Restoration work on the facades, masonry and tiles of the National Palace of Pena successfully completed

- Restoration of the plastered and whitewashed façades, stone masonry features and tile finishings
- Total investment: approximately €300,000
- Two years under planning and eight months of project implementation

Sintra, 11th February 2015 – In January, Parques de Sintra fully completed the restoration of the facades of the National Palace of Pena. The intervention, that counted on investment of around €300,000, involved two years of project planning and eight months of actual restoration work. The integral recovery of the Palace exteriors dealt with the plastered and whitewashed façades, stone masonry features and the tile finishings.

The facade restoration project was structured and implemented according to both conservation related issues and aesthetic reasons and received support supervision by the Parques de Sintra technical team with support and monitoring by technical specialists at the Portuguese General Directorate of Cultural Heritage, the José de Figueiredo laboratory (material analysis) and the National Tile Museum. Project implementation spanned various phases and accompanied other interventions in the palace.

The multidisciplinary PSML team designed, coordinated and inspected every phase, integrating the results of research with the studies commissioned from various specialist entities. The construction work took place in accordance with the “Open for Works” policy of previous projects and thereby fostering the interest of visitors in the different techniques applied in the conservation and restoration of heritage.

Restoring the facades
The work carried out on plastered surfaces (an area of around 10,000m²) consisted of stabilising the finished surface through the consolidation of the plaster, replacing zones of erosion, preparing the surfaces and applying new plasters based upon the historical examples stored in the palace archive made within the scope of a similar earlier intervention process. The topography of the terrain, as well as the climate conditions,
rendered these tasks particularly difficult both in assembling the scaffolding on practically impossibly steep slopes and further hindered by the frequency of strong winds. Thus, in order to complement the traditional scaffolding, part of the work was undertaken by climbing painters, with the appropriate training, who were thus able to guarantee not only the safety levels but also the quality standards required. The application of colour in this intervention was in keeping with the options taken in the 1990s during the last period of restoration. However, this did unify the finishing scheme over the extent of the surfaces and that had proved the most appropriate and compatible with the existing structure: finished in lime based paint.

Furthermore, the waterproofing of the Queen’s terraces, the Dining Room and the Cafeteria (a total surface of approximately 645m²) received attention with the replacement of the insulation materials, and tiles closer to the ones originally used were applied on the floor covering.

**Restoring the stone masonry features**
The work applied to the masonry features covered an areas of approximately 800m². Despite their greater material resistance, they needed both general and specific cleaning, eliminating the biological colonisations while also stabilising their plinth junctions and decorative features. In addition to micro-organisms, these finished surfaces already hosted plants that, if not eradicated, would bring about irreversible degradation to the stone foundations. This also extended to replacing some of the significantly missing features as well as applying a water-repellent layer to provide greater longevity to the protective surface applied by this intervention. Once again, due both to the difficulty of assembling scaffolding and by the need to minimise the disturbance caused to visitors, Parques de Sintra made recourse to conservators-restorers with training in working at height and thereby avoiding the intrusion that inevitably results from the mounting of scaffolding in areas of dense circulation.

**Restoring the tile finishings**
The tile finishings (covering an area of around 450m²) displayed structural problems in terms of the interface between the stone masonry and the ceramic body with already deteriorated grouting and glazing. The risk of coming apart drove the need for the prior application of the protective facing across a significant proportion of the surface undergoing treatment, and even during the project phase, to enable the subsequent
removal of the tiles without any losses. Catalogued, labelled and processed, the tiles were then reapplied with the appropriate support stabilisation, a decisive factor to their relaying. Following the removal of biological colonisations and the calcareous concretions, any broken pieces of glazing were filled and completed with the appropriate materials. The grouting material between the tiles, essential to the absorbing of the tensions that such constructions are naturally subject to, were replaced to a significant depth whenever in a poor state of maintenance. In more complex cases, tile replicas were made to guarantee the level of impermeability needed by the finish to appropriately ensure the building's protection. The process of choosing and producing these replicas also proved very thorough in order to guarantee the best possible alignment between the final results and the intervention objectives.

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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 founded in 2000 in order to meet the challenges arising out of the UNESCO classification of the Sintra Cultural Landscape as a World Heritage site. The entity does not resort to the State Budget and the restoration and maintenance of the heritage in its care are ensured by the revenues resulting from sales at its ticket offices, stores, cafeterias and the rental of facilities for the hosting of events.

In 2014, the sites managed by 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 the Capuchos and the Portuguese School of Equestrian Art) welcomed approximately 1,928,000 visits, around 86% of whom were international in origin. In 2013 and 2014, PSML was distinguished with the World Travel Award for the “World’s Leading Conservation Company”. The PSML shareholders are the General Directorate of the Treasury and Finance (representing the Portuguese state), the Portuguese Institute of Nature and Forestry Conservation, the Portuguese Tourism Board and Sintra Municipal Council.

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