# Title of proceeding:

Quantitative analysis of decorative elements´ presence to assess contextuality and a façade’s’ architectural quality in the historical city centre: Case study Brno

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# Abstract

This paper is focused on the creation of the definition of a building façade´s´ architectural quality in the context of the surrounding buildings. The region was chosen because of the required buildings´ insulation. It´s presencewill be confronted with the traditional use of architectural language. Reduction of the facade´s traditional elements will be evaluated by using simplified architectural composition categories. Positive and negative examples of the design will be determined.

# Keywords

Architecture, style, aesthetics, context, historic, preservation

# Introduction

The aim of this paper is to obtain data on the sensitive architectural approach to design. The research is focused on buildings’ facades visible from public space, trying to describe “architectural quality and sensitive design in closer context of building”. How the physical appearance of the house can affect its surroundings was examined in the pilot phase of this research, subjective evaluation of the house´s facades and its surroundings.

Kevin Lynch (1964, p. V) explains that “The urban landscape, among its many roles, is also something to be seen, to be remembered, and to delight in. Giving visual form to the city is a special kind of design problem, and a rather new one at that.” According to the artistic principles of Sitte, significant places formed by the presence of unique facades, are missing nowadays.“The elements of modern urban design are terribly poor. Straight lines of houses and cubes of building blocks – this is all that can stand against the wealth of the past” (Sitte, 2012: p. 60) Gehl explains that “A pleasant eye-level city provides the opportunity to walk, dwell, meet people and present oneself, and this means that it must have the right scale” (Gehl, 2012: p. 176). “Convenience of social activities depends on the context in which they occur” (Gehl, 2000: p. 15). Thus we can say that public space affects people´s behaviour. The physical context of human behaviour in a city can beunderstood for the purpose of this study as public space. We can divide it into two parts: public space as an exterior with its equipment (park and benches, street and garbage bins), and the visually accessible part of houses as a curtain for events (abuilding´s façade). Camillo Sitte is in general writing aboutcomposing the city of significant places determined besides by unique construction objects (Sitte, 2012). The use of architectural language can help creating those significant places.

The reduction of decorative elements is, among other things, connected with the onset of modernity. Šindelářová (2008: p. 28)writes about how in 1959 Aldo van Eyck at the CIAM congress was the first to critically attack the alienating tendencies of modern architecture and to advocate the return of humanism to architecture: “In principle, a person is always and everywhere the same. He has the same mental equipment even though he uses it differently in accordance with their cultural and social background, with the peculiarities of their way of life, to which he just happens to belong. For so long, modern architects have talked about what is in our time different until they have lost touch with what is not different, which is basically always the same.” (Aldo van Eyck,Otterlo congress, 1959. Cit. in FRAMPTON, p. 323)On the other hand it can be caused by an effort to reduce construction costs. More complex shapes lead to higher amount of expenses during the construction process and bring higher heating expenses. All of the above puts pressure on the formal and architectural side of the project and can lead to reduction of elements of architectural language. Simple shaped buildings with no decorative elements such as moulding are constructed nowadays.For further research, it will be necessary to gain some information about the role of composition in relationship with the architecture design proposal. The following hypotheses were set:

1) The presence of more mutual elements means a higher quality of contextual approach,

2) The scale and proportion of buildings’ facades is more important than specific decorative elements to preserve the character of the location, regardless of the style used.

# Methods

1. Area of interest:

The region of Central Europe was chosen for this paper because of its temperate climate, with continental influences, and the necessity of using insulation to protect buildings against thermal loss during the winter season. Expenses for heating are watched and regulated (Regulation of Energy Consumption of the Building no. 264/2020).An insulation system is mostly composed of extruded plastic or mineral wool in rolls or slabs, connected to building using construction adhesive. Brno, in the Czech Republic, was chosen as an example of a relatively highly-developed city in a transformed country. The construction process in historical parts of the city is regular, acceptable, watched and regulated by government and according to municipal law should be done sensitively. Getting a building permit requires completing a complicated administrative procedure. It requires a previously-issued batch of consents. Documents are issued by the local municipality. Historic preservation regulations are mainly used to control the volume of a designed building. Heightlimits, building area and the shape of the roof are commonly controlled. Consent of visual appearance is necessary to get a building permit (Government issued Building law no. 183/2006)Five different locations in the city centre were selected for this paper. The different levels of historical preservation are set by the municipality.The presence of both historical and new buildings was important for this paper. The following locations were selected: 1/ Brno – eastern part of the citycentre (core of the historic city, mainly multi-storey metropolitan buildings), 2/ Kotlářská street and its surroundings (multi-storey mainly mono-functional residential houses), 3/ Dobrovského street and its surroundings (location outside the centre, damaged during the construction of an underground highway, centrally repaired by the city government, mixture of two-storey family houses and single-use residential multi-storey buildings.), 4/ Vídeňská street (mixed types of buildings, mainly mono-functional residential buildings, mono-functional office buildings), 5/ Pekařská street and Pellicova street (historically valuable part of the city centre, multi-storey multi-functional metropolitan buildings, two-storey mono-functional family houses and multi-storey apartment buildings).

*Fig 1: Position of defined object of interest (source: fig\_1.jpg)*

*Fig 2: Position of defined object of (source: fig\_2.jpg)*

1. Evaluating objects of interest

A mixture of subjectively positive and negative examples of the visual quality of buildings was revealed. Objects of interest were selected by the presence or absence of their mutual visual similarities with their surroundings.The study tries to assess the “contextual quality of buildings” by finding mutual visual elements, although architectural aesthetic measurement can certainly be explored in many other ways. The higher the number of mutual signs is, the higher the quality it is assigned. The comparison was done by graphic analysis using pictures taken for the purpose of this paper. Drápal (1986, pages: 103-145) set these composition categories for evaluating architecture: symmetry (mirrored parts of building),eurhythmy (dimensional balance), rhythm (repeating elements at different intervals), cadence (repeating elements at the same intervals), contrast (mutual difference),nuances (mutual similarity), proportion (relationship of elements of one object), scale (relationship of the elements to the surroundings /humans).The author of this paper added two categories usually used in historical preservation: height equality (regulation of maximal height),uniformity (presence of the same elements).

# Results

*Fig 3: Composition similarities analysis – location No. 1 Eastern centre (source: fig\_3.jpg)*

*Fig 4: Composition similarities analysis – location No. 2 Kotlářská street (source: fig\_4.jpg)*

*Fig 5: Composition similarities analysis – location No. 3 Dobrovského (source: fig\_5.jpg)*

*Fig 6: Composition similarities analysis – location No. 4 Vídeňská (source: fig\_6.jpg)*

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*Fig 8: Location data comparison table (source: fig\_8.jpg)*

The highest average similarity number for an area was discovered in location No. 1: Eastern centre (3, 2) and No. 5 Pekařská and Pellicova (3, 1). The lowest average number was discovered in locations No. 3 Dobrovského (2, 3) and No. 4 Vídeňská (2, 5).The highest number of similarities for a single building was discovered in locations No.1: Eastern centre (7),No. 2 Kotlářská (5) and No. 5 Pekařská (5). The lowest number of similarities was discovered in locations No. 4 Vídeňská (0), No. 3 Dobrovského (1) and No. 5 Pekařská (1). The number of similarities can be explained by influencing factors like the construction process budget and time period. We can say that compared examples containing a higher number of mutual visual elements are less prominent and less visually disturbing. Thus, a sensitive approach in the design process consists mainly of usage of proper scale, proportion and nuances. Examples of positive and negative approaches to architectural form can be seen in pictures (fig. 3-7). The number of similarities can be understood in this research as an indicator. Designing visual similarities can support the harmonious urban area as defined by Drápal. The superfluous presence of contrast can break mutual visual harmony. The appropriate use of architectural language can be the key to preserving the character of the location, regardless of the style used.

# Discussion

Historical preservation and some kind of regulations can be understood as tools which can control the appearance of both single elements (buildings) and whole areas. For the sustainability of the city and preservation of its (historical)character, general rules should be created. The final “score” of each building will of course depend on the evaluator's preferences as Šafárová (2019) proved. Progressive architectural directions will always be understood as contradictions until social standards change. It seems that the most important factor is some level of area unification in scale and proportion. Lynch (1964, p. 102-103) also speaks about an area of homogeneous character “The homogeneity may be of spatial characteristics, like the narrow sloping streets,… of building type, like the swell-front row houses of the South End; of style or of topography.” It seems that a homogenous environment can be created by the presence of buildings with relatively similar appearance. Similarities, nuances, same scale and proportion can be unifying elements. Further research is necessary to bring exact data to confirm that the key visual factor of the evaluating process is scale and proportion whenever what materials are used.

# Conclusions

The following theses were confirmed:

1) The presence of more mutual elements results in a higher quality of contextual approach. According to the number of mutual signs and subjective evaluation of the area by the author we can say that shared visual factors can help unify a space. Lynch (ibid.) also mentions that homogeneity can unify urban space.

3) The scale and proportion of buildings’ facades is more important than specific decorative elements inpreserving the character of the location, regardless of the style used. We would say that those factors are the most perceptible. Assessing the correct use of elements for given historical styles is not possible for most observers. But the role of the overall impression is unquestionable.

Historic preservation as a process that can control the appearance of an area is limited by interpretation of general law. For a successful historic preservation process it will be necessary to determine the required visual factors in general. On the other hand, strict regulations should be amended by the importance of visual connections. Their presence does not always lead to a “sensitive approach and proper use of architectural language.” The importance of scale should be presented. The appropriate use of architectural language can be the key to preserving the character of the location, regardless of the style used. Public discussion should be employed as a complementary tool for the protection of the territory. ‘‘To become competent users of it /public/ space, we must master the store of knowledge associated with it” (Pospěch, 2013)Giving a chance to understand the appropriate approach to the aesthetics of public space is the next task.

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All pictures and graphic attachments made by author for purpose of this paper,

Maps used: www.mapy.cz