

# INFOLIO 40

RIVISTA DEL DOTTORATO DI RICERCA IN ARCHITETTURA, ARTI E PIANIFICAZIONE  
DELL'UNIVERSITÀ DEGLI STUDI DI PALERMO - DIPARTIMENTO DI ARCHITETTURA

## INNER AREAS

# INFOLIO

RIVISTA DEL DOTTORATO DI RICERCA IN ARCHITETTURA, ARTI E PIANIFICAZIONE

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*Il borgo di Gangi, Luisa Lombardo*



**Università  
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**DOTTORATO DI RICERCA  
IN ARCHITETTURA,  
ARTI E PIANIFICAZIONE**  
DIPARTIMENTO  
DI ARCHITETTURA DI PALERMO

## La Rivista

**In folio** è la rivista scientifica di Architettura, Design, Urbanistica, Storia e Tecnologia che dal 1994 viene pubblicata grazie all'impegno dei dottori e dei dottorandi di ricerca del Dipartimento di Architettura (D'ARCH) dell'Università di Palermo (UNIPA).

La rivista, che si propone come spazio di dialogo e di incontro rivolto soprattutto ai giovani ricercatori, è stata inserita dall'ANVUR all'interno dell'elenco delle riviste scientifiche dell'Area 08 con il codice ISSN 1828-2482. Ogni numero della rivista è organizzato in cinque sezioni di cui la prima è dedicata al tema selezionato dalla redazione della rivista, mentre le altre sezioni sono dedicate all'attività di ricerca in senso più ampio. Tutti i contributi della sezione tematica sono sottoposti a un processo di *double-blind peer review*.

Per questo numero il tema selezionato è:

### **"Inner Areas"**

Inner areas, as defined in the Italy's National Strategy (SNAI), are part of the territory that plays a central role in the cultural and social fabric of our communities, are an essential component of our society, economy, and environment. However, they are still often neglected and overlooked, resulting in deterioration, abandonment, and social exclusion. For this reason, it is crucial that the fields of architecture, restoration and architectural history and urban and territorial planning are committed to revitalizing and enhancing inner areas. These disciplines have the knowledge, skills, and tools necessary to create sustainable and innovative solutions that can transform these territories into vibrant and liveable communities. Moreover, inner areas are an excellent laboratory for innovation in these disciplines. These areas provide a unique opportunity to experiment with new approaches and techniques that can then be applied to larger-scale urban and territorial planning projects. The challenges posed by inner areas require innovative thinking and creative solutions, making them an ideal testing ground for new ways. The papers presented in this special issue of *Infolio* are the result of the conference "Inner areas' cultural, architectural and landscape heritage: study, enhancement and fruition. Potential driver for sustainable territorial development?" held in July 2022 at the University of Palermo. The conference brought together experts in the fields of architecture, restoration, and urban planning to discuss the central role of inner areas in our society and the need for innovative and sustainable solutions to revitalize and preserve them, being sometimes critical and some other prepositive. The papers explore a range of topics, including the use of technology in restoration, the importance of architectural history in urban planning and the role of

community engagement in revitalization projects.

The reflections that emerged at the conference highlighted how inner areas are a crucial part of our territory and society, and their revitalization is essential for the well-being of our entire community and the preservation of our cultural heritage.

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#### **Indirizzo in Progettazione sostenibile dell'architettura e Design: Human centered**

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*Opening image: Caltavuturo, Calcibaida masseria, detail of ruined storehouse (photo by the author).*

# The shared project SMART REHABILITATION 3.0 for the EU architectural rehabilitation

## Examples of enhancement, preservation and intervention for traditional architecture in the Mediterranean areas

Urban Planning & Technology

Tiziana Campisi

*Sicilian Mountain municipalities and inland areas are the engine for the harmonious development of the entire region. Saving the cultural identity of these places, encouraging entrepreneurial activity, optimizing the network of services, especially in education and healthcare, is an act due to the new generations. This article wants to stimulate the creation of a strong constructive-cultural identity in resident citizenship and to hypothesize communication strategies which are useful for the enhancement of cultural resources and also of compatible technological & sustainable innovation.*

*To this challenge is associated the shared creation - through the European Erasmus+ Project Smart Rehabilitation 3.0 - of a common professional profile in Building Rehabilitation Expert (BRE), as a model of rehabilitation for historic Mediterranean cities and landscape.*

*Keywords: EU projects, Building Smart Rehabilitation, Tradition & Innovation, Inner Areas, Sicily*

### **Introduction. Living into the beauty of cities and places inside Europe and Mediterranean Basin**

For many people all over the world, Europe is the continent of deep culture. Europe's architectural heritage is the direct result of centuries of construction history. During the time in all countries of our Continent we have built a complex and multilayered melting pot of common construction knowledge, being we now responsible for its safeguarding and improving.

This shared heritage, along with this sense of togetherness, is the real foundation on which Europe is built. Europe's architecture represents also a multifaceted mosaic that is both complex and interrelated. It does not belong to a specific period or a single community or Country. We can discover that all our construction knowledge can be shared as it is European, and often connected to other EU Countries and also of Mediterranean basin. Many cities and villages, as well as the many monuments and sites which reflect our rich and diverse cultures, history and universal values are the occasion for a respectful but also innovative rehabilitation/restoration.

Living into the beauty means taking care of cities and places not only in a perspective aimed at the

maintenance and conservation of assets, but also at their enrichment and transformation in terms of technological innovation and compatible functional rehabilitation, also in terms of extended accessibility and implementation of integrated services.

The changing in social and economic needs impose increasing pressures on historic buildings and ancient centers, with the risk of obsolescence and abandonment, or of often invasive adjustments. Significant portions of the historical heritage, that is presently in disuse, can only be preserved through the introduction of new functions. Even in cases where the continuity of current use appears sustainable, the assessment of the achievement of functional, technological-performance and conservation objectives requires a multidisciplinary effort, which takes into consideration various aspects such as the compatibility of the proposed interventions, the requests for structural/seismic improvement or adaptation.

For the use and reuse of existing buildings, the main performance needs and compatibility could be identified as: legislation and performance requirements; resilience/resistance strategies; knowledge, materials and technologies for the

intervention; compatibility of methodologies; changing restoration/rehabilitation techniques; energy efficiency, accessibility, safety, structural adjustment; compatibility assessment; control and monitoring techniques; maintenance programs and user role. We have to create a common construction language and repository of knowledge and interventions, preserving and restoring great cities and little historical centers and villages, the tens of thousands of monuments, widespread buildings and vernacular or rural architectures, sites and cultural landscapes across Europe, permitting to each building to survive, promoting a new idea of technician that can be an expert both of traditional construction techniques and architectural typologies and also a perfect specialist of the technological innovation linked to rehabilitation and restoration. In this optic, the European culture and heritage could represent a powerful catalyst for a real change and a vital component of the New European Bauhaus and Baukultur, as an integral part of the necessary social, economic, environmental and cultural transformation of our Europe. We need well-planned rehabilitation/restoration design and competitive and well-trained

professionals to regenerate our landscapes, revitalize the beauty of our cities, and find innovative ways of using our cultural heritage to strengthen local communities and create new jobs. We also need to fully embrace the digital transformation and use its benefits to amplify the impact of our architectural interventions. However, this can only be successful with the active participation of local communities and facilitated by national, regional and local governments, and the European institutions, as well as private sector. Traditional architecture is a part of EU cultural heritage; it adapts to the natural condition of territory, is dynamic and sustainable because reuse the same traditional materials, and represent itself a lesson of contemporary architecture [Fig.1] [Fig.2].

### **Italian inner areas & EU rehabilitations goals and challenges**

Inner areas are defined as territories that are significantly distant from the centers of essential services (education, health and mobility), rich in important environmental resources (water, agriculture, forestry, landscape) and cultural resources



*Fig. 1. Vernacular architecture in a village of Cyprus (photo by M. Saeli).*





*Fig. 2. Example of rural architecture (masseria) in the inner Madonie mountain area of Sicily (photo by the author).*

(archaeological heritage, historical settlements, ...). They are part of a highly diversified territory for natural systems and as a result of centuries-old processes of anthropization. About a quarter of the Italian population lives in these areas, in a portion of territory that exceeds 60% of the total and which is organized into over 4000 municipalities/villages.

In Italy small villages or internal areas constitute a third of the national territory in which only the 7% of the Italian population lives. They are characterized by a progressive depopulation and aging of the resident population, with a strong reduction in the supervision and maintenance of soil, landscape and buildings, with serious effects also on the other territories of the country. These areas have lost also sometimes tourist attraction, reducing their important contribution to quality agri-food and artisanal productions. Rehabilitation will be a challenge capable to increase the attractiveness of the territories involved, the fruition of the historical and cultural heritage and the promotion of tourism through the improvement of urban decorum and the recovery of the original and historical features of the villages and architectural emergencies; the enhancement of accessibility conditions and the supply of infrastructures for sustainable mobility; the provision of services and the activation of systems, including innovative and eco-sustainable ones, for tourist reception also through the functional/structural/technological rehabilitation or restoration of buildings and public spaces. The real problems of accessibility to basic services in these areas significantly reduce the well-being of population, limiting the field of choice and opportunities for individuals, who are now forced to move searching useful services in distant locations from one's territory of residence, giving

rise to a phenomenon that strongly undermines the sense of belonging to places, associated with the abandonment of the traditional building heritage existing in these areas.

A substantial part of the internal areas has undergone and is still undergoing a strong process of marginalization, which has manifested itself through phenomena linked to the quality of life of the resident population (also due to the low interest shown in the existing buildings, to be protected and reported to constructive-structural and typological-housing standards appropriate to contemporary living), to its average age and to its degree of occupation, through the scarce valorization or non-use of the rich territorial heritage and through deficiencies in the provision of public and private services and collective. [Fig.3]

Through conscientious restoration and/or building rehabilitation interventions, urban/architectural regeneration approaches can be activated which are based on the reinterpretation of the urban context, through its compatible transformation, which nevertheless preserves its identity. This regenerative process should be dynamic, acting on elements that represent the physicality of a place, but also its economic, social, constructive, cultural and landscape fabric.

Rehabilitation action has traditionally been oriented towards the structural and technical aspects of the buildings. Nowadays, the global concept of urban regeneration is considered one of the main sustainable development goals of the United Nations 2030 Agenda in order to make inclusive, safe, resilient and sustainable cities. EU Ministers for Urban Development approved in 2010 the Toledo Declaration, focused on the importance of integrated urban regeneration and its strategic potential for a smarter, more sustainable and socially inclusive urban development in Europe, supporting the importance of the rehabilitation of the existing housing stock from different perspectives. At the same time, multiple international agreements, such as the Climate Summit COP21 of Paris in 2015 or the recent actualization of the European Directive on energy efficiency of buildings (2018/844), have chosen to accelerate the renovation of existing buildings to reduce the energy consumptions and to reach a sustainable, competitive, safe and decarbonized energetic system for the planet [Fig. 4].

At European level, we take into account the Construction 2020 Strategy for the sustainable competitiveness of the construction sector and its enterprises, in particular the related Action Plan



Fig. 3. Overall view of a part of the historical center of a Madonie village (photo by L. Lombardo).



Fig. 4. Detail of the state of abandonment of traditional architecture inside the Madonie inner area (photo by S. Lo Piccolo)..

aiming at the “improvement of specialized training and making the sector more attractive”. In any case, today the building renovation is a clear priority of the Commission and the “Renovation Wave” is a flagship initiative under the EU “Green Deal” for the construction sector. The European Commission is strongly encouraging Member States to reflect building renovation as a top priority in their national Recovery and Resilience Plans, which aims to rehabilitate millions of buildings in Europe over the next decade. Its objectives are clear: to boost our economy in a period of recovery, improve the quality of life in citizens’ homes and, collectively, move towards the goal of climate neutrality by 2050. Doubling the annual renovation rate in the EU and ensuring high quality renovations will bring valuable benefits to European citizens and will mobilize considerable private and public investment, supporting the green and digital recovery, and a just clean energy transition. The “Technical Support Instrument”, prepared by the EU, will support the Member States in designing, developing and implementing reforms in the area of building renovation. This includes technical support for: targeted reforms aimed at scaling up investments in building renovation, including private homes and public buildings; promote the buildings data availability, providing information for citizens interested in renovating, and support digital technologies in the building sector; developing and implementing sound long-term renovation strategies, roadmaps, policies and programs; improving the capacity of public administrations involved in building renovation, to ensure that the public administration has the necessary skills in the area; refining the capacity of social housing associations by participation of owners and residents in renovation and housing projects.

Achieving these very reasonable goals cannot be done simply by wishful thinking, legislative action or funding. All this is necessary but, as shown by a survey carried out at the European level on this subject, it is also essential to aware the society and prepare all the agents of the sector to be able to face the great challenge that this political commitment represents. Architects, Engineers, Builders, etc. have already had the opportunity to enter into rehabilitation, but the effort that is required now requires expert professionals in the different fields of rehabilitation.

The aim is to develop a training program, for the world of engineering and architecture, shared at European level, which responds to the need to train true experts in the European subsector of rehabilitation,

restoration and maintenance. A professional trained to interact with building owners, to understand their needs and with the technical ability to draft the rehabilitation and restoration projects that each case requires, reaching the highest levels of quality and creativity. A professional aware of respect for traditional techniques and prepared to introduce the most innovative techniques and new materials offered by the market, always adapting to the requirements and characteristics of each building. We cannot forget that rehabilitation and restoration require a balance of two complementary disciplines: technological, related to the world of engineering and artistic, related to architecture, aesthetics and heritage values. The training of the rehabilitation expert must address these two areas of knowledge, in order to provide an adequate response to the demands of a very active economic sector, without forgetting a social component, necessary for this type of intervention. Today we have reached the “Rehabilitation 3.0 model”, which greatly expands its possibilities and its objectives, since it has become the true engine of local and social economies, and is attributed a fundamental role to achieve the essential challenges of improving the quality of life of the population and achieve a decarbonized society by 2050, improving the energy efficiency of the built park. Rehabilitation has also shown itself to be a great source of quality jobs. This requires unprecedented multidisciplinary cooperation between hard sciences (hard skills), technologies, social sciences, arts, humanities and the increasingly essential soft skills. In terms of well-being and health, there are many studies that show how rehabilitation has decisive and relevant effects on the health, life expectancy and well-being of families in their social context. All of this is accompanied by one of the greatest innovations in the sector, such as the introduction of BIM and HBIM computerized processes, within the framework of a 9% improvement in the innovation capacity of the different European Countries, measured by the European Innovation Scoreboard 2020, since 2012. In conclusion, the role of rehabilitation in future systems of innovation, social cohesion and well-being of citizens, in the cultural and creative spirit has very important macroeconomic implications and can be revolutionary for EU policies, at a time when that the large investments of the EU Reconstruction and Resilience Funds, for the recovery of the European economy as a result of the crisis caused by COVID-19, must have rehabilitation as one of their fundamental pillars. One of the important qualities

of rehabilitation of traditional architecture in the inner areas is that it remains stable and acts as a regulator of the market and the activity of the sector. This is possible thanks to the objectives it raises and to which it responds, directly related to people's quality of life and far from speculative movements in the newly built real estate market, which have nothing to do with the needs of the population. The objectives of sustainable rehabilitation, always focused on improving the quality of life of its inhabitants, can be summarized in the following aspects: improve the conditions of structural safety offered by the building; protect the building against decay/damages and humidity also improving technological features of materials and construction systems; repair, upgrade and modify the general gas, water, electricity or sanitation facilities of the building; adapt accessibility conditions by removing architectural barriers and installing elevators; optimize and improve the lighting and natural ventilation of architectures; optimize or substantially improve the energy efficiency of the building; incorporate access to audio-visual, information and telecommunications services [Fig.5]. The rehabilitation of architecture has to be set in the framework of a process of revitalization and regeneration of the territory of which it forms part, whether an urban or a rural environment. It has to be

understood as an intervention on both the physical environment and on the population it hosts, and the series of cultural, social and economic activities that define the 'social environment', with the main objective of improving the living conditions of this population as well as the quality of the area and the 'built' environment, maintaining and promoting its cultural and heritage values, and at the same time guaranteeing its coherent adaptation to the needs of contemporary life. Rehabilitation has to be a slow, programmed process of transformation with mid- and long-term objectives and no fast or sudden interventions. It has to begin with a firm political decision that leads not to the carrying out of specific projects but calls instead for action and ongoing evaluation in accordance with the evolution of the area and its inhabitants.

It is therefore necessary to be ready to face the challenges that the building renovation expert will have to face in the future with a unified professional profile at European level. The profile of a renovate "Building Rehabilitation Expert" (BRE) should contemplate:

- ability to look at the project of preservation as a team work;
- dissemination and design skills based on the



Fig. 5. Example of wooden architecture in Lithuania, object of a necessary rehabilitation intervention (photo by the author).

innovative use of historic building assets;

- ability to solve any problem related to the rehabilitation and consolidation of the historical building, to manage the procedural phases and the construction site;
- ability to foresee in the idea of architectural, technological-structural and executive project also the necessary maintenance activities that the building must have during its future life cycle;
- ability to look at the functional rehabilitation of a building as a new use, different from the original one, but compatible with it;
- ability to keep into account the specific characters and uniqueness of the building to avoid the risk of losing its historical identity;
- knowledge of the building process and its management, knowledge of the construction site (historical and contemporary), management of complex construction sites, knowledge of safety and health regulations in the working-place, projects of scaffolding, and fall protection systems from above (as the roofs);
- ability to deal and develop a project of conservation/modification of an existing building, proceeding from the recognition of the forms of physical-chemical and mechanical degradation and functional deficit, to the definition of effective and adequate techniques of rehabilitation, consolidation, requalification, and improvement of the energy behavior;
- full knowledge of the historical building typologies;
- ability to grasp the original potentialities to identify useful strategies of re-functionalization in a project of preservation;
- deep knowledge of the materials and the construction technologies of the historical architecture, with the ability to analyse, from the typological and technical-structural point of view, an ancient building organism, also of considerable complexity, capable of coordinating and verifying the results of investigations and tests on the building;
- assessment of the safety on the existing buildings;
- knowledge of the concepts of durability, Life Cycle Assessment (LCA);
- technical skills in identifying processes of reuse/recycling of the historical building materials;
- skills of design and verification in terms of regulatory feasibility, integration with the most modern systems (including fire safety) and principles of environmental sustainability, reduction of seismic vulnerability, etc.;
- graphical and manual knowledge, on survey, thematic mapping of the constituent materials, surveys of the technological details, thematic mapping of the materials degradation and structural instability, diagnostic survey;

• knowledge and mastery of digital tools such as BIM and H-BIM design;

• skills regarding energy requalification of the underperforming architectural heritage.

Preservation can be fully considered an activity that concerns an optimal use of the territorial resources, such as historical centers, rural areas, abandoned industrial areas, historic-cultural infrastructures, etc., with deep interventions, even if not conservative, on the existing structures. Preservation includes a series of design operations on the existing building and must face not only with its physical protection but also with its most intimate meanings, especially if the considered building shows some historical features, aiming at improving the performance, also thinking about its possible re-functionalization, with a new one sometimes different from the original. That is better, in our opinion, if it is compatible with the original characters of the building.

Nowadays, the building restoration and rehabilitation suffers a lack of highly specialized professional figures, prepared to face the competitive challenges of the technological, structural and plant rehabilitation, also using modern design tools such as BIM or H-BIM, which must be done without depressing and/or debasing the architectural qualities of the original building.

In addition to this, the architectural rehabilitation and wider urban regeneration project should include, in the internal areas and villages, interventions aimed at:

- favor the reuse of already urbanized areas to avoid further land consumption and make their transformation attractive;
- favor the densification of urban areas for the best economic sustainability of collective mobility systems;
- maintain and increase the attractiveness of urban contexts due to the plurality of functions present;
- ensure the ordinary and extraordinary maintenance and innovation of urbanization works and collective facilities;
- favor, also with civic participation procedures, the verification of the collective utility of urban regeneration interventions;
- improve relations with the surrounding urban fabrics or the re-composition of urban margins;
- improve and enhance urbanization works, services and urban green areas;
- ensure the coexistence of divers

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- improve relations with the surrounding urban fabrics or the re-composition of urban margins;
- improve and enhance urbanization works, services and urban green areas;
- ensure the coexistence of diversified and complementary urban functions and the achievement of a balanced social composition [Fig.6].

### The Smart Rehabilitation 3.0 EU project

Despite these premises, however, it is noted that most European universities still consider building rehabilitation a marginal discipline, compared to new construction activity and fail to adequately and synergistically train the professionals required by the

sector at a European level. In the past, the rehabilitation activity has traditionally been oriented on structural and technological aspects, today the global concept of urban regeneration of the United Nations 2030 Agenda represents one of the main objectives of sustainable development, in order to make cities inclusive, safe, resilient and sustainable. The European Commission has launched the “New European Bauhaus” initiative and, through a website, ideas can now be shared to create the new paradigm of a more sustainable and inclusive way of life. The New European Bauhaus is an environmental, economic and cultural project that wants to develop an innovative framework that sustains, encourages and accelerates ecological transformation, combining urban regeneration, culture, circular economy, design and architecture to contribute to the fulfilment of the Green Deal and the Renovation Wave for Europe. In this framework, Smart Rehabilitation 3.0 is a 30 months multidisciplinary and transdisciplinary long project co-funded by the Erasmus+ Programme of the European Union - Key Action 2, Strategic Partnership for Higher Education - and with the participation of four Universities (Universitat Politècnica de Catalunya (Spain; scientific responsible prof. Montserrat Bosch González), University of Palermo (Italy; scientific responsible prof. Tiziana Campisi), University of Cyprus (Cyprus; scientific responsible



Fig. 6. Example of rural architecture in Sicily, object of a necessary and compatible rehabilitation intervention (photo by the author).

prof. Maria Philokyprou), and Kauno Technologijos Universitetas (Lithuania; scientific responsible prof. Rasa Bertašiūtė), being Lead Partner the Rehabimed Association of Barcelona (president prof. Xavier Casanovas), that promotes sustainable rehabilitation and socio-economic revitalization of historic centers in the Mediterranean area, projecting the experience in other continents. The project aims to mitigate and cover the gap between educational offer and the social reality, by defining a new professional profile of Building Rehabilitation Expert (BRE) and the creation of homogeneous curricula, validated at EU level, for the training of these experts, within the framework of higher education: a professional aware of respect for traditional techniques and prepared to introduce the most innovative ones, always compatible with the existing buildings. The aim is to develop a training program, for EU engineering and architecture, which responds to the need to train true experts in the European subsector of rehabilitation, restoration and maintenance, interacting with building owners and

possible stakeholders as building firms, municipalities and safeguard and valorization Institutions, understanding their needs and offering the technical ability to draft the rehabilitation and restoration projects that each case requires, reaching the highest levels of architectural and technological quality. The project general aim is to deepen knowledge about existing up-to-date technological tools for building assessment, through the collaboration among international Partners, and consequently to upgrade existing training tools and professional qualifications curricula [Fig.7]. The “3.0 concept” become a new paradigm in interaction, making online interface easier and more intuitive for professionals, as smarter applications such as better search functions give users exactly what they are looking for as “digital literacy”. The results that offer this innovate project are that to promote the development of training programs for a new professional qualification and also a “rehabilitation Syllabus” (IO1), in order to train these experts, favoring also the creation of online training obtained through



*Fig. 7. Traditional architecture and its integration into surrounding the landscape (photo by the author).*

four “Massive Open Online Courses” (MOOC, IO2) on rehabilitation and restoration, basing on a high-quality educational experiences. The project would also implement specific tools for the access to technological and innovative interventions in rehabilitation (IO3) and create a repository for “Databases” and digital information on rehabilitation and restoration (IO4).

The Digital Library is a repository open access and freely available accessing to the website where teachers, students and professional experts can directly and freely access multiple information and files on rehabilitation and restoration. It is an open-source network for information distribution, built with the involvement and contributions of specialized experts and companies working in rehabilitation. The two different Databases collecting information relating to technological innovations and innovative interventions in building rehabilitation. Each Database will gather an adequate number of sheets, simple or complex, depending on the study-case. One database organizes the technological innovations by referring to the different building parts/ construction systems, using a particular attention to the original construction materials and to the innovative construction techniques that it will be introduced. Each Partner of the project must involve local stakeholders and industries because they produce innovative materials or construction companies engaged in the experimentation/implementation of cutting-edge construction systems. The second database subdivides the innovative architectural interventions related to the rehabilitation and restoration by referring to specific categories/examples and emblematic study-cases, using a particular attention to the original design and to the innovative architectural intervention that it will be introduced. Also collecting the sheets of this Database, each Partner must involve local stakeholders and architects with innovative rehabilitation/restoration buildings interventions. The MOOCs are a free available on the project website and a flexible way to increase your skills through high-quality educational experiences. The University of Lithuania (UNIKA) will create an online course that provides a comprehensive analysis of the renewal of wooden heritage, combining heritage protection requirements with modern needs and technical possibilities. The Catalunya University (UPC) will do an online course, able to provide useful techniques and successful interventions for an “accompanied self-renovation”, showing ‘bottom-up’ rehabilitations based on the needs and capabilities of the resident population. The Cyprus University (UCY) will produce an online course able to provide an introduction to the environmental features and strategies of vernacular architecture encountered in

both urban and building scale, highlighting vernacular heritage significance, incorporated lessons regarding sustainability, threats related to physical degradation and lack of maintenance, as well as international regulatory framework regarding vernacular dwellings. Finally, the University of Palermo (UNIPA) will create its online course focusing on restoration/rehabilitation techniques and interventions, also explaining virtuous examples of Italian, but not only, recovery/restoration practice; the course is based on a practical approach to solve different technical problems that may arise in the rehabilitation/restoration of the traditional architectural heritage, with a particular focus on the Mediterranean area. The project in all its intellectual results is therefore configured as a fundamental opportunity for connection and exchange between Universities, the world of work and the involved stakeholders, constituting, above all, in the two Databases available on the website and in the online courses, an essential opportunity for easy and direct communication. - even if virtual - of data and highly professional training.

Various professionals have to participate in a common discipline of the rehabilitation and restoration process and this requires true training that guarantees good link/communication and appropriate coordination in the implementation of the work, following the standards, guidelines and regulations criteria regarding technical, environmental, economic and cultural specifications required at European level; the main and obtained skill is an all-inclusive approach to buildings, based on architectural, technological and cultural diversity, well-known and accepted by EU professionals, builders and administrations. During the organized “Short-term joint staff Training Courses about technological innovation in heritage buildings rehabilitation/restoration”, the Partners will exchange in presence - visiting building yards and rehabilitated architectures - knowledge and experiences, learning one from each other, and debate about how to develop training methodologies and tools on specific topics concerning the technological innovation in heritage buildings restoration. The aim of the events is to agree on a common pattern to be applied to training programs for “Building Rehabilitation Experts” (BRE) in the partner Countries; at the same time Partners from the different countries will check their own state of the art on the comparative research, orientating and focussing it to the issues emerged during the discussions. The participants will be selected as experts able to give elements for the debate for the development of intellectual outputs, as extensive research activity carried out between the Universities experts. In the website it is possible to find a page containing different



photos of rehabilitation and restoration projects in Spain, Lithuania, Italy and Cyprus. They have been collected by the partners of the Smart Rehabilitation 3.0 project and are supposed to give an idea about the different fields of restoration they are involved in. Smart Rehabilitation 3.0 has been conceived as a “formative” tool supported by “informative” content (technical-descriptive) to facilitate to the professional the knowledge of the different options of products and technologies to be applied in their rehabilitation and restoration projects and interventions. That is why, since the beginning and for the success of the proposal, we look for the collaboration and support of the institutions, organizations and companies in the respective sector, allowing us to integrate the results of their experience, research and innovation and joining the search for excellence by rehabilitation professionals. Institutions, organizations and companies can participate during the initial period of development of the project (above all during the years 2021 and 2022). On the one hand, they are invited to share the objectives of the project and be incorporated into its structure and participate in its



*Fig. 8. Traditional construction systems, sometimes simple and necessary of a compatible technological check (photo by the author).*

evolution, contributing ideas, knowledge, strategies, and ultimately, establishing synergies. Also, the agents of the sector who consider that they can add value (in services or products) to the rehabilitation and restoration, may choose to take advantage of the tool to pass it on to their current and future users, through constructive solutions and good practices.

Working together with institutions, organizations and companies, will allow us to nurture the platform with those specialized content that provide it with greater

value, due to its innovative training methodology, and the scientific and technological innovation of its content. With the incorporation of their own content, the agents of the sector are able to promote leadership, give prestige to their products and guarantee permanent dissemination.

At the end of October 2022, the final Conference of the Smart Rehabilitation 3.0 Project was held at the UPM in Madrid, within the framework of the Erasmus+ Program, with the participation of some 150 professionals from various European Countries and from the MEDA region, aimed at developing innovative professional skills for the building rehabilitation and monumental restoration sector. The Mediterranean Sea can be considered the common link between all the Countries surrounding it. Different peoples, cultures, arts, crafts, religions and traditions have passed through it, forging both a shared cultural identity and also differences, which can be easily traced in a lot of cities and territories. The Mediterranean city suggests unions and dissonances, sealing the alliance pact that has seen peaceful coexistence, albeit after the imposed dominations of a multi-ethnic and multicultural society. Many cities overlooking the Mediterranean Sea, still today impose a reflection about how is strong the evident relation between their different ways of living. Even today we could talk about a “Mediterranean model” of development, which must be based/re-based on the enhancement of real resources and local identities, founded on an internal condition of balance of sustainability between human settlements and the environment, between natural and man-made territories. This condition can only be sustained on the premise of an adequate protection and improvement of local communities, cultural differences and specificities, through the conscious growth of inter-community relations, the right relationship between majorities and minorities, the respect for cultural heritage and for the legacy of a millenary history. All these topics will be aimed at the recovery of local traditions, representing a cornerstone of the past, but also of the contemporaneity of living and common feeling.

Under the title “Rehabilitation in Europe. Renovation Wave and NextGenerationUE”, the Conference was attended by various of leading European experts and was a unique opportunity to learn about the possibilities that rehabilitation offers to Universities, professionals and the sector in general to open up new fields of work and to internationalization. Today, the renovation of the building stock is a driver of economic activity and job creation throughout Europe and it is one of its fundamental pillars to boost the

green economy and combat climate change. It is an energy challenge, but it also involves improvements in structural safety, comfort, accessibility, quality of life, the promotion of the circular economy and the revitalization of local economies.

As final act of this project, the Conference was organized in 4 different sections: section I, Traditional materials for traditional architecture rehabilitation; section II, Rehabilitation and social goals; section III, Environmental; section IV, Presentation of the Smart Rehabilitation 3.0 results [Fig.8].

## Notes

1. prof. Tiziana Campisi would thanks all the Partners of the EU Smart Rehabilitation 3.0 project. This article represents a brief summary of many documents and intellectual output of the SMART REHA 3.0 project, free available and open access into the website of the same project.

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**DOTTORATO DI RICERCA  
IN ARCHITETTURA,  
ARTI E PIANIFICAZIONE**  
DIPARTIMENTO  
DI ARCHITETTURA DI PALERMO

## RIVISTA DEL DOTTORATO IN ARCHITETTURA, ARTI E PIANIFICAZIONE DELL'UNIVERSITÀ DEGLI STUDI DI PALERMO – DIPARTIMENTO DI ARCHITETTURA

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