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ACTIVITIES IN SUPPORT OF STRUCTURAL REHABILITATION. AN OVERVIEW OF FEUP CONTRIBUTIONS

Structural assessment in support of rehabilitation is a wide spectrum activity, involving different types of complementary requirements, namely: i) preliminary tasks (in-situ surveys, geometrical characterization, historical investigations, etc.); ii) diagnosis of existing and observed/suspected damage, looking for respective possible causes; iii) experimental activities, by lab or in-situ testing at the structure, components' or materials' levels, for mechanical and physical characterization; iv) structural and physical monitoring (to find out or confirm effectively developing or stabilized damage); v) numerical simulations of the structural response under relevant loading conditions; vi) establishment of practically applicable, yet adequate and reliable, format frameworks for safety assessment; vii) safety verifications and decision on intervention options. In this framework, this lecture will mainly focus on issues related with structural diagnosis and experimental activities inherent to testing and monitoring, to provide a brief overview of that type of activities carried out by the Laboratory of Earthquake and Structural Engineering (LESE) of FEUP at University of Porto over the last two decades. In particular, experimental testing on existing constructions, structural elements and materials are addressed, considering several techniques applied in different structural typologies.