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# DESIGN COMMIT

1<sup>ST</sup> INTERNATIONAL CONFERENCE  
ON DESIGN & INDUSTRY · 2024

MAY, 20 - 22 2024

## BOOK OF ABSTRACTS >>

MARIA JOÃO FÉLIX | FÁTIMA POMBO | FERNANDO MOREIRA DA SILVA | PAULO CRUZ | RITA ASSOREIRA ALMENDRA

[HTTPS://DESIGNCOMMIT.PT/](https://designcommit.pt/)





## BOOK OF ABSTRACTS



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## **BOOK OF ABSTRACTS FOR THE DESIGN COMMIT 2024 CONFERENCE**

### **INTRODUCTION**

This Book of Abstracts is a collective endeavor and an academic commitment from the participants of the Design Commit 2024 Conference. All abstracts have undergone a meticulous peer-review process, orchestrated by our Scientific Committee and executed under strict guidelines of anonymity and impartiality. Our goal is to present a compilation of research that not only reflects innovation and diversity in the field of design and industry but also fosters constructive dialogue on sustainable futures and social responsibility within these realms.

### **SUBMISSION AND REVIEW PROCESS**

Each submitted manuscript underwent an initial review to ensure relevance to the conference theme and adherence to established guidelines. The subsequent double-blind peer review was employed to safeguard the integrity of both reviewers and authors, supporting fair and unbiased judgment. We recognize the importance of authentic academic discourse and as such, are dedicated to a zero-tolerance policy on plagiarism and a commitment to originality.

### **EDITORIAL ETHICS AND CONTENT USAGE**

This book is a copyright-protected work, with all rights reserved. Any use of the content herein, outside the scope of private study, research, criticism, or review, requires explicit authorization from copyright holders. We underscore the importance of ethics in academic information usage and encourage practices that promote scientific integrity and collaboration.

### **CONTRIBUTIONS AND AUTHORSHIP**

We clearly outline the responsibilities of authors, from initial submission to the presentation process. Contributions should reflect the work of no more than five collaborators, with the designation of the corresponding author established to facilitate communication and ensure accountability. We emphasize the value of transparency and the proactive declaration of any potential conflicts of interest.

### **COMMITMENT OF REVIEWERS AND COMMITTEES**

Both the members of the Scientific Committee and reviewers are integral parts of this process, committed to maintaining the academic rigor and excellence that are the hallmark of Design Commit. They are dedicated to thoughtful evaluations, enhancements of submissions, and the efficacy of academic communication.

### **CONCLUSION**

The DESIGN COMMIT 2024 Secretariat wishes to express gratitude to all contributors, whose works comprise this volume. May the abstracts presented here serve as catalysts for ongoing innovation and inspiration for all those committed to the advancement of design and industry.



DESIGN COMMIT conference is an event organized by the **Lisbon School of Architecture** (FA ULisboa), in partnership with the **School of Design** (ESD) of the **Polytechnic Institute of Cávado and Ave** (IPCA), the **Department of Communication and Art of the University of Aveiro** and the **OIKOS research group** of the **Research Institute for Design, Media and Culture** (ID+), the **School of Applied Arts** (ESART) of the **Polytechnic University of Castelo Branco** (IPCB), and **Rethink - Research Group on Design for the Territory** (CIAUD); and **School of Architecture, Art and Design of the University of Minho** (EAAD) and the **Design and Technology Group** (DeTech) of the **Laboratory of Landscape, Heritage and Territory** (Lab2PT).

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## ► ABOUT US

The first edition will be an in-person international event, consisting of a wide variety of plenary sessions, and bringing together researchers, academics, designers, rapidly expanding technology companies, emerging companies, business associations and policy makers, with the objective of fostering and actively developing a joint reflection, in a transdisciplinary scientific exchange, which enhances innovation through Design and Industry for a better future with a strategic vision.

Fields that will stimulate responses to the challenges of climate change and environmental degradation will be proposed, paving the way to achieve the goals of the 2030 agendas.

The DESIGN COMMIT 2024 will take place during the 7th Braga Economics Week, an initiative promoted by InvestBraga, aimed at addressing economic issues, involving various types of events, and promoting the exchange of ideas among economic agents, institutions, and citizens.

## ► PURPOSE

This international conference aims to explore models that prioritize a post-growth economy, with **modern, resource efficient, smart, sustainable** and **inclusive** principles, focused on enhancing human health and education, promoting knowledge and inter-sector collaboration, and a digital society for all. And, in this way, contribute to the transition towards a more sustainable, equitable, and resilient future that considers the well-being of both people and the planet.

Amid pandemics, wars and environmental disasters, designers and industries have been forced to imagine a world in which the only way to move forward is to look back. Design and Industry need to understand the role they can play in removing obstacles to social progress and work together to create healthier societies.

➤ **PREFACE TO THE  
DESIGN COMMIT  
2024 CONFERENCE**

A Word from the Conference Chairs

Dear participants and collaborators,

It is with immense pleasure and honor that, on behalf of all the chairs of Design Commit 2024, we welcome you to this unique event, dedicated to the fusion of design and industry and their vital role in shaping a resilient and sustainable future.

In a world of constant transformation, where sustainability and innovation have become imperatives, Design Commit emerges as a beacon of knowledge and collaboration. Our mission is to unite thinkers, creators, educators, and industry leaders to discuss, share, and promote practices that lead to excellence and responsible innovation.

This year's conference presents an exceptional program, filled with inspiring keynotes and discussion panels that promise to stimulate critical thinking and the exchange of ideas. Each session has been carefully planned to reflect the challenges and opportunities presented to our global community.

Through this Book of Abstracts, we offer a glimpse of the innovative research and studies that will be showcased. The abstracts reflect the depth and diversity of the participants' contributions and serve as a window into the future directions of design and industry.

We wish to express our profound thanks to the members of the Scientific Committee, the organizing team, and everyone who contributed to making Design Commit 2024 possible. Your tireless commitment to excellence and the exchange of knowledge is the driving force behind the success of this event.

We invite you to delve into the following pages and join us on the journey of learning and discovery that we promote. May the discussions and insights generated here inspire actions and innovations that transcend the boundaries of this meeting.

With high expectations and a sense of enthusiastic anticipation, we move forward together to explore the boundless potential of design and industry in creating a more promising future for all.

Warm regards,

The Chairs of Design Commit 2024

**MARIA JOÃO FÉLIX, FÁTIMA POMBO, FERNANDO MOREIRA DA SILVA, PAULO CRUZ, RITA ASSOREIRA  
ALMENDRA**



## ➤ OVERVIEW AND OBJECTIVES OF THE DESIGN COMMIT CONFERENCE

### ➤ OVERVIEW

Design Commit stands at the forefront of interdisciplinary dialogue, bringing together innovators, visionaries, and thought leaders from the realms of design and industry. As we gather in the bustling heart of creativity, our agenda is driven by the challenges and possibilities of integrating sustainable practices within these dynamic fields.

At the core of Design Commit is the dedication to fostering a community where collaboration transcends traditional boundaries, encouraging a synergy that fuels transformation and growth. We convene under the shared belief that design is not just an aesthetic choice but a pivotal tool for societal and industrial evolution.

### ➤ OBJECTIVES

- **To Inspire Innovation:** By showcasing cutting-edge research and case studies, we aim to spark new ideas that participants can take back to their own work, driving the frontiers of design and industry forward.
- **To Facilitate Networking:** Providing a platform for professionals from various sectors to connect, share insights, and forge partnerships that have the power to reshape the market landscape.
- **To Educate:** Through keynotes and panel discussions, we offer learning opportunities that enhance skills, expand knowledge, and offer new perspectives on tackling the design and industry challenges of today and tomorrow.
- **To Promote Sustainability:** Emphasizing the importance of eco-friendly and socially responsible design, we encourage discussions and solutions that contribute to a sustainable future.
- **To Advance Research:** Encouraging the exchange of academic findings and engaging with the latest in scholarly work, thus nurturing a space where theory meets practical application.
- **To Advocate for Change:** Pushing the boundaries of what's possible, and advocating for a proactive stance on global issues through the lens of design and industrial development.

As we embark on this journey of discovery and innovation, the Design Commit Conference is more than just an event, it is a catalyst for change, driving a future where design and industry not only coexist but thrive together, fostering an ecosystem of sustainable development and progressive thought.

➤ **ACKNOWLEDGMENTS  
TO SPONSORS,  
COLLABORATORS,  
AND SUPPORTING  
INSTITUTIONS**

The realization of the Design Commit 2024 Conference was made possible through the generous support and commitment of our sponsors, collaborators, and supporting institutions. At this moment of gratitude, we would like to express our recognition to everyone who contributed to the success of this event.

To our sponsors, whose financial and in-kind support has strengthened the structure and quality of the conference, we offer our heartfelt thanks. Your vision and understanding of the value of innovation in design and industry are fundamental to our collective progress.

We are immensely grateful to the organizing team, who shared their expertise and passion, enriching the program with insightful talks and discussion panels. Your dedication to excellence and professional development has not gone unnoticed.

A special thank you goes to the supporting institutions, whose partnership and support were essential to expanding the reach and depth of our meeting. Your collaboration allows the ideas discussed here to resonate beyond the conference walls.

We also acknowledge the assistance of various entities and volunteers, whose help behind the scenes was vital for the logistics and organization of the event. Your hard work and attention to detail ensured a smooth and memorable experience for all attendees.

Last but not least, we thank the academic and research institutions that, by supporting their representatives and researchers to participate in Design Commit, underscore the importance of an ongoing commitment to learning and innovation.

Together, we have built a conference that reflects the intersection between creativity, technology, and business, paving the way for the future of design and industry. Our sincere thanks to all of you for being part of this journey.

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**Chiara Frencia** (INOVA+, Belgium), **Bettina Maisch** (Munich University of Applied Sciences, Germany) and **Fátima Pombo** (ID+ Research Institute for Design, Media and Culture, University of Aveiro, Portugal).

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**David Figueiredo** (ID+ Research Institute for Design, Media and Culture, University of Aveiro, Portugal), **Eduardo Noronha** (ID+ Research Institute for Design, Media and Culture, University of Aveiro, Portugal) and **João Dias-de-Oliveira** (TEMA – Centre for Mechanical Technology and Automation, University of Aveiro, Portugal).

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**Livia Tenuta** (Design Department, Politecnico di Milano, Italy), **Susanna Testa** (Design Department, Politecnico di Milano, Italy), **Francesca Antinarelli Freitas** (Design Department, Politecnico di Milano, Italy), **Beatrice Rossato** (Design Department, Politecnico di Milano, Italy) and **Alba Cappellieri** (Design Department, Politecnico di Milano, Italy).

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**Diogo Carvalho** (Department of Communication and Art; Department of Mechanical Engineering, University of Aveiro, Portugal), **João Oliveira** (TEMA–Centre for Mechanical Technology and Automation, University of Aveiro, Portugal) and **Violeta Clemente** (ID+ Research Institute for Design, Media and Culture, University of Aveiro, Portugal).

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**Ismael Gonçalves Taborda** (Department of Design, Universidade Estadual de Maringá, Maringá, PR, Brazil)

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**PAPER ID [83]**  
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**Sofia Soares** (Instituto Politécnico de Viana do Castelo, Portugal), **Liliana Soares** (CIAUD, Research Centre for Architecture, Urbanism and Design, Lisbon School of Architecture, Universidade de Lisboa, Portugal) and **Ermanno Aparo** (CIAUD, Research Centre for Architecture, Urbanism and Design, Lisbon School of Architecture, Universidade de Lisboa, Portugal).

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**José Rui Marcelino** (Lisbon School of Architecture, Universidade de Lisboa, Portugal), **André Castro** (Lisbon School of Architecture, Universidade de Lisboa, Portugal) and **Catarina Ferreira** (Lisbon School of Architecture, Universidade de Lisboa, Portugal).

**PAPER ID [93]**  
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**Massimo Piccioni** (Politecnico di Milano, Design Department, Italy), **Arianna Bionda** (Politecnico di Milano, Italy) and **Andrea Ratti** (Politecnico di Milano, Design Department, Italy).

**PAPER ID [96]**  
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**Verónica Duarte** (CIAUD, Research Centre for Architecture, Urbanism and Design, Lisbon School of Architecture, Universidade de Lisboa, Portugal), **Maria João Félix** (CIAUD, Research Centre for Architecture, Urbanism and Design, Lisbon School of Architecture, Universidade de Lisboa, Portugal) and **Miguel de Aboim Borges** (CIAUD, Research Centre for Architecture, Urbanism and Design, Lisbon School of Architecture, Universidade de Lisboa, Portugal).

**PAPER ID [98]**  
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**Laura Pirrone** (Department of Design, Politecnico di Milano, Milan, Italy), **Arianna Bionda** (Department of Design, Politecnico di Milano, Milan, Italy) and **Andrea Ratti** (Department of Design, Politecnico di Milano, Milan, Italy).

**PAPER ID [106]**  
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**Ana Brum** (Universidade Federal do Paraná, Brazil), **Gláucia Ferro** (Centro Brasil Design, Brazil) and **Aguinaldo Santos** (Universidade Federal do Paraná, Brazil).

**PAPER ID [111]**  
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**Fernando Moreira da Silva** (CIAUD, Research Centre for Architecture, Urbanism and Design, Lisbon School of Architecture, Universidade de Lisboa, Portugal, Roberto Liberti (Dipartimento di Architettura e Disegno Industriale, Università della Campania Luigi Vanvitelli, Italy), **Silvestro Di Sarno** (Dipartimento di Architettura e Disegno Industriale, Università della Campania Luigi Vanvitelli, Italy) and **Valentina Alfieri** (Dipartimento di Architettura e Disegno Industriale, Università della Campania Luigi Vanvitelli, Italy).

**PAPER ID [112]**  
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**PAPER ID [134]**  
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*Kelli Cas Smythe* (Universidade Federal do Paraná, Brazil) and *Érica Santos Vargas* (Universidade Federal do Paraná, Brazil).

**PAPER ID [143]**  
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*Daniel Risi* (IADE- Universidade Europeia, Lisbon, Portugal).

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*Raquel Antunes* (FAA, Universidade Lusíada Porto, Portugal; ESTG, Politécnico de Leiria, Portugal; CITAD.) and *António Brandão* (FAA, Universidade Lusíada Porto, Portugal; CITAD.).

**PAPER ID [14]**  
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*Yang Li* (Design Department of Lisbon School of Architecture, Portugal), *Yiyuan Ding* (Design Department of Lisbon School of Architecture, Portugal), *Nankai Cheng* (Design Department of Lisbon School of Architecture, Portugal) and *Giuseppe Lotti* (Department of Architecture, University of Florence, Italy).

**PAPER ID [15]**  
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*Guilherme Matos* (ESAD College of Art and Design, Portugal) and *Jeremy Aston* (ESAD College of Art and Design, Portugal).

**PAPER ID [17]**  
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**83** *Sónia Seixas* (CIAUD, Research Centre for Architecture, Urbanism and Design, Lisbon School of Architecture, Universidade de Lisboa, Portugal), *Gianni Montagna* (CIAUD, Research Centre for Architecture, Urbanism and Design, Lisbon School of Architecture, Universidade de Lisboa, Portugal) and *Maria João Félix* (CIAUD, Research Centre for Architecture, Urbanism and Design, Lisbon School of Architecture, Universidade de Lisboa, Portugal).

**83** **PAPER ID [18]**  
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**88** *Ines Katić Križmančić* (2K IDEJA, Zagreb, Croatia), *Ivana Salopek Čubrić* (Faculty of Textile Technology, University of Zagreb, Croatia) and *Vesna Marija Potočić Matković* (Faculty of Textile Technology, University of Zagreb, Croatia).

**84** **PAPER ID [19]**  
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**86** *Marco Manfra* (University of Camerino, SAAD, Ascoli Piceno, Italy) and *Alessandro Damiani* (University of Padova, Italy).

**86** **PAPER ID [21]**  
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**89** *Rebecca Nunes* (Faculty of Architecture and Arts, University Lusíada Porto, Portugal) and *Raquel Antunes* (Faculty of Architecture and Arts, University Lusíada Porto; ESTG, Polytechnic of Leiria; CITAD).

**86** **PAPER ID [22]**  
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**89** *Verónica Duarte* (CIAUD, Research Centre for Architecture, Urbanism and Design, Lisbon School of Architecture, Universidade de Lisboa, Portugal), *Maria João Félix* (CIAUD, Research Centre for Architecture, Urbanism and Design, Lisbon School of Architecture, Universidade de Lisboa, Portugal), *Miguel de Aboim Borges* (Lisbon School of Architecture, Universidade de Lisboa, Portugal) and

*Cláudia Viegas* (H&TRC—Health & Technology Research Center, ESTeSL—Escola Superior de Tecnologia da Saúde, Instituto Politécnico de Lisboa, Lisbon, Portugal).

**PAPER ID [35]**

**COLOUR IN THE FOOD, COLOUR ON THE CERAMIC PLATE – SYMBOLIC PERCEPTION OF THE WHOLE**

*Maria João Mercês* (CIAUD, Research Centre for Architecture, Urbanism and Design, Lisbon School of Architecture, Universidade de Lisboa, Portugal).

**PAPER ID [39]**

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*Francesco Galli* (IULM University Milan, Italy) and *Irina Suteu* (NABA - Nuova Accademia di Belle Arti Milan, Italy).

**PAPER ID [42]**

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*Kaiqing Chen* (Queensland College of Art and Design, Griffith University, Brisbane, Australia), *Dominique Falla* (Queensland College of Art and Design, Griffith University, Brisbane, Australia) and *Dale Patterson* (Queensland College of Art and Design, Griffith University, Brisbane, Australia).

**PAPER ID [48]**

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*Maristela Silva* (CIAUD, Research Centre for Architecture, Urbanism and Design, Lisbon School of Architecture, Universidade de Lisboa, Portugal), *Rita Filipe* (CIAUD, Research Centre for Architecture, Urbanism and Design, Lisbon School of Architecture, Universidade de Lisboa, Portugal) and *Masi Mohammadi* (TU/e University of Technology Eindhoven, Netherlands).

**PAPER ID [49]**

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*Leticia Nardoni Marteli* (CIAUD, Research Centre for Architecture, Urbanism and Design, Lisbon School of Architecture, Universidade de Lisboa, Portugal), *Luis Carlos Paschoarelli* (School of Architecture, Arts, Communication and Design, Sao Paulo State University, Bauru, Brazil), *Fernando Moreira da Silva* (CIAUD, Research Centre for Architecture, Urbanism and Design, Lisbon School of Architecture, Universidade de Lisboa, Portugal) and *Paula Trigueiros* (School of Architecture, Art and Design, University of Minho, 4800-058, Guimarães, Portugal).

**PAPER ID [54]**

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*Ana Moreno* (ID+ Research Institute for Design, Media and Culture, Faculty of Fine Arts of the University of Porto, Portugal), *Nelson Zagalo* (DigiMedia – Digital Media and Interaction Research Center, University of Aveiro, Portugal) and *Heitor Alvelos* (ID+ Research Institute for Design, Media and Culture, Faculty of Fine Arts of the University of Porto, Portugal).

**PAPER ID [56]**

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*Rui Costa* (CIAUD, Research Centre for Architecture, Urbanism and Design, Lisbon School of Architecture, Universidade de Lisboa, Portugal), *Susana Campos* (CIAUD, Research Centre for Architecture, Urbanism and Design, Lisbon School of Architecture, Universidade de Lisboa, Portugal) and *Pedro Bandeira Maia* (ID+ Research Institute for Design, Media and Culture, Polytechnic Institute of Coimbra, Portugal).

**PAPER ID [57]**

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**PAPER ID [58]**  
**DEVICES FOR CURB-CLIMBING WHEELCHAIRS**

*Ana Rita Silva* (University Lusíada, Faculty of Architecture and Arts; Center for Research in Territory, Architecture and Design [CITAD], Portugal), *Benedita Camacho* (University Lusíada, Faculty of Architecture and Arts; Center for Research in Territory, Architecture and Design [CITAD], Portugal) and *António Nicolau Costa* (University Lusíada, Faculty of Architecture and Arts; Center for Research in Territory, Architecture and Design [CITAD], Portugal).

**PAPER ID [59]**  
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*Raúl Goñi* (REDES – Research & Education in Design, Universidade de Lisboa, Portugal) and *Manuela Valtchanova* (Elisava Research, Barcelona School of Design and Engineering (UVic-UCC), Spain).

**PAPER ID [65]**  
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*Lívia Brasil* (CIAUD, Research Centre for Architecture, Urbanism and Design, Lisbon School of Architecture, Universidade de Lisboa, Portugal) and *Gonçalo Falcão* (CIAUD, Research Centre for Architecture, Urbanism and Design, Lisbon School of Architecture, Universidade de Lisboa, Portugal)

**PAPER ID [68]**  
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*Jennifer Schubert* (TH Augsburg, Germany).

**PAPER ID [69]**  
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*Ana Filomena Curralo* (ID+ Research Institute for Design, Media and Culture, Faculty of Fine Arts of the University of Porto, Portugal), *Sergio Ivan Lopes* (Polytechnic Institute of Viana do Castelo, Portugal), *João Mendes* (Polytechnic Institute of Viana do Castelo, Portugal) and *Antonio Curado* (Polytechnic Institute of Viana do Castelo, Portugal).

**PAPER ID [71]**  
**INCLUSIVE DESIGN: CONSUMER DIVERSITY IN HOTEL SERVICE**

*Maristela Silva* (Lisbon School of Architecture, Universidade de Lisboa, Portugal), *Rita Filipe* (CIAUD, Research Centre for Architecture, Urbanism and Design, Lisbon School of Architecture, Universidade de Lisboa, Portugal) and *Paola Rebolgar* (Federal University of Santa Catarina, Brazil).

**PAPER ID [73]**  
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*Elena Elgani* (Politecnico di Milano, Italy), *Elisa Schembri* (Politecnico di Milano, Italy), *Giulia Etori* (Politecnico di Milano, Italy), *Rosanna Caldarella* (Politecnico di Milano, Italy) and *Davide Grasso* (Politecnico di Milano, Italy).

**PAPER ID [75]**  
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*Sofia Nunes* (IADE - Faculty of Design, Technology and Communication, Portugal) and *João Ferreira* (IADE - Faculty of Design, Technology and Communication, Portugal).

**PAPER ID [82]**  
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*Jose Luis Ferreira* (ESAD-College of Art and Design, Portugal), *Rui Pedro Freire* (ESAD-College of Art and Design, Portugal) and *Rafael Coelho* (ESAD-College of Art and Design, Portugal).

**PAPER ID [85]**

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*Nikole Melo de Mendonça* (Lisbon School of Architecture, Universidade de Lisboa, Portugal) and *Rita Assoreira Almendra* (CIAUD, Research Centre for Architecture, Urbanism and Design, Lisbon School of Architecture, Universidade de Lisboa, Portugal).

**PAPER ID [86]**

**DESIGNING FOR TOMORROW: INSPIRING STUDENTS TO SHAPE A BETTER WORLD**

*Carla Cadete* (Universidade Lusófona do Porto, Portugal).

**PAPER ID [87]**

**THE NEIGHBORHOOD IS INCLUSIVE). THE SYNERGY OF PARTICIPATORY DESIGN, ART PRACTICES, AND SOCIAL DESIGN IN COMMUNITY EMPOWERMENT AND SOCIETAL TRANSFORMATION.**

*Ana Cardoso* (ESAD—IDEA · research in design and art; ESAD-College of Art and Design; Blue Design Alliance, FCT; Portugal), *Maria Milano* (ESAD—IDEA · research in design and art; ESAD-College of Art and Design; Blue Design Alliance, FCT, Portugal ) and *Cláudia Pinhão* (ESAD-College of Art and Design, FCT, Portugal).

**PAPER ID [88]**

**MAPPING THE AWARENESS OF A PLACE**

*Jose Silva* (CIAUD, Research Centre for Architecture, Urbanism and Design, Lisbon School of Architecture, Universidade de Lisboa, Portugal) and *Fernando Moreira da Silva* (CIAUD, Research Centre for Architecture, Urbanism and Design, Lisbon School of Architecture, Universidade de Lisboa, Portugal).

**PAPER ID [90]**

**DESIGN AS LEVERAGE - MAPPING SOLUTIONS**

*José Gago* (CIAUD, Research Centre for Architecture, Urbanism and Design, Lisbon School of Architecture, Universidade de Lisboa, Portugal) and *Tiago Marques* ( CHAIA, Universidade de Évora, Portugal), *Fernando Moreira da Silva*

99 (CIAUD, Research Centre for Architecture, Urbanism and Design, Lisbon School of Architecture, Universidade de Lisboa, Portugal) and *Ema Rolo* (CLLC, University of Aveiro, Portugal)

**PAPER ID [97]**

**SUSTAINABLE REGIONAL DEVELOPMENT THROUGH DESIGN**

*Ana Moreira da Silva* (CIAUD, Research Centre for Architecture, Urbanism and Design, Lisbon School of Architecture, Universidade de Lisboa, Portugal).

**100 PAPER ID [101]**

**PERSONAL IMAGE PERCEPTION: THE IMPORTANCE FOR SUSTAINABLE THINKING**

*Raquel Francisco de Almeida Gripp* (Universidade de São Paulo, Brazil), *Carolina Bianque Galito* (Universidade de São Paulo, Brazil) and *Maria Sílvia Barros de Held* (Universidade de São Paulo, Brazil).

**PAPER ID [119]**

**SUSTAINABLE SOCIAL INNOVATION PRACTICES SUPPORTING COMMUNITIES IN PLACE-BASED INNOVATIONS. THE CASE OF AN INTERGENERATIONAL COMMUNITY CARE CENTER**

*Silvia Maria Gramegna* (Department of Design, Politecnico di Milano, Italy) and *Alessandro Biamonti* (Department of Design, Politecnico di Milano, Italy).

**101 PAPER ID [120]**

**ACTION STRATEGIES FOR THE DEFINITION OF A NEIGHBOURHOOD COMMUNITY: THE DISCIPLINE OF DESIGN MEETS CONDOMINIUMS FOR THE DEVELOPMENT OF "BLOCK"**

*Giuseppe Sorvillo* (Università degli Studi della Campania Luigi Vanvitelli, Italy).

**PAPER ID [125]**

**FOOD LITERACY FOR PUBLIC HEALTH: AN INFORMATION DESIGN EXPLORATORY STUDY**

*Suzana Parreira* (CIEBA — Centro de Investigação e de Estudos em Belas-Artes, Portugal), *Pedro Duarte de Almeida* (CIEBA — Centro de Investigação e de Estudos em Belas-Artes, Portugal) and *Duarte Vital Brito* (Cascais Public Health Unit, ARS Lisboa e Vale do Tejo, Portugal).

**PAPER ID [133]**

**DESIGNING FOR IMPACT: ELEVATING  
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*Nidhi Singh Rathore* (Civic Design Lead, Montgomery County Government, United States of America) and *Sogand Seirafi* (Deputy Division Chief, Transit Services, Montgomery County Government, United States of America).

**PAPER ID [135]**

**MULTICULTURAL INTERFACE DESIGN:  
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WOMEN AND CHILDREN TO THE BRAZILIAN  
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*Diovana Mazur Damacena* (Universidade Federal do Paraná, Brazil) and *Kelli Cas Smythe* (Universidade Federal do Paraná, Brazil).

**PAPER ID [137]**

**REVOLUTIONIZING BELL'S PALSRY RECOVERY:  
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DESIGN FOR HEALTH AND WELL-BEING**

*Valentina Sorvillo* (Università degli studi della Campania Luigi Vanvitelli, Italy).

**PAPER ID [141]**

**REDESIGNING THE LEARNING ENVIRONMENT  
OF AN ONLINE FASHION DESIGN COURSE: A  
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*Graça Guedes* (University of Minho, School of Engineering, Textile Engineering, Portugal) and *Patrícia Gomes* (University of Minho, School of Engineering, Textile Engineering, Portugal).

**PAPER ID [142]**

**IMPACT OF INTIMATE APPAREL AESTHETICS  
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*Graça Guedes* (University of Minho, School of Engineering, Textile Engineering, Portugal) and *Mélanie Rodrigues* (University of Minho, School of Engineering, Textile Engineering, Portugal).

**PAPER ID [145]**

**THE CONTRIBUTION OF INTERFACE DESIGN  
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*Inês Costa* (School of Design, Polytechnic of Cavado and Ave, Portugal), *Nuno Martins* (ID+ Research Institute for Design, Media and Culture, School of Design, IPCA, Portugal), **Francisco Garcia** (CIES-ISCTE - Centre for Research and Studies in Sociology, Portugal), **Rita Espanha** (CIES-ISCTE - Centre for Research and Studies in Sociology, Portugal), **Daniel Brandão** (CECS, Institute of Social Sciences, University of Minho),

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*Ana Barros* (Portuguese Society of Pneumology, Portugal) and *Branco Di Fátima* (LabCom - University of Beira Interior, Portugal).

**PAPER ID [146]**

**DESIGNING FOR MEANINGFUL HERITAGE:  
AFFECT, EMBODIMENT AND EMOTION**

*Gaëlle Pillault* (ID+ Research Institute for Design, Media and Culture, University of Aveiro, Portugal), *Tenna Doktor Olsen Tvedebrink* (Aalborg University, Denmark) and *Fátima Pombo* (ID+ Research Institute for Design, Media and Culture, University of Aveiro, Portugal).

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**PAPER ID [147]**

**CUSTOMIZING WEARABLE PROSTHETICS:  
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*Andreia Caldas* (ID+ Research Institute for Design, Media and Culture, School of Design, IPCA, Barcelos, Portugal), *Demétrio Matos* (ID+ Research Institute for Design, Media and Culture, School of Design, IPCA, Barcelos, Portugal), *Adam de Eyto* (LSAD Research Institute, Limerick School of Art & Design, Technological University of the Shannon, Ireland) and *Nuno Martins* (ID+ Research Institute for Design, Media and Culture, School of Design, IPCA, Barcelos, Portugal).

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**PAPER ID [148]**

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*Aleksandra Kosztyła* (ID+ Research Institute for Design, Media and Culture, Faculty of Fine Arts of the University of Porto, Portugal), *Pedro Cardoso* (DigiMedia - Digital Media and Interaction

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Research Center, University of Aveiro, Portugal) and **Heitor Avelos** (ID+ Research Institute for Design, Media and Culture, Faculty of Fine Arts of the University of Porto, Portugal).

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PLAN**

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Design is recognised as a crucial driver of innovation and a facilitator of the transition to a circular economy. While there are numerous strategies to support circular design practices, many tend to prioritise management and engineering processes, overlooking design's aesthetic dimension and its role as a cultural mediator. This research paper aims to revisit the role of design in the circular economy, emphasising its aesthetic and meaning dimensions, and exploring the potential of circular design to trigger socio-cultural change. It develops a framework based on existing literature and examines 14 master design projects developed within a higher education institution in Portugal, using tenets of multiple case study analysis and interpretative approach. The paper proposes a conceptual matrix that connects material function, meaning, and sustainability aesthetics, forming a continuum of design approaches for circular projects. The findings indicate that material exploration and transformation often shape the ethos of the project, while design intention and aesthetics assumes a secondary role. Moreover, the potential to reach a significant human impact is still quite limited. These results highlight the importance of expanding beyond functionalism and rebalancing ontological borders of the field within circular discourse.

*Keywords: circular economy; circular design; sustainable aesthetics; sustainable products; design projects*

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PAPER ID [104]

**APPL(E)AUSE. A FOOD DESIGN EXPERIMENT TO CREATE NEW PROCESSED FOODS FROM APPLE BY-PRODUCTS**

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The work addresses the challenges associated with the sustainable management of food resources through the application of knowledge from the discipline of Design. The aim of the research is to identify new scenarios to increase the competitiveness of the Piedmontese agro-industry sector by identifying new uses for the by-products of fruit processing. The work focuses on using apple pomace in the development of new edible products, enhancing local food resources, and proposing new uses for a by-product that is currently destined for disposal. By adopting a transdisciplinary and design-led approach, it was possible co-design new edible processed foods, involving different territorial actors. The first collected results showed the possibility of valorising apple pomace and reintroducing it into the food cycle, adopting a circular economy for food approach.

*Keywords: Food Design, Design With Food, Transdisciplinary Approach, Apple Pomace, Circular Economy.*

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