

## Environmental Colour Design: A Survey on Colour in Urbanism and Architecture

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### ABSTRACT

Divided into seven themes—Methodological and Analytical Approaches to Urban Colour; Colour in Revitalization Projects; Colour and the Image of the City; Colour of Cities; Colour in Vernacular and Contemporary Architecture; Colour in Specific Building Types; Theoretical Reflections on Colour in the City—this paper gathers together insights from different points of view to create a theoretical and practical basis for the study of the relationship between colour, urban environment and well-being. These different approaches (concepts, methods and design) have been extracted from various AIC papers authored by members of the Study Group on Environmental Colour Design and highlight how to solve similar problems in different ways. Further, on the occasion of the 35<sup>th</sup> anniversary of the study group, it is interesting to note that the concept of ‘environmental design’ has undergone a change in semantics since its initial appearance in the 1940s. Originally, and in succeeding decades, it encompassed processes of human interaction with surrounding natural factors (e.g., geographical, solar, climatic, etc.) through the built environment, such as master plans, architecture, landscape architecture or product design. It was also used to refer to aims and results in the applied arts and sciences in the creation of immediate man-made environments, such as interior design and lighting design. More recently, the term also implies ecological and sustainable design efforts including nature-friendly strategies as well as technologies for producing energy that are self-generating and non-polluting. The paper explores thus the role of colour in the urban environment. Conducted on an international level the paper shows how the ways that colour is defined in different cultures not only depend on geographical and climatic factors, but foremost on social, economic and political aspects and symbolic meanings.

**KEYWORDS:** environmental colour design, practice, methodology

### WHAT IS ENVIRONMENTAL COLOUR DESIGN?

Poignant answers to the question ‘What is environmental colour design?’ can be gleaned from various papers that have been submitted over the years between 2002–2011 and which have been published in the AIC Proceedings and are available at the AIC website [1]. The themes range from discussing theoretical and methodological approaches to presenting artistically oriented ways of how colour is applied within urban space, architecture and interiors. The subjects range from exploring the specificity of a single aspect of colour to investigating elements and complex effects of colour in natural and built environments. Other papers focus on presenting key results of systematic research projects carried out in colour laboratories. Conducted on an international level the exchange shows how the ways that colour is defined not only depend on geographical and climatic factors, but foremost on cultural, social, economic and political aspects and meanings.

The following paper summaries have been extracted from various papers dealing with the treatment of colour in cities, architecture and urban environments and in which different approaches to solve similar problems have been highlighted.

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## METHODOLOGICAL AND ANALYTICAL APPROACHES TO URBAN COLOUR

As to colour concepts and methodology, in 2005 Michel Cler et al. presented methodologies that promote an understanding of the relevance and significance of chromatic expression important to the development of contemporary urban culture and architecture (AIC 2005: 405–408). In 2009 Tatiana S. Semenova talked about ‘Basics of the Moscow Colour Design’ which surveyed her impressive work as Director of the Moscow Colour Centre. The city’s colour policy embraces a whole range of different aspects from building façades to street pavements, urban furniture as well as vegetation, advertisements and the festive colours of ephemeral events. The colour schemes are conceived for historical buildings as well as contemporary architecture and recently for the glass towers of the prestigious business district (AIC 2009, 263). In 2007 Jin-Sook Lee discussed studies on guidelines for environmental colour for the new administrative city Sejong in Korea to be constructed by 2030. Colour planning considering structural features, function and shape of buildings is a new area. As well, individual buildings are not considered to be an important component of the city structure but rather are perceived in their relationship to the overall structure of the city (AIC 2007: 235–238; 371–374). In 2004 María Mercedes Ávila and her team from the Colour Institute in Córdoba carried out colour projects for urban design in which colour is a tool of expression and communication that requires knowledge of some elemental factors, such as daylight, colour appearance, function, information devices, psychological and technical features in order to act on the contemporary city (AIC 2004: 253–256; AIC 2005: 1577–1580). In 2011 Lino Sibillano presented the paper ‘The Colour Space of Zurich. An Exemplary Research on Colour, Texture and Light in Urban Space.’ The five-year research project was conceived and directed by Haus der Farbe, Professional College for Colour Design in co-operation with the city’s Department of Urban Planning and CRB/NCS Colour Centre Switzerland. Genuine research methods were applied to compile empirical data that were analysed and evaluated. As well, colour cards of historic or typical buildings of the city were conceived in order to provide a basis for representing the colours of existing buildings as information to be provided to architects, colourists, craftsmen, property developers and homeowners to better understand architectural colours of the past and conceive colour concepts for the present and future (AIC 2011: 70–77). Isabel Braz de Oliveira et al presented the results of a research project aiming to explore the city’s colours and develop a methodology for the elaboration of a colour plan for Lisbon (AIC 2011: 297–300).

## COLOUR IN REVITALIZATION PROJECTS

The city district of La Boca in Buenos Aires is well known because of its colourful buildings. Emilia Rabuini carried out comprehensive research to study the transfer of colour culture from one country to another in the late 19th century and was able to reconstruct the colour palette of buildings that today belong to the patrimonial identity of the urban landscape of La Boca (AIC 2008, 73). A team including Ana Torres Barchino was investigating the applications of colour and shaping of the urban Carmen District in Valencia with the aim of restoring the chromatic characteristics of the historic centre (AIC 2005: 205–208). A team including Zélia Simões aims to improve colour as a planning instrument in relation to the revitalisation of Paiã-Brandoa, a squat neighbourhood in the city outskirts of Lisbon (AIC 2008, 141). Michel Cler et al. presented the methodology of the Atelier Cler, which aims to rediscover and revitalise the sense of place and memory of a site and its community. This framework applies to orchestrating the appearance or manifestation of light, texture and colour for a maximum harmonious effect (AIC 2005: 1581–1584). Silvia Rizzo discussed a case study of 16th century frescoes on the façades of Genoa palaces and the role of time in affecting colour in the architectural environment. As well, she is concerned with the revitalizing role of colour and its communicative, symbolic, aesthetic and social impact, in particular in relation to the city of Genoa’s historic name ‘Genua Picta’ and the polychromy of the city’s buildings facing the sea (AIC 2003: 362–364; AIC 2005: 447–450).

## COLOUR AND THE IMAGE OF THE CITY

María Mercedes Ávila and José Luis Caivano and their respective teams studied Latin American cities to explore how colour design could be enhanced in order to foresee harmful consequences of urban development. They also assessed available technical and human resources that could be applied to facilitate positive decisions and the construction of the city image within the framework of a sustainable environment (AIC 2008, 163). José

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Luis Caivano and Mabel A. López inquired into how colour can be a privileged element in arguing about the visual image of the city. In particular, they explored how black, white and red are rhetorical means of persuasion in mass communication (AIC 2003: 341–346). María Mercedes Ávila argues that advertising in urban environments brings about a chromatic invasion that compromises the space and structure of a city (AIC 2005: 209–212). Cristina Boeri presented the first results of a research project on the chromatic complexity of the contemporary city of Milan. She thereby developed a method of reading space and urban colour components based on perception (AIC 2011: 277–279). Verena M. Schindler inquired into the concept of ‘green’ as a growing contemporary phenomenon in urban planning and building practices and theories and how ‘green’ is affecting the chromaticness of the built environment (AIC 2008, 136).

### COLOUR OF CITIES

Karin Fridell Anter discussed the colour history of Stockholm’s architecture. Since the city’s founding in the 13th century when it was built with unpainted timber, over the centuries it has gradually developed into a very colourful city (AIC 2008, 178). Helena Soares and Maria João Durão presented the city of Porto, its chromatic harmonies and cultural identity (AIC 2008, 39). Maria João Durão analysed spatial aspects of colour and light as part of the architectural and pictorial image of Venice (AIC 2011: 66–69). Malvina Arrarte-Grau studied the integration of colour and architectural form as a mode of colouring. She explored buildings’ exteriors in contemporary Lima in 1987 showing that there is a tradition and diversity of colour in architecture (AIC 2008, 48). Investigating the development of colour in the city of Buenos Aires (with the exception of La Boca), Verónica Conte demonstrated the significance of the colour grey in the popular imagination in relation to the recent infusion of neighbourhoods with colour through new projects. She observed professionals are generally more sceptical than project developers about this change, but perhaps through ongoing interventions future citizens of Buenos Aires will be re-imagining their city not as grey, but as vibrantly colourful (AIC 2011: 352–355). Latika Khosla defined the environment as a combination of interacting factors including the geological landscape, exteriors of man-made structures, interiors of dwellings as well as retail, business and leisure places of hospitality. She raised the question: ‘Can we determine the essence of some key cities in India, i.e., a sense of the city itself, through colour mapping?’ (AIC 2009, 410)

### COLOUR IN VERNACULAR AND CONTEMPORARY ARCHITECTURE

As to vernacular architecture, studying colour traditions in Polish wooden architecture, Justyna Tarajko focused on multi-coloured country cottages with various popular geometrical, floral or animal motive decoration (AIC 2005: 439–442). Concerning the European development of folk dwellings Demyan Voytovych presented an overview of factors related to architectural polychromy depending on historical and geographical aspects. He pointed out that unique regional attributes that had been formed over centuries are completely disappearing on account of industrialisation, urbanisation and globalization (AIC 2011: 804–807). Colour in contemporary architecture was studied by Verena M. Schindler who argued that since the mid-1990s the meaning of colour in Swiss architecture has been extended through the refined sensibilities of Swiss architects. This impressive development has been underscored by the highly selective eye of contemporary artists working in parallel or in collaboration with architects, as well as the emerging consciousness of special clients (AIC 2007: 215–218). Fiona McLachlan explored the transformative capabilities of colour and light in architecture through selected projects of two contemporary architecture firms. Drawing on an interview with Ben van Berkel and Caroline Bos of UNStudio and considering the work of the American architect Steven Holl, the paper argues that the metaphysical properties of reflected colour can be seen as instrumental in the synergic design of architectural space (AIC 2011: 58–61).

### COLOUR IN SPECIFIC BUILDING TYPES

As to residential buildings, Jin-Sook Lee carried out a study of the colours used for exteriors in residential areas. Considering colour as being one of the main components determining the overall image of the cityscape, she thinks that residential areas are the most basic kind of urban space and the most intimate expression of human habitation (AIC 2003: 251–255). Michel Cler et al. presented the colour approach of the New Town of La Croix-

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Bonnet, which is a developing district of Bois d'Arcy in France (AIC 2007: 219–222). Considering industrial buildings Michel Cler et al. presented Atelier Cler's 35-year process of applying Chromatic townscape to the Industrial Park of the French Ain area near Lyon. The aim was to synthesise the colour appearance of the built and the natural environments (AIC 2005: 405–408). Elisa Cordero discussed a case study of the Collico industrial neighbourhood in the city of Valdivia where the colour yellow was used on façades through a transfer of colour culture initiated by German colonisers in the 19<sup>th</sup> century (AIC 2008, 44). Commercial architecture is explored in a study of colour design in the Amphawa Canal community using NCS colour notation that was presented by Piyanan Prasarnrajkit (AIC 2011: 674–677). Jin-Sook Lee presented a project aiming to establish guidelines for the application of colour to exteriors in order to coordinate colour development in a commercial district (AIC 2005: 455–458). Verónica Conte observed that after Argentina's economic crisis in 2001, the Buenos Aires city district of Palermo Viejo metamorphosed from a residential neighbourhood into a commercial district filled with designer shops and restaurants. A significant change of colour accompanied this change of use. Building façades became brighter and more colourful resulting in a very attractive urban development (AIC 2010: 274–277). Educational buildings were discussed by Elisa Cordero. She described two educational buildings of the Universidad Austral de Chile that stand out due to their bio-climatic technology and daring architectural colour design (AIC 2004: 243–246). Michel Cler et al. presented the colour design of the Atelier Cler for the Lamentin High School Campus located in Guadeloupe in the French West Indies (AIC 2006, 116). Silvia Rizzo showed her colour concepts for nursery schools in Genoa, as well as the aim of European Centres (Children's Museums) to explore colour as a way to stimulate open-minded communication (AIC 2008, 87). Markets were a theme in Silvia María Estevez's paper outlining the history of the domestic food environment, its evolution and trends (AIC 2010: 278–281). María Mercedes Ávila and her team explored the expressive and communicative functions of food sold in urban space, e.g., at outdoor markets, that help to create an enjoyable experience of urban space (AIC 2010: 170–173). Ana Torres Barchino, Juan Serra Lluch et al. aimed at an in-depth understanding of the colour composition of the contemporary St. Caterina Market building (2004) in Barcelona that was conceived by architect Benedetta Tagliabue and featuring a poetic reinterpretation of the colours of a food stall (AIC 2010: 178–181). Elisa Cordero focused on the significant role of colour in the Feria Fluvial Market located on the river's edge and in the very centre of the city of Valdivia. Rhythmically transforming the site into a festival of colours, the market's past and present existence play a vital part in the society's everyday rituals (AIC 2010: 174–177). Juan Carlos Sanz and Verena M. Schindler presented 'Environmental Colour Design and Synaesthesia in Food-Related Contexts' investigating genuine synaesthetic and pseudo-synaesthetic phenomena with respect to colour and food environments (AIC 2010: 345–348).

### THEORETICAL REFLECTIONS ON COLOUR IN THE CITY

Galen Minah carried out a comparative study of colour and pattern using aerial views of cities and overviews of oriental carpets (AIC 2002, 34). In another contribution by the same author, he argued that blackness, whiteness and chromaticness are formulas for high visibility in the modern city. Especially concerning the colour understanding of buildings within western European culture but also in most cities of the world, he thinks significant buildings have been treated architecturally as figural elements in a contrasting background urban fabric (AIC 2003: 26–30). A third study presented by Minah included colour constellations that contribute to the process of a place becoming legible through sequential views of the city from a pedestrian's point of view. To demonstrate this graphically, he designed an experience map to show the city viewed holistically in plan with notations that represent colours, patterns and building envelopes from a street level view (AIC 2005: 401–404). In a project on greyness and spatial experience, Ulf Klarén and Karin Fridell Anter studied visual qualities of grey/greyish colours in interior and exterior spaces on-site (AIC 2009, 219). Another paper presented by the same authors discussed the concept of neutral grey and investigated the preconditions for perceiving neutral greys in different situations. Neutral grey is defined as being only similar to black and white, not to elementary colours. The question was: 'Is neutral grey only an abstraction?' (AIC 2009, 236)

### REFERENCE

[1] *AIC Proceedings*. Available online, <http://www.aic-color.org/congr.htm>.