

Group Members

Chair of Restoration-Conservation, Art
Technology and Conservation Science

Projekt- und Bauleitung:
Roberta Fonti

Mitarbeit:
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| Maike Steidler

Classes, Room 2350 Main Campus
10:00-12:00 frontal classes
lunch break
13:00-15:00 practical activities
(drawings / exercises)

27-28/10 Excursion to Paris

to visit two main sites, Guédelon
[<https://www.guedelon.fr/en/>] and the
church of Saint-Denis, where stu-
dents will have the unique occasion of
cutting and dressing stones under the
guidance of masons.

20/12 Student competition

the winning design will be the one built
in January at the 1:1 TUM workshop

13-17/01 Workshop

Technische Universität München
Department of Architecture
Design Factory 1:1
Theresienstraße 90 / N8
80333 München
<https://www.arc.ed.tum.de/defac>

REBUS intends to push sustainability in
architecture forward by introducing a new
generation of buildings made out of nat-
ural stones having no stable footings on
ground - thus, fully reversible. This is also
to meet the needs of our planet in a CO2
reduction by the help of natural materials
such as stones to be reused over and
over again.

This new generation of building system is
fully reversible, modular, recyclable, and
able to build solid constructions in a great
variety of forms, easy to relocate and
redevelop thanks to the use of reversible
foundations (no-footing on ground) and
dry joint masonry (no-joint mortar).

This knowledge is also intended to be
spent in the reactivation of existing archi-
tectural heritage that is lacking integrity
or seeking for a new purpose by the help
of additions. Further, this can address the
problem of the strengthening of buildings
against natural catastrophic events such
as earthquakes. And this can be achieved
by taking advantage from dissipation
phenomena bond to the use of dry joints
and reversible foundation systems work-
ing per friction.

REBUS is also aiming at addressing mi-
gration phenomena of different kinds.
For instance, populations in towns struck
by natural disasters are often forced to
massively relocate in more safe and se-
cured zones. This can be easily achieved
by the help of flexible and temporary city
sectors. These are set upon the ground
- thus, avoiding for excavation of untouch-
ed soils as well as contributing into the
reduction of operational costs, in spite
of high building costs, while significantly
shortening execution times.

REBUS is developed in collaboration with
the **city of Munich** (Prof. Elisabeth Merk),
which is providing a framework for rever-
sible buildings to be designed.

Project Week: Heritage for a Sustainable Future - REBUS [REversible BUILDings for Sustainable and temporary cities]

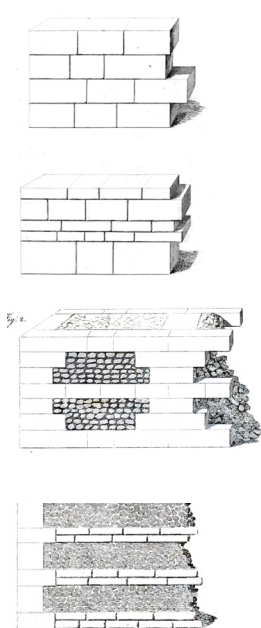


Technische Universität München
Department of Architecture
Design-Factory 1:1

Project Week: Heritage for a Sustainable Future - REBUS [REversible BUILDings for Sustainable and temporary cities]

Step 1

Classes will concentrate on principles of structural design as these had been conceived before and after the introduction of the mechanic of materials. This is to investigate the behaviour of solids subject to forces. This is also for providing students with a deeper understanding of the role of geometry in the evolution of construction techniques and their dimensioning rules over the Centuries.

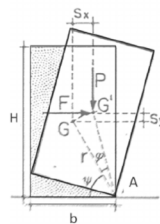


© G. Valadier, 1831-1832. Eleuterio Catesi, Giacomo Rocrué, e Accademia di San Luca. L'architettura Pratica Dettata Nella Scuola E Cattedra Dell'insigne Accademia Di S. Luca. Roma: Società Tipografica. Tom. III

Step 2

Basics on the theory of equilibrium as a tool for understanding the design of stone masonry and to assess its safety level with respect to exceptional actions will be taught by means of practical case studies. A great deal of attention will be paid to the use of graphic statics methods of analysis so to assess the stability of masonry constructions. Students will be equipped with a knowledge of the most common mechanisms of collapse that can affect these building systems. This goes together with the design of the most suitable interlocking masonry pattern. Students are asked to design their own.

A student competition will be held by December, the 20th. The winning design will be the one built in January at the 1:1 TUM workshop



© Giuffè A. (1991) Lettura sulla Meccanica delle Murature Storiche. Edizioni Kappa.

Step 3 Students will build up in a scale 1:1 a studio made out of dry-joint masonry

Workshop: 13- 17 January 2025
1:1 Design Factory

„The strength of a wall, it is dependent from solid footings and high-quality materials. However, this also depends from the way in which these materials are set. In fact, it is not unusual to build weak constructions with stable footings and high-quality materials because of ignorance (lack of knowledge) and negligence upon the setting of construction components.“

Milizia, F. (1785) *Principi di Architettura Civile*. Tomo III. Bassano: a spese Remondini di Venezia

Original Text: « La forza de' muri dipende non solo da' solidi fondamenti, e dagli scelti materiali, ma anco dalla materia d'impiegare essi materiali. Non è già raro, che con fermi fondamenti, e con materiali ottimi si facciano fabbriche debolissime per ignoranza o per trascuratezza nella disposizione.»