

The Use of Wood in Morisco Houses in Sixteenth Century Granada (Spain)

Antonio Orihuela

INTRODUCTION

In Granada, the capital city of the last Islamic kingdom of the Iberian Peninsula, a number of houses remain which were built by the Moriscos, Muslims of the former al-Andalus who were forced to embrace the Christian religion at the beginning of the sixteenth century. This repressed social group, consisting primarily of craftsmen and horticulturists, was able to synthesize in its constructions the most important elements of *Nasrid* architecture with a few of Gothic as well as Renaissance provenance, used by the Castilian conquerors. Their dwellings, thus, reflected the troubles of a culture submitted to the domination of another (López 1987).

We have been able to study and draw general and detailed plans of the 30 best-preserved and most interesting Morisco houses that still stand in the Albayzin. This historic district, located opposite the Alhambra, the royal city of the *Nasrids*, was included on the list of World Heritage Sites by UNESCO in 1994.

These houses constitute a traditional urban building type developed around a central patio, often ornamented with a small pool also used for cooling the air. The external façades lacked decorative elements with the exception of a gate, which had a round or pointed brick arch, often within a rectangle. The usually angled entry provided privacy, protecting the patio from the gaze of curious passers-by. Similarly, windows were small and placed only on the upper levels.

These dwellings would have two storeys, both with a similar distribution: the main multifunctional rooms were normally placed on the northern and southern sides of the patio. The kitchen, latrine and secondary rooms all occupied the rest of the ground floor. Some houses have a third storey on their northern side, to protect the rest of the building from cold winds and to serve as a belvedere looking south. As Granada, located at an altitude of 660-800 m. (2,165-2,625 ft.) has a continental climate, with cold winters and hot summers, the differences in temperature between downstairs and upstairs floors allow for seasonal use (Orihuela 1997).

Morisco builders used cheap materials that produced excellent results. The foundations were made from rubble and the walls from *tapial* (from the Arabic *tabiyya*) or rammed earth and lime, often reinforced with brick pillars as well as inserted courses of bricks.

Nevertheless, the most outstanding material was wood, used as much in the horizontal structures as in open galleries, doors and lattice windows. Ceilings were flat on the ground floor, although collar-beam and coupled roofs, used to form the pitch, were exposed on upper levels.

GENERAL CHARACTERISTICS

The system of carpentry used by the Moriscos was distinguished by the use of beams with very small sections, decorated with longitudinal incisions on the lower part and frequently painted in colour (Gómez-Moreno 2001). Wood was not an abundant product in the old Nasrid kingdom of Granada (thirteenth – fifteenth centuries), but after the Castilian conquest, its supply was facilitated from the not very distant mountain ranges of Cazorla and Segura.

Structural trellis-work decoration was used on collar beam roofs, mainly on the *almizate* and on pairs of tie beams. There were many carved elements, such as lintels, corbels and *gorroneras*.

Next, the different wooden timber frames that form vertical and horizontal structural sets in the Morisco houses are analysed, as well as their decoration. Finally, the different types of doors are described. The Figures in which these characteristics are shown, contain the address of the house that has been chosen as an example.

GALLERIES

Open galleries were required on the upper floors for communication between the rooms. In order to get more space the gallery structure usually jugged out between 10 and 20 cm. from the portico supporting it, which has created many conservation problems. It was held in place by means of vertical posts that supported it on a track located on the projecting heads of the rafters of the corresponding portico ceiling. The posts were always square at the bottom, up to the lower part of the banister handrail, where they became rounded or octagonal. At the top, they were square again, with continuity maintained by means either of *Nasrid* stalactites (*muqarnas*) or Gothic designs (**fig.1-2**). Corbels were placed over them, generally with three lobes, double in the centre and simple at the ends (**fig.3**).

The beams of the porticoes were also supported by corbels of the same type as those used for the galleries, but they were bigger and, therefore, the type with four lobes was the most frequent. In the second quarter of the sixteenth century corbels, made according to Renaissance style designs, were introduced (**fig.4**). It is interesting to follow the evolution of the carved dove that appears in the three and four lobe types, from a figurative design to a stylised one, ending in a geometric form, actually a garland made of small elements that reproduce the feathers of the bird's chest (**fig.5**).

The railings consisted of vertical banisters supported by a horizontal element at the bottom and another at the top that served as a handrail. The banisters were either straight with a mixtilinear section and rotated 45°, or lathed. Among them were some with a similar outline to that of the

columns and other later ones with a more elaborate Renaissance influence, which sometimes had half-banisters leaning against the posts (**fig.6**).

The ceilings of the galleries extended over the courtyard to constitute the eaves and were finished off with brackets of three lobes or of concave and convex lobes. On the other hand, the few eaves still conserved that slope to the exterior façades of the houses were made of brick, with two orthogonal layers and another two placed in a chevron pattern. They usually sloped upwards slightly, due to the influence of the *Nasrid* eaves (Orihuela 1996).

ALFARJES

The *alfarjes* were flat ceilings that covered the ground floor rooms, the porticoes and the galleries. They may have had either one or two layers of beams, the former being more frequent. Those of two layers were used only in large houses where the main rooms were wider (**fig.7**). The narrowness of the beams was compensated for by placing them close together.

To deal with the joints between the wooden panels composing the board, the flat ceilings (*alfarjes*) were of three types: simple, *cinta y saetino* or *menado*. In the simple one, the joints between the panels remained visible and therefore the small grains of earth used as insulation and as a base for the tiles of the floors located above could fall through. In the second, the joints of the boards were hidden by *cintas*, which were laths with both sides bevelled, while the *saetinos*, small cut mouldings, also bevelled, were used to close the space above the rafters and to complete a kind of squared module (**fig. 7**). The third was the most complex as it was made using a double board trimmed with different geometric shapes: the *alfardones*, lengthened and finished with hexagons or ogee arches; and the *chellas*, with octagons or eight-pointed stars. This system not only resolved the aforementioned problem, but added to the decoration (**fig.8**).

ARMADURAS

The *armaduras* were pitched ceilings that covered the rooms of the upper floor and supported the roof. The simplest were the rafter and ridge-piece roofs (**fig.9**), although in Granada they were very frequently built without the ridge, leaning each beam on the one located opposite. In this case, in order to avoid a difficult encounter between the two main rafters at the top, a horizontal board was placed between each pair of rafters (**fig.9**).

The most interesting pitched ceilings were those of collar-beams with double hip rafters, a system which enabled the various gables to be prefabricated in the workshop, either whole or in parts. Later they were laid on the walls with great speed. The *almizate*, the horizontal surface formed by all the collar-beams of a ceiling, would have trelliswork decoration over the entire surface or, at least, in the centre and at the ends. In the latter case, they were needed to strengthen this area, where the structural stress was concentrated (**fig.10**) (Nuere 2000).

In the *armaduras* the aforesaid problem of the joints between the wooden panels of the board was resolved by means of the simple or the *menado* type, but the *cinta y saetino* type, found in so many *alfarjes*, was not used.

With the aim of counteracting the lateral thrust of the gables on the walls, the pitched roofs were finished with several tie beams, generally in pairs (**fig.10**). In very large rooms or in square belvedere towers, tie beams called *cuadrales* were placed in the corners, with the same purpose (**fig.11**).

In important houses, the most decorated pitched ceilings would have another hidden ceiling above, a simpler one with the sole purpose of holding up the roof, freeing the one below from the load.

DECORATION

Following the tradition of *nasrid* architecture, the roofs of Morisco houses in Granada were profusely painted in tempera of green, blue, black and white, while red ochre was used for the background. The prevailing motifs were vegetables, followed by geometric, zoomorphic and Arab epigraphic designs. The different elements could be conveniently painted in the workshop, including some parts that would later be hidden, embedded in the walls or covered by the rafters. The painting even extended to the incisions on the lower part of the beams.

The original *menado* work, formed by a double board trimmed with different geometric shapes, had a high decorative content. It could be used alone or increased by adding painted ornamentation (**fig.12**).

This type of carpentry as well as its ornamental forms was also used in Granada during the sixteenth century, in residences favoured by the new dominant Christian class. Their houses and rooms were bigger, so they used beams of greater dimensions. They began to carve motifs in the wood following Renaissance models and the painted decorations were gradually reduced until they disappeared altogether. Finally the incisions on the lower part of the beams also disappeared.

WOODEN DOORS

The entrance to the house had a large wooden door with the rails visible on the interior side, but covered by planking on the outside, decorated with large nails with rounded heads. As the wooden panels were not feathered, the joints on the inside were usually covered by laths. The entrance door opened by rotating around a lateral axis, but it would have been used only for large objects or beasts of burden. For everyday purposes a shutter of reduced dimensions allowed people to enter, though they were obliged to stoop, and this guaranteed the privacy of the interior as much as ensuring security at the entrance (**figs.13-14**).

The main rooms of ground and upper floor had double doors, placed on the outside of the wall and opening outwards. Each of the two doors turned on its axis, which was fixed in place by a stone or marble element at the bottom and one of wood, usually with some carvings on the sides, at the top. The doors were decorated with overlapping patterns and those of the main room on the ground floor may have had shutters on one or both flaps (**fig.15**).

The *alacenas* or open niches on each side of the access doors in the main rooms were used as cupboards to keep domestic objects. They were closed with wooden flaps, each having two panels decorated with motifs of folded cloth or vertical fluting.

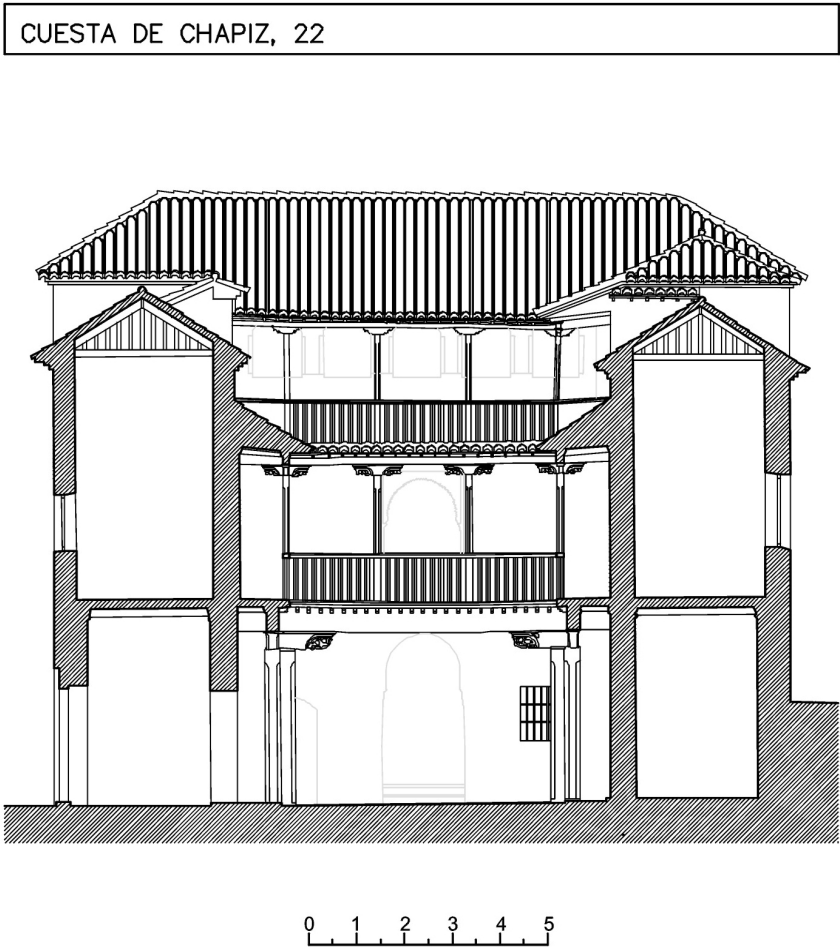


Figure 1. North Gallery of the northern courtyard of the house in Cuesta del Chapiz, 22.

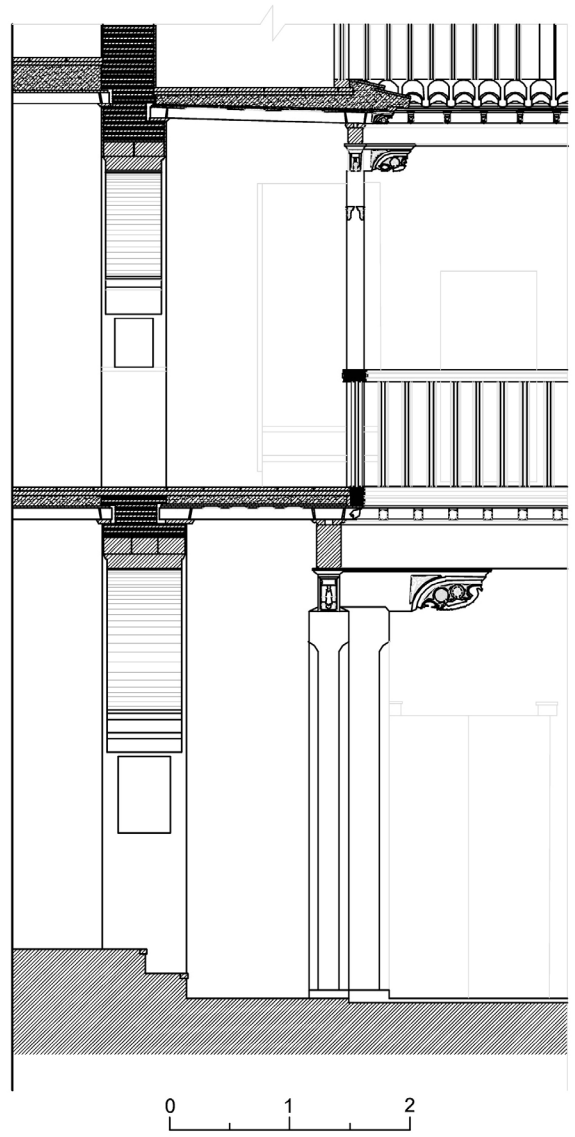


Figure 2. Constructional cross-section of the galleries of the northern courtyard of the house in Cuesta del Chapiz, 22.

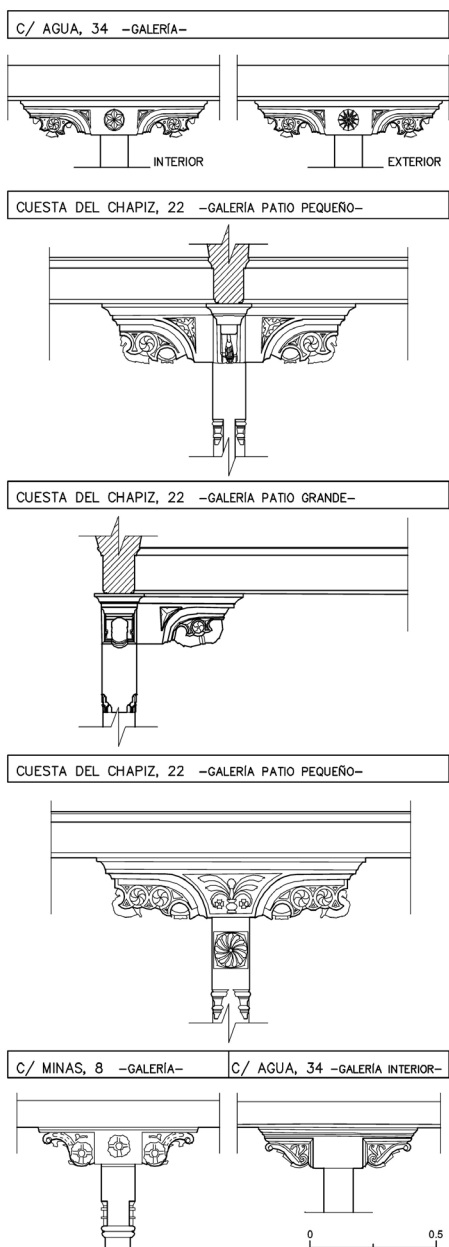


Figure 3. Different types of corbel in the galleries.

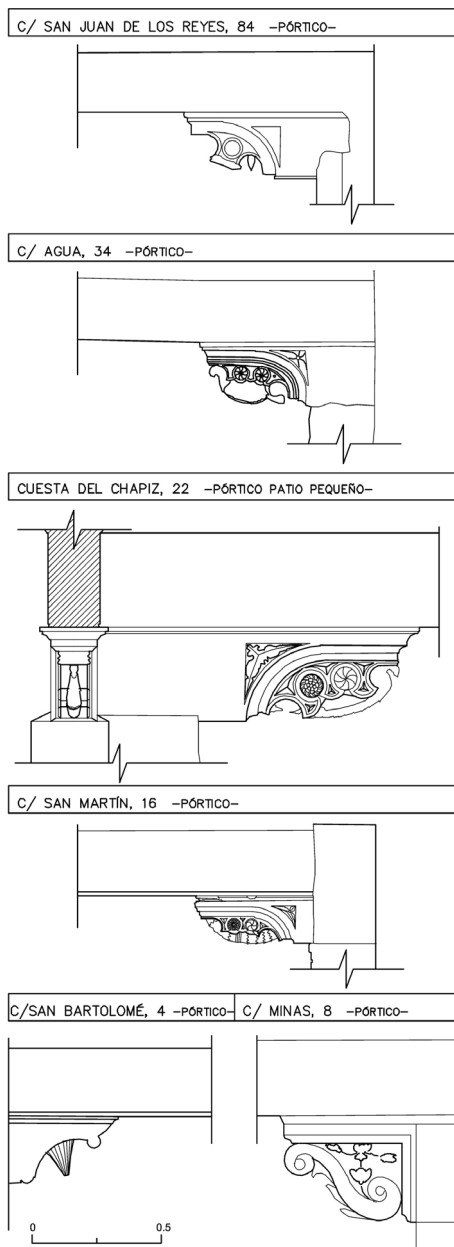
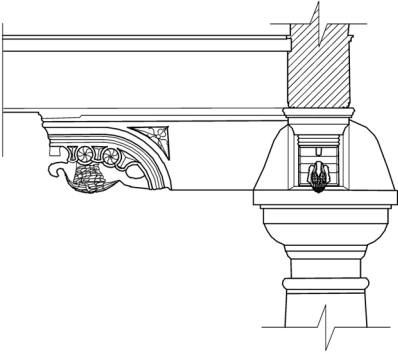
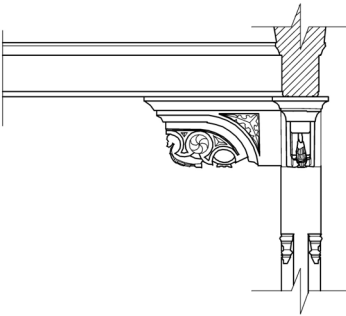


Figure 4. Different types of corbel in the porticoes.

C/ AGUA, 34 -PÓRICO-



C/ CHAPIZ, 22 -GALERÍA PATIO PEQUEÑO-



C/ CHAPIZ, 22 -GALERÍA PATIO GRANDE-

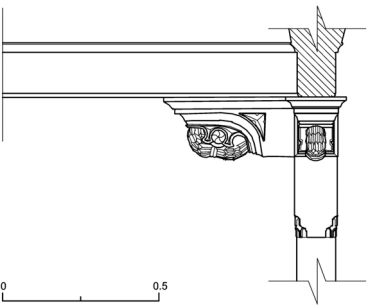
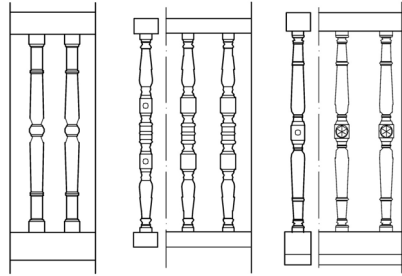
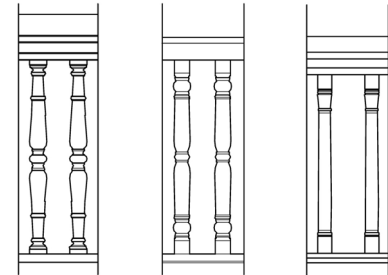


Figure 5. Evolution of the corbels with a dove carved underneath.

C/ AGUA, 34 -GALERIA-



C/ CHAPIZ, 22 GALERIA PATIO GRANDE C/ SAN MARTIN, 12 GALERIA C/ SAN LUIS ALTO,9 GALERIA



C/ PAGÉS, 20 GALERIA C/CHAPIZ,22 GALERIA PATIO GRANDE

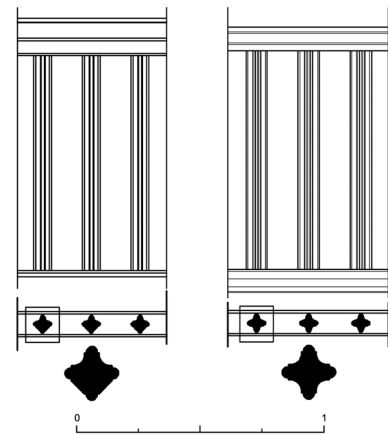
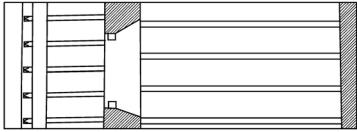
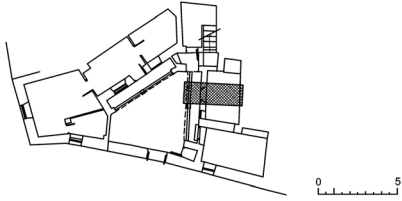


Figure 6. Different types of banister.

C/ SAN MARTIN, 16



C/ PORTERIA DE SANTA PAULA

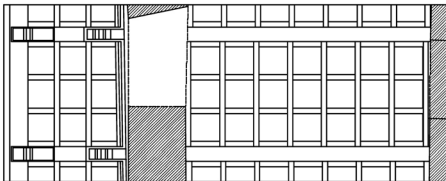
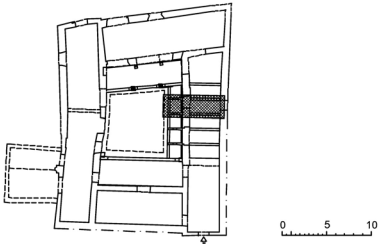


Figure 7. *Alfarjes* with one layer of beams (simple type) and with two layers of beams and *cinta y saetino* decoration.

C/ SAN BUENAVENTURA, 7

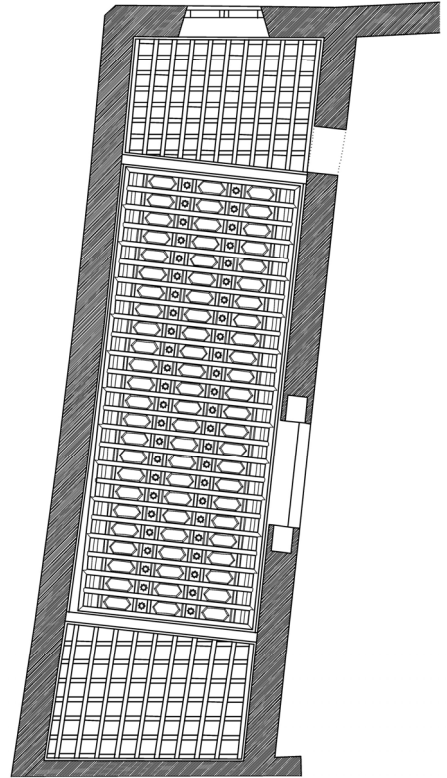
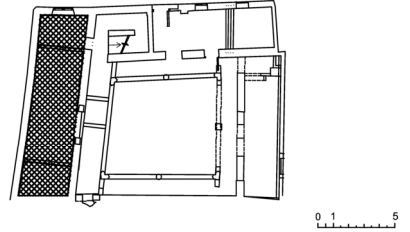
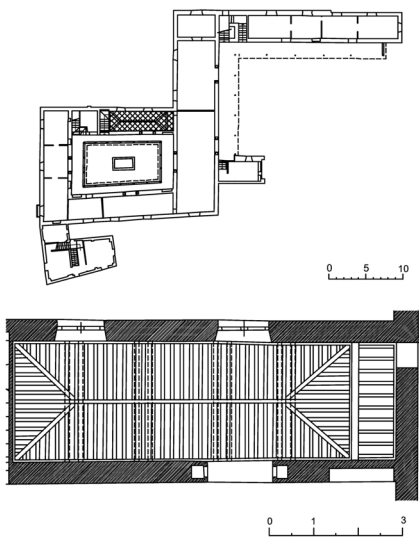
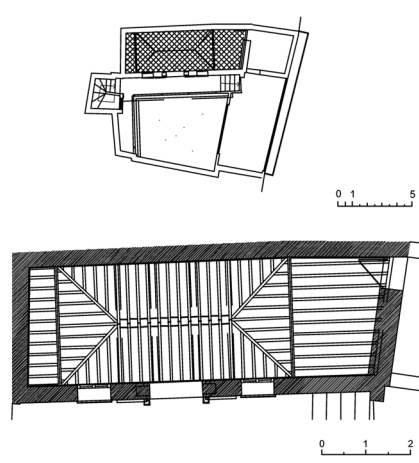


Figure 8. *Alfarje* with *menado* decoration.

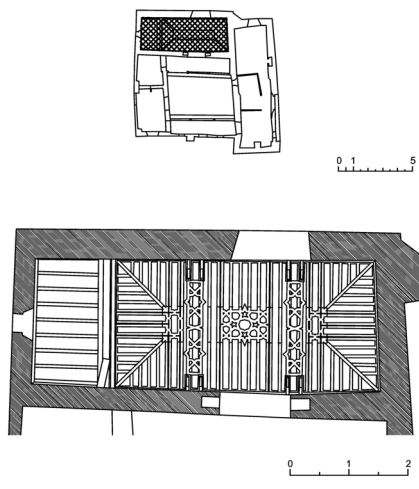
CUESTA DEL CHAPIZ, 22



PLAZA DE ALBAIDA, 4



CUESTA DE LAS TOMASAS, 12



PLAZA DE ALIATAR, 1

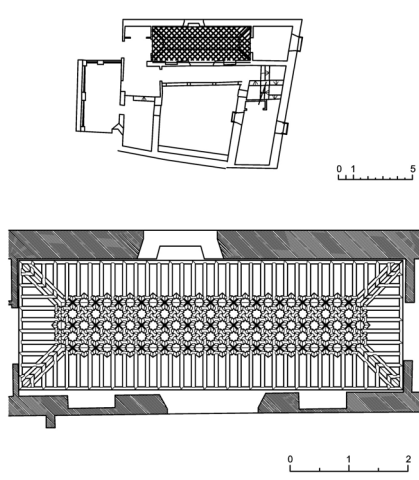


Figure 9. *Armaduras* or pitched ceilings of the rafter and ridge-piece type and without ridge-piece.

Figure 10. *Armaduras* of the collar-beam type with simple or double hip rafters.

PLAZA DE ALIATAR, 1

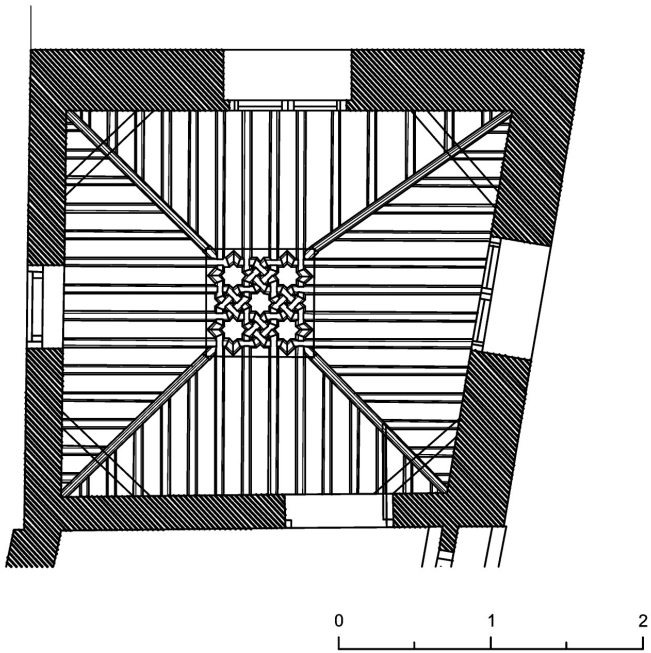
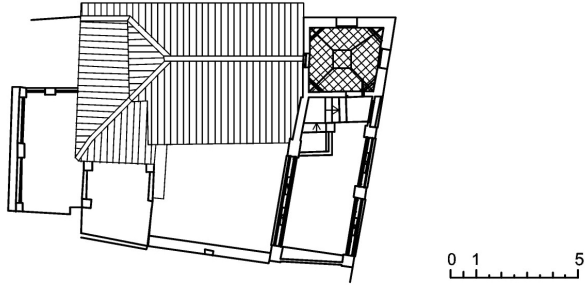
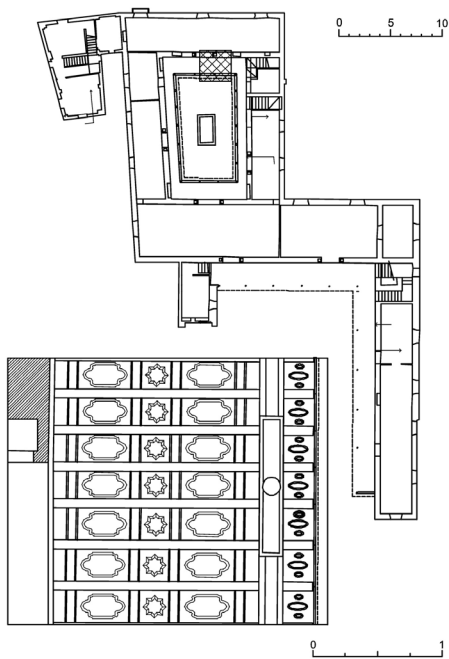
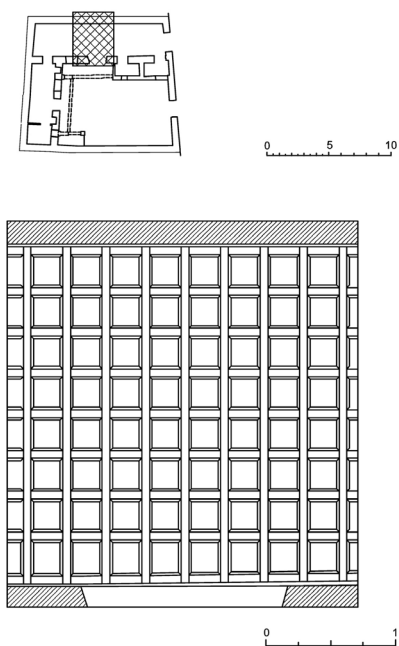


Figure 11. *Armadura* in a square belvedere tower, with *cuadrales* (tie beams in the corners).

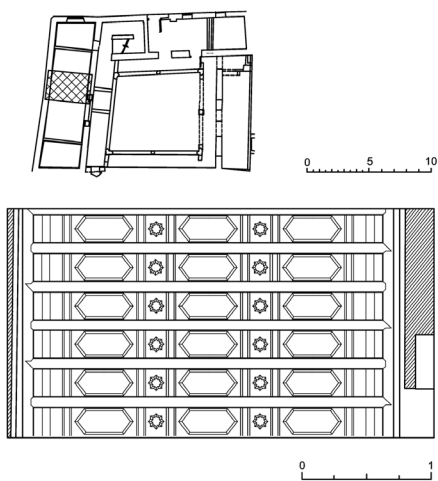
CUESTA DEL CHAPIZ, 22



C/ MINAS, 8



C/ SAN BUENAVENTURA, 7



C/ PAGÉS, 20

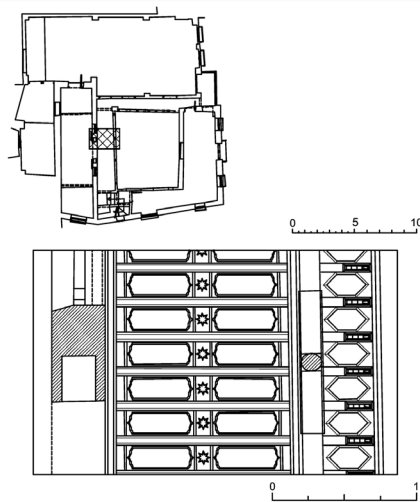
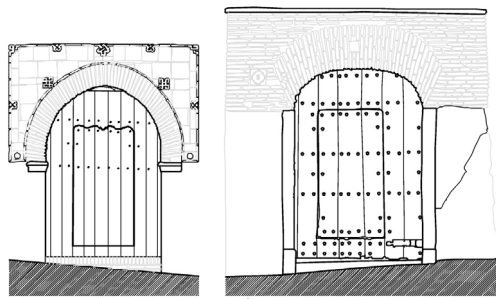
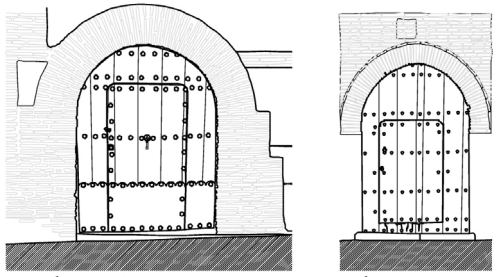


Figure 12. Different types of *menado* decoration on *alfarjes*.



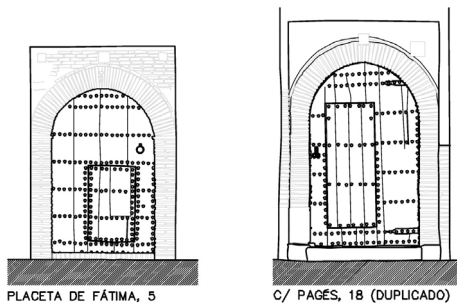
C/ HORNO DEL ORO, 14

C/ GLORIA, 5



CALLEJÓN DE LA ALBERZANA, 1

CALLEJÓN SAN LUIS ALTO, 9



PLACETA DE FÁTIMA, 5

C/ PAGES, 18 (DUPLICADO)

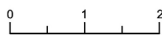


Figure 13. Different types of entrance door still preserved.

CALLE PAGÉS, 20

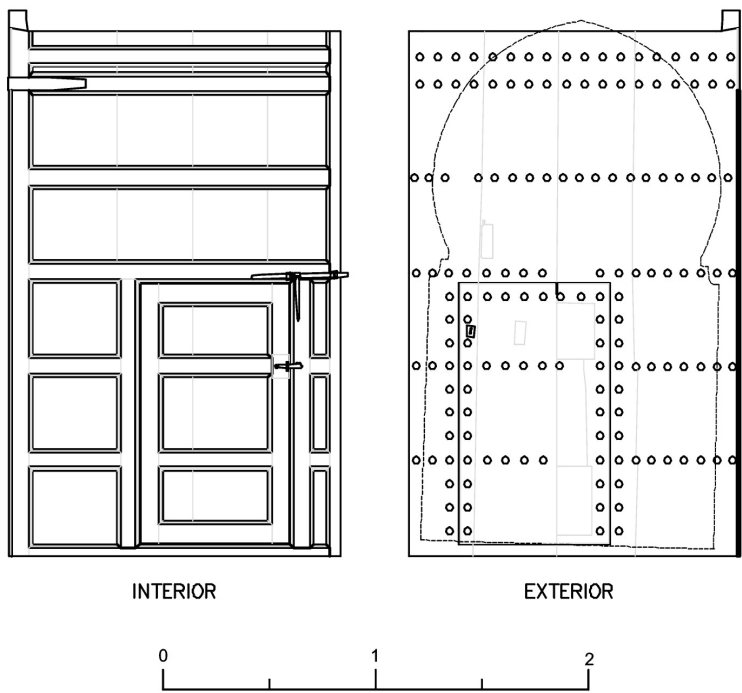
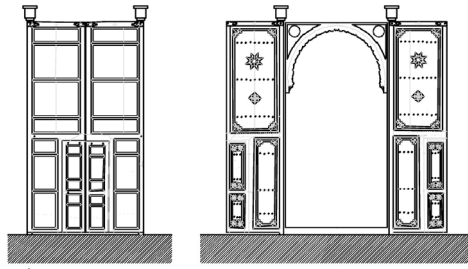
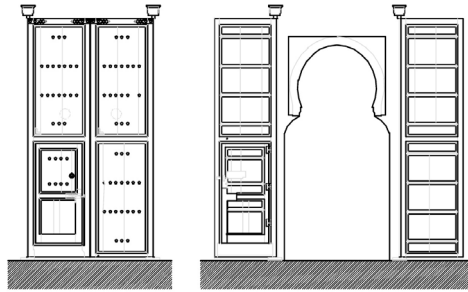


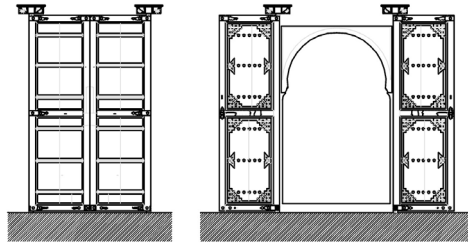
Figure 14. Entrance door: interior and exterior.



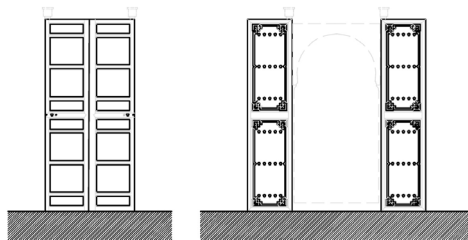
C/ PARDO, 3



PLAZA DE FÁTIMA, 5



C/ MINAS, 8



C/ DEL AGUA, 34

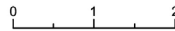


Figure 15. Doors of main rooms on ground and upper floors.

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