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HUMANIZING ENERGY



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PAD

via Francesco Soave 15 – 20135 Milano – Italy

via Roma 171 – 90133 Palermo – Italy

info@padjournal.net – editors@padjournal.net

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aiap@aiap.it – www.aiap.it

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EDITORIAL
#26

Humanizing Energy

Design and Art for Energy Transition

Barbara Di Prete

Politecnico di Milano
Orcid id 0000-0001-9334-7019

Lucia Ratti

Politecnico di Milano
Orcid id 0000-0002-1486-2926

Agnese Rebaglio

Politecnico di Milano
Orcid id 0000-0002-8952-5107



The energy transition represents today an unavoidable challenge, a necessity and an environmental, social and economic urgency that can no longer be postponed. Institutional actors, governmental and non-governmental bodies have defined strategic objectives to pursue it, yet they have undertaken actions that are still too often of limited impact. International programmes include, for instance, the 7th SDGs of the 2030 Agenda and, in the European sphere, the European Green Deal and the most recent REPowerEU, with which the European Union has set the target of using 42.5 percent renewable energy in its energy mix by 2030 (European Commission, 2022). The plan calls for parallel efforts to reduce consumption, improve the energy efficiency of buildings and production cycles, and invest in energy storage infrastructure.

The climate crisis also prompts a rethink of fossil fuels' environmental and social impact. The transition to more sustainable sources, instrumental in a serious reduction of greenhouse gas emissions, is indeed an important step in the fight against climate change. An increment in energy sustainability also goes in the direction of countering the emergency of energy poverty: whereas in developing countries the latter manifests itself in the inaccessibility to the electricity grid for about 1 billion people, Italy alone in 2021 accounted for more than 2.1 million households experiencing difficulties in acquiring a minimum basket of energy goods and services (8.5% of total households) and in 2023 10% of minors still

lived in unhealthy, poorly heated and/or cooled, or poorly lit environments (Castellini et al., 2023).

As a matter of fact, the energy transition concerns all fundamental aspects of societal life: health, work, the quality of everyday spaces, mobility, as well as cultural production and the fight against inequality and discrimination. Community, care, technology, culture, identity, education, neighbourhood welfare, behavioural change, urban biodiversity, social and ecological networks, soft mobility and urban resilience are but a few of the themes that converge in a truly sustainable and inclusive energy transition.

With this in mind, it is surely a collective responsibility to identify processes and methods to implement a rapid and effective energy transition. In this process, design and the arts represent strategic levers of action and innovation, for they may stimulate paradigmatic changes in the ways energy is produced and consumed, in the ways it is used and in the behaviour of individuals and communities around it, to experiment with new conceptual and operational models and, in short, to propose paths towards a more sustainable future.

In this vision, design disciplines intervene on the “hard” components of the energy transition but also on its “soft,” more relational, and qualitative components. This dimension is “close” to the people and calls upon the responsibility of individuals without leaving the solutions solely to institutions, companies, and international bodies. Instead, the energy transition is based on the collective participation of all social

bodies, formal and informal, and requires sharing themes, scales, and project intentions. Indeed, the transition requires systemic, structural, technological, political, economic, and cultural changes involving individuals, communities, and all local and global actors. It is, therefore, necessary to implement a revolution of the current models, starting from a more widespread energy education towards scenarios – some of which are already visible – of co-creation, co-production, and co-management, of short and circular supply chains, of self-production and digitised and smart processes, to secure a safe, ethical and welcoming future.

Innovative models such as those of Renewable Energy Communities (Bolognesi & Magnaghi, 2020), so-called circular neighbourhoods, and “proximity” energies aim to engage individuals and businesses in the creation of a local energy system, re-establishing a direct relationship between users and production, while creating new jobs, stimulating community cohesion and reducing greenhouse gas emissions, are heading in this direction. Ultimately, it will enhance territorial specificities and promote opportunities for social innovation and new forms of energy democracy (Liberti, 2022).

Issue #26 of PAD, therefore, gathers reflections, studies, and research proposals that highlight the role of design and the arts in promoting systemic innovation, both in terms of practice and cultural and social meaning, to provide new models of sustainable energy production, use and consumption. In particular, the issue explores how art and design actions can lead to a transition toward innovation in values, models, and

tools. These three categories also articulate the structure of the journal. Innovation in values leverages culture and knowledge about energy-related phenomena and transforms everyday behavior. On the other hand, an innovation involving models ignites the development of increasingly participatory and collaborative processes in energy production and consumption systems. Finally, sustainability undoubtedly passes through innovation in tools, which are intended as devices and technologies for sustainable energy production but also understood as those supports aimed at increasing awareness about the role of data and information in the overall energy balance.

1. Values: Energy Cultures & Behavioural Change

The first section, *Values: Energy Cultures & Behavioural Change* is dedicated to pieces that explore the role of design in promoting energy sustainability through cultural and behavioural change. This involves spreading new value systems and increasing the knowledge and awareness of individuals and communities. In this context, design, with its interdisciplinary connections, emerges as a powerful ally for individual and collective education. It can generate support for change, raise awareness, engage people and broaden participation in transition processes. Furthermore, design can outline new future scenarios for energy production and consumption, create new formats for managing daily actions, and envision energy-efficient goods and services. It can also promote using sustainable energy sources by adopting technologies and materials with reduced environmental impact.

The essay *Re-Crafting Energy-Related Household Routines: The Integration of Design Methods in Behavioural Change Theory to Foster More Sustainable Routines* by Giovanni Profeta, Francesca Cellina, Desirée Veschetti, Evelyn Lob-siger-Kägi, Devon Wemyss and Pasquale Granato focuses on the promotion of more sustainable household routines in terms of energy consumption using design methods integrated with behavioural change theories. The authors describe the development and implementation of the Social Power Plus (SPP) mobile app, which aims to promote energy-efficient behaviour. The app is based on the Model of Action Phases (MAP), which identifies four stages of behaviour change. It uses data visualisation techniques to provide feedback to users according to their level of data literacy. In addition, the app provides social networking features to facilitate the sharing of energy saving experiences and knowledge.

The contribution by Gijs van Leeuwen and Abhigyan Singh, *Exploring Design Fictions as Tools for Transformation Towards a Human-Centered Energy Transition*, explores how design fiction can be used to support people-centred energy transitions. The authors propose using design fiction as a method of world-building to imagine alternative realities and intervene in the development of energy infrastructures. The emphasis is placed on using design fiction to influence values, mindsets and practices across the distributed networks that shape energy transitions. The authors present seven speculative scenarios to illustrate possible futures of energy infrastructures, aiming to create a comprehensive approach that can influence systemic energy transitions while maintaining a human-centered focus.

The essay *Environment/Data/People: [Eco] Participation Through Data Visualisation as Design Strategic Approach for Engaging, Sensitising, and Educating the Community to Energy Transition*, by Alessio Caccamo and Anna Turco, explores the role of data visualisation in promoting energy literacy and participation in the energy transition. The article highlights the importance of engaging citizens through visual and participatory methods to foster a deeper understanding and commitment to sustainable energy practices. The article discusses different design strategies to make abstract data more tangible and engaging, including visual metaphors, data art, and data physicalisation. It presents several case studies and examples of effective data visualisation projects. By involving individuals and communities in participatory data visualisation, it is possible to create a more emotionally engaging and accessible understanding of complex energy data.

Marco Manfra and Grazia Quercia, in the essay *Design for Temporary and Sustainable Music Festivals: New Values and Informal Educational Systems for Humanising the Energy Transition*, explore the role of temporary and sustainable music festivals as vehicles for promoting new environmental, “energetic” and social behaviours. These festivals can typically address environmental impacts such as energy consumption, fossil fuel use, biodiversity loss, CO2 emissions and waste generation. The authors argue that these festivals can inspire personal responsibility and promote practices of sustainability and circularity. They examine several European music festivals, detailing their sustainability strategies and encouraging responsible behaviour through interactive and engaging methods.

The essay *Talking about Energy: Design and Language for the Energy Transition* written by the editors (Barbara Di Prete, Agnese Rebaglio, Lucia Ratti) concludes the first part. It emphasises the critical role of communication in the energy transition. It argues that design can play a key role in engaging people both cognitively and emotionally in discussions about energy sustainability. By creating a new language around energy, design can, in fact, promote knowledge and awareness to combat the “energy illiteracy” that is currently making the majority seem disinterested in transition-related issues. Starting from the observation that the technical and specialised language currently used in the energy discourse often has an alienating effect on people, the authors suggest that the development of a new everyday vocabulary could help to bridge this gap, making sustainability a more integral part of everyday life and thus encouraging behavioural change. The article outlines different design approaches to help cultivate a culture of sustainability, making energy issues more understandable and actionable for a wider audience.

2. Models: Energy Communities & Collaborative Landscapes

The second section, entitled *Models: Energy Communities & Collaborative Landscapes*, examines alternative and innovative collaborative models of production, management and consumption, mainly characterised by participatory dynamics, community practices and collective empowerment in constructing new economic and social visions. The five contributions offer complementary points of view on methods and tools for raising citizens’ awareness, but also on new forms of “proximity” energy co-production and co-management aimed

at combating energy poverty (energy communities, short supply chains, self-production models, local renewable sources).

All these analyses point to the strategic role that design can play in promoting the containment of energy demand, guaranteeing access to energy for all, promoting increasingly inclusive, democratic, and conscious processes of community welfare, but also in outlining new scenarios of more sustainable consumption, redefining both individual behavior and collective aspirations.

Debora Giorgi, Claudia Morea, Chiara Rutigliano, Letizia Giannelli and Luca Incrocci, in the essay entitled *Services to Design Change: Gamification Opportunities to Generate Virtuous Behaviours and Design Sustainability Pathways*, explores Design for Behaviour Change (DfBC) practices capable of promoting an energy transition based on more sustainable consumption, more conscious behaviour, the ability to embrace technological advances and the application of user-centered design strategies. The contribution aims to provide a theoretical and methodological framework that combines the skills of design with those of social psychology to make sustainable energy choices and personal desires and not merely social or regulatory constraints perceived as distant and suffered as imposed. The essay presents case studies that testify to the effectiveness of the proposed practices in raising awareness and stimulating a collective commitment capable of determining impacts in terms of energy, environmental, and climate sustainability, even in the long term.

The essay *Energy to Design Communities: Energy Communities and Communities of Practice to Support Marginal Areas in Abruzzo*, written by Rossana Gaddi, Raffaella Massacesi, Luciana Mastrolonardo and Davide Stefano, illustrates a systemic and multiscale design experiment carried out in Taranta Peligna (CH). Here, the construction of a Renewable Energy Community provides an opportunity to support high-quality artisanal resources, recover the excellence of the local industrial history, valorise the great environmental heritage of the area and counteract the growing depopulation. The aim is to define a production model based on proximity, public-private collaboration and the use of an open-access Geographical Information System, in order to develop inclusive, community-centred scenarios for clean energy production that combat energy poverty and, in the long run, generate economic, cultural, social and environmental benefits, starting from the energy lever itself.

Carla Sadini, Francesco Zurlo, Stefania Palmieri, Mario Bisson and Silvia Peluzzi, in their essay *Enhancing Wind Farm Projects: A Systemic and Strategic Design Approach to Community Acceptance and Engagement*, investigate how to increase local acceptance of wind farm projects by integrating landscape knowledge and cultural significance through a systemic and strategic design approach. A case study analysis of fifty energy transition projects was undertaken and a matrix was filled to map the case studies based on user involvement and their relationship to the environment. The study highlights the need for community engagement at both the design and implementation stages to achieve local acceptance. The discusses strategies in-

clude educational activities, visualisation of abstract concepts of sustainability and co-design workshops.

The essay by Andreas Sicklinger and Adrian Peach, *Powered by the People: Human-Powered Energy Generation as a Lifestyle Choice*, addresses a crucial issue that is both a constraint and a lever for the energy transition in a society dominated by consumerism and the pursuit of well-being: the need to replace the dominance of waste with a different social vision that does not conflict with the expectations of citizen-consumers, but is capable of asserting itself as a new, desirable, more ethical and also more attractive lifestyle. With this in mind, the essay illustrates an experiment carried out in two university workshops and invites to take advantage of people's growing interest in health and sport as an opportunity for design, using the energy of physical movement to power household appliances and proposing new products to generate decentralised energy, mainly at home or at work. Starting from concrete solutions, the text thus pursues an ambitious and far-reaching goal: to act in the sphere of awareness, responsibility and individual freedom, and to induce a collective change in behaviour for the benefit of society as a whole.

The contribution *Designing Community-Driven Energy Solutions*, written by Valentina Auricchio, Marta Corubolo, Stefana Broadbent, Beatriz Bonilla Berrocal and Chenfan Zhang, proposes a wide-ranging critical and design reflection, developed in the academic sphere, which identifies renewable energies (solar, wind, biogas and other green sources) as the challenge and opportunity for a future capable of reducing CO₂

emissions in the most congested areas of the world, while at the same time reducing energy poverty in the most remote areas or among the most vulnerable populations. Electrification is therefore a prerequisite, strategy and objective for the realisation of this inclusive scenario. In particular, the essay examines a number of community energy solutions that allow citizens to become protagonists of change, sharing resources with their neighbours through networks, often autonomous, that envisage different possible infrastructural distribution models. The results of these experiments are the strengthening of the sense of belonging to the community, the construction of social capital and the transition towards an increasingly necessary local empowerment.

3. Tools: Energy Technologies & Digital Awareness

In the third and final section, centred on *Tools: Energy Technologies and Digital Awareness*, the focus shifts to the more “hard” component of the energy transition. The four contributions collected here are concerned with analysing and proposing directions for an infrastructure, process or service innovation that is brought back to the human scale, suggesting reflections on the introduction of new techno-ecological approaches to energy production, horizontal models for its distribution, recalibrated habits around the use of the web and a renewed awareness of the impact of digital behaviours.

Projects and field experiments aimed at investigating the role of design and art in defining a new productive, commercial, distributive, but also conceptual paradigm – reported first-hand or taken from the literature and critically analysed

here – find space in this section, along with data-based reflections on the impact of current technological and digital solutions, to stimulate further discussion on the existing need for the use of “better” tools, and at the same time a “better” use of the ones that already exist. The role of art and design here becomes that of “contaminators”, capable of identifying alternative strategies to the current ones, gathering clues from different domains of knowledge and grafting between the meshes of technical-technological knowledge the human need to understand and the collective need to be aware of the change we are living.

Suzanna Törnroth, in her essay *Solar Biota: Co-Living with Solar Ecologies*, presents a personal experience of field experimentation in the sphere of alternative solutions for energy production. Challenging the prevailing perception that associates solar energy with the image of large photovoltaic panels located in places that are inaccessible or otherwise distant from the experience of everyday life, the author reports on the results of a five-month multi-species ethnographic study during which she observed her SunSpider – a small prototype of a photovoltaic “organism” – interacting with the ecosystem and other living and non-living entities. Exploring the possibilities opened up by a relational approach to photovoltaic technologies, the essay offers points of departure for a reflection on the complexities and possibilities inherent in the increasingly necessary act of co-living with solar energy-producing devices. Combining an interpretive lens derived from artistic practice and research with a new materialist perspective, Törnroth proposes an original narrative of the

ecosystemic, climatic, and relational entanglements that are triggered in these “solar ecologies” by the conscious coexistence with the technology they bring forth.

From the Cloud to the Ground: A Data-Driven Research to Build Informative Heritage on the Internet’s Energy Footprint, written by Fabiola Papini, Francesca Valsecchi and Michele Mauri, moves the spotlight onto the impact of a technological area that is extremely close to our lives: the Internet. Contrary to the common understanding of the Internet as an intangible and lightweight “cloud” devoid of any physicality, the authors bring to the fore the significant resource consumption and contribution to global warming that the vast network of digital infrastructures involved in the functioning of the Web implies. To this end, the essay employs communication design, and in particular data visualisation, both as a method and as an output, to address the knowledge gap that currently exists around the energy footprint of digital activities, and of contextually identifying visual strategies suitable for effectively communicating such complex data. The interplay between human behavior, technology, and the environment is central to the authors’ discussion, which ultimately aims to raise awareness of the unsustainability of our current relationship with the internet in order to act as a guide to a more responsible digital future.

The essay *Towards Energy Sustainability in the Digital Realm: A Compass of Strategies Between Natural and Artificial Intelligence*, written by Michele De Chirico, Raffaella Fagnoni, Carmelo Leonardi, Ami Licaj, Giuseppe Lotti, Manfredi Sottani and Annapaola Vacanti, also proposes a critical reflection on

the digital as a non-immaterial entity and suggests ways forward from the current predicament. In particular, the authors highlight how the use of digital does not automatically reduce the physical footprint of human activity but rather requires dedicated planning and design aimed at promoting sobriety and moderation, sustainability, accessibility, and inclusion. With this in mind, the essay examines several virtuous contemporary strategies aimed at minimising the energy consumption of the digital, analysing them through a dual reading criterion: practices that use artificial intelligence to improve system efficiency, on the one hand, and practices that rely instead on natural intelligence to redefine established consumption paradigms, on the other. Finally, by clustering these strategies according to further parameters, the essay proposes a significant set of actions aimed at promoting the energy transition within the digital realm, in line with an increasingly post-anthropocentric vision of design.

Lastly, Davide Crippa and Massimiliano Cason Villa, in their essay *Understanding the Energy Transition by Analysing the IT Revolution: An Infrastructural Reading to Direct Design Approaches Toward Energy Sustainability*, draw a connection between the more strictly instrumental field of energy production and distribution technologies and the digital world, weaving a parallel between the energy transition and the IT revolution. Using the IT metaphor as a critical-interpretive tool, the authors focus on the similarities between electrical energy transfer systems and data transfer systems, deriving from these observations a series of operational suggestions that could be transferred between the two domains.

Indeed, the issue of optimising the architecture of computer networks has been addressed before, and the lessons learned from its revision can serve as a guide for the reassessment of current energy policies. In particular, the paper explores the peer-to-peer model as a possible approach to horizontal and community-based energy management through the analysis of recent experiments in design and art and pilot projects carried out in European cities, with the aim of identifying design strategies and synergies that can inform present and future energy infrastructure planning.

References

- European Commission (2022). *REPowerEU. Affordable, Secure and Sustainable Energy for Europe*. https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal/repowereu-affordable-secure-and-sustainable-energy-europe_it
- Castellini, M., Faiella, I., Lavecchia, L., Miniaci, R., & Valbonesi, P. (Eds., 2023). *Osservatorio Italiano sulla Povertà Energetica*. OIPE. https://oipeosservatorio.it/2023/06/06/rapporto_2023/
- Bolognesi, M., & Magnaghi, A. (2020). Verso le comunità energetiche. *Scienze del Territorio*, 142–150. <https://doi.org/10.13128/sdt-12330>
- Liberti, S. (2022, July 27). Esperimenti di democrazia energetica. *Internazionale*. <https://www.internazionale.it/essenziale/notizie/stefano-liberti/2022/07/27/esperimenti-di-democrazia-energetica>

BIOGRAPHIES

Valentina Auricchio

Assistant professor of the Design Department of the Politecnico di Milano. Her research is focused on Design Methods and managing strategic design projects with small and medium industries including Design Thinking processes. Her main interest is in design processes, methods and tools and their application within different sectors for strategic innovation. Member of Polimi DESIS Lab and of the international DESIS Network.

valentina.auricchio@polimi.it

Leire Bereziartua Gonzalez

She is an Industrial Design Engineer, from the Mondragon Polytechnic School (Mondragon Unibertsitatea) and Politécnico di Milano. She is currently part of the Deusto Design Research Group team and teaches at the Faculty of Engineering, at the Bilbao campus of Deusto University. She teaches several subjects related to Technical Graphic Expression in different engineering studies, both at grade level and master level, also "Sustainable Design" and "Laboratory III: Experience and Service Design" in Industrial Design engineering studies. She is also part of the Deusto FabLab team (creativity, innovation and development centre for new products, services and experiences) as FabExpert, she has made FabAcademy during 2018. In addition, since 2018 she collaborates with projects within the Digital Industry Cathedra. In 2014 she holds a master's degree in Teaching Training, which helped develop her teaching skills further, and since the 2019/2020 course she is in PhD adventure, specializing herself in Circular Economy, new technologies and Renewable Energies.

leire.bereziartua@deusto.es

Mario Bisson

Associate Professor at the Department of Design of Politecnico di Milano where he teaches and has taught Industrial design, Visual elements for the project and Color at the School of Design. He is currently Scientific Director of the Color Laboratory of the Department of DESIGN, he is promoter and co-founder of the Interdepartmental Laboratory of Politecnico di Milano EDME (Environmental Design and Multisensory Experience). In 2013 he is co-founder of the MDA Association (Mediterranean Design Association) that deals with topics related to Environmental design.

mario.bisson@polimi.it

Beatriz Bonilla Berrocal

PhD candidate in Design at the Design Department of Politecnico di Milano, member of Polimi DESIS Lab. Her research interests focus on Design for Social Innovation and its application both in business and communities.

beatriz.bonilla@polimi.it

Stefana Broadbent

Associate Professor in the Design Department of Politecnico di Milano. Between 2014 and 2016 she was Head of Collective Intelligence at Nesta, UK's innovation agency. Previously Stefana was a Lecturer in Digital Anthropology at University College London where she led the Master in Digital Anthropology. Her research interests are in the area of digital and sustainable social practices.

stefana.broadbent@polimi.it

Alessio Caccamo

Alessio Caccamo, PhD (1991) is Information Designer and Junior Researcher (RTDA) at Sapienza – University of Rome. He combines theoretical research with applied research in Communication Design - specifically in Data Visualization and Information Design - focusing on pedagogical, sociological and critical aspects, i.e. the human-data interaction. Co-Head of the SID Group – Design for Education, he specializes in Design for Learning, researching through design hybrid projects both analogue and digital for learning environments.

alessio.caccamo@uniroma1.it

Massimiliano Cason Villa

Designer and Ph.D. Student at Iuav University of Venice, he pursued his education with an interdisciplinary outlook, somewhere between Interior and communication design, attending the environment of makers and digital fabrication.

Since 2019 he has been collaborating with the startup Design Differente, taking care of participatory didactics projects on Circular Design topics, with partners such as the Municipality of Milan, La Triennale di Milano and the SOUx school of Milan. Since 2022 he has been teaching at the New Academy of Fine Arts in Milan; today he is a student at the Doctorate in Science of Design at the Iuav University of Venice, with a research focus on Design and Circularity studied under the lens of product life cycle assessment tools.
mcasonvilla@iuav.it

Francesca Cellina

Researcher at the University of Applied Sciences and Arts of Southern Switzerland (SUPSI), Francesca Cellina has a background in both environmental engineering (master) and social sciences (PhD). She performs trans-disciplinary research activities to foster the transition towards a low carbon society, particularly in the domains of mobility and household energy consumption. She exploits ICT tools and devices in participatory, living lab interventions that leverage co-creation and co-design methodologies to engage individuals and stakeholders in real-life interventions aimed at triggering societal transitions.

francesca.cellina@supsi.ch

Davide Crippa

Architect and Ph.D. in Interior Architecture and Exhibit Design, he attended the masters of Italian design, completing his training with an interdisciplinary outlook. In 2004, he founded the Ghigos studio and since then has been pursuing a wide-ranging research among exhibitions, installations and projects of international relevance. From 2007 to 2021 he taught at the Milan Polytechnic and the New Academy of Fine Arts in Milan; today he is a Researcher at the Iuav University of Venice, where he is investigating the potential of interaction design and new digital fabrication technologies with a view to the circular economy, with a thematic focus on the sustainability of installations.

dcrippa@iuav.it

Marta Corubolo

Researcher at the Design Department of the Politecnico di Milano. Her research interests cover service and strategic design and social innovation, community centered design and collaborative services, with a specific focus on the incubation and growth of local initiatives and their relationship with the private and third sector. She is a member of the Polimi DESIS Lab.

marta.corubolo@polimi.it

Michele De Chirico

He is a PhD student in Design Sciences at Università Iuav di Venezia. His research relates to design of materials, focusing on design for the sustainable management of production waste and on materials as contextual actors and cultural meaning-makers. Since 2020, he has also been engaged as a lecturer in courses dealing with design and materials and design history and criticism.

mdechirico@iuav.it

Barbara Di Prete

Architect and phd in Interior Architecture and Exhibit Design, is an associate professor at the Design Department of the Politecnico di Milano, where she carries out research between urban, exhibit and interior design. In 2004 she founded the Ghigos studio, designing exhibitions, installations and projects for institutions of international relevance (Maxxi, Expo2015, MoMA, Milan Triennale, Venice Biennale). Since 2015 she has been coordinating the Specializing Master in "Design for Public Space" provided by POLI.design. She is currently following funded research for ENEA, CAP, Regione Lombardia, investigating the instances of sustainability in the energy, environmental and social fields.

barbara.diprete@polimi.it

Raffaella Fagnoni

She is full professor of Design at Università Iuav di Venezia, where she teaches design laboratories and civic space design. She also directs the PhD school in Science of Design. She has lectured abroad, in Iran and China, and has coordinated local and international research groups, both public and privately funded. Her research topics focus on design for social impact,

service design for public interests, social innovation, reuse and recycling, and design for sustainability, with the aim of intervening in emerging issues through active stakeholder involvement and the enhancement of local heritage. She is focused on the ongoing role of design in contemporary society, considering environmental emergencies and the state of alert in which our planet finds itself, working on the circular economy, local territory, waste recovery, and care for people and habitats.

rfagnoni@iuav.it

Rossana Gaddi

Designer and PhD. Associate Professor at the Department of Architecture of the University "G. d'Annunzio" of Chieti-Pescaia, where she deals with Communication Design and enhancement of local resources and the territory. She took part in national and international seminars and research programs on the topics of innovation for cultural and territorial enhancement, and Communication and System Design for social inclusion.

rossana.gaddi@unich.it

Letizia Giannelli

Research fellow affiliated with the Service Design Laboratory at University of Florence. With a background in video production in the documentary film industry, her current focus is on research on Service Design and its applications in the textile industry.

letizia.giannelli@unifi.it

Debora Giorgi

Phd and Architect, she is Associate Professor in Design (ICAR/13) at the Department of Architecture, University of Florence (DIDA-UNIFI). President of the CdL in Textile & Fashion Design, visiting professor in international Universities, she teaches the Laboratory of Service Design at the CdLM in Design and works on design for services with a particular focus on social innovation and collaborative services.

debora.giorgi@unifi.it

Pasquale Granato

MSc in Computer Engineering, he has built a long career developing complex applications across various domains. He is currently a researcher at SUPSI (University of Applied Sciences and Arts of Southern Switzerland), focusing on renewable energy, particularly solar energy, and sustainable mobility. Pasquale is also an expert in games and gamification, integrating innovative approaches to enhance engagement and learning.

pasquale.granato@supsi.ch

Luca Incrocci

Industrial and UX/UI designer with a background of experience in graphic and service design. He is currently a researcher at the Service Design Lab at the University of Florence, focusing on service design methodologies applied to the textile industry.

luca.incrocci@unifi.it

Carmelo Leonardi

Product designer and Ph.D student in Design Sciences at Università Iuav di Venezia, Carmelo Leonardi graduated from the same university in 2022, with a master thesis titled "Melior de cinere surgo, design of a new ecological material derived from Tephra and its applications" which allowed him to deepen the concepts of social and environmental sustainability in design.

cleonardi@iuav.it

Ami Licaj

Research Fellow at the Laboratory of Design for Sustainability at the University of Florence with a PhD in Design, obtained in 2018, on Data Visualization entitled "Information Visualization. Intersubjective Liquid Discipline." Passionate about processes - and the "designerly" way of dealing with them - applied to all things digital/social/intangible/future. Academic career includes activities as Visiting Professor, national and international seminars by invitation, and design courses in other universities.

ami.licaj@unifi.it

Evelyn Lobsiger-Kägi

MSc Environmental Sciences ETH, she has been researching and teaching sustainable development and energy behaviour at the ZHAW (Zurich University for Applied Sciences) for 15 years and is now co-leading the “Energy Behaviour” Team at the Institute for Sustainable Development. Her main focus is on the participatory development of sufficient and energy-efficient interventions at household and neighbourhood level. She works in a transdisciplinary manner with cooperatives, energy supply companies, municipalities and NGOs to develop and test practice-oriented approaches.

kaev@zhaw.ch

Giuseppe Lotti

Full professor of Industrial Design, is President of the Degree Course in Product, Interior, Communication and Eco-Social Design of the Department of Architecture (DIDA) of the Università degli Studi di Firenze. He is scientific manager of research projects at the European Union, national and regional level. He is the author of publications on the culture of the project. He has been curator of design exhibitions in Italy and abroad. He is the technical-scientific coordinator of the Interior and Design District of the Tuscany Region – dID.

giuseppe.lotti@unifi.it

Marco Manfra

PhD candidate in Innovation Design at the University of Camerino and former research fellow at the University of Ferrara. He was Visiting PhD(c) at the Architecture Faculty of Lisbon University. He is professor of the course “Processi del design per l’impresa sostenibile” in the I and II level Master’s degree program in “Design della Comunicazione per l’Impresa” at the University of Ferrara. He carries out research activities mainly in the field of design for social and environmental sustainability - with eco-social approach -, theories and culture of the project, media ecology, and regeneration of marginal territorial contexts.

marco.manfra@unicam.it

Raffaella Massacesi

Architect and PhD. Communication designer. She is Assistant Professor in Design at the Department of Architecture of the “G. d’Annunzio” University of Chieti-Pescara, and sole director of university spinoff SOS-Habitat. Her research interests relate to digital design, webdesign, environmental communication, communication for public utilities.

raffaella.massacesi@unich.it

Luciana Mastrodonardo

Architect and PhD. Assistant Professor at the Department of Architecture of the University “G. d’Annunzio” of Chieti-Pescara where she deals with Architectural Technology and process sustainability. She took part in national and international seminars and research programs on the impact of sustainability at various scales and in different dimensions, through metabolic and qualitative studies.

l.mastrodonardo@unich.it

Michele Mauri

Researcher at Politecnico di Milano—Design Department, he’s co-director of DensityDesign Lab. Within the laboratory, he coordinates the research, design, and development of projects related to the visual communication of data and information, particularly those related to born-digital data and Digital Methods.

michele.mauri@polimi.it

Claudia Morea

Architect and PhD in Design for Sustainability, she is currently adjunct professor at BA Textile & Fashion Design, University of Florence. Expert in Life Cycle Assessment, she focuses her research on the spread of sustainability assessment capabilities, with specific regard to engagement and sustainability empowerment.

claudia.morea@unifi.it

Stefania Palmieri

Associate Professor at Politecnico di Milano, PhD in Industrial Design. She is Head of Relations with Businesses and Professions for the School of Design - Integrated Product Design. Her research and teaching activities deal with methods and processes, with particular attention to innovation processes in relation to different productive, organizational and cultural contexts, in which to enhance and strengthen the collaboration between University and business. She is part of the Scientific Committee of the interdepartmental laboratory EDME, which deals with digital technologies, immersiveness, new relationships and synergy of knowledge.

stefania.palmieri@polimi.it

Fabiola Papini

She holds a double degree in Communication Design from the School of Design, Politecnico di Milano, and the Shanghai International College of Design and Innovation, Tongji University. She is co-founder of an independent magazine and digital designer at a Milan-based information design agency. Her interests range from data visualisation to digital design, sustainability, and editorial design.

fabpapini@gmail.com

Adrian Peach

He is a practitioner and teacher, has spent three decades working with a diverse range of international brands from Alessi to 3M, with prestigious architectural practices including Antonio Citterio and David Chipperfield, with artisans and industries. He has collaboration with several research centres and universities in Europe and Middle East, like Academy of Art, Architecture and Design (UMPRUM, Prague), Domus Academy (Milan), German University in Cairo (Berlin and Cairo), German International University (Cairo), Istituto Marangoni (London), KLC (London), Istituto Europeo di Design (Milan), Hochschule Hannover, Hochschule für Technik und Wirtschaft (HTW-Berlin), Hochschule der Bildenden Künste Saar (Saarbrücken), Kunsthochschule Weißensee (Berlin) and Università di Bologna.

info@adrianpeachdesign.com

Silvia Peluzzi

Designer, she graduated with honors at Politecnico di Milano in the Master's degree of Product Service System Design. In 2022, she participated in an international mobility program at FH Salzburg where she studied Design & Product Management. With a background in Interior Design achieved with distinction in the year 2021, she had a previous mobility at LAB University of Applied Sciences in Finland.

peluzzi.silv@gmail.com

Giovanni Profeta

Giovanni Profeta holds a PhD in Design from Politecnico di Milano, where he completed his thesis titled "Displaying Open Cultural Collections: Design Guidelines for Cultural Content Aggregators" within the DensityDesign research lab. As a researcher at the Institute of Design of the University of Applied Sciences and Arts of Southern Switzerland (SUPSI), he conducts applied research projects focusing on data visualization and algorithmic methods for accessing and analysing cultural collections. Additionally, he is also the teacher of the Interaction Design course in the Bachelor of Visual Communication and the Master of Arts in Interaction Design and the teacher of the Data Visualization course in the Bachelor of Data Science and Artificial Intelligence.

giovanni.profeta@supsi.ch

Grazia Quercia

PhD in Communication, Social Research and Marketing from Sapienza University of Rome and Adjunct Professor of "Laboratorio di Design Transmediale" at University Guglielmo Marconi, she is a member of the editorial board of the "Transmedia" series by Armando Editore and a member of the research unit GEMMA (Gender and Media Matters). Her research interests include cultural and creative industries, media ecology, transmedia design, participatory culture, sustainability communication and gender studies.

g.quercia@unimarconi.it

Lucia Ratti

Designer and Ph.D. student at the Design Department of Politecnico di Milano, her research activity touches different intersections between design and sustainability, ranging from urban biodiversity to circular exhibit design, to the energy transition and its diffusion. Since 2019 she has been an assistant in didactic activities in the Interior Design Bachelor Degree of Politecnico's School of Design, and in 2020 she started working with the association Repubblica del Design, where she takes care of the design and implementation of participatory design-didactic workshop, with partners such as the Municipality of Milan, Milan Triennale, and SOUx school of architecture for children.

lucia.ratti@polimi.it

Agnese Rebaglio

Designer and Ph.D., Associate professor at the Design Dept. of Politecnico di Milano. Her research activity focuses on designing innovation processes of urban contexts, from a perspective of sustainability and social inclusion. Scientific director of the Specializing Master "Design for Public Spaces" provided by POLI.design. She is currently developing research on design for urban regeneration and energy sustainability promoted by design. Promoter, for the Interior Design Degree Course, of GIDE (Group for International Design Education), a network of European design schools that collaborates in educational programs.

agnese.rebaglio@polimi.it

Chiara Rutigliano

PhD candidate in Sustainability and Innovation for the Design of the Built Environment and Product System at the University of Florence. Designer with experience in graphic and innovative service design, particularly in the study of user experience and relationships in complex systems. Currently his research is focusing on traceability and transparency in the textile industry.

chiara.rutigliano@unifi.it

Carla Sedini

She is an Assistant Professor at the Design Department of Politecnico di Milano and PhD in Sociology. She is a member of the D+S research group at Polimi, where she combines and integrates social research and design. She has been researching and teaching issues related to Territorial Development, Social Innovation, and Quality of Life, with specific attention to fragile populations. She published a book titled "Collectively Designing Social Worlds. History and Potential of Social Innovation".

carla.sedini@polimi.it

Andreas Sicklinger

He is Full Professor in Industrial Design, focuses his research interests on three main fronts: Design as Science (human factors and new human factors), Design Education and Future Aesthetics, Design for Territory and the Mediterranean. He worked for Aldo Rossi on the projects Schuetzenstrasse e Landdsberger Allee in Berlin, covered the role of Product Manager in the retail sector. He has been professor and head of department at the German University of Cairo from 2012 to 2018. He has published books and articles on topics of his research interest. He is member of the Committee of the Institute of Advanced Studie of University of Bologna and Distinguished Visiting Professor at Malaysia Italy Design Institute, Kuala Lumpur.

andreas.sicklinger@unibo.it

Abhigyan Singh

Assistant professor at the Department of Human-Centered Design of Delft University of Technology (TU Delft), The Netherlands. With a background in new media design, anthropology, and IT engineering, his research examines social, cultural, and economic aspects of emergent local energy systems and services. His research makes theoretical, conceptual, and methodological contributions to the emerging disciplines of design anthropology and energy research. Abhigyan's work has earned him awards such as the WWNA Apply Award (2021) from the European Association of Social Anthropologists' Applied Anthropology Network (EASA-AAN) and Cumulus Association's 'Young Creators for Better City & Better Life' Award. In addition to his academic work, he is Co-lead of the Social and Economic Value Sub-task of the International Energy Agency's Global Observatory on Peer-to-Peer Energy Trading (GOP2P).

a.singh@tudelft.nl

Manfredi Sottani

He is a Designer and PhD Candidate (Curriculum in Design) at the Department of Architecture, University of Florence. He carries out research activities at the Design Sustainability Lab (Department of Architecture, University of Florence, scientific supervisor Prof. Giuseppe Lotti), specifically in the field of Digital Design, Sustainability Design, Communication Design and Strategic Design for Territorial Systems. He also participates in regional R&D as well as in international and European projects.
manfredi.sottani@unifi.it

Davide Stefano

Architect and PhD. Researcher in Real Estate Valuation at the Department of Architecture, "G. d'Annunzio" University of Chieti-Pescara, where he deals with cost estimation of post-earthquake reconstruction, relationships between urban quality and real estate values, and price formation of raw materials in the construction sector.
davide.stefano@unich.it

Suzanna Törnroth

She is an Associated Senior Lecturer (PhD) in Design at Luleå University of Technology, Sweden. She researches on the feminist technoscience perspectives of emerging technologies in human and non-human worlds. Particularly, her recent research delves into the ecological and multispecies perspective of solar energy technologies, following a dissertation titled called: "Solarscape: The power of humanity in designing solar imaginaries, entangled worlds, and critical sustainable futures". She also has a practice-based design and urban planning background in Sweden, Singapore, Dubai, Copenhagen and Maldives.
suzanna.tornroth@ltu.se

Anna Turco

She holds a degree in Design, Visual and Multimedia Communication from Sapienza University of Rome. She is the recipient of a research scholarship entitled "Visual Communication Design for Natural Capital and Material and Immaterial Cultural Heritage." Since 2022, she has been pursuing a PhD in Design at the Department of Planning, Design, and Architecture Technology at Sapienza University of Rome and works as a teaching assistant in the Communication Design Laboratory, the Public Space Design Laboratory, and the Design and Representation Laboratory. She has participated in the European project "Conference on the Future of Europe" in Brussels, Strasbourg, and Warsaw, addressing issues related to climate change, environment, and health. Her areas of scientific research focus on Visual Communication Design, specifically Environmental Graphic Design, applied to public space for reactivation and regeneration purposes.
anna.turco@uniroma1.it

Annapaola Vacanti

She is a Research Fellow at Università Iuav di Venezia, where she teaches in design laboratories for the curricula of Product design and Interior design of the master degree design courses. She obtained a PhD in Design at the University of Genoa in 2022. Her research focuses on Interaction Design and the opportunities offered by data-driven tools and Artificial Intelligence for design, exploring the challenges that lie at the intersection between technology, human factors, and sustainability issues. She is working within the iNEST (Interconnected Nord-Est Innovation Ecosystem) project, funded by the National Recovery and Resilience Plan (PNRR). Alongside her academic career, since 2018 she has been art director and organizer of TEDxGenova, an autonomous event operating under official TED license for the local dissemination of valuable ideas.
avacanti@iuav.it

Francesca Valsecchi

She is an Associate Professor at the College of Design and Innovation at Tongji University and director of the Ecology and Cultures Innovation Lab. She develops research on more-than-human design and the challenges of the post-development paradigm. Her research includes published, speculative, and exhibition works about mapping ecosystems, ethnography of waterscapes, ecological data, and urban-nature interaction.
francesca@tongji.edu.cn

Gijs van Leeuwen

PhD Candidate at the Department of Human-Centered Design of Delft University of Technology (TU Delft), The Netherlands. His research is concerned with relations of power and politics, and how these co-evolve with emerging energy infrastructures and technologies. Methodologically, he is developing a transdisciplinary approach that is based on design anthropology. He has a multidisciplinary background with two Master's degrees in Energy Science and Philosophy of Science, Technology, and Society.

g.e.vanleeuwen@tudelft.nl

Desirée Veschetti

Designer and research and teaching assistant at the University of Applied Sciences and Arts of Southern Switzerland (SUPSI), she has been involved in research dissemination projects concentrating on accessibility and cultural heritage. With her background in editorial and interaction design, she incorporates these skills into SUPSI's Bachelor in Visual Communication program, teaching in courses centred on Creative Coding with Machine Learning and User Interface Design.

desiree.veschetti@supsi.ch

Devon Wemyss

PhD Science and Technology Policy Studies, she has been researching in the field of energy digitalisation and behaviour change at the ZHAW (Zurich University of Applied Sciences) for 10 years. Her main focus is on collaborative processes to activate climate-relevant behaviour change, particularly looking at how digital tools can support these changes in the long-term and at large scale to move beyond research.

wemy@zhaw.ch

Chenfan Zhang

PhD candidate of the Design Department of the Politecnico di Milano. Her research interests include design for social innovation, community and community development, and service design. Member of Polimi DESIS Lab and of the international DESIS Network.

chenfan.zhang@polimi.it

Francesco Zurlo

Ph.D., he is Dean of the School of Design of Politecnico di Milano. He is full professor of Industrial Design. His research interests are concentrated in strategic, systematic and creative research through design, focusing to the impact of business innovations and human flourishing. Professor Zurlo is the Director of the Design + Strategies research group, he is a member of the scientific committee of the Observatory of Design Thinking for Business of the School of Management of Politecnico di Milano, and of ADI Index (the most important organization for assessing the best design in Italy).

francesco.zurlo@polimi.it



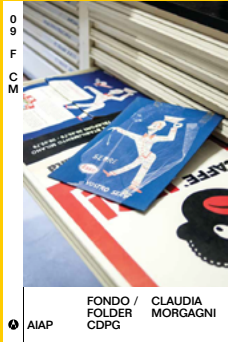
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AIAP
via Amilcare Ponchielli 3
20129 Milano

www.aiap.it
aiap@aiap.it
biblioteca@aiap.it



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