

Dipartimento di Matematica e Geoscienze - Via Edoardo Weiss 2, 34128 Trieste ITALY

WP4

Platy limestone as cultural heritage

Supplement 3.II

Cross-border issues in conservation and restoration of platy limestone

Appendix 3.II.1

Final report for the project area in Italy (Carso)

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Photos and drawings by Fabiana PIERI

Trieste, 11th November 2014

We have studied 148 buildings.

In the Duino-Aurisina municipality we have studied and catalogued 49 buildings.
23 buildings in Aurisina, 4 in Ceroglie, 2 in Malchina, 3 in Precenico inferiore, 4 in Precenico Superiore, 2 in Prepotto, 4 in San Pelagio, 6 in Slivia, 1 in San Giovanni al Timavo.

In the Sgonico municipality we have studied and catalogued 38 buildings.
3 in Borgo Grotta, 3 in Bristie, 3 in Colludrozza, 7 in Gabrovizza, 11 in Rupinpiccolo, 5 in Sales, 1 in Samatorza, 5 in Sgonico.

In the Monrupino/Repentabor municipality we have studied and catalogued 31 buildings.
8 In Zolla/Col, 23 in Rupingrande/Repen.

In the Trieste municipality we have studied and catalogued 29 buildings.
11 in Basovizza, 14 in Santa Croce, 4 in Trebiciano.

In the San Dorligo della Valle/Občina Dolina municipality we have studied and catalogued only one building.

ROOFS

In 33 cases platy limestone roof is conserved as the main part of the house.

In the Duino-Aurisina municipality we have 10 cases.

3 in Aurisina:

- 1007 Agriturismo (guesthouse) Ušaj
- 1015 Razman house
- 1016 Casa Trobec

1 in Prepotto: 1075 Gabrielli house

3 in San Pelagio:

- 1119 Skerk House
- 1120 Peric House
- 1121 San Pelagio (Šempolaj) community's house

3 in Slivia:

- 1140 - Slivia 1
- 1141 Vrdih house
- 1142 Slivia 8A

In the Sgonico municipality we have 7 cases

3 in Borgo Grotta:

- 1040 Borgo Grotta 16
- 1041 Borgo Grotta 19
- 1042 Borgo Grotta 26 A

1 in Gabrovizza: 1063 Gabrovizza 40

2 in Rupinpiccolo:

- 1100 Rupinpiccolo 4
- 1109 Rupinpiccolo 55

1 in Sgonico: 1135 Sgonico 11

In the Monrupino/Repentabor municipality we have 13 cases.

5 In Zolla/Col:

- 1005 Assumption of the blessed Virgin parish - community's house
- 1097 Assumption of the blessed Virgin parish
- 1098 Assumption of the blessed Virgin church
- 1052 Zolla/Col 13
- 1053 Zolla/Col 14

8 in Rupingrande/Repen:

- 1001 »kraška hiša«/karstic house museum
- 1002 karstic house
- 1076 Rupingrande/Repen 5
- 1077 Rupingrande/Repen 6
- 1078 Rupingrande/Repen 8
- 1080 Rupingrande/Repen 15
- 1083 Rupingrande/Repen 22
- 1095 Rupingrande/Repen 71

In the Trieste municipality we have 2 cases

1 in Basovizza: 1039 Kosovel 28

1 in Santa Croce: 1004 Saint Rocco and Saint Sebastiano church

In the San Dorligo della Valle/Občina Dolina municipality we have one building (recently restored with Trani stone): 1117 San Lorenzo church

In 2 buildings part of the roof in platy limestone is conserved

In the Sgonico municipality we have 2 buildings.

1 in Samatorza: 1115 Saint Ulderico church

1 in Sgonico: 1138 St. Michael the Archangel church

SPAHNJENCA

In 10 cases *spahnjenca* is conserved with a roof in platy limestone.

In the Duino-Aurisina municipality we have 4 buildings.

1 building in Aurisina: 1007 Agriturismo (guesthouse) Ušaj

1 in Ceroglie: 1047 Clarčeva house

1 in San Pelagio: 1118

1 in Slivia: 1143 Kralj house

In the Sgonico municipality we have 5 buildings.

3 in Gabrovizza:

- 1058 Cernjava house
- 1059 Obad house
- 1062 Gabrovizza 39

2 in Rupinpiccolo:

- 1102 Rupinpiccolo 4
- 1104 Zenic House

In the Trieste municipality we have studied and catalogued 1 building.

1 in Trebiciano: 1003 Ljenčica's house

Four of them have an external oven covered in platy limestone near the *spahjenca*.

1 in Aurisina: 1007 Agriturismo (guesthouse) Ušaj

1 in Slivia: 1143 Kralj house

1 a Ceroglie: 1047 Clarčeva house

1 in Santa Croce: 1123

Almost all buildings have roof cornice and window top frame in platy limestone.

1. THE STATUS OF EXISTING STRUCTURE / BUILDING IN TERMS OF HERITAGE PROTECTION

Only few buildings are protected cultural heritage (as a whole).

- 1002 karstic house, Rupingrande/Repen 20: Declaration of cultural interest on 29.06.2005, GN 1323 - 1.02.2006

- 1003 Ljenčkica's house, Trebiciano 107: Ministerial Decree 06/08/1981 (art. 4 Law 1089/39)

- 1076 Rupingrande/Repen 5: Ministerial Decree 14.07. 1979 (artt. 1, 2 e 3 Law 1089/39):

“Importante esempio di antica casa carsica caratterizzata da: tetto in scaglie di pietra a due ripidi spioventi, ballatoio su fitti pregevoli modiglioni, canale di gronda in pietra decorato da un puttino, cappelletta esterna e portale ad arco sul muro di cinta. Databile al 1789, data riportata sull'architrave del portone.”

Some buildings, belonging to public and private nonprofit legal entities, which have an artistic, historical, etc. interest, date back more than seventy years and are no longer living author pending verification to assess the existence or not of that interest, are provisionally subject to the regulations of the protection provided by the Code (Article 12 Legislative Decree no. 42/2004) - protection as the whole building.

- 1001 »kraška hiša«/karstic house museum, Rupingrande/Repen 31

- 1121 San Pelagio (Šempolaj) community's house

- 1004 Saint Rocco and Saint Sebastiano church, Santa Croce 1013

- 1005 Assumption of the blessed Virgin parish - community's house, Col 2

- 1097 Assumption of the blessed Virgin parish, Col 2

- 1098 Assumption of the blessed Virgin church, Col 2

- 1115 Saint Ulderico church, Samatorza

- 1116 San Giovanni al Timavo o “in Tuba” - St. John's along Timavo church, San Giovanni al Timavo

- 1117 San Lorenzo church, San Lorenzo

- 1138 St. Michael the Archangel church, Sgonico 23

All the buildings have a landscape protection obligation (protection as part of rural / urban settlement structure).

2. THE LEGAL REPRESENTATIVE / OWNER

44 buildings: only two are public property (the karstic house in Rupingrande [1002] and Saint Rocco and Saint Sebastiano church [1004]).

Three buildings are owned by cultural associations (private) to preserve them (the San Pelagio (Šempolaj) community house [1121], the »kraška hiša«/karstic house museum in Repen [1001] and the Ljenčica's house in Trebiciano [1003]).

Six of them are church-owned (St. Michael the Archangel church in Sgonico [1138], Saint Ulderico church in Samatorza [1115], the complex of Repen tabor with Assumption of the blessed Virgin church [1098], the parish [1097] and the community's house [1005] and San Lorenzo church in San Lorenzo [1117]).

Two of them are used as guesthouses (Ušaj house in Aurisina [1007] and Clarčeva house in Ceroglie [1047]).

3. DESCRIBE PROPERTY OWNER COOPERATION WHEN STRUCTURE WAS LISTED FOR ROR DATA BASE

All owners contacted were glad to cooperate. Many of them are very interested in the results of the project, especially in restoration guidelines.

4. DEFINE THE STATUS OF THE STRUCTURE / BUILDING IN TERMS OF MANAGEMENT OF CULTURAL HERITAGE

We have studied 148 buildings. Almost all buildings have roof cornice and window top frame in platy limestone.

The inhabitants of the Karst didn't take much care in employing traditional features and construction techniques when restoring and enlarging houses in the mid-20th century; buildings with stone roofs were usually substituted with new tiled roofs, which need less maintenance. Buildings with stone roofs encountered nowadays were all abandoned and are in a bad state of preservation. Many of them have recently been restored with a new sensitivity shown towards preserving traditional features.

Only 44 buildings maintain the roof or part of the roof in platy limestone or the spahnjenca with a roof in platy limestone.

Only some buildings (13) conserve the original primary load-bearing structure derived from the oak beams, the secondary structure composed of strips obtained by hand from oak trees and stone slates connected to one another in a horizontal fashion and cover each other almost completely.

2 in Aurisina:

- 1007 Agriturismo (guesthouse) Ušaj - some parts of the building were under conservation supervision in last 10 years. The wooden gallery has been rebuilt on a concrete frame.



- 1016 Casa Trobec – needs some restoration works as soon as possible.



1 in Prepotto: 1075 Gabrielli house - some parts of the building were under conservation supervision in last 7 years directly by the owner. He integrated the original primary load-bearing structure without any static calculation.



2 in Slivia:
- 1141 Vrdih house – needs some restoration works



- 1142 Slivia 8A – needs some restoration works



2 in Borgo Grotta:

- 1041 Borgo Grotta 19 – needs some restoration works as soon as possible.



- 1042 Borgo Grotta 26 A - some parts of the building were under conservation supervision in the last 10 years directly by the owner.



2 In Zolla/Col:

- 1052 Zolla/Col 13 - needs some restoration works.

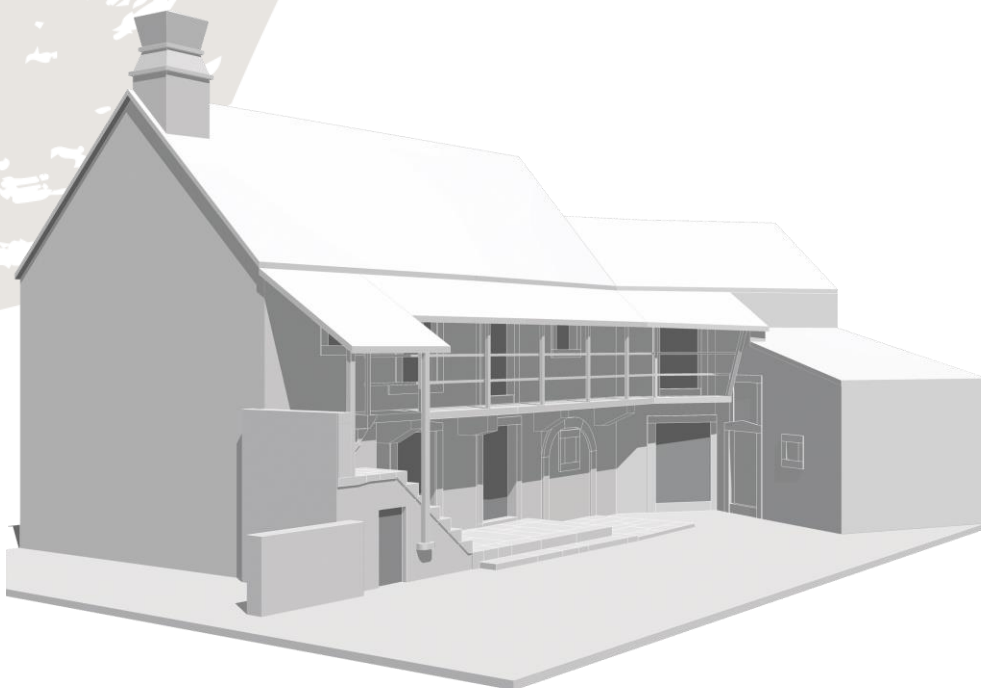


- 1053 Zolla/Col 14 - some parts of the building were under conservation supervision in last 10 years.



4 in Rupingrande/Repen:

- 1001 »kraška hiša«/karstic house museum - The NAŠ KRAS cooperative society bought the building on 29.04.1968 and restored the house. The museum opened in September 1968. The project of architect Marjan Loboda from Ljubljana established to put the outside pavement, the cistern and the high yard wall. Some conservative works were done in 1999.



- 1078 Rupingrande/Repen 8 - needs some restoration works.



1080 Rupingrande/Repen 15 – needs some restoration works as soon as possible.



- 1083 Rupingrande/Repen 22 – needs some restoration works



In some houses the roof was pulled down and rebuilt. In some cases (7) the stone roof has been reconstructed with a primary wooden load-bearing structure, usually a concrete roofing and stone slates connected to one another in a horizontal fashion, covering each other almost completely.

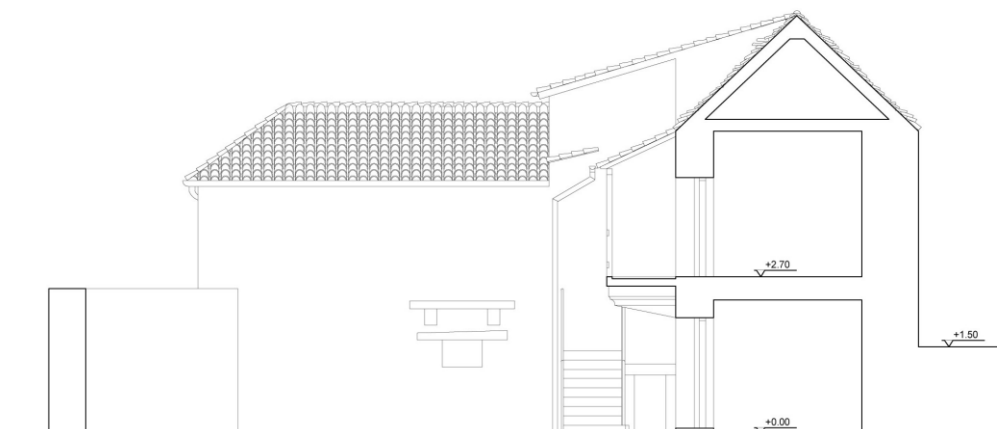
In some cases (e.g. Saint Rocco and Saint Sebastiano church), a bituminous layer was put between wooden roofing and shingles. This led to structural problems. In other cases (e.g. Saint Lorenzo church), a bituminous layer was put on the secondary wooden structure and above a structural concrete roofing support the stone slates. The concrete roofing rests on a concrete beam constructed on the top of perimetrical walls.



Saint Lorenzo church (photos by Luciano Zarattini)

The use of concrete roofing above the secondary wooden structure is suggested also from arch. M. Kokorovec in *Paesaggio e architettura rurale carsica: una guida per costruire e recuperare una tradizione*, Ronchi dei Legionari (GO), 2001 (!).

In other cases (6), the stone roof has been reconstructed over a brick and concrete roofing (see below).



Roofs with primary wooden load-bearing structure

- 1140 - Slivia 1 – a concrete beam has been put at the contact points between the perimeter walls and the coverage.



- 1040 Borgo Grotta 16 – Bad use of plaster.



- 1063 Gabrovizza 40 – the roof has been rebuilt in a correct way. All well restored. Unfortunately the construction company is not active any more.



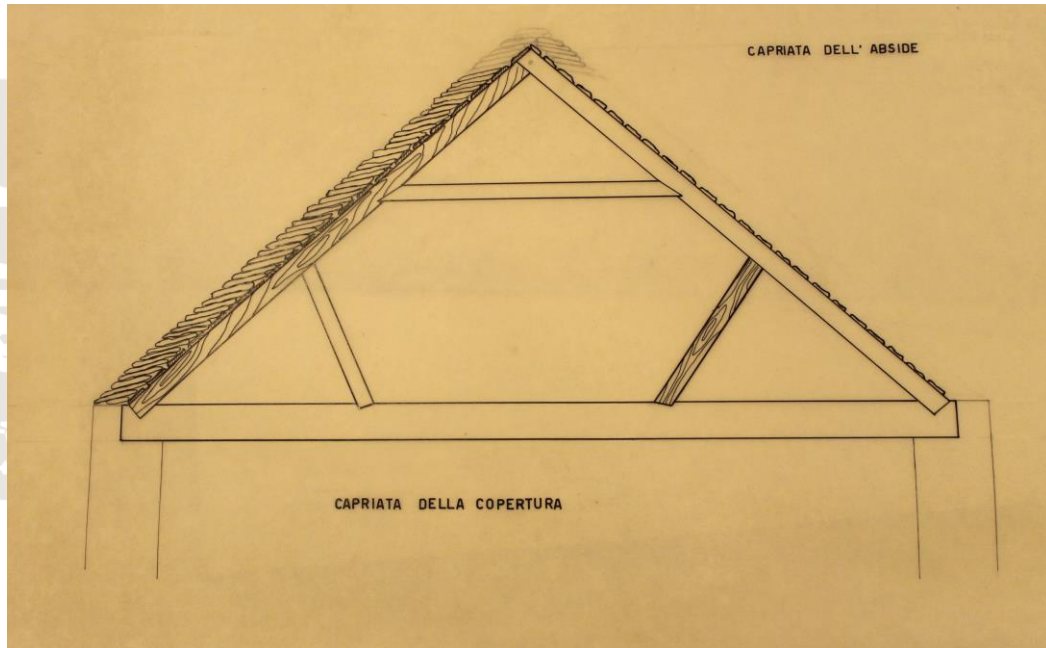
- 1005 Assumption of the blessed Virgin parish - community's house – It has been restored between 1983 and 1990 in a bad way and after a few years stone roofs collapsed. The roof has been rebuilt.



- 1097 Assumption of the blessed Virgin parish - Roof cornices replaced with wrong stones.



- 1098 Assumption of the blessed Virgin church - It has been restored between 1983 and 1990 in a bad way and after a few years stone roofs collapsed. The roof has been rebuilt.



Friuli Venezia Giulia Superintendence archive – 1989

- 1117 San Lorenzo church – Original roof in platy limestone has been completely rebuilt in 2013 using new stone coming from Apulia (Trani stone) put in the wrong way. An engineer, Luciano Zarattini, is the responsible person of the project office.



Roofs reconstructed over a brick and concrete roofing

- 1015 Razman house – It has been recently restored eliminating the vent and involving the placing of a bituminous layer between the wooden roofing and shingles; stones have been replaced the wrong way (stone slates connected to one another not in a horizontal fashion and so don't cover each other almost completely).



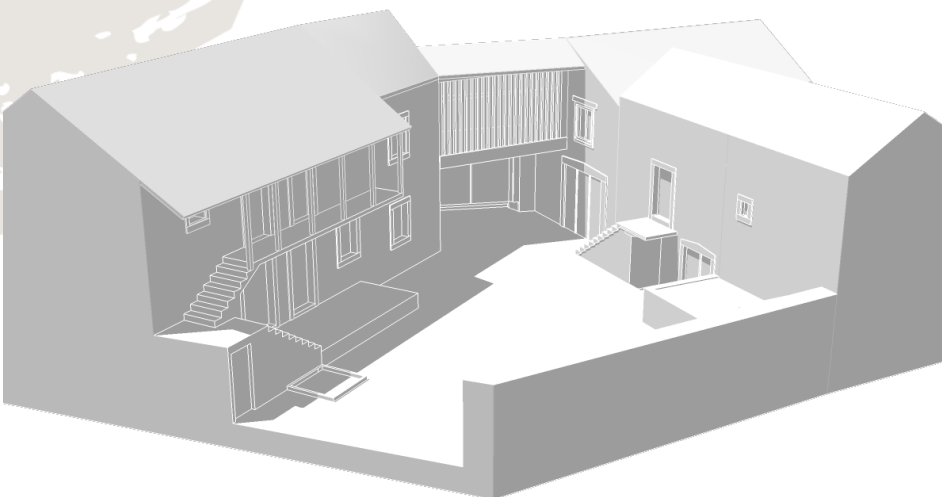
- 1121 San Pelagio (Šempolaj) community's house – Restored in 2011. It seems to be a good example of restoration but the roof has been reconstructed over a brick and concrete roofing.



- 1135 Sgonico 11 – The stone roof has been reconstructed over a brick and concrete roofing. Stones have been replaced the wrong way (stone slates connected to one another not in a horizontal fashion and so don't cover each other almost completely).



- 1002 karstic house – The Trieste Province bought the building on 8.03.1974 and restored the house in 1977. The project of architect Giorgio Berni from Trieste, on 1977, established to build the concrete floor behind the portal gate and changed the arrangement of rooms. The stone roof has been reconstructed on a brick and concrete roofing.



- 1076 Rupingrande/Repen 5 – The stone roof has been reconstructed over a brick and concrete roofing.



- 1095 Rupingrande/Repen 71 – In a recent restoration they have completely rebuilt the roof but without the original vents. Originally it had an external stone staircase to access the gallery made from a wooden structure and covered with a jutting roof. In a recent restoration they



have built, on the back side of the building, an inner stair, maintaining the gallery and the jutting roof. It's a bad restoration: bad use of plaster.

In other buildings the roof has collapsed (Skerk House [1119] and Peric House [1120] in San Pelagio, Rupinpiccolo 4 [1100], Rupingrande/Repen 6 [1077], the one in Basovizza, Kosovel 28 [1039], Saint Rocco and Saint Sebastiano church [1004]).

The roof of the protruding fireplace kitchen (spahnjenca) is easy to conserve since it's built directly on a stone arch. Some buildings have do not have stone roofing anymore but conserve the roof of the spahnjenca in platy limestone.

Four of them have a protruding oven covered with platy limestone near the spahnjenka.

- 1118 San Pelagio – the building was renovated in last 5 years.



- 1143 Kralj house, Slivia 12 – the building has been reshaped in part.



- 1047 Clarčeva house in Ceroglie - It has been restored in 2010. It's a good example of restoration.



- 1058 Cernjava house, Gabrovizza 17 – The external fire-place kitchen in the middle of the facade isn't used as a fire-place kitchen yet, but as a warehouse. Needs some restoration works.



- 1059 Obad house, Gabrovizza 17a – Needs some restoration works.



- 1062 Gabrovizza 39 - building renovated in last 5 years.

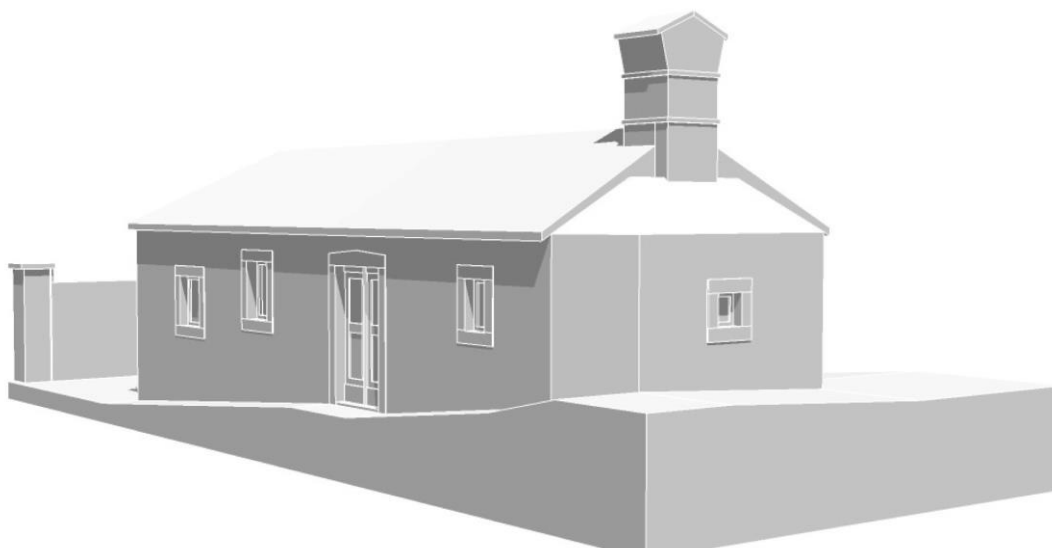


Limestone as the common denominator of natural and cultural heritage
along the karstified part of the Adriatic coast

- 1104 Zenic House, Rupinpiccolo 17 - needs some restoration works as soon as possible.



- 1003 Ljenčkica's house, Trebiciano



Conclusions.

Since we don't have a construction company competent to restore roofs in a traditional way, almost every stone roof has been pulled down and rebuilt with structural concrete roofing supporting the stone slates in the last 10 years. The concrete roofing rests on a concrete beams constructed on the top of perimetrical walls.

Only few roofs still conserve the original structure. This is due to the sensibility of the owner that maintains it by changing broken slates and putting roman lime between them.

5. THE STATUS OF THE BUILDING / STRUCTURE IF IT IS TREATED / PROTECTED AS ARCHITECTURAL CULTURAL HERITAGE

See point 1.

6. WAS THE BUILDING / STRUCTURE CONSERVATION / RECONSTRUCTION OR OTHER PROJECT AWARDED AS THE REPRESENTATIVE EXAMPLE?

See point 4.

7. DESCRIBE BENEFITS FOR THE OWNER OF PROTECTED BUILDING / STRUCTURE

The Code of Cultural Heritage 42/2004 provides for aid to the owners of the protected buildings for conservation works. The contribution (maximum 50% of the total costs) can be obtained only after the project has been approved by the Superintendent but strictly before starting works. The state contribution will be suspended until 31.12.2015.

8. FOR THE INVENTARIZATION PURPOSES: ARE THERE ANY GRAPHICAL REPRESENTATIONS / REPRODUCTIONS / DRAWINGS AVAILABLE?

See point 4.

9. IS THERE ANY INFORMATION OF THE BUILDING / STRUCTURE IN THE LITERATURE?

See inventory sheets and point 2 of Elaborat I.

10. LITERATURE ON ISSUES OF CONSERVATION IN SAFEGUARDING AND RESTORATION OF KARSTIC ARCHITECTURE

Texts on safeguarding and restoration of karstic architecture

- Harej Z., Semerani L., Križnar N., Galluzzo L., Sgubbi G., Černigoj A., Spacal L., Schumann G., *La casa di Pietra. Tipi e forme*, Trento 1984
- Kacic Romana, Kokorovec M., *Paesaggio e architettura rurale carsica: una guida per costruire e recuperare una tradizione*, Ronchi dei Legionari (GO), 2001.

- Kokorovec M., *Lo sviluppo della casa carsica ed il suo restauro* in “*La casa di Lienčka diventerà museo*”, Trieste 2001

Texts on traditional building techniques

- AA. VV., *Architettura e mestieri del restauro: materiali, tecniche e modi edili storici*, a cura di R. Ferrari, casalecchio di Reno, 1986
- AA. VV., *La memoria del sapere, forme di conservazione e strutture organizzative dall'antichità ad oggi*, a cura di P. Rossi, Roma-Bari, 1988
- Arcolao C., *Le ricette del restauro*, Venezia 1998.
- Barozzi P., *Le "trunere" della Fraschetta nella piana di Alessandria*, in "L'Universo", anno XV, n°3, maggio-giugno 1975.
- Bobbio R., Musso S., *Siena: conservazione e trasformazione della città murata*, Istituto di Tecnologia dell'Architettura e dell'Ambiente della Facoltà di Architettura di Genova, Genova, 1990
- Buti A., Galliani G.V., *Individuazione della concezione strutturale dell'edificio come momento prioritario alle indagini ed alla diagnosi*, in "Atti del Congresso Nazionale "La città difficile"", ASSIR.CO, Ferrara, 30 maggio/2 giugno 1984.
- Buti A., *Il riuso del costruito residenziale*, in "Atti del Convegno Tecnologie e Cooperazione artigiana nell'edilizia moderna", Siena, 25 settembre 1982.
- Galliani G.V., *Effetti della rivoluzione industriale sul costruire. Episodi del costruire prima e dopo la rivoluzione industriale*, Genova, 1981.
- La Regina F., *Architettura rurale: problemi di storia e conservazione della civiltà edilizia contadina in Italia*, ed. Calderini, 1980
- Marconi P., *Dal piccolo al grande restauro. Colore struttura, architettura*, Venezia, 1988.
- Musso S., Franco G., *Guida alla manutenzione e al recupero dell'edilizia e dei manufatti rurali*, Venezia, 2000
- Pittarello L., *Appunti per l'individuazione di aree di diversa esperienza tecnico-costruttiva in territorio piemontese*, in "Ricerche di Storia dell'Arte", n°9, 1978/79.