

Recovering color in the Historic Urban Landscape Rua da Junqueira in Lisbon

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ABSTRACT

In this paper we discuss on some studies and recovery actions on architectures made in European historic centres, showing the techniques and research methodologies performed. The solutions and strategies used in colour plans were operated by various interdisciplinary work groups. As an example, we gather the works carried out by the Group of Colour in Architecture at the Polytechnic University of Valencia (Institute of Heritage Restoration) during over twenty years with some of the interventions in historic centres of great heritage value in Eastern Spain, this allows knowing some similarities with related methodologies. The scientific methods and technologies used during the colour recovery process makes clear the participation of interdisciplinary teams sensitive to expectations of recovery, management and appraisal of colour topics and to possibilities for intervention in the urban landscape. Architectures are the cultural landmark of a city and an example of its built value.

1. INTRODUCTION

In official organizations of European cities, sensitive to architectural interventions and new constructions in historic districts, they have discussed in the last 50 years the issues relating to recovering historic urban landscape. Among other aspects, topics such as the recovery of colour in architectural heritage of cities whose historic centres have cultural values of interest are studied. The possibility to act and preserve the materials and colour as a configuring element of buildings are fundamental nuances that define the urban landscape and its effective conservation must be taken into consideration in restoration projects. Likewise, instrumental and scientific methods are established to help in protecting buildings, favouring the specific character and cultural identity to each place and territory.

To stand up for the protection of natural and cultural heritage, is a consensus objective in recent sessions conducted by UNESCO, ICCROM and ICOMOS which include recommendations on the study of the material nature and the preservation of colour in architecture. The UNESCO General Conference held in Paris in 2011 specifies the following recommendation on training, research, information and communication for historic urban landscape projects:

“Research must focus on the complex layering of urban settlements in order to determine values, understand their significance for communities and provide to visitors a global vision of them. Academic institutions and universities as well as other research centers should be encouraged to go in depth into scientific research of various aspects of the concept of historic urban landscape, and work together at local, national, regional and international scale. This work is essential to document the state of urban areas and their

development, facilitate evaluation of proposals for change and improve procedures for management and protection, as well as relevant competences”.

We must insist therefore on the cultural theme of a city, to preserve and take action for its protection is to step towards a coherent development and harmonious adaptation to contemporary life. (UNESCO Warsaw-Nairobi, 1976 “*Conservation of historic towns and urban areas*”). Into this scope fall architecture of our cities, old town characterized by the built and inhabited heritage. Past history follows this way, and preserving this legacy is unquestionably a priority objective.

2. COLOR AND HISTORIC CITY. ANALYSIS METHODOLOGY

The whole of the work developed by the Color Research Team of the Heritage Restoration Institute at the Polytechnic University of Valencia is placed along this line of work aimed at preserving the image of the historic centers through the study, analysis and development of proposals of color intervention in historic architecture. During the last twenty years there have been many papers and studies about urban centers in which it has been proposed and implemented an analysis methodology that aims to ensure the determination of the original color characteristics of urban space and the valuation of correct structural methodologies which guarantee the preservation of historical color understood how patrimonial value.

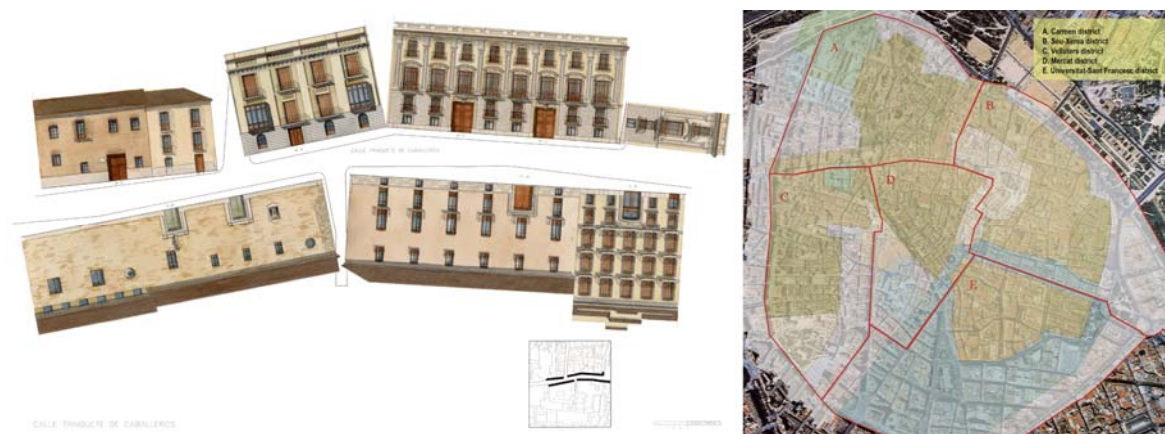


Figure 1: Chromatic stratification of Valencia and chromatic proposal of a specific area.

The whole of the developed work ¹ has shown a direct relationship between the historical color and the original architectural typology, which eventually leads to the existence of an intimate connection between architectural form and color (Figure1). Since this relationship it would be room for determine the existence of an urban zoning directly related to architectural characteristics of buildings, just like the existence of several chromatic areas

¹ The whole of the work developed since the application of this analysis methodology is very large. In Spain they have developed the esencial studies of Valencia, Cartagena, Ontinyent and Burriana, just like other studies of numerous protected areas and catalogued buildings. Additionally they have developed the studies of *Plaza Vieja* in Havana and *Rua da Junqueira* in Lisbon.

in the historic city relative to the time of construction, architectural characteristics of buildings and the social class which used them. Preserving this chromatic structure is preserving the city history itself, so that the development of color planes transcends the simple strategy of formal preservation to become a strategy of preservation of the cultural, social and anthropological characteristics that the city carries.

3. RUA DA JUNQUEIRA IN LISBON.

An example of application of this analysis method, its objectives and its potential to develop strategies of intervention in the field of urban heritage is the project funded by *Fundação para a Ciência e Tecnologia* of the *Ministério da Ciência e Ensino Superior* of Portugal, developed by an international team constituted by researchers from the Polytechnic University of Valencia and the Lusíada University of Lisbon to make the study and development of a chromatic intervention project in Rua da Junqueira in Lisbon². It is a road axis fully representative of the architecture from the Portuguese capital, where buildings belonging to diverse typology coexist, so that the application of the analysis methodology developed by the EIC-UPV team, adapted to the specific characteristics of Lisbon, aims to become a representative model that allows a subsequent normative generalization for the whole of the historical center of the capital.

2.1 Analysis Methodology

The methodology used to determine the chromatic ranges was based on three fundamental aspects:

1. Analysis of archival documents and information.
2. Architectural analysis of the existing buildings and classification of the buildings typology in the city centre.
3. Samplings of the mortars and renderings used, and laboratory analysis to determine their composition and chromatic qualities.
4. Determination of the Colour Table used in the city centre buildings, and specifically, in each building typology. The Munsell colour system has been used as reference system and it has been useful to determine the specific colour ranges.

The analysis and determination of the original chromatic colors has been carried out using a combination of technical analysis and study of the city council archives. This historical information has been added to by the use of two techniques of color measuring. In the first phase, the color of paint superficial coats was studied *in-situ* and 'chromatic' maps were made since instrument readings. These maps identified qualities of light as: HUE, VALUE, and CHROMA. The instruments used were: an adapted contact color meter (measuring mode: absolute and differential) and a spectrophotometer (Color systems: XYZ, Yxy, L*a*b*, L*C*h°, from CIE ; Hunter Lab and Munsell. Absolute values and increments. Total color difference). In a second phase, the study has been broadened with laboratory chemical analysis to determine the exact composition of the original materials – construction materials and mortars, as well as the pigments used in the pastes and the

² *Metodologia para a elaboração de um plano de cor em ambiente urbano* (PTDC/AURÁQI/108794/2008).

resulting colors. This process of analysis and classification of the samples leads to a third phase of the study. The pigmentation samples were prepared for an optical photographic study with a binocular magnifier for a physical/chemical analysis and determination of components. The analytical instruments and techniques used were: Scanning Electron Microscope (for the morphological study of the samples) and X-Ray Diffraction, or Scanning Electron Microscope/Energy Dispersive Using X-Ray (SEM/EDX) for the mineralogical analysis of samples.

2.2 Project results

The application of this methodology is formalized in a set of intervention guidelines which are organised depending on the diverse architectural typologies that configure Rua da Junqueira. Since analysis and intervention cards (Figure 2) it is possible to guarantee the connection of color process assigned to each building individually, and through it, to guarantee the preservation of formal, material and structural logic of historic buildings, ensuring their integrity through a series of directives which come from public organizations in order to preserve the spatial image of the city.

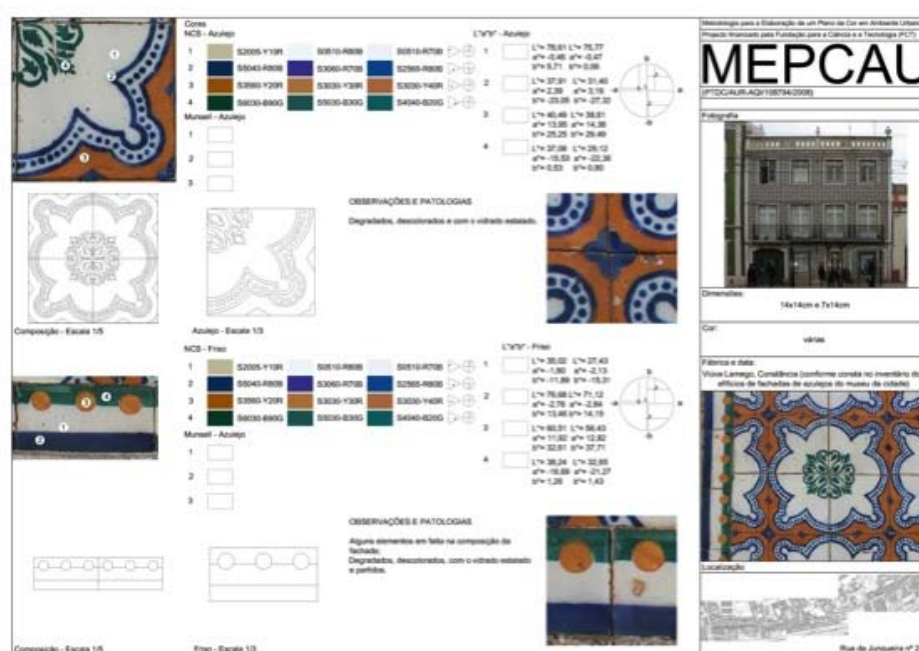


Figure.2 Card of chromatic analysis of a building in Rua da Junqueira in Lisbon

The proposed intervention should be understood as a "pilot intervention" prior to extending it to the whole historic center. It aims to extrapolate the interventions developed in the Spanish litoral to other cultural and social areas, passing the material-structural limits of previous interventions and including new native structural techniques like the tiling in the Portuguese case, which can be treated with similar parameters to those developed for continuous coatings, typical of the Mediterranean area.

4. CONCLUSIONS

Colour is a key variable in the process of urban rehabilitation of historic cities. The respect for the original color is more than a matter of preservation of the architectural integrity a

matter of preservation of the spatial, cultural and social values that the city carries. Ignoring the connection between color and architectural form, we fall into a process of destroying the own spatial coherence of the city, emerging the risk of dissociating color and architectural form in each specific building and destroying the coherent spatiality of the different city areas which are a product of the layers that their own historical development has determined.

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