

Putting the Colour Back into the *Rua Junqueira* in Lisbon

Ángela García Codoñer, Isabel Braz de Oliveira, Ana Torres Barchino, Juan Serra Lluch and Jorge Llopis Verdú

Abstract The aim of the present article is to explain the objectives, methodology and approval of a coordinated European Research Project led by the “Territory, Architectural and Design Research Centre” (CITAD) of the “Minerva Foundation, Culture, Education and Scientific Research” (FMCEIC) in Lisbon, together with the “Grupo de Investigación del Color” (GIC) del Instituto Universitario de Restauración del Patrimonio (IRP). This project, entitled “Methodology for the development of a Color Plan in a Urban Environment” was founded by the “Technology and Science Foundation” (FCT). This project has lasted for three years and has been carried out by a multidisciplinary team of lecturers, doctors and professionals specialized in Colour in Architectural Heritage.

Keywords Color recovery · European research · Rua junqueira

1 European Context

The R&D plans for scientific development in recent years have undergone major expansion, moving from a national to a European scope, creating the essential cross-border synergies that create an important area of research, technology

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development and innovation between different countries and groups of professionals, favouring scientific growth in our society.

International research projects, therefore, are being set up in the globalised world in response to advances in knowledge that demand a greater degree of understanding of socio-cultural diversity. International projects use an interdisciplinary approach that incorporates different groups of researchers and brings together a combination of analytical perspectives that are particular to each region.

The opportunities for international R&D collaboration in both national and particularly international projects provide access to a wide range of European programmes with the creation of International Commissions as a way to access, develop and explore consciousness for the benefit of mainstreaming, which hugely benefits R&D.

2 Technology and Science Foundation, of the Portuguese Ministry of Education and Science

The FCT, or *Technology and Science Foundation*, under the auspices of the Portuguese Ministry of Education and Science, is the Portuguese national agency for technology development and R&D. The FCT provides support to the scientific community in Portugal through a series of different funding instruments that are geared towards scientists, research teams, as well as R&D centres. With these instruments, the FCT provides support for advanced training, developing research, the development of research infrastructures and access thereof, as well as promoting international networks and collaborations, in addition to scientific conferences and communications.

Our Colour & Heritage Research Group at the Polytechnic University of Valencia, together with the *Lab- oratorio da Cor (Colour Lab)* at the Lusíada University in Lisbon initially presented a joint project to restore a wonderfully singular street in the city of Lisbon.

The FCT, through a call for tender for R&D projects, approved, together with the necessary funding, the European Project entitled “Methodology for the development of a Colour Plan in a Urban Environment” for the *Rua de Junqueira*, an emblematic and historic street in Lisbon. The project was to be administered by the Minerva Foundation, for Culture, Education and Scientific Research (FMCEIC) in Portugal, as the Portuguese contingent, through the Territory, Architectural and Design Research Centre (CITAD). The representative body for Spain was to be the Heritage Research Institute and the Technology Transfer Centre (CTT) of the Polytechnic University of Valencia. The research group was to be formed by two teams, one Portuguese, one Spanish, with Angela Garcia the lead researcher. The organizational structure was to be coordinated by Professor Isabel Braz de Oliveira and Professor Angela García Codoñer. The researches from both groups comprised the following doctorate-holding lecturers: Ana Torres, Juan Serra, Jorge Llopis, Pablo Navarro,

Hugo Barros da Rocha, Irene de la Torre, Salvador Gilabert and Aitziber Irisarri. The Coordinator of the Portuguese team, Maria Braz de Oliveira and her research team from the *Lusíada University of Lisbon* comprising the following doctorate-holding lecturers: Nuno Ludovice and Joaquim Marcelino da Conceição.

3 The European Project: The Case of Portugal, “Methodology for the Development of a Colour Plan in an Urban Environment”

Presently, *Rua da Junqueira*, in Lisbon (Fig. 1), comprises an urban area of great wealth; the formation and the evolution of this urban hub goes hand in hand with that of the Tajo River, with the growing occupation of the river bank of its extensive river beach, which due to its prime location, was used as a port area in its earliest settlements with an important strategic position in the defence and control of the entry of boats and ships into the Port of Tajo.

Currently, the linear morphology of this urban hub is characterised by its architectural and orographic heterogeneity with the multiple typological, formal and aesthetic languages of its buildings, that reflect the different periods of its past, and at the same time express a dynamic dialect between the ways of life that developed over the years and reflected in the buildings. As mentioned by historian Nuno Ludovice, *Rua Junqueira* “constitutes a privileged universe from which to identify the coexistence of models and processes that over its long historical evolution has managed to maintain its urban history, whose artistic qualities and varied heritage are strongly identified with this zone” (García and Oliveira 2014) (Fig. 2).

The chromatic aspect is just as important in the spatial reality of this street, and is a structuring element of the cultural and urban identity expressed in a heterogeneous world of different architectural types, as well as the rich chromatic diversity of its buildings.

This urban hub has undergone a series of major transformations from the dockland area of the Tajo with its industrial design, to the construction of residential areas, and with the advent of the gentrification and the arrival of the bourgeoisie and nobility, their palatial homes and mansions.

This *cohabitation* of a wide variety of architectural styles is a major challenge for us, the job of recovering the colours of this array of architectural types from a historical perspective and the coordination of these assets that are part of the same street was a very interesting professional challenge for both teams.



Fig. 1 Developmental readings of the area around the Cordoarioa Nacional (18th–21st centuries) and an aerial view of *Rua da Junqueira* in its present state (CML)

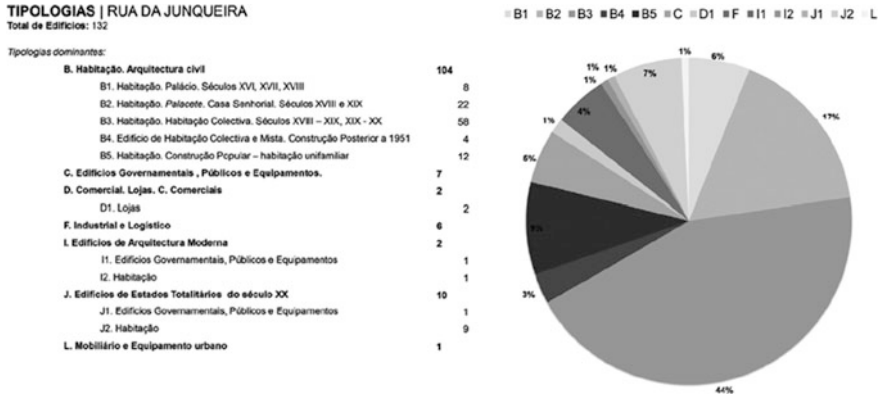


Fig. 2 Summary of the architectural typology of *Rua Junqueira*

4 Strategy employed in the development of the research

Work began with an approximation of the subject of study, analytical systems developed for each specific case, based on an “understanding of the city, or parts of the city, resulting from the material, cultural and socio-economic processes that built it from a spatial and temporal perspective and from the experience (...). The concept of Historic Urban Landscape helps to tie together the tangible and intangible elements of architectural heritage in order to evaluate and understand the city or urban space as a process and not as an object” (Van Oers 2010). Consequently, a study methodology was developed based on evaluation worksheets, one for each specific building, which enabled us to build a simplified description of each of the different architectural types, and these can be continually amended as the minor details are added to each of them. Below is a description of the new strategies used in this particular project, the common denominator being the preparing of the aforementioned analysis worksheets specific to each area of study.

- *Worksheet Type 1. Architectural Type* (Fig. 3): An analytical study is required on the architectural type to be able to tackle, using architectural language, the construction systems themselves, which reflect the technology and the aesthetic tendencies from a particular historic moment in time. Its typological understanding provides us with a more comprehensive knowledge about the overall composition of the urban sector under study. The systematization is essential to be able to establish the grouping criteria and to tackle therefore the organization of future chromatic interventions; a typology study allows us to classify the structures, based on the definition of the worksheets created for that very purpose.

The sheet contains the architectural type with a scaled graphic elevation that depicts each and every one of the details on the façade of the construction. This comprehensive description highlights all the structural, functional and ornamental elements of the buildings. In this way, one is able to elaborate the necessary study

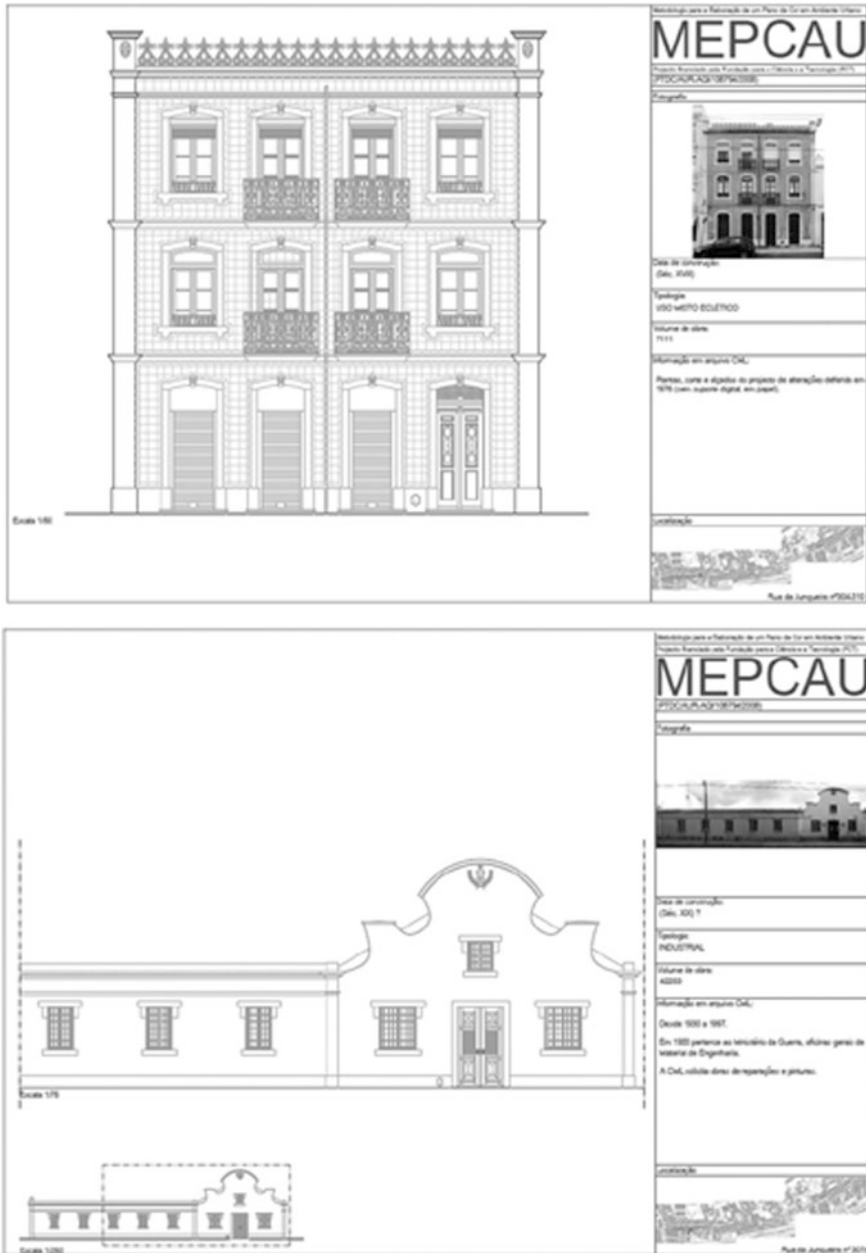


Fig. 3 Two case studies of architectural typology. Typical 19th century dwelling. *Palacete* (Mansion) 1760

about the carpentry and metalwork, ornaments, and any other elements that characterize the composition and the aesthetics of the façade.

With this description, any formal changes or *a posteriori* interventions should there be any, can be traced. It also indicates the location and the placement of the structure as well as the urban shell of *Rua Junqueira*.

- *Worksheet Type 2. Analysis of the samples taken from the façades of Rua Junqueira using instrumentation techniques* (Fig. 4): They also contain a description of finishes and plastering of the façades together with samples taken from the finishes themselves, and the analytical process used to obtain the results that are conducive to the elaboration of the Colour Chart. The sheet contains each reference and its description, together with identity and technical analysis used for its characterization, such as the morphological characterization by means of Optical Microscopy and the chemical and mineralogical characterization.
- *Worksheet Type 3. Ceramics in construction* (Fig. 5): Portuguese tiling is one of the characteristic assets of its architectural heritage. Used from the 16th century up to the present day, its origins go back to the Islamic ceramics found across the whole of the Iberian Peninsula and might be considered to be one of the major legacies of decorative art of any of the Mediterranean countries.

Carrying out a comprehensive survey of the buildings along the *Rua Junqueira*, approximately a third of the total of 126 façades are found to be tile-covered. The colour palette that is surmised following an analysis of the current ceramics along the *Rua Junqueira*, is extensive. The use of tiles to create colour schemes, glosses and relieves on the surface of the façades was also examined, resulting in an urban space that boasts many tonalities and a chromatic dynamism according to the type of architecture. Among other things, the worksheets also contain the ornamental design of the façades as well as its composition and colorimetric assessment using techniques that are adapted to this specific purpose for every colour of each individual tile. These are then recorded and can be used for any future analysis or restoration projects.

This graphical material expresses to a large extent the use of a new analysis strategy, to manage the classification and the detailed study of a complex urban area. The clear order that is obtained by way of the graphic description is interesting, and can even be used for the analysis and elaboration of a study of a single building.

5 Results

The project has highlighted the rich heritage significance of the *Rua da Junqueira* by examining the historical colouring of its buildings and the recovery of its cultural heritage, a process that connects it to its past, but far from being in the past, should be recovered for the benefit of our present. The research findings are available to local townspeople in a book entitled “Cor da rua da Junqueira”—The Colour of Rua

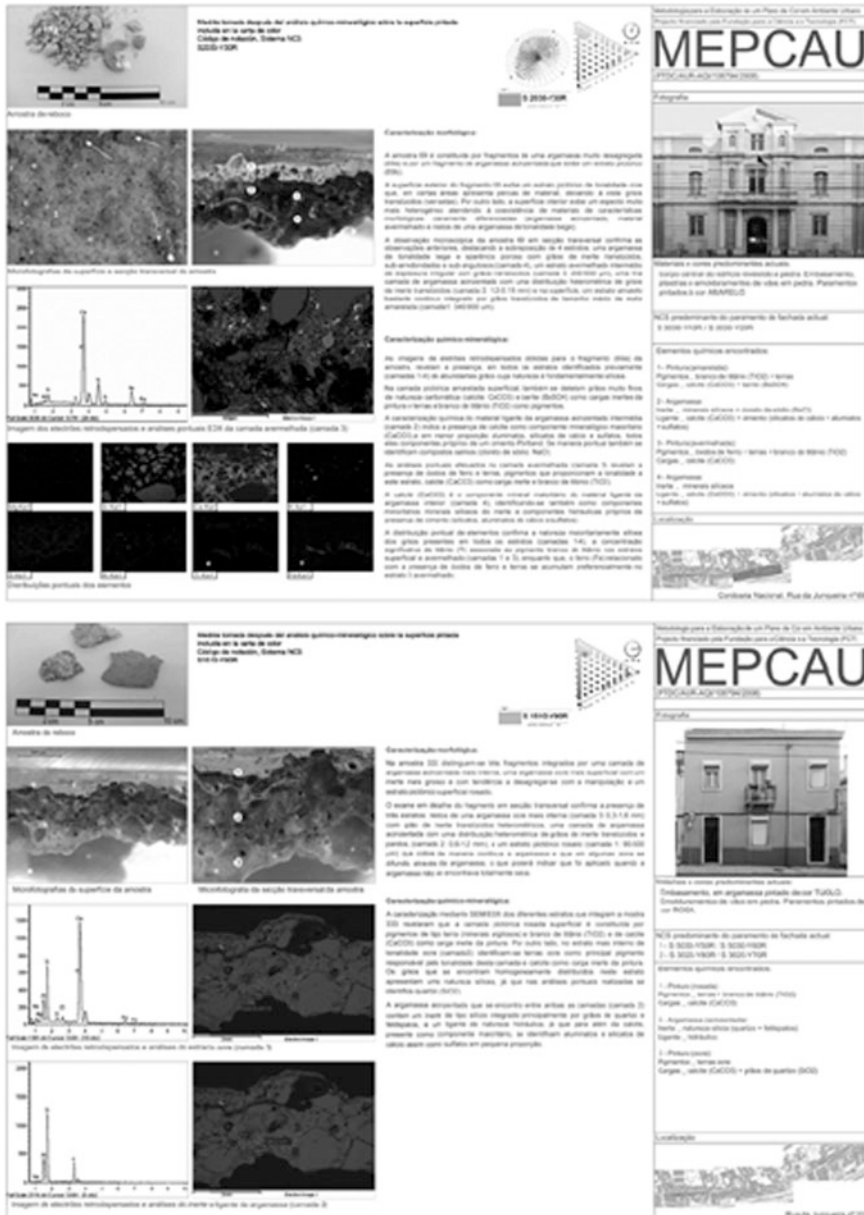


Fig. 4 Two case studies carried out on buildings in the *Rua Junqueira*

Junqueira (Fig. 6), which contains information, both about the procedures used and the results of the study for each of the architectural types and its historical provenance (down to a particular period), or ownership, giving rise to a recovery process of the Urban History of this very unique area.

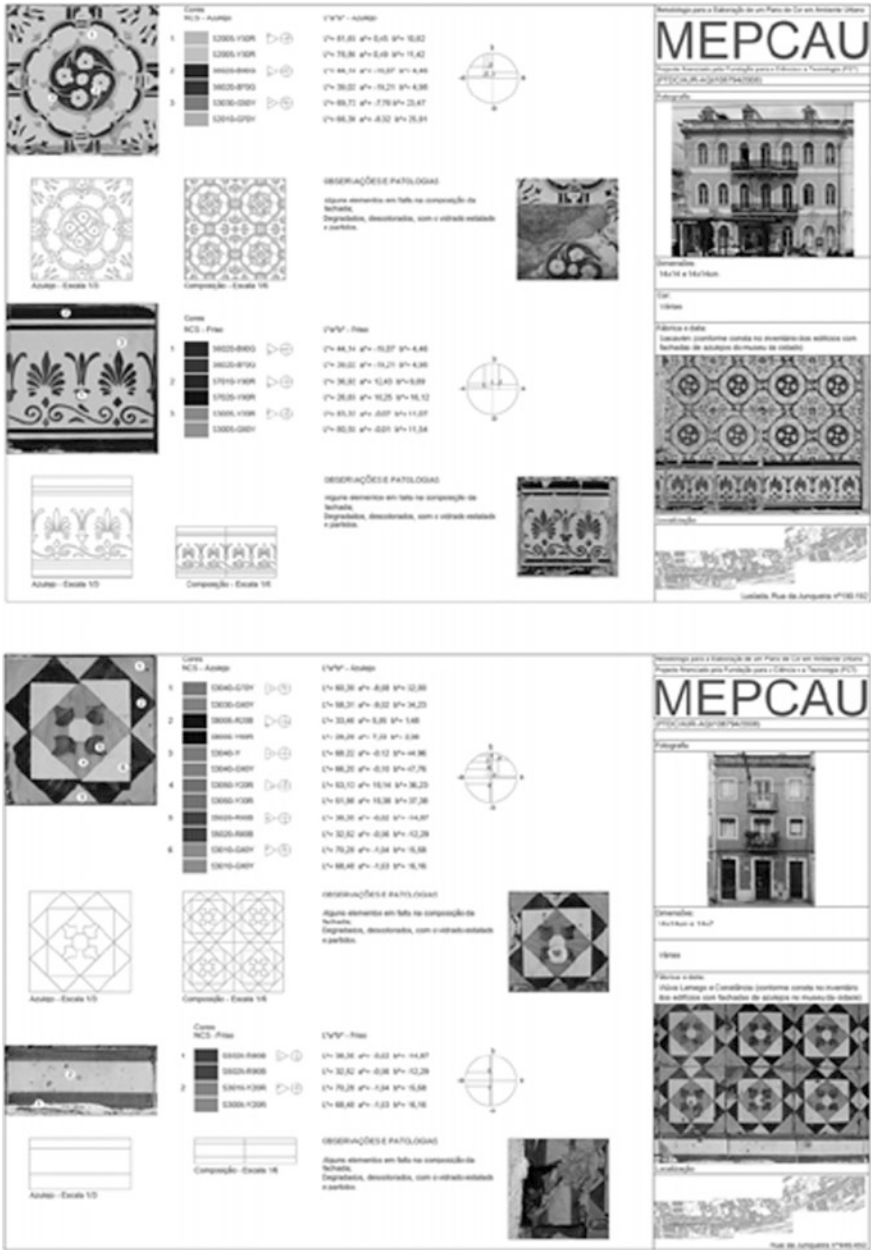


Fig. 5 Two ceramic case studies in the Rua Junqueira with the rich ornamentation of their façades



Fig. 6 “Cor da rua da Junqueira”—The Colour of Rua Junqueira—, which was published following the project

The book provides a very useful tool for cultural heritage recovery from the personal perspective of the local inhabitants. The publication includes a CD-ROM that is compatible with personal computers providing access to the typology worksheets and the corresponding study for each and every one of the buildings that are part of the *Rua da Junqueira*. Its purpose is that of a practical manual aimed at local citizens, with which they can easily and effortlessly access the records for each building, and can browse how best to carry out any intervention, in the interest of recovering the historic urban landscape of this very particular street in Lisbon, encouraging as such its preservation. And the web page (www.ruadajunqueira.wordpress.com) that was created is used to disseminate information over the Internet about the processes used and the results of the study and where, like both the book and the CD-ROM, the neighbours of the *Rua da Junqueira* are able to receive clear and concise information about how to tackle a restoration project of their own building using the analysis worksheets that contain comprehensive data about the composition of the external parameters and the Colour Chart generated as part of the study. In this way, anyone, whether it be a researcher or a neighbour from Rua itself, can freely, in an easy and user friendly way access the data. As for the final dissemination channel, it should be noted that the whole of this research project, the study and the results, both scientific and professional, have been presented at important scientific forums, at a number of different scientific congresses and seminars, both nationally internationally.

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Author Biographies

Ángela García Codoñer University Lecturer in Graphic Expression in Architecture at the Polytechnic University of Valencia (UPV). Her field of research is colour recovery in heritage architecture. She is currently the Editor of the Graphic Expression in Architecture Magazine, the result of lectures given at the UPV as part of the degree and Master's programme taught at the School of Architecture, and has been the doctoral advisor for a number of different doctoral theses, two of which were recipients of Special Achievement awards. She has managed a variety of research projects, both national and international.

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Ana Torres Barchino Ph.D. in Fine Arts from the Polytechnic University of Valencia (2000) and a Full Professor since 2005. Her preferred field of research is the colour and design of architectural spaces. Member of the Colour Research Group in Architecture and Design. She lectures as part of the Master’s in Restoration of Architectural Heritage and the Master’s in Design Engineering at the UPV.

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Jorge Llopis Verdú Ph.D. in Architecture from the Polytechnic University of Valencia (1997) and Full Professor at the University since 2000. His fields of research are the analysis of architectural graphics and the documentary analysis of heritage architecture. Member of the Colour Research Group at the Institute of Heritage Restoration at the UPV. Lecturer at the School of Architecture and as part of the Master’s in Restoration of Architectural Heritage at the Polytechnic University of Valencia.