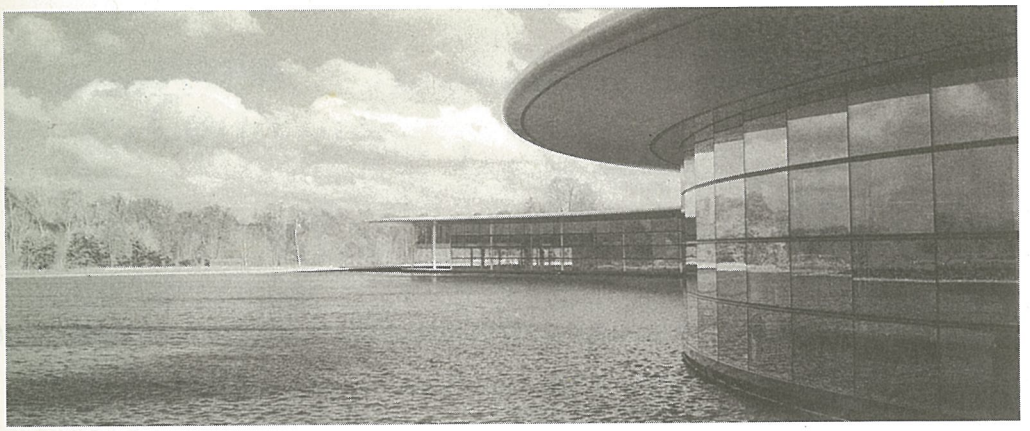

Biophilic Design

The Theory, Science, and Practice of Bringing Buildings to Life

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chapter

15

The Picture Window: The Problem of Viewing Nature Through Glass

Kent Bloomer

Let's take a look at a picture of a classic mid-twentieth-century modernist work of architecture taken from the outside in the picturesque setting of trees, rocks, and gardens. Such an image can produce the compelling spectacle of a connection or a healthy interaction between the world of man and the world of nature. It even suggests an architecture that displays a love of nature. But what about the other way around, looking outward, from a sheltered vantage point inside such a building, through a large flat plane of glass that provides a panoramic view of the outside? (See Figures 15-1 and 15-2.)

The desirability of viewing objects such as trees, gardens, and birds from within a residence, hotel, or workplace is beyond dispute.[1] Even the therapeutic power of viewing the natural environment is now acknowledged (Ulrich 2006). But can we therefore assume that viewing through a large modern glazed opening (let's call

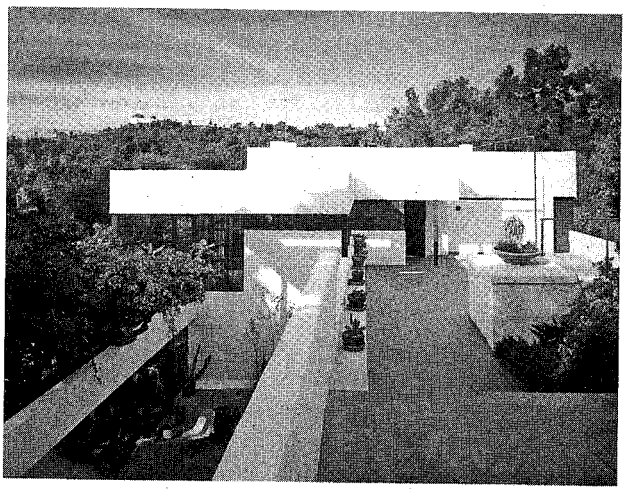

Figure 15-1: Looking from outside, there may appear to be a lively equilibrium between house and nature.

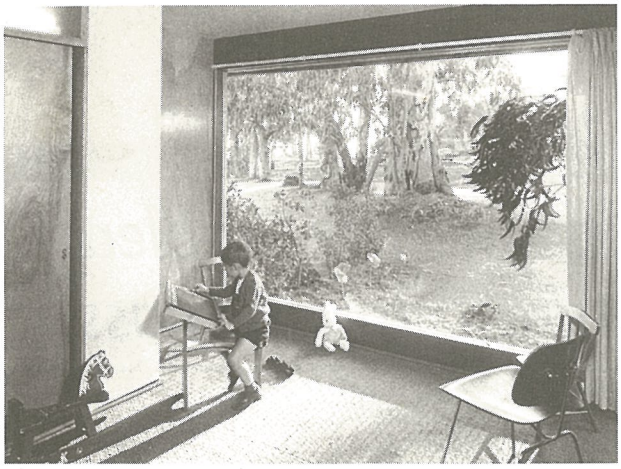

Figure 15-2: From the inside, viewed through a large pane of glass, nature can seem to be subordinate and disconnected.

that a picture window) also provides us with a vital sense of connection, or an active understanding of our responsibility toward nature?

It is interesting to note that the plain, crystalline form of the picture window, as it has evolved today, coincided with both the ascent of the modernist project in architecture and the descent of architectural ornament. In the early- to mid-twentieth century, as a new, more mechanistic style of design emerged, industrialized settlement was in the process of increasingly occupying and gaining greater control over the natural environment. By the second half of that century, a certain "ideal" transparency was being developed between architectural interiors and the world outside, leading to a new type of relationship with nature. In America, a motorized suburbanization also promised to provide a more intimate connection to nature, trees, and the garden. But let us analyze that new relationship, particularly in regard to the contemporary popularity of the big "viewing" window itself and indeed the phenomenon of viewing in general.

While window glass is transparent, it is also hard, and for most practical purposes, impenetrable. We view through glass knowing that glass provides a powerful barrier and protection from heat, cold, wind, rain, insects, and animals. Indeed, glass, whether employed in sky, land, or undersea, is a marvelous triumph of man's protection from the immediate ravages of nature. But beyond the provision of shelter, what is so satisfying about viewing nature through large expanses of glass within the sealed fixed edges of mammoth openings? Does this attraction, this seeming instance of "biophilia," indicate that we are enjoying our control over, i.e., our dominion over and thus our secure distantiation from the "prickle" of nature; or do we imagine that we are truly bonding with or engaging the world outside (Kellert 1993, chap. 2)?[2] Glass is of considerable utilitarian value, but has its ubiquitous and commanding presence in the walls of today's architecture really brought us closer to cherishing the complexity, unpredictability, dangers, and grandeur of the natural world? Regarding the materiality of glass, that is, its sensuality as a medium, why do we go to such great pains to get clear glass, to sanitize it and make it so transparent that its visual substance disappears and thus virtually dematerializes? Curiously, with such means of viewing we might be looking at nature in a manner similar to the way we looked at animals in early twentieth-century zoos, their dangers held at bay by the slender bars of cages. Through glass, we observe the world outside comfortably and safely and without the challenges of actual engagement.

But what can we do to heighten our contact with the natural environment from within buildings, given that we must have our glass windows for any number of obvious practical reasons, as well as the fact that we are attracted to and enjoy viewing nature through glass?

Perhaps the crucial question in the light of the biophilia hypothesis is "Can we enhance the positive phenomenon of viewing nature through glass in a way that might heighten our connection to and possibly increase our love of nature?" And can we reduce the drawbacks of visual distantiation, physical separation, and even a sense of supremacy over nature by architecturally altering the design of today's typical picture window as well as the design of the immediate setting or framework of that window?

Consider the basic act of visual viewing, particularly staring, even without the intervention of glass. While informing, the mere act of looking is usually passive and only quasi-sensual. Viewing may provide a vicarious experience of the object being viewed without the trials of actual encounter. We might say that merely looking at something is somewhat "virtual" by lacking the com-

ponent of action-reaction; for example, we can look at a mountain without climbing it. This, of course, does not mean that looking cannot evoke the excitement of a remembered or potentially more direct experience. But remembering and imagining are steps removed from actually engaging the object under consideration.

Consider also that our original and deepest sensual contact with the world around us was primarily developed in childhood through touch coordinated with sight, sound, taste, and smell. We discovered danger and delight by bumping into something. Over time, our visual perception of objects in the environment became largely a follow-up to our earliest encounters. Still, it is only through touching that we can again experience the simultaneity between action and reaction. I developed this argument 30 years ago in my book with Charles Moore titled *Body, Memory, and Architecture* by emphasizing that the entire system of touch that pervades both the inside and outside of our bodies, which J. J. Gibson (1966) called the haptic system, is a critical property in our experience of architecture's or nature's three-dimensional space. We were indebted to the seminal work of environmental psychologists. In the same study, we explored the "nature" of our own interior space, or the sense of a personal protected interior that we carry with us as we aggressively seek information about the world outside and beyond our personal space. We particularly focused on body imaging, that is, how we develop an image of our own bodies, including how we imagine our bodies relative to other bodies in space (Fisher 1970). An important finding was the notion that we possess a psychological boundary around our bodies (and by extension around our houses) that divides, or separates, our sense of a personal, possessed interior space from an exterior extra-personal space. This boundary is extremely sensitive and conditions our perceptions of the environment. It is also an elastic boundary that is subject to changes of shape, size, and hardness under different times and circumstances of encounter with the social and natural surround.

Such a psychological boundary arguably exists around the perimeter of vehicles, houses, and institutional buildings, or any vessel acting as a surrogate body. It is an intuitive condition that has traditionally informed the architectural design of the envelope, that is, the thick edge or section between the interior and exterior of a building. Certainly, at places of entry, visual statements about issues of social rank, safety, cultural belief, and the occupants' relationship to nature are played out by the shape, dimensions of setback, orientation, overhang, materials, decorations, mats, et cetera. Indeed, the passages through the psychological and actual boundaries of buildings, particularly important buildings, have forever been the most ritualistic moments of architecture. Principal windows and places of viewing have also been intimately dimensioned, shaped, and detailed to proclaim, sanctify, express, and allow a particular attitude toward our connection from within to the world outside. (See Figure 15-3.)

By combining those studies on haptic sensing, aggressive seeking, and body imaging, we concluded that

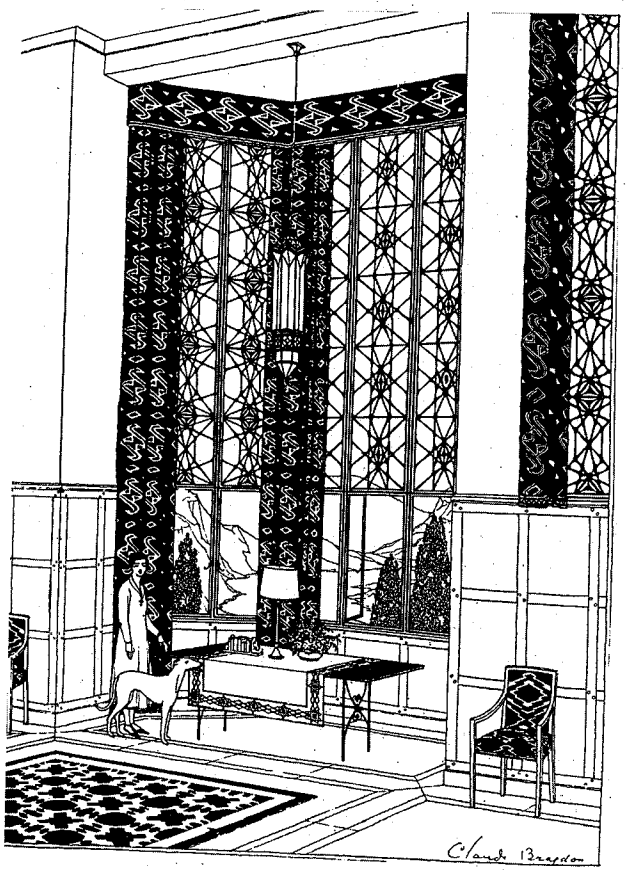

Figure 15-3: Great places of viewing can proclaim a particular attitude toward the natural environment.

our profound knowledge of the environment is corporeal and fundamentally developed from tangible experiences. From the standpoint of biophilia, let us assume that touching and the near-possibility of touching (haptic seeking) are fundamentally critical in establishing a firm connection, a "contact" with the natural environment. Yet, *touching is precisely what is negated by the pure picture window!*

THE ORNAMENTED PICTURE WINDOW

Consider that we can stimulate our sense of touch in the course of viewing through glass if we begin by thickening and populating the hard, glazed boundary between the inside and outside of a building. That is, we can invest the liminal transitional space of the window with material elements, including thicker or tinted glass elements, which might invite touch or simply imply something that is touchable in the course of viewing through the window. This was automatically the case in traditional window design, in which small panes were embedded within a grid of many mullions. (See Figure 15-4.) You still got the view, but the intimate threshold between being inside and outside a building was materialized with a wooden or stone grillwork. By touching or being able to imagine touching elements within the space of the threshold, you may heighten your sensual association with the world outside.

Put another way, by importing properties of the material environment into the glazed threshold, you deposit elements of matter implicated with the world around the window into the moment of divide between inside and outside. Arguably, the moment of divide is the most charged, ambivalent, and negotiable for belonging to both sides of the psychological boundary that informs our reaction to the environment. A further step, then, would be to design the shape of the mullions and incorporate additional material elements within the space of the window that begin to mimic, indeed to portend, some formations, complexities, and actions that are essential features of the world at large. (See Figure 15-5.) As the incorporated divide becomes more evocative and complex, it becomes more ambivalent; that is, it simultaneously implicates formations belonging to both interior and exterior places.

This is the classic function of ornament, to distribute material formations and rhythmic motifs into the spaces between things in order to heighten our sense of the world on both sides of a psychological threshold (Bloomer 2001, 61). Ornament thus performs as a sentinel or a bidirectional indicator of activity on each side of the threshold. It is a type of information. The educator-architect Charles Moore often spoke of the heightened perception given to viewing the distant ocean by inserting a bowl of water or a small pool between the viewer and the view, as compared to just staring into the distance over dry terrain toward the ocean.

If we consider the period of "modern" architecture in Western culture (the period to which we still belong)[3] as beginning around 1800 and developing throughout the nineteenth and early twentieth centuries, we can find any number of decorated windows that invested the glazed boundary with formations, particularly figures of ornament, capable of simultaneously evoking the inherent geometry of architecture and the "adherent" organic formations derived from the natural world out-

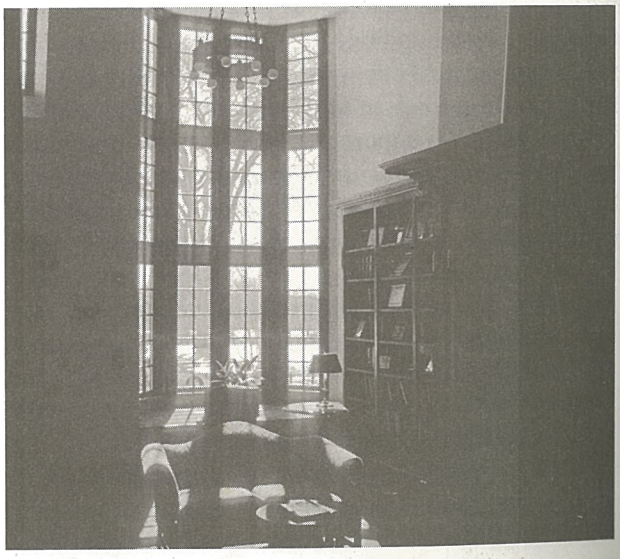

Figure 15-4: We may stimulate our sense of touching the world outside by looking through mullions and small panes of glass.

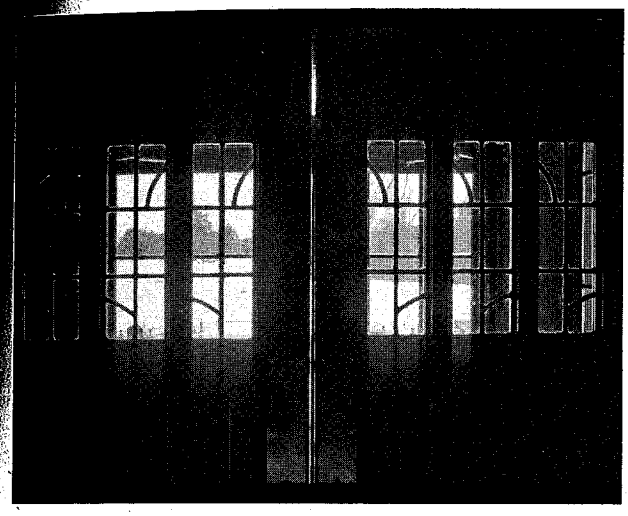

Figure 15-5: The shapes of the mullions may begin to mimic the formations found on trees.

side, particularly those found in trees and leafage (Bloomer 2006).[4] Sometimes this was simply achieved with patterns on curtains, and other times with the shaping of mullions and the incorporation of more complex geometric details.

Indeed, ornamenting windows for viewing was seminal to modern architecture (only to have been professionally condemned and forgotten in the last 60 or 70 years of the rapid growth and colossal mechanization of design in the later modernist movement). For example, Alexander Jackson Davis, one of America's most gifted nineteenth-century architects, was a great inventor of practical window mechanisms who, early in the century, "anticipated such developments of the modern age as strip windows and window walls" (Peck 1992, 9). However, his innovative talent in mechanics did not stifle his inclination to express rhythms and figures found in the natural environment within the glazed boundaries of windows. Indeed, one of the most brilliant compositions of viewing through "pictures" resulted from a collaboration with Tiffany at Lyndhurst in Tarrytown, New York, in which the picture itself is a literal detail (a picture frame within a picture frame) enshrined by the splendor of geometric pattern and the polychrome foliated tracery embellishing the great arched window. (See Figure 15-6 in color insert.)

The American tendency to view the environment through larger expanses of glass inspired another strategy of incorporating natural rhythms into the thresholds of windows as the tall building came into being. Louis Sullivan, considered by some to be one of the seminal composers of the modern skyscraper, inscribed ornament in the reveals of the window wall, that is, the inward face of the window frame perpendicular to the plane of viewing. (See Figure 15-7.) By looking through Sullivan's organic patterns of repetition, the viewer's peripheral vision was rhythmized in the act of looking outward into the land and cityscape. Indeed, one of the functions of ornament, beyond its capacity to portray complex formations innate to nature, is to impress and suffuse its objects with an amount of temporal rhythm. The term *temporal* here refers to types of visual organization that suggest time and changeful-

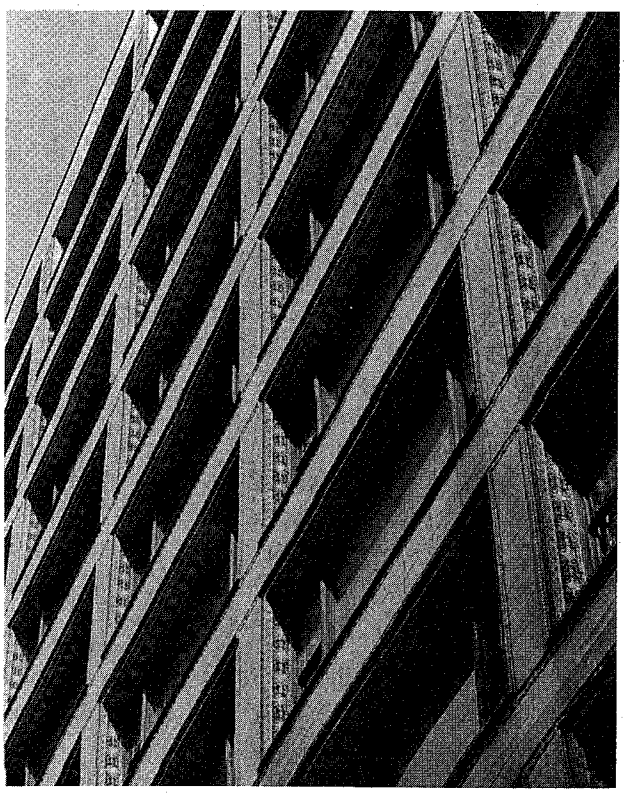

Figure 15-7: By distributing ornament along the reveals of the window frame, the viewer's peripheral vision is "rhythmized."

ness in contrast to stasis. In systems of ornament, such rhythmic patterning is generally quite minimal in area compared to the frozen units of geometry typically found in the overall shape and proportion of buildings. Ornament's intimate rhythmized detail thus incorporates an amount of sensation that originates from living patterns in nature into the basic inorganic forms of architecture.

Sullivan's student Frank Lloyd Wright obviously understood the vitality of viewing through ornamented windows. (See Figures 15-8 and 15-9 in color insert.) It is important in examining Wright's window designs to observe that he does not foreclose the option of clear viewing, especially in the lower eye-level portions of his windows. Even in Wright's more complex designs, you can still view the outside as directly as you can through an unornamented larger plane of clear glass. Like A. J. Davis in his great window at Lyndhurst, Wright understood that attentive viewing does not have to be panoramic in scale.

CONCLUSION

The placement of ornament within the critical thresholds of viewing from within buildings establishes a visible and touchable moment of mediation between inside and outside. By exploring the psychological boundary between the interior of buildings and the natural world, the claim that an "ideal" connection can be achieved by merely looking through clear, simply framed, and expansive units of glass can be critiqued and refined. Paradoxically, by inserting an amount of "picture" in the "picture window," we might articulate and effect a greater bond between the places in which we live and work with the surrounding nature.

The danger in omitting the ornamented window from the study of the biophilic merits of viewing from buildings is the possibility that the popular "naked" picture window may be applauded and declared sufficient, despite the fact that it provides a sanitized vision and might even promote a false feeling of fulfillment predicated upon an *illusion* of experiencing and being connected to the natural environment.[5]

ADDENDUM: THE PROBLEM OF VIEWING NATURE THROUGH "STONE"

The complete absence of any kind of visual sighting of the natural environment establishes an extreme instance of sensual disconnection from nature in deep interior space. Clearly, with that in mind, Wright also situated figures of ornament away from the exterior walls and in the sequestered interiors of his buildings, more as mementos, rather than as direct mediations with "pictures" of the natural world outside. (See Figure 15-10 in color insert.) Indeed, the practice of colonizing the blind spaces deep inside buildings with "cosmic" ornament preceded the classical architecture of antiquity with its colonnaded and decorated center places. That ancient tradition was still brilliantly recalled in many examples of early modern architecture prior to the extremes of reductivism governing the design of interiors in the period of late–twentieth-century canonical modernism. (See Figure 15-11 in color insert.)

In fact, many of us spend at least part of our days back away from the outer walls, all too often in nasty white boxes further debased with a plethora of written messages, computer screens, and way-finding signals (like a digital clock or exit sign). Others spend all day sequestered in such quarters. Occasionally there are potted plants presenting bits of the outdoors. Moreover, unlike the quasi-immateriality of large glass windows that can at least provide an illusion of connecting to nature (which I have contended could be more positively biophilic by incorporating rhythmized physical elements within the window and its frame), the perceivable edges of deep interior space are most often governed by impervious building components creating an essentially deflated world-picture. That fact proposes that there is no alternative for the designer dedicated to biophilic values, other than to contest the material reality of the box.

Logically, the spatial confinement of the box proposes an amount of *going against* its inherent materiality and by extension against the materiality of the building qua building from which the box issues. Building the walls with richer, allegedly natural, and seemingly less commercial or manufactured materials could,

by itself, merely edify the fact of confinement. This suggests moving in a direction that is the reverse of artificially materializing the picture window. It suggests dematerializing critical moments within the surface of the blind box with formations (see Figure 15-12) that (from the standpoint of construction) are intrinsically nonexistent, in order to subvert the hard structure. For biophilic purposes, such imaginary formations, such *information*, would be spirited, originating elsewhere and embedded within the intrinsic structural elements to proclaim the vitality and rhythm of nature. (See Figure 15-13.) Of course "going against" the pure primary structure of building is anathema to the core ideology of late-twentieth-century architecture, which idolized the physical elements of construction. By declaring that the expression of tectonic form and its authority over subordinate space is the defining essence (medium) of the art of building, the modernist canon strained to identify architecture as a limited phenomenon (as a highly specialized profession). Extreme dedication to such "limitations" can promote a type of idolatry that inclines toward the worship of an inorganic geometry rather than the more organic rhythms of life rooted in biophilia. (See Figure 15-14 in color insert.) Consider that a well-hewn wooden beam in a blind box, while charming and rustic, is twice removed from the living exuberance of a tree. At least this writer believes that a deep interior within a work of architecture that *only* aggrandizes the material elements signifying the economics of

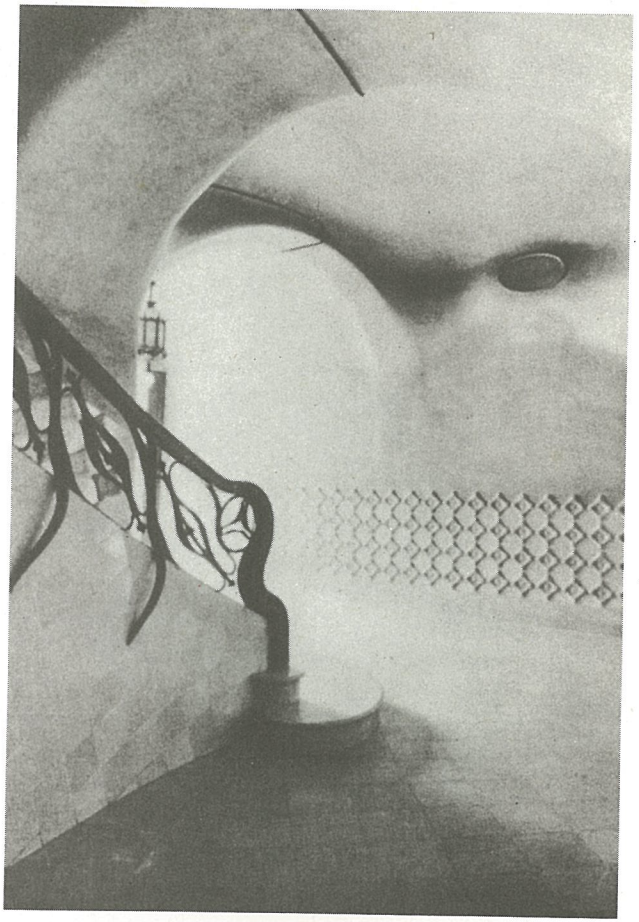

Figure 15-13: Elements of repetition and organic railings can be spirited through dark interiors.

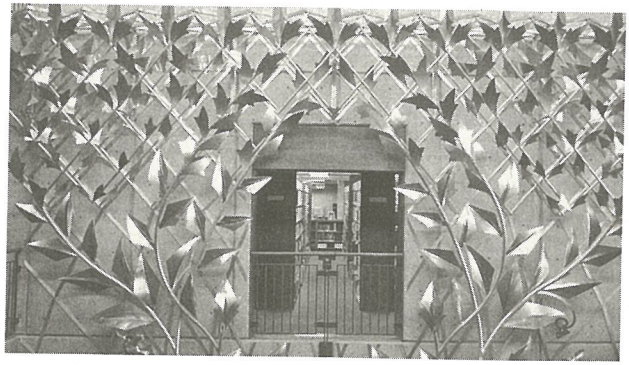

Figure 15-12: Imaginary elements mimicking the formation of foliage can challenge hard concrete walls.

construction, whether plastic or rustic (its rugged supports, blocks of stone, and geometric paving), may produce marvelous and even elegant spaces—but they are works begotten from the finality of life rather than the emergence of life per se. Visually disconnected from the vitality of nature, they become the stuff of tombs.

Yet, paradoxically, tombs such as the Theban tombs of ancient Egypt, have served as the birthplaces of seminal and powerful, perhaps biophilic ornament! The large blocks of stone and massive vaults of antiquity were well suited for the body of an eternal dwelling for the afterlife of the dead, that is, for their immortality. The necrophilia implicit in the material gloom of those

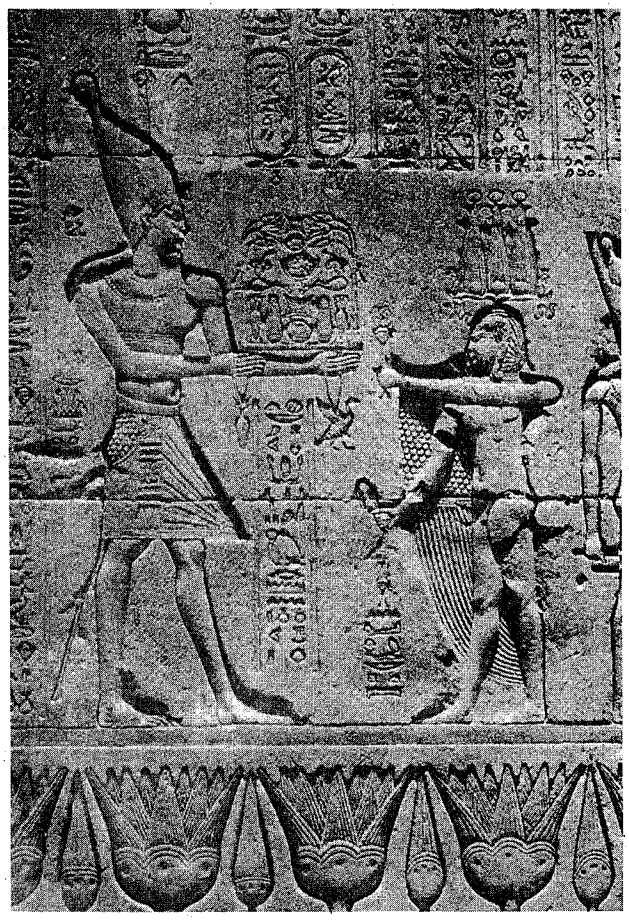

Figure 15-15: The necrophilia of an ancient Egyptian tomb was opposed by images of renewal in a band of bud-blossom-bud ornament.

tombs was mitigated by ornament upon the stone and polychrome friezes portraying rhythmic sequences of bud and blossom. (See Figure 15-15.) As a consequence, the powerful stone walls of those dark sanctuaries were ultimately challenged by figures of ornament that virtually dematerialized the stone in order to magnify the importance of *renewal* implicit in the spirit of foliation. Thus, the strong materiality and massive structure constituting the seminal architecture of death allowed vital formations evoking life to subvert its essential power.

For the purpose of this brief paper, let me isolate a few vital actions capable of being manifested in the dynamic line work of ornament, springing from formations more frequently found in nature than in the statics (the frozen geometry) of construction that usually define the interiors of late-twentieth-century architecture. First is rhythmization (especially a driving, syncopated formation of rhythm) (see Figure 15-16 in color insert); second is a spectacle of changefulness, sometimes portrayed as cycles of growth and decay, or which at any one moment may appear as a visible pattern of metamorphosis (see Figure 15-17 in color insert) (a metamorphose); and third is a composition of dynamic entanglement or competition between different species of things. All three of these actions, taken together or individually, convey measures of indefiniteness, temporality, impermanence, mystery, ambivalence, and growth. None of them necessarily assert the order and harmony that is generally assumed to be a positive emblematic property of basic architecture, but all of them proclaim life, which is the subject of biophilia.

These biophilic qualities are typically found in great ornament, a visual tradition that speaks in a manner more akin to calligraphic writing than to the architectonic shaping of space typically and necessarily found in buildings. Ornament presents visual percepts gained and imagined from without that for centuries have been brilliantly suffused, indeed have been "essential" properties in the richer understanding of architecture that flourished prior to the radical sanitization of design that has dominated the built environment for the last 50 years. Indeed, the primal function of ornament has been forever to mediate between the contrived spatial province of the man-made world, and the living immensity of the natural world-at-large.

ENDNOTES

1. Window viewing from a house or a hotel room is universally valorized in real estate and resort marketing.
2. Kellert observes that a biophilic response per se does not necessarily promote a protective or restorative attitude towards nature.
3. The term *modern architecture* is used here to identify ide-

ological developments in architecture after the French Revolution and the subsequent period of industrialization.
4. Figures of ornament, especially in Western culture, tend to evoke nature via foliation.
5. The term *sufficient* is used here to mean "mission accomplished"; that is, the naked picture window is all that is needed in building design to provide an affective vision of the world outside, a vision capable of promoting restorative action and a will to further nature's well-being.

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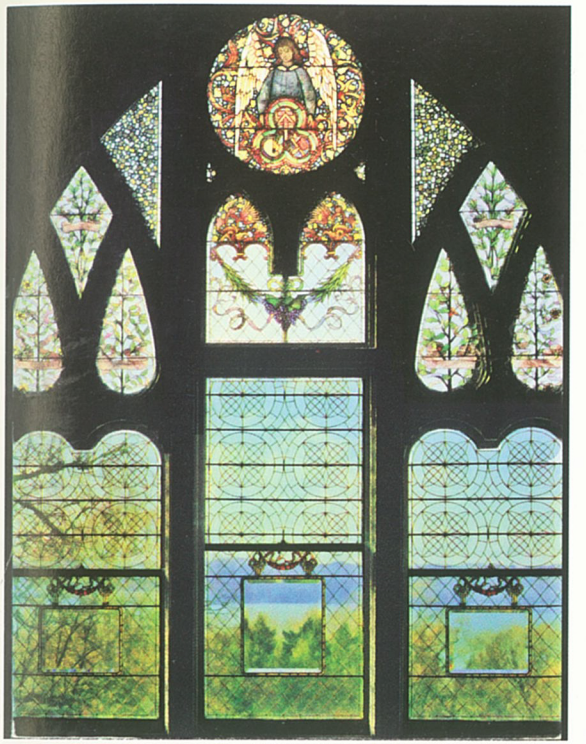

Figure 15-6: The great window at Lyndhurst harbors small picture frames of the view within the larger expanse of the opening.

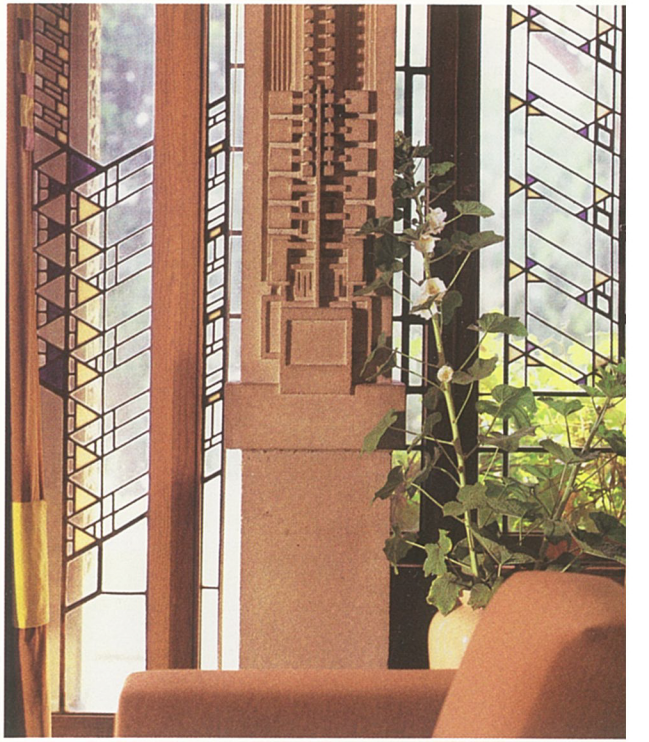

Figure 15-8: Frank Lloyd Wright populated the threshold of viewing with sh implicating forms found both inside and outside of the house.

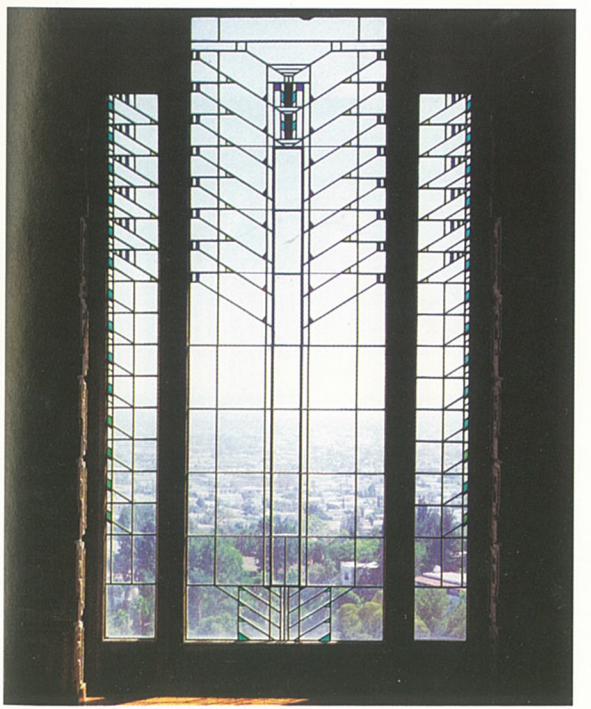

Figure 15-9: Wright's ornamented windows did not interrupt clear viewing through the lower portions.

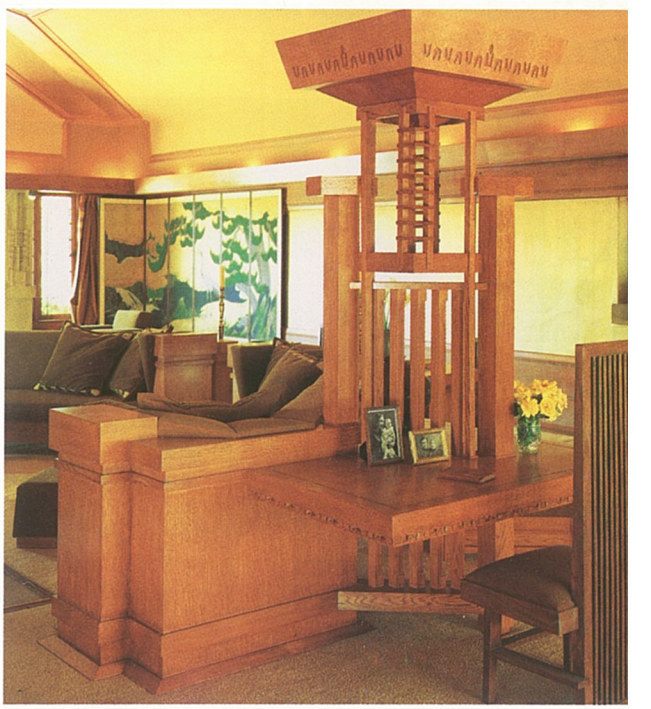

Figure 15-10: Wright placed mementos of nature away from the window into the center of the rooms.

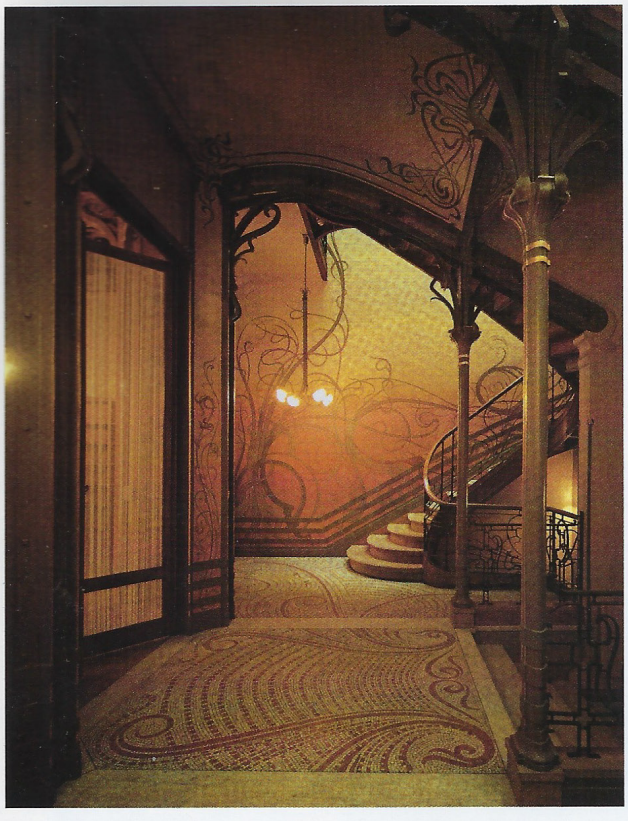

Figure 15-11: In early modern architecture some interiors were brilliantly decorated in homage to nature.

Figure 15-14: The stringers of an interior staircase can dissolve into shapes innate to living forms.

Figure 15-16: A driving, syncopated formation of branching and foliation can portray growth in an otherwise frozen window wall.

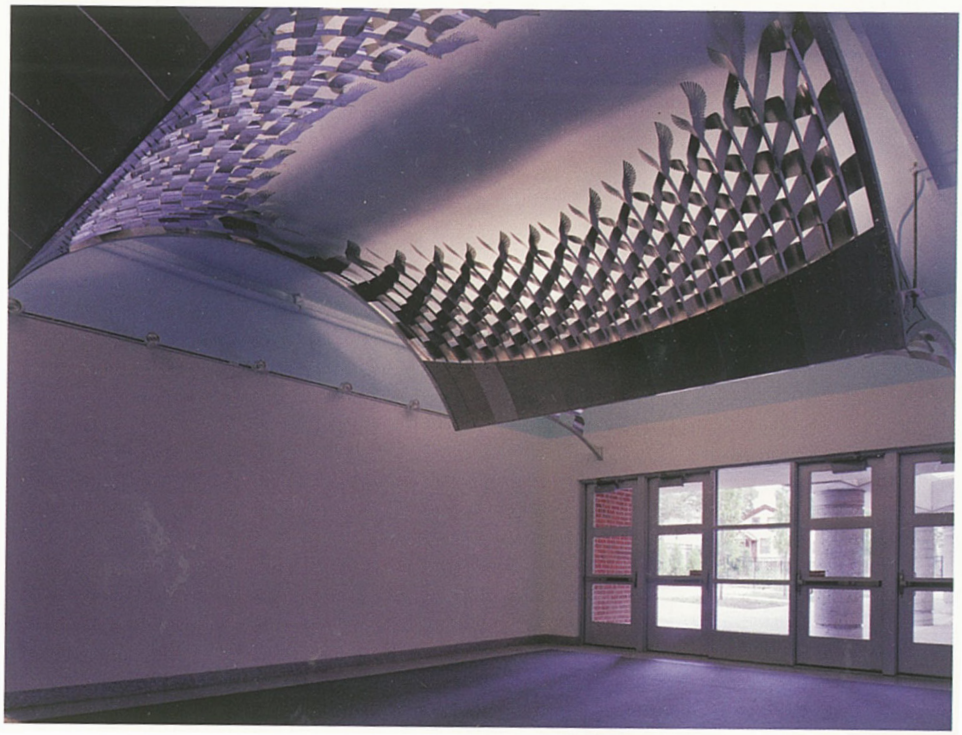

Figure 15-17: Geometry layered upon a ceiling transforms upward into a virtual flock of birds.