



Polski Komitet Narodowy
Międzynarodowej Rady Ochrony Zabytków
ICOMOS



VILNIUS GEDIMINAS
TECHNICAL UNIVERSITY



Methodological approach to conservation



Erasmus+

Methodological Approach to Conservation: Physical Approach

SH

Sustainable Heritage

2 ECTS



Erasmus+



SURE
SUSTAINABLE URBAN REHABILITATION IN EUROPE



UNIVERSIDAD
POLÍTÉCNICA DE MADRID

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 construction.
14. Archaeology.
15. Stratigraphy.

Methodological Approach to Conservation: Physical Approach

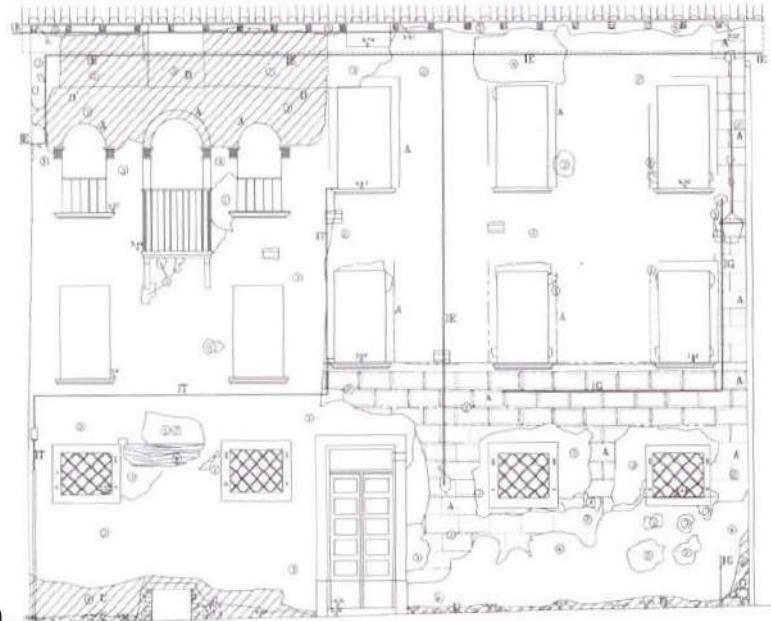


LESSON 07. DAMAGE MAPS I DEGRADATION PROBLEMS

MAP OF DAMAGES: DEGRADATION SURVEY

Definition.

The survey and the representation of the degradation of the materials are usually made using as a basis cartographic architectural survey, on which, using synthetic abstract symbologies, it is portrayed the perimeter of the areas subject some typical aspects of degradation, such as surface deposit , cracking, cracking, fracturing, scaling, alveolization, black crusts, pitting, corrosion, spotting, efflorescence, detachment, etc.



Map of damages. Elevation.

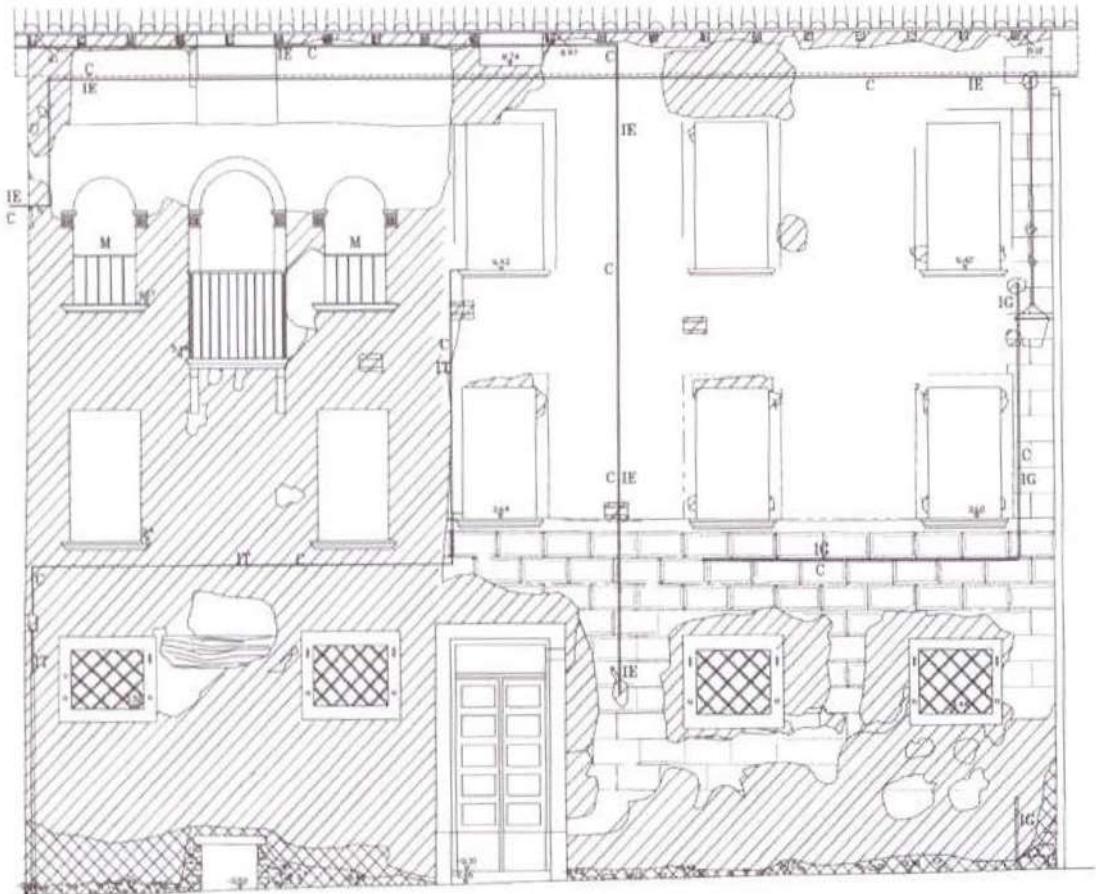
MAP OF DAMAGES: DEGRADATION SURVEY

Definition.

Methods of survey of degradation states mainly use the direct method and, in some cases, the photogrammetric method. After having identified on site the perimeter of the areas with different types of degradation, the technician should identify the areas in question with the appropriate symbols.

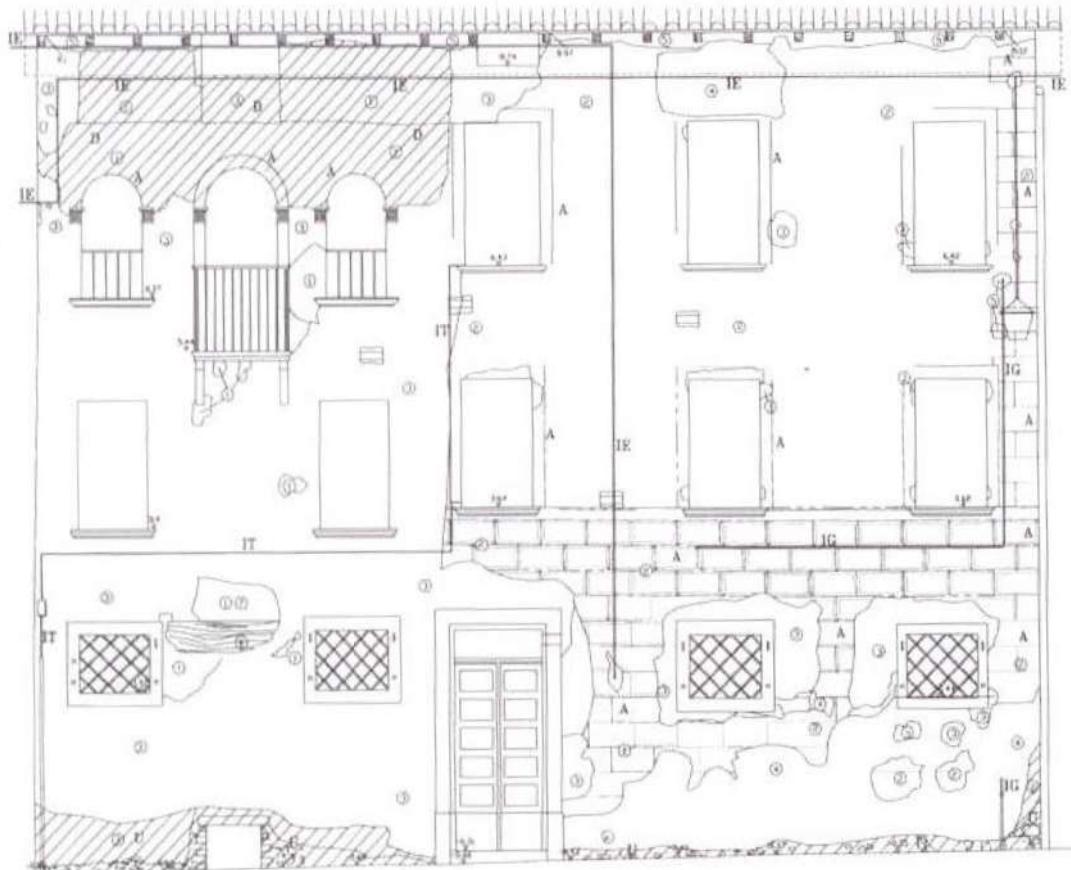
To delimit these areas it is necessary to use some horizontal and vertical references, using lead and level wires; bearing in mind that architectural surveying is normally carried out as a first operation, some elements already detected can be used as reference points, such as the joints of the walls, string courses, edges of doors and windows, etc.

MAP OF DAMAGES: DEGRADATION SURVEY



Map of damages. Elevation.

MAP OF DAMAGES: DEGRADATION SURVEY



Map of damages. Elevation.

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MAP OF DAMAGES: DEGRADATION SURVEY

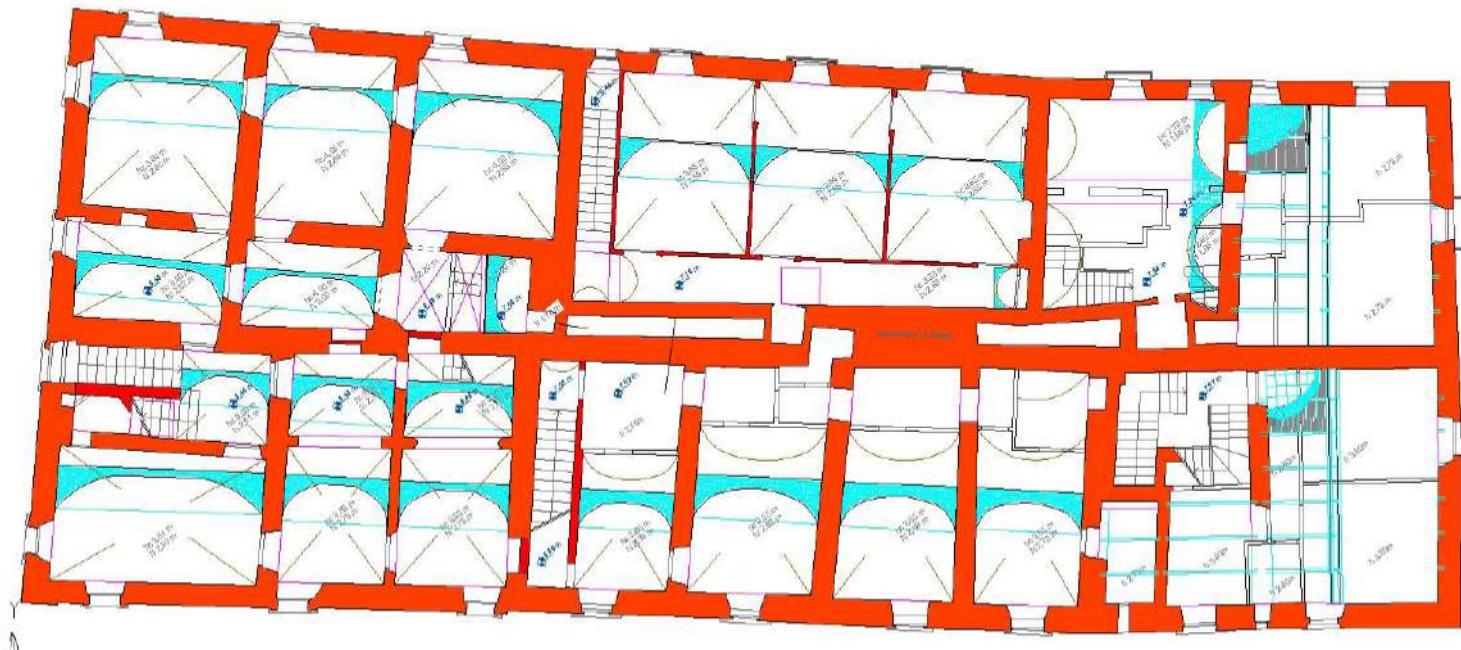
Symbology.

As regards the representation of degradation states, it is necessary to resort to symbologies, which, however, are not yet unified today. A first attempt, in this direction, was carried out by the Nomal commission.



Types of degradation and its conventional symbols.

MAP OF DAMAGES: DEGRADATION SURVEY



Plan. Horizontal section.

LEGENDA DELLE TIPOLOGIE STRUTTURALI

SOLAI



SOLAI
LATEROCEMENTO



VOLTA IN FOGLIO



VOLTA IN
SPESSESSO

SEZIONI VOLTE



VOLTA IN MURATURA



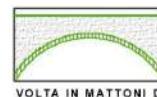
VOLTA IN MATTONE DI
TAGLIO



VOLTA IN PUTRELLE E
TAVELLE/TAVELLONI



VOLTA IN LEGNO



VOLTA IN MATTONE IN
FOGLIO

MURATURE



STRUTTURA
PORTANTE IN
PIETRA



STRUTTURA
PORTANTE IN
LATERIZIO



STRUTTURA
PORTANTE IN C.A.



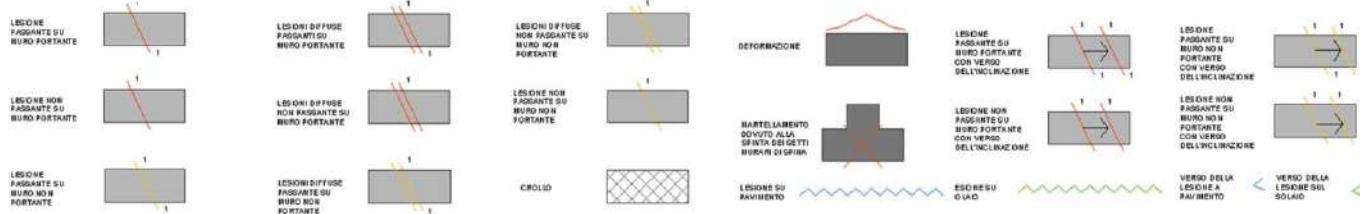
STRUTTURA
PORTANTE IN
PIETRA LISTATA



STRUTTURA
PORTANTE IN
CONGLOMERATO
CEMENTIZIO



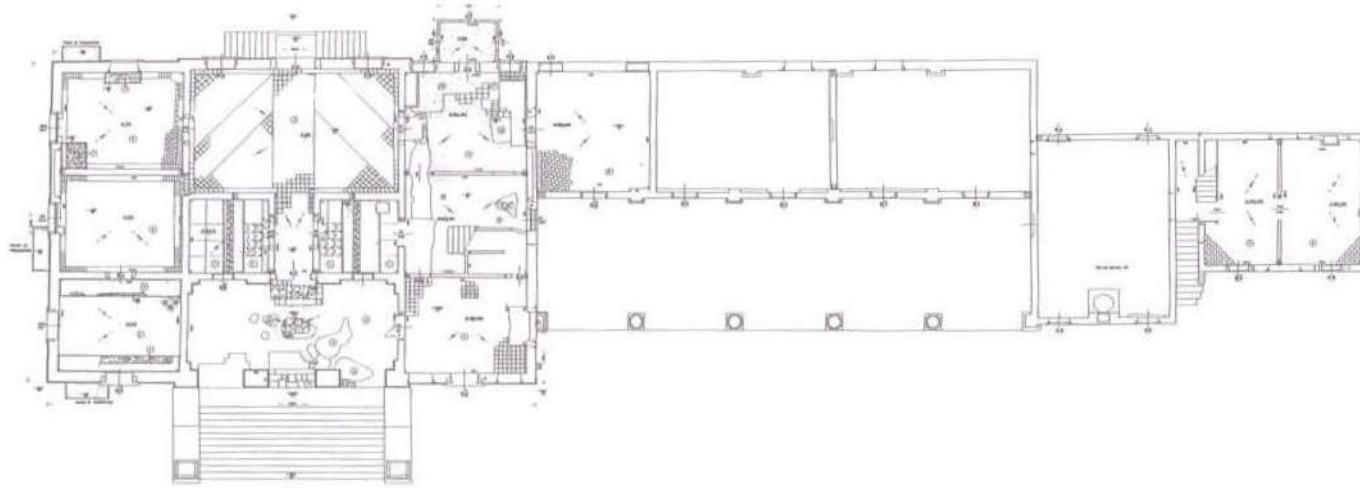
LEGENDA DEI DISSESSI



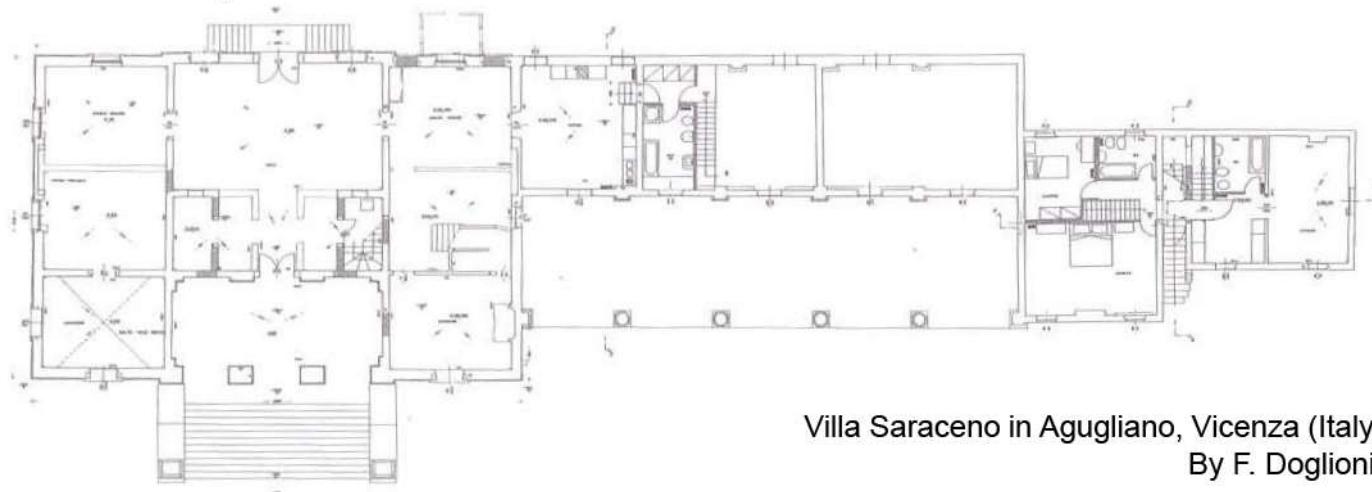
Plan. Horizontal section.

MAP OF DAMAGES: DEGRADATION SURVEY

Map of damages. Plan.

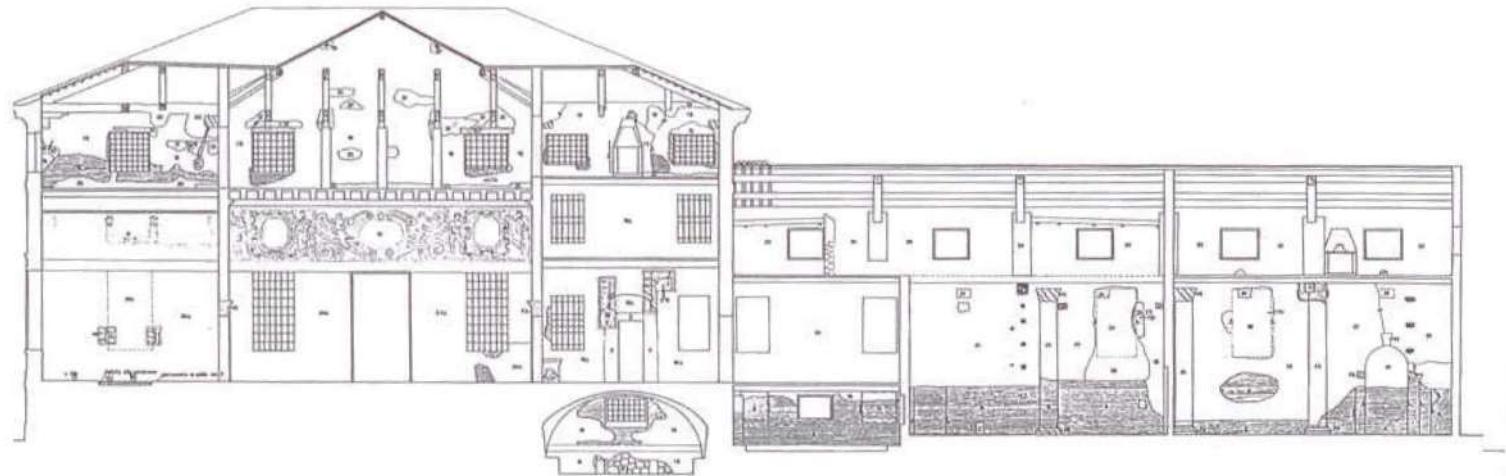


Geometrical survey. Plan.



Villa Saraceno in Agugliano, Vicenza (Italy)
By F. Doglioni.

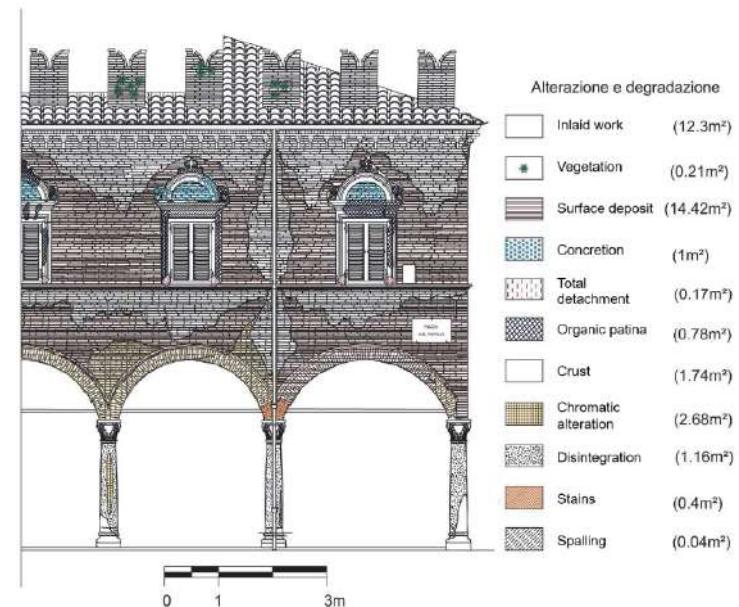
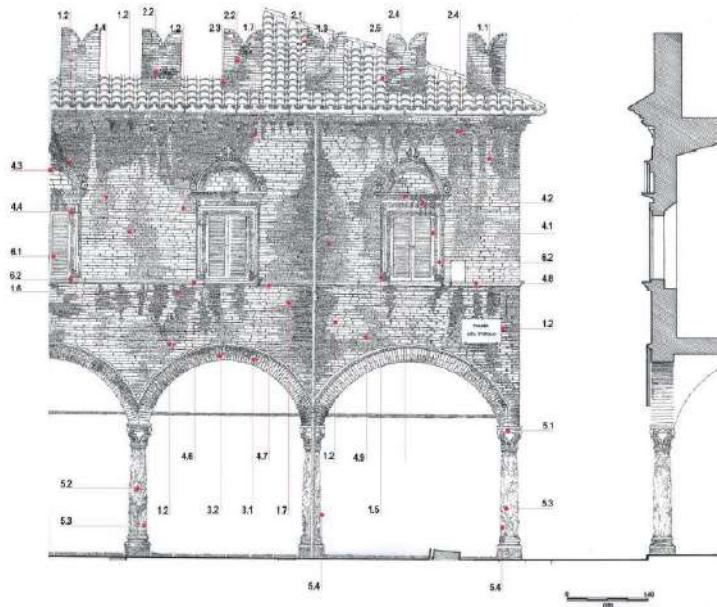
MAP OF DAMAGES: DEGRADATION SURVEY



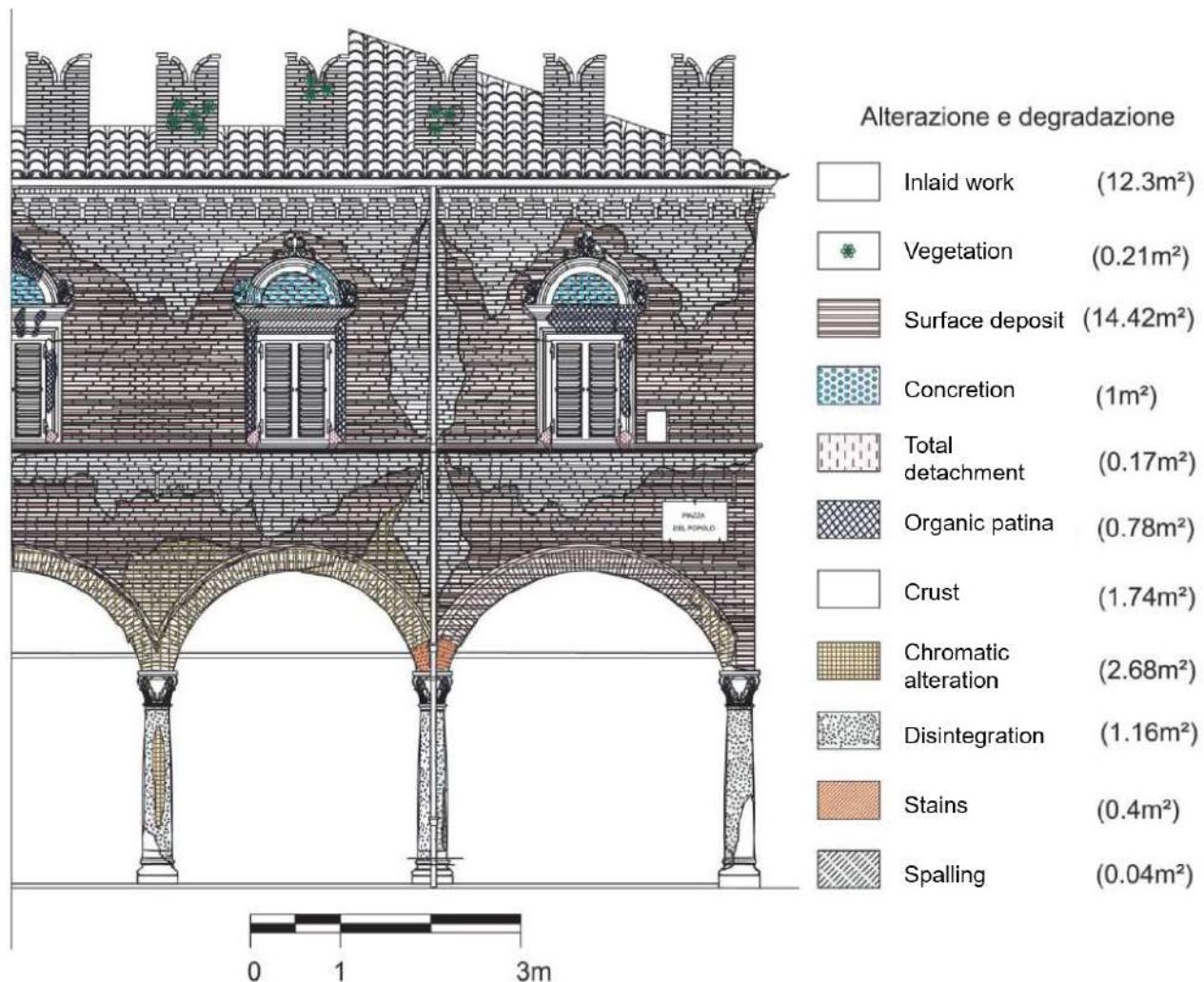
Map of damages. Elevation.

Villa Saraceno in Agugliano, Vicenza (Italy) By F. Doglioni.

MAP OF DAMAGES: DEGRADATION SURVEY



MAP OF DAMAGES: DEGRADATION SURVEY



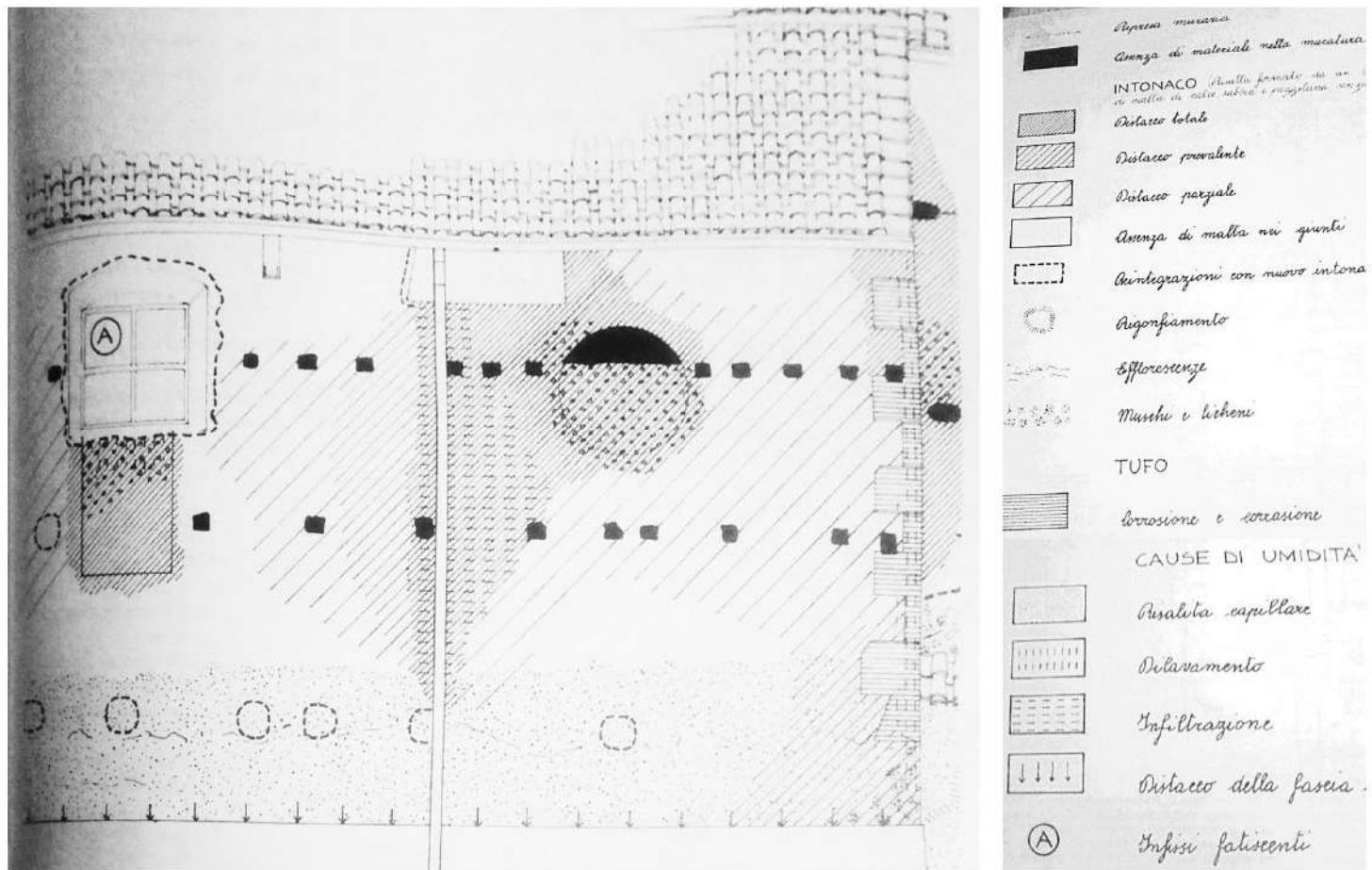
Maps of damage. Alterations and degradations

MAP OF DAMAGES: DEGRADATION SURVEY

Maps of damage.



MAP OF DAMAGES: DEGRADATION SURVEY



Map of damage: deterioration and moisture

MAP OF DAMAGES: DEGRADATION SURVEY

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Crack & Deformation	Detachment	Material Loss	Discoloration & Deposit	Biological Colonization

- | | | | | |
|---|---|--|---|--|
| <ul style="list-style-type: none">• Crack• Deformation | <ul style="list-style-type: none">• blistering• bursting• delamination• disintegration• fragmentation• peeling• scaling | <ul style="list-style-type: none">• alveolization• erosion• mech.damage• missing part• perforation | <ul style="list-style-type: none">• crust• deposit• discoloration• efflorescence• encrustation• film• glossy aspect• film• patina• soiling | <ul style="list-style-type: none">• alga• lichen• moss• mould• plant |
|---|---|--|---|--|



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