

ARCHITECTURE HERITAGE and DESIGN

Carmine Gambardella

XVIII INTERNATIONAL FORUM

Le Vie dei
Mercanti



World Heritage and Contamination

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Carmine Gambardella

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Conference report 300 abstracts and 650 authors from 44 countries:

Albania, Arizona, Australia, Benin, Belgium, Bosnia and Herzegovina, Brasil, Bulgaria, California, Chile, China, Cipro, Cuba, Egypt, France, Germany, Georgia, Greece, India, Italy, Japan, Jordan, Kosovo, Lebanon, Malaysia, Malta, Massachusetts, Michigan, Montenegro, Montserrat, New Jersey, New York, New Zealand, Poland, Portugal, Russian Federation, Serbia, Slovakia, Spain, Switzerland, Texas, Tunisia, Turkey, United Kingdom.

Preface

At the state of art, with profound pride I register that the previous editions of the Forum 'Le Vie dei Mercanti' have favored the creation of an international scientific community with over six thousand researchers, distinguished professors, institutional and business sector representatives from more than one hundred Universities and Research Centers from fifty countries in the world. The XVIII edition of the Forum titled 'World Heritage and Contamination' aims to create a cross-critical dialogue, open to cultural contamination and 'without limits', in a logic of integration between competences which extends, and is not limited to, the following disciplines: Architecture, Culture, Environment, Agriculture, Health, Landscape, Design, Territorial Governance, Archeology, Economy, e-Learning. The activities of protection and promotion of World Heritage, understood as a asset shared by all Humanity, are particularly relevant in Italy, responsible towards the world of custody of the largest number of assets protected by the UNESCO. To the World Heritage Properties is added a landscape heritage of enormous variety and beauty to be protected also through the regeneration of degradation and of the 'minor heritage', in line with the provisions of the UNESCO Conventions on material and intangible assets as well as the European Landscape Convention. In this framework the multidisciplinary topics of the Forum represents a 'thing tank' of confrontation, exchange and cultural contamination oriented towards the United Nations Millennium Development Goals. The location of the Forum is of excellence. Campania Region with six World Heritage Properties, two Unesco Man and Biospheres, three assets registered on the Intangible Heritage List is one of the richest Regions in the world for cultural and landscape heritage, particularly 'contaminated' by Mediterranean cultures. No coincidence that the Forum takes place in Naples and Capri, with site visits and presentations of scientific research and operational projects by the Benecon University Consortium, consisting of five Italian Universities, head office of my UNESCO Chair on Landscape, Cultural Heritage and Territorial Governance. The papers, selected by the Forum's Scientific Committee, will be published in the Proceedings of international relevance. Furthermore, the most innovative research and projects will be published in the 'Quaderni' of the A Class international magazine 'Abitare la Terra / Dwelling on Earth'.

*Prof. Carmine Gambardella, General Chair XVIII Forum
UNESCO Chair on Landscape,
Cultural Heritage and Territorial Governance*

Con profondo orgoglio, allo stato dell'arte, registro che le precedenti edizioni del Forum 'Le Vie dei Mercanti' hanno favorito la creazione di una comunità scientifica internazionale costituita da oltre sei mila ricercatori, distinguished professors, rappresentanti istituzionali e del settore dell'impresa provenienti da più di cento Università e Centri di Ricerca di cinquanta paesi nel mondo. La XVIII edizione del Forum 'World Heritage and Contamination' si propone di creare un dialogo critico trasversale, aperto alle contaminazioni culturali e 'senza limiti', in una logica di integrazione fra le competenze che si estende, e non si limita, alle seguenti discipline: Architecture, Culture, Environment, Agriculture, Health, Landscape, Design, Territorial Governance, Archeology, Economy, e-Learning. Le attività di tutela e promozione del Patrimonio Mondiale, inteso come bene condiviso da tutta l'Umanità, sono particolarmente rilevanti in Italia, responsabile nei confronti del mondo della custodia del maggior numero di beni tutelati dall'Unesco. Alle Properties del World Heritage si aggiunge un patrimonio paesaggistico di enorme varietà e bellezza da tutelare anche attraverso la rigenerazione del degrado e del 'patrimonio minore', in linea con quanto previsto dalle Convenzioni Unesco sui beni materiali e immateriali e dalla Convenzione Europea del Paesaggio. In questo framework i topics pluridisciplinari del Forum rappresentano un 'thing tank' di confronto, scambio e contaminazione culturale orientati verso gli Obiettivi di Sviluppo del Millennio delle Nazioni Unite. La location del Forum è d'eccezione. La Campania con sei siti iscritti nella lista del Patrimonio Mondiale, due Man and Biospheres Unesco, tre beni iscritti nella Lista del Patrimonio immateriale è una delle regioni più ricche al mondo per beni culturali e paesaggistici, particolarmente 'contaminata' delle culture del Mediterraneo. Non a caso il Forum si svolge a Napoli e Capri, con sopralluoghi e presentazioni di ricerche scientifiche e progetti operativi a cura della Consorzio Universitario Benecon, costituito da cinque Atenei italiani, sede della mia Cattedra Unesco su Paesaggio, Beni Culturali e Governo del Territorio. I paper, selezionati dal Comitato Scientifico del Forum, saranno pubblicati negli Atti di rilevanza internazionale. Inoltre, le ricerche e i progetti più innovativi saranno pubblicati nei 'Quaderni' della Rivista internazionale di Classe A 'Abitare la Terra/Dwelling on Earth'.

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CARMINE GAMBARDELLA

UNESCO Chairholder on Landscape, Cultural Heritage, and Territorial Governance; President and CEO of Benecon SCArL University Consortium - Research Centre on Cultural Heritage, Ecology, Economy (University of Campania “Luigi Vanvitelli”, Pegaso University, University Federico II of Naples, University of Salerno, University of Sannio). Full Professor of Drawing at the Pegaso University and at the University of Campania. President of the International Forum “Le Vie dei Mercanti” since its first edition in 2003 to the XVIII edition in 2020. Editor and Founder of the series “Surveying is/or Project”, “Knowledge Factory” and “Architecture, Heritage and Design”. Component of the Scientific Committee of International Class A Magazine *Abitare la Terra/Dwelling on Earth* (Gangemi Editor International Publishing). He covered various roles for the University of Campania, including the Pro Rector of Institutions, Academic Senator, Director of the Department of Architecture and Industrial Design Luigi Vanvitelli, Dean of the Faculty of Architecture Luigi Vanvitelli, Director of the Department of Culture of Design, Director of Doctoral School in the Discipline of Architecture, Coordinator of the PhD in Protection, Safety and Representation of the Environment and Structures and Territorial Governance, Coordinator of the PhD Program in Surveying and Representation of Architecture and the Environment. He is author of numerous scientific international papers, publications and proceedings on surveying and representation of the built and natural heritage.



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Design by Le Corbusier 1931
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Retrofitting practices: an opportunity to “re-design” the urban built heritage

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Abstract

The contemporary city, heritage of modern architecture and its theories, compared to the historical and consolidated city, is the product of urban areas that are like "islands" (B. Secchi).

This building heritage is insufficient to the current comforts and architectural standards due to building and design processes that refer to the principles of "industrialization" and architecture standardization. This condition was caused by the housing "requirements" of the second post-war period.

This architectural and urban heritage requires a reinterpretation and updating through the contemporary standards, to reintegrating suburbs within the social and urban system. In this context, the designer, starting from formal aspects of architecture and social problems, define building and urban requalification through architectural retrofitting: recovery with the current standard requirements for safety and comfort.

This theme, highly current and oriented in the professional future, also requires attention in didactic not only to architectural design and building and urban recovery, but also to the disciplines of representation. In fact, through this discipline, the process of retrofitting is as an opportunity for reading, analyzing and reinterpreting the existing poor-quality building through the survey, reading, understanding and re-design of architecture.

Keywords: Built heritage, City, Retrofitting, Re-design, Drawing

1. Context: the built heritage

The contemporary city, in particular a legacy of modern culture, is fragmented and formed by separate architectural and urban 'organisms' which, like 'islands' in the city, make "the space around us (...) increasingly rippled and wrinkled; cut and interrupted by walls, fences, thresholds, obstacles, normed borders, virtual borders, specialized areas, protected areas" [1].

This urban and architectural condition is inherited from a historical period that determined an evolutionary sequence capable of breaking the traditional patterns. This expansion refers to the growth of decentralized urban areas (acquired by industrial development), and the reconstruction of post-war where the urban context has problems of building speculation.

These urban areas, defined by architectures that do not conform to current architectural standards, are like island separated [2] from the urban context forming what are now called suburbs. These 'areas of margin and exclusion' are almost always far from the consolidated city characterized by serious problems of social marginalization and urban and building degradation [3]. The modern architectural heritage, which constitutes these areas, is largely composed of a second-level architecture, a minor building which is the consequences of misinterpreted processes on the themes of industrial and architectural standardization (typical of the thought of the Modern Movement) [4].

The problem mainly affects the public housing stock which needs a reinterpretation and a re-design capable of interpreting the new needs of contemporary world, using its resilience to be actively reintegrated within the social and urban fabric. In fact, compared to the new regulatory conditions imposed at European and National level, there is a need to give space to urban regeneration and architectural recovery policies by reducing the consumption of additional soil, decreasing demolition

solutions and promoting policies for the recovery and reuse of heritage. The 'environmental issue' becomes a starting point for research for the definition of an interdisciplinary model able to put to system the different needs between stakeholders, professionals, enterprises and Public Administration for the implementation of recovery programs for the recovery of urban areas. Therefore, the retrofitting practices, building redevelopment interventions (to determine adequate comfort conditions), can be considered a suitable tool. It becomes a real opportunity for the redesign of existing architecture, considering the need to regenerate urban public spaces, places of sociability, which are now degraded spaces between buildings.

2. The re-design tools

Intervening on the residential building heritage becomes an opportunity to improve the energy performance of the building by bringing quality standards to the same level as new buildings. At the same time, this model action, create a positive action on the social identity of the places.

Retrofit practices takes into consideration design choices capable of producing functional adjustments to buildings, not only the performance aspects in terms of energy, seismic and therefore technology. This is a real 're-drawing' of architecture and the attention to the technological issues cannot be separated from morphological and formal aspects.

There are numerous cases, at national and European level, in which the redevelopment of social housing buildings on the physical dimension and spaces automatically triggers revitalization processes that affect the entire neighborhood [5].

Capturing and analyzing the strengths of the buildings and their context is the first step to proceed with the right and appropriate design choices. The analysis must start from the context, often formed by large green areas not valued or poorly designed. It can be clearly understood that for a retrofitting project of a building, it is important to consider the positional and volumetric characteristics and its relationships within the urban fabric.

A critical recovery method, that also considers the instruments of the legislature, certainly promotes a "densification" policy, a functional and typological integrations to existing building.

3. Case studies

Some case studies on public residential buildings are examined. These have undergone a redevelopment that involved energy, structural and technological problems. But at the same time the actions have been able to trigger redevelopment phenomena in terms of social and territorial policies, thanks to the "densification" method.

The need for intervention in some European neighborhoods to respond to obsolescence and social degradation has allowed the various governments, over the years, to set up public-private transactions. One of these was the HVS (Habitat et Vie Sociale) program in France, in the 1970s, aimed at overcoming the gap between "urban" and "social" planning of *grands ensembles*, which had peripheral characteristics. It is the suburbs that are considered as potential for the transformations of the city, offering large outdoor spaces, great heights and interstitial spaces that offer "objective possibilities to push architectural research to go beyond traditional housing schemes" [6].

One of the most significant examples of recovery of a building that combines the objective of increasing the energy performance of the envelope with the improvement of housing quality is given by the redevelopment project by the architects Druot, Lacaton and Vassal of the Tour Bois la Prete in Paris, in 2011. This project is the synthesis of the participation of all the actors in the redevelopment process and the methodologies of the Plus + program (theorized by a research by the Ministry of Culture and Communication for the recovery of residential buildings in the French suburbs).

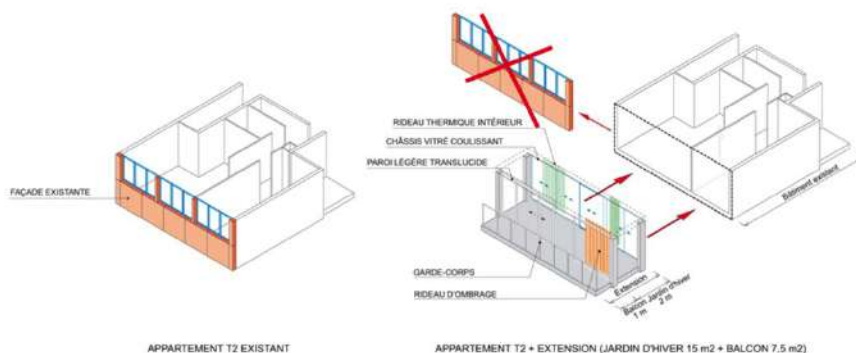


Fig. 1: Transformation of Tour Bois la Prete, Paris ((© Druot, Lacaton & Vassal, <http://lacatonvasal.com/>)



Fig. 2: Transformation of Tour Bois la Prete, Paris (© Druot, Lacaton & Vassal, <http://lacatonvasal.com/>)

The project, through the extension of the tower apartments, prevented the building from being demolished. The extension is given by a self-supporting structure added around the building, allowing the extension of the living rooms and creating closable terraces and balconies. The existing facades have been removed and replaced by large transparent openings. Attention to the social structures of the place even during the construction phase, through to the study and use of prefabricated elements of the new structure, allowed the inhabitants to remain in the apartment even during the construction works [7].

Another French experience is given by the 2009 Loggias Bondy project, developed in the ANRU (Agence Nationale pour la Rénovation Urbaine) program. This resolved the problem of acoustic insulation with respect to the nearby highway. Infact was expanded the useful space of the apartments and the architectural image of the pre-existing building was redeveloped.

The intervention, on a public residential building, by Virtuel studio, allows to isolate the houses and design the building using prefabricated elements, underlining the importance of the relationship between industry and architecture.



Fig. 3: Retrofitting practice of Loggias Bondy, Paris (credit: Studio Virtuel Architecture, <http://www.virtuel.fr/>)

In Hamburg, Germany, the Blauraum study intervened on some post-war residential buildings in Bebelee, in the north of the city. The method adopted is always that of densification, a solution suitable for the request by the public client of affordable housing, without further consumption of land. The complex consisting of six buildings in line, made of two and three levels residential buildings, is reinterpreted with a superelevation allowing to preserve the green spaces and trees, this is the reason for the name "Treehouses". The retrofit intervention was carried out through an extension with prefabricated wooden elements, solving static, energy and economic problems (faster construction times). There is thus an effective aesthetic and functional pragmatism. The result is a contribution to the question of the conversion and expansion of cities, a synthesis between housing quality, architecture and social challenges [8], with the creation of 47 new housing units and the definition of a new urban character.

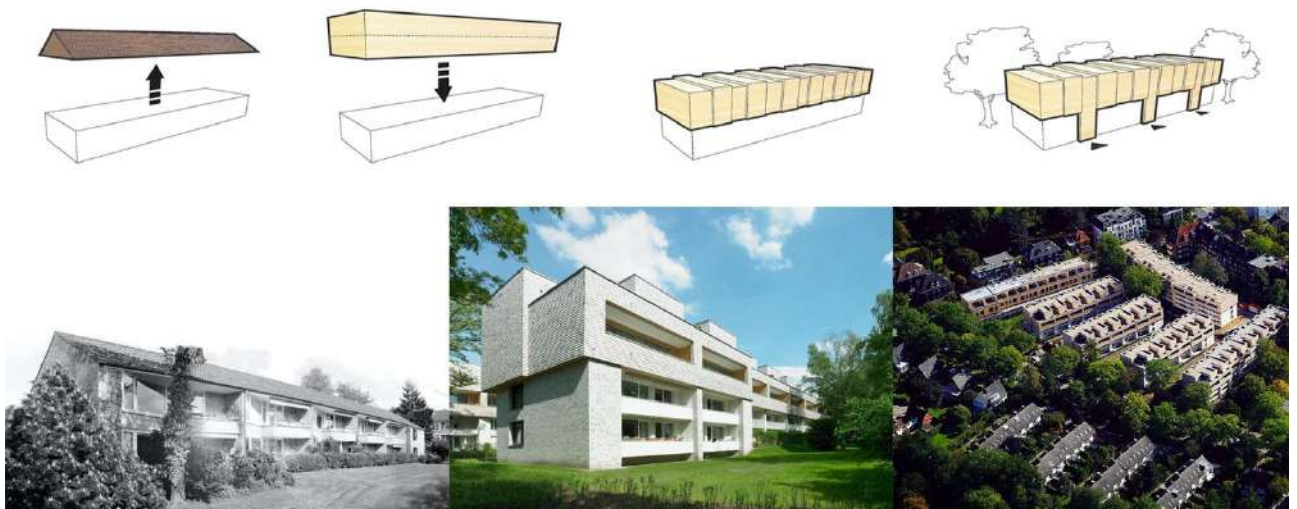


Fig. 4: Retrofitting project of Treehouses, Hamburg (© Studio Blauraum, <http://www.blauraum.eu/>)

The institutions, also in Italy, sensitive to the theme of the redevelopment of the suburbs indicate design competitions such as the one launched by the A.L.E.R. of Milan in 2009 won by Studio MC A (Mario Cucinella Architects). The site is the degraded neighborhood of via Russoli, in the suburbs of Milan. The project involves the four residential tower buildings, of eight floors each, in a housing district of the 70s-80s. It is attentive to environmental issues and national and European regulations. The main objective is to restore the architectural and social quality of the towers, through three main operations: the recovery of the ground floor and basement, the energy and architectural redevelopment of the outer envelope of the 4 towers and the construction of student residences to be placed on their roof [9]. In addition to making the buildings more energy efficient, healthier and safer thanks to new functions and new collective spaces, the new residences, placed at the top and intended for students, allow urban redevelopment thanks also to the integration of different social classes. In fact, as M. Cucinella says, architecture is called to provide adequate answers in harmony with the environment and the cultural context.

The new homes, built with prefabricated wooden construction systems, are designed according to two schemes: the first type is structured as if it were a "micro-village" formed by small independent housing units; the second is of the "hotel" type and the accommodations are distributed around a central green core and on two levels.



Fig. 5: Redevelopment and expansion of residential complex of ALER, MC A (© MCA Archive)

Re-design: a tool for didactic

The architectural retrofitting and urban redevelopment are current themes that is oriented in the near professional future. For this reason, the focus on urban recovery is increased in academic and didactic fields, not only for the disciplines of architectural design but has become a subject for the disciplines of representation. Starting from the disciplines of Survey and Representation it is possible to make 'operational models of proposals' to reconnect marginal buildings of low architectural quality with the consolidated fabric of the city. The enhancement and redevelopment of the "interstitial spaces" of the suburbs and the historic city can be achieved thanks to the re-design of the urban quality through a formal reinterpretation of the building, through contemporary architecture.

The formal and typological redesign of the buildings uses the act of the architectural retrofitting to become an instrument of reintegration and reconnection of divided systems, through the ability to reinterpret the original architectural language with the actualization of the project on the structural, technological and energy.

These design steps can be identified in the case study of a project of degree thesis of the University of Basilicata, "the redesign of the limit" of the old city of Potenza. From the processes of 'knowledge',

typical of the historical survey, and from the reading and interpretation of the city, has been possible to define a project able to resolve a separation between a historical monument, such as the Guevara Tower, and the historical fabric [10].



Fig. 6: Project ideas and graphic elaboration of the architectural retrofitting and urban recovery project

The design, in this case, represents the discipline that allows to observe, analyze and redesign the urban landscape linked to the historical identity of the city.

The first step of the study is the elimination of a school building of the 1960s, now abandoned and without any architectural value, which denies the perspective view from the street of the historic center to the Tower. An urban park is designed around it. The experimentation is completed with an action of formal reinterpretation of a building near the Tower. An architectural retrofitting hypothesis is proposed to this building, through structural modernization and energy improvement operations without neglecting the virtuous and economic processes that would affect the entire urban system.

Another opportunity for study this theme is represented by the project of degree thesis of the Hotel and Spa Complex of Montesano sulla Marcellana (SA), currently associate with a contemporary architectural ruin in abandonment [11]. The complex, designed by the architect Enrico Del Debbio, consists of a structure served as a hotel with restaurant and a thermal palace with swimming pools, football fields and related services. This complex, now abandoned and located in a marginal area of the city of Montesano sulla Marcellana, can be considered as a cultural, architectural, tourist and landscape resource of the Vallo di Diano territory.

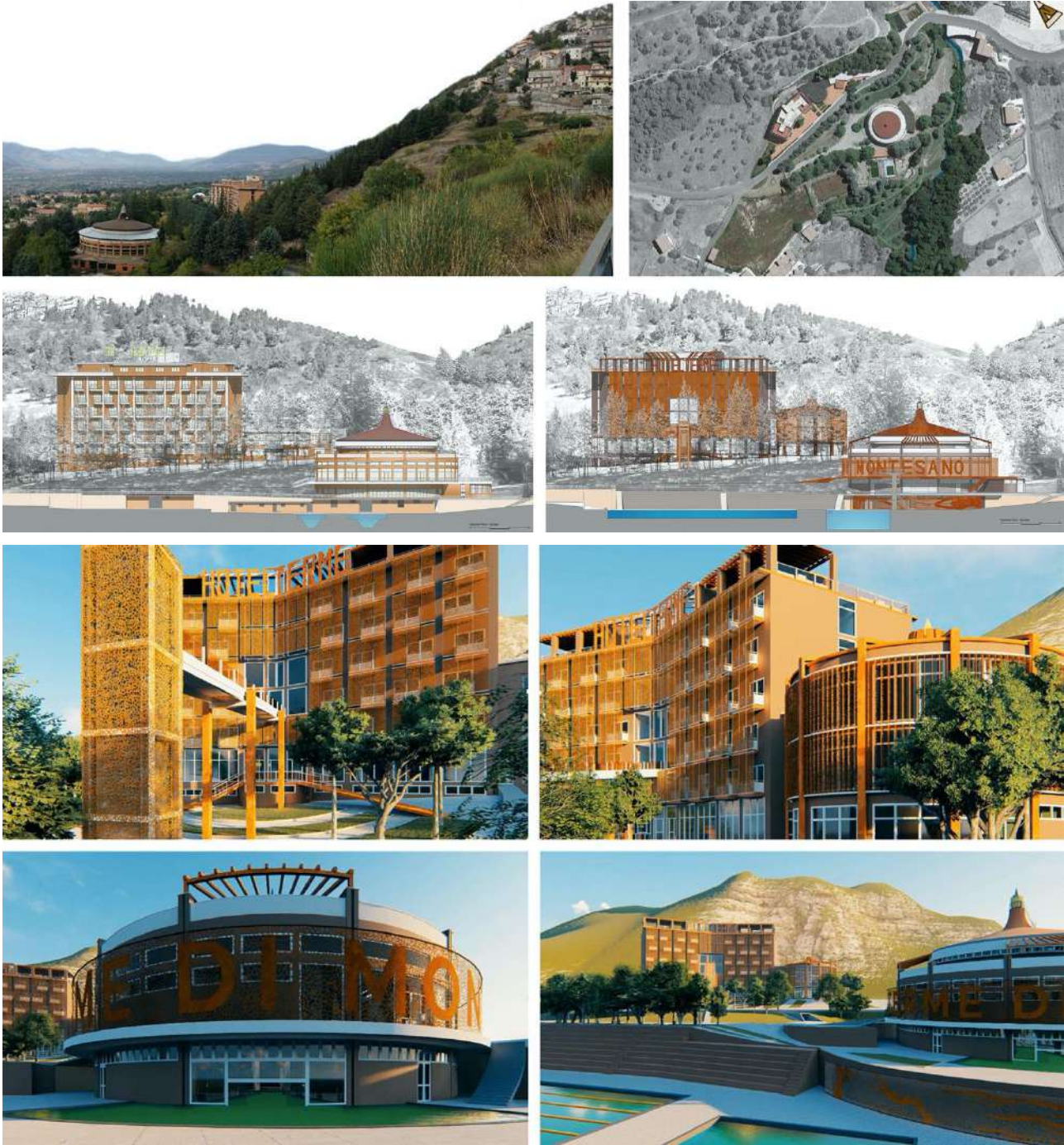


Fig. 7: Survey, redesign and 3D model. The new design of Thermal complex using Corten Stell

The design methods, through the phases of cognitive knowledge of the survey and of the drawing, put in place a project that has the aim to enhancing the historical and architectural traces of the original project by Del Debbio. From the interaction between architecture and landscape, considering the morphology of the ground and the use of the right materials and colors, the building has improved its functions and architectural appearance. The building, in fact, is recognizable in the modern architectural context, restoring the architectural identity of the structures. The project looks at the "temporary inhabitant" and the spaces dedicated to him. In fact, the hotel becomes a place for a tourist hotel and for the elderly who can stay for a more or less long period in these areas. The entire organization of the park concludes the project by updating the entire spa complex on a functional and social level [12].

Conclusions

At national and European level, examples of recovery of buildings belonging to the category of social and residential construction are increasingly frequent. From these experiences it is possible to see how retrofitting, even if only on the structure of the building, automatically creates processes of revitalization of the free spaces that subsequently affected the entire neighborhood [13].

Operation on the building shell, on the size of the apartment, on their distribution and on the relationships between these and the elements of the context such as the city or nature, allow to increase the quality of housing standards. The practice of re-design becomes a means to communicate new future scenarios and represents a concretization of new architectural perspectives [14].

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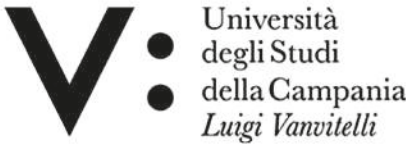
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