Design Challenges Today: An Overview of Its Sustainable Principles

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Abstract: Some approaches in the discipline's short history have marked the direction and type of commitments assumed by design and above all have offered a glimpse of where these challenges are pointing towards now. In fact, we find that design is not an independent activity but is always linked to a system which marks certain priorities according to the context. In order to reposition design objectives towards improving people's living conditions, modern society must deal with the serious conflicts revealing the inoperative nature of the current system and the need for a radical change towards sustainability. Design, together with other areas dedicated to planning, cannot be exercised as a frivolous activity linked to trends, consumption and fashion. Indicators such as the environmental and social crisis the world is experiencing are making other ideas resonate, bringing with them new opportunities for change. This paper makes an approach to Design from the perspective of the challenges and commitments it assumes for the well-being of individuals and society.

Keywords: Design Commitments, Topics and Design Challenges, Social Design

Introduction

TECHNIFICATION AND SPECIALISATION together with the need to attach greater value and scope to design in the business world, has led to a certain professional imbalance reflected by the dichotomy in the profession itself, between the challenges implicit in assuming projects and society's perception expressed in terms of opinion, linked to the idea of inspiration and the exaggerated image of some products backed by designers and prestigious brands.

The promiscuity of the artefacts around us also helps to diffuse and trivialise design work, whose impact on shaping and degrading the environment is unquestionable. At this point it is worth insisting that the specificity of product design lies in its "constructive" dimension that involves materialising ideas in objects that then populate and indefinitely share our habitat. This objectual physical substrate is where design puts down its roots.

The omnipresence of objects for use which, to a greater or lesser extent, characterises any surroundings, dominates the individual as user, determines his or her opportunities for action and proposes a great many dependencies and situations of difficult solution because, in contrast to other areas of design where products cease to exist once they have been "consumed", tangible objects continue to exist until they are destroyed.

Within this framework it is fitting that it should be a subject of study and knowledge, to present an overview of design related to making our habitat more human and accessible, proposing a rediscovery of responsibility-based design which is not primarily subjugated to a commercial purpose. We believe that this perspective of design as a means of contributing to our individual and social well-being favours awareness and perception of the quality of this professional activity in its interesting and fruitful relationship with the world. This study provides a cultural perspective of design that considers it as a major activity in society. Specifically, this research is aimed at finding out premises representing challenges for design, which arise out of the analysis and the debate on design's responsibility towards nature and modern living conditions. Finally this paper presents an overview on the applications of design in social matters.

Starting Point of Research

Design is a planning activity with a participatory vocation which emerges in specific response to people functional and symbolic needs. It is an active, constructive process, in that it attempts to produce forms and transformations, acting as intermediary between what is present and already made, and the future or what remains to be done. In general, the act of design as such is dominated or directly confused with the objects resulting from design work; therefore it is worth noting certain special aspects which enable deeper understanding of this area of action and its importance.

Firstly, it is worth noting that only human beings are capable of using design to modify their environment and produce instruments which enlarge their field of action and improve their living conditions. Secondly, the object of design is something external to it; design is based on a given state, and moves towards another non-existent or potential state; it is the mean through which different products are developed, thereby leading to another important aspect. Because of the sort of beings we are, the "fact" of generating objects is meaningless as a one-way line of communication. Instead, the activity feeds back into itself. Ryan Mc-Veigh's (Ontario, 2008) considerations on the matter, in reference to the work of German sociologist Georg Simmel, are particularly interesting. McVeigh claims that the act of design is deeply influenced by the impressions and reactions it produces in external entities and so provides the basis for human development and culture:

> "[...] as humans, we are the only beings capable of our own perfection. [...] Humanity is incapable of developing its internal, "subjective" culture without the manipulation of external objects. The creation of objects is a necessary component of any societal development; it is, in fact, the only necessity. [...] But we are not the type of beings who mindlessly produce artifacts and proceed through life unaffected by their existence. ...The process is relational and, more importantly, interconnected."[1]

A reciprocal process is established in which design is the instrument which takes on the challenge of seeking new solutions by configuring objects which in turn determine us, by constituting the medium in which we live and culture itself; Design affects objects and our

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[1] SIMMEL, G. Citado por McVEIGH, Ryan: "The Conflict in Design (or, the Conflict of Design)" *Design Principles and Practices*: *an International Journal*. Volumen I, Number 2, 2007 pg. 35. http//www.Design-Journal.com

objects affect us. Or in other words, the modern concept of material culture has been established according to which products are events in civilisation's "material life"; "Material life is people and things, things and people" (Braudel, 1967)[2].

Design activity brings together technological, economic, market, formal, functional and stylistic dimensions that finally acquire reality as a wide variety of products in terms of scale, type and nature. This confluence of fields generates a certain lack of definition in that it points to a clearly two-headed professional profile combining humanistic sensitivity with scientific and technical knowledge. The conception of a product must integrate aesthetics in a way which is intrinsic to its functional resolution and that involves bearing in mind the elements characterising the way it is perceived, or in other words, the elements which, in one way or another, secure particular emotions. Danielle Quarante[3] clarifies the factors which determine these elements and appeal to different orders: purely emotional factors, related to subjectivity and anything that is difficult to measure, cognitive factors concerning our knowledge and culture; intellectual factors, which lead to the logical satisfaction of understanding a product, its adaptation, proportions, etc; and psycho-physiological factors which lead to aesthetic pleasure in relation to the quality of our perceptions, physiological thresholds and personal psychic conditions. Aesthetic features are certainly not quantitative but related to taste, pleasure, sensation and many other individual, social, cultural and historical parameters that merge in the special poetics of the object. Part of the ambiguity of design is produced by the consideration of aesthetics as "something else", something special and "apart", with "added value" not inherent in the object itself (Quarante, 1992). Whatever the case, the person responsible for product conception, the designer, has to deal with these purely humanised aspects and organise them from a technical and technological perspective so that the product in question can be developed with resources appropriate at the time. It should be pointed out that, in turn, a product's aesthetic quality broadens its purpose, by ensuring longer duration in time and greater acceptance in the future.

Industrial society proposed a welfare society that is being expressed in a model of unbridled consumption and unlimited exploitation of natural resources. To quote G. Bonsiepe "products were diversified, products proliferated, instead of being differentiated according to needs"[4]. In contrast, the information and knowledge society based on virtual communications -the use of new technologies and the Internet-, has put forward another system of power based on the capacity to handle and share data in a global system controlled by the countries which dominate research and knowledge. Those same means of communication, however, are opening new channels for knowledge and socialisation, as they also note and reveal the limit situations surrounding life on Earth which nobody can ignore: famine devastating most of the planet, growing degradation of ecosystems, limited resources, economic slowdown, natural disasters and many other matters involving design. As Maldonado already said in the 1970s, "only by admitting the breadth of the arch of industrial design implications will we be able to understand its real importance.[...] As with all design activities which intervene in one way or another in the production-consumption relationship, industrial design acts as a genuine productive force. And furthermore: it is a productive force which contributes to

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[2] BRAUDEL, F. Citado por MALDONADO, Tomás: *El diseño Industrial reconsiderado.* Colección Punto y Línea. Gustavo Gili. Barcelona, 1993

[3] QUARANTE, D. *Diseño Industrial, Elementos Introductorios* (2 Vol), ed. Ceac, Barcelona, 1992, pg. 105.

[4] BONSIEPE, Gui: *El diseño de la periferia*, Colección GG Diseño. Gustavo Gili. Barcelona, 1985, pg 24.

the organisation (and therefore the socialisation) of the other productive forces it comes into contact with."[5]

This humanised and constructive object-subject link gradually lost its meaning during the 20th century due to the cloning of industry, which economic development, under the flag of progress, took to the limit. All this appears to have culminated in a dramatic outcome where, in the short term, nobody wants to be identified as an active subject in this cumulative, destructive process that is acquiring the form of generalised fiasco. The trails left by the consumer society and the products it generates multiply everywhere, putting economic policies protected by a presumed quantitative efficiency in the dock. In short, the amount of what is produced and reproduced greatly exceeds what has been designed. We are facing an alarming situation where nothing is harmless except what does not exist and given the waste of resources and means, we urgently need a change of living paradigm to something which recalls or refers to the true, ultimate aim of any project: human satisfaction.

Image 1: Different Products Representing Economic Development in the 20th Century

Recently, in this global context, solidarity organisations and movements have stepped in pointing directly to other ways of doing things and rethinking our environment. Slow Design (Fuad Lucke, 2007) proposes repositioning design to focus on individual well-being, giving priority to what is near and local rather than what is global, taking key experiential aspects, the environment, meditation, slowness and ritual. It insists that design must act to balance consumerist speed and connect with the diversity and pluralism of handicraft systems. There are many such movements, with more or less close links to design: the Small Planet Institute[6], the EMUDE programme, the Local Food Link Van Group, AEREN (Association for the Study of Energy Resources). Events have also been organised such as the recent Green Energy Design, which examined creative expression compatible with environmental protection at the Fuori Salone in Milan, and individual initiatives from the profession such as The Designers Accord, which attempt to go more deeply into what is essential to promote in the field of ethical design, collaboration, research and sharing of knowledge.

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[5] MALDONADO, Tomás: *El diseño Industrial reconsiderado*. Colección Punto y Línea. Gustavo Gili. Barcelona, 1993, pg 14.
[6] Ethics include everything; people, life, environment… www.designeraccord.org

All these alternative organisations are leading players in social innovation by "micro-changes towards sustainability [...]" considering new situations which bring other design challenges. As E. Manzini notes, "designers must act as co-designers of a possible future"[7] contributing creatively to the demand for tools, services and infrastructures, so that these new ways of interacting with the world, which are less aggressive towards life and human beings, can materialise.

Design must contribute objects that respect and ensure satisfaction for people, fostering integrating, friendly environments, able to establish and maintain the emotional link of mankind with life and nature.

Work Methodology

Setting Design Commitments

We proceeded proposing to a group of 35 students, in the master of Ingeneering and Product Design, to look for the main topics in which design is or must be enterely involved nowadays. This previous stage shows a reflection on design as primary challenge. Of particular interest are some characteristic issues of modern culture: Can committed design become designer-led design? Is accessibility an opportunity? Is it a challenge for design to materialise and not remain in virtual projects?

Preliminary Analysis

This preliminary study shows a number of topics that can be considered the most relevant commitments for design.

Design is seen as the prominent factor in different approaches at the epicentre of social and environmental philosophy in the first decade of the 21st century where particular importance is awarded to things like sustainability and accessibility, the use and humanisation of technologies, messages pointing to responsible consumption and the gradually growing awareness that the current economic and productive model is exhausted.

We conclude that the main focus of interest for this study should be design and education and social design (life conditions, limits situations, accessibility, environments). The intention here is not to give a univocal vision of the reality of design linking it to a single practice with a functionalist bias which points to real basic needs, but to propose a hybrid reference framework which does not emphasise the dominant position of a given form of design based on cultural mimicry.

Particular Analysis

According to these ideas we distinguish between a theoretical design able to develop new values for the future; and the need of knowledge about the practice of design in real world situations, not related specifically with commercial business.

This paper has been structured according to this.

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[7] MANZINI, Ezio: "Creatividad Difusa y Nuevas Formas de Hacer", *Experimenta*, nº 47, abril 2006, pg 49.

A New Scenario for Design: Re-education for New Forms of Life

In order to reposition design objectives towards improving people's living conditions, modern society must deal with the serious conflicts revealing the inoperative nature of the current system and the need for a radical change towards sustainability. Design, together with other areas dedicated to planning, cannot be exercised as a frivolous activity linked to trends, consumption and fashion. Indicators such as the environmental and social crisis the world is experiencing are making other ideas resonate, bringing with them new opportunities for change. By the early 1980s, Bonsiepe was already anticipating this situation:

"A glimpse, even indulgent, at our environment is sufficient to discover that this system of objects is showing pathological deficiencies in functional, ecological and aesthetic terms".

From its very origin the current operational model of the productive system to which professional design has adapted is questionable as it was based on the erroneous premise that all types of resources, from water and oil to uranium, were unlimited. Some specialists such as S. Niño (2009) criticise the system's mode of production because it has not stopped to consider the efficient use of such resources and is only concerned with obtaining them at the lowest possible price.

For their part, many companies since the 1990s have been playing with the ecological component as a factor for differentiation and competitiveness, by superficially greening their products when they had no intention of taking genuinely responsible action in this area.

All environmental issues closely linked to design work constitute a new scenario for the agents involved and, as Garcia de la Fuente[8] states in his article "*El futuro visto con las gafas del ayer (The future seen with yesterday ' s glasses ")*, the real risk for everyone is continuing to make things as we have always done.

The following ideas attempt to highlight some of the main inconsistencies that must be borne in mind to plan for the future. The following conclusions have been reached:

- Humanity's technological and social evolution has brought spectacular change in its interaction with the human habitat, characterised by an imbalance between the rhythms of nature and those of the society that dominates it. Proof of this is the accelerated ageing of the environment. It is well-known that the number of years for which certain resources and natural assets such as water will be available at the current price is coming to an end. Only awareness of the need to use resources efficiently at all levels can improve productivity and ensure quality of life in the near future.
- Responsible consumption is in an initial phase and is only an additional factor in the disappearance of the traditional model. Gradually, more and more people will make their purchases according to responsible criteria, always in relation to what they can afford and the chance to obtain a gratifying experience.
- The current economic crisis has modified the consumption system (whether temporarily or not, we do not know), "transforming a buyers' market into a sellers' market". The model will gradually change from the current insistent approach based in a push strategy, to a much more collaborative approach where conditions and products will be prompted by buyers (rather than being "injected" through different media terminals).

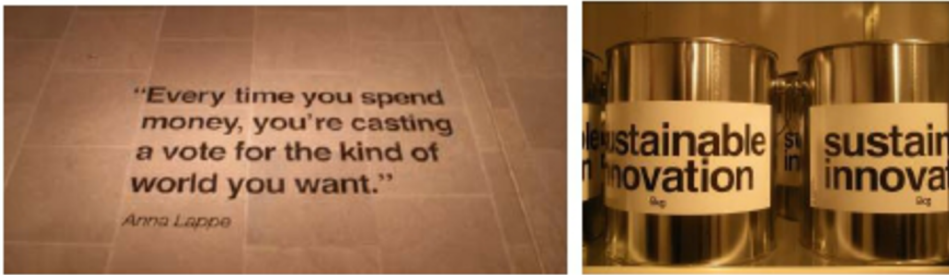[8] www.luisgarcíadelafuente.com

Image 2: "Every Time you Spend Money, you're Casting a Vote for the Kind of World you Want." Anna Lappe. Images from The Flow Market Exhibition at the Dansk Design Centre in Copenhagen 2006

Rethinking Social Design

To approach the matter of social design, we can consider strictly the current reality or, on the contrary, study an alternative possibility. We can think in the general effect of design in society, consider only its humanist meaning, or try to combine them. As Norberto Chaves pointed out, if we refer to the social function of design, in an extensive meaning, we have to state that design only has social function: everything that design produces is made for society and influence powerfully on it, for better or for worse.[9]

Tomás Maldonado, in his book *Industrial Design Reconsidered* (1976), rejected the habit of blindly prioritising the aesthetic factor in design work. The criticism in his book was taken up by his colleague at the Hochschule für Gestaltung at Ulm, Otl Aicher who, as part of the reflection on post modernity in his book *The World as Design* (1991), presents the appearance of "useless tools" determined by subordinating function to aesthetics that sometimes becomes an end in itself.[10]

A large part of society collects these "useless tools" and devours this information with its undeniable formal and symbolic power of seduction, focused solely on exploiting persuasive strategies. But besides this "triumphant design", there is another that strives to show that design is a vital discipline, which can contribute towards equitable social progress and development.

By 1971, Papanek was forcefully announcing responsible design. He made an urgent call for honest design, which paid attention to real needs:

"In recent times designers have satisfied only passing needs and desires, ignoring mankind's true needs. A human being's economic, psychological, spiritual, technological and intellectual needs are usually more difficult and less rewarding to satisfy than carefully elaborated and manipulated "needs" instilled by fashion and novelty [...] As designers with moral and social commitments, we must tackle the needs of a world with its back to the wall while the hands of the clock inexorably signal the last chance to mend our ways".[11]

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[9] CHAVES, Norberto, "La función social del diseño: realidad y utopía"– A lecture given at the end of 2007, in the Conference "Diseño en Sociedad", hosted by the University Valle de Cali, Colombia. (www.norbertochaves.com)
[10] AICHER, Otl: *El Mundo como Proyecto*. Gustavo Gili. Barcelona, 1994
[11] PAPANEK, Victor: *Op.cit.* pgs.16 y pg 27.

Papanek was referring to the need for **a responsible use of environmental resources and an equitable balance between the planet's different social groups and regions**. He was accused by many of being naive and idealistic. His call for responsible design was in direct opposition to market oriented design where designers' know-how and skills were directed at making profits for companies, causing social inequality and environmental problems.

Victor Margolin, possibly one of the most significant historians of design at present, has contributed in his many works towards a more modern definition of social design as a productive activity which attempts to develop human and social capital as well as useful products and processes. According to him, the designer's work is to anticipate and shape tangible and intangible products able to solve human problems on a wide scale and contribute to social well-being. His position is clear: **social design is not volunteering; it is a professional and economic activity responsible to the world and its inhabitants**.

Need and Opportunity

In contrast to that "cosmetic" design, in the late 1980s and early 1990s, various professionals began to question the elitist bias of their activity and they set out to democratise design, focusing on less flashy, but necessary products with a truly social scope.

It was Nordic, and mainly Swedish design, which took up the reins in this direction, managing to broaden the concept of design with the surge in a new interest in the world of work, ergonomics, people with disabilities and the elderly. They understood that adopting a professional ethical code for designers is the essential starting point for any design strategy; but to be really effective it must be accompanied by a critical vision that analyses economics and politics in the spheres of power. Currently, new Swedish government policy conceives of design as a force for developing and launching the notion of "innovative solidarity design".[12] It emerges from a genuine conviction of the need for this type of design and its economic and social effectiveness.

From the very beginning, and even today, Scandinavian social design is a front runner. Ergonomic design was soon included in design school education. It was no coincidence that Victor Papanek was a regular guest speaker at Scandinavian schools in the 1960s. His talks on Third World problems, the environment and disability undoubtedly inspired generations of students; including Tom Ahiström and Hans Ehrich, two pioneering designers specialising in this matter, who launched their own design firm *A&E Design* in 1968. Their advertising slogan: "Good Design= Better Business" is perfectly consistent with Victor Margolin's ideas which also approach social design as a market opportunity and this is evidenced by most of their products, widely sold and imitated. The Swedish office *Ergonomidesign* also stands out with a similar philosophy.

Although Scandinavian design has undoubtedly dominated the social design scene, there are numerous important initiatives in other places. Actually, United States also has played a key role since Ron Mace coined the term *Universal Design* in 1987, and founded the Center for Universal Design at North Carolina State University. *Universal Design* is characterised by being equitable, flexible, intuitive, offering perceptible information and a certain tolerance for error, minimising effort and having the appropriate dimensions. Its aim is to

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[12] LINDKVIST, Lennart: "Diseño ergonómico para todos". AAVV (HALÉN, Widar y WICKMAN, Kerstin (ed.)): *Diseño escandinavo más allá del mito.* Fundación Pedro Barrié de la Maza. Arvinius Förlag. Estocolmo, 2006

simplify everybody's life, making products, communications and the built environment more accessible and usable for the greatest possible number of users at the least possible cost. By definition, *Universal Design* is a tool that enables products and environments to be designed so that they can be used by everybody as much as possible, without needing to be adapted or specialised. Ron Mace, however, before his death in 1998 recognised that the term "universal" was probably not ideal as it could be interpreted as a promise of an impossible standard. However much attention designers pay to user needs, there will always be a small group of users for whom a design does not work.

At the same time, in Europe, *Design for All* became an international slogan and in 1993 the European Institute for Design and Disability (EIDD) was founded as the European platform for *Design for All* aiming to "improve quality of life for all citizens by promoting the ideal of Design for All". The Stockholm Declaration, signed on 4 May 2004 under the slogan: "Good design enables, bad design disables", clarifies the objectives and emphasises the concept's holistic nature:

"Design for All is design for human diversity, social inclusion and equality. This holistic and innovative approach constitutes a creative and ethical challenge for all planners, designers, entrepreneurs, administrators and political leaders."[13]

The term *Inclusive Design*, more common nowadays, appears to emphasise this integrating aspect of design. Raúl Goñi, the founder of *Inclusive Studio* in Barcelona, explains "Inclusive design isn't a new genre of design, it isn't a specialization; it's an approach to design in general as well as the rest of the creative disciplines. It uses inclusion as the base of the creative process, assuring that the general public, the largest number of people possible, have access to information, products, services and spaces."[14] Among his projects, we can find places, playful devices and furniture that enable all kind of users, with or without disabilities, access to sensory experiences in urban and natural environments.

Inclusive Design is social design; a design that does not exclude part of society, that studies and analyses different people's needs and proposes solutions for all.

We must understand straight away that promoting inclusive design is of interest to all of us. According to the World Health Organisation's definition, "a disability is any restriction or lack of ability to perform an activity in the manner or within the range considered normal for a human being". Given mankind's time scale, all of us throughout our lives have been, are or will be temporarily or permanently disabled due to an impairment from birth, a small accident, being in plaster, being pregnant, losing sight or simply getting old. Sometimes, our disability comes from situations outside ourselves, limit circumstances where design also has to find an answer.

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[13] "The EIDD Stockholm Declaration" en http://www.designforalleurope.org/Design-for-All/EIDD-Documents/Stockholm-Declaration/

[14] www.inclusivestudio.com

Image 3: Products Designed to Improve Particular user's Circumstances. Items Shown at the Exhibition Design Challenges: Edison Chopsticks (Australia) [Edisonchopsticks.com.au], Rx Defibrillator HeartStar First Aid (Netherlands)[www.Philips.com], Amphibious Crutch (Spain)[www.emo.es]

Design for Need or Limit Situations

"Safe. Design takes on risk" was the title of an exhibition at MoMA, New York from 6th October 2005 to 2nd January 2006. The exhibition, organised by Paola Antonelli, collected various designs from the social design perspective and most significantly, it presented an appreciation of design that asks itself about genuine human needs.

The recovery of "design for need" invites us to reconsider firstly what our needs are. In 1943, Abraham Maslow proposed a psychological theory in his work *A Theory of Human Motivation,* subsequently expanded, which gave rise to his famous *Pyramid of Needs* still used as the basic model in many social studies.[15] With the pyramid, he formulated a hierarchy of human needs divided into five levels: physiological needs, safety, love and belonging, esteem and self-actualisation. According to this American psychologist, needs appear in succession, starting with the basic or lowest physiological needs and as they are satisfied to a certain degree, other higher order psychological needs appear.

We often consider our physiological needs are already covered and we only concern ourselves with the next, according to our circumstances at the time. A large part of society, however, does not even have the base of the pyramid covered and for another large part even though the base is covered, it could be lost in limit circumstances such as fire, terrorist attack or natural disaster. It is not surprising therefore, that designers are increasingly directing their efforts at designing innovative products and systems to provide food, water, shelter, fresh air and appropriate temperature for everyone.

The broad base of Maslow's pyramid demands attention from designers and so, one of the most urgent needs in difficult situations, the house, materialises in several forms that respond to different starting points, especially in relation to when they are going to be used. Industrial design has often dealt with truly extreme circumstances caused by natural disasters or even by human beings that force displacements of entire groups of society. Sometimes

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[15] DUBOIS, B. y ROVIRA CELMA, A: *Comportamiento del consumidor, comprendiendo al consumidor.* Prentice Hall. Madrid (2ª Ed. 1998)

refugees can be supplied with a simple sheet of plastic like those which have been distributed by the office of the United Nations High Commissioner for Refugees (UNHCR) throughout the world since 1985 to create simple tents providing a certain amount of protection. The plastic sheets have incorporated ongoing improvements, offering different sizes, reinforced stitching, etc. One of the greatest steps forward has been the inclusion of a long lasting insecticide in the material known as ZeroFly Plastic Sheeting. This product is the first in a comprehensive series developed by the company Vestergaard Frandsen, designed mainly for tropical and sub tropical climates with a twofold aim: to provide shelter for users and protect them against malaria. Another of these products is a bed net, PermaNet 2.0, impregnated with deltametrine, a biodegradable, odourless insecticide mixed in a resin, coating the netting fibres, and is progressively released to guarantee the net's effectiveness.

Another truly innovative refuge is *Concrete Canvas* created by two engineers from the Royal College of Art in London, William Crawford and Peter Brewin, in 2005. They decided to merge canvas tents and concrete shelters in a constructive system they called "building in a bag", a sack of cement-impregnated fabric, so that to erect a shelter all one has to do is add water to the bag and inflate it to create the temporary form work and wait approximately twelve hours until it is ready to use. The result is a shelter that is as easily transportable as the tent and as durable as a prefabricated structure.

Obviously, emergencies can range from the most everyday event to the most exceptional. What for many is far from being an emergency, for others, given their extreme poverty, can signify an urgent need. An obvious example is water. A current priority is to guarantee water for everyone. The *Q-Drum,* for example, is an industrial design solution for taking water to areas where there is no water or piping, such as South Africa and Angola. With a fifty litre capacity, made from low density-polyethylene to reduce costs, the Q-drum was invented in 2005 by designer Pieter Hendrikse in response to the need for clean, drinking water in rural populations and to ease the load of hauling water overland.

Equally important as the supply of water are guarantees that it is fit to drink. Almost half the world's poor suffer from serious diseases caused by drinking polluted water. The problem inspired the young Danish designer Mikkel Vestergaard, from Vestergaard Frandsen, to work for over five years to develop *Life Straw*. It is a personal device, a wide straw, light and easy to transport, which makes any type of fresh water suitable for human consumption. The innovative feature of this small purifier is that, in addition to its low cost of only three dollars, no electricity or any type of maintenance is required; one only has to put the straw in the contaminated supply and suck to obtain the liquid. *Life Straw* was presented with the prestigious "Index Award" in 2006 for the prototype design. A year later, the Argentinian Francisco Gomez Paz and the Italian Alberto Meda received the same international award for their *Solar Bottle* design, a bottle that makes water from contaminated sources fit for human consumption using solar energy. The design is linked to the SODIS process (Solar Water Disinfection), backed by the Swiss Federal Institute's Department of Water and Sanitation. The water bottle is exposed to sunlight for six hours and can purify up to 4 litres of water which is easy to transport.
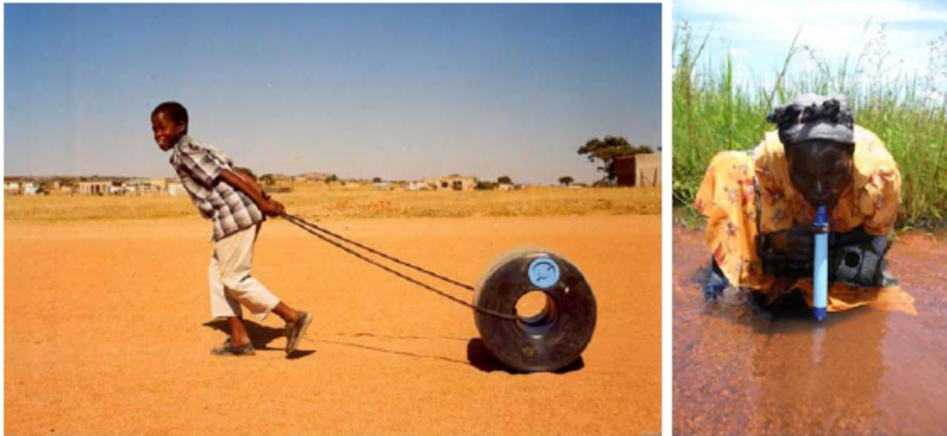
Image 4: Pieter Hendrikse: Q-Drum, 2005 [www.qdrum.co.za], Mikkel Vestergaard: Life Straw, 2006 [www.vestergaard-frandsen.com]

Conclusion: Something is Changing

As noted above, independently of their conception, objects acquire their own entity forming part of people's surroundings and consequently of the culture of the society in which they are immersed. For good or evil, their materiality makes them transcend the designer's wishes and take on an independent existence.

Unfortunately, in most cases designers are unaware of that. Subordinate to labour market terms and conditions, designers generally do not base their designs on benefits for the user or the consumer (they do not always coincide), or even for the company itself, and much less the impact of their design activity on the environment or the target public. They work immersed in the routine of the profession and are unaware of the really effective social impact of their activity.

But something is changing. Although the dream of well-being based on consumption continues, the world environmental, social and psychological crisis has meant that other ideas are beginning to resonate in our minds and with them, new opportunities for change. Designers have been working with the most disadvantaged people in our society for years. The various examples put forward in this text are intended to bear witness to that fact. They summarise the desire to denounce situations and propose solutions.

Change will become truly effective when the assistentialist view of social design is demystified and replaced by a perspective of development, integral growth, invitation to creative innovation, social and business provitability. A clear example of this is the above mentioned international company Vestergaard Frandsen, founded in Denmark in 1957. With its headquarters in Switzerland and offices in many countries, the company's philosophy consists of combining business with solidarity towards the most disadvantaged by creating proposals that are useful for them. With products such as those described, Zerofly, Permanet and Life Straw, the company has shown that its way of understanding business is profitable and necessary.

Designers can contribute enormously to social well-being, but real change cannot come about exclusively from design. The social purpose of designers' tasks is proposed by those who order the work. Therefore, social committed proposes, althought being imaginative and feasible, commonly depend on donations and financing. Certainly the profession constantly has to face conflicting situations that are difficult to manage and appear to remain unanswered: Who is actually the client? The company that provides the designer with a way of life or society? the anonymous client? It is evidently more usual simply to transfer responsibility for any social or environmental impact to the client or company that has placed the order and leave them to take care of the product's impact.

The message which emerges from this combination of factors and inconsistencies is clear and encourages another life model. All agents in society, governments, businesses and citizens must understand and accept that to function in the drastic future, deep changes must be applied which will notably affect our way of life. And such changes must be permanent. Actually, this would be nowadays *Designing for the Real World*, echoing and updating Papanek's provocative book, written almost 40 years ago.

The task of design will be to reflect the values that have always defined this activity that mediates in habitability, by providing flexible solutions, solidarity and respect for the environment. And to return to G. Bonsiepe's ideas, we need to "thematically, didactically and institutionally unite the design syllabus with technological and social reality" to develop a committed concept of design which is able to inspire people with an ideological responsibility.

This statement by Dieter Rams emphasises the imminent need to face new design challenges:

"It is difficult to improve moral values. We could take a giant step forward if we could improve thought, and design is eminently a thought process".[16]

Acknowledgments

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