



PhD in ARCHITETTURA, INGEGNERIA DELLE COSTRUZIONI E AMBIENTE COSTRUITO / ARCHITECTURE, BUILT ENVIRONMENT AND CONSTRUCTION ENGINEERING - 41st cycle

THEMATIC Research Field: HEALTHCARE INFRASTRUCTURES REQUIREMENTS TOWARD USER-CENTERED CARE FOR DEVELOPING CONTEXTS

Monthly net income of PhDscholarship (max 36 months)
1400.0
In case of a change of the welfare rates during the three-year period, the amount could be modified.

Context of the research activity	
Motivation and objectives of the research in this field	<p>The rapid evolution of scientific and technical knowledge as well as medical technologies have determined hospital architecture as the most complex infrastructures where multidisciplinary drivers are present. Epidemiological, economic, demographic insights are fundamental in order to define new trends for addressing WHO “Health for All” policy at global level within a One Health approach. Several professionals and scholars, involved in hospital planning, are developing design and management strategies answering to contemporary healthcare challenges, also with a post-Covid-19 pandemic perspective. In particular WHO released a Technical Brief on Hospitals of the Future to distribute in the European Region comprehensive standards and guidelines for the development of new infrastructures for health and social care. WHO is also supporting countries to the redevelopment of healthcare network and infrastructures. While advanced economies are disseminating design guidance and recommendations (i.e. Australian Facility Guidelines, UK Health Building Notes, etc.) the majority of global contexts lack indications, strategies and toolkits for translating the high-level suggestions into operative guidelines. Developing contexts (among which LMICs countries) are targeted with</p>



	<p>several funding schemes and global organizations for the provision of adequate care for all. In this transition the quality of healthcare infrastructures is increasingly important. The objective of the research is to support this transition focusing on designing and developing health facilities, particularly in low and middle-income countries, introducing element for innovation, environmental sustainability, adaptability to emerging public health emergencies, and a strong emphasis on patient-centered care. This social implication needs to be further explored with an Evidence and Practice – based approach grounded into scientific analysis and global standardised vision. Therefore, the aim of the research project is the definition of a multidisciplinary digitalised evidence-based design and evaluation toolkit for assessing the user-centeredness of healthcare infrastructures design and support the application of strategies also in developing contexts.</p>
<p>Methods and techniques that will be developed and used to carry out the research</p>	<p>PhD Research Overview This PhD project, developed in collaboration with the Design &Health Lab and the social enterprise Socious, aims to explore and improve hospital design through a multidisciplinary approach. The research will progress through five key phases: 1. Contextual Mapping & Literature Review The initial phase involves a systematic review of academic and grey literature across fields such as architecture, medical sociology, design theory, environmental psychology, and clinical organization. This includes case studies and documents from design competitions, NGOs, WHO, and UN-Habitat, providing both theoretical and practical insights into hospital design challenges and opportunities. 2. Case Studies & Post-Occupancy Evaluations (POEs) A selection of hospitals in low-, middle-, and high-income countries—covering diverse ownership models and settings—will be analyzed. Each site will undergo a detailed POE to assess both functional efficiency and patient-centered design. These analyses will identify barriers to and examples of effective user-centered hospital environments. 3. Participatory Fieldwork & Surveys Ethnographic and participatory research will be</p>



	<p>conducted at one or two hospital sites. Methods include participant observation, narrative inquiry with patients and caregivers, and co-design workshops with staff and users. This immersive approach will inform design recommendations grounded in real-world experiences and needs.</p> <p>4. Development & Prototyping Insights from earlier phases will guide the creation of a conceptual and spatial prototype for a future-oriented hospital. This prototype will integrate the identified needs and priorities, especially emphasizing patient-centered care.</p> <p>5. Digital Toolkit Creation The final output will be a replicable, adaptable digital Patient-Centered Design Toolkit for use by architects, planners, NGOs, and healthcare designers. It will blend design theory with practical constraints to support better hospital design globally.</p> <p>Dissemination & Impact The research includes extensive scoping reviews and systematic analyses of international best practices. Findings will be shared via scientific publications, conferences, and expert meetings at both national (e.g., AGENAS, ISS, CNETO) and international (e.g., WHO, EUPHA) levels.</p> <p>Sustainable Development Goals (SDGs) Addressed</p> <ul style="list-style-type: none"> • Goal 3: Ensure healthy lives and promote well-being for all at all ages • Goal 9: Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation
<p>Educational objectives</p>	<p>Educational objectives involve both hard and soft skills with specific regards to the development of candidates' critical thinking, creativity and his/her ability to communicate in qualified international academic, scientific and professional environments along with problem-solving skills. The mix of academic and professional experiences will improve the PhD candidate ability to acquire information from different sources and synthesize the relevant knowledge. Additionally, proficiency in literature search, reviews, data collection and analysis through qualitative-quantitative methods will be part of the overall educational objective. Finally, ability to work in a multidisciplinary environment is a key objective of the overall doctoral learning and training path. During the research activity based on an in-depth focus on legislation, case studies, best practices and tools, the PhD</p>



	candidate will be able to investigate and focus on the main Academic, Scientific and Professional connections between design & healthcare infrastructures approaches, with specific reference to experience-based design, sustainability and environmental issues.
Job opportunities	Opportunities of professional careers are identified in different areas related to the design, organization and management of hospitals and other socio-sanitary facilities. The PhD graduate will have high-level expertise in planning, programming, and evaluation of complex infrastructure, will have international vision and soft skills oriented to innovation and industrial partnership. This will address the figure of hospital planner or hospital facility manager.
Composition of the research group	1 Full Professors 2 Associated Professors 2 Assistant Professors 8 PhD Students
Name of the research directors	Maddalena Buffoli

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Additional support - Financial aid per PhD student per year (gross amount)	
Housing - Foreign Students	--
Housing - Out-of-town residents	--

Scholarship Increase for a period abroad	
Amount monthly	700.0 €
By number of months	6

Additional information: educational activity, teaching assistantship, computer availability, desk availability, any other information
Additional support: Budget for the research activity (only for positions supported by scholarship): total amount Euro 5.707,20 per student



In detail:

- 1st year Euro 1.902,40
- 2nd year Euro 1.902,40
- 3rd year Euro 1.902,40

Additional information about the organization and regulations of ABC-PhD programme can be found in the Regulations for the 41st Cycle of ABC-PhD: download is available at link:

<https://www.dottorato.polimi.it/en/phd-programmes>

Additional information about ABC department and ABC-PhD programme: available at link:

<https://www.dabc.polimi.it/>

Desk availability: The ABC department provides non-permanent desks to be temporarily booked in common PhD rooms.