POLITECNICO DI MILANO

PhD in ARCHITETTURA, INGEGNERIA DELLE COSTRUZIONI E AMBIENTE COSTRUITO / ARCHITECTURE, BUILT ENVIRONMENT AND CONSTRUCTION ENGINEERING - 40th cycle

THEMATIC Research Field: DEFINITION OF INNOVATIVE STRATEGIES FOR THE URBAN REGENERATION AND FUNCTIONAL REORGANIZATION OF THE ASST GRANDE OSPEDALE METROPOLITANO NIGUARDA IN MILAN, TOWARDS THE MILANO-CORTINA 2026 OLYMPIC HOSPITAL.

Monthly net income of PhDscholarship (max 36 months)
€ 1350.0 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 fast 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 and requirements

	of the healthcare infrastructures in order to ensure the highest quality and performances. The aim of the research project is the definition of a set of multidisciplinary - evidence based - performances to improve the quality of healthcare infrastructures, supporting the application of Next Generation Hospital strategies. The ASST Grande Ospedale Metropolitano Niguarda in Milan, towards the Milano-Cortina 2026 Olympic Hospital is the proper place where develop a research project in the field of technical-scientific support for the definition of innovative strategies for urban regeneration and the functional reorganization of one of the biggest hospital compound in Milan, Lombardy Region and Italy. This general objective will be broken down into specific objectives such as a critical synthesis of the functions of the existing heritage using GIS (macro, at the Campus scale) and BIM (micro, at the building scale) methodology, new functional and socio-health structure of the Niguarda Campus, the implementation of the green and pedestrian infrastructure of the Campus, i.e. the creation of new car parks on Via Ettore Majorana for which the relevant concepts will be prepared. These specific objectives relate to the macro-topic Niguarda Ospedale Olimpico.
Methods and techniques that will be developed and used to carry out the research	Coming back to the aim of the research project, stated like the definition of a set of multidisciplinary - evidence based - performances to improve the quality of healthcare infrastructures, supporting the application of Next Generation Hospital strategies, the ASST Grande Ospedale Metropolitano Niguarda in Milan, towards the Milano-Cortina 2026 Olympic Hospital is the proper place where develop a research project in the field of technical-scientific support for the definition of innovative strategies for urban regeneration and the functional reorganization. Starting from an experience based approach, the PhD Candidate will be able to work directly in contact with the ASST Grande Ospedale Metropolitano Niguarda in Milan, meeting the strategic directorate and medical staff for

	understanding the processes, the healthcare needs, the dimension of the spaces, the wayfinding strategies, etc. The design and management strategies that will be develop, 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 would like to meet the challenges of the construction sector in healthcare desing; furthermore, 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. 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, JRP HI, etc.) and international (WHO, EUPHA, D&H International Academy, etc.) level. **SDGs related to this research:** 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 Goal 11- Make cities and human settlements inclusive, safe, resilient and sustainable Goal 13 - Take urgent action to combat climate change and its impacts.
Educational objectives	During the research activity, based 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	For the development of the research project, several disciplines will be involved; in particular the candidate will

	have some collaborations with: ASST Niguarda first of all, as hosting company, rather than Companies in the field of healthcare, hospital planners and, finally, in general, the network established within the World Health Organization Collaborating Center for Design&Health: Healthcare Infrastructures Planning Design Evaluation (WHO CC).
Composition of the research group	1 Full Professors 2 Associated Professors 2 Assistant Professors 7 PhD Students
Name of the research directors	Prof. Stefano Capolongo

Contacts
email. designhealthlab-dabc@polimi.it office. +39 02 2399 5140

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	675.0 €
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 5503.35 per student
In detail:
- 1st year Euro 1834.45
- 2nd year Euro 1834.45
- 3rd year Euro 1834.45

Additional information about the organization and regultions of ABC-PhD programme can be found in the Regulations for the 40th 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.