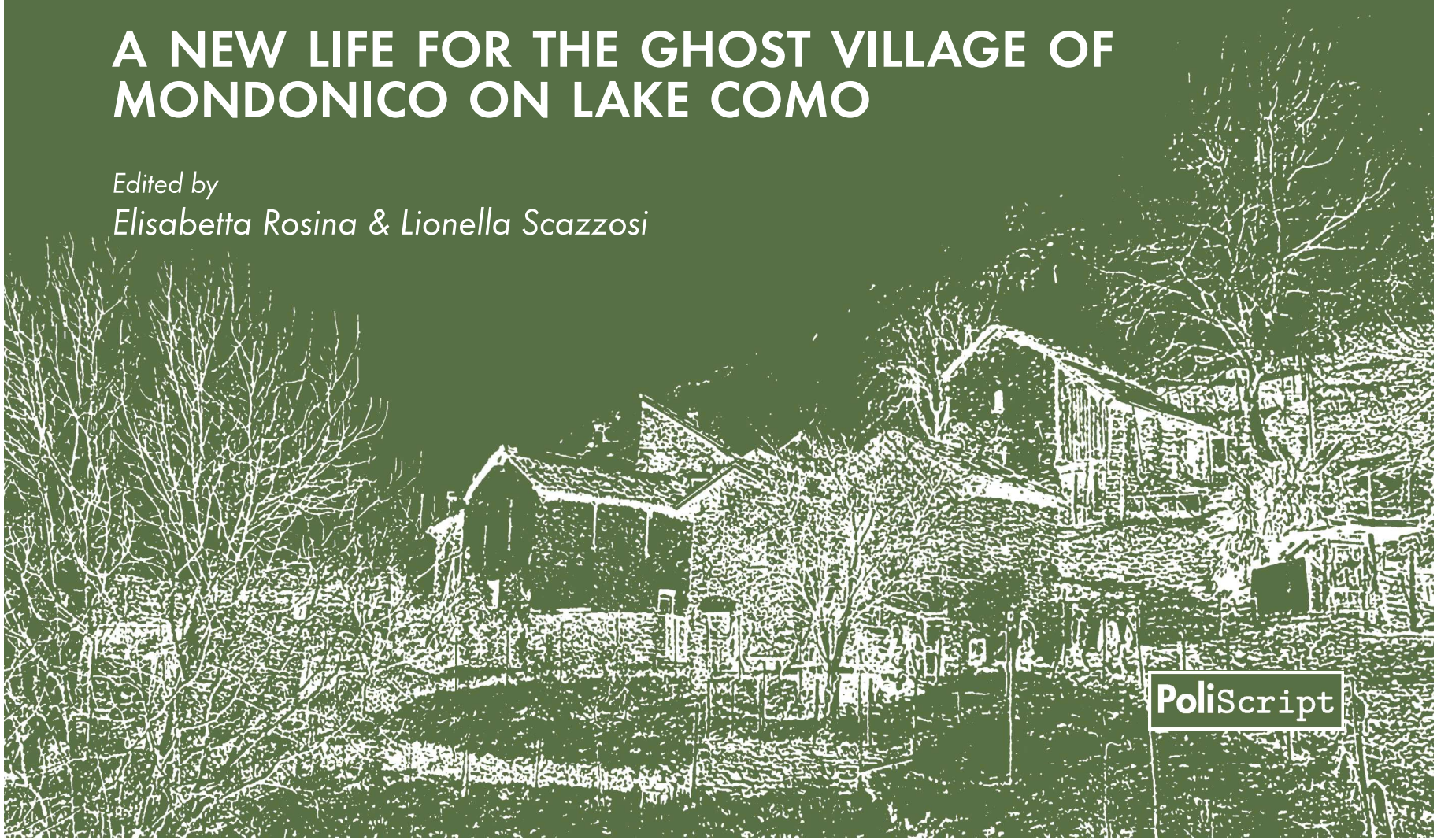
THE CONSERVATION AND ENHANCEMENT OF BUILT AND LANDSCAPE HERITAGE

A NEW LIFE FOR THE GHOST VILLAGE OF MONDONICO ON LAKE COMO

Edited by
Elisabetta Rosina & Lionella Scazzosi



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Acknowledgements
Matthildi Apostolou, Letizia Bernasconi, Micol Borsa, Simonetta Corbella, Davide Cucchi, Martino D'Alberto, Elke Di Flumeri, Silvia Erba, Hao Gu, Valentina Iobizzi, Julie Musial, Domenico Palezzato (Italia Nostra), Jonathan Spodek, Gianpietro Tengattini, Francesco Carlo Toso

Scientific certification of the book: scholars of not Italian Universities reviewed the texts of the book.

ISBN 978-88-6493-039-8

The reproduction of historical documents of the National Archive of Como is authorized, January 2017

Published by: PoliScript, 2018 - Politecnico di Milano
Piazza Leonardo da Vinci, 32 - 20133 Milano, Italy

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Towards new uses of Mondonico

Elisabetta Rosina

Why to use again Cultural Heritage

The enlargement of the concept of Cultural Heritage (CH) as *"the entire corpus of material signs – either artistic or symbolic – handed on by the past to each culture and, therefore, to the whole of humankind"*[1] (Jokiletho, 1999) has reached a common acceptance.
A critical issue remains that the definitions of cultural patrimony still root in selective criteria of a historical background and aesthetic value. In the present Italian legal framework[2] the definition of the classes of CH under protection are wide and general, nevertheless the classes do not include the totality of the CH per the initial definition quoted above.
Despite of the partial inclusion, the recent awareness of Cultural Heritage is spreading out the value of the existing built landscape, especially the historic fabric of urban and rural zones.
In fact, despite the ambiguity of definition existing at present, an important result is to consider the cultural patrimony as an economic patrimony, that requires to be evaluated for its conceptual nature and not only for the financial income due to its use. Since the statements of Amsterdam Charter, the development of economy for CH underlines that historic buildings must meet new uses, compatible with the existing features (Della Torre, 2010) and bringing income and social advantages. The misleading opinion that protection of historic building constrains the new use, is a burden for the owners and public administration, a sclerotic and rigid embalmment, comes to terms with the opportunities that conservation offers for supporting a more conscious and sustainable development of the society and economy in the country. On the contrary, the historic patrimony constitutes firstly a resource that contains a huge potential of sustainability, with various declination and articulation of what sustainability implies in this case: the economic sustainability (CH firstly employs local resources), social (it belongs to the local community that generated it), cultural (as expression of civilization of the local community).
In addition, other potential of CH reveals other aspects of sustainability. Resilience is one. The features of historic buildings substantially meet some criteria of resilience as recently stated[3], supporting the idea that resilience means the capacities for adapting to the future changes although the recognition of these features is not obvious. Despite the update scientific literature on the rural building typologies in specific Alpine regions (Aliverti, 2014), the connection between

the potential of historic settlement in term of resilience does not have diffusion yet.
Scope of the chapter is to evaluate which are the advantages to use again an historic settlement as Mondonico is. Therefore, the text will explore the updated perspectives of the CH values under the transformation of the rural/urban context, with respect to the social aspects that can lead to positive changes, as resilience is. The chapter will explain a possible hypothesis on the value of resilience that historic buildings have, together with the value of use that keep for their possibility of meeting the present and future needs of inhabitants.
The intervention on historic buildings requires following specific criteria of the architecture design that permit to graphing new parts in the existing palimpsest. The criteria of reversibility, compatibility, distinction and least intervention constitute viable paths to improve the resilience of the historic buildings, because preserving their integrity, features and identity in the present use means to preserve possible exploitations and adaptive new uses in the future.

Do historic buildings deal with Resilience?

Resilience has a wide-span, multidisciplinary definition: generally, it is the characteristic of organisms to respond and overcome to unexpected threats by reorganizing of the resources at any levels. At urban level, the features of resilience include redundancies of functions and connections, the management of slow variables and feedbacks, the promotion of adaptive systems, especially by encouraging learning, broadening participation, and polycentric governance systems (Biggs et al., 2015).
In particular, Kishali (Kishali et al., 2018) already proposed a comparison with the historic urban fabric of Fener Balat (Istanbul) and the condition revealing the potential in resilience. The urban context of Kishali's comparison is favourable to resilience in urban district, because of the scale, the extension of the neighbourhood, the presence of the metropolitan middle-eastern city, the pressure of top down changes due to the plans of development, the multicultural group of inhabitants. In a small rural village as Mondonico is, such features are not present. Nevertheless, some common criteria for conservation meet the resilience distinctive tracts. One is to "*anticipate changes, and shape it for sustainability in a manner that does not lead to loss of future options. It involves enhancing the capacity for self-organization*" (Folke et al., 2003), that exactly is one of the conservation cornerstones. The conservation choices have the characteristic to be reversible, with the aim to leave the possibility to remove them in the future for better options (in this chapter in the further). In fact, the recent development of the conservation aims to the best management of the existing resources, including historic buildings, focusing on prevention/mitigation of the environment effects on them and planning maintenance at short-medium term for maximizing their durable material permanence (Della Torre, 2010). The transformation of the building, the steps of the process and especially what is possible to change without looting its values, based on the methodologies of analysis proper of Conservation. The definition of adaptability and its application comes from the body of knowledge on the historic buildings the analysis produces, according to the methodology shown in the previous chapters. The following chapters will show some of the possible new uses for of Mondonico village, that meet the increasing need for sharing knowledge of the village and its landscape, economic sustainability of intervention and the costs of maintenances, the affordability at social/cul-

tural levels (joining students/tourists/new comers and local inhabitants.

Moreover, the spatial organization of a historic building usually is compatible with the criterion of redundancy because of the presence of rooms that can serve the same function at different levels: the choice of duplicate the same functions at different levels is key basilar to obtain a resilient structure. For instance, the vertical connections (staircases) are usually more than one, often resulting from many modifications occurred in time due to fraction of properties, the change of use, the differentiation of paths within buildings due to new needs. The adaptability of the spaces, especially the vertical connections, is a plus for sharing the buildings and its functions towards a design for all.

None of the connections are exactly a repetition, generally are partial connection between some of the levels, nevertheless they constitute an interesting "node" for improving the connection and accessibility throughout the structure. Redundancy results also in not differentiated spaces, small rooms, porch, corridors and "*camerini*" that helped in the past for working and living. The availability of spaces to locate new uses is one of the major attractiveness of the historic buildings. Moreover, the building of the past, built for less complex and specialized residential needs, conserve their potential of different uses and adaptation to them, keeping their value of use in time (Vivio, 2007).

In Mondonico, the uses for residential and agricultural purposes of the buildings created some redundant spaces typical of the storage and conservation of food that can serve as junction, articulation, technical spaces between the wider houses/stables.

The stratification of different uses and modification in historic buildings is an example of overcoming the transition and change; it a witness of past positive experiences of ruling transformation the building confirming its usefulness in the next step of its life. Opening windows and doors, changing the entrances, adding plants etc. are examples of enhancements of the building, a confirmation of its values despite the changes and that were necessary, so much to receive the financial investment. Moreover, these modifications were the fuel for the owners and inhabitants to accomplish their project of life changes, or the way to meet the needs consequent to the changes. Many examples pave the history of architecture of the western countries.

The CH have embedded values that require only to be unravelled and displayed to reinforce the trust on changes, by means of the memory of past changes interwoven in the historic fabric of a settlement. In fact, the usual historic stratification of structures and decoration prove that the traditional building techniques and use of local construction materials positively overcame the challenge of new uses. The criterion of adaptation to swing conditions, through cyclical, partial changes, is well represented in the history of the building, although the time of the cycles can be longer than the human lifespan. An example comes from the historic analysis of Mondonico area (see the chapters "*Recognizing the cultural value of Mondonico: a historical analysis for the reading of the landscape*", by Andrea L'Erario, and the chapters about the property registers analysis by Elisabetta Rosina and Alessia Silvetti in the first part of this book).

The cadastral maps of Dorio show many differences occurred in the ownerships between the end of the 18th and 19th centuries that determined many small (although significant) changes in buildings. Graphic documents of these modifications are not available; nevertheless, their description in the register of the cadastral maps is almost precise to guess the necessary change, for example to supply autonomous entrances

to become different properties.
The history of buildings instils tremendous awareness of history as a process, and to reinforces the confidence to be successful in modification. The display and comprehension of historic building, and its potential, is also a resource for reinforcing the sense of the local community because the building shows the common values that founded the community in different ages of the past. The presentation and dissemination of the cultural values of the building is an invitation to the old and new residents to discover the roots of the recently common present and share the foundation of the community memory. With Angela Colucci *"[...] the local dimension is strategically relevant to improve the total resilience of complex systems and the upper hierarchic levels"* (Colucci, 2012: 36).

A European perspective of the value of CH at present

The European community has been supporting the program to protect CH since the beginning because considered the historic buildings and urban fabric as a capital of irreplaceable cultural, social, environmental and economic value.
The protection of the roots of the cultural identity of any nation is a strategic target to ensure the durable respect also of the economic transition within the European countries and abroad. Quoting the final document of the project CH counts for Europe (CHCFE): *"The interest for the protection of CH in Europe comes also from the increasing awareness of the value and multiple benefits of cultural heritage for the economy, society, culture, and environment. The conceptual and policy developments at present affirm the importance of cultural heritage as a strategic resource for a sustainable and peaceful Europe. They also demonstrate the determination of the EU institutions to develop and implement an integrated policy approach to cultural heritage. As a perspective for the next future, the EU Council's Conclusions on a Work Plan for Culture 2015-2018 identified cultural heritage as one of its four priorities and indicated the need for the EU to invest in cultural statistics as a prerequisite for evidenced-based policy"*.
The project started on 2013 with the support of the European Commission. *"This project comprised collecting, analyzing and consolidating evidence-based research and case studies from different EU Member States on the impact of cultural heritage on the economy, society, culture and environment with three aims: demonstrate the value and potential of cultural heritage as a strategic resource for a sustainable Europe; raise public awareness of this resource; give strategic recommendations to European decision-makers"*. Raising public awareness is one of the goals of the plan of conservation and restoration for historic building that coincides with one of the fundamental strategy for improving resilience (Colucci, 2012: 37). To create fluxes of information and mechanism of feedback is the basis of resilience. The most advanced researches in the field of planned conservation experimented forms of community participation to the knowledge produced during restoration of historic fabric (Della Torre, 2014), as well as developing branches of "experiential" knowledge together with the diffusion of scientific knowledge (Foppoli et al., 2014).
Many results came from the mentioned project CHCFE, for examples the definition of indicators for assessing the values of specific advantages coming from the protection of CH, for the recognition of the multiple and valuable benefits that cultural heritage brings to society.
Mainly, the economic evaluation focus on the resto-

red building and not on the process of intervention, as well as most of the present discussions of scholars and professionals deals with questions that are related to "how to do": which are the traces/stratification of modification of the building to keep, and display after the restoration? Has the restorer the duty to transmit the traces of the past to the future, or to "recreate" "a" past? Which is the limit in between the two actions?
The following paragraph and chapters deal with the methodology of the project of conservation, showing the criteria of the intervention and their application on the village. In fact, although is possible to describe the methodology of intervention as a corpus of criteria leading the choices, it is only the application case be case that permits to answer the questions listed above.

The conservation project meets the new uses

The project of conservation is a project on architecture

The previous chapters show the analysis of the buildings and the site as a mandatory for the intervention on them. The analysis is the mandatory step to obtain a project meeting the conservation aims. The gathered knowledge along the different paths of analysis is both the starting point for any compatible, proper, sustainable, effective new use and the project itself for the conservation of materials, structures and features of the building. Both are projects, because they deal with the "corpus" of the architecture and site (Bellini, 2001), that is the building and landscape, and because both use of the creative tools of design and the scientific tools of preservation. In fact, the project of conservation is much more than a quantification of technologies of technical rehabilitation, or structure strengthening. The designer must evaluate the analysis of all the strategies and techniques of intervention, especially considering the effects on the specific building, forecasting also the effects in a short-long term. The project of conservation is the result of a highly scientific and technical activity of design, based on the knowledge of the specific building (Feiffer, 2005). Different solutions and techniques could be used to obtain the same results, also in terms of compatibility and reversibility, nevertheless the personal creativity and level of expertise of the designer can substantially vary the advanced techniques and traditional procedures.
The aim of the conservation project is to pass on the entire material heritage to the community for the new use; the design of the new configuration/addition has the aim to insert itself among the written lines of historic matter.
As stated in late decades of 20th century, restoration is a project of conservation of the existing buildings and built landscape with the addition of the value of new part (Bellini A. et al., 2005). Any intervention has the aim to improve the physical permanence of the inherited heritage, keeping an active use of its components by new designed parts, for the integral passing to the next generations. After few decades, the principle of conservation is real as never has been in the past. According to Campanella (Campanella, *Il rilievo degli edifici*, 2017: 261-273, 275-288), within the aim to give new functionality to the building, "*[...] any choice of the design is as successful as it will consider all the possible function that the building can host*" without losing its materials and features. The project of conservation and of the new use deal with the unicity of the single building that is the leading spring to realize a real project on the architecture and its environment. The specificity of the building, its character, materials, morphology, suggests intervention that the

same building can generate, founded on its volumes, space distributions that we can perceive and survey in the whole complex. Form the best assessment, the second phase of the project will have the target to take the existing building back by empowering the potential of functionality and increasing the value of use, thanks to the addition of new structures and materials and design.

The new function is a graft on the historic palimpsest

The developed and advanced knowledge requires to get high level, specific, tailored solutions, that can be a sort of "graft", as Caterina Giannattasio explains (Cocco, Gianattasio, 2017: 65-70): *"[...] in other words, grafting is an act of metamorphosis carried out on the old structure, which remains unchanged by modernity and lives in the values of the pre-existing structure. [...] grafting is therefore inevitable in terms of distinctness and modern expression. It gives the architect the role of a listener with regard to the pre-existing structure, on any scale, in order to mediate between the appropriate functions and meanings, and between necessity and possibility [...]"*.

The project of intervention (both conservation and new use) is far from any imitation/model, because a model has a generic and unchanging nature that may lead to a distortion of the place (Cocco, Giannattasio, 2017: 87).

Within this scenario, the institution for the education of the designers have a prominent role to propose the proper approach of the project for new uses of historic buildings. The historic education to restoration and conservation, substantially the education "to listen" the building (COTAC, Understanding Conservation, UK), comes together with the assumption of the criteria of compatibility, reversibility, least intervention and recognition (Mileto, Vegas, 2011) for any intervention on the existing, both provisional or for a prolonged permanence.

Moreover, there is an increasing consciousness of the challenges deriving from the need of accessibility, energy efficiency and safety. Therefore, also the current approach of invasively adapting the historic buildings to the standards for contemporary buildings has been changing towards the improvement of the residual performances. Examples come from the present Italian Ministry guidelines to improve the stability of the historic buildings (MiBACT, 2008) and the energy efficiency (Verpoest et al., 2006), very recently adopted by the EU (Bernardi et al., 2017).

The schools of architecture, architectural conservation, architectural engineering are the natural cradles to diffuse how to study the best solution for improving any specific structure instead of applying a "ready-made" project that matches current fashion and tastes. It is the deepest knowledge of the features and materials of the building, together with the better cure for the damages that create the conditions for a conscious design of the new use and necessary improvement. The project of conservation is a project of architecture, dealing with the architecture in all its aspects and not only a good practice of maintenance and technical repair of the damages.

The conservation of architecture is an activity of planning, aimed to scientifically synthesize the knowledge data (historic, on materials, architecture language and technology, on possible uses) with the objective of conservation of features and materials, considering the historic site a unique document as it comes from the past. This cultural planning is contemporaneously a historic-critic judgment and a scientific knowledge, therefore requires the multi-level collaboration of many disciplines.

The step of the intervention, dealing with the enhancement of the existing buildings, consists in reaching the best balance between the proposal of new addition and transformation for meeting the needs of the new use and the strictest conservation both of materials and building techniques.
It is possible to reach this balance along with a methodology of progressive subtraction of the unnecessary items and images that usually fill our imaginary thinking to a functional use of the building. As worshippers of images (Dezzi Bardeschi, 1995), the icons of contemporary architectures pop up in the mind as a reference, also before that a complete exam of requirements, needs, and opportunity is done. As a difference from the project of a new building, the proposal of new use of a historic building is not a pencil sign on a blank paper. It requires writing among lines, to conceive shapes, colors, materials that dialogue with the existing one, without prevail on them or, even worst, use them as an excuse to display, enhance astonishing new construction that have the commonly accepted marks of genius.

The standard is a challenge for the current use of protected building: four keywords as guideline of the intervention

Mainly, the new uses require meeting the standard for safeness, fire protection, accessibility, energy efficiency, especially if the new function is a public use. Concerning the reinforcement, since 2008 the Italian standard for historic buildings require improving the stability and the prevention of seismic damage instead of applying the general reinforcement of the contemporary structures (MiBACT, 2015. "*Guidelines for improving energy performance of Cultural Heritage. Architecture, historical and urban centers*"). The recent EU standard for the energy efficiency follows the same line: once again, the suggestion of the "improvement" does not quantify and specify the intervention, although the most recent regulation designs the process of decision making for choosing if and how to intervene. The requirement of improvement, together with the following criteria, are suitable for leading both the technical intervention for repairing and the project of enhancing the building (Musso, 2012).
The first criterion is *compatibility*: as technical intervention, the new materials should not damage the existing ones, both physically and esthetically, therefore the new materials should have the same chemical-physical-mechanical properties of the existing ones. As enhancing intervention, the new use should not require damaging the existing building with a massive intervention that sacrifices materials and structure, considering also the reinforcement or demolition required in the phase of the restoration itself. The intervention or the addition should match with the existing without risk to damage it, as it happened using cement mortar to seal frescoes. At present, compatibility is necessary; the new materials should behave as the old ones or show lower performances because, in the case of damage, the new materials will be damaged firstly. The description of the technical conservation project on Saint George church (see the chapter "*Saint George church in Mondonico*", by Alessia Silvetti and Roberto Pozzi) is an example: the choice of the materials for fixing the damage of the finishing, as well as the reinforcement of the structure, totally respect the criterion. It is also an application, of the second criterion: *reversibility*-retractability.
The suggested proposals for new uses meet these two criteria, basing on the idea of "box in the box". The technical solutions proposed in the final chapters are respectful of the existing materials and building techniques as well as the guideline (see the chapter

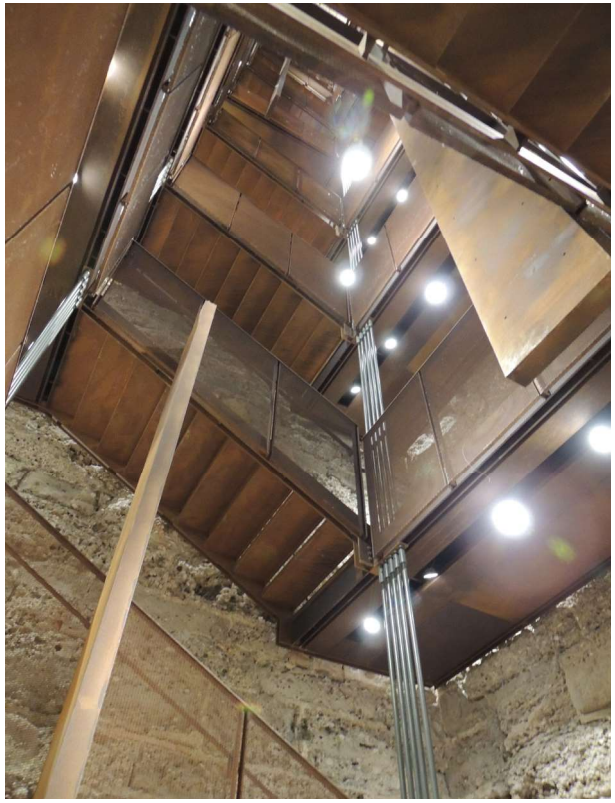

Fig. 1 [left] and 2 [right, top] - The new stairs inside Bernabò Visconti Tower (Trezzo sull'Adda Castle, Italy, project: Lorenzo Jurina and collaborators) is a good example of reversibility and integration between old and new structures (photo: Andrea L'Erario, 2014)

Fig. 3 [right, bottom] - Detail of the wood beam reinforcement of the roof of one tower of Pavia Castle, Italy. The new addition is completely reversible. Project: Lorenzo Jurina (photo: Andrea L'Erario, 2014)

"*Guidelines for preservation of a landscape system. A handbook for the historic village of Mondonico*" by Paola Branduini) for the location, design, volumes, and materials of the new buildings to rise.

In fact, in a technical interpretation of the word, reversibility means that all the intervention should be removable without damaging the existing building, because of possible, future, better intervention or because of the durability of the employed materials. The concept is also declining as re-tractability, that means the possibility to intervene with new materials/solution on a restored part, without taking off the previous material (Arkos Conference, 2002). With Campanella, (Campanella, Geores, 2017: 669-672), a reversible improvement of the building performances opens new options for using light technologies, preferable dry, biocompatible and sustainable, that can support all the needs of the structure without permanent impacts.

The third criterion that basis the intervention states that the best intervention is the least (*less is more*). This criterion serves to prevent any "oversize" addition, transformation, mutation. It has application both on the technical and functional side: for example, the strengthening intervention should be "collaborative" with the existing structure, exploiting its residual performances instead superimposing materials and construction techniques that behave in a very different way from the original one. An example of the concept

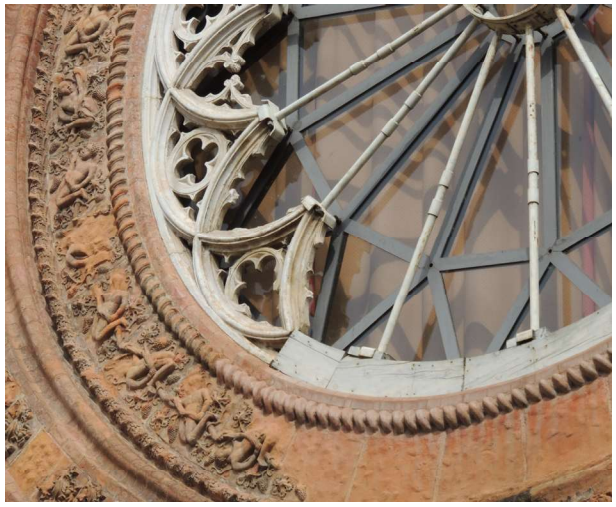

Fig. 4 and 5 [left, top]- The insertion of new horizontal structures on old timber beams. The historical beams are reinforced by the addition of new beams (Ex caserma Calchi, Pavia, Italy). (photo: Andrea L'Erario, 2014)

Fig. 6 [left, bottom] - Salice-to Castle, Italy. Restoration project by Armellino&Pog-gio Architetti Associati, 2011. The new tower, made with a steel and timber cladding self-supporting structure, is well noticeable from the historic castle.

Fig. 7 and 8 [right] - The conservation of the rose window of Aula Magna of University of Pavia, project: Lorenzo Jurina (photo: Andrea L'Erario, 2014)

of least intervention, on the functional side, is to use the existing vertical connection for inserting plants and pipes instead of locating services rooms, bathrooms, kitchen despite of the sacrifice of original materials). The criterion of the least intervention is very important to limit the loss of the integrity of the building and guarantee the respect of all the information regarding the history of the buildings. The traces of the past bring the values, information, a witness of past knowledge and artistic artisanship that express the uniqueness of our Cultural Heritage. Therefore, the best attitude to project the adaptation to the new use is to study the most and to intervene the least, based on the most accurate analysis and evaluation. The examples of the final chapters show how is possible to add new functions (the diffused hotel, the new site for university and especially the diffuse museum) and improve buildings performances, without superimposing images of bog-standard solutions. All the interventions are "tailored" on the spot, meeting needs and design in a balanced dialogue among the old and new. The additions reveal their contemporaneity, without misleading camouflage, although achieving the harmony with the existing parts. Proportions, dimensions, colors, volume articulation, connections, materials of the hotel, the university classrooms and facilities are partially underground, and they exploit the levels curves to hide most of the volume. The natural slope of the hill permits to have natural ventilation and solar irradiation on the western facades, improving also the energy efficiency of the new buildings. The proposed accessibility improvements of the site follow the guidelines and results in the same mainstream of the buildings design: for example, the proposals include the use of local stone or metals for improving stairs and parapets, as well as the addition of simple stone steps for decreasing sharp slopes of the country roads and paths.

In addition, the rehabilitation of small open spaces as belvedere and community/touristic events, gains existing places to the public use and it is a very practical way to reinforce the sense of community, both of residents and tourists, thanks to the possibility to share the wonderful landscape and views. The open-air furniture, signs, lighting system denounce their contemporary design, although they merge in the existing built landscape.

In fact, they respect the forth criterion relies on the *visibility of the new addition*. This criterion has been under discussion since the birth of an early awareness regarding the implication of restoration. At present, the common perspective regarding the recognition focus on the necessity to distinguish the new addition from the existing parts, without disturbing the total view and perception of the whole work of art, building, object. The interpretation of this criterion relies on the sensitivity and culture of the designer, perhaps more than the application of the previous keywords, and many examples could match with it although the final aesthetic result could be different.

The above-mentioned criteria are more than technical guidelines for accomplish a proper addition, or integrate the existing building. They are a path that helps to reach a balanced design; they constitute an accepted frame to facilitate the development of the project. Nevertheless, the creativity and innovative spring of design continuously flow along the complex and ever developing roadmap to accomplish the recognition and enhancement of the building itself and all its historic/material values. The historic buildings, whenever their life started, firstly are a continuous source of inspiration for the population to whom belongs. The only condition is to make them survive, preserving their integrity by preventing the occurring damages and with a management aware of the risks for their conserva-

tion, as well as a studied rehabilitation encompassing all the aspects and levels that the building represents. The recognition of resilient features and strategy in the conservation process of Mondonico reinforces the sustainability of the intervention for reshaping the future of the ancient settlement, as well as many other historic rural villages in the area.

Endnotes

(1) As the deep reflection on the legacy of Ruskin, Riegl, Dvorak, the studies of archaeology methods, the development of the concept of material culture brought to overcome the reduction of history to the great happenings, to emergencies, to (the uniqueness of figurative production (Bellini, 2001). The definition of the Cultural Heritage as the witness of past civilization comes back to the Sixties, in Italy. The Government Committee (Commissione Franceschini, 1967) for the protection of Cultural Heritage stated this definition showing a wide perspective that was too in advance with respect to the legal framework at that time. Nevertheless, the definition is presently considered the widest and more complete, accepted by the updated scientific literature.

(2) Legislative Decree n. 42 of 22 January 2004, Code of the Cultural and Landscape Heritage.

(3) The assessment of building resilience and sustainable systems in social environment bases on several principles: maintaining diversity and redundancy (with the aim to keep them for possible future activation of secondary circuit of functions in substitution of the primary), managing connectivity (to improve it at any level, sharing information and feedback), managing slow variables and feedbacks (providing the slow and controlled change of the necessary factors for survival, that could become dangerous over a threshold), fostering complex adaptive systems thinking, encouraging learning at any level and time (sharing the awareness of learning as a necessity), broadening participation (especially raising the awareness about threats and improving conservation plans), and promoting polycentric governance systems (Biggs et al., 2015).

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ISBN: 978-88-6493-039-8