

Chromatic Reintegration of Lime Renders

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The preservation of historic coatings involves the implementation of consolidation treatments and filling of cracks and gaps, which often generate spots and differences in buildings' surfaces. Thus one of the most common intervention problems for conservative restorers is the reproduction of mortars and coatings with similar composition, technique and chromatism, and the reintegration of chromatic treated surfaces.

The polychromatism in architecture deserves to be target of further research and technical development regarding methods of intervention. The visual clarification, recognition and respect for the building are always aspects to be taken into account in the intervention act.

The present study aims to test a methodology for the chromatic reintegration in lime renderings, taking into account the criteria of pictorial restoration, which should be distinctive from the original.

In this work various techniques for chromatic reintegration used in the pictorial restoration will be studied and adapted to lime mortars coloured through incorporation of pigments, painting or use of selected aggregates. Techniques like *trattegio* or *rigatino* (crossed line draw technique), *punteggiatura* (pointillism), and *illusionismo* (illusion draw technique) will be tested. Earth pigments dissolved in lime water and silicate paints will be used, in order to restore the reading of the old buildings' surface, preserving the original as possible, through out a minimal intervention strategy.

The feasibility of the colour simulation and its durability will be studied, carrying out measurements after drying and after natural and artificial ageing. The study includes a qualitative analysis of the most used pigments, both those found in the market of conservation and those sold in simple drugstores, trying to reach a practical, economical and effective solution, to carry out the work of conservation and restoration. The examinations are conducted in both types of pigment are XRD and chemical analysis, which will permit to verify their chromatic quality in comparative terms.

The conditions of stability and discoloration of the pigments in lime mortar are investigated by natural ageing, through direct exposure to sun. Their chemical and mineralogical composition and their degree of purity, identified by the analyses, also provide information on the possibilities and alteration mechanisms of these pigments in the presence of lime. The chromatic changes observed (colour loss) are identified and recorded by NCS system (Natural Colour System).

Keywords: mortar of lime, chromatic reintegration, pigments, XRD, methodology