

Introduction

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Interior design is less and less reduced to the mere physical component of space. It is instead increasingly projected towards an ‘environmental system’ made up of space, services, communication, and technology, capable of illustrating a multi-scalarity and trans-disciplinarity typical of a project devoted to innovation. This change of focus, from the prevalence of the interior physical component to the dominance of a polyvalent system, has generated a series of changes, including those affecting the project’s area, which shows a progressive rise of the informational-cognitive component where the control of the net of human interactions involved becomes extremely important.

The theme of scalarity runs through the studies on the relationship between man and space, from representation to design, and helps interpret environmental systems differently by relating practices and techniques from different disciplinary fields. Through multi-scalar and multi-disciplinary approaches, it is possible to understand that the design of an environmental system (be it a room or a university campus) must establish a relationship with the context in which it is inserted and that at the same time, the relationships between user, environment, technology, and services are a lens through which to interpret space and its shapes.

The concepts of scale and measurement are indispensable for correlating, from a systemic perspective, the particular with the general, the detail with the whole (De Giovanni & Sposito, 2020), for interpreting and representing, for discretising and recomposing elements and parts with each other in a hierarchical or interconnected relationship, for investigating the physical and the social, for outlining criticality and potentiality (Russo, 2015).

Multiscalar applications are connected to an adaptive concept of design make places and make deeper connections between spatial form, usage, and meaning, framed within a process of hybridization (Leveratto, 2019). Through a multi-scale approach, it is possible to interpret an ecology of the project in which, through the multiplication of the different scales of intervention, it is possible to generate relationships between space and user, not only placing them within complex systems but recognising them in mediated design “patterns” from technology.

Technology and its use made of it are essential elements of a complex environmental system. Through technology, it is possible to help the user to use the space; it is possible to expand the space beyond its physical boundaries, it is possible to interconnect different services, and it is possible to create networks of spaces. The design scale affects the design outcomes, and “thanks to the progress of technology in the field of design at all levels, it is probably the component of the project on which the designer works the most, simultaneously coordinating real and virtual relations” (De Giovanni & Sposito, 2020).

The volume collects various design experiences within heterogeneous research groups of the Design Department of Politecnico di Milano and talks about experiments in designing spaces and services on a different dimensional scale that have impacted various types of users. Through the recounting of these experiments, the book highlights the close interconnections between the design of spaces, the creation of services, the application of communication systems, and the exploitation of technologies, allowing us to reveal the tensions and interactions that are unleashed depending on the prevalence of one or another design discipline and the scale (from XS to XL) at which they take place.

The different chapters focus on a design process aimed at users both as individuals and as communities. We can find evidence of disciplinary and design specificities and recurrences of particular approaches, methods and tools regardless of the specific themes, contexts and scale of intervention. These specificities are explicitly linked to the thematic, contexts and scale.

What emerges here is a rich and varied picture of examples of possible modes of intervention by the discipline of spatial design in dialogue with other design disciplines, including services and communication, as well as a comprehensive set of disciplinary approaches and

tools, each time punctually selected, adapted, hybridised, combined and, finally, adapted to the individual cases narrated in this publication.

The first chapter (XS), dealing with the smallest dimension of the multi-scalar project, namely that of the space delimited by a portion of an exhibition environment, describes a single installation with extreme care; on the other hand, it introduces a vast richness of reflection and perspective, influencing not only functional but also environmental and social dimensions. The Norman Foster Foundation and the Guggenheim Museum Bilbao invited students from 15 design and architecture schools on four continents to envisage the future of mobility on the occasion of the exhibition “Motion. Autos, Art, Architecture”. Responding to this call, Politecnico di Milano has designed “Autofficina Futuro”, an interactive exhibit that responds to people’s presence and gestures with multimedia content.

The second chapter (S) switches its emphasis to public interiors by describing the “Salone del Futuro” design created for the Milano-Monza-Brianza-Lodi’s Chamber of Commerce. The initial premise of the project is that the digital world is radically altering how services are given (constantly becoming more efficient, accessible, and swifter). Chamber of Commerce and Politecnico di Milano collaborated using systemic and spatial co-design methods that blended diverse roles, characteristics, sizes, and contexts to propose how public interiors may be modified in response to new tendencies in the digitisation of public services. The subsequent pandemic intensified shifts in the demand for and types of physical presence, allowing for new and enlarged uses of spaces and meanings of public services and jobs.

The third chapter (M) addresses the topic of the spatial redevelopment of abandoned structures in cooperation with the municipality of Lentate sul Seveso and with the involvement of the local administration, the principal stakeholder, and private sector players. The old military park requalification project detailed in this chapter exemplifies a concept of sustainable urban transformation based on building renovation and civic engagement. The concept offers the construction of student houses combined with multipurpose spaces for local populations to preserve the territory’s resources and history and foster educational and economic growth. It adheres to the ideas of the National Recovery and Resilience Plan, beginning with the relocation of innovative processes from large cities to smaller communities.

The fourth chapter (L) examines how spatial and technological innovation change learning environments to foster active pedagogical approaches. The future of design education will trigger new reflections due to the changing needs of users and the introduction of updated learning approaches. Moreover, the efficacy of universities revolves around the equilibrium of three fundamental elements: pedagogy, space, and technology. This chapter addresses the concept and development of four unique classroom pilot projects. Four spatial solutions to experiment with and engage all users in a participatory implementation of the University's (Engineering, Architecture, and Design) new requirements. Innovative classrooms are dispersed over the campus through a fluid multi-scalarity that connects interstitial spaces to shared spaces, thus promoting social and active learning strategies through technology.

The fifth chapter (XL) examines the synergy of several entities (physical, functional, and human relationships) that have emerged in the decision to relocate the science faculties of the Università Degli Studi di Milano to a new location – the 2015 Expo Area. Spaces can become symbolic sites of belonging for the community that inhabits them, where hopes, fresh aspirations, and future possibilities might fester and grow. Nevertheless, when confronted with a substantial change, they might symbolise their members' and potential communities' concerns and resistance. The study project conducted at the Politecnico di Milano attempted to balance the correct size of a forthcoming community based on quantitative analysis and the appropriate atmosphere due to inclusive co-design methods. The outcome was to function on a meta-design level. As a technique, the approach created a “conversation space” for future campus residents, where participants were free to disengage from current limitations and begin imagining possible alternative outcomes.

The sixth chapter (XS > XL) discusses the subject of multiscalarity in cultural heritage valorisation projects. The design field and practice have a well-established history of valuing cultural heritage, referred to as Design for Cultural Heritage. Some years later, it is given that Design-typical concepts, processes, and tools (e.g., co-design, participation, scenarios) may be successfully implemented in the cultural sector. Interaction design is no less involved in this process, and the human-centred perspective to incorporating digital technology in the cultural arena is now regarded as standard practice. Five initiatives are reviewed

critically, beginning with an interactive exhibit and progressing to a citywide interactive experience. This chapter aims to highlight the constant and variable features of the design-driven method at various intervention scales.

References

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