Endnotes

Notes to Chapter 1

[1]Romaldo Giurgola with Pamille I. Berg, "Kahn, Louis I.", in Adolf K. Placzek and George R. Collins (eds.), ***The MacMillan Encyclopaedia of Architects,*** Vol. 2, New York: The Free Press, 1982, pp. 537-545. See p. 537.

[2]Robert Maxwell, "Kahn, Louis Isador", in Muriel Emanuel (ed.), ***Contemporary Architects,*** 3rd. edn., New York: St. James Press, 1994, pp. 498-501. See p.501.

[3]Axel Menges, "Kahn, Louis I.", in Vittorio Magnago Lampugnani (ed.), ***The Thames and Hudson Encyclopedia of Twentieth Century Architecture***, trans. Barry Bergdoll, London: Thames and Hudson, 1986, pp. 184-186. See p. 184.

[4]Kenneth Frampton, ***Studies in Tectonic Culture: The Poetics of Construction in Nineteenth and Twentieth Century Architecture***, John Cava (ed.), Cambridge, Massachusetts: The MIT Press, 1995, p. 246.

[5]Frampton, ***Studies in Tectonic Culture: The Poetics of Construction in Nineteenth and Twentieth Century Architecture***, p.246.

[6]Louis Kahn, "Form and Design", in ***Architectural Design*** 31, No. 4 (April 1961): 145-154. See pp.145, 148. (Emphasis in original).

[7]Vincent Scully, "Introduction", in Alexander Tzonis (ed.), ***The Louis I. Kahn Archive: Personal Drawings: The Completely Illustrated Catalogue of the Drawings in the Louis I. Kahn Collection University of Pennsylvania Historical and Museum Commission,*** Vol. 1, New York: Garland Publishing Inc., 1987, pp. xvii-xxiii. See p. xix.

[8]William J. Mitchell, ***The Logic of Architecture: Design, Computation, and Cognition,*** Massachusetts: The MIT Press, 1990, p. 90.

[9]Kahn, "Form and Design", p. 148.

[10]Charles Jencks, ***Modern Movements in Architecture***, Harmondsworth, England: Pelican Books, 1973.

[11]Louis I. Kahn, "Louis I. Kahn notebook", [undated, circa 1959], Box K12.22, Louis I. Kahn Collection, University of Pennsylvania and Pennsylvania Historical and Museum Commission (hereafter cited as Kahn Collection). Transcribed from Kahn's original notebook with the assistance of William Whittaker, archivist of the Architectural archives at the University of Pennsylvania.

[12]Cassette recording, "The Scope of Architecture at The Cooper Union Hall, 1-20-60", Kahn Collection.

[13]Louis Kahn, ***Structure and Form***, Voice of America Forum Lectures, Architecture Series, no. 6, Washington D.C.: Voice of America, 1961.

[14]Kahn, "Form and Design", pp. 145-154.

[15]Louis Kahn, "Form and Design", in Vincent Scully, ***Louis I. Kahn***, New York: Brazillier, 1962, pp. 114-121.

[16]Letter, Vreeland to Pidgeon, 11 January 1961 "Master File, November 1 through December 30, 1960", L.I.K. Box 9, Kahn Collection.

[17]David De Long, "The mind opens to realizations: Conceiving a new architecture, 1951-61", in David Brownlee & David DeLong (eds.), ***Louis I. Kahn: In the Realm of Architecture***, New York:

Rizzoli International Publications Inc., 1991, pp. 50-77. See p. 71.

[18]Kahn, "Form and Design", p.148.

[19]Kahn, "Form and Design", p.148.

[20]In Plato's time, the works of poets such as Homer were treated as primary sources of moral and political instruction. Plato argues that their works are merely imitative, and easily produced, since the poet requires no real understanding of the issues their works cover.

[21]Plato, ***The Republic***, (595-598).

[22]Jencks, ***Modern Movements in Architecture***, pp. 43-44 and pp. 232-233.

[23]Perhaps too readily, Jencks treats many architects as Platonists whose theories, if they were held against Plato's actual dialogues, would fall short of Plato's strict rationalism. For example, Jencks points to Mies van der Rohe's "neo-Thomist education" and his frequent quoting of Saint Thomas of Aquinas, as foundations of Mies' Platonism. Yet Aquinas is famous for reconciling Aristotle's empiricism with Scripture, thus abrogating the Platonic/rationalistic views of Saint Augustine which had previously dominated Christian theology. In that respect, Thomism is the very antithesis of Platonism. Therefore, Mies' references to Aquinas are more likely to suggest a preference for Aristotelian empiricism, than Platonic rationalism, a point made by Richard Padovan. See: Richard Padovan, "Machines a mediter", in Rolf Archilles, Kevin Harrington & Charlotte Myhrum (eds.), ***Mies van der Rohe: Architect as Educator***, Chicago: Illinois Institute of Technology, 1986, pp. 17-25.

[24]Charles Jencks, "Semiology and architecture", in Charles Jencks and George Baird (eds.), ***Meaning in Architecture***, London: Barrie and Rockliff, The Crescent Press, 1969, pp. 11-26.

[25]Based on little more than their "commitment to a general idealism", Jencks likens Le Corbusier, Mies van der Rohe, Walter Gropius, Aldo van Eyck, Louis Kahn and James Stirling to Platonic idealists, thus implying that the ideals to which these architects allude are like Plato's Forms. For want of any self-confessed bona-fide Platonists, Jencks is forced to use a very loose definition of the term "Platonic" to find any use for it at all. See: Jencks, ***Modern Movements in Architecture***, p. 31.

[26]Charles Jencks, ***The Architecture of the Jumping Universe: A Polemic: How Complexity Science is Changing Architecture and Culture***, London: Academy Editions, 1995, p. 6.

[27] Jencks' diagram depicts a cycle, wherein the "Platonic World" created the universe, which, through a series of four "jumps", created humans with a capacity to look back at the Platonic Realm from which their own existence emanates.

[28]Paul Davies attempts to influence popular conceptions of cosmology in *The Mind of God*. Davies proposes that the laws of physics are transcendent and describes this view as the modern counterpart of Plato's theory of Forms. See: Paul Davies, ***The Mind of God: Science and the Search for Ultimate Meaning***, London: Simon and Schuster, 1992, pp. 91-92. Much of this speculation stems from Heisenburg's uncertainty principle, and the gulf it leaves between perception and reality. For an explanation of this principle, see: Clifford E. Swarts, ***Phenomenal Physics***, New York: John Wiley & Sons, 1981, pp. 697-699.

[29]Paul Davies, ***The Cosmic Blueprint*** , London: Heinemann, 1987.

[30]Christian Norberg-Schulz, "Kahn, Heidegger and the language of architecture", in ***Oppositions***, 18 (1979): 29-47. See p. 29. Contrary to the position adopted by Norberg-Schulz, Dennis Doordan argues that Kahn's statement that "Order is", and presumably his "form and design" theory as well, represent a poetic sensibility rather than the seed of a philosophical system. See: Dennis P. Doordan, "Tyng's Kahn", in ***Progressive Architecture***, Vol. 66, No. 4 (1985): 125-126.

[31]Norberg-Schulz, "Kahn, Heidegger and the language of architecture", p. 35.

[32]Joseph Burton, "The architectural hieroglyphics of Louis I. Kahn: Architecture as logos", Ph.D thesis, The University of Pennsylvania, 1983.

[33]Joseph Burton, "Notes from volume zero: Louis Kahn and the language of God", in ***Perspecta***, 20

(1983): 69-90. See p. 76.

[34]Burton, "Notes from volume zero: Louis Kahn and the language of God", p.76.

[35]Sir David Ross, ***Plato's Theory of Ideas***, 2nd. edn., London: Oxford University Press, 1951. Cited in: Burton, "Notes From Volume Zero: Louis Kahn and the Language of God", p. 76.

[36]Scully, "Introduction", pp. xvii-xxiii.

[37]De Long, "The mind opens to realizations: Conceiving a new architecture, 1951-61", p. 72.

[38] David Brownlee, "Light, the giver of all presences: Designs to honor human endeavor", in David Brownlee & David DeLong (eds.), ***Louis I. Kahn: In the Realm of Architecture***, New York: Rizzoli International Publications Inc., 1991, pp.126-143. See p.129.

[39]Brownlee, "Light, the giver of all presences: Designs to honor human endeavor", p. 128.

[40]Gerhard Auer, "On the brick that wanted to become an arch: Louis I. Kahn's masonry structures", in ***Daidalos***, 43 (1992): 68-75. See p. 68-69. (Brackets in original).

[41]Klaus-Peter Gast, ***Louis I. Kahn: The Idea of Order***, trans. Michael Robinson, Berlin: Birkhäuser, 1998.

[42]Gast, ***Louis I. Kahn: The Idea of Order***, p.185.

[43]Peter Kohane, "Louis Kahn and the library: Genesis and expression of 'form'", in ***Via,*** Vol. 10, No. 105 (1990): 99-131. See p.99. (Emphasis added).

[44]Michael Benedikt, ***Deconstructing the Kimbell: An Essay on Meaning and Architecture***, New York: SITES/Lumen Books, 1991, p.55.

[45]Plato, ***The Republic***, (476a, 507b and 596a-b).

[46]Romaldo Giurgola, "Giurgola on Kahn", in ***Architects' Journal***, Vol. 195, No. 9 (1992): 26-35. See p. 34.

[47]Arthur C. Danto, "Louis Kahn as Archai-Tekt", in Arthur C. Danto, ***Philosophizing Art: Selected Essays***, Berkeley: University of California Press, 1999, pp. 185-204.

[48]Danto, "Louis Kahn as Archai-Tekt", p. 187.

[49]Danto, "Louis Kahn as Archai-Tekt", p. 187.

[50]Danto, "Louis Kahn as Archai-Tekt", p. 188.

[51]Interview, Steven Fleming with David Brownlee, 26 January 1998, The University of Pennsylvania.

[52]De Long, "The mind opens to realizations: Conceiving a new architecture, 1951-61", p.72.

[53]Scully, "Introduction", p. xvii.

[54]Newsletter, file labelled, "Connoisseur's Club", L.I.K. Box 65, Kahn Collection.

[55]Cassette recording, "The Scope of Architecture at The Cooper Union Hall, 1-20-60", Kahn Collection.

[56]Interview, Steven Fleming with Anne Tyng, 29 January 1998, The University of Pennsylvania. (Cassette recording held in Kahn Collection).

[57]Interview, Fleming with Tyng, 29 January 1998.

[58]Charles P. Bigger, ***Participation: A Platonic Inquiry***, Baton Rouge: Louisiana State University Press, 1968, p. 5.

[59]Bigger, ***Participation: A Platonic Inquiry***, p. 5.

[60]Burton, "The architectural hieroglyphics of Louis I. Kahn: Architecture as logos."

[61] Burton has drawn a number of parallels betweens Kahn's writings and alchemical texts, and

between Kahn's buildings and imagery associated with freemasonry. See: Joseph Burton, "Louis Kahn and the alchemist's art: Constituting the temple of silence", in Cartouche, Fall (1992): 13-15.

[62] See: Burton, "The architectural hieroglyphics of Louis I. Kahn: Architecture as logos", and, Burton, "Notes from volume zero: Louis Kahn and the language of God". An early though less detailed study is: Joe Burton, "The limits of reason", in Fifth Column, Vol. 3, No. 2 (1983): 17-19.

[63]Burton, "Notes from volume zero: Louis Kahn and the language of God", p. 76.

[64]Burton, "Notes from volume zero: Louis Kahn and the language of God", p. 76.

[65]File labelled, "College and University Correspondence, Jan. 1960 through …", L.I.K. Box 64, Kahn Collection.

[66]One such acquaintance is Josef Albers who Kahn helped bring to Yale in 1950. As previously mentioned, Albers, a former Bauhaus professor and artist, is influenced by *de Stijl*, a style philosophically underpinned by the Neoplatonic writings of Theo Van Doesburg.

[67]For example, see the 1972 article, Louis I. Kahn, "I love beginnings", in Alessandra Latour (ed.), ***Louis I. Kahn: Writings, Lectures, Interviews***, New York: Rizzoli International Publications Inc., 1991, pp. 285-293.

[68]Letter, Colin Rowe to Louis I. Kahn, 7 February 1956, file labelled, "Correspondence from Universities and Colleges", L.I.K. Box 65, Kahn Collection.

[69]Rudolf Wittkower, ***Architectural Principles in the Age of Humanism***, 2nd. edn**.**, London: Tiranti, 1952.

[70]Wittkower, ***Architectural Principles in the Age of Humanism***, p. 23.

[71]Letter, Rowe to Kahn, 7 February 1956.

[72]Letter, Rowe to Kahn, 7 February 1956.

[73]Colin Rowe, ***The Architecture of Good Intentions: Towards a Possible Retrospect***, London: Academy Editions, 1994, p. 50.

[74]Rowe, ***The Architecture of Good Intentions: Towards a Possible Retrospect***, p. 50.

[75]Colin Rowe, "Introduction", in Alexander Caragonne (ed.), ***As I was Saying: Recollections and Miscellaneous Essays***, volume 3, Cambridge, Massachusetts and London, England: The MIT Press, 1996, pp. 1-4. See p. 2.

[76]Colin Rowe, "Buffalo waterfront", in Alexander Caragonne (ed.), ***As I was Saying: Recollections and Miscellaneous Essays***, volume 3, Cambridge, Massachusetts and London, England: The MIT Press, 1996, pp. 97-119.

[77]Unfortunately, Colin Rowe died before the writing of this dissertation and the present author had been unsuccessful in his attempts to correspond with Rowe regarding his discussions with Kahn.

[78]Letter, Rowe to Kahn, 7 February 1956.

[79]Cassette recording, "The Scope of Architecture at The Cooper Union Hall, 1-20-60", Kahn Collection.

[80]File labelled, "College and University Correspondence, Jan. 1960 through …", L.I.K. Box 64, Kahn Collection.

[81]Cassette recording, "The Scope of Architecture at The Cooper Union Hall, 1-20-60", Kahn Collection.

[82] For a discussion of the differences and similarities between the historical Socrates and the Socrates of Plato's dialogues, see: Thomas C. Brickhouse and Nicholas D. Smith, ***Plato's Socrates***, New York: Oxford University Press, 1994.

Notes to Chapter 2

[1]The concomitant development of Kahn's "form and design" theory and his church in Rochester are discussed in Chapter 3 of this dissertation. See also: Steven Fleming, "Louis Kahn's quasi religious rhetoric", in ***Thresholds: Papers of the Sixteenth Annual Conference of the Society of Architectural Historians Australia and New Zealand***, The Society of Architectural Historians Australia and New Zealand: Launceston/Hobart, Australia, 1999, pp. 65-71.

[2]Menges, "Kahn, Louis I.", p. 184.

[3]While this dissertation assumes that buildings of Kahn's which are designed after 1960 are conceived as manifestations of "forms", it should be noted that Kahn does not specifically refer to another "form" diagram like the one produced for The First Unitarian Church and School in Rochester.

[4]Kenneth Frampton, "Louis I. Kahn and the New Monumentality 1944-1972", in ***Design Book Review***, Vol. 28 (1993): 6-13. Also in: Frampton, ***Studies in Tectonic Culture: The Poetics of Construction in Nineteenth and Twentieth Century Architecture.***

[5]Ross, ***Plato's Theory of Ideas***, p. 11.

[6]Plato, ***Meno*** (81).

[7]David J. Melling, ***Understanding Plato***, Oxford: Oxford University Press, 1987.

[8]I. M. Crombie, ***An Examination of Plato's Doctrines***, Vol. 2, London: Routledge and Kegan Paul, 1963, p. 319.

[9]Alfred Edward Taylor, ***Platonism and its Influence***, New York: Cooper Square Publishers, 1963, p. 29.

[10]Aristotle, ***Metaphysics***, trans. R. Hope, Michigan: Ann Arbor, 1960. (990a).

[11]John Herman Randall, Jr., ***Plato: Dramatist of the Life of Reason***, New York: Columbia University Press, 1970.

[12]Randall, ***Plato: Dramatist of the Life of Reason***, p.195.

[13]Randall, ***Plato: Dramatist of the Life of Reason***, p.199.

[14]Frederick J. E. Woodbridge, ***The Son Of Apollo: Themes in Plato***, New York: Biblo and Tavern, 1971.

[15]Kenneth M. Sayre, ***Plato's Late Ontology: A Riddle Solved***, Princeton, New Jersey: Princeton University Press, 1983.

[16]Sayre, ***Plato's Late Ontology: A Riddle Solved***, p.18.

[17]Gilbert Ryle, ***Plato's Progress***, Cambridge: Cambridge University Press, 1966.

[18]Ryle, ***Plato's Progress***, p. 17.

[19]A. E. Taylor, ***The Mind of Plato***, First American Edition, Michigan: The University of Michigan Press, 1978, p. 46.

[20]Crombie, ***An Examination of Plato's Doctrines***, pp. 257-258.

[21]Crombie, ***An Examination of Plato's Doctrines***, p.324.

[22]Plato, ***The Republic***, 2nd. edn. (revised), trans. Desmond Lee, London: Penguin Books Ltd, 1987, p. 360.

[23]According to Nickolas Pappas, the three conditions required of Forms are "uniqueness, self-predication, and non-identity". See: Nickolas Pappas, ***Routledge Philosophy Guidebook to Plato and The Republic***, London : Routledge, 1995, p. 204.

[24]Pappas, ***Routledge Philosophy Guidebook to Plato and The Republic***, p. 205.

[25]It is generally accepted that Book 10 of *The Republic* does advance a theory of art, but this is not conclusive. cf. Angelo Corlett, "A dialectical interpretation of the concept of art as *mimesis* in *The Republic",* in ***Idealistic Studies: An Interdisciplinary Journal of Philosophy***, Vol. 21 (1991): 155-169.

[26]Plato, ***The Republic*** (410b) in Lee, p. 103.

[27]Otto Von Simson, ***The Gothic Cathedral: Origins of Gothic Architecture and the Medieval Concept of Order***, 2nd. edn., Princeton University Press, 1962, p.21.

[28]Plato, "Philebus", (56a-b), in trans. B.Jowett, ***The Dialogues of Plato***, 4th edn., Vol. 3, Oxford: Clarendon Press, 1953, p. 616.

[29]Barbara Flanagan, "Louis Kahn: Saint or sinner", in ***Metropolis***, Vol. 11, No. 5 (1991): 50-56.

[30]Louis I. Kahn, "Order is", in Alessandra Latour (ed.), ***Louis I. Kahn: Writings, Lectures, Interviews***, New York: Rizzoli International Publications Inc., 1991, pp. 58-59.

[31]Renzo Vallebuona, "Louis Kahn in Wonderland", in ***Daidalos***, No. 61, (1996): 62-67.

[32]John Whiteman, "Still movement: e.e. cummings and Louis Kahn", in ***Midgard***, Vol. 1, No. 1 (1987): 11-31.

[33]Stephen Grabow, "The role of memory in the perception of architecture: Reading the Trenton Bath House from Auschwitz", in ***Structurist***, No. 37-38 (1997-1998): 41-45.

[34]Randy Swanson, "Art and Science in Transition: Four Laboratory Designs of Louis I. Kahn Considered as Mediative Representation", Ph.D thesis, The University of Pennsylvania, 1993.

[35] Jeffrey Kipnis, "Twisting the Separatrix", in Jeffrey Kipnis and Thomas Leeser (eds.), ***Choral Works: Jacques Derrida and Peter Eisenman***, New York: Monacelli Press, 1997, pp. 137-160.

[36] The space in question is commonly referred to as Chóra, and it is discussed in greater detail in Chapter 5 of this dissertation.

[37]Pappas, ***Routledge Philosophy Guidebook to Plato and The Republic***, p. 14.

[38]"Plato voted the flawed favourite", in ***Sun-Herald***, 6 April 2001, p. 51.

[39]Victor Lowe, ***Understanding Whitehead***, Baltimore: The John Hopkins Press, 1962, pp.251-254.

[40]Norberg-Schulz, "Kahn, Heidegger and the language of architecture", p. 29.

[41]Marshall D. Meyers, *Conversations with Joseph Burton* (Philadelphia: 1979-1981). Cited in: Joseph A. Burton, "The aesthetic education of Louis I. Kahn", in ***Perspecta***, 28 (1997): pp. 204-217. See p. 204.

[42]Tadanao Maedo, "The enquiry into order of architecture in Kahn's thinking", in ***Journal of Architectural Planning and Environmental Engineering***, No. 12 (394), (1988): 52-61.

[43]Reyner Banham, ***Theory and Design in the First Machine Age***, London: The Architectural Press, 1960.

[44]Louis Kahn, "How'm I doing, Corbusier?" [interview with Patricia Mc Laughlin], in Alessandra Latour (ed.), ***Louis I. Kahn: Writings, Lectures, Interviews***, New York: Rizzoli International Publications Inc., 1991, pp. 297-312. See p. 309.

[45]Alan Kahn, "Conversations about Lou Kahn", [interview with Alessandra Latour], in Alessandra Latour (ed.), ***Louis I. Kahn: l'uomo, il maestro***, Roma: Kappa c1986, pp. 65-69.

[46]Alessandra Latour (ed.), ***Louis I. Kahn: l'uomo, il maestro***, Roma: Kappa c1986.

[47]Throughout this dissertation, reference is made to interviews which have been conducted by other Kahn scholars including Joseph Burton, David Brownlee, Jean France, Sarah Williams Ksiazek and Robin Williams.

[48]Chauhan Muktirajsinhji, "Louis I. Kahn: The Yogi of architecture: Interview with Balkrishna Doshi", in ***Architecture and Urbanism***, Vol. 7, No. 322 (1997): 124-136.

[49]Romaldo Giurgola and Jaimini Mehta, ***Louis I. Kahn***, Boulder Colorado: Westview Press, 1975. Also see: Giurgola, "Giurgola on Kahn", p. 26-35.

[50]William S. Huff, "Kahn at Yale", in ***Journal of Architectural Education***, Vol. 35, No. 3, (1982): 22-31.

[51]August E. Komendant, ***18 Years With Architect Louis I. Kahn***, Englewood New Jersey: Aloray, 1975.

[52]John Lobell (ed.), ***Between Silence and Light: Spirit in the Architecture of Louis I. Kahn***, Boulder: Shambhala, 1979.

[53]Scully, ***Louis I. Kahn***, New York: Brazillier, 1962. See also: Vincent Scully, "Louis I. Kahn in the Soviet Union", in ***Architectural Digest***, Vol. 43, No. 5 (1986): 62, 66, 71.

[54]Alexandra Tyng, ***Beginnings: Louis I. Kahn's Philosophy of Architecture***, New York: Wiley Interscience Publications, 1984.

[55]Louis I. Kahn, ***Louis Kahn to Anne Tyng: The Rome Letters 1953-1954***, Anne Griswold Tyng (ed.), New York: Rizzoli, 1997.

[56]Manfredo Tafuri, ***Theories and History of Architecture***, trans. Giorgio Verrecchia, London: Granada Publishing, 1980.

[57]Paul-Alan Johnson, ***The Theory of Architecture: Concepts, Themes & Practices***, New York: Van Nostrand Reinhold, 1994, pp. 33-34.

[58]Jeffrey Kipnis, "Forms of irrationality", in John Whiteman, Jeffrey Kipnis and Richard Burdett (eds.), ***Strategies in Architectural Thinking***, Cambridge, Massachusets: The MIT Press, c1992, pp. 148-165. See p. 165.

[59]Ed Levin, "The Berkeley Lecture: A Postscript", in ***Perspecta***, 28 (1997): 40-[49]. See p. 41.

[60]Levin, "The Berkeley Lecture: A Postscript", p. 40.

[61]David Brownlee, "Light, the giver of all presences: Designs to honor human endeavor", p. 129.

[62]Alexander Tzonis (ed.), ***The Louis I. Kahn Archive: Personal Drawings: The Completely Illustrated Catalogue of the Drawings in the Louis I. Kahn Collection University of Pennsylvania Historical and Museum Commission,*** vol. 1, New York: Garland Publishing Inc., 1987.

[63]Michael J. Crosbie (quoting Anne Tyng), "Add and subtract", in ***Progressive Architecture***, Vol. 74, No. 10 (1993): 48-51.

[64]Benedikt, ***Deconstructing the Kimbell: An Essay on Meaning and Architecture***.

[65]References to specific reviews are made throughout this dissertation.

[66]A good example of a subjective impression, utilised later in this dissertation is provided by Sherri Geldin, who comments on the marvelous quality of daylight in Kahn's buildings. See: Sherri Geldin, "Prologue, Louis I. Kahn: Compositions in a fundamental timbre", in David Brownlee & David DeLong (eds.), ***Louis I. Kahn: In the Realm of Architecture***, New York: Rizzoli International Publications Inc., 1991, pp. 15-17.

[67]Greenburg, Stephen, "Re-examining the house", in ***Architects' Journal***, Vol. 195, No. 9 (1992): 22-25.

[68]Ross, ***Plato's Theory of Ideas***.

[69]B. Jowett, "Timaeus: Introduction", in B. Jowett, ***The Dialogues of Plato***, 4th. edn., Vol. 3, Oxford: Clarendon Press, 1953, pp. 631-636. See p. 631.

[70]Lobell, ***Between Silence and Light: Spirit in the Architecture of Louis I. Kahn***, p. 61.

[71]Geoffrey Broadbent, ***Emerging Concepts in Urban Space Design***, London: Van Nostrand Reinhold, 1990.

[72]Steven Fleming and Michael J. Ostwald, "Rationalism", in Michael J. Ostwald (ed.) ***Movements in Twentieth Century Architecture: A Reader in Architectural Theory***, Sydney: Archadia Press, 2000, p. 75.

[73]Mihai Spariosu, ***Mimesis in Contemporary Theory: An Interdisciplinary Approach: Volume I: The Literary and Philosophical Debate***, Philadelphia: John Benjamins Publishing Company, 1984, p.97.

[74]Joseph Rykwert, ***The Dancing Column: On Order in Architecture***, Cambridge, Massachusetts: The MIT Press, 1996, p. 126.

[75]Rykwert, ***The Dancing Column: On Order in Architecture***, p.119-124.

[76]Plato, ***The Republic*** (510b).

[77]Plato, ***The Republic*** (507b and 524c).

[78]See: Fehmi Dogan and Craig M. Zimring, "Interaction of programming and design: The First Unitarian congregation of Rochester and Louis I. Kahn," in ***Journal of Architectural Education***, Vol. 56, No. 1 (2002): 47-56, p. 52. Also see: Robin B. Williams, "First Unitarian Church and School, Rochester, New York, 1959-69", in David Brownlee & David DeLong (eds.), ***Louis I. Kahn: In the Realm of Architecture***, New York: Rizzoli International Publications Inc., 1991, pp. 340-345. See p. 344, note 3.

[79] Fehmi Dogan and Craig M. Zimring, "Interaction of programming and design: The First Unitarian congregation of Rochester and Louis I. Kahn," p. 47.

[80]Building Committee Meeting, November 4, 1959, file labelled, "Building Committee Minutes 59-60", Historical Records of The First Unitarian Church, Rochester.

[81]See file labelled, "Letters to Building Committee", Historical Records of The First Unitarian Church, Rochester.

[82]Report titled "Scale model of First Unitarian Church auditorium, photometric measurements, and sunlight patterns on interior, by J. C. Evans, member of the congregation, Feb. 15, 1961". File labelled, "1-15 Study of Light from Model '61", Historical Records of The First Unitarian Church, Rochester.

[83]Interview, Steven Fleming with Richard Forbes, 26 June 2002, Rochester.

[84]Letter, Parsons to Building Committee, 24 February, 1961, file labelled, "Letters to the Building Committee", Historical Records of The First Unitarian Church, Rochester.

[85]Interview, Fleming with Forbes, 26 June 2002.

[86]Interview, Fleming with Forbes, 26 June 2002.

[87]Stanford Anderson, "Public institutions: Louis I. Kahn's reading of volume zero", in ***Journal of Architectural Education***, Vol. 49, No. 1 (1995): 10-21.

[88]Norberg-Schulz, "Kahn, Heidegger and the language of architecture."

[89]Kahn, "Form and Design", p. 151.

Notes to Chapter 3

[1]Kahn, "Form and Design", p. 145.

[2]Kahn, "Form and Design", p. 145.

[3]Kahn, "Form and Design", p. 145.

[4]Taylor, ***The Mind of Plato***, p. 43. (Emphasis in original).

[5]Ross, ***Plato's Theory of Ideas***, p. 88.

[6]Taylor, ***The Mind of Plato***, p. 47.

[7]Taylor, ***The Mind of Plato***, p.52.

[8]Erwin Panofsky, ***Idea: A Concept in Art Theory***, trans. Joseph J.S. Peake, Columbia: University of South Carolina Press, 1968.

[9]As art theorists and aestheticians are prone to do when discussing Platonism, Panofsky only concerns himself with one of the Forms, *Beauty Itself*, and not such Forms as *The Church Itself*, or *The House Itself*.

[10] Panofsky's work is taken as a point of departure in David Summers' book, *The Judgment of Sense*. Whereas Panofsky defends Plato's position, Summers defends Aristotle's. Summers is not so pessimistic about the debasement of Plato's Forms as Panofsky is. Rather, he views the influence of Aristotle — who believes that "the human soul, from sensation upward, is suited to its world" — as a positive influence on art theory. As one who personally favours Aristotle's position, Summers goes on to argue that "the beautiful itself is conformity to human sense before it is evidence of transcendental value". In so doing, Summers could be seen to join the ranks of the many Aristotelians whom Panofsky derides. See: David Summers, ***The Judgment of Sense: Renaissance Naturalism and the Rise of Aesthetics***, Cambridge: Cambridge University Press, 1987.

[11]Kahn, "Form and Design", p. 145.

[12]Kahn, "Form and Design", p. 145.

[13]Julia Annas, ***An Introduction to Plato's Republic***, Oxford: Clarendon Press, 1981, p. 2.

[14]Plato, ***Phaedrus*** (274b-277a).

[15]Annas, ***An Introduction to Plato's Republic,*** p. 2.

[16]Tyng, ***Beginnings: Louis I. Kahn's Philosophy of Architecture***, see page preceding Preface.

[17]Louis I. Kahn, "1973: Brooklyn, New York", in Alessandra Latour (ed.), ***Louis I. Kahn: Writings, Lectures, Interviews,*** New York: Rizzoli International Publications Inc., 1991, pp. 320-331. See p.329.

[18]Kahn, "How'm I doing, Corbusier?", p. 309.

[19]Louis I. Kahn, "Talks with students", in Alessandra Latour (ed.), ***Louis I. Kahn: Writings, Lectures, Interviews***, New York: Rizzoli International Publications Inc., 1991, pp. 154-190. See p. 183.

[20]Kahn, "Talks with students", p.183.

[21]Letter, Kahn to Huff, 4 November 1965, file labelled, "Huff, William S.: Correspondence", L.I.K. Box 57, Kahn Collection.

[22]Jeffrey Kipnis argues that Platonic dualism has become the metaphysics of everyday life and that this is reflected in popular culture. See: Kipnis, "Forms of irrationality".

[23]Kahn, "Form and Design", p. 145.

[24]Kahn, "Form and Design", p. 145.

[25]The ceiling structures of Kahn's Yale Art Gallery and Richards Medical Building both accommodate service pipes in the manner described.

[26]Kahn, "Form and Design", p. 149.

[27] An alternative reading of Kahn's theory, in terms of Jung's metaphysics, would provide a valuable

addition to the present study, as well as Norberg-Schulz's Heideggarian reading of Kahn's theory. Such a study, emphasising the influence of Jungian thought on Kahn (and particularly his use of the word psyche), might demonstrate the usefulness of interpreting some of Kahn's statements in terms of Jung's belief in an ancestral race memory. Other relevant philosophies, including Karl Popper's third world the realm of abstractions could also illuminate such a study. Popper's realm of abstractions is like Plato's intelligible realm in that it contains universals, but it is more like Jung's collective unconscious in that the realm is ultimately of human construction. See: Karl R. Popper, ***Objective Knowledge: An evolutionary approach***, Rev. ed., New York: Oxford University Press, 1979.

[28]Louis I. Kahn, "The nature of nature", in Alessandra Latour (ed.), ***Louis I. Kahn: Writings, Lectures, Interviews***, New York: Rizzoli International Publications Inc., 1991, pp.141-144. See p. 142.

[29]Kahn, "The nature of nature", p. 142.

[30]For example, in 1964 Kahn claims that in "everything that nature makes, nature records how it was made. In the rock is a record of the rock. In man is a record of how he was made". See: Kahn, "Talks with students", p. 158.

[31]Tyng, ***Beginnings: Louis I. Kahn's Philosophy of Architecture***, pp. 18-19.

[32]Lobell, ***Between Silence and Light: Spirit in the Architecture of Louis I. Kahn***. Lobell likens Kahn's realm of "Silence" to Jung's "collective unconscious".

[33]Anne Tyng, "Simultaneous randomness and order: The Fibonacci-Divine proportion as a universal forming principle", Ph.D thesis, Graduate School of Arts and Sciences, The University of Pennsylvania, 1975, p. 47.

[34]Carl Gustav Jung, ***The Portable Jung***, Joseph Campbell (ed.), trans. R.F.C. Hull, New York: The Viking Press, 1971, p. 55.

[35]Jung, ***The Portable Jung***, p. 52.

[36]Jung, ***The Portable Jung***, p. 55.

[37]Plato, ***Meno*** (81 and 86).

[38]Jung, ***The Portable Jung***, p. 60.

[39]Kahn, "The nature of nature", p. 142.

[40]Kahn, "Form and Design", p. 149.

[41]Kahn, "Remarks", in Alessandra Latour (ed.), ***Louis I Kahn: Writings, Lectures, Interviews***, New York: Rizzoli International Publications Inc., 1991, pp. 191-207. See p. 195.

[42]Kahn, "Form and Design", pp. 145, 148. (Emphasis in original).

[43]Kahn, "Form and Design", p. 145.

[44]Burton, "The architectural hieroglyphics of Louis I. Kahn: Architecture as logos".

[45]Alexander C. Gorlin, "Modern architects reconsidered: Biblical imagery in the work of Louis I. Kahn: From Noah's Arc to the Temple of Solomon", in ***Architecture + Urbanism***, 5 (176), (1985): 83-92.

[46]Susan Solomon, "Secular and spiritual humanism: Louis I. Kahn's work for the Jewish community in the 1950s and 1960s", Ph.D thesis, The University of Pennsylvania, 1997, p. 1.

[47]Solomon, "Secular and spiritual humanism: Louis I. Kahn's work for the Jewish community in the 1950s and 1960s", p.1.

[48]Interview, Steven Fleming with Susan Solomon, 28 January 1998, The University of Pennsylvania.

[49]For example, see the 1971 text: Louis I. Kahn, "Not for the fainthearted", in Alessandra Latour (ed.), ***Louis I. Kahn: Writings, Lectures, Interviews***, New York: Rizzoli International Publications

Inc., 1991, pp. 258-263. See p. 259.

[50] Louis I. Kahn, "Architecture: Silence and light", in Alessandra Latour (ed.), ***Louis I. Kahn: Writings, Lectures, Interviews***, New York: Rizzoli International Publications Inc., 1991, pp. 248-257. See p. 252.

[51]Louis I. Kahn, "Architecture", in Alessandra Latour (ed.), ***Louis I. Kahn: Writings, Lectures, Interviews***, New York: Rizzoli International Publications Inc., 1991, pp. 270-285. See p. 271.

[52]As discussed in greater detail in part 2 of this chapter, Kahn's clearest allusion to Plato comes in a 1960 address where he states that an architect must be like Socrates when contemplating the "form" on which to model schools. See: Cassette recording, "The Scope of Architecture at The Cooper Union Hall, 1-20-60", Kahn Collection.

[53]Christian Norberg-Schulz makes the observation that Kahn "subordinates the *existentia* to the *essentia,* and thus thinks within the tradition of Western metaphysics". Norberg-Schulz, "Kahn, Heidegger and the language of architecture", p. 29.

[54]The marriage between Platonism and Christianity is discussed by various authors. See for example: Taylor, ***Platonism and its Influence***.

[55]Cassette recording, Vincent Scully, "Louis I. Kahn and the Ruins of Rome", lecture delivered at the Washington Design Centre, Washington, 29 April 1992, Kahn Collection.

[56]Susan Braudy, "The architectural metaphysics of Louis I. Kahn", in ***New York Times Magazine***, 15 November (1970): 73, 77-82, 86, 90. See p. 78.

[57]Tyng, ***Beginnings: Louis I. Kahn's Philosophy of Architecture***.

[58]David Brownlee, "Adventures of unexplored places: Defining a philosophy, 1901-51", in David Brownlee and David De Long (eds.), ***Louis I. Kahn: In the Realm of Architecture,*** New York: Rizzoli International Publications Inc., 1991, pp. 20-49. See p. 24.

[59]Brownlee, "Adventures of unexplored places: Defining a philosophy, 1901-51", p. 24.

[60]The strongest comparison can be drawn between the post-Reformation iconoclasts of Western Europe and Adolf Loos who views ornament as crime. Reyner Banham discusses the influence of Loos' *Ornament und Verbrechen* through *L'Esprit Nouveau*. See: Banham, ***Theory and Design in the First Machine Age***, pp. 88-97. Regarding Loos' views on ornamentation, see: Adolf Loos, "Ornament and crime", in Ludwig Munz and Gustav Kuntstler (eds.), ***Adolf Loos: Pioneer of Modern Architecture***, London: Thames and Hudson, 1966, pp. 226-231. [First Published 1908].

[61]According to Charles Jencks, Mies van der Rohe projects a transcendental, or Platonic, world. See: Jencks, ***Modern Movements in Architecture***, p. 105.

[62]Reyner Banham partly attributes the unity of the International Style to "vaguely Platonic ideas" common to Parisian theorists and their *de Stijl* counterparts. See: Banham, ***Theory and Design in the First Machine Age***, p. 205.

[63]Reyner Banham writes of the object being "[P]latonised by the Purists". Banham, ***Theory and Design in the First Machine Age***, p. 208.

[64]Stephen Greenberg, "Parallel aims [interview with Peter Smithson]", in ***Architects' Journal***, Vol. 195, No. 9, (1992): 54. James Dunnet also discusses Le Corbusier's influence on Kahn. See: James Dunnet, "Apparent heir", in ***Architects' Journal***, Vol. 195, No. 9 (1992): 40-41. Le Corbusier's influence on Kahn is also discussed by David Brownlee. See: Brownlee, "Adventures of unexplored places: Defining a philosophy, 1901-51."

[65]Kahn, "Order is", pp. 58-59. Kahn's letters to Anne Tyng between 1953 and 1954 provide the clearest evidence of their intellectual partnership regarding his "Order" thesis. See: Kahn, ***Louis Kahn to Anne Tyng: The Rome Letters 1953-1954***.

[66]Newsletter, file labelled, "Connoisseur's Club", L.I.K. Box 65, Kahn Collection.

[67]At the back of the group's "Brief History — Volume 1. No. 1", "Scribe [David J.] Weiss" expresses

the atheistic view that *man* created *God* in his own image and for his own purposes, and that "God knows we need to think in these times", when "behind our civilisation stands man's murderous servant, science, growing more powerful by the hour, silently waiting to serve or slay". File labelled, "Connoisseur's Club", L.I.K. Box 65, Kahn Collection.

[68]Minutes of meeting held 30 July 1948, file labelled, "Connoisseur's Club", L.I.K. Box 65, Kahn Collection.

[69]Kahn, ***Louis Kahn to Anne Tyng: The Rome Letters 1953-1954***.

[70]Kahn, ***Louis Kahn to Anne Tyng: The Rome Letters 1953-1954,*** p. 99.

[71]Tyng, "Simultaneous randomness and order: The Fibonacci-Divine proportion as a universal forming principle".

[72]Anne Griswold Tyng, "Resonance between eye and archetype", in ***Via***, Vol. 6, (1983): 47-67.

[73]R. V. Pierard, "Pascal's Wager", in Walter E. Elwell (ed.), ***Evangelical Dictionary of Theology***, Michigan: Baker Book House, 1984, p. 828.

[74]Tyng, "Resonance between eye and archetype", p. 49.

[75]Tyng, "Resonance between eye and archetype", p. 61.

[76]Anne Griswold Tyng, "Synthesis of a traditional house with a space-frame", in ***International Journal of Space Structures***, Vol. 6, No. 4 (1991): 267-273. Also see: Anne Griswold Tyng, "Perception and proportion", (audio-visual slide), London: Pidgeon Audio Visual, 1980.

[77]Letter, Kahn to Entenza (Director, Greham Foundation), 2 March 1965, file labelled, "Letters of Recommendation, 1964", L.I.K. Box 55, Kahn Collection.

[78]D'Arcy W. Thompson, ***On Growth and Form***, (two volumes), 2nd. edn., Cambridge: Cambridge University Press, 1942.

[79]Thompson, ***On Growth and Form***, p. 695. (Emphasis in original).

[80]Thompson, ***On Growth and Form***, p. 1026. Here quoting Galileo, Thompson also mentions that this view of nature is, "as old as Plato, as old as Pythagoras, as old perhaps as the wisdom of the Egyptians".

[81]Alan Kahn, "Conversations about Lou Kahn, [interview with Alessandra Latour]", p. 65.

[82]Burton, "Catalogue of Kahn's Personal Library, 1978-1980", Kahn Collection.

[83]Kahn, ***Louis Kahn to Anne Tyng: The Rome Letters 1953-1954***, p. 127. (Emphasis added).

[84] Sarah Williams Ksiazek, "Critiques of liberal individualism: Louis Kahn's civic projects, 1947-57", in ***Assemblage***, 31 (1996): 57-79.

[85]Thompson, ***On Growth and Form***, p. 720.

[86][Williams] Ksiazek, "Critiques of liberal individualism: Louis Kahn's civic projects, 1947-57".

[87]According to the Stoic doctrine known as "Natural Science", Stoics "believed they could show that the whole world (i.e. the universe) was the planned and providential work of God, [and] that human reason if correct must think in the same way as the divine reason". See: F. H. Sandbach, ***The Stoics***, London: Chatto & Windus, 1975, p. 69.

[88]Regarding the influence of Stoicism on Christianity, see: Troels Engberg-Pederson, "Stoicism in Philippians", in Troels Engberg-Pederson (ed.), ***Paul in His Hellenistic Context***, Edinburgh, Scotland: T&T Clark, pp. 256-290.

[89]Letter, MacKinnan to Kahn, file labelled, "Correspondence From Universities and Colleges", 28 August 1958, L.I.K. Box 65, Kahn Collection.

[90]Jung, ***The Portable Jung***, p. 55.

[91]Burton, "Catalogue of Kahn's Personal Library, 1978-1980", Kahn Collection. Note: the author of

this dissertation was refused access to Kahn's personal library, which at the time was in the possession of Kahn's daughter Sue Anne Kahn.

[92]Burton, "Catalogue of Kahn's Personal Library, 1978-1980".

[93]For example, in 1963 Kahn contributes to the Philadelphia Liturgical Week: Letter, Reverend Sloyan to Kahn, 18 September 1963, file labelled, "The Liturgical Conference: August 19, 20, 21, Panel on Art/Architecture", L.I.K. Box 64, Kahn Collection. Kahn addresses the First Presbyterian Church of Philadelphia in May 1956: Letter, Vaughan to Kahn, 26 May 1956, file labelled, "L.I.K. Lectures 1946 - 1956", L.I.K. Box 64, Kahn Collection.

[94]De Long, "The mind opens to realizations: Conceiving a new architecture, 1951-61", p. 67.

[95]Kahn, ***Louis I. Kahn to Anne Tyng: The Rome Letters 1953-1954***, p. 163, 165.

[96]Sarah Williams Ksiazek attributes Kahn's waning interest in space frames to the pejorative association of technology with mass culture. [Williams] Ksiazek, "Critiques of liberal individualism: Louis Kahn's civic projects, 1947-57", p. 74.

[97]Louis I. Kahn, "Order", in John Lobell (ed.), ***Between Silence and Light: Spirit in the Architecture of Louis I. Kahn***, Boulder: Shambhala, 1979, pp. 18-19. Since she claims to have been Kahn's muse during this period, Tyng is most likely the person he refers to in this quotation. See: Anne Tyng, "Professional and private lives", in Anne Griswold Tyng (ed.), ***Louis Kahn to Anne Tyng: The Rome Letters 1953-1954***, New York: Rizzoli, 1997, pp. 28-59. See p. 55.

[98]*Exodus*, 3:14. The analysis presented here concerns English translations of this passage and does not take account of Hebrew versions.

[99]Kahn, "Talks with students", p. 186.

[100]Kahn, "Talks with students", p.186.

[101]Kahn, "Talks with students", p. 188.

[102]David De Long, "Assembly...a place of transcendence: Designs for meeting", in David Brownlee and David De Long (eds.), ***Louis I. Kahn: In the Realm of Architecture,*** New York: Rizzoli International Publications Inc., 1991, pp. 78-93. See p. 82.

[103]De Long, "Assembly…a place of transcedence: Designs for meeting", pp.78-93.

[104]Louis I. Kahn, "Statements on architecture", in Alessandra Latour (ed.), ***Louis I. Kahn: Writings, Lectures, Interviews***, New York: Rizzoli International Publications Inc., 1991, pp. 221-224. See p. 223.

[105]"May your whole spirit, soul and body be kept blameless". 1 Thessalonians 5:23. (New International Version).

[106]The Christian writer Watchman Nee has written extensively about this theological matter. See: Watchman Nee, ***The Latent Power of the Soul***, New York: Christian Fellowship Publishers, Inc., 1972, and Watchman Nee, ***The Spiritual Man***, 3 volumes, New York: Christian Fellowship Publishers, 1968.

[107]Burton, "Notes from volume zero: Louis Kahn and the language of God".

[108]Louis I. Kahn, "Silence and light", in Alessandra Latour (ed.), ***Louis I. Kahn: Writings, Lectures, Interviews,*** New York: Rizzoli International Publications Inc., 1991, pp. 234-246. See p. 246.

[109]Cassette recording, "The Scope of Architecture at The Cooper Union Hall, 1-20-60", Kahn Collection.

[110]Kahn, ***Structure and Form***, Voice of America Forum Lectures, Architecture Series, no. 6. Washington D.C.: Voice of America, 1961.

[111]Kahn, "Louis I. Kahn notebook", [undated, circa 1959], Box K12.22, Kahn Collection.

[112]Kahn, "Louis I. Kahn notebook", [undated, circa 1959], Box K12.22, Kahn Collection.

[113]Kahn, "Louis I. Kahn notebook", [undated, circa 1959], Box K12.22, Kahn Collection. (Ellipsis and deletions in original.)

[114]Kahn, "Louis I. Kahn notebook", [undated, circa 1959], Box K12.22, Kahn Collection. (Emphasis added). (Ellipsis and deletions in original).

[115]Kahn, "Louis I. Kahn notebook", [undated, circa 1959], Box K12.22, Kahn Collection. (Ellipsis and deletions in original).

[116] Scholarship linking Kahn to Plato is discussed in Chapter 1 of this dissertation.

[117]This slogan has become synonymous with the influence of Louis Sullivan. See: Louis Sullivan, "The tall office building artistically considered", in Robert Twombly (ed.), ***Louis Sullivan: The Public Papers***, Chicago: University of Chicago Press, 1988, pp. 103-113.

[118]Robin B. Williams, "An architectural myth: The design evolution of Louis Kahn's First Unitarian Church", M. A. dissertation, The University of Pennsylvania, 1990.

[119]For a detailed discussion of this phenomenon, see: Johnson, ***The Theory of Architecture: Concepts, Themes & Practices***, pp. 46-49.

[120]For further reading on this project, see: Susan Solomon, "Jewish Community Centre: Ewing Township (near Trenton), New Jersey, 1954-59", in David Brownlee and David DeLong (eds.), ***Louis I. Kahn: In the Realm of Architecture,*** New York: Rizzoli International Publications Inc., 1991, pp. 318-323.

[121]*Esquisse* drawings were cited previously in this dissertation as a possible influence predisposing Kahn to a Platonic position. See: William Jordy (ed.), "Kahn on Beaux-Arts training", in ***Architectural Review***, 155 (1974): 332. Although Kahn does not cite *esquisse* drawings as the source of his "form and design" theory, David Brownlee does make this obvious comparison. See: Brownlee, "Adventures of Unexplored Places: Defining a philosophy, 1950-51", p. 22.

[122]Kahn, "Form and Design", pp. 148.

[123]"Architectural and Building Committee Reminiscences, Jan. 28, 1979", cassette recording, Kahn Collection.

[124]Report from the Building Committee Meeting, file labelled, "Building Committee Reports 59-60", Historical Records of The First Unitarian Church, Rochester.

[125]Report from the Building Committee Meeting, file labelled, "Building Committee Reports 59-60", Historical Records of The First Unitarian Church, Rochester.

[126]Building Committee Meeting, January 4, 1960, file labelled, "Building Committee Minutes 59-60", Historical Records of The First Unitarian Church, Rochester.

[127]Letter, Helen Williams to Louis Kahn, 8 January 1960, file labelled, "Building Committee Correspondence — Rochester, April 1959 through December 1960", L.I.K. Box 15, Kahn Collection.

[128]Letter, Helen Williams to Louis Kahn, 1 March 1960, file labelled, "Building Committee Correspondence —Rochester, April 1959 through December 1960", L.I.K. Box 15, Kahn Collection.

[129]Untitled loose page, file labelled, "Building Committee Correspondence — Rochester April 1959 through December 1960", L.I.K. Box 15, Kahn Collection.

[130]Untitled loose page, file labelled, "Building Committee Correspondence — Rochester April 1959 through December 1960", L.I.K. Box 15, Kahn Collection.

[131]Untitled loose page, file labelled, "Building Committee Correspondence — Rochester April 1959 through December 1960", L.I.K. Box 15, Kahn Collection.

[132]Cassette recording, "The Scope of Architecture at The Cooper Union Hall, 1-20-60", Kahn Collection.

[133]Cassette recording, "The Scope of Architecture at The Cooper Union Hall, 1-20-60", Kahn

Collection. (Emphasis as spoken).

[134]Kahn, "Order is", p. 58.

[135]Kahn, "Order is", p. 58.

[136]Louis I. Kahn, "New frontiers in architecture, CIAM in Otterlo 1959", in Alessandra Latour (ed.), ***Louis I. Kahn: Writings, Lectures, Interviews***, New York: Rizzoli International Publications Inc., 1991, pp. 81-99. See p. 83.

[137]Kahn, "New frontiers in architecture, CIAM in Otterlo 1959", p. 91.

[138]Cassette recording, "The Scope of Architecture at The Cooper Union Hall, 1-20-60", Kahn Collection.

[139]The Margaret Esherick House was designed between 1959 and 1961.

[140]Cassette recording, "The Scope of Architecture at The Cooper Union Hall, 1-20-60", Kahn Collection.

[141]As previosuly indicated, Joseph Burton observes that "Kahn's primary notion of Form is like Plato's theory of the ideas". See: Burton, "Notes from volume zero: Louis Kahn and the language of God", p. 76. In like manner Vincent Scully describes Kahn's "form and design" theory as "a curious but very useful amalgam of Platonic Idealism and Pragmatic Realism". See: Scully, "Introduction", p. xix.

[142]Kahn, ***Louis I. Kahn to Anne Tyng: The Rome Letters 1953-1954***, p. 160.

[143]Kahn, "Order Is".

[144]De Long, "The mind opens to realizations: Conceiving a new architecture, 1951-61", p. 56.

[145]De Long, "The mind opens to realizations: Conceiving a new architecture, 1951-61", p. 56.

[146]William C. Gannett, ***The House Beautiful***, Boston, Massachusetts: James H. West Co. Publishers, 1895.

[147]Interview, Steven Fleming with Colleen Hurst (historian for the First Unitarian Church in Rochester), 25 June 2002, Rochester.

[148]In the previous chapter, Brownlee was quoted as stating that Kahn's vocabulary is "fortified by allusions to respected authority", particularly Platonism. See: Brownlee, "Light, the giver of all presences: Designs to honor human endeavor", p. 129.

[149]Robin Williams, "First Unitarian Church and School, Rochester, New York, 1959-69", in David Brownlee and David DeLong (eds.), ***Louis I. Kahn: In the Realm of Architecture,*** New York: Rizzoli International Publications Inc., 1991, pp. 340-345. See p. 342.

[150]Louis I. Kahn, "On philosophical horizons", in Alessandra Latour (ed.), ***Louis I. Kahn: Writings, Lectures, Interviews,*** New York: Rizzoli International Publications Inc., 1991, pp.100-102. See p. 101.

[151]See: Louis I. Kahn, "On form and design", in Alessandra Latour (ed.), ***Louis I. Kahn: Writings, Lectures, Interviews***, New York: Rizzoli International Publications Inc., 1991, pp. 102-108. See p. 103. This text was first published in the later half of 1960.

[152] Kenneth Walter Cameron, cited in Donald N. Koster, ***Transcendentalism in America***, Boston: Twayne Publishers, 1975, p. 2.

[153]Anderson, "Public institutions: Louis I. Kahn's reading of volume zero".

[154]Kahn, "Form and Design", p. 148. (Emphasis in original).

[155]Anderson, "Public institutions: Louis I. Kahn's reading of volume zero", p. 12.

[156]Anderson, "Public institutions: Louis I. Kahn's reading of volume zero", p. 13.

[157]Andrè Neher, "The view of time and history in Jewish culture", in L. Gardet et al. (eds.), ***Cultures***

and Time, Paris: UNESCO Press, 1976, p. 156. Cited in: Anderson, "Public institutions: Louis I. Kahn's reading of volume zero", p. 13.

[158]For example, see: Kahn, "How'm I doing, Corbusier?" , p. 301.

[159]Kahn, "1973: Brooklyn, New York", p. 324. (Emphasis added).

[160]Kahn, "Talks with students", p. 168. (Emphasis added).

[161]Kahn, "Statements on architecture", p. 223.

[162]Louis I. Kahn, "Space and inspirations", in Alessandra Latour (ed.), ***Louis I. Kahn: Writings, Lectures, Interviews,*** New York: Rizzoli International Publications Inc., 1991, pp. 224-230. See p. 224.

[163]Kahn, "Form and Design", p. 148.

[164]Kahn, "Form and Design", p. 148. (Emphasis added).

[165]Kahn, "Form and Design", p. 148. (Emphasis added).

[166]Louis I. Kahn, "Louis I. Kahn", in Alessandra Latour (ed.), ***Louis I. Kahn: Writings, Lectures, Interviews,*** New York: Rizzoli International Publications Inc., 1991, pp. 122-140. See p. 134.

[167]Kahn, "Louis I. Kahn", p.134.

[168]Kahn, "Louis I. Kahn", p.134.

[169]Kahn, "I love beginnings", p. 287.

[170]Kahn, "I love beginnings", p.287. (Emphasis added).

[171][Williams] Ksiazek, "Critiques of liberal individualism: Louis Kahn's civic projects, 1947-57".

[172][Williams] Ksiazek, "Critiques of liberal individualism: Louis Kahn's civic projects, 1947-57", p. 69.

[173][Williams] Ksiazek, "Critiques of liberal individualism: Louis Kahn's civic projects, 1947-57", p. 69.

[174]Bob Jonas (Building Committee member), quoted from: Cassette tape, "Architectural and Building Committee Reminiscences, Jan. 28, 1979", Kahn Collection. (Emphasis spoken in original).

[175]Kahn, "The nature of nature", p. 142.

[176]Kahn, "The nature of nature", p. 142.

[177]Kahn, "Talks with students", p. 174.

[178]Kahn, "Talks with students", p. 181. (Ellipsis in original.)

[179]Johnson, ***The Theory of Architecture: Concepts, Themes & Practices***, p. 338.

[180]Kahn, "Form and Design", p. 148.

[181]Norberg-Schulz, "Kahn, Heidegger and the language of architecture", p. 35.

[182]Norberg-Schulz, "Kahn, Heidegger and the language of architecture", p. 31.

[183]Kahn, "Form and Design", p.148.

[184]Kahn reiterates his school analogy on many occasions. For example, see: Latour (ed.), ***Louis I. Kahn: Writings, Lectures, Interviews***, p. 83, 101, 151, 229, 267 and 301. In the first and last of these examples Kahn specifically differentiates between "school" and "schools". In none of these examples does Kahn use a plural term when describing the institution of "school". Other examples of Kahn's use of plural and singular terms to differentiate between singular "forms" and their many manifestations are provided throughout this dissertation.

[185]Kahn, "Form and Design", p.148.

[186]Louis I. Kahn, "Address", in Alessandra Latour (ed.), ***Louis I. Kahn: Writings, Lectures, Interviews***, New York: Rizzoli International Publications Inc., 1991, pp. 208-220. See p. 209.

[187]Martin Heidegger, ***Being and Time***, trans. J. Maquarrie and E. Robinson, Oxford, England: Basil Blackwell, 1962.

[188]Heidegger, ***Being and Time.***

[189]Kahn, "Address", p. 209.

[190]Scully, "Louis I. Kahn in the Soviet Union", p. 62, 66, 71.

[191]Kahn, "Form and Design", p. 148.

[192]Kahn, "Form and Design", p. 148.

[193]Kahn, "Form and Design", p. 148.

[194]Kahn, "Form and Design", p. 148.

[195]Kahn, "Form and Design", p.148. (Emphasis added).

[196]Kahn, "Form and Design", p. 149.

[197]Kahn, "Form and Design", p. 149.

[198]Tyng, ***Beginnings: Louis I. Kahn's Philosophy of Architecture.***

[199]Video cassette recording, ***Louis Kahn: Of Dreams and Drawing Boards***, September 1962, Kahn Collection.

[200] Eugene J. Johnson, "Sketching Abroad", in Eugene J. Johnson and Michael J. Lewis, ***Drawn From the Source: The Travel Sketches of Louis I. Kahn***, Cambridge, Massachusetts: The MIT Press, 1996, pp. 33-110. p. 34.

[201]Burton, "Catalogue of Kahn's Personal Library, 1978-1980", Kahn Collection. Items: 163, 175, 180, and 219 relate to modern art, while items 161, 165, 181 relate to modern architecture.

[202]Post cards and similar souvenirs can be found throughout Kahn's office files.

[203]Christian Bonnefoi, "Louis Kahn and minimalism", trans. Dan Cooper, in ***Oppositions***, 24 (1981): 2-25.

[204]Louis I. Kahn, ***The Travel Sketches of Louis I. Kahn: An Exhibition Organised by the Pennsylvania Academy of Fine Arts, 1978-1979***, Philadelphia: Pennsylvania Academy of the Fine Arts, 1978, p. 5.

[205]Kahn, ***The Travel Sketches of Louis I. Kahn: An Exhibition Organised by the Pennsylvania Academy of Fine Arts, 1978-1979***, p. 5.

[206]Kahn, ***The Travel Sketches of Louis I. Kahn: An Exhibition Organised by the Pennsylvania Academy of Fine Arts, 1978-1979***, p. 5.

[207]Vincent Scully, "Marvellous fountainheads: Louis I. Kahn: Travel drawings", in ***Lotus International***, No. 68 (1991): 48-63. See p. 51.

[208]Tyng, ***Beginnings: Louis I. Kahn's Philosophy of Architecture.***

[209]Colin St. John Wilson, "Building ideas", in ***Architects' Journal***, Vol. 195, No. 9 (1992): 20-21.

[210]This quotation was cited on a wall plaque at the Yale University Art Gallery, under the title of "Homage to the Square". However, these exact words do not appear in Albers' monograph of that series and so their original source — possibly a lecture — is unknown. Josef Albers, ***40 New Paintings by Josef Albers, September 28 Through October 24***, New York: Sidney Janis, 1964.

[211]Brownlee, "Adventures of unexplored places: Defining a philosophy, 1901-51", p. 46.

[212]Kahn, "How'm I doing, Corbusier?" p.298.

[213]An example is the 1967 article, Kahn, "Statements on architecture", p. 223.

[214]Kahn, "Architecture", in John Lobell (ed.), ***Between Silence and Light: Spirit in the Architecture of Louis I. Kahn,*** Boulder, Colorado: Shambhala, 1979. See p. 48.

[215]Kahn, "Architecture", in Lobell, p. 48.

[216]Kahn, "Form and Design", p. 145.

[217]Kahn, "Form and Design", p. 149, 151.

[218]While buildings can be interpreted as signifiers of other earthly things, they are usually constructed for some practical purpose. Therefore, in the context of this dissertation, buildings are classified as useful artefacts, rather than artistic works.

[219]Jencks, "Semiology and architecture", p. 14.

[220]Danto, "Louis Kahn as Archai-Tekt", p. 190

[221]Danto, "Louis Kahn as Archai-Tekt", p. 190

[222]Danto, "Louis Kahn as Archai-Tekt", pp. 190-191

[223]Danto, "Louis Kahn as Archai-Tekt", p. 191

[224]Danto, "Louis Kahn as Archai-Tekt", p. 191

[225]Danto, "Louis Kahn as Archai-Tekt", p. 191

[226]Danto, "Louis Kahn as Archai-Tekt", p. 191

[227]Scully, ***Louis I. Kahn***.

[228]Scully, "Marvellous fountainheads: Louis I. Kahn: Travel drawings", p. 53, 55.

[229]Scully, ***Louis I. Kahn***, p.11.

[230]Jan Hochstim, ***The Paintings and Sketches of Louis I. Kahn***, New York: Rizzoli, 1991, p. 30.

[231]Hochstim, ***The Paintings and Sketches of Louis I. Kahn***, p. 31.

[232]Heidi Zuckerman, "Palaces, churches and temples: The influence of Louis I. Kahn's travel sketches on his architectural projects", in ***Drawing***, Vol. 18, No. 3 (1996-1997): 79-81.

[233]Kahn, "Not for the fainthearted", p. 258.

[234]Burton, "Notes from volume zero: Louis I. Kahn and the language of God", p.76.

[235]I.E.S. Edwards, ***The Pyramids of Egypt***, New York: Penguin Books, 1952.

[236]Burton, "Notes from volume zero: Louis I. Kahn and the language of God", p. 72.

[237]Gorlin, "Modern architects reconsidered: Biblical imagery in the Work of Louis I. Kahn: From Noah's Arc to the Temple of Solomon".

[238]Gorlin, "Modern architects reconsidered: Biblical imagery in the Work of Louis I. Kahn: From Noah's Arc to the Temple of Solomon", p.85.

[239]Peter Kohane, "C.R. Cockerell's dream of history", in Julie Willis, Philip Goad, Andrew Hutson (eds.), ***FIRM(ness) commodity Delight?: questioning the canons: Papers from the Fifteenth Annual Conference of The Society of Architectural Historians Australia and New Zealand, Melbourne, Australia, 1998***, University of Melbourne: The Society of Architectural Historians, Australia and New Zealand, 1998, pp. 141-148.

[240]Kohane, "Louis Kahn and the Library: Genesis and expression of 'form'", p. 105.

[241]Kohane, "Louis Kahn and the Library: Genesis and expression of 'form'", p. 127.

[242] A point that will be discussed in greater detail later in this dissertation should also be noted briefly, and that is that it would be difficult to confirm that such sketches are in fact "form" diagrams of the

kind produced for the Unitarian church at Rochester, since Kahn does not acknowledge them as such.

[243]Letter, Rowe to Kahn, 7 February 1956.

[244]Wittkower, ***Architectural Principles in the Age of Humanism***.

[245]Louis I. Kahn, "A statement", in Alessandra Latour (ed.), ***Louis I Kahn: Writings, Lectures, Interviews***, New York: Rizzoli International Publications Inc., 1991, pp. 145-152. See p. 151.

[246]Williams, "First Unitarian Church and School, Rochester, New York, 1959-69".

[247]Giurgola with Berg, "Kahn, Louis I.", p. 541.

[248]Robert Harbison, "The life of ideas in architecture", in ***Harvard Design Magazine***, Summer (1997): 68-70. See p. 68.

[249]Auer, "On the brick that wanted to become an arch: Louis I. Kahn's masonry structures", p. 69.

[250]Auer, "On the brick that wanted to become an arch: Louis I. Kahn's masonry structures", p.69.

[251]Muktirajsinhji, "Louis I. Kahn: The Yogi of architecture: Interview with Balkrishna Doshi". Also see: Balkrishna Doshi, "Louis Kahn in India", in ***Louis I. Kahn: Architecture + Urbanism***, special issue (1975): 308-314.

[252]Lobell, ***Between Silence and Light: Spirit in the Architecture of Louis I. Kahn***, p. 66.

[253]Kenneth Frampton, "Louis Kahn and the French connection", in ***Oppositions***, 22 (1980): 21-53. See p. 21.

[254]Frampton, "Louis Kahn and the French connection", p. 41.

[255]Frampton, "Louis Kahn and the French connection", p. 41.(Emphasis added).

[256]Frampton, "Louis Kahn and the French connection", p.41.

[257]Frampton, "Louis I. Kahn and the new monumentality 1944-1972", pp. 6-13.

[258]Thompson, ***On Growth and Form***, p. 695.

[259]Tyng, "Perception and proportion."

[260]Thompson, ***On Growth and Form***, p.720. Thompson found that certain species of radiolaria are "built" from tetrahedrons. Kahn and Tyng's Philadelphia Tower proposal was also "built" from tetrahedrons.

[261] It could be argued that tetrahedrons provide more suitable structures for radiolaria than buildings, since radiolaria do not need to accommodate upright inhabitants. Perhaps this practical difficulty led Kahn, just two years after the Philadelphia Tower project, to look for the Platonic Forms corresponding to building types, rather than biological structures, for his First Unitarian Church and School in Rochester.

[262]Anne G. Tyng, "Interview with Alessandra Latour, Philadelphia, Pennsylvania, May 2, 1982", in Alessandra Latour (ed.), ***Louis I. Kahn: l'uomo, il maestro***, Roma: Kappa, c1986, pp. 39-55. See p. 51.

[263]Tyng, ***Beginnings: Louis I. Kahn's Philosophy of Architecture.***

[264]Lobell, ***Between Silence and Light: Spirit in the Architecture of Louis I. Kahn.***

[265]John Paul Roth, "Structures of thought: Forms from the works of the architect Louis I. Kahn in relation to psychological principles of integration", Masters dissertation, The University of Oregon, 1978.

[266] Earlier in this chapter, the way in which Jung himself traces his own theory of archetypes to Plato and insists on the atemporal characteristics of the Forms/archetypes was noted.

[267]Christian Devillers, "Louis Kahn grande contemporaneo", in ***Casabella*** Vol. 55, No. 584 (1991): 40-45, 61-66. See p. 62.

[268]Devillers, “Louis Kahn grande contemporaneo”, p.62.

[269]Louis I. Kahn, “Our changing environment”, in Alessandra Latour (ed.), ***Louis I. Kahn: Writings, Lectures, Interviews,*** New York: Rizzoli International Publications Inc., 1991, pp. 153-154. See p. 154.

[270]Kahn, “Talks with students”, p. 173.

[271]Louis I. Kahn, “The room, the street, and human agreement”, in Alessandra Latour (ed.), ***Louis I. Kahn: Writings, Lectures, Interviews***, New York: Rizzoli International Publications Inc., 1991, pp. 263-269. See p. 268.

[272] Kahn, “The room, the street, and human agreement”, p. 268.

[273] Kahn, “The room, the street, and human agreement”, p. 268.

[274]Kahn made this list of desires in 1965. See: Kahn, “Remarks”, p. 197.

[275]Kahn, “Talks with students”, p.183.

[276]Kahn, “Talks with students”, p. 168.

[277]Kahn, “Talks with students”, p.168. (Emphasis in original).

[278]Kahn, “Silence and light”, p. 238.

[279]Kahn, “1973: Brooklyn, New York”, p. 329.

[280]Anderson, “Public institutions: Louis I. Kahn’s reading of volume zero”.

[281]Cassette recording: “The Scope of Architecture at The Cooper Union Hall, 1-20-60”, Kahn Collection.

[282]Cassette recording: “The Scope of Architecture at The Cooper Union Hall, 1-20-60”, Kahn Collection.

[283]Kahn, “Remarks”, p. 194.

[284]Scully, “Introduction”, p. xvii.

[285]Scully, “Introduction”, p. xviii.

[286]Scully, “Introduction”, p. xviii.

[287]Note that this statement is qualified, and is not meant to be conclusive. While not wishing to discuss the influence of transcendent models on Kahn’s work, elsewhere Scully has written that Egyptian Pyramids, when seen in certain lighting situations, seem to magically conquer gravity, enforcing a belief in transcendence. His own views about transcendence are therefore unclear. See: Vincent Scully, ***Architecture: The Natural and the Manmade***, New York: St. Martin’s Press, 1991, p. 27. Whether Scully, or others who look for the historical sources of Kahn’s buildings, believe in transcendence themselves is beyond the scope of this enquiry; however, they do treat Kahn’s theory *as though* they were empiricists.

[288]Alberto Pérez-Gómez, ***Architecture and the Crisis of Modern Science***, Cambridge, Massachusetts: MIT Press, 1984.

[289]Cassette recording of a lecture delivered by Scully titled “Louis I. Kahn and the Ruins of Rome”, at the Washington Design Centre, Washington, 29 April 1992, Kahn Collection.

[290]Danto, “Louis Kahn as Archai-Tekt”, p. 191

[291]Alan Holgate, ***Aesthetics of Built Form***, Melbourne: Oxford Univerity Press, 1992, p. 21.

[292]Holgate, ***Aeshtetics of Built Form***, p. 21.

[293]Wim Swaan, ***The Gothic Cathedral***, London: Elek Books, 1969, p. 24. Vincent Scully describes a comparable sea-change occurring in ancient Egyptian aesthetics. Scully writes of a similar event during Ancient Egypt’s fifth dynasty. Whereas the fourth dynasty temples of Gizeh display “no

imitation of natural forms", and entombed pharaohs await the moment of transcendence with absolute confidence in human magic, "the single most consistent movement in Egyptian architecture thereafter was a kind of regressive return to the security of the earth and the imitation of its forms". Since then, Scully claims, "[m]ankind has never felt so confident again". See: Scully, ***Architecture: The Natural and the Manmade***, p. 29.

[294]The confusion among Renaissance theorists between Platonic and Aristotelian conceptions of beauty is dealt with definitively by Panofsky. See Panofsky, ***Idea: A Concept in Art Theory.***

[295]Leon Battista Alberti, ***Ten Books on Architecture***, Joseph Rykwert (ed.), London: Alec Tiranti, 1955. See Book IX, Chapter V, p. 194.

[296]Wittkower, ***Architectural Principles in the Age of Humanism***.

[297]Genesis, 3:18.

[298]Romans, 8: 20-21.

[299]Millard J. Erickson, ***Christian Theology***, Michigan: Baker Book House, 1992, p. 428.

[300]Sean McDonagh, ***The Greening of the Church***, New York: Orbis Books, 1990.

[301]Ian Bradley, ***God is Green: Christianity and the Environment***, London: Darton, Longman and Todd, 1990.

[302]Paul Collins, ***God's Earth: Religion as if Matter Really Mattered***, North Blackburn, Victoria: Dove, 1995.

[303]File labelled, "Pennsylvania, University of", L.I.K. Box 62, Kahn Collection.

[304]The extent to which other aestheticians, such as Emmanuel Kant, David Hume, John Dewey or Martin Heidegger may have influenced twentieth-century architectural theory is beyond the scope of this work.

[305]Edward Robert De Zurko, ***Origins of Functionalist Theory***, New York: Columbia University Press, 1957. See pp. 3-12. De Zurko's other two analogies are the machine analogy and the moral analogy.

[306]Andrew Metcalf (ed.), ***Thinking Architecture: Theory in the Work of Australian Architects***, Red Hill, ACT: The Royal Australian Institute of Architects, 1995.

[307]The works of Wright, Gaudi, Utzon and Mies van der Rohe are provided as illustrations only. Confirming their aesthetic positions to be Aristotelian is beyond the scope of this thesis.

[308]Frank Lloyd Wright, "The language of an organic architecture", in Bruce Brooks Pfeiffer (ed.), ***Frank Lloyd Wright: Collected Writings***, Vol. 5, New York: Rizzoli, 1995. See pp. 60-63.

[309]Kenneth Frampton, ***Modern Architecture: A Critical History***, London: Thames & Hudson, 1985.

[310]Videorecording, ***Skyer*** [Clouds: Jorn Utzon], Rushcutters Bay, N.S.W.: Mediatrak, 1994.

[311]Padovan, "Machines a mediter", p. 19.

[312]Another possible example of this approach to nature is provided by Philip Johnson. With the Garden Grove Community Church, or "Crystal Cathedral", in California, Johnson appears to borrow from his mentor Mies van der Rohe's divination of nature. According to Johnson, this church intentionally bonds the experience of religion with the experience of nature. Being in essence hypaethral, the Crystal Cathedral brings the viewer's attention to the least spoilt aspect of nature/creation in its urban context, the sky. See: Philip Johnson & John Burgee, ***Philip Johnson/John Burgee Architecture 1979-85***, New York: Rizolli International Publications Inc., 1985.

[313]St.Thomas Aquinas held that a passage from Paul's Epistle to the Romans (1:20) sanctioned empiricism. That passage claims that God encoded his otherwise invisible qualities in material creation for all people to see.

[314]William J. R. Curtis, ***Modern Architecture Since 1900***, 3rd. edn., London: Phaidon Press, 1996. See p. 421.

[315]Curtis, ***Modern Architecture Since 1900***, p. 421.

[316]Curtis, ***Modern Architecture Since 1900***, p. 421.

[317]Le Corbusier and Francois de Pierrefeu, ***The Home of Man***, London: The Architectural Press, 1948, p.124.

[318]For a discussion of this analogy, see: Barry Maitland, "The grid", in ***Oppositions***, Vol. 15, No. 16 (1979): 91-117. Le Corbusier sketches the human skeleton, the digestive tract, the cardiovascular system, and a complete body. A corresponding list of building elements, according to Maitland, would be "the structural skeleton, the volumes of the building defined by their own systems of walls independent of the structure, the circulatory system (which might be said to begin beyond the limits of the body proper), and finally a proportional or geometric system demanded by the building as a whole". See p. 96.

[319]Le Corbusier, ***The City of To-morrow and its Planning***, 3rd. edn., trans. Frederick Etchells, London: Architectural Press, 1971.

[320]Le Corbusier, ***Modulor 2: 1955 (Let The User Speak): Continuation of 'The Modulor' 1948***, trans. Peter de Francia and Anna Bostock, London: Faber and Faber, 1958, p. 22, 59, 144, 189, 197.

[321]Louis I. Kahn, "Speech at Aspen, Colorado, June 19, 1972", in Richard Saul Wurman (ed.), ***What Will Be Has Always Been: The Words of Louis I. Kahn***, New York: Access Press/Rizzoli, 1986, p. 151. (Emphasis added.)

[322]Kahn, "Statements on architecture", p . 223.

[323]Kahn, "Statements on architecture", p. 223.

[324]Louis I. Kahn, "Wanting to be: The Philadelphia School", in Richard Saul Wurman (ed.), ***What Will Be Has Always Been: The Words of Louis I. Kahn***, New York: Access Press Ltd. And Rizzoli, 1986, pp. 89-92. See p. 91.

[325]Kahn, "Wanting to be: The Philadelphia School", p. 91.

[326]It is unusual that with this quote Kahn does not mention Corinth, the forebear of Paestum and a building which Kahn had visited and sketched.

[327]Kahn, "Address", p. 208.

[328]De Zurko, ***Origins of Functionalist Theory***.

[329]Wright, "The language of an organic architecture".

[330]Kahn, "Statements on architecture", p . 112.

[331]Norberg-Schulz, "Kahn, Heidegger and the language of architecture", p. 29.

[332]Kahn, "Talks with students", p. 167.

[333]Kahn, "Talks with students", pp. 167-168.

[334]Kahn, "Space and inspirations", p. 228.

[335]Kahn, "A statement", p. 146.

[336]Kahn, "A statement", p. 146.

[337]Kahn, "A statement", p. 146.

[338]Louis I. Kahn, "Spaces, order and architecture", in Alessandra Latour (ed.), ***Louis I. Kahn: Writings, Lectures, Interviews***, New York: Rizzoli International Publications Inc., 1991, pp. 75-80. See p. 79.

[339]Kahn, "Spaces, order and architecture", p.79.

[340]Frampton, ***Studies in Tectonic Culture: The Poetics of Construction in Nineteenth and Twentieth Century Architecture***, p. 216.

[341]Frampton, "Louis I. Kahn and the French connection", p. 32.

[342]Louis I. Kahn, "Monumentality", in Alessandra Latour (ed.), ***Louis I. Kahn: Writings, Lectures, Interviews***, New York: Rizzoli International Publications Inc., 1991, pp. 18-27. Also in P. Zucker (ed.), ***The New Architecture and City Planning***, New York: Philosophical Library, 1944, pp. 578-579.

[343]Frampton, "Louis I. Kahn and the French connection", p. 30.

[344]Frampton, "Louis I. Kahn and the French connection", p. 30.

[345]Frampton, ***Studies in Tectonic Culture: The Poetics of Construction in Nineteenth and Twentieth Century Architecture***, p. 227.

[346]Frampton, ***Studies in Tectonic Culture: The Poetics of Construction in Nineteenth and Twentieth Century Architecture***, p. 227. The statements of Kahn's to which Frampton refers are published in: Louis I. Kahn, "Foreword", in Myron Goldfinger (ed.), ***Villages in the Sun: Mediterranean Community Architecture***, London: Lund Humphries, 1969, pp. 246-247. See also: Louis I. Kahn, "Forward", in Alessandra Latour (ed.), ***Louis I. Kahn: Writings, Lectures, Interviews***, New York: Rizzoli International Publications Inc., 1991, p. 231.

[347]Frampton, ***Studies in Tectonic Culture: The Poetics of Construction in Nineteenth and Twentieth Century Architecture***, p. 228.

[348]Tyng, ***Beginnings: Louis I. Kahn's Philosophy of Architecture***. Note however that Tyng provides no evidence to suggest that Kahn knew of Einstein's work.

[349]Le Ricolais had been a contemporary of Kahn's at the University of Pennsylvania.

[350][Williams] Ksiazek, "Critiques of liberal individualism: Louis Kahn's civic projects, 1947-57", p. 67.

[351]Louis I. Kahn, "The garden and the room", in John Lobell (ed.), ***Between Silence and Light: Spirit in the Architecture of Louis I. Kahn***, Boulder: Shambhala, 1979, p. 38. Also see: Louis I. Kahn, "Clearing", in Alessandra Latour (ed.), ***Louis I. Kahn: Writings, Lectures, Interviews***, New York: Rizzoli International Publications Inc., 1991, pp. 316-319. See p. 318.

[352]Louis I. Kahn, "Silence", in Alessandra Latour (ed.), ***Louis I. Kahn: Writings, Lectures, Interviews***, New York: Rizzoli International Publications Inc., 1991, pp. 232-233. See p. 232.

[353]Kahn, "The garden and the room", p. 38.

[354]Kahn, "Architecture: Silence and light", p. 248.

[355]Kahn, "Architecture: Silence and light", p. 248.

[356]Kahn writes that "[w]hen personal feeling transcends into Religion...and Thought leads to Philosophy, the mind opens to realizations". See: Kahn, "Form and design", p. 145.

[357]Kahn, "Architecture: Silence and light", p. 248.

[358]Plato, ***The Phaedrus*** (250c).

[359]Plato, "Phaedrus", in trans. B. Jowett, ***The Dialogues of Plato***, 4th edn., Vol. 3, Oxford: Clarendon Press, 1953, p. 156.

[360]Plato, "Phaedrus", in Jowett, p. 157.

[361]Kahn, "Remarks", p. 195.

[362] Kahn, "Form and Design", p. 152.

[363]Taylor, ***The Mind of Plato***, p. 36.

[364]Taylor, ***The Mind of Plato***, p. 37.

[365]Kahn, "Form and Design", p. 152.

[366]Plato, ***The Republic***, trans. Raymond Larson, Illinois: AHM Publishing Corporation, 1979, p. 173.

[367]Plato, ***The Republic***, in Larson, p. 174.

[368]Tyng, "Simultaneous randomness and order: The Fibonacci-Divine proportion as a universal forming principle".

[369]Plato, ***The Republic*** (533d), in Lee, p. 283. See also: Plato, ***The Republic*** (510c).

[370]Broadbent, ***Emerging Concepts in Urban Space Design***, p. 81.

[371]Broadbent, ***Emerging Concepts in Urban Space Design***, p. 84.

[372]Fleming and Ostwald, "Rationalism", p. 75.

[373]Rudolf Schwarz, ***The Church Incarnate: The Sacred Function of Christian Architecture***, trans. Cynthia Harris, Chicago: Henry Regnery Company, 1958.

[374]Schwarz, ***The Church Incarnate: The Sacred Function of Christian Architecture***, p.36.

[375]Schwarz, ***The Church Incarnate: The Sacred Function of Christian Architecture***, p.36.

[376]Schwarz, ***The Church Incarnate: The Sacred Function of Christian Architecture***, P.174.

[377]Kahn, "Remarks", p. 194.

[378]Kipnis, "Forms of irrationality".

[379]Kahn, "A statement", p. 145.

[380]Frampton, "Louis Kahn and the French connection".

[381]Kahn, "Talks with students", p. 181.

[382]According to encyclopaedia definitions, philosophical rationalism privileges reason over observation, and is the antithesis of empiricism. See: Philip W. Goetz (ed.), ***The New Encyclopedia Britannica***, Chicago: Encyclopedia Britannica Inc., 1991, p. 953.

[383]Kahn, "A statement", p. 146.

[384]Plato, ***Meno*** (82-84).

[385]Kahn, "Talks with students", p. 181.

[386]Kahn, "Talks with students", p. 177.

[387]Kahn, "Space and inspirations", p. 225.

[388]Kahn, "Silence", p. 233.

[389]Plato, ***The Republic*** (509d-510b).

[390]Plato further subdivides the intelligible realm (*no ton*) of true knowledge, into two classes: dialectic (*no sis*) and mathematical reasoning (*dianoia*). He also subdivides the sensible realm (*hor ton*) of opinion, into two classes: physical things in which we have belief (*pistis*), and shadows or images which merely constitute illusion (*eikasia*).

[391] David Brownlee, "Light, the giver of all presences: Designs to honor human endeavor", p.129.

[392] Kahn, "Silence and light", p. 235.

[393]Brownlee, "Light, the giver of all presences: Designs to honor human endeavor", p. 128.

[394]Kahn, "Statements on architecture", p. 221.

[395]Kahn, "A statement", p. 146.

[396]Kahn, “Architecture”, in Latour p. 282.

[397]According to Brownlee, Kahn “rechristened” his terms “form and design” as “law and rule”, “belief and means”, “existence and presence”, and finally, “silence and light”. See: Brownlee, “Light, the Giver of all Presences: Designs to honor human endeavor”, p. 128.

[398]“Report to the Congregation from the Fact Finding Committee on Church Architecture”, file labelled, “Building Committee Correspondence - Rochester, April 1959 through December 1960”, L.I.K. Box 15, Kahn Collection.

[399]Williams, “First Unitarian Church and School, Rochester, New York, 1959-69”, p. 340.

[400]Plato, ***The Republic*** (543-591).

[401]Kahn, “Form and Design”, p. 149.

[402]Jencks, ***Modern Movements in Architecture***, p. 105.

[403]Taylor, ***The Mind of Plato***, p. 39.

[404]Taylor, ***The Mind of Plato***, p. 40.

[405]For example, D. M. Armstrong argues for a realm of universals which transcends individual human minds, but which is dependant on humanity for its existence. See: D.M. Armstrong, ***A Theory of Universals: Universals and Scientific Realism***, Vol. II, London: Cambridge University Press, 1978.

[406]Kahn, “Remarks”, p. 194.

[407]Kahn’s veneration of belief can be likened to the Vatican’s veneration of faith. Traditionally, the Vatican has disregarded artefacts which might provide empirical proof of the Gospels — artefacts such as the Shroud of Turin — since such evidence would diminish the importance of faith within Catholicism.

[408] Kahn, “Form and Design”, p. 152.

[409]Sayre, ***Plato’s Late Ontology: A Riddle Solved***, p. 191

[410]Kahn, “1973: Brooklyn: New York”, p. 329.

[411]Kahn, “1973: Brooklyn: New York”, p. 329.

[412]For example, see: Kahn, “Talks with students”, p. 158.

[413]Note that in Saint John’s Gospel (Chapter 9: verse 1-3), Jews of Christ’s time ask whether one’s own sin prior to birth could cause blindness in this incarnation. While the prospect of a previous incarnation is not central to Christendom, neither is it totally alien to the Judeo/Christian tradition.

[414]Luis Vincent Rivera, “Interview with Alessandra Latour, Philadelphia, Pennsylvania. November 13, 1982”, in Alessandra Latour (ed.), ***Louis I. Kahn: L’uomo, il maestro***, Roma: Kappa, 1986, pp. 99-107. See p. 103.

[415]Rivera, “Interview with Alessandra Latour, Philadelphia, Pennsylvania. November 13, 1982”, p. 103.

[416]Huff, “Kahn at Yale”, p. 28.

[417]Interview, Steven Fleming with Robert Segrest, 22 June 2000, The University of Newcastle.

[418] Jim Cunningham was also a Rochester based architect who had taken courses from Kahn. “Architectural and Building Committee Reminiscences, Jan. 28, 1979”, Kahn Collection.

[419]Interview, Fleming with Forbes, 26 June 2002.

[420]Michael Benedikt, “Between beakers and beatitudes”, in ***Progressive Architecture***, Vol. 74, No. 10 (1993): 52-53. See p. 52.

[421]Doshi, “Louis Kahn in India”.

[422]Balkrishna Doshi, cited in Dan Cruickshank, "I like a brick", in ***Architects' Journal***, Vol 195, No. 9 (1992): 28-36. See p. 32.

[423]Tyng, ***Beginnings: Louis I. Kahn's Philosophy of Architecture***, p. 4.

[424]Talbot Hamlin (ed.), ***Forms and Functions of Twentieth Century Architecture***, New York: Columbia University Press, 1952, p. 11.

[425]E-mail correspondence, Marshall D. Meyers to Steven Fleming, 8 April 1998.

[426]Kahn, "Form and Design", p. 148.

[427]Louis I. Kahn, "Making something", in John Lobell (ed.), ***Between Silence and Light: Spirit in the Architecture of Louis I. Kahn***, Boulder: Shambhala, 1979, p. 26. Also: Louis Kahn, typed transcript for a lecture titled "Law and rule in architecture", delivered at Princeton University, November 29, 1961, file labelled, "L.I.K. Lectures 1969", L.I.K. Box 53, Kahn Collection.

[428]Cassette recording, "The Scope of Architecture at The Cooper Union Hall, 1-20-60", Kahn Collection.

[429]Kahn, ***Louis I. Kahn to Anne Tyng: The Rome Letters 1953-1954***, p. 160.

[430]Louis I. Kahn, "Thoughts", in Alessandra Latour (ed.), ***Louis I. Kahn: Writings, Lectures, Interviews***, New York: Rizzoli International Publications Inc., 1991, pp. 313-315. See p.314.

[431]Kahn, "1973: Brooklyn, New York", p. 323.

[432] Factors which may have predisposed Kahn towards Platonism are discussed in an appendix to this dissertation.

Notes to Chapter 4

[1]Kahn, "Form and Design", p. 148.

[2]Henry Veatch, ***Aristotle: A Contemporary Appreciation***, Ontario: Fitzhenry & Whiteside Ltd., 1974.

[3]***Louis Kahn: Of Dreams and Drawing Boards***, September 1962, video cassette recording, Kahn Collection.

[4]See: Charles S. Peirce, "The Logic of Relatives", in K. L. Ketner (ed.), ***Reasoning and the Logic of Things, The Cambridge Conferences Lectures of 1898***, Cambridge: Harvard University Press, 1992, pp. 146-164. Kahn's conception of particular "designs" as having inherent qualities — big, masonry and cheap for example — might also be interpreted in terms of what Peirce calls "firstness", while some of the more idiosyncratic or intuitive relationships between elements within Kahn's work might be described in terms of Peirce's concept of "secondness". For a discussion of Peirce's concept of "secondness" as it pertains to intuitive relationships within architecture, see: Mike Linzey, "On the Secondness of Architectural Intuition", in ***Journal of Architectural Education***, Vol. 55, No. 1 (2001): 43-50.

[5]The most famous passage in which Plato questions his own doctrine of participation can be found in *Parmenides* (133-134).

[6]Bigger, ***Participation: A Platonic Inquiry***, p. 11.

[7]Wittkower, ***Architectural Principles in the Age of Humanism***.

[8]Plato, ***The Timaeus*** (33).

[9]Vitruvius, ***The Ten Books of Architecture***, trans. Morris Hickey Morgan, New York: Dover Publications, 1960, p. 73.

[10]Wittkower, ***Architectural Principles in the Age of Humanism***, p. 23.

[11]Schwarz, ***The Church Incarnate: The Sacred Function of Christian Architecture***, p.7.

[12]Genesis 1:27.

[13]Far from having its origins in the contemplation of the ideal church, it should be remembered that the cruciform plan type evolved from early Roman basilicas. See: Vanna Chirone, ***The House of God Through the Ages: A Panorama of Christian Architecture, Vol. 1, From Early Christian to Romanesque Architecture***, Rome: Pauline Editions, 1959, p. v.

[14]The example of Hagia Sophia is presented here simply to illustrate how Plato's theory of Forms might be applied to buildings. Whether or not Hagia Sophia was in fact conceived as the manifestation of a Form is beyond the scope of the current study.

[15]S. Runciman, ***Byzantine Style and Civilisation***, Harmondsworth: Penguin Books Ltd., 1975.

[16]Procopius, ***Volume VII: Buildings***, trans. H. B. Dewing, The Loeb Classical Library, London: William Heinemann Ltd., 1940. See p. 11ff.

[17]Edmund Norman, ***The House of God: Church Architecture, Style and History,*** London: Thames and Hudson Ltd., 1990.

[18]Peter Kohane, "Hagia Sophia: Aesthetics and meaning", in ***Transision***, Vol. 2, No. 2 (1981): 27-31. See p. 27.

[19]Banham, ***Theory and Design in the First Machine Age***, p. 74.

[20]Banham, ***Theory and Design in the First Machine Age***, p. 76.

[21]Banham, ***Theory and Design in the First Machine Age***, p. 208.

[22]Broadbent, ***Emerging Concepts in Urban Space Design***.

[23]Broadbent, ***Emerging Concepts in Urban Space Design***, p. 91.

[24]Sylvia Lavin, ***Quatramère de Quincy and the Invention of a Modern Language of Architecture***, Cambridge, Massachusetts: The MIT Press, 1992, pp. 164-165.

[25] Leando Madrazo Agudin provides a comprehensive review of discourse related to typology, with specific reference to the Platonic origins of this topic. See: Leando Madrazo Agudin, "The concept of type in architecture: An inquiry into the nature of architectural form," Ph.D thesis, the Swiss Federal Institute of Technology, 1995.

[26]Giulio Carlo Argan, "On the typology of architecture", trans. Joseph Rykwert, in ***Architectural Design*** , No. 33 (1963): 564-565.

[27]Alan Colquhoun, "Typology and design method", in Charles Jencks and George Baird (eds.), ***Meaning in Architecture***, New York: Braziller, 1969, pp. 267-277.

[28]Anthony Vidler, "The third typology", in ***Oppositions***, 7 (1976): 1-4.

[29]Vidler, "The third typology", p. 2.

[30]Rafael Moneo, "On typology", in ***Oppositions***, 13 (1978): 22-45. See pp. 37-38.

[31]Lavin, ***Quatramère de Quincy and the Invention of a Modern Language of Architecture***, pp. 164-165.

[32]Moneo, "On typology", pp. 37-38.

[33]It is noted that these scholars do not purport to make Platonic metaphysics a part of their agendas. Each of these theorists openly advocates an empirical approach to the distillation of types based on the sensory observation of many particulars.

[34]Pérez-Gómez, ***Architecture and the Crisis of Modern Science***.

[35]Johnson, ***The Theory of Architecture: Concepts, Themes and Practices***, pp. 289-290.

[36]Johnson, ***The Theory of Architecture: Concepts, Themes and Practices***, p. 338.

[37]Plato, "Phaedo" (65c), in trans. B. Jowett, ***The Dialogues of Plato***, 4th edn., Vol. 1, Oxford: Clarendon Press, 1953, p. 416.

[38]Plato, ***The Republic***, in Lee, pp. 256-257.

[39]Françoise Choay, ***The Rule and the Model: On the Theory of Architecture and Urbanism***, Denise Bratton (ed.), Cambridge, Massachusetts: The MIT Press, 1997, p. 164.

[40]St. Thomas More, ***Utopia***, trans. Robert M. Adams (ed.), New York: W.W. Norton and Company, 1975.

[41]Choay, ***The Rule and the Model: On the Theory of Architecture and Urbanism***, p. 163. There is some possibility that Plato's town plan as described in *The Republic* is based on an empirical model, namely the Hippodamian system. See: S. Lang, "The ideal city from Plato to Howard", in ***The Architectural Review***, Vol. 112, No. 668 (1952): 91-101. See p. 91 and note 3. However, as is to be expected, Plato himself makes no mention of such an influence.

[42]Choay, ***The Rule and the Model: On the Theory of Architecture and Urbanism***, p. 164.

[43]Jean-Pierre Vernant, ***Myth and Thought Among the Greeks***, London: Routledge and Kegan Paul, 1983, p. 231.

[44]Plato, ***Laws*** (702d).

[45]Choay, ***The Rule and the Model: On the Theory of Architecture and Urbanism***, p. 164.

[46]Plato, ***The Republic*** (399e).

[47]Crombie, ***An Examination of Plato's Doctrines***, p. 322.

[48]Kahn, "Form and Design", p. 148.

[49]Plato, ***The Sophist*** (266c).

[50]Plato, ***The Symposium*** (205b).

[51]Plato, ***The Republic*** (401a).

[52]Kahn, "Our changing environment", p. 154.

[53]Kahn, "Our changing environment", p. 154.

[54]Plato, ***The Sophist*** (266c).

[55]Melling, ***Understanding Plato*** p. 98.

[56]Ross, ***Plato's Theory of Ideas***, pp. 172-175.

[57]Taylor, ***The Mind of Plato***, p. 46. (Emphasis in original).

[58]Taylor, ***The Mind of Plato***, pp. 41-42. (Emphasis added).

[59]Kahn, "Form and Design", p.148. (Emphasis in original).

[60]Kahn, "Louis I. Kahn", p. 132.

[61]Kahn, "Louis I. Kahn", p. 132.

[62]Contemplating the design of university chapels, Kahn writes, "[t]hen you put the ambulatory around, and then you put an arcade around the ambulatory so you don't have to go into the ambulatory, and a garden around the arcade so you don't have to go into the arcade, and then a fence around the garden so that you don't have to go into the garden". See: Kahn, "On philosophical horizons", in Latour, p. 102. In Kahn's thinking, the notion of encircling sanctuaries with bands of insulating spaces is not specific to Unitarian churches, but extends to any kind of worship space.

[63]Kahn, "Louis I. Kahn", p. 133.

[64]Kahn, "A statement", p. 148.

[65]File labelled, "Perspecta 4", L.I.K. Box 62, Kahn Collection.

[66] Incidentally, Kahn's drawings were similarly produced using a soft carpenter's pencil onto yellow-trace which could be easily erased.

[67]In his article *Form and Design*, Kahn moves from his analogy of the spoon, to the contemplation of "House" then "School", to the example of The First Unitarian Church and School in Rochester. See: Kahn, "Form and Design", pp. 148-149.

[68]Kahn, "Form and Design", p.148.

[69] It has been seen that in *The Republic* (352e-353a) Plato distinguishes between pruning knives and carving knives, implying the existence of *The Pruning Knife Itself* and *The Carving Knife Itself*.

[70]Plato, ***The Republic*** (545-549).

[71] Plato views *Doubleness*, *Portability*, and *Discomfort* as Forms in their own right, and though particular beds may participate secondarily in those Forms, in the realm of Forms *Doubleness*, *Portability*, and *Discomfort* stand apart from *The Bed Itself*.

[72]According to the previously identified delimitations of this study, only projects conceived from 1960 onwards are discussed in relation to Kahn's "form and design" theory.

[73]William J. R. Curtis, "Authenticity, abstraction and the ancient sense", in ***Perspecta***, Vol. 20 (1983): 181-194.

[74]For further analysis of this project, see: Ksiazek's [Williams], "Critiques of liberal individualism: Louis Kahn's civic projects, 1947-57", pp. 57-79.

[75]Kahn, "Form and Design", p. 148.

[76]Marshall D. Meyers, "Louis Kahn and the act of drawing: Some recollections", in Alexander Tzonis (ed.), ***The Louis I. Kahn Archive: Personal Drawings: The Completely Illustrated Catalogue of the Drawings in the Louis I. Kahn Collection University of Pennsylvania Historical and Museum Commission, vol. 1***. New York: Garland Publishing Inc., 1987, pp. xxv-xxvii. See p. xxvi.

[77]For example, Kahn speaks of "form and design" in his 1973 text: Kahn, "Thoughts", p. 314.

[78]Louis Kahn built three art galleries: The Yale University Art Gallery, New Haven, Connecticut, 1951-53, The Kimbell Art Museum, Fort Worth, Texas, 1966-72, and The Yale Centre for British Art, New Haven, Connecticut, 1969-74. With none of these did Kahn attempt to wrap smaller spaces about a central space, as he so often chose to do with other building types. Yet gallery spaces can and have been wrapped about central spaces, as for example Frank Lloyd Wright did with the Guggenheim Museum in New York.

[79]Plato, "Laws", in trans. B. Jowett, ***The Dialogues of Plato***, 4th edn., Vol. 4, Oxford: Clarendon Press, 1953, p. 745b-c and e, pp. 314-315. To different ends, this passage from *Laws* is also discussed by Ann Bergren. See: Anne Bergren, "Architecture gender philosophy", in John Whiteman, Jeffrey Kipnis and Richard Burdett (eds.), ***Strategies in Architectural Thinking***, Chicago Institute for Architecture and Urbanism; Cambridge, Massachusetts: The MIT Press, 1992, pp. 9-46.

[80]On various occasions, Kahn refers to the discovery of "forms" corresponding to many building types. In one article alone he relates the concept of "form" to schools, Unitarian churches, laboratories, and cities in general. See: Kahn, "Form and Design", pp. 145-154.

[81]Kahn, "A statement", p. 151.

[82]Kahn, "Remarks", pp. 195-196.

[83]Solomon, "Jewish Community Centre: Ewing Township (near Trenton), New Jersey, 1954-59", p. 318.

[84]Discussing the Trenton Bath House in 1971, Kahn claims that "[t]he hollow columns … became the servant areas and all other areas became open, served by these hollow columns. From this came a generative force which is recognisable in every building which I've done since". When Kahn says

that he "discovered himself" with this project, presumably he refers to the origins of his "servant and served" paradigm, and not the genesis of his "form and design" theory. See: Louis I. Kahn, "Kahn in conversation with Peter Blake, July 20, 1971", in Richard Saul Wurman (ed.), ***What Will Be Has Always Been: The Words of Louis I. Kahn***, New York: Access Press and Rizzoli, 1986, p. 130.

[85] As discussed in Appendix 2 of this dissertation, Kahn's Écoles des Beaux-Arts education under Paul Cret had a profound influence on Kahn's development as an architect. It is also the most apparent influence steering Kahn towards symmetry. Yet if his education is the underlying influence leading to Kahn's concentric plans, it remains an influence that Kahn himself does not acknowledge.

[86]Interview, Fleming with Tyng, 29 January 1998.

[87]Interview, Fleming with Tyng, 29 January 1998.

[88]Lobell, ***Between Silence and Light: Spirit in the Architecture of Louis I. Kahn***, p. 76.

[89] There is clearly scope for further scholarship into this alleged influence on Kahn, since Tyng and Lobell's observations remain highly speculative and point to no direct or implied acknowledgement by Kahn of Jung or of the Mandala symbol. Another study might also make a comprehensive interpretation of Kahn's texts in terms of Jung's theories.

[90]Cited in: Cruickshank, "I like a brick", p. 31.

[91]Kahn, "How'm I doing, Corbusier?", p. 299.

[92]cf. An isolated remark by Taylor could pose an anomaly to the otherwise straightforward proposition that the Form realm contains Forms corresponding to modern or future building types. Taylor claims that "there is nothing sensible which does not 'participate' in a Form or Forms", and oddly, that "there is no Form which is not 'participated' in by something sensible". See: Taylor, ***Platonism and its Influence***, p. 35. Such a remark could be expected from a Plato scholar with a greater interest in Plato's later, allegedly Aristotelian metaphysics, who holds that Plato's Forms come into existence once an object has materialised — Aristotle's Forms are dependant on participants for their existence. However, Taylor insists throughout his work that the Forms are atemporal and autonomous. Taken to its logical conclusion, the above remark by Taylor, coupled with his belief that Plato's Forms are autonomous, requires there to have always been material manifestations of every Form. This places craftsmen in an absurd bind, since it rules out any possibility of invention, by invalidating any prospective Form not already manifest. Neither does this view accommodate a prehistoric time prefiguring the making of humankind's first artefacts. Without being unnecessarily critical of Taylor, it can only be concluded that he does not have human craftsmanship in mind when he makes the above remarks.

[93]From an Aristotelian standpoint, Forms can be conceived, developed or invented. While this work focuses on the classical theory of Forms, it is recognised that Plato scholars such as Sayre and Randall advance an Aristotelian view of Plato's Forms. According to Sayre, Forms in Plato's later works remain beyond sensory experience, as they are in the *Phaedo* and *The Republic*; however, in the *Statesman* and the *Philebus*, they are dependent on sensible things for their existence. The idea of measuring temperature in degrees, for example, depends on there being actual heat or cold to measure, Sayre explains. He also points to *The Octave Itself*, which, he claims, would be unnecessary were it not for the existence of musical instruments. See: Sayre, ***Plato's Late Ontology: A Riddle Solved***, p. 175. According to Randall, the Forms do not exist in an ontologically removed realm of Forms, but have their existence in Plato's dialogues themselves. Figuratively, we paint the Form realm as we speak. Therefore, the Forms are *temporal*, and created by humans. See: Randall, ***Plato: Dramatist of the Life of Reason***.

[94]If, as John Randall claims, the realm of the Forms is simply the realm of human discourse, then, given our ability to discuss any kind of ideal building type, there would be no limit to the number of potential Forms corresponding to the task of building. From Randall's standpoint, Plato's theory of Forms could easily be extended to modern building types, such as *The Office, The Tower Itself*, or *The Airport Itself*.

[95]Kahn, "Form and Design", p. 151.

[96]Kahn, "Remarks", p. 194.

[97]Kahn, "Form and Design", p. 151. (Emphasis in original).

[98]Frampton, ***Studies in Tectonic Culture: The Poetics of Construction in Nineteenth and Twentieth Century Architecture***, pp. 215-218.

[99]Ross, ***Plato's Theory of Ideas***, p. 169.

[100]Plato, "Parmenides", in trans. B. Jowett, ***The Dialogues of Plato***, 4th edn., Vol. 2, Oxford: Clarendon Press, 1953, p. 673.

[101]Crombie, ***An Examination of Plato's Doctrines***, p. 325.

[102]For example, see Kahn's 1961 text: Kahn, "The nature of nature", p. 142.

[103]Cassette recording, "The Scope of Architecture at The Cooper Union Hall, 1-20-60", Kahn Collection.

[104]Kahn, "Form and Design", p. 148.

[105]Plato's raises his concept of the "one" and the "many" on numerous occasions. For example, see: Plato, ***The Republic*** (507b).

[106]Taylor, ***The Mind of Plato***, p. 42.

[107]See: Brownlee and De Long, ***Louis I. Kahn: In the Realm of Architecture***, p. 127, Figure 215.

[108]Peter Kohane, "Louis Kahn and the 'spiritual aura' of architecture", in Michael J. Ostwald and R. John Moore (eds.), ***Re-Framing Architecture: Theory, Science and Myth***, Sydney: Archadia Press, 2000, pp. 101-106. Also see: Peter Kohane, "Louis Kahn and the Classical tradition", in ***Thresholds: Papers of the Sixteenth Annual Conference of the Society of Architectural Historians Australia and New Zealand***, The Society of Architectural Historians Australia and New Zealand: Launceston/Hobart, Australia, 1999, pp. 145- 149.

[109]Kahn, "Form and design", p. 149.

[110]Banister Fletcher, ***A History of Architecture on the Comparative Method***, 13th. edn., London: B. T. Batsford Ltd., 1946.

[111]Thomas Thiis-Evenson, ***Archetypes in Architecture***, Oxford, England: Oxford University Press/Norwegian University Press, 1987/1989. Despite its title, this book does not treat common architectural elements as instances of Forms or transcendent archetypes. Within the context of this dissertation, Thiis-Evenson's work can be viewed as a compendium of *stereotypes*.

[112]Reyner Banham, "On trial, 2: Louis Kahn: The buttery-hatch aesthetic", in ***The Architectural Review***, March (1962): 203-206. See p. 204.

[113]Frampton, "Louis Kahn and the French connection", pp. 21-53. See p. 27.

[114]Frampton, "Louis Kahn and the French connection", p. 27.

[115]Frampton, "Louis Kahn and the French connection", p. 27.

[116]The fiercest debate among Kahn scholars surrounds the issue of mimesis, and whether or not Kahn copies historic precedents. See: Steven Fleming, "Louis Kahn and Platonic mimesis: Kahn as artist or craftsman?", in Architectural Theory Review, Vol. 3, No. 1 (1998):88-103.

[117]Bonnefoi, "Louis Kahn and minimalism", pp. 2-25.

[118]Giurgola, "Giurgola on Kahn", p. 28.

[119]Jencks, ***Modern Movements in Architecture***, pp. 43-44 and 232-233.

[120]Kahn, "Address", p. 213.

[121]Kahn, "Address", p. 213.

[122]Kahn, “Form and design”, pp. 151.

[123]Kahn, “A statement”, p. 148.

[124]Kahn, “Address”, p. 213-214.

[125] The most famous examples of personification as a poetic device within Kahn’s vocabulary are his conversations with bricks.

[126]Kahn, “I Love Beginnings”, p. 288.

[127]Kahn, “I Love Beginnings”, p. 277.

[128]Kahn, “I Love Beginnings”, p. 278.

[129]Mark Rakatansky, “Tectonic acts of desire and doubt, 1945-1980: What Kahn wants to be”, in ***Any***, 14 (1996): 36-43.

[130]Rakatansky, “Tectonic acts of desire and doubt, 1945-1980: What Kahn wants to be”.

[131]For examples of what Kahn refers to as “graphic standards”, see: David Adler (ed.), ***Metric Handbook: Planning and Design Data***, Oxford: Architectural Press, 1999.

[132]Cassette recording, “Louis Kahn at Aspen”, side 2, Kahn Collection.

[133]Frampton, ***Studies in Tectonic Culture: The Poetics of Construction in Nineteenth and Twentieth Century Architecture***, p. 233.

[134]Robert Coombs, “Light and silence: The religious architecture of Louis Kahn”, in ***Architectural Association Quarterly***, Vol. 13, No. 1 (1981): 26-36. See p. 29.

[135]Auer, “On the brick that wanted to become an arch: Louis I. Kahn’s masonry structures.”

[136]Charles Jencks makes the point that Le Corbusier had, by the 1950’s “pre-empted almost every architectural position, for instance using industrial objects ‘as found’”. See: Jencks, ***Modern Movements in Architecture***, p. 259.

[137]The Congregation of the First Unitarian Church, Rochester, N.Y., unpublished brochure, file labelled, “Building Committee Correspondence — Rochester April 1959 through December 1960”, L.I.K. Box 15, Kahn Collection.

[138]Peter Smithson, “Thinking of Louis Kahn”, in ***Louis I. Kahn: Architecture + Urbanism***, special issue (1975): 322-323.

[139]Louis I. Kahn, “Louis I. Kahn: Berkeley lecture”, in ***Perspecta***, 28 (1997): [xii]-33. See p. 8.

[140]Kahn, “Louis I. Kahn: Berkeley lecture”.

[141]Prior to his lecture at Berkeley, Kahn had made a very clear use of the hollow column in his Mikveh Israel Synagogue proposal.

[142]Kahn, “Louis I. Kahn: Berkeley lecture”, p. 23. (The word “slide”, in square brackets, is added by the present author).

[143]Brownlee, “Light, the giver of all presences: Designs to honor human endeavour”, p. 132.

[144]For a discussion of de-anthropomorphism, see: Michael Ostwald and R. J. Moore, “The disappearing body: Three strategies for de-anthropomorphism in architecture”, in ***Exedra***, Vol. 5, No. 2 (1994): 19-27.

[145] Danto, “Louis Kahn as Archai-Tekt”, p. 187.

[146] Danto, “Louis Kahn as Archai-Tekt”, p. 189.

[147]Kahn, “Form and design”, p. 148.

[148]Kahn, “Architecture”, in Latour, p. 278.

[149]Suisman, Doug, Cuff, Dana, McCleary, Peter & Loud, Patricia, “After architecture: The Kimbell

Art Museum", in ***Design Book Review***, No. 11 (1987): 35-55. See p. 42.

[150]Kahn, "Form and Design", p. 151-152.

[151] Little can be added to Kahn's conception of a "form" corresponding to car-free cities by interpreting the above passage in terms of *The Republic* — nowhere does Plato discuss traffic problems — except to reiterate an earlier point that Plato's philosophy implicitly allows for the discovery of Forms which, prior to certain technological advancements, slumbered without earthly participants.

[152]Kahn, "Form and Design", p. 151.

[153]Kahn, "Wanting to be: The Philadelphia School", p. 91.

[154]Plato, ***The Republic***, in Lee, p. 187.

[155] Notably, Plato's remarks are directed towards absolute democracies, which, it could be argued, are more susceptible to popular opinion and whim than are representative democracies of modern times.

[156]Kahn, "Form and Design", p. 152.

[157]Pappas, ***Routledge Philosophy Guidebook to Plato and The Republic***, p. 8.

[158]Plato, ***The Republic***, in Lee, p. 58.

[159]Peter S. Reed, "Philadelphia Urban Design", in David Brownlee & David DeLong (eds.), ***Louis I. Kahn: In the Realm of Architecture***, New York: Rizzoli International Publications Inc., 1991, pp. 304-313. See p. 304.

[160]Ross, ***Plato's Theory of Ideas***, p. 88.

[161]Ross, ***Plato's Theory of Ideas***, p. 88.

[162]The recipe analogy used here is provided by Professor David Dockrill of the Department of Philosophy at The University of Newcastle.

[163] For discussion of the following examples of spatial relationships in *The Republic*, see: Choay, ***The Rule and the Model: On the Theory of Architecture and Urbanism***, p. 163.

[164]Kahn, "Form and Design", p. 148.

[165]Kahn, "Form and Design", p. 148.

Notes to Chapter 5

[1]Kahn, "Form and Design", p. 145.

[2]Kahn, "Form and Design", p. 145.

[3]Kahn, "Form and Design", p. 149.

[4]Kahn, "Form and Design", p. 149.

[5]Simson, ***The Gothic Cathedral: Origins of Gothic Architecture and the Medieval Concept of Order***, p. 22.

[6]Wittkower, ***Architectural Principles in the Age of Humanism,*** p. 111.

[7]Pappas, ***Routledge Philosophy Guidebook to Plato and The Republic***, p. 70.

[8]Plato, ***Timaeus*** (34b).

[9]Vitruvius, ***The Ten Books of Architecture***, p. 73.

[10]Simson, ***The Gothic Cathedral: Origins of Gothic Architecture and the Medieval Concept of***

Order.

[11]Wittkower, ***Architectural Principles in the Age of Humanism,*** p. 111.

[12]Alberto Pérez-Gómez, "Chora: The space of architectural representation", in Alberto Pérez- Gómez and Stephen Parcell (eds.), ***Chora: Volume One: Intervals in the Philosophy of Architecture***, London: McGill-Queen's University Press, 1994, pp. 1-34. See p. 7. (Emphasis in original).

[13]Jowett, "Timaeus: Introduction", p. 631.

[14]Jowett, "Timaeus: Introduction", p. 633.

[15]Louis Kahn, cited in: Duncan Robinson, ***The Yale Centre for British Art: A Tribute to the Genius of Louis I. Kahn***, New Haven: Yale University Press, 1997, p. 12.

[16]Wittkower, ***Architectural Principles in the Age of Humanism***, p. 9.

[17]This claim can be confirmed by dividing dimensional lengths on Kahn's plans and sections by corresponding dimensions running perpendicular to them, in search of factors which approximate 1, 0.5, 0.6666 and 0.75. When this exercise was conducted by the author of this dissertation, some class rooms were found to be square in plan. Otherwise, Kahn's elevations, sections and plans continually fail to yield music based proportions, either approximately or precisely. If music based proportions were a feature of this building, then they could be expected to regulate the ratio between the width and length of the central sanctuary, this space being the symbolic focus of the project. Its width (53') divided by its length (66') yields a factor of 0.803030, or a ratio of approximately 4:5, which has no significance in musical harmony.

[18]Gast, ***Louis I. Kahn: The Idea of Order***. This book has been reviewed by the present author. See: Steven Fleming, "Klaus-Peter Gast, Louis I. Kahn: The idea of order [book review]", in ***Architectural Theory Review***, Vol. 4, No. 2 (1999): pp. 116-117.

[19]Gast, ***Louis I. Kahn: The Idea of Order***, p. 185.

[20]File labelled, "UCRNY - Bolt, Beranek & Newman Acoustical Correspondence", L.I.K. Box 15, Kahn Collection. Refer specifically to "Notes from December 15th 1960 Conference with Bolt Beranek & Newman, Cambridge, Mass".

[21]See the drawing titled: "A2: First Floor Plan", Kahn Collection.

[22]Steven Fleming, "Louis Kahn's Platonic approach to number and geometry", in José Francisco Rodrigues and Kim Williams (eds.), ***Nexus IV: Architecture and Mathematics***, Florence: Kim Williams Books, 2002, pp. 95-107.

[23]Pythagoras' theorem states that, in a right-angled triangle, the length of the hypotenuse squared is equal to the sum of the other two sides squared.

[24]Carol Martin Watts, et. al., "Methodology in Architecture and Mathematics: Nexus 2000 Round Table Discussion", ***Nexus Network Journal***, vol. 2, no. 4 (October 2000). http://www.nexusjournal.com/Roundtable2000.html.

[25] Such considerations may determine the width of the light towers, but such a minor calibration, if it is there at all, hardly rivals the fascination for proportions usually associated with geometrising architects.

[26]For a discussion of the origins of Unitarianism, see: C. G. Singer, "Unitarianism", in Walter E. Elwell (ed.), ***Evangelical Dictionary of Theology***, Michigan: Baker Book House, 1984, pp. 1126-1127.

[27]See the drawing titled: "A4: Upper Level Floor Plan", Kahn Collection.

[28]See the drawing titled: "A3: First Floor Plan", Kahn Collection.

[29]Gast, ***Louis I. Kahn: The Idea of Order***, p. 9.

[30]Steven Fleming and Michael J. Ostwald, "Klaus-Peter Gast, Le Corbusier: Paris — Chandigarh [Book Review]", in ***Nexus Network Journal***, 2001.

[31]Michael J. Ostwald, "Under siege: The golden mean in architecture", in ***Nexus Network Journal: Architecture and Mathematics Online.*** http://www.leonet.it/culture/nexus/network_journal/Ostwald.html. Michael Ostwald compares the work of golden mean "fanatics", like Gast, to that of the characters in Umberto Eco's novel, *Foucault's Pendulum*, who, depending on how they draw their lines, manage to extrapolate a cosmic conspiracy theory from a humble merchant's shopping list. See: Michael J. Ostwald, "The golden mean and the '□aithful': The 1998 Nexus architecture and mathematics conference in Mantua", unpublished manuscript, in possession of the author.

[32]Kahn, "Wanting to be: The Philadelphia school", p. 91.

[33]Danto, "Louis Kahn as Archai-Tekt", p. 188.

[34]Kahn, "The nature of nature", p. 141.

[35]Kahn, "The nature of nature", p. 141.

[36]Kahn, "Form and Design", p. 149.

[37]Kahn, "Form and Design", p. 149.

[38]Plato, ***The Republic*** (527b), in Lee, p. 274.

[39]Plato, ***The Republic*** (523a), in Lee, p. 268.

[40]Plato, ***The Republic***, in Lee, p. 269.

[41]Plato, ***The Republic***, in Lee, p. 269.

[42]Annas, ***An Introduction to Plato's Republic***, p. 218.

[43]Plato, ***The Republic*** (524e), in Lee, p. 270.

[44]It will be noted that, in *The Republic* (529–531), Plato also prescribes studies in astronomy and harmonics. However, since he treats these as species of motion, their potential embodiment in a static medium such as architecture is greatly limited.

[45] John Sallis, ***Being and Logos: The Way of Platonic Dialogue***, Pittsburgh: Duquesne University Press, 1975, p. 431.

[46]Kahn's preliminary schemes all feature square sanctuaries. The "circumstance" which deformed the shape of this space, was a letter from the building committee expressing their dislike of his scheme's "inherent squareness". Letter, Williams to Kahn, 28 February 1960, file labelled, "Building Committee Correspondence – Rochester, April 1959 through December 1960", L.I.K. Box 15, Kahn Collection.

[47]Kahn, "Form and Design", p. 148.

[48]Kahn, "Form and Design", p. 149.

[49]Kahn, "Form and Design", p. 149.

[50]"Dedication of First Unitarian Church, Rochester, NY □ Dec 2 1962", Historical Records of The First Unitarian Church, Rochester.

[51]"Dedication of First Unitarian Church, Rochester, NY □ Dec 2 1962", Historical Records of The First Unitarian Church, Rochester.

[52]Interview, Fleming with Forbes, 26 June 2002.

[53]Colin Rowe's analyses of Ellicott's plan was discussed in Chapter 1 of this dissertation.

[54]Rem Koolhaas, ***Delirious New York: A Retroactive Manifesto for Manhattan,*** New York: Monacelli Press, 1994, p. 10.

[55]Plato, ***The Republic*** (524e), in Lee, p. 270.

[56]Plato, ***The Republic***, in Lee, p. 269.

[57]Vallebuona, “Louis Kahn in Wonderland”.

[58]Vallebuona, “Louis Kahn in Wonderland”, p. 65.

[59]Vallebuona, “Louis Kahn in Wonderland”.

[60]Vallebuona, “Louis Kahn in Wonderland”, p. 67.

[61]Scully, “Marvellous fountainheads: Louis I. Kahn: Travel drawings”, p. 55.

[62]Tyng, ***Beginnings: Louis I. Kahn’s Philosophy of Architecture***.

[63]Kahn, “1973: Brooklyn, New York”, p. 324.

[64]Kahn, “Form and Design”, p. 149.

[65]Kahn, “Louis I. Kahn”, p. 122.

[66]Kahn, “Louis I. Kahn”, pp. 137-138. (Ellipses in original).

[67]Kahn, “Remarks”, p. 203.

[68]Kahn, “Statements on architecture”, p. 223.

[69]Urs Büttiker, ***Louis I. Kahn: Licht und Raum/Light and Space***, trans. David Bean, Basel: Birkhäuser, 1993.

[70]A more detailed explanation of how Plato comes to give *The Good* its title can be found in: Pappas, ***Routledge Philosophy Guidebook to Plato and The Republic***, p. 137-138.

[71]This explanation of *The Good Itself* and its place in Plato’s philosophy has been provided to the author of the present dissertation by Professor David Dockrill of the Department of Philosophy at The University of Newcastle. See: David Dockerill, “A Note on the Form of the Good in *The Republic* and the Forms in the Timaeus”, unpublished manuscript, in possession of the author, Newcastle, Australia.

[72]Plato, ***The Republic*** (508c), in Lee, p. 247.

[73]Kahn writes that “the mountains are spent light, the air is spent light, the streams are spent light and we are spent light”. See: Kahn, “Architecture”, in Latour, p. 273.

[74]Kahn, “1973: Brooklyn, New York”, p. 326.

[75]In Book I, Chapter IV of *The Ten Books of Architecture*, Vitruvius writes that “all bodies are composed of the four elements… heat, moisture, the earthly and air”. This statement is predicated on the Pythagorean elements, earth, rain, air and fire. See: Vitruvius, ***The Ten Books of Architecture***, p. 18.

[76]Plato, “Timaeus” (31b), in trans. B. Jowett, ***The Dialogues of Plato***, 4th edn., Vol. 3, Oxford: Clarendon Press, 1953, p. 718.

[77]Plato, ***The Republic***, in Lee, p. 245.

[78]Kahn, “Form and Design”, pp.145-152.

[79]Geldin, “Prologue, Louis I. Kahn: Compositions in a fundamental timbre”, p. 17.

[80]Andrea O. Dean, “A legacy of light”, in ***AIA Journal***, Vol. 67, No. 6 (1978): [80]-[89]. See p. 87.

[81]Plato, “Timaeus” (47a), in Jowett, Vol. 3, p. 733.

[82]Indra Kagis McEwan, “Instrumentality and the organic assistance of looms”, in Alberto Pérez-Gómez and Stephen Parcell (eds.), ***Chora, Volume One: Intervals in the Philosophy of Architecture***, Montreal: McGill-Queens University Press, 1994, pp. 123-142. See p. 129 and p. 131.

[83]Simson, ***The Gothic Cathedral: Origins of Gothic Architecture and the Medieval Concept of Order***.

[84]Swaan, ***The Gothic Cathedral***.

[85]Swaan, ***The Gothic Cathedral***.

[86]Runciman, ***Byzantine Style and Civilisation***.

[87]Kahn, "Architecture: Silence and light", p. 252.

[88]Kahn, "Form and Design", p. 149. (Emphasis added.)

[89]Kahn, "Form and Design", p. 148. (Emphasis added.)

[90]Kahn, "Form and Design", p. 148. (Emphasis added.)

[91]Pappas, ***Routledge Philosophy Guidebook to Plato and The Republic***, p. 141.

[92]Pappas, ***Routledge Philosophy Guidebook to Plato and The Republic***, p. 215.

[93]Pappas, ***Routledge Philosophy Guidebook to Plato and The Republic***, p. 215.

[94] In surveying Kahn's built work, nothing stands out as having been conceived with arithmetic in mind. There are buildings such as the hospital in Dacca which feature repetitive elements — in this case arches — which could act as visual aids for counting, but the same could be said of almost any building. It is only through a few drawings that Kahn might reveal an interest in arithmetic. In not all, but a few of his drawings, particularly those made during the 1930s, 1940s and 1950s, Kahn renders trees in a highly abstracted wire-line style. (See Brownlee, "Adventures of unexplored places: Defining a philosophy, 1901-51", Figures 18, 31 and 33). Perhaps betraying the influence of Le Corbusier's Purist paintings, these renderings depict an essence of trees, yet barely resemble their visual appearance.

These renderings also resemble diagrams of the Fibonacci progression. According to Fibonacci, branches, like male and female pairs of rabbits, mature for a nominal two months before they are able to sprout new branches every one month thereafter. The resultant growth pattern produces the Fibonacci series: 1,1,2,3,5,8,13,21…. The sum of any two consecutive numbers in this series will produce the next number in the series, for example, 3+5=8.

As the Fibonacci series progresses, the ratio of any number to the next approaches the golden or divine mean of 1.618. For example: 21÷13=1.615, and 34÷21=1.619. (See: Leonardo Pasano Fibonacci, ***The Book of Squares***, Orlando, Florida: Academic Press, 1987 p. xviii). Kahn is likely to know of Fibonacci's progression through Anne Tyng, since her own Ph.D dissertation focuses on this particular topic. (See: Tyng, "Simultaneous randomness and order: The Fibonacci-Divine proportion as a universal forming principle"). The trees which Kahn draws suggest a greater interest in that mathematical theory than they reflect his visual observation of any actual trees. As such, they have the potential to act as visual aids towards the contemplation of a mathematical formula. While the offspring of that formula, the golden mean, is not specifically mentioned in *The Republic*, Jeffrey Kipnis argues that an oblique allusion to it is made in *Timaeus* where Plato considers the ideal triangle. According to Kipnis, this is an allusion to the triple triangle which the Pythagoreans had chosen as their symbol due to the extraordinary number of golden mean relationships contained within that figure. (See: Kipnis, "Twisting the Separatrix", p. 156). In a broad sense therefore, Kahn's possible interest in the Fibonacci series, as evidenced by his sketches of trees, may fall within the greater sphere of Plato's interests, but such an interpretation must be considered highly speculative.

It should also be noted that the same renderings could just as easily lead the minds of other viewers downwards, by causing them to admire particular trees rather than the purely mathematical pattern which they evoke. Presented with the Fibonacci progression, certain viewers might also be led to contemplate rabbits, or nautilus shells. The cliché that beauty is in the eye of the beholder provides an apt qualifier to the claims made here, only in the case of edifying architecture, arithmetic is in the eye of the beholder. Even a triangular tile pattern may cause certain viewers to contemplate particular triangular things rather than *The Triangle Itself*. Likewise, late twentieth-century buildings which evoke the Mandelbrot set, might cause a mathematician to contemplate the simple mathematical formula (where an infinite succession of new z values are replaced by z squared plus c) from which the Mandelbrot set is derived, while others might be more concerned with the natural phenomena which graphic illustrations of that formula seem to emulate.

With regards to Astronomy – which Plato views as the study of physical motion and relative velocity - it could be argued that with buildings such as the Kimbell Art Museum, Kahn consciously celebrates the sun's trajectory through the sky. However; there is no scientific study of physical motion implied in Kahn's descriptions of this phenomena. His appreciation is that of an artist, who simply admires changes in lighting character for their own sake.

[95]Danto, "Louis Kahn as Archai-Tekt", p. 188.

[96]Pappas, ***Routledge Philosophy Guidebook to Plato and The Republic***, p. 215.

[97]According to legend, the sign at the entrance to Plato's academy read, "Let No One Ignorant of Geometry Enter Here". See: W. S. Anglin, ***Mathematics: A Concise History and Philosophy***, New York: Springer-Verlag, 1994, p. 57.

[98]Plato, ***The Cratylus*** (436d).

[99]Plato, ***Timaeus*** (55-56).

[100]The regular solids in Platonic cosmology are those formed by identical polygons on every surface. For example, the tetrahedron features an equilateral triangle on each of its four surfaces.

[101]Plato, ***Timaeus*** (34b).

[102] Earlier in this chapter it was claimed that viewers are led to believe that the sanctuary of Kahn's First Unitarian Church is actually a square and that the surprise caused when they find that it is not, could cause them to consider *The Square Itself*. Yet here it is suggested that an accurately proportioned square might have the same effect.

[103] Banham identifies the theoretical thrust of the *de Stijl* movement as being specifically Neoplatonic, concerned as it is with an "ultimate reality lying behind the accidents of mere appearance". (Banham, ***Theory and Design in the First Machine Age***, p. 151). According to Banham, such appeals are indicative of what he refers to as the "vaguely Platonic ideas" which would help unify Parisian theorists with their Dutch (*de Stijl*) counterparts, and ultimately unify the International style as a whole. (Banham, ***Theory and Design in the First Machine Age***, p. 205).

[104]Plato, "Philebus", (51c), in Jowett, Vol. 3, p. 610.

[105] As Crombie argues, Plato's metaphysics "developed considerably", from his earlier dialogues to his final ones, with a gradual admittance of empirical observation (See: Crombie, ***An Examination of Plato's Doctrines***, pp. 257-258).

[106] In *Philebus* (56a-b), Plato observes that in ship-building, house-building, and carpentry generally, "the builder has his rule, lathe, compass, line, and a most ingenious machine for straightening wood. (Plato, "Philebus", (56a-b), in Jowett, Vol. 3, p. 616). Later in this passage "the art of mensuration which is used in building" is unfavourably compared to "philosophical geometry". (Plato, "Philebus", (56a-b), in Jowett, Vol. 3, p. 616). For Plato, so-called philosophical geometry refers to "the art of computation which is used in trading [using] exact calculation". (Plato, "Philebus", (56a-b), in Jowett, Vol. 3, p. 616). Although having a slightly lower status, building and architecture are valued insofar as they engage builders, architects and perhaps viewers, in pure mathematics and geometry, simply due to the fact that measurement and geometry is involved in their construction. This line of inquiry has no particular relevance to Kahn, except that he, like many of his contemporaries, prefers orthogonal planning and that indirectly their common sensibility may, according to Banham, be attributable to Plato's *Philebus* (51c). Kahn's buildings also rely on accurate measuring and setting out in their construction. Like most buildings Kahn's would have some edifying effect on their builders, perhaps on their viewers and on the office staff responsible for producing working drawings used in their construction.

[107]One slight anomaly to the claim that this sanctuary is modulated according to cubic blocks, is a quarter height course of blocks forming a datum line at the height of the lintels above the door entrances to this space. See Figure 68.

[108]Plato, ***The Republic*** (510b).

[109]Armstrong, ***A Theory of Universals: Universals and Scientific Realism***.

[110]Jencks, ***Modern Movements in Architecture***, p. 233.

[111]Bruno J. Hubert, "Kahn's epilogue: National capital, Dacca, Bangladesh", in ***Progressive Architecture***, Vol. 65, No. 12 (1984):56-67. See p. 64.

[112]Danto, "Louis Kahn as Archai-Tekt", p. 190.

[113]Danto, "Louis Kahn as Archai-Tekt", p. 190.

[114]Danto, "Louis Kahn as Archai-Tekt", p. 190.

[115]Annas, ***An Introduction to Plato's Republic***, p. 218.

[116]Danto, "Louis Kahn as Archai-Tekt", p. 190.

[117]De Long, "The mind opens to realizations: Conceiving a new architecture, 1951-61", p. 68.

[118]Cited in: De Long, "The mind opens to realizations: Conceiving a new architecture, 1951-61", p. 68. [Ellipses in original].

[119]Kahn, "A statement", p. 150.

[120]Kahn, "Address", p. 209.

[121]Kahn, "Address", p. 209.

[122]Kahn, "Form and design", p. 148.

[123]Danto, "Louis Kahn as Archai-Tekt", p. 190.

[124]Ellen Morris, "Looking back at Berkeley: Kahn in context", in ***Perspecta***, 28 (1997): 34-39.

[125]Indra Kagis McEwen, ***Socrates' Ancestor***, Cambridge, Massachusetts: The MIT Press, 1993.

[126]Plato, ***Euthyphro***, (11).

[127]Coombs, "Light and silence: The religious architecture of Louis Kahn", p. 29.

[128]Coombs, "Light and silence: The religious architecture of Louis Kahn", p. 29.

[129]Coombs, "Light and silence: The religious architecture of Louis Kahn", p. 29.

[130]Cited in: Frampton, ***Studies in Tectonic Culture: The Poetics of Construction in Nineteenth and Twentieth Century Architecture***, note 45, p. 235.

[131]Scully, "Louis I. Kahn in the Soviet Union", p. 62.

[132]Scully, "Louis I. Kahn in the Soviet Union", p. 62.

[133]Scully, "Louis I. Kahn in the Soviet Union", p. 62.

[134]Scully, "Marvellous fountainheads: Louis I. Kahn: Travel drawings", p. 52.

[135]Milosav Cekic, "Kahn: Architecture and consciousness", in ***Texas Architect***, Vol. 40, No. 3 (1990): 58-59. See p. 58.

[136]Auer, "On the brick that wanted to become an arch: Louis I. Kahn's masonry structures", p. 69.

[137]Scully, "Marvellous Fountainheads: Louis I. Kahn: Travel Drawings".

[138]Hotchstim, ***The Paintings and Sketches of Louis I. Kahn***, p. 30.

[139]Kahn, "Not for the fainthearted", p. 258.

[140]Hotchstim, ***The Paintings and Sketches of Louis I. Kahn***, p. 31.

[141]Hotchstim, ***The Paintings and Sketches of Louis I. Kahn***, p. 30.

[142]Michael J. Lewis, "Kahn's Graphic Modernism", in Eugene J. Johnson and Michael J. Lewis (eds.), ***Drawn From the Source: The Travel Sketches of Louis I. Kahn***, Cambridge, Massachusetts:

The MIT Press, 1996, pp. 1-24. p. 24.

[143]Kahn, "Our changing environment", p. 154.

[144]Plato, ***Timaeus*** (50d).

[145]Plato's reproductive analogy for receptacle space is predicated on a gender bias which is central to ancient Greek philosophy. For further discussion of this issue, See: Bergren, "Architecture gender philosophy", pp. 9-46.

[146]Plato, "Timaeus", in Jowett, vol. 3, p. 737.

[147] The absurdity, from a philosophical perspective, of Eisenman's project has been pointed out by others, including his collaborator Jacques Derrida. (See: Jacques Derrida, "A letter to Peter Eisenman", in ***Assemblage***, No. 12 (1990): 7-13. For a discussion of Eisenman and Derrida's exchange with relation to Platonic architecture, see: Bergren, "Architecture gender philosophy", pp. 9-46.) In plan, Eisenman's *Choral Works* project can be interpreted as a diagram, which, in some sense, illustrates the receptacle's function. As this dissertation has made clear though, *The Republic* treats works of architecture as useful artefacts modelled on corresponding Forms. While Eisenman's Choral Works project may have some incidental use, as a place for relaxation, it is primarily sculptural and didactic. It is not a useful artefact in the same sense that a bed is; rather, it is modelled on a conception of the receptacle, that being the only entity in Plato's philosophy which is neither a Form or a particular. Insofar as Plato's philosophy of craftsmanship as put forward in *The Republic* is concerned, Eisenman's is flawed premise.

[148]See: Pérez-Gómez, "Chóra: The space of architectural representation", pp. 1-34.

[149]Pérez-Gómez, ***Architecture and the Crisis of Modern Science***.

[150]Noteably, Pérez-Gómez does not prove that architects of the Neoplatonic tradition were conscious of Plato's conception of space as a receptacle of Forms, or of the transcendental meaning of space.

[151]Pérez-Gómez, "Chóra: The space of architectural representation", p. 7.

[152]Pérez-Gómez, "Chóra: The space of architectural representation", p. 31.

[153]Jowett, "Timaeus: Introduction", p. 633.

[154]See: Denise Scott Brown and Robert Venturi, "On ducks and decoration", in ***Architecture Canada*** (October 1968): 48-49.

[155]Kahn, "Form and Design", p. 149.

[156]Carla Yanni, "Fine Arts Centre, Fort Wayne", in David Brownlee & David DeLong (eds.), ***Louis I. Kahn: In the Realm of Architecture***, New York: Rizzoli International Publications Inc., 1991, pp. 346- 351. See p. 350.

[157]Danto, "Louis Kahn as Archai-Tekt".

[158]Plato, ***The Republic*** (600e), in Lee, p. 367.

[159]Kahn, "Monumentality", in Latour, pp. 18-27.

[160]Within the set of working drawings produced for The First Unitarian Church and School in Rochester which are held in the Kahn Collection, there are window head details showing steel lintels.

[161]Frampton, ***Studies in Tectonic Culture: The Poetics of Construction in Nineteenth and Twentieth Century Architecture***, p. 233.

[162]Plato, ***The Republic*** (601-602).

[163]Plato, ***The Republic*** (602).

[164]Plato, ***The Republic*** (602c-d), in Lee, p. 370.

[165]Plato, ***The Republic*** (602).

[166]Plato, ***The Republic*** (602c-d), in Lee, p. 370.

[167]Panofsky, ***Idea: A Concept in Art Theory***, pp. 5-6.

[168]Panofsky, ***Idea: A Concept in Art Theory***, pp. 5-6.

[169]Benedikt, ***Deconstructing the Kimbell: An Essay on Meaning and Architecture***, p. 55.

[170]Kahn, "Form and Design", p. 149.

[171]File labelled, "Building Committee Correspondence — Rochester April 1959 through December 1960", L.I.K. Box 15, Kahn Collection.

[172]Letter, Williams to Kahn, 28 February 1960, file labelled, "Building Committee Correspondence, April 1959 through December 1960", L.I.K. Box 15, Kahn Collection.

[173]Kahn, "Architecture", in Lobell, p. 48.

[174]Scully, "Marvellous fountainheads: Louis I. Kahn: Travel drawings".

[175]Benedikt, ***Deconstructing the Kimbell: An Essay on Meaning and Architecture***.

[176]Kahn, "Form and Design", p. 149.

Notes to Chapter 6

[1]Sarah [Williams] Goldhagen, ***Louis Kahn's Situated Modernism***, New Haven: Yale University Press, 2001, p. 2.

[2][Williams] Goldhagen, ***Louis Kahn's Situated Modernism***, p. 2.

[3]Giurgola, "Kahn, Louis I.", in Placzek and Collins (eds.), pp. 537-545.

[4]Frampton, ***Studies in Tectonic Culture: The Poetics of Construction in Nineteenth and Twentieth Century Architecture***, p.246.

[5]Menges, "Kahn, Louis I.", in Lampugnani (ed.), p. 184.

[6]Cassette recording, "The Scope of Architecture at The Cooper Union Hall, 1-20-60", Kahn Collection.

[7]Kahn, "Form and Design", pp. 145-154.

[8]Kahn, "1973: Brooklyn, New York", p. 324. (Emphasis added).

[9]Kahn, "Form and Design", p. 145.

[10]Kahn, "Form and Design", p. 145.

[11]Kahn, "Form and Design", p. 145.

[12]Kahn, "Louis I. Kahn notebook", [undated, circa 1959], Box K12.22, Kahn Collection.

[13]Kahn, "Louis I. Kahn notebook", [undated, circa 1959], Box K12.22, Kahn Collection. (Emphasis added). (Ellipsis in original).

[14]Kahn, "Louis I. Kahn notebook", [undated, circa 1959], Box K12.22, Kahn Collection. (Emphasis added). (Ellipsis in original).

[15]Kahn, "Louis I. Kahn notebook", [undated, circa 1959], Box K12.22, Kahn Collection. (Emphasis added). (Ellipsis in original).

[16]Williams, "An architectural myth: The design evolution of Louis Kahn's First Unitarian Church".

[17]Kahn, "Form and Design", p. 148.

[18]Cassette recording, "The Scope of Architecture at The Cooper Union Hall, 1-20-60", Kahn Collection.

[19]Kahn, “Form and Design”, p. 145.

[20]Kahn, “Talks with students”, p. 181.

[21]Kahn, “Remarks”, p. 194.

[22]Kahn, “Form and Design”, p. 148.

[23]Kahn, “Making something”, p. 26. Also: Louis Kahn, typed transcript for a lecture titled “Law and rule in architecture”, delivered at Princeton University, November 29, 1961. File labelled, “L.I.K. Lectures 1969”, L.I.K. Box 53, Kahn Collection.

[24]Kahn, “A statement”, p . 148.