

THE PROBLEM OF FORM IN OBJECTS UNDER REDEVELOPMENT (ON THE BASIS OF BYTOM MARKET SQUARE REDEVELOPMENT DESIGN)

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Abstract

The author believes that if a designer has performed many design or research works entailing solutions to various problems, it is recommendable to consider and become aware of previously used methods whose application might have been unwitting or instinctive. The outcome of such reflection can be worth describing and recording in order to formulate a set of guidelines useful in the future. Such methods, being intuitive in nature, are often tied to the designer's subconsciousness, thus are rarely expressed in a clear manner. By using own methods a designer can prove that space should be composed in a given way in order to address specific needs and defined objectives. All this is aimed at preventing accidental formation of space. An example of reasoning serving the aforementioned purpose can be found in a method referred to as CQC or Composition Quality Control, the application of which facilitates intentional shaping of an architectural piece of work.

Keywords: renovation, public space, conceptual design, design, method, composition of forms

1. INTRODUCTION

The design process can be described as the creation of new objects characterised by a new spatial order, i.e. a form, in response to specific functional needs [1]. At the time manifested by the relaxation of rules and

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principles and in spite of the variety of architectural languages present in the last years of the 20-th century the author strongly believes in the necessity of designing within a given language of forms. The author is also convinced that the solution of an architectural, also renovation-related, problem requires the creation of a regulation or model enabling further implementation. Rules are indispensable during the conceptual creation of an architectural work in the architect's imagination. The deliberations presented above resulted in the author's conviction that it is necessary to permanently introduce a method to creative work. The use of an appropriate tool for a design scenario has enabled the author to provide required quality of works in the author's custody.

2. THE HISTORY OF BYTOM MARKET SQUARE

The most valuable fragment of today's city of Bytom is its mediaeval urban layout, typical of contemporary European towns located on Magdeburg Law. Two streets ran, at a right angle, out of each corner of the market square. In addition, two other streets ran out in the middle of longer sides of the market square, i.e. out of northern and southern frontages. The parish church was situated outside the market square, which implies its pre-location origin. Today's view of the market square, significantly different to the original, results from the redevelopment following World War 2 [2]. The main change was due to the demolition of a massive housing quarter in the western frontage. As a result, today's market square is double the size of its mediaeval predecessor! It was in the western frontage that one of the last of Bytom town halls, dating back to 1877, used to be situated.



Photo 1. Postcard of approximately 1910 presenting the Market Square western frontage (demolished later on).



Photo 2. Sleeping lion sculpture in Bytom

The Market Square came into existence in the Middle Ages, yet today its form does not resemble the original. Initially, the Market was square; today its shape is rectangular. The Market Square changed after World War 2, when the Red Army entered the then-German city and demolished the central housing quarter along with the town hall. As a result, the Market Square area doubled its size and has remained so ever since. In 2001, on the basis of a design developed by the author, the city regenerated the Market Square area by resurfacing it and redeveloping its form.

3. MARKET SQUARE BEFORE REDEVELOPMENT

The Market Square area along with neighbouring streets is under Conservation Area Policy and has been recorded in the register of historic monuments. The Market Square is surrounded by compact development buildings, mainly made of brick. Shops are located in the Market Square peripheral development. The very Market Square area is strongly developed, with a particularly dense network along the development. The surfaces of local streets running across the square as well as those of junctions used to be deformed. The pavements made of variously sized concrete flagstones were cracked and damaged.

Archaeological works conducted within the Market Square area by Lodz University research workers resulted in uncovering Renaissance cellar walls, which were then preserved due to their scientific and cultural heritage importance [3].



Photo 3. Market Square in Bytom before redevelopment – the eastern frontage
(author's own photograph)



Photo 4. Market Square in Bytom before redevelopment – the western frontage
(author's own photograph)

4. DESCRIPTION OF MARKET SQUARE REDEVELOPMENT

The proposed Market Square functional programme is complex: shaded green squares, shopping “arcades”, an open amphitheatre and multifunctional spaces. It originally included an underground car park and space for future cubature. Such a range of changes was possible due to the previously extended size of the square, its space and overall dimensions. The concept clearly maintains the orthogonal division of the market square into functional zones reacting to the intended purpose of the square-surrounding frontages and constituting their

front area. The housing quarter including the town hall existing until 1945 has not been reconstructed literally. The greenery “cubature” proposed in this place and assigned to the St. Mary’s Church is a quiet green zone with an orthogonal layout of pot greenery and system habitats.



Photo 5. Bytom Market Square after redevelopment



Photo 6. Bird's eye view of the Market Square (satellite photo)

The opposite side is taken up by a more commercial zone combining the elements of trade and services. In its original form the design assumed the construction of an “embedded” amphitheatre, i.e. seated deeper than the rest of the area. Such an amphitheatre supported by compact technical equipment could create the possibility of presenting open-air summer cinema shows, street theatre performances, music events etc. The middle belt is the most static and stately part of the square. It is emphasized by a lighting system and has

necessary potential to constitute the front area of a future object. It can also take over functions of the outermost belts, thus improving, if need be, their spatial conditions.

The most important design guideline assumed that the functional trisection should not disturb the sense of monospaciality which the observer has while staying within the square. The whole surface of the Market Square was covered by a modular mesh (7m x 7m) surrounded by flooring paved with two kinds of contrasting granite stones. The area was provided with a system of fountains, trees, pot plants and system lighting.

5. OPINIONS ON BYTOM MARKET SQUARE

It proved impossible to execute 100% of the design assumptions such as the amphitheatre, toilets or the underground car park. Nonetheless, in 2009 Bytom Market Square was rated among the seven wonders of Silesian architecture. A two-month Internet survey was held and attended by almost 70 thousand participants. Other architectural wonders recognised in the survey included Katowice Spodek (Entertainment and Sports Hall), the Palace and Park in Pszczyna, Tyskie Browary Książęce (Tychy Brewery), Mater Dolorosa Cemetery in Bytom, Coal Mine Shaft "Krystyna" and Szombierki Heat and Power Station, also located in Bytom [4], [5]. In turn, in January 2011 the Market Square in Bytom was acclaimed by Internet users as the most beautiful market square in Silesian Province, having received as many as 22.32 % of all the votes cast in the survey [6].

6. ASSESSMENT THROUGH CQC (COMPOSITION QUALITY CONTROL) METHOD

In accordance with today's knowledge, including praxeological and system knowledge, it is possible in architectural research to separate the subjective, i.e. artistic experience, from what can be known objectively. Moreover, this can be achieved without determining such a division in advance. CQC Method assumes that the achievement of an intended goal is possible through a proper selection of similar components or, in some other situations, through contrasting such components using structures known from the composition of forms in architecture. However, in spite of the frequently intuitive use of such components in urban planning practice, it is possible to observe numerous cases when gross awkwardness or even errors in design solutions come into being once intuition and sense of space have failed.

7. SQUARE AS THE BASIC MEDIUM OF PLAN COMPOSITION (EXEMPLARY ANALYSIS USING CQC METHOD)

According to W. Kandinsky [8], while analysing any plan – picture (PP) it is necessary to somehow put a structural framework mesh on it. It is only afterwards that one can properly assess such a plan for its structure. Figure 1 A,B,C,D presents the sequence of creating such a plan – a rectangle composed of four squares, where the following assumptions were made – first, a constant size of components in the form and, second, a possibility that the process of form composition may be supported by a random factor. Not accidentally, the initial point for the Market Square structure in Bytom was the composition of 4 fields in a balanced and static structure made up of 49 “points-squares” each, placed on a regular orthogonal mesh 7x7.

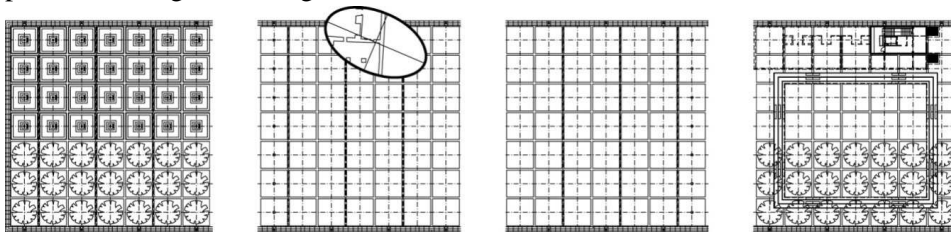


Figure 1. A,B,C,D Functional fields

At the subsequent stage of sequence, looking as if “from the field centre”, each of the components remains unchanged; only the points-squares making up the basic plan area undergo modification.

In turn, the second sequence of Figure 1, enlarged (Fig. 2. A,B), illustrates the modification effect concerning a specific feature of the elements.

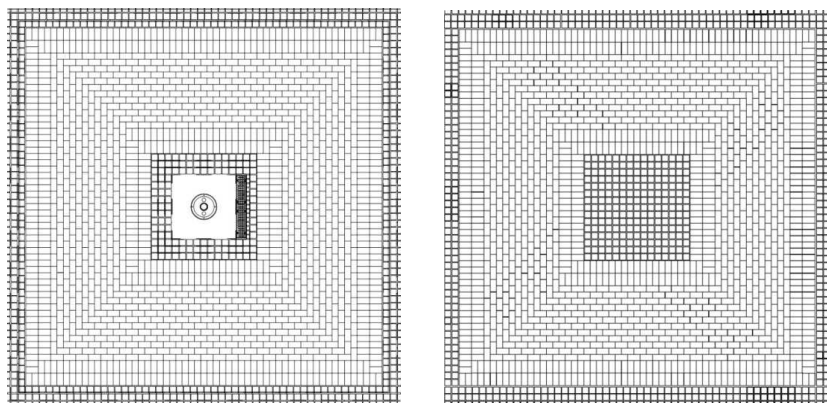


Fig. 2. A,B Sequences of creating points – PF squares of the Market Square.
Section of the fountain (A) and basic section of the flooring (B)

They are not subjected to any transformations and do not change their position. However, their PF programme is modulated, which is related to the performed function. Individual fields adopt a spatial form: trees with habitats, fountains or fragments of 'embedded' amphitheatre objects. As a result, they are slightly different. The initial layout continues to dominate; it is so strong and balanced that the lack of several points can be interpreted as "mutilating" the composition. Such is the situation in a part of one of the fields where the loss of elements is significant and their elimination is done at random. The created system undergoes certain stabilisation by making a new structure of elliptic-square form in which the initial composition is somewhat blurred. The analyses presented in the scheme lead to two conclusions. Firstly, the presented method of shaping activities creates new forms and leads to a greater number and complexity of forms.

This observation is quite obvious and, as such, does not require additional clarification. Secondly, such activities can be used in many ways leading to the obtainment of a clearly different composition. Therefore, shaping such forms can also be a subject of designing.

8. INNER PLANE AND FUNCTIONAL PLAN FIELD (EXEMPLARY ANALYSIS USING CQC METHOD)

A plane can be described as a paper sheet, table surface or a flat field as if extending "infinitely".

In the architectural approach the building plan field is usually referred to as a building projection, defining the shape of a ground floor projection or that of individual floors, thus defining its outline form on each floor.

In the urban development approach the outer outline is associated with the area cohesion of a plot which was geometrically separated from the neighbourhood by means of borderlines determined by border bend points.



Fig. 3. Market Square inner plane

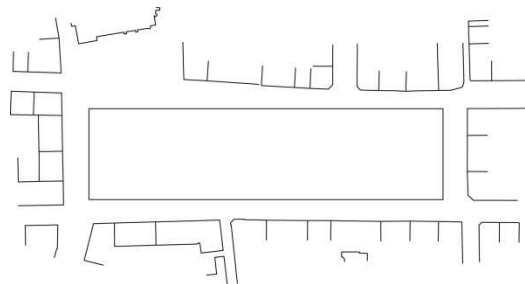


Fig. 4. Architectural complex and PP of the Market Square surface

In both cases the planes can be measured and described quantitatively, e.g. by means of a scale or a surface. The planes have their own forms and can constitute an object in a composition among other neighbouring forms or can constitute the field of a plan and become the objects of a composition. It can be assumed that in architectural objects the areas which form separate functional systems can be confined by means of outer lines. In turn, the lines constitute the borders of a functional plan (FP). Planes plotted by the lines, i.e. forms are PP composition elements of an architectural complex. In the case of the designing assumptions concerning the Market Square in Bytom, the PP plan field related to a polygonal geometrical field of the development area, whereas the internal plane was a rectangular surface with the outlined functional plan (FP) limited by perpendicular vertical and horizontal lines (Fig.3 and 4).

9. CONCLUSIONS FROM CQC METHOD-BASED ASSESSMENT

An urban development plan, irrespective of the technique it was made with as well as regardless of whether it is similar or not to the real world, must always be ordered and composed in a well-thought-out manner. There are no two plans-images composed identically or even similarly, yet there are certain principles governing the composition of elements forming the plan image.

The above-mentioned process can be aided by Composition Quality Control (CQC) developed as the author's method of ordering issues related to architectural environmental design. There are no doubts that the surface of the Market Square in Bytom was developed following the applicable principles of closed composition, being, as the name suggests, the system of forms organised as an integrated whole which cannot be disturbed as it might collapse. In this composition every square centimetre is justified and subjected to the whole.

CQC is based on a fundamental assumption according to which conceptual thinking is consistent with the sequence: analysis – synthesis – assessment or synthesis – analysis – assessment. In relation to a design process, a review – examination starts with the analysis of the design and determination of problems. Observers – designers involved in the process, taking advantage of their knowledge and computer-aided techniques, prepare inspection drawings. Such drawings enable the designers to evaluate solutions at early design stages and analyse them in relation to various compositions. In addition, this method makes it possible to introduce modifications when the design process is not excessively advanced.

10. CONCLUSIONS

The developed design-supporting method is aimed at assisting in a truly creative process, offering a database which enables a more objective design assessment by means of diagrams, site plans, comparative drawings and exemplary solutions. The method assumes that the achievement of an intended effect is possible by means of a skilful selection of similar components, and, if need be, contrasting them with constructions known from geometry.

When a given design fails to meet expectations, it undergoes changes and modifications, which are then documented and added to the programme.

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PROBLEM FORMY W OBIEKTACH PRZEBUDOWYWANYCH
(NA PRZYKŁADZIE PROJEKTU REALIZACYJNEGO PRZEBUDOWY
BYTOMSKIEGO RYNKU)

Streszczenie

Autor uważa, że jeśli projektant ma za sobą wiele prac projektowych lub też prac badawczych, które połączone były z rozwiązywaniem różnych problemów, to warto zastanowić się i uświadomić sobie sposoby, które dotychczas - może nieświadomie lub odruchowo - były stosowane. Wynik refleksji warto opisać i zapisać po to, żeby ująć go w układ wskazań na przyszłość. Metody te, mając charakter intuicyjny, często związane są z podświadomością projektanta, w związku z tym rzadko można spotkać je jako wyrażone w sposób wyraźny. Stosując metody własne można dowiedzieć, że przestrzeń winna być komponowana tak, a nie inaczej dla określonych potrzeb i wytyczonych celów tak, aby jej forma nie była przypadkowa. Przykładem takiego rozumowania jest przyjęta metoda KJK, której zastosowanie pomaga w świadomym kształtowaniu dzieła architektonicznego.

Słowa kluczowe: renowacja, przestrzeń publiczna, projektowanie koncepcyjne, projektowanie, metoda, kompozycja form

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