

In his Unitarian Church at Rochester, Kahn manipulates the lighting of the interior to make manifest the ‘form’ of the space, thus participating in the Christian Neoplatonic tradition.

## Theorising daylight: Kahn’s Unitarian Church and Plato’s super-Form, *The Good*

*Steven Fleming*

This article examines the celebration of sunlight in Louis Kahn’s First Unitarian Church in Rochester, New York, 1960, with reference to that building’s attendant text, Kahn’s 1961 article ‘Form and Design’. Both the text and building are theorised here in terms of Plato’s analogies concerning sunlight, and the resultant fascination with sunlight among Christian/Platonists and architects of the Neoplatonic tradition. The choice of case study relates to two factors. First, this was a formative building in Kahn’s development of an approach to daylight illumination that he would follow with subsequent masterpieces, including the Kimbell Art Museum, the National Assembly in Dacca and the unbuilt Hurva Synagogue. Second, and as will be discussed in greater detail shortly, the building was the catalyst for Kahn’s central theoretical statement about ‘forms’ and ‘designs’, which, many scholars argue, recalls Platonism. Their views will also be discussed in the course of this paper, as they authorise the use of Platonism in the interpretation of Kahn’s work.

This paper, which focuses on Kahn’s only critically acclaimed Christian building, aims to speak directly to a contemporary dilemma, that is, architecture’s difficulty in grounding Christian worship spaces in that religion’s theological and philosophical traditions, without resorting to historical pastiche. Its publication follows an intense period of discussion and writing on the topic of Christian church architecture.<sup>2</sup> While the paper has a historical focus, the possibility that the principles it distils could find applications in future church projects is acknowledged and given due consideration.

### Kahn’s approach to sunlight

Kahn’s veneration of sunlight is a defining feature of his design philosophy. His attitude is evidenced by his insistence that the Kimbell Art Museum and the Yale Center for British Art be naturally lit, despite curators’ concerns about the effects of ultraviolet sunlight on paintings. He is also known to have worked by a window, refusing to switch on an electric light, even on the darkest of days.<sup>3</sup> He often refers to

sunlight in high poetic strains, as in the following quotation from 1973,

*[W]hat’s marvellous about a room is that the light that comes through the windows of that room belongs to the room. And the sun somehow doesn’t realize how wonderful it is until after a room is made. So somehow man’s creation, the making of a room, is nothing short of the making of a miracle. To think that a man can claim a slice of the sun [...]. Without light there is no architecture.<sup>4</sup>*

In his 1961 article ‘Form and Design’, Kahn writes *[t]o the musician a sheet of music is seeing from what he hears. A plan of a building should read like a harmony of spaces in light.*

*Even a space intended to be dark should have just enough light from some mysterious opening to tell us how dark it really is. Each space must be defined by its structure and the character of its natural light. Of course I am not speaking about minor areas which serve the major spaces.*

*An architectural space must reveal the evidence of its making by the space itself. It cannot be a space when carved out of a greater structure meant for a greater space because the choice of a structure is synonymous with the light and which gives image to that space [sic]. Artificial light is a single tiny static moment in light and is the light of night and never can equal the nuances of mood created by the time of day and the wonder of the seasons.<sup>5</sup>*

Kahn begins to think about the space-defining ability of sunlight after a trip to Luanda, Angola, where he notices that ‘when you were on the interior of any building, looking at a window was unbearable because of the glare. The dark walls framing the brilliant light outside made you very uncomfortable’.<sup>6</sup> In 1961, shortly after going to Luanda, he describes an entirely different approach to interior illumination in his First Unitarian Church and School in Rochester.

*The getting of light below was a problem ... though one could get light to shape this room above, it was difficult to get light to shape this room below. So I devised four wells for light in the four corners. The light came in above and went down to define this space below. This space being an oblong ... only two sides in light was not sufficient to*



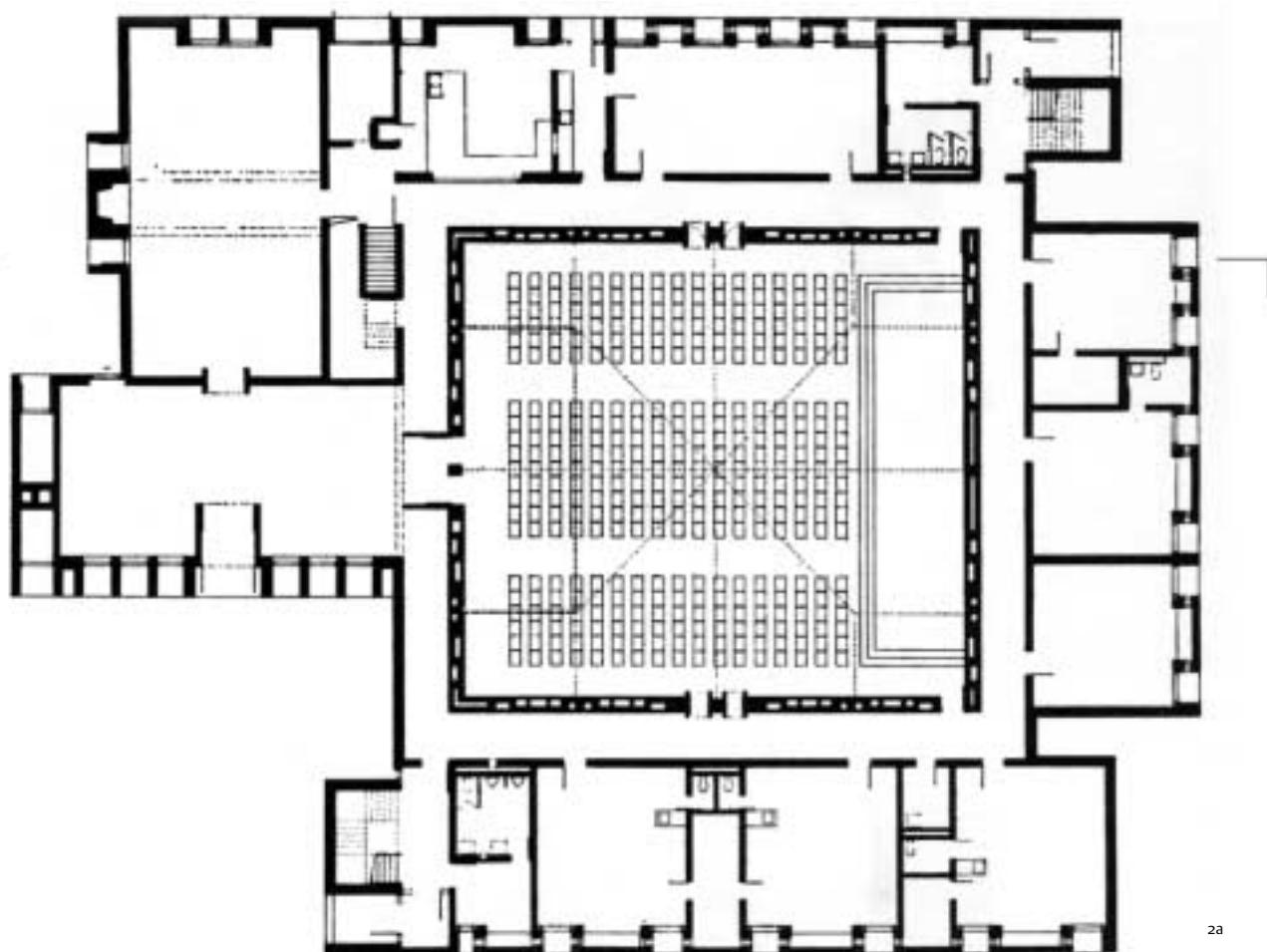
1b



1d



1c



2a

2b

1 a,b & c The sanctuary at Louis I. Kahn's First Unitarian Church and School, Rochester, New York, which is illuminated via four corner light

towers  
d Detail of a light tower shows how daylight reaches the sanctuary indirectly through concealed clerestories

2 As built drawings of First Unitarian Church and School, 1961  
a First floor plan.  
Broken lines over the oblong sanctuary

indicate hips, box gutters and the positions of the four light towers  
b Longitudinal section through sanctuary



3a

3b

*express the oblong ... and therefore I felt that getting the light from above and down a well into the corners of the space gave expression to the form, to the shape, of the room chosen [1].*

Light through openings does more than merely illuminate this space. Kahn is also concerned that daylight reaches into the corners of the space so that the viewer may perceive its shape in plan, which in this case is an oblong and not a square as it may first appear [2 & 3]. Referring to a similar use of gradated natural light in his Mikveh Israel Synagogue proposal [8], Kahn states that '[t]he whole idea comes from realizing that contrast of walls in darkness against openings in light renders interior shapes illegible and turns the eyes away'.<sup>8</sup> So to avoid this Kahn allows light to enter the central space indirectly from above. There are no views of the exterior from the central hall, instead the openings give onto the interior walls of light shafts. On another occasion, Kahn states that '[s]tructure is the maker of light', and that '[a] square building is constructed like a square and its light must give evidence to the square'.<sup>9</sup>

Graphic studies by Urs Büttiker demonstrate how Kahn's approach to natural sunlight is manifest in many of his buildings.<sup>10</sup> In each example, softly gradated sunlight is reflected onto the walls of a space to define its shape. Illumination at task level is secondary to the definition of the structural walls that define interior spaces [4].

#### Hermeneutical framework

The remainder of this essay will attempt to explain Kahn's attitude towards the daylight illumination of his interior spaces, by examining the issue through the lens of Classical Platonism. The justification for choosing what might seem to be an anachronistic or totally alien interpretive apparatus, is a chain of scholarship that warrants close investigation before proceeding with the analysis.<sup>11</sup> It takes its lead from Kahn's notion that particular buildings of the same type share an archetypal essence, or 'form', which is transcendent. Kahn speaks of architects having mystical revelations of ideal 'forms', then translating these into terrestrial buildings through a process he refers to as 'design'. According to Kahn's favourite illustration of his thesis,

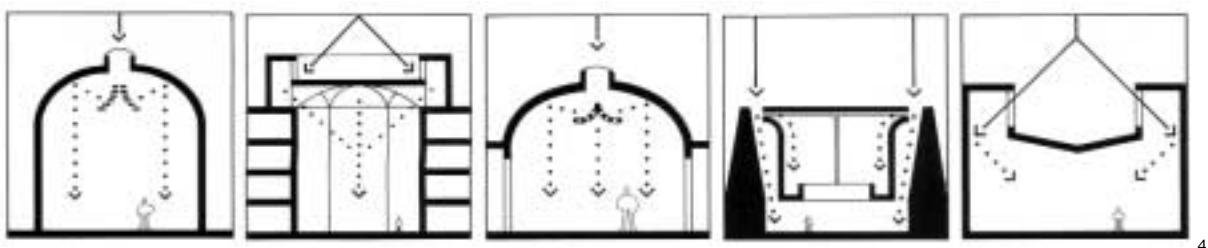
*'in the differentiation of a spoon from spoon, spoon characterizes a form having two inseparable parts, the handle and the bowl. A spoon implies a specific design made of silver or wood, big or little, shallow or deep. Form is 'what'. Design is 'how'.'*<sup>12</sup>

The earliest text to connect Kahn and Plato dates from 1973, when, in his book, *Modern Movements in Architecture*, Charles Jencks described the then living Kahn as the 'major prophet' of the 'metaphysical school' who built elements which seem to have 'arrived perfected from Plato's ideal realm'.<sup>13</sup> It could be argued that Jencks's analysis is easily dismissed, on the grounds that he has linked many other architects to Plato, either directly,<sup>14</sup> or through association with what Jencks has labelled the idealist tradition.<sup>15</sup> Most recently Jencks has related Platonism to what he calls cosmogenetic architecture in his book, *The Architecture of the Jumping Universe*.<sup>16</sup> A diagram at the beginning of that book titled 'Four Jumps to Consciousness'<sup>17</sup> suggests that Jencks may favour a kind of Platonism himself, since – like the theoretical physicist Paul Davies<sup>18</sup> to whom Jencks frequently refers in that book – he seems to believe that the universe sprang from ground rules, otherwise known as a cosmic blueprint,<sup>19</sup> which exists beyond time and space in Plato's Form realm. Whether or not Jencks's analysis of Kahn is affected by his personal enthusiasm for Platonism, it has been endorsed by many scholars since.

Six years later, Christian Norberg-Schulz recognised the need to interpret and develop Kahn's theory in terms of philosophy. 'As it has a philosophical basis', Norberg-Schulz argues, 'this work cannot be confined within the limits of architectural theory as such'.<sup>20</sup> While Norberg-Schulz develops Kahn's theory along Heideggerian lines, he also writes that

*'Kahn's philosophy evidently has Platonic origins. Thus he talks about form in the Platonic sense of idea [...]. He even uses the word 'shadow' in connection with the concrete things of the world, as did Plato in his Allegory of the Cave. Kahn also subordinates the existentia to the essentia, and thus thinks within the tradition of Western metaphysics.'*<sup>21</sup>

In Joseph Burton's 1983 PhD thesis,<sup>22</sup> and in an article of the same year,<sup>23</sup> Plato figures prominently in the analysis of Kahn's theory and influences. Burton argues that



3 a & b Exterior views of First Unitarian Church, showing the clerestories in the light towers that define the corners of the sanctuary

4 Urs Büttiker's analyses of sunlight in Kahn's interiors.

From left to right, the buildings depicted are: the Wolfson Center, the National Assembly in Dacca, the Kimbell Art Museum, the Hurva Synagogue (unbuilt), and the First Unitarian Church in Rochester. (Reprinted with permission from U. Büttiker, *Louis I. Kahn: Licht und Raum/Light and Space* (Basel: Birkhäuser, 1993) p. 138)

5 Kahn's 'form' diagram for First Unitarian Church and School, 1959



'Kahn's primary notion of Form is like Plato's theory of the ideas, also known in English by the term 'Forms', as well as 'Ideas'. His use of the word betrays a German origin.'<sup>24</sup>

In his footnotes, Burton clarifies his understanding of Plato's Ideas, or Forms, by citing David Ross' canonical text on the topic, *Plato's Theory of Ideas*,<sup>25</sup> in which Ross describes the Forms in their classical sense, as transcendent entities.

Despite being the strongest advocate of the view that Kahn's 'forms' have historical, that is material, origins, Vincent Scully also likens Kahn's 'forms' to Plato's transcendent Forms. Writing in the introduction to the complete catalogue of Kahn's drawings published in 1987, Scully describes Kahn's 'form and design' theory as, 'a curious but very useful amalgam of Platonic Idealism and Pragmatic Realism',<sup>26</sup> thus joining the scholars listed here in connecting Kahn to Plato.

In the 1991 exhibition catalogue *Louis I. Kahn: In the Realm of Architecture*, David DeLong describes Kahn's notion of 'form' as Platonic.<sup>27</sup> Writing about Kahn's synonymous use of such terms as 'silence and light', 'law and rule', and 'form and design', to describe what Kahn claims to be ostensibly an unchanging concept, DeLong's co-author David Brownlee also notes that Kahn's differentiation between the ideal world and the world of daily experience echoes Plato's parable of the cave.<sup>28</sup> Brownlee observes that Kahn's

'new vocabulary was fortified by allusions to respected authority. Most fundamentally, the role played by light and shadow in differentiating the ideal world from the

world of daily experience was an echo of the famous discussion of the same subject in Plato's Republic.'<sup>29</sup> One year after the release of Brownlee's and DeLong's book, Gerhard Auer reiterates what has become a common interpretation of the word 'form' within Kahn's vocabulary. 'Kahn's form is not a visible idea', Auer writes, 'but a (Platonic) idea which has not yet materialised, the premonition of a slumbering archetype, an intuitive inspiration, at best formulated as an ideogram'.<sup>30</sup> It is unknown whether Auer's bracketing of the word 'Platonic' is a sign of hesitance or conviction.

A recent text that connects Kahn to Plato is Klaus-Peter Gast's book, *Louis I. Kahn: The Idea of Order*.<sup>31</sup> Gast argues that Kahn's buildings are inscribed with hidden geometrical figures which Gast associates with Platonism. Gast also sees this reflected in Kahn's design philosophy, claiming that Kahn's statement, 'what will be has always been', relates directly to Plato.<sup>32</sup>

Within the literature on Kahn a number of statements can be found which are open to Platonic interpretations. For example, a remark in Peter Kohane's essay on Kahn's libraries can be seen to imply a Platonic level to Kahn's theory. Kohane writes that for Kahn 'the nature of an institution belong[s] to a realm of ideas which transcend[s] the interests of the individual architect'.<sup>33</sup> While Kohane does not make such a connection, Plato's Form realm can also be described as a transcendent realm of ideas. In his Derridean deconstruction of Kahn's Kimbell Art Museum, Michael Benedikt makes an oblique allusion to Plato when he describes the Kimbell's

'banal repetition of ribs', or cycloidal vaults, as announcing Plato's 'problem of the One and Many – that deepest of philosophical themes'.<sup>34</sup> Romaldo Giurgola also implies an alignment between Kahn's 'forms' and Plato's Forms. Giurgola does this in an indirect manner, arguing that Kahn's buildings are the manifestation of the knowledge sought by Heraclitus,<sup>35</sup> the famous ancient Greek philosopher who had set the stage for Plato's theory of Forms by first casting doubt on sense knowledge. Heraclitus had sought absolute knowledge. Plato responded to the philosophical dilemma of his times with the proposition that absolute knowledge could only be had of the Forms. It is possible therefore to interpret Giurgola as calling Kahn's buildings manifestations of Forms, since, in one sense, Forms are the knowledge sought by Heraclitus.

Through these examples, it can be seen that many scholars identify Kahn's 'form and design' theory with Plato's theory of Forms, although none is more explicit than Arthur Danto in his 1999 essay 'Louis Kahn as Archai-Tekt'.<sup>36</sup> Danto begins his essay with a

quotation from the second epistle to the Corinthians in which Saint Paul calls attention to an unseen and eternal realm. Danto proceeds to unite the metaphysical explanation of Plato, the religious assurance of Saint Paul and the architectural embodiment of Kahn, using this single 'piece of thought',<sup>37</sup> the theory of Forms. According to Danto, Kahn's notion of 'form' is 'exactly like its Platonic and Pauline counterparts, invisible and eternal'.<sup>38</sup>

#### **'Form and design'**

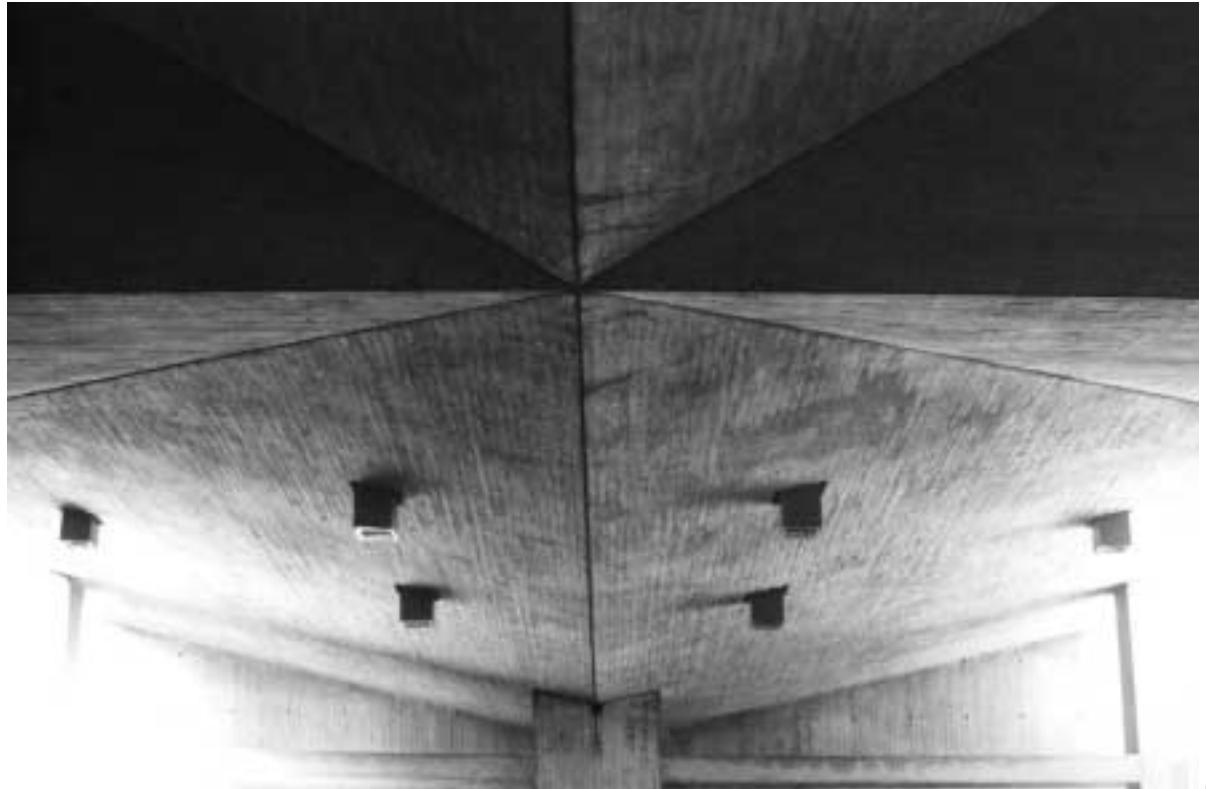
Kahn's First Unitarian Church and School in Rochester represents the clearest application of his 'form and design' theory to a building. Kahn describes his preliminary pictograph for this building as a 'form diagram', representing the transcendent 'form-essence' on which all Unitarian church/school projects should be modelled [5].

Although it is undated, Kahn's earliest documentation of this thesis is most likely a handwritten draft within his personal notebook.<sup>39</sup> The first recorded public expression of this precise



6a

*a* The extremities of the sanctuary at First Unitarian Church are washed with indirect daylight, revealing the shape of the space to the eye, as *The Good* might reveal the building's underlying 'form' to the mind  
*b* The faceted shape of the roof is similarly revealed by soft gradated light, reflected inwards from the corner light towers



6b

thesis is contained within a public address delivered at the Cooper Union entitled 'The Scope of Architecture' on 20 January 1960.<sup>40</sup> Kahn's preoccupation with the thesis dominated his theorising throughout 1960, leading to a *Voice of America* broadcast on 21 November 1960,<sup>41</sup> the revised transcript of which would be published in April 1961 as 'Form and Design' in *Architectural Design*<sup>42</sup> and reprinted in the 1962 book *Louis I. Kahn* by Vincent Scully.<sup>43</sup>

There is also reason to treat 'Form and Design' as Kahn's central theoretical statement. According to Tim Vredeland from Kahn's office, the article embodies Kahn's thinking better than any previous text,<sup>44</sup> and Kahn would not produce such a painstakingly considered text at any later time. David DeLong claims that those inquiring about Kahn's theory would be routinely sent a copy of this text.<sup>45</sup>

For those wishing to interpret Kahn's architecture in terms of Platonism, a remark made during his aforementioned address at the Cooper Union is most relevant. While speaking of ideal 'forms', Kahn argues that an architect must 'start right at the beginning, as though he were Socrates',<sup>46</sup> when contemplating the essence corresponding to any particular building type.

While Kahn's Platonising primarily relates to the topic of typology, his dualistic thinking appears to inform the visual character of his completed buildings also. For example, in his text 'Form and Design', Kahn describes his working process as one which takes an 'unmeasurable' 'form' and translates it according to material means yet, in the end, bestows completed buildings with an 'unmeasurable' aura. Given their serene and otherworldly quality, Kahn's sunlit interiors can be thought of as recipients of the 'unmeasurable' aura he describes.

### Sunlight and '*The Good*' in Plato

Because sunlight is known via the corporeal senses, venerating it within a Platonic scheme is problematic. Yet despite its metaphysically lowly status, sunlight is also crucial to one of Plato's pedagogical analogies. This cannot be understood without first appreciating Plato's metaphysics generally. Throughout his dialogues, Plato frequently raises the spectre of a dualistic division between the sensible and intelligible realms. In the vast majority of his dialogues, and especially those of his middle period, Plato is concerned with an atemporal realm of Being, of which the visible universe is merely a shadow. As the philosopher I. M. Crombie argues, 'there exists both the physical world and the ideal world, and the objects to be found in the former are more or less poor copies of the objects to be found in the latter'.<sup>47</sup> In the same way that Kahn imagines there being a transcendent 'form' corresponding to every class (or type) of building, Plato imagines that every class of particular corresponds to a universal, which is transcendent, and which Plato too calls a Form.

The capstone to Plato's metaphysical system is a Form named, simply, *The Good*, which is described

through an analogy with the sun. The necessity for such a Form within Plato's philosophy can be explained by considering the relationship between particular circles and their corresponding Form. Various things that are circular – wheels, plates, discs, drawn circles – imply a class, circles, which calls for the existence of a Form, *The Circle Itself*. While Forms can be thought of as models for their earthly participants, they must essentially be different from their participants, lest Plato's philosophy lead to a problem of infinite regress. For example, if the Form on which circles are modelled were itself circular, then particular circles, as well as the Form, would participate in an even higher Form, and so on ad infinitum. While the problem of circles may be solvable,<sup>48</sup> there is one sense in which Forms cannot avoid giving rise to a super-Form. *The House Itself*, *The Spoon Itself*, *Justice Itself* and every other imaginable Form, all constitute a class of things; they are all Forms and so give rise to a Form corresponding to Forms.

This super-Form could be called *The Form Itself*, but Plato has a reason to name it *The Good*. When looking around at the world of particulars, trying to distil their essences, it would be normal to look for whatever makes particular things good examples of their kind. The beginnings of a mental picture of *The House Itself* can be gleaned from a sampling of good houses, as a similar image of *The Spoon Itself* can be gleaned from a sampling of good spoons. Bad houses and spoons which do not perform their functions would be useless in divining the ideal house or the ideal spoon. Therefore, what all Forms have in common, and what makes them classifiable, is that they describe the goodness in their respective particulars. This is why Plato gives the title, *The Good*, to the super-Form corresponding to Forms.<sup>49</sup>

In *The Republic*, Socrates is asked by Glaucon to describe *The Good* in the same way that he has previously described other Forms (406b-d), but since *The Good* is metaphysically higher than the other Forms, it cannot be described directly. Were it effable, it might constitute yet another class of entities, itself requiring a Form, and so on.<sup>50</sup> Therefore, Plato argues that *The Good* is beyond human comprehension – theists use a similar tactic when arguing for the existence of a sempiternal creator god, who requires no creator. According to Plato, *The Good* can only be alluded to indirectly and metaphorically, in terms of its visible participant, the sun. Plato makes the point that sight is the only sensorial faculty which requires the presence of a third element, light, in order for it to function (507e). Likewise, in the Form realm, the intellect cannot apprehend the Forms without the light of *The Good*. As Plato writes, *The Good*, 'has begotten it [the sun] in its own likeness, and it [the sun] bears the same relation to sight and visible objects in the visible realm that the good bears to intelligence and intelligible objects in the intelligible realm'.<sup>51</sup>

### Synthesis

Kahn doesn't use sunlight to illuminate elements such as altars, or to create dazzling effects. He

explicitly uses sunlight to reveal the internal shape of his buildings.

Facing eastward during their morning church services, members of the congregation in Rochester have no view of the sky, or of direct sunlight striking interior surfaces of the sanctuary. Rather, they see low intensity skylight (not sunlight) refracted from the corners of the space, then onto the ceiling in a subdued yet ethereal play of light. Lighting effects at roof level can be subdued, as they have no other light sources with which to compete; the space has no side windows and receives no borrowed light from its darkened entranceways. Such a condition naturally leads the viewer's eyes upwards – as heirs to a philosophical and theological tradition in which sunlight is deified, it is not hard to imagine the church members' minds being turned upwards as well, even if the connections made in this paper are never contemplated explicitly [6].

Though it is a secular building, the Kimbell Art Museum in Fort Worth Texas presents visitors with a similar experience [7]. Once their eyes have adjusted to lux levels much lower than those outside, the viewer encounters roof vaults that are evenly washed by diffused sunlight, in this case refracted by perforated aluminium baffles. To be sure, these shimmering vaults also illuminate the art. However, the architectural effect can be viewed as an end in itself, as though Kahn had been more concerned with revealing the building's shape than its contents.

The same sensibility informs the interiors of the Hurva Synagogue (unbuilt), the National Assembly in Bangladesh, Erdman Hall at Bryn Mawr College, the Wolfson Center, and – as mentioned earlier – the Mikveh Israel Synagogue [8]. In every case, visually legible interior shapes are achieved either through the careful placement of concealed clerestorey windows or by similar means. When coupled with the fact that Kahn sees his buildings as earthly manifestations of transcendent 'forms', his approach to daylight illumination suggests a striking accord with Plato's analogy.

The Plato scholar and translator, Desmond Lee, illustrates Plato's analogy between the sun and *The Good* with the following table.<sup>52</sup> According to Plato's primary analogy between *The Good* and sunlight, *The Good* illuminates and defines Forms so that the mind may comprehend them, as sunlight illuminates and defines particulars (including buildings) so that the eyes may perceive them.

Visible World	Intelligible World
The Sun	The Good
Source of growth and light which gives visibility to objects of sense and the power of seeing to the eye.	Source of reality and truth which gives intelligibility to objects of thought and the power of knowing to the mind.
The faculty of sight.	The faculty of knowledge.

Kahn's use of sunlight to define the shapes of architectural spaces is in profound sympathy with Plato's analogy, as the following adaptation of Lee's table illustrates.

Visible World	Intelligible World
The Sun	The Good
<i>Illuminates spaces within Kahn's buildings rendering their shapes visible to the eye.</i>	<i>Illuminates Forms rendering their natures intelligible to the mind.</i>

It is important not to overstate the significance of this interpretation. It is not suggested that Kahn's buildings have a capacity to convert viewers to Platonism, or make them into more rational citizens, nor is there any evidence that Plato's analogy directly influenced Kahn's approach to sunlight. Neither would Plato be likely to fully endorse such an architectural strategy, since it raises building beyond the scope of pure utility, to an art form. Famously, Plato banned artists from his ideal republic. For this reason, the shape-defining potential of sunlight, while it parallels a Platonic analogy, belongs to a corpus of architectural strategies that must be qualified as Neoplatonic.

Likewise, Kahn should be thought of as a Neoplatonist rather than a Platonist. One of Kahn's statements from 1970 most clearly betrays this subtle distinction. Recalling the manner in which some Neoplatonists (or Christian/Platonists), equate sunlight with God, Kahn mentions sunlight and Christ in the same context.

*The most wonderful aspects of the indoors are the moods that light gives to space. The electric light bulb fights the sun. Think of it.*

*I am reminded of Tolstoy, who deviated from faithlessness to faith without question. In his later state he deplored the miracles, saying that Christ has radiance without them. They were holding a candle to the sun to see the sun better.<sup>53</sup>*

Despite these minor points of clarification, it can be said that Plato's analogy between *The Good* and the sun provides a relevant and useful framework by which to appreciate Kahn's handling of sunlight. There are published reviews of Kahn's buildings that might have utilised this framework in analysing Kahn's approach to daylight illumination. For example, Sherri Geldin considers Kahn's statement that buildings, though they are merely measurable (or sensible), should evoke the 'unmeasurable' realm of their inspiration.<sup>54</sup> The answer, she argues, lies in his handling of sunlight. She writes that 'once we have penetrated such wondrous spaces and basked in such uncommon light, his meaning is revealed. For how, ultimately, does one measure the sublime?'<sup>55</sup> For Geldin, Kahn's handling of sunlight has a numinous effect, raising the viewer's awareness of a transcendent realm of inspiration which Kahn refers to as the 'unmeasurable'. Expressing a similar view, Andrea Dean describes sunlight as the primary ordering device of Kahn's Yale Center for British Art. 'It is the quality of that light', Dean writes, 'which makes Kahn's last building transcendent.'<sup>56</sup>

From the standpoint of Platonism, Kahn's buildings cannot literally be thought of as transcendent, but they can evoke transcendent relationships. Buildings can evoke the relationship



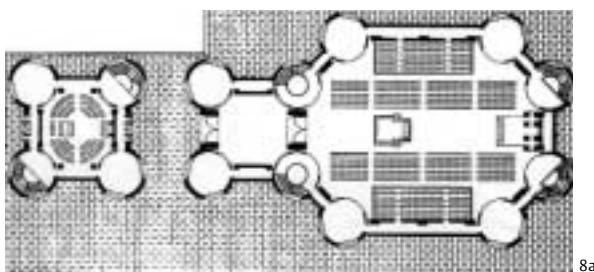
capstone to his metaphysics. It could be argued that all of Kahn's building related 'forms' – Church, Laboratory, School, Museum – have in common an ineffable quality of goodness, and that this is where his metaphysical assent stops.

Plato also describes sunlight as the cause of earthly things, and *The Good* as the cause of Forms. In a remote sense Plato's description of *The Good*, as the source of the visible world, prefigures a view which Kahn would express late in his career, that material is 'spent' light,<sup>57</sup> or 'light which has become exhausted'.<sup>58</sup> In treating light as a constituent element of the phenomenal world, Kahn follows a tradition spanning not only works by Plato, but also Thales, Pythagoras and Aristotle. In architectural theory this tradition finds application in the work of Vitruvius, who, in Book I of *The Ten Books of Architecture*, writes that 'all bodies are composed of the four elements ... heat, moisture, the earthly and air'. This statement is predicated on the Pythagorean elements, fire, rain, earth and air.<sup>59</sup> Interestingly, Kahn's conception of matter as spent light resonates especially well with Plato's creation myth in *Timaeus*, where light (fire), and matter (earth) are portrayed as the primary elements of the universe.

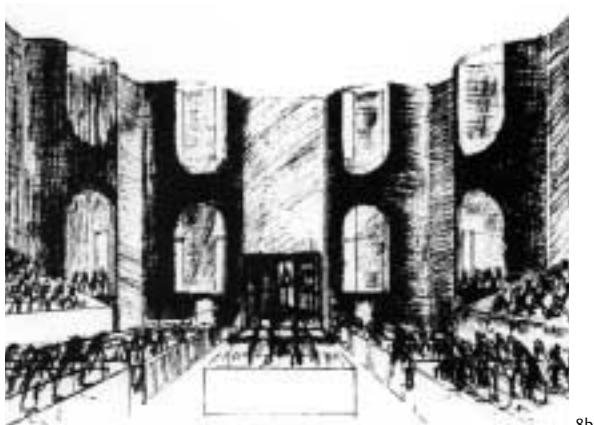
*'Now that which is created is of necessity corporeal, and also visible and tangible. And nothing is visible where there is no fire, or tangible which has no solidity, and nothing is solid without earth. Wherefore also God in the beginning of creation made the body of the universe to consist of fire and earth.'*<sup>60</sup>

Further significance can be drawn from the fact that Kahn pioneered his signature approach to daylight illumination with the design of a Christian church. Historians of Kahn's work have often focused on his Jewish ethnicity. As the present author has argued elsewhere, such studies can neglect Kahn's strong affinity with Christianity and its philosophical heritage.<sup>61</sup> Through his intimate relationships, personal library, academic activities and through his immersion since childhood in a deeply Christian culture, Kahn was very much aware of the Christian world view, including its Neoplatonic – or Paulian – dimensions. As the history of Western architecture is pervaded by the history of Christian church architecture, Kahn would also have been aware of ways in which Christian doctrines have traditionally been embodied in architecture. Given this background, Kahn's close focus on lighting as a way of creating a numinous quality in the interior of the Rochester Church ('it's very gothic isn't it?') can be viewed as a conscious attempt to connect his work to the Neoplatonic tradition in church architecture.

The principle that has been identified in Kahn's work can hence be viewed as a Modernist, or iconoclastic, alternative to an approach that is commonly associated with Suger and stained glass, which remains a standard way of conferring Christian churches with a numinous quality. In their respective commentaries on Gothic cathedral design, Otto von Simson<sup>62</sup> and Wim Swaan<sup>63</sup> detail the influence of Neoplatonism on architects' attitudes towards light. The Abbot of St Denis, Suger



8a



8b

7 Kimbell Art Museum, Fort Worth, Texas, completed 1972  
showing circular 'light bottles' at the corners of the sanctuary and chapel

8 Mikveh Israel Synagogue, Philadelphia (unbuilt project), 1961–72  
a First floor plan, b Interior perspective sketch, showing the sanctuary illuminated via 'light bottles'

that, according to Plato, exists between universals and their common goodness, by sharing such a relationship with the sun. Sunlight can render a building's shape palpable to the eye, as, according to Plato, *The Good* renders its corresponding Form intelligible to the mind.

This line of thinking could also be used to complete Kahn's design philosophy, and provide a

(1081–1151), emerges as a central figure for his deification of natural sunlight. Suger promoted the sainthood of the fifth-century Christian/Platonist, Dionysius the Pseudo-Areopagite, a man so taken by Plato's and the Bible's apparent concurrence regarding light that he developed a theology of light.<sup>64</sup> This later justified Suger's dramatic use of stained glass in his modifications of the Abbey of Saint Denis, from where the Gothic style would spread. The veneration of sunlight by Byzantine architects and mosaic artists can also be linked to the coincidence which exists between Plato's sun analogy and the metaphoric interchangeability of light for God's goodness throughout Scripture.<sup>65</sup> It hardly needs stating that the decorative and representational devices used to celebrate sunlight in past eras contravene Kahn's belief, both as Modernist and as a pupil of Paul Cret, that buildings should generally be stripped of ornamentation. This attitude was shared by his clients in Rochester, who wanted a new church that reflected their shared interest in metaphysical questions, but who were equally interested in the contemporary architecture of their time. In selecting an architect, they only considered progressive, Modern architects. Furthermore, correspondence between the clients and Kahn reflects their general enthusiasm for the undecorated and honest quality of the church he designed for them. A brochure printed by the congregation marvels at how

*[t]he conventional building materials that generally are covered up with finish, or architectural decorations, are fully exposed to form whatever pattern of interest there is [...] Cement blocks form the walls of the sanctuary and the groups of rooms surrounding the sanctuary [...]*

#### Notes

1. Louis I. Kahn, 'Form and Design', in *Architectural Design* 31, No. 4 (April 1961), pp. 145–54.
2. The resurgence in interest in Christian church architecture can be traced to Michael Rose's polemical derision of post-Vatican II functionalist churches. See: Michael S. Rose, *Ugly As Sin: Why They Changed Our Churches from Sacred Places to Meeting Spaces and How We Can Change Them Back Again* (Manchester: Sophia Institute Press, 2001). Various writers have responded to Rose's call, with books suggesting strategies to reintroduce a specifically Christian sense of meaning to church architecture. With respect to Catholic church architecture, see: Michael E. DeSanctis and Donald W. Trautman, *Building from Belief: Advance, Retreat, and Compromise in the Remaking of Catholic Church Architecture* (Collegeville: Liturgical Press, 2002). See also: Nicholas W. Roberts and Stephen A. Kliment,

3. Alexandra Tyng, *Beginnings: Louis I. Kahn's Philosophy of Architecture* (New York: Wiley Interscience Publications, 1984).
4. 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. 320–31 (p. 324).
5. Kahn, 'Form and Design', p. 149.
6. Louis I. Kahn, 'Louis I. Kahn', in Alessandra Latour (ed.), *op. cit.*, pp. 122–40 (p. 122).
7. Kahn, 'Louis I. Kahn', pp. 137–38. (Ellipses in original.)

*Everything extraneous has been eliminated. The fundamentals of the structure have been exposed to remind us of the nature of things.*<sup>66</sup>

The absence of contrived patterns, applied decoration, or stained glass, sat well with their image of themselves as spiritually minded people, who weren't concerned with material trappings.

#### Conclusion

The interior illumination strategy that Kahn pioneered with his church in Rochester, and that he used to convey an 'unmeasurable' aura in later buildings, can be appreciated as a creative reinterpretation of the Neoplatonists' fascination with sunlight. Where Scripture is relatively silent on matters of aesthetics, Neoplatonic and Platonic texts (especially *the Timaeus*), have traditionally provided architects of churches with a supplementary source of authorisation and inspiration. Were it to be considered as Neoplatonic, the lighting principle that has been distilled from Kahn's church is consistent with tradition, in that its faithfulness to the doctrines of its source texts is highly contestable! However, that is typical of religious architecture. The theoretical frameworks through which believers – of any religious persuasion – find meaning in their places of worship, seldom connect with doctrine with teleological precision. The experience of relating to religious architecture, if it is to be numinous, involves making unexpected and intellectually engaging connections with the past. How else could an off-form concrete sanctuary, designed for a progressive group of Unitarian Christians, and of relatively squat proportions, be described by Kahn as 'very Gothic'?

8. Louis I. Kahn, 'Remarks', in Alessandra Latour (ed.), *op. cit.*, pp. 191–207 (p. 203).
9. Louis I. Kahn, 'Statements on Architecture', in Alessandra Latour (ed.), *op. cit.*, pp. 221–4 (p. 223).
10. Urs Büttiker, *Louis I. Kahn: Licht und Raum/Light and Space*, trans. David Bean (Basel: Birkhäuser, 1993).
11. The present author has previously written about this literary thread and the relevance of Platonism to Kahn. That work is available in refereed conference proceedings. See: Steven Fleming, 'Louis Kahn's Situated Platonism', in *ADDITIONS to Architectural History, the 19th Annual Conference of The Society of Architectural Historians of Australia and New Zealand* (Brisbane: The Society of Architectural Historians Australia and New Zealand, 2002).
12. Kahn, 'Form and Design', p. 113.
13. Charles Jencks, *Modern Movements in Architecture* (Harmondsworth, England: Pelican Books, 1973) pp. 43–4 and pp. 232–3.
14. Jencks treats many architects as

- Platonists whose theories, if they were held against Plato's 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 à méditer', in Rolf Archilles, Kevin Harrington & Charlotte Myhrum (eds.), *Mies van der Rohe: Architect as Educator* (Chicago: Illinois Institute of Technology, 1986), pp. 17–25.
15. Based on 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.
16. Charles Jencks, *The Architecture of the Jumping Universe: A Polemic: How Complexity Science is Changing Architecture and Culture* (London: Academy Editions, 1995), p. 6.
17. 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.
18. In *The Mind of God*, Davies proposes that the laws of physics are transcendent and he 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. 91–2. His view is influenced by Heisenburg's uncertainty principle and the gulf it leaves between perception and reality.
19. Paul Davies, *The Cosmic Blueprint* (London: Heinemann, 1987).
20. Christian Norberg-Schulz, 'Kahn, Heidegger and the Language of

- Architecture', in *Oppositions*, 18 (1979), 29–47 (p. 29). Contrary to Norberg-Schulz's (and the present author's) view that Kahn has an undeveloped design philosophy, 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), 125–6. Choosing to emphasise the gulf between Kahn's rhetoric and his practice, other scholars have chosen to largely dismiss Kahn's theoretical pronouncements, believing that a more authentic understanding of his work can be gained through oral histories obtained from Kahn's associates and clients. See: Randy Swanson, 'Art and Science in Transition: Four Laboratory Designs of Louis I. Kahn Considered as Mediative Representation' (doctoral thesis, University of Pennsylvania, 1993).
21. Norberg-Schulz, *op. cit.*, p. 35.
22. Joseph Burton, 'The Architectural Hieroglyphics of Louis I. Kahn: Architecture as logos' (doctoral thesis, University of Pennsylvania, 1983).
23. Joseph Burton, 'Notes from Volume Zero: Louis Kahn and the language of God', in *Perspecta*, 20 (1983), 69–90 (p. 76).
24. *Ibid.*, p. 76.
25. Sir David Ross, *Plato's Theory of Ideas*, second edition (London: Oxford University Press, 1951).
26. 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.
27. David DeLong, '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 (p. 72).
28. David Brownlee, 'Light, the Giver of all Presences: Designs to honor human endeavor', in David Brownlee and David DeLong, eds., *Louis I. Kahn: In the Realm of Architecture*, pp. 126–43 (p. 129).
29. *Ibid.*, p. 128.
30. Gerhard Auer, 'On the brick that wanted to become an arch: Louis I. Kahn's masonry structures', in *Daidalos*, 43 (1992): 68–75 (p. 68–9).
31. Klaus-Peter Gast, *Louis I. Kahn: The Idea of Order*, trans. Michael Robinson (Berlin: Birkhäuser, 1998).
32. Gast, *Louis I. Kahn: The Idea of Order*, p. 185.
33. Peter Kohane, 'Louis Kahn and the Library: Genesis and expression of "form"', in *Via*, Vol. 10, No. 105 (1990), 99–131 (p. 99).
34. Michael Benedikt, *Deconstructing the Kimbell: An Essay on Meaning and Architecture* (New York: SITES/Lumen Books, 1991), p. 55.
35. Romaldo Giurgola, 'Giurgola on Kahn', in *The Architects' Journal*, Vol. 195, No. 9 (1992), 26–35 (p. 34).
36. 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.
37. Danto, 'Louis Kahn as Archai-Tekt', p. 187.
38. *Ibid.*
39. Louis 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).
40. Cassette recording, 'The Scope of Architecture', at the Cooper Union Hall, 20 January 1960, Kahn Collection.
41. Louis Kahn, *Structure and Form*, Voice of America Forum Lectures, Architecture Series, no. 6 (Washington D.C.: Voice of America, 1961).
42. Louis I. Kahn, 'Form and Design', 145–54.
43. Louis I. Kahn, 'Form and Design', in Vincent Scully, *Louis I. Kahn* (New York: Braziller, 1962), pp. 114–21.
44. Letter, Vreeland to Pidgeon, 11 January 1961, 'Master File, November 1 through December 30, 1960', Box L. I. K. 9, Kahn Collection.
45. DeLong, 'The Mind opens to Realizations', p. 71.
46. This solitary reference by Kahn to Plato's mentor has been discovered by the present author in the Kahn Collection in Philadelphia. See: cassette recording, 'The Scope of Architecture' at the Cooper Union Hall, 20 January 1960, Kahn Collection.
47. I. M. Crombie, *An Examination of Plato's Doctrines*, Vol. 2 (London: Routledge and Kegan Paul, 1963), p. 319.
48. The Circle Itself needn't be thought of as a pristine circle in the Form realm. The Circle Itself could simply be a formula, recipe or prescription for the making of particular circles, describing a curved line scribed equidistant from a fixed point. In this case, the fundamental nature of the Form differs from that of its many participants, in the same way that a recipe has nothing in

- common with a meal.
49. For a more detailed explanation of how Plato comes to give *The Good* its title, see: Nickolas Pappas, Routledge *Philosophy Guidebook to Plato and The Republic* (London: Routledge, 1995), pp. 137–8.
50. For this explanation of *The Good Itself* and its place in Plato's philosophy, the present author acknowledges the assistance of Professor David Dockrill of the Department of Philosophy at The University of Newcastle, Australia, and Professor Dockrill's unpublished lecture note, 'A Note on the Form of the Good in *The Republic* and the Forms in the *Timaeus*'.
51. Plato, *The Republic* (508c), second edition (revised), trans. Desmond Lee (London: Penguin Books, 1987), p. 247.
52. Plato, *The Republic*, in Lee, p. 245.
53. Louis I. Kahn, 'Architecture: Silence and Light', in Alessandra Latour (ed.), *op. cit.*, pp. 248–57. See: p. 252.
54. Kahn, 'Form and Design', pp. 145–52.
55. 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*, pp. 15–17 (p. 17).
56. Andrea O. Dean, 'A legacy of light', in *AIA Journal*, Vol. 67, No. 6 (1978): [80]–[89], p. 87.
57. Kahn writes that 'the mountains are spent light, the air is spent light, the streams are spent light and we are spent light'. See: Louis I. Kahn, 'Architecture', in Alessandra Latour (ed.), *op. cit.*, pp. 270–285, (p. 273).
58. Kahn, '1973: Brooklyn, New York', p. 326.
59. Vitruvius, *The Ten Books of Architecture*, trans. Morris Hickey Morgan (New York: Dover Publications, 1960), p. 18.
60. Plato, 'Timaeus' (31b), in trans. B. Jowett, *The Dialogues of Plato*, fourth edition, Vol. 3 (Oxford: Clarendon Press, 1953), p. 718.
61. The present author has written previously on Kahn's affinity with Christianity. See: 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* (Launceston/Hobart, Australia: The Society of Architectural Historians Australia and New Zealand).
62. Otto Von Simson, *The Gothic Cathedral: Origins of Gothic Architecture and the Medieval Concept of Order*, second edition (Princeton: Princeton University Press, 1962).
63. Wim Swaan, *The Gothic Cathedral* (London: Elek Books, 1969).
64. Swaan, *The Gothic Cathedral*.
65. S. Runciman, *Byzantine Style and Civilisation* (Harmondsworth: Penguin Books Ltd., 1975).
66. The Congregation of the First Unitarian Church, Rochester, N.Y., brochure, file labelled, 'Building Committee Correspondence – Rochester April 1959 through December 1960', L.I.K. Box 15, Kahn Collection.

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### Biography

Dr Steven Fleming is a lecturer in The School of Architecture and Built Environment at The University of Newcastle, Australia. In 2006 he was a visiting scholar to The Department of Philosophy at Columbia University. He has practised as an architect in Australia and in Singapore.

### Author's address

Dr Steven Fleming  
 School of Architecture and  
 Built Environment  
 The University of Newcastle  
 Callaghan,  
 NSW, 2308  
 Australia  
 steven.fleming@newcastle.edu.au

