ON MORPHOLOGY, STYLE AND FUNCTION IN ARCHITECTURE

by Clarence Aasen

Morphology, the science of form and structure, is an old discipline with its roots in Greek philosophy. New developments have recently resulted in a variety of systems and opinions based on different principles and have generated substantial controversy. Yet, the essential principles and concepts have been maintained: whether for heuristic or philosophic reasons, formal and structural content is given priority over function. The form and structure of phenomena are regarded holistically rather than atomistically, dynamically rather than statically, and concretely or empirically rather than abstractly or normatively.

All architecture is inherently morphological: it has an overall shape or configuration of line and surface and an ordering of parts which determine these shapes (form); a definite arrangement of its internal, localizable parts (structure); and volumetric enclosure with a surface organization and constituent elements (space). These properties are evident and generative in all architecture which is based on explicit, formal rules or principles, such as classical and neo-classical architecture, or architecture which is typological and seen as belonging to a class of repeated objects. Although less evident, and serving somewhat different generative and expressive purposes, morphological properties are found also in architecture which is considered to be unique or singular objects which spring from the creative impulse. These properties occur also in architecture which serves symbolic rather than functional purposes, or which is conceptual rather than built. And in spite of its informality and 'naturalness', even vernacular architecture possesses strong morphological properties. Indeed, not only are these properties evident in such architecture, they sometimes reflect quite accurately the social and cultural form and structure of the group inhabiting it. Perhaps eclectic architecture tends to be more stylistic than morphological. Thus, the ordering and meaning of the morphological properties of form, structure and space can be seen as generic to all architecure.

In spite of this ubiquity, and perhaps because of it, the historical awareness and utilization of morphological properties among architects has by no means resulted in a consistent or universal approach to architecture itself. In fact, the malaise from which architecture suffers today can be traced in part to the collision of an abstract and formalist interpretation of architectural morphology with functionalist and stylistic interpretations. Often these various interpretations seem to be mutually exclusive and to operate from significantly different perceptions and serve very different ideals.

Questions of whether architecture does, or should, derive its meaning from morphological order, function, or style, or from some combination thereof, and with what if any priority, underlie many of the bitterest debates in the history of architecture. The intensity of this debate indicates that these are questions not only of relativity of perspective or choice of method but touch on more fundamental architectural values and viewpoints. It is very difficult to, for example, reconcile Louis Kahn's dictum regarding 'what a building wants to be' with Edward Durell Stone's belief that, for formal and compositional reasons, it was totally appropriate to change the shape of his John F. Kennedy Cultural Center from a doughnut into a rectangle without altering the facade at all; with the straightforward and almost literal expression of a building program by some functionalists; or with Venturi's pronouncement that the 'decorated shed' is the contemporary North American style.

The essence of a morphological perspective in architecture is similar to that in other fields. In particular, it deals explicitly and integrally with the content of architecture, its constituent material and spiritual properties, in a manner which precedes and transcends, but does not necessarily negate, other considerations, primarily those of style and function. The architectural challenge and the architectural product tend to be viewed holistically rather than in terms of its separate, constituent elements. Whether a result of the particular period of history, the context of the site, the nature of the creative impulse, or for other reasons, architecture is seen as dynamic, as evolving and transforming through time. Finally, rather than an abstract and elitist pursuit, architecture is believed to derive from, and be most meaningful at, the level of direct human experience.

It is the juncture between architectural content and function or style, par-

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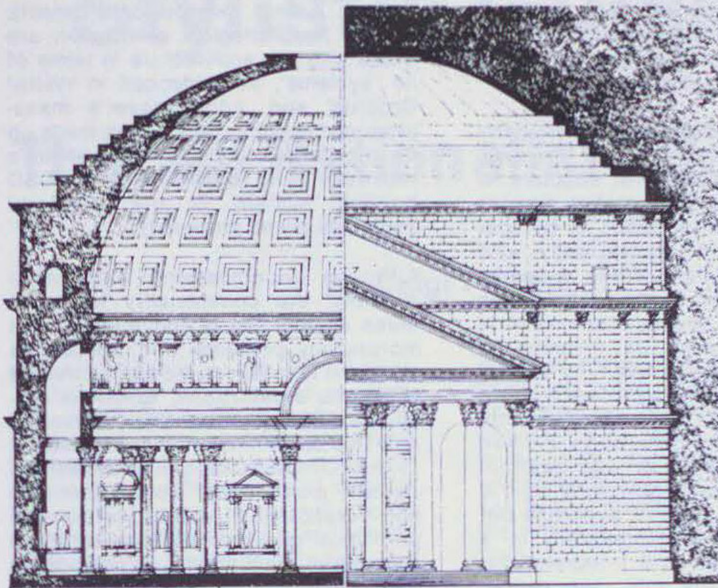
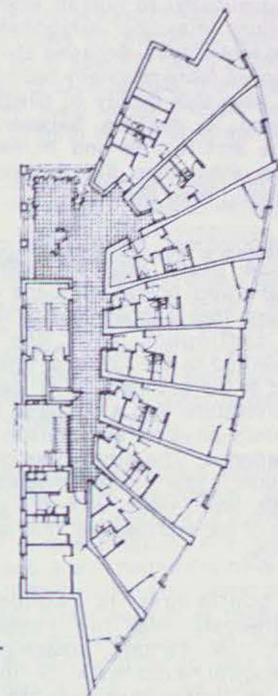


The Pantheon, Rome.



Neue Vahr Apartments, Bremen.

ticularly what is meant by content 'preceding' or 'transcending' architectural function or style, that causes the more intense debates in architectural circles. From a common sense viewpoint, architecture is unlike any other art — it is simultaneously functional and aesthetic — and discretely separating the practical from the inspired leads nowhere. As an experience, architectural content, function and style make one continuous and mutually inclusive pattern, no matter how differently architects or theoreticians establish their criteria as to the priorities of one over the other. In fact, it could be argued that the essence of great architecture, and its fundamental creative force, resides in the appropriate reconciliation of what are often seen as these divergent tendencies.

Nevertheless, because of its inclusivist, dynamic, experiential, content, holistic, empirical, contextual and historical emphases, a morphological approach is significantly different from functional or stylistic perspectives. Not only is it different, but it is also, in a number of important respects, more central to the formal and experiential pursuits of architecture.

Functionalization of architecture implies its transformation into a set of operational rules, into a tool of an exclusively technological character. Its main concern becomes the efficiency and economy of the building process itself, with moral and ethical issues of building remaining not only unanswered, but also unasked. History, according to this viewpoint, becomes irrelevant in the process of accommodating programmatic requirements. While few architects would argue against the premise that buildings must 'work' with some degree of efficiency and programmatic fit before they can be valued as architecture, architecture is clearly much more than a set of operational rules which are given physical form. Thus, while function can be regarded as a necessary aspect of architecture, it does not epitomize its essence. In spite of this, functionalism has proven to be just as much of an ideology as the more formalist and stylistic approaches it was intended to replace, and its adherents argue strongly and loudly in favour of function as **the** determinant of architectural form and expression.

Style in architecture serves an important but similarly more limited role than morphology. In general, style refers to the particular or characteristic form or mode of composition, construction, or appearance of the architecture. Hence, a stylistic approach deals explicitly with neither the functional nor the substantive content; its central concern is with visual effect. In fact, in earlier periods (up to the nineteenth century) style was chosen for the appropriateness of its use in much the same way that the Russians spoke French when they wanted to appear cultured. Once having determined the proper style, the primary issue was the quality of its composition and the resultant architectural effects. Although the twentieth century insistence that style was simply the outcome of applying modern materials and methods to modern problems resulted in the elimination of all historical reference, even this 'styleless' architecture quickly became selfconsciously preoccupied with visual effect.

When style is given undue prominence in architecture, the result tends to be exclusivist, coldly calculating, and quickly boring, since it is based on conceptually predetermined characteristics which necessarily limit the range of architectural expression. Such approaches often concentrate on the compositional rules underlying the style as if they themselves are what architecture is all about. This is, however, a moral stance and not an inevitable architectural requirement. The danger is in confusing rules with meaning; that is, in assuming the conceptual organization of a building design takes precedence over its psychological impact. In fact, as the expressionists and others have demonstrated, all rules, stylistic and otherwise, are only possible and not a necessary condition of architecture, and meaning can flourish without, and in some instances in spite of, them.

Numerous arguments favor a morphological perspective in architecture. These include not only propositions supporting the architectural pursuit itself, but ones which relate architecture to a much larger universe of knowledge, experience and meaning.

In morphology resides the more primordial and archetypal of a human's psychological and cultural experience of architrecture. Architectural structures, forms and spaces appeal directly and innately, although not necessarily

deterministically, to human emotions, perceptions, meaning, symbolism and cultural rootedness. Because style and function are more rationally based, they do not have this quality of directness: they tend to mediate between and distance architecture and human experience rather than, like morphology, synthesizing their essence.

A morphological perspective of architecture deals explicitly with the pragmatic and poetic language of architecture. This language can be viewed as a continuum, with one pole characterized by the formal or syntactic content of the architecture or, parts of the architecture into a cohesive whole on a purely physical and sensory level of experience. The other pole of this continuum, the transcendental or semantic level, deals with the poetic content of the architecture; that is, with its *a priori*.

This continuum is concerned simultaneously with the intellectual content, the cultural meaning and psychological experience of the architecture. Rather than respond to an architectural language as architects do, untrained viewers react to the architectural effects. A morphological perspective of architectural effects. A morphological perspective of architecture allows, therefore, an intimate connection to be made between the more exclusive but precise formal language and rules of architecture and the less cerebral but more perceptually uninhibited response of the non-architect. As such, not only is the precision of the communication increased and intellectual discourse enhanced, but another range of meaning is created by the design elements themselves in their capacity to evoke cultural and psychological responses.

The more successful morphological approaches treat the formal, structural and spatial properties of architecture integratively, dealing with their conceptualization and expression simultaneously on a metaphorical, inclusive level and on a literal, more exclusive level. Thus, a morphological perspective is, for example, far more than a creative use of structure in building or a rationalization of the geometry and form of structures. Pier Luigi Nervi, a leader in bringing the problem of structure in contemporary architecture to the forefront, has given it such formal importance that it becomes the determinant and final feature of architectural design. Other structural engineers, such as Morandi, Castiglioni, Frei Otto and Felix Candella, have also pushed structure to its logical and expressive limits: the forces of compression, tension, moment and shear become a clearly legible pattern of stress and just as clearly legible a pattern of neutralization of stress — visible and comprehensible, demonstrative of the properties of the materials with which the forms are executed.

Although comprehensible and logically correct and, in fact, often exciting, these designers deal with structure in such a literal and absolutist manner that the architecture tends to be one-dimensional and experientially and culturally unfulfilling. While it seems particularly suited to the technologies of engineering systems, it speaks little to the nourishment of meaning in human existence, or even to the requirements of a well-functioning building. This can be contrasted with, for example Hans Scharoun's Philharmonic Hall in Berlin, or with much of Aalto's work, where a structural logic is also taken as a point of departure but where it is raised expressively to a metaphorical level and integrated far more successfully into the overall design.

Unlike stylistic approaches, based as they are on conceptually predetermined characteristics, or functional approaches, with particular operational rules and a technological expression, a morphological perspective is inclusive and, because of this, more accommodative of the pluralist tendencies of our contemporary age. This accommodation derives largely from the variety inherent in the empirical and experiential bases of morphologically-oriented architecture: as the designer's interpretations, the context and the conditions change, so also does the intention and effect of the architecture.

Consequently, it is common to find a very diverse range of schools of thought in architectural history which can be considered morphological in their intent and effect. As examples, organicists like Frank Lloyd Wright and Paola Soleri, or Metabolists like Kurokawa, derive their concepts, analogies and inspiration from the natural world, producing an architecture which is itself often nature-like in its expression. For others, including expressionists such as Mendelsohn and Taut, and the more difficult to categorize architect, Gaudi, it is the creative autonomy of the artist which is paramount: they all preach the freedom of the architect's imagination as against a sterile rationalism in architecture. Others operate on a more literal level and aim for visual effect: the sensual beauty of the Pulsating Yellow Heart by the Haus Rucker Co. and much of the 'Pop' architecture are examples of this approach. Still others refer to the concreteness, richness and detail of the social and physical context to set the parameters for and the content and expression of their designs: activists such as Ralph Erskine, or more traditional contextualists like Asplund, are examples. A final example of architects with a morphological orientation are those who see architecture in terms of its 'systems', as evidenced in Walter Gropius' and Adolf Meyer's mass-produced housing (which was made up of 'large-scale building bricks'), Safdie's Habitat, Ezra Ehrenkrantz's SCSD building system, or the structural engineers noted previously.

Although encompassing substantial diversity, the commonality in all of these approaches is that architectural morphology precedes and transcends style and function as the central means of formal organization, functional accommodation, and poetic expresion. And this accommodation is not pushed to the point of ideological indifference. Certain architectural approaches are non-morphological, and within the morphological perspective some are more successful than others. In addition to the stylistic and functional viewpoints already noted, a morphological perspective does not accommodate the Platonic idealists such as Mies van der Rohe who attempt to carry their buildings through to an absolute and static perfection, as if they represented some underlying cosmic order; or philosophies such as Social Realism, which are based essentially on superimposed political ideologies with a minimum of architectonic content.

Morphological perspectives have led scientists and artists to the conclusion that aesthetics is no longer an isolated science of beauty; science can no longer neglect aesthetic factors. That all art, including architecture, has formal, structural and spatial properties of a rhythmical, even of a precisely geometrical kind, has for centuries been recognized by all but a few nihilists (the Dadaists, for example). That some of these properties — notably the Golden Section — have correspondences in nature has also been recognized for many years. Now the revelation that perception itself is essentially a pattern-selecting and pattern-making function (a Gestalt formation); that pattern is inherent in the physical form and function, and in the meaning and perception of architecture, as well as in natural phenomena such as the nervous system; that matter itself analyses into coherent patterns or arrangements of molecules; and the realization that all these patterns are effective and significant by virtue of an organization of their parts which can only be characterized as **aesthetic** — all this development has brought works of art and natural phenomena on to an identical plane of enquiry. The scope for architecture has, as a result, expanded enormously.

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