



PhD in ARCHITETTURA, INGEGNERIA DELLE COSTRUZIONI E AMBIENTE COSTRUITO / ARCHITECTURE, BUILT ENVIRONMENT AND CONSTRUCTION ENGINEERING - 39th cycle

PNRR 118 PA Research Field: NEXT GENERATION HOSPITAL

Monthly net income of PhDscholarship (max 36 months)

€ 1275.0

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

The rapid evolution of scientific knowledge and medical technologies have determined hospital's unsuitableness few years after their construction. Several professionals and scholars, involved in hospital planning, are developing design and management strategies answering to contemporary healthcare challenges, also with a post-pandemic perspective.

In addition, financial investment at National and European level in healthcare projects (i.e., **Recovery Plan and PNRR Mission M6 - Health within its related Components**, as well as insights from **Mission 5 - Inclusion and cohesion** and **Mission 2 - Green Revolution and Ecological Transition**) have targets of overall quality and compliance with regulations, also in terms of construction timing and costs. Furthermore, the healthcare projects must guarantee high-performances facilities and services; they should respond to the specific needs of the context and the functional requirements, within budget and specific technological requirements. For these reasons, it is necessary to define a tool useful for supporting the design phases that allows to define in spatial and functional terms the needs of the hospital in order to ensure the best quality of construction and management.

The aim of the research project is the definition of a



	multidisciplinary - evidence based - design and evaluation tool for quantifying the dimensions of healing settings starting from the volumes of activities and support the application of Hospital 4.0 strategies.
Methods and techniques that will be developed and used to carry out the research	<p>The aim of the research project is the definition of a multidisciplinary design and evaluation tool for dimensioning the healing settings with a perspective in terms flexibility and high-performances of the spaces, into national and international market needs and requirements.</p> <p>Starting from an experience-based approach, the Candidate will be able to visit and analyze several hospitals and he/she will meet some medical directors for understanding the processes, the healthcare needs, the dimension of the spaces, the wayfinding strategies, etc. This tool will also address the needs of several companies from the Healthcare Infrastructures supply chain and Life Science ecosystem that are seeking for validations and verifications to define strategies and investments in deeper research and applications. The research project will be supported by in-depth scoping reviews of the international literature, along with systematic analysis of relevant experiences and best practices, with the opportunity to share knowledge and discuss preliminary results with international networks.</p> <p>In fact, the results will be disseminated through scientific papers, conferences and meetings with experts in healthcare field, at National (AGENAS, ISS, CNETO, SIAS, SItI, etc.) and international (WHO, EUPHA, D&H International Academy, etc.) level.</p> <p>Two mandatory periods in external institutions are foreseen:</p> <ul style="list-style-type: none"> •a period abroad of 6 months (to be decided by the end of 2023); •an internship in a company, public administration or service centre (to be decided by the end of 2023).
Educational objectives	During the research activity based on an in-depth focus



	on legislation, case studies, best practices and tools, the PhD 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	<ul style="list-style-type: none"> •Companies in the field of healthcare design for understanding the needs of the healthcare market. •Hospital planners for understanding the design strategies and healthcare flows with World Health Organization, Centro Nazionale per l'Edilizia e la Tecnica Ospedaliera (Italian Architects for Health association), Società Italiana dell'Architettura e Ingegneria per la Sanità (Italian Healthcare Engineering association) and International Academy of Design and Health. •Managers for defining the healthcare processes and models with the collaboration of World Health Organization, AGENAS, Società Italiana di Igiene (Italian Public Health Association), Istituto Superiore di Sanità (Italian Health Institute) and Accademia Lombarda di Sanità Pubblica.
Composition of the research group	1 Full Professors 1 Associated Professors 3 Assistant Professors 5 PhD Students
Name of the research directors	Profs. Stefano Capolongo and Maddalena Buffoli

Contacts
Prof. Maddalena Buffoli email: maddalena.buffoli@polimi.it

Additional support - Financial aid per PhD student per year (gross amount)	
Housing - Foreign Students	--
Housing - Out-of-town residents (more than 80Km out of Milano)	--



Scholarship Increase for a period abroad	
Amount monthly	637.5 €
By number of months	6

National Operational Program for Research and Innovation	
Company where the candidate will attend the stage (name and brief description)	To be defined
By number of months at the company	6
Institution or company where the candidate will spend the period abroad (name and brief description)	To be defined
By number of months abroad	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 5197.60 per student.

In detail:

- 1st year Euro 1732.53
- 2nd year Euro 1732.53
- 3rd year Euro 1732.54

Additional information about the organization and regulations of ABC-PhD programme can be found in the Regulations for the 39th Cycle of ABC-PhD: download is available at link: <https://www.dottorato.polimi.it/corsi-di-dottorato/architettura/architettura-ingegneria-delle-costruzioni-e-ambiente-costruito>

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.

This scholarship is funded by the PNRR national programme under the research line on "Public Administration" in D.M. 118. This means that the owner of the position will be obliged to submit periodical reports about her/his activity.