

Ecological Reflections in Architecture

Architectural Design of the place, the space and the interface.

Preface

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A few years ago, I was charged with the task of carrying out a comparative study of ecological building construction in Scandinavia. Our investigation subsumed buildings of widely divergent characters - from grassroots buildings executed in clay and straw to professional constructions erected as the direct outcomes of architectural competitions.

For many years, Scandinavian architects have been pointing their fingers in scorn at grassroots constructions, which they criticize for their deficiency of aesthetic qualities. The grassroots base their dwellings on environmental considerations and urban ecological commitment. Only seldom does it come to pass, however, that the urban ecological content is successfully endowed with a beautiful form.

The situation delineates itself differently with architect-designed construction. Here, ecological construction makes its appearance in the form of choice materials and with an exciting design. In my investigation of Scandinavian construction, however, I carried out a number of tabulations pertinent to these construction projects and accordingly laid bare their results in the environmental area, and it became all too clear that, with respect to these parameters, the architect-designed buildings lagged hopelessly behind the grassroots projects.

For sure, certain environmental considerations manifest themselves quite distinctly in many of the architect-designed projects. Thuja and cedar have come to be popular building materials, which do not require resource-demanding surface treatments, and large glass facades signal the use of passive solar heat. But all too often, a conventional building executed in concrete is hiding behind the thuja paneling's environmentally-friendly appearance and similarly, a question mark has to be placed beside the glass facades' energy-saving effect - as will be described in this book.

In this light, it can be said that the architects are concocting an image of ecology and that their work with the environment accordingly plays itself out on the facade - on 'the surface'. In extension of the architects' harsh judgement of the grassroots - that they do not supply the ecological contents with a beautiful form - the architects can conversely be criticized for creating form without meaning. The grassroots create meaning, but are missing the words. The architects have words, but they lack meaning.

There is, then, a discord between the ideals that serve as the ground for architecture and the reality within which the architecture unfolds itself. This is a widespread problem, which does not only manifest itself in urban ecological projects. These years, when it comes to visual attention, architecture is getting more and more competition from the media's incessant flow of visual expressions. And since architectonic design has, moreover, come to be a commodity in the cities' internal competition for investments, tourists and the like, a higher and higher

priority is being ascribed to architecture's visuality and outer appearance. We wind up erecting grandiose architecture in glass and steel which blinds our vision to such an extent that we cannot catch sight of the environmental problems.

The aforementioned discord between image and reality, between form and content, constitutes an essential point of rotation for this book. In the field of architecture, this has been on the agenda ever since the early modernists made attempts to settle their accounts with historicism's architecture, which they criticized for containing a disharmony between the facade's external order and the building's internal contents. As it was expressed at the time, the plan and the facade should be unified. And in the free arts of the twentieth century, the settlement of accounts with central perspective has similarly led to a renewed interest in the relationship between image and reality. This has found expression in certain tendencies of recent art, such as installation, land art and nature art. Both architects and artists have been busy trying to re-create the things' inner connections.

Seen in this light, modern design has many features in common with urban ecology. The urban ecologists are settling accounts with a worldview within which culture has come to regard itself as standing in a relation of antithesis to nature, a worldview where nature is what is out there - that which is on the other side of the billboard and that which lies below the belt. In place of all this, the urban ecologists are looking for a kind of nature which can be found within culture's own boundaries: they place grass on the roof, they bring goats into the city's backyards and they allow 'wild' nature to bloom in the city's parks. The urban ecologists are squaring accounts with the traditional way of understanding the city as the urban and the controlling, as that which stands in direct contrast to the countryside and the untamed surroundings.

Something analogous to this has been taking place in architecture. Already in the beginning of the twentieth century, the modernists broke with the traditional urban picture and settled their accounts with the well-defined limits of block-formed construction. In park-like developments, they ruptured the contrast and cultivated the meetings between building development and planting, between architecture and landscape - between culture and nature. And this has manifested itself, analogously, in the suburban building developments of the post-war era, which no longer permit of being bounded completely unambiguously in relation to the surroundings. The classical ideal about a city that is clearly bounded and clearly defined in relation to its surrounding environment no longer exists.

As has been suggested, early modernism had many features in common with those that are presently manifesting themselves in urban ecological construction. However, there are also areas where the work with the environment leads to a showdown with the ideals of modernism and where environmentally-related considerations can accordingly indicate a sense of direction for a further extrapolation of modernism's architectural ideals.

By way of example, we can point toward the narrow-minded reliance on rationality and science that has been ascribed to modernism. Among architects and consultants, for some time now, it has been a widespread opinion that the ever-increasing demand for economizing on resources in construction will have to be implemented through the agency of technology. Among environmental experts, however, there is a rising awareness that the

many problems in the environment cannot be solved solely through a corresponding quantity of technological measures. Of course, technological progress ought to be called into play to the widest possible extent, but it cannot stand alone.

This came to light in a number of case studies that I carried out in connection with the preparation of my own doctoral thesis, which serves as the foundation for this book. In the case study of one large residential complex, the consumption of resources varied drastically between the individual residential units, despite the fact that these units had been furnished with the same kind of water-saving technology. In one of the units, for example, the daily consumption of water was 66 liters/person, while in another home, the consumption was 287 liters/person. Here there was a fluctuation of more than 400 %. By way of comparison, a potential saving of around 30% is ascribed to the employment of water-saving technology. Accordingly, the case study showed that technological measures can certainly lead to results in the environmental area. But at the same time it became clear that there are other vital factors in urban ecological construction which are equally important. What became all too clear - and deep down, everyone knows this to be true - is that, in the final analysis, it is our behavior which is the single most important determining factor in the consumption of resources.

Inasmuch as it is our habits, our conduct and our life style which become the topic of discussion - as a direct consequence of the environmental problems - it is, after all is said and done, our culture which becomes the object of debate. And if our culture can be altered as a consequence of the environmental problems, then sooner or later, this will inevitably influence architectonic design, which certainly does - at any given point in time - reflect a culture and the societal values from which it originates.

Therefore, the environmentally oriented work can be discussed in an architectonic/aesthetic situational context. And this is precisely what is being measured and weighed by this book. The book removes the urban ecological efforts from their isolated existences and describes them in a wider perspective, in correlation with contemporary design.

In the book's first three chapters, the fundamental frames for understanding are developed. Special emphasis is paid to three different ways of navigating in the world. One either experiences the world with his senses, understands it with his intellect or creates it with his creativity. In connection with each one of these ways of orienting ourselves, the world comes into view in a certain special way. We can therefore speak about three paradigms or views of reality. These are denoted by the book's three key concepts: 'the place', 'the space' and 'the interface'.

In the book's fourth chapter, a number of ideological and cultural developmental features from the pre-scientific period up until the present day are examined. What is described here is how science's "objective" form of contemplation has brought the occidental culture into a relationship of opposition to nature, and how this has come to manifest itself in art and architecture is demonstrated.

In the fifth chapter, modernism's original architectural ideals are re-examined in the light of a series of antagonisms. On the one side, the early modernists aspired toward a rehabilitation of the faculties of

immediate sensation. But on the other side, they built their faith in the future on rationalization, systemization and scientific insight. In a phenomenological interpretation of modernism's architectural ideals, the mutual contradictions are joined together and what discloses itself is the possibility that modernism's ideological foundation can be carried further into an architecture with a solid ecological foundation.

The sixth chapter points out that, by and large, two types of environmental effort have been setting the agenda thus far: environmentalist movements and environmentalist management. What is demonstrated, however, is that neither of these two types of environmental effort represent up-to-date solutions. In the new worldview, which has been undergoing a development in twentieth century art and architecture, the possibility for developing a new kind of environmental effort can be glimpsed.

Finally, the book's seventh chapter offers a description of the environmental work related to the "body of the building" on the basis of five sub-themes: energy, water, waste, materials and planting. Within each of these themes, the environmental work is explained on the basis of scientific criteria. However, it is becoming evident that the environmental measures could just as well be seen as an expression of changed values and new norms - qualities relating to the underlying concept of the building. This underlying concept is closely connected with what is finding expression in our day's art and architecture. In this light, urban ecology is regarded as a link in a major paradigm shift - within which recent design has been working in the context of even wider frames.

The book is largely based on my doctoral thesis, which I prepared while working at the Danish Building and Urban Research. I would like to thank my friends and colleagues at the research institute, Ole Michael Jensen and Jens Schjerup Hansen, for always making time for a good conversation, and Marianne Krogh Jensen and John Pløger, who with a kindly disposed 'push' persuaded me that this book really ought to be translated into English. And last but not least, I want to thank my wife, Berit, who has followed the entire course of my work at close range.