

sous la direction de  
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# Villages et quartiers à risque d'abandon

*Stratégies pour la connaissance,  
la valorisation et la restauration*

TOME 1

fi  
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UNIVERSITÀ  
DEGLI STUDI  
FIRENZE

**DIDA**  
DIPARTIMENTO DI  
ARCHITETTURA

Villages et quartiers à risque d'abandon : stratégies pour la connaissance, la valorisation et la restauration: tome 1 / sous la direction de Lamia Hadda, Saverio Mecca, Giovanni Pancani, Massimo Carta, Fabio Fratini, Stefano Galassi, Daniela Pittaluga. — Firenze : Firenze University Press, 2022.  
(Ricerche. Architettura, Pianificazione, Paesaggio, Design ; 15)

<https://www.fupress.com/isbn/9788855185370>

ISBN 978-88-5518-535-6 (Print)

ISBN 978-88-5518-537-0 (PDF)

ISBN 978-88-5518-538-7 (XML)

DOI 10.36253/978-88-5518-537-0

*in copertina*


Tunisie, village berbère de Zriba el-Alia (© L. Hadda)

*FUP Best Practice in Scholarly Publishing* (DOI [https://doi.org/10.36253/fup\\_best\\_practice](https://doi.org/10.36253/fup_best_practice))

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Published by Firenze University Press

Firenze University Press

Università degli Studi di Firenze

via Cittadella, 7, 50144 Firenze, Italy

[www.fupress.com](http://www.fupress.com)

*This book is printed on acid-free paper*

*Printed in Italy*

*progetto grafico*

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Dipartimento di Architettura  
Università degli Studi di Firenze

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## SOMMAIRE

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### Préfaces

Giuseppe De Luca	16
Niccolò Casiddu	19
Costanza Milani	22
Mounsif Ibnoussina	23
Stefano Baccelli	25

### Présentation

La régénération des villages est un élément d'un projet de croissance durable et équitable	29
Saverio Mecca	

### Tome 1

#### **Cultures pour la conservation et la valorisation du patrimoine à risque d'abandon en Italie**

Dialogue around abandonment	37
Marco Abbo, Francesca Luisa Buccafurri	
Le musée diffuse: stratégie pour valoriser les villages à risque d'abandon. L'étude de cas de Pitigliano entre patrimoine matériel et immatériel	49
Laura Aiello	
The church of S. Giovanni Battista Decollato at Mensano (Siena): an assessment of the structural condition of the church and adjacent buildings	63
Alessandra Angeloni, Andrea Giannantoni, Michele Paradiso	
Recompose the minor places, the value of the dictionary logic of architecture	77
Enrico Bascherini	
Enhancement strategies for historic towns. A proposal for the village of San Giovanni Lipion	85
Anna Chiara Benedetti, Giorgia Predari, Riccardo Gulli, Felice Monaco	
The digital documentation of the mountain village of Rocca Ricciarda: between medieval and modern archeology	97
Matteo Bigongiari	

<b>Recovery and enhancement strategies for the villages of the Ligurian hinterland. The case study of the Fontanabuona valley</b> Roberto Bobbio, Paolo Rosasco	111
<b>Knowledge and strategies for conservation of historic technologies</b> Teresa M. Campisi	123
<b>Explorer les villes abandonnées, préserver la mémoire des lieux: le cas d'étude de Santa Margherita dans la vallée du Belice en Sicile</b> Alessio Cardaci, Antonella Versaci, Luca Renato Fauzia, Michele Russo	137
<b>Paysage sans paysans: lectures de projet</b> Claudia Cavallo, Caterina Lisini	153
<b>Mountainous abandoned areas and territorial fragilities. Cultural preservation, reuse, improvement strategies</b> Valentina Cinieri, Alisia Tognon	169
<b>The permanence of form. A methodological proposal for the re-signification of depopulated small towns of Sardinia</b> Giovanni Battista Cocco, Ester Cois, Caterina Giannattasio, Andrea Pinna, Valentina Pintus	179
<b>Landscape and cultural identity - some cases of western Liguria</b> Lorenza Comino, Simona G. Lanza,	193
<b>Réflexions sur les tremblements de terre, abandons et identité à travers quelques études de cas en Irpinia</b> Giovanni Coppola	209
<b>Traditional masonry buildings on the Tuscan Apennine Mountains. The abandoned villages around Firenzuola</b> Michele Coppola, Letizia Dipasquale	229
<b>The safeguard of built heritage in archeological sites, an interdisciplinary approach based on light-weight uav photogrammetry and terrestrial laser scanning survey.</b> Carlo Costantino, Angelo Massafra, Davide Prati, Simone Garagnani, Giovanni Mochi	242
<b>Slow mobility as a connection driver for fragile territories between coastline and inner areas</b> Domenico D'uva, Chiara Ravagnan, Chiara Amato, Giulia Bevilacqua	259
<b>An innovative analysis tool for the small towns' valorization: the Riccia municipality's case study</b> Pierfrancesco Fiore, Emanuela D'andria	273



<b>Montecastelli Pisano and Cerbaiola: virtuous surviving examples of two small old villages.</b> Fabio Fratini, Oana Adriana Cuzman, Silvia Rescio	287
<b>A modern architecture in the historical building of Uglianfredo</b> Pierpaolo Frediani	301
<b>Les processus d'abandon et de resignification des lieux après le tremblement de terre: deux études de cas siciliennes en comparaison</b> Nadia Frullo	311
<b>L'abandon des villages en Italie, depuis les années '50 et '60 à travers des cas en Ligurie.</b> Caterina Gardella, Silvana Vernazza	325
<b>The S. Appiano Pieve in Barberino Val d'Elsa (Tuscany, Italy): restoration and enhancement for a sustainable reuse</b> Sara Garuglieri, Valentina Puglisi	333
<b>Villas, bâtiments ruraux et architectures militaires entre abandon et récupération: l'habitat historique rural dispersé de l'île Palmaria (La Spezia - Italie)</b> Carlo A. Gemignani, Luisa Rossi	345
<b>Holistic Approach to the Mediterranean Architectural Heritage at risk of abandonment: the case study of Montalbano Elicona (Italy)</b> Maria Luisa Germana'	359
<b>Autour des villages historiques abandonnés: valorisation, mise en réseau des ressources et stratégies communes de gestion du paysage</b> Adriana Ghersi	375
<b>Back to the small villages. Critical issues and prospects for a post-Covid re-appropriation of built heritage in the marginal internal areas in Lombardy</b> Mariacristina Giambruno, Sonia Pistidda	389
<b>A Methodology for the Seismic Risk Assessment of Pompei's Archaeological Site</b> Nicola Ruggieri, Stefano Galassi, Eloisa Fazzi, Giacomo Tempesta	403



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# MONTECASTELLI PISANO AND CERBAIOLA: VIRTUOUS SURVIVING EXAMPLES OF TWO SMALL OLD VILLAGES

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The little church of Cerbaiola, where the roof has been redone but no interventions have been carried out on the walls.

This work analyses the interventions carried out in two close villages, Montecastelli Pisano and Cerbaiola, located in southern Tuscany, in an old mining area called “Colline Metallifere” (Metalliferous hills). Both villages have suffered a strong depopulation after the cessation of the mining activity. Fortunately, both of them are still surviving albeit with different strategies.

Montecastelli Pisano was a mining centre in the Medieval Period and later, in the XIX<sup>th</sup> century, due to a copper vein discovery. Nowadays only 60 people reside in the village but thanks to a small group of willing foreigners who have found here their refuge, the village is rich in cultural activities. Cerbaiola was founded in 1750 as an open countryside village, with an agricultural function, 4 km far from Montecastelli. In the early 60s of the last century, with the end of sharecropping, this small village was completely abandoned and has slowly undergone a process of transformation in ruins. In the 80s part of the buildings have been restored entering in the rural accommodation circuit. The methodologies adopted in the building refurbishment/conservation will be examined in the belief that only by searching for compatible solutions in terms of materials, structures and functionality, it is possible to become promoters of an effective conservation of the rural villages as an architectural heritage of the Mediterranean countries.

**Keywords:** building materials, Colline Metallifere, survival strategies, Montecastelli Pisano, Cerbaiola

## Introduction

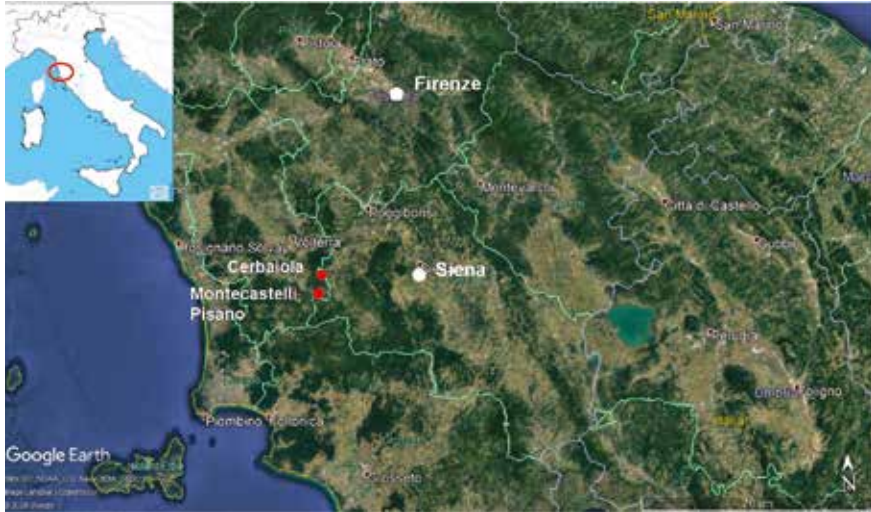
Human settlements are the result of historical events and of the men’s work, and are constantly evolving, responding to various natural and/or anthropic solicitations. There are two possible evolutions:

- progressive abandonment and transformation into ruins of these inhabited centres that still retain traces of materials, building technologies and traditional construction systems, becoming time windows on past history;
- continuity of housing, despite the progressive change in the methods of use due to changes in the local economic activities, historical events, etc.

In this case very often the settlement suffers transformations both on individual historic buildings and in the urban layout with a possible irremediable loss of a significant cultural heritage. This lack of attention was normally due to a lack of recognition of the value of the



**Fig. 1**  
the two villages  
of Montecastelli  
Pisano and  
Cerbaioia in  
the "Colline  
Metallifere" of  
southern Tuscany  
(after Google  
Earth, modified).



**Fig. 2**  
the urban system  
of Montecastelli  
with concentric  
circles around the  
Pannocchieschi  
castle (after  
Google Earth,  
modified).

inherited architectural heritage, considered as obsolete and incapable of responding to current performance and functional requirements.

However, it should be noted that a greater awareness has developed about the value of this architectural heritage, which in Italy, as in the whole Mediterranean region, for centuries influenced travellers, artists and architects and it actually characterizes and identifies the nations themselves (Rudofsky 1964; Carver 1979; AA.VV. 2014)

This new awareness is also manifested at the legislative level. The article 30 of the Code of Cultural Heritage (2004) establishes that the State, the regions, the territorial public authorities as well as the private owners must guarantee the safety and conservation of their cultural heritage properties.

According to art. 29 of the Code, conservation should be ensured «through a coherent, coordinated and planned study, prevention, maintenance and restoration». The latter is defined as «direct intervention on the asset through a complex of operations aimed at both its material preservation and recovery, and at the protection and transmission of its cultural values».

Unfortunately, the interventions carried out in many Italian villages highlights how these purposes have not always been pursued. Sometimes the architectural assets, even if protected by the law, have undergone interventions that have modified their identity and compromised their conservation over time. Although the re-use of buildings according to new functions is to be considered the way through which to ensure their conservation,



often the interventions determine their radical transformation altering the testimonial value of valuable cultural resources (Fratini et al., 2019b). Certainly, architecture is to be considered a “living work” and, as such, destined to undergo continuous changes over its existence. The signs left by the modifications, necessary from time to time, testify to its evolution and, at the same time, its «vitality» (Vassallo, 2007). Projects on existing architectures should be drawn up taking care to control the needed changes. Interventions should be carried out promoting the objective of quality in contemporary additions without endangering the cultural value of the assets (Council of Europe: Framework Convention on the Value of Cultural Heritage for Society, 2005). It is in fact a matter of minimizing the modifications and/or destructions and of planning any additions taking care to respect the signs of the past (Musso & Franco, 2015; Vegas & Mileto, 2015; Acar Bilgin 2019).

This paper intends to focus on the analysis of the interventions carried out in two close villages, Montecastelli Pisano and Cerbaiola, sited in the “Colline Metallifere”, an area of southern Tuscany sparsely populated that in the past was characterized by a widespread mining activity and at present by the exploitation of the geothermal energy (Fig.1). Both villages



**Fig. 3**  
the  
Pannocchieschi  
tower with its  
scarp base under  
restoration.



**Fig. 4**  
the village of  
Cerbaiola, in  
a dominant  
position above  
the valley of  
Pavone and  
Cecina rivers  
(right) (after  
Google Earth,  
modified).



have suffered a strong depopulation, even Cerbaiola in past decades has found itself in a state of neglect, but both are surviving albeit with slightly different strategies.

The methodologies adopted in the building refurbishment/conservation will be examined in the belief that only by searching for compatible solutions in terms of materials, structures, and functionality, it is possible to become promoters of an effective conservation of the most diffused architectural heritage of the Mediterranean countries, that represented by the rural villages.

### **Historical information and socio-economic aspects**

Montecastelli Pisano is located at the top of a hill 500 m above sea level, on the watershed between the valley of Cecina river from that of Pavone. The village has developed with an urban system with concentric circles (Fig.2) around a castle attested since the beginning of the XIII<sup>th</sup> century, remained almost uninterruptedly under the control of Volterra until the end of the XVIII<sup>th</sup> century when it was incorporated in the territory of Castelnuovo Val di Cecina (Schminke, 2015). The remains of the walls at the base of the houses of the external perimeter and the access door on the southern side are still visible. Of the original castle only the Pannocchieschi mighty tower is left, with a square shape and



a scarp base (Fig.3). On the top of the hill there is also the Romanesque church of Santi Filippo and Giacomo, dating back to the XIII<sup>th</sup> century. The village houses a Museum of Rural Life, born in 1985, which documents the agricultural activity and local craftsmanship. As previously mentioned, among the productive activities, besides agriculture and forestry, mining had great importance. The Pavone valley was known since ancient times for the copper and silver mineralizations embedded in the local ophiolitic rocks. Abandoned in the Middle Ages, the Medici tried to reopen the mining activity on several occasions until in 1832 the discovery of an important copper vein, enabled the exploitation that continued until 1869. During the period of activity, the mine had a great importance in the economy of the area managing to employ many hundreds of people.

After the Second World War, like most marginal areas, Montecastelli suffered an important depopulation. At present only 60 people reside in the village, many of the houses have become second houses of those who once lived there or had their family of origin, others have been purchased by “foreigners”, others remain unsold also because the most sought-after dwellings are those isolated in the country, often transformed into “farmhouses”.



Fig. 5  
the square of the  
little village of  
Cerbaiola.



Certainly, it should be noted that after the crisis period from the 70<sup>s</sup> to the 90<sup>s</sup>, the village managed to recover, increasingly outlining its vocation as a welcoming village in the name of tranquillity and cultural activities. This was possible particularly thanks to a small group of willing foreigners who have found their refuge in this small village: the *Auditorium della Compagnia*, born in a deconsecrated church, organizes classical music concerts in the summer; theatre, folklore, painting and sculpture exhibitions are also organized in the former school which has become the *Centro Polivalente Montecastelli*. In the village there is a bar-restaurant which is also the meeting point of the local community, two other restaurants, a garage, but no grocery stores, while the receptivity is guaranteed by the farmhouses that dot the splendid countryside of this little-known area of Tuscany, rich in wild areas covered by dense Mediterranean scrub and alive because of the presence of endogenous energy testified by the numerous steam emissions that characterize the landscape.

Cerbaiola is a small village dating back to 1750, completely isolated, in a dominant position at 350 meters above sea level on the valley of the Cecina river (Fig. 4). In the distance, on a high hill there is Volterra. This village can be reached after 4 km of unpaved



road which starts from Montecastelli and ends there. It was born as an open village, without defensive walls, with an agricultural function, so that the inhabitants were close to the workplace and could use common services. Until the 50s, 14-15 families lived there, for a total of about 100 inhabitants, who, except three families of direct farmers, worked “*a mezzadria*” (as sharecroppers) for the owner of the farm. In 1952 the farm was purchased by Serafino Corsolini, from Pescia Romana, in the *Maremma* near Viterbo, who had it managed by a farmer who lived permanently in the village.

To testify the history of this community, in which all the children had the same nurse, there are the manor house, the small church, the school, which was a multi-class, the common bread oven, the stables. With the end of sharecropping, in the early 60s, this small village was completely abandoned. In 1963 a part of the village with the surrounding farm was bought by a farmer from the province of Latina, while the remaining part by a Florentine. The buildings owned by the latter have suffered a process of ruin and at present are for sale while the first owner, in addition to the cattle breeding activity, was at least concerned to keep the roofs of its buildings in good condition. The grandchildren still live in the village continuing the farming activity and since the 80s they have renovated the houses by inserting them in the rural accommodation circuit (*Borgo La Cerbaiola, Casa Vacanze Le Pelaghe*). Some of these houses have been sold to private individuals who spend the holidays there but, in their absence, these houses are managed by the original owners as rural accommodation.

Arriving in the village, there is a particular atmosphere because not everything has been restored, the spaces between the buildings are all unpaved, there are still buildings in a state of ruin, the square is a parking area for some tractors and agricultural machines (Fig.5). Around the village the cattle graze in the wild. On a country road it is possible to reach the bottom of the valley, at the confluence of Pavone and Cecina rivers where, in the clear waters, it is possible to take suggestive baths. In the silence it can happen to see mouflons, wild boars, porcupines drinking. Nevertheless, to meet the requirements of rural tourism, in a field outside the village a swimming pool overlooking the valley has been realized.

The disadvantages of this small village, its complete isolation, an exclusively agricultural economy, have now become its strengths, with a sustainable redevelopment, which was done “on tiptoe”. The tourist who arrives, especially if there are other tourists who are guests of the various houses, can partially experience the village atmosphere of the past. A holiday that is a discovery is offered, giving pleasant emotions in an isolated environment surrounded by nature that is still partly wild.



**Fig. 6**  
unworked serpentinite blocks for the bearing walls and square blocks of limestones as corner stones in Cerbaiola.

**Fig. 7**  
Cerabaiola, the frame of a window made of bricks.

### Local geology and building materials

In the past, the materials used to build towns and villages were almost exclusively those available locally. Each territory was characterized by its own building materials and its own finishing techniques. In the territory of the peninsula, thanks to the great geological variability and the presence of small states, which lasted until the second half of the XIX<sup>th</sup> century, these differences are particularly evident even on a small scale as in the case of Montecastelli and Cerbaiola (Fratini et al., 2019a). Both villages are located on a vast outcrop of serpentinite rocks. This lithotype originated through the metamorphism of a peridotite, a magmatic rock belonging to the Earth mantle. It is present in the ophiolitic complexes of the northern Apennine, remnants of the Giurassic oceanic lithosphere that now are exposed in the Ligurian tectonic units of eastern Liguria, Tuscan Apennine and Colline Metallifere.

However, Cerbaiola is also located near outcrops of marly limestones belonging to two different formations, the Palombini Shale Formation (Lower Cretaceous) and the Helmintoid Flysch Units (Early-Middle Eocene), both belonging to the Ligurian tectonic units, while in the vicinity of Montecastelli, organogenic limestones of the Messinian and Pliocene ages are present, deposited in marine basins above the Ligurian tectonic units.

This circumstance has determined the fact that the two villages differ greatly for the building stone materials that have been utilized. In Cerbaiola, almost exclusively unworked serpentinite blocks of irregular shape have been used with square blocks of marly limestones and organogenic limestones as cornerstones (Fig. 6). The frame of the openings are either in bricks or sandstone. (Fig. 7)

In Montecastelli the private houses are in mixed masonries realized with unshaped or roughly shaped blocks made of prevailing organogenic limestone and secondary bricks, serpentinite, marly limestones (Fig. 8). Sometimes the bricks prevail particularly in the modest houses. The corner stones are often made of organogenic limestone (Fig. 9). The frames of the windows are generally in bricks and the portals are in organogenic limestone, sandstone, sometimes realized with great care. Regularly shaped blocks of organogenic limestone have been used in the parish of Santi Filippo and Giacomo and in the Pannocchieschi tower, where the cornerstones are in sandstone.

The use of unworked serpentinite blocks in Cerbaiola can be explained by the difficult processing of this kind of rock material to obtain regular blocks, requiring expert stonemasons, not justified by the importance of the buildings. The serpentinite outcrops are in fact characterized by a fracturing without any preferential directions, from which only irregular shaped blocks are obtained. In addition, the sound material is very hard and tends to chip with processing.

On the contrary the processing of the marly limestone to obtain regular blocks is easier because, although the material is very hard and has a tendency to chip with processing, nevertheless in the shaping of the stone ashlar, it is possible to take advantage of the beds more suitable in thickness, like those lower than 30 cm, often crossed by regular fractures (Dipasquale et al., 2016). This is why it has been used as a cornerstone. Moreover, this material has a very high durability against the action of atmospheric agents.

As for the organogenic limestones, these are quite soft stones, easy to work and shape in regular blocks, like the stones used in Salento and Sicily for the Baroque architecture. Generally, this material shows a low resistance to decay which is manifested by strong alveolarization phenomena. Nevertheless, the variety of organogenic limestone present in this territory is quite resistant to decay as testified by the conditions of conservation of the ashlar exposed since the Middle Ages in the parish of Santi Filippo and Giacomo and in the Pannocchieschi tower.

### **Restoration and reuse interventions**

The access to Montecastelli from the southern gate of the ancient walls introduces to a village that is neat and well-kept but not adapted for use and consumption by tourists. In this sense it is a “true village”, which maintains a charm, not done to be visited but to be lived. There are buildings with façades that give the impression not to have been affected by interventions since the XIX century while part of the houses has undergone interventions in the external walls in more or less recent years, from the 60-80s until now, recognizable on the



**Fig. 8**  
Montecastelli:  
mixed masonries  
made of  
unshaped/  
roughly shaped  
blocks made  
of prevailing  
organogenic  
limestone  
and bricks,  
serpentinite,  
marly limestones.



**Fig. 9**  
Montecastelli:  
corner stones  
are often made  
of organogenic  
limestone.

style and materials used. The Pannocchieschi tower is currently being restored while there are no buildings in the state of ruin. Overall, you get the impression of spontaneous interventions by individual owners, not regulated by municipal provisions. An intervention planned at the level of the entire village was instead the renewal of the paving of the alleys using sandstone slabs worked in a herringbone pattern.

The interventions of the 60s and 80s were those less respectful of the formal aspect of the façades and less appropriate as regards the type of materials used. In fact, there are realizations of terraces, cement renders that sometimes show extensive falls, cement repointing of the mortar joints among the stone blocks and bricks, rebuilding of jambs and lintels of the service openings on the ground floor (garages and warehouses), shutters and sheet metal doors.

The most recent interventions consist in the renewal of parts of façades or entire façades with the elimination of the degraded lime plasters and repointing the joints with abundant hydraulic lime mortar to partially cover the stones and bricks.

With regard to Cerbaiola, we have already mentioned that part of the houses is in a ruin. By observing these buildings, it is evident that some of them were rendered with a lime



mortar. In buildings that have undergone maintenance since the 80s, three situations are observed:

- the renders, when present, were eliminated with a following repointing with abundant hydraulic lime mortar to partially cover the stones;
- repointing with abundant hydraulic lime mortar even in the case of original absence of a render;
- absence of intervention in the stone facings without original render.

The frames of the windows and of the entrance doors, if interested by an intervention, have been realized in brick. The doors of the windows and portals are made of wood.

The external access stairs to the first floor, when present, have remained original with the stone steps worn by the use.

Overall, these interventions are respectful of the architectural typologies and are appropriate for the type of materials used. Emblematic in this regard is the small church on which the roof has been redone but no interventions have been made on the walls which are in exposed stone with remains of the old lime render (Fig. 10).

## Conclusions

Generally, the desire to make the architectural artefacts responsive to the changed functional/performance requirements determines the irreparable alteration of the testimonial value of valuable cultural resources. The existing buildings are made suitable for current days uses and better environmental performances without establishing a dialogue with their historical value. Nevertheless, Montecastelli Pisano and Cerbaiola have survived maintaining evidence of their history in their building materials so strictly connected to the local geological resources.

Both villages are “true village”, not to be visited but to be lived and this is testified by the building heritage which presents different aspects: there are buildings that give the impression not to have been affected by interventions since the XIX<sup>th</sup> century, houses that have undergone interventions in the 60-80s (those less respectful of materials and formal appearance) and buildings interested by recent interventions. These ones show particular attention to the conservation of the peculiar architectural characteristics both concerning the building materials and the formal appearance therefore testifying the development, in recent decades, of a new sensitivity towards vernacular architecture while guaranteeing the adaptation of the architectural artefacts to present functional and performance requirements.

## Bibliography

- AA.VV. 2014: *VERSUS: Heritage for Tomorrow-Vernacular knowledge for sustainable architecture*, Mariana Correia, Letizia Dipasquale, Saverio Mecca (Eds), Firenze University Press.
- Acar Bilgin E.(2019) *Rural Architectural Characteristics and Conservation Issues of Alaaddin-bey Village in Bursa (Turkey)*, D. Hawkes et al. (eds.), Conservation of Architectural Heritage, Advances in Science, Technology & Innovation, © Springer Nature Switzerland AG 2019, [https://doi.org/10.1007/978-3-030-10871-7\\_14](https://doi.org/10.1007/978-3-030-10871-7_14)
- Borgo La Cerbaiola<http://www.lacerbaiola.com>
- Carver N.F (1979) *Italian hilltowns*, Documan Pr Ltd.
- Casa Vacanze le Pelaghe<https://itagriturismo.net>.
- Codice dei Beni Culturali e del Paesaggio, D. Lgs. 22 gennaio 2004, n. 42, art. 30.
- Council of Europe. 2005: *Framework Convention on the Value of Cultural Heritage for Society* (<https://www.coe.int/en/web/culture-and-heritage/faro-convention>).
- Fratini F, Cantisani E., Pecchioni E., Rescic S., Sacchi B., Vettori S. (2019a) *Geologia, tempo e abito urbano (Imago urbis)*, in (a cura di Susanna Caccia Gherardini & Marco Pretelli) “Memories on John Ruskin-unto this last”, *Restauro Archeologico* special issue vol. 1, 2019, 78-85.
- Fratini F., Mattone M., Rescic R. (2019b) *Re-use of a medieval tower between conservation and transformation*, proceedings of 35° Convegno di studi su Scienza e Beni Culturali: “Il patrimonio culturale in mutamento: le sfide del riuso”, Bressanone 1-5 luglio 2019, pag. 411-420.
- Musso S.F., Franco G. (2015) *Guidelines for sustainable rehabilitation of the rural architecture*, in “Vernacular architecture: toward a sustainable future”, Mileto, Vegas, Garcia Soriano & Cristini (Eds), Taylor & Francis Group, London, pp. 531-536.
- Rudofsky B. (1964) *Architecture without architects*, Doubleday ed.
- Schminck V. (2015) *Montecastelli Pisano- alla riscoperta di un antico paesino*, Blurb Incorporated.
- Vegas F., Mileto C. (2015) *0 km conservation* in “Vernacular architecture: toward a sustainable future”, Mileto, Vegas, Garcia Soriano & Cristini (Eds), Taylor & Francis Group, London, pp.737-740.
- Vassallo, E.(2007): *Architettura e architetture*, in Ferlenga, A., Vassallo, E., Schellino, F. (eds) proceedings of the congress “Antico e Nuovo. Architettura e Architetture”, Venezia 31 marzo-3 aprile 2004), Il Poligrafo, Venezia, p. 23.