



AIC 2022 Toronto, Canada

SG ECD Celebrating 40 Years (1982-2022)

Study Group on Environmental Colour Design

International Colour Association

<https://www.aic2022.org/program/study-groups/>

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SG ECD

<http://www.aicecd.org>

<https://www.aic-color.org/sg-ecd>

AIC 2022 Toronto, Canada

Meeting of the AIC Study Group on Environmental Colour Design (SG ECD) - online (English)

Celebrate with us!

In 2022, the AIC Study Group on Environmental Colour Design (SG ECD) is celebrating its 40th anniversary!

Date: Wednesday, 15 June 2022, 10:45 am - 12:00 pm Eastern Time (ET)

Presenters:

1. **Verena M. Schindler**, Chair SG ECD: *Introduction*
2. **Galyna McLellan** (Brisbane, Australia): *The controversy of monochromatic architecture in multicultural subtropical contexts*
3. **Fiona McLachlan** (Edinburgh, Scotland): *Colour explorations: On becoming conscious*
4. **Clino Trini Castelli** (Milan, Italy): *Toronto RGB Interior*
5. **Lynnette Postuma** (Toronto, Canada): *A Living Canvas*
6. **Changying Xiang, Barbara Szybinska Matusiak** (Trondheim, Norway): *Colour preference study for façade-integrated photovoltaic design*
7. **Kazim Hilmi Or** (Hamburg, Germany): *Proposals for interior architectural colour design for ophthalmological low vision patients*
8. **Pía López-Izquierdo Botín** (Madrid, Spain): *Freud's preconscious and conscious and the process of communicative and emotional colour skills*
9. **Cath Carver** (London, United Kingdom): *Colour As A Portal*
10. **Ralf Weber** (Dresden, Germany): *Unconscious and conscious colour in architectural design*
11. Q&A

Theme: The Future of Environmental Colour Design: The Conscious and the Unconscious

Theme description: The theme of this ECD meeting, which will be held during the AIC 2022 "Sensing Colour" in Toronto, is the future of environmental colour design with a special focus on the conscious and the unconscious. Conscious environmental colour design is a mental process based on rational thoughts and colour concepts designed for interior spaces or exterior environments such as cities, villages, public or semi-public urban spaces, and architecture. Colour practice based on the conscious awareness of a site at a given time participates actively to the physical application of colour in a real-world context. The unconscious mind, however, reveals the emotional and atmospheric quality of a space. Unconscious colour impacts people's perception and feelings, and evokes moods, atmospheres, ambiances, memories, and affective ties to a place. The transition between the conscious and the unconscious can be dichotomous or gradual. These kinds of explorations can lead to new theoretical and methodological approaches relevant to the future of environmental colour design.

Format: Employing a presentation format called PechaKucha, which means "chit chat" in Japanese, each presenter is allotted 20 slides with 20 seconds comment per slide, for a total of 6 minutes & 40 seconds.

Registration: <https://www.aic2022.org/attendees/registration/>

Participation in the study group meeting is free for all registered AIC 2022 attendees.

Contact: ecd.studygroup@yahoo.com



SG ECD

<http://www.aicecd.org>

<https://www.aic-color.org/sg-ecd>

Galyna McLellan (Brisbane, Australia)

Dr Galyna McLellan is an architect, design educator and researcher. She graduated in Architecture from Prydniprovsk State Academy of Civil-Engineering & Architecture, Ukraine. She obtained her Master's in Urban Design and PhD in Architecture at the Queensland University of Technology, Brisbane, Australia. She has extensive experience teaching colour and architectural design at the university level. Her research interests include colour design in urban environments, colour design education, subtropical urban design and wellbeing.

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The controversy of monochromatic architecture in multicultural subtropical contexts

This presentation discusses the rapid emergence and controversy of monochromatic architecture in the contemporary subtropical city using Brisbane, Australia, as a case study.

The black colour owned significance in many historical and present cultural contexts. The twenties-century architecture proves the alluring emergence of the black and black-white buildings as a notable phenomenon on a global scale. Architects can use black for historical, practical, symbolic or formal reasons. Some designers perceive black buildings as majestic, filled with a special aura and complementary to their surroundings. However, architectural colour is critical to any urban environment and must be seen through a broader socio-cultural lens. The black and black-white palettes can inspire designers but create controversy with cultural associations of the local community rewriting the intended design message.

Central to this presentation is the discussion of black and black-white dominance in the design of high-rise residential buildings in subtropical West End, Brisbane. The intent is (1) to explore theoretical roots, historical use and contemporary assumptions of black architecture; (2) to examine how the professional assumptions about black facades correlate to local social values and subtropical lifestyle preferences; (3) to raise awareness of the critical reception of black architecture by the local multicultural community and the tension between cultural meaning of colour and the architectural ambitions. What is the lesson of the monochromatic intervention in a traditionally vibrant and colourful urban precinct? The presentation concludes that the universally applicable colour schemes, including monochrome black and black-white, can be prominent in individual or iconic building design but are not always appreciated in residential precincts with established preferences for polychromatic architectural expressions. In the subtropical context, the colour palettes of high-rise residential should deliver the desired aesthetic qualities and enhance the place's identity rather than promote the stylistic sophistication of blackness.

Fiona McLachlan (Edinburgh, Scotland)

Fiona McLachlan is Professor of Architectural Practice at the University of Edinburgh and is an architect and educator. She teaches architectural design and professional practice and is a past Head of the Edinburgh School of Architecture and Landscape Architecture (ESALA). She is the author of *Architectural Colour in the Professional Palette* (2012), which was stimulated by the work of her own architectural practice—E&F McLachlan Architects—over a thirty-year period, and a co-author of *Colour Strategies in Architecture* (2015). Her third book, *Colour Beyond the Surface: Art in Architecture* will be published by Lund Humphries in 2022.

<https://www.eca.ed.ac.uk/profile/prof-fiona-mclachlan>

Colour explorations: On becoming conscious

The talk follows a group of architecture students in their investigation of colour. Immersed in an 11-week long architecture studio- Architectural Design: Explorations- the students embark of a process of unlearning what they think they know about colour, then begin to build an intellectual framework for colour design as they learn to experiment, research, observe, reflect and document. Through an iterative process, the unconscious is plundered, as contingent experiences, social and cultural constructions are reconsidered. Consciousness is developed through this process of enquiry- they become more aware of the affective role of colour in the environment.

A student project 'The Palette of Escapism', by three third year architecture students at the University of Edinburgh is used as supporting evidence. Their proposition came out of a sense of loss caused during the pandemic when six major music venues lay empty and the shared experience of being in an audience was sorely missed. How does colour contribute to the atmosphere and sensory experience of music performance in each place?

Their investigation focussed on a series of perceptual thresholds, from the homogenous and muted stone facades of the city, through the marble and brass foyers and into the soft envelope of each auditorium. Their work evidenced these atmospheric shifts in colour and texture at each transition that are experienced unconsciously by the public, in the periphery of the mind and vision, but play a part in changing the mood of the concert goer as they escape into the music.

Clino Trini Castelli (Milan, Italy)

Clino Trini Castelli, designer, artist and design theorist, lives and works in Milan. Known for being the initiator of CMF design, Castelli introduced extensive thinking into the renewal of visual arts languages applied to industrial products, pursued through the tools of Primary Design. Unlike traditional compositional methods, since the 1970s he has focused on meta-projects and on the more intangible figurative aspects, such as material and colour, light and sound, enhancing the virtues of a sensory approach to art and design. He has received significant European, American and Japanese awards for his work, including two ADI Compasso d'Oro Awards (Associazione per il Disegno Industriale).

<http://www.castellidesign.it>

Toronto RGB Interior, 1989

Natural light from above is the light of the sky, which follows complex physical as well as emotional principles. It tends to create its own unstable atmospheric, seasonal, and meteorological identity and even change in colour temperature from sunrise to sunset, giving way to a rich perceptual discontinuity. I address this theme in my 1989 project for home automation in the "RGB Interior" in Toronto, where, together with the additive colour, the great novelty is the extension of the project to the main different aspects of the sensory experience. With the aim of eliminating the cavernous feeling of that space that had windows and skylights on one side only, I adopted a solution based on special timing devices called circadian, able, in other words, to automatically equalize the natural light on one side with the light emitted by artificial sources placed on the opposite side without windows. Compared to this technology, the current availability of controllable LEDs from 2500K to 7000K opens up new possibilities. What I call the new "circadian paradigm" is a scenario in which natural light and artificial light will no longer be antagonistic elements (even on the market) but will contribute to achieving a new balance in the environmental quality of interiors. Visual effects and conscious illusions, together with perceptual effects experienced in a much more unconscious way, are both an integral part of the design idea of this innovative interior.

Lynnette Postuma (Toronto, Canada)

Lynnette Postuma | MLA OALA
CSLA, Member of the Colour
Research Society of Canada

She is a Canadian landscape
architect who dabbles in public
art. She enjoys watching how
people interact in public space
and is motivated by a desire to
contribute to city-building
through art and design.

www.lynnettepostuma.ca

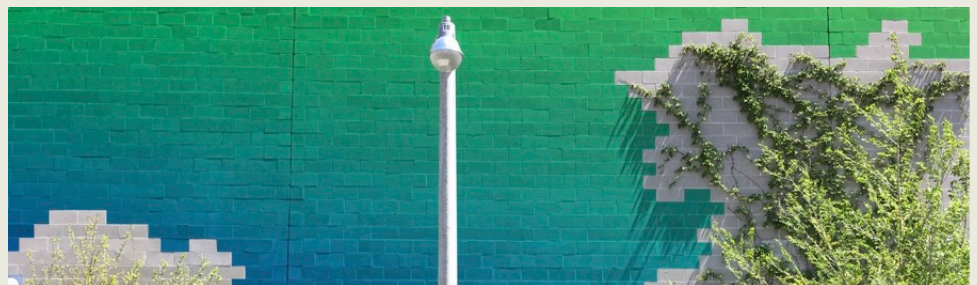
A Living Canvas

This journey into colour was a risk. It challenged a comfortable context of black and white, within the world of line drawings and the all-black wardrobe of architecture circles.

The conscious effort to explore colour took the form of a large scale mural called <Gradation>, located on a popular recreational path in the west end of Toronto and across from a major transit hub. The goal was ambitious: to transform a banal building facade through a series of successive colour changes - painting all 14,508 cinder blocks in distinct variations of blue and green - in order to better integrate the building into its landscape and create a mural as complex as its surroundings.

The vegetation adjacent to the 12,000sq' wall played a key role in the overall design for the mural. The paint formed an outline of the existing trees, shrubs and vines growing on the wall in order to become a "growth marker" or means to monitor the progress of vegetation over time. The intent of the artwork was to allow the viewer to visualize the perpetual - but nearly imperceptible and unconscious - process of green growth.

In this presentation, the artist will describe the concept development including rationale for colour selections, the challenges of creating an artwork based on living organisms and the unexpected dynamics of creating an artwork within a dense urban environment.



**Changying Xiang,
Barbara Szybinska Ma-
tusiak
(Trondheim, Norway)**

Changying Xiang is a PhD Research Fellow in the Faculty of Architecture and Design at Norwegian University of Science and Technology (NTNU), a member of the Light & Colour Centre, NTNU, and a member of the strategy research group NTNU Energy Team Solar, a member of the Energy & Environment Group, NTNU, a Professional Member of International Solar Energy Society. In 2018, he joined the Faculty of Architecture and Design at NTNU as a 100% employee. His current research focuses on developing architectural methods for facade integrated photovoltaics in the urban context - a promising way to apply clean energy in the built environment and to reduce GHG emissions for sustainable development. Besides, he also takes teaching duty in the department for Master level courses AAR4620-Architectural Design with Light and Colour, AAR4850-Light and Lighting.

<https://www.ntnu.no/ansatte/changying.xiang>

Colour preference study for façade-integrated photovoltaic design

Façade-integrated photovoltaics (FIPV) is a promising solution to harvest solar energy in the built environment and to reduce Greenhouse Gas (GHG) emissions. To support architects for the FIPV design, various photovoltaic (PV) products with different colour technologies are emerging. However, advanced colour studies of FIPV from the architectural perspective are still limited. There is a need of practical colour strategies supporting the coloured FIPV application. This study explores the colour design of FIPV systems for high-rise residential prototypes derived from the urban context of the city of Trondheim in Norway. The local colour palette of Trondheim, pixelization colour method and colour harmony concept (monotonous hue concept and complementary hue concept) were employed to develop a series of coloured FIPV proposals. An international online aesthetic survey was conducted, mainly to compare people's preference to three different types of colour combinations: façades and balconies integrated with monochromatic FIPVs (type A), alternatives with partial balcony FIPVs in complementary colours (type B), and alternatives with total balcony FIPVs in complementary colours (type C). From the total of 152 participants, half of them were 'experts' with at least one year working experience in design or colour fields. The evaluation results showed that the type B designs were the most preferred ones (chosen by 38%-45% participants), closely followed by the type A designs (chosen by 31%-38% participants) and then type C designs. The expert groups shared similar preference profiles as the general trend, while the non-expert group tended to rate type C proposals higher than the type A proposals. This indicated that non-experts may be more open to a higher level of colour complexity than trained experts. This study provided novel knowledge for FIPV application from the colour design aspect. Colour harmony concepts have been tested for FIPV designs. The results can serve as valuable references for architects, urban designers and the PV industry.

Kazim Hilmi Or (Hamburg, Germany)

Kazim Hilmi Or is an eye surgeon. He is an individual member of the International Colour Association (AIC). His interdisciplinary work focus on ophthalmology, optics, illumination, colour perception, low vision, forensic sciences, and photography. One of his research aims is building bridges between disciplines.

Proposals for interior architectural colour design for ophthalmological low vision patients

Interior architectural designs are made mostly for people with normal vision and visual perception. In all countries there are many diseases which may decrease different visual perception parameters. The patients end up in low vision with a residual functional vision. The visual perception losses in different diseases happen mostly over months and years. Not only the loss percentage of visual function parameters is different in a single patient, but also their intensity changes over time in a single patient. Visual changes in low vision patients are mostly not stable losses. Patients have also individual temporal changes. The individual residual visual function may involve changes in visual acuity (blurry vision), visual field, contrast and contrast sensitivity, illumination perception, colour perception, among other factors. All visual function changes have also an effect on colour perception. For example, blurry vision may decrease colour perception the way that colours are seen less saturated, although the medical colour perception pathways may be still intact. On the other hand, losses in the visual function may be decreased where colour vision is not affected as heavily as the other visual functions. The use of colour characteristics in interior design and furniture may enhance the perception in each individual low vision patient. All the effects of colour combinations and levels of saturation may be used for the individual needs of each individual low vision patient in an individual way. Colour vision changes in neurologic vision cause mostly a decrease in the yellow-blue colour axis, so for interior design red-green colour combinations should be preferred. In ophthalmological diseases it is the other way around. In low vision patients with changes in colour vision, special designs with red, green and blue colour use may be helpful. In low vision patients without colour vision changes contrasting colours use (for example, blue versus yellow) is indicated.

Pia Lopez-Izquierdo (Madrid, Spain)

As an architect specialized in colour, I have dedicated my research to understand what we see, the contents of perception and how colour affects us and the influence it exerts in space. Because architecture is the medium where colour reveals itself in the most significant and powerful way, becoming a means to create highly complex experiences and to apply them in healthcare spaces, education, and cultural spaces.

<https://studiolopez-izquierdo.com>

Freud's Preconscious and Conscious and the Process of Communicative and Emotional Colour Skills

Merleau-Ponty (1945), argues that knowledge of the world takes place through the body as the realm of cognitive mechanisms and the body as lived and experiential structures. The first actor of this cognition is the beliefs associated with colour and contained in the cognitive background of man (Varela et al, 2011) and the second actor is the sensorimotor system.

The emotional nature of the perceptual experience of colour (Hita Villaverde, 2001) derives from the parallelism between this experience and the cognitive process of emotion (Becks, 1956; Ellis, 1962; Brioles, 2003). Therefore, the nature of the beliefs associated with colour are those that will determine its perceptual experience in space and are contained in the cultural systems (Hutchins, 1995) related to its manipulation.

The Chinese Five Elements Philosophy gathers social and cultural cognition, on which medicine and acupuncture are grounded. They depict the world as constituted by five elements, each one corresponding to a season, a natural element, and a colour. Fernandez (2000-2017) undertook research portraying this system as a process of complex thought called "the Constructive Mind". The key point is that the Constructive Mind cycle corresponds to a Constructive Emotion cycle attached to it.

In my research I propose that when entering a coloured space with one of the five colour concepts (Lopez-Izquierdo, AIC 2021), all these cognitive contents are preconscious in the Freudian sense, housed on a blind level, although always using them. Thus, colour is acting as the Psychic impulse that pushes colour contents from the preconscious to consciousness, triggering highly complex communicative and emotional issues (Fernandez, 2000) into space. My claim is that due to the social genesis of the preconscious as De Lucas (1990) proposes, the enriched Five Elements contents are universal since they refer to natural environments, and therefore people everywhere are influenced in the same way, although without being consciously indicated.

Ralf Weber (Dresden, Germany)

Ralf Weber, PhD is Senior Research Professor of Architecture at the Faculty of Architecture, Dresden University of Technology and heads the University's Color Competency Research Center and Color Teaching Collection that functions as the nucleus for interdisciplinary studies of color in the sciences and arts. He received his Diploma in Architecture at the University of Dresden and thereafter he practiced architecture, amongst others in the office of Frei Otto/Rolf Gutbrodt and taught at Stuttgart University before moving to Berkeley, CA, USA in 1980 where he received a PhD in Design Methodology, Environmental Psychology and Aesthetics in 1986. He taught for several years at UC Berkeley before he returned to Dresden after the reunification of Germany, when he was appointed Chair for Spatial Design in Architecture. He has held visiting professorships in Ankara, Kent State, Florence, and Potsdam and at the School of Architecture, University of Oregon in Eugene. He is the internationally published author of the books: On the Aesthetics of Architecture; Aesthetics and Architectural Composition; and Thema Material as well as numerous articles bridging the fields of architecture, aesthetics and psychology.

https://tu-dresden.de/bu/architektur/die-fakultaet/einrichtungen/sam_farbenlehre/html_box

Unconscious and conscious colour in architectural design

This short and very personal presentation demonstrate difficulties of finding an appropriate color for my house by being torn between an instant „unconscious“ preference and a rational decision making process.

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