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Table of contents

5	About Kaunas
7	About the Conference
12	KTU Design Centre
14	DesignLibrary Kaunas
16	Politecnico di Milano, Department of Design
18	General Chairs
20	Scientific Committee
20	Track Chairs
24	List of Reviewers
25	Partners
	Abstracts & Papers
	DESIGN & SOCIAL DEVELOPMENT
28	<i>Anthropocene and Design. The Role of Design in the emerging Territorial Scenarios of Contemporary Ruins in the Anthropocene Epoch.</i> Silvia Maria Gramegna ¹ , Barbara Camocini, Silvia Piardi, Alessandro Biamonti
36	<i>Residual Spaces.</i> Federico Delrosso
37	<i>Emerging Taxonomies in Higher Education: Exploring Student's Housing Experiences.</i> Brie Smith, Milagros Zingoni, Jana Faro
55	<i>Interior Design as the New First Design Phase: Leveraging Academic Resources for Public and not for Profit Organizations.</i> Brie Smith, Milagros Zingoni, Jana Faro
56	<i>The Role of Design in the Development of an Environmental Therapeutic System for the Enhancement of Well-being among People with Dementia and Caregivers.</i> Silvia Maria Gramegna
64	<i>New Uses of Unused. A comparative Analysis of Social Design Practices in the Context of Contemporary Abandoned Spaces.</i> Oxana Nosova, Fiamma Colette Invernizzi, Nastazja Niedziela
73	<i>Designing the Empathic Experience. A Workshop.</i> Alice Devecchi
85	<i>Design Workshop Practices for Local Development: Analysis of Cases from Turkey.</i> Ceren Aybala Almaata Dabag, Ayhan Ensici

Anthropocene and Design. The Role of Design in the emerging Territorial Scenarios of Contemporary Ruins in the Anthropocene Epoch

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Abstract: The influence of human behaviour is deeply affecting and modifying Earth. This leads experts to introduce a new geological Epoch, named Anthropocene. We can read those changes also from a cultural point of view, related to philosophy, literature and arts. The Anthropocene concept stakes relations between major and primary themes such as human beings, artefacts, nature and time. Specifically, existing built environment and artefacts can be considered direct testimonies of the interaction of humans with nature, space and time. In fact, *Contemporary Ruins*, such as incomplete or abandoned structures, are increasing in their number, both in terms of case studies and territorial extensions. If, in the past, this phenomenon was mainly absorbed through conversion of use processes, nowadays their assimilation is becoming more and more difficult, and hard to be re-metabolized, because they are sometimes made up of new technologies or because of their huge and growing territorial dimensions. Moreover the economic crisis aggravates the emergency, and the fragile background circumstances make hard to intervene with an effective *Adaptive Reuse* approach. Historically, this Design activity, and more broadly Design discipline, was referred only to skilled and trained experts. As a consequence, tools, products and spaces represented the tangible results of this creative process. Nowadays, Design assumed a more spread attitude; in fact we are living in a huge and diffuse designing society. Therefore a growing number of individuals undertake 'diffuse design' actions that often lead to big social changes and territorial transformations. This widespread attitude can be considered as one of the main features of the *Anthropocene* cultural groundwork that deals with the major relationships between human beings, nature and time. Accordingly to the three topics outlined, we proposed an exploratory paper with the aim to investigate the role of design attitude in the process of intervention on new fragile and complex territorial scenarios due to the growing dimensions of *Contemporary Ruins*. A critical reflection, supported by the cultural framework of Anthropocene's concept, in which natural elements and results of human activity become elements of the same scenario, complex as homogeneous, on which design actions can be activated, with the involvement of a new designing society.

Keywords: design, anthropocene, contemporary ruins, design approach, cultural model

Introduction

In recent times, the influence of human behaviour on Earth's atmosphere is so significant to suggest the identification of the beginning of a distinct new geological Epoch, named with the term *Anthropocene*. It would be the last Epoch of the current Quaternary Period (starting 2.58 million years

ago), following the current Holocene Epoch (starting 11.700 years ago). *Anthropocene* could also be read as a cultural concept, related to philosophy, literature and arts; a concept through which Humanities deal with complex questions about the relation between human beings, artefacts, nature and time. As a consequence, this relationship becomes relevant concerning the existing built environment. In fact, *Contemporary Ruins* (hereby meant as the dismissed, incomplete, and abandoned heritage built less than a century ago) are increasingly recognized as a growing phenomenon, both in terms of increasing numbers of reported case studies, and their rising territorial extensions. Moreover, in the past decades, dismissed buildings were easily reabsorbed through a process of re-functionalization, conversion of use, or physiologically assimilated by nature. Nowadays, these phenomena become visible. These tangible evidences of traumatic events, failures, and transformations, often remain as evident presences, because they are made up of new materials, built in contexts that don't have the ability to re-metabolize them or because of their huge and growing territorial dimensions. Historically, Design represented the creative engine that generated tools, products, spaces, etc. It was an activity carried on only by few and skilled experts. Today, it seems assuming another direction, a more spread and expanded character. The so-called 'diffuse design' refers to design activities undertaken by a growing number of individuals. These actions often lead to large transformations, bringing about big social changes. Apparently, Design could be seen as a shared attitude. This attitude is so widespread, expanded and shared that becomes part of the aforementioned cultural model that deals with the fundamental relationships between human beings, nature and time.

Anthropocene

In Geology the concept of *recent* is dramatically different from our everyday life, and concerning the topic, the International Commission on Stratigraphy (ICS) is the official institution, which designate Eons, Eras, Periods, Epochs and Ages of the Earth's official timeline in the last 4.6 billion years. Recently, ICS reported that human behavior has noticeably affected Earth's atmosphere, modifying its features, due to the influence of important anomalies such as global warming phenomenon, or even mutating its chemical composition. ICS had some perplexities and decided to entrust a multidisciplinary group of 40 experts (including meteorologists, oceanographers and palaeontologists) called Working Group on the Anthropocene (WGA) to further inquiry those changes. WGA, in 2009, advocated the identification of a distinct new geological Era, named with the term Anthropocene. The term *Anthropocene* comes from two ancient Greek terms: anthropos (ἄνθρωπος), which means human, and kainos (καινός), which identifies subjects related to novelty. From a terminological point of view, the consequences of the growing impact of human activities on planet Earth's atmosphere and composition, led Antonio Stoppani, an Italian geologist and professor at Politecnico di Milano, to introduce the concept of an *Anthropozoic Era*, in 1873. Stoppani proclaimed the *Anthropozoic Era*, arguing that "the creations of man constitutes the introduction into nature of a new element with a strength by no means know to ancient worlds" (Stoppani, 1873). Most recently, the term *Anthropocene* has been informally used by biologist Eugene Stoermer in the mid 70's (Steffen, et al., 2011), but it has been Paul Crutzen, Dutch Nobel Prize winner for chemistry, to characterize and make popular the term, claiming "We are no longer in the Holocene. We are in the Anthropocene", during a conference in 2000 (Lewis, et al., 2015). Therefore *Anthropocene* would be our new, current, Epoch, characterized by the relevant alteration of Earth due to human activity. Thus one of the main challenges for the scientists is to identify a global marker of our environment able to indicate the

starting point of the new age. This marker should be clear enough to be visible and recognizable by scientists long time, in geology that means even millions of years, into the future (Giannuzzi, 2016). The debate around this kind of golden spike involves several scientists, with their different positions. Among those positions, a focus on radioactive elements from nuclear bomb test is emerging as the best candidate for such a golden spike. Other possible markers are the mass extinction of certain species, the increasing amount of plastic waste accumulated in the oceans, other elements related with pollution, and the chicken; the current specimen diffused all over the world, since the 1950s, present a different dimension and skeleton than its ancestor, the *Gallus gallus* (Carrington & Damian, 2016). *Anthropocene* would be the last Epoch of the current Quaternary Period (started 2.58 million years ago), following or overlapping the current, the Subatlantic one (started 2000 years ago) phase of Holocene Epoch, started 11.700 years ago (Certini & Scalenghe, 2011). Holocene is an important period for human society. In fact, even if humans were present in the Pleistocene, they flourished only in the Holocene, when global environmental conditions were favorable, with warmer temperatures and more water, compared to the glacial period. “From that period, the human impact on the planet has progressively grown, starting a profound modification of the Earth’s landscape” (Kirch, 2005). The aforementioned profound modification of the landscape, looks even more like a long slow process with the goal of adapting the environment to the needs of a growing human society (Tzedakis, 2015). In any case, there are no doubts about the fact that the main important impact of humans on the planet has been ushered by the Industrial Revolution (Douglas, 2002). Moreover, as a wider horizon of discussion, the *Anthropocene*, should include the early modern era as the starting period in which human actions began to affect the landscapes. Moreover, in the *Anthropocene* epoch, human activities represent a strong geological force. The same humans that were initially sheltered inside the caves today have become a new force capable of challenging nature, moreover, succeeding in dominating it. On that scenario, the role of culture needs to be rethought. In fact, *Anthropocene* could also be read as a cultural concept, related to philosophy, literature and arts; a concept in which humanity deals with complex questions about the relation between human beings, artefacts, nature and time.

Design Attitude in the Anthropocene epoch

Historically, Design represented the creative engine that generated tools, products, spaces, etc. Many design theorists defined design as a human capability that everyone has. As described by Papanek (1971) “the planning and patterning of any act towards a desired, foreseeable end constitutes the design process. Any attempt to separate design, to make it a thing-by-itself, works counter to the inherent value, of design as the primary underlying matrix of life” (p.3). Design process can be summarily deconstructed in the ability to critically foresee things that are not working in the society, followed by the capability to creatively imagine an alternative scenario, and practically understand how to realize it. The ultimate aim of Design is to intervene and transform man’s environment, tools and, as a consequence, man himself, enhancing well-being and quality of life. Accordingly, Victor Papanek was one of the first design theorists to point out the social and environmental responsibility of designers. In his book “Design for Real World” (1971) he describes Design discipline as one of the most powerful tools through which humanity can imagine and shape its tools and environments, and consequently the whole society. Respectively, the social and moral responsibility of the designer is clear, and consequently, it requires a deep and wide understanding of the society. In parallel, the design process should involve society, finding new strategies for social engagement. The development of new technologies and the advent of mass production enabled humanity to shape society,

environment and people. Furthermore, the continuous technological and productive progresses made this constant process more and more easier and faster. "From this perspective, we are beginning to be able to define and isolate problems, to determine possible goals and work meaningfully towards them" (Papanek, 1971). Since 1972, Thomas Maldonado in his book "Design, nature and revolution: toward a critical ecology" describes the human environment as "one of the many subsystems that compose the vast ecological system of nature" (Maldonado, 1972). Moreover, he claimed that among subsystems, the human environment is the only one able to provoke substantial and irreversible changes to all other subsystems. In his vision, designers are conniving actors in this process. Global warming, terrorism, poor nutrition and the spread of untreatable diseases on one side threaten society; but they also represent big challenges to work on aiming at enhancing the common good. Nevertheless, Maldonado is aware of the fact that autonomous and spontaneous design actions require a big effort in any social system, but through his book he urged designers to play a substantial role activating and sustaining a process of social change to contrast the growing degradation of the environment. According to this, on one side, Design has always been intended as a way of putting together problem solving capability and sense making, to create a link between being able to do something and having a production of meaning about what is being done. The past decades of emerging design has seen the conversation oriented only towards the problem-solving and pragmatic side, leaving aside the cultural dimension (Manzini, 2015). This has resulted in a "solutionist" line of thought focused on the idea that everything can be reduced only to find solutions. On the contrary, the environment that surrounds humanity is much more complex and demands for hope, a system of meaning, sense and stories. Nowadays, we are facing a new dimension for design discipline. We are experiencing a "diffuse design attitude" (Branzi, 2006). Due to this "diffuse design attitude", society appears as an extensive experimental lab, which aims at defining new meanings, tools, solutions and social forms. Audacious design actions, social and economical paradigms are needed, in order to achieve real transformative activities. In this new context, designers have to be considered as social actors in a society in which "everybody designs" (Manzini, 2015) and in which a host of active minorities, the creative communities, are inventing new ways of being and doing things. In particular, designers have to accept the fact that they can no longer aspire to a monopoly on design and that today Design is not only executed in design studios, but everywhere. At the same time, they have to understand that these contemporary social changes lead the role of design, and of the design practitioners, to acquire even greater importance. In fact, designers are part of this great "diffuse" design arena (Branzi, 2006), playing the active role of "solution promoters", bringing their specificities, such as their capacity to produce visions of the possible and to develop strategies to transform potential visions into real solutions (Manzini, 2015). Designers are certainly among those whose positive contributions are essential to the building of a more humane world. Trained in many disciplines - whether product design, architecture, visual communication, or service design - they are responsible for the artifacts, systems, and environments that constitute the social world. Therefore, Design seeks to enhance its innovative, research-oriented and cross-disciplinary attitude, in order to responsively answer to the true needs of society. All these considerations, leads us to think that we are now in a new age of morally and environmentally responsible Design, in which design practitioners should promote and guide radical social changes, in order to understand the possible futures in the ruined, and unexpected landscapes of the *Anthropocene*.

Adaptive Reuse and Contemporary Ruins within the Anthropocene epoch

Human activities are producing significant changes on the Earth surface (Kaplan et al., 2011). Their impact on the human habitat can be hardly absorbed and the acceleration that these changes have undergone has led scientists to propose the end of the Holocene, introducing the above mentioned new epoch, named Anthropocene (Crutzen and Stoermer, 2000). In addition to the carbon dioxide emissions, to the extinction of some species, to the soil consumption due to deforestation and development, being currently studied by scientists, a relevant part of man's impact on the Earth has been generated by the heritage of abandoned or disused structures, infrastructures and buildings, which is becoming an emerging topic in the debate on the sustainable development and the future of the world. Therefore we can find some references to the *Adaptive Reuse* discipline - which is the international expression referring to the *change of use* of disused buildings (Latham, 2000) – also within the studies concerning the Anthropocene epoch. Zalasiewicz, the British stratigrapher, chairman of the *Anthropocene Working Group of Geologists*, states that Earth has endured changes sufficient to leave a global stratigraphic signature distinct from that of the Holocene or of previous Pleistocene interglacial phases' since the start of the Industrial Revolution. (Zalasiewicz, J. et al., 2008). Indeed, the heritage of the Industrial Revolution, is one of the first and major design topics, a sort of milestone, in the *Adaptive Reuse* discipline due to the conversion of large disused industrial facilities, including infrastructures and urban areas. If we exclude great natural disasters or great wars, with their ruins and rubble, the great technological revolutions, carried out over time through the introduction of the steam engine, the use of electricity power, up to our new frontiers generated by the digital revolution and the Global Digital Age (Sassen, 2007; Rifkin, 2011), have led to the disposal of the related facilities built by humans, going along with the difficulty in their re-absorption, as a critical topic. In some cases, the reuse of these abandoned facilities, specifically the ones with high specialized features, has given rise to new interesting types of spaces, such as the *loft* typology, which was conceived as a creative reuse of dismantled industrial spaces and warehouses to get homes and atelier for artists. If the first evidence of this kind of transformation dates back to the 70's in New York (Zukin, 1982), some more recent similar examples of Adaptive Reuse, come from Far East, with the regeneration of former industrial district 798 Art District in Beijing. On a territorial scale, the large dismantled industrial facilities, such as the Ruhr district in Germany, once the heartland of Europe's steel and coal industries, is now example of adaptive reuse of industrial heritage buildings, being transformed to serve new recreational uses while preserving the area's rich history and identity. The use of existing structures is also one of the prevailing tendencies for the 21st century economic growth within the operations aimed at expanding and re-enabling our ecosystem (Storm Cunningham, 2002). Today we are witnessing a variety of approaches in the conversion of use practice, differing in timelines, tools and strategies (Camocini, 2016). In large urban centers, for example, the conversion of use processes are becoming increasingly fluid and capillary, as they often lead to hybrid functions related to the use of ICT and services; therefore, the final destination rarely covers places that require highly specialized shape and performance. In addition, the reuse of abandoned space is exploited as an urban and social regeneration tool, also led at institutional level to re-energize urban suburbs and degraded areas through small interventions and renewal injection. In ancient times, the reuse of spaces and building constructions, including fragments of relevant buildings, had sometimes undergone to a similar process; it took place as part of an organic and natural process, with no significant leftovers, nor major breaks with the past, as part of a whole and main flow of time. Thus, for example, the great ancient Roman structures have been absorbed in the urban topography of medieval cities.

Nevertheless, the major ancient monumental structures, testimonies of the past, are preserved and considered, at least in Western society, as an important heritage recognized by all. Ancient buildings generate popular appeal and people are conscious of the advantages of retaining them, and can see the benefits in terms of archaeological motives, aesthetic appreciation, economic - tourism and leisure -, functional value, psychological need. This approach doesn't fit to every kind of disused structure. Specifically, the same attention and respect are not directed at abandoned, or never finished, structures created by human activity in recent times. Indeed, today we are detecting an increase in number of newly constructed, disused or unfinished built structures. These *Contemporary Ruins* can be former highly specialized structures, entire urban areas, or even large common structures, thus representing a relevant issue in the contemporary era, due to the high impact they have on the environment and on citizens living around them. They are too large or complex to undergo plain and cost-effective conversion processes, therefore they can be barely assimilated within the physiological processes of urban and territorial development; they cannot be swallowed, deconstructed or reinterpreted. They are belonging to our recent history, witnesses of human's failure. They stand in space and cannot be concealed, but they can be attraction elements for a few interested visitors, or they resist as an admonishment or a monument.

Discussion

Accordingly with the three outlined topics, we conducted an investigation on the role of Design attitude in the process of intervention on new fragile and complex territorial scenarios due to the growing dimensions of *Contemporary Ruins*. Our critical reflection is supported by the cultural framework of *Anthropocene's* concept, in which natural elements and results of human activity become features of the same complex as homogeneous scenario, on which design actions can be activated, with the involvement of a new designing society. Design can intervene in this context, without denying or hiding these outstanding presences, but assigning them a new meaning. The term 'adaptive', in the *Adaptive Reuse* expression, introduces an attitude, borrowed from biology, that refers to the ability of living beings to adapt themselves to major changes occurring in their habitat. It also introduces the variable of 'time', assigning to spaces the ability to deal with subsequent requirements of upgrading. Design thus, can work upon these leftover spaces as if they were a substrate, without modifying them, but by supporting their nature and re-absorbing them, as if they were petrified, fossilized testimonies of a past life.

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