

THE COMPLEXITIES AND CONTRADICTIONS OF SUSTAINABLE DESIGN AESTHETICS

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ABSTRACT

This paper explores the concept of developing a philosophy of a sustainable built environment, explaining the need to prioritise sustainable architectural and city form and aesthetics over the current paradigm of sustainability.

Various factors influencing the development of sustainable aesthetics are considered, including urban growth, climatic conditions, and the social and moral obligation it represents. There are currently calls to eliminate the distinction between architecture and sustainable architecture, arguing that all architecture should be sustainable. Consequently, the formal attributes of specific active and passive design strategies influence new aesthetic trends, such as the use of double-glazed facades with shading devices, or the use of fixed and dynamic sun control louvres and screens as dominant exterior design elements. Sustainability is reduced to a collection of energy-saving technological elements packaged in an attractive aesthetic package. As a result, sustainable architecture participates in the cycle of consumption and waste that underlies the environmental crisis. That being said, this paper suggests that sustainable architecture is influenced by the modern drive for aesthetics and technology, resulting in a focus on more energy-efficient design that still supports unsustainable ways of living.

However, sustainability imposes a new set of principles for the production of architectural form and aesthetics in response to consideration of environmental variables. The poetic aspect can potentially help to postulate this goal. The new paradigm goes beyond the application of new technologies and thinking about the life cycles of the built environment and objects. It requires a sensitive approach that goes beyond mere material rationality to achieve the harmony of integration with nature. Returning the term "sustainability" to its original meaning provided a more precise and consistent framework for architecture, defined by its relationship to the actual, physical dimensions of the environment.

KEYWORDS *_ built environment, aesthetics, architectural form, sustainability*

INTRODUCTION

Since the very beginning of the 21st century, with the increasing globalization that accompanied that period, the cultural and ethical dimensions of sustainability have emerged as a strong impetus for the field of architecture in order to confront the polarities between the pursuit of economic maximisation and the fragility of the natural environment. These changes are related to the rapid pace of industrial and technological development that characterises the modern age and its dominant model of the market economy, which, in a sense, requires large consumption (Harvey 13). Among other things, excessive commodification with unfair distribution of capital is one of the causes of increased patterns of energy and resource consumption, which significantly contributed to the global situation that we consider unsustainable today (Lee). As Glenn Hill argues, in the pre-modern we are given a place, while in modernity we are free to shape our place. This newfound freedom brings with it both liberation and anxiety, but also essentially required consumption as a means for individuals to construct their own sense of place (Hill).

In the search for a model of sustainability in architecture, aesthetics takes on a new dimension, but the essential principles remain the same – the sustainable nature of a structure should be culturally inspired and aesthetically expressive, showing how it serves its purpose in a specific geographical context, taking into account factors such as topography, vegetation and climate. At the same time, the understanding of sustainability today faces significant obstacles.

Emphasis on marketable aspects, different media representations and fragmented technical components overshadows wholeness and poses a fundamental challenge. A scenario in which architecture must participate in an endless search for new aesthetic trajectories, where it itself becomes an aestheticised commodity subject to obsolescence, is often seen as waste long before its functional life is over. Also, there is a tendency to view sustainability through a nostalgic and overly simplistic lens, emphasising rustic and simplistic ideals (Hill).

In the dystopian landscape of sustainability and its aesthetic dimensions, the aim of this paper is to explore the complex relationship and inherent contradictions between the concepts of sustainable aesthetics, in order to gain a deeper understanding of the whole construction of sustainable design. By overcoming the obstacles of superficial appearance and mechanical approach, this research aims to contribute to the progress of sustainable architecture, where aesthetics is inextricably intertwined with the true essence of sustainable practices.

AESTHETIC IMPLICATIONS AND SUSTAINABILITY: CONTRASTING APPROACHES AND SHARED GOALS

When considering aesthetic implications and sustainability, there is a significant gap in different approaches, both in theory and in practice. The first approach is digitally oriented and uses natural systems as a source of design inspiration, applying strategies such as generative design to find form. On the other hand, there is another, more open perspective that explores nature to determine how a building and its environment should function in symbiosis. The rules and principles of this type of passive design are focused on the orientation of the facade, the depth of the plan, the form of the section and the arrangement of materials, which minimises the use of resources and energy. According to Kenneth Frampton, this is the gap between the avant-garde belief that true architectural creativity arises solely from subjective experience, and the environmentalist's belief that architecture, on the contrary, should be based on a deeper engagement in achieving homeostatic balance, requiring greater restraint towards the individual tendency to design. The ecological approach emphasises moral values, consistency and critical thinking, rather than personal interests or ambitions (Frampton, *Urbanization and Its Discontents: Megaform and Sustainability*).

Sustainable structures within both approaches span a wide range of techniques and ecological forms,

from high-tech energy-efficient structures like Norman Foster's Commerzbank headquarters to low-cost low-tech solutions like Cotton Tree Housing by Australian studio Clare Design. It is important to note that the "low" technology approach emphasises the collective socio-cultural way of life and at the same time depends on interstitial elements that merge with an ecologically sensitive approach (Misa, Brey and Feenberg 56). While high-tech, using technology as an instrument, and the principles of the so-called digital approach to nature, often neglects the role of quantitative and empirical elements in shaping the architectural discourse. And as a combination of these two, the passive-hybrid approach draws inspiration from various architectural-vernacular traditions, using all the advantages of technology. It relies on different orientations in accordance with climatic conditions, as well as the use of stable thermal masses that are manipulated through openings, gratings and actuators with sensors, in order to maintain optimal conditions inside the building during all seasons. In one way, he advocates the acceptance of abstract artificiality, where ecology becomes an active and courageous force. Susannah Hagan described this gap with the words "The intellectual spectacularity present in the first case is missing in the second. The intellectual consistency present in the second case is lacking in the first" (Hagan).

Instead of a polemic about whether some high/low technological or hybrid approaches are just part of the social construction or the right way to achieve sustainability, we will look at the social theorist Jürgen Habermas. Habermas brings key insights to this field thanks to his long-term involvement in the study of the role of science and technology in society, as well as his interest in counterculture during the latter part of the last century.

Habermas argues that different theories and views on sustainability are often contradictory and confusing, but are actually legitimate when viewed in relation to each other. It is crucial to understand that Habermas considers science through three domains. The first domain is technical engagement that relies on measurable and empirical data to predict and respond to the environment. The second domain is practical engagement which focuses on social knowledge that is built through debate and consensus building. The third domain is emancipatory knowledge based on self-reflection (Habermas). In the context of sustainable architecture, these three spheres are important because of their inclusive and connecting character. The emphasised role of mediating technology through society and the individual encourages a pluralistic and ambiguous approach in this field. This enables the coexistence of discourse even within frameworks that are often strictly defined by academic paradigms.

In order to concretise Habermas' three domains, with the aim of symbiotic reasoning of sustainable principles and their aesthetic dimensions, the first step is to focus on design methodologies in scientific and empirical fields of knowledge. This quantitative knowledge provides the basis for assessing society's needs and seeking strategies that promote sustainable development within a specific context. Through the resulting practical engagement, a connection is made with Habermas's second domain, where social knowledge is constructed through the achievement of consensus and agreement. Such an approach does not exclude the experiential or phenomenal aspect, since Habermas's third domain, the domain of emancipatory reflection, is firmly based on the individual. Reflection goes beyond the control of both the technology and the architects themselves. For this reason, it is crucial to recognise the limits of context and culture.

Thus, a combination of quantitative aspects focused on measurable parameters that do not exclude the experiential or phenomenological aspect, and refer to subjective and immeasurable characteristics and values, which is very much a question of sustainability aesthetics.

THE BOUNDARIES OF NATURE AND CULTURE

Regarding the eco-technical structures that Catherine Siessor has characterised in her theoretical work, two key features that have long been recognised in the architectural tradition are often overlooked. The first is the embodied energy naturally found in vernacular objects, while the second

is the immeasurable principle of the object's long-life cycle. These principles were once an integral part of the masonry structures of the past, leaving us with a legacy of extremely adaptable buildings from the 18th and 19th centuries, many of which we still use today (Slessor). In today's time, these goals can be summarised as durability, adaptability and sustainability. However, achieving such residual value is more challenging due to minimum space standards and the paradoxical inflexibility of lightweight construction techniques.

As architectural theorist Kenneth Frampton argues, sustainable buildings today should focus on generic adaptability rather than utilitarianism or superfluous formal gestures that quickly become obsolete. Buildings should be constructed of low-energy materials that can withstand weathering and aging, rather than using high-energy synthetic substances that often require continuous maintenance when exposed to natural conditions over long periods of time. But above all, sustainable architecture is impossible without close integration with the environment (Frampton). Therefore, it must take into account factors such as microclimate, topography, vegetation, as well as known functional and formal requirements that are addressed in standard practice. This enables the coexistence of discourse even within strictly defined academic frameworks (Frampton).

This idea emphasizes the importance of the interaction of nature and culture at the deepest level, with architecture firmly placed in the sphere of culture. The renewed awareness of the importance of landscape can be understood as a bridge between quantitative and qualitative aspects of sustainability, measurable and empirical qualities. We can find inspiration in the intrinsic terms of landscape aesthetics (Hawkes 15). Encouraged by this perspective, the field of architecture can develop an authentic alternative to the invasive practice that reinforces the dichotomy between nature and culture.

This view is further emphasized if we take full advantage of the capabilities of technology for simulation, synthesis and modeling of the immediate environment. In this way, we can fully integrate the variables that define the intrinsic aesthetics of the connection between place and building in a more efficient and symbiotic way. This includes the ecology, geology and hydrology of the specific context in order to minimize the potentially destructive impacts of construction on the environment (Frampton).

CONCLUSION

Architecture faces an inherent challenge that is present in many other disciplines - finding a balance between the rational and intuitive worlds, where technology plays an important role, but where ephemeral qualities must not be neglected. There are no objective reasons why environmentally friendly and sustainable design could not be culturally inspiring and aesthetically expressive at the same time. On the contrary, sustainability and its inherent aesthetics should properly be considered as a key source of inspiration for deepening the new paradigm. It should be treated as a central driver of creativity and innovation, an incentive for architects to create harmonious, inspiring and visually stunning buildings that at the same time meet high environmental standards.

In essence, the emphasis is on a comprehensive approach that integrates technical, artistic and intuitive elements. Through a deep understanding and alignment of these different aspects, architects can achieve harmony between aesthetics, functionality and environmental sustainability.

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