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AIC Study Group on Environmental Colour Design:
AIC 2021 Workshop

Abstracts

Variability of Colour
in natural, built, and sociocultural environments

1 September 2021

Chairs: Yulia A. Griber, Verena M. Schindler

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Date: Wednesday, 1 September 2021

Time: 1:15 PM – 2:45 PM (13:15–14:45) CEST

Duration: 90 Minutes

Theme: The Variability of Colour in natural, built, and sociocultural environments

Programme:

1. **Zena O'Connor** "Identifying and managing the factors that impact variability between specified and perceived color"
2. **Pablo Manyé** "Variability of sociocultural colour associations related to the environment in Northeastern Brazil"
3. **Monica Kuo** "East vs. West: How color is perceived differently in psychological and physical environments of different cultures"
4. **Kazim Hilmi Or** "Colours of face masks used during the Covid-19 pandemic and social messaging"
5. **Stig Evans** "London's largest painting"
6. **Beichen Yu** "The urbanism of colour: A perspective to re-evaluate the use of saturated colours in urban and landscape design"
7. **Jimena Vanina Odetti** "Study of the colors of a tourist city, from the urban cultural construction perspective: The case of Puerto Vallarta, Jalisco, Mexico"
8. **Francesca Valan** "Environmental harmony: New relationships between space and colour"
9. **Doreen Balabanoff** "Observations about the phenomenology of colour in Nature"

Theme description:

In the SG ECD Workshop at the AIC2021 we would like to discuss the variability of colour. How does colour, its appearance and its materiality, dramatically change over time? And why? We also would like to draw attention to the variability of colour in natural, built, and sociocultural environments. How does colour dramatically change the environment over time? A building can change its chromatic appearance depending on trends or urban policies. For example, the Winter Palace in St. Petersburg, an important symbol of political power, has been repeatedly repainted over the centuries including its colour being radically changed from brick red to turquoise more than ten times. Aiming to initiate discussion about how colour changes its appearance as well as how the environment changes with the application of colour, topics to be addressed will not only entail the impacts on colour through the implementation of administrative policies and regulations, but also the effects via time of day and seasons, ageing, light, artworks, fashion, changing beliefs, meanings, sociocultural factors, and digitalization.

Format: Participants of the SG ECD Workshop are requested to present their work in the PechaKucha storytelling format. PechaKucha website: <https://www.pechakucha.com>

SG ECD website: <http://www.aicecd.org> > projects

Identifying and managing the factors that impact variability between specified and perceived color

Zena O'Connor

PhD, Design Research Associates, Sydney, Australia
zena@zenaoconnor.com.au

Abstract

Variability of color in the built environment can occur in response to trends and urban policies, as well as its appearance, the latter of which may be due to the impact of time, ageing and deterioration of colored surfaces. Another form of variability arises in respect to the difference between specified building façade color and the subsequent perceived color once specified color is applied in situ. As a result, specifying façade color in the built environment can be a problematic process for the following reasons. Firstly, it is known that façade color can influence judgements about building size and congruity. In addition, client aims as well as aesthetics and preference are also relevant when specifying building façade color. However, there are a number of additional factors that influence the variability between specified color and the resulting perceived color in situ. Research indicates that these differences between specified color and perceived color can vary in hue nuance and/or tonal value by up to 20%.

This paper explores the factors that impact specified color when applied in situ and which cause perceived color to vary from specified color. Aside from the complexity of both color and human perception and evaluation of color, these factors include: Color undertones in paint; the impact of contextual simultaneous contrast; light reflectance issues as well as the impact of reflected color; the impact of textured surfaces on façade color appearance; the impact of ambient lighting and the role of aspect (that is, the direction a building façade faces).

Knowledge of the factors that underpin variations between specified color and subsequent perceived color can inform and influence the façade color scheme development process. This is particularly important for projects of a commercial, industrial, and large residential nature where client aims are often paramount and variability in color can impact issues beyond aesthetics. This paper also discusses strategies that can be employed to manage and potentially mitigate factors that may cause variability between specified color and perceived color. These strategies are discussed with reference to projects in Sydney that illustrate the issues arising from variability between specified building façade color and perceived building façade color.

Keywords: *perceived color, inherent color, specified color, facade color, color perception*

Variability of sociocultural colour associations related to the environment in Northeastern Brazil

Pablo Manyé

Prof. Dr. Coordenador de Atividades Complementares de Artes Visuais, Centro de Artes Reitora Violeta Arraes de Alencar Gervaiseau, URCA - Universidade Regional do Cariri, Ceará, Brazil
pablomanye@gmail.com ; pablo.manye@urca.br

Abstract

Eleven years ago, I came from Spain to teach at the University of Fortaleza (Unifor) in the city of Fortaleza in Northeastern Brazil. Here I implemented a colour teaching program. One, in particular, was adapted to children age 4 to 6 years from communities at social risk. In one of the sessions, I asked them what they associated with the colour blue. The majority response was "with death." When I asked why, they told me that the people who died went to the blue sky; therefore, all the dead members of their families were there. Another reason is that when a little girl or boy die the child's body is placed in a coffin that is often painted in a saturated cerulean blue. When I asked the colour of the sea, the answer was unanimous: "Green."

Since then, I have not stopped teaching in different areas related to colour, nor have I stopped learning with students. Some are professionals coming from areas such as engineering, architecture, or marketing, as well undergraduate and graduate students at different universities, and especially children of various ages.

Nowadays I am a professor at the State University of Ceara, located in the state capital. The state is known as the "land of light." That motto (arising from José do Patrocínio) refers to the fact that Ceará was the first state to abolish slavery in Brazil. The direct reference between light and freedom evokes Plato in this relation between light and truth.

This part of Brazil is also among the areas with the highest solar radiation (Atlas Solarimétrico Brasileiro. TIBA, C. et al, 2000). The colours are therefore intense and full of nuances, and also, very rich in references due to being a state of encounters between Africans, Indigenous and European people, among other ethnic groups, creating singular associations of colours with feelings, ideas, or fears. These can be especially surprising for someone who comes from European countries or others, as in my case, born in Uruguay.

I would like to present to our group my experience and, if possible, to have an engaging discussion about the sociocultural variability of colour associations related to the environment, different perceptions of colour in this part of South America, and also articulate some associations that have caught my attention in these last ten years of teaching colour in Brazil.

Keywords: *Ceará, Brazil, colour associations, sociocultural environments*

East vs. West: How color is perceived differently in psychological and physical environments of different cultures

Monica Kuo

Head Department of the Department of Landscape Architecture and Environmental Planning, Chinese Culture University, Taipei, Taiwan
monica.kuo.1216@gmail.com

Abstract

As a professor that incorporates practical planning and design as well as academic theory and application but does not have any professional training in “color”, when discussions of “color” appear in the physical environment, nature, wilderness, densely populated cities, and even when it appears in literature, painting, poetry, philosophy, and psychology, etc., it would particularly arouse my interest. Looking back at past international studies on colors in the field of chromatology, they mostly focused on the optics, physics, chemistry, and even the technical verification and equipment accuracy of color, which has indeed made important contributions to the empirical research in its precision science.

However, in the greater contact aspect between people and the environment, such as the impact of the colors between natural and man-made facilities in the environmental landscape, as well as the greatly varied holistic effects created by the interaction of color and natural weather landscapes, background climate, and natural landform due to seasonal or timing differences, it comprises the aesthetic experience and another multi-dimensional effect between people and the environment that contains the sense of beauty and empathy along with association and comfort.

Color is not just an event, nor is it just a single field. It has become another symbolic brand or intangible asset of a certain region. Through the classical Chinese poetry and classical Japanese literature created by the ancients, the color changes in the environmental situations can be deeply explored and become a kind of intuitive color essence, and then further develop the touch of the four-dimensional spatial emotion base on the time sequence, just like the “Keelung Zhengbin Fishing Harbor”, “Taroko National Park Shanyue Suspension Bridge”, “Yangmingshan National Park Datun Bridge”, and “Taipei Civic Boulevard Overpass” color scheme program the author hosted and participated in. Although it is only a thin layer of color alteration, it imperceptibly transformed the life and cultural perceptions and emotions of the citizens into a more diversified and multi-layered element. In addition, natural changes such as the changes in the seasonal weather landscape, the life cycle of flowers and plants, etc., have also touched the different temperaments of mankind, and reached another level of spiritual cleansing and transferal.

As a designer and an interdisciplinary researcher, I look forward to sharing these experiences with everyone, and continuously refine color/aesthetics/literature/art/philosophy... and other multi-dimensional value positioning through alternative exchanges.

Keywords: *color perception, color psychology, intrinsic physical color, sense of intuition, sense of scrutiny*

Colours of face masks used during Covid-19 pandemic and social messaging

Kazim Hilmi Or

PhD, Eye Surgeon, Hamburg, Germany
hilmi.or@gmail.com

Abstract

Shortly after the outbreak of Covid-19 pandemic in early 2020, it has been shown that it has been a droplet infection of virus. So it became mandatory all over the world to wear a sanitary face mask over long periods of a day, especially where social contacts could be. So social distancing (about 1,5 to 2 meters), wearing masks and hand hygiene became mandatory. Until that time there has been no appropriate masks for small droplets including viruses. There were only medical masks (especially for surgeons and medical staff) on the market. They had three different layers to block bacteria, but they were open on all four sides. They were mostly used during surgeries and for the protection from bacterial infections. Their efficacy in virus infections are limited, because they are not designed for that. On the other hand, there were some professional and relatively expensive masks (FFP2 / KN95 or FFP3 masks) used for construction workers or other similar professions where very small particles get into the air, which may damage the lungs of the workers. They were much more effective against droplets, but their production has been relatively low, so it has been very difficult to find them to buy. At the beginning of the Covid-19 pandemic there were little amount of relatively effective masks on the market. At that time people started to sew their own masks from available textile materials. A lot of mono- or multicoloured handcrafted masks were created at that time. It has been socially very important, because humans look first at the face of the social partner. The mimicry plays an important role in human social interaction (more than spoken words), but they couldn't be seen when wearing masks. But the colours and figures on the mask could reflect some part of the intended social message. After some time the production of medical and FFP2 and similar masks increased and they become obligatory in most countries. At first they were all blue as for medical masks (colour of health) and white for FFP2 (colour of cleanliness). Later on, medical masks were produced also in other colours (pink, violet, etc.), and FFP2 masks in all colours including black. They could be worn as accessory to clothing and send powerful messages. At the time of pandemic the colour of the masks became a tool of social messaging, which couldn't be given through facial expressions.

Keywords: *colours of face masks, pandemic, message, socio-psychological environments*

London's largest painting

Stig Evans

Artist, Brighton, UK
stignet@hotmail.com

Abstract

The presentation will describe how Artist Stig Evans and Architects KPF collaborated on a large-scale central London building development.

Central to the project was the consideration of the relationship between the building and its immediate environment. The building, One Crown Place, sits on the fringe of the city of London and the presentation will outline how the building was developed to meet the specific needs of its location. The presentation will outline the initial concepts to final structure and discuss the importance of embracing colour in its final scheme. It will consider the incorporation of distinctive colours to the building and how it was implemented to the facades, both the exterior facing terracotta and the interior facing glass facades. The presentation will go on to focus specifically on the coloured glass facades of the building, and how the commission offered an opportunity to investigate ways in which colour can be used to modify and change architectonic space. It will consider how visual and spatial shifts, produced by changes in environmental conditions, can create interesting and mutable architectural spatial variations on a building's façade.

The presentation will explore the visual impact, in structure and also in colour, enabling the artist to develop themes and interest from his studio-based work as a painter and his work as a fine art picture restorer into an architectural context. Processes from both disciplines will be described and the reasoning behind their application and relevance in this framework will be expanded.

The presentation will describe how each façade was treated as an individual, large-scale canvas and how colours and panels were selected. The article will also reflect on how historic 'cloud studies' by British painter John Constable were used during the research phase as a conceptual and aesthetic foundation to explore the effects of weather patterns and seasons and also to give it an historical context relating to the history of the site.

The presentation will go on to discuss how the final colour swatches were translated into the much larger glass panels and the technique used to apply the colour to the outside of the glass to create London's largest painting.

Keywords: *colour, application, building facades, cloud studies, built environment*

The urbanism of colour: A perspective to re-evaluate the use of saturated colours in urban and landscape design

Beichen Yu

ESALA, The University of Edinburgh, Edinburgh, United Kingdom
aimeeyu24@gmail.com

Abstract

Colour is crucial when thinking of the city. It is not difficult to imagine the difference between living in an all-pink, Disney-style city and a city based on material colours. Colour can play an essential role in how we understand, experience, and even interact with urban spaces. Yet only a few notable discussions have addressed or informed the use of colour from the perspective of urbanism. Previous studies tend to guide the use of colour in environmental colour design by providing geographical references and principles of colour harmony. Geography and colour theories are fundamental perspectives for articulating the story of colour in the urban environment, but the other side of the coin – the urbanism of colour – is still missing.

The strong links between colour and urban issues already exist. Individuals or groups often use distinct colours to communicate more concisely and explicitly in the city. For example, the distinct yellow and blue colours depict the story about the brand IKEA, its Swedish identity, the global trends, which left marks in cities worldwide. Using saturated colours to make a strong claim in urban spaces is common in advertising. However, this trend seems to have expanded to the field of design. My research focuses on urban and landscape design projects characterised by saturated colours between 2000 and 2018. By analysing and categorising the use of colours and features of cases, the study finds that more and more urban and landscape designs have re-evaluated the role of colour and adapt to this strategy of using distinct colours.

This presentation aims to show how different groups, be they small or large, local or global, engage saturated colours in the design of urban public spaces to fulfil their interests through representative cases. Moreover, how their motivations of using colours and consensus in the meanings of colours shaped the colour design. By revealing different groups and their modes of using colours identified in my research, I intend to emphasise the significance of the urbanism of colour by highlighting the role of colour as an active factor that constantly interacts with social, cultural, and economic life in the urban environment.

Keywords: *colour, saturated colour, urbanism, urban environment, urban and landscape design*

Study of the colors of a tourist city, from the urban cultural construction perspective: The case of Puerto Vallarta, Jalisco, Mexico

Jimena Vanina Odetti

PhD Docente Investigador, Líder del Cuerpo Académico Diseño e Innovación, Instituto Tecnológico Mario Molina, Unidad Académica de Puerto Vallarta, Puerto Vallarta, Mexico
jimena.odetti@vallarta.tecmm.edu.mx

Abstract

Through a chromatic study of the city of Puerto Vallarta, Jalisco, Mexico, the phenomenon of color is approached as an element of experience and urban cultural construction of a tourist destination. An analysis of the relationships in the generation of objective and subjective color palettes of the city of Puerto Vallarta is carried out as axes that allow studying the color values identified by the natives, inhabitants, and tourists, to reveal their knowledge, experience, multiplicity, and perception as results of the urban cultural construction of a tourist city. It begins with the studies of urban color. A link is made between the methodologies for the analysis of tangible color with the studies of urban anthropology and urban imaginaries, to relate the objective and the subjective of color in the city of Puerto Vallarta, from the reality and the cultural construction of the protagonists of a city that is consolidated as an international tourist destination. The study is developed from the generation of objective color scales, which include the analysis of the urban image colors, consisting of the facades, urban furniture, and the landscape context, as a particular setting of a tourist destination to the study of perceptions subjective chromatic, also expressed in scales that reveal the urban cultural constructions developed by the natives, inhabitants, and tourists. For this, the starting point is the studies from urban anthropology and the contributions that from urban imaginary to the analysis of the color of the city already mediated by the perception of natives, inhabitants, and tourists, with a view to studying the configuration of scales of subjective color arising from certain aspects of the urban experience and the cultural construction of a tourist city. The approach to the study of color in this article starts from the objective and the subjective and is related to the study of the colors of the city from the material and immaterial perspective. From here, the relationships between the subjective aspects of color that come from images, experiences or visual stimuli and the perceived material reality are raised. This materiality of the objective color becomes the starting point for the study of subjective colors as a product of the urban cultural construction of a tourist city.

Keywords: *architecture, color identification, color management, urban color, color and culture*

Environmental harmony: New relationships between space and colour

Francesca Valan

Francesca Valan Studio, Milan, Italy
francesca@francescavalan.it

Abstract

Environmental harmony is the balanced relationship created between the historical and chromatic identity of a place and the openness to the future of new buildings.

Colour can be used to experiment with new languages, to define new spatial harmonies that go beyond the purely chromatic values of balance and establish a dialogue between present and past, interior and exterior spaces.

Environmental harmony defines rules for preserving the chromatic identity of a place: the task of maintaining the relationship with the past (historic iconic colours) is assigned to Colour Presence, while the task of updating the spatiality of a place by redefining visual paths is assigned to Colour Distribution.

An example of the application of environmental harmony is the Sistema Fortezza project, a corpus of prescriptions created on the basis of a preliminary architectural project (meta-project), in view of the redevelopment of the Fortezza da Basso in Florence.

Fortezza da Basso is considered a masterpiece of Renaissance architecture. It was designed by Antonio da Sangallo the Younger and built between 1534 and 1537. In 2010 the Municipality of Florence approved the recovery and redevelopment plan of the complex.

The project aims to enhance and consolidate the Fortezza's function as an exhibition and conference centre, and to allow the city to make new use of the complex by integrating it with the urban fabric and making public use of its squares and its green spaces.

The transformation of the Fortezza da Basso includes the construction of new pavilions, conceived as eco-sustainable buildings, digitised and morphologically transformable to the needs of the third millennium.

Through an innovative meta-design procedure, the Municipality of Florence has drawn up a body of preliminary design standards called the "Fortezza System", which will allow solutions to vary as interventions on individual buildings. The Fortezza System is organised in sheets of prescriptions preparatory to final design and includes a specific section dedicated to CMF design.

The CMF design project is divided into two sections: preliminary analysis (colour presence) and suggestions for the use and combination of colours, materials and finishes (colour distribution).

The proposed talk will present this project to highlight the functional and chromatic evolution of a historical building and its relationship with the environment.

Keywords: *environmental harmony, colour presence, colour distribution*

Observations about the phenomenology of colour in Nature

Doreen Balabanoff

OCAD University, Toronto, Canada
doreen.balabanoff@gmail.com; www.ocadu.ca

Abstract

Goethe suggested 'empathic observation' as a valuable approach to understanding natural phenomena – returning to the things themselves...foundations of the phenomenological approach to perception. Maurice Merleau Ponty and James J. Gibson utilized the ideas from the biologist Jakob von Uexküll to develop their phenomenological approaches that explored mind-body-environment as interwoven, inseparable. As an artist, designer, and researcher, I am interested in all of these ways of thinking, and utilize them in my work. Understanding the world can occur using scientific instruments, to our great benefit; but embodied experience – in the moment and over many moments – shows us repetitious patterns that govern our awareness and being, but that are never the same...and these are embedded within us in a way of knowing that is profoundly universal and personal.

I have long observed a view of Lake Huron (Ontario, Canada, one of the Great Lakes) from a cliff overlooking it, and from the shore. It is a remarkable, constantly changing phenomenon, and in response to recent photo postings online, I was asked about the colour...which is incredibly varied from moment to moment, day to day...and I had a pretty easy time describing what causes the change of colour. Not from a series of tests, but from years of watching it, noticing things.

In this presentation I will show images of the lake I know very well, and talk about how its colour shifts and morphs and works...with some observations about why things happen. And how my temporal and extended experience of empathically observing this body of water influences what I know, and how I understand the world.

Keywords: *Lake Huron, empathic observation, Goethe, embodied perception, environmental colour*

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