

ARCHITECTURAL HERITAGE

MUR DM 118 - Heritage Risk-management accessibility reuse

Funded By	MINISTERO DELL'UNIVERSITA' E DELLA RICERCA [P.iva/CF:97429780584] Dipartimento DAD
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Context of the research activity	<p>The proposed research intends to deepen the study of heritage at risk both at a national and international level, through a multi-scale interdisciplinary approach (from the small scale to the single architectural artefact), to develop and test strategies for the regeneration, management, and use of cultural heritage. It fits perfectly into the research topics that characterise the PhD program in Architectural and Landscape Heritage and envisages synergic work with some of the bodies responsible for the protection of the heritage itself, such as the Superintendencies and international bodies such as ICOMOS, ICOM, and UNESCO.</p> <p>Progetto finanziato nell'ambito del PNRR - DM 118/2023 - CUP E14D23001880006</p>
	<p>Cultural heritage constitutes a resource whose preservation is motivated not only by being "testimonianza materiale avente valore di civiltà", but also by the important role it plays in actions aimed at promoting the regeneration and economic and social development of those territories that are currently in a critical condition. As stated by the Cultural Heritage Counts for Europe Report (2018), "Cultural heritage is a significant creator of jobs across Europe, covering a wide range of types of jobs and skill levels: from conservation-related construction, repair, and maintenance through cultural tourism, to small and medium-sized enterprises (SMEs) and start-ups, often in the creative industries". More recently, the PNRR also highlighted how investment in the protection and enhancement of landscape and cultural heritage also offers the opportunity to create synergies with strategic priorities such as green transition, environmental sustainability, social inclusion and regeneration.</p> <p>Safeguarding and enhancing the heritage requires action both to promote its conservation by mitigating the risks of natural and/or man-made origin to which it is subjected, and to promote its more widespread use and</p>

Objectives

enjoyment. In this perspective, starting from the analysis of the criticalities affecting small urban or rural centres (in line with what is promoted by the PNRR, Mission 1. Digitisation, Innovation, Competitiveness, and Culture), as well as the sites whose outstanding universal value has been recognised by UNESCO, it is considered important to develop strategies for the documentation, analysis, conservation, restoration, regeneration, use and management of the landscape and cultural heritage.

The specific objective of the Ph.D. study is to train a researcher profile that can recognize, in the critical and interdisciplinary approach to heritage knowledge and documentation, as for all DAP candidates, a fundamental point of any type of possible intervention. In particular, the 3-year research will aim to develop a technical and methodological approach that exploits advanced strategies related to the management, enhancement, and enjoyment in a heritage at-risk scenario. The specific applications and interests will be identified according to the Ph.D. students' profiles. They can be identified at the urban scale or on extensive architectural complexes isolated or disseminated in the territory or on single buildings.

Some of the possible objectives could be:

- Study/Definition/realization of a tool able to integrate the spatial information at the urban scale (GIS oriented) with the building scale (HBIM oriented);
- Analysis of the actual potentiality of VR/AR/MR instrument for data management and visualization;
- Evaluation of AI/ML algorithms in the Heritage at risk domain;
- Climate Change and Heritage at risk strategies and best practices;
- Participatory processes for heritage regeneration and management;
- Study and design innovative solutions for the communication and enjoyment of natural and cultural heritage;
- Study and design of innovative solutions for communication of project phases and site operations (live restoration);
- Accessibility and dissemination;
- Functional compatibility: typology, distribution and behaviour;
- Codes, shapes and architectural features;
- Management and enhancement.
- structural safety reconciled with the need to preserve the historical-cultural value
- monitoring techniques and the protection of heritage
- architectural heritage environmental quality with a view to decarbonizing
- experimental methods and integration of innovative technologies for environmental control, energy efficiency, thermal, acoustic, and lighting characterization of the built environment

Skills and competencies for the development of the activity

DAP Ph.D. candidate's work will be planned as a shared schedule: partly at the Polytechnic of Turin and partly abroad (minimum of six months) according to the requirement of the present scholarship (the location of experience abroad will be defined during the first year of the Ph.D.). The candidate should hold a Master's Degree in Architecture, Archaeology, buildings Engineering, or Civil Engineering. Competencies of candidates are requested in the main sector of the Ph.D. course.