

# CIVIL AND ENVIRONMENTAL ENGINEERING

## DISEG - Analysis of the behavior of complex masonry systems subject to seismic actions

<b>Funded By</b>	Dipartimento DISEG
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<b>Context of the research activity</b>	structural design
<b>Objectives</b>	The research work involves the study of seismic behavior and vulnerability of complex masonry systems such as masonry building aggregates or mixed masonry / reinforced concrete buildings. The analyses are carried out by means of high-fidelity models (micro or meso-modelling of the masonry) calibrated on reference experimental tests. The objectives of the study are: the evaluation of the contribution of the individual structural units with respect to the overall response; the evaluation of the aggregate effect in relation to the degree of connection between structural units, the stiffness of the floors and the geometric details; the development and validation of simplified modeling criteria; the evaluation of the effectiveness of possible reinforcement interventions.
<b>Skills and competencies for the development of the activity</b>	Excellent knowledge of the mechanical behavior of masonry constructions and of the main linear and non-linear modeling criteria. Adequate knowledge and expertise in the field of non-linear FEM modeling using 1D, 2D and 3D finite elements. Knowledge of plasticity and damage laws of brittle materials. Adequate knowledge of the main seismic analysis techniques, linear and non-linear, static and dynamic.