Back to blue for the National Palace of Queluz: restoration of its facades, stone masonry, beams and roofing

→ The National Palace of Queluz recovers its original “enamel blue” on the facades overlooking the upper gardens
→ Roofs over the Robillion Pavilion and Dining Room restored
→ Stone masonry and beam restoration also completed
→ Intervention took place within the overall restoration project under implementation at the National Palace of Queluz and its Gardens
→ Restoration work always carried out through recourse to already existing materials whenever feasible

Video on the Palace returning to the colour blue:
https://www.youtube.com/watch?v=55TJSyUEYW8

Sintra, August 31 2015 - Parques de Sintra has now completed the restoration of the National Palace of Queluz facades overlooking the upper gardens and that have now finally regained their original colour: blue.

This results from a broad study that sought to return chromatic harmony to the monument in keeping with the integrity of its external finishings. The original colour of the Palace exterior had been lost with it acquiring a great diversity in tones and colours ranging from pink, orange and yellow on the plastered surfaces and shades of green and blue on the beams.

The survey of the state of conservation, carried out immediately after Parques de Sintra was awarded the management of the Palace (in late 2012), confirmed the advanced state of degradation of the property due to the lack of investment in the meanwhile. This latest phase, beginning in January 2015, falls within the framework of the overall restoration project for the Gardens and the National Palace of Queluz and spanning the restoration of the stone masonry, beams and facades overlooking the upper gardens along with the recovering of the roofs over the Dining Room and the Robillion Pavilion.
These projects represent total investment of around €600,000 and were implemented both for conservation related issues as well as for aesthetic questions.

The Palace goes blue again

During maintenance work over the course of the 1980s and 1990s, two patches of blue paint were found behind busts on different facades of the National Palace of Queluz. The analysis then undertaken by the Portuguese Civil Engineering Laboratory and more recently, under the auspices of the Parques de Sintra project, by the University of Évora HERCULES Laboratory confirmed that this material was traditional lime and sand plaster with a light greyish blue pigment. Microscopic observation of the angular grains of silicone and the identification of the element cobalt revealed recourse to a pigment made out of ground glass, such as “enamel blue” or “glass cobalt” – a noble pigment in usage ever since Ancient Greece and through to the mid-19th century even if lacking in stability whenever applied in traditional lime based finishings: the blue goes pale and becomes “brownish”. It was precisely this “brownish” tone that was referred to by a traveller in 1799 and, while some of the remains found during the intervention displayed this shade, others, having been protected under layers of plaster, still retained a vibrant tone.

The blue colour of the Palace facades receives further corroboration by a watercolour picture by an unknown artist held by the Torre do Tombo National Archive and dated 1826, which also depicts frames thrown into relief by panels of yellow on some of the plastered sections between the beams. Furthermore, António Caldeira Pires refers in his book on the history of the Palace that the colour of the beams was dark green and that the fences were painted “in green”.

Research and the study of the diverse historical records, graphic and photographic sources do prove the existence of these frames and enabling the definition of their respective dimensions and shapes as well as the colours applied within their borders.

Given the advanced state of degradation of the Palace facades, the project opted to replace the most deteriorated sections of plaster and bars, harmonising the finishing of the facades with the closest solution to the original: traditional materials in colours obtained from pigments of mineral origin over lime and sand plastered sections. The restoration work also encountered further remains of the blue colour in conjunction with an original frame that served to confirm the research results.

Stone masonry and beams restored

Incorporated into the facades, the beams are essential to guaranteeing the overall structural stability, impermeableness and the environmental conditions prevailing within the building’s interior and hence the objective was to restore the functional effectiveness of all these features alongside restoring the aesthetic coherence and harmony to the built heritage. The restoration of the beams followed the specific rules in place as regards the material type applied – wood in the majority – and in addition to the extent and the depth of the intervention. The work carried out was designed
whenever possible to restore the existing materials thus minimising the need for the replacement of features and guaranteeing the authenticity of the restored object.

The stone masonry in lioz marble, a stone quarried in Ançã, and another dolomitic limestone were subject to cleaning with the elimination of all biological colonisations, filling any gaps and relaying the joints with traditional limestone and sand mortars. Some consolidation tests were carried out on the stone sections more subject to wearing and deterioration with analysis of the results expected in the long term to contribute towards choosing the most appropriate mortar to apply in the future. All of the joints between the stone blocks were inspected in addition to installing a system to keep away pigeons through a set of stainless steel spikes.

**The restoration of the Robillion Pavilion and Dining Room roofs**

The restoration of the roofs of the Robillion Pavilion and the Dining Room involved treating and inspecting the metallic structure and the replacement of the finished sections made up of voided reinforced tile slabs with cement mortar in an advanced state of degradation by a lighter system incorporating wooden features and maritime plywood panels. Cork agglomerate tiles were then added to raise the level of fire resistance and the thermal performance in the lofts above. The original roofing tiles were retained whenever possible. In order to resolve water infiltration issues, the drainage system was replaced by new copper guttering with the waterproofing of the roof lining. Alongside this work, the energy and communications installations in the loft were checked and reorganised in conjunction with the fitting of a modern lightning protection system that now covers the entire extent of the Palace.

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**About Parques de Sintra - Monte da Lua**

Parques de Sintra - Monte da Lua, S.A. (PSML) is an entirely state owned company set up in 2000 following the classification by UNESCO of the Sintra Cultural Landscape as a World Heritage site. The company receives no funding from the state and hence the restoration and maintenance of the heritage under its management are ensured by the revenues generated by ticket sales and profits from the stores and cafeterias and renting out facilities for events.

In 2014, the sites under the management of PSML (the Park and National Palace of Pena, the National Palaces of Sintra and Queluz, the Chalet of the Countess of Edla, the Moorish Castle, the Palace and Gardens of Monserrate, the Convent of Capuchos and the Portuguese School
of Equestrian Art) welcomed approximately 1,928,000 visitors, around 86% of whom were of international origin. The company won the World Travel Award for Best Conservation Company in both 2013 and 2014.

The PSML shareholders are: the General Directorate of the Treasury and Finances (representing the state), the Institute of Nature and Forestry Conservation, Portugal Tourism and Sintra Municipal Council.

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