

## Gubbio: Bargello Palace, the Restoration of a Medieval Italian Building

Alessandro Bazzoffia

*University of Florence, Faculty of Architecture, Department of Restoration and Preservation Architectural Heritage*

**ABSTRACT:** Umbria is a territory on which Middle Ages left many extraordinary examples, from palaces to castles, from traditions in the vernacular identity to the conscience of the meaning of the past written on the buildings' stones. At the same time, earthquakes are frequent and strong in this central part of Italy and this make the historical inheritance more vulnerable. The Bargello Palace, a XIII A.D. building in the centre of Gubbio, is a very significative example in order to understand the two directions of a restoration project and its realization.

### 1 URBAN VIEW

#### 1.1 *Medieval quartiere Sancti Iuliani*

Bargello Palace is distinguishable on the urban scale of the town of Gubbio (Fig.1), inside the Medieval *quartierio Sancti Iuliani* at the crossing of a quadrivium formed by the present S. Giuliano-Rosetti street and by the first and second part of Consoli Street, in a corner position and in front of the small square with the same name (Fig.2). In this square there's the ancient Fons Sancti Iuliani called "the fools' fountain" because of the licence given to the tourists after they had gone round it for three times and got wet by its holy water.

The church in front of it is the Medieval *Capellan Sancti Iuliani supra portam civitatis positam*, mentioned in an old archive documents since 2<sup>nd</sup> January 1182 when Pope Lucio III, and his predecessors: Innocenzo, Celestino and Alessandro as well, conferred to S. Mariano Rectory to be in possession of its privileges and property.

Later in 1182-'94 it will be also mentioned by Bishop Bentivoglio from Gubbio as *ecclesiam sancti Iuliani positam supram muum civitas Eugubini*. You can understand from the quotations that the church was situated above the walls of the town, not far from one of its main gate. It was built on a more ancient staple dating back to the year 1000 A.D.; this make us understand the precise evolution of the town and it was still situated above the present road axis Baldassini-Savelli and two gates, S. Giuliano and S. Andrea, opening towards the valley. The basic part of the church, is made up of a building with three staple doors; two of them with a segmental calcareous stone arch and the third one with Gothic arch; later, a new part was and other architectural items were added to the church with the same typology.

The upper part of the building has a series of three acute large windows which get light from the west into the church, built on two old edifices' area.

The main façade has an ancient entrance with a Gothic arch portal and a *palombino* late Renaissance revision above it.

## 1.2 *S. Juliani ecclesia*

The very ancient *S. Juliana ecclesia* dated 1110, is thought to be situated where now you can see an architectural structure, developed on two older working staples which open on to a square



Figure 1 : Urban view showing effects of good administration - A. Lorenzetti sec.XIV

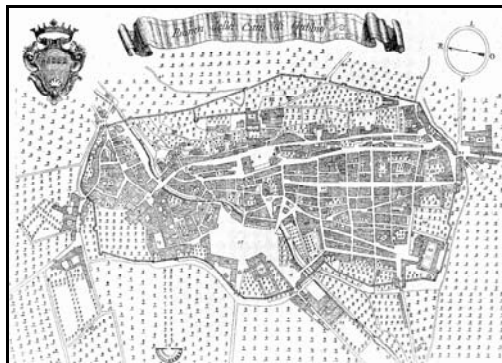


Figure 2 : Plan of Gubbio painted by Domenico Porcelli on 1773

with the same name. But that's not sure: it could be placed in the room beneath the building that later became *S. Giuliano Cantinone* of the Cathedral Canons where there's still an extraordinary and valuable wooden press.

The small square was an open space for the various jobs inside the artisan staples, included those ones situated at the church's base; in late sixteenth-century, the wall fountain was located on to the seventeenth-century Ramosetti Palace façade; the relevant cistern and the adduction waterworks stayed above it. The thirteenth-century public waterworks fed the fountain; the waterworks split in to two branches, as the archaeological excavations data proved that after spurt the major fountain or *fons Arenghi*, situated in the *platea communis* next to the new S. Mariano and Giacomo Cathedral, fed some public fountains of the town, among which the S. Giuliano's. Its name comes from the nearby church and we know different architectural models: the first, is the Medieval one which we know little or nothing about, but it was located not far from the church with the same name; the second one, the wall model was built in late sixteenth-century according to a decision adopted on 5<sup>th</sup> December 1520. The stonework was executed by the masters: *Egregios Viros Ser Antonini Pierangeli Andriolis et Mag. ri Terzuoli*; the third round shaped model can be seen in a paper illustration called: *Gubbio città regia antichissima dell'Umbria*, dated 1663 and written by Prior Ignazio Cassetta and printed in Amsterdam; in the caption, you can find the explanation of letter Q : S. Giuliano Square and its fountain.

You can also see another view of its roundness in the cadastral parcel map of the town, drawn up by Giuseppe Maria Ghelli, an expert land surveyor from Bologna, in 1768. In the end the last round model elaborated in the nineteenth-century is the one, precisely restored, we can still admire nowadays, though it doesn't appear as an ex-novo construction but a later restoration of the previous one with changes made in some particular parts.

## 2 THE PALACE STRUCTURE

### 2.1 *Bargello Palace*

It is a fourteenth-century valuable palace, built in white calcareous local stone, well squared with a final layer claw chisel accurately treated by expert stone masons. They reached high degrees of perfection in their work probably because they were well paid by their clients and patrons.

The old building complex is the union of the two buildings which can be clearly seen from Consoli Street side; one of them was more ancient facing on to the narrow street that was divided from the high Tower called Paradise. The second building was bigger and at the beginning vertically built on two floors (a ground floor and a first floor) with the entrance on the

square side and a series of portals related to the artisan staples. The mezzanine floor, considered the first floor, is pointed up by a string-course cornice of the large windows accurately carved; therefore it ends at the second upper cornice string-course called eaves level. Anyway this is a typical standard construction of the Medieval *eugubina* house, a Medieval *casalino* with a vertical development on two floors where the staples, at the ground floor were used for trade and crafts (Fig.3); whereas, at the first floor, and sometimes at the second mezzanine floor, there was the common living spaces' development and such division was measured once again with related string-course cornices. Later on, in the Renaissance period an extra storey was added to Bargello Palace; it was made of a row of pillars and, or stone pilasters, afterwards plugged with bricks, according to the large windows related to the Medieval standard sample, still nowadays preserved inside Consoli Palace. During that period a well accurately decorated window was re-inserted in the façade in front of the fountain. A fourth stage of the building development, characterized by the restoration of the higher part of the façade facing the square, took place undoubtedly after a partial collapse of the façade itself, as it is shown by the structural irregularity of the two side wings stone of the façade. The façade itself of the building was modified first with an irregular stone wall structure, different from the one below, which had very irregular brick rows; secondly with inserting a red brick string-course pavement cornice and a brick masonry above it. The large windows of this last mezzanine floor were put on them without taking into consideration that the string-course cornice of the large windows, facing Consoli street, appeared at a higher level. The particular corner position of the building in the urban framework brings out only two of the four main façades facing the public streets of the town, as the other two are leaning against other buildings which probably had been built previously the Palace was.



Figure 3 : Bargello Palace at the end of nineteenth-century



Figure 4 : Interiors of Bargello Palace: the nineteenth-century first floor

This hypothesis was strengthened by the visual analysis of the wall joints done on to the building corners. On the left side of the façade, facing the square, there is a sharp partition line between the two structures, but built in two different constructional moments, as it is also shown by stone rows laying along no coincident horizontal lines.

## 2.2 The Paradise Tower

There is the classic 15-20 centimetres air space between the two buildings, which is the ancient a-seismic joint, also provided by the fourteenth-century good building rules. It appears quite unusual the solution adopted for the intersection angle between the two main façades of the Palace; in fact the building sharp edge is removed up to a certain height, with the laying of a beveling corner and then it is restored a little bit below the first string-course cornice. The façade facing Consoli Street, on the contrary, has a corner effect on the right side, well marked and precise, thanks to a sharp vertical line with string-course cornices ending plumb line; this corner façade, instead of being orthogonally placed to the adjoining façade, sets to acute angle because of a narrow street that was situated between the Palace and the facing Tower called Paradise Tower; later on, it was closed in order to built an outside staircase used as the entrance of the

Tower itself. Once, the Tower stood isolated and detached from Bargello Palace; it was in fact used as a military check point view of the municipal territory, Commune's property; it is obvious that it was not a property of any noble family of the town as it was often believed.

This new narrow street was 130 centimetres wide, measurable at Consoli Street side, exactly next to the soaring Tower and still running up to the opposite direction towards Ripa, then closed too. The Tower was surely built before the Palace, as you can work out from the following architectural details: stone corner rusticated ashlar; its overhanging on to Consoli

Street and consequently the setting back of the facing Palace; in the end the corner conditioning acute angle, a real unusual construction for a house (Fig.4).

### 3 THE STRUCTURAL REINFORCING AND A-SEISMIC ADJUSTMENT WORKS

#### 3.1 *The structural reinforcing works*

The structural reinforcing works and the extensive damage caused by the earthquake on the 26<sup>th</sup> September 1997, were mainly related to the Palace roofing, the floors and the brick vaults (Fig. 5). The wooden covering structure got decaying as years went by; not only for huge water infiltrations from the ceiling but also for the partial precarious repairs carried out in years.



Figure 5 : Brikvaults reinforcing works



Figure 6 : Ground floor: reinforcing works

The structure needed to be dismantled in order to carry out reinforcements and consolidations with iron extrados beams on to the beams that needed restoration; this helped to let the whole inner ceiling uncovered and to change all the damaged beams (Fig. 6); moreover the string-courses were made in perimetric ferroconcrete and connectors were put inside the rough stone masonry in order to remove the thrust factors from the inside to the outside of the building.

#### 3.2 *A-seismic adjustment works*

Even the wooden floors' structure had to conform the existing a-seismic regulation, trough a series of special steel "T" beams, inside slots carried out on the upper part of the secondary wooden frame (original joists) of the floors in order to keep them in view, though extremely warped because of the camber in the middle of the beam.

The related steel pins of the beams in the walls and the arc-welded net, partially inserted into the stone perimetric masonry (Fig. 7), would have made the whole structure perfectly connected (Fig. 8).



Figure 7 : Steel pins of the beams in the wall



Figure 8 : Wooden floors' structure restoration

Similarly the brick barrel vaults too, were placed plainly on the ground floor and were reinforced after having been removed and lightened themselves from the top; this helped to keep them in view after their sand blasting and filling with putty.



Figure 9 : Anti-seismic adjustment works



Figure 10 : The roof level

The extrados lift stage and the reinforcing with special mortars and arc-welded calendered net and anchored to the vaults would assure a better bond tie and a satisfactory structural level of stability and complete finishing with a concrete casting lightened (light cellular concrete) to arrange in the wooden floors of other storeys as well, a small space for pavement technological systems (e.that is the heating “coil” system and the electrical system backs) (Figs. 9-12).

### 3.3 Terracotta-tiled floor

In order to complete all the Palace's interiors new pavements were restored with handmade *terracotta*-tiled floor and kilns like those existing in Medieval age; they were made with a coat of mortar and coloured lime filler; they were also placed according to the “ancient” manner that is the perimetric position ahead.

The particular style of this noble building “Tower Palace”, though accurately set up with a wall face in regular white stone ashlars and thin stuccoes, did not prevent some structural damages from appearing outside the edifice.

Therefore before carrying out all restoration phases and stone hangings' cleaning, it was necessary to reinforce through deep injections into the slots with proper epoxy resins and with subsequent filling with putty in order to have a final and uniform good effect on to the wall building face.



Figure 11 : Connection between roof beams and façade



Figure 12 : Reinforcing on the extrados surface

#### 4 THE CONSERVATIVE RESTORATION WORKS

##### 4.1 *The architectural finishing*

In order to complete all the structures restoration works that is the ceilings, masonry and the technological system, it will be important to carry out the architectural finishing, inside the Palace. Old and decayed plasters will be removed replacing in view the rough round barrel vault at the ground floor with subsequent sand blasting and interconnection joints pier. Other micro sand blasting works will be carried out on to the barrel vault and *lunettoni* at the basement, in order to remove patinas and blackenings deposited in years. The external wooden frames of doors, fairly valuable, will be properly restored as there is a great deal of patinas and different kinds of deposits which deteriorated completely their original look. The interior iron frames of the windows too were checked and properly restored trough a coat of paint after being polished and spread with antioxidant. In order to complete the all interiors, new plasters and lime painting will be done to set off the whole building. The covering surface will be made with old tiles and pantiles, recycling some of them. New copper eaves gutters and descendants will be also built and properly linked to the municipal draining sewerage system.

##### 4.2 *The Bargello Palace's façades*

The Bargello Palace's façades needed proper and special conservative restoration works (Fig.13) because there was a lot of decayed stone material, changing colourings because of patinas, sulphations, black scales. All these phenomena begin to cause a sort of corrosion on the surface layers. In restoring the outside constructions (Fig.14), liable to be damaged by atmospheric agents we have followed these preparatory phases:

- doing no destructive preliminary tests that were necessary to get a correct choice among the most proper restoration technologies; it was also necessary to get an extensive documentation made of tests such as petrographic researches, to fix chemical features, properties and the nature of stone material which needed to be restored. Than we did a systematic chemical analysis combined to a thermal test of the materials and of the surface encrustations in order to know exactly the level of decay and the causes which produced that. As far as concerning polishing it must be said that the tests on physical-chemical-mechanical and mineralogical properties of the material

and of the black crusts which needed to be removed, were very important; it was also very important to know how to detect and set up consolidating and protection were needed. In fact it was essential to know the crystal structure of the stone we had to intervene on; the chemical nature of crystals, the cementation level, compactness, porosity, nature and pollutants coming from the air and the water that reacted on to the original crystal stone. The deposits detection was chiefly concentrated on the most protected areas from beating rain and washing away, but it was also discovered, at different heights of the building, on some areas not directly exposed to the rain;



Figure 13 : Bargello Palace before the restoration



Figure 14 : Bargello Palace after the restoration

- previous consolidation to avoid pieces of material, already detached, could be lost during the restoration phase;
- an accurate polishing to take away the surface dirtiness, caused by the atmospheric carbonious parcel and clear water soluble-salts (such as sulphates, chlorides, etc.) of the stone that were present not only on the surface;
- filling with filler and sealing slots and craquelures;
- stone reinforcement with proper consolidating material;
- final protection of the stone layers with proper products largely tested and therefore completely reliable.

## 5 CONCLUSIONS

Two main considerations must be done at the end of this paper:

- first, the problem of earthquakes, which made this part of Italy (Umbria) a very vulnerable territory, in order to maintain the past heritage: in this way, Bargello Palace restoration gives, in its particular interventions adequate to a middle-age building, a contribute to a conservative restoration methodology, according with structural reinforcing and a-seismic adjustment works

- second, the opportunity of a new approx toward the use of historical palaces: no more simply restoring works in an ancient building: on the contrary, it's important to re-use the ancient heritage in a philological coherent use. This way, the past will live of an eternal youth: in the present case, Bargello Palace, after restoring works, will find its new life in the transformation towards a double museum: museum for itself and historical exposition (museum) of middle-ages objects: from the arbalests to the dresses of the medieval Gubbio.

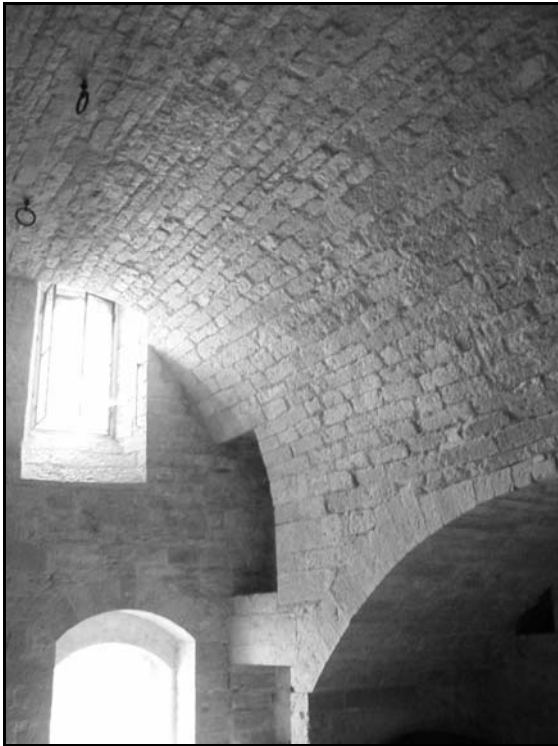


Figure15 : Bargello Palace: the ground floor



Figure 16 : the restored wooden covering structure