

REFLECTIONS ON CONTEMPORARY DESIGN EDUCATION: THE GREEN MAP SYSTEM AS TOOL FOR A BETTER UNDERSTANDING OF SUSTAINABLE PRACTICES

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Abstract

The main focus of this paper is Design Education and the need for implementing sustainability concepts within design disciplines. This approach reflects the urgently need of searching new methodologies in order to find the needs of the present without compromising the future generations ability in finding their own needs, according to the World Commission on Development and Environment, 1987. In this sense, some changes in design methodologies, particularly in design education, are discussed and pointed out as a matter of priority.

The perspective of sustainability imposes new concepts of development, new social behavior and new cultural paradigms, which can be seen as an extreme difficulty in implementing sustainable practices. In one hand the currently pedagogical practices do not drive to sustainability because it is mainly centered in the teachers' background instead of a participatory process with students, on the other hand the goals of design projects are focused on industry needs other than society. This means, the more we focus on traditional methods in design education the less we can achieve sustainability.

Using these ideas as a starting point, some reflections on contemporary design education are discussed. The example of the Green Mapping Methodology is used as reference in undergraduate design courses, trying to implement the principles of sustainable development within the design disciplines.

The main contribution of this article is to show how the development of the Green Map System can effectively contribute to the discussion about a more sustainable world, taking into account the design's point of view. This method has as main goals education, information and promotion of a sustainability conscience. Green Map identifies some social and environmental issues, as well as urban natural resources of the city of Sao Paulo and starts a collective thinking process within design students. In this sense, this method is used as example of how to design and permanently dealing with social and environmental aspects of development, changing the attitude of designers according to the sustainability approach.

Keywords

Design education, sustainability, green map system

1. What sustainable practices mean?

The Brundtland Report, called Our Common Future, promoted by The World Commission on Development and Environment from The United Nations, in 1987, advocates the Sustainability Model for the world, considering it as an integrated system with specific balances and ecological flows, affected negatively as a whole

whenever one of its parts is threatened. According to this Report, sustainability, i.e. sustainable development, means “finding the needs of the present without compromising the future generations ability in finding their own needs”.

From the sustainable development perspective it is imperative to focus on minimizing the negative effects of the industrial production on nature and at the same time to respect human values and needs. In this sense, the ways of growing, developing and sustaining human satisfaction can not be based exclusively on economical values, as intended by the Expansionist Model, but must include environmental, cultural, social and ethical values overall when deciding which civilizatory routes should be followed.

Moreover, the decision making process has to increasingly consider the society expectations, according to ecosystems dynamics and ethical principles overall. In this way, any decision regarding sustainability should move from isolated company decisions to social and ethical decisions, i.e. participatory decisions. Besides, the main concerns of producers from the design phases to the use and disposal of materials have to incorporate ethical practices towards sustainability.

The changes needed in the search for sustainability require the drastic decrease in the use of natural resources compared to what industrialized societies have been using over the last decades. In this sense, Manzini and Vezzoli (2002) propose three dimensions of change for the current model of development: (a) physical dimension; (b) economical and institutional dimension; (c) ethical, aesthetical and cultural dimension. The first dimension focus on the material and energy flows within the production systems, that have to be optimized in order to achieve better levels of quality and increasing the life cycle of materials and products as well. The economical and institutional dimension is regarded to the improvement in the relationships among the several social actors involved in these decision processes. And the last dimension commented on the authors' work is related to the establishment of criteria and values for judgments regarding the quality of the social system itself.

2. What is the role of designers in the sustainability context?

According to Margolin (2002), the power of design is related to the generation of ideas, methods and intervention techniques, developing shapes and communication solutions aimed to work pro-actively instead of merely reacting to the demands of industry and market together. From this point of view, the perspective of sustainability requires from designers a permanent objective in simplifying production processes and assuming environmental, cultural and social demands whenever performing products and services.

Taking into account that design has in its basis the aim in solving complex problems and situations, designers must focus their efforts on the developing of systems, e.g. production, leisure, learning, workstations, that can strongly respond to the environmental, cultural and social needs, adapting or reshaping any other kinds of solution out of this spectrum. According to Ekuan (1997, p. 4), “what design can and must do is the proposal of a new life image and lifestyle that is compatible with the environment in daily life, home life, global life and life in the workplace”.

The activity of design can only achieve the sustainability principles from the moment

when designers achieve a new conscience (Margolin, 2002). In this sense, designers have to learn how to dialogue with other disciplines and incorporate values that can effectively contribute to the improvement of society well-being, involving new approaches for the solutions related to humane needs and expectations.

3. Design practice, design education, and ethics: the need in attending environmental demands together with society expectations

According to Freire (1996), there is an ethical responsibility inherent to the pedagogical process, i.e. teaching-learning pedagogy, once it is an exclusively human praxis. As commented on the author's work, teachers cannot assume themselves as subjects of the process of searching, deciding, changing and transforming the world without assuming themselves as subjects of ethics. In this way, ethics can be seen as something essential to the human contact and experience. Consequently, the need of ethics in human relationship implies the responsibility as main principle for human conduct.

Not only the design education, but education as a whole has not been performed in a way that includes such values as basic for any further action, both professionally or as a person, an integrated citizen associated to a social code of ethics. The main objective of an ethical education is to lead the students to reach beyond simple professional competence toward global professional responsibility (Findeli, 1994).

Design education plays an important role in changing the subject from a technology oriented growth to a humane oriented development, helping the design students to take into account some ecological, cultural and ethical principles when performing products and services. In this sense, sustainable design and social responsibility work together towards effective positive design solutions and have to be placed within the education of a designer.

This can be seen as an extreme difficulty in implementing sustainable practices. The perspective of sustainability imposes new concepts of development, new social behavior and new cultural paradigms. The more we focus on immediate results and traditional methods within design schools the less we can achieve sustainability. In this way, we propose conscience from design students providing opportunities to first understanding community values and principles then interacting with their needs, developing design concepts oriented to solve specific problems.

The need of moving from a "traditional" approach, i.e. design as a problem-solving activity, to a systemic approach, i.e. design as a system-regulating activity in a dynamic process of change has been discussed by several authors. According to Findeli (1994, p. 57) it is essential to bring several disciplines together with the general science of design, e.g. anthropology, ergonomics, semiotics, sociology, psychology, in order to study the relationships between the object, the environment and the human expectations. In this sense, "the disturbances of the global system which embrace the user / object / environment, expressed by needs, desires, aspirations, intentions, are considered a high priority within the design process, contributing to an increase of human well-being".

This changing process requires from companies the planning of their goals respecting the interests of profits and at the same time listening to and understanding the society needs. Within the global scenario, and particularly in Brazilian contexts, facing the social characteristic of Brazil, the market has been pushed to attend some popular demands more efficiently (e.g. housing furniture, alternative transportation, low cost products). In this perspective, the design works as a sensitive radar in order to offer adequate methods of responding the society needs. This strongly means incorporating new models and sustainable principles within the design education.

4. Case Study: the Green Map System as tool for knowledge acquisition in eco-design education

Using these ideas as a starting point, the example of the Green Map methodology is used as reference in undergraduate design courses, trying to implement the principles of sustainable development within the design disciplines. Once this method has its main goals on education, information and promotion of a sustainability conscience, the Green Map identifies some social and environmental issues, as well as urban natural resources contributing to achieve a collective thinking process within design students.

The Green Map System (GMS) is a set of urban maps aimed to connect information on natural environments and the city itself, created by the American eco-designer Wendy Braver, in 1992, in New York. Some maps can be used as visual representations that better communicate geographical complexities of time and space, particularly in urban areas. In this sense, the Green Maps amplify this communication power throughout the development of icons that identify, quantify and localize not only the natural resources but also human and industrial activities that somehow impact the quality of life in communities. They can be seen as an inventory of the environmental situation in a specific area, working as perception tool for the urban planning, helping the decision making process according to sustainability approach.

The creation process of a local Green Map starts and strengthens a discussion on the development of a community from the perspectives of environment, society, economy, culture, needs and uses of space in urban areas, helping people to better visualize what is going on in their place and neighborhood. In this way, the Green Map stimulates proactive actions in terms of urban planning and solutions based on specific characteristics of the city itself. This discussion can promote new patterns of behavior, lifestyles and consumption models, motivating the development of sustainable alternatives in search for a better quality of life. Besides, it can be seen as an important tool for participatory intervention when dealing with social and environmental problems of the municipality and public policy implementation.

Effectively, the development of such maps creates new perspectives for the life in cities, working collaboratively with communities and rethinking the present in order to achieve a more sustainable future, interacting with the biodiversity and the human activities in a clever way.

In order to help design students to understand the principles of sustainability, the development of Green Map Systems was introduced into a design project discipline. The main focus of the GMS project was the city of Sao Bernardo do Campo, located

in the Southeast part of Brazil, in the metropolitan area of Sao Paulo. This case study was developed at the Design Center Uniban, at the Bandeirante University of Sao Paulo, as part of the undergraduate course in graphic communication design. The most important goals of the project were to educate, to inform, to promote and to integrate an ecological conscience in design students, regarding specific problems of the city, identifying the main issues of relevance in terms of environmental care and the use of natural resources, in order to create a collective knowledge about the dynamics of nature as a permanent requirement when making public policies and urban planning solutions.

In this sense, the Green Map was used as tool for identifying and promoting sites of environmental interests, not only for tourists but also for the citizens of Sao Bernardo do Campo. The map was supposed to offer some visual references easy to understand, informing the user on how 'green' the city nowadays is. The idea was to support designers, policy makers and society itself with information related to the environment based on principles of sustainable development.

The methodology of GMS allows the students to collect geographical and spatial data and, at the same time, to identify problems that impact the quality of life in the urban center. This is also an advantage for the students, once they can develop a more sensitive approach regarding environmental and social interventions from the very beginning of the design process. Some problems like waste residues, industrial emissions, recycling alternatives for garbage, water pollution, etc. were identified by the groups of students as the main concerns to focus when developing solutions for Sao Bernardo do Campo. Besides, the conceptual process of developing a Green Map for the city allowed the students to face and recognize real problems instead of getting information exclusively from books and other means of data collection.

The relevance of the project to the city of Sao Bernardo do Campo, one of the most industrialized centers of Brazil, is considered very high because of its damaged environment, constituted by several factories and industrial plants. Consequently, the development of sustainable actions is seen as an imperative requirement in order to reshape the future of the city as a whole.

The Green Map project involved 36 undergraduate design students in a period of one semester. Firstly, a specific area of the city was chosen as priority for the study and the class was, so, divided in six groups of students. Each group was supposed to collect one kind of data, e.g. photographic and geographical information, community population and organization, municipality official maps, natural reserves already established by law. Secondly, some environmental and social problems were accounted, discussed and presented as a report from each group, in order to document and share their experiences. After that, the process of generation of ideas and the design project itself took place.

One important characteristic of GMS is the iconographic design, based on the user's experience in a participatory process. These icons are designed according to some cultural values and special interests of communities. Some of them have been used globally, trying to achieve a minimum of unity among Green Maps from all over the world. Besides, some concepts were presented to community members in order to test the legibility of the signs and the main language used as reference to the project,

isolated indoors' learning process. The Green Map System can be used as an effective tool aimed to contribute to the learning within the sustainability context.

6. References

EKUAN, Kenji (1997). A new age, new design values. *ICSID News*, 2. P. 4.

FINDELI, Alain (1994). Ethics, aesthetics, and design. *Design Issues*, v. 10, n. 2. Summer, p. 49-68.

FREIRE, Paulo (1996). *Pedagogia da autonomia: saberes necessários à prática educativa*. 28ª Edição. São Paulo: Paz e Terra (Coleção Leitura).

MANZINI, Ezio; VEZZOLI, Carlo (2002). *Desenvolvimento de produtos sustentáveis: os requisitos ambientais dos produtos industriais*. São Paulo: EDUSP.

MARGOLIN, Victor (2002). *The politics of the artificial: essays on design and design studies*. Chicago and London: The University of Chicago Press.