

Centenarios  
de la Tercera Generación  
Centenaries of the  
Third Generation

ROBERT MCCARTER

Aldo van Eyck  
and Louis I. Kahn:  
Parallels in the Other  
Tradition of Modern  
Architecture

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### **Abstract**

The third generation Modern Dutch architect Aldo van Eyck and the second generation Modern American architect Louis I. Kahn met for the first time at the 11th CIAM conference held in Otterlo, the Netherlands in September 1959. During this conference, at which both Van Eyck and Kahn gave lectures and presentations of their works, the two architects discovered there were a remarkable number of parallels between their practices, including their fundamentally ethical interpretations of architecture; their search for timeless ordering principles; their drawing inspiration from the other arts; the anthropological, historical and tectonic grounding of their work; the spatial structure of their buildings and unbuilt designs; and their commitment to the architecture of the city, and the urban life that takes place there.

### **Keywords**

Aldo van Eyck, Louis I. Kahn, Modern Architecture.

### **Resumen**

El moderno arquitecto holandés de la Tercera Generación Aldo van Eyck y el moderno arquitecto estadounidense de la Segunda Generación Louis I. Kahn se encontraron por primera vez en la 11ª conferencia del CIAM celebrada en Otterlo, Países Bajos, en septiembre de 1959. Durante esta conferencia, en la que tanto Van Eyck como Kahn impartieron conferencias y presentaciones de sus obras, los dos arquitectos descubrieron que había un notable número de paralelismos entre sus proyectos, incluidas sus interpretaciones fundamentalmente éticas de la arquitectura; su búsqueda de principios de ordenación intemporales; su inspiración de las otras artes; la base antropológica, histórica y tectónica de su trabajo; la estructura espacial de sus edificios y proyectos no construidos; y su compromiso con la arquitectura de la ciudad y la vida urbana que allí se desarrolla.

### **Palabras clave**

Aldo van Eyck, Louis I. Kahn, Arquitectura Moderna.

# Aldo van Eyck and Louis I. Kahn: Parallels in the Other Tradition of Modern Architecture

## Aldo van Eyck y Louis I. Kahn: Paralelos en la otra tradición de la arquitectura moderna

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In September 1959, at the invitation of Alison and Peter Smithson, the American architect Louis I. Kahn (1901-1974) attended the 11th and last Congr es Internationaux d'Architecture Moderne (CIAM) conference held at Henry van de Velde's Kroller-Muller Museum in Otterlo, the Netherlands. There he met the Dutch architect Aldo van Eyck (1918-1999), founding member of Team 10, the successor of CIAM that emerged at the end of this conference. The paths of these two architects - the Second-Generation modernist Kahn, then 58 years old, and the Third-Generation modernist Van Eyck, then 40 years old - parallel in so astonishingly many ways, crossed here for the first time, deeply affecting them both at a time of critical transition in their respective practices and thought.

The summer and fall of 1959 were an eventful time for Louis Kahn. The University of Pennsylvania Richards Medical Laboratories were finishing construction, and he had begun the designs for the Tribune Review Building, the Salk Institute, the US Embassy in Angola, the Mill Creek Community Center, the First Unitarian Church in Rochester, and the Fine Arts Center in Fort Wayne, Indiana. In April 1959, Frank Lloyd Wright passed away, and despite his characterization of Wright's later works as "arbitrary, personal, experimental or disdainful of tradition"<sup>1</sup>, Kahn felt compelled to visit for the first time Wright's Johnson Wax Building of 1936. Its light-giving ceiling and the rhythm of its thin-shell concrete lily-pad columns, together forming a modern hypostyle hall, were an astounding revelation for Kahn, as his colleague at Yale, the historian Vincent Scully recalls, Kahn "to the depths of his soul, was overwhelmed"<sup>2</sup>. Shortly after, in discussions with his students, Kahn said that when you are "in an inspiring place, like the Johnson Wax Building, you feel... honored"<sup>3</sup> [fig. 1].

- 1 Richard Saul Wurman (ed.), *What Will Be Has Always Been: The Words of Louis I. Kahn* (New York: Rizzoli, 1986), unpaginated copy of Kahn notebook page, after page 306.
- 2 Vincent Scully, *Louis I. Kahn* (New York: Braziller, 1962), 30-1.
- 3 Louis Kahn, transcribed notes of studio discussions, University of Pennsylvania, November 25, 1960; in author's files.



[Fig. 1] 1. University of Pennsylvania Richards Medical Laboratories, Louis I. Kahn, 1957-59; construction photograph. 2. University of Pennsylvania Richards Medical Laboratories, Louis I. Kahn, 1957-59; corner laboratories. 3. Johnson Wax Building, Frank Lloyd Wright, 1936; interior.

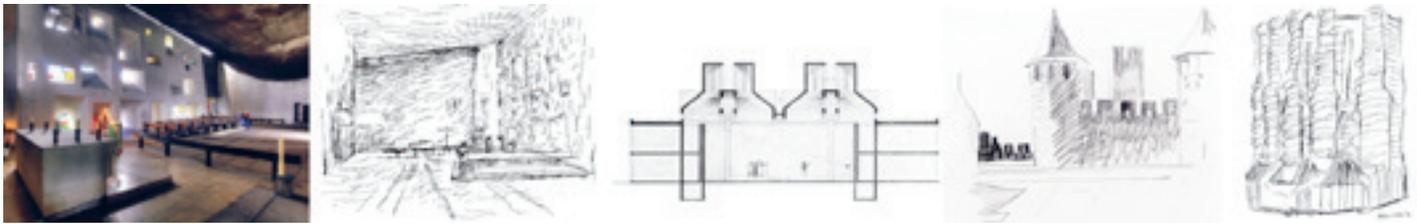
On his way to the CIAM 11 conference in Otterlo, Kahn visited for the first time Le Corbusier's Ronchamp Pilgrimage Chapel, making two sketches of the interior, the elliptical roof section and its perimeter light. This experience, along with the visit to Wright's Johnson Wax, would have a strong effect on Kahn's designs for the First Unitarian Church, where in his early schemes he attempted to merge the two roof concepts by employing umbrella-like column structures to support a roof which was separated from the surrounding walls by a horizontal light slot at the perimeter. Before arriving at Otterlo, Kahn visited a series of English manor houses with the Smithsons, which would influence the way he detailed masonry and wood in later buildings such as Exeter Library and the Yale Center for British Art. Kahn also visited the medieval walled town of Carcassonne and the St. Cecile Cathedral in Albi, making thirty-three sketches of the former and twelve of the latter, and Albi, one of the largest all-brick buildings in the world, would inspire his later designs for the Mikveh Israel Synagogue, the Indian Institute of Management and the Bangladesh National Capital [fig. 2].

During the preceding ten years, a group of younger architects, led by Alison and Peter Smithson, Aldo van Eyck, Jacob Bakema, Giancarlo de Carlo and Georges Candilis, had begun to question CIAM's continued emphasis on the issues of "minimum existence" standards for housing and strictly functional zoning of urbanism, particularly in light of the pressing issues of reconstruction in war-devastated historical cities and the rapid spread of sub-urban development. Following WWII, a number of issues that had been peripheral to the early CIAM conferences became central to the discussions of the younger architects, including the historical development of cities; the urban core or center as the place where the individual citizen can participate in public life; the smaller-scaled types of urbanism, such as the street and neighborhood, which lie between the house and the city; and the need for a modern form of monumentality to house contemporary social and cultural institutions.

The decisive break occurred at CIAM 10, the 1956 meeting held in Dubrovnik, where this group, hereafter called Team 10, assumed control of the agenda, propelled by Sigfried Giedion and Le Corbusier's call for the original members, who had founded CIAM in 1928, to pass the leadership for developing modern architecture and urbanism to the next generation. Two years later, Van Eyck was invited to serve as an editor for the Dutch journal *Forum*, and the first issue he edited was titled "The Story of Another Idea". The issue presented a polemical history of CIAM since its founding, as well as the story of the "other" modern architecture that had developed both within and in opposition to CIAM since 1947. Using selected quotations from CIAM reports, Van Eyck traced what he argued was the loss of relation between the increasingly technical, progress-obsessed, and narrowly functional architecture advocated by CIAM and the still vibrant works of the avant-garde in the other arts. Eric Mumford, author of the definitive history of CIAM, has called this issue of *Forum* "a kind of thematic invitation to the Otterlo Congress"<sup>4</sup>.

At Otterlo, the members of Team 10 were joined by a number of other architects from around the world, including Alfred Roth, Eduard Sekler, Jerzy Soltan, Ernesto Rogers, Jose Coderch, Fernando Tavora, Arne Korsmo, Andre Wogenscky, Ralph Erskine, Kenzo Tange, and Louis Kahn. Unlike the earlier CIAM conferences where separate thematically-defined groups worked in parallel sessions, the 1959

4 Eric Mumford, *The CIAM Discourses on Urbanism, 1928-1960* (Cambridge: MIT Press, 2000), 260.



[Fig. 2] 1. Ronchamp Chapel, Le Corbusier, 1950-55; interior. 2. Louis I. Kahn, sketch of interior of Ronchamp Chapel, 1959. 3. Louis I. Kahn, preliminary section of Unitarian Church, 1959. 4. Louis I. Kahn, sketch of Carcassonne, France, 1959. 5. Louis I. Kahn, sketch of Cathedral at Albi, France, 1959.



[Fig. 3] 1. Louis I. Kahn and Alison Smithson at CIAM '59 in Otterlo. 2. Aldo van Eyck at CIAM '59 in Otterlo. 3. Louis I. Kahn, model of Trenton Jewish Community Center, 1957. 4. Aldo van Eyck, Amsterdam Orphanage, 1955-60; aerial view of roof. 5. Louis I. Kahn, TJCC Bath House, 1955. 6. Aldo van Eyck, Amsterdam Orphanage, 1955-60; older children's house. 7. Louis I. Kahn, Rochester Unitarian Church, 1958-65; interior. 8. Aldo van Eyck, Roman Catholic Church, The Hague, 1964; interior. 9. Aldo van Eyck, model of Sonsbeek Sculpture Pavilion, 1965.

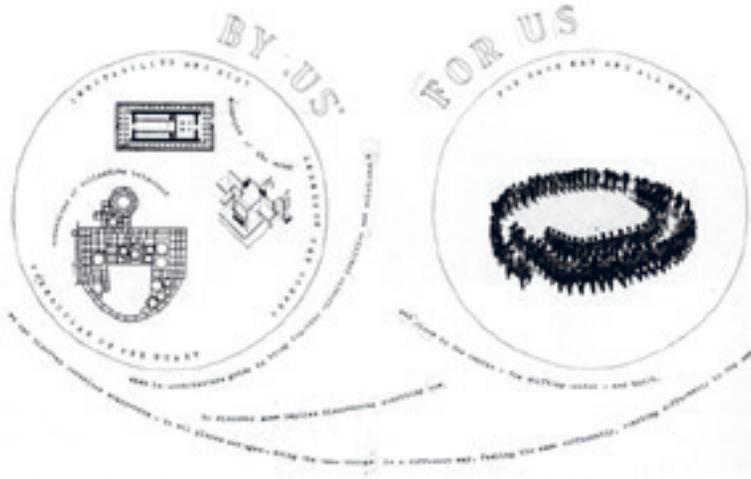
Otterlo meeting consisted entirely of plenary sessions which all participants attended, extending from early morning to late at night, during which each participant presented their own works which were discussed and critiqued by the entire group, without the intervention of a moderator or session chair. As Alison Smithson recalled, “Hunger or mental exhaustion were the only accepted limitation to work”<sup>5</sup>.

It was at the Otterlo Congress that Van Eyck and Kahn first met and became aware of each other's work. As Van Eyck's biographer, Francis Stauven, has noted; “this entailed a shock of recognition for both of them,” as they realized that they had been on parallel paths for a number of years.<sup>6</sup> In particular, the remarkable similarities between the square grid plan, concrete frame, and domed roof of Kahn's Trenton Jewish Community Center of 1954-58, which he presented at the conference, and the square grid plan, concrete frame, and domed roof of Van Eyck's Amsterdam Orphanage of the same years, remain striking even today. We might also note the similarities between Kahn's first design of 1955 for the Trenton Jewish Community Center, and Van Eyck's design for the Open-Air School in Amsterdam of the same year, the plans of which are both organized on non-rectangular grids – octagonal and hexagonal, respectively. From Van Eyck's ingenious public housing projects and playgrounds of the 1940's – so similar to Kahn's public housing work of the same period; to the later Roman Catholic Church in The Hague of 1964 – its massive concrete block walls and enormous cylindrical skylights echoing Kahn's First Unitarian Church of 1959; and finally to the Sonsbeek Sculpture Pavilion of 1965 – its square plan of parallel concrete block walls under a translucent roof, centered by circular forms so remarkably similar to Kahn's Trenton JCC Bath House of 1955. The parallels are even more striking when we note the amazing similarities in the two architects' thinking regarding such issues as the essential nature of architecture; the history of the discipline and its relation to design; the need to broaden the functional program; the state of modern architecture; and the focus on interior spaces designed as the articulation of fundamental geometries [fig. 3].

5 Alison Smithson, *Architectural Design 5* (May 1960): 178. Quoted in: Francis Stauven, *Aldo van Eyck: The Shape of Relativity* (Amsterdam: Architectura & Natura, 1998): 347.

6 Stauven, *Aldo van Eyck*, 353.

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[Fig. 4] 1. Aldo van Eyck, Amsterdam Orphanage, 1955-60; play pool. 2. Aldo van Eyck, “Otterlo Circles” conference panel, 1959.

Although Kahn was busier than he had ever been with numerous new commissions, it was Van Eyck, at this time without any new work and with two current projects that would remain unbuilt, who led the CIAM conference attendees, including Kahn, on a tour of his largely completed Municipal Orphanage, or Children’s Home, in Amsterdam, of 1955-1960. And it was Van Eyck’s ideas on the essence of architecture and arguments about the state of modernism that most deeply affected all at the conference, including Kahn [fig. 4].

Van Eyck gave two talks at the Otterlo conference, and in the first, titled “Is architecture going to reconcile basic values?”<sup>7</sup>, he began with a sustained attack on what he felt to be the ethically and aesthetically bankrupt state of mid-century mainstream modern architecture. Calling attention to the liberative concepts discovered by Picasso, Klee, Mondrian, Brancusi, Joyce, Le Corbusier, Schoenberg, Bergson and Einstein, who had broken from what he called “the deterministic” way of thinking, Van Eyck singled out modern architecture’s failure to meet the challenge of engaging the ideas of the earliest modernists in all the arts, and the way mid-century architecture had turned its back on this, its own legacy. Modern architecture was misapplying the discoveries of the avant-garde as a superficial

7 Three versions of Van Eyck’s first talk at Otterlo exist; the first is an incomplete transcription taken from a recording made by Herman Haan at the Congress (NAi, Rotterdam), transcribed in Vincent Ligtelijn and Francis Strauven, *Aldo van Eyck: Writings* (Amsterdam: SUN, 2008); the second is the edited and slightly different version that appears in Alison Smithson (ed.), *Team 10 Primer* (Cambridge: MIT Press, 1968); and the third is published in Oscar Newman, *CIAM 59 in Otterlo* (Stuttgart: Karl Kramer, 1961). All texts included in Newman were edited by their authors.

“technical, mechanical and decorative” veneer of modern form; “Surely we cannot permit (modern architects) to continue selling the diluted essence of what others spent a lifetime finding. They have betrayed society in betraying the essence of contemporary thought”<sup>8</sup>.

In his lecture, Van Eyck argued for a series of fundamental understandings, all of which he shared with Kahn, “The time has come to gather the old into the new; to rediscover the archaic qualities of human nature – I mean the timeless ones. To discover anew implies discovering something new. Translate that into architecture and you’ll get new architecture – real contemporary architecture. Architecture is a constant rediscovery of constant human qualities translated into space. Man is always and everywhere essentially the same [...] Modern architects have been harping continually on what is different in our time to such an extent that even they have lost touch with what is not different, what is always essentially the same. This grave mistake was not made by the poets, painters and sculptors. On the contrary, they never narrowed down experience; they enlarged and intensified it; tore down not merely the form barriers as did the architects, but the emotional ones as well”<sup>9</sup>.

Van Eyck went on to call for understanding history as a living, timeless tradition, perceived through human experience: “We meet ourselves everywhere – in all places and ages – doing the same things in a different way, feeling the same differently, reacting differently to the same”<sup>10</sup>. In an effort to find another way, Van Eyck spoke about his search for architectural beginnings outside traditional Western classical culture, looking instead to African tribal structures, medieval cities, and the Kasbah and mosque of the Islamic world for inspiration. In his “Otterlo Circles” panel displayed at the conference, Van Eyck proposed that architecture must integrate, rather than choose among, the classic (represented by the Parthenon), the vernacular or “spontaneous” (Pueblo Bonito), and the modern tradition (van Doesburg construction) [fig. 4].

Van Eyck also argued that the division of labor between architecture and planning would be the death of any kind of real urbanism: “We must stop splitting the making of habitat into two disciplines... part-whole, small-large, few-many, i.e. into architecture and planning”<sup>11</sup>. Van Eyck drew an analogy between city and house, architect and urban planner, holding that “a house must be like a small city if it is to be a real house – a city like a large house if it is to be a real city”<sup>12</sup> – a concept that addressed the key problem Team 10 had set itself: the critical scale between house and city – the neighborhood.

Van Eyck closed his talk by speaking of architecture understood as “the doorstep” which establishes the in-between that reconciles conflicting polarities such as public and private space. “What then, I ask, is the greater reality of the door? Well, perhaps it is the localized setting for a wonderful human gesture: conscious entry and departure. That’s what a door is; something that frames your coming and going, for it is a vital experience not only for those that do so but also for those encountered or left behind. A door is a place made for an occasion that is repeated millions of times in a lifetime between the first entry and the last exit”<sup>13</sup>. Here Van Eyck employed what would prove to be one of his most influential concepts: in counterpoint to the modernist ideals of “space and time”, and the tyranny of functional programming, Van Eyck proposed his social and experiential ideals of “place and occasion”.

Van Eyck then presented five projects to the congress, the Orphanage in Amsterdam of 1955-60; the town plan of Nagele of 1952-58; three schools for Nagele of 1954-56; the Congress Hall for Jerusalem of 1958; and his student Piet Blom’s project entitled, “The cities will be inhabited like villages”. In “The Story of Another Idea” issue of *Forum*, Van Eyck had described this project of Blom’s, designed for Sloterveer in Amsterdam, as linking and integrating the dwellings in such a way that “they eventually merge and partly or entirely cease to be separate bodies, the replacement of both architecture and urbanism with a new discipline that encompasses both [...] This approach will inevitably lead to a dignified human habitat, one which will look more like an organized Kasbah than one would be inclined to believe today”<sup>14</sup> [fig. 5].

8 Aldo van Eyck, “Is architecture going to reconcile basic values?” in Newman, *CIAM 59 in Otterlo*, 26-9; also in Smithson, *Team 10 Primer*, 20-2.

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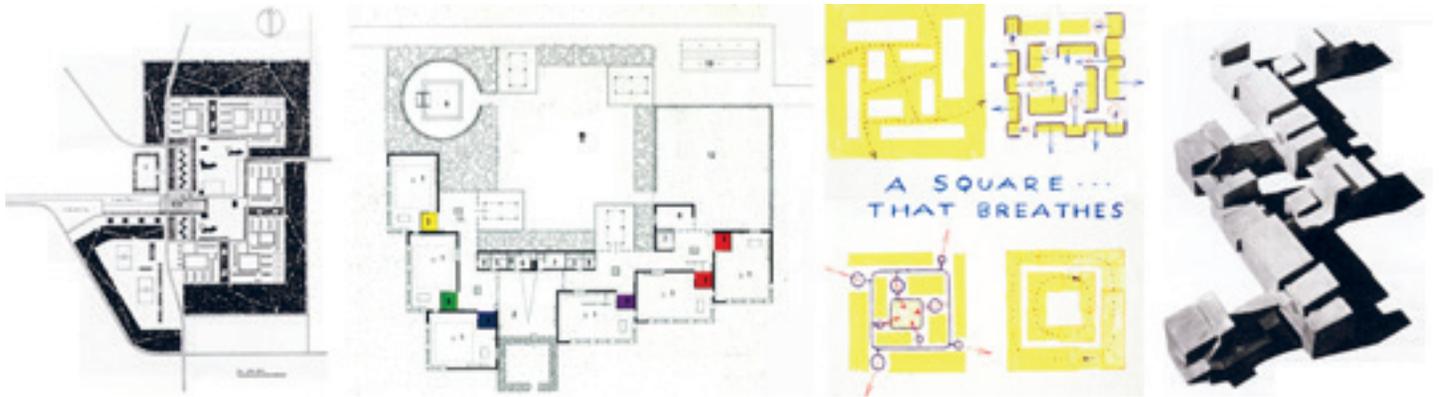
10 Smithson, *Team 10 Primer*, 20-2.

11 Newman, *CIAM 59 in Otterlo*, 26-9; also in Smithson, *Team 10 Primer*, 20-2.

12 Smithson, *Team 10 Primer*, 27.

13 Newman, *CIAM 59 in Otterlo*, 26-9; also in Smithson, *Team 10 Primer*, 20-2.

14 Aldo van Eyck, “The Story of Another Idea” in Ligtelijn and Strauven, *Aldo van Eyck: Writings*, 268.



[Fig. 5] 1. Aldo van Eyck, town plan for Nagele, 1952-58. 2. Aldo van Eyck, school at Nagele, 1954-56; floor plan. 3. Aldo van Eyck, Congress Hall, Jerusalem, 1958; plan concept diagram. 4. Piet Blom, urban design, "The cities will be inhabited like villages," 1958.

While the effect on Kahn of Van Eyck's lecture was immediate, it would be some years before Kahn could acknowledge and express its importance to him. In 1971, Kahn began an interview by stating: "Van Eyck to me is a significant architect. He's more than significant, he's a great architectural mind who has had little opportunity." Kahn followed this with a story that was clearly inspired by Van Eyck's conception of architecture as being formed by the daily rituals of life, and the architect's ethical imperative to impart dignity to the experience of inhabitation: A grandfather and grandson are climbing the stairs together, the grandson taking three steps at a time and the grandfather feeling winded after only a short way. The architect has thought to make a large landing at the mid-point of the climb, with a window seat and bookcase, which is "a blessing" for the grandfather, as he can suggest they stop and read a book, and give him a chance to catch his breath rather than revealing to his energetic grandson that he is tired from the short climb. This story of Kahn's so perfectly captured Van Eyck's conception of design that one of Van Eyck's closest colleagues, the architect Herman Hertzberger, would later quote this story of Kahn's in lectures on his, Hertzberger's own work, as a way of explaining his intentions<sup>15</sup>.

In the same interview, Kahn went on to recall Van Eyck's lecture at Otterlo: "Aldo van Eyck made a speech about the meaning of a threshold just before you enter a room. It was magnificent, because through this he could build a whole architecture [...] Since that time, I respected him as being tremendously significant"<sup>16</sup>. At the end of this interview Kahn first gave poetic voice to his profound belief, clearly inspired by Van Eyck's ideas: "History is that which reveals the nature of man. What is has always been. What was has always been. What will be has always been"<sup>17</sup>.

In a letter supporting the international effort to save Van Eyck's Orphanage from destruction in 1987, the architectural historian Eduard Sekler wrote: "Louis Kahn, the greatest American architect after Frank Lloyd Wright, singled out (the Orphanage) for praise on more than one occasion: he was aware that it demonstrated a new way of thinking about architecture"<sup>18</sup>. It was only after the 1959 Otterlo conference that Kahn first articulated his concepts of "the architecture of connections," which gives the spaces of circulation value equal to the primary program spaces, and spaces that engendered "unplanned meetings", which Kahn grew to believe was architecture's most important "function". Finally, in an interview that took place only a few months before Kahn's death, Strauven noted that Kahn told him that "Aldo van Eyck was one of the few with whom he felt a kinship as an architect"<sup>19</sup>. This had been confirmed in the spring of 1960, soon after their first meeting at Otterlo, when Kahn invited Van Eyck to teach with him as a visiting design critic at the University of Pennsylvania [fig. 6].

At the 1959 Otterlo conference, Kahn presented only three projects: the Trenton Jewish Community Center and Bath House, the Richards Medical Research Laboratory Towers, and his various urban design and planning proposals for the city of Philadelphia made during the 1950's – these last were

15 Interview with Kahn, Wurman, *What Will Be Has Always Been*, 113. Hertzberger employed Kahn's story of the stair landing in lectures on his own work at Columbia University in 1988, and at the University of Florida in 1995.

16 Wurman, *What Will Be Has Always Been*, 113.

17 Wurman, *What Will Be Has Always Been*, 113-6.

18 Sekler, quoted in Francis Strauven, *Aldo van Eyck's Orphanage: A Modern Monument* (Rotterdam: Nai, 1996), inside front cover.

19 Strauven, *Aldo van Eyck*, 353, note 458.



[Fig. 6] Louis I. Kahn, Indian Institute of Management, 1959-74; “architecture of connections” as place for “unplanned meetings”.

immediately embraced by the members of Team 10 and extensively published in Alison Smithson’s later summary manifesto of 1968, *Team 10 Primer*.

Late in the conference, Louis Kahn gave the keynote address, which was less a discussion of his own work than a free-ranging discourse on the nature of architecture. As Alison Smithson later said; “Lou Kahn delivered a homily”<sup>20</sup>. Kahn began, like Van Eyck, by challenging the contemporary architectural profession’s assumptions about design: “I believe that there are many in our profession who rely entirely upon the actual design and very little on the way of thought as to what a thing wants to be.” He argued that structure and construction were the fundamental shapers of our experience: “Architecture is the thoughtful making of spaces [...] I think an architectural space is one in which it is evident how it is made; you will see the columns, you must see the beams, or you must see the walls, the doors, or the domes”<sup>21</sup>.

Kahn’s insistence on “seeing the beams,” and on the ceiling described as “domes,” relates directly to the visit by two young architecture faculty from the University of Texas at Austin, Colin Rowe, architectural historian and urbanist taught by Rudolph Wittkower at the Warburg Institute, and Robert Slutzky, painter and former student of Josef Albers at Yale University, to Kahn’s office in late 1955; their discussion of the Trenton Jewish Community Center (JCC) project; the subsequent correspondence between Rowe, Slutzky and Kahn; Rowe’s gift to Kahn of Wittkower’s 1949 book *Architectural Principles in the Age of Humanism*; and Rowe’s use of Kahn’s Trenton JCC in his essay entitled “Neo-‘Classicism’ and Modern Architecture,” II of 1957 – the same year Kahn’s Trenton JCC was published in Europe<sup>22</sup>.

Rowe’s 1957 essay opens with a precise description of the International Style system of space-making, which “postulated a skeleton structure whose function of support was to be separately expressed from any non-structural function of enclosure [...] International Style space was a system which tended to prohibit any display of beams (and required) that the *under* surfaces of the roofs and floors should present uninterrupted planes [...] the column does not promote the spatial expression of the structural bay, nor do a series of columns define individual structural cells”<sup>23</sup>. This is exactly the opposite of the tartan-grid structure Kahn employed in the Trenton JCC, which he used at the Otterlo conference to

20 Alison Smithson, *Team 10 Meetings* (New York: Rizzoli, 1991), 27.

21 Louis Kahn, “New Frontiers in Architecture: CIAM in Otterlo 1959,” in Alessandra Latour (ed.), *Louis I. Kahn: Writings, Lectures, Interviews* (New York: Rizzoli, 1991), 81-99.

22 Colin Rowe, *The Mathematics of the Ideal Villa and Other Essays* (Cambridge: MIT Press, 1976). At the time he wrote these essays, Rowe had left the University of Texas and was back in England, where Kahn’s third Trenton JCC design was published in the May 1957 issue of *Architectural Review*. Rowe also received copies of the drawings and model photos from Kahn in his correspondence regarding the Trenton JCC.

23 Rowe, *The Mathematics of the Ideal Villa*, 141-3.

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introduce his concept of “servant and served” spaces – an immensely influential idea that would be come up in discussions at every Team 10 meeting thereafter.

Rowe concluded his essay by stating that Kahn’s “Jewish Community Center is emphatically the most complete development to date of themes” of spatial cells, tartan (a-b-a) grids, centrality, hierarchy, and structural-spatial order implicit in Classicism, as engaged in Modernist designs. While Rowe predicted that the future belongs, not to Kahn, but to Mies and Le Corbusier, who “recognize and accept what is surely the normative condition of 20<sup>th</sup> century building – the flat slab and its point support,” he also noted that this normative condition had proven utterly incapable of accommodating and giving form to the growing desire for centrality, hierarchy and vertical spatial development inherent in ancient architectural examples such as the dome<sup>24</sup>.

In his Otterlo lecture, Kahn criticized Mies van der Rohe’s Seagram Building in New York for its failure to reveal its structure: “I am really worried about the beautiful things that exist around us today [...] The Seagram Tower is a beautiful bronze lady, but she is not true.” In hiding its structural frame that acts to counter lateral wind loads, Kahn said; “the building is not honest”<sup>25</sup>. Kahn’s insistence on the presence of structure in the experience of inhabiting the building dates back to his 1944 essay “Monumentality,” which he began by stating, “Monumentality in architecture may be defined as a quality, a spiritual quality inherent in a structure which conveys the feeling of its eternity [...] Monumentality is enigmatic. It cannot be intentionally created [...] However, our architectural monuments indicate a striving for structural perfection”<sup>26</sup>.

At Otterlo, Kahn followed his critique of contemporary practice, and its lack of connection with what is really essential in architecture, with the statement that “modern space is really not different from Renaissance space [...] We still want domes, we still want walls, we still want arches, vaults, arcades and loggias”<sup>27</sup>. Again, this continued ideas Kahn had first set out in his “Monumentality” essay, where he held that architects “dare not discard the lessons (historical monuments) teach, for they have the common characteristics of greatness upon which the buildings of our future must, in one sense or another, rely.” And later, he held that “the influence of the Roman vault, the dome, the arch, has etched itself in deep furrows across the pages of architectural history. Through Romanesque, Gothic, Renaissance, and today, its basic forms and structural ideas have been felt. They will continue to reappear but with added powers made possible by our technology and engineering skill”<sup>28</sup>.

In his Otterlo lecture, Kahn stated his profound belief that architecture’s fundamental task was the housing of the institutions of man, appropriately transformed so as to engage contemporary society. Regarding urbanism, the subject of much debate at the conference, Kahn stated: “Every city is made up of institutions. If you consider the making of a city you would have to consider the organization of the institutions [...] the institution of housing, the institution of movement (streets), the institution of schools.” Following this, Kahn concluded with a homage to Van Eyck’s earlier talk – the only instance where Kahn referred by name to any of the conference participants; “I mean to show my appreciation to Aldo who simply talked about a door. I think it is a wonderful thing to review the aspects of architecture from that sense [...] it can lead a man to realizations which go far beyond the problems of the door or a gateway”<sup>29</sup>.

Following Kahn’s keynote lecture, Van Eyck gave a second talk at the conclusion of the Otterlo Congress, entitled “The moment of realization,” in which he returned to his primary themes while also connecting to a number of Kahn’s points. Arguing that architects have overemphasized the measurable, Van Eyck stated in terms quite close to Kahn; “Far from expanding reality as the (modern artists and poets) have done, architects have contracted reality [...] Modern architecture, I’ll say it here, has (more often than not) been dishonest with a halo of honesty.” Van Eyck connected with Kahn’s argument about the nature of things, noting that design is not about accumulating data; “It is the moment of realization that counts in the art process – Kahn has already referred to it – and it doesn’t follow because you have done your homework well”<sup>30</sup>.

24 Rowe, *The Mathematics of the Ideal Villa*, 154-5.

25 Latour, *Louis I. Kahn*, 91, 96.

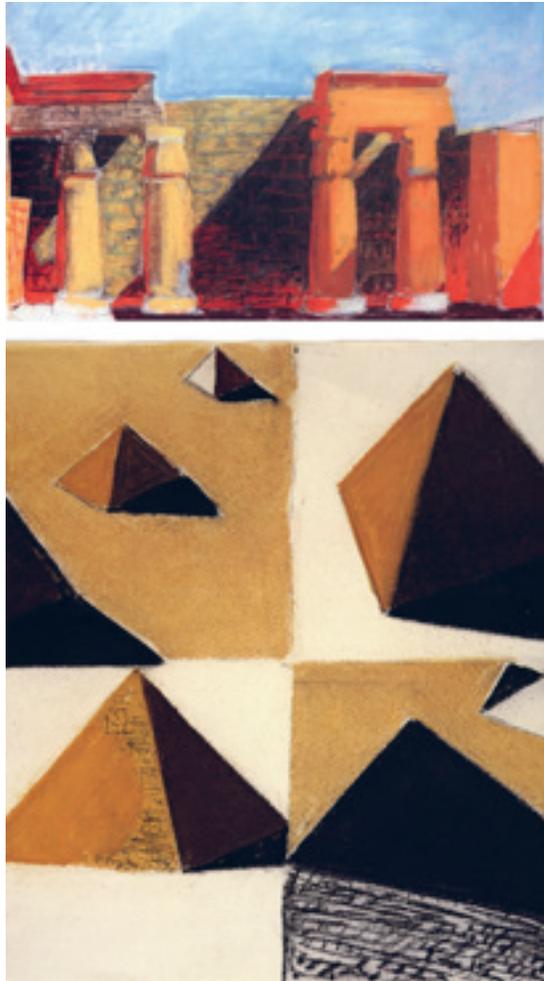
26 Latour, *Louis I. Kahn*, 18.

27 Latour, *Louis I. Kahn*, 90.

28 Latour, *Louis I. Kahn*, 19.

29 Latour, *Louis I. Kahn*, 81-99.

30 Aldo van Eyck, “The moment of realization” in Ligtelijn and Strauven, *Aldo van Eyck: Writings*, 205-7.



[Fig. 7] 1. Louis I. Kahn, sketch of Egyptian Temple, Karnak, 1950-51. 2. Louis I. Kahn, sketch of Egyptian pyramids, 1950-51.



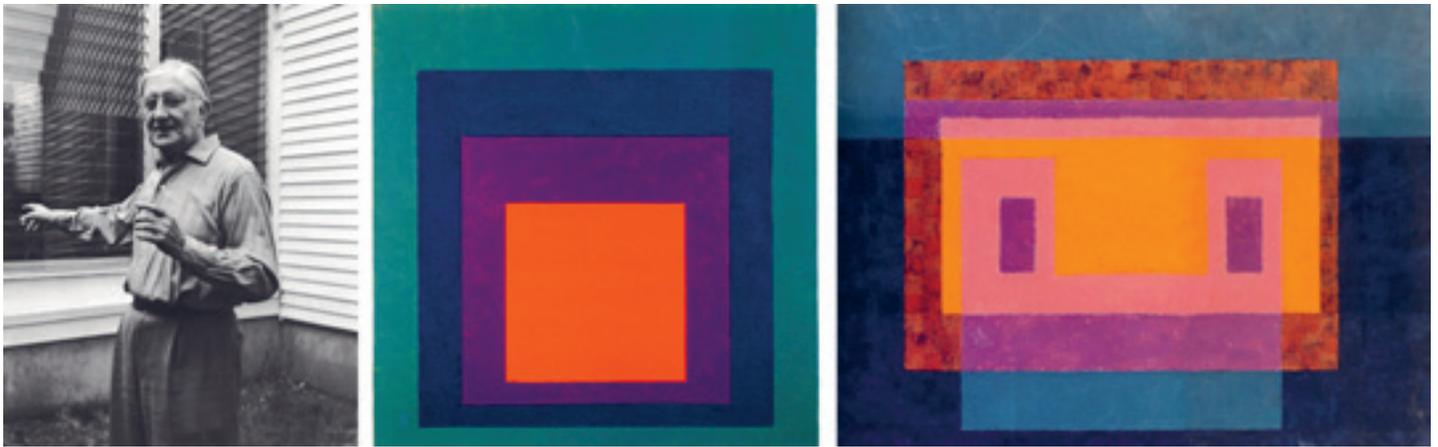
[Fig. 8] 1. Aldo van Eyck, photograph of house in Aoulef, Algeria, 1947-52. 2. Aldo van Eyck, photograph of Dogon village in Banani, Mali, 1960.

In addition to the numerous parallels that became evident at the Otterlo conference, another parallel between Van Eyck and Kahn has to do with both architects' pivotal experiences of historical places. Kahn made his second extended trip to Europe, as Resident Architect at the American Academy in Rome in the winter of 1950-51, during which he traveled not only to the Roman and Greek ruins in Italy, but also to Greece itself and to Egypt. Without question, Kahn's architecture was deeply affected by this re-exposure to the great historical monuments he had last seen in 1929, and one of the fundamental changes coming out of this second trip was Kahn's decision to abandon light-weight structures of steel for an architecture of mass, concrete and masonry, a decision the consequences of which led directly to his capacity to join the eternal and the circumstantial in his mature works, and to his emergence on the world stage [fig. 7].

This experience of Kahn's is paralleled almost exactly by Van Eyck's series of trips to north Africa, the American southwest, and other destinations, starting in 1947 and continuing for three decades. These trips would profoundly affect Van Eyck's architecture, and while the destinations varied, his search was always for what he called "the elementary". Van Eyck made a series of research trips to engage with cultures typically labeled as "primitive" (a term Van Eyck would not tolerate), where the vernacular building culture had evolved over centuries so as to allow a subtle and yet effective adaptation to the extreme climatic conditions. Van Eyck was particularly taken with the combination of symmetrical, geometric overall forms and asymmetrical, polycentric accommodations of daily human ritual – forms that are strikingly similar to those of the series of 750 playgrounds he designed for Amsterdam from 1947-78 [fig. 8].

Regarding the relation of these inheritances from history, Kahn in his Otterlo lecture held that "a man that discovers things that belong to the nature of things does not own these things. The designs belong to him but the realizations do not. If you copy Le Corbusier's designs you are somewhat of a thief. But if you take that which is in essence architectural from him, you take it very freely, because it does not belong to him either. It belongs to the realm of architecture"<sup>31</sup>.

31 Latour, *Louis I. Kahn*, 94-5.



[Fig. 9] 1. Josef Albers at his home in Connecticut. 2. Josef Albers, *Homage to the Square*, 1950. 3. Josef Albers, *Variant*, 1952.

Yet another parallel between these two architects comes in the fact that, having taught joint art and architecture studios with the German-American painter Josef Albers at Yale from 1949-56, Kahn also felt quite strongly that modern artists and sculptors were often closer to the question of the nature of things, as Van Eyck had argued so persuasively in his Otterlo lecture. In Kahn's 1944 "Monumentality" essay he had quite pointedly employed "an older sculptor" as the pivotal client/user of his hypothetical "community museum of sculpture, painting, and crafts," used by Kahn to demonstrate what he believed to be a more integrated approach to the design of monuments<sup>32</sup>.

The relations of Kahn and Van Eyck to their contemporary artists, and the influence of specific paintings on the development of their respective architectural ordering principles, are considerably more important than has been acknowledged to date. First is the intriguing fact that each architect engaged the work of two opposite schools of modern painting. Kahn was influenced by Albers' work in ways that strengthened Kahn's fundamental sense of geometric order as well as of the nature of materials; and also by Willem de Kooning and others' works of Abstract Expressionism, from which Kahn further evolved the concepts of revealing the marks of making and direct expression of materials.

Van Eyck, in turn, was influenced by the works of Dutch de Stijl artist Piet Mondrian and the Swiss Concrete artist Richard Paul Lohse, from which Van Eyck developed the concept of polycentric gridded structures; and also by the works of Hans Arp, Joan Miro and others' works of Surrealism, from which Van Eyck came to more fully understand the symbolic and psychological aspects of the craftworks he had seen and collected in his travels through Africa. In fact, it was in analyzing Arp's work in 1946 that Van Eyck first articulated his key concept of "what is constant and constantly changing"<sup>33</sup>.

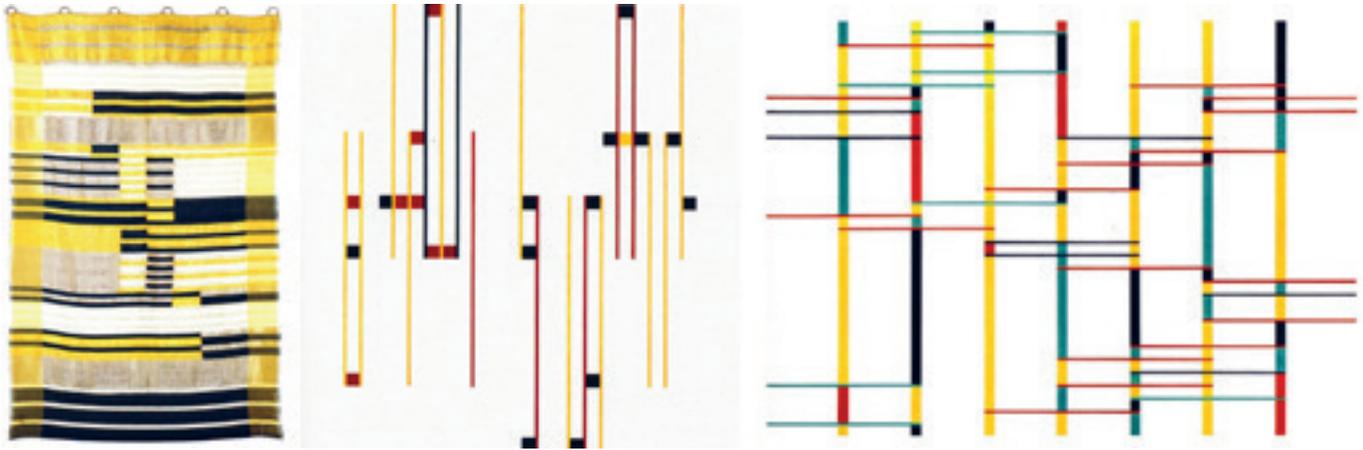
In Albers' work Kahn found reinforcement of his belief in the fundamental beginning offered by pure geometries. Albers' art work, largely produced during the time both he and Kahn taught at Yale, exemplified a rigorous and precise exploration of space: his "Homage to the Square" series (1950-76), a set of differently colored squares set within each other creating an effect of foreshortening in one-point perspective; his "Variant" series (1947-55), where T and U-shaped, crisply rectangular elements are layered to create an ambiguous and complex perspective; and his "Structural Constellation" series (1950-54), with their white lines framing several overlapping cubic volumes which appear to be rotating and folding through space. All of Albers' paintings actively engage space, and, through his active engagement of them in his teaching at Black Mountain College and Yale University, these paintings were very influential in the thinking of generations of architects [fig. 9].

In a 1944 essay published in the same book as Kahn's "Monumentality," Albers had argued that architecture students should experience the qualities of the materials with which they build, so as to reveal in the finished building the process of its construction<sup>34</sup>. In his teaching, Albers stated that,

32 Latour, *Louis I. Kahn*, 26.

33 Stauven, *Aldo van Eyck*, 87. Van Eyck first coined this term while (rather freely) "translating" into English an essay on Arp by Carola Giedion-Welcker.

34 Josef Albers, "The Educational Value of Manual Work and Handicraft in Relation to Architecture", in Paul Zucker (ed.), *New Architecture and City Planning: A Symposium* (New York: Philosophical Library, 1944), 688-94.



[Fig. 10] 1. Anni Albers, woven wall hanging, 1925. 2. Richard Paul Lohse, *Konkretion I*, 1945-46. 3. Richard Paul Lohse, *Konkretion III*, 1947.

in all art “precision – as to the effect wanted – and discipline – as to the means used – are decisive,” and his emphasis on the experienced qualities of each *material* – texture, color, depth, hardness – and the way it received and returned sunlight would have particular importance for Kahn. According to Albers, the primary intention of his teaching exercises was to “develop understanding of and respect for material”<sup>35</sup>, a direct source for Kahn’s concept of honoring the material.

While Albers’ extraordinary stained glass art works date from his Bauhaus years, he brought most of them with him to the US; he exhibited a number of them at Yale in 1956, while Kahn was still on the faculty, and it is likely he showed them to his friend and studio co-teacher Kahn as early as 1950. That Kahn’s father had been a stained glass craftsman would have hardly been the only reason he would have found these extraordinary works inspiring. The lines of color woven and layered through these glass works are clearly related to the art of modern weaving that reached its peak in the Bauhaus, and in the work of Josef Albers’ wife, the weaver Anni Albers. It was Anni Albers who in 1946 made the extraordinary characterization of modern art, summarizing the concept of the generative power of the materials themselves: “being creative is perhaps not the desire to do something, but listening to that which wants to be done, the dictation of the materials”<sup>36</sup>. This last comes quite close to a number of Kahn’s own later aphorisms, including his asking the brick “what it wants to be.” The effect of the thinking of both the Albers on Kahn would be profound and lasting [fig. 10].

Van Eyck’s close personal relationship with Lohse would prove to be no less important to Van Eyck’s development as an architect, and also resulted in some of the earliest publications of Lohse’s work being authored by Van Eyck. Lohse’s paintings consistently involved rigorous right-angle grid orders, into which were woven, through the use of color, various diagonal tensions, often including dynamic pinwheel compositions – yet it is important to point out that this was achieved without Lohse ever employing any literal diagonal forms [fig. 10].

Van Eyck saw in Lohse’s paintings both form and counter-form; serial compositions; variation on themes; point and counterpoint; syncopated rhythm – all methods essential to Van Eyck’s evolution of a different method of urban design. Van Eyck stated in 1952 of Lohse’s work: “Imparting rhythm to repetitive similar and dissimilar form, he has managed to disclose the conditions that may lead to the equilibrium of the plural and thus overcome the menace of monotony,” leading to the repetitive being “subordinated to the laws of dynamic equilibrium, i.e. harmony in motion” and “the meaningful rhythmification of a repeating theme”<sup>37</sup>. Van Eyck’s urban design for Buikslotermeer in Amsterdam, undertaken with Bakema in 1962, was his most fully articulated deployment of the pinwheeling, rotating geometries derived from his studies of Lohse’s paintings and their discussions of the potential for developing diagonal spaces from rectangular grids. Lohse recalled in a later interview, “Aldo and I were always talking about the possible relations between art and architecture, about the question whether both involved analogous structures, and to what extent these structures can be made identical [...] the methods and systems a painter develops may contain possibilities for structural transference

35 Mary Emma Harris, *The Arts at Black Mountain College* (Cambridge: MIT Press, 1987), 17.

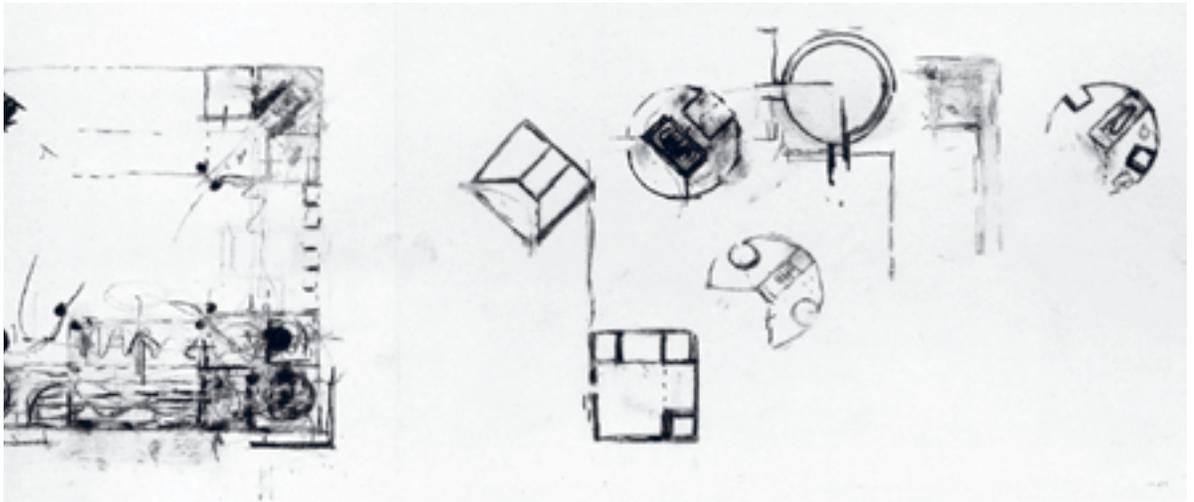
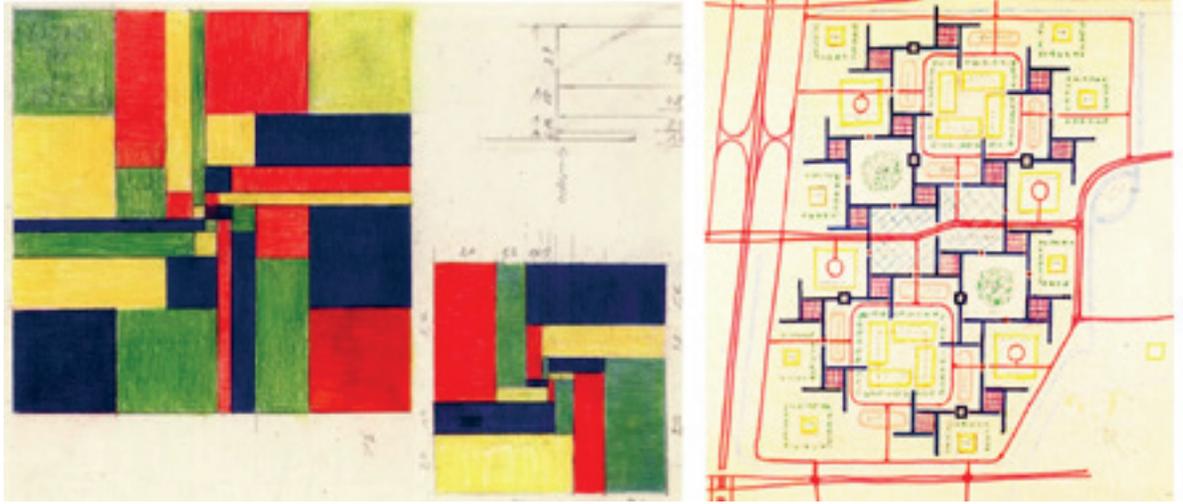
36 Albers quoted in Harris, *The Arts at Black Mountain College*, 24.

37 Van Eyck, *Forum* 5-7 (1952): 186. Quoted in Strauven, *Aldo van Eyck*, 222.

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[Fig. 11]

1. Richard Paul Lohse, page from sketchbook, 1954.
2. Aldo van Eyck, sketch of urban plan for Buikslotermeer, 1962.
3. Louis I. Kahn, sketch study for Exeter Library, 1966.

[...] Van Eyck always pursued a logical dynamic. In the same way as this dynamic arises out of a cohesion of verticality and diagonality in my work. Diagonality was the determining force for Cézanne too, though he did not depict it as such. One can recognize this sort of dynamic in the work of Van Eyck”<sup>38</sup> [fig. 11].

Another parallel is that, in designing a building, both Kahn and Van Eyck “started with the square,” though only Kahn spoke about this fundamental beginning point, for him coming from the study of Wright’s early work<sup>39</sup>. In the making of plans, for Kahn, the square developed as a cruciform was the rule; for Van Eyck, on the other hand, the square developed as a pinwheel was equally the rule. For Kahn the inherent symmetry of the square as cruciform was to be retained and strengthened through the use of axes and projection; whereas for Van Eyck the symmetry of the underlying square grid was to be diverted towards diagonal spatial development through the use of shear and rotation [fig. 11].

Where Kahn often employed nested symmetrical volumes ordered by the square and the medieval proportioning system of “rotated squares,” Van Eyck tended to employ asymmetrically attached pure geometric volumes, ordered but not made symmetrical by the grid. Both architects also regularly employed the grid, but, whereas Kahn most often developed symmetrical, axial, tartan (a-b-a) gridded precincts, as an overall rectangular form encompassing all spaces, Van Eyck tended to break the

38 Lohse quoted in Vincent Ligtelijn (ed.), *Aldo van Eyck: Works* (Basel: Birkhauser, 1999), 296. The complete interview is reprinted, in Dutch, in *Niet om het even... welevenwaardig, van in over Aldo van Eyck* (Amsterdam: Van Gennep, no date), 18-9.

39 Louis Kahn, “I always start with a square, no matter what the problem is”, in Heinz Ronner and Sharad Jhaveri (ed.), *Louis I. Kahn: Complete Works, 1935-1974*, 2<sup>nd</sup> ed. (Basel: ETH/Birkhauser, 1987), 98.

symmetrical and axial order of simple (a-a-a) grids, allowing strong diagonal development or “dispersal” of space, as he called it. Despite their differing uses of the grid and geometries, Kahn and Van Eyck both tended to construct similarly polycentric plans.

The final parallel to be drawn between Kahn and Van Eyck is their respective manners of engaging the architecture of the city, or urban design. It is important to note, in light of Van Eyck’s similar comments at the Otterlo conference, that sixteen years before, in 1943, Kahn had published neighborhood planning diagrams that included the statement: “The plan of a city is like the plan of a house”<sup>40</sup>. The (unacknowledged) source for this analogical relation between house and city, engaged by both Kahn and Van Eyck, is Leon Battista Alberti’s *On the Art of Building*; “If (as the philosophers maintain) the city is like some large house, and the house in turn is like some small city, cannot the various parts (rooms) of the house – atria, xysti, dining rooms, porticos, and so on – be considered miniature buildings?”<sup>41</sup> Both architects also engaged Alberti’s implication that, if a city is like a large house, its urban spaces (stoa, forum, street, plaza) could be conceived as rooms, or interior spaces of the city.

Late in his life, Kahn made this understanding of urban spaces as rooms quite explicit in his lecture, “The Room, the Street, and Human Agreement.” He began with the room and ended with urban spaces of the city; “The room is the beginning of architecture [...] The plan is a society of rooms [...] The street is a room of agreement [...] Dead-end streets in cities today still retain this room character. Through-streets, since the advent of the automobile, have entirely lost their room quality. I believe that city planning (should) reinstate the street where people live, learn, shop and work as the room out of commonality. The street is a community room [...] A long street is a succession of rooms”<sup>42</sup>.

Van Eyck believed that all inhabited rooms – including exterior rooms such as urban squares – are fundamentally interiors, and held that all spaces designed by mankind, whether inside or outside, rooms or streets, must be fundamentally conceived and experienced as interior spaces. “For thirty years architecture – not to mention urbanism – has been providing outside for man even inside (aggravating the conflict by attempting to eliminate the essential difference). Architecture (sic urbanism) implies the creation of ‘interior’ both outside and inside, for ‘exterior’ is that which precedes man-made environment; that which is counteracted by it; that which is persuaded to become commensurate by being interiorized”<sup>43</sup>. For Van Eyck, the quality of interior experience is all that matters: “It is not space that counts ultimately, but the *interior* of the space and, above all, the *inner horizon* of that interior – whether it is inside or outside”<sup>44</sup>.

At Otterlo, Kahn showed his urban plans for Philadelphia calling for garages, or “wound-up streets”, as he called them, to be placed around the perimeter of downtown, a modern “wall” of cylindrical masses (similar to the walls of Carcassonne and Albi) defending the city from the destructive effects of the automobile. Kahn stated: “A city is a framework which is based upon movement”, arguing that the new order of the city should come from zoning the streets first, as to their nature and the kind of traffic they carry, thus “giving automatically the use of environments and buildings.” Kahn made the intriguing suggestion that “the street in the middle of the town [...] is really a contour, it is really a level, it is really a building”<sup>45</sup>, of which we treat the roof as “ground”. In Kahn’s complexly interwoven plans for Philadelphia, he articulated the various types of movement, and the scales of urban block each implied, all in a horizontally layered design that was zoned not in plan, but by levels and street types. Coming as it did at the moment the Team 10 members were developing their concepts of “web” planning, low-rise high-density horizontal layered urban structures, Kahn’s presentation at the conference was full of meaning for the concept of the “mat building”, the Team 10 building-type *par excellence* [fig. 12].

While fifteen years later, Alison Smithson would include Kahn’s urban designs for Philadelphia in her 1974 article, “How to Recognize and Read a Mat Building”, she would leave out Kahn’s Trenton Jewish

40 Illustration by Kahn, in Louis Kahn and Oscar Stonorov, *Why City Planning Is Your Responsibility* (New York: Revere Copper and Brass Company, 1943).

41 Leon Battista Alberti, *On the Art of Building*, Vol. 9 (Cambridge: MIT Press, 1988), 23.

42 Latour, *Louis I. Kahn*, 263-6.

43 Van Eyck, Ligtelijn and Strauven, 571, 118, 319.

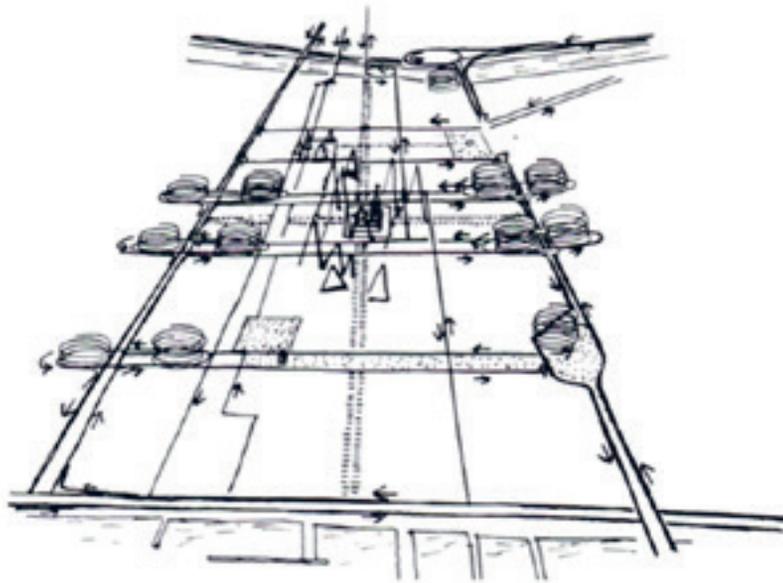
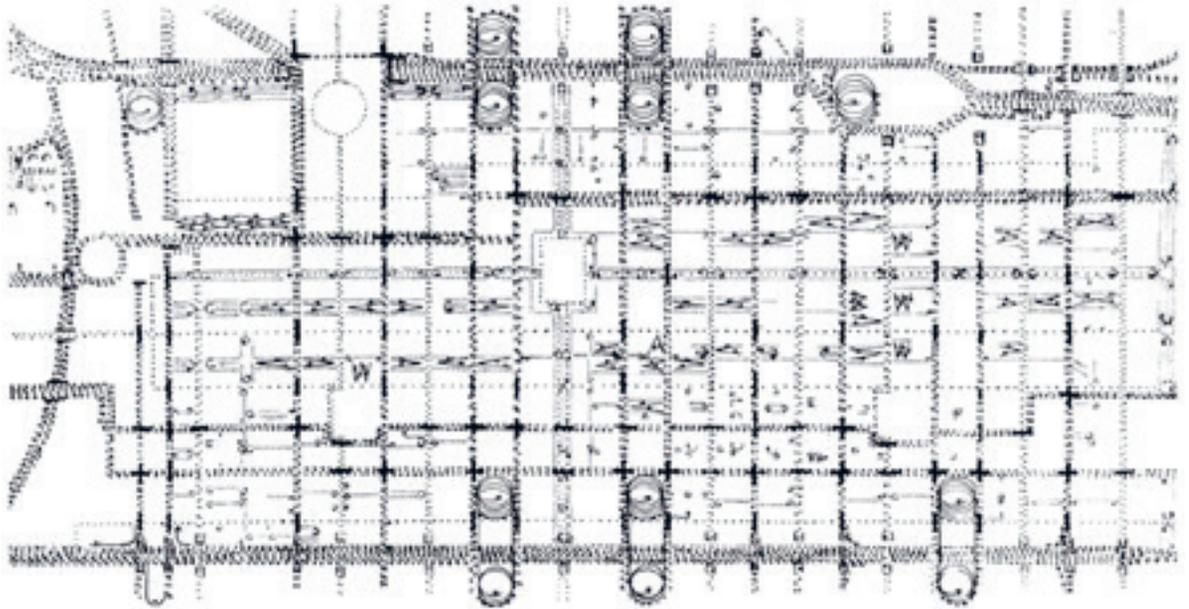
44 Ligtelijn, *Aldo van Eyck*, 201.

45 Laour, *Louis I. Kahn*, 95, 87, 82-83.

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[Fig. 12]

1. Louis I. Kahn, street plan for Philadelphia, 1952-57.
2. Louis I. Kahn, urban plan for Philadelphia, 1952-57.

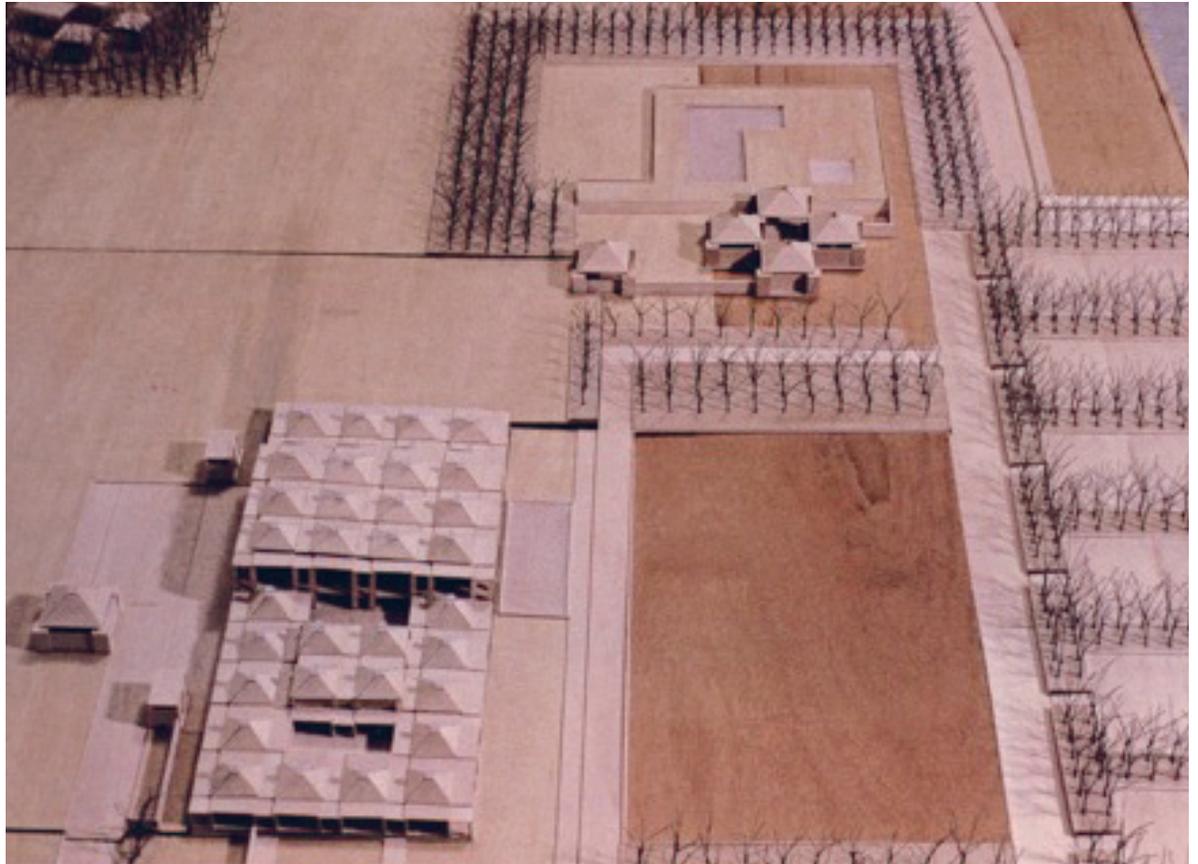
Community Center<sup>46</sup>. Perhaps this was in Team 10 familial deference to Van Eyck's contemporary Orphanage, which she characterized as the first true mat building. But how to explain the continuation of this oversight in the recent Harvard publication, entitled *Le Corbusier's Venice Hospital and the Mat Building Revival?* In this otherwise admirable 2001 publication, Smithson's seminal mat building article is reprinted, with an addendum of updated examples, and yet Kahn's Trenton Jewish Community Center is not mentioned once anywhere in the book<sup>47</sup>. This is all the more troubling when one examines the chronology of mat building "prototypes" leading up to, and likely influencing, Le Corbusier's Venice Hospital project of 1964 – one of the most fully evolved mat buildings ever conceived. This begins with the extensive exposure Kahn's third design for the Trenton Jewish Community Center received in both Europe and the US when it was published in the May 1957 issue of *Architectural Review*, a British magazine, and in Volume 4 of Yale University's *Perspecta* that same year – two years before the Otterlo conference [fig. 13].

As Kenneth Frampton has indicated, Le Corbusier's Venice Hospital project was clearly influenced by the work of Team 10 member – and former Le Corbusier atelier employee – Shadrach Woods<sup>48</sup>. Woods, as one of only three Americans among the 43 attendees of the Otterlo conference, had an intense

46 Alison Smithson, "How To Recognize and Read a Mat Building", *Architectural Design* (September 1974).

47 Hashim Sarkis (ed.), *CASE: Le Corbusier's Venice Hospital and the Mat Building Revival* (Cambridge: Harvard Design School, 2001).

48 Kenneth Frampton, *Le Corbusier* (London: Thames and Hudson, 2001), 224.



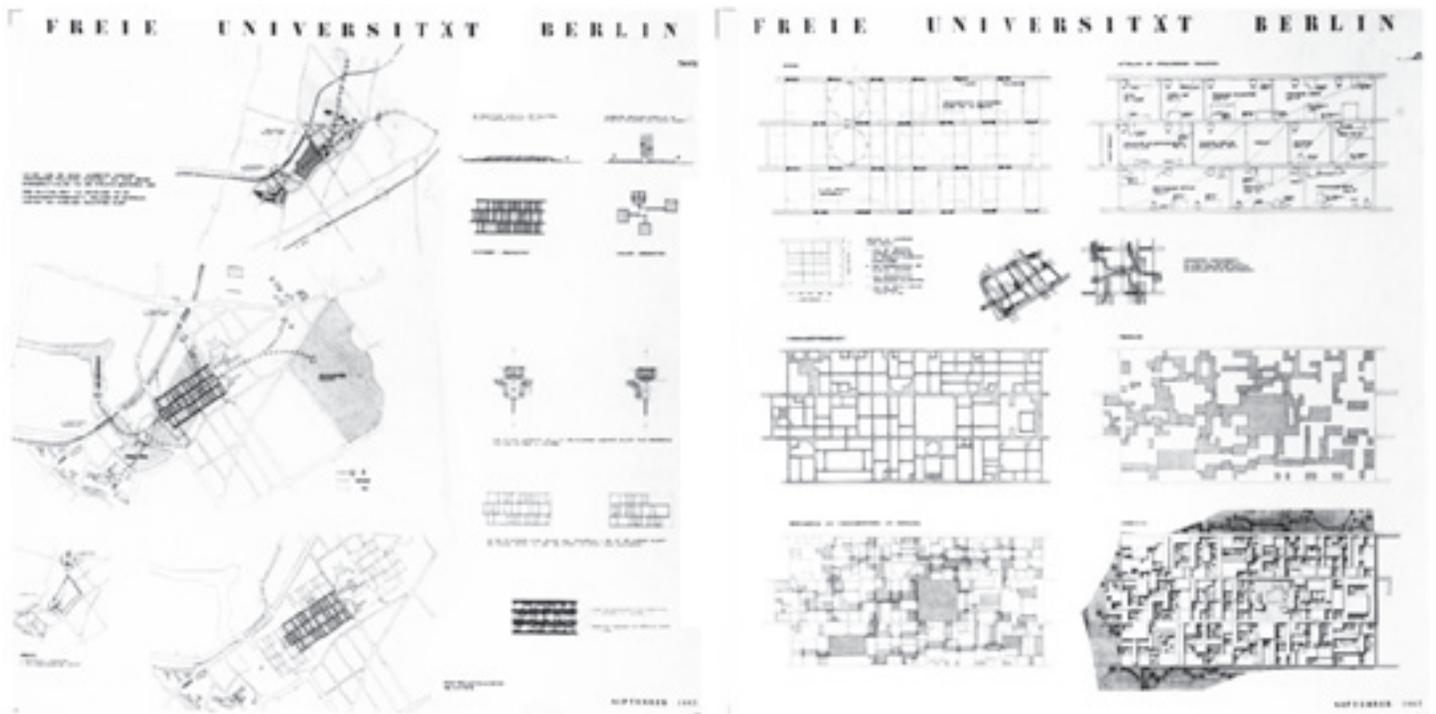
[Fig. 13] Louis I. Kahn, aerial view of model of Trenton JCC, 1957; (model made under supervision of author in 1995).

interest in the designs Kahn presented there. Four years later, in 1963, in partnership with Georges Candilis and Alexis Josic, Woods designed two astonishing competition-winning schemes that are generally understood to be the first true modern mat buildings: the plan for the war-devastated center of Frankfurt-Main and the plan for Berlin Free University. Only the latter would be realized, but we are here more concerned with the influence these projects held for Le Corbusier in his design for the Venice Hospital of the following year.

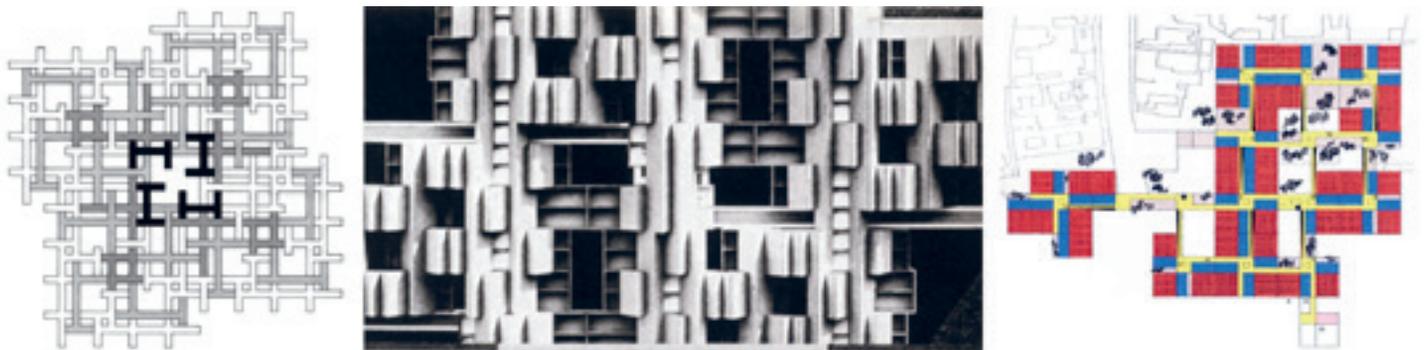
Both of Woods' designs are based upon a rectangular tartan grid of movement paths separated, in plan and section, from both the served volumes and the existing ground plane. Both are also defined within overall rectangular forms, though the Frankfurt-Main design is adjusted to fill in the irregular edges of the bombed-out site. The Berlin Free University, despite its equally irregular, if suburban site, is held within a rectangle that is, we should note, of the exact same proportions as Kahn's Trenton JCC. Despite Smithson's editing Kahn's Trenton JCC out of her mat building chronology in favor of Van Eyck's equally important Orphanage, neither of the Woods' designs partakes of Van Eyck's aggressive diagonal dispersal of the initiating grid form of the Orphanage [fig. 14].

It can be argued that Van Eyck's strongest influence on Le Corbusier's Venice Hospital design came not through his own Orphanage but by way of the work of his student, Piet Blom. Van Eyck had presented Blom's project, "The cities will be inhabited like villages," at the Otterlo conference in 1959, and at the 1962 Team 10 meeting at Royaumont, Van Eyck, who had not received any commissions since the completion of the Orphanage, chose to present projects by his students, including "Noah's Ark," Piet Blom's diploma project, an urban structure for a million inhabitants between Amsterdam and Haarlem. While Blom's design was severely criticized by the Smithsons, it was immediately appreciated by Guillermo Jullian de la Fuente, Le Corbusier's partner, who in 1964 invited Blom to exhibit his work in the Paris office of Le Corbusier. Jullian and his associates were immediately taken by Blom's "Housing as an urban roof" project of 1964, a dense fabric of interwoven pinwheel housing forms elevated to the roof to create a horizontal, mat-like building, with communal activities placed among the structural piers in the shadowed space beneath – all remarkably close to Le Corbusier's eventual design for the Venice Hospital [fig. 15].

It was the Berlin Free University design – the one so remarkably close to Kahn's 1956 Trenton JCC – that Woods showed Le Corbusier sometime in 1963, as well as Blom's "Housing as an urban roof" – inspired by his teacher Van Eyck's Orphanage and pinwheeling urban designs – that Jullian (partner



[Fig. 14] Candilis Josic and Woods, Berlin Free University, 1963; conference presentation panel.



[Fig. 15] 1. Piet Blom, "Noah's Ark," 1962; urban plan. 2. Piet Blom, "Housing as an urban roof," 1964; model of roofs. 3. Le Corbusier, Venice Hospital, 1964-65; plan of upper, patient room floor.

in charge of the Venice Hospital)<sup>49</sup> showed to Le Corbusier in 1964, which Le Corbusier subsequently used as the starting points for his design of the Venice Hospital, along with Le Corbusier's own 1925 Cité Universitaire project, a mat building far *avant le lettre*. Thus we come full circle, with Kahn's tartan-gridded Trenton Jewish Community Center – developed as a reaction against the free plan column grid and flat, unarticulated slab of Le Corbusier's immensely influential Maison Domino, the type-form for the International Style of mid-century modernism – joining the equally anti-International Style pinwheel circulation systems in Van Eyck's Orphanage and urban designs, along with his student Blom's urban designs, as the primary sources for Le Corbusier's late exploration of another kind of modern architecture and urbanism, the mat building. And today's mat building revival indicates the continued potential inherent in this design concept, one among many that were shared by Kahn and Van Eyck.

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49 Jullian has indicated the influence of the Blom "Housing as an urban roof" project on the Le Corbusier office's Venice Hospital design in a 1984 interview with Strauven, *Aldo van Eyck*, 468; this has been confirmed in the author's discussion with Le Corbusier's other partner at the time, Jose Oubrierie, December 2007.

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