Inside and Outside in Architecture: A Symposium

I. RUDOLF ARNHEIM

THE WORDS *inside* and *outside* reflect a dichotomy in direct experience. Inside and outside cannot be seen at the same time. This dichotomy reminds the psychologist of the corresponding one in his own field. The behaviorist, ignoring the inside of the mind, dwells in a world of external objects, animate or inanimate. These objects are defined by what they look like and what they do. Their appearance, complete in itself, points to no inside but leaves room for inferences on the nature of a hidden core. Inversely, the introspectionist, dwelling within the mind, can conjecture on the observer's own outer appearance only from what is sensed inside. One cannot see one's own face. The world as perceived from the introspectionist's station point is never truly outside; it is rather an extension of the inside —a collection of obstacles and opportunities, as Freud has described the totality of the non-self. In psychology as well as in architecture, the two approaches, although exclusive of each other, require each other, and in both fields the need to integrate the two may be described as the principal challenge.

Henri Focillon, in *La Vie des formes*, asserts that man's practical experience is limited to the approach from the outside. "Human movement and action," he says, "are exterior to everything; man is always on the outside, and in order to penetrate beyond surfaces, he must break them open." Therefore, he believes that architecture accomplishes an "inversion of space," to be considered its greatest marvel. "The unique privilege of architecture among all the arts, be it concerned with dwellings, churches, or ships, is not that of surrounding and, as it were, guaranteeing a convenient void, but of constructing an interior world. . . ." [1] It is true that architecture alone among the visual arts has to deal with outside and inside although it shares with literature this privilege of reflecting the basic dichotomy of the mind. But by no means does the conception of the interior require an inversion of ordinary space experience. On the contrary, the sensation of being surrounded is primary and universal: the maternal womb, the room, the house, the valley, the canyon of the street, the final enclosure of the horizon and the hemisphere of the sky—they all belong together and are always with us. The primary awareness of being inside is directly reflected in the house as a surrounding shelter and the semi-spherical sky of the architectural vault or cupola. It is supplemented secondarily by the experience of being on the outside of other things. Gaston Bachelard in his poetics of space, *La Poétique de l'espace*, points out that a metaphysics starting with the moment in which existence amounts to being "thrown into the world" is a metaphysics of a second position. It neglects the earlier state of being as well-being, symbolized by the maternity of the house.[2]

The primary world of the inside is complete. Regardless of whether it be limited

Rudolf Arnheim teaches at Sarah Lawrence College and is a trustee of this Society. His latest book is *Towards a Psychology of Art* (1966).

or endless, nothing exists outside of it. Bachelard makes this point while discussing completeness and roundness: "Seen from the inside, without exteriority, being can only be round." [3] An architectural interior is the totality of what can be seen at the time. Hence its curious independence of size: it can be called large or small only by indirect comparison with things seen before or afterwards. The outside of a building, on the contrary, is inevitably dependent on the size of the surrounding space and the other objects contained in that space. Therefore, a building, seen from the outside, looks more clearly large or small.[4]

If outside and inside cannot be seen together although the unity of the two is essential, how then is architecture possible? Obviously either view must be supplemented by what is known about the other. But this knowledge cannot be purely intellectual because intellectual knowledge and visual imagery do not mix. Only images unite with images. Fortunately, a particular view of an object can also include aspects of the object which are not presently visible, although they are as visual as what is directly seen. I *see* the back of the vase I look at, and I *see* its hollow interior—which is fundamentally different from merely *knowing* that these aspects are there. Similarly, I see a building as containing an interior, and I see the inside as being fronted by an outside.

Here, another obstacle may seem to arise, deriving from a mistaken application of the theory of figure and ground. From the textbooks of psychology we remember Edgar Rubin's figure of a goblet whose outlines can also be seen as two profile faces looking at each other. The figure demonstrates that one and the same contour looked at from the outside produces a shape (goblet) completely different from the shape seen from the inside (faces). The one cannot be recognized in the other, and the two cannot be seen simultaneously but only alternately. Both of these effects would seem to be fatal to architecture.

There are, in fact, architectural examples to bear out this predicament. When looked at from the inside, the Statue of Liberty, which is made of a thin sheet of metal supported by an armature, looks like a puzzling accumulation of hollows, senseless and surely without any resemblance to a human body. Attics, crawl spaces, and similar inside areas not intended to be "seen" often look like the back of a front—a front, however, unrecognizable from the inside because all concavities have turned into convexities and vice versa. This is so because the back of the front is seen as "figure," not as ground, and to the extent to which this is also true for some aspects of legitimate interiors a similar effect may be produced by them.

But it is only necessary to walk through a traditional church to realize that the walls and vaults and ceilings are not simply positive shapes, looked at from empty space, the way we look at a piece of sculpture. They are rather the shell of an air volume that fills the interior and in the midst of which we find ourselves. The internal shape corresponding to the external convexity of a cupola is not so much a concave hollow surface as it is a second, internal dome, made of air. Instead of two contradictory aspects created by the outer and the inner surfaces of the stone construction—one of them convex, the other concave—we perceive two volumes, fitted into each other, like the cores in the old flatirons or the foot inside the boot. Nested volumes can indeed be visualized as a unitary percept.[5]

The architect, then, keeps the interior of a building from being a mere backside residue of the outside by giving it the shape of a positive air volume. He thus expresses visually the fact that an interior is not empty space, as a geometrician would have it, but filled with a meaning of its own. This meaning of the interior is carried out spatially through the various movements created by the axes and shapes of the air spaces. For example, there is horizontal movement through the nave and aisles toward the altar of a church and away from it; and there is a vertical ascension, gradually converging toward the center of the rib vault, the dome, or the ridge of the roof.

These movements of air volumes bear

out the role of the human beings in the building. They guide their minds in the proper directions and magnify their stirrings to the giant size of architectural dimensions. Hence the channeling and the amplification of our own being that we experience in a successful interior.

One of the fundamental differences to be noted, therefore, is that as we approach a building we are outside its stone volume, in empty space. We are spectators. For example, rather than being elevated ourselves we are treated by the building to a spectacle of elevation. Indoors, however, we are an integral part of the interior. We are essentially, although not entirely, with and within the air volume filling a shell of stone. And here indeed is the strongest obstacle to the unified conception of a building. For although it is true that nested volumes can be visualized as a unitary percept, these volumes are not to be viewed from a common station point, as are the flatiron and its core or the boot and its foot. The outside must be viewed from the outside. But to look at the inside from the outside would mean to miss its nature; it must be viewed from its own inside. The unification of the two perspectives, produced by the two station points, has to overcome an antagonism. That is, the parallelism of exterior and interior shape is complicated by a counterpoint of views.

Perhaps it is worth mentioning explicitly that windows and doors, large and transparent though they may be these days, do not commonly let us see the inside of a building. They let us peep at the inner core of the outside, which is quite another matter. A building may present itself as the container of a precious content, for example, of a statue of Athena; or it may appear as a center of radiation, for example, when the lights emerge from the windows at night. Henry Moore placed into his hollow sculpture a second solid, resembling a chrysalis in its cocoon. Compare these examples with what might be called the lantern type of modern building, which permits us indeed occasionally to get a glimpse of what it is like to be inside. Inversely, what a person in a building sees through the windows is the setting around the building, not its exterior. (The English word *outside* may mislead us here by its double meaning.) As I said before, one cannot see one's own face.

The architect's visual concept must unify these antagonistic aspects of the building. His task is further complicated by the obvious fact that outside and inside do not always parallel each other as strictly as do the outer and the inner surfaces of a ceramic bowl. Where such parallelism is approached, for example, in Romanesque churches, the solid stone construction appears almost like a transparent shell, expressing a reassuring limpidity and simple frankness. The composition of the east front of St. Servin in Toulouse, where, in the words of Focillon, "the volumes build up gradually, from the apsidal chapels to the lantern spire, through the roofs of the chapels, the deambulatory, the choir, and the rectangular mass upon which the belfry rests . . . ,"[6] holds essentially for the inside as it does for the outside. It resembles a man's spontaneous facial expression and gestures, which reflect much of his soul with its complexities. The outsides of other buildings are more like a man's dress and deliberate conduct, displaying the way he wishes to appear. Nikolaus Pevsner, in his *European Architecture,* gives examples of buildings hiding the secret of the sacred, separating the secular from the transcendental or the modest from the splendid or the rational from the irrational. But such discrepancy must observe certain rules. The contradictory aspects must add up to a meaningful whole. Also, less obviously, the outside as well as the inside must be complete and unified in itself—a rule violated, for example, in the façades of some English Gothic cathedrals, which are screens placed in front of the church proper and unrelated to what is behind them, or John Wood's phony palace façade hiding thirty separate houses on the Royal Crescent at Bath.[7] In such a building, an outside that should be there but is not is in conflict with another outside which is there but does not fit.

So far I have dealt with the outside and the inside as separate realms. This di-

chotomy, however, is bridged by the mobility of man, who, more or less freely, passes from the one realm to the other. In early styles of architecture this crossing of the threshold is a practical matter of piercing the walls with doors, but it is not acknowledged by a continuity of outside and inside in the form of the building. The impregnability of buildings spatially reflects an early conception of human existence: man surrounded by barriers and faced by closed entities, which must be cracked if they are to be penetrated. At the other extreme of our philosophy of space, we note the modern conception of the universe as a void, scantily populated by particles, which do not block continuous passage. Each work of architecture must locate itself somewhere on the scale between complete blockage and complete passage, and the particular ratio of closedness and openness it selects is a significant aspect of its style.

Given the intimate metaphoric relation between house and man, we may even be tempted to connect this stylistic feature with a particular image of man, that is, with a corresponding ratio of closedness and openness in human nature. It may be admissible, for example, to point to the continuity established by the modern psychologist between the inner workings of the mind and their outer manifestations and to find a similar continuity in a style of building of our time, which eliminates the wall and, in its more radical form, demolishes the outer envelope completely. In this latter case, the building presents itself as an arrangement of slabs and sticks to which the distinction of outside and inside is as inapplicable as it is to a bridge, a machine, or a Calder mobile.

We have found it necessary to interpret the combination of closed and open spaces as a dynamic interplay of barriers and passages. Quite in general, architectural space must be viewed as an activity of forces, not as a static arrangement of objects and interstices. The geometrician sees solids, hollowed and surrounded by empty space. Space, however, is not empty. It is an invitation to transit, traversed by actual and potential trajectories and beset by barriers representing obstacles, promises, protection, etc. Space is created and made dynamic by objects, specifically by the dynamics of objects. Seen from the outside, the building is an expanding volume, reaching into space horizontally and vertically. A similar experience is provided by the inside.

In neither case, however, is this expansion an unlimited sprawling. Architectural dynamics acquire meaning only through the channeling of direction and through the antagonism of advance and containment. Focillon has distinguished between space as limit and space as an environment. "In the first case, space more or less weighs upon form and rigorously confines its expansion, at the same time that form presses against space as the palm of the hand does upon a table or against a sheet of glass. In the second case, space yields freely to the expansion of volumes which it does not already contain: these move out into space, and there spread forth even as do the forms of life." [8] Now it is true that concavities in the outer envelope of a building are perceived as the effect of pressure exerted upon the building by the surrounding space. To a lesser extent this holds also for plane walls. But since all visual dynamics are ambiguous, the retreat of the concavity and the restraint of the wall are experienced also as being due to a control exerted by the building itself. In successful architecture, the extent of an expansive movement is determined, first of all, by the power of the available impulse. A mighty spire cannot derive its launching power from a small building, and a well designed tower visibly consumes its resources until it stops where it has to; whereas some of our commercial high-risers disconcert us by growing out of bounds and finally stopping without reason.

In addition to the proper balance of effort and resource, a good building is an image of that self-discipline which makes the difference between thoughtful action and aimless thrust. Propulsive and restraining forces visibly counterbalance each other within the form of the building itself. As the air volume of an interior

pushes upward toward the peak of a vault, the hollow reacts not only by receding under the impact of the thrust but also by reacting, like a pair of cupped hands, with a compression that holds together what is being expanded. Similarly, inside a house with an open pitched roof we find the slanting sides of the roof not only lifted but also counteracting the lift, like the folding up of a pair of wings. The thrust of elevation may be dominant as in a pointed arch, or neutralized as in a semicircular arch, or recessive as in a depressed vault. The particular ratio of expansion and contraction and the particular distribution of the expansive and constrictive forces help determine the character of an architectural style. It serves each generation of men to locate its own position between the confinement of the walls and the infinity of space.

[1] Henri Focillon, *The Life of Forms in Art* (New York, 1948), p. 22.

[2] Gaston Bachelard, *La Poétique de l'espace* (Paris, 1964), pp. 23 ff.

[3] Bachelard, p. 210.

[4] Buildings designed from the inside out will suffer from a lack of external unity because each interior space in its completeness ignores the presence of its neighbors.

[5] Cf. Steen Eiler Rasmussen's excellent discussion of "solids and cavities in architecture" in his *Experiencing Architecture* (Cambridge, Mass., 1959), chap. II.

[6] Focillon, p. 20.

[7] Nikolaus Pevsner, *European Architecture* (Harmondsworth, 1957), pp. 97, 249.

[8] Focillon, p. 24.

II. WOLFGANG M. ZUCKER

IN ONE OF HIS STORIES the German Romantic novelist Jean Paul tells of a poor poet who inherits a piece of land but has not the money to build a house.[1] All he can afford is a wooden wall with a window cut into it. This wall he puts up in the middle of his land, seats himself behind the window, and now enjoys what was before simply nature under the aesthetic aspect of a landscape. Jean Paul, himself the author of a primer in aesthetics,[2] is both ironical of and sympathetic towards his hero in whom Schiller's aesthetic categories of the Naive and the Sentimental have surprisingly fused; but he does not seem to notice the fact that the poet behind his houseless window *has* performed the primeval act of architecture, the separation of an inside from an outside. A single wall certainly is no building, and without an opening it would not even be possible to distinguish front and back. But by sitting behind the window and by looking out, Jean Paul's poet has defined an inside and an outside. This effect he accepts as the substitute for the house he cannot afford. By this he demonstrates that an architectural structure has, besides and beyond its obvious purpose of providing shelter against inclement weather or enemies, another fundamentally aesthetic function that is not less important than the pragmatic one. Technology, mechanics, statics define the conditions any architectural structure must meet in order to fulfill its physical functions. But the basic fact that it separates an inside from an outside is, or should be, the starting point of the aesthetics of architecture. This position and its implications I propose to defend in this paper.

The architect is, if we let ourselves be guided by the meaning of the Greek word, the primeval cutter. What does he cut? It is neither wood, nor stone, nor metal; other artisans perform such cutting. In fact, the architect does not cut any stuff,

Wolfgang M. Zucker is professor of philosophy and coordinator of independent studies at Upsala College, East Orange, New Jersey. His article "Reflections on Reflections" appeared in the Spring 1962 issue of this journal.