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# Proceedings of IASDR 2023: Life-changing Design

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# Life-Changing Design

Proceedings of the 10th Congress of the International Association of Societies of Design Research (IASDR 2023)

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# [Changing] Spaces and Services

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This track aims to delve into and extend an ongoing discourse concerning the interplay between spatial and service design, to foster a coordinated approach to designing spaces and delivering services as a single entity. The exploration revolves around how the coordinated approach in the design of spaces, interiors, and services is shaping the evolution of our modern lifestyle within intricate urban landscapes. This relation integrated into the design process facilitates the harmonization of functions, incites creative initiatives, amplifies public involvement, ensures inclusivity and diversity, and influences the behaviours occurring within a space. This topic has provided a platform for formulating theories, methodologies, and integrated design projects where spaces act as catalysts for reshaping contemporary services, while services facilitate the emergence of innovative spatial prototypes. The article investigates a range of studies and contemplations that delve into design interventions at micro, meso, and macro scales.

*Keywords: spaces; services; spatial design; service design*

## 1   Spaces and Services

The foundation of human spatial experience is rooted in architecture and urban planning. Viewed from the place-specific perspective of environmental psychology, the *place* construct is understood as a socio-physical unit of analysis, dynamically defined and transformed by people and the environment over time, possessing a unique and situated sense of identity determined by such place specificity of behaviour. The contribution of environmental psychology has been fundamental in nurturing the shift to the user- and human-centred approach in architecture, design and engineering (Bonnes and Bonaiuto in Bechtel & Churchman, 2003, p. 31). Spatial and interior design have deeply captured the focus on the spatial and physical attributes of the environment in which behaviours occur. In fact, they are design fields that cross the boundaries of conventional specialisms such as architecture, landscape architecture, urban design, and service design, encompassing specific aspects of public art. They

explore the manipulation and alteration of a given space, including its perception, and its actions and interactions. A *space* is, therefore, interpreted as a phenomenon that in addition to its physical, spatial, and design-related characteristics, is also influenced by and influences various other aspects such as social, cultural, aesthetic, political, economic, religious, and virtual, expanding to the notion of *place*. As Graumann (*Ibid*., p. 108) summarizes: "[Space] is the term for abstract geometrical extension indifferent with respect to any human activities [and place] in contrast, has in itself a strongly experiential connotation [...], constructed in our memories and affections through repeated encounters and complex associations".

Many changes are taking place within the fields of the design of spaces as a complex phenomenon, incorporating morphological and anthropological perspectives, as well as perspectives from humanities and the social sciences. These changes, through various historical developments in different scientific communities, have led today to the general understanding that interior design and spatial design disrupt the borders between public and private areas, among interior and external spaces, and among objects and architecture too, valuing interior spaces of the city (homes, offices, museums, libraries, etc.) as an independent (Branzi in Crespi, 2013, p. 7) and porous presence. Modern life parameters are redefined through spatial and interior design: physical spaces facilitate interpersonal connections and foster a sense of shared ownership and engagement with the surroundings. Although not fully established as shared definitions, interior design concerns private and public spaces closest to people's physical and sensory experiences; spatial design expands to how space produces a variation in the relations among its inhabitants, focusing on a relational and dialogical perspective (Bourriaud, 1998; Bishop, 2005; Rancière, 2013; Rooke, 2013; Fuad-Luke, 2014), and encompassing, for instance, large communities' interactions within urban environments. This is why the development of both public and private spaces aligns with the inherent relational aspect of services, forming a symbiotic relationship that influences the creation of significant social settings (Fassi et al., 2018) and following differentiated relational patterns.

Over the past three decades, service design has progressively evolved, establishing distinct approaches and methodologies, clarifying its boundaries, and recognizing its interrelationships with various other fields such as management, marketing, innovation, service science, social and behavioural sciences, computing, engineering, industrial design, and more. It has also developed into a structured methodology with abundant toolkits, all integrated into the broader design thinking framework. Moreover, service design has benefited from insights and input from these disciplines, and it has been investigated within the branches of strategic design, design for sustainability, and interaction design. Expressly, the spatial component has been implied within theories and practices when exploring the physical evidence and the design material of service (Bitner, 1992; Clatworthy, 2011; Blomkvist et al., 2016; Penin, 2018; Vink et al., 2021; Morelli et al., 2021). However, a lack of research delves deeply into direct communication between service design and spatial design, particularly among the scientific communities engaged in these areas. This has resulted in a gap in research addressing bridging languages, theories, and methodologies.

The convergence of spatial and interior design with service design leads to creating a diverse array of environments, including urban planning, workplaces, retail spaces, private interiors, public services, and infrastructures. Within this spectrum, spaces accommodate interactive entities, while services unfold within physical surroundings, yielding concrete outcomes (De Rosa, 2022). Spatial and service

design and their "collisions" (De Rosa, 2022) emphasise the importance of design-driven praxis to transform spaces in relation to relational practices for generating meaningful and impactful social settings. The question of how the design of spaces and services can be intertwined, therefore, arises and determines the interdependence of spaces and the social practices within them, as well as the influence of spatial dimensions on any service designed to be part of that space.

Investigating the relationship between spaces and services and how it can create innovations through disruptive changes, is the core of the [Changing] Spaces and Services track. After selecting a wide range of applications, the track includes 8 papers mirroring two main areas of interest and investigation: collisions between spaces and services in indoor spaces and across complex urban systems. This selection of studies is an opportunity to review and reflect on the level of integration and the nature of the implications of these collisions as they manifest in different sectors and settings.

## 2  Collisions between spaces and services: a spatial perspective

This thematic area includes 4 papers: "Metro interior design to reduce the occurrence of metro congestion", "Office space design based on Kano Model, AHP, QFD Methods", "Designing therapeutic and social spaces for older adults facing Mild Cognitive Impairment: Priorities in spatial and furniture layout", and "Design Characteristics in Outdoor Seating Areas – A study of coffee shops in Hong Kong and Copenhagen". The papers in this section present a limited level of integration or *collision* between service and spaces. Collisions here relate to the object of the design or design research that represents a fundamental component of a service system, e.g. the metro interior as a fundamental touchpoint of a mobility service system, the therapeutic spaces as key touchpoints of residential care for elderly people, office spaces as a manifestation of work organisation and support system, and the outdoor seating areas of coffee shops as a service and a spatial interface between interior and exteriors in a city.

In particular, the paper "Metro interior design to reduce the occurrence of metro congestion" is an example of a study that considers spaces, and in particular in this case, seven distinct layouts, as a fundamental dimension of a mobility service system, able to impact on passengers' experiences. In particular, the researchers aim to develop a predictive method and quantitative algorithm to help optimize the interior design of metro carriages using "spatial attractiveness" as a driver to foster a more even distribution of passengers. The quality of user experiences is highly dependent on how the design of spaces facilitates the mobility of people in the subways or their distribution in the carriages.

The paper "Office space design based on Kano Model, AHP, QFD Methods" is another example of methodological study for improving the interior design, in this case without a direct link to improving any service system. The office space is only seen as a physical place to support employees' well-being and effectiveness, aligned with their professional needs. The proposed methodology integrates three distinct methods - the Kano model, AHP, and QFD Methods - in a sequential manner, starting from the collection of user requirements, to the definition of weight values of different attributes of user requirements, to the elaboration of a priority ranking of design elements, to be followed in the design process.

The third paper, "Designing therapeutic and social spaces for older adults facing Mild Cognitive Impairment: Priorities in spatial and furniture layout" offers a very small study on environmental

affordances that can foster social interaction in memory care facilities, extending evidence collected for dementia care. Similarly to the other two papers, while the service system behind the care facilities is very evident here, the built environment remains the sole focus. In this case, the authors apply Ferdous' (2019) list of environmental affordances impacting social interactions in memory care facilities for people with Dementia with the hypothesis that the list could also be applied to people with Mild Cognitive Impairment. The study conducted a survey in Brazil with a very small sample of healthcare professionals to choose the most relevant parameters for environmental design, e.g. seating close and facing each other to facilitate conversation in the living areas; outdoors therapeutic environments with multi-sensory stimuli; visual access to natural environments; natural lighting in living and dining spaces to motivate their use; and seats available to everyone in the social areas.

Finally, the paper "Design Characteristics in Outdoor Seating Areas – A study of coffee shops in Hong Kong and Copenhagen" investigates the recent phenomenon of an increase in the outdoor areas of coffee shops during and after COVID-19. These spaces, defined as "transitional" zones in shops, cafes, and restaurants, serve as interfaces between the internal and external domains, conveying offerings and values to customers. Outdoor seating areas in these establishments integrate segments of the surrounding neighbourhood and extend the establishment's sphere into the vicinity. The paper explores the incorporation of 114 outdoor seating zones in speciality coffee shops in Hong Kong and Copenhagen, identifying four typologies of seating areas in each city.

## 3  Collisions between spaces and services: across-cutting theme perspective

Unlike the previous group of contributions, this second set broadens the scope of collisions between spaces and services, focusing on Spatial Design. The four featured contributions reflect more intricate systems comprising diverse participants, experiences, and cross-cutting themes in this context. This thematic cluster encompasses a journey that begins with investigating the visual and emotional aspects of spaces and then proceeds to tackle critical matters concerning the experiences of people (and others) in urban spaces. By examining four cases where spaces and services are intricately intertwined, this area delves into healthcare, inclusivity, sense of community, and the perception of time.

The first paper of this thematic area, "Visual and Spatial Design for Community Healthcare: The Comprehensive Design of 'Houses and Community Hospitals' in Lombardy Region," delves into the impact of COVID-19. It underscores how the pandemic has compelled public institutions to innovate and experiment with new approaches to enhance healthcare services for the public and their communities. To achieve this objective, the authors focus on "proximity healthcare", a novel strategy to improve healthcare services by treating patients with hospitality and fostering a familiar environment within healthcare facilities. The paper's case study focuses on the significance of visual and spatial design, particularly in common areas, by influencing the actions and interactions of patients, their families, and the caregiving staff. It is widely recognized that interior spaces' environment and layout can profoundly affect healthcare users' behaviour and well-being, fostering feelings of comfort, relaxation, and security (Indraprastha & Shinozaki, 2011). In this regard, by emphasizing the project's development and the resulting meta-design book containing spatial and visual guidelines, the authors effectively illustrate how improving the visual aspects of spaces and services can enhance patients' overall experience, who are viewed more as community members.

The second contribution, "Data Challenge. Re-thinking the library as a learning space to intersect youth, culture and gender diversity", takes a very different approach to re-designing spaces. In this case, the library, intended as a learning space, is already interpreted as both a public space and a service where the two aspects are strongly interrelated and can't be separated. Given its public role as a "common good", redesigning learning spaces is inevitably connected with the need for public engagement and the call for more inclusivity. In keeping with the section's theme, this integration has the potential to profoundly reshape the design process and its results. Furthermore, it extends beyond the confines of interior spaces, encompassing outdoor areas and engaging a broader spectrum of participants and potential users. It aspires to exert influence at a policy level, where the design of physical spaces is just one facet among many, as these ideas expand into various dimensions.

As for the first contribution, the third paper, titled "Yearning for Revival: Using "Healing" as the Linking Strategy to Recreate Emotionally Resilient Communities", addresses the profound impact of COVID-19 and the Omicron variant on global systems, leading to a painful coexistence with the pandemic. It highlights the resulting economic, social, and cultural challenges, the emergence of "Long Covid" and psychological pressure within communities. Moreover, it emphasizes the need to discover and establish strategies that bridge spaces and services, residents and communities, and the broader interconnected field during the recovery and transition period. Through comparative theoretical analysis, the authors define and explore the concept of "healing design" - considering its characteristics, limitations, and potential - to connect isolated spatial functions and services and provide suitable places for dialogue.

The last paper of this section, "Mapping urban regeneration through multiple dimensions of temporality: A visual analysis of three approaches to Theory of Change" examines visual elements in Theory of Change maps used for urban rejuvenation projects in Europe. These maps are typically created to capture the holistic aspects of regions and visualize the collaborative efforts of urban stakeholders for transformation. However, the author identifies a significant issue: these maps often overlook specific aspects connected to "time". Consequently, the article investigates the visual language employed in these maps. It introduces new concepts for representing time, aiming at providing city stakeholders with tools for navigating the complexities of urban regeneration projects more effectively. Time is pivotal in designing services within spatial contexts, as it is experienced subjectively. In urban regeneration projects aimed at finding sustainable solutions, the perception of time becomes even more critical since non-human agents (such as plants) perceive and experience time differently than humans. Therefore, this paper unfolds a crucial question: how can design foster a maximally inclusive experience for all when designing urban spaces and services? Given the urgent need to address the issue of time and its diverse perceptions, which unfortunately appears to be neglected in current design processes, it serves as an invitation that Service and Spatial Design must be prepared to accept.

## 4  Findings and conclusions

The papers of this track cover different scale levels when integrating, in an explicit or implicit way, spatial and service design by going from the micro-scale of interior design to projects at the community level to urban scale interventions. When scaling up, the approaches, as well as the set of actors and competencies involved, seem to change, as well as the nature of the relation with services.

**Spaces as generators of experiences.** The papers focusing more on the *micro-scale of interior design* introduce cases and approaches focusing on redesigning spatial layouts and identifying critical parameters and factors that can influence the quality of the experience for different kinds of users and in different contexts (i.e. mobility, healthcare and office interiors). The proposed research methodologies are primarily quantitative, aligned with an evidence-based approach to architecture and interior design, and aims to standardise and optimise design processes and layouts within complex or sensitive environments (e.g. spaces for people with mild cognitive impairment). In all these cases, from a methodological perspective, there is no intention or ambition from the authors to propose an integration into current service design practices that are not mentioned or discussed in the papers. Still, from a multidisciplinary perspective of service design, these interior design papers raise a question on how to foster the dialogue between quantitative studies of overcrowding when designing for mobility service systems, positive design spaces for residential care, etc. Conversely, integrating a service perspective could enhance the nature of the reflection. For example, in the conclusions of the mobility study, the authors reflect on the fact that the quick development of technologies, such as wireless charging ports, might lead to revisiting the proposed evaluation model. If, together with the physical layout, the authors would consider service functionalities as further attractors of people distribution in the layout design, there could be the potential for a more transformational design and approach.

**Spaces as service interfaces**. In between *micro and meso scales* of the neighbourhood, there are studies about the so-called *transitional spaces* as outdoor areas in boundaries spaces; here, the paper exploring the outdoor seating areas of coffee places in Hong Kong and Copenhagen aims to identify typologies of outdoor seating arrangements considering both functional and symbolic roles of these areas at the interface between interiors and exteriors. In this case, the focus is on how these places work as service interfaces and communication channels toward the city, becoming potentially "eye-catching" for people passing by, addressing niche targets such as people with pets, or offering a place to watch street-level activities. The liminal nature of these spaces inevitably leads to connecting the design with the city's surrounding areas, also touching upon local legislation (e.g. ban of artificial warming or cooling systems) and urban regeneration dynamics and processes.

The scale of the focus area leads to different integrations of expertise, which in the case of cities – and thus the *macro scale* – also touches on policy.

**Layering the collisions**. The papers of this track put on evidence the integration of spaces and service design as something that happens (or not) at different levels and stages of the design process. The actual collisions of spaces and services in the design process could happen from the start in terms of problem framing, methodology and/or in terms of reflection on the output and impact (e.g. impact of interior design on the experience or social interaction). Our hypothesis is that the higher the integration, the higher the transformational potential of the design project and outcome.

The papers focusing on interior design work on one of the dimensions of services, as their physical spaces and touchpoints, while in other studies (e.g. the library design project), spaces are just the context of a larger service design project. For example, the study of the metro carriages does not seem to engage with the implications of re-designing the carriages in relation to mobility services. In contrast, the data-driven library project seems more concentrated on the actual service design project in the context of a library and beyond. For example, in the study on care facilities for people with Mild

Cognitive Impairment, while the service system behind the care facilities is very evident here, the built environment remains the sole focus. As highlighted by one of the two reviewers of this paper, "There is little to no analysis of the wider factors that impact how such affordances enable social interaction (for example, from healthcare or support staff initiating activities)". This focus on the physical space reduces the complexity of the study. Still, it leaves some open questions on how the physical affordances and parameters could be used at their best when designing care facilities and services, in an interconnected way. Also, in the paper investigating offices, the design object is only seen as a physical place to support employees' well-being and effectiveness, aligned with their professional needs. While recently service design has been applied to support human resources in organisations to improve employees' well-being and experience (Bertolotti, Di Norcia & Vignoli, 2018), considering staff as internal users of companies, this paper does not make any reference or reflection on the link with service design. As with the paper on metros, the proposed methodology can be interpreted as a call to better integrate qualitative with quantitative approaches, balancing the aim to optimize and standardize an interior design process with the need for situated approaches to workplace design. Finally, for this paper, the question could be how these considerations "collide" with the idea of office spaces as a fundamental part of a service system provision for employees where digital and intangible offers could be grounded on the physicality of workspaces.

**Spaces and Services roles.** If we take a last step in this reflection, we can see how spaces and services can play different roles in a design project. There can be spaces that play a very functional role in improving services, in their functionality (better use of spaces of a metro station), or quality as in improving the well-being of patients in residential care. Vice versa, there can be services that can be integrated as functionality into new spatial layouts addressing, for example, emerging needs, as in the case of residents walking with dogs during lockdown being able to use outdoor seating areas. Beyond a purely functional role, integrating spaces or services can transform the original ideas of spaces or services, as when libraries are interpreted as public spaces, extending their functions and locations in the city. When these interrelations are managed consciously and with an interdisciplinary and mixed-method approach, these leverage effects can be improved and better directed toward transformations.

**Methodology as a means of integration**. Another collision could relate to the applied methodology, where interior design can inform service design, and vice versa, service design can inform interior design, or ideally, the approaches support a transformational approach to space and services as an integrated endeavour. In this last case, the way problems are framed can already reveal if spaces and services are actually interpreted in an interrelated way. In the papers related to the track, this happens when dealing with "healing design" as an integrated approach to the improvement of spaces for dialogue, when time holds a pivotal role in designing services within spatial context to make them more inclusive and when a space (i.e. a library) is considered as a service itself. This is in line with Yongqi Lou's redefinition of Environmental Design as a new interdisciplinary program which "focuses on using holistic, human-centred, and interdisciplinary approaches to create and enable a sustainable life/space ecosystem, including experiences, communication, and places that optimize the interactions of humans with their surroundings." (Yongqi. L, 2019)

In conclusion, the track highlights the emerging practice of a transdisciplinary approach related to spatial and service design that has been read through several lenses presented in the findings. There

is still room for interaction between the two disciplines to make those collisions more integrated and less random, more dialogical and less in silos, more balanced and less single perspective. It aims to develop a professional profile able to deal with, manage and generate outputs by having skills and competencies across spatial and service design. It aims to further develop a common language, set of tools and integrated methodology to reinforce a theoretical background across these fields.

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