

Earth, Air, Water, Fire

The Elements of
Frank Lloyd Wright

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CHAPTER ONE

INTRODUCTION



The connection between the architecture of American architect Frank Lloyd Wright (1867-1959) and the natural world is by no means an unexplored concept. His work as a world renowned organic architect has prompted many references by various authors noting the presence of the four elements in his architecture, such as Neil Levine¹ and Peter Blake², although thus far, this potential principle of design has never been collectively addressed. According to Vitruvius³, the concept of the four classical elements was first envisaged by Greek philosopher Empedocles of the fourth century BC. Empedocles asserted that there were four mortal gods, earth, air, water and fire, and two immortal gods in the form of love and strife⁴. Whilst Wright's personal life was clearly dominated by love and strife, this study proposes that Wright's professional work was intrinsically organised according to the four elements. Since the age of Empedocles, the four elements have been considered the embodiment of the natural order, and a fundamental principle of ancient science. The four elements as embodied in architecture have also been practiced for centuries, being believed to bestow an element of mysticism, spirituality, or cosmological order to a structure, as the representation of the four elements being an expression of the structure of the world⁵. This was especially the case in ancient temples, particularly prominent in the Mayan, Egyptian and Japanese cultures, regarded so highly by Wright. The Maya's

¹ Levine, Neil, *The Architecture of Frank Lloyd Wright*, (Chichester: Princeton University Press, 1996), p. 141.

² Blake, Peter, *Frank Lloyd Wright – Architecture and Space*, (Middlesex: Penguin Books Ltd., 1960), p. 42.

³ Rowland, Ingrid D. & Howe, Thomas Noble (Eds.), *Vitruvius's Ten Books on Architecture*, (Cambridge: Cambridge University Press, 1999), p. 96.

⁴ Inwood, Brad, *The Poem of Empedocles - A Text and Translation*, (revised edition), (London: University of Toronto Press Inc., 2001), p. 90.

⁵ Lethaby, William, *Architecture, Mysticism and Myth*, (London: Solos Press, 1994), p. 35-50

believed that their more important buildings and monuments should be built in conjunction with the earth to the heavens, and Wright specifically admired their ‘assertion of form that could only have proceeded from the purest kinship to elemental nature’⁶.

Wright emerged from the tradition of the Romantics, being heir to the social and political background of American transcendentalist figures such as Henry David Thoreau (1817-1862), his disciples Ralph Waldo Emerson (1803-1882) and Walt Whitman⁷ (1819-1892), and British writer John Ruskin (1819-1900), all advocates of the value of nature, freedom and democracy, and whose writings Wright was familiar with⁸. These writers often connected the ancient elements, so frequently that Gaston Bachelard has even proposed that the great writers of this era grounded their work around ‘reveries about the four classic elements - air, water, fire and earth’⁹.

Wright’s childhood also bore witness to the destruction of the Prairie by industrial agriculture, the American frontier and the wilderness disappearing before his young eyes. Prior to this, the American landscape was characterised by vast space, as Louis Sullivan (1856-1924) observed - ‘the symbolic images of nature, began, more and more, to represent images of America...America was

⁶ Frank Lloyd Wright, *The Future of Architecture*, (London: The Architectural Press, 1955), p. 45.

⁷ De Long, David G. (Ed.), *Frank Lloyd Wright and the Living City*, (Milan: Skira Editore S.p.A., 1998), p. 149.

⁸ Quinan, Jack, “Frank Lloyd Wright’s Guggenheim Museum: A Historian’s Report” in *Journal of the Society of Architectural Historians* (Vol. 52, No. 4, December 1993), pp. 466-482, p. 470, footnote 13.

⁹ Etlin, Richard A., *Frank Lloyd Wright and Le Corbusier - The Romantic Legacy*, (Manchester: Manchester University Press, 1994), p. 32.

space and landscape'¹⁰. Experiencing the loss of the Prairie, Wright was endowed with the prairie spirit - 'an afterglow of poetic nostalgia for such scenes of quiet beauty and broad significance as the image of freedom'¹¹. When later generating plans for Broadacre City (1934), his project for an idealised exurban America, Wright's spirit of freedom came to life, as he declared 'Again the pioneer takes his place on the frontier'¹².

Wright's exposure to the Froebel Gifts in his youth, a system of childhood toys including building blocks and strips of coloured paper, furthermore endowed him with an intricate knowledge of the interrelations between geometry, pattern, volume and form, founded in learning from nature¹³. Wright was not only exposed to this system during his own childhood, but was also training his children in Froebel's system during his early architectural endeavours of the 1890's¹⁴.

Also in his early career, Wright worked under Louis Sullivan between 1888-1893, an architect greatly concerned with learning from the organisational principles of nature, a continuous fascination for Wright which blossomed during this period. As a practicing architect, Wright was among several contemporary designers who upheld the belief that the architect should design all elements of the house, in

¹⁰ Levine, *The Architecture of Frank Lloyd Wright*, p. 23.

¹¹ Hoffman, Donald, *Understanding Frank Lloyd Wright's Architecture*, (New York: Dover Publications, Inc., 1995), p. 7.

¹² Ibid. p. 99.

¹³ Rubin, Jeanne S., "The Froebel-Wright Kindergarten Connection: A New Perspective" in *Journal of the Society of Architectural Historians*, (Vol. 48, No. 1, March 1989) pp. 24-37, pp. 27-30.

¹⁴ McCarter, Robert, *Frank Lloyd Wright: A Primer on Architectural Principles*, (New York: Princeton

order to establish a firm design continuity, such as William Morris (1834-1896) and Otto Wagner¹⁵ (1841-1918). However, Wright clearly distinguished himself from his European modernist contemporaries, addressing similar issues in architecture such as materials, light, space and movement, but differing ‘in grasp and treatment of old principles’¹⁶. Whilst Wright’s works of the 1920’s and 1930’s were executed concurrently with architecture at the height of International Modernism, his work remained radically different to his contemporaries. Wright believed nature to be ‘deeper than fashion’¹⁷, condemning both previous and contemporary architectural styles which merely followed current trends, rather than the principles of nature.

The hypothesis of this study is that Frank Lloyd Wright used a combination of the four elements in some form in most of his architecture, in order for the structure to be synchronised with the natural world and to possess a unity and continuity of form within itself. The assertion behind this hypothesis contends that this potential principle of design emulates from a desire to engage the underlying principles of nature, in order to endow his ‘great Mother Art’¹⁸ with the mystical qualities of nature itself. This is contrary to the argument by Levine, who asserts the purpose of the combination of the four elements as to define the house as a

Architectural Press, 1991), p. 10.

¹⁵ Sloan, Julie L., *Light Screens - The Leaded Glass of Frank Lloyd Wright*, (New York: Rizzoli International Publications Inc., 2001), p. 28.

¹⁶ Meehan, Patrick J. (Ed.), *Truth Against the World – Frank Lloyd Wright Speaks for an Organic Architecture*, (Washington, D.C.: The Preservation Press, 1992), p. 118.

¹⁷ Ibid. p. 42.

¹⁸ Ibid. p. 281.

‘form of control of the landscape’¹⁹. Whilst Blake identifies the presence of the four elements as an ‘atavistic principle of planning’²⁰, he however does not offer any reasoning or explanation for this method.

Rather than imitating nature directly, Wright aimed at an emulation of the higher principles which govern nature and the environment. The four elements work in opposition to each other as balanced partnerships, and Wright was acutely aware of nature’s equilibrium between contradictory forces, illustrated by his exploration of juxtaposition and balance of conflicting aspects, such as light and shadow, the vertical and the horizontal, and large and small spaces. In Wright’s own words, the cycle of nature involves the interaction and balance of the four ancient elements, and the ‘Cosmic laws’ being ‘the physical laws of all man-built structures as well as the laws of the landscape’²¹, as he states: - ‘Ceaselessly, the rock masses are made by fire, are laid low by water, are sculptured by wind and steam’²². In order therefore, to create architecture in harmony with nature, Wright incorporated nature’s ancient elements and laws into his design practices.

Due to constraints, the purpose of this study is to serve as an introduction to this area of Wright’s designs rather than a thorough analysis. Therefore specific examples are cited which are particularly relevant to the argument, rather than undertaking a summary of Wright’s grand oeuvre, in order to present a logical

¹⁹ Levine, *The Architecture of Frank Lloyd Wright*, p. 141.

²⁰ Blake, *Frank Lloyd Wright – Architecture and Space*, p. 42

²¹ Wright, *The Future of Architecture*, p. 36.

²² *Ibid.* p. 188.

defence of the hypothesis. This study has been divided into four major chapters, each examining the presence and role of each of the elements in Wright's architecture. The individual chapters analyse the direct form and function of each element, and the cosmological implications for its inclusion, which will then be summarised by the concluding remarks.

CHAPTER TWO

EARTH



'The land is the simplest form of architecture...What then is architecture?...It is man in possession of his earth...While he was true to earth his architecture was creative.'

Frank Lloyd Wright²³

This chapter illustrates the manner in which Wright's architecture was bound to the earth below, contrasting with his parallel use of light and air to create not only an opposition of the elements, but to inspire a sense of protection and synchronized freedom. Wright's relationship with the natural landscape was a profoundly deep one, seeing architecture as a metaphor for nature²⁴. He not only attempted to conceive an architecture which arose from the ground 'in harmony with elemental laws'²⁵, but also an architectural language which obeyed principles of design. His trademark term of an 'organic architecture' refers to this dual meaning, an architecture which is not only harmonised with nature, and 'true to earth', but which furthermore possesses a complete integration of parts akin to the manner of wholeness found in the natural world²⁶.

Wright literally placed nature's gifts into his architecture through the use of urns filled with flowers and vines²⁷, but above and beyond this many elements of his structures are reminiscent of natural forms and principles of design, through arrangement and materials. Wright firmly believed in employment of local, naturally occurring materials, in order to reinforce the idea that buildings should

²³ Wright, *The Future of Architecture*, p. 34.

²⁴ Hoffman, Donald, *Frank Lloyd Wright - Architecture and Nature*, (New York: Dover Publications Inc., 1986), p. 39.

²⁵ Meehan, *Truth Against the World - Frank Lloyd Wright Speaks for an Organic Architecture*, p. 41.

²⁶ Etlin, *Frank Lloyd Wright and Le Corbusier - A Romantic Legacy*, p. 48.

²⁷ Hoffman, *Understanding Frank Lloyd Wright's Architecture*, p. 65, citing Robert C. Spencer.

appear to have emerged from the ground where they stand²⁸. His use of nature's materials created a man-made environment synchronised with nature, utilising its beauty, rather than contrasting with it. Wright also used naturally occurring features of the landscape to enhance the natural beauty of his architecture, such as rivers and lakes, but these will be addressed in later chapters.

Arthur Drexler noted that Wright's structures physically resembled natural phenomena: - 'skyscrapers like trees, houses like caves, a museum like a shell'²⁹. Wright's emulation of natural forms, however, went far deeper than simple imitation. Whilst he would never directly imitate forms or aspects of nature, he had a profound understanding of its underlying principles of structure which allowed its creations to maintain their form and standing³⁰. His aim was to embrace the founding design principles of nature, nature being the most ancient writer of the landscape, as architecture is 'the universal writing of humanity'³¹. Much of his architecture, both in its design and construction, is based around principles of design which he witnessed in nature. On many occasions throughout his career, Wright implemented the principle of the cantilever, enabling his architecture to defy gravity and logic, from the cantilevered balconies of the prairie houses such as the Frederick C. Robie House (Chicago, Illinois, 1906) to Fallingwater (Bear Run, Pennsylvania, 1935), (see Figs, 26-27, 69-61). Further cantilevered construction can be seen in his designs for the Johnson Wax

²⁸ Wright, *The Future of Architecture*, p. 71.

²⁹ Drexler, Arthur, *Ludwig Mies van der Rohe*, (London: Mayflower Publishing, 1960) p .9.

³⁰ Frank Lloyd Wright, *Architecture – Man in Possession of his Earth*, (London: Macdonald & Co. Publishers, 1963), citing biography by Iovanna Lloyd Wright (pp.14-60), p. 40.

Building Research Tower (Racine, Wisconsin, 1944) and the Price Company Tower (Bartlesville, Oklahoma, 1952)³², which Wright described as ‘the tree that escaped the crowded forest’³³ (see Figs. 144-145, 149-150). The cantilever itself demonstrates nature’s equilibrium of opposing forces, a principle which echoes throughout Wright’s architectural oeuvre.

Alternatively, Wright’s textile block houses of the 1920’s resemble crystalline structures emerging from the rock below, demonstrating Wright’s recognition of the principles of uniformity and irregularity of nature in his combination of differently patterned tiles to give an overall effect (see Figs. 50-53). Wright considered that ornament should be ‘of the surface, not on the surface’³⁴, judging ornament to derive from the natural beauty or character of the surface or material, rather than being an applied addition. The construction of the textile block houses particularly, together with many other Wright buildings, itself functions as the ornamentation of the structure, in accordance with the idea of a complete integrated whole as would occur in the natural world.

Wright’s employment of natural forms can further be seen in the Paul R. Hanna House (Stanford, California, 1936), in which Wright implemented a hexagonal module plan, echoing the regular structure of honeycomb (see Figs. 64 & 65). At Taliesin (Spring Green, Wisconsin 1925-) and Fallingwater, Wright also designed

³¹ Meehan, *Truth Against the World – Frank Lloyd Wright Speaks for an Organic Architecture*, p. 91.

³² Storrer, *The Architecture of Frank Lloyd Wright – A Complete Catalog*, no. 238 & no. 355.

³³ Heinz, Thomas A., *Frank Lloyd Wright’s Public Buildings*, (Kent: Grange Books Plc., 2002), p. 68.

³⁴ Charles Jencks, *Modern Movements in Architecture*, 2nd Ed., (London: Penguin Books, 1987), p. 125,

stone walls reminiscent of each regions irregular rock stratifications, assuring the buildings maintained the appearance of a natural structure.

Wright firmly believed in building developed from ‘the nature of the thing’³⁵, from the study of character and subsequent truth to that character which promised an organic architecture³⁶. Therefore, in order to appear in harmony with the surrounding landscape, Wright’s structures often evolved from an examination of each particular site, with their dramatically different geographical, climactic and environmental conditions. This principle of design can be seen throughout Wright’s oeuvre, from prairie houses such as the Willits House (Highland Park, Illinois, 1901) or the Frank J. Baker House (Wilmette, Illinois, 1909) where the Midwest climate could demonstrate violent extremes of heat and cold, sun and storm and drought and rain. Wright kept his structures sheltered from intense heat and cold through long, low, wide eaves, which could prevent harsh bright sunlight penetrating the interior whilst reflecting light during dark periods³⁷ (see Figs. 13 -14, 40-41). Similarly, the construction of the Imperial Hotel (Tokyo, Japan, 1916) was uniquely designed to withstand underground movement on the principle of floating the foundations of the structure on the marshy ground³⁸ (see Figs. 86-88). Many other projects conceived for desert climates such as Taliesin West (Scottsdale, Arizona, 1937), the Arizona State Capitol Building (Phoenix, Arizona, 1957), the Johnson Desert Compound (Death Valley, California, 1923-

citing Wright.

³⁵ Meehan, *Truth Against the World – Frank Lloyd Wright Speaks for an Organic Architecture*, p. 147.

³⁶ *Ibid.* p. 51.

³⁷ Wright, *The Future of Architecture*, p. 137.

1925) , and the Frank Lloyd Wright Desert Dwelling Project (Death Valley, California, 1924-1925) were specifically designed for the climactic fluctuations and conditions of the east coast, and as such were conceived with pools and fountains to promote the image of an ‘oasis’ in the desert in times of high temperatures, and multiple fireplaces to provide warmth in colder climates (see Figs. 55-58, 124-126, 142-143).

Similarly, projects in the amiable Californian climate, such as Hollyhock house (Los Angeles, California, 1917) and the textile block houses, such as ‘La Miniatura’ (Los Angeles, California, 1923) or the Storer house (Hollywood, California, 1923), demonstrate Wright’s adherence to the nature of the site, as the climate gave no call for the roof as an agent of shelter so the houses were conceived as single entities, giving shade from the sun on the interior and enjoyment from its rays without hindrance on the exterior (see Figs. 46-53). At the Hollyhock House, Wright further adapted the design to the nature of the site by transforming the traditional roofline into a series of terraces and promenades, so that the pleasant climate could be enjoyed from a variety of vistas³⁹. The Solomon R Guggenheim Museum (New York, New York, 1956) has also been the subject of much attention due its extremely rare spiral or ziggurat plan imposed onto the rectilinear grid of New York City⁴⁰, breaking up the city’s imposed geometry (see Figs. 116-119).

³⁸ Blake, *Frank Lloyd Wright – Architecture and Space*, p. 69.

³⁹ Hoffman, *Understanding Frank Lloyd Wright’s Architecture*, p. 74.

Furthermore to Wright's adherence to utilising the principles of construction evident in nature and attention to site, his buildings often took other natural factors into account, such as light of the sun – 'the great luminary of all life'⁴¹. Wright often designed the orientation of his residential buildings so that depending on the climate the main living areas were directed to be sun drenched or shaded during daylight hours. This can be seen in dwellings such as the John L. Rayward House (New Canaan, Connecticut, 1955), or the Second Herbert Jacobs House (Middleton, Wisconsin, 1943), whose hemispherical designs and glass-screened living spaces made them specifically suited to receive the sun, and alternatively in the Boomer House (Phoenix, Arizona, 1953) whose main living space is directed north, away from the desert sun⁴². Again this feature of Wright's conceptual process stems from examination of the site, and according attention to the orientation of the plan (see Figs. 76-77, 83-85).

Wright has also been charged with creating designs which appear to obscure the boundaries between the interior and exterior, the natural and the built environments, which occurred from initial conception at the point of the plan. Many of Wright's prairie houses adopt the cruciform or pinwheel design for their foundation, so rather than having a main body of the house, different rooms are projected outward from the central core into the surrounding environment, such as the Willits House (see Figs. 13-14). Furthermore, his use of terraces, especially in domestic projects physically projects his architecture into its surroundings,

⁴⁰ Quinan, "Frank Lloyd Wright's Guggenheim Museum: A Historian's Report", p. 475.

⁴¹ Frank Lloyd Wright, *The Natural House*, (New York: New American Library of World Literature, Inc., 1963) p. 150.

obscuring the classification of internal and external space. The six terraces of Fallingwater offer almost as much floor space as the entire interior, yet themselves are on the verge between interior and exterior⁴³ (see Figs. 59-63). Disintegration of the traditional enclosing elements of a structure were also redefined by Wright, choosing to adopt piers rather than walls to define areas, with large windows and skylights taking the place of walls and ceilings, using glass to enhance the feelings of space and light. Many of his houses therefore contained 'light-screens' in place of walls, as can be seen in early Prairie houses such as Robie House, the Meyer May House (Grand Rapids, Michigan, 1908) or the Frank J. Baker House, and in larger projects such as Fallingwater, and 'Wingspread' House (Wind Point, Wisconsin, 1937) (see Figs. 26-29, 37-41, 69-62, 66-71). This however, reduces the physical and visual barriers between the enclosed space and the world beyond, and allows visual associations between internal and external space. The fact that many of Wright's plans, such as those for the Darwin D. Martin House (Buffalo, New York, 1904) and the Avery Coonley House (Riverside, Illinois, 1907) extend far beyond the borders of the house itself, into the surrounding landscape, demonstrating how Wright considered the environment into which the structure would be introduced, and the interaction between architecture and landscape (see Figs. 23 & 36).

Wright's architecture was conceived to embody the same manner of unity and beauty as nature, founded on its universal laws, echoing the writings of Leon

⁴² Storrer, *The Architecture of Frank Lloyd Wright – A Complete Catalog*, no. 361.

⁴³ Hoffman, *Understanding Frank Lloyd Wright's Architecture*, p. 87.

Battista Alberti (1404-1472)⁴⁴. Unity as a concept in Wright's architecture stemmed from his belief in the architect as designer of all elements. To this end, the furniture of Wright's projects was conceived as 'a child of the building'⁴⁵, supporting Wright's belief that individual architectural components can only reach completeness when merged 'into the larger expression of the whole'⁴⁶.

Wright showed consideration for the environments he created, believing people to 'derive countenance and sustenance' from their surroundings, being 'rooted in them just as a plant in the soil'⁴⁷. His encounter with the earth centred on an innate respect for the power and wonder of the natural world, an appreciation of its beauty and elegance, and recognition of the needs of man. In relating his architecture to nature and the horizontal as 'the true earth-line'⁴⁸, Wright was endeavouring to restore to nature the wild prairies she lost during his childhood, whilst giving man back his freedom in the wilderness. His architecture was bound to the earth in form, principle, philosophy and spirit, bestowed with the timeless quality and beauty of nature herself.

⁴⁴ Watkin, David, *A History of Western Architecture*, 3rd Ed., (London: Laurence King Publishing, 2000), p. 216.

⁴⁵ Hoffman, *Understanding Frank Lloyd Wright's Architecture*, p. 43.

⁴⁶ Wright, *Architecture – Man in Possession of his Earth*, p. 56.

⁴⁷ McCarter, Robert, *Frank Lloyd Wright – Architect*, (London: Phaidon Press Ltd., 2001), p. 249, citing Wright.

⁴⁸ Frank Lloyd Wright, *An American Architecture*, (London: Architectural Press, 1955), p. 61.

CHAPTER THREE

AIR



‘The interior space itself is the reality of the building...In integral architecture the room-space itself must come through...We no longer have an outside and an insides as two separate things...They are of each other. Form and function thus become one...a higher conception of architecture: architecture not alone as form following function, but conceived as the space enclosed...The building now became a creation of interior space in light.’

Frank Lloyd Wright⁴⁹

Wright’s expression of his fundamental belief in the properties of architecture echoes the ancient ethos of Chinese philosopher Lao Tzu, who reasoned that the reality of the building consisted ‘in the space within’⁵⁰. Furthermore it is reminiscent of sentiments from Dutch architect Hendrik Petrus Berlage (1856-1934), who stressed ‘space-creation and relationships of the masses’ as the ‘true essentials’ of architecture⁵¹, and who perceived Wright to be ‘a master without an equal in Europe’⁵². The conception of light, space and air was critical to Frank Lloyd Wright’s approach to architecture, and this chapter will briefly analyse the manipulations of space, and use of light in his work. As mentioned, the notion of space and landscape was pivotal to the notion of the American wilderness and the plains of the Midwest states. Many of Wright’s creations show a vastly developed knowledge of the interplay of volumes, masses and colours, possibly from his Froebel kindergarten training, to which he indebted the ‘unity of proportion’ in his organic architecture⁵³. Although in his very early career Wright’s designs were

⁴⁹ Ibid. p. 217-8.

⁵⁰ McCarter, *Frank Lloyd Wright: A Primer on Architectural Principles*, p.15.

⁵¹ Curtis, William J.R., *Modern Architecture Since 1900*, 3rd Ed., (London: Phaidon Press Ltd., 2001), p. 153, citing Berlage’s essay *Principles and Evolution of Architecture* of 1908.

⁵² Sharp, Dennis (Ed.), *The Rationalists: Theory and Design in the Modern Movement*, (London: Architectural Press, 1978), citing Pevsner, Nikolaus, “Frank Lloyd Wright’s Peaceful Penetration of Europe”, (pp.34-41), p. 35.

⁵³ Rubin, Jeanne S., “The Froebel-Wright Kindergarten Connection: A New Perspective”, p. 30.

rooted in the conventions of his predecessors, dominated by rectilinear, cubic and octagonal forms, the rapid development of his ideas about space soon precipitated Wright's 'destruction of the box'⁵⁴ and manipulation of the traditional interior.

Whilst the exterior spaces and forms of Wright's creations are relevant in this chapter, many of his exterior spaces are merely an 'expression of interior volume in exterior form'⁵⁵, and as such this shall be the main area of analysis. Wright's interior organisation of space often revolved around a fireplace core, as will be focused on more precisely later, but there were several fundamental ordering principles which Wright observed to evoke an architecture of space and light. From the fireplace as central element, the remainder of the design often then evolved from 'solid substance... [to] an interior of ever-increasing fluidity'⁵⁶. Wright designed his houses from the inside out, rather than the traditional method of conceiving an exterior form and manipulating the internal divisions to coincide. This procedure for generating plans aligns with the architectural beliefs of Gottfried Semper (1803-1879), and his 'Four Elements of Architecture' outlined in 1851, which was reinforced by Wright's interest in Japanese architecture⁵⁷. Wright furthermore believed that 'internal disorder is architectural disease, if not the death of architecture'⁵⁸, and therefore placed great emphasis on

⁵⁴ Brooks, H. Allen, "Frank Lloyd Wright and the Destruction of the Box" in *Journal of the Society of Architectural Historians*, (Vol. 38, No. 1, March 1979), pp. 7-14, p. 7.

⁵⁵ McCarter, *Frank Lloyd Wright: A Primer on Architectural Principles*, p. 257.

⁵⁶ Frampton, Kenneth, *Modern Architecture – A Critical History*, 3rd Ed. (London: Thames and Hudson, 2000), p. 59, citing Mason.

⁵⁷ Etlin, *Frank Lloyd Wright and Le Corbusier - The Romantic Legacy*, p. 27.

⁵⁸ Wright, *The Future of Architecture*, p. 203.

the importance of an ordered plan, giving form and order to space with a great deal of care being taken to consider the interplay of mass and volume. Wright envisioned the plan as the ‘solution’ with the elevation as the ‘expression’ of an organic integrated whole⁵⁹.

H. Allen Brooks asserts that Wright’s redefinition of interior space began with ‘dismembering the traditional box...at its point of greatest strength - at the corner’⁶⁰. In increasing the size of the doorways and breaking down the conventional corner, Wright was able to allow rooms to interpenetrate each other, breaking down the boundaries of spaces so that each ‘room’ can be viewed as part of another⁶¹. However, Robert McCarter asserts rather that Wright strengthened the corners in the public rooms of the Prairie houses as it suited his spatial intentions, and opened up those of only the private rooms⁶². Later in Wright’s career⁶³, he furthered his dismembering of space by manipulating the ceiling and floor heights of spaces, rendering space in motion on the vertical axis together with the horizontal, creating balconies, double height rooms and split-level designs⁶⁴, such as the Frank J. Baker House⁶⁵ and ‘La Miniatura’ House, (see figs. 39, 40 & 51). In imagining changing forms of floors, ceilings and walls, Wright affected a metamorphosis of conceptions of space. By establishing a visual

⁵⁹ Wright, *An American Architecture*, p. 48.

⁶⁰ Brooks, “Frank Lloyd Wright and the Destruction of the Box”, p. 7.

⁶¹ Ibid. p. 8.

⁶² McCarter, *Frank Lloyd Wright: A Primer on Architectural Principles*, p. 266.

⁶³ Blake, *Frank Lloyd Wright – Architecture and Space*, p. 73.

⁶⁴ Brooks, “Frank Lloyd Wright and the Destruction of the Box”, p. 9.

⁶⁵ Hitchcock, Henry-Russell, *In the Nature of Materials – The Buildings of Frank Lloyd Wright 1887-1941*, (New York, Hawthorn Books, Inc., 1942), plates 158 & 159.

contour leading from one space into another, Wright created the impression of an expansive space rather than one constrained by limits of brick and stone. This can be seen in the Robie House, the Avery Coonley House and the Rayward House, where the eye is carried by the glass-screen along the main living space (see Figs. 27 & 28, 33 & 34, 83-85). The space therefore is defined rather than enclosed, becoming areas rather than rooms equated within the larger overall space⁶⁶.

Wright's destruction of the traditional corner and subsequent overlapping of rooms meant not only that Wright's houses were often devoid of corridors, but also that the sequence through the space was a series of shared experiences⁶⁷. Several interpretations of the same space can be made as closure and thresholds are implied rather than directly stated, as can be seen in the Susan Lawrence Dana House (Springfield, Illinois, 1902) and the Darwin D. Martin House (see Figs. 15-25). This supports Wright's belief that organic architecture can only reach completeness as it is merged 'into the larger expression of the whole'⁶⁸, and also consequently acts as physical manifestation of his assertion that 'the interior space itself is the reality of the building'⁶⁹ only that 'which roofs and walls serve to enclose'⁷⁰.

Wright's homogenisation of space undoubtedly emanates from his Froebel

⁶⁶ Brooks, "Frank Lloyd Wright and the Destruction of the Box", p. 12.

⁶⁷ McCarter, *Frank Lloyd Wright – Architect*, p. 48.

⁶⁸ Wright, *Architecture – Man in Possession of his Earth*, p. 56.

⁶⁹ See above passage, and corresponding footnote 52.

training, resulting in his unparalleled feel for volumes and masses. To this effect, Grant Mason has demonstrated the striking visual affinity between the Froebel patterns and Wright's designs⁷¹. The effect produced by Wright's restructuring of the space was one of psychological definition, creating an architectural implication for its purpose, fitting all the needs of man. To this end, Wright positioned furniture to create a 'sense of dynamic spatial organisation'⁷², rugs were aligned to carry the occupants over room divisions with ease. Ceiling heights were also coordinated with the specific activities which occupied each space⁷³. Ceilings were higher where people would be standing and lower where they would be sitting in dining and living areas, and notably around the fireplace. All these elements combined would relay Wright's domestic values to the inhabitants, with the stress on moving swiftly through hallways, and resting in communal areas, where the family would gather. This demonstrates both Wright's beliefs in building on a human scale⁷⁴, and in architecture meeting the basic needs of man by providing a place of 'refuge, recreation and repose'⁷⁵ for body and mind. However, as mentioned, Wright also accommodated for 'free men' in 'free space'⁷⁶, creating ideal settings for Appleton's 'prospect-refuge theory', where notions of freedom and safety are simultaneously embodied in an architecture⁷⁷. By psychologically defining his spaces, Wright could ensure that every major need

⁷⁰ Wright, *The Future of Architecture*, p. 58.

⁷¹ Mason, Grant, "Wright in the Nursery – The Influence of Froebel Education on the Work of Frank Lloyd Wright" in *Architectural Review*, (Vol. CXIII, No. 678, June 1953), pp. 349-341.

⁷² McCarter, *Frank Lloyd Wright: A Primer on Architectural Principles*, p. 242.

⁷³ Ibid. p. 263.

⁷⁴ Wright, *The Future of Architecture*, p. 137.

⁷⁵ Ibid. p. 210.

⁷⁶ Blake, *Frank Lloyd Wright – Architecture and Space*, p. 80.

⁷⁷ Hildebrand, Grant, *The Wright Space: Pattern and Meaning in Frank Lloyd Wright's Houses*, (Seattle:

of man was catered for in his creations.

During the 1930's, Wright began experimenting with new geometrical forms and new realms of space occupied by the circle, triangle and hexagon, as opposed to his earlier manipulation of cuboids, octagonal and rectilinear space⁷⁸. Triangular module designs executed in the late 1940's and 1950's, can be seen in the McCartney House (Kalamazoo, Michigan, 1949) and the Beth Sholom Synagogue (Elkins Park, Philadelphia, 1954), (see Figs. 78-80, 112-115). A further emulation of the principles of structure evident in nature, Wright had developed a capacity to manoeuvre within new boundaries, whilst moreover expanding his ability to work outside the traditional 'box' of architecture. This feature of his oeuvre, combined with his ability to infuse unity without symmetry, permitted a scheme of spatial organisation based on several fundamental principles, adaptable to diversity site and size⁷⁹, creating new projects as variations on a theme.

Wright placed a great deal of importance on the benevolent properties of 'free living in air and sunlight'⁸⁰. He believed that 'buildings, too, are children of earth and sun'⁸¹, borne of the land and flooded with light and warmth from the sun's rays. Wright used a great deal of glass in his architecture, considering glass to be

University of Washington Press, 1991), p. 30-31.

⁷⁸ Jencks, *Modern Movements in Architecture*, p. 131, dates this development to the 1940's, however there is evidence from hexagonal elements of plans of the Hanna House of 1936, and circular elements of the Monona Terrace Civic Centre of 1938, that this actually occurred earlier.

⁷⁹ Curtis, *Modern Architecture Since 1900*, p. 122.

⁸⁰ Wright, *The Natural House*, p. 46.

⁸¹ Hoffman, *Frank Lloyd Wright - Architecture and Nature*, frontispiece page.

space in ‘architectural expression’⁸². Emerging as an architect into an America gripped by the highly representational art glass of Louis Comfort Tiffany⁸³ (1848-1933), Wright’s abstract and geometric designs came as something very different and somewhat revolutionary⁸⁴. Wright’s windows were transformed from the traditional punctuated holes in solid walls, into horizontally continuous screens of light, acting as a frieze of glass⁸⁵. This marked visible membrane formed a visual and thematic link between the interior and exterior. The exterior is visible, yet kept separate, maintaining the sense of simultaneous freedom and protection from the interior viewpoint⁸⁶, as can be seen in the Stevens House (Yemessee, South Carolina, 1939), (see Figs. 72-73). However, the elimination of ‘any hard boundary between inner and outer’ brought the landscape visually closer to the interior⁸⁷.

Wright however believed that glass was ‘not beautiful in sunlight’, and was only achieved beauty in shade and shadow⁸⁸. This may have been his motivation for the creation of his art glass, as it gave depth and shading to an otherwise untextured surface. In addition to creating vistas of the surrounding landscape, Wright’s use of art glass as a further dimension to interior decoration also was evident from the outset, as in the Susan Lawrence Dana House, whose rooms are

⁸² Wright, *Architecture – Man in Possession of his Earth*, p. 100.

⁸³ Hughes, Robert, *American Visions - The Epic History of Art in America*, (London: The Harvill Press, 1997), p. 247.

⁸⁴ Sloan, *Light Screens - The Leaded Glass of Frank Lloyd Wright*, p. 27.

⁸⁵ Hoffman, *Understanding Frank Lloyd Wright’s Architecture*, p. 18

⁸⁶ Sloan, *Light Screens - The Leaded Glass of Frank Lloyd Wright*, p. 18.

⁸⁷ Pevsner, Nikolaus, *Pioneers of Modern Design - From William Morris to Walter Gropius*, 2nd Ed., (Middlesex: Penguin Books Ltd., 1975), p. 191.

⁸⁸ Wright, *Architecture – Man in Possession of his Earth*, p. 98.

filled with an abundance of various glass objects, from lamps to dividing doors (see figs. 15-22). Wright often maintained the design continuity of the remainder of the house in the glass itself, the motif in glass being ‘calculated with reference to the scale of the interior and the scheme of decoration’⁸⁹, in the same manner as the furniture was an ‘interpretation of the building as a whole’⁹⁰. Another factor was that much of his art glass was protected by the long, wide eaves which surrounded much of his domestic architecture, which also provided a diffused light in which to display the glass. The underside of these eaves were flat and light in colour ‘to create a glow of reflected light that made the upper rooms not dark, but delightful’⁹¹.

However, Wright’s command of light was not restricted to his preferred casement windows. Top-lit vertical spaces were a feature across Wright’s oeuvre which allowed maximum light to enter spaces without sacrificing exterior walls.

Wright’s exploration of top-lighting began at the foundation of his architectural career, in the playroom at his own Oak Park home (Oak Park, Illinois, 1889-95), which later evolved into sky-lighting and clerestory lighting of the main living spaces for many of his Prairie Houses⁹², and later conceptions such as Wingspread House, (see Figs. 5, 66-71). In many of his urban spaces, Wright has chosen to erect enclosing exterior walls unpunctuated by windows, yet flooded

⁸⁹ Sloan, *Light Screens - The Leaded Glass of Frank Lloyd Wright*, p. 29, citing Wright from *In The Cause of Architecture* of 1928.

⁹⁰ McCarter, *Frank Lloyd Wright: A Primer on Architectural Principles*, p. 257.

⁹¹ Wright, *The Future of Architecture*, p. 137.

⁹² Clausen, Meredith L., “Frank Lloyd Wright, Vertical Space, and the Chicago School’s Quest for Light” in *Journal of the Society of Architectural Historians*, (Vol. 44, No. 1, March 1995), pp. 66-74, p. 74.

with light from above. This can be seen in enclosed industrial spaces such as the Larkin Company Administration Building (Buffalo, New York, 1904), and the Johnson Wax Building (Racine, Wisconsin, 1936) (see Figs. 129-132, 137-141)⁹³. The V.C. Morris Gift Shop (San Francisco, California, 1948), similarly physically closes itself off from the street on which it lies, only paradoxically to boast an interior filled with diffused light from the large circular glass domed skylight, which was very likely the genesis of the Guggenheim design⁹⁴ (see Figs. 146-148).

Following the Gothic tradition of identifying light with spirituality, Wright also equated light with spirituality, and so often flooded his religious or sacred buildings with natural light⁹⁵. Even in early religious buildings such as The Unity Temple (Oak Park, Illinois, 1904) top-lighting reigned supreme⁹⁶ (see Figs. 104-105). Designs for the Steel Cathedral (New York, New York, 1927-8), and the Beth Sholom Synagogue also demonstrate this belief, both being composed of glass and steel, radiating divine light (see Figs. 106-107, 112-115). The vast windows of the Unitarian Church (Shorewood Hills, Wisconsin, 1947) and the Florida Southern College Annie Pfeiffer Chapel (Lakeland, Florida, 1938) also align Wright's beliefs in the qualities of light (see Figs. 108-111). Wright's observance of principles in the natural world – 'we reach for the light spiritually, as the plant does physically'⁹⁷. This can most clearly be seen in the Solomon R. Guggenheim Museum originally lit by a combination of the grand skylight and continuous

⁹³ Ibid. p. 72-3.

⁹⁴ Heinz, *Frank Lloyd Wright's Public Buildings*, p. 59.

⁹⁵ Sloan, *Light Screens - The Leaded Glass of Frank Lloyd Wright*, p. 145.

⁹⁶ Clausen, "Frank Lloyd Wright, Vertical Space, and the Chicago School's Quest for Light", p. 73.

horizontal band of clerestory windows⁹⁸, which seemed immersed with symbolic significance, as the lighting itself seemed to reflect spiritual enlightenment as the summit of the spiral path (see Figs. 116-119). The spiral as motivation of the plan also was a symbol of transcendency, having powerful connotations of movement⁹⁹.

The spatial concept envisioned in Wright's organic architecture which expressed the 'aspirations of free men to free space'¹⁰⁰, was viewed by Wright as adhering to radically different to the architectural ambitions of his European colleagues. Wright held contempt for their buildings, for being a different style of box, but a box none the same¹⁰¹. Wright's conception of organicism operated in a totally different architectural language from other 'organic' architects of the 20th century, such as Hugo Häring (1882-1958). His radical dissection of almost all aspects of planning from floor to ceiling, and introduction of reams of glass, all play prominent parts in the invocation of light and space in Wright's buildings, public and private. From this brief examination of Wright's output and design principles, it is apparent that through manipulation of light and space, the concept of air was fundamentally important to the architect, envisaging space as a return to the Prairie for a distinctive American architecture.

⁹⁷ Wright, *The Natural House*, p. 46.

⁹⁸ McCarter, *Frank Lloyd Wright – Architect*, p. 312.

⁹⁹ Quinan, "Frank Lloyd Wright's Guggenheim Museum: A Historian's Report", p. 475.

¹⁰⁰ Blake, *Frank Lloyd Wright – Architecture and Space*, p. 80.

¹⁰¹ *Ibid.* p. 80.

CHAPTER FOUR

WATER



'Water is a living thing, hence its aspect may be deep and serene, gentle and smooth; it may be vast and ocean-like, winding and circling. It may be oily and shining, may spout like a fountain, shooting and splashing...It may form waterfalls rising up against the sky or dashing down to the deep earth; or gleam radiantly, reflecting the sunlight in the valley. Such are the living aspects of water.'

Kuo-hsi¹⁰²

Water, as expressed by Kuo hsi has the ability to express many characteristics of its highly adaptable nature. It has been a symbol in many different cultures, although primarily it is seen as a sign of life, fertility and health¹⁰³. As a universal element, water acts as an allegory for the duality of nature itself, bringing things into being and washing them away into nothingness, expressing the force and the frailties of the natural world, both creator and destroyer. Whilst water is the element not wholly universal to Frank Lloyd Wright's architecture, its prominent inclusion in a vast number of projects seems to deserve consideration. Water, like fire, is particularly distinctive when used in conjunction with architecture for its potential to bring movement and sound to an essentially static and silent art. Wright's use of water is perhaps the element most often overlooked in this architecture, although it was frequently used in purposefully constructed interior and exterior pools and fountains, generating an additional dimension to Wrightian space.

The inclusion of water in Frank Lloyd Wright's architecture occurred at the

¹⁰² Moore, Charles W. & Lidz, Jane, *Water and Architecture*, (New York: Harry N. Abrams Inc., Publishers, 1994), p. 17, citing Kuo-hsi.

¹⁰³ Ibid. p. 17.

conception of his first independent commission, at the Winslow House (River Forest, Illinois, 1893), which boasted a small reflecting pool to the front of the house (see Figs. 8-10). From this point, the introduction of water became a regular occurrence across all domains of Wright's architecture, often culminating in exterior pools, such as Hollyhock House, or interior features, such as the reception hall fountain at the Susan Lawrence Dana House. Pools were an important feature of Wright's larger houses throughout his career, from the early Winslow House, the Avery Coonley House, the Henry J. Allen House (Wichita, Kansas, 1917), and Hollyhock House (see Figs. 8-10, 32-36, 44-49). During the 1920's, the textile block houses such as 'La Miniatura', and the Storer House (see Figs. 50-53) featured exterior pools, and Wright's major domestic projects of the 1930's also gave much attention to the inclusion of water, including most notably Fallingwater, the Hanna House, and Wingspread (see Figs. 50-53, 59-71). In domestic architecture water features often accompanied the large fireplace hearth, the revolution in space and light, and an architecture grounded on nature's principles, although structures of all denominations and dimensions were given the added component of water, from museums to churches, offices and hotels. Despite all these projects, some of Wright's most interesting projects involving water remain unexecuted, although remaining designs do reveal critical information concerning Wright's attitude to water.

Wright's use of water in his architecture adopted many forms, and whilst the function of the inclusion of water elements differs from building to building, there are several clear purposes for its presence and form. From the study of plans, it

seems clear that Wright was heavily influenced by pre-existing natural water features such as rivers and lakes, and deliberately manipulated his designs to incorporate water into his architecture, or create vistas of water from his living spaces. This was exacerbated by his use of numerous glass screens to open up the landscape to the inhabitants, as can be seen most prominently in Fallingwater, the unbuilt 'Seacliff' House (San Francisco, California, 1944-1946), and Taliesin built above the Wisconsin River¹⁰⁴, whose sites were chosen specifically for features of their natural environment, and designed with consideration to it (see Figs. 59-63, 78, 133-136).

Despite Wright's employment of the natural world to enhance his architecture, as discussed in the previous chapters, for the most part the water elements included in his work were constructed specifically for the purpose of his architecture. On many occasions, the incorporation of man-made water features appears appropriate to the philosophy of their structure, as Wright's attention to the natural environment enabled him to measure the level of water appropriate for the particular environment of each project. This is demonstrated in designs for the unrealised Arizona State Capitol, which Wright hailed as 'The Oasis', (see Figs. 124-126). Paying specific attention to the climactic conditions of the area, Wright's design truly appeared as an 'Oasis' in the desert. Water was a foremost feature of the scheme, which involved numerous pools and fountains. Water's dominance in a scheme for a desert climate illustrates Wright's appreciation of the landscape, which similarly can be seen in the earlier Taliesin West, whose dry and

¹⁰⁴ Levine, *The Architecture of Frank Lloyd Wright*, p. 84.

barren natural environment would not accommodate naturally occurring areas of water (see Figs. 142-143). The purpose of this building was as a winter retreat for the Taliesin Fellowship¹⁰⁵, and its main pool which can be seen from the entrance approach remains motionless, inspiring reflection and relaxation, introduced the idea of an oasis in the desert.

Wright's use of pools in projects for communal dwelling is evident from plans of unrealised projects such as the San Marcos Water Gardens (Chandler, Arizona, 1929), and the Floating Gardens Motel (Leesburg, Florida, 1952) or in the now destroyed Imperial Hotel, which featured a number of pools forming a courtyard (see Figs. 86-92). This building, which Wright first looked upon as a modern 'ocean liner', and later referred to as a 'battleship', was built to sustain the possibility of earthquakes on the Pacific Rim, Wright having realised that 'the ground in a serious earthquake...undulates like waves at sea'¹⁰⁶. Wright's understanding of nature's principles in relation to the movement of water avoided the hotel's destruction when disaster struck, and his newly acquired knowledge of the devastating forces of fire at Taliesin inspired the inclusion of such pools forming and framing the courtyard¹⁰⁷.

On the other edge of the Pacific basin¹⁰⁸ was Hollyhock House, which not only rested on Olive Hill giving views of the Pacific Ocean, but also included

¹⁰⁵ Ibid. p. 257.

¹⁰⁶ Ibid. p. 118-119.

¹⁰⁷ Copplestone, Trewin, *Frank Lloyd Wright - A Retrospective View*, (London: Grange Books, 1997), p. 53.

¹⁰⁸ Levine, *The Architecture of Frank Lloyd Wright*, p. 124.

purposefully constructed water pools at either end of the scheme, and most notably, a water pool directly surrounding the fire (see Figs.46-49). Whilst this was not the first time Wright appeared to deliberately oppose fire and water¹⁰⁹, this was the first time these elements were placed directly in the same space as undoubtedly deliberate juxtaposition. Once again the form taken in the water element is appropriate to the overall scheme, as the water passes through this house literally¹¹⁰ and symbolically linking the natural waters of the ocean to Wright's constructed complex. The waters act as the connection between the constructed and the natural environments. The circular pool which now lies still was originally in partnership with a fountain¹¹¹, balancing reflection and contemplation with the thirst for the activity of life, again creating an amalgamation of the philosophical and architectural schemes. Despite this, the most interesting feature of this design for the purposes of this study is the main fireplace embedded within a pool of water. Both Levine¹¹² and Hiroshi Murata¹¹³ have commented on the metaphysical configuration of the structure being altered by this mythical union of the elements, Murata concluding that this configuration results in architecture and nature becoming 'synchronised'¹¹⁴.

Interestingly, the Little Dipper School (Los Angeles, California, 1923), conceived for another area of the same site on Olive Hill, also features a direct comparison

¹⁰⁹ Even in early houses such as the Winslow house, the pool to the front façade faces the fireplace in the hall on the same axis.

¹¹⁰ Smith, Kathryn, "Frank Lloyd Wright, Hollyhock House and Olive Hill, 1914-1924" in *Journal of the Society of Architectural Historians*, (Vol. 38, No. 1, March 1979), pp. 15-33, p .23.

¹¹¹ Levine, *The Architecture of Frank Lloyd Wright*, p. 128, and corresponding footnote on p. 453n47.

¹¹² Ibid. p.141.

¹¹³ Lind, Carla, *Frank Lloyd Wright's Fireplaces*, (Pomegranate Communications, 1995), citing Hiroshi

of the elements of fire and water, having a fireplace and pool at diagonally opposite corners of the main space (see Fig. 100). In these and the later Doheny Ranch Development House C (Nr. Los Angeles, California, 1923), water and fire are opposing centrally in the design, with earth and air converging on the periphery (see Fig. 54). In another little known unexecuted design, The Frank Lloyd Wright Desert Dwelling Project, the elements converge around a central pool opposite a ‘monumental fireplace...rising through the full height like a backbone’ (see Fig. 58). In this instance the elements appear to juxtapose in a number of ways, the earth and water on the horizontal axis and air and fire on the horizontal¹¹⁵. However, as the building is open to the sky, the pool moreover acts in conjunction with each of the other elements, with the earth around it, the fire opposite and the open sky above. On this occasion, the water element also adheres to the overall principle of containment, realised by the exterior walls. The inclusion of water in a project conceived for the desert is also again reminiscent of ‘The Oasis’, providing refuge for the traveller, as realised almost simultaneously in Taliesin West.

Religious buildings, buildings inspiring spiritual contemplation, and buildings for education also often incorporated water. Remaining schematic designs for the Steel Cathedral illustrate an enormous pyramidal structure composed of steel and glass, designed to house 100,000 people and over 1,500 feet high (see Figs. 106-107). These designs however, also show a massive fountain at its exact centre

Murata at the Frank Lloyd Wright Retrospective of 1991, p. 36.

¹¹⁴ Ibid. p. 36.

¹¹⁵ Levine, *The Architecture of Frank Lloyd Wright*, p. 187-9.

projecting water 1,000 feet high ‘into illumination’¹¹⁶. This ambitious project was never realised although a more modest design was constructed as the Beth Sholom Synagogue, (see Figs. 112-115). The Solomon R. Guggenheim Museum also featured a pool at the base of its ramp ascending towards the sun, creating a ‘dialectical pairing’ of poetic elements’ which ‘brought together sun and water’¹¹⁷ (see Figs.116-119). Pools were also a familiar feature of Wright’s school designs, such as the Hillside Home School (Spring Green, Wisconsin, 1901)¹¹⁸ , the Little Dipper, and the Florida Southern College Campus (Lakeland, Florida, 1938-1954), (see Figs. 93-95, 100-103).

Furthermore, Wright’s Larkin Company Administration Building featured a fountain at its main entrance, introducing the workers to the notion of water, before they enter into the abundance of space and light on the interior (see Figs. 129-132). Several of Wright’s community buildings also rely on water as a founding element of their designs, such as the Monona Terrace Civic Centre (Madison, Wisconsin, 1938-1959), and the Marin County Civic Centre (San Raphael, California, 1957), both of which commanded stunning views of waters beyond their reach, (see Figs. 120-123, 127-128).

Obviously Wright’s main project involving water was the domestic residence entitled ‘Fallingwater’ for Edgar and Lillian Kauffman¹¹⁹ (see Figs. 59-63). This project completed in the later years of Wright’s life, reaffirmed him as one of

¹¹⁶ De Long, *Frank Lloyd Wright and the Living City*, p. 103

¹¹⁷ Etlin, *Frank Lloyd Wright and Le Corbusier - The Romantic Legacy*, p. 39 and p. 59.

¹¹⁸ De Long, *Frank Lloyd Wright and the Living City*, p. 118-9.

America's leading architects, the creator of a masterpiece of architecture and a feat of engineering. Wright's objective for the site was to make the conjunction of house and waterfall 'as intimate as possible'¹²⁰. It would appear that in this mission he succeeded, as the house has been described as 'an abstraction of the spectacular site'¹²¹. Wright's placement of his creation directly over the waterfall may appear to attempt at a dominance of nature, however, the extensive use of natural materials and design principles such as the cantilever, plus the obvious respect for the pre-existing landscape by the architect would call this into question. The cantilevered construction enabled Wright's structure to develop from natural principles without impeding on the natural beauty of the site, and maintaining the integrity of the site's horizontal emphasis¹²². The house has been described as 'a celebration of the four elements'¹²³ although the prominence of water contradicting fire in this design is particularly striking, with a central chimneystack anchoring the house to the rocks below, over which the Bear Run waters dynamically wash.

A later and lesser known project, entitled 'Tirranna', meaning 'running waters' (New Canaan, Connecticut, 1955), also takes water as the main driving force of its design (see Figs. 83-85). Surrounded by the running waters of the Noroton River, and featuring a series of pools, fountains and waterfalls, the project incorporates

¹¹⁹ McCarter, Robert, *Fallingwater*, (London: Phaidon Press Ltd., 1994), p. 4.

¹²⁰ Levine, *The Architecture of Frank Lloyd Wright*, p. 228-30.

¹²¹ Wright, *Architecture – Man in Possession of his Earth*, citing biography by Iovanna Lloyd Wright (pp.14-60), p. 40.

¹²² Hoffman, Donald, *Frank Lloyd Wright's Falling Water - The House and Its History*, 2nd Ed., (New York: Dover Publications Inc., 1993), p. 21.

¹²³ Etlin, *Frank Lloyd Wright and Le Corbusier – The Romantic Legacy*, p. 53.

manufactured vistas over the water, like Fallingwater, whilst maintaining a respect for the natural landscape and refusing to impose itself on it. Both Fallingwater and Tirranna, together with the Dohney Ranch House C and Hollyhock House, emphasise the idea of water passing through the complex, as though Wright's architecture were allowing water to follow its natural course without hindrance (see Figs. 46-49, 54, 59-63, 83-85).

Water appears to have been a crucial factor in Wright's designs, especially in juxtaposing fire, besides being a tool for invoking reflection, and a medium for appreciation of the beauty of nature. On the basis of this brief analysis, it would appear that water was intrinsic to Wright's design philosophy, with its continual presence across all types of building throughout his long career, and individual designs apparently dedicated to the appreciation of water itself.

CHAPTER FIVE

FIRE



'The fireplace is the geometric and symbolic centre of the house, for here is where the sacred flame of the family is kept burning... Connecting the vault of heaven with the underworld, the conduit opens into the dwelling of man to warm and sustain him with fire. It is the cosmic centre of the house where all the forces of the landscape are concentrated.'

Thomas Beeby¹²⁴

'I should think fire the best thing in the world, if I were not acquainted with air, and water, and earth.'

Ralph Waldo Emerson¹²⁵

Like water, fire is seen as a sustainer and extinguisher of life, bringer of the new day in the rising of the sun, and giver of heat and light. From Emerson's statement it is clear that the Romantic writers highly regarded the four elements as the fabric of nature, and believed them to be strongly interwoven with the substance of man. Wright believed the fireplace to be the heart of the home, describing it as 'the heart of the whole and of the building itself'¹²⁶. The fascination with fire in Wright's works is evident from the outset, their sheer abundance within his oeuvre, often in several rooms of one structure, indicating the strength of their importance for him as an architect. Their continual presence is also testament to Wright's opinion of their importance as a fundamental element of the American home. Even as early as the erection of the Winslow House in 1893, when central heating had become a permanent feature of

¹²⁴ Bolon, Carol R.; Nelson, Robert S. & Seidel, Linda (Eds.), *The Nature of Frank Lloyd Wright*, (London: University of Chicago Press, 1988), citing Thomas Beeby, *Wright and Landscape: A mythical Interpretation*, (pp.154-172), p. 171.

¹²⁵ Emerson, Ralph Waldo, *Essays - First and Second Series*, (London: J. M. Dent & Co., 1906), quote extracted from first series lecture entitled 'Art' from 1841, (pp.192-203) p. 195.

¹²⁶ Lind, *Frank Lloyd Wright's Fireplaces*, frontispiece citing 'Architect, Architecture and The Client' from 1896 by Frank Lloyd Wright.

residential buildings¹²⁷, the fireplace remained a central element (see Figs. 8-10). A probable explanation for this was identified in 1969 - 'No Wright house is without a fireplace, not because of the need for heat but because of those intangible psychological values - warmth, comfort, protection, and family unity'¹²⁸. Wright's texts by John Ruskin also associated domestic architecture with domestic values, linking architecture, beauty and morality, and emphasise the need for prominent fireplaces in order to evoke domestic values¹²⁹.

This chapter will examine the forms and functions of Frank Lloyd Wright's fireplaces, and commonalities of design, placement, and purpose. Wright designed over one thousand fireplaces, each assuming an overtly prominent role in the overall design of his houses¹³⁰. Fireplaces had specific roles to play and functions to perform in the organization of the house and home. The concept of the hearth for Wright had a deep symbolic significance, often acting as the stable core of the design from which the remaining architectural elements of the house emanate, and moreover as the stable core of family life around which all activity revolves. Wright is believed to have viewed the fireplace as the Western translation of the Japanese *tokonama*, the 'permanent element...and the focus of domestic contemplation and ceremony'¹³¹. Similarly, Donald Hoffman proposed that Wright imagined the hearth to be the 'Indian campfire taken indoors'¹³². The

¹²⁷ Frampton, *Modern Architecture – A Critical History*, p. 59.

¹²⁸ Lind, *Frank Lloyd Wright's Fireplaces*, p. 47, citing H. Allen Brooks.

¹²⁹ Ibid. p. 10.

¹³⁰ Ibid. p. 9.

¹³¹ Frampton, *Modern Architecture – A Critical History*, p. 59, citing Manson.

¹³² Hoffman, *Frank Lloyd Wright - Architecture and Nature*, p. 71.

corresponding underlying principle of these assertions is essentially that Wright saw the hearth was the permanent, solid, stable element of morally upright family life, the element around which architecture and man evolved in unison.

As Wright clearly placed so great an importance on the emblematic functions of the fireplace, it would therefore seem appropriate to present the main fireplace as both ‘the geometric and symbolic centre of the house’¹³³. Grant Hildebrand greatly emphasised the importance of the fireplace as a pivotal feature of Wright’s design process¹³⁴. The main fireplace often acts as the genesis or ‘fulcrum’¹³⁵ of the conceptual process around which other elements of the design emulate, often culminating in a pinwheel or cruciform-in-square plan. Wright appears to have viewed the main fireplace as the anchor of the entire design, literally and metaphorically representing the roots of the structure in space, the heart of the home, around which the contrary sense of freedom was evoked through this use of space and light, as discussed in the previous chapter. The location of many of his fireplaces within the overall design are usually geometrically central to the design, especially in early designs such as the Willits House or Wingspread House, (see Figs. 13-14, 66-71). In these designs, together with many others, the main fireplace defines the point of convergence of the horizontal and vertical axis of the design¹³⁶. However, this can furthermore be seen in less conventional designs, such as the Paul R. Hanna House, whose fireplace rests on the site of

¹³³ As footnote 125.

¹³⁴ Hildebrand, *The Wright Space: Pattern and Meaning in Frank Lloyd Wright’s Houses*, p. 19-23.

¹³⁵ Levine, *The Architecture of Frank Lloyd Wright*, p. 230.

¹³⁶ Baker, Geoffrey; Gordon, Lindsay & Millikin, Sandra, *Frank Lloyd Wright* (Units 7-8 of the Open

convergence of opposing aspects of the hexagonal plan, symbolising the site of balance (see Figs. 64-65). Despite the symbolic implications for having the hearth in the geographical centre, the 'utility core' principle advocated by Wright created not only a mystical but also a practical element to the organisation of space. From this starting point, Wright could arrange the surrounding spaces according to necessity and desire. Throughout his career, Wright often used the same chimney stack to house multiple fireplaces, from smaller prairie houses such as the Frank J. Baker House to larger conceptions such as Fallingwater or Wingspread, whose fireplaces appear to bind the architecture to the earth (see Figs. 40-41, 59-63, 66-71). One large chimney stack would also have given some indication as to the type of space Wright was creating, as each side of the fireplace can act as an indicator of direction guiding the expansion of the structure into the eventual configuration. This can most clearly be seen in the Willits House, whose centripetal fireplace anchors the structure, allowing the space around to extend freely first into rooms, then terraces beyond¹³⁷ (see Figs. 13-14).

The attention paid by Wright to his fireplaces however, was not limited to the main living or communal spaces. Whilst this was very often where the main fireplace of the plan was situated, Wright placed fireplaces in many other areas of his constructions. This can be seen in various projects where fireplaces are also situated in dining rooms, bedrooms, halls, and moreover in work-spaces such as studies, libraries and studios, as at Frank Lloyd Wright's Home and Studio (Oak

University Course text for *History of Architecture and Design 1890-1939*, (Milton Keynes: Open University Press, 1975), p. 28.

Park, Illinois, 1889-1995), Taliesin and Taliesin West (see Figs. 1-7, 133-136, 142-143).

Despite this being the general rule, the fireplace however, was not exclusively placed in the geographical centre of the house, and evidence even from early designs shows that he placed fireplaces on exterior walls, and often used the form to establish the width of the main axis of the house by acting as a terminus, such as the Husser House¹³⁸ (Chicago, Illinois, 1899), (see Figs. 11-12). This demonstrates that whilst the fireplace maintained its prominence in the main communal spaces, Wright felt it occasionally unnecessary to sustain his methodology of always locating it centrally in the design. In the later Usonian houses of the 1930's, the hearth also acts as the point of intersection between the wings for sleeping and living¹³⁹, such as the Lloyd Lewis House (Libertyville, Illinois, 1940), (see Figs.74-75). The fireplace masquerading as architecture was also used as a screening device, masking another aspect of the design¹⁴⁰. This is evident in the Reverend R. Ziegler House (Frankfort, Kentucky, 1909) and the Storer House, whose fireplaces detract attention away from the staircase adjacent to the main living space (see Figs. 42-43, 52-53). In the Robie House, the Tomek House (Riverside, Illinois, 1907), and Avery Coonley House, a fireplace screen is used as a separating device to divide the living and dining spaces (see Figs. 26-36). After establishing the location of his fireplaces, Wright also used many

¹³⁷ Hitchcock, Henry-Russell, *Architecture: Nineteenth and Twentieth Centuries*, (London: Yale University Press, 1977), p. 434.

¹³⁸ McCarter, *Frank Lloyd Wright: A Primer on Architectural Principles*, p. 112.

¹³⁹ Jencks, *Modern Movements in Architecture*, p. 132.

devices to draw the occupant's attention towards the fire, as shall be discussed later.

Wright's fireplace designs adopt a diversity of forms using a wide range of materials. These include traditional brickwork, shown in the Robie House, textile blocks as expressed in the Storer House, stone work as at Fallingwater, and more abstract designs, as in the Hollyhock House, (see Figs. 28, 49, 52, 62-63).

Through the plethora of designs and forms taken on by Wright's fireplaces however, like the remainder of his architecture, geometry was almost universally applied¹⁴¹. On the occasions in which Wright placed a number of fireplaces in the same elongated chimney stack, such as in Fallingwater and Wingspread House, this would undoubtedly alter the form taken by each fireplace as space permitted (see Figs. 59-63, 66-71).

One prominent feature of many of Wright's fireplaces is that they are often set deep and low into the masonry of the structure, giving the appearance of 'primeval openings'¹⁴² recessed in a cave, increasing the sensation of the fireplace as an ancient symbol. Wright said of this feature that 'The integral fireplace became an important part of the building itself...It refreshed me to see the fire burning deep in the masonry of the house itself'¹⁴³. Another common feature of Wright's fireplaces designs is the strong horizontal emphasis, often accented by a

¹⁴⁰ Brooks, "Frank Lloyd Wright and the Destruction of the Box", p. 10

¹⁴¹ McCarter, *Frank Lloyd Wright: A Primer on Architectural Principles*, p. 270.

¹⁴² Hoffman, *Frank Lloyd Wright - Architecture and Nature*, p. 46, citing Wright.

¹⁴³ Wright, *The Future of Architecture*, p. 137.

large, long mantle or rectilinear brick and stonework, such as in the Robie House through to Fallingwater and the later Anthony House (Benton Harbour, Michigan, 1949)¹⁴⁴ (see Figs. 28, 62-63, 81). This was often accentuated by the width of the fireplace, occasionally stretching the length of one wall, as in the Lloyd Lewis House, (see Fig. 74). These features of design demonstrate Wright's obsession with the horizontal as 'the true earth-line of human life, indicative of freedom'¹⁴⁵.

As Wright often used the fireplace as a focal point to draw occupants into the main living space, in keeping with his beliefs on the hearth being the centre of the home, the form of the fireplace was required to draw attention to itself. In many living spaces the sheer horizontal mass of his fireplaces would naturally attract attention, such as in the Lloyd Lewis House as mentioned above, or alternatively more vertical conceptions, as demonstrated in Wingspread House (see Fig. 69-71, 74). On other occasions, drawing the eye's attention to the fireplace by mirroring the shape of the fireplace in floor and ceiling patterns would attract attention through continuity of design, such as in Hollyhock House (see Fig. 49). Other methods such as having the ceiling patterns direct the eye's attention through use of line and colour to the fireplace area were also implemented, demonstrated in the Avery Coonley House and the Anthony House (see Figs. 33 & 81). Lowering the ceiling height before the fireplace was another device used by Wright to influence the individual's encounter with the fireplace, again as in the Avery

¹⁴⁴ Lind, *Frank Lloyd Wright's Fireplaces*, p. 24, 40 & 42-3.

¹⁴⁵ Wright, *An American Architecture*, p. 61.

Coonley House (see Fig. 33). As mentioned, Wright was acutely aware of scale, realising that people respond to space and form by means of empathic experience¹⁴⁶, and consequently designed his structures in direct concordance with the human scale¹⁴⁷.

Homes however, were not the only structures to be endowed with Wright's gift of fire. His buildings for learning also often possessed fireplaces as focal points of the main spaces, evident in the Hillside Home School and the Avery Coonley Playhouse (Riverside, Illinois, 1912). In the tradition of Wright's early fireplace designs, the fireplaces are low and long, and similar to his domestic dwellings are designed to promote community.

The placement of furniture was another influential factor of drawing people into the space. Using soft furnishings to compliment and supplement the attraction of the fireplace and surrounding area, Wright was able to infuse the fireplace with a deeper symbolic significance and fusion of his social ideals than many other architects who included this element by means of necessity rather than as a purposeful and prominent feature.

The fireplaces in Wright's homes performed several duties, to divide the space, draw the occupants into the communal spaces, and naturally bring heat and light into an area, whilst providing and architectural focus for the room. Wright

¹⁴⁶ McCarter, *Frank Lloyd Wright: A Primer on Architectural Principles*, p. 257.

¹⁴⁷ Wright, *The Future of Architecture*, p. 137.

utilised the fireplace to manipulate the movements of the occupants into the immediately surrounding space, as they are attracted by the light and warmth of the hearth. Wright used his fireplaces to create types of space, large and small, through the design and placement of his fireplaces. As mentioned, many of his very large or prominent fireplaces were in the main living area, creating a communal space, as seen in a vast number of his domestic dwellings. However, smaller fireplaces or inglenooks also created more enclosed, intimate spaces, such as in Frank Lloyd Wright's own home or the Winslow House (see Figs. 3-4, 10). Therefore, the location, design and dimensions of the fireplace had both the power to unite and divide people in space, directing them into certain areas, and in doing so, Wright was infusing his social beliefs into his architecture. The fireplace is an intrinsic feature of Wright's design criteria, steeped in practical purpose and symbolic significance, the stable element at the heart of the American home.

CHAPTER SIX

CONCLUSION



The inclusion and juxtaposition of the ancient elements in Frank Lloyd Wright's work, as introduced by this study, appears to have potential as a basic principle of planning previously overlooked or unexplored by Wright scholars. The use of features directly demonstrating or adhering to the elements appeals to his buildings across time and genre, size and purpose. Secondary evidence such as his interest in the transcendentalist writers, the Froebel training, and their emphasis on learning from nature and appreciating its importance, all point to a philosophy combined with unequalled talent, creating an architecture bound to nature in appearance, principle and proximity.

Much of the documentation on Wright's work in relation to the subject of nature appears to be directed towards a synthesis of architecture and environment, an understanding and utilization of underlying principles governing construction of the natural environment. Various authors such as Levine, Blake and Etlin, have cited examples of projects by Wright which exemplify a mythical union of the elements in some form, be it 'a celebration of the four elements' or a 'dialectical pairing' of elements¹⁴⁸. Hiroshi Murata also acknowledges Wright's architectural configuration as 'a world where...the four basic elements of nature, earth, air, fire and water are encountered and nature and architecture are synchronised'¹⁴⁹. This study therefore contributes to the vast body of research on Frank Lloyd Wright, and provides a framework for future exploration and analysis of the metaphysical union of elements in his architecture.

¹⁴⁸ Etlin, *Frank Lloyd Wright and Le Corbusier - The Romantic Legacy*, p. 53 and p. 39.

¹⁴⁹ Lind, *Frank Lloyd Wright's Fireplaces*, citing Hiroshi Murata at the Frank Lloyd Wright Retrospective of 1991, p. 36.

Each of the elements briefly analysed in this study appear to be of some focus for Wright as important concept involved in the design process. Wright's romance with the earth and the natural world spanned his epic career, giving synthetic form to natural principles, whilst his integration of construction principles evident in nature into a design philosophy created architecture bound to the earth below as a synthesis of man and nature. Wright designed with attention to the landscape, and as such his structures are conceived to harmonise with the character of the terrain. His manipulation of the traditional interior endows his structures with the impression of space, by dissolving traditional forms into an architecture submerged in light and air. Water also appears as a fundamental element to his architecture, bringing movement to a motionless art. The forms of water adopted align with the philosophy of the structures, and the level appropriate to the environmental conditions. Lastly in this union of elements, the fireplace proved crucial as a starting point of design, entrenched in symbolic significance and social beliefs, being the constant core of structures designed to promote community, family and stability.

Whilst each element does not materialise in every project, there are those which exhibit an exploration of the mythical union in its entirety, such as many of the prairie houses¹⁵⁰, Hollyhock House, the Little Dipper School, and Fallingwater. In structures which by virtue of their function cannot feature each element, there appears to be a 'dialectical pairing'¹⁵¹ of the elements present. An overview of this

¹⁵⁰ Blake, *Frank Lloyd Wright – Architecture and Space*, p. 42.

¹⁵¹ Etlin, *Frank Lloyd Wright and Le Corbusier - The Romantic Legacy*, p. 39.

study however, shows that Wright's architecture on the whole celebrates the four elements, more prominently in some projects and building types. Different architectural forms of architecture will undoubtedly be more suited to embody certain elements, and this interplay between the elements appears to have become an 'obsession' for Wright from the days of the prairie houses onward¹⁵². Wright's awareness of the equilibrium of contradictory forces in nature enabled his architecture to demonstrate a delicate balance of oppositions, between the elements, between architecture and the landscape, and between architectural features themselves.

Whilst Wright observed a natural ideology, his contemporaries were radically practicing an alternate hypothesis for Western architecture, often exploring similar themes yet adopting a totally different approach. Wright envisaged continuity in architecture as man aligning himself with nature, a natural evolution towards a truly organic architecture of the future¹⁵³. He sought a return to the 'first principles...to the beginning of the thing'¹⁵⁴, anticipating that on returning to the simple, basic principles, that one would experience a sense of unity or completeness¹⁵⁵. The elements in Wright's architecture denote a simplicity of form akin to the prairie itself, a restoration of the origins of the natural world. His return to the ancient elements of nature endowed his architecture with a unity and continuity of form, and locates his architecture

¹⁵² Blake, *Frank Lloyd Wright – Architecture and Space*, p. 42.

¹⁵³ Wright, *The Future of Architecture*, p. 296.

¹⁵⁴ Meehan, *Truth Against the World – Frank Lloyd Wright Speaks for an Organic Architecture*, p. 63.

¹⁵⁵ *Ibid.* p. 100

within a linear framework of structures akin with nature. Wright also saw his mission as an architect to present the world with an organic architecture which was characteristically American, greater than any other, and steeped in the fundamentals of the transcendentalists, nature and freedom. The ancient elements in his architecture therefore appear as a metaphor for nature, analogous to a timeless freedom embodied on the prairie, where architecture and nature each become more beautiful in the presence of the other.