



AIC2016 INTERIM MEETING COLOR IN URBAN LIFE: IMAGES, OBJECTS AND SPACES

SANTIAGO DE CHILE, OCTOBER 18-22, 2016

BOOK OF PROCEEDINGS

(with USB Flash Drive enclosed)

Edited by Ingrid Calvo Ivanovic

Published by Asociación Chilena del Color

Santiago de Chile, October 2016

This publication includes lectures, papers and posters presented in AIC2016 Interim Meeting, Color in Urban Life: Images, Objects and Spaces, held in Santiago de Chile, 18-22 October, 2016. This meeting is organized by the Chilean Color Association, more info in: www.aic2016.org

AIC2016 Interim Meeting, Color in Urban Life: Images, Objects and Spaces; Book of Abstracts / Editor: Ingrid Calvo Ivanovic – 1st. Ed. – Santiago: Asociación Chilena del Color, 2016.

ISBN: 978-956-14-1967-4

Arte – Diseño

Editor: Ingrid Calvo Ivanovic

Graphic Design: Ingrid Calvo Ivanovic & Magdalena Stephens Manríquez.

Assistant in Edition: Lina M. Cárdenas.

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Printed in Santiago / Impreso en Santiago.

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Analysis of the Urban Landscape to Integrate Architectures with a Visual Impact that are in Close Proximity to Historic Monuments

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ABSTRACT

This study is part of a research project whose aim is to put forward innovative architectural solutions to improve the visual integration of architectures with an impact on the urban landscape, evaluated in a virtual reality environment through immersion. Some buildings in Valencia historic city center have been taken as case studies. In this paper we discuss certain architectural resources that have been useful to develop different landscape integration proposals based on three aspects: a historiographic study of the image from the past, a study of the current formal reality and a study of *other similar contemporary examples*.

1. INTRODUCTION

We have taken certain architectures from the historic centre of Valencia (Spain) as case studies, located in a designated area of protected urban landscape, close to two historic monuments of cultural interest: the Serranos Gate, part of the former high-medieval city walls (1398), and the former Carmen Convent and the Santa Cruz Church (1281) in the Carmen district of the city. The buildings and facilities considered to be visual blights require treatment that ranges “from regulations that require the treatment of visible dividing walls, to not being in compliance with building regulations”. The buildings in question are used as communal housing and must be substituted as they are not in keeping with aesthetic characteristics of their surroundings, either because of an excess in the volume built, surplus number of floors, presence of unsuitable elements on their façades or other aesthetic matters. The replacement of these dwellings will take place once the buildings have come to the end of their useful life, something which will not happen for a considerable time, given that we are talking about buildings that were constructed a relatively short time ago. Furthermore, these replacements have very complicated economic and social consequences. We therefore believe that it is feasible to find simpler architectural solutions to the buildings whose façades look out onto public spaces that will improve the appearance of these dwellings and facilitate a certain degree of landscape integration. We will turn to the visual possibilities of colour and material in an attempt to fragment the form to enable it to better blend into its urban surroundings.

2. METHOD

A series of photomontages were created, each with a different architectural solution for the same building to be shown to experts in this field, as well as to the general public. Based on their feedback, we are able to evaluate the degree of satisfaction for each proposed solution and indicate certain design criteria that will facilitate the

(1) “Special Plan for the Protection of areas surrounding Assets of Cultural Interest: the Serranos Gates, Santo Domingo Church and Convent, Museum of Fine Arts (former S. Pío V Convent), El Temple Monastery, Palace of Justice, former Carmen Convent and Santa Cruz Church, and the Condes de Cervellón Palace” (PEP-08)

work of the architect when undertaking urban landscape interventions, which from a heritage perspective, are particularly sensitive. The buildings are observed within a virtual reality environment using 360 sphere panoramas. The ability to direct one's gaze in any spatial direction undoubtedly improves the sense of immersion compared to static photographs that are generally used in Public Participation Plans (PPP). Successfully integrating buildings with a visual impact requires the careful observation of the site together with a thorough understanding of it from a formal, cultural and historical perspective, even more so if we consider that urban landscapes in which we are going to work are conditional on the extent to which one wants to draw attention to the historical monument found there. Obviously, architectural integration should not abandon the use of the visual languages that are particular to contemporary architecture or the latest tendencies and developments.

In our work, we have found certain architectural resources that would facilitate integration based on three aspects: a historiographic study of the image from the past, a study of the current formal reality and a study of other similar contemporary examples.

2.1 A historiographic study

The historiographic study allows us to learn what aspect an urban area had at the historical moment in time to which the protected historic monument belongs. It enables us to discover the formal attributes that relate to the local culture, which could well be significant: historical events, iconic elements for the collective imagination, etc. (Serra et al. 2016b).



Figure 1. a) Actual condition of the building with visual impact. b) Photograph of the same corner with the previous building during the great flood, Valencia, 1957.

2.2 The study of current formal reality

The study of the current formal reality involves an analysis of the formal attributes that relate to the type of architecture: height of the building, proportion, size of recesses, seriation, hierarchy, ornamental elements, building materials used, textures, etc. (Serra et al. 2016a).

Some authors distinguish three components of landscape: physical, biotic and human (Escribano et al. 1991) and define the visual properties of the landscape, understood to be the “set of features that visually characterize a landscape or its components and which can be used for analytical or differentiating purposes”. Said characteristics refer to “colour, form, line, texture, scale, dimension and spatial character” (Español-Echaniz 1992). In any case, the colour and materiality are considered to be first-rate aesthetic constraints and are acknowledged as such in international literature, as well as in the subsidiary regulations of most municipal councils (Cañas-Guerrero 1994).

2.3 The study of other similar contemporary examples

The study of other similar contemporary examples involves analyzing questions that relate to the aesthetic language to be used: realism, abstraction, elements of the immediate reality, etc. A vast number of architects have developed interesting colour interventions to establish a dialogue between architecture and its immediate surroundings. Not only do they take into account the similarity between the colours, but also in particular the laws of harmony and the ability of colour to cut across the composition of the architectural form: the perception of geometry, dimensions, visual weight, texture, etc. The early experiments of Albers, later taken up by others such as Swirnow (1992), showed that colours tend to draw closer or draw apart when placed right next to each other, creating optical illusions which become significant when applied to the surroundings (Billger 1999).

Some of these examples could be described as in coherence with architectural form. In this group and highly acclaimed among the contemporary projects are the works of Friedrich Ernst von Garnier, with colour interventions in already constructed buildings in order to contextualize them within the landscape, without necessarily recurring to the use of mimesis. Also of particular note was the project by Grete Smedal (2009) in the municipality of Longyearbyen (Sweden), virtually at the North Pole, where a study of the colours of the landscape over the course of the year and the participation of the local community were key elements of the proposal.



Fig 02. a) Façade with historicist trompe l'oeil. b) Mirror Façade reflecting the Sta. Cruz church

Some others are incoherent with the architectural form, with no formal relation with the building. In this trend we find not figurative works, which do not refer to any recognizable pattern, generally being a composition with spots, shapes and colours that each viewer can interpret individually. Of the many artists working in this field we should highlight Maya Hayuc, Nuria Mora and Sten&Lex. Some others opt by realistic figurations to emulate a trompe l'oeil, such as Mehdi Ghadyanloov, or other anamorphisms (Felice Varini, Aakash Nihalani, Boa Mistura). And of course there are still outstanding colour proposals on architectures playing with distortion and movement (Fernando Peixoto or Carlos Cruz Díez).

There is also noticeable a tendency towards ecological solutions, with different specific results. In one hand using environmentally friendly materials (recycled, with low carbon footprint, etc.), which provide a natural/ecological aesthetic to link architecture with its environment. On the other hand a remarkable increase of vertical garden solutions, with real green to smooth the visual impact of tough buildings.

4. CONCLUSIONS

Three different studies have been pointed out to reach innovative architectural solutions to improve the visual integration of architectures with visual impact on the urban landscape: a historiographic study of the image from the past, a study of the current formal reality and a study of other similar contemporary examples. With these three resources, we have developed specific solutions for some buildings located in the historic city center of Valencia, and which can be assessed in a 4D virtual reality environment through immersion. An application called “LandArch: evaluación del impacto visual” is available to download for free in AppStore and users may observe the sceneries in their own personal devices, also with the help of Google Cardboard glasses.



Fig 03. a) Garden Façade b) Façade with Brandhosrt Museum solution (Sauerbruch Hutton)

ACKNOWLEDGEMENTS

Research was made possible thanks to the financial support for R&D from the Valencia Regional Government's Department of Education, Culture and Sport.

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(2) Full 3d panoramas: <https://pcabazos.webs.upv.es/plz/p00.htm>, <https://pcabazos.webs.upv.es/plz/p01.htm>

(3) Video available at: <https://youtu.be/wY9hjar2dgs>

(4) Full 3d panoramas: <https://pcabazos.webs.upv.es/plz/p10.htm>, <https://pcabazos.webs.upv.es/plz/p03.htm>

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(2) Full 3d panoramas: <https://pcabazos.webs.upv.es/plz/p00.htm>, <https://pcabazos.webs.upv.es/plz/p01.htm>