

# Reflections

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The Journal  
of the  
School  
of  
Architecture  
University of Illinois  
at Urbana-Champaign  
No. 7

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The Journal of the School of Architecture  
University of Illinois at Urbana-Champaign

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**Reflection** (ri flek shen) n. 1.) The act of casting back from a surface. 2) To happen as a result of something. 3.) Something that exists dependently of all other things and from which all other things derive. 4.) To look at something carefully so as to understand the meaning.

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Spring 1989  
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# Scandinavian Architecture During the Late 1930s:

## Asplund and Aalto vs. Functionalism

**William C. Miller**  
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Though we claim to be living in a post-industrial society and to be engaged in developing a "postmodern" architecture, much of our architectural practice is still grounded in techniques derived from modern architecture's emphasis on industrial production. We criticize the ubiquitous placelessness and the abstract nature of space resulting from modernist acceptance of universal technique, only to justify, it would seem, replacing it with an equally placeless and abstract historicism. It is a historicism bearing witness to the loss of our own sense of history at two levels: First, we lack awareness of our own local histories and traditions; and second, we are unaware of the vital heritages provided by our collective, immediate past. For instance, only recently have we begun to demonstrate a real understanding of, and appreciation for, the diversity of directions that occurred in architecture between the first and second World Wars. Moreover, mired in the present, we seem to forget that a number of architects have been, for five decades now, critically scrutinizing modernist tenets. In the decade and a half before World War II, many designers not only used local tradition to transform the universalizing tendencies of modernism, but did so without being sentimental or nostalgic. By using regional heritages to critique modernism's generalizing techniques, they revitalized the experiential and mnemonic capacities of architecture.

Scandinavian architectural practice during the 1930s provides a case in point. Although

Nordic architects embraced "Functionalism"—as modernism was termed in Scandinavia—by the early thirties, almost immediately a number of individuals began questioning Functionalism's basic precepts. For those critical of modernism, architectural production assumed one of two modes. The first and more widely practiced of the two sought to modify Functionalism's focus on universal technique by using regional norms of expression and craft. The second, exemplified by the work of Gunnar Asplund and Alvar Aalto, resulted in a practice that subverted modernist sensibilities by reasserting the primacy of place, both physically and culturally, and employing the full gamut of sensory and tactile experiences that architecture can convey to the individual.

### **Nordic Functionalism**

Scandinavian awareness of the new ideas emerging from continental Europe began in the 1920s, as Nordic architectural journals began publishing the work of the French, German, Dutch, and Russian avant-garde. At this time, northern architects were especially open to currents from the outside and willing to participate in theoretical and polemical discussion. Le Corbusier and Walter Gropius lectured in the north, and five Scandinavian architects attended the 1929 C.I.A.M. meeting in Frankfurt on the minimum dwelling. Moreover, Nordic architects, including Gunnar Asplund and Alvar Aalto, traveled throughout Europe to visit the seminal works of the new architecture. Asplund's and Aalto's first-hand knowledge of avant-

garde developments was not only instrumental in the promulgation of Nordic Functionalism but established them among its leaders.

While Asplund's Stockholm Exhibition of 1930 and Aalto's Turun Sanomat Newspaper Building (1929) and Paimio Sanatorium (1929-33) (fig. 1) are seminal pieces of Nordic Functionalism, by the early thirties a number of especially fine examples of modernism existed throughout Scandinavia. Exemplary works—embracing both modernism's formal canons and its social programs—were also produced by Erik Bryggman, Viljo Revell, Oiva Kallio, and P. E. Blomstedt (fig. 2) in Finland; Arne Jacobsen, Flemming Lassen, Mogens Lassen, and Edvard Heiberg in Denmark; Lars Backer, Frithjof Reppen, Ove Bang, and Arne Korsmo in Norway; and Uno Ahren, Sven Markelius, Eskil Sundahl, and Hakon Ahlberg in Sweden. For these architects, Functionalism was a symbol of modernity, internationalism, and progressiveness that broke radically with the perceived provincialism of Scandinavia's recent past. Nordic Functionalism was, like continental modernism, an oppositional architecture critical of bourgeois attitudes and values and the normalizing functions of tradition.

Accepting both the formal canons and social programs of modernism, Functionalist architecture was characterized by the use of the "free" plan; the separation of structure from building envelope, with the structure (usually of concrete) being detached from the "free" facade; and a machine imagery created

by taut-skinned, white cubic volumes with minimalist detailing. Many Nordic architects had directly experienced the major new works on the continent, which led to extremely sophisticated buildings—both formally and in detail qualities—being executed in Scandinavia during this period. In fact, Aalto's knowledge of his peers' work and his quick assimilation of modernism's industrial detailing techniques was wryly commented upon by Hilding Ekelund in 1930: "With the same ardent enthusiasm as the academics of the 1880s drew Roman baroque portals, Gothic pinnacles, etc. in their sketchbooks for use in their architectural practice, Alvar Aalto noses out new, rational-technical details from all over Europe which he then makes use of and transforms with considerable skill."<sup>1</sup> Nordic Functionalists further accepted the bias for buildings sited in open, park-like settings. In built works as well as in proposals, sections of extant urban fabric were opened to auto access and the perceived health-giving properties of sun, air, and greenery.

Functionalism's proponents were active propagandists who used the popular press to promote the new architecture and its social ideas in Scandinavia.<sup>2</sup> To enlighten the general public about the new housing concepts tailored to "modern life," the housing section of the Stockholm Exhibition as well as a number of other exhibitions on the modern dwelling were held in the Nordic countries at this time.<sup>3</sup> A year after the Stockholm Exhibition, six Swedish architects, Asplund in-



Figure 1. Alvar Aalto, Tuberculosis Sanatorium, Paimio, Finland, 1929-33 (photo: author).

cluded, published the manifesto *Acceptera*, a polemic supporting Functionalist ideologies.<sup>4</sup> As a result of this activist posture, Nordic architects received a level of political support unequaled on the continent; that is, the physical propositions of Functionalist social programs became the mandated planning principles of the Scandinavian welfare-state governments during the 1940s.<sup>5</sup>

#### **Regional Norms versus Universal Technique**

Though many architects continued to actively embrace Functionalism, criticism of its propositions began to emerge during the mid-1930s. This criticism initially concerned tectonics and materiality. For as modernist works appeared in Scandinavia and forces of nature and the impact of climate began to act upon them, architects questioned the advisability of using Mediterranean-inspired building forms in the harsh northern environment. The Danish architect Esbjorn Hirt observed that Functionalism's "unprotected white surfaces and flat roofs were not suitable in our climate with its constant alternation between wet and dry and frost and thaw."<sup>6</sup> To modify Functionalism's astringent forms and material palette, architects incorporated traditional pitched-roof forms,

brick, tile, and stone cladding, and punched window openings. This was a conscious attempt, as Hirt noted, "to unite the modern demand for rational, unsymmetrical, 'free' planning with the desire for a building profile retaining the traditional tile roofing that has proved particularly suitable to the Danish climate."<sup>7</sup> Traditional norms softened Functionalist "ethics," providing more corporeal substance and regional character to the work.

In achieving this, a common set of design strategies was employed fairly consistently throughout Scandinavia. First, green park-like environs continued to be preferred as building sites, so buildings maintained their object status within an open landscape. Simultaneously, architects strove to enhance the "naturalistic" qualities of the extant setting, a romantic tactic that would create a picturesque relationship between the landscape and the seemingly casually placed building forms. Second, designers integrated modernist "free" planning and elemental volumetrics with traditional building shapes and roof profiles. Overhangs were excluded from the pitched-roof forms in a desire to maintain a taut, cubic outline. Buildings appeared firmly rooted to the earth rather



than uplifted on pilots. The resulting simplicity of form, coupled with the asymmetrical arrangement of elements and picturesque settings, imbued the buildings with a quiet monumentality. Third, tectonics favored the corporeality provided by local materials, supplanting the abstract, ephemeral character of surfaces rendered in stucco. Satisfying this desire for increased tactility, brick, tile, stone, and wood wall cladding replaced stucco, while roofs were finished with tile, shingles, and metal. Although concrete frames were employed in large buildings, many architects returned to traditional masonry and wood construction systems for more modest works. Finally, simply proportioned, punched window openings replaced the modern horizontal strip window. While providing the image of a more traditional window type, the scale of the aperture was enlarged beyond the norms usually provided by tradition.

Many representative works demonstrate these tactics. In Denmark, there were Fisker, Stegmann, and Moller's Arhus University (1931-46), Fisker and Moller's Copenhagen apartment block (1939), F. Schlegel's Crematorium Chapel (1937), Jacobsen and Moller's Arhus Town Hall (1939-42) (fig. 3), and Lassen and Moller's Nyborg Library (1939); in Finland, E. Bryggman's Suomi Insurance Headquarters (1938) and Resurrection Chapel (1938-40) (fig. 4); and in Sweden, O. Thunstrom's housing complex in Højdagen (1938), E. Sundahl's summer villa (1939), H. Egler's row housing in Stocksund (1939), and S. Frolen's summer villa (1939).

As an attempt to transform modernism, this sensibility resulted in only a modest modification of Functionalist tenets. Instead of critically scrutinizing the role regional norms could play in impacting on modernist action, architects were using a tactic that was merely skin-deep accommodation. Modernism was not reinvigorated; rather, traditional and vernacular images were appropriated into the equation. Modern rational planning techniques had simply been mixed with locally acceptable building forms and material usages. But for Asplund and Aalto, the thin veil of respectability accorded by tradition did

not get to the root of the problem; for them the critique of modernism was more instrumental.

During this same time, both Asplund and Aalto were expressing concern about the impact of mechanization on the human spirit, as witnessed in Functionalism's reliance upon universal technique. It was their view that this design strategy yielded an impoverished architecture that contributed to the ever-increasing alienation experienced by the individual in modern mass society. Criticizing the limited compositional and tectonic potentials of such an architecture, Aalto stated in his 1935 lecture "Rationalism and Man": "We have conceded and we should be agreed upon the fact that objects that properly can be given the label *rational* often suffer from a notable lack of human qualities."<sup>8</sup> By 1940, in the essay "The Humanizing of Architecture," he emphatically stated: "Technical functionalism cannot create definite architecture."<sup>9</sup> Asplund's 1936 speech, "Art and Technology," contains similar sentiments: "One should not conceive of utility as an end itself but merely as a means to increase choice and well-being for people in this life. Technology does not suffice to achieve this. . . ."<sup>10</sup>

Neither Aalto nor Asplund were suggesting the rejection of industrial production per se; rather they questioned its use as a compositional or formal technique. They were proposing a more humane architecture, one going beyond the reductionist qualities of Functionalism, that included a broader spectrum of practical techniques from which to draw. Nor did they promote a nostalgic traditionalism or historicism. Their aim was to revitalize the capacity of architecture to mediate between the universality of modern civilization and specifics of local culture.

To attain this, they adopted a mode of practice that embraced the following attitudes and sensibilities. The modern individual's separation from nature was a primary concern of both. This separation, coupled with increased mechanization, created an estrangement between the individual and the biological structures and rhythms of the



Figure 2. P. E. Blomstedt, Church, Kannonkoski, Finland, 1938 (photo: author).

natural world. To foster a more direct participation with nature, both architects reasserted the importance of place—both physically and culturally—in their work. Rather than merely enhancing a site, they actively cultivated it, paying specific attention to the particulars of the local condition. Modern industrial techniques, especially technical standardization and serial replication, often produced experientially impoverished environments. Asplund and Aalto, in appealing to the full range of human experiences and perceptions, employed a wide variety of sensory and tactile qualities in their designs. They eschewed the abstract, ephemeral tectonics of Functionalism in favor of a more corporeal and tangible materiality rooted in the norms of local tradition and usage. Their agenda was to relink modern civilization with an everyday praxis that included vital heritages, to reintroduce memory and experience to their appropriate places in architectural design.

### Asplund

Any of a half dozen works Gunnar Asplund designed before his death in 1940—including the State Bacteriological Laboratory (1933-

37), his summer house Stennas (1937), the crematoria at Kviberg (1936-40) and Skovde (1937-40), and the Stockholm Social Welfare Offices (1938)—demonstrate his critique of Functionalism and its tenets. Two works will suffice for discussion here, the Goteborg Law Courts Addition (1934-37) and the Woodland Crematorium (1935-40); for through the very differences of their programs and contexts, Asplund's potency in managing the above agenda is revealed.

In the Law Courts Addition to Tessin's Town Hall (1672), Asplund accepts the urban, neoclassic context of Gustaf Adolf Square as binding. The facade facing the square appears as two frames, a symmetrical, neoclassical one and a modern structural grid, that embrace a yellow fenestrated plane layered behind them. In extending the yellow plane behind his grid, Asplund provides a common inner surface, or datum, that binds the disparate natures of the two outer structures together. Asplund's structural grid, though modern in appearance and construction, is further regulated both vertically and horizontally by the rhythms and proportions of Tessin's original facade. This results in a compositional wholeness, yet each frame reads as a temporally different structure. The asymmetrical placement of the window openings coupled with the neutrality of the structural grid emphasizes the subordinate relationship of the addition to the original building. The nuances of the place, both the square and the town hall, are maintained; the form of the addition is cultivated from the particular qualities of the extant environment, from the urban scale through the detailed development of the elements comprising the facade.

In plan, Asplund reciprocates Tessin's U-shaped building order in a twofold manner. First, an interior atrium is formed that experientially extends the existing exterior light court into his composition, a space with both internal and external components separated by a glass curtain wall. This act continues the tradition found in nineteenth- and early-twentieth-century Scandinavian civic architecture that uses courtyards as a primary ordering device—Ragnar Ostberg's Stock-

holm City Hall, with its exterior and interior courts, is an obvious precedent.<sup>11</sup> Second, Asplund's plan order corresponds directly to Tessin's, for room and corridor widths of the original plan are consciously extended into the new. In contrast to the orthogonal regularity of Tessin's plan, and the exterior structural frame of the addition, the interior atrium incorporates figural or curved forms, spaces, and elements. The universal exterior grid has given way to the particular crafting of the interior atrium space. The walls and balustrades forming the atrium are wood paneled, further contrasting with the masonry walls of Tessin's court.

The wood-paneled walls and balustrades of the atrium convey a tactility and tangibility that speak of the civic and social propriety of the space. Asplund's white exterior structural grid is revealed as cream colored, curved, H-shaped columns in the atrium. The columns and the secondary elements within the atrium—stairs, elevator, clock, and planting—combine with the rich, warm-colored wood paneling to achieve a wholly Scandinavian quality. Surfaces are real, tangible, to be experienced by the body as well as the eye. The skylight bathes the space in the ever changing light from the Swedish sky, a constant reminder of the daily and yearly cycles of the natural world outside. Inflection to the local condition, both cultural and physical, has critically modified the universalizing tendencies of Functionalism.

A monumental vista is presented those approaching Asplund's Woodland Crematorium: an ensemble composed of strategically positioned architectural elements—processional walk, wall, loggia, cross, and meditation grove on raised mound—placed within a gently sloping landscape contained by dark forest edges. The naturalistic aspects of the site appear dominant, for the buildings seem subordinate to the dramatic landscape. But Asplund did more than enhance the site features; he recrafted a former gravel pit to create a resonant dialogue between building form and landscape. The vitality of this dialogue is facilitated by the open vistas that enframe and articulate the presence of the architectural objects, as they stand dis-



Figure 3. Arne Jacobsen and Erik Moller, Town Hall, Aarhus, Denmark, 1939-42 (photo: author).

cretely and statically in the space of the site. It is the architectural elements, in fact, which gather the sky and earth together, establishing the place of human action in the setting.

Stuart Wrede has discussed the influences which informed Asplund's sensibility concerning landscape design from its earliest manifestations in the Woodland Cemetery design done with Sigurd Lewerentz in 1915.<sup>12</sup> Asplund draws heavily from Nordic landscape painters of the late 1890s, who were, in turn, influenced by the German romantic painter Caspar David Friedrich. Friedrich's paintings, as Wrede notes, contained numerous "archetypal Nordic landscape images": in particular, "the deep evergreen forest with graves set in the surrounding wilderness, the church with surrounding churchyard, and the dolmen and earth mound on the heath surrounded by oaks and the wayfarer's cross."<sup>13</sup>

While these images are integral to Asplund and Lewerentz's cemetery design, in the Woodland Crematorium they are applied in an almost painterly fashion. Asplund not only draws upon this romantic heritage but

fuses two other traditions of practice into the development of the crematorium: the classical and the vernacular.

A long, low wall leads to the classical loggia that crowns the ensemble, rooting the complex on the rolling landscape. Courtyards and a layered series of walls form the two smaller chapels in the composition. Wall and courtyard are common elements associated with the Swedish vernacular building tradition. The loggia is balanced in space by the tree-bedecked meditation mound, while the wayfarer's cross acts as a vertical counterpoint between the two. The roof of the loggia slopes down to an opening in its center over an impluvium, while John Lundqvist's sculpture *Resurrection* rises through the opening in the roof. The cave-like interior of the main chapel contrasts with the openness of the loggia; moreover, it gestures to the earthen hill of the meditation grove, which recalls ancient burial mounds. The materials used in the complex consciously reinforce the dialectic nature of the elements. Against the verdure of the site, the rough stone path and smooth stuccoed wall lead to the dressed, cream-colored stone walls of the chapels and the columns that form the loggia. Contrast is provided by the dark granite cross, the wood beams and decking of the loggia ceiling, and the gray stucco and concrete interior of the main chapel. Asplund's use of material conveys essential knowledge about the purpose of each element in the composition, and he exploits the full range of experiential and tactile potentials latent in the corporeal nature of these materials.

At the time of his death in 1940, Asplund had, as shown in the Law Courts Addition and the Woodland Crematorium, developed a strategy of resistance against modernism's reliance on universal technique. These works represent a tactic that included reincorporating the vital heritages of the past, as well as revitalizing the experiential and tactile capacities of architecture. His is a resonant architecture that eschewed the trivializing potentials of a nostalgic, or allusion-based, architecture.

#### **Aalto**

The Villa Mairea (1938-39) is Alvar Aalto's

pivotal work of this period, for it completes the move away from Functionalism that was emerging in such works as the Viipuri Library (1930-35), the Tallinn Art Gallery project (1936), his own house at Munkkiniemi (1936), and the Finnish Pavilion for the 1937 World's Fair. In the Villa Mairea, Aalto codifies and reveals the themes that characterize his mature works for the next three decades—the Finnish Pavilion for the 1939 New York World's Fair, the Saynatsalo Town Hall (1950-52), the Pedagogical University in Jyväskylä (1953-56), the Rautatalo Building (1953-55), the Public Pensions Institute (1952-56), the Vuoksenniska Church (1957-59), and the complexes at Seinäjoki and Wolfsburg.

In the Villa Mairea, Aalto carves a place in the Finnish forest by forming an L-shaped building block around an exterior courtyard space, a courtyard completed by landscape elements—stone walls, stepped terraces and earth berms, a wooden gate, and trees. Within the L-shaped block, the spatial hierarchy of the plan order is revealed through volumetric expression and material usage. The whitewashed masonry L-shape denotes the utilitarian or private spaces of the house, while figural forms and shapes executed in wood, tile, stone, and large glazed openings signify the honorific or living spaces of the dwelling. A free-form plunge pool is placed next to the sauna in the courtyard, while the undulating entrance canopy and the curved, wood-sided, sloped-roof studio space seem to fragment and erode the regularized geometry of the white L-shaped building mass. This dialectic between regularized building form and especially configured elements characterizes Aalto's work from this time on. Moreover, the sauna has a sod roof, while vines climb over the surface of the building upon poles placed there for just that purpose. The living spaces of the Villa Mairea contain a rich tapestry of textures and materials. Floor and ceiling patterns articulate various subspaces within the large living area—sitting room, music room, library, and solarium. Structure, in the form of leather-wrapped or vertically wood-stripped columns, reinforces the spatial order; when combined with the numerous wooden poles used throughout

the living spaces, the columns provide the image of a private interior forest.

The courtyard, the differentiation of honorific from utilitarian spaces in plan and volumetrics, the planting, the manipulation of light, the use of multiple textures and materials, and the creation of undulating surfaces and forms are all hallmarks of Aalto's mature style. The courtyard, which Aalto used to order works from dwelling to civic center, not only establishes a place in the Finnish forest, but provides a setting for communal activity—be it familial or civic. Moreover, it is a mnemonic device; it recalls the exterior courtyards around which Finnish farm complexes and city houses were traditionally organized. Thus the courtyard's use is especially fitting in the Villa Mairea, for it roots the building to site as well as to cultural tradition. Most of Aalto's domestic and civic courtyards are grass surfaced, continuing the remembrances of the grass courts in traditional Finnish dwellings. The differentiation between honorific and utilitarian spaces informs most of Aalto's building orders. Important rooms are articulated through unique shaping in plan, section, and volumetrics, and they stand unsuppressed within the common, ordinary order accorded the remaining spaces. The Villa Mairea's entrance canopy and second-floor study become the town hall council chambers, auditoria, library reading rooms, and lecture halls in Aalto's civic buildings. That Aalto uses figural or undulating forms and shapes to signify these important rooms reinforces their prominence and position in his compositions.

In Mairea, vines not only cover the exterior form but are introduced as an essential element in the major interior living spaces. Planting becomes a regular feature of the exteriors and interiors of numerous Aalto works. Nature is allowed to engage the built form, a reminder that it is always present to reclaim our works if we lack care in our stewardship of the environment. The sod-roofed sauna, coupled with the recurring presence of the growing vines, continually reminds us of nature's closeness. Aalto's use of planting not only roots his works to the



Figure 4. Erik Bryggman, Resurrection Chapel, Turku, Finland, 1938-40 (photo: author).

immediate forest context and the rhythmic cycle of the natural order, but speaks of the potential antagonism between built form and nature.

Materials are used in Mairea not only for their specific corporeal and tactile qualities, but also to provide essential information about the use and importance of the various spaces and elements. A propriety of use is conveyed, for utilitarian areas are treated with ordinary materials, while important spaces and forms are finished with materials that support their special purposes. The richness of Aalto's palette of materials is reinforced through tactile variations and finish qualities. That the living areas in Mairea have large glazed openings on both the court and forest sides acknowledges Aalto's sensitivity to the manipulation of light. Not only can one sit in these spaces and see both forest and open court, one is aware of the entirely different qualities of light that each imparts. The vocabulary of window openings developed for the villa speaks not only for the differing quality of light necessary for a particular space, but acknowledges the honorific or utilitarian status of the respective rooms.

The Villa Mairea encapsulates the themes Aalto explored during the remainder of his career. His humanistic intent, based upon reintegrating the individual with nature and revitalizing the experiential qualities of architecture, was neither sentimental nor superficial. Instead, Aalto demonstrated the ability to transform vital heritages and traditions into a multi-valent architecture, an architecture which continues to provide essential lessons for contemporary practice.



## Conclusion

Much of Scandinavian architecture after World War II continued to develop along the path taken by most Nordic architects during the 1930s. These architects did not relinquish using industrial processes as a design technique. Instead, they continued to balance Functionalist tenets with regional traditions in an attempt to bring modern ideas into a closer correspondence with local conditions; and they tried to expand Functionalism's repertoire of expression by broadening its boundaries rather than renouncing it out of hand. This represented the view that the necessary modification of modern architecture would come from a judicious mixing of modern technique and the traditional forms and materials associated with regional histories. This activated a design dialogue between the generalizing qualities of universal methods and the specifics of regional expression, but it was a somewhat flaccid one. The results are epitomized by the doldrums witnessed throughout Scandinavia following the war, that competent but boring anonymity associated with Swedish "empiricism" and Danish "impeccability."

Aalto and Asplund, on the other hand, presented a markedly different attitude about architectural production, one based upon critical resistance. Their resistance was grounded in a practice that examined the role architecture plays in reclaiming the essentials of human experience for the individual in modern mass society, thus counteracting the reliance on modern technique. Their practices, then, differed not only from those of their contemporaries during the 1930s, but from much that influences architectural production today. Our present attitude of production seems to embody a practice of currency; our procedures and values are rooted within the norms of the contemporary, and are defined by the realm of actions, competencies, and attitudes held as immediate by any number of our peers. Within this practice, actions regarding the influence accorded regional norms are all too often manifested in a direct, "quotational" way; they are source specific and allusion based. Neither Asplund nor Aalto was bound to source in this manner; instead they proffered

a strategy to recapture architecture's role in everyday life by returning to the tangible realities of place, memory, and experience.

## Notes

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1 Quoted in Kirmo Mikkola "Pa spanning efter en nutid" (Looking for the Present Time), in *Nordisk Funktionalism* Arkitektur Forlag AB (Stockholm) 1980, p. 72.

2 In addition to the critical journals that appeared during this period—*Kritisk Revy* (Denmark), *Plan* (Norway), and *Tulenkantaja* (Finland)—many architects used both newspapers and popular magazines as forums for their ideas. A number of articles and interviews by Aalto, for instance, appeared in the popular press beginning in the late 1920s; (see William C. Miller, *Alvar Aalto: An Annotated Bibliography* [Garland Publishing [New York] 1984).

3 In Finland, the Rationalization of the One-Family House exhibition occurred in 1930, and a housing competition for Nordic Construction Day was held in 1932. In Sweden a low-cost housing competition was held in 1932, and the Standard 34 housing exhibition took place in Stockholm in 1934. Many of the works seen in these exhibitions and competitions were based upon ideas that came from the 1929 C.I.A.M. exhibition *die Wohnung für das Existenzminimum*.

4 G. Asplund, W. Gahn, S. Markelius, G. Paulsson, E. Sundahl, and U. Ahren *Acceptera* (To Accept) Private printing (Stockholm) 1931 (reprinted 1980).

5 Nordisk Funktionalism provides a good synopsis of this issue.

6 Esbjorn Hiort *Nyere Dansk Bygningskunst—Contemporary Danish Architecture* Jul. Gjellerups Forlag (Copenhagen) 1949, p. 47.

7 *Ibid.*, p. 24.

8 Alvar Aalto "Rationalismen och Manniskan" (Rationalism and Man) Lecture delivered to the Swedish Craft Society, 9 May 1935. Quoted in Goran Schildt, ed. *Alvar Aalto: Sketches* MIT Press (Cambridge, Mass.) 1978, p. 48.

9 Alvar Aalto "The Humanizing of Architecture" *The Technology Review* (November 1940):14-16.

10 Gunnar Asplund "Konst och Teknik" (Art and Technology) Speech presented to the Swedish Architectural Association, 1936. Quoted in Stuart Wrede *The Architecture of Erik Gunnar Asplund* MIT Press (Cambridge, Mass.) 1980, p. 153.

11 Concerning the influence of Ostberg on Asplund, see Wrede, *Architecture of Erik Gunnar Asplund*, pp. 1-76.

12 Stuart Wrede "Landscape and Architecture: The Work of Erik Gunnar Asplund" *Perspecta* 20 (1983):195-214.

13 *Ibid.*, pp. 198-99.

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# The Legacy of Mies van der Rohe

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The legacy of Mies and creativity: there are those who see a built-in contradiction here: an oxymoron as it were.

They point to the large number of bad imitations of Mies's buildings and to Mies's statement that he had intended to create an architectural language and—"ipsa re"—the indictment is made. One adds to that the perception that Mies worked within a very narrow vocabulary of both materials and forms; that he was a strict classicist whose buildings—despite their being elegantly proportioned and meticulously detailed—were cold and inhuman and the case for the proposition that the Miesian legacy is inimical to creativity is clinched. All this, however, is based on an improper definition of creativity and on a profound misunderstanding of the true nature of Mies's work and teaching.

Creativity is not indulgence. Viewed in the proper light, Mies's statement that "Architecture has nothing to do with the invention of forms" can be wonderfully liberating, while at the same time it escalates the level of creativity required in the making of a meaningful architecture.

In the late 1940s, Philip Johnson said to a group of students at Pratt Institute: "Gentlemen, when you are working on a design problem, you have three choices: you can imitate Frank Lloyd Wright, you can imitate Le Corbusier or you can imitate Mies. The choice is entirely up to you, though personally I would recommend that you imitate

Mies, because it's easier to do it well."<sup>1</sup> If students are led to believe that architecture does, in fact, deal with the invention of forms, they will—they usually do—resort to imitating the work of others, an equally meaningless endeavor, whether their model is Mies or Michael Graves.

It is important to understand how inadequate is the description of Mies as a classicist. In the entire history of the architecture of the Western world there have been two major movements: the Gothic and the Classical. They parallel the great divisions in literature, music, or painting: romantic and classical, lyrical and rational, the Yin and Yang of the worlds of intellect and art.

Gothic architecture is dynamic, exhilarating, brooding, and awe-inspiring. It was adopted by the romantic poets and novelists of the 19th century. In specific architectural terms it is the embodiment of structure, clearly conceived and clearly expressed.

Above all, however, Gothic architecture is characterized by the impulse to articulate. Each element of the plan and of the structure is made to stand out sharply. Each of the chapels surrounding the chevet of a Gothic cathedral is read as a discrete volume, both internally and externally. Each sinew of the structure, each vault, each groin rib, each flying buttress is clearly articulated. (A parallel, as Panofsky has pointed out, to the schemata of the Thomistic philosophers.)

Classical architecture, on the other hand, is dominated by the unifying impulse. The same spirit that subjects the gregories of Corneille and Racine to the "rule of 3 unities" (unity of action, unity of time, and





Ludwig Mies van der Rohe, Crown Hall, Illinois Institute of Technology, Chicago, 1952–56 (photo: Botond Bognar).

unity of place) characterizes all classical architecture. Everything is subordinated to the overall composition. Instead of articulating the elements of the plan, the building makes a broad, generalized statement. The chapels in a Renaissance church are given no expression on the exterior.

The dominance of the horizontal line, the way in which the building, so often, is placed on a podium, all serve to underscore the aura of stateliness, serenity, and repose that characterize Classical architecture.

I submit that the goal of Mies's work was an enormously ambitious one: nothing less than the creation of a new synthesis of the two major strains of Western architecture: the Gothic and the Classical. Mies never made an explicit statement to that effect, of course. But then, there were a lot of things about his work, concerning which Mies never made an explicit statement. It is difficult to know even to what extent, if any, he articulated this goal to himself. But, conscious or not, the evidence is overwhelming that—increasingly, as his career progressed—Mies was working towards just such a synthesis. In the Barcelona pavilion, the separation of column and wall was the kind of articula-

tion that is quintessentially Gothic, while the placement on the podium, the strong hovering horizontal plane, the stateliness of the composition are, all, strongly Classical. The I.I.T. Library & Administration Building project is strongly Gothic. It is in Crown Hall (1956) and in the Bacardi project for Santiago, Cuba (1957) that we see the full realization of this synthesis, and it finally reaches a climax in the National Gallery in Berlin. The stateliness and serenity of the building, the noble proportions, the way it is placed on its podium, the bi-axial symmetry of its structure—all these qualities bestow upon it, as so many critics have done, the label of Classical. But, behold the total clarity with which the structure is expressed. Notice, in particular, the juncture of the cruciform column, to the roof structure by means of a pin joint. This kind of articulation is nothing if not thoroughly Gothic in spirit. We are in the presence here, of a new architectural language, which is rooted in the past; a true synthesis of spirit, not of forms.

Here it should be said that Mies's increasing preoccupation with the creation of so-called universal spaces (a term, incidentally, he never used) can be seen in two ways: First, as a manifestation of the Classical spirit. Secondly, as the proper

response to the fact that we live in a society characterized by nothing so much as by change, change at an exponential rate. In such a society, it is extremely unlikely that a building will serve the program for which it was designed throughout its physical life.

The view that Mies's goal was to fuse the two major strains of architecture into a single, new language is consistent with the way he, himself, tried to define the task of architecture, in his 1960 acceptance speech of the A.I.A. Gold Medal. He spoke of the need for clarity and of the dawning of a new architecture, then went on to say:

"In all these years I have learned more and more that architecture is not a play with forms. I have come to understand the close relationship between architecture and civilization. I have learned that architecture must stem from the sustaining and driving forces of civilization and that it can be, at its best, an expression of the innermost structure of its time." Later, in the same speech, he said: "Architecture should be related only to the most significant forces in the civilization. Only a relationship which touches the essence of time can be real. This relation I call a truth relation. Truth is in the sense of Thomas Aquinas, as the *'Adequatio intellectus et rei'*. Or, as a modern philosopher expresses it: 'Truth is the significance of facts'. Only such a relation is able to embrace the complex nature of civilization. Only so, will architecture be involved in the evolution of civilization. And only so, will it express the slow unfolding of its form. This has been, and will be, the task of architecture. A difficult task, to be sure. But Spinoza has taught us that great things are never easy. They are as difficult as they are rare."<sup>2</sup>

The very enormity of the task (or tasks) which Mies pursued throughout his work (whether consciously defined or not) helps explain why a number of other considerations were largely absent from his agenda: ecology and energy conservation for example. (One should also remember, incidentally, that Mies was working in the U.S. at a time when it was clear to everyone that energy was limitless and very, very cheap.)

An extension of Mies's original agenda affords rich and meaningful opportunities to apply one's creativity. So do newly

emerging forces at work in our society, and new technologies.

One concern that was not left out of Mies's agenda was contextualism. Beginning with the Bismarck monument, projected in 1910 and using the technique, which he pioneered, of combining a photograph of the actual site with a rendering or model photograph of the proposed building, Mies painstakingly investigated the relationship between the building and its environs. Nowhere was this done more painstakingly than in one of his last projects, the one for the Mansion House office building in London (1967). Many composite photographs—which have not been published—show that he was carefully looking at the building as it would appear in the context of the square, on which it was going to be located, from side streets leading to the square and, even as it would appear on the skyline when seen from across the Thames.

The most common misconception of Mies's work and teaching is that they are, somehow, canonical. To be sure, there have been, and still are, those who feel compelled, simply, to copy the external appearance of Mies's buildings. They are no better, and no worse, than those who copy Gabriel or Ledoux.

Mies, in his own work, was anything but canonical. There is a tendency to think of his work as being rigidly rectilinear—and then one remembers the mid-thirties project for a courthouse with a garage or the second version of the Ulrich Lange house, to say nothing of the mid-sixties Houston museum. There is a tendency to think of him as working with a very limited palette of colors and materials—and then one thinks of the Barcelona pavilion, with its onyx, green marble, and red silk curtain; of the Mannheim theater project, where those who saw the actual model remember the bright gold and turquoise silk curtains of the two auditoria or of the bronze mullions, amber glass, and green marble panels of the Seagram building. And so on. . . .

The architectural language which Mies sought to create is a language of ideas, not of forms. There is nothing prescriptive, or proscriptive, about it. The only proscription was uttered by Mies when he said: "I don't want to be interesting—I want to be good."<sup>3</sup> This is, of course, a difficult path to follow, but creativity does not come easily.

What Mies tried to teach us was the need to strive for clarity and for order. Order is perceived by some as being inimical to creativity, but nothing could be further from the truth. As an example: What could be more creative than a performance by a small group of first-rate jazz musicians? The tune they start playing is only a point of departure for a series of spontaneous improvisations in which the music is created while it is being played. This is happening within a very strongly ordered framework, created by the beat, laid down by the rhythm section, and the formal structure, say, the blues (12 bars, AAB, CCD, etc.).

In his 1938 inaugural address, Mies talked about order. "Every decision leads to a special kind of order" he said, and went on to explain that neither the mechanistic principle of order with its overemphasis on materialistic factors nor the idealistic, with its overemphasis on the ideal and the formal, were adequate.

"So we shall emphasize the organic principle of order as a means of achieving the successful relationship of the parts to each other and to the whole. And here we shall take our stand."<sup>4</sup>

As stated earlier, the architectural language which Mies sought to create—which is a large part of his legacy to us—is a language of ideas, not of forms. It has to do with clarity and order, with discipline and craftsmanship, or—to try to sum it all up in a single word, which best characterizes Mies's entire work: integrity.

The question of appearance, or mimetism, is irrelevant. If one may end on a personal note: A young architect (the author) about to leave Berkeley, California (where he had completed his undergraduate studies) for Chicago, suddenly broke out in a cold sweat: "What am I doing?" he said to himself. "I am about to go to I.I.T. and study with Mies for two years, at the end of which I will be an architectural cripple, incapable of designing a building which does not look as if it had been done by Mies." But it was too late for second thoughts and arrive in Chicago he did. There, after meeting the Master, looking at his buildings and at the work done by previous students, he was, again, seized by panic: "What if"—he now said to himself—"even after studying with Mies for two years, I still may not be able to do buildings which will look as if they had

been designed by Mies?" What happened, of course, was that after two years of intensive study with Mies, neither of those two concerns held any significance. He had learned that the only thing that mattered was to make a good building. He had been set free.

#### Notes

1 Personal communication with John C. Hoops.

2 Philip Johnson *Mies van der Rohe*, Museum of Modern Art (New York) 1953, p. 199.

3 Recorded interview.

4 David Spaeth *Mies van der Rohe*, Rizzoli International (New York) 1985, pp. 173-74.

# Mies and the *Baukunst*:

## An Oriental Connection?

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*What is right and significant in any era is to give the spirit an opportunity for existence.*

—Ludwig Mies van der Rohe

What someone learns is as important as how he learns. In the case of Ludwig Mies van der Rohe (1886-1969), this is especially true. Mies was largely self-taught as a professional. He attended Aachen's *Domschule* from 1892 to 1899 and a local trade school, the *Spenrathschule*, from 1899 to 1901. When his formal education ended he was fifteen years old. With typical understatement, he described his training as an architect as follows: "I had no conventional architectural education. I worked under a few good architects; I read a few good books—and that's about it."<sup>1</sup>

One of these few good architects was Peter Behrens, from whom, Mies said, he "learned great form." From H. P. Berlage, whose work he studied during an extended visit to Holland (1911-12), Mies said he "learned great structure." Mies's appreciation of Behrens's "form" and Berlage's "structure" did not overcome the enduring influence of Karl Friedrich Schinkel (1781-1841) on his work. For Mies, the influence of Germany's leading neoclassical architect of the nineteenth century was something to be struggled with. According to him, "After Berlage I had to fight with myself to get away from the classicism of Schinkel."<sup>2</sup> He never really did, and his work, I would argue, is the better for it.

It was Frank Lloyd Wright's influence on Mies that was less literal and more subtle than

Schinkel's. In an exhibition catalog of Wright's work, Mies summed up Wright's influence on European architects in 1910, when a major exhibition of his work was mounted and a portfolio of his drawings published: "The dynamic impulse emanating from his work invigorated a whole generation. His influence was strongly felt even when it was not actually visible."<sup>3</sup>

In actuality, Mies learned about the art of making buildings as much by carefully looking at buildings, studying their use of materials, their structure and proportions, as he did from his "masters," Schinkel, Behrens, Berlage, and Wright. Years after his departure from his hometown of Aachen, Mies recalled the buildings he knew in his youth and their influence on his education as an architect: "They were medieval buildings, not with any special character but they were really built."<sup>4</sup>

To Mies, the most significant characteristic of these structures was not their Gothic drama, their decoration, or their materials; rather, he admired the unity and solidity of their construction. In Mies's work, the putting together of parts, the act of construction, had an almost mystical quality, one he approached with religious fervor. At his inauguration as Director of Architecture at Armour (later Illinois) Institute of Technology (1938), Mies expanded upon this perception: "Where can we find greater structural clarity than in the wooden buildings of old? Where else can we find such unity of material, construction and form? Here the wisdom of

whole generations is stored. What feeling for material and what power of expression there is in these buildings. What warmth and beauty they have! They seem to be echoes of old songs."<sup>5</sup>

The buildings are united by the fact that each example has something to do with structure. By structure, Mies meant a "complete morphological organism,"<sup>6</sup> not merely a set of beams, girders, and columns; and when discussing either his work or that of his students, Mies preferred to term it *Baukunst* rather than the more accepted *Architektur*. This compound of two German nouns held a clearer meaning for him than did the term architecture—"bau the construction and kunst just a refinement of that and nothing more."<sup>7</sup> It was, then, the possibility of refining a system of construction that offered Mies the greatest potential, the greatest challenge: "I desire the absence of architecture and I practice—the art of building."<sup>8</sup>

Given this, it is easy to understand and appreciate his fascination with skeleton construction. He came to understand both steel and reinforced concrete structures as "skeletons by nature. No gingerbread. No fortress. Columns and girders eliminate bearing walls. This is skin and bone construction."<sup>9</sup> Where is the structure more clear than in a skeleton? It is tantalizing to see in his "skin and bone" structures a connection, an affinity with Oriental philosophy and construction. During a visit to Japan in 1953, one of Mies's students, Werner Blaser, noticed the similarities between Mies's ap-

proach to construction and that of the Japanese, in which there is a "clear separation of 'skin and skeleton' . . ."<sup>10</sup>

The German Pavilion for the International Exposition, Barcelona, 1929, is an excellent example of similarities between Japanese architecture and Mies's work. The Barcelona Pavillon, as it is more familiarly termed, was the clearest realization (to that date) of Mies's ideas about space and *Baukunst*. Such a realization was not, however, arrived at easily. Several, more conventional solutions preceded the final plan for the pavilion. The first plan, completed late in 1928, was for a covered area the same size as the one constructed, with the roof plane supported on a series of bearing walls. Spatially, it was not unlike his plan for a brick country house from 1923 where wall planes extend beyond the roof's perimeter to engage the landscape. A second plan, architectonically not unlike the first, utilized both walls and columns to carry the roof load. In his last plan, the one actually constructed, the weight of the roof plane is carried on columns only; walls become a series of "optional" and visually "light" non-loadbearing screens. The intellectual and visual separation of structural and non-structural building elements allowed for space to be defined and articulated in a new way. It represented, as Mies described the "shock," the discovery of a "new principle."<sup>11</sup>

The Barcelona Pavilion had no real program, as that term is understood and used by architects today. It was to be whatever Mies chose to make of it. Its sole function was to

accommodate a reception for the King and Queen of Spain as they signed the "Golden Book" officially opening the exposition. The pavilion had the symbolic role of representing Germany among the nations participating in the exposition. Its design is in striking contrast to the prevalent neo-renaissance and neo-baroque styles of the neighboring buildings. However, in its precision and refinement, Mies's pavilion was the epitome of German craftsmanship and industry, a metaphor for technology in the twentieth century. Further, he was able to represent this metaphor three dimensionally, in the clearest possible way, because the abstract nature of the building's program allowed him to concentrate totally on the *idea* of space. As a spatial continuum, the pavilion transcends the physical limitations of its site as well as the physical definition of space which walls, floors, and roof plane traditionally made. The space Mies created has the quality of a Mobius strip in that, as one moved through it, what was first perceived as inside is, in actuality, outside, though a more defined outside to be sure.

This spatial ambiguity characteristic of Mies's work was also noted by Arthur Drexler, in a different context and in connection with Chinese architecture. Describing Mies's 1938 project for three courtyard houses, Drexler noted: "Like a Chinese palace the scheme reveals fascinating pockets and alcoves, courts within courts. Like Chinese architecture too, it juxtaposes the satisfaction of the imperturbable wall with the mystery of space while preserving the order of visible structure."<sup>12</sup>

It was also characteristic of Mies's work to set forth an articulated and ordered skeletal structure, the visible structure to which Drexler refers, on a plane defined with a grid or module. Unlike the Japanese use of a module, the tatami mat, that culture's more or less universal device for ordering space, Mies's use of the module knew no absolute proportions or fixed dimensions. In his work, the size of the module derived organically from the requirements of the building problem at hand. His attempt was to establish a general order into which the disparate parts

of a building might be placed, a physical and intellectual continuum. For Mies, it made sense to use the same module in subsequent work only if both the program and the structure were the same as another building's.

The results of Mies's approach are startlingly similar to those of the Japanese; like them, he adopted and used the module as an ordering device and the skeleton structure to establish an organic order for architecture, to manifest the *Baukunst* both of and in his work. There is a pervading concern for "aesthetic balance" in Mies's work and the Oriental, to which Blaser refers, which borders on obsession. There is also a Zen-like preoccupation in Mies's concern for balance and proportion as well as in his attention to detail. Stories abound about how he would spend hours contemplating the disposition of horizontal and vertical elements in an elevation, the placement of a work of art on a wall, or the nuance of shadows cast by various flange thicknesses of the window mullions—as in the Seagram Building.

What such accounts tell us is not that Mies was a very patient man—he was—but that for him the making of any aesthetic judgment carried with it a profound sense of responsibility to be the best, to do the best, at all levels. As Kakuzo Okakura observed in another context: "A special contribution of Zen to Eastern thought was its recognition of the mundane as of equal importance with the spiritual. It held that in the great relation of things there was no distinction of small and great, an atom possessing equal possibilities with the universe."<sup>13</sup>

For Mies, the making of architecture was a moral act, "a communion with the essentials of our civilization," one that carried with it individual and collective responsibility to build, or cause to be built, that which embodies the spirit of the times, the *Zeitgeist*, with the highest and best technique, the *Baukunst*. Such an attitude is predicated on Mies's belief that the highest human endeavor, the making of architecture, is a mode of spiritual expression, the vehicle as well as the manifestation of the *Zeitgeist*. The parallels we see between his work and the Oriental



strike us as profound because they have been arrived at from quite different vantages. There is a similarity of means and ends, of appreciation and understanding.

The Barcelona Pavilion clearly shows that Mies understood that "the reality of a room was to be found in the vacant space enclosed by the roof and walls, not in the roof and walls themselves."<sup>14</sup> For architectural veracity, it is not necessary in Mies's work or in traditional Oriental construction for actual physical connections between beams or between columns and beams to be seen in order to be understood and accepted. Other visual information supplied in the skeleton construction supports the perception that structural members are connected to one another in an appropriate and logical manner. Verisimilitude is accepted in place of verifiable truth.

Although Mies and the Oriental tradition of construction have arrived at similar architectural expressions for the skeleton, wherein physical connections are suppressed and spatial ambiguity is a mutual characteristic, a gulf separates the two. It is a gulf predicated on two different world views of the position man and the things he has made occupy relative to nature and the universe. Both Mies and the Oriental attempt to place man-made things in harmony with nature. In the Oriental tradition, this is done so as to humble man, to indicate his relative unimportance and subordination to a larger cosmology. Mies's work seeks no such subordination. Rather, through his work, the architect seeks a restoration of man, mankind, and man-made things to the position they occupied during the Renaissance: the center of the universe. In seeking perfection for man-made things, Mies seeks to elevate all mankind to a noble, lofty realm.

In his lifetime and despite evidence to the contrary, Mies saw a nobility in the works of construction undertaken by man. He sought, in his own work, to give architectural expression to this essential nobility of spirit. Mies sought to accomplish through architecture what it has been said Winston Churchill accomplished through writing, "to restore meaning to such words as honor and glory

and majesty while conceptually restoring the individual person once again to his place at the center of the universe, the ruler rather than the slave of the forces loosed by scientific technology."<sup>15</sup>

#### Notes

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3 Philip Johnson *Mies van der Rohe* Museum of Modern Art (New York) 1953, p. 201.

4 Peter Carter "Mies van der Rohe, An Appreciation on the Occasion, this Month, of his 75th Birthday" *Architectural Design* 31 (March 1961):97.

5 Johnson *Mies van der Rohe*, p. 198.

6 Carter "An Appreciation," p. 96.

7 Ibid.

8 "Mies van der Rohe" *House and Garden* November 1947, p. 246.

9 Johnson *Mies van der Rohe*, p. 198.

10 Ludwig Mies van der Rohe "Burohaus" G 3 (June 1923), no pagination.

11 "6 Students talk with Mies," *North Carolina University State College of Agriculture and Engineering, School of Design Student Publication* 2 (Spring 1952):28.

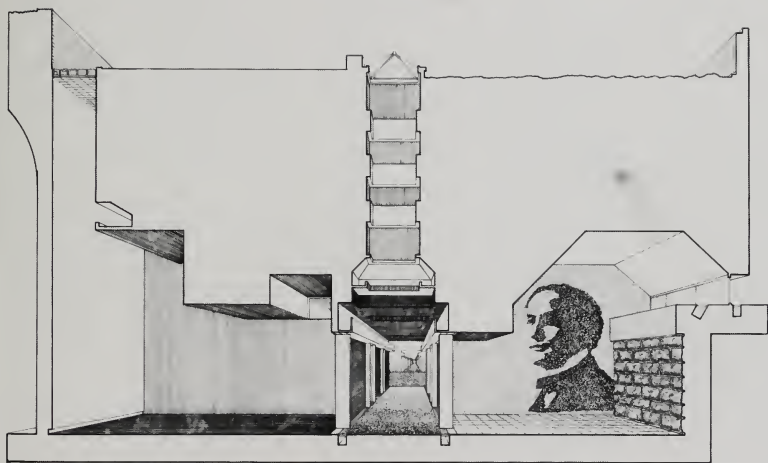
12 Arthur Drexler *Ludwig Mies van der Rohe* George Braziller (New York) 1960, p. 23.

13 Kakuzo Okakura *The Book of Tea* (1906)  
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14 *ibid.*

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ESCAPE EXHIBITS

*David Smuk, M.Arch. Thesis Project  
Houdini Museum of Magic and Illusion, Detroit, Mich.  
School of Architecture, UIUC  
Hub White, critic  
Spring 1989*

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# Between the Ends and the Means of Architecture

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One of the hallmarks of our scientific civilization is its dependence on specialists. We need them. Yet although life without experts would be hard to imagine, the present overspecialization carries with it a price tag. The logic of its growth requires a constant narrowing of focus in every field of study in order to grasp its depth, to comprehend its details, and to appreciate its inherent structure. As the cliché goes, “we know more and more about less and less.” Consequently, meaningful communication can exist only within a small circle of highly knowledgeable specialists who are basically ignorant about other specialists’ domains. Thus our society becomes increasingly fragmented, heterogeneous, and helpless in the face of its own complexity. Architecture is no exception: Postmodernism, in contradistinction to monolithic modernism, offers a multitude of ideas, trends, and solutions focused usually on particular problems or issues. Should we instead seek a more holistic approach to architecture or a synthesis of its various concepts? This paper takes the risk of investigating these problems within a broad and general framework. Of necessity it simplifies the problems; however, I hope that it does not oversimplify them.

## **The Time of Hope**

Modern architecture, especially in the heroic period, presented a unique opportunity for architects. It was a period of high expectation, struggle, and hope. Together with many intellectuals and artists, architects were able to define with great clarity their goals and to implement them with methods developed by

the exact sciences. Their objectives stemmed from the perceptions about the *fin de siècle* society whose wrongs they wanted to rectify: its industrial order of injustices, with wealth and privileges on one side and poverty and slums on the other; its industrial city of contradictions, with great boulevards and monuments on one side and pollution, congestion, and chaos on the other; its bourgeois, decadent culture with the pretentious and, as they saw it, irrelevant art and architecture. They thought that they could improve the built environment, thanks to their intellectual frame of mind inherited from the Enlightenment.

Enlightenment and, as we would say today, its blind faith in rational thinking, was the basis of one of the most fateful philosophical systems: positivism. Within the rationalist mode of thinking, positivism defined its position toward reality: the world in its totality was considered inaccessible to the human mind and, to be comprehended, it had to be reduced to those elements that could be observed, identified, and explained—in short, to the facts. Facts became the subject matter of philosophy and a solid foundation for science. After being measured and classified, they could easily be compared, reproduced, predicted, and, most importantly, manipulated. These possibilities of the exact sciences gave rise to another science: sociology. It set as its goal the development of a precise, unshakable, and “scientific” knowledge of the human world. The social scientists had at their disposal such positivist ideas as the assumption that the human

world was of a similar order to that of the material world, and that the methods of inquiry developed by the exact sciences could be applied to the human sciences as well. In other words, they could establish "universal laws governing every observed phenomena" and apply them toward the improvement of society and the human environment.

For the first time in history, man saw himself as a real master of the universe. But was he? This newly acquired power contained the seeds of defeat. The certainty which man thus gained represented merely a tiny fraction of reality—that which was measurable and verifiable. Could man understand the whole world by merely knowing the facts? Despite these doubts, positivism declared its total devotion to them and consequently became a doctrine which rejected all spiritual problems. "Suffering, death, ideological conflict, social clashes . . . all are declared out of bounds, matters we can only be silent about, in obedience to the principle of verifiability."<sup>1</sup>

Modern architects equipped with such powerful ideas felt confident and enthusiastic. Their work would become rational and they would waste no time on unnecessary concerns with elusive values and metaphysics. The quantitative approach would gain respect and wide application, while the qualitative approach would be considered unscientific and unreliable. Indeed, they set to work, struggling against subjectivity in design and such undefined terms as "taste" or "feeling." When Le Corbusier suggested a rational approach to function and structure, and

reduced the building to its five basic elements, he laid the foundations of a scientific architecture for a new civilization. Likewise, the identification of the four functions of the city was supposed to provide an exact knowledge of the way it worked. Today, pilotis, horizontal windows, or a free plan can be modified according to any need, taste, or fashion, but the main idea of establishing primary elements which can be assembled into an architectural whole is with us to stay. Similarly we do not have to divide the city into functional zones, but when proposing a mixed-use development, we clearly understand all of its consequences. But perhaps it was the belief in universal laws that gave modern architects their arrogant conviction that it was they who could decide how people should live, work, and recreate. In spite of it, however, the idea of positivism must have been strong indeed to have inspired Le Corbusier to declare emphatically: "architecture or revolution."

Soon the revolutionary ideas formulated by the great masters of modernism were taken over by ordinary architects and applied (perhaps confirming Kuh's theory of the scientific revolutions) to the enormous task of rebuilding the towns and the cities destroyed during World War II. Unfortunately, the new theories did not have enough time to mature or to adapt to our rapidly developing societies and generated a built environment of dubious quality. Also, the concentration on utility, functionality, efficiency, and, at that time, such fashionable problems as "growth and change," "flexibility and adaptability," or "the

great number" were emphasized at the expense of esthetics or some "higher," perhaps spiritual needs of man. Finally, man himself was reduced to the role of a mere "user." So it is no surprise that soon a reaction to those uninspiring mass-produced buildings and towns came from younger architects who found the vocabulary of modern architecture exhausted and its premises questionable.

Science too became aware of its shortcomings. In spite of such well-known and appreciated achievement of scientific civilization as developments in biology, medicine, or electronics, or the advances of social well-being in the developed countries, clouds started gathering over its otherwise bright future. The two world wars, the holocaust, the threat of nuclear war, the inability to control hunger and famine, and the degradation of the environment showed the inadequacy of positivism in dealing with reality and forced some philosophers to question the foundations of Western philosophy. Their belief in unlimited progress began to dwindle and, again, the question of man's relation to the outside world became their primary concern. Yet the changes which occurred in philosophy took a different turn. Instead of studying nature, philosophy became concerned with the explanation and expansion of scientific knowledge, with the logic and precise methods of the mathematical sciences. In this way positivism was transformed into logical positivism and became analytic philosophy: a "super science." But as Richard Rorty suggests, it was "left without . . . a sense of mission, or a metaphilosophy."<sup>2</sup> It was left without significant goals—without ends.

Architects, disappointed with the results of their work, became increasingly interested in scientific methods, too. "Operational research," "systems analysis," or "decision theory" attracted the attention of some architects and seemed to open new avenues in place of the *cul-de-sac* of the modern movement. Ludvig von Bertalanffy's "General System Theory," Herbert Simon's "The Sciences of the Artificial," or the theories of Horst Rittel were the texts to be read. But not for long. After the initial enthusiastic reception of Christopher Alexander's "Notes on the

Synthesis of Form" another impasse was reached. The previous optimism seemed to wane and even "advocacy planning" or "participatory design," in spite of their good intentions, could not offer a breakthrough. Finally, the great unfulfilled promises of science were perhaps symbolically summarized in the science-fiction imagery of Archigram and the Metabolists: the last "hurrah" of progress.

### The Time of Disillusionment

The disenchantment with analytic philosophy brought new ideas that began to dominate the intellectual scene. They came in the form of semiotics, structuralism, and later post-structuralism. Semiotics, as formulated by Ferdinand de Saussure, proposes that languages are systems constituted by arbitrary signs which, in turn, consist of signifiers (words) and signifieds (concepts, things). The essential and revolutionary idea in Saussure's theory is that there is no natural connection between the two. Signifiers are formed in an arbitrary way and, consequently, their relation to signifieds is based on convention and sanctioned by history. To put it differently, signifiers are independent of reality or self-referential. Following this line of reasoning, semiotics approached language not so much as an "imperfect" tool for communicating knowledge (as analytic philosophy would have it) but as an abstract system whose intrinsic logic governs our thinking. The relationship of signifiers and signifieds takes over the relationship between mind and reality, and the previous discussion of how our minds reach certainty in constructing a picture of the outside world is further reduced to problems of the internal structure of language. This seems to be another example of the reductionistic attitude of science which leads students of literary texts to substituting syntax—an entity ideally suited for objective, "scientific" analysis—for content, the subject of qualitative value-judgments.

For architects this new development means a change of objectives. Architecture, like linguistics, becomes independent of reality and self-centered. Architects cease to be interested in the problems of the environment

surrounding them and concentrate instead on buildings as signifying elements of architectural language. They appreciate the internal logic of design rather than functional solutions or systems of construction; formal aspects of architecture rather than its content or program; what their buildings express rather than how they work. Thus architecture becomes an abstract order of self-referential, formal statements with "syntax" being its *raison d'être*—its guarantee of a scientific status.

Later, following the Saussurean insight, Jacques Derrida concluded that, like the existing gap between the signifiers and the world they signify, so too there exists a chasm between the written text and reality: the text suppresses or hides some truths about the world it describes. It is the role of the critic and the reader to uncover them through a particular analytical reading of the text called deconstruction. But the question of truthfulness of a written text is related to a quintessential problem—that of truth itself. This question—the philosophical view that there is an objective truth about the world—constitutes, according to Derrida, a false foundation of Western philosophy which he calls "logocentrism." To expose it, to put the problem of the objective truth in the right perspective becomes the main concern of Derrida. Yet he realizes that the problem is so deeply rooted in the tradition of Western thinking that in order to overcome it he has to combat not only logocentrism itself but the way it is formulated: the text, including his own, can be accused of the same suppression of truth. Consequently, an auto-irony, a search for new forms, a use of new words and idioms, an obscurity of style become his weapons. The ideas of Derrida generate furious controversy. For some they represent a mere passing fashion; for others, they promise an end to the vicissitudes of logocentrism with its ill-conceived search for pseudo-truths: a new beginning for stagnant Western philosophy.

In spite of this controversy the Derridean approach exerts a strong influence on architecture. Peter Eisenman, a true follower of Derrida, tries to apply his ideas to architec

ture. Yet a movement that wants to free itself from truth is unable to define its own ends. Hence Eisenman searches for another architecture, an other—not a new—architecture, for the word "other" suggests merely a difference, whereas the word "new" indicates a direction, a value, a hierarchy. Consequently, the concept of "other" leads to an architecture "as is": architecture severed and shielded from any external conditions or outside influences; architecture with its own intrinsic, arbitrary logic expressed by such notions as "traces," "grafts," "textuality," "recursivity," and so on: a self-referential architecture trying to find its goals, its ends, its meaning—in itself.

The evolution of rationalism as described here is of necessity overly brief and simple. In reality it represents a long, dramatic struggle for the human mind and soul. After three hundred years of development, the hegemony of rationalism over the human intellect engulfed humanity and reached its logical conclusion: the total rationalization of human life. From the rationalization of thinking, through the rationalization of the means of production, we have reached the rationalization of the means of exchange—of information, of goods, and of cultures. From the scientific civilization—the modern one—we have moved to the consumer civilization—the postmodern one. This "rational" process brought a total commercialization of society, of professions (health industry, education industry, entertainment industry), of knowledge (business or the know-how-oriented university curricula), of culture (media-dominated benign art, supporting rather than opposing consumerism). Even architecture celebrates such symbols of commercialism as Las Vegas, the "consumer spaces" of Portman, or the lush coffee-table editions of architectural books. Consequently, highly developed societies are fragmented into special-interest groups of overinformed and undereducated individuals. And the loss of certainty, the escape from the shackles of reality, the pursuit of ambiguous successes, leave us unable to talk to each other, or even to formulate a basis for conversation.

### The Secular World of Ambiguity

The description of the evolution of rationalism would not be complete without considering another factor that played a crucial role in shaping our civilization: the secularization of society. The death of God proclaimed by Nietzsche has nurtured Western man since the dawn of the Enlightenment. The rejection of the sacred in the name of rational thinking was supposed, as Kolakowski says, to liberate man from all tradition, from all preestablished meanings, and to open for him, on the basis of his total autonomy, endless opportunity for shaping his own fate. His belief in the limitless malleability of the individual and the endless potential for social improvement led man to the utopian belief in constant progress. Thus progress became man's ultimate goal, his moral obligation, almost his *raison d'être*. Overwhelmed by this new opportunity, man was unable to notice that this unlimited autonomy, instead of giving him a Promethean power of self-creation, led him to unrestricted fancies and arbitrary decisions devoid of any criteria of judgment. He measured the instruments of progress, yet was unable to determine its direction.

The rejection of the sacred deprives us of its power for stabilizing and consolidating social order, or to put it differently, removes the limits that define man. The fruits of this fateful development abound in our secular society: when the state bureaucratizes such previously sacred aspects of life as birth, marriage, or death, it reduces them to trivia and leaves us in a spiritual void; when lawyers justify our wrongdoings, they liberate us from the feeling of guilt and invalidate the meaning of our actions. These phenomena, common in our everyday lives, testify to the moral ambiguity of secular society and generate consequences we know all too well. The role of the sacred, however, is ambiguous too. Not only does it give sacred sense to fundamental events of life such as birth and death, work and art, war and peace, crime and punishment, but also it justifies such aspects of social life as, of necessity, its injustices, privileges, and tools of oppression. But the sacred cannot be contemplated independently of the profane. When opposed to

one other, they produce a tension between the conservative forces and the progressive ones, between a stable structure and dynamic development. Without this tension, this essence of life, the conservative forces would lead us to death by stagnation; the forces of change, acting in a structural void, would cause death by disintegration.

These brief reflections on the sacred are not intended to evoke a nostalgia for a lost world. Rather they serve as a reminder that our reality is more complex than some would like to think. Today, often disappointed with our scientific civilization, we question the institutionalization of reason. We find the hegemony of rationality unbearable, and we revolt against the utopia of progress. But perhaps it is not the idea of progress that we should reject but its exclusivist tendency, the worship of progress. When confronted with the eternal, the permanent, the structured, man may still find hope in progress.

### The Postmodern World of Indifference

It is perhaps not without reason that many concerned professionals—scientists, philosophers, or artists—warn us against the suicidal tendencies of our civilization. Their sources can be found in science's claim to being value free and in our loss of hope of ever reaching the truth. Since we are left without any criteria for judging our thoughts and actions it is no surprise that we escape into nihilism and cynicism. Paradoxically, however, in spite of this bleak picture, there flourishes a rich, theoretical and practical activity among scientists, writers, literary critics, artists, musicians, and architects. Does this activity point to a more positive aspect of our times, or is it symptomatic of decadence? Does it represent a conscious search, or a haphazard groping for new objectives? Within present-day architecture, so abundantly and exquisitely documented by the publishing industry and the media, many trends struggle for recognition: the pastiches of historical forms; high-tech exuberances; consumerist extravaganzas; semiotic obscurities; and poetic imagery—all compete for publicity and supremacy. Can we define their meaning? Unfortunately, without criteria for judging them, with no way of evaluat-



ing their significance or importance, we find that everything seems to be equal or, to put it differently: anything goes. But does it really?

Our common sense tells us that that is not true, that there must be a difference between a right approach and a wrong one, between a good solution and a bad one. The point is that we cannot scientifically prove what our common sense can intuit. Consequently our present frame of mind disregards the problem altogether. We cannot prove, for example, that architecture which takes into consideration the constraints of nature and climate, the requirements of culture and civilization, or the traditions conveyed by history is better (or worse) than architecture that has its roots in modern linguistics and must (like language) find in itself its own meaning and logic. We cannot prove that architecture that uses the most advanced technologies, innovative materials, and the latest design methods is better (or worse) than architecture that does not want to become a utilitarian building trade or an extension of civil engineering but aspires to have symbolic or artistic significance for mankind. Should we disregard these problems as meaningless?

All of these approaches, although well defined in themselves, when considered independently represent architecture's half-truths. Architects approach only problems of special interest to them, and ignore the rest. So perhaps, to prove the superiority of any of them would reflect a false necessity inherited from the times of hope when we believed in science, in truth, and desired "the obvious and the literal." Now, in the time of disillusionment, our choices are not so clear. Since this evolution from certainty to ambiguity seems to lead to the heart of postmodernism, let us rephrase it. Here is how Rorty sees this evolution in philosophy:

Up until Kant, the secular intellectual saw the knowledge gained by the advancing natural sciences as the point of his life. Throughout the nineteenth century, men such as Huxley and Clifford and Peirce still saw respect for scientific truth as the highest human virtue, the moral equivalent of the

Christian's love and fear of God. . . . But the nineteenth century also saw the rise of a new sort of secular intellectual, one who had lost faith in science with the same thoroughness as men in the Enlightenment had lost faith in God. Carlyle and Henry Adams are examples of this new kind of intellectual, the kind whose consciousness is dominated by a sense of the contingency of history, the contingency of the vocabulary that he himself is using, the sense that nature and scientific truth are largely beside the point and that history is for grabs. This sort of intellectual is secular with a vengeance, for he sees the religion of science or of humanity as being just as self-deceptive as the old-time religion.<sup>3</sup>

But perhaps self-deception can be self-deceptive too. Perhaps the present emphasis on the ambiguity of language, the questioning of truth, origin, and history, and consequently the mistrust of our thoughts and actions represent a temporary event, a symptom of our time: to use a term so unpopular today, the *Zeitgeist*. And if that is true (and to paraphrase Nietzsche, truth will exist as long as man believes in grammar), we are not entitled to indulge in nihilism: to blur distinction between pluralism and chaos, ambiguity and obscurity, reflection and indecision, difference and indifference—to claim that since everything deceives us, we can be noncommittal, neutral. Neutrality does not exist (for to be neutral means to be *not* not-neutral, which means to take a position). Hence, we need a sharpening of opinions, a taking of stands; we need a clash of ideas, views, and solutions without which society would become amorphous and disintegrate in entropy. As Kolakowski says, "human culture cannot ever approach a perfect synthesis of its diversified and incompatible components. Its very richness is supported by this very incompatibility of its ingredients. And it is the conflict of values, rather than their harmony, that keeps our culture alive."<sup>4</sup>

Yet the fragmentation of our society, the "ambiguity of differences," the importance given to language at the expense of the subject undermine the basis of conflicts: signifiers are not worth fighting for, they do not

constitute a common ground for exchanging arguments, reasons, or opinions. Thus the architectural "single-interest groups" seek satisfaction in perfecting their particular, often arbitrary theories, in refining their poetic imagery, in escaping into elusive allegories, or just in achieving media recognition or commercial successes. They seem to be disinterested in the "real world" problems, and in searching for common goals and ends. But who determines ends, and for whom?

Although the attainment of common goals and ends seems to be another utopian idea, and the present state of cultural, intellectual, and moral ambiguity may be a passing condition, the conflict of values is of a different order: it is a force that sustains and articulates culture, that stimulates the exchange of ideas and promotes debate and discussion. The conflict of values therefore rejects ambiguity and indifference, and requires clear opinions and sharp arguments. Yet a meaningful discourse is not based on taking positions and defending them. Something else is needed: a constructive (deconstructive?) attitude, an attitude that believes in strong convictions yet is aware of their transience—an attitude expressed already and so well by Karl Popper: "Intellectual honesty does not consist in trying to entrench, or establish one's position by proving it—intellectual honesty consists rather in specifying precisely the conditions under which one is willing to give up one's position."<sup>5</sup> The question remains whether intellectual honesty is self-deceptive too.

## Notes

I wish to thank Truett James for his help in the preparation of this paper.

1 Leszek Kolakowski *The Alienation of Reason: A History of Positivist Thought* Anchor Books (Garden City, N.Y.) 1969, p. 204.

2 Richard Rorty "Philosophy in America Today" in *The American Scholar*, (Spring 1982):187.

3 *Ibid.*, p. 199.

4 Leszek Kolakowski *Husserl and the Search for Certitude* Yale University Press (New Haven, Conn.) 1975, p. 85.

5 Imre Lakatos *Falsification and the Methodology of Scientific Research Programmes in Criticism and the Growth of Knowledge* ed. Imre Lakatos and Alan Musgrave Cambridge University Press (Cambridge) 1970, p. 92.





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# A Framework for Theory in Architecture

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This paper attempts to set the diffuse content of architectural theory into a framework of interpretation through which students may begin to come to terms with what is often seen as a difficult and nebulous subject. Implicit in this framework is the belief that a particularly valid role for theory is to act as an interpretative “bridge” between an academic subject like history and the activities of the design studio, and in so doing act also as a catalyst for design activity.

The paper suggests that the context of any such discussion of theory in architecture is provided by one of the most fundamental of all artistic concerns—the dialectic between reality and its representation. The concept of the dialectic is used here in the Hegelian sense of a pairing of a thesis and its antithesis. This provides the mechanism by which structure and form are given to the arguments contained in the paper, which outlines a series of four dialectic constructions, each dealing with a different aspect of architectural inquiry. These dialectics form a series of overlays which together can provide the basis of a framework of interpretation and analysis, and which comprise the material of a subsequent lecture course.

These four dialectics are posed at the *phenomenal* level by considering issues of constancy and change in the physical world; at the *philosophical* level by discussing some essential attributes of rationalism and empiricism as they affect architecture; at the *attitudinal* level by examining the aesthetic and social values evident in the opposing

artistic styles and viewpoints of classicism and romanticism; and, finally, at the *operational* level by analyzing the concepts of syntactic and semantic structure as they are relevant to architectural design. These arguments are discussed and exemplified with reference to the work of various architects, historical and contemporary.

To begin with we need to acknowledge that the word “theory” has various meanings: it may, for example, be contrasted with practice as unverified speculation; or it may be used to signify any hypothesis whether confirmed or not; but in its best sense it signifies a systematic account of some particular field of study derived from a set of general propositions. These may be taken as postulates—that is, propositions assumed to be true and thus not requiring any further “proof”—or they may be principles more or less strongly confirmed by experience, as in the natural sciences. There may be rival theories in a particular field, differing in their selection of principles, or in the emphasis laid upon certain principles or propositions.

This last condition characterizes theory in architecture, for our discipline contains many rival and often mutually exclusive theories. Geoffrey Scott, writing in 1914, expressed this state of affairs as it struck him forcibly;

Architecture, it is said, must be “expressive of its purpose,” or “expressive of its true construction,” or “expressive of the materials it employs” or “expressive of the national life”

(whether noble or otherwise), or "expressive of a noble life" (whether national or not); or expressive of the craftsman's temperament, or the owner's or the architect's, or, on the contrary, "academic" and studiously indifferent to these factors. It must, we are told, be symmetrical, or it must be picturesque—that is, above all things, unsymmetrical. It must be "traditional" and "scholarly," that is, resembling what has already been done by Greek, Roman, Medieval, or Georgian architects, or it must be "original" and "spontaneous," that is, it must be at pains to avoid this resemblance; or it must strike some happy compromise between these opposites; and so forth indefinitely.

If these axioms were frankly untrue, they would be easy to dismiss; if they were based on fully reasoned theories, they would be easy, at any rate, to discuss. They are neither. We have few "fully reasoned" theories. . . . We subsist on a number of architectural habits, on scraps of tradition, on caprices and prejudices, and above all on this mass of more or less spacious axioms, of half-truths, unrelated, uncriticized and often contradictory, by means of which there is no building so bad that it cannot with a little ingenuity be justified, or so good that it cannot be plausibly condemned.<sup>1</sup>

So we can sense that by and large, in its very nature, architectural theory proceeds on the basis of postulates, propositions, that are not susceptible to any form of "proof" in the scientific sense. But this is not totally true. Those aspects of architecture having to do

with the manipulation of quantifiable physical phenomena such as heat, light, and sound are guided and informed by what we might call "scientific" theory, based on empirical experiment, observation, and reasoning. Structural theory in building operates in the same way, a way where theories having to do with quantifiable conditions may be utilized in order to predict the outcome of particular circumstances and design decisions.

So we can begin to see that there are different types of knowledge within the discipline of architecture. These different components of architectural knowledge can be conveniently classified as:

- i) empirical knowledge about buildings; in particular, construction and technology—essentially, how to build;
- ii) knowledge of the technique and craft of design; the design process—how to design;
- iii) knowledge of the art of architecture; why a building looks the way it does; how the form of the building relates to the generating sets of ideas; what the origin and content of such ideas may be; and how these ideas relate to wider ideological or philosophical issues.

This paper sets itself principally within the third category, although all three of the components interrelate in complex ways. Indeed, just as we begin to appreciate the complexities of what we do, so do we realize

that to attempt to operate in terms of just our own personal and individual experience of buildings is insufficient to engage this complexity effectively. Descriptions of perceived relationships at a direct and "surface" level are important, but they are not enough. Analytical and intellectual examination at a deeper level is also required, and for such a level of inquiry to operate effectively we need the formulation of some coherent framework of values and propositions concerning architecture. Such propositions would transcend the immediate realm of purely personal experience and establish a more profound basis of reasoned criteria and relationships. It is the examination of these deeper levels of value, relationships, and intentions that constitute theory in architecture.

The development of some form of reasoned critical framework provides us with a set of tools with which to manipulate complex ideas, and it allows us to inform and enrich our design intentions. The need for clearly defined intentions in our work is relevant for at least two major reasons. The first, as suggested above, is that such a framework of values and references, with some breadth and depth of intellectual content, can directly benefit us as designers. It can be more comprehensive, supportive, and stimulating than merely an expression of personal belief. Such a framework can connect our contemporary design actions into the continuum of history, and it incorporates societal criteria into its frame of reference. The second reason, really a specific instance of the first, is a concern for reducing the gap in understanding between ourselves and our work on the one hand, and the general public on the other. In recent and present times many architects have seemed to settle for a belief in developing what may be called a personal philosophy, as a substitute for a workable and informative theoretical base.<sup>2</sup> The problem with this approach is that if those beliefs are simply personal to us as individuals, and not easily expressed in terms that are generally understood by the rest of society—our patrons and users of our buildings—then the only justification available to us in responding to criticism is that of maintaining the position of an autonomous artist. This

means, in effect, that our work subscribes not so much to general principles as to just our own belief in its value. Thus without any bridge of explanation and sharing of values with society, any rapprochement between ourselves, as artists and design professionals, and our public may prove to be impossible. Paul Klee, remember, during the Bauhaus period, complained that "the people are not with us," and felt this loss keenly as a diminution of the artist's role within society.

But before we can begin to consider what any such "general principles" might be, we need to define and discuss what we may call the "content" of architectural theory, that is, what sort of ideas constitute theory in architecture, what do they mean, and where do they come from? The critical framework for the discussion offered in this paper is predicated upon a series of dialectic propositions, a series of pairing of ideas and attitudes that ostensibly are polarized, and as such serve to indicate opposite ends of the architectural spectrum. The catalyst for these discussions is provided by what is perhaps one of the most fundamental of all dialectics within art, that between reality and the representation of that reality through any particular artistic medium. In our case, of course, the medium is architecture, which, being a "useful" art, has to embrace both the real and the representational; the work of architecture is part of the real, usable world as well as being a representation of it.

But what actually does this mean, when we talk about architecture being a representation of reality? Architecture is produced (usually) in response to a program or a particular set of needs, and such needs or programs embody individual, social, political, and technological ideas and values, either implicitly or explicitly. These form the immediate reality of the building condition, and at the same time are part of a greater cultural reality beyond the specific case. These ideas and values are indeed phenomena that contribute to the shaping of our world, physically and metaphorically; and architecture, as forms and spaces conceived and built in response to these values and conditions,

"represents" them to us in physical form. We are able to "read" meanings in buildings; ideas and values are represented and made visible to our understanding. We understand, of course, that when we talk like this about architecture being representational, we are not talking about some simple pictorial representation of likeness. Architecture is not an imitative art in this literal sense. For architecture to represent something there has to involve some form of symbolism, or some form of signification whereby one thing, a building or a part of a building, stands for or reminds us of another thing or idea. In this sense, architecture can be considered a medium of social communication, and we can begin to sense that it contains within itself concepts and values that are indicative of two manifestly distinct conditions. On the one hand there are clearly forms, ideas, and values that are the substance of architecture itself, its own history, traditions, and professional discipline. We may think of such ideas as being "internally referential." On the other hand, we can see that in order to signify other non-architectural meanings in relation to its societal context, architecture has to deal with ideas and values that are connected to these issues; that is, they are "externally referential."

We will return in due course to these important notions of architecture as social communication and of internal and external reference, but before doing so, in relation to the issue of representation, let us first consider what we mean when we talk as artists about "reality."

It is a reasonable generalization to say that the various artistic revolutions of the nineteenth and early twentieth centuries aimed, each in its own way, at the idea of a more "essential" realism.<sup>3</sup> There was a discernible intention to penetrate beneath superficial appearances and stylistic techniques, to move beyond convention in a search for ways to achieve a more profound understanding of contemporary reality. To do this, art made "analogues" of reality; that is, it focused upon some particular ideas and phenomena and created new kinds of visual structures, through which, by comparison with pragmatic experi-

ence, certain attributes of reality could be better understood and appreciated. A clear example of such intentions is provided by the artists of the cubist movement in the early years of this century in their attempt to engage the dimension of time as something fundamental to any portrayal of reality. As we know, this led them to the concept of simultaneity with its representational development of the depiction, all together, of several aspects of the same object, which in "real" time would have to be experienced sequentially. The purism of Le Corbusier and Ozenfant also demonstrates this idea of analogues of reality in the way that ideas concerning the fundamental structure of the world are suggested and depicted by variations upon only a few "universal" forms and archetypal objects.

A necessary corollary to the creation of analogues in this sense is the generation of aesthetic rule systems and paradigms to guide and sustain the artistic endeavor. Piet Mondrian's paintings of the 1920s and 1930s provide an example of such a rule system and its operation and refinement, while Le Corbusier's "Five Points" became a clear paradigm for the International Style. Now, if these paradigms and rule systems are concerned with some notion of "essential" ideas and attributes of reality (as they attempted to be) then we could reasonably expect them to deal with conditions and qualities that are absolute and unchanging. But, in our thinking upon this, we have to acknowledge that it is not a simple matter to define "absolute" and unchanging conditions. Here, then, we are required to confront the first of the dialectic structures with which we may construct our theoretical framework, that is, the dialectic between *constancy* and *change* in the phenomena that comprise our world.

Throughout the classical world, and during the Renaissance, the concept of art was primarily based upon the notion of some exemplary past that contained absolute values of beauty. The essence lay in the classical ideal, and it was firmly believed that "the task of art was to imitate nature, and that in fact artistic excellence lay in masterly and proper imitation of nature."<sup>4</sup> Against this classical theory

of mimesis, the great German philosopher Hegel (1770- 1831) proposed that art be lifted out of this abstract metaphysical realm and be located instead within the "concrete" world of each particular culture. Each cultural period was now to be viewed as a recognizable and discrete stage in an evolutionary process of history, each stage recognizable in relation to its social attitudes and aesthetic forms. Thus, here we have the notion of relativity: social values, ideologies, and aesthetic principles are relative to their period and not absolute across time. We can clearly perceive here ideas of relative and absolute beauty coming from philosophical inquiry, and connecting directly to our dialectic of constancy and change, and it is into the realms of philosophy that we need to venture now in order to better understand these origins and connections.

Aristotelian thought offers particular insight into the problem of constancy and change, for according to Aristotle's analysis we have to recognize two basic elements in any possible natural event. The first of these is that there must be something that remains the same, and yet is somehow subject to variation; and the other is that there do occur genuine changes of qualities. Thus, for example, when an acorn grows into an oak tree, there must be some permanent feature that has at one time the qualities that we call an acorn, and later, those that we call an oak. Unless this were the case, we could not even properly describe it as a change, since there would be no relation between the former stage and the latter. But if there is some fixed aspect, there must be another that changes; there must be something different between the acorn and the oak or there would be no genuine alteration. The two features, Aristotle said, are *matter* and *form*. Matter is the essential characteristic which is capable of being "informed," that is, of assuming various forms. The matter of the acorn and the oak has the potential to receive different forms, of having one form at one time and another form at a later time. The form of the object at any given time is its actuality, what it has become at that particular moment.

Each and every object in this world thus has

a permanent nature which persists through its realization or acquisition of different forms. Each and every object can be understood only in terms of both its matter and its form, and the processes by which it grows, alters, or moves, that is, replaces one form with another. The permanent aspect of an object never exists independently, or without assuming some form; the object always is in some state and in the process of reaching some other state. Thus the formal changing aspect, and the material, permanent aspect of any object are always present and always constitute the basis for any explanation of what is occurring.

This has clear and direct implications for architecture inasmuch as it suggests that the design of a building is intrinsically the process through which we may identify and preserve some essences of the physical and societal context, while at the same time being the agent of transformation of these essential qualities so that they may be continually represented in ways relevant and particular to contemporary circumstances. The work of Giancarlo de Carlo in Urbino, Italy, is specifically instructive in this regard. For example, his School of Education set within the urban fabric of the medieval city demonstrates direct conceptual connections both to its physical context and to architectural ideas evident in the nearby fourteenth-century Ducal Palace (by Laurana and Francesco di Giorgio); and yet the form of de Carlo's building is unmistakably contemporary, and its vocabulary that of the modern movement.

Our excursion into metaphysical philosophy in fact brings us to the second element in our developing theoretical framework, and this concerns nothing less than the fundamental question, how do we define this "reality" that we are engaged in representing? This is such a profound topic that we clearly need some acceptable level of generalization for our purposes, and indeed we can define such a level of inquiry by phrasing our second dialectic as that between the philosophical poles of rationalism and empiricism.

Rationalism is a philosophy that goes back in

its architectural manifestations to at least the eighteenth century, when it provided the theoretical basis for architecture in France and Italy, in contrast to the Picturesque developments in England, which were predicated upon the alternate philosophy of empiricism.

As with all profound questions of philosophy, origins can be found in the work of such classical giants as Plato and Aristotle, but for our purposes rationalism as a philosophical position was most clearly formulated by the Frenchman Rene Descartes in 1637. He was concerned to arrive at a distillation of concepts that were absolute and "true" in any and all circumstances, that is, deep and underlying elemental phenomena that were constant and irreducible whatever the variety of superficial circumstances of any situation. To this end he rejected any knowledge gained through the senses as untrustworthy and subject to change, and he concentrated instead upon absolute and abstract deductive reasoning. For example, he maintained, he could not know if at any one time he was sitting in his study reading a book, or lying asleep dreaming about it.<sup>5</sup> There was no absolute proof of the condition. But whether he was asleep or awake his hand would still have five fingers; the number "five" was therefore "true." And what was true of number was also true of form—of the square, the triangle, the cube, the cone, the sphere, and the cylinder; these were profound realities that existed as elemental phenomena, and which underlay the whole series of transient and ephemeral "realities" experienced through our senses. There is, or course, much more to Cartesian rationalism than this simplistic summary, but this was the part that subsequent architectural theorists saw as relevant.

Marc-Antoine Laugier in 1753 translated these ideas into architectural form through his mythical Primitive Hut,<sup>6</sup> where he postulated that all great architecture was and should be developed from only three basic formal elements: the column, the pediment, and the architrave. This basic trilogy of forms, he considered, was the irreducible essence of architectural form; it encapsu-

lated universal architectural truths, valid at all times and in all places, and it was given authority by the antiquity and origin of these forms in the mythical past, when the first buildings were supposed to have been constructed using only these three elements. Nearer to our own time Mies van der Rohe brought this rationalist tradition to the furthest limits of abstraction by building in twentieth-century materials pure examples of what Laugier had written about. Indeed, Mies's famous dictum of "less is more" is as terse a representation of rationalist philosophy in architecture as we are likely to see. Current work in Europe by the so-called neorationalists such as Aldo Rossi, Giorgio Grassi, and O. M. Ungers also pursues these and similar themes.

In contrast to this rationalist position, the philosophy of empiricism, as developed by British philosophers such as Bacon, Locke, Hume, and Berkeley in the seventeenth and eighteenth centuries, takes a thoroughly opposite stance. It says that far from mistrusting our senses, as Descartes did, they are indeed our only source of knowledge.<sup>7</sup> We are, so these philosophers considered, born with a totally blank mind, "white paper" onto which we record the impressions received by our eyes, ears, and other sensory organs, thus building up in the only possible way our knowledge of the world outside ourselves. We submit these sensory perceptions, as we receive them, to various ordering procedures, comparing, contrasting, and thus learning relationships between people, things, concepts, and so forth. Rather than considering some *general* set of circumstances and working downward and inward toward some irreducible and universal essence by a process of deductive logic, as the rationalist would, the empiricist tends to begin with some *particular* circumstances, and from a detailed examination of this to work upward and outward toward some generalized conclusions by the opposite process of inductive logic.

This approach to philosophy also has profound implications for architecture. In the eighteenth century, for example, designers such as Humphrey Repton took these ideals and culled from them a set of precepts by



which designs could be made for the express purpose of sensory delight. Indeed, a major impetus of the eighteenth-century Picturesque movement, and to a large extent the nineteenth-century romantic movement also, was derived from the idea of the direct appeal to the senses—to specifically induce in the spectator certain emotions generated by the arrangement of forms and images. Nor do we need to look back into history for other examples. A designer like Charles Moore is a pure empiricist, concerned above all else with human sensory comfort and delight. This is shown particularly well in Moore's design of a house for a blind client and his family near New York. Here the whole plan is ordered and informed by utilization of a whole range of sensory experiences, with a particular combination of a stimuli provided by each space, so that the sightless person can orient himself, move around and enjoy the house by experiencing it and learning the arrangement of spaces from the sensations given to him by each space. Such sensations are provided by touch—the feel of different materials; by sound—with different acoustic resonances from surfaces, and the use of water in the central space as a sound source to assist direction finding; by heat—with sunlight admitted to rooms at particular times and in particular ways depending on the use of the room and its orientation; by smell—with internal landscape used to provide a range of olfactory experiences for different spaces, and so forth. The ordering geometry of form and space is here not derived from idealized forms and relationships, but rather from an assemblage of particular incidents which are then correlated into an overall formal composition.

So far we have defined two dialectic structures within the overall frame of artistic endeavor concerning reality and its representation. The first highlighted the ever-present *phenomenal* relationship between constancy and change, while the second considered the *philosophical* relationship between rationalist and empiricist positions. To this developing framework we can add two further dialectic constructs, an *attitudinal* relationship between classicism and romanticism, and an *operational* relationship between syntactic

and semantic structures within architectural form. What we are engaged in doing here is building our framework of theory by a process of continual focusing on the "grain" of architectural ideas; from overall issues pertaining to the patterns and processes that constitute our world of complex phenomena; through philosophical polarities that each in their own way seek to manage these complex issues; down to aesthetic attitudes that refine our judgment; and finally to a discussion of how architecture actually operates as a formal system and a medium of communication for ideas and values.

In relation to aesthetic attitudes, the distinction between classicism and romanticism is a useful one inasmuch as it distinguishes between particular and powerful groupings of aesthetic and social values. We can say again, within the limits of acceptable generalization, that classicism is social, formal, intellectual, logically organized, and static; and romanticism is individual, informal, emotional, and dynamic.<sup>8</sup> Classicism is social in that its emphasis is on the qualities that people, institutions, and other societal groupings have in common, rather than on individual differences. This emphasis on similarities inevitably imparts a degree of conformity to classical works, manifested in a certain amount of formality and predetermined standards, polish, and accepted conventions, together with an overall objectivity, as opposed to the essential subjectivity of the romantic point of view. There is with the classical viewpoint a general desire to have fixed standards and to be able to conform to them with the certainty of being right. In the seventeenth century, for example, in the field of literature, the foundation of the academies in France was motivated by the declared intention "to give our language certainty by rules . . . and to make it pure (and) eloquent."<sup>9</sup> This desire for a system of rules that would guarantee correctness and quality received great reinforcement from Newtonian physics and mathematics in the late seventeenth century, which revealed that the whole universe was rational, systematic, and consistent, operating by its "laws" with mathematical precision.



The use of the word "rational" points up some cross-references between classicism and rationalism, just as a different emphasis, this time on the individual and his senses, implies some connections between romanticism and empiricism. It is important, however, to continue to distinguish rationalism and empiricism as basic philosophical positions concerning the theory of knowledge—how we interpret what we know—whereas classicism and romanticism remain primarily as opposing attitudes or styles, with commonalities within themselves across the arts and into the philosophy of aesthetics.

We can recognize that attitudes inherent in classical thought represent one aspect of architectural inquiry that is always present—the search for stable and solid criteria—and against this we can recognize also that attitude characterized by the independently minded artists of the nineteenth and twentieth centuries. These artists and architects refused to be drawn into the world of the academies and the great bodies of established thought and doctrine; they preferred instead to search independently and individually for an appropriate expression of their contemporary epoch. Instead of trying to develop an objective and considered response to any given situation, the romantic artist or architect preferred instead to emphasize his own individual reaction to the circumstances, to celebrate the idea of unique personalities. Jean Jacques Rousseau, the eighteenth-century French philosopher, provided a statement that might well serve as the rallying call for the whole romantic movement when he wrote: "I am not made like anyone I have seen; I dare believe that I am not made like anyone in existence. If I am not better, at least I am different."<sup>10</sup>

We can see, then, in brief summary of this element of our theory framework, that romantic and classical attitudes each present certain strengths and weaknesses. The romantic celebration of unique personalities is a catalyst to individual insight and innovation, but it can also lead to an unfettered anarchy where there are not rules or communally agreed values. Conformity to classical canon can put the artist in touch with

transcendent ideas of universal beauty and value, and guarantees a degree of aesthetic good manners at the very least, but it can also breed a deadening conservatism that is stifling to innovation and the individual. That these are powerful aesthetic impulses cannot be doubted, and one of the reasons for the renewed popularity and recognition of the works of Karl Friedrich Schinkel (1781-1844) is nothing less than this architect's unique ability to weave together nineteenth-century sources of romanticism and neoclassicism to create a powerful and flexible architectural language.

In moving onto our final dialectic construct, that between syntactic and semantic structure, we are dealing now specifically with the operational end of architectural theory, and attempting to explain something of the nature of architecture as a formal language. Having come to some conclusions about the content and concepts of reality, and our attitudes toward them, we are now able to consider those means that we have at our disposal, as architects, to effect some representation of this reality.

We talked earlier in the essay about architecture being "representational," not in any simple pictorial sense, but rather as a system of social communication involving some form of symbolism or other means of signification. In this sense architecture, as a means of social communication, can be considered as a sign system or language, and thus is susceptible, to some degree, to basic linguistic analysis. This consideration of architecture as a sign system allows us to borrow from linguistic studies the key concepts of semantic and syntactic structure, which together form the final element in our dialectic series.

To explain simply this categorization we can say that semantics deals with the study of the ways in which signs actually carry meaning, and how such meaning is communicated. Syntactics, on the other hand, deals with the rules and processes of combination of signs, without regard for the content or meaning of the signs; for example the ways in which words may be combined into sentences according to certain rules but without specific

reference to the meaning of the words themselves.

In developing our understanding of syntactics in architectural terms we can see that we are considering rules of combination that are "abstract" in the sense that they are devoid of any representational meaning. But their logic as systems of elements and combinations has to derive from some source, and this source is the discipline of architecture itself, its traditions, history, aesthetic and constructional rule systems, paradigms, and so forth. We can say, in fact, that as such, syntactic structures are "internally referential" in the manner that we noted earlier.

One of the clearest examples of the development of an approach to architectural design that establishes its coherence and logic from within the limits of its own discipline was formulated by the French architect J. N. L. Durand in his lectures to the Ecole Polytechnique in Paris during the early years of the nineteenth century.<sup>11</sup> Durand defined architecture simply as the art of composing and executing buildings, and he argued that because architecture was the most expensive of all the arts it should not be whimsical or guided by prejudice. Durand argued that in order to avoid wasteful expense, architectural design had to closely follow totally rational and immutable rules, and in contrast to previous theoretical positions (such as Laugier's Primitive Hut) he stressed the irrelevance of any transcendental justification. Architecture, he maintained, should be assured of its usefulness in a material world ruled by pragmatic values, and there was no need to look for any explanations outside the field of this new and completely autonomous theory, composed now of truths evident from mathematical reason. Architecture, created by people for people, could identify and reach its objectives "within its own way of being."

Although clearly aligned with contemporary rational philosophical notions, Durand's theory was predicated upon a system of values markedly different from those of his predecessors. Values in architecture were no longer to be identified by a set of precepts explained and justified by transcendental

intentions and relationships. Architecture ceased with Durand to be a metaphoric image of some aspects of cosmic order, where symbolism had been an inherent component in architectural thinking. The new self-contained and pragmatic order contained similar sets of forms, but their relationships were now self-referential and autonomous, and their ordering was rational, not symbolic.

Durand's process was based upon the logical premises of analysis and synthesis. He analyzed the elements of buildings, columns, walls, openings, roofs, vaults, and so forth, relating form to material and construction. He then explained how to combine these elements, which he compared to words in a language, or notes in music, and through these combinations the separate parts of the buildings were formed, such as rooms, porticoes, and atriums. Once these parts were well formulated, Durand explained how to compose whole structures, and in such a manner architectural design became a formal game of combinations, devoid of any transcendental justifications. Any meanings were to be derived from within the system, and architecture became a language where any possible meanings depended entirely on syntax. Form and content had become one.

The influence of Durand's theory upon nineteenth- and twentieth-century architecture has been immense. His teaching methods and precepts became enshrined in education and practice alike: at the écoles of the nineteenth century and at the schools of architecture in the twentieth century this method and theory formed the basis of much of the architect's training. Book such as Nathaniel Curtis's *Architectural Composition* in the 1920s and 1930s were the backbone of studio instruction and comprised largely of reworkings and refinements of Durand's teachings. And today, a book like Ching's *Architecture: Form, Space and Order* follows very closely the explicit and implicit messages of Durand's *Lecons d'Architecture*, published in 1802, in the way that it demonstrates clear themes of syntactic composition, such as spatial ordering systems, formal typologies, and so forth. These themes are validated and interpreted within their

own terms of reference and the provenance of architectural tradition and precedent.

The whole subject of syntactics received a tremendous boost in the 1950s after Noam Chomsky first published his book *Syntactic Structures*.<sup>12</sup> Chomsky suggested that we are able to express ourselves and our ideas by forming sentences according to certain "generative" and "transforming" rules of syntax, and his book contains many examples of language form generation according to these complex rules. Some architects, notably Peter Eisenman, have tried to make direct analogies with Chomsky's rule systems in order to develop aesthetic rule systems for the generation and transformation of architectural form. Eisenman's "House" series is perhaps the most notable recent example of an architect attempting to construct an architecture from completely syntactical sources, or as Durand put it, from "within its own way of being."

In acknowledging the importance and prevalence of architectural inquiry at the syntactic pole of our dialectic, we have to give parallel and equal consideration to operations within the field of semantics, that is, the study of how signs carry meaning. The most promising way of looking at this area of study seems to be through the theory of signs developed from the work of Ferdinand de Saussure, a Swiss linguist and philosopher who researched the subject at the University of Geneva between 1906 and 1911.<sup>13</sup> Saussure called his general theory of signification "semiology," and it has at its root the basic idea that a sign is a two-part entity, the form which signifies an idea, and the idea that is signified. We may be surprised to find this, Saussure's most basic concept, anticipated by none other than Vitruvius, who wrote "in all matters, but particularly architecture, there are those two points; the thing signified and that which gives it significance."<sup>14</sup> Saussure's distinction between the signifier and the signified is exactly like this. The signifier consists of some material representation, a word, or some part of a building, for example, while the signified is that concept to which the representation refers. However, in order for the meanings to be understood a

third element must be present—what we may call a "social contract." This social contract is the mechanism by which meanings are shared and respected. For example, there was no particular reason why the English should call a certain animal "bull," but there now exists a social contract between all English-speaking peoples in the world that we shall use the word "bull" when we want to refer to that particular type of animal. If, for example, I used some other word or coined a new word for the purpose, no one could understand me: I would have broken the social contract. It is important, however, to recognize at this point that architecture is not quite like written or spoken language in this respect. Although we can see from examples that architecture clearly does carry meanings, there is no comprehensive social contract as to what the meanings of building elements or whole buildings are. What social contract that does exist as to meanings and architectural form is a partial and patchy one. As an example of this "architectural contract" in operation we can cite the example of the Gothic cathedral, and note that this building type is a communally understood and potent "signifier" of the Christian faith, that which is "signified." Indeed, through a process of learning this relationship most of us in Western cultures now share a social contract as to conventional church form. However, such a learned and shared relationship does not exist across the spectrum of architecture: architectural elements are not simply like words in this respect, and we need to exercise great caution in expecting or demanding neat or "packaged" meanings from architectural form.

Despite this valid warning, however, it is constructive to look at an example of a building that is specifically encoded with meanings in order to understand better the potential of this relationship between form and meaning. In this context both Geoffrey Broadbent<sup>15</sup> and Charles Jencks<sup>16</sup> have drawn attention to the Casa Batllo of Antonio Gaudi in Barcelona (1904-6) as an example of an architecture that carries a rich variety of meanings at a number of levels of interpretation. The first two floors have an unusual colonnade which has a strong visual analogy

with human bones. The main facade with its undulating forms in brown, green, and blue ceramics "represents" the sea, while the boldly tiled roof actually "looks like" a dragon, and the whole arrangement is topped by a pinnacle bearing a Christian cross. Bones, sea, and dragon are all represented by simple visual analogy, but Jencks has pointed out also that the whole composition is given extra relevance and depth of meaning in that it operates also as an expression of national pride for the Spanish province of Catalonia, of which Barcelona is the capital. Here we have a representation of Catalanian separatism in the symbolic slaying of the dragon of Castile (the seat of central authority in sixteenth- and seventeenth-century Spain) by St. George, the patron saint of Barcelona. St. George is signified by the Christian cross, the "bones" signify the bones of the martyrs who died during the course of the conflict, while the "sea" may signify the general maritime nature of that area of northeast Spain and Barcelona in particular. Here we have a social contract for these deeper levels of meaning which is common to only one particular group, those sharing the communal heritage of the Catalanian province. The building may be, for this social group, a very potent and enjoyable symbol, but it is important for us to realize also that the very limited nature of this social contract does not take all value from the building even if we are excluded from this specific history and heritage. The architectural form still retains beauty and visual coherence, and contains within it other, more simple and direct visual analogies that may be appreciated by the casual observer. This consistency and coherence is achieved across these various levels precisely because there is a dialogue between the syntactic structure of formal composition and the semantic structures of analogy and cultural meaning.

We can see from this example that if we can refer to syntactic structures as *internally* referential, then semantic structures, by the very nature of their signification, are *externally* referential, that is, they refer to ideas and values outside the immediate discipline of architecture. This distinction between those architectural ideas and values that are

internally referential within their own discipline and those that are externally referential to other societal or artistic values is an important one, and a distinction that would serve to underwrite a series of further explorations.

This paper, then, has sufficed only to scratch the surface of many important matters, an examination of which may help us understand both the products and processes of our own discipline and also to inform the design intentions that guide our work as practicing architects. At the same time the themes, topics, and architectural works discussed briefly here serve to define the content of a lecture course designed to orient students in the complex and often contradictory world of architectural theory.

#### Notes

1 G. Scott *The Architecture of Humanism* 2nd ed. Charles Scribner's Sons (New York) 1924, pp. 7-8.

2 B. Allsop *A Modern Theory of Architecture* Routledge and Kegan Paul (London) 1977, p. 1.

3 A. Colquhoun "Rules, Realism, and History" in *Essays in Architectural Criticism* (Cambridge, Mass.) 1981, p. 67.

4 D. Porphyrios "Notes on a Method" *Architectural Design* 51, no. 6/7 (1981):96.

5 These simplified statements are based upon those outlined by G. Broadbent, "Neoclassicism," *Architectural Design* 49, no. 8/9 (1979):2. A useful deeper analysis may be found in B. Aune, *Rationalism, Empiricism and Pragmatism: An Introduction*, Random House (New York) 1970.

6 M. A. Laugier *An Essay on Architecture* trans. W. Herrman and A. Herrman-Hennessey and Ingalls (Los Angeles) 1977.

7 Broadbent "Neoclassicism," p. 3.

8 Definitions are taken from Hornstein, Percy and Brown, eds. *The Reader's Compan-*

ion of *World Literature* New American Library  
(New York) 1973, p. 117.

9 Ibid., p. 362.

10 Ibid., p. 457.

11 This discussion of Durand's teaching is based on material in A. Perez-Gomez, *Architecture and the Crisis of Modern Science*, MIT Press (Cambridge, Mass.) 1983, pp. 297-326.

12 N. Chomsky *Syntactic Structures* Mouton (The Hague) 1957.

13 F. de Saussure *Course in Linguistics* (1906-11) trans. W. Baskin Philosophical Library (New York) 1959.

14 Vitruvius *The Ten Books on Architecture* trans. M. Morgan (1914), Reprint Dover (New York), 1960 Quoted in G. Broadbent, "A Plain Man's Guide to the Theory of Signs in Architecture," *Architectural Design* 47, no. 7/8 (1977):479, upon which article this discussion of semantics is based.

15 Broadbent "A Plain Man's Guide," p. 480.

16 C. Jencks *The Language of Post-Modern Architecture* London (Academy Editions) 1977, pp. 98-101.

# other place(s):

## An Examination of "place" in the Work of Aalto and Terragni

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### place as space

**Place.** (plē's), *sb.* Forms: [ME. *place*, a.F. *place* (11th c.)=Pr. *plassa*, Sp. *plaza*, Pg. *praca*, It. *piazza*,... *Place* has superseded OE. *stow* and (largely) *stede*; it answers to F. *lieu*, L. *locus*, as well as to F. *place*, and the senses are thus very numerous and difficult to arrange.

**I. 1.** An open space in a city; a square, a market-place. a. Used in OE. to render L. *platea* of the Vulgate.

**II.** A material space.

**2.** space; extension in two (or three) directions; 'room.' *arch.* To offer *place*, to make way, give way (*obs.*).

**3.** A particular part of a space, of defined or undefined extent, but of definite situation. (=L. *locus*, OE. *stow*.) Sometimes applied to a region or part of the earth's surface.<sup>1</sup>

In attempting to understand the concept of place, we fluctuate between thinking of place as a physical thing and considering place as an experiential phenomenon. This vacillation is reflected in other efforts to define place, for example, Christian Norberg-Schulz's in *Genius Loci*. Inspired by Martin Heidegger's concept of 'dwelling,'<sup>2</sup> Norberg-Schulz accurately observes that place cannot be reduced to any one of its properties, such as space or dimension, without losing what is described as its concrete nature. With the use of phenomenology, a return to "things" rather than mental constructions, Norberg-Schulz asserts that "place" is found in our ability to concretize our existence in form. His term "concrete space" is described not as

homogeneous, but as growing out of its many qualities such as enclosure and extension, and their specific material expression.

However, it is in Norberg-Schulz's discussion of its concrete nature that the phenomenon of place reverts back to the physical forms which signify it, rather than staying within the play of this signification. He uses the etymological meaning of the word to reinforce the idea that "place" as a noun is a phenomenon that exists in the physical environment. He goes on to connect "place" with its qualities of space and its attendant character, terms which he subsequently uses to discuss the spirit of place of various cities.

In this discussion it seems that, although place and space are not synonymous, the former is deemed necessary for a reading of place, especially within an urban context. This contrasts with other commentators such as Alan Colquhoun, who recognizes the separation between the physical environment as a social schematization and our reading of it.<sup>3</sup>

Place, for Norberg-Schulz, is connected with the notion of belonging, and is expressed through the act of symbolizing meanings within a conventional spatial tradition. However, it is my contention that, just as in Gaston Bachelard's writings,<sup>4</sup> where the "space" lies outside the text, "place" resides in the associations and meanings that exist outside of the physical environment. It is through the signification, through the resonances that arise out of a reading of concrete

space, that one can begin to understand "place."

### the other

**Place** (ple's), *v. Pa.t.* and *ppl.* placed (ple'st); also 6 *Sc.* plasit, plaist, pladeit, 6-7 plast(e); *pa.ppl.* 6 yplasde. [f. Place *sb.* So F. *placer* (1606 in Hatz.-Darm.).]

1. *trans.* To put or set in a particular place, position, situation; to station; to posit; *fig.* to set in some condition or relation to other things. Often a mere synonym of *put, set*.<sup>5</sup>

In the final chapter of his book, Norberg-Schulz criticizes the modern movement for its lack of spatial definition. He uses the ideas of space and character as a means to reveal what he considers to be its lack of imageability and the resultant loss of place in the contemporary city. He specifically cites the lack of figure-ground relationship as a symptom of this malaise, while still maintaining that certain architects, such as Wright and Le Corbusier, achieve a measure of spatial definition in their work. However, rather than assume that these works represent a disintegration of spatial qualities, it may be more productive to propose that modern architecture represents a condition where space is not *a priori*; that this is a different kind of "space" that we are seeing.

Michel Foucault, in his article "Autres Espaces,"<sup>6</sup> describes this "space" in relation to the changes in spatial conceptions that Western history reveals. He briefly outlines this progression by stating that there was

originally a hierarchical system of spaces (the sacred, the profane), which he calls the space of localization. This space gave way to the space of extension, which he connects with Galileo's discovery of the earth's movement around the sun. Foucault then connects the space of our time with the concept of arrangement, an idea which comes from the systems and networks of modern technology. He concludes that the space of arrangement can be described as a series of relationships between positions that separate them and link them to create a kind of shape. It is a space that is not neutral or homogeneous, but one which is saturated with specific qualities, like the poetic "space" described by Bachelard.

This paper will attempt to uncover these other "places," ones that cannot be codified with the figure-ground dichotomy to which traditional conceptions of space seem bound. This investigation is grounded in two basic precepts: the first, that if the structure of language informs the analysis of place, and if architecture is indeed a text, then the idea of place resides in the reading of that text and the play of associations between each "word." Secondly, the critical analysis of these projects will be undertaken in relation to the idea of arrangement, as it represents a condition in which "place" emerges as the qualities of relationships between positions.

### place(s) of difference

*"Traveling, you realize that differences are lost; each city takes to resembling all cities, places exchange their form, order, distances,*





Figure 1. Alvar Aalto, Town Hall, Saynatsalo, 1952, view of courtyard (photo: Rod Henmi).

*a shapeless dust cloud invades the continents. Your atlas preserves the differences intact; that assortment of qualities which are like letters in a name.*<sup>7</sup>

In his book *Invisible Cities*, Italo Calvino describes a conversation between Marco Polo and the great Emperor Kublai Khan. This exchange reveals the fears of a powerful man, as he attempts to experience his empire through the accounts of the traveler Polo. While afraid that his empire is slipping away from him, he is still confident that nothing will undermine his power to know it through the irrational taxonomy of his atlas. To the great emperor, this atlas represents an analogical empire. It allows him to visit cities he could never see (Jerusalem, Atlantis, New York), to hold the history of human culture in his hands. In the space formed by the pages of this atlas there is a "place" that emerges from the tension between distant locations, the relationships that hold them together, the distinctions that keep them apart.

In the work of Aalto, the site is like the atlas of Khan. It is a surface which is already

"written" upon, and on which his projects engage in a subtle dialogue like characters in the pages of a book. "Place" emerges as the quality of relationships between these characters, as the site holds together and grounds them. Thus, his projects are a topology on which the complex layering of intentions are held in balance. In the Town Hall at Saynatsalo this sense is expressed through its presence on the site as a horizontal block placed into the low-relief terrain. This idea is reinforced through the nature and placement of the flanking housing blocks, which both measure the slope and define the slowly rising diagonal path to the town hall. This reading of topological "grounding" is reinforced through the material expression of the building as a homogeneous brick mass that is carved into and built upon. In this sense, this building becomes the hill, a conception that is reinforced by the creation of a new ground through the raised courtyard that is set within the hollowed-out mass.

However, this topological reading begins to fluctuate when the project is more closely examined. As one approaches the building, the sense of solid mass is brought into question by the transparency of the base, as is particularly evident in the council chambers tower. The impression of the solid exterior form is also undermined by the two entrances which carve into the corners of the block and cause the enclosed space to dissipate. These kinds of formal ambiguities are further elaborated when this project is examined from the viewpoint of typology. At a general level the reference between Saynatsalo and traditional town hall configurations is fairly self-evident, as observed by Demitri Porphyrios in his article "The Retrieval of Memory."<sup>8</sup> The references to typology are clearly present in the plan through the elements of the solid exterior wall, the circulation which follows the profile of the court, and the tower which marks the civic presence of the building. However, further examination reveals a kind of diagonal direction to the plan, which pivots from the mass of the council chambers, and separates itself from the residential section and the library block. These two pieces are held together by massing, and yet are syntactically indifferent to the rest of the building,

as evidenced by their internal structuring of space. These kinds of particularities suggest that within the project there is an interaction between the typological and topological references which hold it together and the differences which begin to separate it into distinct pieces.

An understanding of this tenuous balancing in Aalto's work begins to reveal the conception of space which appears to be not *a priori* but a result of the relationships between elements. This observation has been made by Goran Schildt, who compares the idea of space in Aalto to the paintings of Cezanne.<sup>9</sup> For Cezanne the canvas forms a two-dimensional surface on which objects are depicted and out of which a "spatial" reading emerges. In Saynatsalo the "space" grows out of the topology of surface, which is given clear expression in the sensuous materiality of the courtyard space. The treatment of the ground plane indicates that this void is read, not only through its boundaries, but also through the expression of surfaces. Squares of paving material, small trees, and a reflecting pool interact within the courtyard to such an extent that the space is "read" through them. At the same time these elements seem to form a relationship to the walls around them and thus engage these walls with this manipulated horizontal plane. The sense of interaction of surface is further developed in the mass and materiality of the walls. The library presents a neutral brick facade which defers to the domestically scaled wood-and-stucco facade of the town hall corridor. Yet simultaneously the solid wall of the library projects into the space, allowing its entrance to be clear, and engaging the courtyard in the same way that the council chamber tower does. Through this reading of the horizontal surfaces and surrounding walls, the "space" of the courtyard emerges. It is a "space" which, while topologically and typologically grounded, expresses its specific differences at a syntactic and material level. Out of this complex web of relationships emerges the salient qualities of "place," a place which grows out of the resonances between objects set within the terrain of the site.

## place(s) of memory

*"The art of memory is an invisible art, it reflects real places but is about, not the places themselves, but the reflection of these within the imagination."<sup>10</sup>*

In her article, "The Art of Memory," Frances Yates talks about the history of mnemonics, a history which began with the practices of the Roman orators. She describes the memory training of these great men as an artificial memory which consists of places and images. This "system" of memory is based upon the ability of the speaker to wander through "spaces" in his or her mind, spaces on which images are "placed," images which induce memory. This idea was given specific form in the memory theatre of Guido Camillo, a series of seven spaces that were characterized by religious and iconic images. This theater was more than a neutral "space" in the mind of the speaker, it was a physical setting which, through these images, "contained" and "induced" memory. The Casa del Fascio is this kind of memory machine. Its formal, material, and iconic expressions are a result of the "messages" that are compressed into it, and overlaid on its surfaces. These references create a "montage" of the past and the present, which interact to create a "place" that resides in the mind.

In the Casa del Fascio, this "place" of memory emerges from the overlapping readings of the physical and material forms of the building in which the past and the present "speak." This conversation is initiated by the mass of the building, a proportioned marble block set in relation to the "lacustrine beauty of Como"<sup>11</sup> and the physical presence of the adjacent Duomo. This conception of mass is also evident in the domestic type of the palazzo, appropriated here by Terragni as the form for a new institution for the Fascist regime. The use of wall architecture is also deeply rooted in Roman building tradition, where weight and mass are innately present. However, in this building the sense of mass is given definition through the marble cladding which begins to suggest that "the empty space is the air and the solid is transparent."<sup>12</sup> This sense



Figure 2. Giuseppe Terragni, Casa del Fascio, Como, 1936, view of front facade (photo: Botond Bogner).

of the transparency of the solid is also evident in the use of the concrete frame, a form which is simultaneously Roman and modern. The frame engages in a dialogue with the wall, each facade balancing this interaction in a different way. Out of this relationship between past references and present icons are at a point of being frozen here. The frame and the wall exist in the same plane, but neither is given clear dominance. Is this a frame which has been filled in to suggest a tower, or a wall that has been carved out to make a frame? There is only silence, as each element never achieves a point of rest. The facade alternates between being read as solid mass and as transparency, wherein these elements begin to change their positions. One can read the transparency of the solid wall, more clearly present in the interior "room" of the building. One can also perceive the solidity of the "wall" of space compressed

between the facade and the exterior wall, a space which also suggests the transparency of the interior.

These observations bear witness to the writings of Terragni, which speak of the resonances between the past and the present, where "tradition does not disappear, but changes appearance."<sup>13</sup> This relationship of past and present is suggestive of the historical materialism of Walter Benjamin, "a past, charged with the time of the now which is blasted out of the continuum of history."<sup>14</sup> The decoration of the front facade, proposed by Terragni, is exemplary of this kind of relationship, as through the use of photomontages he was able to freeze the past and the present through iconic and symbolic "messages." During this period photomontage was employed extensively as a political device, as it was able to compress a specific moment and deliver all of the impact of that intense moment instantaneously. On this facade these photomontages would have illustrated certain significant moments in the history of fascism, as well as specific social themes such as agriculture and the family. These images were to play on the surface of the facade, as perspectival images which are

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cropped and recombined like illustrations in a magazine. In this sense this facade is like the topology of Aalto; it is a ground on which these images engage in a dialogue, a dialogue which sets into motion a chain of associations in the mind of the observer. Through the unique abilities of photomontage to capture a moment and compress it into a powerful message, this facade is a memory machine. It is a "montage" of political and cultural messages which opens up a territory in which the past and the present are frozen, in which memory is the "place" where architecture exists.

Un'Architettura" *Quadrante* 35/36 (October 1936):37.

12 Carlo Belli "Dopo la Polemica" *Quadrante* 35/36 (October 1936):3.

13 Il Gruppo 7 "Architecture" trans. Ellen R. Shapiro *Oppositions* 6:92.

14 Walter Benjamin "Theses on the Philosophy of History" in *Illuminations* Schocken Books (New York) 1969, p. 261.

#### Notes

1 *Oxford English Dictionary* Clarendon Press (Oxford) 1933, vol. 7.

2 See Martin Heidegger "Building, Dwelling, Thinking" in *Poetry, Language, Thought* Harper and Row (New York) 1975.

3 Alan Colquhoun "Typology and Design Method" in *Essays in Architectural Criticism* MIT Press (Cambridge, Mass.) 1981, p. 44.

4 See Gaston Bachelard *The Poetics of Space* Beacon Press (Boston) 1964.

5 *Oxford English Dictionary*, vol. 7.

6 See Michel Foucault "Autres Espaces" in *Lotus International* 48/49:9-17.

7 Italo Calvino *Invisible Cities* Harcourt, Brace, Jovanovich (New York) 1974, p. 137.

8 See Demetri Porphyrios *Sources of Modern Eclecticism* Academy Editions (London) 1982.

9 See Goran Schildt *Alvar Aalto: The Early Years* Rizzoli (New York) 1984, p. 220.

10 Frances Yates "Architecture and the Art of Memory" *Architectural Association Quarterly* 2 (no. 4): 5.

11 Pier Maria Bardi "Moralita di

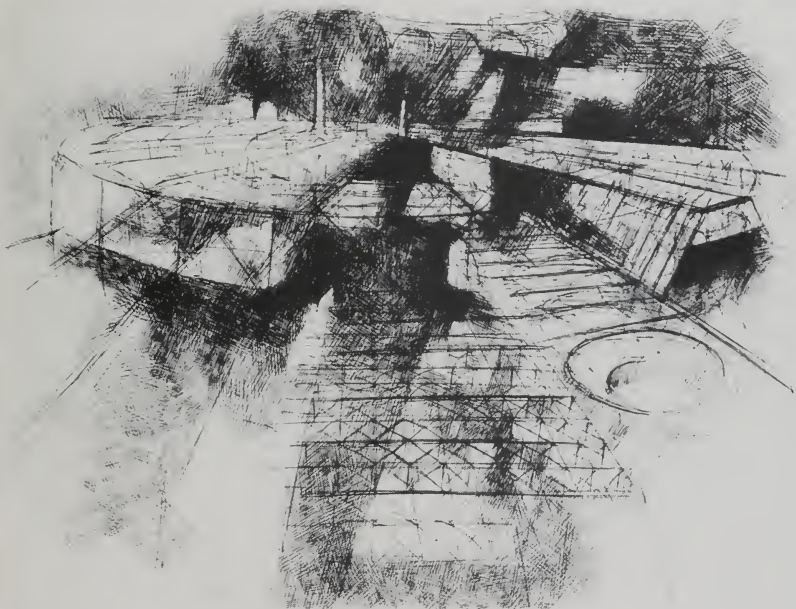
# How Quickly Does Fast Change?

**Alan Stacell**

Texas A & M

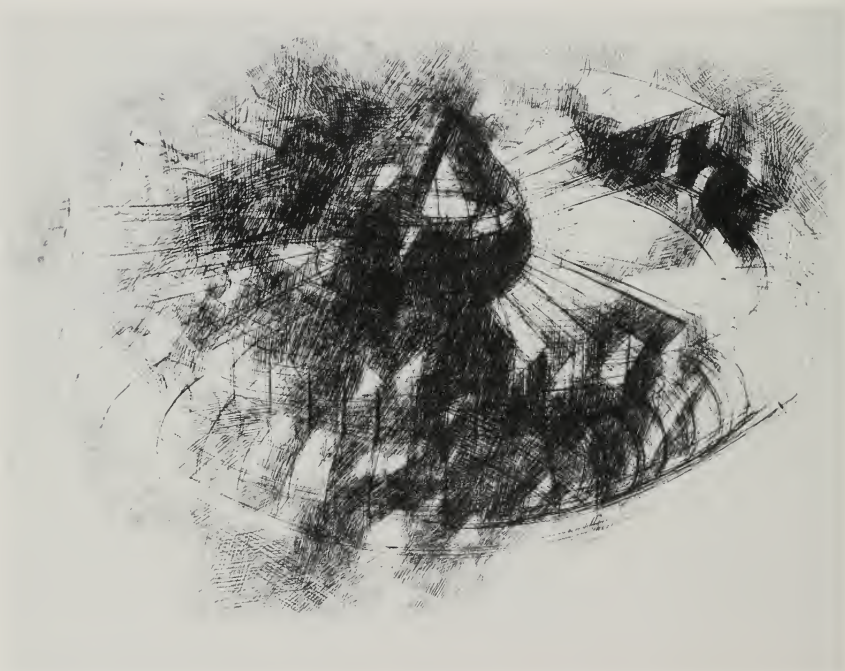


*Shivers, bones, scantlings, trusses and studs, and  
how many times must you look before you see?  
And how many looks do you get? What if you use  
up all of your looks before the object that you are  
looking at is exhausted of its supply of images?  
What if you use all the images? Does it vanish?*



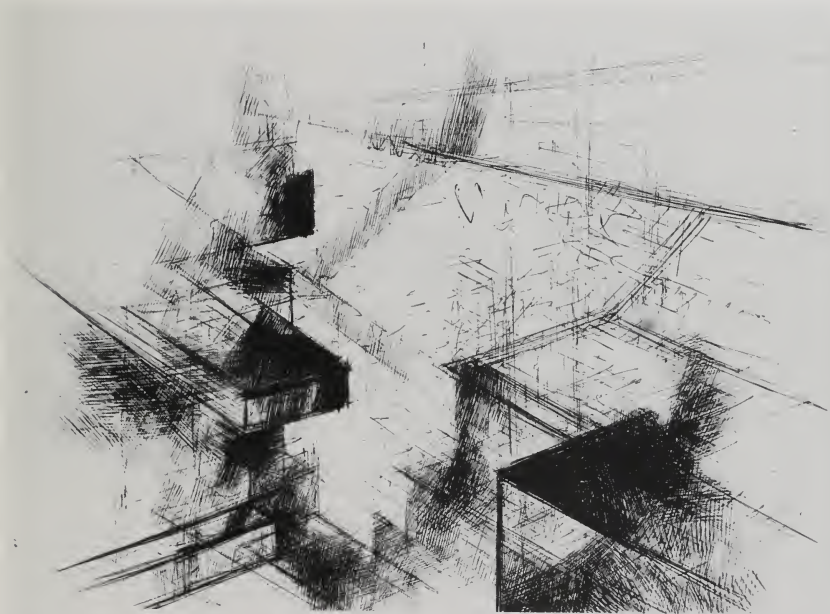
*Structure is a patterned behavior of whole systems of forces. The behavior of any part or component of a system constitutes a separate whole system. The terms separate parts and subassembly become oxymorons.*





*Imagine thinking of structure as a chain of endlessly  
renewing omni-directional empirical events in which  
one broken link would be only a momentary blip,  
while the matrix restructures itself.*





*The terms "form," "structure," and "shape" are sometimes substituted one for the other. I would submit that for my purpose "form" is intended to allude to a whole configuration or entity that has boundaries; "structure" is the pattern of generative forces, whether empirical or mental; and "shape" is a two-dimensional silhouette or profile.*

# Tech Heads and Paper Tigers:

## Theory vs. Technology in Architectural Research

**Charles F. Morgan**  
University of Florida

*"Tech Heads and Paper Tigers: Theory vs. Technology in Architectural Research" was originally presented at the Architectural Research Centers Consortium national conference (School of Architecture, UIUC), 1988.*

### Introduction

Most of us recognize the problem; it has been with us a very long time. We see the separation of faculties into camps, the unequal funding of research and/or salaries, even the division of students along the lines of the faculties. The problem, of course, is the perceived dichotomy between technological and formal issues in architectural research and education.

The bases for the problem may be equally obvious: long-standing individual interests in art and inductive methods rather than science and deductive methods; a cultural or inherited bias toward right-brain thinking rather than left-brain thinking; a tendency toward either the practical or the sublime; even a disposition to address issues of greater or lesser economic import.

The symptoms of this theory/art vs. practice/technology dichotomy present themselves repeatedly: Within some schools of architecture, professors in technological topic areas are treated as second-class citizens, only peripherally involved in curriculum development, rewarded only minimally at salary time, and generally disregarded as "necessary evils" in the architectural education/research process. Of course, at other schools, the bias toward "practical" educa-

tion holds sway, and the technologists have the upper hand.

In the research realm, however, it is more clear, at least to me, that one group has precedence over the other. The funding available for research in the technological aspects of architecture is both more abundant and more readily available. Especially over the last few years, technically oriented individuals within architecture programs have been increasingly able to provide evidence of their worthiness to produce useful research. Funding for less technical research, especially that in architectural theory, is both less abundant and not readily available to researchers from architecture schools. This reflects not only the current administration's attitude toward the "utility" of such research, but perhaps also a general attitude by funding agencies toward esoteric research being done within what they consider to be an engineering-oriented discipline.

Interestingly, we seem to prompt this behavior in others by our own actions. The recent Research Conference conducted by the Architectural Research Centers Consortium had not a single session devoted to non-technological issues. The stated objective of this conference was to discuss research agendas in architecture, yet it omitted that area that lies closest to the hearts of most architects and building designers: architectural form and theory. Moreover, the relationship of formal theory to technological theory was also omitted. I take issue with

such an omission, even though my main interests lie in the technological aspects of architecture.

### **A Brief History of Technology**

To be sure, this attitude expressing a dichotomy between formal theory and technology has not always existed. The origins of the discussion begin with Greek philosophers, who express in the words *techne* and *logos* that technology is something far beyond the study of machines and/or processes. Rather, technology at that time implied, according to Heidegger, a “bringing forth,” (*poiesis*) of not only the “activities and skills of the craftsman” but also the “arts of the mind and the fine arts.” Indeed, according to Heidegger, *techne* “is something poetic.”<sup>1</sup> Coupling *logos*, the discourse or thinking about something, with *techne*, technology implies discourse and/or thought about the techniques of artisans, as well as the arts of the mind, and issues that are poetic as well as scientific.

This, of course, is contrary to the more popular image of technology, that it is related to the study and/or use of machines, or that it exclusively addresses technical processes. This point of view originated in the thinking of sixteenth-century rationalist philosophers. From that time onward, according to one current theorist, Marc Angelil, “human thought and action,” including design, “became increasingly dominated by rational constructs” and the scientific method.<sup>2</sup> Moreover, the design professions adopted this view so completely that a split occurred

between engineers, who were primarily interested in rational, scientific methodological approaches to design, and artists, especially “fine” artists, who were primarily interested in poetic, mythical, and imaginative approaches to design. Put another way, rationalism resulted in the current popular thought that technology should be coupled with art in a dichotomy. This popular dichotomy uses a variety of phrases, including, but not limited to: Art vs. science, theory vs. practice, artists vs. technicians, right-brain thinking vs. left-brain thinking, or even natural vs. unnatural, to be a bit provocative.

Peter McCleary makes a similar argument when he explains that, while *scientia* implies the “theory” of any discipline, the natural sciences developed such rigor in their methodology that they “annexed” the word “science.” Applied sciences (engineering disciplines), the principal originators of theories about building, subsequently adopted “technology” as their operative term. “In this case (engineering), we have, not the ‘logos’ (thinking/discourse) of the ‘techne,’ but the ‘scientia’ of the ‘techne.’ Thus technology is read as a derivative of engineering or applied sciences. . . . Our professions too readily accepted the sixteenth-century separation of the artist and the artisan, and embraced the notion that ‘art’ is a creative act, which is totally subjective and one whose product is to be praised for its lack of utility.”<sup>3</sup>

### **Current Attitudes**

The implications of this current attitude toward technology and its relationship to art

and formal theory may be costly. At the very least, our disposition toward architecture may be severely stilted, as the following argument may suggest:

The question comes to mind: What do we expect of architecture? Most simplistically, we hope it will provide us with shelter, protect us adequately from the elements, and do so with some measure of structural safety. If that is all we ask, then architecture is technology, even assuming the popular definition of technology, for basic shelter with attendant structural safety is more a technical matter than an aesthetic one.

But architecture is more than the making of buildings. Heidegger poses a relationship between dwelling (the verb) and building (the verb). To live on earth, as a mortal, is to dwell, according to Heidegger.<sup>4</sup> But without protection, man cannot live on earth, he cannot dwell. So then, building is necessary if man is to dwell on earth. "We do not dwell because we have built, but rather we build because we must dwell."<sup>5</sup>

However, according to Ortega y Gasset, "pleasurable states of mind" are as necessary to man as food and shelter. "Not being, but well-being, is the fundamental necessity of man, the necessity of necessities"<sup>6</sup>. This might imply that the popular attitude toward technology—that it is concerned more about "bare" necessities like protection from the elements—is well placed in its dichotomous relationship to aesthetics and formal theory.

However, James Marston Fitch argues: "It goes without saying that all architects aspire to the creation of beautiful buildings. But a fundamental weakness in most discussions of architectural aesthetics is a failure to relate it to its matrix of experiential reality."<sup>7</sup> He further argues that separating aesthetics, the "well-being" of buildings, from experience, the "dwelling" in buildings, is not reasonable or logical. We cannot judge architecture accurately without associating aesthetic questions about a building with their experiential counterparts.

Relating these to the question concerning our expectations of architecture, one must observe that architects do not themselves build their designs. While technical issues are critical to their design, architects are not concerned with the execution of those techniques. Technique, of course, is related to technology, but it addresses more the manner or methods by which an individual applies the skills of his profession or art. In any case, architecture is more the discourse or theory of making/designing buildings than about the building itself. Going back to *techné* and *logos*, then, architecture is technology. To suggest otherwise would be to bias the discussion and misrepresent architecture and its dual aesthetic and technical nature.

However, it is in another matter that a misreading of the relationship between art/aesthetics and technology can be most costly: competitiveness. If architects do not understand or do not attend to the coequal status of art and technology, then it is more difficult to transfer new technological information to designers or, conversely, for designers to communicate their need for innovative technology to experts in other fields. Cultures and/or nations that encourage such transfer obviously will gain advantages in the architectural and building-construction markets.

In a more subtle way, such exclusiveness by either designers or technologists can also be harmful in a competitive sense. Poetry, imagination, fantasy, magic, and myth are not the enemies of technologists or aesthetes. Rather, they provide an "idea pool" from which new knowledge may be gathered, and to which rational processes can be attached. Coupling such non-technical ideas with rationalism will expand its utility, not damage it. Very possibly, a wider variety of technical or aesthetic problems can be solved, some of which may even be constrained by solely rational processes. Jacques Ellul stated the constraints rather well:

"Modern science failed to maintain its bonds to the origins of imaginative thought. . . . it became purely conceptual. Similar was the development of technology; the emphasis on

rationality in scientific thought became the primary characteristic for technical understanding. Rationality, best exemplified in systematization, division of labor, creation of standards, and production norms, led to the reduction of method to its logical dimension alone, excluding spontaneity, creativity, and imagination. Every intervention of technique became in effect a reduction of facts and principles to the schema of logic. Technological order in the modern era, following the premises set by the Cartesian model of mind, was functionalized, reduced to efficient procedures, and totally devoid of poetic meaning.<sup>8</sup>

Even at a smaller scale, within our own subculture of architectural researchers and educators, the dichotomy of art and technology does harm. Too much architectural research funding is awarded to non-architectural research organizations, in part because we do not even support each other's research credibility. As was mentioned previously, such an impression was conveyed at the Architectural Research Centers Consortium's recent Research Conference. At the very least, each group loses credibility with at least half of its potential research sponsors. There is an incompleteness in our current attitude toward architecture, art, and technology: "Architects who have aimed at acquiring manual skill (art) without scholarship (science/technology) have never been able to reach a position of authority to correspond to their pains, while those who relied only upon theories and scholarship were obviously hunting the shadow, not the substance. But those who have a thorough knowledge of both, like men armed at all points, have the sooner attained their object and carried authority with them."<sup>9</sup>

#### A New Attitude

Heidegger builds a very strong link between *techné* (activities and skills of the artisan, and the arts of the mind and the fine arts) and *poiesis* (bring forth). But *poiesis* in its highest form results in *physis*, the "arising of something from out of itself," and, in turn, *aletheia*, truth resulting from the revealing or bringing forth (*poiesis*) of those things that had previously been concealed. So technology is a way of revealing and knowing, in the

widest sense; technology is a way of revealing truth. Put another way, technology is the theoretical framework within which knowledge is acquired and understood.<sup>10</sup> Insofar as we wish to understand architecture, we must also understand technology.

Solutions to such a longstanding problem, of course, are difficult, especially since, in my view, the wall between artists and technologists has been built, in recent years, from both sides. For individuals in one or the other of these arenas, perhaps increased cognizance of the problem and its potential for damage will be helpful in reaching the solution, at least by small steps. Larger steps can be taken by organizations like the Architectural Research Centers Consortium, through the sponsorship of research projects, conferences, and papers that more equally address topics of both artistic and technological interest. In the long run, "technology must redress the imaginative content of creative production."<sup>11</sup> In practice, research, and education, we should be equally concerned with "well-being," a plane of existence far above simple "dwelling," and possible only through the thorough integration of art, technology, and architecture.

#### Notes

1 Martin Heidegger *Basic Writings* Harper and Row (New York) 1977, pp. 283-317.

2 Marc M. Angelil "Science, Technology and the Imagination" Paper presented at University of Florida, Gainesville, March 1988, p. 17.

3 Peter McCleary "An Interpretation of Technology" *Journal of Architectural Education* 37, no. 2 (winter):3.

4 Heidegger, pp. 319-39.

5 Richard Cervone "Technology: Its Role and Image in Architecture" Unpublished manuscript, University of Florida, Gainesville, November 1988, p. 8.

6 Jose Ortega y Gasset Essay 3: "Man the

Technician." In *History as a System and Other Essays Toward a Philosophy of History* W. W. Norton (New York) 1961, p. 99.

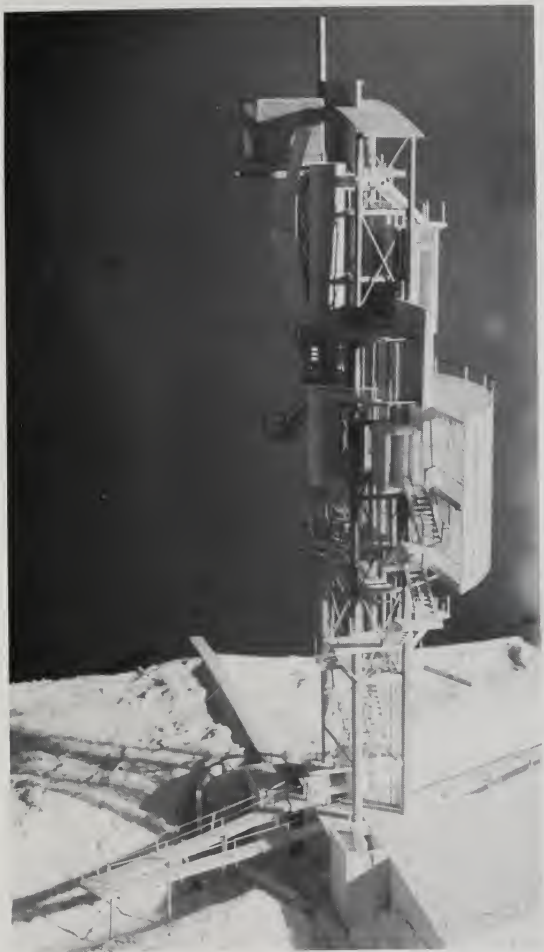
7 James Marston Fitch "Experiential Context of the Aesthetic Process" *Journal of Architectural Education* 41, no. 2 (winter):4.

8 Jacques Ellul *The Technological Society* Vintage Books (New York), quoted in Angelil, p. 21.

9 Vitruvius *Ten Books on Architecture*, quoted in Peter McCleary's "History of Technology," a paper presented to the Architectural Design Research Symposium of the Architectural Research Centers Consortium, November 12, 1981, p. 2.

10 Heidegger, pp. 283-317.

11 Angelil, p. 22.



*Kwang Kim, M. Arch. Thesis Project  
"The Balancing Act:  
Prairie Center for UIUC Visiting Artists"  
School of Architecture, UIUC  
Jack Baker, critic  
Spring 1989  
(photo: Kwang Kim)*



## Reflections and Urbanism

*Reflections* is the Journal of the School of Architecture and is dedicated to theory and criticism. *Reflections 1-4* contained articles and papers focusing on design theory and pedagogy. *Reflections 5: Teaching in Architecture and Reflections 6: Landscapes, Townscapes and Memorials* were thematic.

### **Reflections 6: Landscapes, Townscapes and Memorials** contents:

**The Park:  
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Lance M. Neckar

**The Allegory of the Garden:  
The Garden as Symbol in the Art and  
Architecture in the Age of Humanism**  
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**Architecture as Cultural Artifact:  
Conception, Perception (Deception?)**  
Julia W. Robinson

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**Transformation, Nostalgia  
and Illusion About Public Life and  
Public Environments**  
Michael Brill

**The Building as Village**  
James W. Shields

**On Symbolism of Memories and Ruins**  
Wojciech Lesnikowski

**Monuments in the Realm of Memory**  
Farouk Seif and Folke Nyberg

**Et in Arcadia Ergo:  
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