

# Conservation of the historical render in the Church of Nossa Senhora da Assunção in Elvas

## *Conservação dos rebocos históricos na Igreja de Nossa Senhora da Assunção em Elvas*

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### Abstract

In this paper we present a practical case of conservation of the historical renders in the pyramidal tower of the Church of Nossa Senhora da Assunção in Elvas (Portugal), carried out by the former IPPAR (Portuguese Institute of Architectonic Heritage), now Regional Direction of Culture of Alentejo. Awareness of the value and of the risks facing these renders points towards the necessity to safeguard their material authenticity.

During the works of conservation of the main façade, under the layers of non decorated recovering render; a previous decorated render, simulating stone masonry, with raised joints reproducing stone divisions and the internal structure in solid brick, was discovered.

After material and historical analysis we came to the conclusion that it was highly probable that this render was contemporary to the construction of the Church and, as such, it seemed essential to conserve and restore this covering as historical evidence and cultural heritage.

Treatment of the pyramidal tower render included removal of the non original recover mortars, survey of ancient materials, execution of technical and decorative scheme, surfaces' cleaning and consolidation of the weaker original old mortars. In order to fill the gaps in the original surface, specific lime mortars, prepared with washed sand and standard grain size, were used. Restoration techniques were used to reconstitute and integrate the lacunas. These actions not only conserved the workmanship, but also reconstructed the decorative structure and a reading clarity, allowing the identification of restoration without the connotation of a mimetic integration.

This joint action, only possible with the help of the conservation and restoration team, puts into evidence the possibility of continuous evaluation and learning. It is clear that, in cases where there are unknown, unpredictable factors, due to the specific work and value of the materials, it is possible to change the course of action and introduce new and improved measures to take into consideration new facts and new opportunities of preserving the cultural value of historical renders.

### Keywords

CATHEDRAL project; Church of Nossa Senhora da Assunção; conservation; historical renders; restoration.

### Resumo

Apresentamos o caso prático da conservação do reboco histórico da cobertura piramidal da torre da fachada da Igreja de Nossa Senhora da Assunção, antiga Sé de Elvas, intervenção promovida pelo antigo IPPAR, agora Direcção Regional da Cultural do Alentejo.

Acreditando na importância da divulgação, pretendemos: dar a conhecer e sensibilizar o leitor para o valor histórico e artístico destes revestimentos; apontar situações de risco neste património, e alertar para a necessidade de salvaguardar a sua autenticidade estética e material.

Durante os trabalhos de conservação da fachada verificou-se que, sob a camada de reboco final, não decorada, existia um reboco, decorado, simulando a alvenaria aparelhada com a marcação em relevo das juntas das pedras. Existindo fortes probabilidades de que este reboco fosse um testemunho contemporâneo da época da construção da Igreja, pareceu-nos fundamental alterar os trabalhos previstos e optar por conservar este revestimento enquanto reboco histórico.

A intervenção incluiu: a remoção das camadas de reboco não funcionais; o levantamento das superfícies com registo de materiais e estereotomia das juntas; a pesquisa de técnicas e materiais tradicionais; a limpeza a seco das superfícies; a consolidação das lesões; a integração das discontinuidades nas argamassas originais; a execução de um reboco de enchimento e preparação para a camada final e a realização da superfície final com a marcação das juntas, simulando a estereotomia da pedra.

Esta acção, além de conservar a obra, restituiu à estrutura decorativa uma *clareza de leitura* permitindo a identificação do restauro sem assumir a conotação de uma integração mimética.

A metodologia utilizada, a colaboração entre a equipa técnica de conservação e restauro e o director de projecto, as sinergias criadas pela transdisciplinaridade da equipa, assim como o rigor da execução demonstraram que é possível conhecer o monumento durante o processo de conservação, assim como avaliar e validar continuamente as diferentes opções tomadas.

### Palavras-chave

Igreja de Nossa Senhora da Assunção; conservação; Projecto CATHEDRAL; rebocos históricos; restauro.

## The Church of Nossa Senhora da Assunção

The former Sé or Cathedral of Elvas, dedicated to Nossa Senhora da Assunção (Our Lady of the Assumption), is classified as a National Monument, and it can be immediately identified by the solid force of the façade, which is an imposing presence in the square and in the landscape. Construction of the existing Church may have started in 1517 according to the founded opinion of some authors [1, p. 1; 2, p.1]. The Church was built in the place of a previous building presumably in Gothic style. At the same time and facing the Church, a new and big urban square was defined. This big square had straight implications in the urban structure of the town, where the Church and the facing square became the central and the most important part of Elvas.

Authorship of the architectural work of the Church of Nossa Senhora da Assunção of Elvas is often attributed to Master Francisco de Arruda [2, p.1]. However, recently, some art historians doubted this authorship [1, p.7-14; 3, p.80]. According to José Custódio Vieira da Silva, the work, in “Manuelino style”, of the Cathedral of Elvas “has the architectural unsuspected and revealing quality of an experienced architect” [1, p.12].

The recognition of the heritage value of this monument and the concern for its state of conservation justified the “Project of Conservation of the Cathedral of Elvas” presented to the Operational Program of Culture, in 2000. The extension of the intervention in the building and the enormous economical budget foreseen justified a phased project lasting for 6 to 8 years. Presently, the restoration has finished the last phase. The restoration aimed at improving the conditions of welcome and public delight of the building and contributing to a better knowledge and diffusion of its heritage value. Restoration of the main front façade and the bell tower were included in the several actions promoted and carried out in the scope of the conservation intervention.

The façade was undoubtedly one of the most problematic situations, due to the state and degree of alteration of the stone material and the non-functionality of the joints and also due to the architectural meaning of the façade for the whole monument and for the image of the city (fig. 1). The axial tower composes the imposing and symbolic main façade of the Church of Nossa Senhora da Assunção. The large dimensions of the tower define, almost in



Fig. 1 Church of Nossa Senhora da Assunção before the works of conservation.

exclusive, the principal façade of the cathedral. This axial arrangement of the tower is not usual in Portugal, although there are some parallels with the Church of Saint Magdalena of Olivença, built at the same time.

For José Custódio Vieira da Silva [1, p.12], it is not easy to outline the reasons for the choice of this façade typology. However the author refers that this formal option is firstly due to practical conditions, like the lack of space, though it does not hide the symbolic conception marked by the almost military imposition of the axial tower. Note that the Church of Nossa Senhora da Assunção, being built on a pre-existent church, could not dispose of the space required for the construction of the bell tower in a different location.

Probably, the bell tower of the church was the last part built in “Manuelino style”, in 1538. The pyramid was probably built at the same time.

## The intervention

As a strategy, the former IPPAR prepared a public procurement for the intervention of conservation and restoration of the old façade of the Cathedral of Elvas that was won by the firm Nova Conservação (nr. 85/IPPAR/E/03) (fig. 2).

During the works on the site we discovered, on the top of the tower, in the pyramid part, under the finishing layer of the non decorated render, a previous decorated render that simulates stone masonry with raised joints (figs. 3-7). In fact, when preparing the conservation project for the restoration of the façade we used mechanical elevators for a prior study of the conservation and materials' diagnosis but, at that time, with this equipment and weather conditions, it was not possible to observe any traces of the existence of this historical render.

After a material and historical analysis<sup>1</sup>, we considered that there were strong probabilities that the newly discovered render, simulating stone masonry, could be a contemporary evidence from the time of the construction of the tower [4, 5]. With this hypothesis in mind, we thought it would be necessary to alter the project and the works foreseen, which included removing the degraded mortars, dry cleaning the brick masonry and executing a new render, and we decided to conserve and to restore this covering as historical evidence and cultural heritage.

Assuming the *sine qua non* condition to preserve the material, as cultural evidence, we proposed to Nova



Fig. 2 Church of Nossa Senhora da Assunção during the works of conservation.



Fig. 3 Initial state of conservation of the pyramidal tower.



Fig. 4 Detail of the initial state of conservation.

<sup>1</sup> This Church is a case study included in the research Project "CATHEDRAL"- Characterization and Conservation of Traditional and Historical Mortars from Alentejo's Religious Buildings (<http://cathedral.lnec.pt>).



Fig. 5 Removal of the non decorated recovering render.



Fig. 7 Detail of the previous decorated render.



Fig. 6 The previous decorated render discovered under the layers of non decorated recovering render.

*Conservação* to alter the scheduled works and restore this historical covering that should maintain also its protective function. This restoration should follow an open project methodology, according to the data that eventually might be discovered through research in the lab and *in situ*.

### Conservation activities

The restoration of this historical render took place from January to March 2006, at the same time of the conservation work on the façade.

Restoration activities carried out were based on the following assumptions and aspects:

- To keep the architectural function of the pyramidal tower of the Church;
- To use the traditional technical and technological way of executing lime mortars (with raised joints);
- To rehabilitate the coherence of the aesthetic value of the façade with its texture and colours;
- To conserve all the evidence of the historical renders.

The intervention process had the following steps:

- Removal of previous non-decorative and non-functional render. After removal, we could identify evidence of different types of uncovered decorated historical renders. There were renders where we could see the aesthetic appearance and formal techniques in spite of some material degradation. There were also uncountable





Fig. 8 In loco, water absorption experimental tests were made to characterise the original materials.

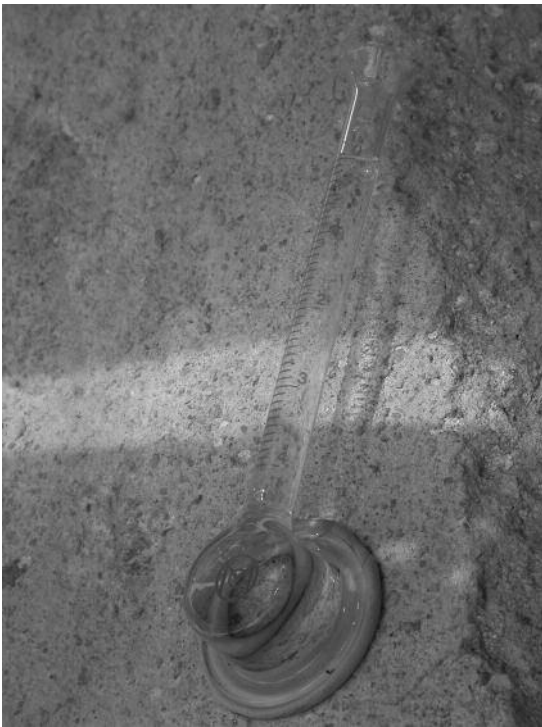


Fig. 9 Detail of the experimental tests.

traces that we could reconstruct visually, having a full panorama of the decorative scheme (figs 5-7);

- Photogrammetric survey of all historical surfaces, survey of the execution of the technical and decorative scheme, record materials and decorated/raised joints;

- Photographing survey and documentation of all the historical traces and of the removing process;

- Evaluation of whether the extension of uncovered areas was enough or not to allow the recovering of the lacunas, despite the poor state of conservation of the historical render.

- Decision to preserve all the historical evidence and to reconstruct and reintegrate the lacunas with a similar decorative render. The conservation process intended not only to conserve the authenticity of the historical render; but also to regain the techniques and technology of making this kind of surfaces, resulting in a clear reading of the façade and an identification of the restoration, without the connotation with a mimetic integration.

- Characterization of the original materials, with *in loco* experimental tests, to define the restoration mortars' properties (figs. 8-9);

- Experimental tests, to define the solution for the restoration render, both from the technical and the aesthetic points of view. For these tests the conservation team worked together with specialized companies in manufacturing (Fradical, Lda. – D. Fradique lime delegate) and applying (Construtora J.M. Tripa e Filho, Lda.) lime mortars and traditional renders techniques.

- Dry-cleaning of all surfaces through controlled brushing;

- Consolidation of the damaged mortars and integration of the irregularities in the original renders. In the latter situation we used a lime mortar made of non-hydrophobic lime putty.

- Application of an *arriccio* layer using non-hydrophobic lime mortar mixed (pre-dosed) with clean and calibrated sand and aggregates;

- Application of the final decorated layer with raised joints simulating stone masonry. In this case we used a lime putty non-hydrophobic mortar with limestone aggregates and washed fine sand. The mortar mix used was: 1 unity of non-hydrophobic lime; 1 unity of Negrais yellow limestone 0 special; 1 unity of Negrais yellow limestone 00; 0.5 unity of Alvito blue limestone (powder); 0.5 unity of Coina yellow fine sand. The procedure to reconstitute and integrate the gaps of the original surface is explained in the photographs (figs. 10-25);

- Finally, use of a mineral, silicate based, surface treatment, to protect the render from aggressive weather conditions such as strong wind and rain.



Fig. 10 Preparation the restoration lime mortar, mixed with washed sand and standard grain size.



Fig. 11 Application of the restoration lime mortars, after the humidification of the support. Scattering until the render thickness was obtained.



Fig. 12 Using the mason's mortar-board to compress the mortar; before adding different coloured sands to the mortar, and with the mason's mortar-board compressing again the render.

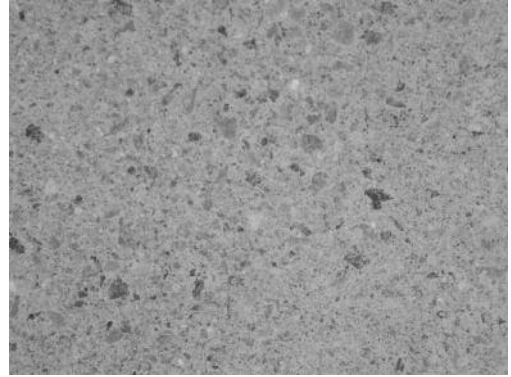


Fig. 13 To obtain this aesthetic aspect of the surface the following process was used: (1) Compressing, after the first drying, with a metallic mason's mortar-board, the surface again, through arch movements, until a "cream/gum" was formed; (2) water pulverization of the surface; (3) brushing the surface and removing the "cream/gum" using a humidified sponge until the coloured sand grains were seen.

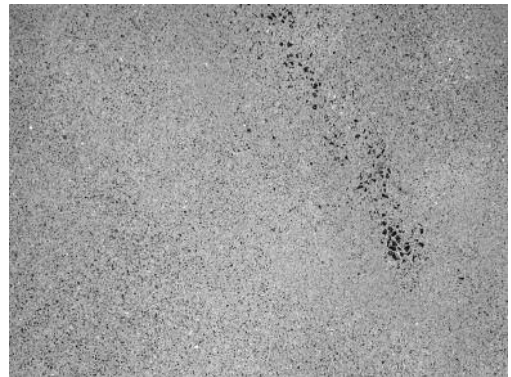


Fig. 14 Surface render's detail.



Fig. 15 Reproducing the decorative scheme. The joints were traced using nails and coloured threads.



Fig. 16 Detail of the reproducing the decorative scheme.

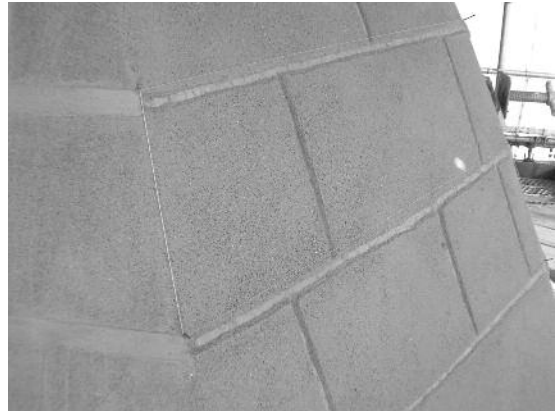


Fig. 19 Surfaces details the with the furrows.



Fig. 17 Removing the mortar in joints with metal tools; cleaning and humidifying the furrows.



Fig. 20 Application of the mortar in the joint area.



Fig. 18 Detail of the humidifying works.



Fig. 21 Removing and cutting, after a first drying, the excess mortar, according to the decorative scheme.





Fig. 22 Applying a thin grain size mortar in the joint area after pressing and watering the render during the drying stage to avoid the mortar being fissured.



Fig. 23 Detail of the application of the final decorated layer with raised joints.



Fig. 24 Surfaces details after integration of the lacunas.



Fig. 25 Architectural surface after the integration of the lacunas.

### Final Remarks

The case described in this paper may be considered a remarkable example for future interventions (figs. 26-27). The methodological approach, the collaboration of the conservation team and the Project coordinator to identify problems and to find solutions, the synergies created by the trans-disciplinary team, all demonstrate that it is possible to learn about the monument, its techniques and materials during the conservation process and to have a continuous evaluation and validation of different options taken along the process. It is clear that, in cases where there are unknown, unpredictable factors, due to the specific work and value of the materials; it is possible to change the course of action and introduce new



Fig. 26 The pyramidal tower after the conservation and restoration works.





Fig. 27 The main façade after the conservation and restoration works of the historical mortars.

and improved measures to take into consideration new facts and new opportunities of preserving the cultural value of historical renders.

## References

- 1 Vieira Silva, J. C., 'Igreja Matriz de Nossa Senhora da Assunção de Elvas (antiga Sé). A obra manuelina', report commissioned by IPPAR, Évora (2004).
- 2 Borges, A. G. M., 'Igreja de Nossa Senhora da Assunção de Elvas (Antiga Sé)', report commissioned by IPPAR, Évora (2005).
- 3 Dias, P., *História da Arte em Portugal*. Vol.V, Ed. Alfa, Lisboa (1986).
- 4 Silva, A. S., Veiga, R., Adriano, P., Magalhães, A., Pires, J. Carvalho, A., Cruz, A. J., Mirão, J., Candeias, A., 'Characterization of historical mortars from Alentejo' religious buildings', in *International Historical Mortars Conference, 24-26 September 2008*, Lisboa (2008).
- 5 Monteiro, P., 'Relatório sobre quatro monumentos do Alentejo; estudo sobre as fases de construção', report commissioned by IPPAR, Évora (2006).