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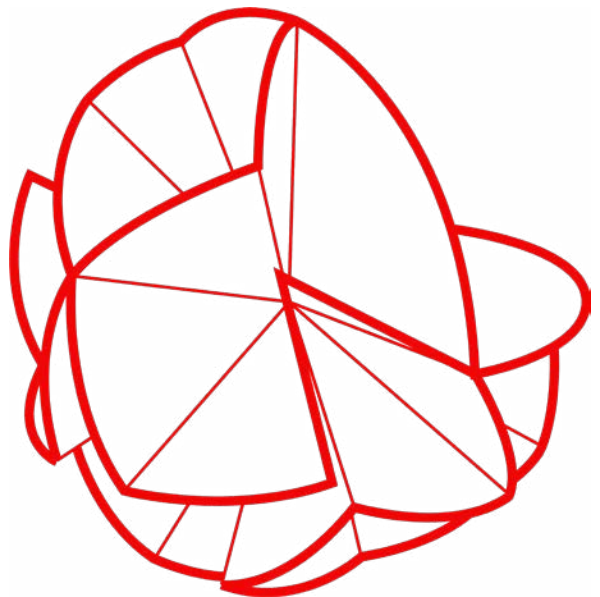
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1

Disrupting Geographies in the Design World

Proceedings of the 8th International
Forum of Design as a Process

Alma Mater Studiorum — Università di Bologna

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(Eds.)
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Elena Formia
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The Latin Network for the Development of Design Processes

The Latin Network for the Development of Design Processes is a group of researchers, academics, students and business professionals of Latin languages and cultures who study and operate in a particular field of design known as design processes. They meet in a Forum, conceived as an international specialised conference, to engage in lively discussions and debates about their studies and experiences.

The Network was founded in 2008 with the “Carta di Torino” manifesto. Since its very beginning, Professor Ph.D. Flaviano Celaschi has been leading a team that, over the years, guaranteed the cultural and scientific focus of the members of the Network, fostering inter-institutional cooperation. Since 2015, the Network has been hosted by the Alma Mater Studiorum – Università di Bologna, within the Advanced Design Unit (ADU) of the Department of Architecture, coordinated by Professor Ph.D. Elena Formia.



So far, the members organised eight Forums, covering the following thematic axes:

Design Cultures as Models of Biodiversity

1st Edition

Universidade do Vale do Rio dos Sinos, Porto Alegre, Brazil

June 24-26, 2009

Design, Art, Craft: Cross-fertilizations and Experiences

2nd Edition

Universidade de Aveiro, Aveiro, Portugal

October 28-30, 2010

Innovation in Design Education

3rd Edition

Politecnico di Torino, Torino, Italy

November 3-5, 2011

Diversity: Design/Humanities

4th Edition

Universidade do Estado de Minas Gerais

– UEMG, Belo Horizonte, Brazil

September 19-22, 2012

Advanced Design Cultures. The Shapes of the Future as the Front End of Design-Driven Innovation

5th Edition

Tecnológico de Monterrey, Campus Guadalajara, Mexico

September 18-20, 2014

Systems & Design. Beyond Processes and Thinking

6th Edition

Universitat Politècnica de València, València, Spain

June 22-24, 2016

Design & Territory: Emergencies and Conflicts

7th Edition

Universidad Nacional de Colombia, Sede Palmira, Colombia

June 23, 2020

Disrupting Geographies in the Design World

8th Edition

Alma Mater Studiorum — Università di Bologna, Bologna, Italy

June 20-22, 2022

For more information about the Editions and related publications, see: <https://www.forumdesignprocess.org/dgdw22/past-editions/>

8th Forum Main Partners

Alma Mater Studiorum — Università di Bologna Advanced Design Unit Department of Architecture

The Advanced Design Unit is a community of professors, researchers and experts who deal with design cultures and their continuous innovation. It operates in the University of Bologna through teaching activities, research, and the third mission.

<https://site.unibo.it/advanceddesignunit/it>

Tecnológico de Monterrey (TEC)

Established in 1943, Tecnológico de Monterrey is a distinguished private nonprofit university dedicated to cultivating leaders with robust entrepreneurial acumen and a profound sense of humanity, making them globally competitive. With a presence in 26 cities across Mexico, the university boasts a student enrollment exceeding 65,000, encompassing both undergraduate and doctoral programs. Garnering recognition on the global stage, the QS World University Rankings (2021) position Tecnológico de Monterrey at an impressive 155th worldwide. Within its esteemed Escuela de Arquitectura, Arte y Diseño, the university nurtures talents in Architecture, Digital Art, Design, and Urbanism.

<https://tec.mx/es>

Pontificia Universidad Católica de Chile School of Design

The UC School of Design equips professionals to navigate intricate scenarios, addressing challenges stemming from the ever-evolving landscape of scientific and technological advancements and the socioeconomic and cultural intricacies of the contemporary world. Rooted in the ethical principles of the University, this educational endeavour places particular emphasis on fostering creative intelligence, nurturing critical thinking, and cultivating social sensitivity.

www.disenho.uc.cl

diid disegno industriale industrial design

diid is an open-access, peer-reviewed scientific design journal published three times a year. It was founded in 2002 to fill a gap concerning scientific journals in Italy related to industrial design and design studies. Over the last two decades, *diid* has investigated design disciplines and practices, recording their development thanks to the significant contribution of Italian and international scientific communities. The one inaugurated in 2021, with issue no. 73, is a new phase. The journal, while exploring advanced design cultures, delves into specific aspects such as anticipation, narratives of complex systems belonging to the evolving landscape of capitalism and relational dynamics, the front-end of innovation, the avant-garde of theoretical and applied design debates. The pivotal theme under the lens of analysis is transformation, aiming to comprehend its various impacts and meanings within the realms of innovation domains. With this approach, it aims at overpassing spatial, cultural, economic, and technological boundaries giving voice to design research coming from different areas.

<https://www.diid.it/diid/index.php/diid>

8th International Forum of Design as a Process

Disrupting Geographies in the Design World

Alma Mater Studiorum — Università di Bologna

Bologna, June 20-22, 2022



Responsible Innovation

Social Justice

Ecocentrism

Changing Education

www.forumdesignprocess.org/dgdw22

How design is evolving to respond to the urgent needs facing our environment and society at large? How to understand and design the dynamic relations between artefacts, human beings and the ecosphere? How might design principles and practices adapt their approaches to attend to the diversity that characterised the world?

In an increasingly globalized world, new geographies in and of design offer the stage for negotiating ecosystem's complexity. Design is positioned as a key driver for improving the living standards of many, where human and environmental capitals are pivotal in local economies, and also for the connection to the rest of the world.

The 8th International Forum of Design as a Process (Bologna, June 20-22, 2022) featured speakers from the Global Design community, expanding the original vocation of the Latin Network for the Development of Design as a Process to include researchers and designers of the Mediterranean Area, Middle East, IOR (Indian Ocean Region), and Global South regions. The aim was sharing new perspectives on design futures with responsibility and justice, at the forefront of change, establishing strategic partnerships, and creating accessible knowledge.

The Forum, spanning three-days of meetings, reflection opportunities and networking activities, involved designers, scholars, young researchers, design entrepreneurs, opinion leaders, in an experimental format. Grounded in three pillars – seminars, workshops, and exhibitions –, the event aimed to attract audiences to Bologna, consolidating the potentials of the design world as hub for thought and creative production for present and future generations.

Speakers' contributions inspired the designers' community of practices, and resonated with students and the wide community, to connect design to all aspects of culture and life. This interdisciplinary approach explored the intersections of materiality and culture, post-coloniality, decoloniality, gender studies, and other areas of human thought and action which seek to analyze, question and challenge the disruptive geographies in the world, today.

Five tracks were proposed to address the different dimensions of design futures centered on responsibility and justice.

The submitted papers were reviewed, and a selection is published in this Digital Special Issue of *diid. disegno industriale – industrial design*. Each track begins with a red page containing the original text used in 2022 for the call for papers, also indicating the names of Chairs, Co-Chairs, and Track Editors. Following this, an introductory paper outlines the contents published in the form of research articles for each track.

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Disrupting Geographies in the Design World

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Realists of a Larger Reality: Cities, Political Imagination and Social Creativity

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The Single Issue Lie: Design and Intersectionality

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in the Workshop
“Strange Wonder”**

Track 1

There's No Plan(et) B: Sustainable Transitions to Systemic Planet- Centric Design

Along with the effects of climate change and the social unrest that has spread around the world in the past years, the recent health emergency for COVID-19 pandemic has exacerbated inequalities and injustices at different scales, and has severely tested the resilience of individuals, communities, institutions, and businesses. Current crises, in their multiple manifestations, have exposed the profound instability affecting the planet and brought to the surface many complex situations that require urgent intervention.

In this scenario, design is once again called to reconsider, as a discipline and as a practice, its traditional role towards society and the environment, and to redefine its methods, tools, and processes to offer better solutions for products and services that not only do not harm our surroundings, but also contribute to healing the conflicts that affect both humans and all other beings that inhabit the planet and interrelate as a single living system. The challenge is therefore to encourage and facilitate transitions towards more sustainable and circular patterns of production and consumption, adopting a systemic and planet-centric approach, reinforcing the ethical responsibilities of design, and reaffirming its mediating role in the resolution of the wicked problems that characterise the contemporaneity.

This track invited researchers, educators, practitioners, and students, to share their reflections and experiences concerning design-led processes that bring to the disruption with traditional practices and the transition to alternative forms of thinking and acting, aiming to address current crises and lay the foundations for more sustainable future.

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There's No Plan(et) B. Sustainable Transitions to Systemic Planet-Centric Design

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Abstract

The current environmental, social, and economic crises have laid bare the profound instability plaguing the planet and brought to light many complex situations that require urgent action. Design is called once again to reconsider, as a discipline and as a practice, its role towards society and the environment, and to redefine methods, tools, and processes to offer solutions that not only do not harm the surrounding environment, but also help heal the conflicts that affect human beings and all other beings inhabiting the planet as one living system. The goal is to promote transitions to more sustainable and circular production and consumption patterns by taking a systemic, planet-centered approach, strengthening the ethical responsibilities of design, and reaffirming its mediating role in solving the wicked problems that characterize the contemporary world. Within this framework, reflections, and experiences from the field of design research were gathered to highlight disruptions with traditional practices and possible paths of transition to alternative forms of thought and action, with the aim of addressing current crises and laying the groundwork for a more sustainable future.

Keywords

Sustainability
Ethics
Transitions
Systemic Approach
Planet-Centricity

A Mutable and Unstable Scenario: The Emergence of Polycrisis

Whether it is the effects of climate change, pollution or loss of biodiversity, the planet is facing some of the greatest challenges it has ever known. This triple planetary crisis of an environmental nature (UN Climate Change, 2022), together with the multiple social, political, and economic issues that are affecting the entire world (Bauman & Bordoni, 2014), are questioning current paradigms, existing production, and consumption models and, in general, people's current lifestyles (Lefebvre, 2014). On the other hand, equity and social inclusion, political freedom, and economic equality, are some of the main demands, often unfortunately unheeded, which activists and protesters address to governments asking them to take concrete actions and activate processes of change to tackle a scenario that is increasingly VUCA (Bennis, Bennis & Nanus, 1986), an acronym for Volatility, Uncertainty, Complexity and Ambiguity.

Looking at the different crises, it can be observed that they are synchronized with deeply interconnected impacts. According to WWF (World Wildlife Fund, n.d.), for example, Covid-19 is “the indirect consequence of our impact on natural ecosystems”, and deforestation is paving the way for species jumping, the so-called “spillover” phenomenon (Pratesi, Galaveri & Antonelli, 2020). Indeed, virologist Ilaria Capua (2020), by coining the concept of “Circular Health”, proposes an integrated approach that aims to sustainably balance the health of people, animals, and ecosystems (One Health Center of Excellence-UF/IFAS, n.d.).

From the devastating effects of deforestation to the exponential increase in waste and ocean pollution, from the social protests that have erupted in recent years to the health emergency caused by the Covid-19 pandemic, to the more recent invasion of Ukraine by Russia, which has put international diplomatic relations in check, global crises are constantly intensifying, causing global instability, increasing inequalities between rich and poor, and exacerbating the so-called “North-South divide” (Glenn, 2007). We are living in a state of “permacrisis” (Turnbull, 2022), that is, “an extended period of instability and insecurity, especially one resulting from a series of catastrophic events” (Collins English Dictionary, n.d.), also known as “polycrisis” (Lawrence, Janzwood & Homer-Dixon, 2022), defined as “an array of grave, long-term challenges, now often labelled *global systemic risks*” (Cascade Institute, 2022).

The term “crisis” comes from the Greek word *krisis*, meaning “decision”, and the verb *krino*, which refers to the action of discerning, judging, and deciding; it designates the moment when there is a rupture or a very marked change in a given situation, such as an illness or a significant modification in nature, in the life of a person or a community (Fernández López, n.d.). The term has an agrarian origin, linked to the harvesting of wheat: for an ancient Greek, “crisis” is the process that occurs when the grain is separated from the chaff, an analytical division that allows only the good or usable part of the harvest to be kept, an operation that requires judgment (Alcoberro, n.d.). Therefore, being in crisis implies facing a conflictual or unbalanced situation, which involves a choice; it is an opportunity to generate significant transformation, since it

implies making a decision, opting for one path, and renouncing another. Such choice, however, must be made wisely and considering the consequences of each alternative: it is, thus, necessary to choose “critically” (from the word *kritikós*, related to the “ability to discern”) and judiciously, that is, with “criterion” (another word derived from the Greek and meaning “court of justice”).

A crisis, as such, is not necessarily negative and, if approached appropriately, can become an important opportunity for positive change, even when addressed by Design (Scherling & DeRosa, 2020). Modern philosopher Reinhart Koselleck (Koselleck & Richter, 2006) sees a semantic shift in the notion of crisis today, speaking of a contradiction between opposing forces that accelerates the transition from the past to the future (Turnbull, 2022).

In that sense, it is necessary to bring back to the center of reflection the notion of “ethical responsibility” or “ethics of responsibility”, an expression introduced by the political scientist Max Weber (1919) and later adopted by Hans Jonas (1979) as the basis for defining so-called “Sustainable Development” (The World Commission on Environment and Development, 1987). “Ethics” derives etymologically from the Greek *ethos*, meaning “behavior”, while the word “responsibility” derives from the Latin *respondeo*, which has the same origin as “to respond”. The “ethics of responsibility” could hence be defined as “behavior capable of responding to someone or something”. In other words, acting with ethical responsibility implies considering the effects and consequences of one’s actions, and it is by anticipating these effects and consequences, and making oneself accountable for them, that decisions are made.

The Evolution of Design Coping with Contemporary Crises

Although many authors locate Design at the center of the contemporary crises (Fry & Nocek 2021) a more critical approach to “problem solving”, which has distinguished the discipline so far, can in fact contribute to creatively reformulating possible solutions and imagining new ways of dealing with complex issues and so-called “wicked problems” (Rittel & Webber, 1973; Sweeting, 2018), which are characterized, among their main features, by a strong social impact, the involvement of multiple actors in the decision-making process and the presence of confusing information, which makes their resolution even more complicated. Wicked problems are often classified as difficult or even impossible to solve: consequently, tackling them requires divergent thinking and creativity, with a direct impact on design methods and practices.

In recent decades, in response to increasing uncertainty and complexity, the discipline of Design has adapted to new challenges through profound structural changes that have redefined its approaches and objectives, by becoming more advanced in its methods (de Bont et al., 2013) and more strategic in its perspectives (Zurlo et al., 2002; Zurlo, 2004; Verganti, 2009); also, by applying a systemic vision and environmental responsibility to design processes (Bistagnino, 2011; Battistoni et al., 2019; Barbero & Pereno, 2020).

Designers have become facilitators and mediators (Celaschi, 2008a; 2008b) of complex systems, that is, where individual factors intertwine with technological, economic-productive, socio-cultural,

and environmental factors, and have acquired a greater awareness of how to react, anticipate and “pro-act” to crises, in an attempt to transform critical situations into opportunities to generate positive impacts on people and the planet.

In addition to playing a relevant role as a creative activity that determines the technical, functional, and formal qualities of objects produced by industry, Design has thus evolved into a process that drives innovation and leads to a better quality of life through meaningful products, services, and experiences (Heskett, 2005; World Design Organization, n.d.).

Over time, Design has also embraced the criteria of Responsible Innovation (Owen et al., 2012; Stilgoe, Owen & Macnaghten, 2013; Blok & Lemmens, 2015; Gianni, Pearson & Reber, 2019; Jakobsen, Fløysand & Overton, 2019), thus taking on its own impacts and liabilities towards people, communities, and society (Succini & Ciravegna, 2022). As for environmental impacts, European Commission (2020) clearly states that up to 80 per cent of them are determined in the design phase of products; on its side, the Ellen MacArthur Foundation (2023) emphasizes the crucial role of multi-level design in the transition from our extractive to circular economy, proposing an adaptive and holistic design strategy.

The last decade has, indeed, seen the emergence of a wide variety of approaches to thinking rigorously and creatively about the long-term future. Among them, Advanced Design is an articulated system of design practices used to conceive and develop processes, products, or services for complex scenarios, seeking to produce continuous innovation and a long-term vision for society and organizations (Celaschi, 2015; Celaschi et al., 2019; Celi, 2015; Iñiguez Flores et al., 2014).

On the other hand, Transition Design (Irwin et al., 2015; Dunne & Raby, 2013) states that organizations, institutions, and communities must intentionally move towards a more sustainable, equitable and desirable long-term future by co-creating visions together with all stakeholders operating in the present, according to a principle of co-responsibility of all actors involved with respect to the impacts of a project. Transition Design is an approach characterized by some specific skills, including, for example,

the ability to devise solutions that integrate social and natural systems and to intervene sensitively in such systems; to devise solutions which take account of short, medium, and long horizons of time and all levels of scale of everyday life, and the ability to identify potentialities for transition in everyday life. (Irwin, 2015)

The Role of Design in Promoting Sustainable Transitions: A Choral Reflection

Within this framework, the challenge is therefore to encourage and facilitate transitions towards more sustainable and circular patterns of production and consumption, adopting a systemic and planet-centric approach, reinforcing the ethical responsibilities of design, and reaffirming its mediating role in the resolution of the wicked problems that characterize the contemporaneity. Researchers, educators, practitioners, and students from all over the world were invited for a choral reflection, to share their thoughts and

experiences on the design processes that lead to the disruption of traditional practices and the transition to alternative forms of thinking and action, with the aim of addressing current crises and laying the groundwork for a more sustainable future.

The results of this choral reflection are the contributions, collected here, which were presented during the 8th International Forum of Design as a Process “Disrupting Geographies in the Design World”, particularly within Track 1 “There’s No Plan(et) B: Sustainable Transitions to Systemic Planet-Centric Design”.¹ The papers can be grouped into four main thematic areas, each of which touches on a topic particularly relevant to the reflections promoted by the track: i) Collaborative Communities for Territorial Development; ii) Towards Planet-Centric Scenarios; iii) Circular Design Methods and Tools; vi) Materials Experiences.

Collaborative Communities for Territorial Development

In this first thematic grouping, the collected articles illustrate investigations and reflections on the role of design in supporting communities in collaborative processes leading to sustainable territorial development.

“Beyond Collaboration: A Network Analysis of Local Stances and Global Frameworks in the Collective Design of the City” is the title of the paper by Francesca Sabatini, Martina Massari, and Saveria Olga Murielle Boulanger, which focuses on collective city-building practices beyond the participatory framework of institutional urban governance, specifically examining how grassroots organizations in Bologna are able to produce a dual movement between local and global, mutually informing global movements and local practices geared toward sustainable city growth.

“Alter_Azioni” is the name of a teaching and research experience at the center of Pietro Costa and Raffaella Fagnoni’s contribution, entitled “Alter_Azioni: Designing between Biological and Artificial. Scenarios for a Short-Term Future”: this experience investigated the lagoon context as a framework for local design experimentation to address the problems of the local territory and the environment through the exploration of the needs of the region and its inhabitants, and in the search for a possible balance between the biological and the artificial approaches.

Finally, the contribution “(Systemic) Design for Sustainable Territorial Transition: A Literature Review of State of the Art” by Asja Aulisio, Silvia Barbero, and Amina Pereno, presents a systematic review of the literature in the field of design, and specifically systemic design, to identify tools and methodologies useful for supporting decision-makers or stakeholders in processes of social, economic, and environmental transition toward sustainable territorial development.

1

Track Chair: Erik Ciravegna, Pontificia Universidad Católica de Chile; *Track Co-Chair:* Clara Giardina, Alma Mater Studiorum – Università di Bologna; *Track Collaborator:* Davide Pletto, Alma Mater Studiorum – Università di Bologna. For more information, see <https://www.forumdesignprocess.org/dgdw22/sustainable-transitions-to-systemic-planet-centred-design/>

This thematic area brings together works by diverse authors, united by the intent to reflect on how design is evolving and how this evolution is leading to a paradigm shift and a holistic planet-centric transition.

Sabrina Lucibello and Carmen Rotondi, with their contribution “Dasein ist Design: An Ontological Discussion of Design in the Ecological Crisis Time” propose a reflection on the evolving nature of design and how it can stimulate new dialogic, reflective, and strategic approaches to face contemporary crises.

Annapaola Vacanti, Francesco Burlando, Isabella Nevoso, and Massimo Menichinelli present “The More-Than-Human Trend in Design Research: A Literature Review”, a discussion on design practices and approaches that, over the past decade, have evolved beyond a single-user focus and are thus defined by terms such as More-Than-Human Centered Design, Ecosystemic Design, Posthuman Design, Community-Centered Design, and Multispecies Design; the results of the literature review aim to provide a clearer picture of the phenomenon.

Through a methodology based on a tripartite analysis (literature review, case studies and historical context analysis), the paper “Being and Nature. The Aesthetic Ecocentrism” by Adriano Pinho and Francisco Providência, focuses on understanding how design aesthetics can take an active role in changing toward a more sustainable and resilient society.

Jurji Filieri and Elisabetta Benelli, with their contribution “Forward to the Primitive. New Sustainable Design Processes Characterized by Primitive Aesthetic”, emphasize how the growing integration of ethical and environmental sensibilities leads to an often-primitive approach to design that is capable of catalyzing concrete actions and triggering a new accessible aesthetic for the public.

Finally, Guilherme Giantini and Lígia Lopes, with their contribution “How Long Does It Take For a Paradigm Shift. A Design-based Critical Essay on Materials and Fabrication Processes”, offer critical reflection on the transformation processes of matter and energy in the production of human artifacts in design and architecture, with the aim of bringing out sustainable industrial approaches and promoting developments in potentially innovative fields, such as biomaterials and biomanufacturing.

Circular Design Methods and Tools

The contributions grouped in this area explore methods and tools, from both service and product design, to facilitate the transition to circularity in applications in specific fields.

Chiara Olivastri and Giovanna Tagliasco, in their paper “Sustainability Needs Service Efficacy”, focus on the area of service design and its contribution in the implementation process of a project called Efficacy, a platform for optimizing bulky waste collection and recovery of reusable parts through the Surplus reuse and shelter centers.

“Systemic Design Applied to Medtech. Guidelines for Corporate Training on Sustainable Healthcare” by Enrica Ferrero and Giulia Ferrero illustrates how to use the potential of Systemic Methodology to define the contents of a training course on sustainability for the companies in the healthcare system.

Still in healthcare, Gabriele Maria Cito and Angela Giambattista propose the contribution “Reducing Waste in Healthcare: A Systemic Design Approach for Sustainable Disposables Manufacturers”, as a reflection on the application of Systemic Design methods to address the issue of waste management in the healthcare system, which plays a primary role because of its complex composition and risks to workers, patients, and the environment.

A discussion, in a systemic perspective, on how appliances should change to adapt to the current scenario of a compromised environmental situation and the need to transition towards a circular economy, is at the heart of Chiara Battistoni’s paper “A Framework to Design Appliances for the Circular Economy Scenario”.

Finally, “Digital Fashion Technologies & Practices: Design Driven Sustainable Transition in Fashion Industry” is the name of Ludovica Rosato and Alberto Calleo’s contribution, which addresses the environmental sustainability issues related to fast fashion and analyzes how, by exploiting technological innovation and the combination of tangible processes and intangible practices, design can support sustainable transitions in the fashion industry.

Materials Experiences

The papers of this fourth area take a specific look at the topic of materials and current experiments on both the creation of new materials and possible new applications of existing materials in a more sustainable way.

Michele De Chirico, with his contribution “Material Resources as a Contextual Complex System”, shows how the multidimensional interpretation of resources can lead to sustainable design actions; the article presents a mapping of the presence and use of material resources in local supply chains, to rethink their sustainable use through design interventions.

The paper “Diffuse Micro-Factory: Circular Distributed Production System for Microbial Nanocellulose” by Lorena Trebbi, delves into the details of an operational model, based on bottom-up and co-design approaches, for micro-distributed production of biofabricated materials, with the aim of suggesting possible circular alternatives to current linear production-consumption systems based on the take-make-discard paradigm.

“From Sea to Fashion. Seaweeds as Material for a Sustainable Transition” is the title of Paolo Franzo and Clizia Moradei’s essay, which addresses the reasons why fashion design is showing a growing interest in the marine environment as a context in which to identify new sustainable materials for fashion, focusing on the case of algae.

The contribution of Giovanni Inglese, Sabrina Lucibello, and Carmen Rotondi, titled “The Sound of Sustainability. Biomaterials and New Sensory Frontiers”, investigates the possibilities that design

research on biomaterials can offer to the development of musical accessories, in terms of “sensory enhancement” and spreading a new ethical consciousness around sustainability.

Finally, a sustainable application of materials is that proposed by Raquel Gomes and Cláudia Albino in their paper “Unpacking Ceramic History in Asia and Europe: Contribution to New Reusable Packaging Design”, which details the proposal for a non-disposable modular packaging system for ceramic products, which can organize interior spaces, thus reducing waste.

Erik Ciravegna

Ph.D. in Design from Politecnico di Milano. He is currently a Researcher at the University of Bologna; until 2022, he was an Academic at the School of Design of the Pontificia Universidad Católica de Chile, where he is now Visiting Professor. His research background is communication design, with a focus on packaging design, product identity and branding. He is particularly concerned with sustainability, ethics, and social responsibility of design. He also works on methods and tools to support creativity and project development.

Clara Giardina

Ph.D. candidate in Design from the University of Bologna. Her main research fields are sustainability and open innovation, especially in the packaging sector. She is coordinator of the Packaging Innovation Observatory (Unibo), an organization acting on the complexity of packaging to trigger transitional innovation. She looks at Responsible Advanced Design as a tool for creating sustainable behaviors.

Davide Pletto

Ph.D. student in Design from the University of Bologna. His doctoral research is centered on circular design in the packaging industry, aiming at finding more recyclable solutions without reducing the barrier properties that ensure product freshness and accessibility. In the area of circularity, he is particularly interested in issues related to materials and their sensory interaction, especially from a point of view of experimentation and prototyping.

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Alter_Azioni: Designing between Biological and Artifactual. Scenarios for a Short-Term Future

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Abstract

The contribution describes the activities of a teaching and research experience, named *Alter_Azioni*. It consists of three main parts. Firstly, it introduces the lagoon context as the reference framework used to experiment with a design local based to address the problems of the local territory and the environment. The paper moves on to discuss the design approach proposed to the students, contextualizing research and experiences based on the needs of the region and its inhabitants, through the exploration of a possible balance between the biological approach and the artifactual one. Furthermore, it summarizes some references about these issues, in order to gain a deeper insight into the chances or the pitfalls of this project. The second part provides an overview of the possible design range of concerns scenarios for a short-term future, focusing on the design projects developed and mapping them following three paths. Finally, in the third part, a look back points out what has been experienced as possible alternative scenarios.

Keywords

Design for social impact
Design for fragile environments
Product-service system
Service design
Proximity relationships

Scenario - the Venetian Lagoon

The reference scenario for this paper is the Venetian lagoon, a vast territory with a surface area of approximately 550 km², of which approximately 130 km² is made up of islands and terrestrial land, and the remaining 420 km² is made up of bodies of water (Matticchio et al., 2017). This is an area that is, by its very nature, mutable and in constant transition between land and water, in which it is possible to experiment and explore new possibilities for research and design projects. In this context our interest has shifted towards systems of things in which aesthetics and poetics are brought into play to load 'nature-based' solutions with expressive potential, suitable for the survival of very fragile situations, going beyond approaches and strategies of the design project based on functionality directed principally at the industrial system. The experimental aspect consisted in driving the students to analyse different circumstances of a local context, a very particular territory such as the Venice lagoon.



Fig. 1
Lagoon of Venice: a fragile environment. Ph: Giorgio Bombieri.

This area represents a wealth of biodiversity, landscapes, culture, and history, which is not comparable to other coastal areas of the Mediterranean basin (Zanetti et al., 2007).

The Venice lagoon is an emblematic and successful example of the interaction between man and nature, which contrasts the slowness and apparent unchanging place with an extreme fragility due to the unstoppable rapid transformation of the ecosystem, the unresolved issues related to climate change, the human intervention too invasive and short-sighted. Among the causes of the deterioration of this territory, of which only 8% consists of dry land, prevail the issues of sea-level rise and wave motion, large tourist flows, trawling, isolation of small villages with a rich cultural heritage, water pollution, microplastics, alteration of flora and fauna with the consequent loss of biodiversity, the progressive weakening of craft economies. The apparent immutability threatens to be disrupted by the quickness of the traumatic effects.

Beyond the constrained and traditional paths of industrial design, these urgencies impose the need for a strong and rapid push exploiting the design capabilities to imagine and build possible futures. In fact, this project started with the idea of facing the complexity of the lagoon ecosystem by inviting students to research specific local situations - social, cultural, environmental - through collaboration with local stakeholders to imagine scenarios of daily life for a short-term future. The primary objective was to highlight possible chances for the sensitive nature of this environment, testing with the students a different way of conceiving and managing the design skills, tools, and processes. Young designers were asked to contribute to the collective process of social innovation (Manzini, 2015) for the quality of life in vulnerable areas such as the Venetian lagoon.

Reorienting the Design Approach Between Biological and Artifactual

The *Alter_Azioni* project focuses on a specific region and the people who live in it, their needs, and their behavior, aiming at the heart of a problem in order to foster new visions and generate ideas capable of influencing the lagoon context: a shift from designing forms, spaces, services, and artifacts, to conceiving a way of being and living.

Increasingly frequent critical emergencies on an environmental, social, political, and economic level bring into focus the need to rethink the dynamics of the production system and distribution of goods, pushing design to interrelate with the local territory or a specific context in which to develop circular and proximity relationships. Driven by a responsible vision, the project deals with the most critical issues of everyday life, and, beyond form-related features, aspires to content (Papanek, 1971) with a greater focus on semantic and cultural aspects, in relation to history and traditions, relationships and feelings, using tools and a more empathetic language (Fagnoni, 2012). As Paolo Cardini states, design can be considered “an endogenous act, that lives and grows in specific contexts, rather than being an exogenous element implanted in existing systems with a high risk of rejection” (Cardini, 2022, p. 17).

In this framework, design is not a goal to be achieved, it's not the design *of* something, a form-oriented investigation, but rather the design *for* something, as a medium to bring about changes that have a positive impact on society and the environment. In this way, the design tools and approaches are applied to intervene in changing a specific situation, or, quoting Herbert Simon, to “devise courses of action aimed at changing existing situation into preferred ones” (1969). The concept of *designing for* something has become established especially since design has started to expand from the design of tangible things to the design of services, experiences, and processes (Sangiorgi, 2011).

Meanwhile, designers have begun to spread new conjunctions of design in areas aimed at the social, the commons and the environment: *social impact design*, *socially responsible design*, *design for social innovation* (Resnick, 2019), recall the connection established by pioneers such as Papanek, Maldonado, Yona Friedman, between design, ecology, and social development. This has

brought to the attention of designers those instances of the research for an ethical and sustainable design path – as opposed to a vision aimed exclusively at commercial purposes – that has been spreading since the 1980s through those participatory and responsible practices. Emanuele Quinz (2020), in his late book, talks of design as an anti-industrial project.

After all, as Manzini points out, most of the problems people face lie in proximity (Manzini, 2021). Relationships develop within a given context understood both as a physical space and as a social form in which action becomes possible and the project takes on meaning. The system of constraints and opportunities that are proposed, the possibilities for action, also need to be repositioned in proximity, going to strengthen the thickness of the social fabric, operating in the hybrid physical-digital space.

Therefore, the pursued approach combines the humanistic and sensitive dimension of design with the technical-scientific perspective that regulates the way of working.

Through an osmotic process of micro-actions, which connect and establish rhizomatic relationships (Deleuze & Guattari, 1980) the design processes and tools are used aiming to sensitively reunite the individual with the surrounding everyday reality.

Designers who “shape a design space in which non-specialised users can access user-friendly environments in which they can design their own objects” are defined as meta-designers by Jos De Mul (2011). The transition from designer to meta-designer means allowing a passive user to evolve into an active agent of change that overcomes limitations and problems with endemic and endogenous solutions (Cardini, 2022)

Back-Casting

Already in 1998 John Tackara in *Domus* magazine (1998) clearly analysed futuristic visions for the design of 2028, talking about entropy and seeing how design was already able to detach itself from industry and also innovation. He also talks about *back-casting*, a project path that aims at processes rather than products, investing more in the collaboration and the integration of skills and disciplines, to arrive at imagining concrete opportunities and new directions for design.

The *Alter_Azioni* project works on 16 products-services, actions able to stimulate reflection and address specific behaviours, rather than defining the materiality of the products, to recover an increasingly limited social imagination (Mulgan, 2020). The ability to conceive great technological developments and futuristic scenarios and the progressive blurring of the boundaries between human and artificial are diminishing the capability to react even in front of the prefiguration of apocalyptic visions (Latour, 2018; Morton, 2018; Staszowski & Tassinari, 2021).

Rapid evolutions in digital technologies have transformed production processes and information systems, and the dematerialization of products has changed the way we consume, work and travel, offering alternative experiences and creating new collaborative market logics in which services or product-services take the place of traditional goods in a perspective of innovation by meaning

(Verganti, 2018). The primacy of servitization (Siagri, 2021) indicates that the raw material of the economic and social system may now become sharing and collective intelligence (Mulgan, 2018) in the context of a different function of territories, no longer considered as matters of mere extraction of materials and energy or support for industrial settlements, but as evolving intangible assets (Siagri, 2021).

Alter_azioni: Designing Otherwise

In this time of the extreme present in which everything can change in a very short time, there are things and circumstances that seem to remain unchanged and unchangeable, such as the lagoon. The term *Alter_Azioni* refers to a different way of approaching design. In this combination of words, *Azioni* (*Actions*) relates to design acts and interactions between place, people and peculiar circumstances, the aim of which is to design starting from the priorities of the geographical context. In its turn, the term *Alter* indicates the *otherness*: related to the Venice lagoon this term investigates the concept of *other* and refers to a pluriverse (Escobar, 2018), a system in which it is possible to rethink other ways of moving, caring, feeling a sense of belonging, and preserving. When considering the pluriverse, we expand the horizon of our perspective, recognizing and appreciating the multiplicity of realities co-existing. Each reality within this pluriverse, holds unique interactions, dynamics and ways of living which inspire alternative design practices. These universes propose a multitude of potential, encouraging a shift away from a singular, dominant perspective to a vast array of interconnected realities.

This approach encourages young designers to focus on an in-depth research phase with an ethnographic and geographical field analysis, which supports and guides the different stages of the design process. As a consequence, it follows the Double Diamond design process model of the British Design Council, which has been adapted for this specific context.

In the first divergent part of the design process, it was essential to carry out some preparatory exercises using visual collaboration platforms and guided brainstorming sessions, to identify some characteristic aspects of the target territory, even in a preliminary way. Subsequently, the students were engaged in creating a postcard on a subject that had particularly impressed them, such as biodiversity, recovery of local craft traditions, and conservation of natural heritage, with the aim of understanding a possible approach to such a specific context. A key stage is an on-site investigation, when the students carried out an exercise called *Video Personas*, which had a twofold purpose: on the one hand to collect valuable information directly on the place, using the ethnographic approach typical of UX design and service design, and on the other hand to move in a real context and experiment with design as a tool to perceive social impact, contextual reality and proximity relationships in a direct way. The *Video Personas* become in this way a design artefact.

With this approach it was possible to identify some situations that were unknown to the students, through personal confrontation with some people found on site (e.g. the elderly farmer who grows

vegetables on the island of Sant'Erasmus, the CNR researcher who is an expert on algae, the chef who only uses local raw materials from the lagoon area, the foreign tourist who arrives in Venice for the first time and has to plan his timetable, etc.) with the aim of identifying for each of them needs, desires, habits and cultural backgrounds.

Compared to the already well-known Personas tool, the use of video offers different information: "The video supports empathy, engagement and understanding of the character, it communicates the softer details on behaviour, action and motivation and creates curiosity" (Nielsen, 2013, p. 78).

Through the video interview, the student is no longer forced to design by imagining the world in its most global and abstract dimension but enters a direct relationship with the real context, with the people who inhabit it, their stories, and their work, establishing a deeper and more authentic knowledge process.

During the following phases, design projects have been developed, enabling students to gain experience, making their proposals take shape, using local materials and realizing study models, with the help of local stakeholders. Some of them will be carried out with local associations, others received some funding and prize, others probably could be involved within the framework of the post initiatives of an Interreg project (<https://www.italy-croatia.eu/web/crew>) on the local development of the Venice lagoon.

Three Paths for a Short-Term Future

The *Alter_Azioni* activities and design projects aim to take care of the place, be rooted in the local context, and feed circular processes. Starting from the research work and design experiences three trajectories can be classified, useful to identify possible directions of the design role in the contemporary context.

Bio-Based and Second Life

This path includes bio-oriented projects that experiment with natural materials approaches, that enhance local products, crafts, activities, and their related contexts.

A critical emergency in the lagoon is the progressive erosion of the salt marshes, which endangers the survival of the lagoon and its inhabitants both physically and culturally. Addressing these problems, the project *Pitàro* is a product-service system that involves people in a community and collaborative action aimed at the environmental restoration of salt marshes. It allows people to grow halophyte plants at home, with the purpose of replanting them in salt marshes.

Another design proposal considers that Venice has the potential to become a benchmark on the topic of seaweed. Therefore, *Tressa* is an open-source product-service for the collection and reuse of algae, a fundamental natural element for the fragile balance of the lagoon ecosystem, but at the same time a versatile material in its adaptability of use.



Fig. 2
Tressa, a project for algae. Collection, information, witnessing through products-services. @luav Alter_Azioni Lab Design 3.



Fig. 3
Pitàro, a proximity sharing service for a community and collaborative action aimed at the environmental recovery of salt marshes (barene). @luav Alter_Azioni Lab Design 3.

Traces and Experiences

This path includes projects related to local traditions, which recover stories and knowledge of crafts, places, rituals or ways of life that are in danger of disappearing.

One example is the tradition of pearl manufacturing: since the 13th century pearls have been used as currency, but it is only since 2020 that the know-how related to this long-standing knowledge has become part of the Unesco heritage. The *Contatto* project is a product-service system that offers an experiential tour in the Venetian Lagoon to raise interest in the art of Venetian pearls.

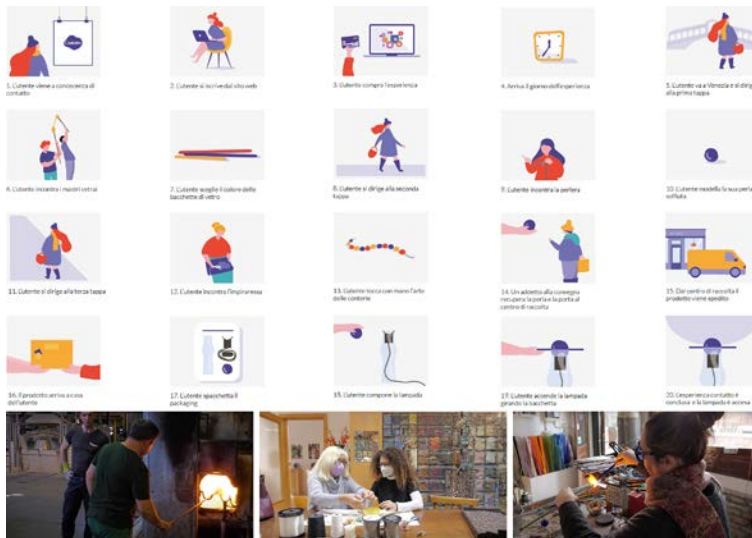


Fig. 4
Contatto, an experiential
 tour that guides people to
 the art of Venetian pearls.
 @luav Alter_Azioni Lab
 Design 3.

Habits and Welfare

This path includes projects that aim to facilitate the maintenance of lifestyles and habits, seeking a balance between the distinctiveness and image of the lagoon, and the needs of its inhabitants.

In the lagoon the problem of travel between the city and the islands is real and urgent, on the one hand because of the huge influx of people and on the other because of the complications involved with the use of public transportation. *'Ndemo* is a special boat pooling service accompanied by a set of products (pinpoint, raincoat, and seat) that allows the best possible use of private boats.

Another problematic aspect is the lack of care services: many islands have no pharmacy, forcing residents to make very long and difficult journeys to purchase medication: *Medice* is a product-service that consists of a communicating system composed of hubs, drones and a mobile app and it has been designed to integrate the existing pharmaceutical service system.

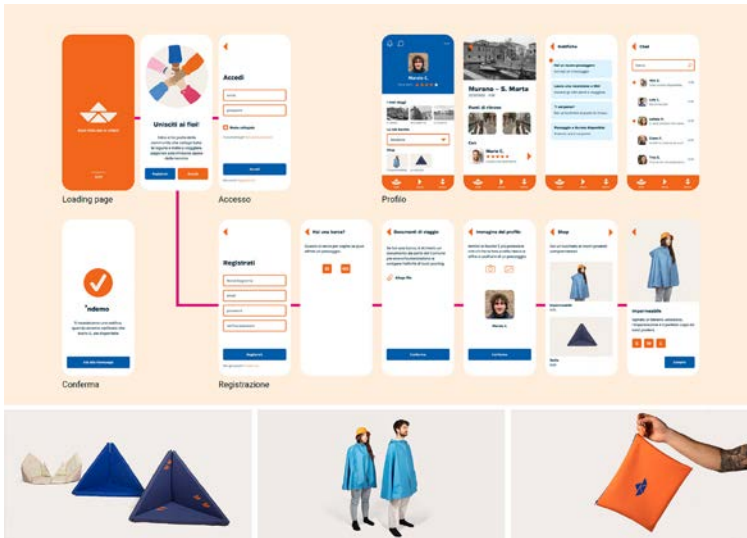


Fig. 5
'Ndemo, a boat pooling service to facilitate movement in the Lagoon in an economically and ecologically sustainable way. @luav Alter_Azioni Lab Design 3.

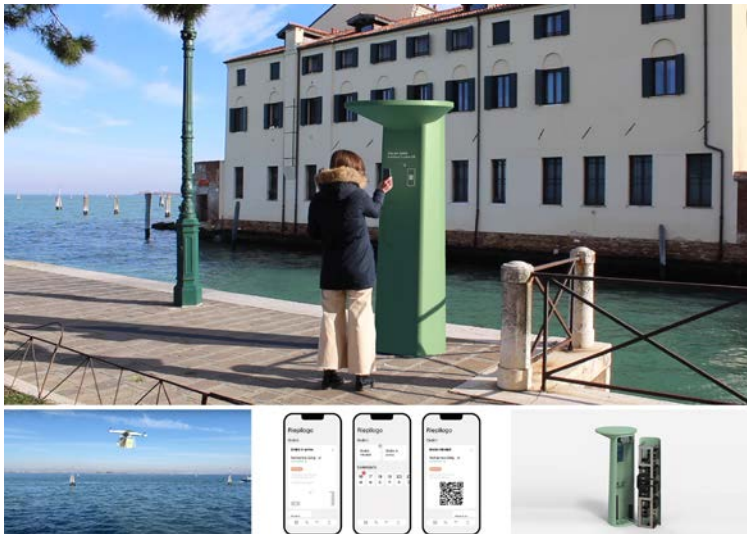


Fig. 6
Medice, a product-service system for health to improve the pharmaceutical system, with hubs scattered around the lagoon and drugs transported by drones. @luav Alter_Azioni Lab Design 3.

The aim of these projects is to go beyond the academic exercises centered on theoretical tasks, fostering practical experimentation in the development of personal projects in collaboration with local stakeholders. This hands-on approach is exemplified in *Tressa* project through the prototyping of a bioceramic and a bioplastic film derived from algae. These materials have been used to create a set of tableware, underlining an emerging trend in the use of second-generation materials. Similarly, *'Ndemo* project resulted in the development of a service and the necessary artifacts for its operation, also participating in the incubation process as a startup.

Changing Design Paradigms

In a world of ever-increasing emergencies related to climate change and pollution, it is not possible to continue with the idea of design feeding the global commodity system (Rawsthorn, 2018). Instead of seeing design as the production of goods and commodities, it needs to be understood as the making of what is necessary for sustaining the environment.

If the aim of design discipline is to improve people's life, today we need to think about maintaining and protecting the habitat in which they live.

We are facing a momentous change: an unstoppable process of social and environmental ruin puts us in front of the faults of the previous ones. The young generations of designers are much more sensitive to these issues: they feel anger towards those who preceded them thinking without any scruple only about their interests (Fagnoni, 2021). In this sense, as educators, we try to make experiences with our students to imagine a different approach to our disciplines: how to apply design skills and tools to contribute to the maintenance of the fragile local habitat in which we live.

Fundamental to this project is the idea that designers need to consider designing as/for the common goods (Botta & Jungiger, 2021) and consequently the commons, not only as a matter of result but as an attitude (Rawsthorn, 2018), testing a process in an experimental way, to finalise an *alter* way of conceiving and developing product-service systems.

Following the outlines of a post-digital craft, a long time after Sennett's book success (2008), good hands have regained vigour, although electronics, computer science and artificial intelligence dominate and dematerialize customs and traditions. The "good hands" (as they are virtuous, technically skilled) are also "good hands" (as they are polite, doing right). These practices recover the culture of proximity between the local workers, the local economies, and emerging designers (Fagnoni, 2021).

The mapped three paths address the *environmental* sense of design, offering a contribution to the ecological concerns of human cohabitation within a biosystem and taking care of the making of a relationship system.

In order to address these needs, the design process experimented in the *Alter_Azioni* project was based on a multidimensional design: it includes projects of services, products, installations, actions, and participatory practices, characterized by a commitment to activate social transformations and improvements of the existing environment oriented towards the common good, citizenship, sustainability, and accessibility. The process starts from a careful analysis in the field, experimenting with methods to reconstruct a representation of reality: video interviews carried out on the territory are a concrete example of this. They do not represent a mere ethnographic and documentary investigation phase, but are intended as an artefact, constituting the story designed for and with local stakeholders, the recipients of the interventions, in response to increasingly pressing social and environmental needs. These video interviews gave origin to the product-service systems described above.

Some steps underpin this paradigm shift: the first one is based on the importance of using local materials, rethinking production as an environmentally friendly system, and introducing an experimental approach through the re-circulation of natural waste. The second gives importance to the enhancement of territorial heritage through the recovery of rituals, gestures and actions related to objects, artistic and craft products, foods, memories, and places. The third process focuses on the primacy of servitization, considering sharing and collective intelligence as the raw material of the economic and social system for a different balance of territories resources.

The challenge is thus to promote and support the shifts towards sustainable habits and practises. This is possible by adopting a systemic and planet-centric approach, strengthening the ethical approach of design, by reactivating and re-enabling its role in tackling the wicked problems that distinguish our time through focusing on the hyperlocal context.

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The 8th International Forum of Design as a Process, themed “Disrupting Geographies in the Design World” was held in Bologna from 20 to 22 June 2022. The event was organised by the Advanced Design Unit of the Alma Mater Studiorum – Università di Bologna, Department of Architecture, in collaboration with two partner universities: Tecnológico de Monterrey (TEC) and Pontificia Universidad Católica de Chile.

The Forum engaged speakers from the Global Design community, expanding the original vocation of the Latin Network for the Development of Design as a Process to include researchers and designers of the Mediterranean Area, Middle East, IOR (Indian Ocean Region), and Global South regions. The goal was to share new perspectives on imagining design futures in a responsible and just perspective, at the forefront of change, while building strategic partnerships and creating accessible knowledge.

Structured around three pillars — seminars, workshops, and exhibitions — the Forum hosted meetings, reflection opportunities, networking activities. It involved designers, scholars, young researchers, design entrepreneurs, in an experimental format.

Speakers’ contributions not only inspired the practices of the designers’ community, but also resonated with students and the broad audiences. The presentations explored intersections of materiality and culture, post-coloniality, decoloniality, gender studies, and other areas of human thought and action which seek to analyse, question and challenge the disruptive geographies in the world, today.

The papers submitted to the five tracks proposed are published in the Digital Special Issue 1 of *diid. disegno industriale – industrial design*, celebrating during those days its 20th anniversary and serving as the fourth partner of the event.

The Editors

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