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WP4

Platy limestone as cultural heritage

Supplement 3.II

Cross-border issues in conservation and restoration of platy limestone

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GENERAL OVERVIEW
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RoofOf ROCK

1. Introduction

All over the eastern Adriatic Karst area, researched within the frame of RoofOfRock – Limestone as the common denominator of natural and cultural heritage along the karstified part of the Adriatic coast – project, platy limestone is used in a representative architecture (sacral and public buildings and fortifications) and especially in the traditional profane, vernacular buildings. Sacral buildings made of platy limestone are in major part protected as the cultural heritage monuments, while the rural architecture is mostly without any protection and is therefore more exposed to deterioration and to invasive renovations, disregarding the original techniques and the original material.

The analysis of the selected architectures within the project RoofOfRock has led to the following general observations in the monuments' protection. More or less, there are two different approaches and practices. Sacral buildings, which also today mainly serve its original purpose, are well-protected also because of their long-term religious use. They are as a rule in the property of religious institutions and are mostly officially evidenced in the state register and therefore under the supervision of the responsible cultural heritage institution. Municipal infrastructure and rural housing architecture have no – apart from some exceptions – level of protection.

In the hinterland of the eastern part of the Adriatic coast and on the adjoining islands, vernacular buildings have been mostly abandoned and the architectural elements have been constantly decaying. The architectural elements are subdued to the constant modernization, replacements of the generations as well as the ownerships. In the general overview, a bad state of preservation of masonry objects is caused especially through the relatively large number of the unoccupied buildings and abandonment of their primary functions and is to a greater extent also the consequence of the war fights at the end of the 20th century.

Regarding sacral monuments, most of the roofs covered with platy limestone were – due to the maintenance – restored during the second half of the 20th century. More or less these roofs were renovated by applying old, traditional methods. The stone slabs (the same, local, stone material as originally) were laid in the same, traditional way (splitting or cutting), their thickness, size, shape and color, have imitated the original roof-covering. However, by the vernacular architecture, the original stone roofs were more than often replaced with new tiled roofs.

In Herzegovina we can find a special case of the restoration practice. The country suffered extreme damages and the devastation during the war in the 1990's, when traditional sacral and profane architectural heritage was in a major part destroyed. After-war renovation required accelerated restoration that was – respecting the traditional overlook – carried out by means of modern techniques and modern materials.

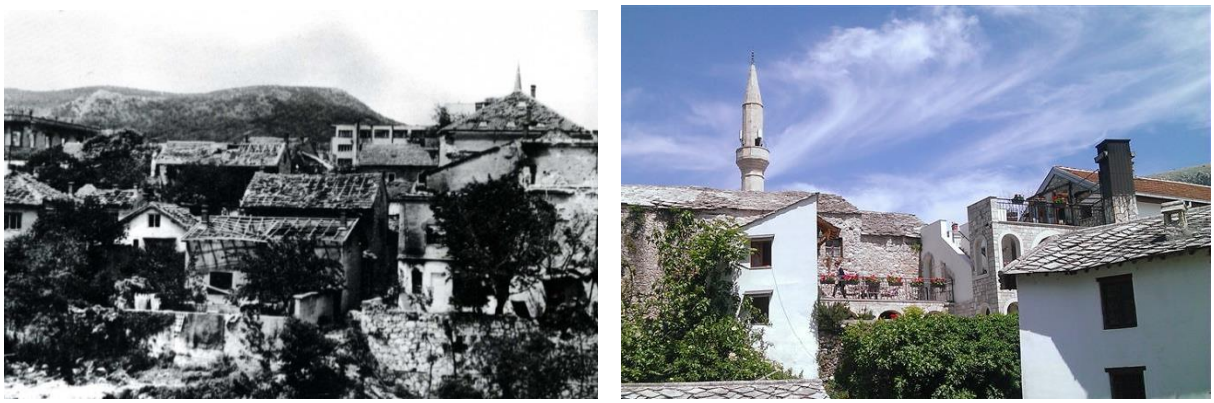

Figure 1
Mostar, the destroyed and rebuilt downtown (BiH).

2. The legal status of heritage protection

In the whole eastern Adriatic area, treated in the frame of the RoofOfRock project, platy limestone has been one of the substantial elements in the vernacular architecture, although it has not achieved any special status within national conservation legislation so far. The main problem in the protection of platy limestone monuments is in all probability the lack of concern for "minor" rural architecture, which led to the neglecting, disrespecting and unrecognizing of the cultural and social values of utility infrastructure as an integral part of local, as well as national cultural heritage. The traditional rural architecture hardly competes with the modern architecture, present-day needs, cheap and widely available modern materials and, after all, with the latest construction techniques and building tools.

Without a proper legal frame it is difficult to cope with the issues about renovation and conservation of the traditional architecture (built of platy limestone), what results in the inevitable fact that many structures of vernacular heritage have been decaying and are now deteriorated. In "better" cases, traditional buildings and structures were subjected to unprofessional restoration with no official institutional supervision and without the collaboration of the experts, which led to the renovation in the style of a kind of pseudo-traditional anachronistic architecture. The original vernacular heritage has therefore in many cases lost its inner self.

Within the registered buildings the architectural structures are of private (owned by families, cultural associations) as well as of public property (national, municipal, religious ownership, ownership of public institutions).

In all EU countries in the eastern Adriatic area (Italy, Slovenia and Croatia), the cultural heritage is regulated through the national legislation.

In Italy, the Code of Cultural Heritage and Landscape (42/2004) provides the owners of the protected buildings a subsidy for conservation and restoration works. The contribution (maximum 50% of the total costs) can be obtained only after the project has been approved by the official superintendent, but strictly before the beginning of works. The state contribution will be suspended on 31st December 2015.

All the buildings in Italian Carso are protected as an integral part of rural/urban settlement structure, but only few buildings are fully protected within Cultural Heritage Protection Act; for example:

- Karstic house, Rupingrande/Repen 20: declaration of cultural interest on 29th June 2005, GN 1323 – 1st February 2006; Ljenčkica's house, Trebiciano 107: Ministerial Decree 6th August 1981 (art. 4 Law 1089/39) and Rupingrande/Repen 5: Ministerial Decree 14th July 1979 (artt. 1, 2 e 3 Law 1089/39).

The verification of cultural interest (art. 12 of Legislative Decree no. 42/2004) provides that the movable and immovable properties, which belong to non-profit public and private legal entities, possess a special artistic, historical, etc. value, were built at least seventy years ago and their author is no longer alive, should be subject to a special procedural verification to assess

the existence or not of that particular interest or value. Pending verification, such properties can be provisionally subject to the regulations of protection provided by the Code of Cultural Heritage and Landscape and are therefore fully protected (catholic churches for example).

To a greater extent protection is given only to the most representative authentic, traditionally built homesteads or to some integral parts of the auxiliary buildings, for example: Agriturismo (guesthouse) Ušaj in Aurisina/Nabrežina no. 8.

Figure 2
Casa carsica/*kraška hiša* karstic house, Rupingrande/Repen no. 20 (IT).

In Slovenia, the maintenance, protection and management of the cultural heritage are under the jurisdiction of the Ministry of Culture and its offices. For the maintenance and protection of the cultural heritage Institute for the Protection of Cultural Heritage of Slovenia (http://www.zvkds.si/en/ipchs/ipchs/about-ipchs/) is responsible. The Institute has seven regional offices, for the Kras region the offices in Nova Gorica and Piran are responsible, and also the Centre for Preventive Archaeology and Restoration Centre. The latter is mainly in charge for the conservational and restoration issues, regarding the buildings in public property. It is strictly against the law to renovate the declared cultural heritage monuments without the proper conservation plan. For the monuments owned by the state, Restoration Centre makes a conservation plan, for the monuments in the private ownership; the owners have to order the conservation plan from Restoration Centre or from some private institution with the concession and pay for it.

The protection of the architectural as well as cultural heritage in Slovenia is regulated through the *Cultural Heritage Protection Act* (Uradni list Republike Slovenije [Official Gazette of the Republic of Slovenia], no. 16/08, 123/08, 8/11 – ORZVKD 39, 90/12 and 111/13)), which was passed in 2008, the last changes were implemented in 2013.

Each immovable cultural heritage is registered in the Register of the Immovable Cultural Heritage, which is available online (http://rkd.situla.org/) and to each registered unit is

given its evidence number (EŠD), which had to be implemented also in the description sheets of the representative buildings and selected show cases (see Supplement 3.I, Annex 3.I.3).

The protected immovable cultural heritage monuments are listed in the Cultural Heritage Register and have acquired their ID number (EŠD). The Protection Act distinguishes between three levels of the monument:

- cultural heritage structures (only listed in the Cultural Heritage Register, but without any proper protection, only exterior, measures and the primary purpose of the building have to be protected; for example: homestead "Pri Polhovih", Dutovlje 111, EŠD 9131, homestead "Pri Petrovih", Tupelče 4, EŠD 9459);
- the local monument (of the special importance for the local community, declared by the municipal authorities, for example: Homestead "Pri Blaževih", Gorenje pri Divači, EŠD 7338, homestead "Škrateljnova", Divača, EŠD 94) and
- national monument (of the special importance for the whole nation, declared by the Government of the Republic of Slovenia on the proposal of the Ministry of Culture; for example karstic homestead "Pr'Betanci" in Betanja at Škocjan, EŠD 9107).

Unfortunately, only few buildings of the rural architecture are fully legally protected. In Slovenian part of Kras for example homestead "Pr'Vncku" in Matavun 15, "Pr'Betanci" in Betanja 2 and Jakopin barn in Škocjan 7 are fully protected and have gained the status of the national monuments.

For the protection and maintenance of architectural monuments in Croatia Ministry of Culture and its network of restoration departments and conservation institutes are responsible. On the national level the conservation of the architectural heritage is regulated through *The Act on the Protection and Preservation of Cultural Goods* (Narodne Novine [Official Gazette] 69/99). The act regulates all rights and obligations of the owners of cultural monuments, protection and preservation of cultural heritage, administrative and inspection activities and it also regulates the local town planning. All other conservation acts are subdued to that act.

The rural architecture, however – with few exemptions – is not officially registered, which is why it does not have any form of protection. The law, however, clearly lays down the conditions which have to be fulfilled in order to assign the building the status of the protected cultural property.

The cultural monuments in Croatia are listed in the Cultural Heritage Register of the Republic of Croatia; that is a public document, issued by the Ministry of Culture. It consists of three lists:

- the list of protected cultural monuments;
- the list of cultural property of national significance and
- the list of preventive protected resources.

All cultural protection-acts, cultural heritage legislation, to the headline act subdued regulations and programs have one common goal – to preserve local and national cultural heritage for future generations and to enhance a common sense for cultural identity.

Considering the type of cultural monuments (listed in the Cultural Heritage Register of the Republic of Croatia), several programs are available:
- the program of protection and conservation of immovable cultural property,
- the program of protection and preservation of archaeological heritage,
- the program of protection and conservation of movable cultural property and
- the program of protection and preservation of intangible cultural heritage.

Also the historic city center and the whole village can be protected as an integral whole. The historic urban landscape of Počitelj with Gavrankapetanović Tower (Gavrankapetanovića kula) is hereby designated as the National Monument of Bosnia and Herzegovina (Službeni glasnik BiH [Official Gazette of Bosnia and Herzegovina], No. 6/03). Town in the Čapljina municipality, Počitelj, is on the Tentative list of UNESCO (ref. 5092). The Velagić Mill in Blagaj, which is a part of the residential complex of Velagić family (Velagićevina), is protected as a natural and architectural ensemble of National Monument of Bosnia and Herzegovina (Službeni list BiH [Official Gazette of Bosnia and Herzegovina], No. 2/05).

The status of preventively protected cultural property has gained, for example, the Church of St. John Baptist, Medviđa (P-4852) in Croatia, while, on the other hand, church of St. Nicholas, Prahulje, Nin in Croatia has gained merely the status of the protected cultural property (Z-1336).

Although the Čaršija mosque, Stolac (an ottoman architectural complex, erected in 1519 (the cemetery, a cistern, a fountain and other auxiliary buildings)) was destroyed in 1993, it was fully reconstructed in 2006 and was consequently declared as a National Monument of Bosnia and Herzegovina (Službeni list BiH [Official Gazette of Bosnia and Herzegovina], No. 2/05). Nowadays it is not used for religious purposes only, but also for tourism purposes.

As an integral part of the protected traditional village for example, homestead “Pri Šekljetovih”, Skopo 58 is listed. Although the building itself is unprotected, it has gained its status as an indivisible village-part. The same forms of protection have gained also the homesteads at the address Kopriva 29, Kopriva and “Pri Krnelovih”, Volčji Grad 61. In that cases is therefore protected the whole village and all its integral parts, i.e. singular homesteads with adjoining structures

Unfortunately there is a lot of cases of the insufficient protection. A prominent example of the insufficient protection is, for example, the homestead "Čerina dvori" Podgrađe at Benkovac in Croatia, built in a traditional way. This house complex is constructed of platy limestone and – like all villages in Zadar hinterland – has no legal protection, although it is relatively well-preserved.

Figure 3
The homestead "Čerina dvori" Podgrađe at Benkovac (CRO).

For example, stables in Vela Luka in Korčula, however, are not legally protected, although the church of St. Roch and the adjacent cemetery are registered in the national register of cultural heritage. The roofs in Donja Nakovana are the most deteriorated elements, because they are built of the short-lived material such as wood.

3. The maintenance and restoration of the traditional architecture

Today, many villages and hamlets in the hinterland of eastern Adriatic coast are abandoned and are left to constant decay. The reasons are generally a combination of economic migration, remoteness of the transport and a mismatch of traditional architecture with demands of the modern lifestyle.

A great part of the stone roofs-buildings that we encounter nowadays has been abandoned and consequently bad preserved. A lot of them have only recently been restored using original materials and applying traditional techniques in order to preserve the traditional features.

In the middle of the former century the inhabitants of Kras/Carso and the building owners did not put much care in using traditional features and construction techniques during the restoration and enlargement of houses. Stone roofs were usually replaced with modern, lighter tiled roofs, which also enable adaptations of the residential space directly under the roof.

Only a small number of buildings have preserved the original wooden structure of the roofing on which the stone slates were horizontally laid. Very often buildings do not have stone roofing in the residential space anymore, but have preserved the roof of *spahnjenca*, made of platy limestone. The roof of the added kitchen (*spahnjenca*), often remains as a relict; due to its small dimensions it is easily to maintain.

Human factor represents major menace to the survival of the built heritage. In particular, the process of decaying is born through negligence and ignorance of the historic value of the building, traditional materials and techniques. Typical problematic issue in the restoration of the traditional vernacular dry-wall architecture is caused through the inadequate structural improvements regarding dry stone walls. The use of concrete, as cheap and customary "adhesive" for dry stone structures is widely accepted, which can clearly be seen at the old kitchen house in the village of Donja Nakovana.

Figure 4
The use of concrete at the old kitchen house in the village of Donja Nakovana (CRO).

Inappropriate "modern" material (concrete) injected in structural gaps between limestone blocks has caused several other problems, such as calcification of stone and eventual deterioration of stone elements. Besides, once concrete is chemically bonded with stone, it can be only removed physically, and the removal can easily cause cracks, because it is stiffer and more brittle material than lime. Portland cement is watertight, so once capillary moisture permeates the walls it is very hard to desiccate the walls – and at extreme temperatures this water can cause breaking of the stone. However, use of concrete mortar for interior walls, as well as for surrounding dry stone walls, is not advisable. In the cases when the use of interior plaster is inevitable, it is recommended to use lime mortar. Another result of a widespread misuse of concrete in the renovation of traditional houses is the flooring, which is often made of thin concrete layers. Traditionally these floors joists were made of wooden beams, a relatively cheap and durable solution, which allowed the structure "to breathe".

Not only public legal ownership, but also private owners were more than glad to cooperate with RoofOfRock descriptors. In general, they showed a lot of interest in our project and have been looking forward for project results. As all of them owned a building of which at least one consistent part (roof) is made of platy limestone, they showed a particular interest especially in restoration guidelines.

Especially the private owners proved to be very compliant and provided us with the data about former restoration/conservation works on buildings (like dates, what architectural part was replaced/renovated and with which material, historic photos of the state before the renovation …). The provided data proved to be very valuable in order to fulfill the descriptions sheets (see Supplement 3.I, Annex 3.I.3).

Within the family property are, for example homestead "Pri Blaževih" in Gorenje pri Divači and houses "Pod Veli vrh" in Korčula on Vela luka. Several buildings in private property are burdened with unresolved ownership issues; one of them is, for example, Bišćević House (Bišćevića kuća/Bišćevića ćošak) in Mostar, which is owned by several owners. In the property of cultural institutions are for example "casa carsica/kraška hiša" karstic house museum – Carso Nostro/Naš Kras in Rupingrande/Repen, Ljenčkica's house in Trebiciano, Gavrankapetanović Tower (Gavrankapetanovića kula) in Počitelj, which is owned by Komisija za očuvanje nacionalnih spomenika BiH [Commision for Protection of National Monuments of Bosnia and Herzegovina]. In the property and management of different religious institutions are, for example, church of St. Roch and St. Sebastian, Santa Croce, church of the Assumption of the Blessed Virgin - community's house in Monrupino/Repentabor, parish church of St. Eliah in Kopriva, Church of St. Peregrine at Savar, St. Nicholas Church in Nin, Blaca monastery in Brač, Cathedral in Trogir, Čaršijska mosque in Blagaj. Karstic house Rupingrande/Repen 20 in Monrupino/Repentabor, Asseria, Podgrađe near Benkovac, Grohote village in Šolta are of the public property.

In present-time some buildings are for rent or are used for cultural, museum and tourism purposes. For example, agency Fortuna Tours in Bosnia and Herzegovina has a concession for the management of one part of the building Bišćević House (Bišćevića

kuća/Bišćevića ćošak) in Mostar, which is otherwise still in private hands. The owner therefore does not profit only from the renting the building, but also through the steady stream of tourism, which provides the sustainable income.

As mentioned in the former chapter, the legal protection (in comparison to representative architecture) is only to a lesser extent given to the rural, vernacular architecture. Therefore the renovation depends on the owners, who are free to choose the material and the method of reconstruction. They often decide for the cheaper material or modernize the vernacular building regarding the modern life needs.

In Dubrovnik-Neretva County, rural architectural tradition of roof-covering with platy limestone was abandoned at the end of the 18th and during the 19th and especially in the 20th century, or, in other words, as soon as ceramic roof tiles have become widely available due to its cheapness, leaving only lower layers (usually the lower two or three rows) covered with stone tiles. This bad renovation practice is still visible both in urban and rural areas.

On almost all (badly restored or deteriorated) buildings in Vela luka in Korčula, limestone tiles were replaced with asbestos plates, even iron lime plates, which were mounted on the original wooden construction. The main problem in that type of the reconstruction is the lack of skilled professionals, who are trained to work with traditional materials and traditional construction techniques. The second issue is, of course, procurement of the material, particularly of the bonding materials such as lime mortar. Since merely all platy limestone (thin bedded bioclastic) used on roofs and eaves is of the type *Crna FM* (albian-cenoman) and is found in the vicinity of the platy limestone-buildings, small amounts of the same material could be excavated in the direct proximity for the purpose of the renovation of demolished roofs. In many cases, platy limestone is stored quite close and can be reused during the renovation process.

In several houses the roof was pulled down and consequently rebuilt (for example: church of the Assumption of the Blessed Virgin and adjacent community's house in Monrupino/Repentabor). In some cases the stone roof has been reconstructed on a primary wooden structure, usually by applying concrete roofing and stone slates, horizontally connected to one another (for example house in Gabrovica pri Črnem Kalu 40).

In some cases (for example church of St. Roch and St. Sebastian, Santa Croce, Trieste, Ražman house, Gračišče), a bituminous layer was lathed between wooden roofing and *škrle*, a technique, that has led to structural problems. In some other cases (for example: St. Laurentius church, Basovizza/Bazovica) bituminous layer has been lathed on the secondary wooden structure and over concrete roofing. The concrete roofing lies on a concrete beam constructed on the top of perimetrical walls. In some cases, the stone roof has been constructed over the roofing made of brick and concrete (for example San Pelagio/Šempolaj community's house, Sgonico/Zgonik 11).

In order to preserve the original structure and the original appearance of the vernacular architecture, for successful conservation work the traditional skills in stone masonry are crucial. Yet, presently there are only few properly educated professionals with practical knowledge about traditional processing of stone and wooden elements and these masters as well as their apprentices have proved to be very expensive to hire. On the other hand, the skills of manually extracting platy limestone have almost been forgotten; for example, despite the long tradition of the stone processing on the island of Korčula, there are only few people today who still practice this tradition.

In Zadar and its hinterland the closing of historical quarries created the problem in the maintenance of cultural monuments (for example pavements in the old town – the problem is the replacement of the worn stone blocks with new). Instead of formal protection, which is not always stated in the case of rural architecture, it is necessary to encourage the restoration through favorable credit terms, but under strict professional supervision.

In Italy, there is no building company, which is able to fully restore stone roofs in a traditional way, in the last 10 years almost every stone roof was pulled down and replaced with structural concrete roofing supporting the stone slates. Only few roofs have preserved the original structure. The merits for that go merely to the owners, who have put lots of effort in the maintaining and who have constantly replaced broken slates with new.

It has become almost necessary to add secondary purpose to the traditional buildings, for example for cultural, touristic or museum means, what is the only way to create conditions for the sustainable development of rural areas and to enable the permanent protection of the buildings, built of platy limestone. Maintaining the traditional architecture is quite expensive and complex, because it requires the cooperation of professionals, skilled experts, competent institutions and – last but not least – of building owners.

4. The conservation issues of platy limestone in view of natural science

Platy limestone is a lithotype characterized by featured stratified structure, which often causes exfoliations and material loss due to the detachment of portions of material in concomitance of the layer, present along the whole rock height. Detachment of material along layers (lamination) also implies the deposition of impurities in formed fissures that still occur in platy limestone genesis, facilitating biological deterioration as well as deposition of solubilized calcium carbonate or other salts. The observed characteristic causes significant structural weakening of platy limestone, making it a building material of a relatively poor quality, which partly explains its extensive use not only in roof covering, as to a much smaller extent in the walls.

The analyses within RoofOfRock project have showed that most encountered deterioration typology among the analyzed samples is of biological origin, more specifically – it is caused by lichens. The principal weathering mechanisms as responsible for carbonate degradation caused by lichens is their respiration and secretion of organic acids and ligands. Recrystallization and cementation of previously solubilized calcium carbonate in limestone represent another aspect, which is responsible for structural damages and they often result in coarsening of large grains in a matrix of fine grain. Solution and deposition can lead to the formation of various types from calcite to dolomite, from different forms of silica to clay minerals. All these forms result in a modification of the physic-chemical properties of platy limestone. The compressive strength can be lowered and its resistance can be weakened.

Finally, the studies about platy limestone conducted so far showed that it is a simple material of local production, locally extracted and used in past by generations who knew its characteristics and have exploited it accordingly to them. The relative low quality of platy limestone was complemented through frequent rearrangements of the roof stone slabs and replacements of the damaged slabs.

Regarding the restoration issues, some further considerations should be made about the nature of platy limestone as a local material. Thought-provoking, restoration activities have actually never occurred in a rural area on the vernacular building without any artistic value. The conservation guidelines have to be considered as the directions and regulations about the replacements of the old and damaged or missing material with new, which has to be (in the best case) out of the corresponding local material from the local quarry and treated in the traditional technique. All the replacements and repairs have to be made respecting these standards and bearing in mind the old traditional techniques, which, unfortunately, do not prove to be neither the easiest nor the cheapest. Therefore lots of owners choose the cheaper, more modern methods and materials during the renovations.

5. Conclusions

During the process of the maintenance and the renovation of stone houses as well as stone roofing in the city centres that have been recognised as an important urbanistic historic monument (for example Počitelj, Diocletian's palace in Split, Zadar, Štanjel, etc.) the role of the local population, which understands the need for the preservation of the traditional looks of the architecture, is of special importance. Through decades the tourism activities have been built on the identity of architectural heritage, the tourism – hand with hand with the responsible official services – has repeatedly put efforts in the preservation of at least an exterior and the main facade. However, the conservation guidelines are often powerless against the cheaper building material, industrial construction works, modern tools and rigidness of the new generations of the owners or the building-users and, however, also against the collision between the contents of past and modern life.

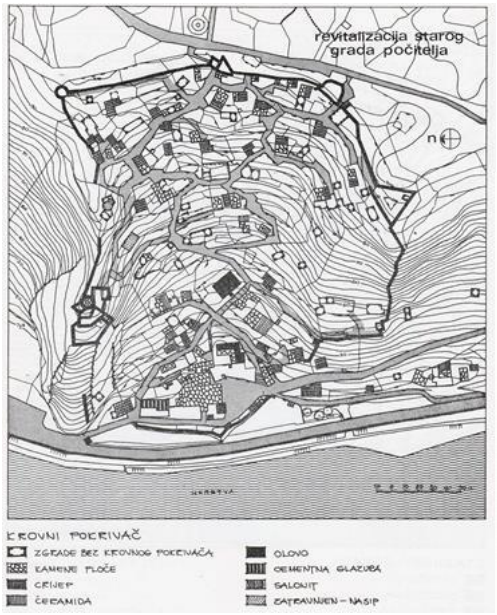

Figure 5
Počitelj (BiH): Vjekoslava Sanković, Revitalization of the ancient city Počitelj
(Naše starine 14-15, Sarajevo, 1981, 228) and restaurant Han of Šišman Ibrahim-paša.

Rural stone architecture is much more subjected to the constant changes. Certain areas of the cultural landscape have been abandoned due to the remoteness and poor economical state and only sacral buildings have remained more or less well-preserved thanks to the solid stone construction. Homesteads and auxiliary buildings are, as soon as the roofing collapses, unceasingly deteriorating; the drywalls by the paths and by the pieces of land are overgrown with spines and bushes.

The inhabitance still remaining in the countryside wants to reach the standards of the developed urbanized centers. Usually the inhabitance construct the new building structures and

use their old homesteads as the auxiliary buildings; in the case if they decide to live in them, they rearrange the traditional buildings according to their life needs. They rightly endeavor for the modernization of their living space that is often realized at the expense of the traditional building and without any professional supervision.

However, the city inhabitants have to a great extent contributed to the preservation of the traditional architecture in the rural areas and in the Adriatic islands, as they often decide to spend their holiday in the countryside and prefer to stay in a traditional Mediterranean house and have therefore put effort in the renovation of singular buildings for their own needs. Some of them overtook the demanding task like the construction of the roofing for the heavy stone roof tile (cf. Fig. 5), although it was – since the end of the 19th century – also in the countryside usually replaced with much lighter ceramic tiles.

Figure 5
Gorenje pri Divači, "Pri Maticovih",
an example of a recent reconstruction for residential purposes (SLO).

Modern conservational approach has to encompass the stone architecture heritage as the whole, as the morphology of geological forms, vegetation as well as the work of human hands that have – establishing their living space – fundamentally influenced on the cultural landscape. In the limelight is the karstic limestone mountain chain that has "caused" the specific overlook of the cultural landscape, with the stone karstic house and the village church with the belfry as the main architectural identities of the hinterland of the Eastern Adriatic coast.

6. Literature on the issues of conservation and restoration of karstic architecture

The whole literature, regarding the use, history of exploitation, conservation and restoration of the architectural buildings constructed of platy limestone, compiled within the project RoofOfRock, is an integral part of the Supplement 3.I, Annex 3.I.4. Here is therefore presented only a short list of the scientific and professional literature on the topic of conservation as well as restoration of the karstic architecture and on the traditional techniques in karstic architecture.

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