



CONNECTIVITY
and **CREATIVITY**
in times of **CONFLICT**

Cumulus Antwerp

2023



Cumulus conference: Connectivity and Creativity in times of Conflict
Hosted by the Faculty of Design Sciences, University of Antwerp, Belgium,
on April 12-15, 2023
Conference website: Cumulusantwerp2023.org

Published by Cumulus

Cumulus the Global Association of Art and Design Education and Research.
Aalto University, School of Arts, Design and Architecture PO BOX 31000,
FI-00076 Aalto www.cumulusassociation.org

This publication bears the GPRC label (Guaranteed Peer Reviewed content).

ISSN 2490-046X
No. 10

Cumulus Conference Proceedings Series
Editor-in-Chief: Cumulus President Lorenzo Imbesi

Publications in the Series

01/17 Kolding, REDO
02/17 Bengaluru, Letters to the Future
03/18 Paris, To get there: designing together
04/18 Wuxi, Diffused Transition & Design Opportunities
05/19 Rovaniemi, Around the Campfire – Resilience and Intelligence
06/19 Bogotá, The Design After
07/21 Rome, Design Culture(s) Volume #1, Volume #2
08/23 Guayaquil, Arts imagining communities to come
09/23 Detroit, Design for Adaptation
10/23 Antwerp, Connectivity and Creativity in times of Conflict

Academia Press
Coupure Rechts 88
9000 Gent
België

www.academiapress.be

Academia Press is a subsidiary of Lannoo Publishers.

ISBN 978 94 014 9647 6
D/2023/45/341
NUR 656/658

Kristof Vaes & Jouke Verlinden (editors)
Connectivity and Creativity in times of Conflict.
Cumulus Conference Proceedings Antwerp 2023
Gent, Academia Press, 2023, 783 p.

Layout: Keppie & Keppie

© University of Antwerp,
© Cumulus Association International Association of Universities and Colleges of Art,
Design and Media.
© Kristof Vaes & Jouke Verlinden
© Lannoo Publishers

All content remains the property of authors, editors and institutes.



Preface

Connectivity and Creativity in times of Conflict - conference proceedings VI
 Cumulus president's message - Design for Adaptation in Times of Complexity IX

Track 1

Nature positive/design for transformation

Editorial 2
Design methodology
 Scenario-building through a systemic lens: a new perspective on tools and methods to design for sustainability transitions 4
 Intimacy/integrity: a framework for thinking about epistemological styles in design activity 9
 Democratizing design: the development of a 'Design for Do-It-Yourself' framework 15
 The power of imagination: immersive and experiential counterfactuals to engage with sustainability 20
 Applying human-centered system design to the development of a tool for service innovation 25
 Pulse approach: integral design project management to empower transformative processes 30
 Research on design sketch from different disciplines: overview and directions 35
 Researching the invisible: troubling qualitative research design through information architecture 41

Design education

T+ designers: a case for transdisciplinarity in design higher education by way of a South African case study 46
 Materiality, commons, and design education 51
 Representing and shaping regenerative futures: a context-specific approach to art and design education. 58
 Creative strategies for the learning spaces of the future 62
 Implementing SDGs in a product design curriculum, or: the value of tap water 67

Design materialization

Yutaka: how do we prototype the transformative change towards nature positive designs with soil 72
 Material experience: the future of material selection for product design 77
 Discerning modes of design in ecological restoration 82
 From visual to multisensory: how does intangible cultural heritage of traditional costume self-remodel in digital interactive environment? 87
 Designing sustainable furniture: guidelines to promote furniture life cycle design 94

Biophilic approaches in design

Biophilic design for remote studying environments: analysis of case studies involving a collaboration between ergonomics and environmental psychology 98

Bioreceptive interfaces for biophilic urban resilience 103
 Artificial nature: possibilities for mycelial composite material design 109
 Botanical design: exploring the application of parametric plants in furniture 113

Eco-social transitions

Systemic Design Oriented Leadership (SDOL) – a co-created play for eco-social leadership development with the methods of Systems Thinking 118
 Design for transformation: unlock competencies for coping complexity 122
 Change agents: designers interpreting 'the social' and 'social' interpretations of design 127
 The changing role of designers in transition processes 132

Fashion innovations

Fashion design matter: the role of design in guiding a sustainable transformation in Europe 137
 Convincing fashion consumers to go green: a brand communication problem? 142
 Prototype dialogues; re-balancing design thinking through negotiations with fabrics, form and future 148
 Future fashion: new and ancient systems at the intersection of anthropology, ecology and innovation. 152

Urban design & citizen inclusion

Design fiction localised 158
 Transit Oriented Development used to formulate design guidelines for an improved bus network in Malaysia 163
 Exploring sustainable ecosystems in the "15-minute" urban living circle—take Shanghai Urban Space Season 2021 as an example 169
 The Unified Citizen Engagement Approach: a design-oriented framework for involving citizens in the energy transition 174

Design & digitisation

Designing for Viral Infection Awareness through PLAYMUTATION 179
 Gamifying the low impact customer solution design 183
 Connecting to the future; using serious games and scenario development for responsible design 189
 About utopias, apocalypses, respawning and zombies and how understanding images of space and time may inform design for sustainable behaviour 194

Track 2

Digital futures/hybrid reality

Editorial 200
New crafts and craftspeople
 Fashion Craftsmanship 4.0. Learning experience about Industry 4.0 technologies for hybrid digital fashion-tech products, processes, and business model design 202
 Crafting hybrid workflows for the design of augmented textile artefacts 210

Distance: digital immersive technologies and craft engagement	214	Fantastical reality: designing virtual urban space through extended reality	333
Notions of hybrid craft production: conversations and small-scale experiments in digital fabrication	219	The Metapolis – cities between a ripple and a blur	338
Research through design in the cyber-physical era		Towards data activation and engagement within a smart city	345
Digital synesthesia in product design. Building a vocabulary of physical interactions for a sensible quantified self	223	Technology driven design education	
Digital content that offers experience of listening to crystallized music	228	Teaching design of technologies for collaborative interaction - an emerging pedagogical framework	349
The body can not be thought: the 'disabled body' as a catalyst to develop new paradigms for human-computer integration.	232	A mixed-method approach: virtual reality to co-create future higher education workspaces in a post COVID-19 academic environment	357
Metaphysical Instruments: prototypes for hybrid and live music-making	236	An attempt to integrate AI-based techniques into first year design representation course	363
Redefining the role of design(ers)		Digital fashion	
Virtual skin: co-creating 3D materials with synesthetic artificial intelligence	241	The emperor is naked: deconstructed materiality in fashion NFTs	368
Cabinets of curiosities for the postcolony II: tokens: collections I-V	245	Dematerializing fashion- improving design-led sustainable and hybrid retail experiences via digital twins	372
Speculating futures in an age of nostalgia	250	Fashion archive as a meta medium: unfolding design knowledge through media technologies	379
Computational thinking in design and fabrication for augmented and accessible museums.	254	Fashion and the metaverse: from omni-channel to direct-to-avatar	384
Usability and performance of innovations		Track 3	
Usability and UX evaluation of an online interactive virtual learning environment: a case study of Wales' Virtual Hospital	260	Handle with care/inclusivity	389
Design perspectives for the future of work in Industry 5.0 environment: the digital and physical space in Augmented Reality uses	266	Editorial	390
Assessing the impact of immersive versus desktop virtual reality shopping experiences in the fashion industry metaverse	271	Design for/as communication	
A pilot study with the Shaper Origin to determine the learning curve of augmented fabrication	276	Encouraging humanitarian assistance in conflict zones through animated public service announcements	392
Design for and with extended reality		The design of an engaging focus group discussion toolkit involving school-aged children following urotherapy	397
Introducing the material experience concept in the metaverse and in virtual environments	280	Inclusive Transformation of age-friendly communities based on digital technology support	402
Balancing authenticity and creativity: A VR system design for assisting in ceramic creation.	287	Taking care of the elderly through the tools of the animated communication design: a useful and ethical imperative	408
What is the furniture in the Metaverse for?	292	Pee poo period. Exploring the intersection between shame, bodily fluids, and sustainable design	413
Design for and with digital fabrication		Design for diverse users	
Craft in the age of robots	299	Feminist value sensitive design of self-tracking technology based on female body data	419
Light it up: designing electronic textile with a light as a design material	304	Spatial "mutual altruism" as a relationship of care for homeless people. How design impacts social re-integration	425
Strategy for knowledge transfer in AM as a hybrid process chain towards a transition from prototyping to commercialisation	309	I'll be there for you: exploring a sense of belonging to enhance student engagement	429
Speculative tinkering on circular design materials through 3D printing	317	Inclusive design in the context of performative gender through product form	433
Flaws as features, new perspectives for developing an additive manufacturing design language	322	Landing the internship: the role of gender in finding ID internships	438
The digital on urban scale		Object as the tool of recovery - Examining material culture of young refugees in Hungary for trauma processing	443
Designing smart product-service systems for smart cities with 5G technology: the Polaris case study	328	The food delivery industry and its lack of care in gender equality: the speculative case of 'GiGi'	448
		Winning at more than a game! A storytelling board game concept to raise awareness about refugees' language barriers	455

Care(ful) spaces

Cities for all: co-design interventions on urban features using inclusive technology	461
Separating Covid from non-covid: spatial adaptations in existing hospital buildings	466
Wayfinding is caring	471
Explore vacant public spaces regeneration to facilitate minor's activities and education under inclusive design principles	475
Human-space relationships as narrative processes for inclusivity	480
Urban darkness: human experience of atmosphere and fear	485
Daily social interactions of hawkers as a catalyst to actuating bottom-up spatial justice: experience from Hong Kong	489
The city of care through walkability and proximity. Researching on and with Generation Alpha on urban walkability assessment	494
Hinges, passages and comfort	499
Renewal of urban ecological transportation network based on inclusivity design — Take Sydney's "Livable Green Network" plan as an example	504
How to take care of the Antwerp modernist social housing of Alfons Francken? And how do this housing blocks take care of its changing population?	510
Inclusive innovation: a study of creative furniture design for urban community public space	515

Co-creating care(ful) design

Health, care and prosthetics: co-design methodologies in the case of autofabricantes	519
See the unseen: a co-creation design process for children with incarcerated parents	524
The power of photovoice: AI support provides voicing opportunities for children in sex education	529
Co-design for the common good: a holistic approach to workspace projects	533
Co-designing neighbourhood identities. How to share memories and experiences towards a common sense of belonging	538

Design(ers) & learning

Universal design for learning as an inclusive teaching methodology for an African art and culture course in Ghana	544
Material-led thinking as a practice of care: a strategy from art and design education	550
Artful care for self and others in daily design practice	555
Material metaphors: method for physicalising relations and experiences	560

Design ethos

A South African approach towards a caring design practice	565
Weighing the tensions of nostalgia, necessity, and care in contemplating the future of the Nigerian design-scape	570
Food as a form of care: designing social innovative processes and practices	575

Designing with posthuman kinship: from posthuman theory to human-non human collaborative design approaches	580
Beyond empathy: how curiosity leads to greater care	585

Inclusive approaches to intangible cultural heritage

Convention versus contemporaneity: the affordances of design-led mediation towards sustaining an ancestral cycle of linen making in Castelões, Portugal	590
Combining care for planet, people and culture towards circularity	594
Media art creation process using digitized archetype of Korean traditional dance movement	600
Envisioning design strategies for intangible cultural heritage activation	604

Sustaining traditional crafts and techniques

Craft for care, design for life. Heritage contemporary enhancement and communication design tools as a resource for social changes, fostering diversity and inclusion	610
Embroidered heritage: a design-led visual ethnography of traditional Palestinian motifs	615

Adaptation of the built environment

Design for Ukraine's heritage: engaging international students during times of war through design activism	619
The technical compatibility of vertical greening with built heritage	624
New design models for proximity retail and senior inclusion	628
Investigating spatial patterns of green infrastructure at built heritage sites in Antwerp, Belgium	632
From architecture to community: adaptive reuse as social practice	636

Participation and role of communities

Methodology and evaluation of digital assets reconstruction of cultural heritage with visitor participation in museum	642
Community heritage: an immersive approach to disaster resilience	646
Caring for human diversity and built heritage through design: a multiple case study enquiry	651

Poster abstracts

Adding value to the future through design and entrepreneurship: PLACE	657
A video game for emotion regulation of medical students	658
Video game design for ecological impacts	659
Dwell and move, change ensues	660
Transposing timelines	661
Artificial intelligence-aided type design for Chinese script	662
Design and reconstruction of the new interest youth community in china in the post-epidemic era	663
Sound E-scape: an interactive, digital application for music therapy and soundscape generation	664
Development of existing biophilic interior design definition	665

Design-driven approaches to human augmentation. An exploratory study	666	Human augmentation: the role of design in the design of on-body interfaces for cognitive-sensorial wellbeing	718
Designing with people: creating a multi-level interdisciplinary design education environment for more inclusion	667	A conception toward design narratives for innovation	721
Material connotations: meta-structure research of practice based projects with invasive species plant waste	668	Home away from home – The role of design methods in processing trauma of forced migration and loss of place	725
From collecting natural objects to presenting the future anthropocene: exhibition design for the anthropocene theme in museums	669	Decoloniality and healing: confronting inter-generational trauma/ideologies through architectural preservation and education	728
Catacombs: refuge on the border of the virtual and the real	670	The ephemerality of an organic material and its implications: a context specific study with invasive exotic species (Japanese knotweed) waste in Genk, Belgium	731
Hybrid specimens: Phygital artefacts at the intersection of analogue + digital crafts	671	Visual communication bridging intercultural barriers	734
Content management system in mapping movable objects	672	Feeling the future car: designing for driving pleasure in the era of co-driving	737
FlavourGame: interaction design in hybrid games	673	Mediterranean landscapes in emergency: nature and culture	739
Bibliometrics in circular design visual representation	674	Key Performance Indicators for measuring and evaluating users' sensory perceptions and behaviors in learning spaces in higher design education	742
Inclusivity as a hype phenomenon in advertising	675	Textile handcraft making and women creators' psychological well-being: a narrative review	746
Inclusion in recruiting	676	Cross-case analysis on the integration of extended reality (XR) with the design and planning of the built environment	750
Values, design and educational project: contemporary projections	677	Ecosystem services: an interpretive paradigm of urban and territorial heritage. Strategies, guidelines, and vision for sustainable cities	754
Project Hope : the creative revolution mural, a human singularity approach	678	Characteristic analysis of future-oriented design based on cognitive context theory	757
More-than-human ways of thinking through felting wool	679	Digital wellbeing and design	760
"Care strategies to strengthen heritage structures as a community asset during the pandemic: the case of Bahay Nakpil-Bautista"	680	Appropriation and appreciation of Austrian and Indonesian puppetry	763
A novel offloading insole system designed for healthcare	681	Reinventing the gastronomic experience: using interactive digital environments to raise awareness of food-related cultural heritage	766
Towards an embodied expression of pandemic nodes & networks in the age of social distancing	682	Developing cultural heritage sustainability from the perspective of participatory sentimental souvenir design	770
Cumulus Phd network	683	How does design intervention promote sustainable rural transition: an analytical framework based on the multi-level perspective model	774
Evolution of 'Mashrabiya' in the Middle East & North Africa - traditional wood carving technique revival	684	Designing future hybrid creative space using digital tools in educational institutions and organizations	777
Exploring the potential of material innovation to revitalize traditional crafts in Egypt	687		
An overview of design suggestions for contemporary theatrical VR productions	690	Reviewers	781
Polymath interpolation in transdisciplinary open-ended design – design for conservation	693		
Implementation of design culture as a strategic innovation through design-oriented industrial conversion and product diversification	696		
Sustainable transformation of age-friendly community centres based on transition design	700		
Parametric Joinery. Development of a system of configurable joints	704		
Designing a ward inventory for a sustainable healthcare. Framework for healthcare providers of configurations among disposable medical devices, clinical procedures, and medical equipment in the neonatology department.	707		
A safe space of creativity-designing with vulnerable female communities	711		
The direction of wayfinding. From the identification of a place to the expression of its meaning.	715		

Spatial “mutual altruism” as a relationship of care for homeless people. How design impacts social re-integration.

Elisa Cinelli¹

¹Department of Management, Economics and Industrial Engineering, Politecnico di Milano
elisa.cinelli@polimi.it

Abstract

The paper reports on the potential effects of spatial “mutual altruism” on the social reintegration of homeless people and the key role played by design in establishing this kind of relationship. Nowadays, temporary reception offered by homeless dormitories is still considered strategic, given the prevalence of people who, according to the data, only need accommodation temporarily. On the other side, these places are frequently viewed as containers of discomfort, abandonment, and unwelcomeness. One of the main research objectives is to make third-sector organizations and service providers aware that spatial quality is a fundamental factor that influences the process of social reintegration; “beauty brings beauty.” Participatory Design is seen as the driver of the research, which was conducted using quantitative and qualitative research approaches. Using the quantitative method, which included data and book references, a general background has been set up. A deeper understanding of the study’s issue has been gained through the qualitative method, which includes participant observation, semi-structured interviews, and questionnaires, with the involvement of social and public actors engaged in the fight against homelessness. Due to the complexity of the housing exclusion problem and the consequently complicated design solutions, one of the outputs of the research is a framework used to analyze the efficacy of existing homeless facilities, creating a paradigm that can be traced across all hospitality models. The framework refers to the categories of needs for usability, well-being, safety, management, and sustainability. Inside the category of well-being, “domesticity” in temporary housing has been a key concept explored. Domesticity is defined as the ability of guests to directly and independently change the space. It stresses how important it is to give guests the chance to create a place where they can feel safe, considering both their physical and emotional needs. The main expected result is to create, design, and offer a sense of belonging for people who may have few social connections. Activating one’s resources and forming new connections require favorable conditions, which design can help to achieve.

Author keywords

Spatial “Mutual Altruism”; Homeless Dormitories; Spatial Design; Social Design; Participatory Design.

Introduction: social bond and extreme poverty

Homelessness is a social phenomenon that comes from the structure of our globalized society, a society of excess and surplus that produces waste and marginalization (Bauman, 2013). Experts agree that extreme poverty increases proportionally with the weakening of social networks (Gnocchi, 2009; Landuzzi & Pieretti, 2003). Hence the importance of analyzing the homeless’ condition not only in terms of material deprivation but also in terms of loss of capacity; moreover, we know that the relational capacities of people living on the street deteriorate steadily (Meo, 2000). Thus, relationship support is the primary tool enabling people in a state of severe marginalization to recover. Mastropasqua (2004) explains how social problems are generated by social relations and how the quality of those relations determines the possibility of problem solving. The individual expresses himself only within a system of belonging. The methodological and logistical problems in surveying this phenomenon, combined with scientific community disinterest (Fazzini, 2015), have led to a knowledge vacuum. The current study aims to evaluate the homeless receptive system by developing an evaluation framework. The study begins with an examination of the system’s current state of the art and then focuses on the relationship of care between the individual and the space within homeless shelters, emphasizing the significance of spatial quality for social reintegration. The paper is a result of the author’s master’s thesis for the Interior and Spatial Design course at Politecnico di Milano. In terms of participatory design, the primary purpose of the research is to promote a means of developing beneficial interactions between people and within physical space. Places and how people experience them influence human actions and relationships.

State of the art of contemporary homeless receptive facilities

In the current social services landscape, factual evidence demonstrates that the majority of homeless individuals are *houseless*, defined by Ethos classification as “guests of homeless shelters” (Amore et al., 2011). Therefore, a major portion of the population resides in a dormitory, which was specifically created to handle this demographic (Grigis, 2015). The primary function of the first shelters, formed in the United States (U.S.) in the aftermath of the American Civil War, was to contain and govern the homeless. They were



emergency facilities put up in the basements and hallways of public buildings, sometimes at the local police station (Davis, 2004). Even today, they are typically situated in buildings that were originally intended for another function.

Hospitality approaches

Nowadays, the scenario is more complex. There is a wide range of specialized services available, each with its own set of goals and functionalities. Peculiarities that also differ from country to country. The most significant distinction is between the two main internationally recognized approaches: *the Staircase Approach* and the *Housing First Approach*. The *Staircase Approach* has been the base of the entire receptive system since the 1960s in the U.S. and later in other countries. This *Staircase* was created to gradually prepare someone for living independently in their own home. Similar in morphology but different in logic, there is another approach named *Holistic or Multidimensional*. The fundamental difference with the *Staircase Approach* is that the path each person takes is not determined by a progressive logic established in advance in a standard educational process but is adapted to the individual within an individualized relationship with a social worker (Fio. PSD, 2015). The *Housing First* is a more recent revolutionary concept that places housing as the first step in the process of social reintegration. It focuses on helping people live in their own homes as members of a community, aiding them in the administration of their houses and on the road to rehabilitation (Pleace, 2016).

Hospitality facilities

In the *Multidimensional* and *Staircase Approaches*, a variety of structures cover the diverse needs of homeless people. From the lowest to the highest step, the services typologies included are:

- » Emergency shelter: open only at night and often only at specific times of the year (in winter). It is a service with a low threshold, meaning it satisfies minimal basic demands. In general, it is suitable for all. Typically, the period of stay ranges from a few days to a few months.
- » Transitory shelter, with social care: in these shelters, social assistance is provided in addition to accommodation. It houses people according to specific categories: gender, geographical origin, and age. The requirements for staying are stringent. Generally, the period of stay ranges from a few months to a couple of years.
- » Supportive housing, with medical care: this kind of housing is uncommon, resembling a hostel yet functioning as a hospital. It houses individuals who have been discharged from health care facilities but still require care. The length of the stay corresponds to the hospitalization (usually a few weeks).
- » Micro-community: typically, has both individual rooms and communal amenities, such as a kitchen, that are conducive to socializing. Similar to a multi-room apartment, it accommodates a limited number of individuals (according to certain categories). It provides avenues for social and occupational reintegration. The average length of stay is between one and two years.
- » Temporary housing: for single or family occupancy. Access is typically granted through a public call for applications or social worker notification. There is a very

small monthly contribution to the rent. The duration of stay ranges between one and two years.

- » Housing Led accommodation: combination of residential accommodation and care, nursing, and social support services. It consists of "assisted" co-housing, with the presence of operators and volunteers at particular times of the day. It is a sustainable housing autonomy experience, both from the perspective of relationship dynamics and the economic perspective. The length of stay varies greatly.
- » Public housing: generally located in entirely dedicated buildings or neighborhoods. The governmental administration owns the property. Provides housing for those who cannot afford rent on the private market. Access is granted through public notice, and lodging is typically not assigned on a short-term basis. There is no end to permanence.

The difficulty of guiding the homeless through the many stages of the rehabilitation process of the *Staircase Approach* generates a block in the system and is one of the most pressing concerns. Due to a lack of facilities suitable for more sophisticated types of housing (Fio.PSD, 2015), the large number of people taken into care and placed in emergency facilities almost never progress to the subsequent type of reception. Because of this problem, people stay longer than they need to in emergency rooms and other places that aren't meant for long stays.

Social design as a method of research

The word "design" has become so commonly used that some critics question its significance, as it is often paired with any other noun or verb. Alison J. Clarke (2015) argues that the overuse of the term may lead to its loss of power or be the outcome of its humanist, inclusive, and plural vision. However, by linking the term "social" with the term "design", the process of promoting positive social transformation is being referred to. In 1980, Swiss sociologist and urban planner Lucius Burckhardt spoke of a *socially oriented* design capable of altering the quality of social relations (Moretti, 2019).

A document from the European Commission (2013) defined "social design" as a term "used to describe particular approaches to social innovation. [It is] meant to empower people at local level to invent together solutions to economic and social problems" (p. 8). A report by the Arts and Humanities Research Council (AHRC) and the University of Brighton (Armstrong et al., 2014) describes social design in terms of a number of essential factors: the term "social design" highlights the concepts and activities implemented within participatory approaches to researching, generating and realizing new ways of achieving collective and social change. Participatory research methods appear to be the tipping point, as they increasingly build a practice that is considerate of people, their relationships, and their beliefs.

Participatory activities for qualitative research

In the current research, participatory design activities were required to address and understand the complexity of the system. Research was undertaken in two main phases that frequently overlapped and interlaced. One phase systematized the phenomenon by studying data and literature from

the fields of design and sociology. The other phase was founded on an observational activity that generated an interpretive process. This has been accomplished using a variety of methods, including participant observation, interviews, and site visits.

The methodology applied to this research was based on the researcher's long-term, direct experience in the context of the inquiry. This supported nonintrusive ethnographic fieldwork (Pieretti, 2003). Observing daily routines and conducting empathic discussions form the project's initial baseline (Meroni et al., 2018). As the subject of this research is complex and characterized by stereotypes, informal interviews with numerous actors were essential for collecting data, notions, and ideas. Municipal policymakers, designers specialized in housing deprivation, sociologists, and various social actors from the third sector operating in the city of Milan, from managers to volunteers, were involved. During these meetings, it was possible to outline an overall picture of the city context, in terms of quantitative capacities and of the welfare system's approach and its gaps. Visiting receiving facilities and interacting with the operators and guests were key to the research, as was seeing the practices and dynamics that happened in the space.

Time based responses

The complexity of the problem of housing exclusion and the correspondingly complex answers that might be presented to the problem introduce almost limitless variables into the definition of design solutions. Assuming that the variable represented by the length of stay on the street is the one that influences a person's lifestyle and identity traits more than any other factor (Meo, 2000), it can be argued that the temporal dimension might play a strategic role in contrasting responses. Case studies were then selected focusing on the duration of their interventions: permanent, temporary, and mobile solutions. The mobile response buffers the highest risks of street life by protecting individuals from the cold. Temporary solutions are the most developed and diverse, with diverse goals based on shelter type, while permanent solutions are the most rare and complex to pursue (Cinelli & Mastrantoni, 2022). The selection of case studies was conducted on a global basis, with the most significant findings occurring in Europe and the United States.

The framework

The instrument used for the analysis was a framework to measure the effectiveness of existing homeless facilities in terms of physical-environmental factors and services. The definition of the framework is to be interpreted as the result of bibliographic study, particularly the studies conducted by architects and lecturers Cristian Campagnaro and Roberto Giordano, as well as the results of interviews and site visits. The framework refers to the categories of needs for usability, well-being, safety, management, (Campagnaro & Giordano, 2017), and sustainability (Fig. 1). The framework evaluates these components of a project and, by extension, hospitality models on a scale ranging from 0 to 100.

Usability includes spatial, functional, and perceptual elements. *Well-being* means that the physical, functional, relational, and emotional needs of homeless people must be met. *Safety* is



Figure 1. Needs categories framework.

fundamental in terms of theft-prone items, human safety, and health. *Management* is concerned with the services provided, which vary according to the type of reception. *Sustainability* factor needs to consider technological, economic, and socio-cultural plausibility throughout the design process.

Findings

A comparison of the selected case studies according to the needs categories framework, suggests that permanent housing models are more effective than mobile and temporary responses in meeting the needs of individuals experiencing homelessness. This is likely due to the stability and security provided by permanent housing, which enables individuals to access support services and work towards achieving long-term social and economic stability. This also underlines the need to adopt a "widespread reception" model that promotes a territorial network ever closer to the Housing First and Housing Led models. However, it is important to note that mobile and temporary responses still play an important role in providing immediate assistance to those in need, responding to emergency situations. These responses can help mitigate the risks associated with living on the streets and provide individuals with access to basic services and support.

Investigating people's perceptions of places is challenging. In fact, a huge amount of information is needed to build an articulated and dynamic set of stimuli (Del Nord & Peretti, 2012). According to Del Nord and Peretti, the contexts' ability to conform to users' needs must be analyzed, as well as how much the environment shape users' experience and behavior. When someone who had previously lived on the street enters a dorm or a house, all the dynamics of residing in a private, or semi-private, space and the ensuing relationships with the space are at play. Designing spaces properly and rethinking them in terms of their function, type of activity, and users can help improve the relationships that happen inside the receptive structures. People who have a bad image of themselves are thrown off by a beautiful place that seems to be "designed" for their happiness. People are more likely to take care of themselves, their own spaces, and other people when they see beauty (Porcellana, 2019; Porcellana & Campagnaro, 2013). In this case, the beauty of a space is not only about visual aesthetics, issues that must be investigated, but also about how it is cared for and maintained. It is essential to provide the guests with the opportunity to cultivate an environment with which they may identify. Identification involves personalizing places in accordance with requirements that are not only practical but also emotional. From the adaptabil-

ity of the furnishings to accommodate the various practical needs of the guests to the incorporation of personal objects that can be associated with personal memories or interests. Making a "domestic space" means having decision-making authority over space events. This is the basis for establishing an emotional connection with the environment: a sort of "mutual altruism" (Haines-Gadd et al., 2018) relationship by forming an emotional bond with the space and subsequently caring for it. A way to foster a sense of mutual altruism is to involve the homeless community in the design process through co-design activities and tools (Campagnaro, 2019). This would empower them to have a say in how their living space is configured and what amenities it includes, increasing their sense of security and belonging.

Conclusion: Design impacts

Social phenomena are not always perceptible. One of the most important functions of social science and statistics, together with the design discipline, is to reveal patterns that are otherwise unseen to those living in or managing societies (Murray et al., 2010). Involving people, including third sector organizations, service providers, policymakers, social workers and homeless people, into participatory design, serves as the institutional framework for the establishment and maintenance of cooperative relationships predicated on dialogue and mutuality (Sennett, 2012).

As a result of the research, two correlated levels of design impact emerged. The first level is the interpersonal relationship dimension. The need for care and wellbeing can only be met if the encounter with the other is guaranteed. This requires the establishment of a third sector comprised of relational procedures and processes made up of listening, closeness, competence, difference, and singularity (Mastropasqua, 2004). The second level is the link between people and space. The spatial quality is a feature that influences the social reintegration process, highlighting the significance of a design that takes into account the needs categories framework.

Today, as social inequality, housing crises, and the lack of basic amenities continue to increase, the interplay between design and the social dimension is once again a fundamental concern. The designer assumes social responsibility with the understanding that design actions are change agents. By advocating co-design and non-professional design models inspired by anthropology, Victor Papanek encouraged designers to adopt a responsible production role and make tangible changes to improve the lives and living environment of people (Kries et al., 2018). The social repercussions of design are intrinsic; hence it cannot be peripheral. Design has always played a social and political function (Manzini, 2015) and the more complex society becomes, the more design decisions will have environmental, ethical, social, and economic consequences.

References

- Amore, K., Baker, M., & Howden-Chapman, P. (2011). The ETHOS definition and classification of homelessness: An analysis. *European Journal of Homelessness*, 5(2).
- Armstrong, L., Bailey, J., Julier, G., & Kimbell, L. (2014). *Social Design Futures: HEI Research and the AHRC*. University of Brighton.
- Bauman, Z. (2013). *Wasted lives: Modernity and its outcasts*. John Wiley & Sons.
- Campagnaro, C. (2019). Homelessness: esperienze di co-design e case di housing first. *ATTI E RASSEGNA TECNICA*, vol. LXXIII, 82-88.
- Campagnaro, C., & Giordano, R. (2017). Home for homeless. Linee guida per la progettazione dei centri di accoglienza notturna. *Techne*, 14, 179-187.
- Cinelli, E., & Mastrantonio, C. (2022). Educational usability as an empowering tool for social re-integration. *INTED2022 Proceedings*, 7798-7803.
- Clarke, A. J. (2015). *Emigré Culture and the Origins of Social Design*. In E. Resnick (Ed.), *The social design reader*. Bloomsbury Publishing.
- Davis, S. (2004). *Designing for the homeless: Architecture that works*. Univ of California Press.
- Del Nord, R., & Peretti, G. (2012). L'umanizzazione degli spazi di cura. *Linee Guida, Ministero Della Salute-TESIS, Firenze*.
- European Commission. Directorate General for Regional Policy. (2013). *Guide to social innovation*. Publications Office. <https://data.europa.eu/doi/10.2776/72046>
- Fazzini, O. (Ed.). (2015). *Homeless e i servizi per i senza fissa dimora in Italia e Lombardia*. Éupolis Lombardia.
- fiio.PSD (Ed.). (2015). *Linee di indirizzo per il contrasto alla grave emarginazione adulta in Italia*.
- Gnocchi, R. (Ed.). (2009). *Homelessness e dialogo interdisciplinare. Analisi e confronto fra modelli diversi*. Carrocci Editore.
- Grigis, L. (2015). La fenomenologia delle attività quotidiane degli ospiti dei dormitori milanesi. *Autonomie Locali e Servizi Sociali*, 38(2), 269-290.
- Haines-Gadd, M., Chapman, J., Lloyd, P., Mason, J., & Aliakseyeu, D. (2018). Emotional durability design nine—A tool for product longevity. *Sustainability*, 10(6), 1948. <https://doi.org/10.3390/su10061948>
- Kries, M., Klein, A., Clarke, A. J., Papanek, V., Boelen, J., Scott, F., Hunt, J., & Tonkinwise, C. (2018). *Victor Papanek: The Politics of Design* (1ª edizione). Vitra Design Stiftung.
- Landuzzi, C., & Pieretti, G. (Eds.). (2003). *Servizio sociale e povertà estreme* (2007th ed.). https://www.francoangeli.it/Ricerca/scheda_libro.aspx?id=11262
- Manzini, E. (2015). *Design, when everybody designs: An introduction to design for social innovation*. MIT press.
- Mastropasqua, I. (2004). *Architettura delle reti sociali: Teorie, luoghi, metodi*. Carrocci Faber.
- Meo, A. (2000). *Vite in bilico. Sociologia della reazione a eventi spazzanti*. Liguori.
- Meroni, A., Selloni, D., & Rossi, M. (2018). *Massive Codesign: A proposal for a collaborative design framework*. FrancoAngeli.
- Moretti, M. (2019). *Socio-Social-Design*. Corraini Edizioni.
- Murray, R., Caulier-Grice, J., & Mulgan, G. (2010). *The open book of social innovation* (Vol. 24). Nesta London.
- Pieretti, G. (2003). Povertà e povertà estreme: Elementi di discussione per il servizio sociale. In C. Landuzzi & G. Pieretti (Eds.), *Servizio sociale e povertà estreme* (2007th ed.). https://www.francoangeli.it/Ricerca/scheda_libro.aspx?id=11262
- Pleace, N. (2016). *Housing first guide Europe*.
- Porcellana, V. (2019). *Costruire bellezza: Antropologia di un progetto partecipativo*. Meltemi.
- Porcellana, V., & Campagnaro, C. (2013). Il bello che cura: Benessere e spazi di accoglienza notturna per persone senza dimora. *Cambio: rivista sulle trasformazioni sociali*: 5, 1, 2013, 35-44. <https://doi.org/10.1400/208130>
- Sennett, R. (2012). *Together: The rituals, pleasures and politics of cooperation*. Yale University Press.



This book contains academic papers and posters of the Cumulus Antwerp conference, held in Antwerp on 12-15 April 2023. The Cumulus community, designers, artists, and educators were invited to submit contributions on how culture and creative industry can offer resilience, consolation, and innovation models on human scale, in line with the conference theme 'Connectivity and Creativity in times of Conflict'.

The contributions were double blind reviewed in the tracks

- 1) Nature positive/Design for transformation,
- 2) Digital futures/Hybrid reality,
- 3) Handle with care/Inclusivity, and
- 4) PhD network.

Editors: Kristof Vaes & Jouke Verlinden

