

# Greening Modernism



**T**HE Modern Movement is predicated on attitudes that lead directly to the efficient use of resources for building construction and operation, attitudes that are fundamental to sustainability. Also intrinsic to Modern architecture is a systematic methodology that provides the armature for a design process that focuses on a sustainable future. Understanding these issues provides valuable guidelines and tools for contemporary planning and architecture. Additionally, a wider recognition of this aspect of Modernism will reduce general hostility toward Modernism, thereby facilitating the preservation and conservation of Modern architecture built examples.

By Carl Stein

**M**UCH of the material in this article will be very familiar to regular readers of the **docomomo** Journal; however, it may still have utility. It may include fresh presentations of interrelationships and juxtapositions between various aspects of the Modern Movement, and the arguments presented here may prove to be helpful in advocating for the preservation of relevant Modern buildings.

Concern for sustainable design and construction is often seen to be at odds with the Modern Movement in architecture. This seriously flawed view is in large part due to misunderstandings of both words “Modern” and “sustainable.” Ironically, many of the aspects of work of the Modern masters are now being “rediscovered” as being key elements in environmentally responsible building design; among them, the efficient use of materials, the passive and active exploitation of solar and wind patterns, and the incorporation of plant life into building design.

A further misapprehension is that historic preservation stands in opposition to both Modernism and sustainability, a position resulting not only from the misunderstandings mentioned above but also from a misreading of the prevailing attitude of the Moderns toward the appropriate use of history and its meaning in the architectural continuum. While some of the confusion regarding the interaction among sustainability, preservation and the Modern Movement is the result of well-meaning but ill-informed or shallow study, much can be traced to conscious, intentional misrepresentation intended either to advance competing architectural, planning and social attitudes or to directly further personal or corporate ends.

*While Modernism does not, in itself, offer new design tools for building reuse and historic preservation, it does provide a very clear framework for the appropriate application of these tools.<sup>1</sup>*

Modernism has immense value as a problem solving tool. Recognition of the current crises that exist due both to global environmental degradation and to absolute limitations on essential resources, makes it essential that the misrepresentations and misunderstandings of Modernism, whether intentional or not, be corrected and that the Modern method be updated to fully incorporate current realizations regarding the state of the planet. However, in order for the framework of Modernism to serve the ends of sustainability, the meanings of “Modernism” and of “sustainability” must be properly understood. First and foremost, Modernism is a method and an attitude. It is not a style. This is clear in the great stylistic variety seen in the work of the members of CIAM (*Congrès Internationaux d’Architecture Moderne*), who may be seen as being representative of the best of the Modern Movement.<sup>2</sup>

Even the work of individual Modern architects shows considerable evolution over the course of their careers. Compare, for example, the iconic Villa Savoye by Le Corbusier from 1928 with his *Maisons Jaoul* from 1954 [figures 1, 2, 3].

Despite this obvious avoidance of narrow stylistic boundaries, a widely held misunderstanding is that Modernism is represented by the cookie-cutter curtain wall commercial structures that have populated our cities and suburbs since the 1950s. This not only leads to ignorance of the profoundly important historical advances that occurred in the first half of the twentieth century, it also creates a widespread hostility to the concept of Modernism, thereby greatly complicating efforts to preserve the surviving examples of serious Modernist building.

A review of the Modern Movement history makes this misplaced conflation of Modernism and certain stylistic elements, sometimes described as the international style, all the more surprising. In addition to the work itself, the writings of key practitioners of Modern architecture, insist on the absolute primacy of process over style. While, as noted above, some of the misunderstanding results from naivety and some from intentional misrepresentation for personal benefit, there are also many examples of confu-

< Figure 6. Bronze relief, **Le Corbusier**: a work of Purism, 1948.



sion on the part of some of our most thoughtful and influential historians and critics. For example, in 1976, Ada Louise Huxtable wrote in the *New York Times* a review strongly praising the early advocates of post-modernism as being as answer to the failures of “Modernism”<sup>3</sup> [figures 4, 5].

Despite recognizing “the genius and influence of Mies van der Rohe” and praising the “sculptured concrete forms of Le Corbusier,” specifically noting that the “Marseilles apartments and the chapel at Ronchamp are among the ranking prototypes of 20<sup>th</sup> century high-rise and symbolic construction” and despite commenting on the “prophetic humanism of Alvar Aalto” and “the early work of Walter Gropius,” Ms. Huxtable then went on to repeat many of the old one-liners about Modernism, reinforcing the movement misunderstandings. She wrote

of the “puritanical pieties of Modernism,” followed by a statement of her belief that the mannerism of the “new” work was “replacing the purism and functionalism of the 20<sup>th</sup>-century architectural revolution” [figure 6].

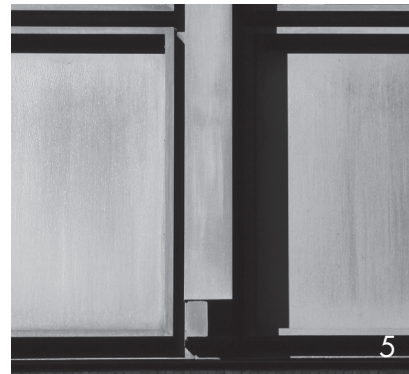
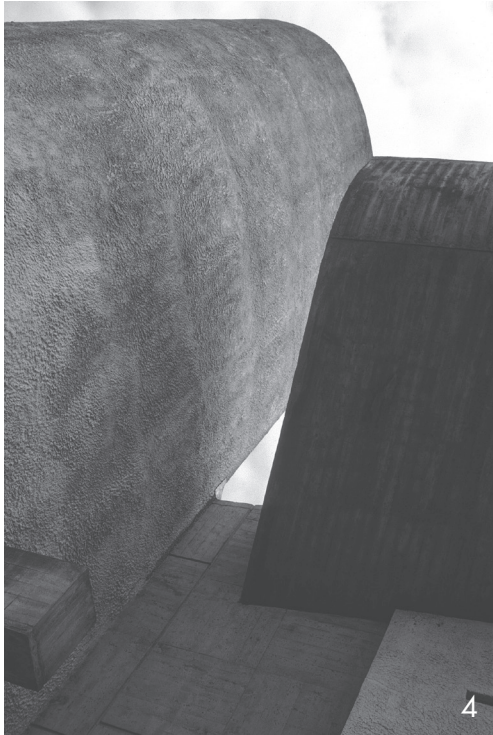
First, of course, purism had about as much to do with Puritanism as cubism had to do with cubes, which is to say virtually nothing. But more than that, the idea that Modernism called for an austere view of built space is belied both by the writings of the Moderns themselves and by their work. In fact, much of the work is lush and sensuous, in form, in surface and in subject.

One of the most misunderstood and misapplied statements is Le Corbusier’s “A house is a machine for living in” from *Toward an Architecture (Vers Une Architecture)*.<sup>4</sup> While this is frequently quoted as being a call for a cold functionalism, in fact, nothing could be farther from the

truth. Also in *Toward an Architecture*, Le Corbusier writes the following:

*My house is practical. Thank you, as I might thank the engineers of the railroad or the telephone company. You have not touched my heart.*

*But the walls rise against the sky in such an order that I am moved. I sense your intentions... It is architecture.<sup>5</sup>*



And this is a far cry from cold utilitarianism. Clearly, the functions of “living” that the “machine” is intended to satisfy include the elevation of spirit, of joyousness. The program of architecture is not a simply efficient shelter but includes a primary criterion, a deeply enriched quality of life. Understanding the complex functions to be served by Modern architecture is essential to understand the inter-connections between Modernism and sustainability, and it is essential to its clear definition.

Ms. Huxtable also brought up the common misunderstanding regarding Modernism’s view toward expressing structure. Speaking of the proto-post-modernists she wrote that, “it is no longer essential to reveal or express basic structure.” Compare this with what Le Corbusier wrote:

*A commonplace among architects (the young ones): it is necessary to show construction...*

*Sorry! Emphasizing construction is fine for students at the Arts et métiers who want to show what they’re worth. The good Lord indeed emphasized wrists and ankles, but then there’s all the rest<sup>6</sup> [figure 7].*

Figure 1. Villa Savoye, **Le Corbusier**, 1928–31 (photo 1964).

Figure 2. Villa Savoye, **Le Corbusier**, 1928–31 (photo 2005).

Figure 3. Maison Jaoul, **Le Corbusier**, 1954–56 (photo 1964).

Figure 4. Chapel at Ronchamp, **Le Corbusier**, 1954 (photo 1964).

Figure 5. Seagram Building, **Mies van der Rohe**, detail, 1958 (photo 2011).

Figure 7. Barcelona Pavilion, **Mies van der Rohe**, detail, 1929. Note that the spatial, pictorial and informational content of the polished, cruciform column, provides architectural richness far greater than its simple function of roof support. This very sophisticated architecture is achieved with essentially the same resources as a simple column—highly sustainable (photo 2010).

This Modern formulation is far from minimalist, far from narrowly constructivist and far from puritanical. While the details of construction and structure are frequently elements in the overall realization of Modern architecture, they are not ends in themselves. And in the context of the efficient use of resources, consider the environmental benefits of having the basic components of a building add to the visual experience, intellectual enrichment or pure joy that the building offers.

The misunderstanding—or perhaps misrepresentation—of Modernism continued as Ms. Huxtable claimed that architecture “is one profession that went through the ‘history is irrelevant’ bit half a century ago.” Yet the Moderns themselves were profoundly concerned with history. Walter Gropius, in *The Scope of Total Architecture*, wrote:

*Studies in the history of art and architecture, intellectual and analytical in character, make the student familiar with the conditions and reasons which have brought about the visual expression of the different periods...<sup>7</sup>*

Far from a rejection of the history study, Gropius put forward a position explicitly calling for the study of history but in its integrative, analytical sense rather than as review of style.

Similarly, Le Corbusier, in describing how to study history from a Modern viewpoint writes:

*One must go and see Pompeii, which is moving in its recititude. [The Romans] found the Corinthian more beautiful than the Doric, because more florid. Bring on the acanthus capitals, the entablatures decorated without much moderation or taste! But underneath was something Roman that we’re going to take a look at. In sum, they built superb chassis but designed dreadful coachwork...<sup>8</sup> [figure 8].*

*The Scope of Total Architecture* is explicit in defining Modern architecture as a methodology:

*My intention is not to introduce a, so to speak, cut and dried “Modern Style” from Europe, but to introduce a method or approach which allows one to tackle a problem according to its particular conditions.<sup>9</sup> (emphasis added)*

Here, clearly and unambiguously, Gropius describes Modernism as a process rather than a style, yet despite this, and despite the fact that the means to approach sustainable design are inherent to the Modern process, the commonly held view is that there is a fundamental conflict between Modernism and sustainability. Rather, properly understood, the Modern process is Gropius’ “method or approach” for addressing the problem of sustainable planning and design “according to its particular conditions.” The bones of this Modern approach may be extrapolated from the numerous contemporaneous writings of its practitioners but is nowhere more clearly distilled than in the CIAM Grid, a matrix that places architecture



and planning concerns into four major categories—Living, Working, Care of the Body and the Spirit, and Circulation—and establishes cells at the intersections between these categories and each of the problems and/or opportunities inherent in the design process.<sup>10</sup> Although the CIAM Grid is incredibly ambitious in its attempt to bring all of the issues affecting then-contemporary planning and design into a single matrix, what is perhaps most relevant to this discussion is its use of what would now be called multi-media notation within each of the matrix cells. By accommodating text, drawings and maps, photographs and other notations, the Grid supports the inclusion for evaluation of factors that go far beyond simple quantitative measurement. It specifically acknowledges the importance and incorporates the consideration of issues dealing with joyousness and elevation of intellect and spirit.

*...the walls rise against the sky in an order such that I am moved. I sense your intentions... It is architecture*<sup>11</sup> [figures 9a, 9b].

The corollary to this observation as related to sustainability is that success of any program depends on its ability to enhance quality of life.

*It is not the primary purpose of architecture to save energy. [A]ny building activity, by definition, requires the use of energy. It is, however, the responsibility of architects to carry out their work in a way that gains maximum results from the expenditure of precious, non-renewable resources.*<sup>12</sup>



Figure 8. Organizational rigor and details of the “chassis” at Pompeii.

Figure 9a. Chapel at Ronchamp / Figure 9b. Seagram building. Note that each of these buildings has walls that “rise against the sky in such an order that I am moved” yet each does so in a very different way.

This observation was made in 1991; however the Modernism of the first half of the 20<sup>th</sup> century evolved in a dramatically different context, or at least understanding of context; that is, one having limited understanding of the profound impacts of approaching the absolute limits on resource availability or of the rampant environmental degradation resulting from their overuse. Awareness of these conditions requires that new criteria should be introduced into the process, thus “Greening Modernism.”

*“Greening Modernism” references two conditions which are relevant to current global concerns regarding a sustainable future. The first is the existence of a set of fundamental principals and attitudes inherent to the Modern Movement as they relate to sustainability... The second condition is the need to upgrade the environmental performance of most of the existing building stock, much of which being in the modern style.*<sup>13</sup>

Additionally, “Greening Modernism” might also refer to the relatively recent recognition of the finiteness of many essential resources as an added “particular condition” in the Gropius view, a particular condition of great importance. This added awareness and inclusion as a primary criterion may be seen as greening the conceptual basis of Modernism. This, in turn, poses the question of when did this “particular concern” become part of the architectural world view, or for that matter, when should



it have? Although the concern for creating a built environment that functions in concert with nature can be found throughout the history of architecture and throughout the world, realization that there are absolute limits on resource availability and efforts to come to grips with the implications inherent to this realization are relatively new, particularly as applied to architectural design criteria.

In 1972, *The Limits to Growth* by Donatella Meadows and others was published, reporting the findings of the Club of Rome research project that had been funded by the Ford Foundation.<sup>14</sup> These findings were remarkably prescient as to the conditions experienced today, some forty years later. The book was not an isolated call. A year earlier, in 1971, Barry Commoner's *The Closing Circle* presented many of the same observations and raised many of the same concerns.<sup>15</sup> In 1975, E. F. Schumacher approached the same issues from the vantage point of economics in *Small is Beautiful*.<sup>16</sup> Questions of sustainability and the built environment have been widely discussed in the public arena for at least forty years and, while this represents a significant segment of contemporary experience, it is the blink of an eye in the history of architecture. It is interesting to note that the period of essentially turning a blind eye to the finiteness of critical resources roughly coincides with the massive distortions of the Modern Movement.

One of the charges leveled at Modernism during these past three or four decades is that its attitudes favoring efficiency essentially are austerity measures which lead to a reduced quality of life. These changes equate more "stuff" with a higher standard of living. Here again, Modernism offers help. In order that quality of life issues be incorporated into the equations for evaluating sustainable progress, it is necessary to reassess how sustainability is measured which means, in turn, rethinking the definition of quality of life.

*In terms of energy use, the important consideration is not the absolute energy performance of the building as an object, but rather its efficiency in meeting a programmatic goal with minimum energy consumption. The same may be said for all aspects of sustainable design.*

*Just as energy efficiency should not be measured in Btu's per square foot but rather in Btu's per programmatic goal solution, environmental impact—whether it is carbon footprint, consumption of water, occupation of land, use of non-renewable material, it should not be evaluated per unit of building but instead as it relates to satisfying human needs. This definition of sustainable design requires, in turn, a clarification of what is meant by human needs. To have a sustainable Modern architecture, it is essential to recognize that human needs supported by that architecture go far beyond the simple issues of shelter or utility. Architecture has the power to create spaces that calm*

*or excite; that focus or expand fields of vision—literal and metaphorical; that offer intellectual clarity or pose demanding questions. Architecture can speak of privacy or community. It can profoundly impact the body, mind and spirit. The success in addressing all of these issues must be taken into account when viewing the value obtained from the expenditure of environmental capital.<sup>17</sup>*

It is here that Modernism, the movement born in the period of intense scientific and technological development, has particular relevance, especially as it relates to issues of quality of life. The basic laws that describe behavior of the physical world also provide understanding of the world of art and intellect. In particular, there is the concept of entropy whose internalization leads immediately to the realization of the self-destruction inherent in casual excess. This concept is helpful in appreciating why efficiency will actually enhance quality of life [figure 10].

*Entropy is energy which is at the same level as its surroundings. As such, it is unavailable for application to useful ends. Within a closed system, the movement of energy from a higher to lower state not only reduces the amount of high-level energy but also raises the level of the surroundings—increases entropy, thus reducing the potential value of whatever high-level energy remains. In broader terms, entropy may describe any condition in which the value or importance of any resource is determined by its differentiation from its surroundings. Construction materials manufactured and assembled as a building are high-value resources.*

*The same materials in a landfill become an increase in entropy. The homogenization of the cultural environment, the loss of genius loci, increases cultural entropy. The loss of environmental diversity increases environmental entropy.<sup>18</sup>*

Modernism, with its complexities, inclusiveness and nuances is not sympathetic to the currently popular sound bite mindset; however, it does provide the underpinnings for a holistic approach to planning and design processes necessary for a sustainable built environment. It does this by providing at least the outlines for the tools required to integrate the complex sets of issues that planners and architects must address as well as by defining an overall discipline that insists on inclusiveness [figure 11].

Interestingly, as the misunderstandings regarding the Modern process are corrected and the true importance of Modernism is more fully appreciated, the built works of this movement should face less antipathy, thereby making their preservation and continued utility all the more likely—a sustainable step in itself and, as with all architectural things, an integral part of a continuum that is iterative and cyclical.

## Notes

1. *Greening Modernism*, C. Stein, 81.
2. CIAM, the *Congrès Internationaux d'Architecture Moderne* or International Congress of Modern Architecture, was established in 1928 and continued until 1959. Throughout this period, CIAM, meeting somewhat irregularly, sought to promote Modern architecture and to provide a *compendium* of the issues to be addressed. Members included, among others, Alvar Aalto, Hendrik Berlage, Victor Bourgeois, Le Corbusier, Lúcio Costa, Cornelius Van Eesteren, Sigfried Giedion, Walter Gropius, Walter Loos, Richard Neutra, Gerrit Rietveld, Josep Lluís Sert and Mart Stam.
3. "The Gospel According to Giedion and Gropius is Under Attack", A. L. Huxtable, *The New York Times*, June 27, 1976.
4. *Toward an Architecture*, Le Corbusier, 151. The reference here is to the 2007 translation published by The Getty Research Institute. The original 1927 English translation of *Vers une Architecture* was titled *Towards a New Architecture*. The addition of the word "New" into the title of the earlier translation conveys a very different sense of the book's intention.
5. *Toward an Architecture*, Le Corbusier, 195.
6. *Toward an Architecture*, Le Corbusier, 162.
7. *Scope of Total Architecture*, W. Gropius, 53.
8. *Toward a New Architecture*, 198.
9. *Scope of Total Architecture*, 3.
10. *The Charter of Athens*, Le Corbusier. Originally published anonymously in 1943 in occupied Paris, is both a summary of the work of the CIAM and a history of the organization.
11. *Toward an Architecture*, Le Corbusier, 195.
12. *Energy Conscious Architecture*, C. Stein, 1.
13. *Greening Modernism*, Carl Stein, 10.
14. *The Limits to Growth*, D. Meadows.
15. *The Closing Circle*, B. Commoner.
16. *Small is Beautiful*, E. F. Schumacher.
17. *Greening Modernism*, 160.
18. *Greening Modernism*, 120.



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Figure 10. Building material becoming entropic.

Figure 11. Surface, transparency and reflection at the Barcelona Pavilion. Great complexity and nuance in what initially appears to be a very simple building.