

Explore How Ground Colours Support Social and Societal Functions of Urban Space

Case Studies on Urban Squares

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Research Topic

In an urban context there is a need for space and facilities for leisure and recreation, social contacts, communication and cultural and commercial activities. According to the UN's „New Urban Agenda 2016“ these social and societal functions of urban open space are important for the development of a good social and societal environment and aim to promote social and intergenerational interactions in cities. Colours offer a great tool for this purpose. They deliver information, support communication and design. As a sensory stimulus, colour has an effect on human perception by influencing emotions, sensory sensations and the perception of space. The ground of public squares is an unoccupied, open area in the urban setting that offers opportunities for a targeted colour and design enhancement.

This research explores applied colour design in urban space and how ground colours can support social and societal functions of urban space. The aim of this work was to acquire a fundamental knowledge on colour properties and their effects on human emotion and perception in order to understand how to apply colour in further projects in urban space.

Approach

Various studies prove the psychological and perceptual effects of specific colours on humans but only partly deal with applied colour design in urban contexts and show few practical recommendations and approaches.

A multiple case study with comparison of the projects served in this research to explore



Colour of Surrounding Environment
Accent Colours
Dominant Colours

Fig. 1 Case Study 1
Coloured Zócalo, 2015, Mexico City
(100architects, 2015, Plaza de la constitución)

a possible application of colours and understanding of the effects colours have on people in practical application. Several cases were selected to explore projects in urban spaces that commonly use colour on the ground of urban squares in the context of social and societal functions (Fig.1-Fig.4). As an important part of this research, a basic theoretical knowledge on physical colour properties and their psychological effects have been acquired from existing studies and literature and used as a basis for the analyses and comparison of the selected cases.

Case Studies

Different colour properties defining quality and quantity of colour such as hue, saturation, lightness as well as contrasts and shapes were examined for each project from photographs with comparable lighting conditions and put in relation to the psychological effects of the colours. The estimated intrinsic values of the dominant and accentuating colours served as a basis for the determination of the psychological effects. From the Colour Emotion Model (A model identifying three common culture-



Dominant Colours
Accent Colours
Colour of Surrounding Environment

Fig. 2 Case Study 2
Superblock of Sant Antoni, 2019, Barcelona
(Leku Studio, 2021, Superblock of Sant Antoni)

independent emotion factors) colour activity, colour weight, and colour heat were estimated for each project (Fig.6). The influence of the shapes and contrasts of colours on space perception were considered as well.

Colours function as a mediator of emotion where emotional information is perceived by the people using the urban square. Consequently, the assumption was made that the colour design supports specific social and societal functions of the urban squares.

Cross Case Comparison Result

All investigated projects showed similar colour properties and designs: a preference for warm hues, a medium range saturation, a high level of lightness (Fig.5). Contrasts and mainly pure geometric figures are used in most projects to create a further differentiation of the space on the square and to the surroundings and designate different functional areas. Sensations such as warmth and activity are strongly conveyed in all projects (Fig.6).



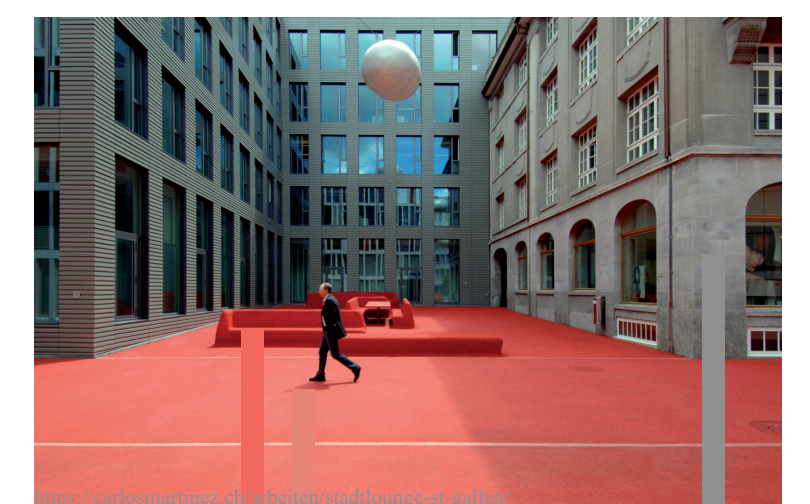
Dominant Colours
Accent Colours

Fig. 3 Case Study 3
Superkilen, 2012, Copenhagen
(Bjarke Ingels Group, Superkilen)

Conclusion

The results of the cross case comparison can be used to recommend colour properties for similar projects. For future projects, it should be taken into account that slight differences in saturation and lightness of colours can cause altered effects. According to the Colour Emotion Model the overall atmosphere created by the colours should reflect the targeted functions of the square.

There is a potential for further substantiation of the research.



Dominant Colours
Colour of Surrounding Environment

Fig. 4 Case Study 4
City-Lounge, 2005, St. Gallen (Carlos Martinez Architekten, 2017, City Lounge St. Gallen)

As the perception of colours is influenced by many factors, such as lighting conditions, amounts of colour, surrounding environment and adjacent colours, further experimental evaluations should be developed. These could be user surveys or observations of user behaviour in addition to the theoretical basis. They can essentially contribute to a better understanding of influencing social behaviour and the supporting of the social and societal functions of urban spaces.

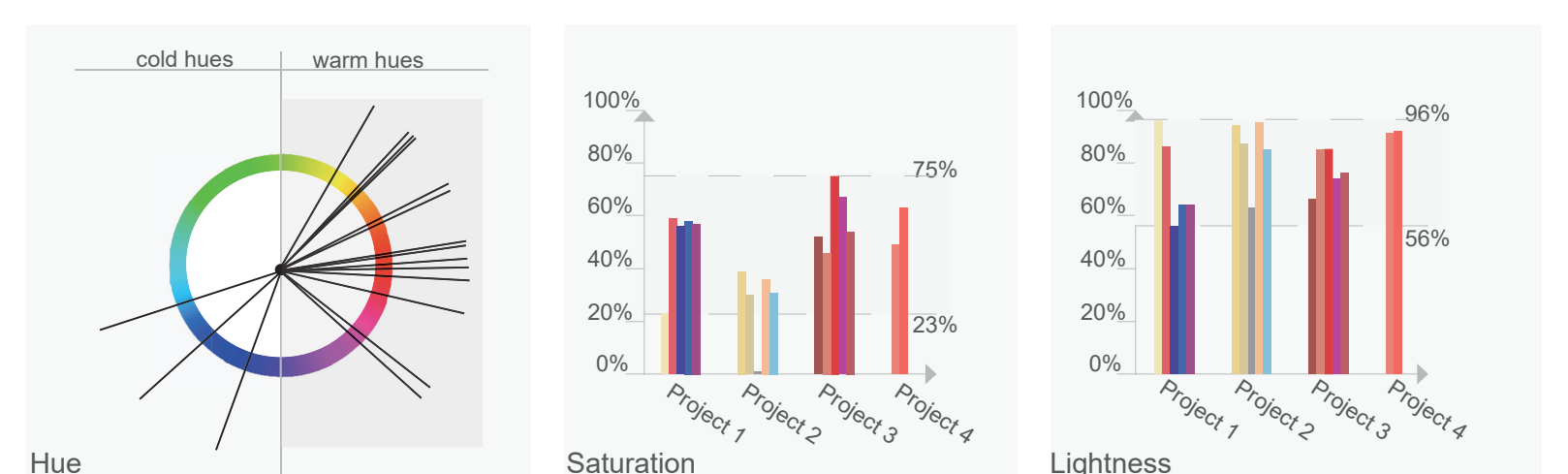


Fig. 5 Cross Case Comparison: Intrinsic values of colour

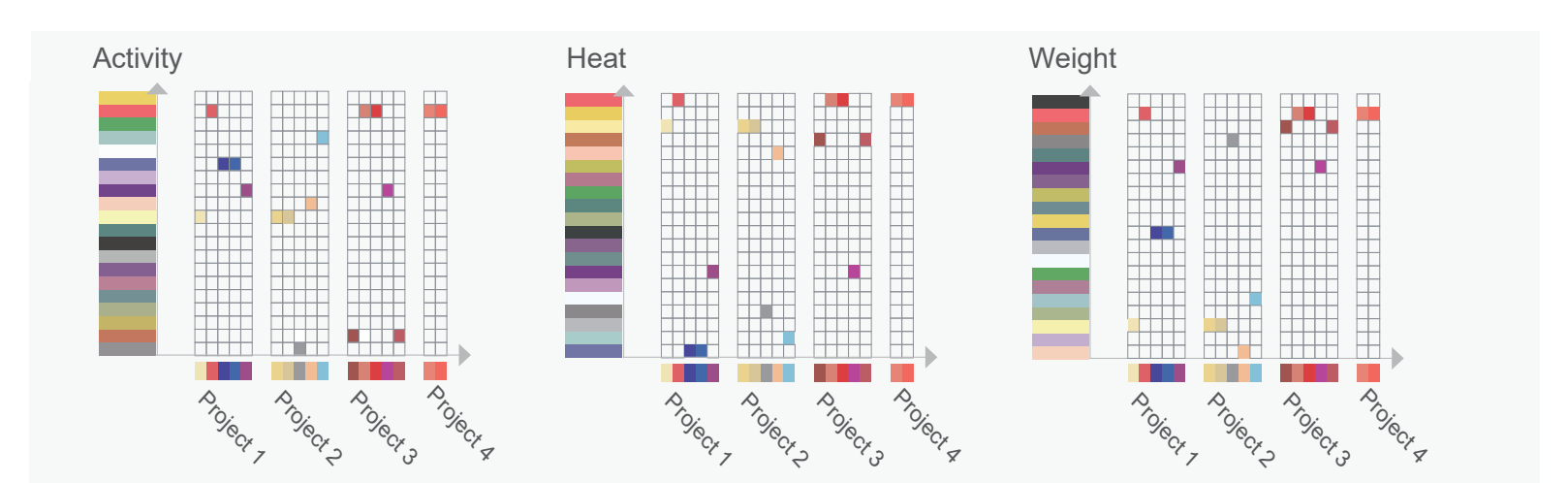


Fig. 6 Cross Case Comparison: Three colour emotion factors