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NextGenerationEU



UNIVERSITÀ
DEGLI STUDI
FIRENZE

ARCHITECTURE AND DESIGN CULTURES, KNOWLEDGE AND SAFEGUARDING OF CULTURAL HERITAGE

Director prof. Francesco Collotti

PROGRAMME	NextGenerationEU – (PNR)	CUP	B55F21007810001	
SCHOLARSHIP	1			
TITLE OF THE SCHOLARSHIP	From BIM to Digital Twin. Information management to support decision-making processes in the life cycle of buildings.			
RESEARCH TOPIC	<p>In recent years, the construction sector is also transforming into a data-driven production sector. In particular, Building Information Modeling (BIM) is able to support the use of big data produced in the different phases of the life cycle of buildings, making it possible to experiment with Artificial Intelligence (AI) for the optimization of the various processes of analysis, simulation, predictive evaluation, concerning the quality of the built environment. The operating phase of a real estate asset involves approximately 70% of the total investment and management costs in the entire life cycle of the building and the management and monitoring of spaces, building components and systems play a decisive role in guaranteeing the well-being and health of users. In Facility Management (FM), the availability of reliable and real-time updated databases on physical assets becomes a central issue in order to plan effective control, maintenance and evaluation of interventions in the ordinary and / or emergency phases. To this end, the flow of data from sensors (Internet of Things) located inside the buildings for real-time monitoring of the environmental quality of the spaces and the performance levels of building and plant components, can be suitably integrated with the information. structured within BIM models of assets, pre-establishing coherent databases. The integration between BIM and IoT therefore declines the creation of Digital Twin (DT), in which the data coming from the sensors combined with the information on the physical asset, allow continuous monitoring through effective forms of data visualization. The research aims to define areas of application and implementation processes of the Digital Twin to Cultural Heritage. Operational solutions will be developed for the case studies identified with in-depth analysis of open data models for built heritage.</p>			
Study/Research periods abroad	1-3 months			
INTERVIEW				
LANGUAGE	DATE	TIME	MODE	PLACE
Italian	14 th December 2022	10:00 a.m.	In-person*	Dipartimento di Architettura (DIDA) Via della Mattonaia, 8 - Firenze

* In the application form candidates residing abroad may ask to conduct the interview remotely