

Artificial Barriers of the Cities

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Abstract. Urban structure is constantly changing. Its development was influenced by several important steps in history of any city. Up to interval of time, it is possible to accept the assessment of the pros and cons, but mainly emerging lessons for the future. When studying the map sources, the authors of the article found three main groups. These groups have got common working title barriers of the cities. For the single barriers of the cities were chosen the specific examples of urban structures on which the effects of their influence there demonstrated. On the basis of the influence of the three groups of barriers were defined two basic structures of the cities.

Introduction

During the research of the individual map backgrounds, the answer for the question of what affects the development of the cities, revealed itself. They are barriers. The title was chosen deliberately because it simply describes the issue in the growth of the urban fabric. The observed barriers were divided into three main groups, the natural, the artificial and the legislative ones. [1]

The natural barriers were set by selecting a site for the establishment of the city. The biggest influence in this group had a river and the relief of the earth. This group was created by natural forces. In contrast, artificial and legislative barriers were created by man himself. [2]

The expected paper deals with the second group of barriers that have been named as artificial barriers of the cities. The title was chosen deliberately because it is a type of barriers that were created and implanted into landscape by human. This section included three elements: walls, roads and railways.

The first element – walls – had the only one impact, but the major one. When the walls were established and the city grew in its grasp, suddenly it stopped against them. This effect has been termed as the "demarcation" of the urban structure. Thanks to the walls we have the historically bounded oldest core urban centers now. Somewhere they have been demolished and replaced by roads, elsewhere they have been partly preserved as the parts of the historic centers.

The second element – roads – connects various cities to each other and according to which way they are conducted in the urban areas, they have a dual effect on the structure. They are mainly the present types of communication, the contemporary main roads, the highway ones. If the main backbone traffic is routed to the city center, it was observed from the maps the subsequent "fission" of the city structure. When the traffic was routed in a sufficient distance from the city center, the "demarcated" structure of the city was created.

The third element – the railways – as well as road and rail lines significantly affected the evolution of the urban fabric. If the railway was close to the city center, it caused the "fission" to the following growth of the city. If it has been conducted in the surrounding area, so in retrospective it "demarcates" the city.

Walls

In the Müller maps from 1790 a lot of the towns with walls were founded. Two different cities were chosen, Prostějov and Přerov, on which the theory of artificial barriers cities was applied to.



Fig. 5 Prostějov [5]



Fig. 6 Přerov [5]

Demarcation and fission

With the city of Prostějov on today's perspective we can see how the artificial barriers gradually, during the development of the city, formed the first city walls of the historic core. Subsequently railway line delimited the city from the northern and the eastern parts. The expressway R46 delimited the city as well from the eastern part. In contrast, the city of Přerov, though the beginning was similar, walls formed the urban core, as one of the few had the important railway junction that caused the fission of urban development. Communication in Přerov also causes the fission of the urban structure now.



Fig. 7 Prostějov [6]

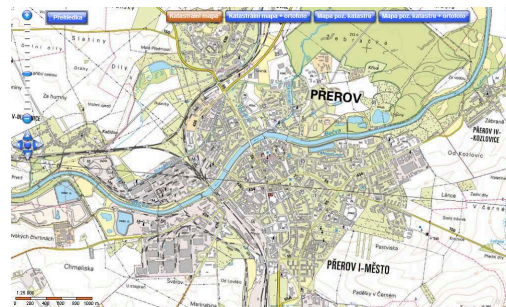


Fig. 8 Přerov [6]

Summary

The Athens Charter, resulting from the Congress' Internationaux d'Architecture Moderne (CIAM) meeting in Athens in 1933, crystallized the theory of the Modern Movement in architecture and town planning. The ideas of the great men of the first half of the twentieth century – Le Corbusier, Gropius, Jacobus Oud and others – were revealed to the urbanist as the dogma of rationalism. In the 1950s this preoccupation with function, structure, standardization was challenged and ideas about human association and the softer social aspects of urban planning and architecture given greater emphasis. Peter and Alison Smithson were among those in the forefront of this movement usually associated with Team 10, a group within CIAM. One outcome of this change in thinking among some architect-urbanists was the rehabilitation of the street as a legitimate element of civic design. The Smithsons wrote: 'In a tight knit society inhabiting a tight knit development such as the Byelaw Streets there is an inherent feeling of safety and social bond which has much to do with the obviousness and simple order of the form of the street: about 40 houses facing a common open space. The street is not only a means of access but also an arena for social expression.'¹² Unfortunately the analysis led to the idea of streets in the air: 'The principle of identity we propose is the basis of the Golden Lane Project – a multi-level city with residential street-in-the-air.'¹³ As

an idea it failed in Britain: as a concept the street-in-the-air was not within the cultural norms acceptable to the general population in this country. An example of this type of housing at Radford in Nottingham was demolished after only twenty years in use. A street in the British tradition is firmly anchored to the land and still conforms, in the mind, to one of the three generic street scenes described by Vitruvius about 2,000 years ago. [7]

On the basis of the map background the authors of the article found several barriers that have been built up over the centuries by the human. This group of barriers was named as "artificial" barriers of the cities, because they were not created by natural forces but by the human ones. Into this group of barriers were included the observed elements: walls, roads and railways. As the research base to find these elements were used the map backgrounds from the map servers. The first of these elements had the only one effect, which was named as the "demarcation". The second and the third elements affected urban areas according to their positions towards the urban centers. If the element is located near the historic center then the "fission" of the urban development was caused. If the element has been created at a sufficient distance from the city center, then the structure demarcation followed by these elements (roads and railway).

Urban structure elements – roads and railway – are one of the most important elements of the structure of today's cities. With their construction the significant barriers that every city needs to function properly, were included into the urban structures. However, the people must remember that these important barriers are hard to overcome in terms of their reconstruction or complete removal. Therefore, these elements should be designed with sufficient respect for the city's future.

References

- [1] Information on <http://www.fast.vsb.cz/export/sites/fast/cs/veda-a-vyzkum/odborna-cinnost-fakulty/sbornik-vedeckych-praci/archiv-vydanych-sborniku/sbornik-vsb-tuo-fast-2013-1.pdf>
- [2] Information on <http://www.fast.vsb.cz/export/sites/fast/226/cs/konference-a-seminare/architektura-v-perspektive-2013-sbornik.pdf>
- [3] Information on http://oldmaps.geolab.cz/map_region.pl?z_height=330&lang=cs&z_width=700&z_newwin=1&map_root=mul&map_region=mo#
- [4] Information on http://archivnimapy.cuzk.cz/mapy/map.phtml?dg=co_rastr_1000k,MCR500_op,P_COCM_u&me=-958775.556739,-1282635.97206,-400169.80851,-872110.327503&language=cz&config=cio&reset=session=ALL
- [5] Information on http://archivnimapy.cuzk.cz/mapy/map.phtml?dg=topo_Klad0,topo3v75_01&me=-1176871,-1736953.731346,13508,-735654.268646&language=cz&config=3v&reset=session=ALL
- [6] Information on <http://sgi.nahlizenidokn.cuzk.cz/marushka/default.aspx?themeid=3&MarExtent=-990320.44597457629%20-1239836%20-346646.55402542371%20-923033&MarWindowName=Marushka>
- [7] C. Moughtin, Urban Design: Street And Square, Architectural Press. 300 (2003) 129-130.