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Sustainable Urban Rehabilitation in Europe

Methodological approach to conservation

Erasmus+

Sustainable Urban Rehabilitation in Europe

3rd Semester

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Methodological Approach to Conservation: Physical Approach

2 ECTS

SH
Sustainable Heritage

Erasmus+

SURE
SUSTAINABLE URBAN REHABILITATION IN EUROPE

UNIVERSIDAD POLITÉCNICA DE MADRID

Sustainable Urban Rehabilitation in Europe

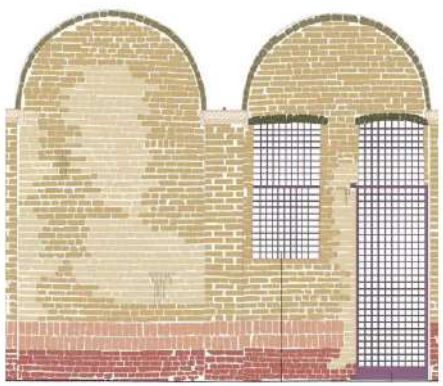
Methodological Approach to Conservation: Physical Approach

SH

Sustainable Heritage

The course provides the students an holistic approach on the understanding of the buildings an its physical appearance.

Thanks to this general overview, the students will acquired the methodology that will helps them to obtain a diagnosis framework of the architectural element studied. The course goes beyond the methodology and furnishes the scholars a general and solid criteria on the matter. It supports them to draw relations between all the phases of a restoration project, understanding the importance of finding and having general guidelines that appropiate to the building, element or site, and its values.

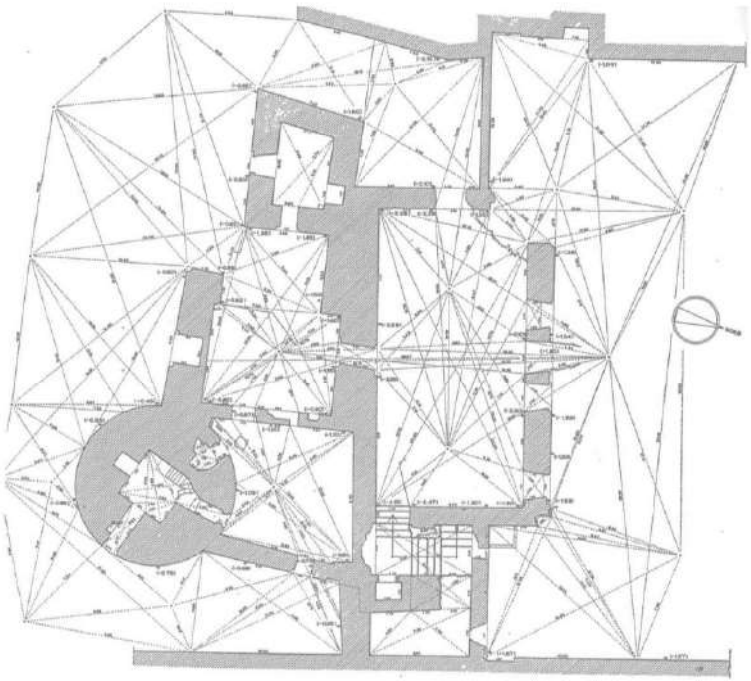


Sustainable Urban Rehabilitation in Europe

Methodological Approach to Conservation: Physical Approach

1. **Introduction to Methodological Approach**
2. Geometrical Survey
3. Geometrical Survey: traditional method
4. Geometrical Survey: new tools
5. Material Survey.
6. Mechanical Survey.
7. Damage maps I: degradation problems
8. Degradation types.
9. Damage maps II: fissure and crack problems
10. Damage maps III: moisture problems
11. Damage tests on masonry constructions I
12. Damage tests on masonry constructions II
13. Survey, maps and tests on wooden contruction.
14. Archaeology.
15. Stratigraphy.

Methodological Approach to Conservation: Physical Approach



LESSON 01. INTRODUCTION TO METHODOLOGICAL APPROACH

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SURE
SUSTAINABLE URBAN REHABILITATION IN EUROPE

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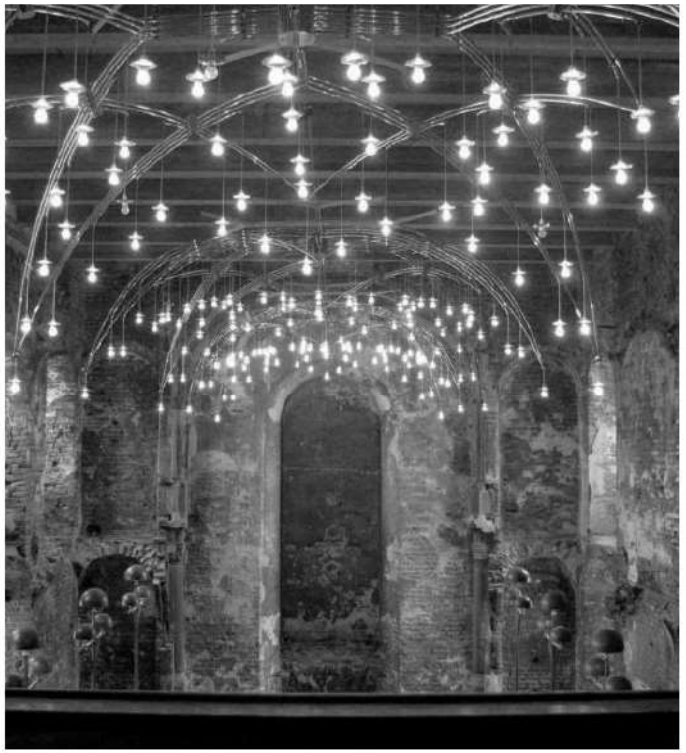
"L´esistente è inesauribile e qualsiasi modo di analizzarlo consiste in una proiezione di ipotesi parziali che lo investiranno senza mai poterne comprendere ed esaurire la totalità." Brandi, 1974, pág 104

Lo existente es inagotable y cualquier modo de analizarlo consiste en la formulación de una hipótesis parcial sin que ello nos lleve a comprender y agotar la totalidad.

"What exists is inexhaustible and any way of analysing it consists in the formulation of partial hypotheses that will invest in it without ever being able to understand and exhaust the totality."

Cesare Brandi, 1974



Kolding Castle (Denmark)
Inger & Johannes Exner

There are aspects of the study of historical buildings

ASSESSMENT OF THE VALUES AND SIGNIFICANCE OF THE BUILDING (theoretical approach)

This aspect is focused on the study of the history and the composition of the building. The memory will be completed within a bibliographical research, while the compositive description can be studied in comparison with similar building.
This aspect includes an assessment in terms of heritage values, considering historical and artistic values. This evaluation requires knowledge in restoration history and criteria and will conclude in the statement of certain premises that would as guidelines for the corresponding intervention.

DIAGNOSE OF THE CONSTRUCTION (physical approach)

This is a scientific approach, which provides a deeper knowledge of the geometrical, physical, material and constructive aspects of the building. This aspect is linked to the documentary and historical values, as the every building is proof of its own story.
Only undertaking a proper scientific methodology will enable one to choose the best conservation techniques, in order to preserve the flesh and bones of the building.

CRITERIA

The main issues in the intervention on historical buildings are:

- **TO CONNECT (compromise):** to achieve a compromise between the conservation of the documentary and historical values of the building, with the contemporary values of the historical construction. The conservation and use of the building may require architectural solutions to stability, security, comfort and esthetical criteria.

- **TOLERANCE (respect):** every intervention on a historical building is different from the others. There need to be an assessment of the main values that the building holds. The architectural project should respect and embrace those values, prevailing the conservation of the built heritage.

CRITERIA

TO CONNECT (compromise)

The intervention in the Palladian Basillica allows the conservation of the building stratifications to meet the inclusion illumination systems, security features and uses. The rooms in the building can host exhibitions and different events respecting its history

Basilica Palladiana in Vicenza (Italy). Internal view.

CRITERIA

Basilica Palladiana in Vicenza (Italy).
External view.

CRITERIA

TOLERANCE (respect)

To respect and not to annul the pre-existence.

To give value to the constructive systems and to the surfaces of the envelope.

Evolution of the Trajan's Market. Rome (Italy)

CRITERIA

TOLERANCE (respect)

To respect and not to annul the pre-existence.

To give value to the constructive systems and to the surfaces of the envelope.

The restoration offers to the viewer the clue for a previously existing window over the main entrance. This is done with the use of colour and texture.

Villa Saraceno in Agugliano, Vicenza (Italy).

DATA GATHERING

WORKING PROCESS

- To know about the building.
- To diagnose.
- To delimit premises.
- To provide solutions.

DATA GATHERING

WORKING PROCESS

- To know about the building. ➡ This subject will provide the methodology corresponding to the study of the physical and technical aspects of the building.

- To diagnose.

- To delimit premises.

- To provide solutions.

DATA GATHERING

The data gathering consists of the following activities:

- Geometrical survey
  (*rilievo geometrico*)
- Constructive systems survey
  (*rilievo materico*).
- Stratigraphy. Phases. Archaeology
- Mechanical and constructive survey
  (*rilievo mecanico*)
- Damages. Map of damage.
- Damage monitoring.

DATA GATHERING

The data gathering consists of the following activities:

- **Geometrical survey (*rilievo geometrico*)**
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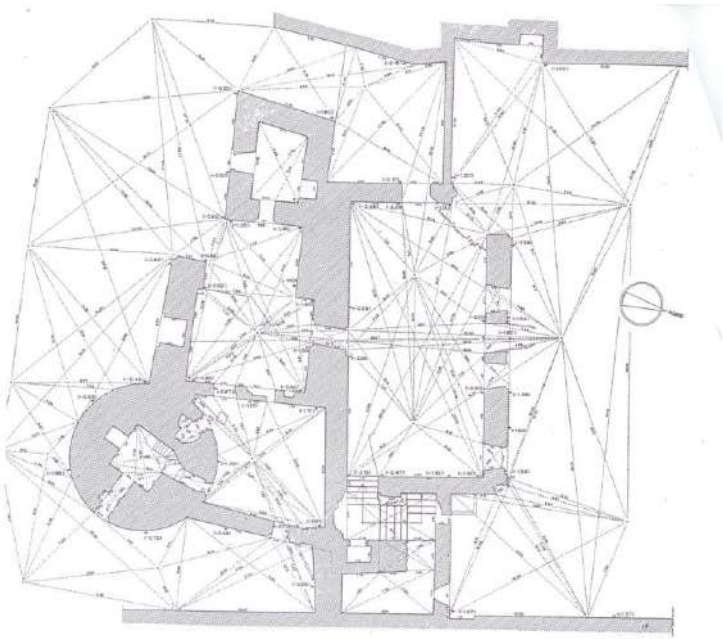

By Calogero Bellanca and Giovanni Carbonara.

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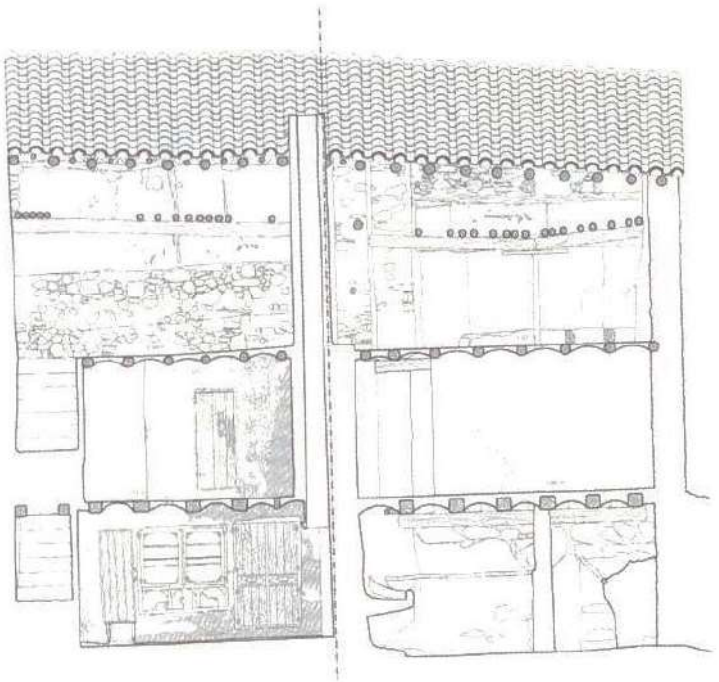

Section by Fernando Vegas and Camilla Mileto.

DATA GATHERING

The data gathering consists of the following activities:

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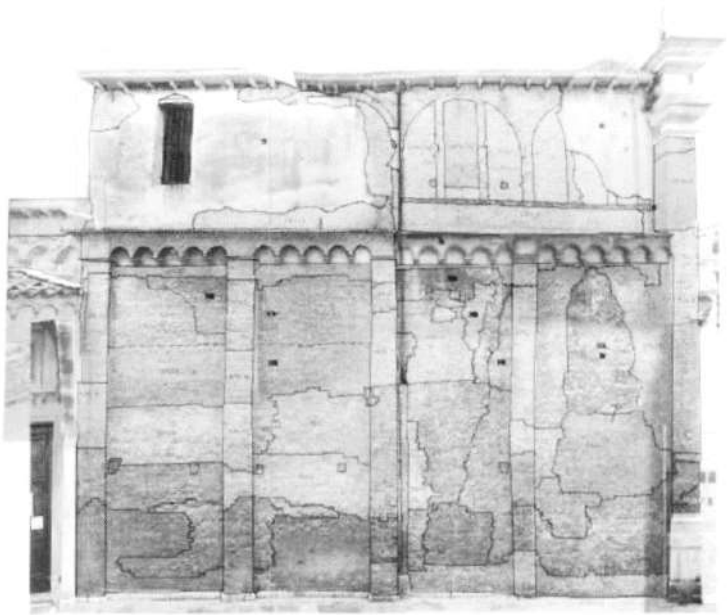

Stratigraphyc map by Francesco Doglioni

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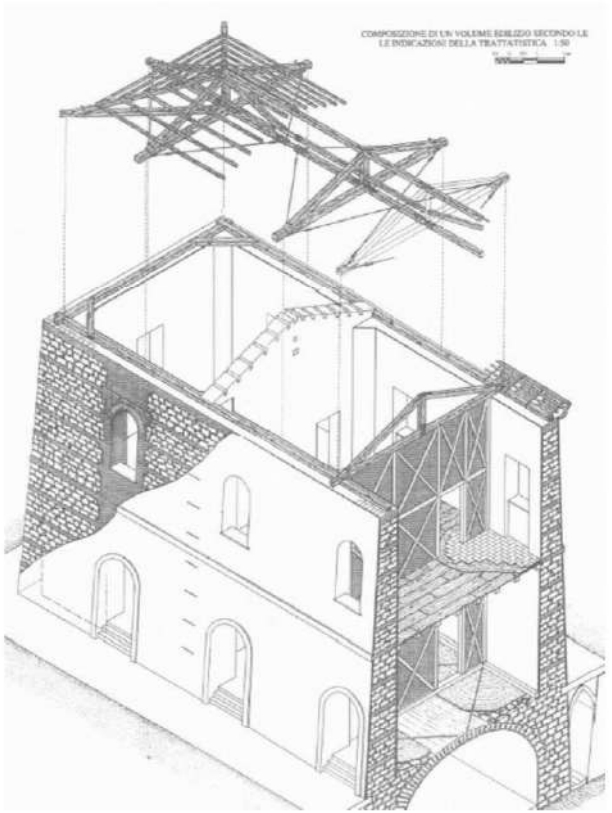


Composition of a building volume

DATA GATHERING

The data gathering consists of the following activities:

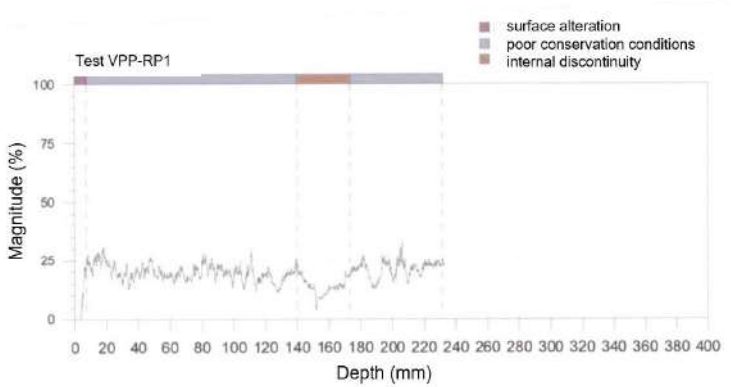
- Geometrical survey
  (*rilievo geometrico*)
- Constructive systems survey
  (*rilievo materico*).
- Stratigraphy. Phases. Archaeology
- Mechanical and constructive survey
  (rilievo mecanico)
- **Damages. Map of damage.**
- Damage monitoring.

Single flat jack tests

DATA GATHERING

The data gathering consists of the following activities:

- Geometrical survey (*rilievo geometrico*)
- Constructive systems survey (*rilievo materico*).
- Stratigraphy. Phases. Archaeology
- Mechanical and constructive survey *(rilievo mecanico)*
- Damages. Map of damage.
- **Damage monitoring.**



Densiometric profile from de VPP-RP1 test

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ADDITIONAL LITERATURE

Methodological Approach to Conservation: Physical Approach

Project "SURE - Sustainable Urban Rehabilitation in Europe"
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