact to the
community but at the same time maximising customer efficiency. By working with the State and Local Authorities, DD were able to develop the best outcomes for all parties and execute long term agreements with the government departments that benefited the centre owner supplying the community with facilities and infrastructure for the future growth of CoR’s land. In addition the RTA insisted on the removal of on-grade crossings across Devlin street to improve travel time on the network through improved signalised junctions and enhance public safety. It is also important to note that redevelopment of Top Ryde must be viewed in a broader context of establishing a momentum for revitalising the whole of the Town Centre over time.

Figure 16: Artist’s Impression of Top Ryde from Devlin Street (City of Ryde, 2012)

**Brief Description**

The new Top Ryde City is an exciting fully integrated multi-level major regional shopping centre presented over a lettable area of approximately 78,100m2, set to revitalise the north-western suburbs of Sydney.

The first stage of the retail component was officially opened in November 2009, comprising a Big W DDS, a Woolworths supermarket and some 115 specialty stores. Franklins and ALDI supermarkets are located on lower ground two (LG2) and anchor stage two (2) of the development, which officially opened in mid-March 2010.
The third stage of the Centre represents practical completion of the retail shopping centre. This final stage includes a full line Myer department store, a state of the art eight (8) screen Event Cinema’s complex, a tenancy to house a ten pin bowling alley and laser wars facility, a high end fashion and premier outdoor leisure and dining precinct.

The high street shopping precinct, namely La Strada, runs north-south across the development and creates a linkage between the shopping centre, the leisure precinct, and the residential and commercial developments. Also featured is the outdoor leisure and dining precinct, La Piazza, at the northern end of La Strada. This creates a vibrant dining precinct, ideally catering to both weekday lunches and a wide range of visitors in the evenings and during weekends.

![Figure 17: Cross Section of Top Ryde (Shopping Centre component) (City of Ryde, 2012)](image)

**Retail Concept**

The Centre is fundamentally made up of four (4) retail levels in the following configuration:
LG2

LG2 offers an unprecedented convenient fresh food shopping offer all on one (1) level. This level provides every day shopping requirements with the inclusion of three (3) of the latest generation supermarkets; Woolworths, Franklins and ALDI, complimented by a fresh food market, large greengrocer, an Asian supermarket and a Dan Murphy’s liquor super store.

The mix of specialty retailers is complimentary to the primary and secondary catchments, providing a high level of variety in order to benchmark Top Ryde City as a true destination of choice. The mix of fresh food and other retailers has been designed to be complimentary to supermarket shopping in order to promote multiple weekly shopping visitations.

The northern end is anchored by Woolworths and Dan Murphy’s, which is the higher quality end, with more discount orientated food offerings being accommodated in the southern end, anchored by ALDI and Franklins supermarkets. The larger fruit and vegetable operator and the Asian grocer has been strategically located in the centre of this level as a transition point between the supermarkets and it importantly, enables these retailers to benefit from pedestrian traffic flow from both ends of the Centre.

Lower Ground One (LG1)

LG1 is anchored by a BIG W and features an 850 (approx.) seat food court with approximately 11 food specialties and six (6) food kiosks offering a broad selection. LG1 also encompasses a contemporary/general fashion precinct.

This level also includes a dedicated services precinct including key cutting, a watch/jewellers repair, dry cleaners and beauty services. The services precinct has been positioned to capitalise on multiple access points including direct pedestrian access points from Tucker Street and the side car park. Strategically located throughout this level are the key ancillary uses including optical, travel, mobile phones, hair dressers and giftware, together with mini-majors JB Hi-Fi, Dick Smith and Globalize.
Ground Floor (GF)

GF is designed as a unique open air plaza, accommodating exhilarating precincts including; the La Strada (the road to fashion) a high brand name fashion precinct, the La Piazza a dining precinct, and an extensive banking services precinct, including Westpac, Commonwealth Bank of Australia, ANZ and St George bank branches, and other essential service providers.

The La Strada, high quality fashion precinct, is set to be anchored by a two (2) level Myer department store, with a footprint on the GF of approximately 5,900 sqm. The fashion precinct includes well known Australian and International brand retailers to cater to the higher end customer, and the 18 to 35 year old higher disposable income shopper.

The La Piazza dining precinct, includes an unprecedented full restaurant offering, which is unique to Top Ryde City; providing a point of difference to competing shopping centres and catering to Ryde and the broader surrounding suburbs.

These precincts are complimented by the development of the residential and commercial components, together with direct pedestrian access to the bus interchange on Devlin Street; creating a true town centre environment which provides residents, workers and shoppers with live weekend entertainment and the unique alfresco café and dining precinct, forming the heart of Top Ryde City. Mini-majors on this level include Rebel, Glue Store and Priceline.

Level 1 (L1)

The offering on L1 is designed to create a true destination of choice for the homewares, children, health and beauty, and mature fashion customer. This floor is anchored by the second level of the Myer department store.

This area has been strategically designed to ensure the following attributes add to an inviting and enjoyable retail experience for parents with babies and/or young children:
• Direct access from express ramps
• Large number of pram (mothers) parking located directly adjacent to the children’s and homewares precinct which is clearly indicated and managed by an advanced electronic parking system
• Wider common areas for ease of access
• Natural light
• Parent’s room conveniently positioned and accessible
• Refreshment facilities designed for pram access
• Soft play area for children
• Centrally located between the childcare centre and the medical centre

These components are linked to the leisure and entertainment precinct that is totally interactive with all other levels from a visibility and vertical transportation perspective.

L2 to L4
The entertainment precinct situated over L2 to L4, includes a state of the art eight (8) screen Event Cinema complex and a tenancy to house a ten pin bowling alley and laser wars facility.

Design & Layout

The Centre was master planned with fundamental retail planning principles:

1. Every level, except GF has direct access to car parks;
2. The two (2) levels below GF, LG1 and LG2, are for every day shopping; whilst the levels GF and above are for long stay, leisure and entertainment shopping;
3. Design quality and intent for point two (2) above is reflected in finishes, amenity and mix (for example, the quality of finishes on GF and above are high quality creating the ambience and feel of a hotel lobby);
4. Approximately two thirds of the car park is provided for every day shopping below GF and one third for leisure entertainment above GF;
5. Vertical transport relates directly to retail and car park levels;
6. Anchor tenants are on the east and the car park on west (if not below or above); and
7. All levels are easy to access for cash rich, time poor shopping.

Accordingly, Top Ryde City has been designed with pedestrian comfort, ease and convenience top of mind and is one of the feature quality shopping centres in Australia with a large six (6) storey Atrium linking the development as a central heart.

There are two (2) vertical transport nodes centrally located in the Centre. These nodes include two (2) passenger lift shafts, together with travelators, which are effectively equidistant to all retail levels allowing customers choice and flexibility of transport. The passenger lifts are predominantly glass construction and travel through glazed shafts allowing customers a great view of the Atrium and all the retail on offer as they travel between the levels. The moving travelators are designed in trapeze like structures suspended in the middle of the void with a full view of the retail shops to one (1) side and below, while on the other is a four (4) storey garden wall with the La Strada below.

Further adding to the appeal of the Centre is the unique landscaping, which ties the La Strada to the La Piazza restaurant precincts. The landscaping incorporates a giants garden concept and includes a number of spectacular water features. This landscaping creates a natural ambience, enabling the La Piazza precinct to also accommodate market days, concerts, parades, cultural displays, ferris wheels and many other such uses.

Special consideration has been applied throughout to ensure the experience is equally enjoyable whether shoppers arrive at the Centre by car, public transport or on foot. Direct pedestrian access to all street frontages has been provided, including convenient internal walkways linking Devlin and Tucker Streets, and Pope Street to Blaxland Road. These internal walkways, together with the open air La Strada and La Piazza precincts, facilitates an ease of pedestrian movement around the Centre. Further enhancing the pedestrian access to the Centre are the two (2) weather protected footbridges over the busy Devlin Street. These have been specifically built, improving the ease and safety of pedestrians accessing the Centre from the western side of Devlin Street.
Car Parking

Approximately 3,000 car spaces are dedicated to the retail shopping centre, representing a generous car parking provision of 3.8 spaces per 100 sqm of lettable area. Numerous car parks are integrated throughout the Centre; being provided at each level (except for GF), to provide optimum efficiency. The car parks are well serviced with multiple ingress and egress points. As Devlin Street is a major arterial road, the development has maximised access by acquiring land from the local council and re-negotiating easements/land tenure to enable easy access for vehicles travelling in either direction on Devlin Street directly into the development. This has resulted in slip lanes and underpasses, enabling vehicles to enter directly into the basement car park with ease.

Secondary car park access points are located through Tucker and Pope Streets, with all levels of parking linked via an internal ramp system. Both these secondary access points have express ramp systems, both entering and exiting the site, that provide quick access to over 800 car spaces. An advanced first class electronic system manages the parking areas for 100% of the car park, providing directions to customers to assist them in finding available parking and identifying parking allocated for disabled and parent shoppers. The car park allows the first three (3) hours free parking, conforming with free parking provisions as generally provided by other metropolitan regional shopping centre’s in Sydney – further adding to the customer convenience focus of the Centre.

Construction

<table>
<thead>
<tr>
<th>Foundations</th>
<th>Reinforced concrete footings and foundations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structure</td>
<td>Combination of reinforced concrete and steel framing throughout</td>
</tr>
<tr>
<td>Floors</td>
<td>Post tensioned concrete floor slabs</td>
</tr>
<tr>
<td>Roof</td>
<td>Concrete or metal deck roof sheeting with skylights to various internal mall areas.</td>
</tr>
<tr>
<td>External Walls</td>
<td>Combination of masonry block, precast concrete and composite panelling external walls.</td>
</tr>
<tr>
<td>Awnings</td>
<td>Steel framed, metal deck awnings to external elevations.</td>
</tr>
</tbody>
</table>
The development incorporates a number of initiatives to reduce the carbon footprint of the Centre. Just some of these initiatives are detailed below:

- Over 120 bicycle parking spaces are available, together with shower and changing facilities for cyclists, walkers and joggers providing an alternate method for staff, business workers and visitors to get to the Centre.
- 240,000 litre rain water tanks have been installed to maximize recovery and re-use of water throughout the site including landscaped gardens and the reduction of water usage in the Centre’s cooling and heating systems.
- Recycling of approximately 90% of construction waste.
- Installation of cold water facilities where hot water is not essential.
- Sensor controlled lighting to reduce energy consumption and energy efficient cooling and heating systems reducing the impact on the Centre’s electrical grid.

5.12.2 CONTRACTUAL LINKS/MAIN PARTIES

The Tripartite Agreement brought together the owner, City of Ryde Council (CoR), and regulatory body, Roads and Traffic Authority (RTA), together with the private sector developer (Bevillesta, in the form of Defined Developments). As can be seen from the contractual links diagram (Figure 18), which was developed during the interview process, the PPP model used supplied a very low risk solution for the local government (CoR). In removing the likes of design and maintenance risk, CoR were able to supply infrastructure to the community at merely an ‘administration cost’. The PPP, via the tripartite agreement, also provided a framework for the RTA to work within, streamlining approvals and providing an efficient way of achieving the infrastructure that was such a key component of delivery Top Ryde.
Fundamentally, the main contractual parties and the participant roles of those bound by the Tripartite Agreement are:

- City of Ryde (local government - council) - administration and review
- Bevillesta (private sector developer) - design, financial and delivery risk
- RTA (state government) – approval process for relevant works

*Figure 18: Contractual Links within the Top Ryde PPP*
5.13 RISK ISSUES ENCOUNTERED ON THE TOP RYDE PROJECT

5.13.1 Compliance, Due Diligence and the Tripartite Agreement

The basis of the model used for the delivery of Top Ryde involved the establishment of:

- the risk profile;
- internal and consultant reports;
- deeds;
- marketing plans;
- statutory compliance; and
- Project Control Groups as the foundations for successful project structure.

Case Example

City of Ryde’s GM explains:

“This process was authorised, with subsequent project approval to proceed by the State Department of Local Government. In order to manage this process, and particularly the process of engaging consultants, commissioning external reports and studies, especially where in-house expertise was lacking, so as GM, I put together a cash surplus of $9m to support and fund these issues for the duration of the project.”

At the pre-delivery stage $800,000 was spent with Bovis LendLease under a consultancy agreement to mitigate risk in the ground (sub-soil). A detailed geotechnical and structural analysis was carried out by BLL under contract with the Developer (Defined Developments). A quantity surveying consultant, WT Partnership, provided reviews of all BLL costs. These tests enabled a ‘no latent conditions’ clause under the contract and BLL did all necessary research to price and deliver the contract. This level of Geotechnical research enabled BLL to price work more accurately.

The Tripartite Agreement succeeded in bringing the owner (CoR) and regulatory body, RTA, together with the developer (DD).
Case Example

City of Ryde’s GM explains:

“CoR and RTA mitigated some of their risk by having input into the design by ensuring compliance with design standards. CoR were allowed to enforce their rights under the design standards and DD, as developer, had to deliver this under the contract. CoR also mitigated some of their risk by putting bonds into place under Tripartite Agreement that were relevant to significant stages of project delivery. “

Further risk was mitigated by not issuing occupancy until the Integrated Traffic Solution (ITS) was complete and approved in accordance with the DA, i.e. in accordance with Local Government planning law and State Law (LEP) which meant that the centre could not expand until the ITS was developed. Maintenance risk was managed by using an ongoing clause in the centre’s lease agreement that DD maintain and certify annually.

5.13.2 Design and Construct Risk

Major Design and Construction risk, which was enhanced by the complicated underpass system to allow traffic from RTA network into top Ryde site, was mitigated with the engagement of BLL as D&C contractor. The management framework was developed by Defined Developments and implemented via various levels of the PCG meetings. CoR via RTA had a requirement to engage the Verifier before the RTA would grant approval.

Case Example

Defined Development’s Director explains:

“Risk was mitigated by the (independent) Verifier approving the design. Defined Developments contributed towards the cost of the Verifier and therefore had risk mitigation as they had input into design. The RTA insisted on independent verification as part of their risk mitigation procedures“.
5.13.3 Financial Risk

The Developer mitigated financial risk by establishing funding arrangements with a syndicate of 6 lending institutions. Finance could be effected if one or more of the banks pulled out of the deal but this in turn was mitigated by a ‘no reason’ clause, e.g. there had to be an significant event such as a dispute or extensions of time etc for them to do so and therefore allow financiers to enforce step-in rights.

The risk of ensuring centre occupancy (tenants) was managed by DD as the financiers would only fund the project if budgets were correct. This involved a significant projection and feasibility study of project finance costs, leasing plans and agreed revenue from centre. The financiers also undertook their own finance checks, assessed by an independent cost consultant, WT Partnership, who checked costs, values variations etc. The banks also engaged independent retail experts every month who sat on a agreed leasing panel to assess that DD were meeting budgets and adhering to the project’s program. Checks were also carried out on demographic studies to ensure demand was there for a centre of this size and nature and DD had to sign up major tenants before finance was approved.

5.13.4 Community Risk

Community support for the development of Top Ryde was significantly high. This risk was initially managed at approval stage by going out to a full public review and debate. One frequent topic was the issue of pedestrian access to the Centre.

Case Example

City of Ryde’s Senior Project Manager clarifies:

“Access was proposed to change via pedestrian bridges and the community raised the question as to why do we have to cross the bridge, why cant we cross the road like we used to? These issues change overtime, as do community members, so referring them back to a public consultancy process years earlier doesn’t always lead to a positive outcome for the public. These risks must be managed by an upfront agreement and continuously responding to public questions. A continued community interface, such as
newsletters, meetings, consultation etc in order to provide a successful method for problem solving and keep the community in a positive frame of mind about the project.”

This excellent level of community liaison from the Council contracted with that of the D&C Contractor.

Case Example
City of Ryde’s Senior Project Manager explains:

“BLL have had very good people on the job but when they demonstrate how good they are they are often taken off the job and put on other projects, sometimes without informing other partners such as CoR and DD. This was not a good example of open communication. Also, BLL Engineers are trained as good technical people but, in the main, not good at dealing with community.”

The maintenance of the lifts that connected to the two pedestrian bridges was a significant community and technical risk. There was community backlash to the first bridge when the lifts were not operational due to system failure.

Case Example
City of Ryde’s Senior Project Manager explains:

“In hindsight, both bridges should have been operational at the same time in order to manage ongoing pedestrian access to the centre. Greater security measures were also introduced to prevent ongoing vandalism. This helped to enforce that the biggest risk was managing the change for people (community). Change can be perceived as simple to some, yet significant to other members of the community. The simple fact that they can no longer walk across the road and must now use a bridge, or that a bus stop is moving 50m down the road etc can lead to ferocious community backlash.”
Constant assessment on the impact on community is important to project success. The issue of the pedestrian bridges was a significant contractual issue as the RTA made it a contractual condition that the pedestrian crossing on Devlin Street, a main arterial route with over 90,000 daily traffic movements, be removed to improve traffic flow.

5.13.5 Contractual Links

The Tripartite Agreement brought together the owner (CoR) and regulatory body (RTA) together with the private sector developer (Bevillesta in the form of Defined Developments). The PPP model for the project supplied a very low risk solution for the local government (CoR). In removing the likes of design and maintenance risk, CoR were able to supply infrastructure to the community at merely an ‘administration cost’. The PPP, via the tripartite agreement, also provided a framework for the RTA to work within, streamlining approvals and providing an efficient way of achieving the infrastructure that was such a key component of delivery Top Ryde.

Fundamentally, the participant roles of those bound by the Tripartite Agreement involved:

- CoR (local government) - administration and review
- Bevillesta (private sector developer) - design, financial and delivery risk
- RTA (state government) – approval process for relevant works

5.13.6 Legal and administration Costs

The legal aspects of a PPP include the contracts, the legal entity and the law and regulations that the PPP will be working under (Bult-Spierinh and Dewulf, 2006). Whilst all interview participants acknowledged that legal costs were an inevitable consequence of the construction industry’s highly litigious environment, the dominant view was that PPP legal and administration costs were ‘excessively high’. These costs can act as a deterrent to the private sector at tender stage and the public sector at development stage.
There were a number of legal and administration costs identified as part of the Top Ryde project, and indeed unique to PPPs. These include:

• Legal advice regarding the establishment of the PPP
• The legalities of setting up the PPP and also arrangements with the contractor(s)
• Liaising with project stakeholders to work through the contract and assessing the risk in the contract
• Costs incurred as part of the Independent Verifier process stipulated by the Department of Local Government (NSW State Government requirement of PPP projects).
• The lack of standardised contract documentation from projects of this nature.
• Efficiency and effectiveness on the focus on the ‘finer points’, given the economics of long-term legal obligations contained in many PPPs, particularly in contracts of over 20 years, and in this case the 49 by 50 year lease arrangement.

Upfront costs incurred under a PPP

The ‘upfront’ or bid costs (legal fees, consultant fees etc) for the Developer on Top Ryde were initially minimal and were thought of as being similar if this project was merely a standard Design and Construct contract. However, additional costs were incurred once the project was classified as a PPP by the State Government. This additional cost wasn’t envisaged upfront as Top Ryde was classified as a PPP late in the process as the project itself was already established and many of the costs had already been incurred.

Case Example

City of Ryde’s Senior Project Manager explains:

“One of the additional costs, that of Independent Verification (where the verifier, Parsons Brinckerhoff was to be paid $500,000 for their services). This costs was wholly incurred by CoR but after negotiations between the GM and DD, the developer contributed $300,000 towards the fees. There were some other costs incurred once the project was confirmed as a PPP such as running costs that involved the monitoring of the
management framework system where an independent PCG committee had to be established and the representatives subsequently had to be paid for their time.”

Independent Verification

A key issue in a PPP is independent verification/certification.

Case Example

City of Ryde’s Senior Project Manager explains:

“For example, as far as the road services on Top Ryde are concerned, the RTA stated that CoR should be responsible for this area and should lead the certification process. CoR took responsibility for this and this speeded up the certification process and reduced costs. In regards to the bridge component of the works it was deemed that there was no need for a Verifier to be involved as the RTA had the expertise to assess this in-house and were willing to certify this work.”

Initially, CoR thought this additional certification process would cost $300,000, but these costs ‘blew out’ to $500,000 due to a lack of communication and an understanding of what the certifier would actually do. Subsequently, the relationship with the certifier became very ‘contractual’ and ‘adversarial’ and this was not part of the collaborative style that was embraced by all other project stakeholders. The abrasive nature of the relationship was the certifier had a negative impact on project morale.

Case Example

City of Ryde’s Senior Project Manager explains:

“Organisations who provide engineering services and certification, such as Parsons Brickenhoff (PB), are excellent engineers, however they have an organisational culture of where they place administration of a project, including the likes of approving invoices, with their highest qualified engineers who receive little to no admin support. Subsequently, the certifying engineer on Top Ryde was distracted and overworked and became bogged down in micro issues. The specialists within PB needed more support so that the engineers who should be certifying works to free to do so. On Top Ryde, the engineer in question was a global specialist in tunnel design who was working worldwide
but CoR had to wait for his specific approval which was frequently delayed due to the extent of his portfolio and the nature of his role. PB were also very expensive in terms of consultancy rates and used engineers who were costed at very high hourly rates. If independent certification has to occur as part of the PPP process then it needs to include greater value for money with significantly more administrative support.”

The problematic issue of perceived ‘over’ verification is also mentioned by the main private sector entity, Defined Developments.

Case Example

Defined Development’s Director provides further supports on this matter:

“The nature of the verification process is also somewhat questionable in its current format. For instance, BLL were uncomfortable with the process as they paid their own consulting engineers, Hyder, to design the tunnels. Hyder have significant expertise in the likes of tunnel design yet another consultant (PB) is then engaged to assess their work yet bear no responsibility over that work. Therefore, if anything goes wrong with the design and construction of the tunnel then it is BLL/Hyder who bears responsibility regardless of PB’s certification. This issue had a negative impact on project culture.”

The cost of independent certification is enormous to the public sector, and in its current format, is another unnecessary cost of PPPs. If Top Ryde had not been designated a PPP project by the State Government, and was merely the likes of a standard Design and Construct type contract then these costs would not be incurred. Not only is this process costly, but also time consuming and it creates a divisive atmosphere. PB weren’t organized organisationally to deal with this level of certification, which also appears to be a duplication given the role of the D&C Contractor’s consulting engineer, Hyder.

In slight contrast to the significant criticism attached to the third party certification process, the RTA was keen for this process to be established in order to provide independent verification to complex design and construction procedures and mitigate risk particularly in light of the recent Lane Cove Tunnel collapse. This view was finally supported by the GM of CoR as there were concerns due to the complexity of the project, and particularly the tunnel design, that the future risk to CoR was quite
extraordinary. So, the third party verification was as critical to CoR as it provided added governance, which was important given there was no in-house knowledge in tunnel design in CoR’s Public Works Group. CoR had numerous experts who had designed bridges, but the tunnels were particularly complex and risky as they were located very near the surface of the road. The RTA were there doing own due diligence as a matter of cause but CoR owned the road and therefore had the liability for tunnel collapse.

Furthermore, under the terms of the PPP the GM had to certify that everything was ‘fit for purpose’ under the project scope and GM at the time, Michael Whittaker, felt that he did not have that level of expertise or confidence. So, in order to certify that this very complex part of the project was fit for purpose and to subsequently obtain the various warranties and capture the relevant corporate knowledge to hand over to the CoR, the GM felt that third party verification was vital, however, the process used on Top Ryde could have been better managed and facilitated by the Verifier. CoR had excellent relationships with all project stakeholders other than the independent certifier, mainly due to the process.

Case Example

City of Ryde’s Senior Project Manager suggests a change in procedure:

“In future, if a certifier has to be used, then a tender process could achieve a successful outcome by calling for an emphasis on the certifier’s ability to become part of a collaborative team and demonstrating an ability to carry out certification with the necessary administrative support without burdening the specialist engineer. If independent certification is not stipulated then certification could be done internally via in-house expertise (self-certification process) or via a contracted private certifier that could be engaged by the builder or the client. A contractor such as BLL will have a contract with an engineer or supplier to design a bridge or tunnel that is supplied to the client and under the contract there should be sufficient liability coverage so that the client is happy, it has the right outcome and can call on the builder/engineer to rectify any defects without incurring additional independent certification costs. The current process is a duplication where the certifier excludes responsibility with statements such as ‘it appears to comply’. Therefore, under the current process, what is the real value of independent/third party certification?”
The trepidations conveyed above reflect concerns expressed by Evans & Bowman (2005) who point out that the legal framework in which the PPP project operates will be a crucial factor to the success of a PPP model. “the legal framework within which a PPP project operates will also be a determinant of the optimal PPP model” (Evans & Bowman, 2005, p.63).

5.13.7 Standardisation of Documentation

A lack of standardised PPP documentation was cited as a core reason in driving high legal and administration costs. All participants agreed there was a lack of consistent principles and practices across the various State jurisdictions in terms of guidelines, and that generally, drove costs. Disappointment was expressed that the potential of the National PPP Forum established in 2003, which aimed to standardise many PPP processes had not been realised. It is hoped that the recent initiative of the current State Government in establishing ‘Infrastructure NSW’ will explore this further.

After the Development Application (DA) for Top Ryde was lodged an independent assessment panel was established which recommended to CoR that the project should proceed after ratification. A Project Manager was then employed in late 2006 to oversee all infrastructure and ensure that CoR expectations were met. This became a form of ‘due diligence’ so that CoR could avoid problems that occurred on similar projects, such as the Oasis project with Liverpool Council. As CoR has an obligation to avoid unnecessary expense and risk this methodology could become standard procedure for future similar projects. The Department of Local Government were supportive of this, particularly as this was the first PPP of this type involving CoR and there was no existing standardised templates or management models to follow.

The Fitzgerald Report (Fitzgerald, 2004) recommended that PPP processes should undergo streamlining in order to reduce the costs of tenders and encourage wider bidder participation to increase competition. Divergent views existed on how best to standardise PPP processes and which model to follow. There was a general concern that international precedents may not reflect the smaller scale of the Australian PPP market. Differences of opinion existed in regards to whether national standardisation could ever be achieved considering the nature of the Australian federal system (in contrast to the...
UK where standardisation was implemented under a more centralised Government system).

However the UK PPP model, in which legal/contractual documents have been standardised, was viewed as the reference point for those who recommend standardising documentation for Australian PPP models. There was some consensus that a reduction in transaction costs could result from standardised templates such as those in the UK. It is worth noting however that despite the introduction of templates in the UK, the transaction costs are “high and appear likely to remain relatively so despite the development of templates” (Public Accounts & Estimates Committee Report on Private Investment in Public Infrastructure 2006, p.84). This was also reflected in experiences of the UK PPP market where despite the standardised documentation in place, legal costs did not reduce. These experiences raised the question, would the associated cost of implementing standardised documentation be too prohibitive considering the relatively limited Australian PPP market?

According to the Department of Local Government the project was determined as meeting the definition of a PPP under s400B of the Local Government Act 1993. Therefore, a form of standardised documentation was adhered to on the Top Ryde PPP and is explained below.

Case Example

CoR’S GM expands on the issue of standardisation:

“After defining Tip Ryde as a PPP, further assessment of project documentation by the Department of Local Government deemed that the project did not represent a high risk to CoR and there was no requirement to submit project processes for review to the Local Government Review Committee. However, the Department reminded CoR that the processes outlined in the standardised document ‘Guidelines on the Procedures and Processes to be followed by Local Government in PPPs’ must still be followed even though the project was assessed as non-reviewable. The Department of Local Government could always change their assessment if the risk profile of the project changed over time.”
5.13.8 Recent Government Agency Initiatives

On a positive, during the period of this research, recognition needs to be given to the significant work done by Government agencies to standardise some of their PPP processes based upon previous experiences and feedback from the private sector. All were in accord that all levels of Government appear to be committed to refining contractual negotiations, in order to reduce extended legal debates which are not only costly for the contractors involved but also for Government.

Examples of initiatives included work undertaken by the NSW Department of Health to standardise legal documentation based on previous PPP project experiences that included the Newcastle Mater Hospital, Long Bay Hospital and Correctional Facility projects.

Despite general consensus from interview participants that the lack of standardisation was often costly, particularly at the initial bidding stage, there were some concerns that a tightly standardised approach could restrict flexibility and innovation, features often cited as major strengths of PPPs.

5.14 SUCCESSFUL MANAGEMENT OF RISK FACTORS FOR THE TOP RYDE PROJECT

5.14.1 Tripartite Agreement

Under the Tripartite Agreement, the City of Ryde is the roads authority and the owner of the surrounding Devlin Street and Blaxland Roads. As owner, the City of Ryde agreed to lease a portion of these roads, comprising the site for Top Ryde, to the Developer under the Agreement. The Developer undertook the works on the site and agreed to own and operate the works (finance, design, construct and operate). Under section 138 of the Act, the consent of Council, as roads authority, with concurrence of the RTA, was required. A condition of the DA consent is that the three parties enter in a Tripartite Deed of Agreement.
Case Example

CoR’S GM explains:

“The Tripartite Deed served to clarify the roles and responsibilities of the three key players, i.e. City of Ryde, RTA and Bevillesa, at the beginning of the project. The tone of the Tripartite Deed was not adversarial. The roles and responsibilities of each party were discussed, agreed and formalised at the start of the project.”

Subsequently a three-layer communication model was established and embraced enthusiastically by all the parties to manage the PPP work. The three levels consisted of:

1. **PPP Communication Meeting**

   Hosted weekly by the Main Contractor (Bovis Lend Lease) and attended by CoR, and often RTA, with stakeholders such as STA and the Project Verifier as necessary. This meeting served to advise and discuss detailed works progress, certification issues, focus points for co-operation, feedback from the local community and communications required with local residents about future work.

   Case Example

   City of Ryde’s Senior Project Manager explains:

   “Weekly communication meetings have been structured to review the works programme and the community's interest together to manage expectations and minimise inconvenience.”

   2. **PCG (Project Control Group) Meeting**

   Initiated and hosted by CoR weekly as appropriate, this brings together the project managers operating on behalf of the CoR, the Developer, Main Contractor and RTA to
overview general progress, identify and mitigate risks and issues, ensure information flow is timely, agree points of collaboration, resolve contentious issues, defuse potential problems and agree action points for all participants to ensure the project proceeds as smoothly as possible.

Case Example
City of Ryde’s Senior Project Manager explains:

“Weekly PCG meetings have enhanced communication and collaboration between the three PPP stakeholders' representatives, the effectiveness of which has been reinforced by the inclusion of the Main Contractor in this forum.”

3. High Level PCG Meeting

This is held every two three months according to need and, as specified in the Tripartite Deed is chaired by an independent person. Given RTA’s concurrence role in the PPP, the principal attendees have been the CoR and the Developer. These meetings have provided a platform of supervision, negotiation and control of the direction of the PPP works and design intent of the overall project. This forum is principally concerned with policy, direction and the progress of the project at a strategic level.

Case Example
City of Ryde’s Senior Project Manager explains:

“Collaboration at quarterly High Level meetings between the Heads of the CoR and Bevillesta organisations provided a strategic control upon the relationship between PPP and DA. The nominated project managers for the CoR, RTA, Bevillesta and BLL have operated as consistent principal contacts for their organisations facilitating resources as required and ensuring that communication is not weakened through dilution. The Tripartite parties and Bovis Lend Lease each have large organisations with many ‘interested’ members.”
5.14.2 Relationship Management

Relationships

The success of Top Ryde was driven not just by considering the shopping centre in isolation, but within the broader context of delivering developments to the City of Ryde in order to ensure the holistic coming together of all planned precincts.

Case Example

City of Ryde’s GM explains:

“During the planning stage for Precinct 1, the State Minister for Planning intervened and restricted the height of CoR’s land to 10 storeys. However, successful relationship management allowed for further negotiation and led the broader project stakeholders to see the wider community value of ensuring success of the project and not let the project get de-railed by hiccups.”

The 10 storey limit imposed on Precinct 1 did not impact on Precinct 2, Top Ryde Shopping Centre, the LEP was subsequently gazetted although CoR had been restricted in their attempt to gain height uplift through the new town centre LEP.

All senior project stakeholders within CoR were involved in the negotiation and planning process and developed successful relationships with senior project stakeholders from both the private and public sectors. Initial commercial negotiations were carried out on CoR’s behalf by both the GM and Manager of Buildings and Property. The GM, in tandem with the Group Manager of Environment and Planning developed the planning instruments. The GM and Group Manager of Public Works negotiated with transport authorities. A ‘softly, softly’ approach to negotiations had to be adopted by CoR stakeholders as CoR had a vested interest in the project and a great deal of patience had to be shown by other parties/stakeholders. This type of approach was replicated by the main private sector stakeholder, Bevillesta, as the Development Director of Defined Developments embodied similar traits which help foster a successful working relationship with CoR where negotiations were performed in a very positive and ‘can-do’ manner.
Case Example

City of Ryde’s GM explains:

“Relationships within the project were driven by a ‘win-win’ situation and the successful management of very diverse stakeholder expectations. The cultural issue of relationship management (teamwork, trust, mutual goals etc) helped to drive the project away from typical adversarial contracting. On the odd occasion when BLL had to be reminded of their contractual obligations, e.g. if the program was falling behind schedule, then reminders were all carried out at the appropriate level, the highest level if possible and subsequently then filtered down to onsite operations.”

Excellent holistic management of Top Ryde has no doubt helped to deliver a successful project. Obligations under each party have been met in a timely manner and the process of agreements made monthly, weekly and daily under different management structures from the top down have enabled outstanding results. This was achieved in practice at the likes of the PCG High level meeting where obligations were agreed and passed on down through the chains of management to those responsible for the daily delivery on site.

Commitment

Commitment is another key aspect of building successful stakeholder relationships.

Case Example

City of Ryde’s GM explains:

“All stakeholders must want ‘travel the journey’, realise and assess the risks involved, accept that there will be problems, but must be committed enough to be able to work around the problems and subsequently accept that for every risk managed there will be mutual rewards. Projects such as Top Ryde are ever evolving and fluid and this must be recognised by sharing challenges and risks. There is an onus on the broader project stakeholders, such as the Regulatory bodies, to understand the dynamic nature of PPPs and the complexities of this type of project.”
However, often regulatory bodies tend to avoid relationship-based contracting approaches and still want to refer specifically to a contract, which in some cases could have been signed several years earlier, leading to micro levels of contract compliance which leads to adversarial and poor relationships and ultimately variations and increased costs.

Case Example
City of Ryde’s GM explains:

“If stakeholders have, to use an analogy, ‘skin in the game’ (in this case CoR/RTA/Beville) then they were ‘in’ and extremely supportive and keen to solve problems. But, if stakeholders didn’t have this direct ‘involvement’ (as is the case with the Dept of Local Govt, ICAC etc) then they would be part of the project if things were successful, but if things went wrong or for political reasons it was not deemed appropriate to be ‘part of the project’ then they didn’t want to be seen to have any ‘involvement’.”

This certainly led to some negativity and where the likes of the Department of Local Government sat somewhat removed from the project. As discussed previously, this also led to some over expenditure in order to remove the risk to cover for personal or hardship risk (i.e. Independent Verifier).

**Communication**

At a project operation level, the Project Control Group (PCG) process was introduced and implemented by CoR’s Project Manager. This led to significant improvements in the process and culture of face-to-face contact with key project players. This process was implemented after the initial meeting between CoR, Defined Developments, RTA, and Bovis Lendlease.

Case Example
City of Ryde’s Project Manager explains:

“This led to a very positive project culture with successful communication occurring at diverse levels. There is no doubt that the project’s culture of open and collaborative
communication led to the avoidance of contract disputes. Key issues were identified at PCG level and senior project players could then act by solving problems almost immediately after the meetings. Establishing the correct collaborative atmosphere insures the spirit of intent of contract is fulfilled without going into dispute.”

Communication channels were open and collaborative at all times.

Case Example

City of Ryde’s Project Manager explains:

“All project participants, from senior management through to site supervisors were free to contact CoR’s Project Manager at any time. Open lines of communication and access to data were also reciprocal as CoR’s Project Manager had continuous availability to the Contractor’s (BLL) ‘Project-Web’ data-base. Project-Web is BLL’s web-based project management tool that is used to link the site-based team, remote designers, clients, consultants and local contractors for document control, drawing management and project updates. Project-Web worked very well for fostering open communication and collaboration allowing freedom of access on a daily basis.”

Open and collaborative communication also meant that there was the ability for project stakeholders to talk to senior people at very short notice. Top Ryde project stakeholders actively embraced collaborative communication approaches and this was enhanced by the fact that these senior and middle management players were all diversely experienced and practical thinkers.

Case Example

City of Ryde’s Project Manager explains:

“This level of collaborative communication was particularly espoused by the main players within CoR, RTA, Beville Group and BLL, unfortunately, the Independent Verifier was not on the same wavelength. There were some problems with the Independent Verifier not responding in a timely manner to meet the project program as they had limited recourse for this. Hence, Defined Developments had to coax them in order for the Developer to meet their contract obligations. This problem was again driven by resource problems within the Verifier’s organisation and communication had to happen at the
highest level in order for assistance to avoid the adverse consequences of non-
performance.”

This issue can be overcome by ensuring input into a holistic team structure to ensure the ‘right people’ are involved in order for all stakeholders to gel.

**Community Support**

The issue of developing a successful relationship with the broader community of the City of Ryde was initially sought during the public notification process during the planning stages. There was an unprecedented community support of 95% for the planning instruments to develop the site. The community was aware from day one of the need to create a certain number of storeys for the both the Civic and Top Ryde precincts to make them commercially viable and that the real issue regarded more holistic planning to create a ‘real’ township for Ryde. This meant the right civic and governance precincts, the right retail precincts, the right commercial, the right open spaces, the right residential, the right alfresco dining spaces etc. It wasn’t just about the one precinct but the coming together of several of them.

Case Example

City of Ryde’s GM explains:

“Previous applications for planning approval to extend Top Ryde had been rejected by Council. What made a significant difference with the approved DA was the overwhelming support of the community. Ryde residents helped to drive getting the project supported as they had got to stage where they wanted to ‘just make it happen’ as they effectively had nowhere to go for acceptable commercial and retail activity. Residents were faced with going to the likes of Chatswood (a minimum 12km away) for the cinema and extensive shopping activities. So, by 2004 the old 1950s centre was very outdated with a huge amount of public support for redevelopment. Therefore, during the early stages of construction when many problems occur (noise, demolition, increased traffic, dust, trucks etc) the community was very forgiving as they desperately wanted Top Ryde to progress.”
The community was also supportive of the additional height and bigger building limit (increased bulk/scale/density) in order to make the project economically viable due to the complex nature of calculating the feasibility of this type of project. The community did not need to be ‘won over’. Dealing with the community on a daily basis was successfully managed by CoR’s Project Manager and with communication channels established between the public and key project stakeholders. A policy was put in place that the Project Manager would communicate with a member of the community within 24 hours of their initial enquiry. This not only helped to hasten any community complaints but also created a happy ongoing ‘working’ relationship between CoR and the community of Ryde.

BLL did somewhat dilute their excellent commitment to community consultation and engagement as the project reached completion, they still excelled on their contractual and technical commitments to the project but their community goodwill went downhill as they over-relied on the input of the CoR and Centre Management.

Case Example
City of Ryde’s Project Manager explains:

“For example, their site office developed a very low-key presence with no community access to the likes of brochures and no community interface compared to early stages of the project.”

The levels of community engagement need to be maintained by all relevant stakeholders from the inception and planning stages through to project completion and building operation and evolve during that period to reflect the changing expectations and concerns of the community.

A major achievement of this project is that the key communication team was kept small and consistent and this has worked successfully. The Stakeholders’ project managers have remained unaltered during the project and as a small team remained focussed and consistent facilitators for their organisations.
5.15 SUMMARY OF CASE STUDY RISK FACTORS

The NSW State Government, through firstly its Department of Public Works and then the specially created off-shoot the Olympic Coordination Authority, incorporated some of the key learning experiences of Stadium Australia into the SuperDome project. In particular, the issue of a revised tender and negotiation process.

Case Example

The OCA’s Director of Stadia summarises how the Government reflected upon the process of Stadium Australia and integrated the relevant factors into the SuperDome:

“We actually published our design to help the consortia understand more what was in our minds, we ran 2 groups to the wire and we paid the losers. That gave us, if not a better deal, it gave us more certainty that we got the best deal.”

Similarly, the NSW State Government, albeit a different department from the one that procured the Olympic infrastructure projects, used a similar model, particularly with regards to private operation and ownership, on the Mater Hospital redevelopment to that used on the Casey Community (Berwick) Hospital.

Case Example

NSW Government’s GM of Public Works explains:

“Early PPP hospital systems, especially the BOO models, lacked performance indicators and exposed the Government to adverse risk and failures. The payment system used on the Mater is based on a similar BOOT model that has been developed and successfully used for the Casey Community Hospital. NSW Health established the ‘Labour Services Agreement’ which effectively allowed clinical services to be delivered by public sector employees, while all non-clinical services are provided by the private sector. This model had been successfully established in the Casey Community Hospital PPP, while a mix of private and public sectors employee awards for the same roles and responsibility caused significant issues in Port Macquarie and Latrobe PPPs which were BOO models”
This learning process of identifying the key issues from previous but recent PPP projects provides an example of how the NSW Government is not only keen to continually improve but to also document the process. Time was certainly another key issue and it certainly saved months and months at the negotiation stage on the likes of the SuperDome as stakeholders responded quicker when they know there’s competition. They know that once they have been selected as the preferred component, then they have basically secured the contract and it’s just a matter of conducting the formalities and things tend to get strung out and take longer.

The SuperDome model appears to be setting the current benchmark and is indeed acting as the framework for future public-private joint ventures. Since Abi Group’s somewhat unsuccessful foray into stadium operation (sports events) then the SuperDome has gone on to become a very successful business firstly under PBL and now as part of the Nime Entertainment group. However, the SuperDome project was a good process for both the government and the private sector, including Abi Group and has certainly delivered a fine building. Stadium Australia was a good process, delivering an award winning and cutting edge sports stadium, but the process was not as refined as that of the SuperDome.

The SuperDome process should be considered as the model to build upon in future public-private sector partnership projects of this type. There are faults and criticisms, it is a very expensive process running two tendering teams, so certainty that the outcome can justify that additional expense is vital. Running two full negotiation consortia with complete legal and commercial support is financially a big step, but this enhanced overall performance and quality of the process and indeed the end product.

The findings of the literature review were formulated into a Risk Factor Framework applicable to PPP projects in general. This framework has subsequently been tested via the case study on current PPP projects. This section of the thesis analyses the results of the case study projects. A summary of results is provided in the following tables and the subsequent chapter further compares the results of the literature with those established during the case study process and also comparison is drawn between the four case study projects in question.
In an effort to understand the situation and context surrounding the formation, development and feasibility of Stadium Australia, the Sydney SuperDome, Mater Hospital and Top Ryde, there was a real need to become familiar with various aspects of what are extremely complex projects, not just technically, but the broader aspects of procurement such as finance, feasibility, operation and ownership. As such, the initial part of the case study chapter focused on project background and clarification of the project company structures and contractual issues within each project.

The review of various project documentation and documenting the interview process allowed for the development of a project specific Risk framework. The framework developed while reviewing relevant literature was used initially as the ‘reference framework’ for risk discussion during the case study interview process and successful aspects of risk management were also drawn out of this process.

The interview process with key project senior management, involved at project phases ranging from the consortium bid stage to the current operational stage, helps to identify risk management issues incorporated on current Australian social infrastructure PPP projects. Significant comments developed during these discussions have been incorporated throughout the relevant sections of the case study.

It was found that the majority of risks identified while reviewing the literature were relevant to varying degrees on the Stadium Australia project. Beyond these issues, there were several risks considered unique to Stadium Australia. They initially centred upon the issue of Olympic Games tickets and then gold membership rights associated with equity investment. The consequences associated with the Olympic Games, such as cancellation, boycott or event re-programming, are issues not usually associated with typical PPP projects for obvious reasons. However, the ‘risk’, since the early operational days of hosting the Olympics, of the continuation of ensuring events are not only attracted to the stadium, but that tickets also sell the required numbers, will be ongoing for the duration of its operational cycle.
The most significant risks identified with Stadium Australia during the case study stage include the following:

- **Bidding risk** where substantial financial investment was spent during the tender and negotiation stage, in the hope of being awarded the right to develop the project.

- From a building perspective, *the technical, environmental and construction related risks* were of significant concern. It was noted that the risk profile of the project was probably exacerbated by the high level of public scrutiny and profile associated with staging of the 2000 Olympic Games. This is supported by the measures and conditions imposed, such as extreme completion guarantees, discretionary termination clauses and the required $215 million payment to the OCA at financial close for drawing down progress claims.

- **Market risk** of being able to continue to attract the events, and subsequent necessary attendances, to the stadium.

- The risk issue of the ability to raise both *debt and equity* given the innovative financing methods and extremely complicated consortium structure.

- The *consortium* had a wealth of *expertise*, considerable *experience, high profile* and a *good reputation*.

- An *efficient approval process* assisted the stakeholders in a very tight timeframe.

- **Innovation in the financing and equity raising** methods meant that the consortium had a very good ‘winning’ strategy. They demonstrated the ability to raise both debt and equity.

- The *consortium structure* consisted of great teamwork, complimentary styles and general trust.
In reflecting upon the remainder of the project’s concessionary period, the most significant issue remains that of achieving sufficient revenue. The factor underlying this particular issue is the logic of achieving better economies of scale out of a much larger venue, when comparing the Stadium to current, alternative venues in NSW. To date this has proven true with the ‘sell-out’ of several events. The ability to maintain the required revenue will then contribute significantly to achieving an all-round successful project.

It was found that the majority of risks identified while reviewing the literature were also relevant to varying degrees on the SuperDome with some risks considered unique to the project. As with Stadium Australia, they centred upon the initial issue of hosting Olympic Games events, which are issues not usually associated with typical PPP projects, and the ongoing risk of attracting and delivering regular and successful tenants and events.

The most significant risks identified with the Sydney SuperDome during the case study stage include the following:

- There were no ‘competitive protection arrangements’ as per the Stadium Australia Project Agreement. The Government found these arrangements difficult to administer on Stadium Australia. The resulting competition risk factor is that the SuperDome has to compete with a major rival and established business entity, the Sydney Entertainment Centre. By not incorporating a competitive protection arrangement in to the Project Agreement also allows the Government to build another entertainment centre, elsewhere in Western Sydney for example, if this is viable. The Government wants total freedom to do whatever it deems necessary in future stadia development strategies. This obviously injected some form of uncertainty (risk) into the business of the SuperDome.

- With regards to operations risk in the SuperDome, the Government has incorporated an Asset Management Plan up to year 20 of the 30 year concession period to address the issue of operations and maintenance failure. The Asset
Management Plan has a review mechanism stating the various terms, details of repayment, replacement, schedule, cost et al. It also indicates the finances necessary for investing into the sinking fund each year so that when the time comes to carry out a specific maintenance it ensures that there is enough money available. Up to year 20 the Government is relying on its inspectorial role which also allows for scrutiny and approval of spending out of the fund. After year 20 the Government view is that in the last ten years of the concession period there will be a normal temptation by the operators to let the building run down because it will be handed back at year 30. So, in year 20 the Government will have a regime of inspection measuring performance against the Asset Management Plan and if the view is that it’s not being implemented properly then the Government can insist on a bond being put in place which basically gives them sufficient funds to cover any shortfall in maintenance on building handover.

- The issue of *bidding risk* was successfully managed by the Government in that they paid the loser after two tenderers were led to the latest tendering stage possible. They were paid a pre-specified quantity of money, this was not a re-imbursement of all of their tender costs, which was a significant re-imbursement towards the additional costs of tendering to an extremely late stage. This resulted in improvements in the quality of the two bids that were being prepared in direct competition with each other as the re-imbursement acted as a safety net for both tenderers leading to improvements in the process.

- The SuperDome deal was a very *streamline approval and negotiation process*. It came immediately after Stadium Australia, where the Project Agreement was signed only a few months after the tendering negotiation process for the SuperDome started, and enabled reflection of the key issues associated on the stadium to be incorporated into the SuperDome. The various issues that had been sub-optimal on Stadium Australia, or at least where there was room for improvement, could actually be incorporated into the SuperDome process. This actually made it by world standards a very slick process.
• The underlying key to success in any PPP project is successful business operation. One area in which financial success can be further enhanced is that of business diversification. The SuperDome’s core business being a multi-use arena staging various sporting and entertainment events. In order to diversify and open up additional markets it also has a number of eating and drinking establishments that are also open on days when there are no events at the SuperDome. This is particularly profitable on days when events are held elsewhere at Olympic Park, such as the nearby Aquatic Centre or Stadium Australia.

• The SuperDome had a streamline financing and reasonable equity in participants who had more of a risk appetite than average project participants and who actually wanted to be develop the business. The SuperDome bid had few innovative ideas, but the project company had a fairly large appetite for risk. This appetite for risk extended included into wanting to compete with the nearby Sydney Entertainment Centre.

In reflecting upon these issues, the most significant issue remains that of achieving sufficient revenue. The private sector consortium of the SuperDome had an enormous appetite for competition with the Sydney Entertainment Centre. Millennium consortium was sound enough to take on the competition at the bidding stage and during early operation, however, this Abi Group led consortium did not have the expertise to deliver a successful events management operation. The success of the SuperDome, operationally speaking, has significantly increased since ownership/operation changed from Millennium to firstly PBL, and then Nine Entertainment, as these organisations have a wealth of knowledge and expertise in delivering events suitable for a large indoor arena such as the Superdome.

It was found that the majority of risks identified while reviewing the literature were also relevant to varying degrees on the Mater Hospital project. Prior to the selection of a procurement method for the redevelopment of the Mater hospital the State Government (in the form of NSW Health) began with a preliminary risk review that focused on the initial processes rather than later delivery risks and on the elements with higher level
risk profiles relative to development, management and delivery of the Mater Project. This process of risk identification continued through an intensive stakeholder engagement process with six (6) key risk area headings identified: Quality of service/Quality of hospital product; Timely delivery/Costs within budget; Disruption to hospital activities during delivery; Urban development; Equality and availability of opportunity; and Information and consultation. These broad risk categories acted as a starting point to develop a full and detailed risk profile and this was fully explored during the interview process. The most significant risks identified with the Mater Hospital during the case study stage include the following:

- The proposed revenue streams from the Government to the private sector are on a monthly ‘performance based’ payment structure, which began when the hospital became operational. The payments relate to initial project finance; design, construction, and commissioning; maintenance and operation of the hospital including the management of the health sector employees; and by achieving contractual benchmarks and agreed key performance indicators.

- Cost control and planning were managed by the involvement of a independent Quantity Surveyor/Cost Consultant in the process mapping of the project and being involved in any relevant decisions that could effect cost control.

- Interface risk is managed by the Project Company who is responsible for ensuring that the provision of its services do not disrupt the ongoing operation and functions of the hospital. The Project Company must not, without the prior written consent of the Project Director, modify its work practices or change how it provides the Services in any way which may increase the costs to the state government of providing the Hospital Functions or of otherwise operating the Hospital.

- Inspection and auditing rights are managed by the State Government who requires the Project Company to ensure its Operator and Construction Contractor keep appropriate books of accounts and have its financial statements audited annually. The State government insists that within 20 business days after
each six month period the Project Company must provide various financial information and also provide the Project Director with all documents, reports and plans which it provides to the Financiers.

- **Sponsor risk** was managed by the NSW Government in that they carefully considered which PPP model to use (i.e. in this case a typical BOOT agreement) and a thorough and appropriate allocation of risk was carried out. The NSW Government contractually ensured that if the Novacare Consortium fails then the Government has reduced its financial exposure by ensuring that tripartite deeds and guarantees, debt financing agreements, securities, contractor guarantees, insurances et al have been put in place.

- **Financial risks** on the Mater primarily relate to whether firstly the project doesn’t achieve finance and secondly if the project doesn’t succeed financially and fails. The impact for Government is that it must maintain key services. In this instance the NSW Government has to accept the risk, however, it installed additional measures to reduce financial exposure above and beyond the obligations of the project deed in that they applied a more robust financial scrutiny to the bidders prices than conducted with earlier PPP projects procured by the NSW Government.

- **Operating risk** relates to the services delivered under the PPP contract and whether the private sector can deliver those services to appropriate specifications, standards and regulations within the financial parameters of the consortiums bid. The payment mechanism in the Mater requires two main principles, one being performance based (KPIs) and the other is dependent on the quality and quantity of services provided. Risks were mitigated by the integration of performance guarantees, defects liability period, completion deadlines, inspection and step-in-rights, termination clauses, handover condition criteria, compensation and relief events, and benchmarking and market testing.
• With regards to **Asset Ownership** the NSW Government researched and assessed several procurement alternatives for delivering the new hospital and upon determining the procurement method as PPP, the scope determined a project term of 28 years. Clinical services were to remain the responsibility of NSW Health while non-clinical (building maintenance, grounds, security, cleaning et al) services were to be completed by the private sector. Payments from the Government for services were based on performance benchmarks and significant assessment was completed for design risk, construction risks, interface risks and hospital disruption, financial risks et al to determine the best ‘value for money’ proposal against risk transfer and using the Public Sector Comparator (PSC).

Through the PPP process, NSW Treasury calculated that the Novacare proposal would provide a ‘net present cost’ saving to the Government of approximately 2% when compared to a traditional public sector delivered procurement model over the contractual 28 year PPP term. The success of the Mater hospital redevelopment can also be attributed to a thorough analysis of previous healthcare PPPs, particularly those such as Port Macquarie, La Trobe and the one in which the Mater model was based on Casey Community (Berwick) Hospital.

It was found that the majority of risks identified while reviewing the literature were also relevant to varying degrees on the **Top Ryde** project. Local government has been investigating the delivery of infrastructure and service PPPs and Top Ryde was the first major PPP to be procured in NSW with the Local Authority, i.e. Ryde Council, as the main public sector entity. As PPP arrangements can be complex and risky changes were made to the **Local Government Act 1993** by the **Local Government Amendment (Public–Private Partnerships) Act 2004**. The changes introduced an additional part in Chapter 12 of the Act with new requirements for all councils in NSW, including county councils, when entering into PPPs. The Act provides that the Director General of the Department of Local Government may from time to time issue guidelines requiring specified procedures and processes to be followed by councils when PPPs are being used or considered for the delivery of infrastructure and services. The Guidelines are intended to guide and assist councils and others in the operation of the new PPP
requirements. The most significant risks identified with Top Ryde during the case study stage include the following:

- The risk issue of **Compliance and Due Diligence** appeared at the forefront of this local authority led PPP. The basis of the model used for the delivery of Top Ryde involved the establishment of: the risk profile; internal and consultant reports; deeds; marketing plans; statutory compliance; and Project Control Groups as the foundations for successful project structure. This process was authorised and approved by the State Department of Local Government. In order to manage this process, and particularly the process of engaging consultants, commissioning external reports and studies, especially where in-house expertise was lacking, the GM put together a *cash surplus* of $9m to support and fund these issues for the duration of the project.

- The **Tripartite Agreement** succeeded in bringing the owner and regulatory body, RTA, together with the developer. Ryde Council and RTA mitigated some of their risk by having input into the design by ensuring compliance with design standards. CoR were allowed to enforce their rights under the design standards and DD, as developer, had to deliver this under the contract. CoR also mitigated some of their risk by putting bonds into place under Tripartite Agreement that were relevant to significant stages of project delivery. **Maintenance risk** was managed by using an ongoing clause in the centre’s lease agreement that DD maintain and certify annually.

- Major **Design and Construction risk**, which was enhanced by the complicated underpass system to allow traffic from RTA network into Top Ryde, was mitigated with the engagement of the D&C contractor. The management framework was developed by the Developer and implemented via various levels of the PCG meetings. CoR via RTA had a requirement to engage the Verifier before the RTA would grant approval. Risk was mitigated by the Verifier approving the design. Defined Developments contributed towards the cost of the Verifier and therefore had risk mitigation as they had input into design.
• The Developer mitigated **financial risk** by establishing funding arrangements with a syndicate of six lending institutions. Finance could be effected if one or more of the banks pulled out of the deal but this in turn was mitigated by a ‘no reason’ clause, e.g. there had to be an significant event such as a dispute or extensions of time for them to do so and therefore allow financiers to enforce step-in rights.

• The risk of ensuring **centre occupancy** (tenants) was managed by the Developer as the financiers would only fund the project if budgets were correct. This involved a significant projection and feasibility study of project finance costs, leasing plans and agreed revenue from centre. The financiers also undertook their own finance checks, assessed by an independent cost consultant. The banks also engaged independent retail experts every month who sat on a leasing panel to assess budgets and the program.

• **Community support** for the development of Top Ryde was significantly high. This risk was initially managed at approval stage by going out to a full public review and debate. A continued community interface was also implemented, where newsletters, meetings, consultation et al, were used in order to provide a successful method for problem solving and to keep the community in a positive frame of mind about the project. The maintenance of the lifts that connected to the pedestrian bridges to Top Ryde was a significant community and technical risk. There was community backlash when only the first pedestrian bridge was complete as the lifts were not operational due to system failure. Both bridges should have been operational at the same time in order to manage ongoing pedestrian access to the centre. Change can be perceived as simple to some, yet significant to other members of the community. The simple fact that community members can no longer walk across a road they have been able to do so for many years and must now use a bridge can lead to ferocious community backlash. Constant assessment on the impact on community is important to ongoing project success.
• **Commitment** is another key aspect of building successful stakeholder relationships. All stakeholders must realise and assess the risks involved, accept that there will be problems, but be committed enough to work around the problems for mutual reward. Projects such as Top Ryde are ever evolving and fluid and this must be recognised by sharing challenges and risks. There is an onus on the broader project stakeholders, such as the Regulatory bodies, to understand the dynamic nature of PPPs and the complexities of this type of project. However, often regulatory bodies tend to avoid relationship-based contracting approaches and still want to refer specifically to a contract leading to micro levels of contract compliance which leads to adversarial and poor relationships and ultimately variations and increased costs.

• **Communication** channels were open and collaborative at all times. All project participants, from senior management through to site supervisors were free to contact Ryde’s Project Manager at any time. Open lines of communication and access to data were also reciprocal as project stakeholders had continuous access to the Contractor’s web-based project management tool that was used to link the site-based team with others in the management and supply chain. Open and collaborative communication also meant that there was the ability for project stakeholders to talk to senior people at very short notice. At a project operation level, the establishment of the Project Control Group (PCG) led to significant improvements in the process and culture of face-to-face contact with key project players. This process was implemented after the initial meeting between CoR, Defined Developments, RTA, and Bovis Lendlease and this led to a very positive project culture with successful communication occurring at diverse levels. The culture of open and collaborative discussion led to the avoidance of contract disputes and key issues were identified at PCG level enabling senior project players to then act by solving problems immediately. A major achievement of this project is that the key communication team was kept small and consistent and this has worked successfully. The Stakeholders' project managers have remained unaltered during the project and as a small team remained focussed and consistent facilitators for their organisations.
The success of Top Ryde was driven not just by considering the shopping centre in isolation, but within the broader context of delivering developments to the City of Ryde in order to ensure the holistic coming together of all planned precincts. All senior project stakeholders within Ryde Council were involved in the negotiation and planning process and developed successful relationships with senior project stakeholders from both the private and public sectors. Relationships within the project were driven by a ‘win-win’ situation and the successful management of very diverse stakeholder expectations. The cultural issue of relationship management (teamwork, trust, mutual goals et al) helped to drive the project away from typical adversarial contracting. On the odd occasion when contractors had to be reminded of their contractual obligations then this was carried out at the appropriate level, the highest level if possible and subsequently then filtered down to onsite operations. Excellent holistic management of Top Ryde helped to deliver a successful project.

5.16 CASE STUDY RISK FACTOR FRAMEWORK

The culmination of reviewing contract summaries, project documentation and discussions with several key project personnel is evident in the following frameworks for risk factors (Tables 11, 12, 13 and 14) specific to Stadium Australia, the Sydney SuperDome, the Mater Hospital and Top Ryde. The framework differs somewhat from the one developed when reviewing the relevant literature in that actual project participants are identified. The contractors, Obayashi, Multiplex, Abi Group and Bovis Lend Lease have been listed separately from other private sector project participants such as Gardner Merchant, Ogden IFC, AEG Ogden, Novacare, Defined Developments et al as they perform very different private sector functions.

The risk framework (tables) provides a summary of the analysis of results previous discussed in this chapter. The ‘crosses’ identify which particular risk factor is applicable to the relevant party managing the factor in question and includes a summary of the key issues or responses from the interviewees:
<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Project Company/Operator</th>
<th>Contractor</th>
<th>Other Project Participants</th>
<th>Host Govt./Public Sector</th>
<th>RISK MANAGEMENT TECHNIQUE (including success factor examples)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction Time Overrun</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Ultimate responsibility for managing construction within the project time frame borne by Multiplex (under terms of D&amp;C contract).</td>
</tr>
<tr>
<td>Construction Cost Overrun</td>
<td>×</td>
<td></td>
<td></td>
<td></td>
<td>Obayashi, then Multiplex in turn ultimately responsible for cost overrun by way of fixed price, lump sum D&amp;C contract. Project company responsible for cost overrun associated with their initiated changes/variation or for items outside the D&amp;C scope.</td>
</tr>
<tr>
<td>Design Risk</td>
<td>×</td>
<td></td>
<td></td>
<td></td>
<td>Multiplex bore the substantial portion of this risk under the D&amp;C contract. Government and project company still bear some risk in that the design brief is correctly prepared and interpreted.</td>
</tr>
<tr>
<td>Operational Cost Overrun</td>
<td>×</td>
<td></td>
<td></td>
<td></td>
<td>Risk is typically borne by the private sector operator under the terms and conditions of the operational and maintenance agreement (Ogden IFC). Gardner Merchant also bear this risk in the operation/provision of catering</td>
</tr>
<tr>
<td>Risk Factor</td>
<td>Project Company/Operator</td>
<td>Contractor</td>
<td>Other Project Participants</td>
<td>Host Govt./Public Sector</td>
<td>RISK MANAGEMENT TECHNIQUE (including success factor examples)</td>
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<tr>
<td>Unforeseen Difficulty/Latent Conditions</td>
<td>Stadium Australia Management</td>
<td>Obayashi, then Multiplex</td>
<td>Ogden IFC, Gardner-Merchant</td>
<td>NSW Govt. (initially as OCA)</td>
<td>Trustee responsible for expenses and damages associated with site conditions, latent conditions, contamination, heritage and archaeological items, endangered flora and fauna. Most of these conditions ultimately borne by Multiplex throughout construction phase.</td>
</tr>
<tr>
<td>Changes in Taxes/Laws</td>
<td></td>
<td>×</td>
<td></td>
<td></td>
<td>According to ‘Project Agreement’ the project company bears this risk except where a law/tax change is shown to be ‘discriminatory’, i.e. specifically and only affects the project. Multiplex bears risk of any changes relating to sales tax.</td>
</tr>
<tr>
<td>Market Risk: Revenue/Demand Change</td>
<td></td>
<td>×</td>
<td></td>
<td>×</td>
<td>All market risk borne by the project company. Significant feasibility and market research aims to mitigate this risk. Some risk also borne by the likes of Gardner Merchant in their ‘underwriting’ of anticipated catering revenues.</td>
</tr>
<tr>
<td>Market Risk: Revenue or Income Change [e.g. due to demographical change]</td>
<td></td>
<td></td>
<td>×</td>
<td></td>
<td>Comprehensive feasibility investigation, realistic forecasts and allowances for contingency factors are methods of managing this risk. Risk does remain in that social and economic change in an area is likely...</td>
</tr>
<tr>
<td>Risk Factor</td>
<td>Project Company/Operator</td>
<td>Contractor</td>
<td>Other Project Participants</td>
<td>Host Govt./Public Sector</td>
<td>RISK MANAGEMENT TECHNIQUE (including success factor examples)</td>
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<tr>
<td></td>
<td>Stadium Australia Management</td>
<td>Obayashi, then Multiplex</td>
<td>Ogden IFC, Gardner-Merchant</td>
<td>NSW Govt. (initially as OCA)</td>
<td>throughout a 20-30 year concession period. Some mitigation provided by way of project participants partially ‘underwriting’ certain revenues.</td>
</tr>
<tr>
<td>Bidding risk</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td></td>
<td>Project company and participants bear the considerable time and cost consequence associated with bid feasibility, preparation and subsequent presentation. Nomination of preferred tenderer status after initial bids were cut to 3 to minimise wasted private sector involvement.</td>
</tr>
<tr>
<td>Corruption</td>
<td>×</td>
<td></td>
<td></td>
<td>×</td>
<td>Risk assessed as being unlikely. Allocation of risk (responsibility) is dealt with by the underlying laws of Australia. Clear and transparent guidelines from public perspective eased concern with regard to corruption possibility. The process was overseen by government’s ‘due diligence’ auditor.</td>
</tr>
<tr>
<td>Political Backdown - Failure to Honour Agreement or Guarantees</td>
<td></td>
<td></td>
<td></td>
<td>×</td>
<td>The project agreement made provision for indemnification of the private sector.</td>
</tr>
<tr>
<td>Existing Infrastructure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>The facility depended on construction of adjacent infrastructure (new rail station, carparking, roads) by</td>
</tr>
<tr>
<td>Risk Factor</td>
<td>RISK ALLOCATION: PARTY RESPONSIBLE FOR MANAGING THE RISK FACTOR</td>
<td>RISK MANAGEMENT TECHNIQUE (including success factor examples)</td>
<td></td>
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<tr>
<td></td>
<td>Project Company/Operator</td>
<td>Contractor</td>
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</tr>
<tr>
<td></td>
<td>Stadium Management</td>
<td>Obayashi, then Multiplex</td>
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</tr>
<tr>
<td></td>
<td>Other Project Participants</td>
<td>Ogden IFC, Gardner-Merchant</td>
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</tr>
<tr>
<td></td>
<td>Host Govt./Public Sector</td>
<td>NSW Govt. (initially as OCA)</td>
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</tr>
<tr>
<td>Raw Material Supply</td>
<td>✗</td>
<td>✗</td>
<td>OCA in accordance with the Homebush Bay Masterplan Transportation Strategy. Existing infrastructure (SFS, SCG, Parramatta Stadium) ‘competition risk’ borne by Project Company.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inflation, Foreign Exchange or Interest Rates</td>
<td>✗</td>
<td>✗</td>
<td>Risk borne by the contractors during construction. Operationally, it is not a likely risk with this type of project. Long term supply contracts are however in place with companies such as Tooheys, CocaCola- Amatil &amp; Ticketek.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financing</td>
<td>✗</td>
<td>✗</td>
<td>Risk borne by various parties. Provision in Works Adjustment Deed for contract sum adjustment due to interest rate fluctuations up until financial close of the project.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Country Risk</td>
<td>✗</td>
<td></td>
<td>Equity investment undertaken by founders, commercial and public investors. Underwriters forced to take up balance of under-subscribed public offering of gold packages.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Australia viewed as a very stable, safe country to invest. The risk associated with changes here lay largely with the project company only if subsequent changes in</td>
<td></td>
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</tr>
<tr>
<td>Risk Factor</td>
<td>Project Company/ Operator</td>
<td>Contractor</td>
<td>Other Project Participants</td>
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<td>RISK MANAGEMENT TECHNIQUE (including success factor examples)</td>
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</tr>
<tr>
<td>Force Majeure/ Natural Disaster</td>
<td>Stadium Australia Management</td>
<td>Obayashi, then Multiplex</td>
<td>Ogden IFC, Gardner-Merchant</td>
<td>NSW Govt. (initially as OCA)</td>
<td>A risk throughout entire project life. Responsibility generally shifts between the construction phase (Contractor) and the operational phase (Project Company). Government bears some risk on uninsurable events. Some risk can be partially mitigated by way of insurance cover.</td>
</tr>
<tr>
<td>Operation and Maintenance Failure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Risk is typically borne by the private sector operator under the terms and conditions of the operational and maintenance agreement.</td>
</tr>
<tr>
<td>Market Competition</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Risk is assessed by the private sector during feasibility stages. Project Agreement does not restrict construction of similar venues. However, OCA undertakes to ‘negotiate in good faith’ with Trustee over any financial loss associated with construction of a venue in excess of 25,000 seats within a 50 km area.</td>
</tr>
<tr>
<td>Industrial Relations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Borne by Multiplex throughout the construction/development phase of the project. O&amp;M contractor throughout operational phase.</td>
</tr>
<tr>
<td>Risk Factor</td>
<td>Project Company/Operator</td>
<td>Contractor</td>
<td>Other Project Participants</td>
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</tr>
<tr>
<td>Project Performance</td>
<td></td>
<td>✗</td>
<td></td>
<td></td>
<td>Can influence the efficiency in operation. Inefficient operation may lower revenue.</td>
</tr>
<tr>
<td>Operational Safety Regulations/Public Liability</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Risk is significantly the responsibility of the Ogden IFC (O&amp;M contractor). Multiplex bears some risk in undertaking D&amp;C contract to provide facility ‘fit for purpose’.</td>
</tr>
<tr>
<td>Warranties and Guarantees</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Some transfer procedures of the PPP agreement stipulate warranty requirements for a certain period of time post-transfer. This provision may serve as a motive for ensuring adequate ‘up-keep’ in the final stages of the concession period. The contractor bears risk of the usual warranties and structural guarantees.</td>
</tr>
<tr>
<td>Project Lifespan or Life Cycle</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Risk exists for the project company in that over the project lifespan/concession period, new technology or competition may introduce an element of obsolescence. At transfer stage the government may be taking ownership of a partly out-dated facility. Gardner Merchant also bear risk where they may actually own various equipment in the facility. Multiplex bears some</td>
</tr>
<tr>
<td>Risk Factor</td>
<td>Project Company/ Operator</td>
<td>Contractor</td>
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</tr>
<tr>
<td></td>
<td>Stadium Australia Management</td>
<td>Obayashi, then Multiplex</td>
<td>Ogden IFC, Gardner-Merchant</td>
<td>NSW Govt. (initially as OCA)</td>
<td>in design and in accordance with the projects ‘Asset Plan’ requirements.</td>
</tr>
<tr>
<td>Operating Expenses</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td></td>
<td>The O&amp;M contractor typically bears the consequence of changes in operating costs resulting from issues such as materials, wages et al. Long term material supply contracts mitigate the risk of possible material price increases. Operational expenses will ultimately effect revenue and therefore the project company.</td>
</tr>
<tr>
<td>Environmental Impact Issues</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td></td>
<td>The risk of poor environmental management or perhaps poor site selection (environmentally) may be a private or public sector risk depending on arrangements. Important, given Sydney’s bid for the Olympics as the ‘Green Games’.</td>
</tr>
<tr>
<td>Approval Process – efficient/complicated negotiations</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td></td>
<td>Slow and inefficient approvals are a risk often borne by the project company. OCA submitted a comprehensive DA.</td>
</tr>
<tr>
<td>Technical Innovation/ Project Complexity</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td></td>
<td>Project complexity may be a risk if there is insufficient experience (management &amp; technical).</td>
</tr>
<tr>
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<td>-------------------------------------------------------------</td>
</tr>
<tr>
<td>Underdeveloped Legal/Fiscal/Economic Framework</td>
<td>Stadium Australia Management</td>
<td>✗</td>
<td></td>
<td>✗</td>
<td>Risk (gamble) borne by the project company when undertaking a project of this nature.</td>
</tr>
<tr>
<td>Political Instability - opposition and support</td>
<td></td>
<td>✗</td>
<td></td>
<td>✗</td>
<td>By virtue of the concession period, all projects will see a change in administration. Private sector gambles in this risk by accepting exposure.</td>
</tr>
<tr>
<td>Native Title/Land Claim</td>
<td></td>
<td></td>
<td>✗</td>
<td>✗</td>
<td>Government indemnifies the Trust against land claim. If however claim is based on artefacts or archaeological items found, then the Trust bears this risk.</td>
</tr>
<tr>
<td>Discretionary Termination of Project Agreement by Government</td>
<td></td>
<td></td>
<td></td>
<td>✗</td>
<td>In view of the high profile nature and importance of the project, OCA had the right to terminate the Project Agreement at any time without reason, such that they could then take control.</td>
</tr>
<tr>
<td>Overall Documentation Risk</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Relevant to all parties (particularly gold and platinum investors who in many cases were naïve of the structure) brought about by the large number of parties and the complexity of arrangements supporting the project.</td>
</tr>
<tr>
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</tr>
<tr>
<td>Olympic Games Tickets and Gold Membership Rights</td>
<td>Stadium Australia Management</td>
<td>Obayashi, then Multiplex</td>
<td>Ogden IFC, Gardner-Merchant</td>
<td>NSW Govt. (initially as OCA)</td>
<td>Risks unique to Stadium Australia and borne by gold and platinum investors.</td>
</tr>
<tr>
<td>Environmental Impact Issues</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Carefully prepared Environmental Impact Statement assisted in bid and approval process. Environmental factors in project design were a success factor for Multiplex in winning the bid.</td>
</tr>
<tr>
<td>Approval Process – efficient negotiations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Efficient approval process assists likelihood of success. Comprehensive DA &amp; efficient approval process meant that consent was given on 8th August 1996 before Project Agreement was signed in September ’96.</td>
</tr>
<tr>
<td>Technical Innovation/Project Complexity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Solution in overcoming project complexity. Innovation was a factor in winning project bid, e.g. financial methods (ASX listing) &amp; design (environmental/waste management issues). 30,000 extra seats provided for the Olympic &amp; early post-Olympic periods. Also, movable seats in the reconfiguration process that provided maximum viewing in various sports.</td>
</tr>
<tr>
<td>Developed Legal/Fiscal/Economic Framework</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>All parties must be aware of &amp; adhere to.</td>
</tr>
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<td>Stadium Australia Management</td>
<td>Obayashi, then Multiplex</td>
<td>Ogden IFC, Gardner-Merchant</td>
<td>NSW Govt. (initially as OCA)</td>
<td>State and Federal Governments very supportive, particularly given the country’s responsibility in staging the Olympics.</td>
</tr>
<tr>
<td>Political Stability/Support</td>
<td>✗</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Selecting the Right Project</td>
<td>✗</td>
<td></td>
<td></td>
<td></td>
<td>Not all projects are suitable for the PPP method. Public &amp; private sector participants agreed upon the advantages of the concept. Project feasibility study demonstrated examples of viability.</td>
</tr>
<tr>
<td>Existing Joint Ventures/Strategic Alliances</td>
<td>✗</td>
<td></td>
<td></td>
<td></td>
<td>Viewed favourably, particularly if project participants have previous experience of PPP and local partners are involved.</td>
</tr>
<tr>
<td>Size of Organisation (resources and project management ability)</td>
<td>✗</td>
<td></td>
<td></td>
<td></td>
<td>Proven experience and adequate resources to procure such a project relaxes government (OCA) concern when awarding the project. Multiplex’s previous experience a major bonus.</td>
</tr>
<tr>
<td>Trust</td>
<td></td>
<td></td>
<td></td>
<td>✗</td>
<td>Government feels more comfortable and confident if project sponsors are known and trusted.</td>
</tr>
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</tr>
<tr>
<td>Community Support</td>
<td>✗</td>
<td></td>
<td></td>
<td></td>
<td>Assisted success of the project and led to a more efficient approval process. Helped by the fact that the Stadium was part of the Olympic project.</td>
</tr>
<tr>
<td>Feasibility Study</td>
<td>✗</td>
<td></td>
<td></td>
<td>✗</td>
<td>Provides foundations for project planning (success).</td>
</tr>
<tr>
<td>Technology Transfer</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>Helps with government and local support (high profile, innovative, environmental et al). Multiplex had proven expertise to overcome complex construction issues.</td>
</tr>
<tr>
<td>Financial Capability/Creditability of Investors</td>
<td>✗</td>
<td></td>
<td></td>
<td>✗</td>
<td>Project company needs to account for contingency factors. Government will have to ‘step in’ if project collapses.</td>
</tr>
<tr>
<td>Team Compatibility/Complimentary Styles</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>All Stadium Australia consortium teams ‘fitted well’ with complimentary skills and expertise.</td>
</tr>
<tr>
<td>Consortium Structure</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>The structure forms the basis for all types of risk management/distribution and therefore contributed to success as it was very well developed and understood by all parties.</td>
</tr>
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<td><strong>Ogden IFC, Gardner-Merchant</strong></td>
<td><strong>NSW Govt. (initially as OCA)</strong></td>
<td>Successful capability of new road and rail network to transport significant numbers to the Stadium, particularly during high profile sporting events. OCA ‘negotiated in good faith’ with Trustee over any financial loss associated with construction of a venue in excess of 25,000 seats and within a 50 km radius.</td>
</tr>
<tr>
<td>Existing Infrastructure</td>
<td>✗</td>
<td></td>
<td></td>
<td>✗</td>
<td></td>
</tr>
<tr>
<td>Special Bid Features</td>
<td>✗</td>
<td>✗</td>
<td></td>
<td></td>
<td>Environmental aspect of the bid aided success at bid stage. Likewise, the provision of 30,000 extra seats for the Olympic period generated increased revenue.</td>
</tr>
<tr>
<td>Avoiding Delays/ Cost Over-runs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Multiplex had to comply with the D&amp;C contract deadlines. Subsequently, the stadium was delivered on time.</td>
</tr>
<tr>
<td>Public Funding</td>
<td>✗</td>
<td></td>
<td></td>
<td>✗</td>
<td>A small amount of tax-payers money was used for project finance.</td>
</tr>
<tr>
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</tr>
<tr>
<td>Construction Time Overrun</td>
<td>Millennium Agent Pty Ltd, then PBL, then Nine Entertainment</td>
<td>Obayashi, then Abi Group</td>
<td>AIDC, LMI</td>
<td>NSW Govt. (initially as OCA)</td>
<td>Ultimate responsibility for managing construction within the project time frame borne by Abi Group. Consortium running the business has more to lose.</td>
</tr>
<tr>
<td>Construction Cost Overrun</td>
<td>×</td>
<td>×</td>
<td></td>
<td></td>
<td>Obayashi, then Abi Group (in the form of Millennium Contractors) ultimately responsible for cost overrun by way of fixed price, lump sum D&amp;C contract. Project company responsible for cost overrun associated with their initiated changes/variation or for items outside the D&amp;C scope.</td>
</tr>
<tr>
<td>Design Risk</td>
<td>×</td>
<td></td>
<td>×</td>
<td>×</td>
<td>Abi Group bore the substantial portion of this risk under the D&amp;C contract, Sub-contractors also bear relevant risk. Government carries no risk as outcomes have already been specified.</td>
</tr>
<tr>
<td>Operational Cost Overrun</td>
<td>×</td>
<td></td>
<td></td>
<td></td>
<td>Risk is typically borne by the private sector operator under the terms and conditions of the operational and</td>
</tr>
<tr>
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</tr>
<tr>
<td>Unforeseen Difficulty/Latent Conditions</td>
<td>Millennium Agent Pty Ltd, then PBL, then Nine Entertainment</td>
<td>Obayashi, then Abi Group</td>
<td>AIDC, LMI</td>
<td>NSW Govt. (initially as OCA)</td>
<td>Expenses and damages associated with site and latent conditions ultimately borne by Abi Group throughout construction phase.</td>
</tr>
<tr>
<td>Changes in Taxes/Laws</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>The project company bears this risk as any other business and they must abide by and take account of any changes in law or taxes. Project specific issues are borne by the Government.</td>
</tr>
<tr>
<td>Market Risk: Revenue/Demand Change</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>All market risk borne by the project company who carry out significant feasibility and market research studies to mitigate this risk.</td>
</tr>
<tr>
<td>Market Risk: Revenue or Income change [e.g. demographical change]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Comprehensive feasibility investigation, realistic forecasts and allowances for contingency factors are methods of managing this risk. Risk does remain in that social and economic change in an area is likely throughout a 20-30 year concession period. Expansion of Sydney’s Western Suburbs is</td>
</tr>
<tr>
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<td>Owayshi, then Abi Group</td>
<td>AIDC, LMI</td>
<td>NSW Govt. (initially as OCA)</td>
<td>thought of as a positive demographic change.</td>
</tr>
<tr>
<td>Bidding Risk</td>
<td>×</td>
<td></td>
<td></td>
<td></td>
<td>Project company and participants wore the considerable time and cost consequence associated with bid feasibility, preparation and subsequent presentation. This was off-set as the Government paid the loser of the two tenderers who were led to the wire. They were paid a pre-specified quantity of money which was a significant re-imbursement towards the additional costs of tendering to a very late stage. This resulted in a higher standard of bids.</td>
</tr>
<tr>
<td>Corruption</td>
<td>×</td>
<td></td>
<td>×</td>
<td></td>
<td>Risk was assessed as being unlikely. Allocation of risk (responsibility) is dealt with by the underlying laws of Australia. Clear and transparent guidelines from public perspective eased concern with regard to corruption possibility. The process was overseen by government’s ‘due diligence’ auditor.</td>
</tr>
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<td></td>
</tr>
<tr>
<td>Political Backdown - failure to honour agreement or guarantees</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>The project agreement made provision for indemnification of the private sector. Government may ‘step in’ if pressurised if business is in difficulty.</td>
</tr>
<tr>
<td>Existing infrastructure</td>
<td>✗</td>
<td></td>
<td></td>
<td></td>
<td>The facility depended on construction of adjacent infrastructure (new rail station, carparking, roads et al) which was promised by OCA in accordance with the Homebush Bay Masterplan Transportation Strategy. Existing infrastructure (Sydney Entertainment Centre) is ‘competition risk’ borne by Project Company.</td>
</tr>
<tr>
<td>Raw material supply</td>
<td></td>
<td>✗</td>
<td>✗</td>
<td></td>
<td>Risk borne by the contractors during construction. Operationally, it is not a likely risk with this type of project.</td>
</tr>
<tr>
<td>Inflation, Foreign Exchange or Interest Rates</td>
<td></td>
<td>✗</td>
<td>✗</td>
<td></td>
<td>Risk borne by various parties. Provision in Works Adjustment deed for contract sum adjustment due to interest rate fluctuations up until financial close of the project</td>
</tr>
<tr>
<td>Financing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Equity investment undertaken by founders and commercial investors.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Australia viewed as a very stable, safe country to invest.</td>
</tr>
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<td>Country Risk</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>The risk associated with changes here lay largely with the project company only if subsequent changes in government resulted in ‘back down’.</td>
</tr>
<tr>
<td>Force Majeure/Natural Disaster</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>A risk throughout entire project life. Responsibility generally shifts between the construction phase (Contractor) and the operational phase (Project Company). Government bears some risk on uninsurable events. Some risk can be partially mitigated by way of insurance cover.</td>
</tr>
<tr>
<td>Operation and Maintenance failure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Risk is typically borne by the private sector operator under the terms and conditions of the operational and maintenance agreement under the Asset Management Plan.</td>
</tr>
<tr>
<td>Market Competition</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Risk is assessed by the private sector during feasibility stages. Project Agreement does not restrict construction of similar venues or for restrictions to be placed upon competing venues such as the Sydney Entertainment</td>
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**Industrial Relations**
- Borne by Abi Group throughout the construction/development phase of the project. O&M contractor (Millennium Agent) throughout operational phase.

**Project Performance**
- Can influence the efficiency in operation. Inefficient operation may lower revenue.

**Operational Safety Regulations/Public Liability**
- Risk is significantly the responsibility of the O&M contractor (Millennium). Abi Group bears some risk in undertaking the D&C contract to provide a facility ‘fit for purpose’.

**Warranties and guarantees**
- Some transfer procedures of the PPP agreement stipulate warranty requirements for a certain period of time post-transfer. This provision may serve as a motive for ensuring adequate ‘up-keep’ in the final stages of the
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<td><strong>AIDC, LMI</strong></td>
<td><strong>NSW Govt. (initially as OCA)</strong></td>
<td>concession period. The contractor bears risk of the usual warranties and structural guarantees.</td>
</tr>
<tr>
<td>Project lifespan or Life cycle</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>Risk exists for the project company in that over the project lifespan/concession period, new technology or competition may introduce an element of obsolescence. At transfer stage the government may be taking ownership of a partly out-dated facility.</td>
</tr>
<tr>
<td>Operating Expenses</td>
<td>×</td>
<td></td>
<td>×</td>
<td></td>
<td>The O&amp;M contractor typically bears the consequence of changes in operating costs resulting from issues such as materials, wages et al. Long term material supply contracts mitigate the risk of possible material price increases. Operational expenses will ultimately effect revenue and therefore the project company.</td>
</tr>
<tr>
<td>Environmental Impact Issues</td>
<td>×</td>
<td></td>
<td></td>
<td></td>
<td>The risk of poor environmental management or perhaps poor site selection (environmentally) may be a private or public sector risk depending on arrangements. Important, given Sydney’s bid for the Olympics as the ‘Green games’. EIS issues are part of the project.</td>
</tr>
<tr>
<td>Risk Factor</td>
<td>RISK ALLOCATION: PARTY RESPONSIBLE FOR MANAGING THE RISK FACTOR</td>
<td>RISK MANAGEMENT TECHNIQUE (including success factor examples)</td>
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<td></td>
<td>Project Company/Operator</td>
<td>Contractor</td>
<td>Other Project Participants</td>
<td>Host Govt./Public Sector</td>
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</tr>
<tr>
<td></td>
<td>Millennium Agent Pty Ltd, then PBL, then Nine Entertainment</td>
<td>Obayashi, then Abi Group</td>
<td>AIDC, LMI</td>
<td>NSW Govt. (initially as OCA)</td>
<td></td>
</tr>
<tr>
<td>Approval Process – efficient/complicated negotiations</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>Slow and inefficient approvals are a risk often borne by the project company. OCA submitted a comprehensive DA to overcome delay.</td>
</tr>
<tr>
<td>Technical Innovation/Project Complexity</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td></td>
<td>Project complexity may be a risk if there is insufficient experience (management &amp; technical).</td>
</tr>
<tr>
<td>Underdeveloped Legal/Fiscal/Economic Framework</td>
<td>✗</td>
<td></td>
<td>✗</td>
<td></td>
<td>Risk (gamble) borne by the project company when undertaking a project of this nature.</td>
</tr>
<tr>
<td>Political Instability/Opposition and Support</td>
<td>✗</td>
<td></td>
<td></td>
<td>✗</td>
<td>By virtue of the concession period, all projects will see a change in administration. Private sector gambles in this risk by accepting exposure.</td>
</tr>
<tr>
<td>Discretionary Termination of Project Agreement by OCA</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td></td>
<td>In view of the high profile nature and importance of the project, OCA had the right to terminate the Project Agreement at any time without reason, such that they could then take control.</td>
</tr>
<tr>
<td>Risk Factor</td>
<td>Project Company/Operator</td>
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</tr>
<tr>
<td>Overall Documentation Risk</td>
<td>Millennium Agent Pty Ltd, then PBL, then Nine Entertainment</td>
<td>Obayashi, then Abi Group</td>
<td>AIDC, LMI</td>
<td>NSW Govt. (initially as OCA)</td>
<td>Brought about by the large number of parties and the complexity of arrangements supporting the project.</td>
</tr>
<tr>
<td>Approval Process – efficient negotiations</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>It was a streamline process, the Government learnt from Stadium Australia project. Government produced a very clear brief and ran two competitors as far as possible down the tendering process offering compensation to the loser saving months of negotiation, creating added competition and subsequent best possible deal.</td>
</tr>
<tr>
<td>Bid Features/Project Financing</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>Efficient process, equity in the various participants who also had more of a risk appetite and determination to run the SuperDome business.</td>
</tr>
<tr>
<td>Business Diversification</td>
<td>✗</td>
<td></td>
<td></td>
<td></td>
<td>The integration of parts of the building that are a separate business from events at the SuperDome (e.g. café, entrance foyer) with the outside area of Sydney Olympic Park. Therefore, the building can generate income even on non-event days.</td>
</tr>
<tr>
<td>Ongoing Business</td>
<td>✗</td>
<td></td>
<td></td>
<td></td>
<td>No matter who owns or manages the day to day</td>
</tr>
<tr>
<td>Risk Factor</td>
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<tr>
<td></td>
<td>Millennium Agent Pty Ltd, then PBL, then Nine Entertainment</td>
<td>Obayashi, then Abi Group</td>
<td>AIDC, LMI</td>
<td>NSW Govt. (initially as OCA)</td>
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</tr>
<tr>
<td>Viability</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>operations, the community has a competitively priced venue to watch various events that doesn’t cost any more than competing venues. Excellent event promotion experience of recent operators.</td>
</tr>
<tr>
<td>Competition</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Fierce appetite for competition with main rivals (Sydney Entertainment Centre), demonstrated by consortium.</td>
</tr>
<tr>
<td>Environmental Impact Issues</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>Carefully prepared Environmental Impact Statement assisted in bid and approval process. Environmental factors such as energy efficient design and material use.</td>
</tr>
<tr>
<td>Technical Innovation/Project Complexity</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>No clever ideas, but a streamline approval process, risk and finance equity, appetite for competition and a risk profile that matched that of the Government. Large roof span example of technical success.</td>
</tr>
<tr>
<td>Developed Legal/Fiscal/Economic Framework</td>
<td>×</td>
<td></td>
<td></td>
<td>×</td>
<td>CSF that all parties must be aware of &amp; adhere to. Possibility of Government ‘step in’ if business runs into difficulty.</td>
</tr>
<tr>
<td>Political Stability and Support</td>
<td></td>
<td></td>
<td></td>
<td>×</td>
<td>State and Federal Governments very supportive, particularly given the country’s responsibility in staging the Olympics.</td>
</tr>
<tr>
<td>Selecting the Right</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Public &amp; private sector participants agreed upon the</td>
</tr>
<tr>
<td>Risk Factor</td>
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<td></td>
<td>Millennium Agent Pty Ltd, then PBL, then Nine Entertainment</td>
<td>Obayashi, then Abi Group</td>
<td>AIDC, LMI</td>
<td>NSW Govt. (initially as OCA)</td>
<td>advantages of the concept. Project feasibility study demonstrated examples of viability with particular attention paid to experiences on Stadium Australia. Crucial success factor given costs of putting a decent proposal together.</td>
</tr>
<tr>
<td>Project</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Viewed favourably, particularly if project participants have previous experience of PPP and local partners are involved. Government had previously worked successfully with Abi Group on PPP infrastructure projects in Sydney (tollways).</td>
</tr>
<tr>
<td>Existing Joint Ventures/Strategic Alliances</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Proven experience and adequate resources to procure such a project relaxes government concern when awarding the contract. Huge multi-national companies do not always guarantee success.</td>
</tr>
<tr>
<td>Size of Organisation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Government feels more comfortable and confident if project sponsors are known and trusted. Previous working relationships already established between parties.</td>
</tr>
<tr>
<td>Trust</td>
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<tr>
<td>Risk Factor</td>
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<tr>
<td>Community Support</td>
<td>Millennium Agent Pty Ltd., then PBL, then Nine Entertainment</td>
<td>Obayashi, then Abi Group</td>
<td>AIDC, LMI</td>
<td>NSW Govt. (initially as OCA)</td>
<td>Assisted success of the project and led to a more efficient approval process. Helped by the fact that the SuperDome was part of the Olympic project. Post-Olympics support continued to grow due to huge western Sydney demographic hungry for services.</td>
</tr>
<tr>
<td>Feasibility study</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Carried out by both key parties and provides the foundations for successful project planning. Successful issues from Stadium Australia integrated into the SuperDome process.</td>
</tr>
<tr>
<td>Technology Transfer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Assists will government and local support (high profile, innovative, environmental et al). Abi Group had proven expertise to overcome complex construction issues on PPP projects.</td>
</tr>
<tr>
<td>Financial Capability/ Creditability of Investors</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Project company needs to account for contingency factors. Government will have to ‘step in’ if project collapses.</td>
</tr>
<tr>
<td>Team Compatibility/ Complimentary Styles</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Abi Group and its subsidiary Millennium Consortium had teams with complimentary skills, expertise and PPP project experience. SuperDome Government team also</td>
</tr>
<tr>
<td>Risk Factor</td>
<td>Project Company/Operator</td>
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</tr>
<tr>
<td>Consortium Structure</td>
<td>Millennium Agent Pty Ltd, then PBL, then Nine Entertainment</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>The structure forms the basis for all risk management/distribution &amp; therefore contributed to success as it was clear and well developed. Need for transparency as Government must know where respective fees are going.</td>
</tr>
<tr>
<td>Existing Infrastructure</td>
<td></td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>Successful capability of new road and rail network to transport significant numbers to the SuperDome, particularly during the Olympics and other high profile events. No similar venue in the heavily populated Western Sydney area.</td>
</tr>
<tr>
<td>Avoiding Delays/Cost Over-runs</td>
<td></td>
<td>×</td>
<td></td>
<td></td>
<td>Abi Group had to comply with the D&amp;C contract deadlines. Subsequently, the arena was delivered on time.</td>
</tr>
<tr>
<td>Public Funding</td>
<td></td>
<td>×</td>
<td></td>
<td>×</td>
<td>Only a small amount of tax-payers money was used for project finance, hence successful outcome when considering the end product is a state of the art multi use arena for community use.</td>
</tr>
<tr>
<td>Delivery of Asset with a Smooth Transition from</td>
<td></td>
<td>×</td>
<td></td>
<td></td>
<td>Facility must be delivered on time, to budget and within project specification. The delivery process of the facility</td>
</tr>
</tbody>
</table>
## Risk Allocation: Party Responsible for Managing the Risk Factor

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Project Company/Operator</th>
<th>Contractor</th>
<th>Other Project Participants</th>
<th>Host Govt./Public Sector</th>
<th>RISK MANAGEMENT TECHNIQUE (including success factor examples)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delivery to Operation</td>
<td>Millennium Agent Pty Ltd, then PBL, then Nine Entertainment</td>
<td>Obayashi, then Abi Group</td>
<td>AIDC, LMI</td>
<td>NSW Govt. (initially as OCA)</td>
<td>must be efficient between construction completion and operation. The facility must be fit for purpose with no on-going construction activity.</td>
</tr>
<tr>
<td>Equity Investors Must Realise Growth in their Investment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Investors must continue to see and benefit from continued growth of their investment. A risk borne by the Operator and Investors. This has been enhanced by more experienced operators since PBL and then Nine Entertainment took over.</td>
</tr>
</tbody>
</table>

Table 13: Mater Hospital Risk Factor Framework (established during the case study process)
<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Project Company/Operator</th>
<th>Contractor</th>
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<th>Host Govt./Public Sector</th>
<th>RISK MANAGEMENT TECHNIQUE (including success factor examples)</th>
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</thead>
<tbody>
<tr>
<td>Site risk</td>
<td>Novacare</td>
<td>Abi Group</td>
<td>Department of Public Works and Bovis LendLease (client rep)</td>
<td>NSW Govt. Department of Health</td>
<td>Specific risks included ground conditions and latent defects, building conditions and latent defects, other environmental risks. NSW Health’s Risk: the structural consultant reports completed on the buildings to remain being deficient or in error by not identifying major defects. Novacare’s Risk: acceptance of the site and buildings (excluding latent conditions) with some risk passed onto D&amp;C contractor.</td>
</tr>
<tr>
<td>Design, construction and commissioning</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Specific risks included utility and other services, DA Approval Risk, Design Risk, Defects Liability Period, Completion, Inspection Rights, Destruction and Reinstatement, Handover Condition Risk, Benchmarking/Market Testing. Novacare’s Risk: the risk of completing all construction works and providing operational services to ensure ‘no disruption’ to the “hospitals functions”. They also rely on Authority Approvals and ensuring the design and construction being ‘fit for purpose’ under the NSW Health’s project outline, objectives and brief.</td>
</tr>
<tr>
<td>Sponsor risk</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>The Government bears the risk to ensure the SPV meets its contractual outcomes but can lessen risk by guarantees or “retaining an appropriate level of control over changes to ownership of the SPV”. The risk to the</td>
</tr>
<tr>
<td>Risk Factor</td>
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<td>Host Govt./ Public Sector</td>
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<tr>
<td></td>
<td>Novacare</td>
<td>Abi Group</td>
<td>Department of Public Works and Bovis LendLease (client rep)</td>
<td>NSW Govt. Department of Health</td>
<td>private sector is the project becoming unviable over the contract period and the financial input being unrecoverable.</td>
</tr>
<tr>
<td>Change in ownership</td>
<td>×</td>
<td></td>
<td>×</td>
<td></td>
<td>NSW Health’s Risk: the risk the consortium remains financial for the duration of the contracted term (i.e. 28 years).</td>
</tr>
<tr>
<td>Financial</td>
<td>×</td>
<td></td>
<td>×</td>
<td></td>
<td>Novacare’s Risk: financial risks associated with the completing of operational services and not meeting the agreed benchmarks and key performance indicators. The Government carries some risk but mitigates it by using the value for money assessment tool such as the PSC.</td>
</tr>
<tr>
<td>Operation</td>
<td>×</td>
<td></td>
<td>×</td>
<td></td>
<td>Operating risk relates to the services to be delivered under the PPP contract and whether the private sector can deliver those services to appropriate specifications, standards and regulations within the financial parameters of the consortiums bid. The public sector mitigates some risk with the likes of step-in rights.</td>
</tr>
<tr>
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<tr>
<td></td>
<td>Novacare</td>
<td>Abi Group</td>
<td>Department of Public Works and Bovis LendLease (client rep)</td>
<td>NSW Govt. Department of Health</td>
<td>The payment mechanism in a social infrastructure PPP such as this requires two main principles being performance (KPI based) and quality/quantity of services provided.</td>
</tr>
<tr>
<td>Payment mechanism</td>
<td>✗</td>
<td></td>
<td></td>
<td>✗</td>
<td>Interface risk is the risk that the contract services will not be compatible with the delivery of core services and vice versa. NSW Health’s risks include that he Novacare Consortium ensures no disruption to the existing hospital operations and that no work practices are modified or changed without consent from NSW Health. Novacare believes that some contractual conditions impede its ability to provide services as a hospital is a dynamic working asset.</td>
</tr>
<tr>
<td>Interface risk</td>
<td>✗</td>
<td></td>
<td></td>
<td>✗</td>
<td>Managed under the terms of the 28-year operational agreement which includes a labour services agreement for Novacare to use public sector employees.</td>
</tr>
<tr>
<td>Market risk</td>
<td>✗</td>
<td></td>
<td></td>
<td>✗</td>
<td>Generally this risk is passed to the private sector however, NSW Health experienced concern amongst their employees unions that this PPP was leading to the</td>
</tr>
<tr>
<td>Industrial relations</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td></td>
</tr>
<tr>
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</tr>
<tr>
<td></td>
<td>Novacare</td>
<td>Abi Group</td>
<td>Department of Public Works and Bovis LendLease (client rep)</td>
<td>NSW Govt. Department of Health</td>
<td>- privatisation of hospital services and this led to considerable discussions. This risk included possible strike action not only at the hospital but NSW state wide, with unions affecting services and suppliers. Novacare’s risk related to more financial issues associated with non-performance and strike action of its member base. Proposed revenue streams from the Government to the Novacare Consortium are based on a ‘performance based’ payment structure by achieving benchmarks and KPIs and relate to maintenance and duration of the hospital including management of the NSW Health sector employees under a labour services agreement.</td>
</tr>
<tr>
<td>Asset Ownership</td>
<td>✗</td>
<td></td>
<td></td>
<td></td>
<td>This risk relates to maintaining the asset to the required standard, including the risk that the cost of maintenance may increase during the term. The major issue is that the asset is subject to fluctuations in value over the contracted period and the residual value risk of the asset could be worth less than financially modelled at the end</td>
</tr>
<tr>
<td>Risk Factor</td>
<td>RISK ALLOCATION: PARTY RESPONSIBLE FOR MANAGING THE RISK FACTOR</td>
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<tr>
<td></td>
<td>Novacare</td>
<td>Abi Group</td>
<td>Department of Public Works and Bovis LendLease (client rep)</td>
<td>NSW Govt. Department of Health</td>
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<tr>
<td>Fit for purpose</td>
<td>×</td>
<td>×</td>
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</tr>
<tr>
<td>Stakeholder</td>
<td>×</td>
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</tbody>
</table>

- Novacare’s risk relates to the design life of the hospital infrastructure might prove to be shorter than anticipated, resulting in accelerating refurbishment expenses or a failure to meet specified asset hand-over conditions. Risks are managed via the O&M contract that involves numerous inspections, performance criteria and KPIs.

- NSW Health’s risk includes that at the end of the 28 years contract period, the asset will return to the ‘Trustees of the Sisters of Mercy (Singleton)’ under the previous agreements established between them and NSW Health and they must ensure the facility meets current standards and is not ‘out of date’. Novacare’s risk relates to the design life of the hospital infrastructure might prove to be shorter than anticipated, resulting in accelerating refurbishment expenses or a failure to meet specified asset hand-over conditions. Risks are managed via the O&M contract that involves numerous inspections, performance criteria and KPIs.

- Comprehensive user workshop process initiated. Independent expert consultation introduced at key stages (e.g. peer review).

- Review of consultation process, identification of key stakeholders, co-ordination of approval process and consultation with the design programme and process map.
<table>
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</thead>
<tbody>
<tr>
<td>1. Cost planning and control</td>
<td>☒</td>
<td>☒</td>
<td></td>
<td>☒</td>
</tr>
<tr>
<td>2. Government initiatives and legislation</td>
<td>☒</td>
<td>☒</td>
<td>☒</td>
<td>☒</td>
</tr>
<tr>
<td>3. Contract</td>
<td>☒</td>
<td>☒</td>
<td></td>
<td>☒</td>
</tr>
<tr>
<td>4. Defects Liability</td>
<td>☒</td>
<td>☒</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**RISK MANAGEMENT TECHNIQUE**

(including success factor examples)

- **Cost planning and control**: Requirement for independent cost consultant/QS involved in process mapping and benchmarking key costs.
- **Government initiatives and legislation**: Department of Public Works and Services (DPWS), NSW Health and Hunter Health agreed to medium term objectives so that changes in legislation or revised initiatives didn’t disrupt procurement partners.
- **Contract**: Insufficient planning and the inappropriate contract selection will impact on the risk and responsibility allocation for the project. Standard NSW GC21 contract used as part of broader PPP. Contract developed out of workshop with all major stakeholders.
- **Defects Liability**: The State’s preferred approach to Defects Liability Period is that one year post the Full Service Commencement date, the Project Company will be liable to repair any Defects in the Works. To the extent that a Defect needs to be fixed during the Defects Liability Period, then the Period will be extended in respect of that particular Defect. However the additional

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<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Project Company/ Operator</th>
<th>Contractor</th>
<th>Other Project Participants</th>
<th>Host Govt./ Public Sector</th>
<th>RISK MANAGEMENT TECHNIQUE (including success factor examples)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Novacare</td>
<td>Abi Group</td>
<td>Department of Public Works and Bovis Lend Lease (client rep)</td>
<td>NSW Govt. Department of Health</td>
<td>Defects Liability Period must not be longer than the original one. Novacare sought to amend the State’s preferred approach to Defects Liability Period by stating that it assumes that it in intended that the Defects Liability Period be in effect a 12 plus 12 defects liability period. It is not intended to be a 12 plus 12 defect liability period. Rather it is intended that every time the Project Company fixes a Defect then, with respect to that Defect, a Defect Liability Period applies of one year from the date that Defect has been rectified.</td>
</tr>
<tr>
<td>Completion</td>
<td>✗</td>
<td>✗</td>
<td></td>
<td></td>
<td>Novacare will only have to provide the consents for the occupation of the stage and its use for the provision of the services in respect of such stage. However, under the agreement the Project Company is responsible for obtaining all Consents.</td>
</tr>
<tr>
<td>Inspection rights</td>
<td>✗</td>
<td></td>
<td></td>
<td></td>
<td>With regards to audit rights, The Project Company must ensure its Operator and Construction Contractor keep appropriate books of accounts and have its financial statements audited annually. Within 20 Business Days</td>
</tr>
</tbody>
</table>
### Table 14: Top Ryde Risk Factor Framework (established during the case study process)

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Project Company/Operator</th>
<th>Contractor</th>
<th>Other Project Participants</th>
<th>Host Govt./Public Sector</th>
<th>RISK MANAGEMENT TECHNIQUE (including success factor examples)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Novacare</td>
<td>Abi Group</td>
<td>Department of Public Works and Bovis LendLease (client rep)</td>
<td>NSW Govt. Department of Health</td>
<td>after each six month period the Project Company must provide various financial information (including unaudited profit and loss statement, cash flow statement and balance sheet etc). The Project Company must provide the Project Director with all documents, reports, plans etc which it provides to the Financiers.</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Project Company/Developer</th>
<th>Contractor</th>
<th>Other Project Participants</th>
<th>Host Govt./Public Sector</th>
<th>RISK MANAGEMENT TECHNIQUE (including success factor examples)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site Conditions</td>
<td>Bevillesta/Defined Developments</td>
<td>Bovis Lend Lease</td>
<td>RTA</td>
<td>Local Authority – City of Ryde Council</td>
<td>Clear and detailed disclosure of all known site conditions. Evidence gathered from all arms of the organisation having an interest or past interest in the site. Responsibility for disclosure on Council’s solicitors.</td>
</tr>
<tr>
<td>Approvals</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Documents to include specific clauses that approvals are the responsibility of the purchaser/lessee. Exception is the stratum lot Development Approval is responsibility of Council to enable the subdivision to occur.</td>
</tr>
<tr>
<td>Environmental</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Documents to include specific clauses that investigations concerning site contamination are the responsibility of the purchaser/lessee and Council provides no warranties.</td>
</tr>
<tr>
<td>Heritage</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Purchaser to make sufficient enquiries as part of contract for sale. Known heritage area within 100 metres of the site has been noted on S149 Certificate.</td>
</tr>
<tr>
<td>Availability of site</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Council had to develop exit strategy from the car park &amp; library and have that plan ready to implement when the purchaser required Council to vacate. This required some preparatory works to be completed and they were programmed in time to allow vacation to occur.</td>
</tr>
<tr>
<td>Design, construction and commissioning</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Outcomes delivered at cost and within timeframe. Owner or developer or builder to take full responsibility for delivering the project to agreed quality assurance standards, including meeting all BCA, DDA, OH&amp;S and other statutory/non-statutory requirements. Covered in</td>
</tr>
<tr>
<td>Risk Factor</td>
<td>Project Company/Developer</td>
<td>Contractor</td>
<td>Other Project Participants</td>
<td>Host Govt./Public Sector</td>
<td>RISK MANAGEMENT TECHNIQUE (including success factor examples)</td>
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</tr>
<tr>
<td></td>
<td>Bevillesta/Defined Developments</td>
<td>Bovis Lend Lease</td>
<td>RTA</td>
<td>Local Authority – City of Ryde Council</td>
<td>documentation, together with performance guarantees/bonds or similar.</td>
</tr>
<tr>
<td>Design</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>Ensure as much of the design undertaken by Bevillesta has provision for Council’s future requirements, including the spur roads and tunnel under Devlin Street. Council needs to develop strategy to vigorously pursue the progression of the next stage of the Civic Centre project and be in a position to provide detailed design to Bevillesta prior to construction of the ramps beginning.</td>
</tr>
<tr>
<td>Construction</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>Similar to Design risk, the construction of the ramps provides an ideal time for Council to link in with Bevillesta for Council’s future requirements, including the spur roads and tunnel under Devlin Street. Another aspect is the impact from construction on Council’s existing facilities and amenity. High risk to Council – Bevillesta will not wait for Council to have its construction works delayed. Impacts on Councils existing facilities and associated disruption is also high. Documentation has ‘non interruption’ clauses in favour</td>
</tr>
<tr>
<td>Risk Factor</td>
<td>Project Company/Developer</td>
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<td>Other Project Participants</td>
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<tr>
<td></td>
<td>Bevillesta/Defined Developments</td>
<td>Bovis Lend Lease</td>
<td>RTA</td>
<td>Local Authority – City of Ryde Council</td>
<td>of Council but aspects need to be monitored to ensure Bevillesta complies. An ongoing reporting vehicle was established to raise issues with Bevillesta and ensure that they comply.</td>
</tr>
<tr>
<td>Asset ownership</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>The issues of technical obsolescence and default were of particular concern but not deemed a huge risk to council as this was successfully managed by way of the contract.</td>
</tr>
<tr>
<td>Commissioning</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Inspection of the completed infrastructure and a sign off that Council is satisfied with the quality and standard. Closer to end of leases a further process will ensure the assets are handed over in a fashion that is acceptable to Council.</td>
</tr>
<tr>
<td>Residual value of asset</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Assets to be vested in Council at end of lease term. Contract provides requirements to renew/replace prior to end of lease and value to be preserved. Council to ensure there is no diminution in value as the asset nears the end of its useful life. Managed by applying the replacement/renewal provisions of the contract.</td>
</tr>
<tr>
<td>Risk Factor</td>
<td>Project Company/Developer</td>
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<td>Other Project Participants</td>
<td>Host Govt./Public Sector</td>
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<td></td>
<td>Bevillesta/Defined Developments</td>
<td>Bovis Lend Lease</td>
<td>RTA</td>
<td>Local Authority – City of Ryde Council</td>
<td></td>
</tr>
<tr>
<td>Probity</td>
<td>×</td>
<td></td>
<td></td>
<td></td>
<td>Probity Plan. Establish a road map of Council actions to be undertaken.</td>
</tr>
<tr>
<td>Financial</td>
<td>×</td>
<td></td>
<td></td>
<td></td>
<td>Acquired bank guarantees on execution of contract documentation. Allowed reductions as project progresses and met key completion stages.</td>
</tr>
<tr>
<td>Technical</td>
<td>×</td>
<td>×</td>
<td></td>
<td></td>
<td>Continual monitoring of delivery of facilities and any shortcomings to be brought to Bevillesta’s attention. Observe all designs and seek amendment where they do not meet expectations of contractual obligations.</td>
</tr>
<tr>
<td>Operational</td>
<td>×</td>
<td></td>
<td></td>
<td></td>
<td>Incorporate monetary disincentives/withdrawal of consents, in contractual arrangements to ensure Bevillesta abides by original proposal. Incorporate penalties for not achieving agreed program milestones.</td>
</tr>
<tr>
<td>Changes in Ownership</td>
<td></td>
<td></td>
<td></td>
<td>×</td>
<td>Monitor ownership issues as they develop. Obtain all necessary notices and advices in terms of the contract if assignment or transfer is requested.</td>
</tr>
<tr>
<td>Interest Rates and Tax</td>
<td>×</td>
<td></td>
<td></td>
<td></td>
<td>Monitor market conditions and ensure all guarantees are in place in case of project being aborted.</td>
</tr>
<tr>
<td>Risk Factor</td>
<td>RISK ALLOCATION: PARTY RESPONSIBLE FOR MANAGING THE RISK FACTOR</td>
<td>RISK MANAGEMENT TECHNIQUE (including success factor examples)</td>
<td></td>
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<td>---------------------------------------------------------------------</td>
<td>---------------------------------------------------------------</td>
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</tr>
<tr>
<td></td>
<td>Project Company/Developer</td>
<td>Contractor</td>
<td>Other Project Participants</td>
<td>Host Govt./Public Sector</td>
<td>Monitor market conditions and ensure all guarantees are in place in case of project being aborted.</td>
</tr>
<tr>
<td>Changes</td>
<td>Bevillesta/Defined Developments</td>
<td>Bovis Lend Lease</td>
<td>RTA</td>
<td>Local Authority – City of Ryde Council</td>
<td>Seek reimbursement from Bevillesta for all costs associated with the road lease in terms of arrangements. Other costs to be recorded in contract register and paid in terms of budget approvals.</td>
</tr>
<tr>
<td>Finance availability</td>
<td>✗</td>
<td></td>
<td></td>
<td></td>
<td>Observe all works as designed and constructed and put a quality control regime in place to monitor. To be designed and constructed in terms of contractual obligations.</td>
</tr>
<tr>
<td>Operational costs</td>
<td>✗</td>
<td></td>
<td></td>
<td></td>
<td>Approve variations after close examination and assessment. Ensure costs attributable to Bevillesta are not paid by Council.</td>
</tr>
<tr>
<td>Quality</td>
<td>✗</td>
<td>✗</td>
<td></td>
<td></td>
<td>This includes economic downturn, demographic change, and inflation. Acquire bank guarantees on execution of contract documentation but allow reductions as project progresses and key stages are complete.</td>
</tr>
<tr>
<td>Variations</td>
<td>✗</td>
<td></td>
<td></td>
<td>✗</td>
<td></td>
</tr>
<tr>
<td>Market risk</td>
<td>✗</td>
<td></td>
<td></td>
<td>✗</td>
<td></td>
</tr>
</tbody>
</table>
### Risk Allocation: Party Responsible for Managing the Risk Factor

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Project Company/Developer</th>
<th>Contractor</th>
<th>Other Project Participants</th>
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<tr>
<td></td>
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<table>
<thead>
<tr>
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<th>Project Company/Developer</th>
<th>Contractor</th>
<th>Other Project Participants</th>
<th>Host Govt./Public Sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial relations</td>
<td>×</td>
<td></td>
<td>×</td>
<td></td>
</tr>
<tr>
<td>Legislative, government or sovereign risk</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>×</td>
</tr>
<tr>
<td>Force Majeure</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td></td>
</tr>
<tr>
<td>Stakeholder risk</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td></td>
</tr>
</tbody>
</table>

**Risk Management Technique (including success factor examples)**

- **Industrial relations**: Ensure owner/developer/builder is clearly responsible for all industrial issues that may arise during all stages of the development.
- **Legislative, government or sovereign risk**: This includes approvals, law changes and regulations. Continual monitoring of status with planning instrument amendments and DA lodgement. Lobby appropriate parties to ensure smooth passage for approvals. Monitor any proposed legislative changes and assess impacts.
- **Force Majeure**: Monitor external events and take action as appropriate. Unable to predict events and therefore mitigation strategies are difficult to apply.
- **Stakeholder risk**: Regular communication program and updates (PCG etc), as well as early involvement in planning and decision making. Communication plan to be developed to incorporate regular feedback to all. Ensure City of Ryde staff are kept well informed and obtain buy-in. Senior stakeholders involved throughout the project who helped to keep communication channels open, make immediate decisions and filter information quickly down the supply.
<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>RISK ALLOCATION: PARTY RESPONSIBLE FOR MANAGING THE RISK FACTOR</th>
<th>RISK MANAGEMENT TECHNIQUE (including success factor examples)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Project Company/Developer</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bevillesta/Defined Developments</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Contractor</td>
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</tr>
<tr>
<td></td>
<td>Bovis Lend Lease</td>
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<tr>
<td></td>
<td>Other Project Participants</td>
<td></td>
</tr>
<tr>
<td></td>
<td>RTA</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Host Govt./Public Sector</td>
<td></td>
</tr>
<tr>
<td>Insurance</td>
<td>×</td>
<td>Both public liability and building insurances cover required. Owner/developer/builder to be responsible for both forms of insurance. City of Ryde will need to arrange specific cover upon practical completion and occupation of any new accommodation or in conjunction with refurbishment of existing accommodation.</td>
</tr>
<tr>
<td>Community</td>
<td>×</td>
<td>Regular community engagement and consultancy via face2face forums, online notifications and discussion, 24-hour response rate to phone calls et al.</td>
</tr>
</tbody>
</table>
6.0 CHAPTER SIX: DISCUSSION

6.1 OVERVIEW OF DISCUSSION

This chapter discusses the risk factors identified in both the literature and the 2-stage case study process at both organisational and project level and comparison is drawn with regards to key issues.

The overall aim of this thesis was to examine the perceptions of Public-Private Partnerships (PPP) schemes in order to establish a framework of risk for social infrastructure PPP projects. The various Risk Factors of PPPs have been identified by reviewing current literature and undertaking a 2-stage case study, of firstly organisations involved in bidding for Australian PPPs, and secondly of four current Australian PPP projects. This has also led to the development of a risk factor framework, which not only identifies these issues, but also indicates who is responsible for managing the various factors and provides successful examples of how this is achieved.

The Research Problem revolved around the issue of PPP projects being inherently complex arrangements. Of the previous research involving the identification and management of risk in PPPs, none of these studies have tested the factors on both current PPP organisations and projects. Therefore, there is a clear research gap and a subsequent need to carry out periodic review in order to constantly update risk management of PPPs. The development and testing of an established theoretical model, or framework, is important to the ongoing management and measurement of these factors to ensure continued construction project success with regards to public-private sector partnership models, such as PPP.

6.1.1 The Research Problem

A single research problem statement was developed:
In the complex procurement method of PPP, an established framework of risk management is necessary for the purpose of periodic review and to subsequently test in current PPP projects to further develop the framework in a ‘real world’ context.

The rational of identifying and analysing both risk and success factors of PPP projects is supported by Moodley et al (1997); Salzmann and Mohamed (1999a); Chen (2000); Jefferies, 2004; Li et al 2005a; Li et all 2005b; and Jefferies, 2006) who suggest that risk and success factors should be considered together, due to the point that a factor can be described in not only a negative sense (risk factor), but also in a positive sense (success factor). It is therefore essential that both risk and success issues are studied.

6.2 RISK FACTOR DISCUSSION

The emphasis on risk, and the subsequent management of risk, is essential given the likes of the NSW Government’s Department of State and Regional Development publication ‘Guidelines for Private Sector Participation in the Provision of Public Infrastructure’. These guidelines confirmed a shift in attitudes toward asset planning and procurement by stating:

“The government aims to maximise private investment in infrastructure to the extent that this results in net benefits to the community beyond those from public provision. It also strives to promote an efficient allocation of risk between the public and private sectors to parties best able to manage them” (NSW Government, 1997).

These changes opened new avenues to the government for the procurement of buildings and infrastructure. The utilisation of the PPP concept is an example of the increased acceptance of these alternative forms of procurement.

This shift in attitude is further supported by the NSW Government (2000), in their Green Paper ‘Working with Government – Private Financing of Infrastructure and Certain Government Services in NSW’. It attempts to capture this opportunity to increase the benefits and comment on the issues and concerns held by the private sector that may impede development. An additional opportunity is therefore provided to identify, allocate and
manage risks and broaden relationships between the public and private sectors. More recent Government guidelines, such as Australian Commonwealth Government (2008) and NSW Government (2012) have re-emphasised the statement above from NSW (1997) and have continued to stress the importance of successful risk management by developing strategies for successful management particularly when procuring infrastructure projects using the PPP approach.

It was found that the majority of risks identified throughout the review of literature and then represented in the subsequent theoretical framework were relevant throughout the Stadium Australia case study project. Apart from a native title risk and several financial risks unique to the issue of Olympic games tickets and gold membership rights, the framework established in reviewing the literature proved to be comprehensive in covering aspects relevant to Stadium Australia. A similar risk pattern emerged with the SuperDome project, the notable exception being risk associated with competition. With the SuperDome the host Government (OCA) did not follow the framework established during negotiations with Stadium Australia and avoided any competitive protection arrangements. The main exception with the Top Ryde project was the issue of the main public sector entity involved in the PPP, i.e Local Authority in the form of City of Ryde Council. This opened up some different risk categories, in particular that of community involvement. The Mater Hospital redevelopment was again somewhat different in being the largest hospital to date procured using PPP in NSW. A number of harsh lessons learnt from previous healthcare PPP projects, such as Port Macquarie Base Hospital were reflected upon particularly in the area of operational risk where many of the core services were kept within the operational realms of the public sector, all be it in some instances with the private sector employing public sector staff under a ‘labour services agreement’.

In order to recap the significant risk factor findings of the literature, and to provide a framework for discussion, a risk factor category has been developed. This classification has been developed using the previous work of Tiong (1990) and Walker and Smith (1995) as a starting point for further development. The developed framework, or classification matrix (shown in detail in the Literature Review Chapter), provides additional categories and supporting sub-categories and was developed using current literature published since the
previous frameworks were developed (Levy, 1996; UNIDO, 1996; Ma et al, 1998; Kerf, 1998; Salzmann and Mohamed, 1999a; Smith, 1999; Wang et al, 2000; Li, 2003; Loosemore et al 2006; Cheung, et al, 2012; Zeng and Tiong, 2012):

- Political - host government; corruption
- Legal - legislative framework; project agreement; tax; laws; legal costs
- Financial - bid process; form of financing; evaluation; commercial investors; ownership; rates of return
- Environmental - impact; ecological sustainability
- Technical - physical conditions; construction; design; technology
- Revenue – market; demand; toll/tariff; commercial rights
- Operational - operation; maintenance; ownership

Comparison of the issues identified during both the review of the literature and within the case study projects are discussed in more detail under specific ‘risk factor’ headings as follows:

6.2.1 Political Risks

*Host Government*

The literature review identified that country related risks of a political, legal and commercial nature are the most significant and difficult to manage (Tiong, 1990; Tam et al, 1994; Ogunlana, 1997; Tam and Leung, 1999; Love et al, 2000). These risks are considered most significant because they are all issues that the project company has little or no control over. In developed countries, such as Australia, where the legal systems are well tested and proven to be very reliable, concession companies can undertake to carry most risks while receiving very little guarantees in return. However, in the developing countries concessionaires are better off seeking government guarantees or even financial participation in projects as a risk sharing strategy.

This logic appears to have been undertaken in the situation of both case study projects. Australia is viewed as a stable country in the political, legal and commercial sense. As such
the case study project companies have been able to accept the majority of these risks with little government guarantee. Had the project been undertaken in a developing country, such as Thailand, it is unlikely that these risks would have been accepted without a more equitable risk sharing strategy.

As Ogunlana (1997) states, the creditability of the host government as a contract partner is often neglected. If the host government dithers, or fails to deliver promises, at any stage of the PPP project, the sponsors are left with a project that is unable to live up to economic promise. Political climate, regulatory and legal policies and the transparency of government operations determine the success or failures of PPP schemes. Beyond this, the promoters (Government) of a PPP project are faced with a vast array of risks, many of which they would not encounter under a traditionally procured public sector project (Walker & Smith 1995; Jefferies and Chen, 2004; Yuan et al 2010).

This form of risk was assessed as being unlikely on each of the case study projects. The allocation of responsibility (risk) is dealt with by the underlying State and Federal laws of Australia and clear and transparent guidelines from the public perspective eased concern with regard to the likes of corruption possibility. The process was overseen by government’s ‘due diligence’ auditor.

The Project Agreements for each of the case study projects made provision for indemnification of the private sector. In the event of any of the private sector project company’s getting into difficulty, then the Project Agreements allow the Government to ‘step in’ and oversee business operation if pressurised.

6.2.2 Legal Risks

Native title and artefacts risk

A unique risk, previously unacknowledged in the review of the literature, was identified as to tenure and usage with respect to the land upon which Stadium Australia is built. The Stadium Australia Project Agreement stipulates that the State Government indemnifies the Stadium Trust for any losses that it incurs because of a native title application. If an application had
been successful, it would have obviously derogated substantially from the Trust’s rights to use the site. However, the indemnity does not extend to losses incurred by the Trust as a result of a native title application which was materially based on the existence of artefacts on or around Stadium Australia land. Risks relating to such an application were passed on to Obayashi under the Head Contract and in turn, Multiplex under the D & C Agreement. A similar contractual agreement exists within each of the other three case study projects.

Changes in Federal and/or State Law

Changes in federal or state laws may be an issue particularly during times of an unstable political environment. Ogunlana (1997) and Bult-Spierinh and Dewulf (2006) emphasise the importance of a predictable and proven legal system in the host country. This would ensure consistency and a smooth transition during the various stages of development, operation and transfer of ownership of the project.

There may be certain ‘discriminatory’ changes to the laws of NSW that have a material adverse effect on the Stadium Australia Trust’s ability to carry out the project, to repay debt or to make distributions and pay dividends. If this occurs, the Trust and State Government must enter into good faith negotiations with a view to enabling the Trust to maintain these abilities and obligations. The Trust and Stadium Australia Management bear the risk of all other changes in law affecting Stadium Australia, including ‘indiscriminate’ law changes except where they involve native title or substantial structural or major maintenance works are made necessary by a law change after the commencement of the Sublease.

On each case study project the government (be it State or in the case of Top Ryde, Local Authority) carries the risk where they are specific to the project. If they are general taxes such as Goods and Services Tax (GST), then the business bears this risk. In line with ongoing PPPs, the NSW State Government is trying to set up a regime whereby a developer decides to procure a piece of infrastructure for themselves, then the Government gives them some form of concession, e.g. rent free land or business opportunity for a long period of time and in exchange the operator runs their business and charges a fee to do this. Subsequently, like any other business, if the law changes, then this has to be managed.
Legal costs

Specifically related to the bidding phase of a PPP project there were a number of legal costs identified at Stage 1 of the Case Study process as being ‘unique’ to a PPP. These include the costs of:

– Legal advice regarding the establishment of the SPV and the principal;
– The legalities of setting up the SPV and also arrangements with sub contractors; and
– Liasing with the companies to work through the contract marking it up with any queries and assessing the risk in the contract.

A number of concerns and criticisms regarding various aspects of PPP contracts emerged, all regarded as playing a part in driving up the legal costs associated with a PPP bid:

– The lack of standardised contract documentation;
– Efficiency and effectiveness on the focus on the finer points of the contract given the economics of long-term legal obligations contained in many PPPs (particularly in contracts of 25 to 30 years).

Stage 2 of the case study process, in particular with regards to the Top Ryde project, not only reinforced some of these legal costs, but also identified others. These mainly revolved around the costs incurred as part of the Independent Verifier process stipulated by the Department of Local Government (NSW State Government requirement of PPP projects). The ‘upfront’ or bid costs (legal fees, consultant fees etc) for the Developer on Top Ryde were initially minimal and were thought of as being similar if this project was merely a standard Design and Construct contract. However, additional costs were incurred once the project was classified as a PPP by the State Government. This additional cost wasn’t envisaged upfront as Top Ryde was classified as a PPP late in the process after the project was already established and many of the costs had already been incurred.

Current literature supports these findings, referring to the extended time spent during the PPP bidding phase negotiating between project advisors and client representatives over the terms and conditions in the contract. These lengthy delays resulting in increasing bidding costs
Concern was also voiced in regard to the potential for a conflict of interest to occur in the area of legal issues. Unlike other professional groups involved in PPP bids, lawyers could be involved with more than one bid at any one time. This concern fuelled the perception that the legal profession get the opportunity to ‘double dip. The trepidations conveyed reflect concerns expressed by Evans & Bowman (2005) who point out that the legal framework in which the PPP project operates will be a crucial factor to the success of a PPP model….“the legal framework within which a PPP project operates will also be a determinant of the optimal PPP model” (Evans & Bowman, 2005, p.63)

6.2.3 Financial Risk

**Inflation, Foreign Exchange or Interest Rate Risk**

Financial risks linked to inflation or exchange and interest rates were identified by Walker and Smith (1995); The World Bank (1995); UNIDO (1996); and Hodge and Greve (2005). This is a risk borne by various parties, but typically by the private sector. If interest rates fluctuate, there is a provision in the Works Adjustment Deed of each project for contract sum adjustment up until financial close of the projects.

**Bid and Negotiation Risk**

The issue of Bidding or Tender Negotiation Risk, where substantial finances are used during the tender and negotiation stage in the hope of being awarded the right to develop the project, is one that differs between the two stadia projects.

The theoretical framework recognised the significance of this risk and Tiong et al, 1992; UNIDO, 1996; Curnow et al, 2005; Hodge and Greve, 2005; Bult-Spiering and Dewulf, 2006; and Jefferies et al, 2010 also suggested that the cost associated with bidding was often seen as a deterring factor for potential tenderers. This fact appears to have eventually been recognised by the NSW Government in the case study projects as the State Government introduced partial compensation for the underbidder(s) on the SuperDome after problems incurred on the first Olympic project, Stadium Australia. Subsequently, on the SuperDome, the Government ran two groups to the end of the tendering process and offered the loser financial compensation.
This process differs dramatically from the one used to negotiate Stadium Australia and similar PPP concession projects. With Stadium Australia, the successful tenderer had been identified at an early stage and contracts were subsequently signed. The remaining participants (tenderers) were therefore culled from the process in what is a common model. However, the SuperDome process took an entirely different approach by identifying two tenderers and negotiating with them until the very end of the tendering process. As the loser was offered a generous form of reimbursement for entering into the process, the running of the two tenderers as late as possible at the negotiation stage created a very competitive environment that could only offer the Government as good a deal as possible.

However, this is a model that has not always been continually used on subsequent PPP projects. The Stage 1 interview process highlighted that there was a strong body of opinion from the private sector that current social infrastructure projects in Australia are not true partnerships. Industry criticism of the bidding process for PPPs tended to be concerned with the narrow scope of work that is offered to the private sector during the operational stage and in reality, PPP project costs relating to finance, building design, construction, maintenance and waste management amount to less than 15% of the total life cycle cost of the enterprise.

**Risk of debt and equity raising**

In the case study projects the risk of achieving the sale of the equity investment packages and ability to attract lenders is a risk borne by the project company and the underwriters. In typical PPP projects this risk will always be with the private sector. The risk was exacerbated in the Stadium Australia project by the complex arrangements in place. However, this innovation and financing ability is viewed as a success factor (UNIDO, 1996; Jefferies et al, 2002; and Commonwealth of Australia, 2008) and was certainly a positive aspect in the successful consortium’s tender bid on Stadium Australia.

Stadium Australia Management is a publicly listed entity and was founded on its ability to raise both debt and equity. Of the initial $550 million investment, the public float raised $350 million. Even though the float was unsuccessful in that it finished short, from a Stadium viewpoint it didn’t make an enormous difference to SAM because the underwriters paid the
shortfall. Equity funding for the project was raised via gold and platinum investors, founders and commercial investors. The innovative techniques employed on the financing of Stadium Australia helped to break several barriers. These included introducing the first Australian Stock Exchange (ASX)-listed lifestyle product. It was also the first triple-stapled listed product. Most shares on the ASX are simple products involving straight ownership of equity. Stapled products involve add-ons designed to make the overall product more attractive or to suit the particular needs of the project. In the original float offerings, gold and platinum packages involved three things: Olympic tickets; membership entitlements; and equity investment (thus, a triple-stapled product). Each unit in the Trust is stapled to a share in Stadium Australia Management.

The ability to attract equity investors into a PPP project is only one component of the overall financing requirements. Ability to raise debt and attract organisations willing to offer these arrangements is the other significant component. The primary debt funding for Stadium Australia was a Construction Loan Facility and now a Term Loan Facility. ANZ Bank and ABN AMRO agreed to provide a A$161 million Construction Loan Facility to the Trust under the terms of the Construction Loan Facility Terms Sheet.

However, the organisational section of the Case Study identified that there has been a shift from the practice of construction companies investing substantial equity into PPP projects to the provision of construction services underpinned by much smaller investment sums in the project. Common practice reported is for banks and specialist equity providers such as Bilfinger Berger to put up the majority of the finance. Such a shift was viewed as a safer and natural progression, enabling construction companies to remain focused on their area of expertise (construction management) rather than financial and investment issues. This is of particular relevance given Abi Group’s foray as major equity investor in the SuperDome which performed poorly, operationally speaking, until they on-sold the operational rights.

The following other issues relating to debt and equity were also strongly voiced by the majority of participants during the interview process:

– Debt funds PPP projects, usually 90% debt and 10% equity
– Banks and bondholders provide the debt
– Financial institutions will usually require construction companies to carry some of the ‘hurt money’ if the bid is not successful
– Tollway projects tend to have a greater proportion of equity
– The entrance of superannuation funds into the market has become a significant factor in terms of fund provision
– Bonds provide another method of financing, for example not only on the Stadium Australia project but also in healthcare infrastructure such as the Royal Women’s Hospital in Melbourne.

6.2.4 Environmental Risks

Sustainability
The World Bank (2012) stated that infrastructure can support economic growth, reduce poverty, and at the same time make development environmentally sustainable. The environmental issue is perhaps the most difficult to initiate, design and deliver when developing large scale infrastructure. The lack of evidence in ‘green’ issues with previous infrastructure projects is obvious despite several authors making specific reference to the issue (World Bank, 1995; UNIDO, 1996; Kerf et al, 1998; Wyatt, 1998; Wang et al, 2000; and Jefferies, 2006).

Successful environmental risk management, certainly in terms of bidding, was evident on both Stadium Australia and the SuperDome in that each project incorporated significant environmental/sustainable aspects to their project bids. The projects contain numerous examples of environmental sustainability from the design process through the construction stages and into building operation. The risk of poor environmental management or perhaps a bad choice of site (environmentally) may be either a private or public sector risk. It was particularly important given Sydney’s bid for the Olympics as the ‘Green games’.

Under the Stadium Australia Project Agreement, the Trust bears the risk of contamination on the construction site. A review of potential contamination risks was undertaken and identified a number of soil contamination issues. As a consequence, a remediation action plan was
developed to deal with the issues and when complete the site was suitable for the
cstruction of the stadium. The responsibility for effecting the remediation action plan was
passed on to Obayashi by the Trust under the Head Contract, who in turn transferred this risk
and responsibility to Multiplex under the D & C Agreement. The environmental design and
construction risks, such as the use of grey water and the incorporating green building
materials, was taken by the contractor under the D & C Contract.

The SuperDome incorporated even higher levels of environmental strategies and adopted a
series of environmental measures to:

- significantly reduce energy and water consumption;
- minimise the use of pvc;
- use electricity generated from renewable sources;
- encourage patrons to use public transport;
- use finishes and systems selected on the basis of life cycle analyses;
- minimise indoor air pollution;
- minimise and manage all wastes and maximise waste recycling; and
- use only recycled and plantation timbers.

The Mater Hospital project has a ‘step-in’ clause in the operational agreement that could be
actioned if there is a serious environmental risk effecting either the public or operational staff
of the hospital. Other risks of this nature related to ground conditions. NSW Health’s Risk
was to accept the environmental consultant reports completed on the buildings and the site
prior to handover the private sector. The operator, Novacare’s Risk was acceptance of the site
and buildings with some risk passed onto D&C contractor.

6.2.5 Technical Risks

Construction Overrun

Ultimate responsibility for managing construction, and subsequently any construction related
overruns, are borne by the contractor, in the case of Stadium Australia, Multiplex; on the
SuperDome and Mater Hospital, Abi Group; and on Top Ryde, it was Lend Lease. In each
project, the contractor was ultimately responsible for cost overrun by way of the fixed price,
lump sum D & C contract. The project company was responsible for the cost overrun associated with their initiated changes and variations or for items outside the D & C scope. The contractor(s) bore the substantial portion of design risk under the D & C contract. The Government and project company still bear some risk on each of the projects in that the design brief is correctly prepared and interpreted.

Taking Stadium Australia as an example, these risks were mitigated by the fact that, under the Head Contract, Obayashi was required to meet the various milestone dates and to actually complete construction of stage 1 by 1st March 1999, three months before the required completion under the Project Agreement, and more than 18 months before the Olympic opening ceremony. The arrangements meant that liquidated damages were payable by Obayashi to the Trust under the Head Contract and by Multiplex to Obayashi under the D & C Agreement.

Construction delay did not effect the Government, particularly as the construction deadline was several months before the Olympics began. In this case, the Government is not operating the building, so if it’s delivered a month late, it’s not their problem. However, they still incorporated provision for liquidated damages into the contracts, but as it’s the consortium that will be operating the venue then they have more to lose by construction time overrun than the Government as it is the private sector who is running the business.

This is perhaps a fairly unique case as the Government’s main concern was that both the Stadium and the SuperDome projects would be operational by the time of the Olympic Games. So, in setting completion dates long before the Games were due to start they in effect passed the risk onto each project company, and subsequently the main contractor(s), as it was in their sole interest to have their respective buildings operational as soon as possible as they were running the business. This varies from traditional contract structures, even other PPP schemes such as the Mater Hospital, whereby the client is usually the business operator and stands to lose more by delays in construction completion. For instance, when delivering a public hospital, where there is a need have it operational by a specific date, construction time over-run does became important because of the fact that the government is the operator of a
business inside a building operated by someone else. With Stadium Australia, the SuperDome, and Top Ryde the Government is not the operator of the business.

**Technical Innovation**

Technical and managerial innovation from the private sector is facilitated by specifying outputs and performance requirements, rather than providing highly detailed project briefs, thus offering an improved focus on service delivery (APCC, 2002; Akintoye et al., 2003; Blake, 2004; FitzGerald, 2004; Jefferies, 2006). Technical innovation can be a solution to overcoming project complexity. The complexity of the project, however, may be a risk, particularly if there is a lack of experience.

Innovation was certainly a success factor in winning the Stadium Australia project. The financing methods such as the ASX listing broke new barriers and the project design was also very innovative, particularly with regards to environmental and waste management issues. Technical innovation on the SuperDome may not have been as crucial with regards the winning of the contract, but it was certainly an issue incorporated into the design to enable buildability and provide a facility that was fit for purpose. The SuperDome has a total floorspace of approximately 60,000 square metres and the curved form is some 32 metres high providing unobstructed views for over 20,000 people. Innovation is also provided by way of numerous environmental issues such as the minimal use of PVC and maximum use of environmentally friendly building materials, including non-toxic paints, cellulose fibre insulation and sound-proofing made from recycled paper.

On healthcare projects such as the Mater, performance specification had to be appropriate for this type of project to invoke maximum innovation from the private sector partner, ensuring that the project fulfils the present and future infrastructure requirements. This is particularly important for technically social infrastructure projects when they are handed back to the public sector after the private sector operational period in order to avoid risks such as obsolescence.
6.2.6 Revenue Risks

Revenue

With regards to both Stadium Australia and the SuperDome, the achievement of revenue targets and the management of revenue risks will depend on the number and type of events held at the stadium. In terms of the project finance concept, revenue generated over the concession periods need to be adequate to cover interest payment, debt repayment, dividends on equity investment, operational costs and ideally produce a sufficient profit margin.

As far as the stadium is concerned, corporate hospitality revenues and fees from the Stadium Australia Club are the largest contributor toward operating revenue. These two sources together contribute approximately 65% of the revenue of Stadium Australia Management in the year ending 30 June 2012. Food and beverage sales, merchandising, event rentals and signage rights outside the Olympic period form part of the operating revenue.

Complete revenue risk does not rest solely with the Trust and Stadium Australia Management. Agreements with the operational contractor, Ogden IFC, and the catering contractor, Gardner Merchant, stipulate some degree of revenue underwriting responsibilities. For instance, under the Stadium Catering Deed, Gardner Merchant pays Stadium Australia Management a fee based on a percentage of the gross revenue derived from catering services. Likewise, under the ‘long term supplier arrangements’ with Tooheys and Coca-Cola Amatil for various drinks provisions, each supplier will make a stipulated payment to Stadium Australia Management.

Revenue risk on the SuperDome is firmly with the operator, initially this was the Millennium Consortium, and the equity investors. Revenue is generated from long-term sporting tenants, one-off entertainment events, and the subsequent corporate hospitality that follows. The greater risk that the SuperDome has in comparison with Stadium Australia, is that it suffers from increased competition risk with a very similar venue, the Sydney Entertainment Centre, that is more established business entity. The operational contract for the SuperDome has changed hands several times since the initial operator, the Abi Group owned Millennium Consortium, first started when the arena opened in 1999. It is only since Millennium on-sold
the operational rights to the arena that it has become a viable and now very successful entity
under both PBL and then Nine Entertainment.

On Top Ryde, the private sector development company, established by Bevilesta Pty Ltd to
deliver Top Ryde shopping centre, signed a 49 by 50 year lease for a ‘peppercorn’ rent of $1.
Under the terms of the lease, the developer wouldn’t pay any significant rent for the land
providing they successfully linked CoR Civic Precinct land to the ITS in the form of bridges
and underpasses. This is a somewhat unusual model but one in which the public sector were
prepared to embrace given the significant upgrade and development of not only the shopping
centre but also civic and public buildings and the extensive supporting road network.

Top Ryde was an unusual PPP revenue model as the majority of social infrastructure PPP
revenues are generally based on an ‘availability’ structure with the government providing
direct payments. Key commercial principles for social infrastructure PPP’s can include:
  • payment mechanism and availability
  • Insurance
  • Relief, compensation and force majeure events
  • Default events
  • Termination events
  • Termination payment
  • Government step-in
  • End of term arrangements

The revenue streams from the Government to the private sector operator on the Mater
Hospital are based on a more traditional revenue model in that they involve a monthly
‘performance’ payment structure. The payments relate to the:
  • initial project capital investment;
  • design, construction, commissioning;
  • maintenance and operation of the hospital including the management of the
    health sector employees under a labour services agreement; and by
  • achieving contractual benchmarks and agreed key performance indicators.
The monthly service payment on the Mater (subject to abatement for non-performance) is made up of volume adjustments (catering, clinical waste), energy payments, additional payments (groceries, security guards) and energy payments. The Mater Hospital is the first hospital in NSW to be built, maintained and operated by the private sector under a PPP, and on completion the Mater redevelopment will be the largest provider of radiation oncology services in New South Wales.

PPPs can offer greater flexibility and asset utilisation through accessing third party revenues (APCC, 2002), however, according to Jefferies and McGeorge (2008), current government policy limiting risk allocation and the sharing of business operation is a restricting factor for private sector stakeholders in the development of a successful revenue stream. Despite this, PPPs are still the preferred option for government to deliver a range of services in social infrastructure, particularly Healthcare (Jefferies et al, 2007).

**Market and patronage risk**

This considerable risk of being able to repeatedly attract the events and the people to the facility is evident in all PPP projects in terms of anticipating revenue. The review of the literature identified some techniques incorporated in an attempt to mitigate the risk. Depending on the market and/or product from the facility, these strategies include off-take agreements, government subsidies, variable concession periods and restrictions on competition (Walker and Smith, 1995; UNIDO, 1996; Tam and Leung, 1999; Smith, 1999; Wang et al, 2000; Bracey and Moldovan (2006); Loosemore et al, 2006). However, in the situation of the case study projects, apart from limited restriction on future competitive venues, this market risk lies entirely with the private sector. Risk management measures in this instance remain upon the accuracy and detail of feasibility studies and an allowance for certain contingency factors.

With regards to the commercial viability of Stadium Australia, a number of factors are seen as crucial to overcoming this type of market or revenue risk. The consequences for the much larger capacity Stadium Australia, of an inadequate support infrastructure is critical, as it impacts likely attendance and in turn the attractiveness to potential hirers, resulting in
revenue shortfalls. The Homebush Bay Transportation Plan allowed for new road and rail networks to serve Olympic Park from all parts of metropolitan Sydney and the construction of several multi-storey carparks within walking distance from all venues.

With regards to the Top Ryde project, the patronage risk of ensuring centre occupancy (tenants) was managed by the Developer as the project financiers would only fund the project if occupancy budgets and patronage forecasts were correct. This involved a significant projection and feasibility study of project finance costs, leasing plans and agreed revenue from centre. The financiers also undertook their own finance checks, assessed by an independent cost consultant, who checked costs, values variations et al. The banks also engaged independent retail experts every month who sat on a agreed leasing panel to assess whether the Developer was meeting budgets and adhering to the project’s program. Checks were also carried out on demographic studies to ensure demand was there for a centre of this size and nature and Developer had to sign up major anchor tenants before finance was approved.

**Competition**

The risk exists that competitive venues such as the Sydney Football Stadium (SFS), Sydney Cricket Ground (SCG), Parramatta Stadium or even future stadia draws hirers and subsequently, events, away from Stadium Australia. The risk posed by a new competitive venue is partially mitigated under the Project Agreement. The State Government entered into good faith negotiations with the Trustee and Stadium Australia Management, in the event that a Government controlled entity undertakes or assists in the development or redevelopment of a competing stadium with over 25,000 seats and within 50km of the Homebush Bay area. The new competitive venue must have a material adverse effect on the Trust’s ability to carry out the project, or repay debt, make distributions or pay dividends. These arrangements do not protect the Trust or investors from the risk of private sector sponsored competitive venues in NSW, or from venues with less than 25,000 seats or constructed more than 50km from Stadium Australia. This risk is managed by the fact that the SFS and the SCG are specifically mentioned in the project agreement in that they have limitations on the extent to which they can redevelop.
The competitive protection arrangements on Stadium Australia were logical. If the Government financially facilitates the development of a competing stadium that leads to a material impact of the business of the stadium, then the Government must negotiate with the project company in order to fix that effect and may be by means of a cash settlement, by extending the concession period or through some other concessions. Either way, it is certainly an obligation on the government who reaped the benefits of private sector money in the initial deal. If the Government then initiates something to compete with the facility, then it has to pay in some way. If the type or of number of events in the targeted events schedule and the price and volume targets for merchandise, food and beverage, signage, event rental and corporate hospitality are not achieved, then the revenue generated from Stadium Australia Management would be reduced. As a result, rates of return for investors and debt repaying ability would be adversely affected.

The patronage risk of being able to attract the events and the people to the stadium is significant. However, there is a good underlying logic as to why the Stadium has been successful in its first 15 years of operation under a 30-year PPP agreement. Stadium Australia seats 80,000 people, whereas the SFS and SCG seat around 40,000 each. In comparing a 40,000 capacity stadium to one with an 80,000 capacity, the larger stadium achieves much better economies of scale in that its operating costs are not twice that of the smaller stadium.

These ‘competitive protection arrangements’ on Stadium Australia were not integrated into the SuperDome agreement as the Government was considered it as being difficult to administer. So, when the SuperDome agreement was negotiated and the consortium made reference to the existing and competing entertainment centre (Sydney Entertainment Centre), the Government recognised that the SuperDome has to compete with it and that the Government was not willing to do anything about the competing entertainment centre. The Entertainment Centre is trading successfully and is popular with the public, so the consortium had to develop a business plan knowing that they had to compete with it. The Government didn’t want any arrangements which stated that if the Sydney Entertainment Centre has more than a certain number of acts a year then this would lead to compensation for the SuperDome project company in some way. Also, as a further significant difference is that if the Government decides to build another entertainment centre, for instance in the Western
Sydney area and close to the SuperDome, then so be it. The Government wanted freedom to be able to do this.

This obviously injected some form of uncertainty into the business of the SuperDome. The project company had to therefore ‘cost’ that uncertainty. This risk factor was managed by the project company by establishing a marketing reserve fund, which could be used to compete against the opposition or allow them to incur some heavy start up loses. At the negotiation stage the project company informed the Government of that figure, so that the Government could then increase its’ contribution by that amount. This then initiates another risk factor, that could lead to an unsuccessful project bid as the Government will then be asking the other competing tenderer that same question which they may manage by another means.

Competition for Top Ryde Shopping Centre was managed around demographics and the need for the shopping centre to undergo a significant renovation and upgrade. The original Top Ryde shopping centre was built in 1957, being New South Wales’ first regional shopping centre and one of Australia’s earliest. The City of Ryde has always had strong historic town centres such as Ryde, West Ryde, Eastwood and Gladesville. Macquarie Park in North Ryde provided technology-based organisations with a major precinct centred upon Macquarie University. Subsequently, it was believed the role of the Top Ryde as an important retail and social centre declined over the 1980’s and 1990’s as its infrastructure became outdated with insufficient parking and a limited choice of food and retail outlets. The City of Ryde recognised that the redevelopment was required in order to reduce escape expenditure outside of the suburb, increase employment and restore the Town Centre as a social, community and civic hub.

**Demographics**

Levy (1996) reiterated many of the general risks and also suggests that changes in demographics over the concessionary period may substantially affect revenue. Both stadia projects are in the Homebush Bay area of Western Sydney at Olympic Park, and demographics are not seen as a significant revenue risk as far these projects are concerned. The population demographics of Western Sydney are amongst the highest in Sydney with regard to both density and increasing numbers. Also, due to these shifting demographics,
nearby Parramatta (the commercial and business centre of Western Sydney) and only 6 km from Olympic Park, is now considered as the geographical centre of Sydney (Australian Bureau of Statistics, 2002). Likewise, Top Ryde is located close by and in similar growing area in the North West suburbs of Sydney. Future demographic growth in this area has been supported with the NSW Government’s commitment to the North West Rail Link which is an $8.3 Billion including 8 new stations linking Sydney’s CBD and North with North Western suburbs. This indeed bodes well in terms of continued patronage with a supporting, thriving and increasing local population.

6.2.7 Operational Risks

Operation
The operational phase of a PPP arrangement is typically of the longest duration and is the key to revenue sustainability (Walker and Smith, 1995; UNIDO, 1996; Goldberg, 1998; Salzmann and Mohamed, 1999a; Walker and Hampson, 2000; Jefferies, 2006; Commonwealth of Australia, 2008; Jefferies and Lau, 2010; Brewer et al, 2012). Operational risk is typically borne by the private sector operator under the terms and conditions of the operational and maintenance agreement.

In the case of the Stadium, this rests with Ogden IFC, although Gardner Merchant also bears similar risk in the operation and provision of catering services, and with the SuperDome, Nine Entertainment and AEG Ogden*. Operational safety is also an issue of risk, and is significantly the responsibility of the O & M contractor, Ogden IFC (Stadium Australia) and AEG Ogden (SuperDome). However, the respective contractors Multiplex (Stadium Australia) and Abi Group (SuperDome) did bear some risk in undertaking the D & C contract to provide a facility that is ‘fit for purpose’.

The future financial success of Stadium Australia depends substantially on the operator’s ability to generate corporate hospitality revenues and membership subscriptions and with regards to the SuperDome, future success depends not only on attracting events and regular users but also its ability to compete with the likes of the Sydney Entertainment Centre.
On Top Ryde, operational risks relate to the ongoing demands of providing a viable and successful shopping centre and place of public and civic space. These issues mainly refer to successful management of the centre in terms of tenancy leases and the supporting demographics of the area. The levels of community engagement also need to be maintained by all operational stakeholders and must evolve during the operational period to reflect the changing expectations and concerns of the community.

As for health infrastructure, the failure with the Latrobe Regional Hospital was partly attributed to its low bid price for the services together with the inability to achieve efficiency gains it expected from private sector operations. The Mater hospital was based on a fairly traditional PPP approach in that the agreement between the NSW Government and the private sector consortium involved a project term of 28 years for the financing, design, construction and commissioning of new hospital buildings; refurbishment of the old Mater Hospital; and transfer of local mental health services onto the site. The main operational issues related to the maintenance of buildings, car-parks and grounds, utility supply and management services et al. In addition, the consortium provides a range of ‘non-clinical services’ (security, catering, cleaning, general services et al) while managing public sector health employees (who remain public sector employees of the Hunter New England Area Health Service) under a Labour Service Agreement.

*AEG Ogden is a joint venture between the Australian based Ogden IFC and AEG Facilities which is a stand-alone affiliate of the Anschutz Entertainment Group that is an American worldwide sporting and music entertainment presenter.

6.3 SUCCESSFUL MANAGEMENT OF RISK FACTORS

McDermott (1999); Rowlinson (1999); Salzman and Mohamed (1999a and 1999b); Jefferies and Gameson (2002); McGeorge et al (2006); Jefferies (2006); Walker and Rowlinson (2008); and Love et al (2011) all state that the key to successful PPP infrastructure projects is the successful identification, evaluation and allocation of the risks involved. The issue of
success is very closely related to the issue of risk. So much so in fact that they are interrelated particularly in terms of the influence they each have upon one another. This relationship between risk and success is supported by Salzmann and Mohamed (1999a) who suggested that risk and issues of success should be considered together. Recent studies into successful management of risk factors include those by Rashid et al, (2006); Ismail and Rashid, (2007); Chan et al (2010); Zhao et al, (2010); Ke et al, (2012); World Bank, (2012); NSW, (2012); and VIC, (2013). However, research has still been limited, particularly at project level. The following issues were highlighted as being prominent from one or more of the case study projects.

6.3.1 Consortium Structure

Both the literature review and case study confirmed the critical importance of the consortium structure as a success factor in not only winning PPP projects but in the successful operation of them. The conclusion may be drawn that the consortia of both projects had a wealth of expertise, considerable experience in major construction works and also public-private joint ventures, high profile and a good reputation. Without doubt, this played a significant role in the consortium’s successful bids.

UNIDO (1996), initially identified the importance of a well organised and defined structure for the stakeholders in a PPP project and also noted the importance of reputation and profile among the participating parties as a success factor in winning the bid:

“choosing the most suitable project consortium is usually the single greatest determinant of the success or failure”.

This was supported by McDermott (1999); Grimsey and Lewis (2002); Jefferies (2006); and Jefferies et al (2007) who all emphasised the issue of a strong, complimentary and experienced consortium. Further support was also provided in each of the case study projects, particularly from the private sector participants, who tended to reflect much of that comment:
A crucial success factor in terms of managing the consortium structure of the Stadium Australia project was that the representatives of the two main companies involve, i.e. Multiplex and Hambros were a very good fit. The team members got on very well and worked together well in a trusting relationship. The list of founding organisations and commercial investors in the consortium had a wealth of expertise, considerable experience, high profile and a good reputation. Without doubt, this played a significant role in the consortium’s successful bid.

Similar issues of success were evident on the Top Ryde project. Relationships within the consortium structure were driven by a ‘win-win’ situation and the successful management of very diverse stakeholder expectations. The complimentary skills and culture of the consortium enabled teamwork, trust and mutual goals to be achieved and this helped to drive the project away from adversarial issues. Success was achieved by ensuring stakeholder input into a holistic team structure to ensure the ‘right people’ are involved in order for all consortium stakeholders to gel.

The form of the contracts within the broader PPP project agreements can also have positive influences on the success of risk management. Under the Tripartite Agreement for Top Ryde, the City of Ryde is the roads authority and the owner of the surrounding Devlin Street and Blaxland Roads. As owner, the City of Ryde agreed to lease a portion of these roads, comprising the site for Top Ryde, to the Developer who undertook the works on the site and agreed to own and operate the works (finance, design, construct and operate). Under section 138 of the Act, the consent of Council, as roads authority, with concurrence of the RTA, was required. A condition of the DA consent was that the three parties enter into a Tripartite Deed of Agreement. The Tripartite Deed served to clarify the roles and responsibilities of the three key players (i.e. City of Ryde, RTA and Bevillesta) right at the beginning of the project. The tone of the Tripartite Deed was not adversarial and the roles and responsibilities of each party were discussed, agreed and formalised at the start of the project.

A major risk identified on the Mater Hospital project was that of stakeholder expectation and consultation not matching either the process or completed product. This included the
completed asset not being “fit for purpose” and operational, work methodology, and technology changes had to consider multi users (e.g. Clinical Maintenance et al). This led to a review of consultation process, the identification of key consortium members ad project stakeholders, and ongoing consultation with the design management team. A series of comprehensive user workshops were developed whereby independent expert consultation was introduced at key project nodes. This led to a continuous peer review process involving stakeholders from several project parties.

6.3.2 Relationships

Successful PPPs are based on a recognition of and striving for mutual benefits and win-win scenarios through more cooperative relationships between the parties. PPPs are long-term, develop and change over time, and involve substantial relations between the parties which must be carefully managed Chueng et al (2005). The interview process identified that relationships with the organisations that use the finished piece of infrastructure is important to the operational and business success of the project. The Stadium Australia case study revealed agreements with a number of project participants who partially underwrite revenues for the facility. Beyond this, several agreements have been made with organisations such as the National Rugby League, Australian Football League, Australian Rugby Union and so forth for the staging of a minimum numbers of events.

Relationships played a vital part in the success of Top Ryde at many stages of the project. During the planning stage the State Minister for Planning intervened and restricted the height of 10 storeys. However, successful relationship management allowed for further negotiation and led the broader project stakeholders to see the wider community value of ensuring success of the project and not let the project get de-railed by planning restrictions which could have led some key stakeholders to withdraw from the project. All senior project stakeholders within Ryde Council were involved in the negotiation and planning process and developed successful relationships with senior project stakeholders from both the private and public sectors. The General Manager of Council, in tandem with the Group Manager of Environment and Planning, developed the planning instruments; and the GM and Group Manager of Public Works negotiated with transport authorities. A ‘softly, softly’ approach to
negotiations was used by Council stakeholders and a great deal of patience had to be shown by other parties/stakeholders. This type of approach was replicated by the main private sector stakeholder, Bevillesta, as the Development Director of Defined Developments embodied similar traits which helped foster a successful working relationship with Council where negotiations were performed in a very positive and ‘can-do’ and ‘win win’ manner.

6.3.4 Business Operation and Diversification

The payment mechanism in social infrastructure PPPs requires two main principles, one being performance based (KPIs) and the other dependent on the quality and quantity of services provided. The underlying key to success in any PPP project is successful business operation (Jones, 2003; Duffield, 2005; Jefferies et al, 2006; McGeorge et al, 2008).

The project term of 28 years on the Mater Hospital consists of operational services (including maintenance of buildings, car-parks and grounds, utility supply and management services) and non clinical services (including security, catering, cleaning et al). In entering into the Project Deed the Project Partner acknowledges management of the NSW Health employees under the ‘Labour Services Agreement’. The proposed revenue streams from the Government to the Novacare Consortium are based on a ‘performance based’ payment structure by achieving benchmarks and key performance indicators and relate to finance; design construction and commissioning; and maintenance and duration of the hospital including management of the NSW Health sector employees. The payment terms also have a clause stipulated for non-performance and abatement of fees. With the Mater, the NSW Governments preferred position of transferring operational risk to the private sector is maintained. The Government improved its financial scrutiny and payment system to PPP Consortiums based on performance and non-performance. Early systems lacked performance indicators and exposed the Government to adverse risk and PPP failures. The payments system for the Mater is based on a similar model that has been developed and successfully used for the Casey Community Hospital in VIC. NSW Health established the ‘Labour Services Agreement’ which effectively allowed clinical services to be delivered by public sector employees, while all non-clinical services are provided by the private sector. This model has also been successfully established in the Casey Community Hospital PPP.
One area in which financial success can be further enhanced is that of business diversification. The SuperDome’s core business being a multi-use arena is that of staging various sporting and entertainment events. In order to diversify and open up additional markets it also has a number of eating and drinking establishments that are also open on days when there are no events at the SuperDome. This may be particularly profitable on days when events are held elsewhere at Olympic Park, such as the nearby Aquatic Centre, Sydney Showground or Stadium Australia.

The SuperDome has its Boulevard cafes and shops and a very large transparent foyer which opens out onto the plaza and allows integration of these inside spaces of the arena into the outside. The SuperDome benefits and so do the people not just attending event here but also at other nearby venues or who are just visiting what is now a fairly busy suburb in its own right, i.e. Sydney Olympic Park and Homebush Bay. These indoor-outdoor aspects integrate the venue with the surrounding precinct and is a key success factor.

### 6.3.5 The Tender/Bidding Process

Most PPP projects are first identified by the host government and in advertising or requesting for proposals, the government asks for bids to have a particular project delivered on a PPP basis. (Walker and Smith, 1995; UNIDO, 1996; McDermott, 1999; Jones, 2003; Evans and Bowman, 2005, McGeorge et al, 2010). On the SuperDome the State Government supported the issue of a different bidding process. The Government had a clear project brief and timeframe and didn’t deviate from it. They wanted to run two shortlisted bidding groups to the very end of the tendering process, and in the process pay the loser the best part of their tender costs. The SuperDome bidding process took the approach of identifying two tenderers and negotiating with them until the very end of the tendering process. As the loser was offered a generous form of reimbursement for entering into the process, the running of the two tenderers as late as possible at the negotiation stage created a very competitive environment that could only offer the Government as good a deal as possible. So, the success issue in this case was the Government knowing exactly what it wanted, documenting it, informing the tendering consortiums and sticking to it. In other words, maintaining and
abiding by a clear and precise project brief and documentation that was readily available to
the tendering consortiums. A not too dissimilar approach was used on Top Ryde in that the
Developer used a negotiated form of tendering with the D&C contractor, Lend Lease, as
opposed to a competitive system involving several contractors. Lend Lease’s D&C costs
were negotiated and benchmarked by the Developer using an experienced cost consultant to
check the costs of any tender submissions.

6.3.6 Community Engagement and Support

The government aims to maximise private investment in infrastructure to the extent that this
results in net benefits to the community beyond those from public provision (Australian
Commonwealth Government, 2008; NSW Government, 2012). In some cases there may be a
reliance on the developer of the business to obtain community support. This is not the case
with Stadium Australia or the SuperDome, where the Government carried out most of the
community work, and in the initial procurement stages, the projects were given unrivalled
community support given the hosting of the Olympics and the development of significant
sporting and community infrastructure.

The issue of developing a successful relationship with the broader community of the City of
Ryde was initially sought during the public notification process during the planning stages
where an unprecedented community support of 95% was achieved to develop the site. The
community was aware from day one of the need to create a certain number of storeys for the
both the Civic and Top Ryde precincts to make them commercially viable and that the real
issue regarded more holistic planning to create a ‘real’ township for Ryde. In 2004 the old
1950s centre was very outdated with a huge amount of public support for redevelopment.
Therefore, during the early stages of construction when many problems occurred (noise,
demolition, increased traffic, dust, trucks et al) the community was very forgiving as they
desperately wanted Top Ryde to progress. The community was also supportive of the
additional height and bigger building limit in order to make the project economically viable
due to the complex nature of calculating the feasibility of this type of project. The
community did not need to be overly ‘won over’.
Dealing with the community on a daily basis was successfully managed by Council’s Project Manager and with communication channels established between the public and key project stakeholders. A policy was put in place that the Project Manager would communicate with a member of the community within 24 hours of their initial enquiry. This not only helped to hasten any community complaints but also created a happy ongoing ‘working’ relationship between CoR and the community of Ryde. The levels of community engagement need to be maintained by all relevant stakeholders from the inception and planning stages through to project completion and building operation and evolve during that period to reflect the changing expectations and concerns of the community.

6.3.7 Communication

The risk resulting from poor communication or a exchange of information is high and can have even more sever consequences on projects as complex as PPPs (Bracey and Moldovan, 2006). Successful facilitated and managed communication in procurement approaches such as PPP are also mentioned by Rowlinson (1999); Phua and Rowlinson (2004); and Ng et al (2012). The three-layered communication model used on Top Ryde was beneficial in many ways. The PPP communication meeting was hosted weekly by the Main Contractor and attended by Council, often RTA, with stakeholders such as STA and the Project Verifier as necessary. This meeting served to advise and discuss detailed works progress, certification issues, focus points for co-operation, feedback from the local community and communications required with local residents about future work. Weekly Project Control Group meetings were the 2nd layer of communication and served to bring together the project managers operating on behalf of the Council, the Developer, Main Contractor and RTA to overview general progress, identify and mitigate risks and issues, ensure information flow is timely, agree points of collaboration, resolve contentious issues, defuse potential problems and agree action points for all participants to ensure the project proceeds as smoothly as possible. The final communication layer was that of the High Level PCG which was held less frequently, usually every 2 months, and as specified in the Tripartite Deed was chaired by an independent person. Given RTA’s concurrence role in the PPP, the principal attendees have been senior management from both the Council and the Developer. These meetings provided a platform of supervision, negotiation and control of the direction of the PPP works and
design intent of the overall project. This forum was principally concerned with policy, direction and the progress of the project at a strategic level.

**6.4 SUMMARY OF RISK FACTOR DISCUSSION**

The risk profile of all of the case study projects is exacerbated by the high level of public scrutiny and community involvement that is far more evident in social infrastructure PPPs. This was further exaggerated in the early years of Stadium Australia and the SuperDome given they were procured as part of Sydney’s hosting of the Olympic Games and this was further evidenced by measures and conditions imposed such as extreme completion guarantees, discretionary termination clauses and in the case of Stadium Australia, the required $215 million payment to the NSW Government at financial close for drawing down progress claims. Further, the level of political and public scrutiny on using a PPP approach for delivering a public hospital created another level of due diligence and stakeholder management. Community engagement and relationship management were seen as the key factors to be successfully managed on the Top Ryde project given that it was a mix of public, civic, commercial/retail and road infrastructure.

The transfer of these risks to the private sector are typical within all PPP projects and this logic follows the risk management strategy of transferring the risk to the party most able to control or mitigate it. The importance of a comprehensive risk analysis in projects as complex as those encountered under large PPP infrastructure projects should not be underestimated. Risk analysis helps to establish financial and technical feasibility, parties can seek better allocation of the risks through the agreement of suitable and equitable contract clauses and insurance and a more positive and rational risk-taking attitude results from a carefully prepared analysis, since the risk takers know where they stand.

The procurement of projects such as Stadium Australia, Sydney SuperDome, Mater Hospital and Top Ryde under the PPP approach is in accordance with Australian State and Federal Government’s increased acceptance of alternative forms of project procurement and search for private sector infrastructure investment and expertise. This has allowed the significant
transfer of risk from public to private sector and also provides government flexibility without the extent of budgetary constraints previously experienced.

The consortium structure and project agreement form the foundation for risk management and the necessary risk distribution. In the event of a dispute, the legal structure and associated contract agreements should be well enough defined in terms of responsibility, dispute procedures and relationship management techniques that enable prompt resolution to be achieved. With regards to the SuperDome project, the strategy of running two tendering groups to the wire, compensating the losers, was fundamental to project success. It gave the Government more certainty that they got the best deal. It also saved months in negotiations as the various tendering participants respond quicker in an environment of competition. The SuperDome model still appears to be setting the benchmark from a bidding point of view and is indeed acting as the framework for future public-private joint ventures. To a certain extent, this form of tendering was replicated on Top Ryde by using negotiation strategies as opposed to traditional competitive tendering ones.

Previous literature identifies market concerns with regard to competition and the flexibility to adjust to new markets (Woodward, 1992; Walker and Smith, 1995; Salzmann and Mohamed, 1999a; Fone and Young, 2000; Fone and Young, 2005; Curnow et al, 2005; Jefferies, 2006; and Carbajal, 2012). The case study revealed Stadium Australia’s flexibility to cater for different or new markets. This is evidenced by the Post-Olympic re-configuration of the layout to allow cricket and football matches in 2002 and the announcement in July 2013 by the NSW Government that a $250 Million revamp to further reconfigure seating and add a retractable roof would take place to further ensure the future operational viability of the stadium in terms of attracting major sporting and entertainment events. Market concerns in regard to existing competition were not seen as a major threat given the advantages in achieving better economies of scale with the larger venue, given the lack of local competition of this size. Risk mitigation was however included within the project agreement with regard to limiting the effect of introducing competitive venues within a 50km distance. The SuperDome does have the capability to stage a variety of events (sporting, exhibitions, concerts, formal engagements et al) but it does suffer from competition risk from nearby facilities and the future possibility of new multi-use arena’s being developed.
As the facility may have a degree of monopoly power, the government may wish to regulate fees and charges (Walker and Smith, 1995; UNIDO, 1996; Ma et al, 1998; Salzmann and Mohamed, 1999a; Jefferies and Gameson, 2002; McGeorge et al, 2006; Murray, 2009; Marks, 2013). The only concerns revealed by the case study in regard to pricing are in association with the operational revenue risk previously described.

Concerns regarding infrastructure relate to the quality of infrastructure which actually feeds the new facility (Walker and Smith, 1995; Salzmann and Mohamed, 1999a; 1999b; Grimsey and Lewis, 2002; Duffield, 2005; World Bank, 2012). The case study revealed this factor as an important issue, with particular regard to transportation within the Homebush Bay region. The Transportation Implementation Masterplan outlined the State Government’s responsibilities in providing this infrastructure which both Stadium Australia, the SuperDome and the broader and rapidly developing suburbs of Sydney Olympic Park and Homebush depends on. Infrastructure, in terms of the road network, was also a key issue on Top Ryde. The issue of the pedestrian bridges was a significant contractual issue as the RTA made it a condition that the previous pedestrian crossing on Devlin Street, a main arterial route with over 90,000 daily traffic movements, had to be removed to improve traffic flow.

Relationships, are crucial to a successful operation (Walker and Smith, 1995; Kerf et al, 1998; Salzmann and Mohamed, 1999a; Cheung et al, 2005; Jefferies et al, 2013). The case study revealed agreements with a number of project participants who partially underwrite revenues for the Stadium Australia. Beyond this, several agreements have been made with various sporting organisations for the staging of a minimum numbers of events. Also, on Stadium Australia, the key representatives of the two major private sector companies involved were extremely committed, dynamic, aggressive and yet accommodating. They were a very good fit. The team members got on very well and worked together well in a trusting relationship.

Successful PPPs are based on mutual benefits and win-win scenarios through cooperative relationships. ‘Softly, softly’ approaches to negotiations was used by Council stakeholders on Top Ryde and a great deal of patience was shown by other stakeholders which helped foster
successful working relationships where negotiations were performed in a very positive and ‘can-do’ and ‘win win’ manner. This was particularly evident on Top Ryde with an outstanding level of commitment, teamwork, trust and formal 3-layered communication process.

Therefore, the case study projects have shown evidence in all respects of fulfilling the success factors required for sustainable operation. In concluding, the risk factor framework formulated from the literature review has been compared against the results of PPP case studies at both organisational and project level. The study confirms that the identification, analysis and successful management of risk factors are vital for managers engaging in improvement of their individual project and indeed their organisation as a whole.
7.0 CHAPTER SEVEN: CONCLUSIONS

7.1 PUBLIC PRIVATE PARTNERSHIPS – IDENTIFIED THEMES

A Public Private Partnership (PPP) is a consortium that forms a temporary organisation with a complex network of players with competing goals and objectives, many of whom never get to see the complete picture. Inevitably the group operates under pressure, particularly the members of the SPV (Special Project Vehicle) who are the drivers of the bidding process. The private sector view, which has been continuously reinforced in Stage 1 (i.e. organisational level) of the case study process, is that social, as opposed to economic PPPs, are more complex with relatively higher bid costs. Another recurring theme at this stage of the case study has been the difficulty in developing true partnerships between the public and private sectors during the bidding process which is also frequently adversarial. Much of the negativity and adversarial environment which surrounds PPPs is due to a lack of transparency both in terms of the costs of bidding and in terms of identification of risk, opportunity and success factors. Themes that have emerged include:

- **The PPP procurement model and the Australian market** - PPPs are seemingly becoming deeply embedded as an integral part of Government procurement strategies and in Australia this will amount to over $30 Billion from the period of 2003 to 2013.

- **Characteristics of social PPP projects** - Social infrastructure projects (schools, hospitals) are characterised as being smaller in scale than economic infrastructure projects (motorways, bridges, tunnels) and, by their very nature, also tend to be complex, particularly in terms of ongoing involvement with the community.

- **Design and Construct (D&C) versus Design and Construct in a PPP (Bidding Costs)** - a D&C/PPP as opposed to a standard D&C creates additional pressures which are magnified on social as opposed to economic PPPs where the projects on offer are potentially less lucrative and where the bid cost ratio is higher.
• **Legal costs** – lack of standard contracts, lengthy contract negotiation, litigious nature of construction, verification costs et al, all play a part in driving up the PPP legal costs.

• **Standardisation of documentation** – lack of standard contracts and processes particularly on smaller projects.

• **Design documentation** – high level of documentation required.

• **Innovation** – standardisation must be achieved but not at the cost of stifling innovation.

• **Public Sector Comparator (PSC) and Role of Government** – lack of consistency and transparency in PSC and some Governments still regard PPP as private sector funding.

• **Lifecycle costs and future proofing** – greater life cycle analysis required.

• **Debt and equity** – there has been a shift to construction companies investing much smaller investment sums into PPP projects, however, this shift is a safe and natural progression, allowing a focus on their area of expertise, with banks and specialise equity companies still contributing the majority of finance.

• **Bundling and economies of scale** – bundling currently occurs on two levels, firstly where a contract combines both maintenance and construction and secondly where there is a practice of constructing more than one facility under the one contract.

• **Current Australian PPP projects** – a detailed map of PPP projects from the late 1980’s to present was developed.

### 7.2 SUSTAINABLE PROCUREMENT

PPP projects have become increasingly common both in Australia and globally as a means of providing public infrastructure to countries without directly impacting on their sovereign finances. The PPP procurement scheme requires a firm to Finance, Design and Build an infrastructure facility, Operate, and even own, it for a stipulated period of time, and then Transfer it free of charge back to the Government at the end of the period.
Purely public and purely private delivery mechanisms can be unreliable, unstable and averse to innovation. The growing acceptance of alternative project delivery and finance methods, such as PPP, implies that governments will be increasingly faced with strategic choices whether to use ‘public’ or ‘private’ mechanisms, or a combination of the two, in the provision of infrastructure facilities.

Therefore, sustainable improvement in infrastructure will be achieved through a procurement strategy that encourages individuals and firms to innovate, encourages technology developers and investors to enter the process and one which is simple and easy for participants to understand. A flexible and reliable public-private procurement strategy is required if broader questions related to economic and environmental issues are to be addressed. Concession based procurement methods, such as PPP, provide governments with private sector financial input and expertise in the provision of public infrastructure. PPP schemes provide a means for developing the infrastructure of a country without directly impacting on the government’s budgetary constraints.

7.3 HISTORICAL RISK FACTORS

In order to recap the significant risk factor findings of the literature, and to provide a framework for discussion, a risk factor category was developed. This classification has been developed using the likes of previous work from Tiong (1990); Walker and Smith (1995); Wang et al (2000); Li (2005); Loosemore et al (2006); Zou et al (2008); and Xu et al (2011) as a starting point for further development. The developed framework is summarised in the following list of key risk factor issues:

- Foreign Exchange Rate Fluctuations
- Interest Rate Fluctuations
- Market
- Demand
- Competition
- Form of Financing
• Income/Revenue stream
• Cost Overrun
• High legal costs
• Underdeveloped legal framework
• Underdeveloped fiscal framework
• Political Instability
• Creditability of Host Government
• Political Opposition
• Corruption
• Construction Difficulties
• Completion Delays
• Physical Conditions
• Poor Design
• Inappropriate Use of Technology
• Operation
• Inexperienced Stakeholders
• Demographic Change
• Environmental Impact

The public sector wants sponsors (private sector) to bear a significant part of the project risks. Risk typically borne by the project sponsors through the project company include those of construction and completion risks, operating risks, supply risks, and currency and interest rate risk. It is common for the private project sponsors to both bear risks the risks that they are familiar with and also those risks that they are in a position to best manage. These include most development risks, construction and completion risks and operating risks. The sponsors will however, hesitate to agree bearing responsibility for uninsurable risks that are unquantifiable and outside their control, such as political risks, country commercial risks, indeterminate demand risks and uninsurable force majeure risks. There are cases whereby the government still wishes to transfer some of these risks to the private sector, and in doing so must accept higher costs as a consequence.
When a government first embarks on a project procured by the PPP approach, it may be necessary for a certain level of government support to be given towards minimum levels of demand and therefore revenue. Most project related risks can be transferred to the private sector, however the risks of demand and revenue could in some facilities, expose the private sector to more risk than deemed acceptable. The level and type of risk borne by the public sector tends to be an important indication to the financial community and therefore potential investors, of the government’s commitment to the project. Governments may bear or share the identified risks through performance guarantees, stand-by loan arrangements or compensation provisions.

At the uppermost level, basic risk allocation for the individual PPP project is defined in the project agreement between the project company and the host government awarding the concession. The importance of a comprehensive risk analysis in projects as complex as large PPP infrastructure projects has the benefit of helping to establish financial and technical feasibility, facilitate improved allocation of the risks through the agreement of suitable and equitable contract clauses and insurance, and a more positive and rational risk-taking attitude results from a carefully prepared risk analysis as the risk takers clearly know where they stand.

7.4 PROJECT SUCCESS

When considering concession contracts, such as PPP, issues critical to successful risk management of PPPs:

- Developed legal and economic framework
- Favourable inflation, exchange and interest rates
- Financial capability and support
- Technical innovation
- Appropriate risk allocation
- Avoiding delays and cost overruns
- Comprehensive feasibility study
• Existing infrastructure
• Political stability and support
• A well prepared Environmental Impact Statement
• Expertise
• Local partner(s)
• Shared authority
• Transparency
• Commitment
• Strong private consortium
• Developing a culture of partnership
• Bid/Tender process

The successful management of risk factors is vital for managers engaging in improvement of their organisation and/or projects, as they will clearly indicate how much progress is being made in particular areas.

7.5 RISK FACTOR FRAMEWORKS

Consideration given to PPP characteristics and perceptions of risk factors and successful risk management has allowed the development of overall risk factor frameworks. With application to PPP projects generally, the framework serves the purpose of raising awareness to factors at an early planning stage, such that further consideration can be implemented where applicable. The framework considers issues from all perspectives throughout the construction and development phase through to the operational and eventual transfer phase. The undertaking of a 2-stage case study approach allowed the identification of risk factors at both organisation and project level and also provided successful strategies for risk management in PPPs.
7.6 CASE STUDY RISK FACTORS

With regards to the 2-stage case study process, Stage 1 provided a more holistic set of results given that the study was at organisational level and Stage 2 identified more specific project-based risk issues.

As described earlier in this chapter, the results from Stage 1 outlined a number of current themes with regards to social infrastructure PPPs:

- The PPP procurement model and the Australian market
- Characteristics of social PPP projects
- Design and Construct (D&C) versus Design and Construct in a PPP – Bidding Costs
- Legal costs
- Standardisation of documentation
- Design documentation
- Innovation
- Public Sector Comparator (PSC) and Role of Government
- Lifecycle costs and future proofing
- Debt and equity
- Bundling and economies of scale
- Current Australian PPP projects

At Stage 2 of the Case Study (Project Level) the following risk management issues were identified:

- Consortium structure
- Tender/Bid process
- Approval process
- Market risk
- Debt and equity
In all four of the case study projects the risks of a political, legal and commercial nature are identified as the most significant as they are all issues that the project company has little control over. In developed countries, such as Australia, where legal systems are well tested and proven to be very reliable, concession companies can undertake to carry most risks while receiving very little guarantees in return. This logic was proven correct in the context of the case study projects.

It was found that the majority of risks identified while reviewing the literature were relevant to varying degrees on the Stadium Australia project. Beyond these issues, there were several risks considered unique to Stadium Australia. They initially centred upon the issue of Olympic Games tickets and gold membership rights associated with equity investment and continue to relate to various operational risks with regards to tenancy agreements, attracting sporting and entertainment events and the planned reconfiguration that will alter seating structure and provide a retractable roof.
The most significant risks identified with Stadium Australia during the case study stage include the following:

- Bidding risk where substantial financial investment was spent during the tender and negotiation stage in the hope of being awarded the project.

- The technical, environmental and construction related risks were of significant concern and exacerbated by the high level of public scrutiny and profile.

- Market risk of being able to continue to attract the events, and subsequent necessary attendances, to the stadium.

- The risk issue of the ability to raise both debt and equity given the innovative financing methods and extremely complicated consortium structure.

The most significant risks identified with the Sydney SuperDome during the case study stage included:

- There were no competitive protection arrangements and resulted in the SuperDome having to compete with a major rival and established business entity elsewhere in Sydney.

- Operations risk in the form of an Asset Management Plan incorporated into the Project Agreement up to year 20 of the 30 year concession period.

- Marketing risk in having to continue to attract events and tenants to the Arena over the 30-year ownership and operations period.

The most significant risks identified with the Mater Hospital during the case study stage included:
• The proposed revenue streams from the Government to the private sector are based on a monthly ‘performance based’ payment structure. The main risk issue being the competent maintenance and operation of the hospital including the management of the health sector employees and also by ensuring contractual benchmarks and agreed key performance indicators are achieved.

• Interface risk is managed by the Project Company who must ensure that the provision of its services do not disrupt the ongoing operation and functions of the hospital.

• Inspection and auditing rights are managed by the State Government who requires the Project Company to ensure its Operator and Construction Contractor keep appropriate books of accounts and have its financial statements audited annually. The State government insists that within 20 business days after each six month period the Project Company must provide various financial information and also provide the Project Director with all documents, reports and plans which it provides to the Financiers.

The most significant risks identified with Top Ryde during the case study stage included:

• Compliance and Due Diligence risks appeared at the forefront due to this being the first local authority (council) led PPP in NSW. This was supported through the development of the Tripartite Agreement,

• Community risk given that Top Ryde is the catalyst for re-planning and regenerating Ryde Town Centre as a whole and the nature of its public, civil, commercial and road based mix of infrastructure.

• Ongoing financial risk with the commercial and retail component of Top Ryde as the operator has a complex funding arrangement with six financial institutions and must ensure that demographic growth (customers) and commercial tenants are successfully managed.
Over-arching these three themes above appears to be the adoption and integration of successful relationship management.

The risk findings of the case study projects are supported by much of the historical and recent research into PPPs, according to Allen (2001); Akintoye et al (2002); Li et al (2005a); Jefferies (2006); Walker and Rowlinson (2008); Love et al (2011); World Bank, (2012); NSW, (2012); and VIC, (2013) risk should be allocated to the party that is best able to manage it. Risk transfer issues reinforce the findings that the design build, finance and operating risks should be completely transferred to the private sector.

7.7 SUCCESSFUL RISK MANAGEMENT

The review of project documentation and the interview process of the Stadium Australia case study project identified the following examples of successful management of risk factors:

• The consortium had a wealth of expertise, considerable experience, high profile and a good reputation. The consortium structure consisted of stakeholders who embodied great teamwork, had complimentary styles and general trust.

• An efficient approval process assisted the stakeholders in a very tight timeframe.

• Innovation in the financing and equity raising methods meant that the consortium had a very good ‘winning’ strategy. They demonstrated the ability to raise both debt and equity.

• Excellent relationships with organisations who use the facility as part of their operation. Several agreements are on-going with Australia’s main sporting bodies and organisations such as the NRL, AFL, ARU and FFA with regards to staging regular and one-off events.

• The excellent quality of infrastructure that connects Stadium Australia to the rest of Sydney and wider NSW. This includes a large local railway station, several local
multi-story car parks, an extensive connecting Sydney suburban and regional NSW rail network, extensive State Transit Bus network and a host of upgraded or new connecting road and motorway links.

In reflecting upon the success factor issues from the perspective of the remainder of the project’s concessionary period, the most significant issue remains that of achieving sufficient revenue. The success factor underlying this particular issue is the logic of achieving better economies of scale out of a much larger venue, when comparing the Stadium to current, alternative venues in NSW. To date this has proven true with the ‘sell-out’ of several events. The ability to maintain the required revenue will then indeed contribute significantly to achieving an all-round successful project. The success in order to be able to continue to attract tenants and events is also being successfully managed by the planned further reconfiguration of the stadium beyond 2015 when the seating is redesigned and a retractable roof is added to improve the event-day experience for the paying spectators.

The SuperDome case study process identified the following examples of successful management of risk factors:

• The issue of bidding risk was successfully managed by the Government in that they paid the loser after two tenderers were led to the latest possible tendering stage and this resulted in even greater competition.

• The SuperDome project agreement was a very streamline approval and negotiation process helped by the Government having very clear project objectives and by using a significant reflection process from previous tendering experiences on similar project(s).

• Business diversification that supported the core operation of the arena.

• The successful private sector consortium also had a large appetite for risk that extended into wanting to compete with the nearby Sydney Entertainment Centre.
• Sale of ownership and operation from the Millennium consortium to firstly PBL and currently Nine Entertainment, who also then engaged a stadium events management operator, AEG Ogden, who have significant experience and extensive networks in the area of sports and entertainment management. The Arena has been transformed from performing poorly, in terms of contracting tenants and staging regular events, to consistently being ranked in the global top ten of highly performing multi-use arena’s.

With the remainder of the project’s concessionary period in mind, as with Stadium Australia, the most significant issue of success for the SuperDome remains that of achieving sufficient revenue. The on-sale of ownership and operation firstly in 2006, and more recently in 2011, with both significant naming rights agreements and the involvement of experienced arena operators has ensured business success in at least the medium term and bodes well for the remaining 15 years of the ownership/operational agreement with the NSW Government.

The Mater Hospital case study process identified the following examples of successful management of risk factors:

• Sponsor risk was managed by the NSW Government in that once the decision was made to use the PPP approach as opposed to traditional forms of procurement, they carefully considered which particular PPP model to use (i.e. in this case a typical BOOT agreement). A rigorous process for the allocation of risk was carried out and a process of reflection with a detailed study of previous hospital PPPs, both in NSW and VIC, performed. The NSW Government contractually ensured that if the Novacare Consortium fails then the Government has reduced its financial exposure by ensuring that tripartite deeds and guarantees, debt financing agreements, securities, contractor guarantees, insurances et al have been put in place.

• With regards to Asset Ownership, and upon initiating the procurement method as PPP, the project scope determined a term of 28 years. Clinical services were to remain the responsibility of NSW Health while non-clinical (building maintenance, grounds, security, cleaning et al) services were to be completed by the private sector.
Payments from the Government for services were based on performance benchmarks and significant assessment was completed for design risk, construction risks, interface risks and hospital disruption, financial risks et al to determine the best ‘value for money’ proposal against risk transfer and using the Public Sector Comparator (PSC).

• The Financial risks on the Mater primarily relate to whether firstly the project doesn’t achieve finance and secondly if the project doesn’t succeed financially and fails. The impact for Government is that it must maintain key services. In this instance the NSW Government has to accept the risk, however, it installed additional measures to reduce financial exposure above and beyond the obligations of the project deed in that they applied a more robust financial scrutiny to the bidders prices than conducted with earlier PPP projects procured by the NSW Government.

• The operating risk relates to the services delivered under the PPP contract and whether the private sector can deliver those services to appropriate specifications, standards and regulations within the financial parameters of the consortiums bid. The payment mechanism in the Mater requires two main principles, one being performance based (KPIs) and the other is dependent on the quality and quantity of services provided. Risks were mitigated by the integration of performance guarantees, defects liability period, completion deadlines, inspection and step-in-rights, termination clauses, handover condition criteria, compensation and relief events, and benchmarking and market testing.

The Top Ryde case study process identified the following examples of successful management of risk factors:

• Community support for the development of Top Ryde was significantly high. This risk was initially managed at approval stage by going out to a full public review and debate and a continued community interface was also implemented. Constant assessment on the impact on community is important to ongoing project success.
• Communication channels were open and collaborative at all times and meant that there was the ability for project stakeholders to talk to senior people at very short notice. At a project operation level, the establishment of the Project Control Group (PCG), as part of the three-tierd communication strategy, led to significant improvements in the process and culture of face-to-face contact with key project players. The culture of open and collaborative discussion led to the avoidance of contract disputes and key issues were identified at PCG level enabling senior project players to then act by solving problems immediately. A major achievement of this project is that the key communication team was kept small and consistent and this has worked successfully. The Stakeholders' project managers have remained unaltered during the project and as a small team remained focussed and consistent facilitators for their organisations.

• All senior project stakeholders within the main public sector body, Ryde Council, were involved in the negotiation and planning process and developed successful relationships with senior project stakeholders from both the private and public sectors. Relationships within the project were driven by a ‘win-win’ situation and the successful management of very diverse stakeholder expectations. The cultural issue of relationship management (teamwork, trust, mutual goals et al) helped to drive the project away from typical adversarial contracting.

7.8 A UNIQUE RISK ISSUE

On PPP projects, the main risk takers are the project company and the main contractor. Commonly, the Main Contractor is in a minor equity role and the end of their involvement comes once the project has been ‘handed over’. However, in several aspects of the case study projects this was not the case. With Stadium Australia, there was Main Contractor involvement after project completion both during the Olympic period, where there were a number of cases of remodelling the stadium for specific events, and also during the post-Olympics reconfiguration process involving substantial redevelopment to half of the stadium. The Contractor has also been involved in pre-tender discussions for the proposed further reconfiguration that is planned for 2015. Likewise with the SuperDome, the main private
sector body, Abi Group, were both the Main Contractor and the subsequent facility Operator, all be it for only the first six years or so of operation before on-selling their rights. This issue does, in effect, created another ‘zone of project criteria’.

7.9 GOVERNMENT AS A KEY STAKEHOLDER

Given this growing trend for governments to place major infrastructure projects into the private sector then the importance of the host government as a contract partner is often neglected. If the host government dithers, or fails to deliver promises, at any stage of the PPP project, the sponsors are left with a project that is unable to live up to economic promise. Political climate, regulatory and legal policies, tender/bid assessment procedures, risk transfer strategies and the transparency of government operations determine the success or failures of PPP schemes.

7.10 THE NEW SOUTH WALES GOVERNMENT

In basic terms, the NSW Government’s involvement in PPP projects is simply to use them as ‘financing arrangements’. Current government policy has led to a reduction in infrastructure investment and it is looking for partners in order to develop projects and make a financial contribution. In exchange for this, the government will provide the development land and contribute to revenue as these facilities operate. Future public projects, and indeed the development of PPPs, means that some government facilities may be more efficiently operated by the private sector where there is more profit incentive to streamline operations of the facility. It therefore makes it possible for the private sector to develop a facilities management programme to operate a building and maintain that asset for the Government so that the Government then concentrates only on conducting what it perceives as being its core business.

This is supported by the NSW Government (1998); (2000); (2001); and (2012), in their various PPP guidelines and policy documents, which state that the government doesn’t need
to own a school, or a prison, or a hospital, it merely needs to have a facility, in the case of a school for example, where it can use it to teach people.

Previously, the Government has a poor record of documenting building maintenance issue. It owns an asset and operates it, but rarely documented this over the past decade or so, until the introduction of initially NSW (1998) ‘Total Asset Management’, and then NSW Government (2001), and more recently NSW Government (2012), that attempted to address that. This issue of looking after its’ own Government building’s as an asset stock is done quicker more cost effectively by the private sector as they are more driven by financial savings or profit. The real onus is then on the Government to specify what its outcomes are. Historically, they do this poorly.

The private sector is more attuned to carrying out what they have to do and is financially driven. Besides private sector involvement via PPPs, public sector groups such as the NSW Roads and Traffic Authority (from 2013 renamed as the Roads and Maritime Services – RMS) are now out-sourcing their road maintenance; the Department of Defence outsources the delivery of port services and support craft for the Royal Australian Navy and facilities management on many of it’s Army buildings; the Department of Employment, Workplace Relations and Small Business and the Department of Education, Training and Youth Affairs, outsource IT infrastructure; NSW Department of Public Works outsources minor works contracts; many NSW local authority councils outsource maintenance and waste management et al. Several major public and private buildings are also out-sourcing maintenance to the body most appropriate equipped to deal with this form of management, the original builder.

These approaches are very similar to PPP projects, where public facilities are operated by a private sector body, and for complete success, project outcomes and expectations must be clearly described, not only for the finished product, but the complete project cycle.

7.11 KEY VARIATIONS IN THE CASE STUDY PROJECTS

There were some differences in the SuperDome process when compared to that of Stadium Australia. The key difference being that the Government published its design to help the
consortia understand more of what the Government expectations were. Two groups were taken to the end of the tendering process, with the losing tenderer getting financial compensation. This resulted in greater certainty that the Government got the best and most competitive outcome (deal). It certainly saved months and months in negotiations as the tenderers respond quicker when they are in competition. In a traditional process, once a successful tenderer has been selected as the preferred component, and it’s merely a matter of completing the formalities and issues tend to get prolonged.

The SuperDome was a good process for the NSW Government and it was a good process for the private sector. It has delivered an outstanding award winning building. In the first 6 years of operation it struggled as a business, and it was only when the Abi Group based consortium Millennium, on-sold the ownership and operational agreement to PBL/Nine Entertainment and the arena was then managed by AEG Ogden, one of the world leaders in stadia and events management, that the business started to become successful. Stadium Australia was a good process that delivered a fine facility, but this was not as refined as the SuperDome process and product. However, Stadium Australia does appear to have a slightly more viable business future, with several long-term tenancy agreements in place across a diverse range of sporting events, with business success to increase further with the planned reconfiguration work of the stadium in 2015.

The SuperDome bidding/tendering process, however, does provide a reference model to build upon in future PPP projects. It was an expensive process, running two tendering teams and paying the loser tender costs, so the Government must be certain that its’ outcomes can justify that additional expense.

The Mater Hospital redevelopment was a typical BOOT model used on what can be described as a classic social infrastructure PPP project. The agreement between the NSW Government and the proposed private sector consortium involves a 28-year project term for the financing, design, construction and commissioning of: new hospital buildings; refurbishment of the old Mater Hospital; transfer of local mental health services onto the site; maintenance of buildings, car-parks and grounds, utility supply and management services et al (operational services); and provision of a range of ‘non-clinical services’ (security,
catering, cleaning, general services et al) while managing public sector health employees (who remain public sector employees of the Hunter New England Area Health Service) under a Labour Service Agreement. The proposed revenue streams from the Government to the private sector are on a monthly ‘performance based’ payment structure. The Mater Hospital redevelopment was the largest hospital to date procured using PPP in NSW. A number of harsh lessons learnt from previous healthcare PPP projects were reflected upon, particularly in the area of operational risk, any many of the core services were subsequently kept within the operational realms of the public sector, all be it in some instances with the private sector employing public sector staff under a ‘labour services agreement’ with appeased the private operator who was keen to embrace more core services as part of the PPP model. Further release of the core services to the private sector was resisted given the pressure from political groups, unions and the community at large who still saw some PPPs as ‘privatisation by stealth’.

Top Ryde was unique in that it was the first local authority led PPP in NSW, certainly one of such a mixed-use nature, and from a tender point of view built on the process that was used for the SuperDome. While only one tenderer was used from a D&C viewpoint, as opposed to two on the SuperDome, Top Ryde ensured some form of competitiveness with the sole D&C Contractor by ensuring that their costs were continuously cross-checked by using an independent cost consultant to analyse submitted staged tender figures with current industry cost benchmarks and subsequent negotiation of prices were discussed if there were any major discrepancies.

7.12 THE FUTURE OF PPP SCHEMES

Despite all the positive and successful risk management strategies outlined in the case study results of this thesis, there are still numerous fundamental reasons as to why the PPP process requires continuous review and suitability assessment. This has been supported by many commentators over the last 15 years including the likes of Shepherd (1999); Grimsey and Lewis (2002); Akintoye et al (2003); Grimsey and Lewis (2004); Curnow et al (2005); Duffield (2005); Hardcastle et al (2005); Bult-Spiering, M & Dewulf, G (2006); Jefferies (2006); Australian Commonwealth Government (2008) and more recently Love et al (2011);
UK Government (2012); World Bank (2012); RICS (2013); UK Government (2013); and Liu and Wilkinson (2014) who state:

- Lack of flexibility in the evolution of the project where the host authority must juggle competing bidders and keep them on the same baseline, often while simultaneously processing an Environmental Impact Statement.
- The current arrangements lack flexibility in operation whether it be extending or widening a tollway or conversion of a power plant.
- Reform the bidding process to make it more efficient, for example reduce the number of bidders and develop more competitive negotiated tender strategies and make more broader assessments of the project’s VfM.
- Revise the benchmarking tools, such as the Public Sector Comparator
- Continue to refine the methods for risk allocation
- Establish industry and government advisory bodies (Infrastructure Australia is a great start) to promote research, provide seminars, establish think-tanks and committees, disseminate information and guidelines et al.
- High transaction costs still exist.
- Standardise contracts but ensure flexibility and innovation are not compromised.
- Transfer of knowledge at several levels, both in the broad spectrum from established to emerging markets and on the more narrow focus from project to project.
- Address negative perceptions of PPPs, particularly by the broader community, such as union groups who see it as the privatisation of public sector services and the tax-payers who have seen several projects delivered over budget and late and leaving them with having to pay more for the use of that infrastructure.

This is still much support for PPP’s, with the likes of Lenard et al (2002); Li et al (2005a); Jefferies (2006); McGeorge et al (2008); Commonwealth Government (2008); NSW Government (2012); VIC Government (2013); and RICS (2013) all stating that private sector delivery of public facilities using private sector expertise can yield efficiency savings delivering better value for public money.

Even though Curnow et al (2005); Jefferies (2006) state that the the scope of work needs to be
enlarged to make Social Infrastructure PPPs more attractive to the private sector and current models restrict the involvement of the private sector during the operational stages of a PPP, however, the growing expertise and diversification of private sector stakeholders reinforces the fact that they are still keen to be heavily involved. Furthermore, Jefferies and McGeorge (2009) and Regan et al (2011) state that even though PPPs are a new approach to social infrastructure they have been reforming the costly inefficiencies associated with traditional government procurement methods as they remedy the major failings of traditional procurement models of delivery time, cost overruns, poor life-cycle costing practices, lack of rigour in the asset allocation and suboptimal service delivery outcomes.


These guidelines continue to be a means of establishing partnerships between the public and private sectors and aiming to deliver improved services through appropriate risk transfer, innovation asset utilisation and integrated complete life-cycle management and operation. The guidelines provide a framework that enables both sectors to work together to improve public service delivery through private sector provision of infrastructure. This does not mean privatisation of public services, as the Government will continue to provide core issues, however the private sector is becoming more and more equipped to even take on this additional responsibility.

As the mapping process performed in this thesis confirms, the PPP approach, which has previously been mainly used for roads, tunnels, and bridges, is now being extensively used to build government schools, prison, hospitals, civic buildings and precincts, mixed-use
developments, sports stadia and other public facilities and therefore opening up an entirely new approach to the establishment and maintenance of social infrastructure in NSW.

Concession procurement models, such as PPP, continuing to grow as they offer opportunities for value improvement through involvement of the private sector. A competitive commercial approach with innovation and the application of better risk management can reduce the level of risk and bring enhanced value. Bundling risks together with the organisation best able to manage those risks is critical to this process.

The blend of special skills and experiences incorporated into the joint approach of PPP’s allow the public sector client and private sector supplier to achieve an outcome which neither party could achieve alone (Akintoye et al, 2002; Grimsey and Lewis; 2004; Hardcastle et al, 2005; Commonwealth of Australia, 2008; Jefferies and McGeorge, 2009; Zeng aand Tiong, 2010; Ng et al, 2012; World Bank, 2012).

The emergence of PPP schemes provides a means for developing the infrastructure of a country without directly impacting on the government’s budgetary constraints. The principles embodied in public-private sector partnerships is now established worldwide as a significant means of developing public services such as infrastructure. The case study projects have shown evidence in all respects of managing the risk factors and fulfilling the success factors required for a sustainable operation. Each of the case study projects show evidence required for sustainable operation and are examples of how both Government and private industry is attempting to meet Australia’s need for infrastructure in the new millennium. Stadium Australia and the SuperDome are examples of benchmark projects with regards to the public-private partnerships of sporting and entertainment centres; the success of the Mater hospital redevelopment can be attributed to a thorough public and private sector stakeholder analysis of previous healthcare PPPs, which was paramount in developing the operational model for the Mater, and subsequently laid the footings for the operational agreement for the recent Billion Dollar plus new Royal Adelaide Hospital in South Australia; and Top Ryde’s success was driven by the broader context of delivering developments to the City of Ryde and in being the first major local authority PPP in NSW whereby relationships were driven by a significant ‘win-win’ culture drive the project away from typical adversarial contracting.
PPPs act as an essential but relatively minor part of Governments’ asset acquisition program. However, as they tend to be large, complex projects that can affect people’s lives for a very long time, PPPs arouse a great deal of interest and passion. Social PPPs are also viewed as high risk/low gain projects by some of the major stakeholders in the development and construction sector. Therefore, it is important that:

a) non-value-added transaction costs in the PPP bidding process are identified;
b) risk is properly identified and allocated to the parties best able to carry the risk;
c) PPPs must become a true partnership with the scope of work, particularly at the operation stage, broadened and;
d) methodologies are developed to objectively evaluate project success.

Issues remain with social infrastructure PPPs, as Regan et al (2011) confirm, such as uniform methods for accountability and transparency, private sector capacity constraints and maintaining a competitive bid market, incomplete contracts and long service intervals. These are challenges for future improvement of the model but the question no longer needs to be asked as to whether PPPs are a good or a bad thing, but how the model can be improved to achieve better public services in the future.

7.13 RECOMMENDATIONS

7.13.1 Application of the Thesis Results

The following question must be asked in order to relate the findings of this thesis with their application to industry:

What can industry practitioners do with the research results?

The outcome of this thesis should be of assistance to decision takers in both the public and private sectors by making explicit factors which are currently accepted as being implicit in PPP bidding and project evaluation. Firstly, the thesis provides detailed discussion on various
aspects of PPP. This includes definitions, concept aims, project mapping, successful advances and reasons for its surge in popularity. This will be a valuable reference source for both Public and Private Sector stakeholders considering taking part in a PPP project.

Further, the case study information can be added to various data-base collections, particularly with regards to procurement method decision making and those that are used for the identification of key risk factors and successful risk management when considering the PPP option for delivering social infrastructure projects.

The findings of the research, represented in the form of the risk factor frameworks, also add an updated body of knowledge for this increasing form of procurement and provides perceptions from all of the major organisations in Australia who bid for PPPs and subsequently documents four of Australia’s most recent PPP projects. The frameworks can be used as a risk management tool in order to facilitate project success in PPP’s.

7.13.2 Recommendations for Further Research

As there are still ongoing uncertainties with regards to the provisions of a nation’s infrastructure, there is a continuing requirement to carry out research involving all aspects of execution of Public-Private Partnerships in infrastructure investment.

The majority of infrastructure projects are now based on operation budgets chiefly concerned with the planned projects cash flow, assets and financial performance as the main basis for investor security. Therefore, such projects represent higher overall risk compared to traditional project lending. Further research is therefore required into the various financing solutions, such as PPP’s, tax levies on developers, and asset levies on existing property owners who derive a benefit from the provision of new infrastructure (Asset Value Capture).

Ongoing research is also vital in terms of international collaboration, so that aspiring PPP stakeholders can look at successful international approaches, such as those in the UK, where the PFI approach has been superseded by PF2. Over the last 20 years the UK has long been a leader in modernising the way in which public infrastructure and services are delivered and
finding new ways to work in partnerships with the private sector. Not all PPPs have, however, been successful, and even the PFI approach became tarnished by its waste, inflexibility and lack of transparency. In 2012, the UK Government initiated a fundamental reassessment of PFI, which led to their revised model, PF2, for the continuation of private sector expertise in the delivery of public infrastructure and services.

PF2 takes an important new approach to:

• the investment of public sector equity in the PPP;
• the restriction of scope of Contractor services to Hard FM;
• the flexible management of soft services, within the PPP framework, by the Authority;
• the transparency of operational and financial information on PF2 projects (but without overburdening the resources of the Contractor);
• the retention of risks by the Authority where more appropriately managed by the public than
• the private sector; and
• the strengthening of the new PPP structure so as to attract new sources of investment and
• finance to the market.

UK Government (2012; 2013)

The PPP approach has the potential to be one of the most advanced procurement developments in the last 50 years so additional research would be necessary in order to determine how these benefits could deliver greater rewards to Australia. Research should not be merely a replication of the UK model, but must be in the form of a model for the assessment of PPP’s which is sophisticated enough to achieve greater efficiencies in finance, design, construction and operation within the local context.

As Australia has a multi-jurisdictional government system (Federal, State and Local), this reinforces the need for greater efficiency in government infrastructure and services. Multiple agencies frequently duplicate services and propose conflicting legislation. PPP’s offer an opportunity for public and private sector bodies to form partnerships to improve efficiency.
through innovation. Therefore, research that facilitates the standardisation of government approaches to PPP’s would be a useful.

Forms of Public Private Partnerships have, in the main, been successfully implemented. However, the private sector carries a severe financial burden in preparing submissions and legal and financing costs are very high, perhaps even unsustainable. Therefore further research is also required into standardised approaches to the funding of infrastructure.

In summary, it is suggested that further research opportunities, with regards to PPP projects, should be undertaken in the following areas:

- Standardised approaches to the funding of infrastructure.
- Standardised approaches to infrastructure provision (preferred delivery mechanisms).
- The development of long-term PPP’s that demonstrate expertise in infrastructure provision.
- The establishment of a database of case studies, that can be continuously revised, particularly as more and more PPP projects approach the end of their respective concession periods and are transferred back to Public Sector ownership.
- Measure the benefits to the broader public (tax payer).
- Sophisticated financial risk assessment and more robust PSC.

7.13.3 Concluding Remarks

The establishment of specialist Government units for the likes of PPP, such as Infrastructure Australia, which was created as part of the Infrastructure Act in April 2008, is a significant step in the right direction. However, ongoing research into Public-Private Sector Partnerships is vital to ensure the development of sustainable procurements methods, the continued funding of a nation’s infrastructure, successful operational viability, fair risk distribution and subsequent financial success and that greater rewards are provided for all stakeholders, particularly the community at large.
Notwithstanding any reservations that may exist on PPPs, there is general acceptance that social PPPs are part of the procurement landscape in Australia and likely to remain so for the foreseeable future. The growing acceptance of alternative project delivery and finance methods, such as PPPs, implies that governments will be increasingly faced with strategic choices whether to use ‘public’ or ‘private’ mechanisms, or a combination of the two, in the provision of infrastructure facilities. The emergence of PPP schemes provides a means for developing the infrastructure of a country without directly impacting on the government’s budgetary constraints. The principles embodied in PPPs is now established worldwide as a significant means of developing public services such as infrastructure.
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APPENDIX ONE: HUMAN RESEARCH ETHICS COMMITTEE (HREC) APPROVAL
Thank you for your recent application to the University of Newcastle Human Research Ethics Committee (HREC) for approval of the protocol identified above.

Details of previous approvals for Initial, Renewal and Variation applications are available upon request.

A Certificate of Approval is enclosed.

THE CERTIFICATE AND THIS ADVICE ARE TO BE RETAINED THEY ARE IMPORTANT DOCUMENTS

- Note any comments related to the approval.
- Where the HREC is the lead or primary HREC, if the research requires the use of an Information Statement, ensure the Reference No. is inserted into the complaints paragraph in the approved document(s) prior to distribution to potential participants.
- Where the research is the project of a higher degree candidate, it is the responsibility of the project supervisor to ensure that the candidate receives this approval advice.

Conditions of Approval

This approval has been granted subject to you complying with the requirements for Monitoring of Progress, Reporting of Adverse Events, and Variations to the Approved Protocol as detailed below.

PLEASE NOTE: In the case where the HREC has "noted" the approval of an External HREC, progress reports and reports of adverse events are to be submitted to the External HREC only. In the case of Variations to the approved protocol, you will apply to the External HREC for approval in the first instance and
then Register that approval with the University's HREC.

- **Monitoring of Progress**

Other than above, the University is obliged to monitor the progress of research projects involving human participants to ensure that they are conducted according to the protocol as approved by the HREC. The *Certificate of Approval* identifies the period for which approval is granted and your progress report schedule. A progress report is required on an annual basis, you will be advised when a report is due.

- **Reporting of Adverse Events**

1. It is the responsibility of the person **first named on the Certificate** to report adverse events.
2. Adverse events, however minor, must be recorded by the investigator as observed by the investigator or as volunteered by a participant in the research. Full details are to be documented, whether or not the investigator, or his/her deputies, consider the event to be related to the research substance or procedure.
3. Serious or unforeseen adverse events that occur during the research or within six (6) months of completion of the research, must be reported by the person first named on the Certificate to the (HREC) by way of the Adverse Event Report form within 72 hours of the occurrence of the event or the investigator receiving advice of the event.
4. Serious adverse events are defined as:
   - Causing death, life threatening or serious disability.
   - Causing or prolonging hospitalisation.
   - Overdoses, cancers, congenital abnormalities, tissue damage, whether or not they are judged to be caused by the investigational agent or procedure.
   - Causing psycho-social and/or financial harm. This covers everything from perceived invasion of privacy, breach of confidentiality, or the diminution of social reputation, to the creation of psychological fears and trauma.
   - Any other event which might affect the continued ethical acceptability of the project.

5. Reports of adverse events must include:
   - Participant's study identification number;
   - date of birth;
   - date of entry into the study;
   - treatment arm (if applicable);
   - date of event;
   - details of event;
   - the investigator's opinion as to whether the event is related to the research procedures; and
   - action taken in response to the event.

6. Adverse events which do not fall within the definition of serious, including those reported from other sites involved in the research, are to be reported in detail at the time of the annual progress report to the HREC.

- **Variations to approved protocol**
If you wish to change, or deviate from, the approved protocol, you will need to submit an Application for Variation to Approved Human Research. Variations may include, but are not limited to, changes or additions to investigators, study design, study population, number of participants, methods of recruitment, or participant information/consent documentation. Variations must be approved by the (HREC) before they are implemented except when Registering an approval of a variation from an external HREC which has been designated the lead HREC, in which case you may proceed as soon as you receive an acknowledgement of your Registration.

### Linkage of ethics approval to a new Grant

HREC approvals cannot be assigned to a new grant or award (ie those that were not identified on the application for ethics approval) without confirmation of the approval from the Human Research Ethics Officer on behalf of the HREC.

With best wishes for a successful project.

Professor Allyson Holbrook  
Chair, Human Research Ethics Committee

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### Linked University of Newcastle administered funding:

<table>
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<th>Funding body</th>
<th>Funding project title</th>
<th>First named investigator</th>
<th>Grant Ref</th>
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<td>ARC (Australian Research Council)/Linkage Projects(**)</td>
<td>An investigation of the allocation of risks during the bidding process for public and private sector partnerships</td>
<td>Chen Swee,Eng</td>
<td>G0184255</td>
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<tr>
<td>Construction Industry Institute Australia/Seed Funding(**)</td>
<td>An Investigation of the Risk Management process during the bidding stage of Social Infrastructure PPPs</td>
<td>Jeffries Marcus,</td>
<td>G0189735</td>
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Applicant: (first named in application) | Mr Marcus Jefferies
--- | ---
Co-Investigators / Research Students: | Professor Swee Chen
 | Ms Katie Cadman
Protocol: | An investigation of the allocation of risks during the bidding process for PPPs

In approving this protocol, the Human Research Ethics Committee (HREC) is of the opinion that the project complies with the provisions contained in the *National Statement on Ethical Conduct in Human Research, 2007*, and the requirements within this University relating to human research.

**Note:** Approval is granted subject to the requirements set out in the accompanying document *Approval to Conduct Human Research*, and any additional comments or conditions noted below.

### Details of Approval

| HREC Approval No: | H-198-0306 |
| Date of Initial Approval: | 15-Mar-2006 |

### Approval

Approval will remain valid subject to the submission, and satisfactory assessment, of annual progress reports. If the approval of an External HREC has been "noted" the approval period is as determined by that HREC.

### Progress reports due:

Annually.

If the approval of an External HREC has been "noted", the reporting period is as determined by that HREC.

### Approval Details

#### Initial Application

Approved

15.03.06

Approved with comments.

[a] Involvement of Chair of the Board of Advice.

The Committee sought clarification as to what role this person would have in the conduct of the research. If he was to have an active role and be privy to the data collection then it was suggested he should be named as a co-investigator in the application and the Information Statement for participants as his involvement might be viewed as a potential conflict of interest by some potential participants.

[b] Confidentiality.

Given the small number of participants and the relationship between the researchers and the industry partners, it might not be possible to give an absolute assurance of confidentiality to the participants. They could be identifiable by descriptors other than their name, eg position in company, or by their comments alone. If these issues were relevant, then the limits on
confidentiality were to be acknowledged in the Information Statement.

[c] Information Statement.
The Committee agreed that the document required the following amendments.
(i) Present on University letterhead.
(ii) Clarify whether participants were presenting their personal views or participating on behalf of their company. If the former they should be reminded not to divulge sensitive business information without the consent of their company. If representing the company, the Consent Form should include a statement "I am participating as a representative of (company name)."
(iii) Given the industry partner’s stake in the study and the likelihood that the companies would know who was invited to participate in the small study sample, could an absolute assurance really be given that whatever decision they made regarding participation they would not be disadvantaged in any way?
(iv) Limits on confidentiality as per [b] above.
(v) Last page at Research Team - add the affiliations of the investigators.
[d] Consent Form.
The Committee agreed that the document required the following amendments.
(i) Present on letterhead.
(ii) Add a consent statement relating to the archival project data.
(iii) If representing the company, add a statement to that effect as per (c)(ii) above.

30.03.06
Response received and considered by Chair. Approved with Comments to continue pending further amendments to Information Statement and Consent Form.

21.04.06
Response received and accepted. Approval confirmed.

Progress Report / Renewal
13-May-2009
Approved

Variation
08-Dec-2010
Variation to:
1. Collect additional data from industry partners, including additional case study projects.
2. Amend the Participant Information Statement, Consent Forms and Letter to Organisations
   - Participant Information Statement, Version 2 dated 27.10.2010
   - Consent Form, Version 2 dated 27.10.2010
   - Letter to Manager, Version 2 dated 27.10.2010
   - Organisation Consent Form, Version 2 dated 27.10.2010
Approved
The committee ratified the approval granted by the chair on 15/11/2010 under the provisions for expedited review

Authorised Certificate held in Research Services
Professor Allyson Holbrook
Chair, Human Research Ethics Committee
APPENDIX TWO: CONTRACT SUMMARY TABLE FOR STADIUM AUSTRALIA
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<tr>
<th>DOCUMENT</th>
<th>PARTIES</th>
<th>SUBJECT MATTER</th>
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<tbody>
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<td>OCA DOCUMENTS</td>
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<tr>
<td><strong>Category 1</strong></td>
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<tr>
<td>Project Agreement</td>
<td>OCA/Trustee</td>
<td>Financing, planning, designing, construction, commissioning, owning, procuring, operation, &amp; maintenance of Stadium Australia by the Trustee.</td>
</tr>
<tr>
<td>Agreement to Lease</td>
<td>OCA/Trustee</td>
<td>Agreement by OCA to grant the Lease to the Trustee on Practical Completion of Stage 1</td>
</tr>
<tr>
<td>Lease</td>
<td>OCA/Trustee</td>
<td>Grant by OCA to Trustee of possession from Practical Completion (Stage 1) until 31/1/2031</td>
</tr>
<tr>
<td>Olympic Rights Agreement</td>
<td>OCA/Olympic Rights Trustee/ Stadium</td>
<td>Regulates obligation of Olympic Rights Trustee to pay Olympic Ticket amount to OCA, and obligation of OCA to issue (via SOCOG) Olympic Tickets to Olympic Rights Holders under the Commercial Rights Agreement (CRA)</td>
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<td></td>
<td>Australia Management (SAM)</td>
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<td>OCA Consent Deed</td>
<td>OCA/Trustee/ Security Agent/ SAM</td>
<td>Regulates rights of financiers &amp; OCA, under various securities, and the right of the financiers, in event of a default, under the Project Documents or the Debt Documents.</td>
</tr>
<tr>
<td>OCA/SAM O&amp;M Deed</td>
<td>OCA/SAM</td>
<td>SAM gives certain undertakings to OCA in relation to Stadium Australia, and permits OCA on behalf of NSW Government to hire and use it for major international sporting events.</td>
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<tr>
<td>PAFA Act Guarantee</td>
<td>Crown in right of the State of NSW</td>
<td>Guarantee, by the Crown in right of the State of NSW, to the Trustee, among others, of OCA’s obligations under certain Project Documents.</td>
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<tr>
<td>OCA Trustee Security</td>
<td>OCA/Trustee</td>
<td>Fixed and floating charge over all of the Trust’s assets and the Trustee’s rights of indemnity to secure the Trustee’s obligations under the Project Documents owed to OCA</td>
</tr>
<tr>
<td>OCA/SAM Deed of Charge</td>
<td>OCA/SAM</td>
<td>Floating charge over SAM’s project assets and any option granted to SAM in respect of FF&amp;E to secure performance by the Trustee of its obligations under the Project Documents to certain costs of SAM and obligations of SAM under the OCA/SAM O&amp;M Deed.</td>
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<td>Venue Agreement</td>
<td>Trustee/Trust Manager/SAM/SOCOG</td>
<td>Regulates manner in which Stadium Australia is to be made available to SOCOG for and in connection with the Olympic Games and subsequent Paralympics and the Test Events.</td>
</tr>
<tr>
<td>Commercial Rights Agreement</td>
<td>SOCOG/Trustee/Olympic Rights/Trust Manager/SAM</td>
<td>Regulates marketing activities, the conduct of certain events at the Stadium and the grant of Olympic rights to Olympic Rights Trustee</td>
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<td><strong>CONSTRUCTION CONTRACTS</strong></td>
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<td>Head Contract</td>
<td>Trustee/Obayashi</td>
<td>Planning, design, construction and commissioning of Trustee Works by Obayashi</td>
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<tr>
<td>OCA Construction Contract</td>
<td>OCA/Obayashi</td>
<td>Planning, design, construction and commissioning of the OCA works</td>
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<tr>
<td>Multiplex D &amp; C Agreement</td>
<td>Obayashi/Multiplex</td>
<td>Planning, design, construction and commissioning of the Trustee &amp; OCA Works</td>
</tr>
<tr>
<td>OCA Works Co-ordination Deed</td>
<td>OCA/Trustee/Obayashi/Multiplex/Trustee</td>
<td>Defines the risk profile for the OCA Works so that it is the same as the risk profile for the Trustee Works Guarantee by Multiplex to Trustee of performance of Obayashi’s obligations under the Head Contract, OCA Construction Contract, OCA Works Co-ordination Deed and the Construction Co-ordination Agreement</td>
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<td><strong>Category 2</strong></td>
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<tr>
<td>Construction Co-ordination Agreement</td>
<td>Trustee/Obayashi/Multiplex</td>
<td>Ensures co-ordination of design and construction of Stadium.</td>
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<tr>
<td>Contractor’s Deed of Novation</td>
<td>OCA/Trustee/Obayashi/Multiplex</td>
<td>Gives OCA the right to take novation of Head Contract if Project Agreement terminated, or novation of Multiplex D &amp; C Agreement if Head Contract terminated</td>
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<td>Deed of Guarantee and Indemnity (Environmental Risk)</td>
<td>Multiplex/Trustee</td>
<td>Indemnity to be given by Multiplex to Trustee in relation to contamination</td>
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<tr>
<td>FF&amp;E and O&amp;M Undertaking</td>
<td>Multiplex/SAM</td>
<td>SAM agrees to assist Multiplex in preparing plans and indemnifies Multiplex for failure of a supplier to make FF&amp;E available which causes Multiplex to breach the Multiplex D&amp;C Agreement.</td>
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<td><strong>TRUSTEE/STADIUM AUSTRALIA MANAGEMENT (SAM) AGREEMENTS</strong></td>
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<td><strong>Category 1</strong></td>
<td>Trustee/SAM</td>
<td>Agreement by Trustee to grant Operating Sublease to SAM upon grant of Lease.</td>
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<tr>
<td>Agreement to Sublease</td>
<td>Trustee/SAM</td>
<td>Grant by Trustee to SAM of exclusive possession of Stadium from grant until 30th January 2031</td>
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<td>Operating Sublease</td>
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<td>Ensures payment out of Trust of all cost of Founders incurred prior to Financial Close.</td>
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<td><strong>Category 2</strong></td>
<td>Stadium Australia 2000 Ltd in the agreement, Hambros/Multiplex/ Stadium Australia 2000 Ltd/ the Trustee and the Trust Manager in the deed Trust Manager/ SAM</td>
<td>Describes the relationship between and the respective roles of the Trust Manager and Stadium Australia Management in relation to the Project</td>
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<td>Clause 23.7 Agreement and Release and Indemnity Deed</td>
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<td><strong>Project Co-existence and Co-operation Agreement</strong></td>
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<td>Stadium Australia Management and ANZ Bank</td>
<td>2 agreements relating to the lease by Stadium Australia Management of equipment from ANZ Bank, with purchase option</td>
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<td>Stadium Australia Management, ANZ Bank and Consolidated Press Holdings Ltd</td>
<td>Deposit to be applied against obligations of Stadium Australia Management under one of the Hire Purchase Agreements</td>
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<td>2 agreements under which ANZ bank purchases equipment from Multiplex to be made available to SAM under the Hire Purchase Agreements</td>
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<td>SAM/Security Trustee</td>
<td>Charge in favour of a security trustee over certain compensation received by SAM pursuant to the Agreement to Sublease &amp; the Operating Sublease</td>
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<td>Charge in favour of Trustee from SAM over moneys received from third parties to secure indemnities given by SAM to Trustee in Agreement to Sublease and Operating Sublease</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Stadium Australia Trust Deed</td>
<td>Trustee</td>
<td>Guidelines and provisions for operation of the Trust</td>
</tr>
<tr>
<td>Olympic Rights Trust Deed</td>
<td>Olympic Rights Trustee</td>
<td>Olympic Rights Trustee agrees to act as trustee of each Olympic Rights Holders’ Trust</td>
</tr>
<tr>
<td>DOCUMENT</td>
<td>PARTIES</td>
<td>SUBJECT MATTER</td>
</tr>
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<tr>
<td><strong>EQUITY SUBSCRIPTION AGREEMENTS</strong></td>
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</tr>
<tr>
<td>Category 1 Founders’ Subscription Agreement</td>
<td>OCA/SAM/Trustee/Trust/ Multiplex/ Macquarie/ Obayashi/Hambros OCA/SAM/Trustee/ Trust Manager/ Commercial Investors</td>
<td>Agreement by which Founders agree to subscribe for Stapled Securities</td>
</tr>
<tr>
<td>Commercial Investor Subscription Agreement (one agreement for each of GardnerMerchant, OCA &amp; Ogden)</td>
<td></td>
<td>Agreement by which Commercial Investors agree to subscribe for Stapled Securities</td>
</tr>
</tbody>
</table>

| UNDERWRITING AGREEMENTS | | |
| Category 1 | | |
| Equity Underwriting Agreement | Underwriters/SAM/ Trust Manager/ Multiplex/Hambros | Agreement by Underwriters to underwrite the issue by SAM and the Trust Manager of Gold Packages and Platinum Packages. |

Summary of Material Contracts

*(Stadium Australia Group, 1996a; Sydney Olympic Park Authority, 2002)*
APPENDIX THREE: CONTRACT STRUCTURE FOR STADIUM AUSTRALIA

I. Original Contract (1996)
II. Current Contract (2002-present)
APPENDIX FOUR: CONTRACT STRUCTURE FOR THE SUPERDOME
APPENDIX FIVE: CONTRACT STRUCTURE FOR THE MATER
APPENDIX SIX: LOCAL GOVERNMENT & PPP LEGISLATION

I. Top Ryde – Department Of Local Government (DLG) PPP Legislation And Guidelines ‘Circular To Councils’

II. DLG Local Government Act 1993 PPP Definitions

III. DLG PPP Proposal Flowchart

IV. DLG PPP Assessment For Top Ryde
PUBLIC PRIVATE PARTNERSHIPS LEGISLATION AND GUIDELINES

The Local Government Amendment (Public Private Partnerships) Act 2004 (the Act) and the Local Government (General) Regulation 2005 commenced on 1 September 2005. The Act brings into effect the recommendations of the Emeritus Professor Maurice Daly, Commissioner of the Liverpool City Council Public Inquiry, in relation to Public Private Partnerships (PPPs).

As indicated in Circular 04/34, the requirements of the Act dealing with PPPs have effect from 28 June 2004.

The Act defines PPPs, requires councils to follow the procedures set out in guidelines and establishes the Local Government Project Review Committee.

The Act defines a PPP as an 'arrangement between a council and a private person for the purposes of: (a) providing public infrastructure or facilities (being infrastructure or facilities in respect of which the council has an interest, liability or responsibility under the arrangement), or (b) delivering services in accordance with the arrangement, or both'.

Some arrangements are excluded from the operation of the PPP legislation under Division 7 of Part 13 the Local Government (General) Regulation 2005. The exclusions consist of normal transactions carried out by councils that are otherwise regulated by the Local Government Act 1993 or related legislation. Some of the exclusions are: arrangements subject to the tendering requirements of section 55 of the Local Government Act 1993; the sale of Council property; leasing or licensing of community land and arrangements arising out of the operation of Division 5 of Part 4 of the Environmental Planning and Assessment Act 1979.

Any council entering into a PPP must now comply with the attached guidelines, which been prepared by the Department in consultation with the public and private sectors and the Local Government and Shires Associations of NSW. The guidelines are not intended to be onerous or require work in addition to that normally expected of a prudent organisation when entering into a complex partnership arrangement. They follow well-established practices for PPPs at the State level.

Councils are required to submit an assessment of the project to be carried out under the PPP to the Department before they enter an arrangement. The General Manager must certify that this assessment has been carried out in
accordance with the PPP guidelines. The regulations include a limited exemption from this requirement for PPP proposals that originated on or after 28 June 2002.

Councils should also be aware that they now need the Minister’s approval under section 358 of the Local Government Act 1993 to form not only corporations but any other type of entity defined in that section.

Section 55 of the Local Government Act 1993 has also been amended so that an entity formed by a council must now invite tenders before entering into a contract under that section. However, this requirement will not apply if that contract is part of a project that has been assessed or reviewed in accordance with the PPP legislation.

The Local Government Project Review Committee comprises representatives from:

- Department of Local Government (Chair)
- NSW Treasury
- Premier’s Department
- The Cabinet Office
- Department of Infrastructure, Planning and Natural Resources.

The Committee is not responsible for assessing the merits of the project as this responsibility rests with the Council. The primary concern of the Committee is to ensure that the project risks are clear and well understood by all parties.

Information sessions on the guidelines will be arranged in the near future. Councils are encouraged to attend to ensure a full understanding of the procedures to be followed.

Garry Payne
Director General
Local Government Act 1993 No 30

Current version for 15 June 2010 to date (accessed 30 June 2010 at 12:09)

Chapter 12 | Part 6

Part 6 Public-private partnerships

Division 1 Preliminary

400B Definitions

(1) For the purposes of this Act, a public-private partnership means an arrangement:

(a) between a council and a private person to provide public infrastructure or facilities (being infrastructure or facilities in respect of which the council has an interest, liability or responsibility under the arrangement), and

(b) in which the public infrastructure or facilities are provided in part or in whole through private sector financing, ownership or control,

but does not include any such arrangement if it is of a class that has been excluded from the operation of this Part by the regulations.

(1A) For the purposes of subsection (1), the provision of public infrastructure or facilities includes the delivery of services during the carrying out of any project under the public-private partnership.

(2) In this Part:

arrangement includes a contract or understanding (whether or not involving the formation of an entity).

entity means any partnership, trust, corporation, joint venture, syndicate or other body (whether or not incorporated).

PPP guidelines means the guidelines in force from time to time under section 400C.

private person means any person other than:

(a) the Government (including the State, the Crown and a Minister of the Crown), or

(b) a public or local authority (including a council or a State owned corporation), or

(c) a public sector employee or other person or body acting in an official capacity on behalf of the Government or a public or local authority.

relevant council, in relation to public-private partnership or proposed public-private partnership, means the council that has entered into, or is proposing to enter into, the partnership.

significant project means:

(a) any project with an estimated total cost of more than $50 million or such other amount as may be prescribed by the regulations, or
PPP Proposal Flowchart

1st Stage: Pre-RD/Market testing
- Business Plan
- Capacity of Council
- Probability/Risk
- Public Interest Evaluation
- Project Plan/Economic Appraisal
- Proposed EOI/Market Testing Process

COUNCIL

2nd Stage: Pre-Contract Signing
- EOI/Market testing evaluation
- Probity Review
- Project specifications
- Project management structures
- Risk Management Plan
- Financial appraisal
- Legal documentation

COUNCIL

No

Minor Revision

Council

NO

Yes

PSC Assessment of Compliance

Contracts Signed

Minister for approval under existing arrangements

Guidelines on the Procedures and Processes to be followed by Local Government in Public-Private Partnerships
Mr Michael Whitaker  
General Manager  
 Ryde City Council  
 Locked Bag 2669  
 NORTH RYDE NSW 1670

Dear Mr Whitaker,

I refer to your correspondence dated 22 November 2005 regarding the proposed project at Ryde Civic Centre, 1 Devon Street Ryde. The Department has determined that the project as outlined does not meet the definition of a public-private partnership under s4008 of the Local Government Act 1993.

The Department has undertaken an initial assessment of the project based on information supplied with your letter dated 6 October 2005 and further information supplied with your letter dated 22 November 2005. Information supplied via email from Mike Betts of 1 December 2005 has also been included in the assessment.

The Department has concluded that, based on the information provided by the council, the project does not represent a high risk to council and there is no requirement to submit the project processes for review by the Local Government Project Review Committee.

The council is reminded that the processes outlined in the Guidelines on the Procedures and Processes to be followed by Local Government in Public-Private Partnerships (the guidelines) must still be followed even though the project has been assessed as non-reviewable.

If the risk profile of the project changes over time, the Department must be notified of this change as soon as practicable after the council becomes aware of the fact.

I trust that this Information is of assistance.

Yours sincerely,

Garry Payne  
Director General
END OF THESIS