

## **CONSTRUCTIVE TECHNIQUES OF THE HISTORICAL CENTRE OF ZUNGOLI. FROM THE ANALYSIS OF THE ANCIENT PATRIMONY TO THE RECOVERY METHODS**

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### **ABSTRACT**

The preservation of the artistic historical heritage and assets, a topic widely examined by the contemporary cultural debate, has greater possibilities of succeeding when the protection strategy ties the cultural qualities to the choices that increase the economic value of the good. The smaller city centres, often strongly penalized by the demographic migrations, offer a rich heritage that, with appropriately aimed operations, can offer a variety of occasions of use. The paper will analyse the characteristics of the technological construction systems of the village of Zungoli, in the province of Avellino, that is any extraordinary built environment, until today preserved from ostentatious manumissions. The main appeal of this centre is in the historical continuity transmitted from the warm tonality of the stone and from the harmonic disposition of volumes and the site. The result of the analysis has been a manual of constructive techniques and typical project approach methods for the site, to create an instrument for the compilation of a recovery plan of the built environment in compliance with the nature of the historical buildings and in the respect of the cultural identity of the place. The plan, through the implementation of new functions in the buildings, today in great part abandoned and of public property, has supplied, moreover, the cue for the technical formation with the institution of schooling building yards in which the theoretical culture is translate in practical activity. The paper is part of a greater research program.

### **1. INTRODUCTION**

This paper presents a part of the results of an ample research on the technological and functional recovery of rural villages, elaborated by the research group coordinated by prof. Ing. Agostino Catalano, of the university of Naples Federico II. The recovery of the historical centres is not only an important cultural factor, but is as well an occasion of economic development that can propose new models of local growth. New legal institutions, and new initiatives to sustain them have been created, conceiving the confluence of public and private funds for the completion of projects of great public interest, that can generate and stimulate recovery processes. In the urban planning field new tools are experimented that conceive re-use proposals that, conscious of the historical, cultural and social values of the historic centres, propose articulated strategic Urban Riqualfication Programs and fiscaleconomic incentives. The Functional Riqualfication Project of the historical centre of Zungoli is configured as an occasion to recover the traditional constructive techniques, through the use of local materials, rediscovering past crafts of the local building. The project is an occasion to induce the typological recovery of the buildings. That would favour the regeneration of some professions that are disappearing for the introduction of the modern building methods. This project allows us to initiate a strategy for the ancient centre that, assigned a strong role, is a propulsion element of development, based on the acquisition of the abandoned buildings by the town council, on the cooperation of public and private funds. Through aimed projects it will be possible to integrate and obtain the betterment of the services of the historical centre, recreate the roads system, and repopulate the residential and commercial units. The final aim is the achievement of the enhancement of the environmental and urban quality of the village, offering services outside and maintain local autonomy.

### **2. THE RECOVERY PLAN OF ZUNGOLI. THE RULES**

In the territory of the village of Zungoli we can identify three areas. The ancient centre, with a triangular plan metric

distribution on the hill, that has preserved the original character with low houses built one against the other in stone, connected by walking paths (**Image 1**).



Image 1: The urban structure of the village of Zungoli

The perimeter zone of new urbanization, that was born at the feet of the hill along the provincial road, and the third zone with its farming aggregates far from the town. The necessity to wed conservation and development, trough the recovery and riqualfication of the historical village and it's territory needs to be based on an extensive knowledge of the context. The research is organized in sequential steps. The first phase includes an analysis of the existing context highlighting the problems and potentialities of the historical centre. In this phase we analyse architecture and materials, with surveys and data analysis and organization. In a second phase the objectives of the riqualfication project are refined, based on the technological characters, the intervention typologies for the primary recovery of the buildings; design graphs are prepared for the recovery project and the intervention typology applicable to each building. The achievement of the objectives of the requalification project is a fundamental for the institution of

operations that promote the relations between the centre of the town and the other areas. This project is an occasion to endorse the typological recovery of the historic buildings and the traditional building techniques, through the choices of the local materials, discovering the local building crafts. The use of indigenous materials preserves, also, the facades, maintaining the formal continuity of the buildings of the historic centre.

### 3. HISTORY AND TECHNIQUES OF THE FORTIFIED CITTADEL

The growth of the town, situated in a geographical interconnection node between different parts of the peninsula, was imprinted to the maximum openness towards the outside.

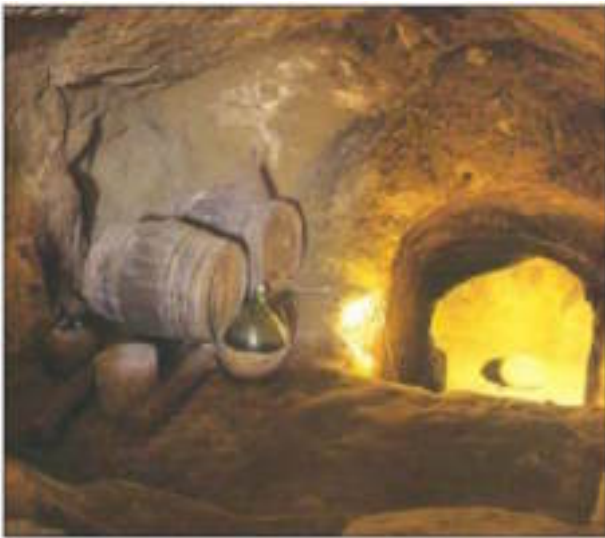


Image 2: An example of dwellings dug in the cliff

Location of settlements since the most remote ages, it is born to its actual configuration around the end of the first millennium, as a typical product of the fortifications, with outer walls and a castle. This citadel was part of the net of fortified towns born as a protection of the territorial borders. The historical built environment is characterized by an esthetical and structural uniformity, the cliff dwellings are of particular interest, suggestive natural cavities or simply underground cavities that created by the extraction of the tuff stone used to build the homes, they have been used as stables, grain silos, but as old manufacturing plants for the production of olive oil (**Image 2**). Other peculiar architectures of the historical centre are the bridge houses. At the ground floor the public roads pass through them, the passage in cross vaults and barrel vaults with abutments in squared sandstone blocks with dull edges and with curb stones as shown in (**Image 3**). The bridge houses were usually inhabited by the dominators that had the complete control of the entry road to the village.

The castle, is without a doubt the most important monument of the town of Zungoli, it was first built in 1032. the cylindrical tower on the north-west is the oldest part. In 1825 it was transformed by the marchesi Susanna di Sant'Eligio, in noble palace.

The castle had two functions, on the one side it was part of the defensive system of the town, strengthening it, but it also had autonomous defensive capabilities and was separated from the town buildings by a trench, that was in later times progressively filled up until it became the square Piazza Castello (**Image 4**).



Image 3: A road under a bridge house

The complex presents various constructive phases, the oldest being the tower born probably as a donjon in the XI century, on three levels, in the XIII century it was modified and the other three towers were built and the walls that connects them all.



Image 4: The castle seen from the square

The earthquake of 1456 damaged the structures, and the north-tower was demolished and never again rebuilt. The building in the various areas built in certain times all have the same characters since they all were born to satisfy counter-arches visible on the south-west side were built then to the same basic needs, if we exclude the building that had special functions like the churches or the castle. Their shapes and



Image 5: Counter arches of the castle

On the north-east side some rooms were added and on the north side the stairway to the lower garden was created and some new windows were opened that were later closed off. After the 1930 earthquake the higher parts of the two tower on the main façade were remade. The entrance to the castle is made by a ramp embraced by two semicircular wings that frame the cold iron gate.

#### 4. TECHNOLOGICAL CHARACTERS OF THE HISTORIC BUILDINGS

The typical architecture of the village in its oldest parts presents, usually, basic shapes.



Image 6: Adaptation of the structures to the site

The building in the various areas built in certain times all present the same characters since they all were born to satisfy

the same basic needs, if we exclude the building that had special functions like the churches or the castle. Their shapes and dimensions their materials and constructive techniques were the product of the same living needs and the same technical resources (**Image 6**).

Obviously every house was different from its neighbours, but the similarities are prevalent and the constructive elements and structural assemblies are consistent. This means, as well, that for the constructive similarities the reaction to seismic events will be uniform.

The main charm of the architecture of Zungoli is the sense of historical continuity that is communicated by the warm colours of its stone and the harmonic disposition of the volumes. The building type recognizable in Zungoli is the terrace homes with narrow facades towards the public roads with gardens, on the other side they usually face private croft (**Image 7**).



Image 7 : Correlation between the entrance and the stairs

One of the characteristic components of this typology is the sandstone masonry made with irregular blocks, and ample use of mortar (**Image 8**), finished inside in plaster and left fair-faced outside. The continuity of the stonework was defined by ample openings, portals with precious arches in chiselled stone (**Image 9**), and windows framed by chiselled sandstone.

The inner rooms were often paved in riverbed stones (**Image 10**) Usually through a trapdoor it was possible to reach low sopraelevations where foodstuff was stocked or through small openings it was possible to go to suggestive caves created by the extraction of the tuff stone. Barrel vaults, cross vaults characterized both the caves and the rooms on the ground floor (**Image 11**).

The thickness of the walls is usually 60-70 cm, with sandstone blocks and plaster. The internal partitions are made in the same way with sandstone blocks finished with lime plaster.



Image 8: Sandstone masonry made with irregular blocks



Image 9: Portals with precious arches in chiselled stone



Image 10: The inner rooms paved in riverbed stones



Image 11: Barrel vaults, cross vaults characterize the rooms on the ground floor

The same stone was used for the foundations, instead to reinforce the masonry usually curb stones or bricks were used to create façade arches (**Image 12**).

In the other parts of the house the foremost material was wood used in the main trusses. All the relevant data collected in typological and technical sheets has been synthesised in thematic tables that immediately visualize of the situation and present data for the recovery program.

The most significant data are the built volumes, the use of the buildings and the decay levels.

From the table of the levels above ground we notice that most buildings are one or two stories high and have one or two underground levels.

The table of the use of the buildings is one of the most important for the successive phases of the requalification, as it synthesises the data of abandoned and inhabited homes, and if the use is seasonal.

It's importance as well in the individuation of the abandoned homes to focalize on them the requalification, for each dwelling a new use, compatible with the building and the context, will be defined.



Image 12: To reinforce the masonry usually curb stones or bricks were used to create façade arches

The synthesis table of the decay contains an accurate survey of the technological decays and categorises them as:

- buildings that need only ordinary or extraordinary maintenance
- buildings recovered
- buildings without structural damage
- buildings with structural damage
- buildings partially crumbled
- buildings in ruin • repaired buildings



Image 13: Palazzo Caputi

The graphs that present the quality, historical and artistic value of the buildings point out the presence of important

architectonic episodes like the Norman Castle, the Franciscano Convent, the Church of SS. Assunta, the Church of S.Nicola, but also noble dwellings like Palazzo Caputi (**Image 13**), Palazzo Giandolfi, the functional recovery project of the last one is the focus of a paper that will be presented.

## 5. CONCLUSIONS

The charm of the medieval town of Zungoli is to be found in the whole , that sometimes is chaotic and irregular but always in harmony with the architectonic and typological characteristics. The final consideration is that the major part of the buildings have a great value, especially in consideration of the urban context. Non withstanding the architectonic harmony episodes of reconstruction have happened and these will be subject to extraordinary maintenance to conform them to the medieval town of Zungoli.