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THE NATIONAL STADIUM IN WARSAW AS A CHALLENGE FOR CITY LOGISTICS

Abstract

The main goal of this article is to consider potential problems and impact of the National Stadium located in the centre metropolitan area, on public transport in Warsaw. This choice of location is not utterly consistent with the urban logistics concept, according to which all of traffic generators should be located outside the city center and even better on its outskirts. Public transport problems faced by Warsaw today are palpable mainly in the city center and affect every citizen. Hence, what could be the impact of the National Stadium on transport in the city?

Key words: national stadium, urban logistics, transport congestion

1. INTRODUCTION

City logistics concept is very popular but also difficult to define. One of the definition says that these are all activities that exist in order to optimize the flow of goods, people and information within the social system, which is the city [15]. At present, there is a strong pressure for planning and bring into action sustainability development in common live so also in city logistics. Therefore, this phenomenon is also defined as integrated service-oriented movements leading to improve aspects of the movement by development of life quality, economy, ecology, so as to achieve long term city development [14] or as “to answer, as far as possible, how society intends to provide the means of opportunity to meet economic, environmental and social needs efficiently and equitably, while minimizing avoidable or unnecessary adverse impacts and their associated costs, over relevant space and time scales”[1]. This kind of sustainability strategy includes transportation system which is one of the crucial when planning such great venture as football stadium for European Football Championship and other big events.

2. METHODOLOGY

In order to present the probable problem of sustainability city transportation connected with National Stadium in Warsaw the authors made comparative analysis between it and other European stadiums as Allianz Arena in Munich, Emirates Stadium in London and Amsterdam Arena as western European solution. Furthermore, there will be two examples from Poland (Wroclaw and Legia Warsaw Football Club Stadium).

3. DECISION ABOUT LOCATION OF NATIONAL STADIUM

The idea of building a new national stadium in Warsaw appeared in the middle of 90s. and from the very beginning its location was main contentious issue. One of the concept assumed to locate it for belonging to the Treasury ”10th Anniversary” Stadium. Another initiative was to build it in entirely different parts of the capital. The famoust of these was an idea stating

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that the new facility would be located on Bialoleka and will be called Stadium Poland (taken this name off on Stade de France in Paris). Many specialists assumed the concept of building it on the area of the Racecourses at Sluzewiec, the land on the Luk Siekierkowski, in Wawer or Wesola. For over a decade this investment remained only in the conceptual sphere.

In April 2007, the UEFA Executive Committee decided to host the European Championships 2012 in Poland and Ukraine. The decision was also made which cities will host the tournament. Warsaw was among the chosen four. The need to build a new stadium was indisputable, but the location has raised still as very controversy decision.

April 26, 2007 the President of Warsaw signed the decision on the conditions of development for an investment based on the construction of the planned sports facility in the 10th Anniversary Stadium in Warsaw. Now, it is one of the largest and most expensive investments in the recent years. Even now its strong impact on the space and the city landscape can be perceived. In this context, it is worth to consider the impact of investment being made upon the communication, and to consider the current and anticipated problems.

This choice, however, is not fully compatible with the concept of city logistics according to which all traffic generators should be located outside the central area of the city. What therefore were the significant factors in choosing this particular location? The basic criteria can be indicated into 3 main groups relevant with: (a) economy, (b) socio-historical aspects and (c) transportation web.

a) economy

The present location has created the possibility of daily, continuous use of the surrounding space strictly citywide, such as: catering, services, commerce, entertainment, recreation, etc. and thus deriving income [10]. The investor has rightly assumed that the income from one-off events are only part of the revenue (perhaps not the most important one) of the entire project. He, thus, emphasized the so-called accompanying functions: offices for rent (more than 8.0 thousand m²), a huge conference center (nearly 7.0 thousand m²) largest conference room in Warsaw for the 2.0 thousand people. Moreover, retail spaces, service areas, recreation areas, etc. It should be noted that in the next step further investments are planned, including arena, office buildings, etc.

b) socio-historical aspects

The location directly continues the functional tradition of space, refers to deeply and positively coded associations existing for 60 years in the minds of several generations, the investor recognizes the importance of this motivation and deliberately keeps "icons" of the old stadium (e.g. green embankment of the basin, the characteristic oval entrance to the stadium, the monument to athletes),

c) transportation web

The existing transport network (road, tram, train-to Stadium station) and the second underground line which is under construction represent a large potential for infrastructure - in a natural way without the need for new investments the efficient service to the stadium and facilities to be built in the future in the area can be provided. The vast area around the National Stadium provides the organization of an adequate number of temporary parking spaces for cars and coaches – the UEFA requirements concerning the number of parking spaces at the stadium where the EURO tournaments are organized call for the stadium with a capacity of 60,000 spectators 10,000 parking spaces for cars and 500 parking spaces for coaches [3]. At the same time, the National Stadium according to "The Study of the Conditions And Directions of Spatial Development" is located in the central zone *Ib* in

relation to which the arrangements limiting car traffic are in force as well as point to prioritize public transport, reducing car parking spaces and the introduction of pedestrian traffic areas. It seems that many people will try to reach the stadium by car, what in accordance with the Say's law, that supply creates the demand what will contribute to increase the traffic congestion in the city. It can be noticed that the requirements for parking lots are not flexible and do not include the specific of the location of stadiums in the city centers and should be verified.

4. WEST EUROPEAN SOLUTION

Modern stadiums in the world, also created on the occasion of great sporting events, are mostly located outside the city center. This is influenced by many factors, among which the most important are:

- relieving the central area of the incoming crowd of sports fans at one time and communication problems associated with this;
- cheaper land prices outside the city center, which affect the construction of additional infrastructure around the stadium – parking lots, training pitches, etc.;
- facilitated access of fans from other cities to the stadium located outside the center and usually at major arteries - highways, ring roads, etc.

In order to compare the Warsaw location it is worth to examine a variety of examples from recent years of implementation of large, prestigious stadiums in Europe and try to define them according to criteria (table.1).

Table 1. Comparison of European Stadiums

Stadium Fields	Allianz Arena in Munich [8]	Emirates Stadium in London [9]	Amsterdam Arena
Economic	Low land prices outside the city (especially at the burdensome junction of highways). Thanks to this, numerous shops were created and even nurseries, all with the capacity 8.0 thousand m ²	The determining factor was the location right next to the old historic stadium Highbury and the continuing of the 90-year tradition of the place. Stadium Highbury was adapted to the apartment building - in the place of the stands more than 700 apartments were constructed and in the place of the playing field - a park for residents.	Low land prices outside the city, thus the entire multifunctional complex was created the stadium, office buildings, shops, a music hall. The whole complex has become a strong impetus to the development of this part of the town.
Socio-historical	In Munich there is a deep-rooted notion of the need to push this type of investment outside the strict city center, in this case, the attention was drawn to urban and acoustic disharmony.		The construction of a cubature building this size in the center of the city would destroy the historical figure of the city

Stadium Fields	Allianz Arena in Munich [8]	Emirates Stadium in London [9]	Amsterdam Arena
Transportation	Current underground line, the crossing of highways, at the stadium the parking lot for 10.5 thousand cars was built – the biggest in Europe	The access is provided by the underground line (in the first 10 minutes range there are three underground stations and one railway station), and therefore restrictions on private car parking were introduced.	Located at the junction between the First and Second Ring Road, next to it run two subway lines and a railway line, bicycle paths were constructed and a huge complex of underground parking for over 8.0 thousand cars was built.

5. WROCLAW USES GOOD PRACTICES

Recalling the examples of stadium locations in the world, it is good to mention also the stadium which is being built in Wroclaw, one of the four cities staging the Euro 2012 in Poland. The Municipal Stadium was located outside the strict center, in the north - west part of the city in the Maslice district. Along with the construction of the stadium the construction of the A8 highway ring road around Wroclaw was started, which is located in the immediate vicinity of the premises thus facilitating the access to the stadium without entering the city unnecessarily. What is more, the architects designing the stadium provided at this point a special promenade to reach the stadium from two sides - on the south it will allow free access for fans from the area of an integrated stop of tram and train communication, and an outside car park Park&Ride. From the north the promenade provides the access to the northern junction of public transport - urban trams and buses, and a parking for coaches [7]. It seems that the location of the stadium in Wroclaw with the designed communication system is by far the most rational and resembles the best solutions used in West Europe.

6. THE NATIONAL STADIUM IN THE CONTEXT OF THE CITY

The National Stadium is located in a metropolitan area of the city center of Warsaw (in the mentioned area Ib), on the right side of the river, across roads with high traffic and high importance of the city communication: Poniatowski Bridge, Swietokrzyski Bridge, Wybrzeze Szczecinskie Street, Wal Miedzeszynski Street. Communication problems faced by the capital now are felt almost by all the inhabitants of the city. All kinds of traffic impediments, the transport congestion is felt primarily in the central area of the city. The main inconvenience for residents is steadily increasing travel time. The average speed of trams and buses decreases (lack of bus lane). This may be caused by many reasons. The present state of communication is shaped by many factors. The most important among them are [16]:

- low standard of public transport services: obsolete bus and train fleet, low run frequency, neglected road infrastructure,
- insufficient privilege level of public and cycling transport, a small number of bus lines, of bus-tram lines, physical separators for bus/bicycle traffic from car traffic,
- transit traffic, even in the very center of the city - the lack of ring roads,
- insufficiently developed system of Park&Ride parking lots (P+R),
- the lack of adequate cycling infrastructure, the total length of bicycle paths in Warsaw is

less than 300km, most of which are separate and poorly connected, several kilometers sections, the share of the travel by bicycle is also minimal (about 1%),

- the minimum share of internal rail transport in the city,
- a psychological aspect - the car is often regarded as an indicator of material status, few wealthy residents travel by public transport,
- a high rate of the number of cars per capita.

At the same time, Warsaw is constantly growing, unfortunately, not always harmoniously and in a planned manner. In the outlying districts large housing estates are created, where infrastructure development does not keep pace. As a result private cars are used more frequently as it is often the only convenient means of transport.

7. THE IMPACT OF NATIONAL STADIUM ON TRANSPORTATION ORDER IN WARSAW

At 7 months before the championships it is difficult to predict in detail what impact the use of the stadium on the communication in Warsaw will have. There are in fact different detailed scenarios, however, the overall scenario, seems to be defined and is rather pessimistic.

It is worth in this context to look at the very instructive case of the stadium of Legia Warsaw Football Club, which was inaugurated (first 3 stands) in August 2010. Similarly, as the National Stadium, it is located in the city center, in the vicinity of roads with the highest traffic in Warsaw (Lazienkowska Route, Lazienkowski Bridge, Wislostrada). Although the stadium housed 30,000 viewers (around 2 times less than the target capacity of the National Stadium) it had a dramatic impact on the communication in the center. To the first match at the new facility the fans came mainly using their own transport. It resulted in one big, wayward car park around the stadium. Cars were parked on every spare patch of green and on pavements. After the end of the event, all the drivers was trying to leave the vicinity of the stadium, what created a huge traffic congestion in the city center where people in private cars and buses had got stuck for over an hour [5].

The next problem arise about the run of 2nd underground line and location of "Stadium" station. In the majority of western cities, underground line has the biggest influence in unloading the crowd. What is more, the metro stations are located in the peripheral parts of the tube line, what means that supporters after the game get in to the almost empty carriages. In Warsaw, the „Stadium” station is located in the central part of the second tube line, thus spectators leaving the arena must get in to the carriages which are already full with inhabitants/commuters not always related to the sport event. The same problem concerns buses and trams and it seems that it would contribute to decrease effectively of unloading the crowd.

Moreover, it should be taken into consideration fact that during the EURO the majority of inhabitants will have to act as usual: attend work/school, use the public transport and the streets that will be crowded with thousands of fans. It's commonly known that many streets will be closed for the car traffic during the match days, even Poniatowski Bridge. Thus we can expect as similar communication paralyze as during the different parades that take place in Warsaw like student's, independent day's which are organized during the days-off to avoid disorder.

Furthermore, build-up of a metro line determinates urban city development. It's commonly known that building of the underground line will be connected with investments progress [6]. It its believed that more and more people will be using subway and in 10 years it might have turned out that the National Stadium is surrounded with very dense building

development, and its location in the city center will be particularity, especially comparing to the cities and stadiums from the West Europe.

Given the example of the Legia Warsaw stadium, the present neglected state of communication in the city, as well as above-mentioned problems we can easily imagine what will happen when ca. 60 thousand spectators will leave the National Stadium at the same time (during the concerts even up to 72 thousand). Communication paralysis immobilizing the city for long hours seems to be inevitable. Situation, that hopefully will never take place, but which in ruthlessly way would expose all of the transportation informalities will be the alarm evacuation of the all spectators. It's really hard to imagine where all event participants will be evacuated and how the life-saving services will reach the stadium through the crowded streets.

8. EURO 2012 IN WARSAW NOT ONLY AROUND THE STADIUM

During the EURO 2012 the amount of supporters gathered in the stadium will be only the small percentage of whole football fans in the city. It seems that one of the most problematic place in Warsaw will be the Defilad Square, where the fan zone creation for around 100 thousand people is planned [4]. In this context is worth to call to mind the situation which took place in the Defilad square while the every-year charitable concert. The increased amount of people taking part in the celebration resulted in closing the nearest underground station „Swietokrzyska”. The by-passes for trams and buses were introduced, what resulted in huge bedlam and paralyze all of the nearby streets.

It must be reminded that around 10 thousand people took part in that event and what is more during the EURO renovated Swietokrzyska Street will be fenced in what will be the spatial obstacle for football fans.

9. CONCLUSION

Quite unexpected decision to host the European Championships in 2012 in Poland and Ukraine forced Poland to quick and determinated activites. For the sake of time and budget limitations those activities weren't always well thought-out. To the controversial decision of the location I would also add the lost opportunity to build an object with a capacity that would enable the organization of the Olympic Games. Today this vision is rather unrealistic, but who imagined 10 years ago that Poland will host Euro?

Before the fans from around the world come to the Warsaw, there should be time to test and diagnose the current system of communication around the stadium. It is essential to organize at least a few mass events before the championships, which will provide practical guidance and show in detail all the communication problems. As the time goes on and there is a few month delay in construction there is a strong danger possibility that after supported events will be not enough time to make any changes.

At the end of theoretical reflections, is worth to consider the possible solutions that can help improve communication in the city both during the matches and in the long term. What best practices can be transferred and applied in Warsaw? Because of the fact that opportunities for specific activities are dependent on transport-spatial conditions for a given city, it is extremely hard to point out only one, the best solution for sustainability while mass events. Nevertheless, all public and self-government authorities responsible for planning and implementing the transport system should pay attention to the best city logistics solution which were implemented in London, Berlin, Copenhagen, Stockholm, Gothenburg or Amsterdam and try to follow their suit.

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STADION NARODOWY W WARSZAWIE JAKO WYZWANIE DLA LOGISTYKI MIEJSKIEJ

Streszczenie

Głównym celem niniejszego artykułu jest przedstawienie rozważań na temat potencjalnych problemów transportu publicznego wynikających z lokalizacji Stadionu Narodowego w centrum Warszawy. Wybór takiej lokalizacji nie jest do końca zgodny z koncepcją logistyki miejskiej, według której inwestycje wywołujące nadmierny ruch i powinny zostać zlokalizowane poza centrum miast, a nawet na przedmieściach. Warszawa już teraz zmagają się z wielkimi problemami transportu publicznego. Jak zatem dodatkowo Stadion Narodowy wpłynie na sytuację transportową mieszkańców?

Słowa kluczowe: stadion narodowy, system transportowy, zator drogowy