

## EuroTeQ Collider 2024

Challenge

### Heritage for a Sustainable Future - Pushing sustainability in architecture forward

Category

**Nature**

Focus

**Entrepreneurship**

**"Heritage for a Sustainable Future" aims at urging students to peer into our past for progressing architectural topics in the future. In retrospect, sustainable building systems that respect our planet should be considered and rethought to help shape the cities of the future. In the strict meaning of the conservation-restoration field, providing a sustainable future to our existing heritage means seeking for a balance between new functions and the distinctive spatiality of the existing built (Design) while ensuring its safety (Engineering) so as to redevelop buildings without causing irreversible changes to their structural and architectural features (Conservation-Restoration).**

#### **Problem definition**

Pushing sustainability in architecture forward, by providing a sustainable future to our existing heritage, all the while drawing inspiration from our past for progressing in the future. This is so to revisit sustainable building systems able to respect our planet and to resist unexpected natural catastrophic events as well as reinventing them into a new perspective of architectural forms and structural designs able to reshape our cities of the future.

#### **Description**

Conceiving increasingly and more sustainable construction systems, which are able to adapt to our environment – thus, using local and natural materials so to meet the needs of our planet in CO2 reduction by focusing on stone masonry. This knowledge is intended to be spent both into the reactivation of existing architectural heritage that is lacking integrity and/or seeking for a new purpose as well as into the strengthening of buildings so to withstand earthquakes. And in exploring new horizons in the design of more sustainable city landscapes.

#### **Key questions**

How can we design more sustainable construction systems able to respect our planet, all the while reactivating our existing architectural heritage so to embrace the new in the old into a holistic vision towards a sustainable future?

How can we reinforce existing masonry constructions so to make them to resist earthquakes, all the while avoiding for disproportioned losses to architectural features deemed to be preserved for future generations to experience culture?

#### **Links**

<https://www.arc.ed.tum.de/en/rkk/home/>

#### **Skills**

Possessing an history into the history and design of masonry constructions is an advantage. No special skills are required, here. However, a strong control of drawing methods (hand drawing or CAD ones) is necessary, although Group dynamic is encouraged so to take advantage from diversity and different expertises. Knowledge in Maths is an advantage. However, simplified methods of calculation will be taught to you and equations presented in an understandable way so to make this accessible to different groups and staffing level.

#### **Partner**

The chair of conservation-restoration, with its interdisciplinary background and different expertises of its team members, is researching and teaching at the cross between the Engineering and the Humanities by blending History, Design and Conservation into a united approach intended to build up a more sustainable future. The chair possesses different stakeholders including the city of Munich and different managers of monumental sites and international foundations. Teaching for this challenge will be mainly delivered by our team member Roberta Fonti with the help of various stakeholders managing the site offered as case studies for exercising.