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## COLOUR GAMES IN ARCHITECTURAL SPACE

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### GRY Z KOLOREM W PRZESTRZENI ARCHITEKTONICZNEJ

#### Abstract

The article discusses different ways of implementing architectural colour games in space. The author has selected examples of “colourful games” in which colour composition plays a key role. Colour is also presented as an element of the conscious, oftentimes dynamic game, played between architect and spectator. Finally, colour becomes the game itself, part of the experiment in space – architectural performance, as well as a representative of the “fun and game” aesthetic.

*Keywords: colour in architecture, playing with colour, architectural colour games*

#### Streszczenie

W artykule zaprezentowano różne sposoby realizacji architektonicznych gier z kolorem w przestrzeni. Przedstawiono przykłady „gier w kolorze”, w których zestawienie barw odgrywa główną rolę w kompozycji budynku. Kolor jest też prezentowany jako element świadomej, nierzadko dynamicznej gry architekta z widzem. Kolor wreszcie sam staje się grą, przedmiotem czasowego eksperymentu w przestrzeni – architektonicznego happeningu i reprezentantem estetyki „gry i zabawy”.

*Słowa kluczowe: kolor w architekturze, gra z kolorem, gra kolorów*

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## 1. Introduction

According to the famous Le Corbusier definition: “*Architecture is a learned game, correct and magnificent, of forms assembled in light*” [12 p. 80]. Then he writes that: “*the task of the architect is to liven up surfaces covering those forms*” [12 p. 89]. Colour, Le Corbusier’s “*daughter of light*” [10 p. 224], is nowadays one of the most important elements of that game. Colour games in the architectural space can be played in many ways. They may be an **architectural “(inter)play of colours”**, when colour plays the key role in the whole building’s composition. Colour can also be used by architect as an element of **the conscious game with the spectator**. Finally, **colour can become the game itself**, a part of the experiment – an architectural happening in the space or a **representative of the “fun and games” aesthetic**.

## 2. Architectural colour games – (inter)play of colours

In contemporary architecture, many **architects play “colour games”**. In such games colour is no longer treated as an additional element. On the contrary, it plays the main role, becoming an integral part of the overall composition [17]. Due to the use of modern building materials such as glass and plastics, with an almost unlimited range of available hues, it is possible to create polychromatic façade schemes of durable colours. Nowadays, participants in “colour games” have a much broader range of means than ever before. Therefore, they have the capability to create various colour-material effects that were impossible to achieve in the past. **A carefully planned (inter)play of the colours, lights, textures and shapes, as well as their connections and interpenetration, intensify the emotional and aesthetical experiences of the observer**. Not surprisingly, architects playing colour games usually operate with many – even over a dozen – diverse colour hues. Consequently, they successfully refute the popular thesis of the need to minimize the number of façade colours to three or four in order to obtain an overall harmony. In the kaleidoscope of rainbow-coloured objects, a worthy place is occupied by the laureate of the Mies van der Rohe Prize (2007) – MUSAC (Museo de Arte Contemporáneo de Castilla y León, designed by Luis M. Mansilla + Emilio Tuñón (León, Spain, 2004). One of the most recognizable elements of the building is its glass façade of 42 different shades, inspired by the colours of the 13<sup>th</sup>-century stained glass window in the Cathedral of León: “La cacería” (Hunting) [11 p. 122]. A unique interplay between colour and sound was implemented by the Kell Muñoz Architects in the Edcouch-Elsa ISD Fine Arts Center (Edcouch, Texas, USA 2007). The rhythmic and chromatic patterns of the supergraphic that wraps the exterior façade are delivered from the popular folk song – *corrido* “La Máquina Amarilla” (The Yellow Machine), so that each sound is parallel to the particular colour shade in the mural [24]. **The colourfulness of nature, translated into architectonic language, is often an inspiration for polychromatic “colour games”**. Two projects for covered market spaces in Spain can be mentioned to illustrate this. Santa Catherina Market in Barcelona by EMBT (Miralles/Tagliabue, 2005.) is fully covered by a dynamic, undulating roof of ceramic tiles. Its pattern of hexagonal, pixilated elements in 67 vibrant hues refers to the colours of the fresh fruit and vegetables sold in the market [14 p. 148]. The building of the largest Catalonian flower market Mercabarna-Flor (WMA – Willy Müller Architects, Spain 2008.) in Sant Boi de Llobregat is characterized by a multicoloured, striped façade. Its 22 colour shades in connection with the irregular geometrical pattern of the big

zinc roof, which covers the whole market, imitate the aerial view of cultivated flower fields [14 p. 158]. Colourful flowers also inspired Casanova+Hernandez Architects in the project of the Ceramic Museum and Mosaic Park, created in Jinzhou in China for the 2013 World Landscape Art Exposition. The Museum's façade, as well as the park benches and pavement, are covered with the same kind of ceramic tiles whose extensive colour palette was obtained from local flora [2]. The polychrome of the roof at Frank Gehry's Museum of Biodiversity in Panama (2014) is not only connected to the colours of the traditional architecture of the local villages, but also reflects the shades of the tropical environment of the location [1].

Almost **at the opposite end of the "multicoloured game" is situated "one colour game"**, where one leading hue, which plays a very special role, is used in the composition. This is the case in the Didden Village – the superstructure of a brick building in Rotterdam (arch. MVRDV, 2007). All the elements of the building and its surrounding terraces are covered with bright blue polyurethane coating. The building, like a blue crown on top of the dark, brick volumes of the neighbouring houses, creates an unusual, contrasting spatial accent [7 p. 180]. **Oftentimes "one colour game" is played based on corporate colours** in some way identified with a company through a logo or other element of colour recognition. As an example two objects connected with the Italian Ferrari automotive company will be presented. The Museum Casa Enzo Ferrari in Modena (Future Systems, Jan Kaplicky, SHIRO STUDIO/Andrea Morgante, 2012), is entirely dedicated to the company founder: Enzo Ferrari (1898 – 1988.). The roof of this futuristic structure, the form of which is intended to resemble the air intake vents on the bonnet of a car, is covered with aluminium panels in a bright, yellow hue called *giallo Modena* (Modena yellow). This hue, selected in the past by Enzo Ferrari as the background in the company logo, was at that time one of the most popular hues for Ferrari cars [4]. Another example is the colour of the roof of Ferrari World – a theme park dedicated to Ferrari (arch. Benoy, Yas Island, Abu Dhabi, 2010) that alludes to today's most popular and recognizable colour for these sport cars – "Rosso Corsa" (racing red) [18].

### 3. Colour as an element of the game played with the spectator

Based on the psychological effects of colours, the architect can regulate the colour climate of the building in a planned and consistent way, thus introducing the viewer into the desired mood. Therefore, it is possible to direct colour effects consciously, to elicit specific emotional associations, as well as to create colour compositions conducive to different feelings, according to the specific function of a building. Through the choice of a specific set of colours, the architect always attempts to create a certain relationship with the building's user. Consequently, **colour becomes an element in the conscious game played with the viewer**, a specific actor in the architectonic performance. The characteristics of that game may be very dynamic, especially when the spectator changes the colour perception by changing their position in space. This is the case in the small, experimental building of the Chameleon Cabin (arch. White Arkitekter, Sweden 2013), the perception of which from the outside changes – like a chameleon – and its façade appears sometimes white and sometimes black, depending on the observer's point of view [3].

New media-façade technologies give special opportunities to transform static façades into colourful spectacles. The technologies used in "mediatecture", as it's known, enable design of large façade surfaces through a wide spectrum of elements, as: illumination, text, graphic

animations or videos in various resolutions. Additive colour mixing of the three basic RGB colours of LED lights enables all the colours of the rainbow to be obtained. The ability to change the colour of the façade in controlled sequences allows for visual effects of architectural colour in motion. The “mediatization” of a façade offers potential for the development of an emotional connection between the observer and the architecture and attracts special attention to the actual static constructions [16]. Thanks to the visual union between colour, light and media techniques, it is also possible to create interactive games between the viewer and the building, when the colour changes are dependent on actions undertaken by the users. Then **the colour becomes a reflection of a real game**. An example of such colour use is the Munich Allianz Arena (arch. Herzog + de Meuron, 2005). Its outer cover can be illuminated independently in three colours: white, blue and red. The intention of the architects was to change the stadium colour during football matches depending on the club colours of the respective local team – FC Bayern (red) or TSV 1860 (blue) or white when the local German team plays [22].

#### 4. Colour as a game

**Colour is treated by some architects as a game per se.** Thus, the architectural space becomes their field of artistic and chromatic experiments. From 2012 onwards, in the Portuguese town of Agueda, the installation “Umbrella Sky Project” is performed by Sextafeira Produções under the motto “*add colour to your life!*”. From June to September, during the festival of local culture AgitÁgueda, hundreds of multi-coloured umbrellas are suspended over the city streets, turning them into a colourful spectacle while protecting residents and tourists against the acutesummer heat [15]. Carlos Cruz-Diez (born 1923), a Venezuelan kinetic art and op-art artist, realizes his colouristic intervention projects in urban areas – mainly streets – from the 1960s. His extraordinary paintings, inspired by the works of Joseph Albers, among others, using the phenomenon of simultaneous contrast or afterimage, can be admired e.g. on the streets of Caracas (1975), Fortaleza (1986), Marseille (1989), Miami Beach (2010), Houston (2011), and Mexico City (2012). The most recent work by the artist is at the sequence of the parkways in the Miami Marines Ballpark Stadium in Miami (2011–12). Here additive colour mixing is used and the perception varies with the movement of the viewer along the routes [20]. Olafur Eliasson (born 1967), one of the most interesting, contemporary visual artists, known for his large-size sculptures and installations, also engages in colour experiments in space. His projects, by showing the dependencies that exist between light and colour, make the viewer aware of their own role in the perception of the surrounding reality, as well as enabling them to experience the changeability of their perception in time and get to know its mechanisms. Among many colourful installations it is worth mentioning: the Green River Project, implemented in various cities in 1998–2001, Dagslyspavillon (VKR Holding, Hørsholn, Denmark, 2007), Colour Activity House (Kanazawa, Japan, 2010) and Your Rainbow Panorama (ARoS Aarhus Kunstmuseum, Denmark, 2007–2011) [13].

However, colour is not always just an individual game for the architect-artist. **Colour as a collective game** can be presented in the activities realised within the framework of the Programme “Let’s colour” by AkzoNobel’s brands such as Dulux, Levis or Coral. This Programme aims to create a global movement for colour transformation of the human living environment. Since its launch in March 2009, more than 250 projects in 25 countries

(including England, France, Brazil, Turkey, India and South Africa) have been realized. Over 16000 people have been directly involved in the process of adding colours or repainting of degraded buildings and urban spaces. In 2011, Poland also joined the group of countries where the project is implemented [23]. *Tudo de Cor Para Voce*, conducted since 2009 by the Coral group, is the Brazilian equivalent of the Let's Colour programme. Its main purpose is to preserve and promote traditional colour schemes, as well as to introduce new colours for social housing, particularly in the poorest neighbourhoods. A similar purpose is behind the artistic interventions of the Danish artists Jeroen Koolhaas and Dre Urhahn (Haas & Haan) in the Favela Painting Project in Rio de Janeiro (since 2005) [21].

## 5. Colour as a representative of the 'fun and games' aesthetic

**Architects often tend to choose multi-coloured composition to visually reflect the function of "fun and games"**. The colour palette identified with this aesthetics generally consists of highly saturated shades with a predominance of primary colours. Polychromatic, rainbow-coloured facade compositions are often used in kindergartens and other facilities for children and youth, with the aim of creating and also reflecting the atmosphere of excitement and play. In the Kekec kindergarten (Arhitectura Jure Kotnik, Ljubljana, Slovenia, 2010), a façade made of wooden panels is painted in 9 shades of colour. Due to the possibility of the rotation of individual elements it becomes an educational toy by itself. The playable building façade allows children to recognize colours while changing appearance of the building from the outside [5]. The colours of the nursery in Monthey (arch. Bonnard Woeffray Architectes, Switzerland 2008) is also an example of the atmosphere of "fun and games" [6]. In the project of The Strong – National Museum of Play in Rochester (CJS Architects, 2006), one of the new building extensions, called the "Field of Play", is constructed as giant, children's building blocks, coloured in the basic hues: red, green, blue and yellow [19].

## 6. Summary

According to Rem Koolhaas, in the 21<sup>st</sup> century colour is no longer just the thin, decorative layer placed on the building. Rather it is a strong means of expression that helps to reshape the space, as well as to change the visual status of an object. In a world where everything is changing, the role of the colour also has to change. It can no longer be just an added feature – it must become an exponent of the idea of movement and variability [8]. An element of the game. Using the words of Carlos Cruz-Diez: "Freedom and emotion only come into play, when the time comes to choose and combine the colours" [9 p. 76].

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