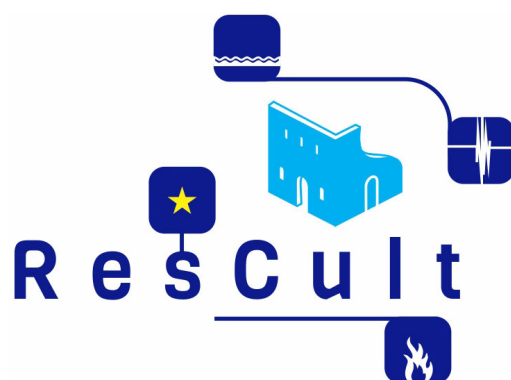




**POLITECNICO
DI TORINO**



Increasing Resilience of Cultural Heritage:
A supporting tool for the safeguarding of cultural
asset

Factsheets



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NAME OF CULTURAL ASSET, LOCATION.

Regional Hazard

- 1. CLIMATIC CONDITIONS
- 2. WEATHER CONDITIONS
- 3. TERRITORIAL CONDITIONS

Local Hazard

- 1. ARCHITECTURAL - URBAN CONTEXT CONDITIONS
- 2. URBAN FIRE PREVENTION SYSTEM

Formal Vulnerability

- 1. DISTRIBUTION TYPE
- 2. FURNISHINGS, OBJECTS, ECC..
- 3. CULTURAL IMPORTANCE OBJECTS
- 4. BUILDING FIRE PREVENTION SYSTEM
- 5. FIRE-FIGHTING ELEMENTS

Functional Vulnerability

- 1. FUNCTIONAL TIPOLOGY
- 2. EMERGENCY INTERVENTION STAFF

Structural Vulnerability

- 1. BUILDING STRUCTURAL TIPOLOGY



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NAME OF CULTURAL ASSET, LOCATION.

F. Rr. 1

Regional Hazard

It refers to the general territorial characteristics.
It is not possible to modify the factors that occur to its determination.

Local Hazard

Formal Vulnerability

Functional Vulnerability

Structural Vulnerability

1. CLIMATIC CONDITIONS

The indicator refers to the climatic conditions of the territory in which the cultural asset is located. The indicator considers the type of climate (dry or wet) and the average temperature.

- Dry climate and high average temperatures.
- Dry climate or high average temperatures.
- Temperate climate/temperate average temperatures
- Wet climate or low average temperatures.
- Wet climate and low average temperatures.

Very high
High
Medium
Low
Very low

DESCRIPTION

Describe the conditions and motivate the risk level chosen.



NAME OF CULTURAL ASSET, LOCATION.

F. Rr. 2

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Regional Hazard

It refers to the general territorial characteristics.
It is not possible to modify the factors that occur to its determination.

Local Hazard

Formal Vulnerabilty

Functional Vulnerability

Structural Vulnerability

2. WEATHER CONDITIONS

The indicator considers the level of rainfall, according to a qualitative scale.

- Very low rainfall area.
- Low rainfall area
- Medium rainfall area
- High rainfall area
- Very high rainfall area

Very High
High
Medium
Low
Very low

DESCRIPTION



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NAME OF CULTURAL ASSET, LOCATION.

F. Rr. 3

Regional Hazard

It refers to the general territorial characteristics.
It is not possible to modify the factors that occur to its determination.

Local Hazard

Formal Vulnerability

Functional Vulnerability

Structural Vulnerability

3. TERRITORIAL CONDITIONS

The indicator refers to the territorial conditions which could most favour the spread of a fire. The indicator considers the presence on the territory of certain elements (type vegetation, location, etc.).

- Very high presence of fire risk elements
- High presence of fire risk elements
- Medium presence of fire risk elements
- Low presence of fire risk elements
- Low presence of fire risk elements

Very High
High
Medium
Low
Very low

DESCRIPTION



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NAME OF CULTURAL ASSET, LOCATION

F. RI. 1

Regional Hazard

Local Hazard

It refers to the context where the building is located. It is possible to modify the factors which regulate it, through specific adaptation measures.

Formal Vulnerability

Functional Vulnerability

Structural Vulnerability

1. CONDITIONS OF THE URBAN - ARCHITECTURAL CONTEXT

The indicator refers to the urban fabric and architectural context which could favour the spread of a fire. The indicator considers the density of the buildings and the different levels of accessibility.

- High density buildings, very low distance between buildings. Accessibility very difficult.
- High density buildings, very low distance between buildings. Difficult accessibility. (Medieval City)
- Medium density buildings, reduced distance between buildings. Medium accessibility (Renaissance or modern city).
- Low density buildings, big distance between buildings. Easy accessibility (Contemporary city).
- Very low buildings, big distance between buildings, isolated buildings. Easy accessibility.

Very High

High

Medium

Low

Very low

DESCRIPTION



NAME OF CULTURAL ASSET, LOCATION

F. RI. 2

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Regional Hazard

Local Hazard

It refers to the context where the building is located. It is possible to modify the factors which regulate it, through specific adaptation measures.

Formal Vulnerability

Functional Vulnerability

Structural Vulnerability

2. URBAN FIRE PREVENTION SYSTEM

The indicator refers to the presence of fire prevention systems in the area under examination. Systems that can easily prevent diffusion through a timely and non-destructive system of control and shutdown are considered by this indicator.

- Urban fire systems not available
- Urban fire prevention system available, but with low diffusion/efficiency
- Urban fire prevention system available, with low/medium diffusion/efficiency
- Urban fire prevention system available, with medium diffusion/efficiency
- Urban fire prevention system available, with high diffusion/efficiency

Very High

High

Medium

Low

Very low

DESCRIPTION





F
I
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E

NAME OF CULTURAL ASSET, LOCATION.

F. Vfo. 1

Regional Hazard

Local Hazard

Formal Vulnerability

Functional Vulnerability

Structural Vulnerability

It represents the difficulty of preserving the peculiar aspects of the shape of the building (volume, style, decoration, internal and external architecture).

1. DISTRIBUTION TYPE

The indicator aims at qualitatively evaluating the possibility of evacuation from the cultural asset under examination. Evacuation is intended both for people and for valuables inside the property.

- Distribution path that makes the evacuation very problematic.
- Distribution path that makes the evacuation problematic.
- Distribution path that partially facilitates the evacuation.
- Distribution path that facilitates the evacuation.
- Distribution path that facilitates a lot the evacuation.

Very High
High
Medium
Low
Very low

DESCRIPTION



NAME OF CULTURAL ASSET, LOCATION.

F. Vfo. 2

**F
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Regional Hazard

Local Hazard

Formal Vulnerability

It represents the difficulty of preserving the peculiar aspects of the shape of the building (volume, style, decoration, internal and external architecture).

Functional Vulnerability

Structural Vulnerability

2. FURNISHINGS, COATINGS, OBJECTS, NON-STRUCTURAL ELEMENTS

The indicator considers the presence within the cultural asset of: furnishings, objects and non-structural elements, as well as their degree of resistance to fire.

- Elements with very low fire resistance

Very High

- Elements with low fire resistance

High

- Elements with medium fire resistance

Medium

- Elements with high fire resistance

Low

- Elements with very high fire resistance

Very low

DESCRIPTION



NAME OF CULTURAL ASSET, LOCATION.

F. Vfo. 3

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Regional Hazard

Local Hazard

Formal Vulnerability

It represents the difficulty of preserving the peculiar aspects of the shape of the building (volume, style, decoration, internal and external architecture).

Functional Vulnerability

Structural Vulnerability

3. OBJECTS OF CULTURAL IMPORTANCE CONTAINED IN THE BUILDING

The indicator considers the presence inside the building of objects of high cultural importance that are subject to the risk of fire.

- Totality of objects at risk of fire	Very High
- High presence of objects at risk of fire	High
- Medium presence of objects at risk of fire	Medium
- Low presence of objects at risk of fire	Low
- No objects at risk of fire	Very low

DESCRIPTION



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NAME OF CULTURAL ASSET, LOCATION.

F. Vfo. 4

Regional Hazard

Local Hazard

Formal Vulnerability

It represents the difficulty of preserving the peculiar aspects of the shape of the building (volume, style, decoration, internal and external architecture).

Functional Vulnerability

Structural Vulnerability

4. BUILDING FIRE PREVENTION SYSTEM

The indicator concerns the presence of an anti-fire system inside the building and its efficiency level.

- System not present
- System present but underdeveloped and inefficient
- System present but inefficient
- System present of medium efficient
- System present and efficient

Very High
High
Medium
Low
Very Low

DESCRIPTION





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NAME OF CULTURAL ASSET, LOCATION.

F. Vfo. 5

Regional Hazard

Local Hazard

Formal Vulnerability

Functional Vulnerability

Structural Vulnerability

It represents the difficulty of preserving the peculiar aspects of the shape of the building (volume, style, decoration, internal and external architecture).

5. FIRE-FIGHTING ELEMENTS

The indicator considers the presence of subdivision systems, ventilation systems and all those elements that can avoid / limit the spread of flames, inside the building.

- Elements not present
- Elements partially present but inefficient
- Elements partially present and partially efficient
- Elements partially present and efficient
- Elements partially present and efficient

Very High
High
Medium
Low
Very Low

DESCRIPTION





F
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NAME OF CULTURAL ASSET, LOCATION.

F. Vfu. 1

Regional Hazard

Local Hazard

Formal Vulnerability

Functional Vulnerability

It refers to the ability to preserve the functional typology of the building.

Structural Vulnerability

1. FUNCTIONAL TYPOLOGY

The indicator assesses the level of affluence in the considered building, according to its public or private nature.

- Public building with very high affluence
- Public building with high affluence
- Public building with medium affluence
- Public building with low affluence
- Private or uninhabited building

Very High
High
Medium
Low
Very Low

DESCRIPTION



F
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NAME OF CULTURAL ASSET, LOCATION.

F. Vfu. 2

Regional Hazard

Local Hazard

Formal Vulnerability

Functional Vulnerability

It refers to the ability to preserve the functional typology of the building.

Structural Vulnerability

2. STAFF FOR EMERGENCY INTERVENTION

This parameter investigates the presence of control and emergency staff, inside the cultural asset.

- Absent staff
- Staff almost absent and poorly trained
- Staff partially present and / or not sufficiently trained
- Staff partially present and trained
- Staff present and trained

Very High
High
Medium
Low
Very Low

DESCRIPTION





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NAME OF CULTURAL ASSET, LOCATION.

F. Vst. 1

Regional Hazard

Local Hazard

Formal Vulnerability

Functional Vulnerability

It refers to the ability to preserve the functional typology of the building.

Structural Vulnerability

1. TYPE STRUCTURE OF BUILDING

The indicator concerns the fire resistance of the structural elements in the considered building.

- Structural elements with no fire resistance

Very High

- Structural elements with low fire resistance

High

- Structural elements with medium fire resistance

Medium

- Structural elements with medium/high fire resistance

Low

- Structural elements with high fire resistance

Very Low

DESCRIPTION



EARTHQUAKE

NAME OF CULTURAL ASSET, LOCATION

Regional Hazard

- 1. SEISMIC CONDITIONS
- 2. GEOLOGICAL CONDITIONS

Local Hazard

- 1. URBAN - ARCHITECTONIC CONTEXT CONDITIONS

Formal Vulnerability

- 1. NON STRUCTURAL ELEMENTS
- 2. PLANIMETRY CONFIGURATION
- 3. HEIGHT CONFIGURATION
- 4. AGGREGATES VOLUMES
- 5. DISTRIBUTION TYPE

Functional Vulnerability

- 1. FUNCTIONAL TYPOLOGY

Structural Vulnerability

- 1. CONNECTIONS BETWEEN STRUCTURAL ELEMENTS
- 2. HORIZONTAL STRUCTURES (slab)
- 3. STRUCTURAL TYPOLOGY
- 4. WALL QUALITY
- 5. ROOF
- 6. ARCH AND VAULT
- 7. FONDATIONS
- 8. RESISTANT VERTICAL ELEMENTS
- 9. STAIRS
- 10. BUILDING CONTEXT
- 11. DETERIORATION
- 12. DETERIORATION BY RECENT EARTHQUAKE



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Regional Hazard

It refers to the general territorial characteristics.
It is not possible to modify the factors that occur to its determination.

Local Hazard

Formal Vulnerability

Functional Vulnerability

Structural Vulnerability

1. SEISMIC CONDITIONS

The indicator aims evaluating, through a qualitative scale, the maximum degree of acceleration of the ground where the cultural heritage is located.

- Predicted maximum ground acceleration very high (0.240-0.300 g)	Very High
- Predicted maximum ground acceleration high (0.180-0.240 g)	High
- Predicted maximum ground acceleration medium (0.120-0.180 g)	Medium
- Predicted maximum ground acceleration low (0.060-0.120 g)	Low
- Predicted maximum ground acceleration very low (0-0.060 g)	Very low

DESCRIPTION

Describe the conditions and motivate the the risk level chosen.



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Regional Hazard

It refers to the general territorial characteristics.
It is not possible to modify the factors that occur to its determination.

Local Hazard

Formal Vulnerability

Functional Vulnerability

Structural Vulnerability

2. GEOLOGICAL CONDITIONS

The indicator considers the type of ground and its implication on the possible amplification of the earthquake phenomenon.

For the evaluation of this indicator, it is possible to refer to geological or seismic maps.

- Soils with maximum amplification of the phenomenon	Very High
- Very favorable terrains for the amplification of the phenomenon	High
- On average favorable terrains for the amplification of the phenomenon	Medium
- Less favorable terrains for the amplification of the phenomenon	Low
- Terrains not favorable for the amplification of the phenomenon	Very low

DESCRIPTION



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Regional Hazard

Local Hazard

It refers to the context where the building is located. It is possible to modify the factors which regulate it, through specific adaptation measures.

Formal Vulnerability

Functional Vulnerability

Structural Vulnerability

1. CONDITIONS OF THE ARCHITECTURAL - URBAN CONTEXT

The indicator refers to architectural and urban conditions that can favour the destruction due to an earthquake. The indicator considers the urban fabric, paying attention to the density of the buildings and the different levels of accessibility.

- High building density, very small distances between buildings. Very hard accessibility.
- High building density, very small distances between buildings. Hard accessibility (eg medieval city)
- Medium building density, reduced distances between buildings. Medium accessibility. (eg Renaissance or Modern city)
- Low building density, large distances between buildings. Easy accessibility. (eg Contemporary city)
- Very low building density, large distances between buildings, isolated buildings. Easy accessibility.

Very High

High

Medium

Low

Very low

DESCRIPTION



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Regional Hazard

Local Hazard

Formal Vulnerability

It represents the difficulty of preserving the peculiar aspects of the shape of the building (volume, style, decoration, internal and external architecture).

Functional Vulnerability

Structural Vulnerability

1. NON-STRUCTURAL ELEMENTS

The indicator considers non-structural elements and their ability to withstand an earthquake. The performance of ceilings, cornices, false ceilings, fixtures, furniture, interior and exterior objects, which can cause damage with their fall, are evaluated.

- Not adopted elements adjustment measures	Very High
- Insufficient measures of adjustment the elements	High
- Partially adopted elements adjustment measures	Medium
- Sufficient measures of adjustment the elements	Low
- Adopted or unnecessary elements adjustment measures	Very low

DESCRIPTION



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Regional Hazard

Local Hazard

Formal Vulnerability

Functional Vulnerability

Structural Vulnerability

It represents the difficulty of preserving the peculiar aspects of the shape of the building (volume, style, decoration, internal and external architecture).

2. PLANIMETRY CONFIGURATION

The indicator considers the planimetric configuration and whether it is favorable or not to counter an earthquake.

The indicator takes into account: the arrangement of the resistant elements, the difference in resistance in the two main directions, unfavorable arrangement of openings in the walls, presence of latter additions.

- Not favorable configuration to counter the seismic event
- Little favorable configuration to counter the seismic event
- Partially favorable configuration to counter the seismic event
- Favorable configuration to counter the seismic event
- Very favorable configuration to counter the seismic event

Very High

High

Medium

Low

Very low

DESCRIPTION



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Regional Hazard

Local Hazard

Formal Vulnerability

It represents the difficulty of preserving the peculiar aspects of the shape of the building (volume, style, decoration, internal and external architecture).

Functional Vulnerability

Structural Vulnerability

3. HEIGHT CONFIGURATION

The indicator evaluates the height of the building and whether it is favorable or not to counter a seismic event.

The indicator takes into consideration the prevalence of the vertical dimension on the horizontal dimension (in plan).

- Not favorable configuration to counter the seismic event	Very High
- Little favorable configuration to counter the seismic event	High
- Little favorable configuration to counter the seismic event	Medium
- Favorable configuration to counter the seismic event	Low
- Favorable configuration to counter the seismic event	Very low

DESCRIPTION



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Regional Hazard

Local Hazard

Formal Vulnerability

Functional Vulnerability

Structural Vulnerability

It represents the difficulty of preserving the peculiar aspects of the shape of the building (volume, style, decoration, internal and external architecture).

4. AGGREGATED VOLUMES

The indicator considers the presence of volume added to the main body that may be favorable or not to the resistance to the earthquake's actions.

Examples of aggregated volumes refer to: porticoes, loggias, suspended terraces, etc.

- Very unfavorable presence of aggregated volumes	Very High
- Unfavorable presence of aggregated volumes	High
- Partially unfavorable presence of aggregated volumes	Medium
- Favorable presence of aggregated volumes	Low
- Not aggregated volumes	Very low

DESCRIPTION



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Regional Hazard

Local Hazard

Formal Vulnerability

It represents the difficulty of preserving the peculiar aspects of the shape of the building (volume, style, decoration, internal and external architecture).

Functional Vulnerability

Structural Vulnerability

5. DISTRIBUTION TYPE

The indicator qualitatively evaluates the evacuation possibility in the examined cultural asset.

Evacuation is intended both for people and for valuables inside the property.

- Not favorable configuration to counter the seismic event	Very High
- Little favorable configuration to counter the seismic event	High
- Partially favorable configuration to counter the seismic event	Medium
- Favorable configuration to counter the seismic event	Low
- Very favorable configuration to counter the seismic event	Very low

DESCRIPTION



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NAME OF CULTURAL ASSET, LOCATION

T. Vfu. 1

Regional Hazard

Local Hazard

Formal Vulnerability

Functional Vulnerability

It refers to the ability to preserve the functional typology of the building.

Structural Vulnerability

1. FUNCTIONAL TYPOLOGY

The indicator takes into consideration the level of affluence according to the public or private nature, of the building under investigation.

- Public building with very high affluence.
- Public building with high affluence.
- Public building with medium affluence.
- Public building with low affluence.
- Private or uninhabited building.

Very High
High
Medium
Low
Very low

DESCRIPTION





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NAME OF CULTURAL ASSET, LOCATION

T. Vst. 1

Regional Hazard

Local Hazard

Formal Vulnerability

Functional Vulnerability

Structural Vulnerability

It consists in the ability to preserve the static properties of the building.

1. LINKS BETWEEN STRUCTURAL ELEMENTS

The indicator evaluates the connections between structural elements such as tie rods, buttresses, reinforcement rings, etc.

- Not suitable links between the horizontal and vertical elements.
- Poorly adapted links between the horizontal and vertical elements.
- Partially adequate links between the horizontal and vertical elements.
- Adequate links between the horizontal and vertical elements.
- Links between the horizontal and vertical elements very adequate.

Very High

High

Medium

Low

Very low

DESCRIPTION





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Regional Hazard

Local Hazard

Formal Vulnerability

Functional Vulnerability

Structural Vulnerability

It consists in the ability to preserve the static properties of the building.

2. HORIZONTAL STRUCTURES (slab)

The indicator evaluates horizontal structures, such as slabs. For the assessment, the structural consistency must be taken into account.

- Not adopted interventions to adjust horizontal structures.
- Not sufficiently adopted interventions to adjust horizontal structures.
- Partially adopted interventions to adjust horizontal structures.
- Sufficiently adopted interventions to adjust horizontal structures.
- Adopted or unnecessary Interventions to adjust horizontal structures.

Very High

High

Medium

Low

Very low

DESCRIPTION



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Regional Hazard

Local Hazard

Formal Vulnerability

Functional Vulnerability

Structural Vulnerability

It consists in the ability to preserve the static properties of the building.

3. STRUCTURAL TYPOLOGY

The indicator considers the type of structure and the seismic resistance of the materials used.

- Very low seismic resistance structure materials.
- Low seismic resistance structure materials.
- Medium seismic resistance structure materials.
- High seismic resistance structure materials.
- Very high seismic resistance structure materials.

Very High
High
Medium
Low
Very low

DESCRIPTION



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Regional Hazard

Local Hazard

Formal Vulnerability

Functional Vulnerability

Structural Vulnerability

It consists in the ability to preserve the static properties of the building.

4. WALL QUALITY

The indicator evaluates the quality of the walls and its characteristics. Particular attention must be paid to the structural quality, the mortar, the blocks used, the state of conservation of the materials and the arrangement of the wall elements. The presence of any repair interventions is also considered in this indicator.

- Not adopted measures of walls quality adjustments	Very High
- Insufficient measures of walls quality adjustments	High
- Partially adopted measures of walls quality adjustments	Medium
- Sufficient measures of walls quality adjustments	Low
- Adopted or unnecessary measures of walls quality adjustments	Very low

DESCRIPTION



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Regional Hazard

Local Hazard

Formal Vulnerability

Functional Vulnerability

Structural Vulnerability

It consists in the ability to preserve the static properties of the building.

5. ROOF

The indicator assesses on a qualitative scale whether maintenance works on the roof have been carried out.

- Not adopted roof adjustment measures
- Insufficient roof adjustment measures
- Partially adopted roof adjustment measures
- Sufficient roof adjustment measures
- Adopted or unnecessary roof adjustment measures

Very High

High

Medium

Low

Very low

DESCRIPTION



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NAME OF CULTURAL ASSET, LOCATION

T. Vst. 6

Regional Hazard

Local Hazard

Formal Vulnerability

Functional Vulnerability

Structural Vulnerability

It consists in the ability to preserve the static properties of the building.

6. ARCH AND VAULT

The indicator assesses using a qualitative scale whether maintenance and adjustment measures on arcs and vaults have been adopted.

- Not adopted arch and vault adjustment measures	Very High
- Adapting arch and vault made inadequatel	High
- Partially adopted arch and vault adjustment measures	Medium
- Adapting arch and vault made sufficiently	Low
- Adopted or unnecessary arch and vault adjustment measures	Very low

DESCRIPTION



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Regional Hazard

Local Hazard

Formal Vulnerability

Functional Vulnerability

Structural Vulnerability

It consists in the ability to preserve the static properties of the building.

7. FOUNDATIONS

The indicator assesses whether maintenance works foundations have been carried out. Among the interventions to be taken into consideration, it is possible to recall: foundation consolidation, soil consolidation, insertion of foundations, construction of seismic joints, etc.

- Not adopted foundations adjustment measures

Very High

- Inadequate foundations adjustment measures

High

- Inadequate foundations adjustment measures

Medium

- Sufficient foundations adjustment measures

Low

- Adopted or unnecessary foundations adjustment measures

Very low

DESCRIPTION



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NAME OF CULTURAL ASSET, LOCATION

T. Vst. 8

Regional Hazard

Local Hazard

Formal Vulnerability

Functional Vulnerability

Structural Vulnerability

It consists in the ability to preserve the static properties of the building.

8. RESISTANT VERTICAL ELEMENTS

The indicator on the resistant vertical elements assesses whether maintenance measures have been adopted.

- Not adopted elements adjustment measures
- Insufficient measures of adjustment the elements
- Partially adopted elements adjustment measures
- Sufficient measures of adjustment the elements
- Adopted or unnecessary elements adjustment measures

Very High

High

Medium

Low

Very low

DESCRIPTION





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NAME OF CULTURAL ASSET, LOCATION

T. Vst. 9

Regional Hazard

Local Hazard

Formal Vulnerability

Functional Vulnerability

Structural Vulnerability

It consists in the ability to preserve the static properties of the building.

9. STAIRS

The indicator on the stairs assesses whether maintenance measures have been implemented.

- Not adopted stairs adjustment measures
- Insufficient measures of adjustment the stairs
- Partially adopted stairs adjustment measures
- Sufficient measures of adjustment the stairs
- Adopted or unnecessary stairs adjustment measures

Very High

High

Medium

Low

Very low

DESCRIPTION





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Regional Hazard

Local Hazard

Formal Vulnerability

Functional Vulnerability

Structural Vulnerability

It consists in the ability to preserve the static properties of the building.

10. BUILDING CONTEXT

The indicator evaluates the presence of adjacent buildings and their possible connection with the considered cultural asset.

- Building not adjacent to other buildings or isolated
- Building partially adjacent to other buildings
- Building adjacent to other buildings
- Building partially connected to adjacent buildings
- Building connected effectively to adjacent buildings

Very High
High
Medium
Low
Very low

DESCRIPTION



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Regional Hazard

Local Hazard

Formal Vulnerability

Functional Vulnerability

Structural Vulnerability

It consists in the ability to preserve the static properties of the building.

11. DETERIORATION

The indicator assesses the presence and the degree of degradation of the cultural asset under examination.

- Presence of very important degradation elements	Very High
- Presence of important degradation elements	High
- Presence of degradation elements of medium importance	Medium
- Presence of degradation elements of low importance	Low
- Not degradation elements	Very low

DESCRIPTION



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NAME OF CULTURAL ASSET, LOCATION

T. Vst. 12

Regional Hazard

Local Hazard

Formal Vulnerability

Functional Vulnerability

Structural Vulnerability

It consists in the ability to preserve the static properties of the building.

12. DETERIORATION BY RECENT EARTHQUAKE

The indicator assesses the presence and degree of deterioration caused by recent earthquakes.

- Presence of very important degradation elements	Very High
- Presence of important degradation elements	High
- Presence of degradation elements of medium importance	Medium
- Presence of degradation elements of low importance	Low
- Not degradation elements	Very low

DESCRIPTION



FLOOD

NAME OF CULTURAL ASSET, LOCATION

Regional Hazard

- 1. WEATHER CONDITIONS
- 2. GEOMORPHOLOGICAL CONDITIONS
- 3. REGIONAL HYDROGRAPHIC CONDITIONS
- 4. GLOBAL TERRITORIAL CONDITIONS

Local Hazard

- 1. LOCAL HYDROGRAPHIC CONDITIONS
- 2. CONTRAST OF RISK
- 3. CONDITIONS OF THE ARCHITECTURAL URBAN CONTEXT

Formal Vulnerability

- 1. BUILDING PROTECTION SYSTEM
- 2. DISTRIBUTION TYPE
- 3. FURNISHING, OBJECTS, ETC..

Functional Vulnerability

- 1. FUNCTIONAL TYPOLOGY

Structural Vulnerability

- 1. STRUCTURAL TYPOLOGY



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NAME OF CULTURAL ASSET, LOCATION

A. Rr. 1

Regional Hazard

It refers to the general territorial characteristics.
It is not possible to modify the factors that occur to its determination.

Local Hazard

Formal Vulnerability

Functional Vulnerability

Structural Vulnerability

1. WEATHER CONDITIONS

The indicator refers to weather conditions, considering the level of rainfall of the territory, according to a qualitative scale.

- Very high rainfall area
- High rainfall area
- Medium rainfall area
- Low rainfall area
- Very low rainfall

Very High
High
Medium
Low
Very low

DESCRIPTION

Describe the conditions and motivate the the risk level chosen.





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NAME OF CULTURAL ASSET, LOCATION

A. Rr. 2

Regional Hazard

It refers to the general territorial characteristics.
It is not possible to modify the factors that occur to its determination.

Local Hazard

Formal Vulnerability

Functional Vulnerability

Structural Vulnerability

2. GEOMORPHOLOGICAL CONDITIONS

The indicator refers to the geo-morphological conditions of the land on which cultural asset is located. It assesses the risk of landslides, floods and avalanches, considering the geo-morphological causes and the proximity of the examined building to natural or artificial risk elements.

- High proximity to natural or artificial risk elements
- Medium/high proximity to natural or artificial risk elements
- Medium proximity to natural or artificial risk elements
- Low proximity to natural or artificial risk elements
- No proximity to natural or artificial risk elements

Very High
High
Medium
Low
Very low

DESCRIPTION





F
L
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D

NAME OF CULTURAL ASSET, LOCATION

A. Rr. 3

Regional Hazard

It refers to the general territorial characteristics.
It is not possible to modify the factors that occur to its determination.

Local Hazard

Formal Vulnerability

Functional Vulnerability

Structural Vulnerability

3. REGIONAL HYDROGRAPHIC CONDITIONS

The indicator refers to regional hydrographic conditions.

-Main hydrographic network with very low efficiency

Very High

-Main hydrographic network with low efficiency

High

-Main hydrographic network with medium efficiency

Medium

-Main hydrographic network with high efficiency

Low

-Main hydrographic network with very high efficiency

Very low

DESCRIPTION





F
L
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D

NAME OF CULTURAL ASSET, LOCATION

A. Rr. 4

Regional Hazard

It refers to the general territorial characteristics.
It is not possible to modify the factors that occur to its determination.

Local Hazard

Formal Vulnerability

Functional Vulnerability

Structural Vulnerability

4. GLOBAL TERRITORIAL CONDITIONS

The indicator refers to regional territorial conditions, with particular reference to the land cover where the cultural asset is positioned.

- High ground cover
- Medium/high ground cover
- Medium ground cover
- Low ground cover
- Very low ground cover

- Very High
- High
- Medium
- Low
- Very low

DESCRIPTION





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NAME OF CULTURAL ASSET, LOCATION

A. RI. 1

Regional Hazard

Local Hazard

It refers to the context where the building is located. It is possible to modify the factors which regulate it, through specific adaptation measures.

Formal Vulnerability

Functional Vulnerability

Structural Vulnerability

1. LOCAL HYDROGRAPHIC CONDITIONS

The indicator refers to the presence of a secondary drainage network and its degree of efficiency.

- Secondary hydrographic network with very low efficiency
- Secondary hydrographic network with low efficiency
- Secondary hydrographic network with medium efficiency
- Secondary hydrographic network with high efficiency
- Secondary hydrographic network with very high efficiency

Very High
High
Medium
Low
Very low

DESCRIPTION





F
L
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D

NAME OF CULTURAL ASSET, LOCATION

A. RI. 2

Regional Hazard

Local Hazard

It refers to the context where the building is located. It is possible to modify the factors which regulate it, through specific adaptation measures.

Formal Vulnerability

Functional Vulnerability

Structural Vulnerability

2. CONTRAST OF RISK

The indicator refers to the presence of elements which can contrast the flood risk, such as the presence of vegetation, walls or barrier structures, waterproofing, etc. around the building.

- Absence of natural or artificial elements to counteract the risk
- Low presence of natural or artificial elements to counteract the risk
- Partial presence of natural or artificial elements to counteract the risk
- High presence of natural or artificial elements to counteract the risk
- Very high presence of natural or artificial elements to counteract the risk

Very High
High
Medium
Low
Very low

DESCRIPTION





F
L
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D

NAME OF CULTURAL ASSET, LOCATION

A. RI. 3

Regional Hazard

Local Hazard

It refers to the context where the building is located. It is possible to modify the factors which regulate it, through specific adaptation measures.

Formal Vulnerability

Functional Vulnerability

Structural Vulnerability

3. CONDITIONS OF THE ARCHITECTURAL - URBAN CONTEX

The indicator considers the urban fabric where the cultural asset is located, paying attention to the density of the buildings and the different levels of accessibility.

- High building density, very small distances between buildings. Very hard accessibility
- High building density, very small distances between buildings. Hard accessibility (eg medieval city)
- Medium building density, reduced distances between buildings. Medium accessibility. (eg Renaissance or Modern city)
- Low building density, large distances between buildings. Easy accessibility. (eg Contemporary city)
- Very low building density, large distances between buildings, isolated buildings. Easy accessibility.

Very High

High

Medium

Low

Very low

DESCRIPTION





F
L
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NAME OF CULTURAL ASSET, LOCATION

A. Vfo. 1

Regional Hazard

Local Hazard

Formal Vulnerability

Functional Vulnerability

Structural Vulnerability

It represents the difficulty of preserving the peculiar aspects of the shape of the building (volume, style, decoration, internal and external architecture).

1. BUILDING PROTECTION SYSTEMS

The indicator considers the presence of building protection systems, such as water-proofing, drainage system, barrier systems, etc.

- Systems not present
- Low efficiency systems
- Medium efficiency systems
- High efficiency systems
- Very high efficiency systems

Very High
High
Medium
Low
Very low

DESCRIPTION





F
L
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O
D

NAME OF CULTURAL ASSET, LOCATION

A. Vfo. 2

Regional Hazard

Local Hazard

Formal Vulnerability

It represents the difficulty of preserving the peculiar aspects of the shape of the building (volume, style, decoration, internal and external architecture).

Functional Vulnerability

Structural Vulnerability

2. DISTRIBUTION TYPE

The indicator qualitatively evaluates the possibility of evacuation from the cultural asset under examination. Evacuation intended both for people and for valuables inside the property.

- Distribution path that makes the evacuation very problematic.
- Distribution path that makes the evacuation problematic.
- Distribution path that partially facilitates the evacuation.
- Distribution path that facilitates the evacuation.
- Distribution path that facilitates a lot the evacuation.

Very High
High
Medium
Low
Very low

DESCRIPTION





F
L
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D

NAME OF CULTURAL ASSET, LOCATION

A. Vfo. 3

Regional Hazard

Local Hazard

Formal Vulnerability

Functional Vulnerability

Structural Vulnerability

It represents the difficulty of preserving the peculiar aspects of the shape of the building (volume, style, decoration, internal and external architecture).

3. FURNISHINGS, OBJECTS, ETC..

The indicator refers to the presence of a series of objects of prestige and importance contained in the cultural asset under investigation.

-Very high presence of elements exposed to risk

Very High

-High presence of elements exposed to risk

High

-Medium presence of elements exposed to risk

Medium

-Low presence of elements exposed to risk

Low

-Very low presence of elements exposed to risk

Very low

DESCRIPTION





F
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Regional Hazard

Local Hazard

Formal Vulnerability

Functional Vulnerability

It refers to the ability to preserve the functional typology of the building.

Structural Vulnerability

1. FUNCTIONAL TYPOLOGY

The indicator takes into consideration level of affluence in the building according to its public or private nature.

- Public building with very high affluence
- Public building with high affluence
- Public building with medium affluence
- Public building with low affluence
- Private or uninhabited building

Very High
High
Medium
Low
Very low

DESCRIPTION



F
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NAME OF CULTURAL ASSET, LOCATION

A. Vst. 1

Regional Hazard

Local Hazard

Formal Vulnerability

Functional Vulnerability

Structural Vulnerability

It consists in the ability to preserve the static properties of the building.

1. STRUCTURAL TYPOLOGY

The indicator takes in consideration the flood resistance of the structural elements, assigning a value on a qualitative scale.

- Structural elements with very low resistance to flood	Very High
- Structural elements with low resistance to flood	High
- Structural elements with medium resistance to flood	Medium
- Structural elements with high resistance to flood	Low
- Structural elements with very high resistance to flood	Very low

DESCRIPTION