Engineering Innovations
ISSN: 2813-1002, Vol. 8, pp 81-97
doi:10.4028/p-1xJaWG
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Submitted: 2023-09-22
Revised: 2023-10-01
Accepted: 2023-10-01
Online: 2024-01-03

Innovation and Tradition Respect for Tradition in the Architecture of the Past

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Keywords: Ancient architecture, tradition, innovation in the past, natural materials, sustainability, basalt, construction tradition, raw earth

Abstract. This work shows some examples of architecture that have been able to combine the cultural and technological traditions of the places in which they are located with elements of innovation. The theme of respect for tradition in the great architecture of the past is discussed in the first part of the chapter. Three examples of great Italian architecture were chosen in which elements of innovation are inserted into projects in which the architect has chosen to respect the pre-existing structures. Subsequently, the use of materials and construction techniques belonging to the local tradition is discussed innovatively and continuously over time. Finally, some examples of contemporary architecture are displayed in which the designers have decided to respect traditions to make the works they propose better communicate with the environment, territory and society. Respecting traditional materials also turns out to be a method for creating eco-sustainable architecture.

Introduction

When you create a new architectural work you often find yourself having to communicate with what already exists. One's ideas cannot always be guided only by emotions but must take into account the social and cultural context, as well as the urban and architectural. The new buildings or squares must often be placed in a rich urban context, with works worthy of respect and already historicized. The designer's creativity is tested and his ideas must come to a compromise.

Not only does this happen in current times but also in the past. Architects of great caliber have found themselves having to tackle projects on existing buildings or in a very strong cultural background. They were asked to create something that honored the client and was representative of the historical time. There are several testimonies of architects who have decided to overturn the existing in favor of the new but also testimonies of architects who have created works still remembered today, created respecting the existing and ancient traditions but in vain and creating architectural masterpieces.

Today we are increasingly witnessing major climate changes. Traditional architecture somehow respects the environment and the landscape by exploiting the material resources available. Each project is different as it is the expression of a personal idea and a different territorial reality. When developing a project there is no single effective method or strategy. The creative genesis is made up of various strategies which, in recent years, have been aimed above all at respect for the environment and pre-existing structures have taken on greater value.

A fundamental element of many current projects is based on the local building tradition. Starting from this, we arrive at finding innovative solutions that can make the most of natural resources and better adapt architecture to its social and natural environment. The ability of architects today consists of finding innovation by exploiting the construction traditions of places. "Tradition does not mean closure, immobility. On the contrary, the value of traditions lies in their being open to innovations. Tradition is not the opposite of innovation, but rather its complement" [1]. This statement by Alvaro Siza is significant for the current trends in contemporary architecture. But how did architects deal with the existing in the past?

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Methodology and Structure

This chapter is divided into four sections. The first section describes some examples of innovation that started from tradition in the great architecture of the past. There are only three examples of historic Italian architecture, those considered most significant for the topic covered. The second section describes traditional architecture and, especially, there are some examples to understand the use of local materials in an innovative way and traditional construction methods as a starting point for innovative architectural solutions. The third section is a discussion with some examples of the use of traditional systems with innovation in contemporary architecture. The last section is a conclusion, with a perspective for the future.

Historic Architecture

Even the great architects of the past found themselves faced with projects for which their creativity was put to the test by pre-existence. If in ancient times it was preferred to erase what had been created, in more recent times, especially from the Renaissance onwards, pre-existences takes on a Cultural Value and therefore must be respected. This is the situation that Filippo Brunelleschi found himself having to face with the project for the dome of Santa Maria in Fiore in Florence, the great Michelangelo Buonarroti when, in 1561 he was entrusted with the task of restoring the ancient baths of Diocletian in Rome and Francesco Borromini with the projects for the Saint Charles at the Four Fountains complex in Rome. The sensibility of these great architects was manifested in their approach to the existing and their creativity allowed them to create particular architectural works.

Dome of Florence Cathedral. At the beginning of the 1400s, Italy and Europe witnessed a rediscovery of the values of the past. With the rediscovery of the remains of the buildings of Imperial Rome, baths, basilicas, and temples became a point of reference for all artists and architects to remodulate the language of medieval art to build a new one that finds its ancient origin. Giorgio Vasari defines this movement as a “rebirth” while in more modern times the entire period is defined as the “Renaissance” [2]. Several art and architecture scholars analyzed the ancient architecture to understand its language. The ancient architectures are not copied but inspiration is drawn from them to create something new and innovative.

Among the first architects in Italy who broke the mold by proposing innovative solutions starting from tradition was Filippo Brunelleschi. He already showed himself to be an innovator in the creation of the tile for the competition for the construction of the second door of the baptistery of San Giovanni. In his panel Brunelleschi, while remaining faithful to classical themes, decides to insert a new spatial concept, with some figures that emerge from the physical limits imposed by the frame while others are pushed in forcefully. The artist, in his composition, captures the drama of the moment, distancing himself from his contemporaries who, in a scene taken from a biblical episode, preferred to represent the serenity due to faith. The competition was won by Lorenzo Ghiberti but the studies for the tile were the starting point for subsequent ones which led him to the invention of the method for representing real objects as they are seen in space: perspective. Thanks to his ingenuity he was entrusted with the project for the construction of the dome of the Florence Cathedral (Fig. 1).

The dome, due to its size and structure, has been considered an architectural masterpiece since its creation. It is the symbol of Florence and the Renaissance. Its construction took place between the years 1420 and 1436 and it is the largest masonry vault in the world. Already in the fourteenth century, when the church was built, a dome had been planned but due to its size it was never built. Brunelleschi decided to create a masonry structure with Gothic shapes that recall the original style of the cathedral but brought innovations from a technological point of view. The architect balanced the dome through the use of a double cap, built without the use of armor but with a self-supporting system that also included bricks arranged in a herringbone pattern. The two caps, two coplanar domes, were made of bricks and stones. Each canopy is made up of eight sails and is held together by twenty-four median and ten parallel ribs. The ladder used for the uphill path towards the lantern, located to close the structure, is placed between the two caps in the cavity. The interior of the structure, with lighter materials at the top and heavier at the bottom, is mainly made of bricks, while the exterior is covered

with terracotta tiles with ribs made of white marble. Overall, the dome is considered Renaissance, because it is a volume defined in space that dominates rationally but does not differ from Gothic forms, connecting with the existing in an exemplary way [3].

Fig. 1. Florence cathedral and Brunelleschi's dome (Ph. by Salvatore Niglio 2019).

Michelangelo and Saint Mary of the Angels and Martyrs. In 1561 Pope Pius IV entrusted Michelangelo Buonarroti, now elderly and at the peak of his artistic career, with the works for the transformation of the *tepidarium* of the Baths of Diocletian in a church. The architect in those years was working on the completion of St. Peter's Basilica, a project which however he never saw complete. For the great Basilica he initially solved the structural problems that had worried previous architects, but he decided to create something different than those who had preceded him. However, the approach to the project for the new church commissioned by Pius IV which was to be dedicated to the Virgin and the angels is different. For this latest project, Michelangelo decided to respect a large part of the existing structures, initiating a form of respect for tradition, exploiting the existing, innovating the forms and using the natural lighting coming from the existing windows. He intervened in the thermal complex demonstrating a modern and non-destructive attitude even if far from what can be defined as "archaeological restoration".

Michelangelo's intervention was aimed above all at preserving the Roman walls by restoring the hall *tepidarium* showing a non-destructive and modern attitude towards what was left of the past. He limited himself to reinforcing the existing walls, creating some partition walls to delimit the spans of the naves, covered with cross vaults, and adding two square side chapels, thus creating an ecclesiastical building outside the canons of the time.

The new church had three entrances: one on the current Piazza della Repubblica, concave in shape, built respecting what remained of the Roman exedra (Fig. 2), and the others positioned on the sides of the transept. The altar was also placed on the transverse axis rather than on the longitudinal one, as was customary, and the space was expanded laterally rather than longitudinally [4]. The square rooms of the ancient baths and the rotunda on the opposite side were transformed into vestibules and were equipped with porticoes. In this way, it was possible to reduce the new works in favor of the

construction of a long Carthusian choir. All the walls and vaults were plastered in white and the only note of color was given by the eight giant columns in front of the walls made of reddish granite. The interior space was conceived as the true aesthetic object of the architecture, with lighting playing an important part. The vestibule was lit only by a lantern and the choir windows brought little light into the side rooms, creating dim light. The eight large ancient windows of the clerestory, however, illuminated the entire central room from above.

In the 18th century, the church was renovated in the late Baroque style. Columns and decorations typical of the period were added, closer to the original decoration of the *tepidarium*, and far from the typical austerity of the sixteenth century. The side entrances were closed and two chapels were built in their place. Although the space designed by Michelangelo was not remodeled, the impression one has today is completely different from that desired by the great architect who favored the essence of the structures as they had survived until his time.

Fig. 2. The facade of the church of Saint Mary of Angels and Martyrs in Rome (from https://www.romanoimpero.com/2022/10/sotto-s-maria-degli-angeli-e-dei-martiri.html).

Saint Charles at the Four Fountains. The project for the church of Saint Charles at the Four Fountains (also called "San Carlino" due to its small size) occupied the architect Francesco Borromini both at the beginning of his career and at the end. Between 1634 and 1644 he was commissioned to design and build the church, the convent and the cloister of Saint Charles at the Four Fountains for the Order of the Discalced Trinitarians and, in 1655, the façade of the church. The architect immediately finds himself faced with the small space in which to insert all the works requested of him.

Having to respect the pre-existing structures, Borromini did not have much freedom of movement in the conception of a new work. We are in the midst of the Baroque period and, according to the taste of the time, the architecture had to create visual effects that surprised visitors and was characterized by richness and monumentality. Borromini's creativity was put to work especially when, in 1655, he was entrusted with the project for the façade of the church. The facades, in the Baroque period, were characterized by celebratory and scenographic solutions and lost the

architectural meaning that was typical of previous years. The reference to the ancient in this period increasingly becomes a pretext for experimenting and finding new and spectacular solutions.

This is the case of the church of Saint Charles at the Four Fountains. Already in designing the plan of the church, Borromini found himself having to face problems regarding space. The little space available and the need to respect the previous structures did not allow the creation of a work that respected the taste of the time. He, however, managed to achieve something unique. He combined three different types of structure in this church: the lower, wavy part recalls some structures from the late Roman period; the intermediate part with the plumes that support the dome above draws inspiration from churches with a Greek cross plan; and finally, the dome, oval in shape, connects to the base shape [5]. With great creativity he achieved his goal by combining three different geometric shapes in a small space, arousing admiration in his contemporaries and inspiration in the architects of subsequent centuries.

Fig. 3. The facade of the church of Saint Charles at the Four Fountains in Rome (from http://www.turismoculturale.org/visitesancarlino.htm.

The entire monumental complex is characterized by its surprisingly small dimensions and the extreme simplicity of the materials, in accordance with the rule and spirituality of the friars of the Trinitarian order, but also with the artistic ideas of Borromini who preferred humble materials such as plaster to precious materials. and stucco, to be ennobled with the technique.

The facade was not erected immediately. We had to wait a few more decades for his project, the last work of Francesco Borromini, begun in 1665 and completed in 1667. The decoration of the facade continued after his death until completion in 1682. Today there are still many original projects left for the church, which Borromini had created to find a solution that suited two important needs: the lowest possible cost and the maximum use of the little space available. The position was not the easiest, as it was positioned next to a rounded corner of the intersection between Via del Quirinale and Via delle Quattro Fontane. Thanks to the skilful use of the available materials and shapes, the work stands out from the surrounding buildings both from a decorative and chromatic point of view.

The articulation system, which combines a small and a gigantic order, derives from Michelangelo's Capitoline palaces and from the facade of Saint Peter where Borromini had begun to work. But he used this Michelangelo system in a completely new way. The facade consists of three sectors; below, the two external concave sectors and the central convex sector are linked together by the robust, continuous and wavy entablature; above, the three sectors are concave and the entablature takes place in three separate segments (Fig. 3). Furthermore, the oval medallion supported by angels and dominated by the onion-shaped element cancels the effect of the cornice as a horizontal barrier. The compactness of this facade, with the minimum wall space, densely filled with columns, sculptures and plastic decoration, which never lets the eye rest for long, is typical of the Baroque. Thanks to the genius of the architect, who was able to combine Roman tradition, respecting the existing, and Baroque innovation, the church and the entire complex can be counted among the greatest products of Baroque architecture.

Traditional Architecture

Since ancient times, men have had great innovative abilities which have manifested themselves above all in traditional architecture and spontaneous construction. Each population has always tended to exploit the resources at its disposal by trying to create increasingly innovative solutions capable of making the lives of those who lived there as comfortable as possible. Despite this, even today when we talk about tradition we almost feel uncomfortable because they evoke constraints that we are not always willing to overcome. However, tradition can also be a guide, an example to draw inspiration from to find increasingly innovative architectural solutions. This is what can be seen in the architecture of the different regions. In the past, architects but also simple builders have used materials coming from the surrounding area. There is therefore, for example, the use of travertine in the Lazio area, the use of basalt on the slopes of Vesuvius and Etna and tuff in the Ragusa areas.

Materials. The use of local stones as a building material has been widely documented since very ancient times. It is known that man has always used what he had available. Over the centuries this habit has never changed and today we find entire cities built with local materials. This is the case of the city of Catania, whose main characteristic is the black color given by the basalt used in different ways. Several written historical sources testify to how this stone is suitable for construction. It is so present that it has also become a fundamental element of the built landscape. Reusing lava, because that is what it is, to build had almost the aim of exorcizing the destructive force of Etna and making coexistence with the volcano peaceful [6].

The use of lava as a building material is documented in several ancient documents. Especially since the beginning of the 19th century, several scholars have analyzed the use of lava as a building material in areas where volcanoes are present. Even in the previous century, the various travelers who visited the island in search of ancient remains admired the wise and conscious use of local materials [7].

Even today it is possible to see how the natural elements coming from the volcano are constantly used in masonry, plaster and road paving. Due to their particular characteristics, basalt and lava azole are suitable for the construction of walls and plasters resistant to atmospheric agents and recurring telluric movements. Often the basaltic elements are left without any plaster covering, making the wall texture itself a decoration for the building.

This is the case of Porta Garibaldi, built in 1768 based on a design by Stefano Ittar (Fig. 4). The architect uses traditional materials, basalt and limestone typical of the areas south of Catania, to create a decoration that makes one of the access gates to the city unique and recognizable. Precisely for the defensive function typical of city gates, a very resistant local traditional material was chosen. Even the rest of the surrounding walls, since medieval times, were built with basalt blocks and, in many sections, they still resist today together with the watchtowers.

Fig. 4. Catania, Porta Garibaldi (from https://fondoambiente.it/luoghi/porta-garibaldi?ldc).

Basalt in Catania is also used for numerous decorative elements, first of all the “u liotru” symbol of the city. It is a monumental fountain positioned in the center of Piazza Duomo and whose main element is “u liotru”, an elephant carved in basalt now considered the symbol of the city. The fountain was created by Giovan Battista Vaccarini as part of the reconstruction of Etna city after the earthquake of 11 January 1693. Also in this case the alternation between the white of the marble and the black of the basalt makes the work particular and the use of limestone for the elephant’s tusks and eyes makes it realistic (Fig. 5). In the same Piazza Duomo, several buildings meet, also built in different periods. They all have in common the characteristic black color given by the basalt and the lava azole used in the plasters (Fig. 6).

Fig. 5. Catania, Elephant Fountain (Ph. 2019).

Fig. 6. Catania, Piazza Duomo (Ph. 2015).

Other examples of the use of basalt in different eras can be found in the church of Sant'Agata prison (Fig. 8). Here it is possible to notice the different walls: the innermost medieval ones, belonging to the structures of the medieval urban wall, the outermost ones belonging to the reinforcement built in the 16th century. Furthermore, these include the walls belonging to the Roman structures, all made with Etna basalt. The type of wall changes but the use of local stone does not change, as it is more suitable for the purpose and cheaper than others that come from distant areas.

Fig. 7. Catania, Cathedral (Ph 2015).

Fig. 8. Catania, the church of Sant'Agata Prison (Ph. 2016).

The use of basalt is constant and continuous over time both in Catania and in the areas of the province that are in direct contact with Etna. Even in the surrounding inhabited centers it is possible to notice the same constant and continuous use over time, demonstrating that technological innovation can always respect the local construction tradition (Fig. 9).

A final example is the use of basalt on the south-west side of Etna and in a less recent era. This is the case of the "Saracen Bridge" of Adrano which, due to its beauty, is considered among the thirty most beautiful bridges in Italy (Fig. 10). It is a stone bridge, probably built in Roman times but rebuilt and modified starting from the Islamic period, which allows the crossing of the Simeto river between Adrano, in the province of Catania, and Centuripe, in the province of Enna. Of the Roman structures, the bases of the main arch remain which were left by the Arabs when, following the occupation of the territory, they wanted to restore the activity of the bridge which had probably collapsed due to a flood of the Simeto river. The Arabs, in this way, replaced the damaged Roman structures with new structures built according to their canons, taking care of the chromatic effects, with the alternation of dark stones and light stones in the ring nuts of the arches, and modifying the shape, inserting the arch pointed arch typical of Islamic architecture. In this way, respecting the tradition of using basalt as a local building material, the structure is lightened and streamlined, ensuring that it lasts over time. Given its position, along the important road axis that connected the city of Troina with the city of Catania, the bridge was reinforced during the Norman period and also in subsequent periods, especially after the earthquake of 1693 which caused severe damage to the structures.

When the road system in the area was modified at the end of the 1700s, the bridge lost its importance and was gradually abandoned. In 1948 a flood destroyed part of the structures. These were rebuilt with different shapes and of the original structure only the central arch remains today, with a pointed arch [8].

Fig. 9. Acireale, basalt fountain (Ph. 2016).

Fig. 10. Adrano, Saracen bridge (Ph. 2023).

Construction tradition. Respect for construction tradition with an eye to technological innovations is visible even further north in the province of Catania. In the province of Messina, there are several religious buildings with particular characteristics. They have clear references to Arab Architecture but were built in the Norman Era. These are cubes, small religious buildings located in the northern area of Etna but also churches present on the Ionian coast.

An example among all is the church of Saints Pietro and Paolo of Agrò, built along the Agrò stream in the province of Messina between 1117 and 1172 (Fig. 11). The dating of the church is deduced from a document that reports the news of the foundation of the church commissioned by Roger II in 1117. Following the earthquake of 1169, which severely hit all of eastern Sicily and southern Calabria, the church was restored and brought back to new condition, as can be deduced from the date engraved on the entrance portal. The inscription, in Greek and dated according to the Arabic calendar, also reports the name of the person who wanted the reconstruction, the protomaster Girardo il Franco. In these few elements, it is already possible to notice references to local tradition: the language used for the inscription, Greek, refers to the Monastery of SS Salvatore and the monks of San Basilio, who still used Greek in official documents; the dating according to the Arabic calendar brings back the local custom which saw Islamic customs and traditions, still rooted in the territory. The architectural layout constitutes a mix of styles, between the basilica layout with three naves and a tri-apsidal transept, typical of Christian structures, and the central layout typical of structures of the Byzantine tradition.

The architectural composition presents several particularities due precisely to the mix of styles. The main nave has a central dome set on a high cylindrical drum. The connection with the circular shutter of the dome occurs through brick arches which progressively bring the quadrangular shape to the circular shape. A similar solution occurs for the dome located at the intersection with the transept. This, smaller in size, presents a more complex solution composed of hanging arches that bring the quadrangular shape of the base to an octagonal shape and then to the cylindrical shape of the base of the dome. The spatial articulations adopted for the two domes refer to explicit construction repertoires

typical of Islamic workers, a sign that those who wanted the building to be built respected local construction traditions.

A common feature of all the churches in Val Demone is the attention to the external appearance of the building, with the use of lava stone from Etna and pink marble from the quarries of Taormina together with local limestone and bricks. The alternation of these materials, with the bricks arranged in rows, in a herringbone and sawtooth pattern, alternating with the local sandstone and carefully arranged blocks of basalt and marble, gives the building a unique and recognizable appearance. Whoever wanted and built the church, in this case, respected the local construction tradition, used easily available materials, and inserted stylistic innovations that made the work unique [9].

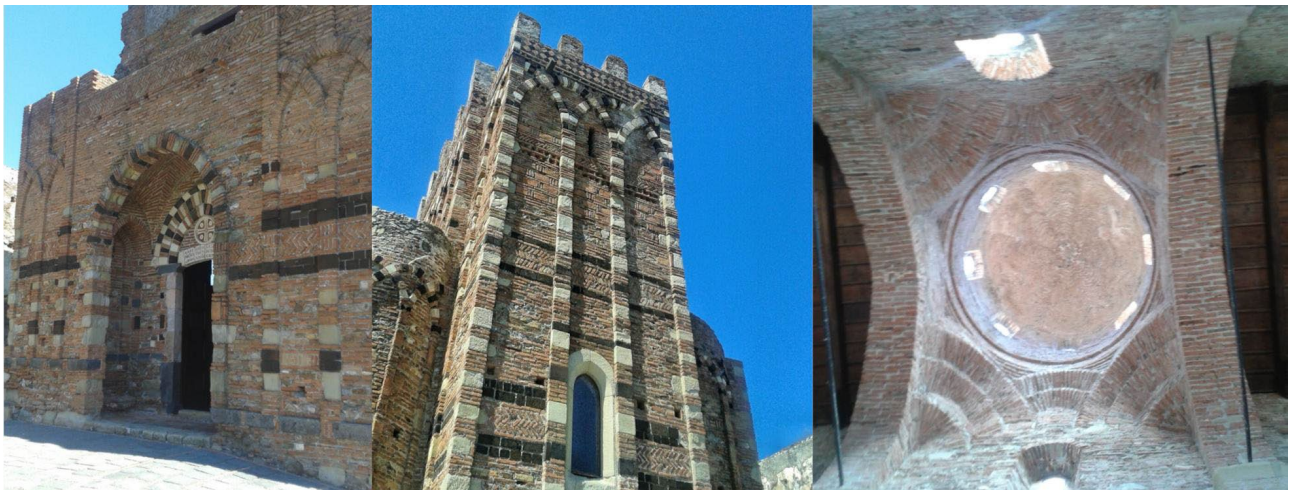

Fig. 11. Church of Saints Peter and Paolo of Agrò, Casalvecchio Siculo (Me), (Ph. 2017).

Another example of a construction tradition that has endured over the years is the Trullo. The Trullo building typology belongs to what is defined as spontaneous architecture, made with local, poor materials and with wall structures built without the help of binders. This particular building typology is present only in the Puglia region and its origins are linked to the society of the places and the geological conformation of the place.

The Trulli are an expression of Apulian peasant culture and are still scattered throughout the countryside of the Itria valley. They are small structures, rectangular with truncated pyramid roofs or circular with ogival roofs, and the construction technique is strongly linked to the geological conformation. They are present in places with rocky terrain since they are based directly on the rock and it is the construction material of the trullo itself.

The very thick walls are made with rough limestone stones collected directly from the surrounding fields and dry, that is, without the use of lime. The conical roofs rest directly on the load-bearing walls and are made up of successive layers of gray limestone slabs which give them their traditional appearance. The covering cone is closed by a pinnacle bearing propitiatory decorative motifs. This type of structure, with the high thickness of the walls and the few windows, allows for excellent thermal insulation, guaranteeing coolness in summer and warmth in winter.

In the past they were used as shelters for farmers or for shepherds or, in any case, had a use strictly connected to the agricultural life of the places. Today, given the particularity of the structures, the trulli are highly sought after and are restored to be inhabited by tourists or, more generally, by those who want to spend their holidays in Puglia. Various accommodation facilities offer trullo accommodation but various people choose to live there permanently, restoring the structures so as not to alter the structural and environmental characteristics (Fig. 12) [10].

Fig. 12. Trulli, hotel "Fascino Antico" in Martina Franca (TA), (Ph. by Salvatore D'Anna, 2015).

Innovation and tradition in contemporary architecture

Today, current trends aim to use choices that are increasingly respectful of the environment, more sustainable and that exploit natural resources in a conscious and less polluting manner. Historically, as already explained, the building materials were the most available and others that did not belong to the local tradition were rarely used. Respect for traditions has accentuated the search for innovative solutions.

Raw earth. Among the historically oldest materials are raw earth bricks. Composed of a mixture of earth, water and clay dried in the sun, they were for several centuries the construction material of the simplest buildings but also the most complex and elaborate ones. The Tower of Babel was built with raw earth bricks in the 7th century B.C., the palace of Minos in Crete in 2000 B.C. and several other even more recent buildings. In Sicily, archaeological discoveries of buildings in which the most used material was raw earth are frequent. This material was used on the island from the prehistoric period up to, in a less significant way, the present day [11]. Attention towards this material has increased in recent years, above all thanks to numerous studies that requalify raw earth as a sustainable and environmentally friendly building material [12]

The current demand for sustainable interventions, for materials that respect the environment and solutions that involve minimal intervention, have favored the rediscovery of ancient construction systems and, in this case, of those that use raw earth bricks precisely for their ecological qualities. The decline of raw earth architecture arises from the needs of the industrialized society that replaced the rural one.

After the Second World War, with the reconstruction of cities damaged by bombing, traditional construction techniques were abandoned in favor of more modern ones. Seismic events and the new rules for construction in seismic zones subsequently imposed the use of reinforced concrete considered more resistant than brick, stone or raw earth wall structures. However, traditional construction techniques are not always unsuitable for seismic areas. On the contrary, if not modified inappropriately over the years, they are more suitable than reinforced concrete for buildings in areas subject to strong seismic events.

The growing interest in raw earth and its low environmental impact has allowed the development of new technological studies. In various countries, innovation processes towards architecture with raw earth bricks are increasingly widespread. In Europe, given the widespread diffusion of the raw earth tradition until the Industrial Revolution, these studies are more frequent than in other areas. In Italy the recovery processes of raw earth architecture with the most suitable restoration techniques are widespread, especially in the Sardinia region where the in-depth knowledge of the material and its use in traditional architecture has allowed them to be used for new constructions, creating buildings in a sustainable and environmentally friendly [13]. Also in other regions of Italy, the use of raw earth

has spread again, especially after catastrophic events which required a better knowledge of traditional architecture to better conserve both from a material and cultural point of view [14]. New construction techniques have been devised such as that of compressed earth blocks (BTC, CEB compressed earth block), where the use of a press allows the creation of blocks of regular size whose mixture allows rapid drying times and good resistance to bad weather. At the same time, the technique allows for the creation of regular walls, reducing the use of mortar and plaster [15].

Contemporary architecture. After the Second World War, Italy and Europe witnessed reconstruction. The trend is almost always to build new buildings, far from tradition, to bring cities towards the new modernity. Today, however, the sensitivity of designers pushes them to seek innovative solutions while respecting traditions and above all respecting the environment.

This attitude, in accordance with what happened in the past, aims to research and make clear the links between architecture and its cultural and social context. There are several projects that today, through the analysis of local construction traditions, manage to maintain these traditions without giving up innovation in both forms and functions. Today, innovation consists of the ability of architects to find a new compositional key that is well suited to the most ancient construction traditions of the place where the new architecture is to be built [16].

Architect Álvaro Siza uses traditional materials and construction techniques for his works. His aptitude for dialogue between new and old is highlighted in several of his works. One of many is the clay pavilion in Puerto Escondido in Oaxaca, Mexico [17]. The architect's task was to design a pavilion with natural materials to encourage the use of clay and promote teaching for its processing. The building typology that inspired him was the Palapa, a typical building with a palm-shaped roof. Siza was able to create a contemporary structure using simple materials such as clay, straw and wood and modern construction techniques (Fig. 13).

Today several buildings are built respecting the tradition of the place. Starting from tradition, contemporary architects have often found ideas to trigger a series of reflections that lead to the creation of new and particular architecture. This is the case of the building built in Passo di Monte Croce in Sesto in Val Pusteria by the architects of Pedevilla Architects in collaboration with Willeit Architektur (Fig. 14). The building, a center serving hikers in the area, is part of a larger project conceived by the administration of the Natural Park which wanted a series of recognizable buildings, positioned in strategic points in the area declared a World Heritage Site by UNESCO and which were to become service points for the entire area [18]. A final example in which tradition and innovation meet wonderfully is the small village of Torba, located near Bordrum in Turkey (Fig. 15). This is a widespread hotel covering approximately 74,000 m^2 in which the focus of the designers, belonging to Baraka Architects, was to reconcile the new buildings with the environment and all the pre-existing buildings [19].

Fig. 13. Puerto Escondido, Mexico. Clay pavilion (from https://www.theplan.it/architettura/un-padiglione-in-argilla-firmato-alvaro-siza).

Fig. 14. The building in Passo di Monte Croce in Sesto in Val Pusteria (from https://pedevilla.info/kreuzbergpass).

Fig. 15. The village of Torba in Turkey (from https://divisare.com/projects/447589-baraka-architects-orhun-ulgen-voyage-torba-hotel?utm_campaign=journal&utm_content=image-project-id-447589&utm_medium=email&utm_source=journal-id-677).

Conclusions

Taking inspiration from tradition is certainly not the only way to approach a new architectural project. However, this remains an excellent strategy to respect the built environment and to create something that can best integrate. In the previous paragraphs, it has been explained how the problem of cultural and material pre-existences has been addressed in the past. It was decided to exhibit examples of architecture created starting from the Renaissance, a period of great transformations and experiments. Precisely in this period the dual attitude of designers and clients, with the conservation of archaeological remains or the destruction of parts of them to encourage the construction of new buildings or new road routes, is significant for understanding the reason why respecting the pre-existing structures creating something unique and innovative could be considered almost against the grain. In previous times the use of local materials made the new works more suitable for the built environment in which they were inserted. The difficulty of transportation forces builders to use local materials, which are more available and economical. In this way, "different" materials, foreign to the local culture but also to the environment, were not introduced into the territory.

Temples and theaters of the classical period, bridges and churches of the medieval period appear today more sustainable for the environment than the reinforced concrete and brick buildings built after the Second World War and following the construction standards for seismic zones. The latter, in fact, in the recent past have imposed the use of construction systems deemed more suitable than the local construction culture. Careful studies, however, have shown that traditional walls are not always unsuitable for resisting seismic events. Knowing the traditional wall structures has allowed and still allows today to carry out a more effective conservative intervention, therefore also including those innovations that can better safeguard the building and the safety of those who live there. Knowledge of tradition is therefore fundamental to laying the foundations for innovation. A starting point for these studies was the attention that, at the beginning of the 90s of the twentieth century, was paid to the historic center of the city of Syracuse and the island of Ortigia [20]. Knowledge of ancient wall structures and their static functioning has made it possible to re-evaluate ancient buildings, to insert the most suitable technological innovations and to preserve them from future seismic events.

Today, an intervention that respects the tradition of the place is to be considered a sustainable intervention for the environment. There is more and more talk about environmental sustainability and interventions that respect the environment in all its essence. Thanks to unsuitable choices of the recent past, in which the intervention on the landscape was not seen as respectful of the common good and of public interest which also consists of respecting what does not belong to us, today's architectural interventions aim to create works that can recognize the Cultural and Environmental Values of the territory.

"We must know how to move from the aesthetic landscape (to look at) to the ethical landscape (to live)". This statement by Salvatore Settis encompasses the entire concept of sustainability [21]. All the elements must not be considered individually but must be considered as a whole. The link between people, understood as an organized community, and the environment in which they live must always be taken into consideration when thinking about a new project. Real knowledge of the territory and the cultural heritage of the area are the prerequisites for making an intervention sustainable, be it a restoration or a new construction. Especially in the field of restoration, various measures are put in place to carry out an intervention that can bring together innovation, eco-sustainability and local construction tradition [22].

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