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edited by

Filippo Bosi, Paolina Ferrulli and Elisabetta Fossi

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Contents

Sustainability in architecture thirty years after the Brundtland Report: a critical approach

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Abstract

The research aims to reconsider the concept of sustainable development and consequently of sustainability, because it maybe justified to say that their meaning have been manipulated. Therefore almost thirty years after its formulation, it is a concept which needs to be reviewed. Sustainability issues enjoy great popularity, however a certain lack of critical approach to this topic has been detected. The goal of this research, albeit ambitious, is to shed light on the relationship between the effects of sustainable development and architecture, considering as objects of the analysis the implications and the consequences of the concept of sustainable development: the products of sustainability. They could have a great influence on the man-made environment currently designers, regardless of the position which can be assumed with sustainability, must deal with this process such as in the case of regulations.

Although sustainable design is often focused on technical aspects or performance, this research aims to integrate them with a cultural analysis, outlining a cultural history of sustainability, to avoid omitting a number of aspects which if left unchecked in dealing with such a complex subject, could cause shortcomings and over-simplifications.

The complexity of the scenario allows a choice of methodological approaches to the research. Thus the research proceeds first by induction, identifying the subjects and the critical issues related to them, starting from the basic formulation of the subject itself and the direct consequences of it, through to the analysis of the most influential authors and the historical context in which they arise. Then examining the specific elements for a more in-depth analysis.Thanks to the results of this analysis, the research proceeds by deduction to the origin, that is the basic formulation of the subject (sustainable development) and its consistency with the objectives set, assessing the results of research in the conclusions.

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Research scenario

Starting from the definition of sustainable development, it appears as a process aimed to achieve goals of environmental, economic and social improvement, locally and globally.

For these reasons, a sustainable development as defined, is incompatible firstly with the degradation of the environment and natural resources and also with the violation of human dignity and freedom, poverty and economic decline, the lack of recognition of human rights and equal opportunities.

The definition of sustainable development formulated by the Brundtland Report attaches to the concept of sustainability a strong sense of ethics, stressing the need to operate in the present a series of choices which could ensure that future generations will enjoy the same benefits as their predecessors, pursuing a common good future, put at risk by man's attitudes and behaviour towards the environment and its resources.

Therefore the advent of sustainable development has been positively welcomed by many authors as one of the greatest challenges of the next millennium, in the social, economic and environmental fields (Tiezzi, Marchettini 1999).

Therefore, the objective of sustainable development is to control and limit human activity to reduce the carbon footprint, trying to deal with a number of issues related to pollution, exploitation of non-renewable resources and soil consumption.

Despite these problems being currently shared by the majority of the scientific community, a lot of conflicting opinions have been expressed about some of these issues putting them in discussion, sometimes even by authoritative voices, as happened in the case of the Nobel Prize-winning Kary Mullis (2013), which believes that a direct connection between climate change and carbon dioxide emissions is not scientifically demonstrable. However, having certainty about the causes of climate change is important, because it is on this, as well as on the exhaustibility of fossil fuels issue, that guidelines on energy efficiency are based in different sectors of the economy.

It may be justifiable to say that there are some aspects related

to energy and environmental issues that may be considered incontrovertible: saving meant as a limitation of energy, resources or soil consumption, even if presupposes some kind of waiving, is a concept that generally carries a positive meaning, since the restriction implemented in the present ensures the possibility of future wellness. However, it should be stated unambiguously what is meant by welfare and what dynamics will start in response to the limitations made. When you are confronted with the sustainability issue, first of all, is important to identify the different approaches that you may have about this topic.

The environmental aspect of sustainability is the one most strongly promoted through the media, who often use examples to influence people emotionally. Maybe it is because we can have a direct feedback with this aspect: that we can see with our own eyes the reality that surrounds us, and its changes impress us immediately. In fact, when we look at a plant, our mind begins a series of interpretations, a synthesis of rational and intuitive emotions, and weaves a series of reports by the plant itself and the emotions received from it. All of this is influenced both by our culture and our genetic heritage[1] (Tiezzi, Marchettini 1999).

The economic aspect of sustainability is also widely debated and evaluated, as in the case of the environmental aspect being measured and quantified through objective data, so it is more easily verified. Much more delicate and complex is the promotion and evaluation of social sustainability, since it brings with it a number of qualitative and subjective aspects, that are difficult to identify unambiguously. The more that an environmental issue becomes relevant and shared, the greater is the risk of the proliferation of a phenomenon that has been defined by the term greenwashing[2], a series of marketing strategies designed to highlight a range of products sensitive to sustainability issues, in order to make them more attractive in the eyes of the consumer, thus dwarfing the actual meaning of sustainability.

Research goal and objectives

The United Nations World Commission on Environment and Development (WCED) in its 1987 report Our Common Future defines sustainable development as a «development that meets the needs of the present without compromising the ability of future generations to meet their own needs» (WECD, 1987). After this definition many others were formulated and consequently the notion of sustainability has emerged.

Since its formulation to date, this binomial has been widely used

and misunderstood, becoming in accord with Serge Latouche (2012) a generalized and sometimes mystifying expression. Therefore almost thirty years after its formulation, I think that it is a concept that needs to be reviewed, because the word sustainability, considering each of its forms, has been manipulated. This could be a consequence of the use of ambiguous communication strategies and market interference, which presumably helped to create and feed a confused debate on this topic (Owen, 2010). In light of these issues there is the need to analyse this topic critically, to gain more awareness about the influence which it has exercised on our perception of reality, studying the scenarios that have been opened in different disciplines and cultural areas, in particular in architectural debate. With regard to this specific topic, the research aims to evaluate the problems identified, the answers made and failures, to develop new hypotheses.

After the Brundtland Report numerous summits which have enriched the concept of sustainable development followed, reducing it to three spheres of influence, with the aim of translating the theoretical aspects in operational strategies, through specific policy choices and procedures, such as the enactment of specific regulations[3].

The goal of this research, albeit ambitious, is to shed light on the relationship between the effects of sustainable development and architecture, considering as objects of the analysis the product of sustainability, reflecting on some very important dynamics: what results have brought the interactions between the product sustainability and the man-made environment? Have the principles of sustainable development been observed in a consistent way? What objectives set at the theoretical level have been translated consistently on a practical level? Are there other possible scenarios that have not yet been assessed?

Which product, more than any other, have generated doubt creating confusion, or sending deceptive messages, considering the original objectives of sustainable development?

Applied methodologies

The complexity of the scenario allows a choice of methodological approaches to the research. Thus the research proceeds first by induction, identifying the subjects and the critical issues related to them, starting from the basic formulation of the subject itself and the direct consequences of it, through to the analysis of the most influential authors and the historical context in which they arise. Thanks to the

results of this analysis, the research proceeds by deduction to the origin, that is the basic formulation of the subject (sustainable development) and its consistency with the objectives set, assessing the results of research in the conclusions.

It is important to highlight the originality of this approach, which is a review of what happened after the definition of the concept of sustainable development through the examination of architectural products, with a phenomenological vision.

Following the method described, the research is divided into three main parts: the first part of the study describes the concept of sustainable development, starting from the description of the scenarios that led to its definition, researching its historical and epistemological bases, outlining a cultural history of sustainability. Then the concept of sustainability is defined in its three main aspects and the objectives that it has set. This kind of investigation, which takes into account how sustainability has become part of the collective imagination reveals the presence of relevant consequences of sustainable development, which I define in the course of the research as the products of sustainability. The products of the sustainability are the phenomenological basis departure from which gradually the research comes back towards the generating elements themselves (sustainable development and sustainability).

The second part of the research deals with the concept of sustainable development, applied in this case to architecture, has given life to the elements reproduced and reproducible, which in their turn have given rise to different trends. After a general description of the products of sustainability that mostly interact with the themes of architecture, the research selects some products considered suitable for the purpose of a deeper analysis; for example, a selection of the directives corpus issued by the European Community, in particular energy and environmental regulations and environmental assessment tools[4].

The choice is made to fall on these products and on the trends related to them because they have, or seem to have, a strong effects in architecture, in particular on technical, formal, communicative and economic choices. To assess the interaction of these products with the field of architecture, the research identifies parameters to determine their degree of influence on the project, their degree of consistency with sustainability principles and their ability to meet the objectives set by sustainable development, and finally, the presence of interference.

In the third and final part of the analysis will be assessed some

of the strategies that have been undertaken to achieve the objectives of sustainable development in architecture and what problems were encountered, with the possibility of developing new ones, or of introducing corrective elements inside of them.

Target audience, expected results and future developments

Sustainability issues enjoy great popularity, however a certain lack of critical approach to this topic has been detected. Although sustainable design is often focused on technical aspects or performance, this research aims to integrate them with a cultural and historical analysis, outlining a cultural history of sustainability, and to avoid omitting a number of aspects which if left unchecked in dealing with such a complex subject, could cause shortcomings and over-simplifications.

The research fits into the theoretical debate, but with repercussions in practice, since it is a discussion rooted in epistemology, integrating the analysis of the technological debate not only with the traditional methods of the discipline, defining a new kind of approach.

The results of the analysis will consist in the synthesis of a series of reflections resulting from the knowledge gained during the research path, allowing us to establish and describe the relationships occurring between the products of sustainability and architectural issues, including a series of cultural elements often ignored.

Conclusions

The research is still in development, but I can make some assumptions: in assessing the outcomes of the research. I will not focus exclusively on the consistency of the answers that have been given to the analysed issues (through policies, procedures, intervention programs), but also on the consistency of the requests that were made at the beginning.

The research may find the lack of a systemic approach to the complex problem of sustainable development, underlining the need to identify more flexible strategies. So at the end of this research I would say that: despite the criticism and mistakes made in the practices, aimed at promoting the concept of sustainability, there are elements that belong to this concept, recognized and shared, that have a direct and predominant influence in architecture.

These elements may need to be reinterpreted, and not abandoned,

because they can have a strong value in the design phase.

On the contrary, it might be inferred from the research that the concept of sustainable development is intrinsically bound to be unsuccessful, because it is eternally inconsistent since its formulation and the products of sustainability have betrayed the conditions that generated them. A different outcome might still claim that it is impossible, in some cases or with respect to certain issues, to overcome the ideologies and the partisan attitudes, because although the validity of some of the concepts related to sustainability is demonstrable, with more or less scientific arguments, some aspects of it can be disproved, and each of us might tend to stay true to their convictions in virtue of ethical intrinsic content of sustainable development.

Notes

1. The same concept is expressed Julia B. Corbett, in her book "Communicating Nature: How We Create and Understand Environmental Message" (2006).
2. Neologism coined in 1986 by New York environmentalist Jay Westerveld, comprising the crasis of "green" and "brainwashing".
3. Briefly retracing the fundamental steps that have succeeded the Brundtland Report, we find the definition of sustainable development later reformulated by the World Conservation Union (1991), in 1992 the United Nations Conference on Environment and Development in Rio de Janeiro, which raised the idea of sustainability as a concept articulated in the three dimensions of Environment, Economy and Society. From the Rio Conference was born the first tool for the practical implementation of sustainable development, Agenda 21.
4. To better describe the phenomena arising from the concept of sustainability in architecture, we must start from a wider point of view: currently we are in a particular historical moment in which we own numerous new technologies and new materials, sensing the need to employ them in a different way. It can be said that the new techniques have allowed new expressions of architectural culture, sometimes taking the upper hand on it. The set of these products give birth to real trends and generates the different trends that are found inside sustainable design. For example, directives and regulations have the task to translate

into operational terms a number of instances and problems encountered previously on the theoretical level: this is clearly the case also with regard to regulations on sustainability and the environment.

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