

THE PHILADELPHIA SCHOOL: 1955-1965
A Synergy of City, Profession, and Education

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I. BACKGROUNDS

The Philadelphia School

In the April 1961 issue of *Progressive Architecture*, Jan Rowan published his article, “Wanting to Be: The Philadelphia School.” “Wanting to be,” of course, came from Louis Kahn. “The Philadelphia School” was the first outside identification of what has since been recognized as one of the most fertile sources in contemporary architecture, one which has spawned or deeply influenced many of the most important directions architecture has taken in the past twenty years.¹

Over the years, the Philadelphia School has become identified with Kahn and Venturi. While both are important figures, overemphasizing their roles misses the point of a unique convergence of city, practice, and education, each in a period of renewal, and all serving as a backdrop for the growth of maturing personalities and the evolution of a philosophy of architecture.

Seen most broadly, the Philadelphia school might be defined as activity in city planning, the architectural profession, and architectural

¹In preparing this article, we interviewed Dean G. Holmes Perkins, Romaldo Giurgola, Robert Geddes, George Qualls, Robert Venturi, Denise Scott Brown, Edmund Bacon, and Steve Goldberg. We drew most heavily, however, on our own experiences between 1959 and 1966 as students at Penn (Mimi: B.A. 1963, M. Arch. 1966; John: B.A. 1963, M. Arch. 1965, M. Arch. 1966 in architectural theory, not in Kahn’s studio.) As much as thanking those who gave so generously of their time to speak with us, we would like to apologize to those whom we did not interview. We realize that the Philadelphia School means many things to many people, and to the extent that we may have omitted, misrepresented, or misinterpreted anyone, we hope that further research and writing on this subject can bring forth more of what is a complex story.

education, centered around the Graduate School of Fine Arts (GFA) at the University of Pennsylvania between 1955 and today. In this article, we have greatly narrowed the subject to deal primarily with the seminal bachelor of Architecture program at the GFA from 1960 to 1966. While an important part of the Philadelphia School is the synergistic relationship between the city, the profession, and the school, and between the various programs in the school, and while much has happened since 1966, we believe that the subject and the program we have chosen represent the core of what was the Philadelphia School's "golden age." At that time students chose among Romaldo Giurgola, Robert Geddes, George Qualls, and Robert Venturi for their studio critics; Kahn and Venturi were radically transforming modern architecture; Robert Le Ricolais was building experimental structures; Karl Linn was applying Zen Buddhism to architecture and pioneering vest pocket parks; Paul Davidoff was raising the issue of poverty and developing advocacy planning; David Crane was working on the capital web; Ian McHarg was questioning progress in western Culture and advancing urban and regional ecology; Herbert Gans was moving into Levittown; Denise Scott Brown was forging a syncretism of European and American planning theory; and Edmund Bacon was directing the most active planning commission in the country. Despite our desire to narrowly focus this article on the Bachelor of Architecture program, the fact of convergence makes it necessary to discuss other areas as well. In this section we mention the renewal of the city, the profession, and the school. The description of Bacon's planning efforts is long because of the importance of the relationship between the school and the city. The description of the profession is very brief, since we go into it in more detail in the section titled "philosophy," where we describe the work of several Philadelphia School

architects, and draw some general conclusions about what characterizes their architecture. In “Curriculum,” we describe the education at Penn. In “Conclusions,” we comment on the place of the Philadelphia School in modern architecture.

City

Philadelphia has several strong architectural traditions, including William Penn’s five squares, the diagonal Benjamin Franklin Parkway, Frank Furness, PSFS, and bricks. However, by the early 1950’s, it had experienced sixty years of single party machine rule (mostly corrupt) which had left it in both spiritual and physical decay: “Second prize, two weeks in Philadelphia.” When Joseph Clark was elected reform mayor in 1952, Edmund Bacon (who had begun to meet with energetic young citizens to plot reform in 1939) was Director of the City Planning Commission. Bacon was educated at Cornell in the Beaux-Arts tradition, worked in China, and studied with Eliel Saarinen. He has a broad grasp of urban form and a Hegelian sense of changing spatial concepts in different cultural periods. Bacon’s sense of history is indicated in his book, Design of Cities², which also documents the planning methods he used in Philadelphia and describes his use of Paul Klee’s concepts of movement as well as those of Baroque city planners. Lacking the money Robert Moses raised through the bonding power of his authorities, and the political power that Ed Logue had through ties with a strong governor, Bacon used ideas, and operated through the

² Design of Cities, by Edmund N. Bacon, revised edition, 197 , Viking Press, New York. Paperback, Pocket Books, 197 . The book includes both Bacon’s approach to the history of cities, and his methods and accomplishments in Philadelphia.

democratic process, which carried his work through the administrations of successive majors and governors.

Bacon believes that the professional's responsibility is to "structure the dialogue," providing the planning or architectural image to which governmental and community groups can respond. This contrasts sharply to conventional planning, which seeks to assess the future through surveys, and conventional architecture, which produces a design in response to a client's stated needs. Bacon's process is cyclical, moving from a comprehensive plan into area plans, an architectural image, capital program, and back to comprehensive plan. Thus there is a continually revised long-range view of overall planning goal to which specific plans relate. These overall goals also relate specific plans to each other. Similarly, there is a continually updated six years capital program broken down into both budget areas and geographical areas, thereby giving each neighborhood information on which it can act politically. Physically, this approach has led to a unified and continually developing downtown, where each project provides impetus for the eventual implementation of a neighboring project. This comprehensiveness contrasts strongly to such single monster renewal projects as Detroit's Renaissance Center, and to the scattered and chaotic process in New York. Today, Philadelphia's downtown is widely regarded as one of the most livable among older cities, and in the past ten years, center city population and employment have increased, running counter to national trends. The development of downtown Philadelphia has continued since Bacon's retirement, verifying the lesson he had learned from Pope Sixtus V: that strong organizing principles, once established, can shape a city after the time of its planner.

The energetic physical and political reformation of Philadelphia took place during a strong interaction between the school and the city. Bacon was on the Penn faculty, the dean of the school, G. Holmes Perkins, served as the chairman of the City Planning Commission, and various Penn faculty did research and design projects for the city. The master plan for Penn's Landing was done by Geddes, Brecher, Qualls, and Cunningham, and the early plans for Market Street East were done by Kahn and later by Mitchell/Giurgola.

Although there were strong ties between the GFA and the city, the relationship was not always harmonious. Much of the faculty in the planning department saw Bacon (who is an architect by education) as a physical designer with a proclivity for dated Baroque vistas, an ignorance of social issues, and a thirst for control over the future. Bacon saw the planners as being concerned with pure process, research, and celebration with no results or practical applications, and no sense of the human will. Philadelphia was not unique in developing this split between architects and planners, which is now widespread.³

School

Central to convergence of city, practice and education was the Graduate school of Fine Arts at the University of Pennsylvania. Like the city, the school had also experienced a decline, and its revitalization was undertaken by G. Holmes Perkins. Many of the people we interviewed for

³ A recent description of this split can be found in "On Architectural Formalism And Social Concern: A Discourse for Social Planners and Radical Chic Architects," by Denise Scott Brown, Oppositions 5, Summer 1976.

this article confirmed our belief about Penn, when they started interviews with: “Of course, it was Perkins’ School.”

From 1910 to 1920, Penn was considered the best school in the country under the Beaux-Arts master Paul Philippe Cret. Later George Koyl became Dean and remained until 1952, by which time there was pressure, including student unrest, for a change from the Beaux-Arts tradition Koyl had maintained by bringing in top prize-winning critics. While other schools had long since shifted to “modern” architecture, Penn had tried to build on the old. It was a dead end. In 1952, Perkins was selected as the new Dean of the GFA and Chairman of the Department of Architecture.

Perkins had graduated from Exeter, Harvard (Chemistry) and the Harvard Graduate school of Design (Architecture, 1929). He taught at Harvard and Smith until World War II, spent three years in Washington, D.C. working on housing, and later became the Chairman of Planning at Harvard while Walter Gropius was Chairman of Architecture, and Joseph Hudnut was Dean of the design school.

Perkins accepted the appointment at Penn on the understanding that he would have the president’s backing in making sweeping changes. In the early years of Perkins’s administration, Penn must have seemed like a transplanted Harvard. It was from there that he brought Gropius’s concept of the “total environment,” the idea of adding divisions of city planning and landscape architecture, a studio structure which integrated upper and lower students, and much of his faculty.⁴ Perkins made twenty-two new faculty

⁴ Perkins also added programs in painting, sculpture, and graphics, which strangely had been absent from the Graduate School of Fine Arts. An urban design program on the Masters level was added in an attempt to form a bridge between architecture and planning, but it in fact widened the gap by drawing physical design out of planning,

appointments in his first two years. To avoid the danger of building a school on expired ideas, which often happens when big names are brought in, Perkins relied on his extraordinary intuition about people and appointed mostly young unknowns who then developed in interaction with each other.

Committed to urbanism, Perkins is also a defender of egalitarian democratic ideals and a gentlemanly mode of professional conduct, both of which derive from his New England background. These commitments underlay all of the achievements of the Philadelphia School, but Perkins's real contribution was as an administrator, as the person who put the whole thing together. Perkins kept administrative and curriculum decisions to himself, encouraging philosophical discussion among the faculty. Geddes recalls: "There was sense that a new architecture and a new urban design was evolving. It was unselfconscious and was not looking elsewhere, except, to Corbu and Mies. We didn't go elsewhere to see what was happening; people came to Philadelphia, including Smithson, van Eyck, and Bakema. The evening Lou presented the Trenton Community Center, there was a feeling of being at the absolute frontier of architecture.

We should note that Penn's Department of City Planning, established by Perkins, was also extremely important during this period. However, its accomplishments are outside the scope of this article.

Profession

During the period under discussion, Philadelphia also saw a renewal in the profession. The city had had figures of architectural importance in the past: Frank Furness, Paul Philippe Cret, George Howe and Oscar Stonorov.

leaving it at a polar opposite from architecture. Kahn had a clear dislike for planning, feeling it to be necessary but as a function of the "marketplace" rather than the university.

But in the 1960s, the city blossomed with new offices, which were to become a major force in American architecture: Kahn, Mitchell/Giurgola, Venturi and Rauch, Wallace McHarg, etc. These offices put into practice the ideas being developed in theory in the school, and most faculty members were also practitioners.

II. PHILOSOPHY

Philosophical Unity

At one point Wittgenstein, suspecting that there is no single characteristic common to all forms of language, suggested that language is like a thread. No one fiber (characteristic) is continuous through the entire length of the thread, yet the fibers do overlap, and the thread does have continuity. Similarly, the Philadelphia School philosophy can be seen as made up of the individual philosophies of various architects, no two identical, but all overlapping and eventually forming a cohesive whole.

Modern Architecture

The Philadelphia school philosophy emerged in response to the limitations of the themes of the Modern Movement, which dominated American architecture by the 1950s. While these themes are complex and none appears in pure form in any one architect's work, some oversimplification will help us to present the situation against which the Philadelphia school reacted. These themes are the universal of Mies, the prototypical of Gropius, the particular of Le Corbusier, and, in reaction to these, the expressionistic of Saarinen.

The most prevalent of these themes was, of course, Mies's universal space. Having stipulated that most programs could be fulfilled in an open flexible space, Mies's primary interest in architecture became the enveloping of that space. The Miesian approach separated the building from function, both as programmatic use and as institutional meaning. Thus, as Jencks notes, we have no way of distinguishing which building at IIT is Mies's

boiler plant and which is his chapel. Mies also separated the building from its urban context as can be seen in his photomontage of the IIT campus into a Chicago neighborhood, completely ignoring surrounding conditions. Finally, Mies also distanced architecture from technology. His concern was more often with an idealized image of technology than with how a building is actually put together.

Gropius's prototypical architecture is best seen in his Total Theater (1927), which was presented as the solution to the theater, applicable in any time or place for any form of theatrical production. In the early 1950s, the prototypical approach was used by Breuer, Johnson, Johansen, and Franzen in attempts to find the solution to the house, with differentiation between public and private space the central issue. The limitation of this approach was that it produced an architecture which had no relationship to a given time or place. It did involve a deeper investigation of the institution to be housed, but it attempted to understand that institution independent of any cultural or physical context.

In reaction against the sparseness of the early Modern Movement, Le Corbusier, in his post-War buildings, began to search out particular details in function to generate articulation in form. In this country, Eero Saarinen sought expressionist alternatives to the sparseness of the Miesian box. The Philadelphia School was not influenced by Saarinen's expressionism, but it was influenced by Le Corbusier's interest in the relationship between program and form. The Philadelphia School's response to the limitations of the Modern Movement was the development of what we have termed an archetypal approach.

Louis Kahn and Archetypal Architecture

As developed by Louis Kahn, an archetypal approach searches for the essence of an activity, the motivating collective mind-forms that are then inflected in a building through the circumstances of a unique combination of site, client, labor, budget, etc. (We have borrowed the term from mythological archetypes, which have both universal and local characteristics.) Kahn used the term “Form” to mean the archetypal and “Design” to mean the circumstantial. It is the “existence will” inherent in archetypal forms which propels them into concrete “realization” through Design.⁵

Taking the example of a school, when Kahn asked, “What does this building want to be?” he was asking what is the archetypal meaning of the institution of education. To find this meaning is to find the Order of the architecture which will serve that institution. This is what allows a building to participate in “architecture,” to which it is an “offering.” Thus an archetypal solution transcends the universal in that it is for education, not just for nay function which fits the space, it transcends the particular in that it serves the spirit of school as well as its particular functions, and it transcends the prototypical through its concern with finding the more general Forms (“Form” in Kahn’s sense) which respond to deep and timeless human patterns rather than the more specific shapes which respond only to

⁵ For Kahn’s philosophy see Between Silence and Light: Spirit in the Architecture of Louis I. Kahn, by John Lobell, Boulder: Shambala, 1979. Also see Louis I. Kahn by Romaldo Giurgola and Jaimini Mehta, Boulder: Westview, 1975. Also see “Kahn and Venturi, an Architecture of being in Context,” John Lobell, Artforum, February 1978. For Kahn’s architecture see Louis I. Kahn, Complete Works, 1935-74, by Heinz Ronner et al., Boulder: Westview, 1977. Responding to lobbying by a great cross-section of people, the Pennsylvania Legislature, in an unprecedented action, saved in one piece all of Kahn’s papers and drawings to be kept under the custody of the University of Pennsylvania and housed and exhibited in the Furness library.

transitory social patterns. And, unlike prototypical solutions, archetypal architecture does not aspire to “the solution” which can theoretically be repeated at any time in any place, since its archetypal referents derive their expression and vitality from specific local conditions.⁶

Kahn was educated in the Beaux-Arts tradition under Paul Philippe Cret at the University of Pennsylvania, and while he absorbed the lessons of Mies and Corbu as thoroughly as any of his contemporaries, he struggled throughout his life to reintroduce traditional values into architecture. In the mid-1940s, Kahn envisioned what he then termed a new “monumentality,” one that would express such “monuments” as schools, churches, and cultural centers, but would also respond to new materials, such as steel with welded joints, tempered glass, and plastics. The architecture he envisioned at that time had a futurist, even science fiction quality to it.⁷ Eventually, Kahn was to differentiate “monumentality” into two qualities, Order and institution. Order refers to existence will, to underlying essence. He came to see Order as a universal principle, like Lao Tzu’s Tao, and said only, “Order is.”

Institutions provided for Kahn the substance of architecture. Thus for him, architecture was not a visual or spatial art, but rather the art of institutions. Architecture is always for a human institution: the home, the church, the school, the place of work, etc. To design a good school, one must go back to the “beginning” of education, to its origin in the common

⁶ It is this archetypal concern that ties Kahn to the Beaux-Arts as well as to Jungian, Buddhist, and Taoist concepts of the relationship between consciousness and form. Any Tyng, who collaborated with Kahn, has made similar but more systematic explorations of the archetypal origin and evolution of geometric forms in human consciousness.

⁷ Later, Kahn’s interest in new materials became tempered by practical reality, although his use of precast, prestressed and post-tensioned concrete in the Richards Medical Towers, and partially finished stainless steel for the Yale British Studies Center, indicate that his experimental attitude continued. Kahn was, however, most comfortable with masonry.

will. When it is in touch with this origin, the institution is vital. Out of touch with it, the institution and the building are lifeless.

While most of the architecture of the 1950s and 1960s was Miesian, there was more than one interpretation of Mies. Philip Johnson pursued elegance, SOM the universal of corporate space, and the Smithson's the quality of how building elements are put together. Kahn's approach was closest to the Smithson's in that he was very concerned with material reality, and for a while he shared the designation "New Brutalist" with them. But actually, Kahn's concern was with structural order and the relationship of that order to functional meaning. In the Yale Art Gallery, Kahn divided served and servant spaces, using the columns to set them apart. He also used a tetrahedral ceiling truss to house ducts and lighting in a more integrated fashion than hiding them under a hung ceiling. While the intentions of the Yale Art Gallery are clear, some of this clarity comes, we feel, from Kahn's method of rendering the plan. It is not until the Richards Medical Towers that these intentions are fully expressed in the building.

The Richards Medical Towers brought all of Kahn's ideas together, and its presence was particularly felt at Penn, as it was under construction on the campus during much of the time discussed in this article. The Medical Towers derived its configuration from a close investigation of the activity of the scientists, providing separate column free areas with natural light at the periphery. (This configuration has brought much criticism, and Kahn used a different arrangement for the Salk Laboratories.) The building also has a clear articulation of structure and of served and servant spaces. August Komendant, a pioneer in concrete technology, was the engineer, and the depth of their investigation of how a building is put together is probably unparalleled in modern architecture.

The Philadelphia School followed Kahn into the intense investigations of the Medical Towers, and its lessons were absorbed into the design studios both by the other faculty members and the students. However, his subsequent development, while appreciated, was not similarly absorbed. In the Salk Laboratories, Kahn used a configuration which suggests a mandala, working from the outside to the inside, from body (service towers), to mind (laboratory spaces), to society (walkways), and finally to spirit (monastic offices and the cathedral-like court.) Kahn became interested in timeless qualities of the human spirit as can be seen both in his buildings and his poetry. He became concerned with the origin of things beyond time (“volume zero”), with essential Order, and with an intense philosophical understanding of the human place in nature.

Meaning and Western Culture

At the beginning of Sticks and Stones, Lewis Mumford quotes W.R. Lethaby: “Architecture, properly understood, is civilization itself.” An archetypal approach to architecture implies a response to the particular circumstances of the time and place of the building, but it also implies an understanding of civilization, of the cultural background from which the particular expression ultimately derives its meaning.

At Penn, there was an in-depth exploration of Western culture in order to base architecture on the footings of our historical traditions. One way this was evident was in the Hegelian sense of different periods, which was the theme of several history and theory courses that reinforced each other. Tatum’s History of Landscape Architecture was ideally sited to make the point, as gardens afford an opportunity for designers to realize their ideas purely, uncompromised by the realities of existing cities. The progression

from the small enclosed medieval gardens, to the geometric Renaissance gardens, to the axial Baroque gardens, to the naturalistic English gardens affords a picture of the evolution of Western society and consciousness through these periods. Perkins presented a similar progression in his course on the histories of London and Paris, and reinforced the concept with readings from Spengler's Decline of the West. Bacon's History of Cities course also pursued this idea. Bacon also used McLuhan in his analysis of the impact of automation and mass media on post-industrial society. This analysis of the impact of technology on consciousness, and therefore on culture and the arts, strongly parallels that of Lukacs and the "Western Marxists," although there was no mention at Penn of these European thinkers, with the exception of Merleau-Ponty, who was referred to by Giurgola in his theory course.

Romaldo Giurgola was educated at the University of Rome and at Columbia University. After teaching at Cornell he came to Penn, where he taught design and theory. His theory course brought the investigation of culture into concentrated focus on the industrial era, presenting the development of modern architectural theory from the 1750s until today: The course covered a whole range of social, esthetic, and philosophical issues: the various schools, academies, and movements (Beaux-Arts, Art Nouveau, Bauhaus, etc.); utopian visions, the industrial city, and new towns (Fourier, Owen, Garnier, Howard, Corbu, Wright); the impact of developments in other fields (Einstein's theory of relativity, cubism, futurism, phenomenology); and the cultural, psychological, symbolic, functionalist, linguistic, and spatial definitions of architecture and esthetics. Where Venturi's references were exclusively architectural, Giurgola's reading list included Hegel and Merleau-Ponty, along with Alberti.

In her course on city planning, Denise Scott Brown surveyed contemporary planning theory. Scott Brown came to Penn as a graduate student in planning and architecture, having previously studied at the Architectural Association in London. She joined the faculty in 1960 and attempted to form a bridge between architecture and planning, teaching planning theory in the architecture program, and basic design in the planning program. Her course for the architects was “Contemporary theories with special attention to their relevance to current professional problems in the design of the urban environment,” surveying historical (Ebenezer Howard, etc.) and contemporary (the Smithsons, CIAM, Team 10, etc.) planning theory. Following van Eyck’s dictum “house is city and city is house,” the principles were extended to buildings through an analysis of their circulation systems, the means by which they are perceived and used, and the similar organizational problems that buildings and cities present.

In her articles, Scott Brown made a direct contribution to the School’s interest in meaning. In “The Meaningful City” (Journal of the American Institute of Architects, January 1965, but distributed to her students several years earlier), she raises the issue of the meaning given by the perceiver to the object perceived in a medieval town and a modern city. She identifies heraldry (written and graphic signs), physiognomy (building shapes) and locational patterns as the sources of urban meaning. In this article, she is unable to identify a system of meaning in the modern city, but she does in a later article, “On Pop Art, Permissiveness and Planning” (The Journal of the American Institute of Planners, May 1969.) Here she identifies popular culture as a source of contemporary meaning. While Venturi’s earlier references to “pop” had been to Jasper Johns, here Scott Brown refers to Ed Ruscha’s photographs of parking lots, gas stations and Los Angeles

apartment houses. This article appeared after she taught in Los Angeles (1965-68), an experience that probably intensified an interest in popular culture she had acquired in Africa where she was born, and in England where she was exposed to the Smithsons and their circle. This interest has since found expression in Learning From Las Vegas (MIT, 1972), which she co-authored with Venturi and Izenour, in Signs of Life, a show on popular culture mounted at the Renwick Gallery in Washington, D.C. (1976) by the firm Venturi and Rauch, of which she is a partner, and in her planning work for the firm.

Before moving from the cultural analysis made at Penn to particular manifestation in architecture, it is necessary to digress from the concern with Western culture and look at a criticism of Western culture and a concern with non-Western cultures that was also present in the School. It is interesting to note that the three figures primarily responsible for these concerns were all in the Department of Landscape Architecture. These concerns have already been hinted at in the description of Kahn's philosophy, which rejects the nineteenth century materialism and progress which still dominate much of our thought. Kahn's approach is also quite different from the spiritual concerns of such modern architects as Mies and the German Expressionists, who see the human spirit as separate from nature and in a state of evolution. Kahn's view parallels Wright's in seeing human consciousness as an integral part of nature. Thus it is basically an Eastern view.

The strongest analysis of non-Western culture in the school came from Aldo van Eyck, a Dutch architect who was a visiting critic in landscape architecture. Van Eyck is interested in the integration of architecture and cultural values, as can be seen in his work on the Dogon in Africa, in which

he showed that the organizing forms underlying their concepts of the cosmos, the house, the person, the basket, are all necessarily related. In his talk at CIAM'59 in Otterlo, he described the integration of the inside and outside, the city as house and the house as city (as seen in his Amsterdam Children's Home.)⁸ He also spoke of the "inbetween realm," the place of transition between inside and outside in a way that parallels Kahn's description of the Treasury of shadow between Silence and Light. The complexities and ambiguities revealed in van Eyck's explorations must have had some influence on Venturi, and the typically Brutalist organization of van Eyck's Amsterdam Children's Home probably influenced Geddes's Delaware Dormitory.

Another who questioned Western culture was Karl Linn, whose experiences under the Nazis in Germany left him with a passionate need to explore human nature and to work for a strengthening of human community. Teaching landscape architecture at Penn, he explored the relationship between architectural space and human psychic space, sometimes using principles of Zen Buddhism. Feeling a need to transcend the confines of the classroom, he took his students out into various local communities where they pioneered in the building of vest pocket parks and in advocacy planning.

Lewis Mumford was a figure in the background of the Philadelphia School. He was a frequent visitor on the faculty between 1956 and 1962, and his humanism, his analysis of technology and culture, and his interest in

⁸ Van Eyck's talk, "Is Architecture Going to Reconcile Basic Values," is in New Frontiers in Architecture, CIAM'59 Otterlo, by Oscar Newman, Universe Books, New York, 1961. Also see articles by van Eyck in VAI 1, Ecology in Design, The student Publication of the Graduate School of Fine Arts, University of Pennsylvania, Philadelphia, 1968; also in Meaning in Architecture, edited by Charles Jencks and George Baird, George Braziller, New York, 1969.

Patrick Geddes underlie much of what happened at Penn.⁹ Mumford's interests in ecology were particularly influential on Ian McHarg. As a landscape architect, McHarg found himself in an interesting position at Penn. What was the relevance of landscape architecture in a school that had established so intense an urban commitment? The answer came in a redefinition of landscape architecture, and McHarg applied the term "ecology" outside of a biological context in his course, Urban Ecology. This interest was later expanded in his "Ecological Regional Planning" program, and the approach is described in his book, Design With Nature.¹⁰ While committed to urbanism, McHarg was also a severe critic of it, developing in his Man and Environment course an analogy between cities and cancerous growths. One of the guest lecturers in the course was Alan Watts, whose fundamental criticism of Western experience paralleled that of McHarg. This criticism could be seen in several places at Penn, in Mumford's dissatisfaction with urban development since the Renaissance, in van Eyck's appreciation of the cultural integration of the Dogon, in Karl Linn's Zen parables, and in Kahn's poetry, which strongly paralleled that of Lao Tzu, but McHarg was the most outspoken.

Context

The broad analysis of meaning in cultural and historical terms must eventually be rendered into expression in a particular context. A building exists in a physical as well as cultural context, and meaning is impossible

⁹ For some of Mumford's writing on architecture during this period, see Lewis Mumford: Architecture as a Home For Man, Essays For Architectural Record, edited by Jeanne Davern, New York: Architectural Record Books, 1975.

¹⁰ Design With Nature. Ian McHarg, Garden City, New York: The American Museum of Natural History, The Natural History Press, 1969.

without context. A free-floating building is as meaningless as a free-floating statement. The Philadelphia School advocated an anonymous or background architecture, your building will exist among buildings that came before and that will come after. Perkins refers to a “relationship to the environment which includes historic traditions. You behave like gentlemen to your neighbors.” The Philadelphia School was acutely conscious of the city, specifically the city of Philadelphia, as the setting for its buildings. As mentioned earlier, Philadelphia was a laboratory for the ideas being explored in the school, and the school and the city were strongly related, with Perkins serving as the Chairman of the City Planning Commission, and Bacon teaching at the school and using Penn faculty members for urban design projects.

In the curriculum, a city planning course by James Murphy confronted planning issues concretely in the context of the revitalization then ongoing in Philadelphia. For example, Society Hill was investigated in terms of the history of the area and the project, the legislation and zoning, the competition selecting Zeckendorf and I.M. Pei, the technology of poured-in-place concrete, and the restoration of historic houses—all thoroughly presented through reading, class discussion, guest lectures, and site visits. This two-semester course covered modern planning theory, as well as several other projects in similar detail.

The architectural expression of the Philadelphia School’s concern for context is best seen in Kahn’s Medial Towers with its use of red brick, a traditional Philadelphia material and the dominant material on the campus; its use of precast concrete, a locally available state-of-the-art technology; and its careful siting between two existing buildings and in relationship to the Men’s Dormitories.

Before the Medical Towers, Kahn did the plans for the Trenton Community center, which established much of the direction of Philadelphia School architecture. Here the International Style grid was radically altered, adopting a three-part hierarchy of small squares, rectangles, and large squares, allowing for a variety of different room sizes which could still keep a relationship to the structure. Corbu's free plan had separated structure from partition, thus responding to non-bearing wall architecture, but also separating function from structural order. Kahn made a sketch of a person sleeping with a grid line cutting through him and said that you cannot sleep in two rooms at the same time. The Trenton Community Center grid even provided an orderly way to include very large spaces such as the gym. It also had a hierarchy of column sizes, which permitted smaller columns for light loads and larger columns for heavy loads, while keeping both within the same scale through sharing the same width. The quality of distinct spaces (as opposed to Mies's universal space) was further emphasized by pavilion-like roof segments with skylights.

Several of Kahn's concerns—as strong relationship with the site, the use of traditional materials, a Brutalist cluster organization, and a strong relationship between form and program, are evident in Robert Geddes's work. Geddes had studied at Harvard. At Penn, he was at first interested in structural determinism. His first building, the Moore school of Electrical Engineering on the Penn campus, is a small gem of early Philadelphia School architecture. The waffle slab ceiling used an innovative system of cardboard form work.

Geddes's broad humanistic interests later led him to the psychologist Dr. Humphry Osmond, a pioneer in the study of the effects of space on behavior. Working with Osmond, Geddes designed a University of

Delaware dormitory complex, which uses a topological arrangement of social hierarchies. The dorm rooms share a corridor node, groups of rooms share a dorm counselor's room and stair, these groups then share an entrance and lounge space, several of these "houses" then share a dining hall, etc., etc. Geddes taught a studio with Osmond as a guest critic, which applied these principles to a mental hospital.¹¹

This topological approach to social hierarchies was strongly related to the organization of Jan Eyck's Amsterdam Children's School, and to Kahn's Medical Towers. Geddes later rejected this "close fit functionalism" approach as being too socially deterministic. The criticism was summarized in the observation that the building responded to all of the needs of a prototypical student, but an actual student may wish to live with three roommates in town near a part-time job. The field of "environmental psychology" is just beginning to deal with these ideas in architecture.

The strongest manifestation of concern for a particular response to particular circumstances can be seen in the work of Robert Venturi. Discussions of the Philadelphia School often seek to relate Louis Kahn and Robert Venturi. The relationship lies, we feel, in Venturi's ability to address the issues raised by Kahn in a vocabulary responsive to contemporary American culture. The Philadelphia School sought to avoid monumentality, and to build a "background" architecture. However, although this was largely achieved, a prejudice that a building should be "builderly" was maintained. (We have coined this term from "painterly," as used in art criticism.) By builderly, we mean the sense in which a building looks like a

¹¹ The Delaware Dormitory and work done in the studio of Mimi Lobell (Miriam Comings) and Steven Izenour were published in "The Psychological Dimensions of Architectural Space," Progressive Architecture, April 1965.

building. In the Philadelphia School, the quality came from the use of red brick, exposed concrete slab edges, concrete lintels, and heavy waffle slabs, as well as from the sense of urban context and relationship to surrounding traditional buildings.

In art, during the late 1950s and early 1960s, there developed a movement against the painterly quality of painting. The abstract expressionists began to be seen as much closer to European traditions than was previously thought. The emotion which motivated the action in “action painting” was “content,” and the paintings were in traditional muted painterly colors. Jasper Johns’s flags of the late 1950s confronted the issue of content, and Ad Reinhart’s black canvases confronted the issue of color. Later, the Pop artists introduced the ordinary into content, and Frank Stella, among others, used bright commercially available colors. These artists were extracting the fundamental intentions of painting from the specific European cultural tradition with which it had become associated.

During the 1950s, the only architect seriously addressing similar issues was Bruce Goff. At Penn, the only architect to address them was, of course, Robert Venturi. Venturi’s program was complex. He sought to simultaneously cut architecture off from its association with the weight of European culture and at the same time, re-establish its roots in fundamental issues. The first of these tasks proceeded slowly, as can be seen from the almost exclusive use of European examples in his book, Complexity and Contradiction in Architecture¹², and from the Paladian references in his *Mother’s House*.

¹² Complexity and Contradiction in Architecture, Robert Venturi, The Museum of Modern Art, New York, 1966.

The seriousness with which Venturi relates to architectural history is documented in his book, Complexity and Contradiction. Later, architecture's response to the automobile, existing social structures, and popular culture were addressed in *Learning From Las Vegas*, written with Denise Scott Brown and Steven Izenour.

For the most part, the Philadelphia School was committed to the concept of designing from the program. The implication of designing from a program is that meaningful form will result from fulfilling stated needs. Most juries at Penn presumed to discuss projects in terms of their fulfillment of the program, but obviously other, unstated, criteria were also being used. There was no established vocabulary for the unstated criteria, but in general, they related to the "Philadelphia School" quality in architecture, as seen in the work of Kahn, Giurgola, and Geddes.

The implication is, of course, that there was a preconception, previous to the program, of what a building is and how it should look. Penn was schizophrenic (as was much of the Modern movement) in not reconciling, or even identifying, the conflict between program and image. The contradiction between program and image provided much of the energy for Venturi's work, and buildings such as his Mother's House go a long way toward resolving that contradiction.

In one way, Venturi was the least typical "Philadelphia School" architect, and he does not feel particularly related to the school we have described. His having a Princeton dedication, yet teaching in a Harvard-dominated school immediately, set him apart and the "mannerist" quality of his work and that of some of his students drew sharp attacks from some of Penn's more orthodox figures. But in many ways, he is typical of the Philadelphia School. In their work, Venturi and his associates have realized

all of the school's aims in terms of totality of context, historical continuum, humanistic orientation, archetypal architecture, integration, and a background architecture. They have accomplished this, moreover, through a true absorption of history, that is, through a realization that our circumstances are truly different from what they were in the past. Thus, by coming to grips with the automobile, modern social institutions, and popular culture, they have translated the Philadelphia School's aims into the immediacy of the present. The means change; architecture remains.¹³

Venturi's course, *Theories of Architecture*, was generally considered one of the most important in the school, and the research he did for it eventually resulted in his book, *Complexity and Contradiction in Architecture*, containing "all the things the Dean wouldn't let me put in the course." The course consisted of "architectural analysis and historical comparison employed as tools of criticism and techniques in the architect's design process. Its method is the breaking up of architecture into Vitruvian elements, and further, into alternating considerations, concrete and abstract, conceptual and perceptual; of the juxtaposition of the ideas of site and background, structure and form, material and texture, use and space-movement-light-scale, and the elements of composition—for the purpose of analysis. Fragmented elements are evolved from specific examples: contemporary and historical examples are compared non-chronologically." (From the course outline.) Venturi's non-chronological analysis of the elements of architecture had the effect of opening up an amazingly rich resource of solutions, attitudes, signs, and symbols with which to approach everyday problems in design, presented totally free of the repressive restrictions of the "Orthodox Modern Movement." While Venturi's

¹³ See "Kahn and Venturi, *An Architecture of Being in Context*," op cit.

references were truly ecumenical, one remembers most vividly, his own enthusiasm for the Vitruvian, Palladian, mannerist, and baroque traditions that were to play such an important part in Complexity and Contradiction and his early work.

Philadelphia School Buildings

After reading descriptions of the often differing work of these architects, one might ask: What does a Philadelphia School building look like? That question is not easy to answer, as there was no emphasis on any one part of architecture (structure, materials, three-dimensional space, social concerns, etc.) rather, the attempt was for an integrated balance among all of these to reinforce the intended hierarchies of functions and meaning. Nonetheless, there were some salient design characteristics apparent in many building, and these characteristics might best be summed up in the early work of Romaldo Giurgola (Mitchell/Giurgola), who was learning most directly from Kahn, and who synthesized many of the school's concerns. These characteristics include: 1.) The use of masonry—brick, a traditional Philadelphia material, and concrete, often precast. Giurgola's dormitory at the Academy of the new Church (1962) uses a typical Philadelphia School combination of brick and exposed concrete slab edge. His American College of Life Insurance Underwriters center (1961) combines these materials with a precast façade and structural system. His University of Pennsylvania Parking Garage (1963) is poured-in-place concrete, although it was originally designed to be precast. 2.) Topological clustering as a means of organization. This typically Brutalist device, used by Kahn, van Eyck and Geddes, can be seen in Giurgola's International Student Housing Competition (1965.) 3.) The favoring of articulation over simplification

with the articulated elements used to clarify the buildings' functions. Giurgola's Boston City Hall Competition (1962) separated out the council chamber from the office wing, and used articulated stairs and toilets to break up the offices. 4.) The use of structure as an ordering or organizing element. This is true of the Parking Garage, which uses structure to give visual order to the cars, and Boston City Hall, which uses the structure of the council chamber as a light source and as a device to announce the importance of the chamber. 5.) In some cases, the resurrection of the central space. In Giurgola's work, this can be seen in the Administration Building of the Academy of the new Church (1963), which uses the organization of Kahn's Goldenberg House. 6.) The avoidance of the free plan. This would, of course, be true of any building that uses structure as an organizing force. However, these characteristics did not result in a unity of architectural vocabulary comparable to that evident in Cambridge and Boston inspired by Sert and Corbu. We feel that the Philadelphia School approach is more sensitive, as it can vary its approach depending on the conditions of the site.

At this point, we will summarize the philosophical issues that concerned the Philadelphia School. Most of these items are illustrated by the previous descriptions of the thought of individual Philadelphia School figures.

- 1.) A broad cultural rather than a narrowly formalistic or technological orientation.

- 2.) Archetypal architecture as a transcendence of the universal, the prototypical, and the particular.

- 3.) History as a physical and an ideological continuum.

- 4.) The totality of the urban context, socially, politically, and economically.

- 5.) A close relationship between form and meaning.
- 6.) The integration of building elements (structure, materials, light, etc.) to establish a hierarchy of function and meaning.
- 7.) A non-methodological approach to design.
- 8.) The design of a background or anonymous architecture.
- 9.) in some cases, a non-Western, even spiritual analysis of human experience.

III. CURRICULUM

Design

The Philadelphia School philosophy was never a self-consciously presented doctrine, but rather it evolved through the various studio and theory courses.

The three-year B. Arch. Program at Penn was structurally similar to that of other graduate schools at the time: five semesters of design; a sixth semester devoted to a thesis project; and structures, materials, theory and other support courses.¹⁴ The heart of the curriculum was, of course, the design sequence.

For undergraduates majoring in architecture, design began (after various drawing courses) in Stanislawa “Siasha” Nowicki’s basic design course. Nowicki’s approach was narrow and rigorous, intended to train a critical eye and a disciplined hand rather than free the imagination, with much of the work done on 20” x 30” white Strathmore boards. First-year design followed with a city planning research team project, designed to introduce students to the “total concern” of the architect and to help them gain confidence by calling on skills in research and analysis that they had learned in college. The team project was succeeded by progressively more complex individually designed buildings.

¹⁴ Just prior to 1960, Penn switched from a five year undergraduate B. Arch. To a graduate program requiring a B.A. degree for admission. Thus, it became a seven-year program (4 years + 3 years) for students transferring in, and a six-year program for Penn students who majored in architecture in college. Penn, like most other graduate schools, now gives an M. Arch. Degree for this work.

Between first year and thesis, students took three semesters of design helped along with first year in the high, classically detailed, white vaulted loft at the top of the old Fine Arts Building. Most students worked in the studio rather than at home. Studios had ten to twenty students and two critics. They met Monday, Wednesday, and Friday from 2:00 to 6:00, primarily for individual crits with occasional field trips and group discussions. Second- and third-year students were mixed and did different, but related projects covering a variety of building types. Projects were usually based on work in the critics' offices, and Perkins scrutinized the programs to insure their appropriateness and realism, especially in terms of their relation to the city.

Two projects, about eight weeks each, were done per semester. Presentation requirements were high, but not strict, and were secondary to design. Overly slick presentations were viewed with the suspicion that the glossy techniques veiled a weak design. The grades were pass, fail, and commend, and the latter was sometimes given to work done on yellow tracing paper, but a close examination revealed a great sensitivity of line, highly perceptive design decisions, and a sophisticated ideological investigation. Models were in grey chipboard, communicating simply and directly. Jury etiquette was strict, and late work was not accepted. At juries there were no questions from the audience,; with five to eight faculty members serving on each jury, the juries became one of the major forums in which students saw the interaction of ideas among the faculty.

Students could choose among four studios, each taught by a senior critic (Geddes, Giurgola, Venturi, and Qualls) and a junior, visiting, or rotating critic (John Bower, Robert Kliment, Walter Weissman, Tim Vreeland, Leon Loschetter, and others.) Geddes tried to present the

principles of architecture on a level that would enable a weaker student to get his or her bearings, and a strong student to develop solutions in greater detail than was usually possible. In his attitude towards the program and materials, Geddes might be described as the most orthodox modern architect on the faculty. Giurgola was more concerned with the deep search and with subtleties of artistic and philosophical vision. Venturi's studio explored many of the issues of "complexity and contradiction" developed in his book. Qualls often assigned large commercial buildings or complexes presenting difficult interfaces with the city and often bordering on urban design.

Thesis

The entire Penn education came together in a thesis project taking up the last semester with only light additional coursework. Students chose their own projects (in studio all programs were given by the critic), recommended to be about 35,000 square feet, or bigger than a residence, smaller than a hospital. A high degree of "reality" was required, and the program, which was to be written over Christmas vacation and submitted for approval at the beginning of the semester, was to include detailed descriptions of the activities in the building, lists of net and gross square footages, site conditions, and presentation requirements.

Each student chose a design critic from the faculty and was assigned a structural and a mechanical critic, but only three meetings with each were allowed throughout the entire semester. Final requirements included the design presentation, a model, sample working drawings, a set of outline and trade specifications, sample structural and mechanical calculations, structural framing plans, and diagrams of HVAC, plumbing, and electrical systems.

The thesis project gave a comprehensive reality to the Penn education and gave students the confidence that, by the time they graduated, they could write a program and do the design, development, and presentation of a building on their own.

Student Work

The best student design work might be characterized as sensitive, sedate, and competent. Students used the masonry and cluster organization of the Philadelphia School, and generally produced a background architecture. It may occasionally be appropriate to design a building that sticks out like a sore thumb, but any building a Penn Student was designing was not likely to be that occasion. Some used Kahn's vocabulary (there was a period when service towers appeared on everything including houses) and some of Venturi's students used his vocabulary. There was some Corbu, a little Wright, and almost no Mies.

The design programs were usually tightly fit to the site and the most important design issue was the actual solving of the problem, that is, fitting everything together so that it "worked." After this, critics looked for a strong overall design concept, and an integration of structure (and often mechanical) with the design forms. The student's choice of design vocabulary was never commented on, due to the pervading myth (stated but not practiced) that form came only from response to program.

Presentations were in pencil or ink, the pencil presentations usually by stronger students who had mastery of subtleness of line. Models were usually in grey chipboard and sometimes in white Strathmore. They never attempted to show realistic details. By today's standards, the general quality of student work was very high.

Theory

To back up the design sequence, Penn had seven semesters of an extremely strong required theory sequence in addition to required art and architectural history courses. The sequence began with a course in which plates of historic buildings and complexes from Banister Fletcher were analyzed and copied with a focus on the organizational principles used in these projects. This was followed by Murphy's, Scott Brown's, Venturi's and Giurgola's courses described earlier in the section on philosophy. It was in these courses that the Philadelphia School provided an analysis of culture and a theoretical basis for design that has probably not been duplicated in modern architecture.

This intense analysis was reinforced by the electives offered in the different departments, many of which were popular with architecture students. These included a full selection on the history of art and architecture offered by the school's excellent history of art department; Edmund Bacon's History and Theory of City Planning (as summarized in his book, Design of Cities); Perkins's in-depth studies of the histories of Paris and London; George Tatum's History of Landscape Architecture; McHarg's Man and Environment and Urban Ecology courses (see his Design with Nature); A.E. Gutkind's History of Urban Developments (see his books in his International History of City Development series); Le Ricolais's Experimental Structures lab based on natural structures and the topology of surfaces (see Via 2)¹⁵; and August Komendant's Advanced Structures course (see his My 18 Years with Architect Louis I. Kahn.)

¹⁵ For Le Ricolais's work, see "Interviews with Robert Le Ricolais, 'Things Themselves Are Lying, and So Are Their Images'" and "Matieres" by Robert Le Ricolais in

A review of lecture notes transcribed (by Denise Scott Brown) from these teachers shows a persistent focus on structure, order, perception, meaning, ethics and continuity.

The playground was empty and the children were shown thickly distributed in various streets nearby. It was suggested that there was too much direction both architectural and social in the playground. Is street activity wrong?

(David Crane, 1961)

Structures Implicit and Explicit, VIA, Publication of the Graduate School of Fine Arts, University of Pennsylvania, Vol. 2, 1973.

Le Ricolais had his own research department within the school, and offered one course taken by a few students, mostly from Kahn's Masters studio. Le Ricolais's work did not often directly influence Philadelphia School architecture, although his intensity contributed to the seriousness of the school's atmosphere. He was a close investigator of nature, interested in the structural variations of radiolaria, in the material-to-strength efficiency of human bones, and the differences between spider webs that are structurally determinate and those that are indeterminate. His own work with soap films on wire structures and various forms of tension and compression structures required topological rather than quantitative forms of mathematical calculation.

Le Ricolais explored structures for towers, domes, and bridges that employed various light-weight tension and compression principles. He envisioned office buildings with floors held in place by walls of tension cables, trihex bridges whose pitch could be continuously adjusted by great tension cables, thereby propelling mass transit vehicles, and cities of close packing trihex geometries permitting efficient services. However, most of his structural explorations never showed up in the work of Penn faculty or students.

What relationship can be seen between Le Ricolais's work and that of other Philadelphia School figures is seen in a shared interest in topology. The organization of Kahn's Richards Towers can be described as topological, as can the plan of Geddes's Delaware Dormitory. Early in this century, a relativistic space-time dominated cultural forms, as in Einstein's physics, Proust's and Joyce's novels, Cubist painting, and Frank Lloyd Wright's architecture. By the 1950s, with the spread of electronic media, extension had ceased to be an important characteristic of space and time. Space without dimension can be comprehended topologically.

The discipline of seeing natural things is a mathematical one. A Chinese proverb says ‘things lie and their image lies’ . . . I worked on the Radiolaria about 25 years ago and I am now returning to try to find the complex structural truth hidden behind it. Its structure is more wonderful than any building. Prima donna architects are infinitely less rich than nature.

(Robert Le Ricolais, 1961)

An ethic, ecologically, is a limitation on freedom of action in the struggle for existence. An ethic, philosophically, is a differentiation of social from anti-social conduct. There are two definitions of one thing which has its origin in the tendency of interdependent individuals and groups to evolve modes of cooperation . . . There is as yet no ethic dealing with man’s relation to the environment and the animals and plants which grow upon it. The extension of ethics to include man’s relation to environment is an evolutionary possibility and an ecological necessity.

(Ian McHarg, 1961)

Gropius, Kepes, and Lynch have studied carefully and written at some length on the scientific aspects of perception and its relationship to art, architecture and city form. However, none has suggested that scientific knowledge can do more than complement man’s creative abilities . . . How do we derive meaning from what we perceive and in what way is this important to the planner? What is a ‘meaningful’ city?

(Denise Scott Brown, 1962)

When the Santa Trinita Bridge over the Arne was to be restored, a commission of engineers and historians was formed. The engineers said that to place the old stone upon a new concrete structure would be cheaper. The historians said ‘rebuild the bridge as it is’; and the people agreed and showed their agreement by street demonstrations. The bridge was finally rebuilt with the same materials and methods of construction (and by the reopening of an old quarry.) This is a manifestation of coherence toward real architecture.

(Romaldo Giurgola, 1961)

To review these notes is to be in a time warp where the glints and glimmers from the past are suddenly fired into the dominant philosophies of today: Crane on the validity of ad hoc street life; Le Ricolais on the superiority of natural structures against which not only our architectural conceits but also our brilliant mathematics are but crude fumbings in the dark; McHarg on environmental ethics and humanity as a “planetary disease;” Scott Brown on the intentionality of perception and meaning; and Giurgola on the need for historical continuity and architectural coherence. These are tiny fragments of a body of thought that was developing at Penn, not only in the mind and in the classroom, but also on the drawing boards of the offices and in the cityscape of Philadelphia.

Kahn and the Bachelor of Architecture Curriculum

Having described the Bachelor of Architecture curriculum, we should briefly discuss Kahn’s influence on that curriculum. Penn has been

criticized for turning out Kahn's imitators as surely as IIT turned out Mies's imitators. This is not true, and the Bachelor of Architecture curriculum was dominated neither by Kahn's forms nor his thought.

An architect visiting Philadelphia would quite naturally have been drawn to Kahn's one-year Master of Architecture studio.¹⁶ Before and after the construction of the new Fine Arts Building, which Kahn refused to use, his studio was housed in a beautiful cathedral-like space in the top of the old library designed by Frank Furness. Here the visitor would have found Kahn and his fellow critics, Norman Rice, Robert Le Ricolais and August Komendant, talking with students. The work on the boards would have been scrubby sketches on yellow tracing paper, often done with charcoal. If our visitor wanted to pocket such a "yellow fuzzy" in order to possess a Kahn original, he would be taking his chances. They all looked alike, those done by Kahn and those done by students. Should our visitor have chanced to come during a jury, he would have found twenty students presenting buildings with drawings and models at 40th scale. Plans would have been exquisitely delicate, done with hard leads and often filled with Kahn's geometric forms. Models would have looked like large faceted jewels.

The point is that many visitors saw only the Master's studio, which was the only course Kahn taught during the period under discussion (earlier he was a regular studio critic) and which was actually quite peripheral to the B. Arch. Program. It was in a different building and admitted few Penn graduates, taking a high proportion of foreign students. The visitor who saw only Kahn's studio, but did not have the patience (and who does) to watch

¹⁶ Prior to 1962, Kahn was a design critic in the B. Arch. Program. After 1962, the Paul Philippe Cret chair was established which Kahn held while teaching the M. Arch. Studio.

the more extensive and less exciting activities of the B. Arch. Students, missed the essence of what was happening at Penn in those years.

Kahn's indirect influence was, of course, immense. He was in every way the spiritual head of the school. His juries, held in the main exhibition space of the old Fine Arts Building, were always packed and were highlighted with witty barbs from Ian McHarg and Siasha Nowicki, the twinkling camaraderie between Kahn and Le Ricolais, and the anticipation of poetic nuggets from Kahn himself. (The faculty may have viewed these events somewhat differently since the invitations to serve on his juries provided Kahn with a deadly means of expressing who was in and out of favor at the moment. Kahn seldom if ever served on B. Arch. juries.)

Kahn's attitude toward architecture, the intensity with which he strove continually to work back to the essence, to "volume zero," infected the school and the city he did have considerable influence on the program when he wanted to exert it (he was in large part responsible for the 1967 appointment of Charles Enrique Vallhonrat as Chairman of Architecture.) Many of the faculty members developed in directions he opened; Venturi, Vreeland, and Vallhonrat worked for him at one time or another; and the relationship between Kahn's work and that of Venturi and Giurgola is much discussed. But Kahn's influence on his fellow faculty members was inevitably absorbed into their own work, inflected through their personalities, and expanded through their own creative ideas. It was the B. Arch. Students who benefited from this diversification, enrichment, application, and clarification of Kahn's ideas.

Even this must be seen as only one part of an atmosphere in which everyone was learning from and being influenced by everyone else. One of the wonders of Penn was the mutual respect, communication, and openness

that one sensed among the faculty.¹⁷ As Giurgola pointed out, “A really good school is based on communication. That’s the only thing really. You have to have an agreement. You can’t be on opposite ends, one talking carrots, the other apples.” Through the vehicles of faculty meetings, juries, and informal discussions, there was a discussion of ideas among the architects, planners, and engineers in the formative stages of their careers that resonated in many different ways through their teaching and their work.

After 1966

Perkins and the school suffered two severe blows in the mid-1960s. The first was the blocking of Kahn as the designer of a new Fine Arts Building by state and university officials, which caused corrosive dissension among the students and faculty. The second was a massive loss of faculty suffered in 1965 and 1966. In one year Geddes and Vreeland left to become deans at Princeton and the University of New Mexico, respectively; Giurgola left to become Chairman of Architecture at Columbia; and Venturi left because of the lack of support for his approach to architecture and because Perkins had not gotten him a commission on campus or in the city, as he had for other faculty members; and Scott Brown left to teach in California. (Note that Geddes, Giurgola, and Venturi constituted three-quarters of the senior design faculty.)

Perkins feels he might have weathered the loss of faculty, which was too rapid to allow younger people to grow into positions, if he had been ten years younger and in better touch with architects across the country. As it

¹⁷ Since graduating, we have learned something of the complex axes and triangulations of sympathy and hostility that wove among the Penn faculty at the time. However, dissension never interfered with a professional attitude toward education, and neither of us ever heard one faculty member put down another.

was, the loss was followed by nationwide student unrest. Unlike some other schools, Penn held together during this period, and integrated social advocacy into the curriculum, first, not for credit, and then for credit. However, the period placed severe stress on all parties concerned, including Perkins and his new Chairman of Architecture, Carles Vallhonrat. Perkins had worn both the dean's and chairman's hats from the beginning, but eventually came under pressure to relinquish the chairmanship. Vallhonrat was chosen with Kahn's backing and his strong and narrow concern for quality in design would have served him better at any time other than the late '60s.

Today Perkins is University Professor of Architecture and Urbanism. His office is also the rare Book Room of the Furness library. At one end of this room is the icon, if there is one, of the Philadelphia School—an original Piranesi print of Robert Adam's Plan of Rome. (Many students got full-size Photostats of the print, and it was always a good game to look for the forms of the latest Philadelphia School building in it or to search it for an organizational parti.) Perkins divides his time between working on the rare book collection and administering the Ph.D. program in architecture, and rumor has it that he is still the Godfather of the school's administration.

Perkins is not without his detractors, particularly the Venturis who feel that he did not adequately support them and that he failed to fully capitalize on Penn's potential. Some students and faculty felt Perkins to be authoritarian, to lack an understanding of subtle issues in architecture and planning, and to be unsupportive of experimentation and innovation. We are sure that there is some truth to these feelings, although we feel that many of his critics fail to understand the role of an administrator. Our own experiences with him were all positive. While no group of people and ideas

can come together without dissension, we feel that, on the whole, Dean Perkins was responsible for creating the environment that made the Philadelphia School possible, and in so doing, he certainly ranks with Gropius as an educator.

IV. CONCLUSIONS

Scope of Education

The Philadelphia School defined architecture narrowly and practiced an orthodoxy of education that began in Siasha Nowicki's basic design course. Nowicki taught basic design and sometimes first year, and was a strong voice for the disciplined attitude toward architecture maintained throughout the school. Nowicki did not believe that creativity could be stifled, and her belief was put into practice by the limited scope of her assignments. There was no plaster work, no welding, no large scale messy environmental structures, no multi-media work, little photography; in short, no artsy-craftsy projects, no fun and games, nothing which would mess up the studio.

There was diversity among the faculty, ranging, say, from Venturi to Geddes, but for the most part, faculty members were in fundamental agreement on what constitutes architecture. The point is that a Venturi represented the farthest out approach at Penn, not a Bruce Goff. And no student designed a building that looked anything like Goff would have designed, or Fuller, or Soleri, or Archigram. In fact, the Penn discipline was so thorough that when Soleri visited to sell his bells and show his slides, we were certainly admiring of the craftsmanship and the adventurous work in the desert, but no one took his ideas about architecture seriously. Similarly, when an early Archigram exhibit of walking cities was mounted, the general reaction was that Kahn's work held more for the future because it was founded on basic principles, rather than on fantasy.

The pressure was always on for architectural ideas to be buildable in the here and now. Although Perkins organized the art department and opened the Institute of Contemporary Art, he drew the line on poetic, visionary, or conceptual statements in architecture. Even when McHarg's attention turned from conventional landscape architecture to the staggering problems of regional ecological balance, Perkins, though he supported the new direction, was impatient for practical, physical design applications.

McHarg, as the charming and volatile chairman of landscape architecture was sufficiently in Perkins's and Kahn's good graces not to be adversely affected by this emphasis on buildability. But it did cause a prejudice against the activities of the Department of City Planning. While the architecture department was coasting along with the times in virtually ignoring the serious social issues that would soon explode in the country at large, the planning department was doing important groundwork on the problems of housing, racism and poverty that were soon to loom into architectural awareness.

After 1966, the B.Arch. program became involved in all of these issues with mixed success. While the commitment to urbanism theoretically extended to all races, income levels, and ethnic groups, and while Penn may have responded earlier than most schools, the weight of tradition and habit proved as heavy there as at any other institution that has tried—sincerely or reluctantly—to accommodate the multi-faceted “consciousness-raising” of the 1960s and '70s.

Penn's view of architecture is, to some extent, expressed in the activities of Penn students after graduation. Most had satisfying educations as designers and went into design-oriented offices to work. Many graduates from this period are now teaching. The freer and more eclectic experience

Yale students had, actually building houses while in school, was unknown at Penn. The Penn experience was the straight and narrow. We suspect that Penn's ethic of designing an anonymous background architecture and its aversion to publicity will reduce the visibility of its graduates. Unlike Yale's or Harvard's, Penn's golden age will not be identified through its "star" graduates.

We spoke to Steve Goldberg, a classmate and now an associate at Mitchell/Giurgola in New York, about the narrowness of the Penn education. Goldberg's reaction, like ours, was favorable. While none of us thought about it while at school (we didn't know other schools were different), we have since, Goldberg, as a result of teaching at Columbia, and we, as a result of teaching at Pratt. Both Pratt and Columbia are the opposite of what Penn was. They are pluralistic and eclectic, exposing the students to various points of view about architecture and giving a choice of direction. Goldberg remarked, and we agree, that "the danger of a pluralistic school is that a student may spend more time trying to evaluate conflicting views of architecture than in developing skills and an integrated meaningful direction. Penn avoided that problem. Since the school had already decided what architecture was, the student could either transfer out or get on with the education. Penn gave you three years to develop a certain facility. At the end of those three years, you had a pretty good idea of what you could or could not do, of what kind of designer you were (if you were a designer) and of what kind of architecture you might want to do. There was no danger of spending the three years doing research, engaging in school politics, or avoiding the whole thing with a part-time job, building a house, going out into the community, or doing independent studies. The attitude at Penn was that you could find out about other approaches to architecture by reading the

magazines, and once you got out, the skills you had learned would serve you anywhere.”

The Place of the Philadelphia School in Modern Architecture

The implicit objectives of the Philadelphia School were to establish a firm theoretical basis for modern architecture, and to root that architecture in context, both physically and culturally. We believe that the Philadelphia School was successful in achieving these objectives. It started with a broad historical and cultural analysis that gained perspective through its awareness of non-Western thought in the work of McHarg and Karl Linn, and non-Western culture and architecture in the work of van Eyck. An analysis of Western culture was present in courses by Bacon, Perkins, and Tatum; and Mumford’s work was responsible for an intense awareness of the impact of technology throughout Western history and particularly during the Industrial Revolution. Giurgola’s theory course dealt in depth with the impact of the Industrial Revolution on architecture.

The city was viewed as a historical organism in courses by Gutkind, Bacon, and Perkins, and courses by Venturi and Giurgola dealt with the history of architecture, as did courses offered by the history of art department. In all cases, history was approached not to imitate its forms, but to learn from its principles. Kahn’s architecture remains the best example of this effort.

The physical context for architecture was addressed in McHarg’s regional planning and urban ecology concerns, in the role of the city of Philadelphia as a laboratory, in the siting of most studio design problems in the city, and in the presentation of contemporary planning theory in Scott Brown’s course.

Finally, architecture itself was being rethought from fundamental issues. Here the buildings and projects of Kahn, Venturi, and other Philadelphia School figures speak for themselves.

What is most remarkable about the Philadelphia School effort is its comprehensiveness—from major cultural issues to brick detailing and everything in-between. This kind of comprehensiveness comes from education, personal commitment, and work in community. A longer study could analyze the role of the Beaux-Arts training of many of the Philadelphia School figures and could also search out other influences, such as that of Eliel Saarinen and Patrick Geddes. Personal commitment can be seen in the dedication to architecture by many of these people, and commitment to community can be seen in the careers of Bacon and Perkins, both of whom realized from the beginning that their respective jobs as Executive Director of the City Planning Commission and Dean of the Graduate School of Fine Arts would consume the major portion of their careers. The contrast in today's attitudes is seen in the city hopping of many planners and the musical chairs in deanships.

The depth of the Philadelphia School approach has not been duplicated. More recently, we have seen one-shot instant solutions: close-fit functionalism, loose-fit functionalism, systems building, design methods, user needs, defensible space, environmental psychology, adhocism, semiology, historicism, post-modernism. Mindless catchwords, they come and go, like clothing fashions or French intellectual fashions, perpetrated on gullible audiences by publicity seekers vying for their five minutes of fame.

If we were asked to identify one limitation in the achievements of the Philadelphia School, we would say that it was the inability to fully relate, in one dialectical approach, the arts and society. We do not feel that the school

can be faulted for his inability, as it is endemic in American intellectual efforts.

At Penn, even though architecture students were given a strong background in physical urban design, there was a schism between architecture and physical planning on the one hand, and social theory on the other. Denise Scott Brown's attempt to bridge this schism was never successful. The architects regarded social issues as irrelevant to form and the planners regarded form as irrelevant to society.

We believe that architectural form and social structures are directly interrelated. It is not merely that each bears on the other, but that ultimately, they are the same. This is a point of view completely foreign to American thought, but one common in Europe, where leading critics of art and literature are often also leading political theorists. Lukacs, Adorno, Sartre, and Merleau-Ponty come to mind. One of the few Americans whose scope of thought is wide enough to encompass both the arts and society is Lewis Mumford, who was, as we mentioned, an early figure at Penn. But America lacks the foundations out of which the Europeans mentioned above worked, so that Mumford's accomplishments have been of an individual nature, not easily absorbed into the work of others.

We feel that the unfinished task of the Philadelphia School is the development of an approach to culture sufficiently broad to include both architecture and the physical and social sciences, and to directly relate them each to the others. It is just such an approach that modern architecture still lacks, and which keeps it from being truly modern.

FACULTY

Rather than attempt to list all the permanent and visiting faculty members who were at the GFA from 1960 to 1966, we have chosen a typical semester and list below the faculty in the order shown in the January 1962 catalog (reflecting rank.)

Architecture

G. Holmes, Perkins, Chairman
Chairman
Louis I. Kahn
C. Preston Andrade
Stanislawa Nowicki
Edmund N. Bacon, Visiting
August E. Komendant, Visiting
Georges Robert LeRicolais, Visiting
Robert L. Geddes
Romaldo Giurgola
Thomas B.A. Godfrey, Vice Dean
Leon Loschetter
John W. MacGuire
George W. Qualls
John A. Bower
Robert C. Venturi
Thomas R. Vreeland
Walter Weissman
J. Ronald Woodruff
Denise Scott Brown

City Planning

Gerald A.P. Carrothers,
Robert B. Mitchell
G. Holmes Perkins
William L.C. Wheaton
Chester Rapkin
David A. Wallace
Erwin A. Gutkind
Walter Isard
Louis I. Kahn
Ian McHarg
Edmund N. Bacon, Visiting
John Dyckman
Herbert Gans
Denise Scott Brown
Paul Davidoff
Benjamin H. Stevens
Anthony R. Tomazinis
David A. Crane
Henry Fagin

Paul M. Cope

John M. Johansen, Visiting

Robert L. Bauer

Harlan Coornvelt

H. Mather Lippencott

John R. McKinley

Charles F. Ward

Leonard Weger

Alan G. Levy

Joseph V. Marzella

William L. Porter

Britton Harris

Harold F. Wise

Louis K. Lowenstein

Landscape Architecture

Ian L. McHarg, Chairman

John M. Fogg

George B. Tatum

Karl Linn

George E. Patton

Anthony J. Walmsley

Gordon Cullen, Research

Ian Nairn, Research

Aldo van Eyck, Research

Dan Kiley, Visiting

Jacques Simon, Visiting

Note: This listing does not include the Fine Arts Department, the Institute for Urban Studies, or the Institute for Architectural Research.

ILLUSTRATIONS

(Note: this selection of illustrations is not complete.)

THE CITY OF PHILADELPHIA

Plan of 1682, showing William Penn's five squares. Plan of 1962, showing the diagonal Benjamin Franklin parkway. The "downtown" area shown in this plan received a great deal of design attention during the years discussed in this article. The two rivers, the crossing of Market and Broad Streets, the five squares, and the diagonal parkway are strong orienting forms.

THE FURNESS BUILDING, UNIVERSITY OF PENNSYLVANIA 1888-1891

Now the art and architecture library, this building exerted a strong subliminal influence on the Philadelphia School. Kahn's Masters studio was conducted under the roof over the "apse." Its entrance is reminiscent of that

used by Kahn for the Medical Towers, as is the articulated stair tower. The great central space is seen in Kahn's work, and the library's original skylights are similar to those used in the British Art Center at Yale. There are nineteenth century aphorisms in the glass that recall Venturi's interest in signs. The building's overall strength prefigures 1950s-1960s Brutalism, and finally the difference between the articulated campus facade and the flat street façade prefigure the Philadelphia School's interest in response to setting.

PLANNING IN PHILADELPHIA

Urban design in Philadelphia was always done in the context of the entire city, and many project plans included a sketch such as this of the entire city.

PLANNING IN PHILADELPHIA

In order to accomplish his projects, it was necessary for Edmund Bacon to work within the full political process, as he did not have the kind of independence Robert Moses enjoyed in New York through his authorities. Bacon devised a six-year capital plan broken down by neighborhoods, and used architectural images to encourage community and political support for

the rebuilding of the city. His success was due to the comprehensiveness and interrelatedness of the physical planning, the totality of his grasp of the political process, and his willingness to stick it out for twenty-five years. From Design of Cities, Edmund Bacon.

BACON'S PHILADELPHIA

These two plans show changes in the city under Bacon's directorship of the planning commission. From Design of Cities, Edmund Bacon.

STUDIES FOR MARKET EAST DEVELOPMENT, PHILADELPHIA, MITCHELL/GIURGOLA, 1964

Market Street, west of City Hall, had been developed in the early 1950s as Penn Center. The urban design quality was indifferent. For Market Street east of City Hall, the Planning Commission commissioned Giurgola to do studies which were to influence the later design. Integrating several levels from the subway to street and mezzanine levels, Giurgola used strong structural diagonals as a unifying form. It was an application on large scale of a principle used in the Parking Garage, and it derives from Wright and Kahn. The project was eventually carried out (much changed in design but

not concept) by Bower and Fradley. John Bower is another Penn faculty member.

SKETCHES FOR MONUMENTS, LOUIS KAHN, 1940s

At this time, Kahn was struggling to bring together the “monumentality” of past architecture with contemporary programs and materials. Later he divided “monumentality” into “institutions” and “Order.”

TRENTON JEWISH COMMUNITY CENTER, LOUIS KAHN, 1954-59

Kahn challenged Le Corbusier’s concept of the free plan, claiming that the column grid implied spatial differentiation, and that you “cannot sleep in two different rooms.” The Trenton Center brought a reintegration of structure and function.

BATH HOUSE, TRENTON JEWISH COMMUNITY CENTER, LOUIS KAHN, 1955-56

Part of the Community Center that was built, the pavilion forms of the Bath House were very influential at Penn.

RICHARDS MEDICAL RESEARCH BUILDING, LOUIS KAHN, 1957-64

The Medical Towers represent a culmination of one stage of Kahn's development, and embody and originate many of the concepts of the Philadelphia School. Served and service spaces, the integration of structure and function, hierarchical organization, and the use of red brick to set the building in context all became characteristic of much Philadelphia School architecture.

FORM AND DESIGN DIAGRAMS, UNITARIAN CHURCH, ROCHESTER, N.Y., LOUIS KAHN, 1959-67

Kahn described his design process as starting with a completed realization, the "Form." The Form represented an irreducible essence. The Form was then tested against the circumstantial, which in this case confirmed the

original Form. The “Design,” (here First Design) was the consequence of the play between the Form and the circumstantial, remaining true to both.

GOLDENBERG HOUSE, LOUIS KAHN, 1959

The Goldenberg house introduced the forty-five degree angle (or “zoot”) in the Philadelphia School. It also emphasized a strong central organization.

ALDO VAN EYCK

This pair of form diagrams by van Eyck illustrates an archetypal attitude toward space. They imply two kinds of human relationship that would then become particularized in an architectural design.

CHILDREN’S HOUSE, AMSTERDAM, ALDO VAN EYCK

In this project, van Eyck sought to represent his dictum, “the city is a house, the house is a city.” Its cluster organization paralleled that of many

Philadelphia School buildings, including Kahn's Richards Medical Towers, Geddes's Delaware Dormitory, and Giurgola's International House.

DORMITORY, UNIVERSITY OF DELAWARE, GEDDES, BRECHER, QUALLS AND CUNNINGHAM

Working with the psychiatrist Humphry Osmond, Geddes derived a topological hierarchy of clustering to organize the dormitory complex with a close fit between social organization and architectural form. Geddes later rejected this close fit as too deterministic. Geddes gave a mental hospital as a studio problem using this approach.

ROBERT LE RICOLAIS

While Le Ricolais's structural explorations did not have a direct impact on design at Penn, the intensity of his investigations was very much a part of the atmosphere. (Le Ricolais with cigarette, Charles Vallhonrat taking notes.)

ACADEMY OF THE NEW CHURCH, MITCHELL/GIURGOLA, 1963

During these years, Giurgola was learning most directly from Kahn as indicated by this plan derived from the Goldenberg house.

PARKING GARAGE, PHILDELPHIA, MITCHELL/GIURGOLA, 1963

The Parking Garage was originally intended to be precast, but acceptable bids were not received and it was done in poured-in-place. The strong diagonal structure was intended to provide visual unity to the automobiles. This organizing quality of structure shows the influence of both Kahn and Wright on Giurgola.

BOSTON CITY HALL COMPETITION, MITCHELL/GIURGOLA, 1962

The Boston City Hall project illustrates the strong connection between form and meaning characteristic of many Philadelphia School buildings. The office wings and council chamber are clearly differentiated. The service cores of the office wing and the skylight of the council chamber are integrated with the structure. Public access to the office wing is through a continuous open span at its perimeter.

INTERNATIONAL HOUSE COMPETITION, PHILADELPHIA,
MITCHELL/GIURGOLA, 1965

In this project, Giurgola used the cluster organization found frequently in Philadelphia School architecture. He also used the strong diagonals that had become common in his work.

ROBERT VENTURI

Venturi's Project for a Beach House, 1959; House for his Mother, 1962; and Grands Restaurant, 1962.

MANAYUNK STUDY, STUDENT PROJECT, 1963

First year design began with research for an urban design project. Besides boards showing housing and the street as a place, boards were also done on land use, schools, population, employment, recreation, etc. This approach built on analytical skills students already had and emphasized the importance of the urban context in which buildings would be designed.

ROBIN FREDENTHAL, STUDENT PROJECTS, 1962-64

The elementary school shows a Frank Lloyd Wright influence; the church, a late Le Corbusier influence; and the beach house, an early Le Corbusier influence. Penn was not rigid in its design conceptions, although these projects might be said to show an appropriateness of response rather than an eclecticism. The office building, with an atrium pre-dating Portman, is a powerful urban solution. Fredenthal was one of the strongest designers in the school. He is now a sculptor living in Philadelphia.

ROBERT FELIN, STUDENT PROJECT, 1963

This beach house was done in Venturi's studio.

SHAKESPEARE THEATER, STUDENT PROJECT, STEVE
GOLDBERG, 1964

This deceptively simple plan uses a minimum of elements and is similar in organization to Mitchell/Giurgola's later Park Service Project, Bar Harbor.

SEVERAL PROJECTS, KAHN'S MASTERS STUDIO

The work done in Kahn's Masters Studio differed from the B. Arch. Work in that it was more closely derivative of Kahn's work. B. Arch. Students were very aware of this work and were indirectly influenced by it.

