The city landscape is the result of many factors; it is a sum of many smaller landscapes. At present, these elements are particularly appreciated, and they are in a sense a showcase of a place; they are unique in a special way. Such uniqueness is characteristic for a fortified landscape.

The term fortified landscape was introduced into the Polish literature by Bogdanowski (1996). This concept is designated as a comprehensive form of coverage and terrain adapted for defense purposes. Such a landscape, in addition to combat objects, also includes non-military structures, such as engineering, logistics, barracks, road, railway structures, fire connections – currently interpreted as view links and communication links with accompanying avenue trees.

Due to the very specific spatial structure, functional and spatial solutions characteristic of it, also in the field of greenery, the remains of which are easy to read to this day, are very important elements of the natural system of cities, as well as their spatial composition (Clark and Glazer, 2004).

The aim of this article is to indicate the impact of defensive work presence on the city landscape shape during functional and economic changes. The example object is the case of the Warsaw Fortress System. The article is focused on the three main topics:

- the changing position of the forts and other remnants of the defense system,
- the value of and challenges and problems related to the preservation and maintenance of the elements of the fortification system,
- the potential and threats of urban development on and around the forts.

The methodology of the study is based on the SWOT method and the analysis and criticism of the literature as well as the systematic review. Elements of criticism of the sources were also made. A very important part of the source materials were historical iconographic materials – photographs, engravings, sketches, paintings. Historical iconographic materials (photographs and maps) were compared with the current state of preservation of the fortresses in terms of the preservation of architectural material, communication and viewing connections, and the share of vegetation.

Inventory fieldwork was also carried out, which included the implementation of photographic documentation, which was then analyzed and confronted with written and iconographic source materials. It was also crucial to analyze the place of particular elements of this defensive work in the current structure of the city.

This defensive work is an example of a ring fortress. Its citadel elements consist of a citadel, surrounded by rings of forts, mostly bastion ones, and other fortress objects. The system of the ring fortress was associated with a much larger area in which the defensive work was carried out. Unfortunately, as history has shown, this form was not tactically effective. That is why few ring strongholds have survived to this day (Fig. 1).
After the defeat in the Crimean war in the mid-nineteenth century, rivalry between Russia and Prussia began for the advantage in Europe. The line of confrontation ran through the territory of the Kingdom of Poland, which is why Russia decided to build a number of fortresses from its means, which constituted a barrier against the German Empire and a base for the Russian army in a possible war against Germany. The construction of the Citadel began after the defeat of the November Uprising (1832–1934). The construction costs (11 million rubles = 8.5 tons of gold) covered the Congress Kingdom in its entirety, it was a punishment for rebelling against Russia, at that time Poland did not exist on the map, and this part of it was under the rule of Russia (Królikowski, 2002). In the years 1847-1965, the Citadel was surrounded by six forts. In 1883, the construction of a large ring fortress was started, first implementing the outer ring of forts around the city (Pałubska, 2006). The last stage of the expansion of the fortress falls in the years 1889–1992.

The outer ring was composed of 15 brick-and-earth artillery and infantry forts (Fig. 1). The inner ring, on the other hand, consisted of five brick-and-earth forts. From 1890 to 1894, earth embankments and resistance points were built. The network of military roads connected all defense constructions. There were outlines along the rings – the perimeter roads, which were connected by main exit routes from Warsaw. In addition, the roads ran radially from the center of the Citadel to each fort. To this day, this communication system is very important in the functioning of the city. The Regional Railway Line provided food stores and barracks. At the end of the 1890s, the forts were modernized, and brick and concrete buildings were replaced. The work ended in 1907.

In 1915, Russian troops left Warsaw without major fights, and as a result, the fortress was built without a huge cost. That same year, on August 5, German troops entered Warsaw. The occupation began, which lasted until November 11, 1918 (Pałubska, 2009).

In April 1916, permission was granted for almost a three-fold enlargement of the Warsaw area. As a result of this management, the city crossed its administrative borders and entered the fortress areas, which eventually ended the fortress city stage. The Germans used the barracks, warehouses and other objects of the fortress, but they were little interested in the forts. After Poland regained its independence, the forts remained the property of the army. Later there was a process of transferring fortress areas to other ministries and allocating them for development (Pałubska, 2008). Liquidation of the fortress at the same time enabled the territorial development of the city.

The fortress belt consisted of two rings: an internal one with a storage function and an external one with a combat function. The main site of the Warsaw Fortress was the Warsaw Citadel. The forts are located in 10 districts of Warsaw (Fig. 2). The Warsaw fortress created a star-band layout of the city, which is still visible...
today. The border adopted from 1770 was an acute border that could not be crossed. A large increase in the population from about 70 thousand up to about one million before World War I caused a huge spatial restriction. The closure of the city in strictly defined limits contributed to the narrowness, the introduction of high buildings as well as the reduction of sanitary conditions. On the other hand, the necessity to establish communication between the forts was decisive for the expansion of roads, city canalization, introduction of electricity, telegraph and telephone network (Królikowski, 2002).

The urbanization process took place – areas with multi-family housing appeared. Agricultural land changed its destination mainly to the development areas and areas of allotments gardens. Previously unpaved communication routes were changed to asphalt roadways (Figs. 3 and 4).

Due to the restructuring of the army as a result of system changes (1989), the Warsaw forts were transferred to the Military Property Agency and the Military University of Technology. Then, according to the law, a part of the forts was put up for auctions. Nine forts have been nationalized or privatized. Ignorance about the values and possibilities of using the Warsaw Fortress contributes to the degradation of the valuable relic of the Russian fortifications from the 19th and the beginning of the 19th century.

Loss of the military function of the fortress does not mean that the fortress did not play later and currently does not play an important function.

The fortress had a significant impact on the city’s physiognomy. The spatial structure of Warsaw was significantly shaped by the fortress. Until 1911, in the area of the esplanade, investments related to the erection of brick and wooden buildings were significantly limited. In this way, the natural spatial development of the capital was stopped. The direct effects of the slowdown were: an increase in population density, space deformation, increased concentration of buildings, and thus a widespread lack of housing. The demand for investment land increased. Intermediate effects can be attributed to the dynamic development of the town, which were located outside the wide fortress belt. The abolition of these restrictions in 1911 resulted in a three-fold administrative enlargement of Warsaw in 1916 and the incorporation of fortress structures into the city’s structures. Another problem was the connection of all post-construction areas with the central part of the city.

In 1918, the post-industrial areas changed their ownership status. Although the earlier owner – the State Treasury (in Polish law represents the Polish state acting in the field of civil law relations in which it is treated as an equal partner to private entities as opposed to the sphere of public law relations in which the State represented by public authorities decides unilaterally on the legal situation of individuals) – sold the objects of the former fortress at a very low price or transferred free of charge, the poor communication of these areas from the city center resulted
Unfortunately, after the World War II, previously developed urban planning guidelines were not binding. The departure from the urban plans of the Great Warsaw has squandered the chance for a cohesive development of the capital. The fortress areas passed into the hands of the army. During the socialist period new estates were created in the area of the fortress esplanade, diversified urban and architectural landscape for each of the districts (including the Przyjaźń estate, the Jelonki estate, the Ksawerów estate). However, it was an incoherent process, without a comprehensive urban concept. Unfortunately, the disharmonious landscape of Warsaw was created in this way.

Currently, the area of the former fortress (nearly 250 ha, without protection zones), due to the size of the spatial foundation, architecture, earth structures distinguished by the terrain on the background of the city landscape, is a very attractive element in the capital tissue, which should be used in development projects (Fig. 5).

The main source of the fortress’s problems was the abolition of its most important function – a defensive function. Both the protection and management of these residues in the capital city is a significant problem. The area occupied by the fortifications is 250 ha, which already in 1995 represented more than 1% of the invested areas, as well as nearly 17% of all areas of services, administration and central functions of the capital (Molski, 1996).

To this day, from the 19th century fortification system, in addition to the Warsaw Citadel, 21 forts and 5 defense points have been preserved. The network of fortified roads was partially obliterated, and only the residual amount of secondary plantings remained from fortress greenery. Urbanization processes have led to a blurring of the layout of the nineteenth century Warsaw Fortress (Królikowski, 2002).

During the inter-war period, the idea of allotment gardens was extremely popular. Some of these gardens in Warsaw were also built around the forts. This was the beginning of the implementation of the so-called the Great Warsaw (Różańska and Krogulec, 2007). Unfortunately, these plans were not implemented due to World War II.

Currently, from the 19th century fortification system, in addition to the Warsaw Citadel, 21 forts and 5 defense points have been preserved. The network of fortified roads was partially obliterated, and only the residual amount of secondary plantings remained from fortress greenery. Urbanization processes have led to a blurring of the layout of the nineteenth century Warsaw Fortress (Królikowski, 2002).

Based on the analyzed material concerning the condition of the historic forts of the Warsaw Fortress, it was found that the districts where brick structures were best preserved were: the Bemowo, Mokotów and...
Table 1 Development and use of the Warsaw fortress facilities

| Location | Fort name | Use | Degree of coverage with woody vegetation (%) | Area (ha) | Degree of preservation of a historic substance (%) |
|----------|-----------|-----|---------------------------------------------|----------|-----------------------------------------------|
| The Warsaw Citadel | – a museum and park facility, partly used by the army – visual dominant of the city | 40 to 50 | 36 | 90 |
| | Siergiej | – the Żeromski Park, in the buildings of a cultural and gastronomic establishment | 11 to 40 | 2 | 60 |
| | Aleksiej | – the Kussociński Park, sport facilities | 1 to 10 | 2 | 85 |
| | Władimir | – in 1999, the fort was taken over by the Military Property Agency and in 2000 sold to a private catering company. The fort together with part of the underground corridors is open to visitors with a guide. A fragment of the Traugutt Park | 1 to 10 | 2 | 85 |
| | Śliwicki Fort | – in 2001, in the immediate vicinity of the fort, a housing estate for police officers with buildings on the esplanade and partly in the courtyard of the fort was created. Although there are still individual buildings of the fort, this construction was carried out without taking into account the principles of protection of monuments and care for the urban order of the city. This meant a permanent breach of this valuable monument and its layout. It should be emphasized here that there were projects and works in which the fort was to be included in the layout of the newly planned housing estate as a park and recreation area | 11 to 40 | 8 | 20 |
| Citadel Forts | P – Parysów Fort | – the whole area is an area for cycling, hiking and running. For more extreme crosscountry cycling or running accents, we can use the same fortifications and embankments (located in the very center of the fort). | 11 o 40 | 8 | 80 |
| | Szczecin Fort | – currently, the fort area is partially occupied by allotment gardens, but you can easily visit the barracks and find out the ruins of the caponier; homeless | 1 to 11 | 7 | 50 |
| | M – Mokotów Fort | – after the World War II, from 1961 to the end of the 1980s, the fort housed television and radio broadcasting equipment. Currently, the fort is surrounded by residential buildings, and it is used as the seat of companies and clubs | 40 to 60 | 7 | 65 |
| | Cze – Czerniaków Forts | – in 2007, the fort left the army, the facility is accessible and deprived of supervision. Allotment gardens in the fort were almost completely devastated. The area of the fort is overgrown with trees and the outline of the original fortifications is difficult to see; to this day, large sections of the old forts have been preserved. Currently, the investment area Fort CZE – apartments estate | 40 to 60 | 7 | 70 |
| Inner ring of forts | I Bielany | – currently, the area of the fort is used for sports purposes, forest park | 11 to 40 | 8 | 35 |
| | II Wawrzyszew | – currently, the fort’s area is divided into parts. In the neck there are workshops and warehouses, and in the front part – a recreation center. The moat of the fort is one of the cleaner water reservoirs of this part of Warsaw | 40 to 60 | 6 | 65 |
| | A Babice | – from the end of the war to the present day, the fort is occupied by units of the Polish Army, and therefore it is unavailable | 60 | 5 | 70 |
| | III Blizne | – the fort is in the hands of a private owner who has not undertaken any work there yet. It is still surrounded by a picturesque moat. Around are garden plots and new housing buildings, group events | 11 to 40 | 5 | 60 |
| | IV Chrzanów | – paintball, apartments estate | 40 to 60 | 5 | 80 |
### Continuation of the table 1

| Localisation | Fort name | Use | Degree of coverage with woody vegetation (%) | Area (ha) | Degree of preservation of a historic substance (%) |
|--------------|-----------|-----|---------------------------------------------|-----------|---------------------------------------------|
| V Włochy     | institute of Nuclear Chemistry, cross-cycling; to this day, the fort has been in good condition. The post-mortem area in its neck and on the esplanade (in front of the forehead) is occupied by the cemetery. There are barracks preserved in very good condition, poterna barracks on the axis and ruins of the caponier and blown-up traditor. The very clear layout of the fort, including the embankment and esplanade, has been devastated and seized in recent years. In the outline of the embankments, there is a playground, tennis courts and recreation areas for the residents of the district. | 11 to 40 | 5 | 65 |
| VI Okęcie    | warehouse area, parking; since the end of World War II, the Okęcie Fort area belonged to the Polish Army. From 1999, the army moved out of the fort. Currently, the object is preserved in about 50%; the remaining neck barracks without a frontal wall and the powerful ruins of the main caponier (anti-cloak). The dry fortress ditch has been re-flooded with water, through which moisture penetrates into the neck barracks. Fortunately, several modern objects have been created in the fort, effectively blurring the readability of the object. | 1 to 10 | 5 | 50 |
| VII Zbarż    | currently, the surrounding of the fort is used as garden plots. The fort itself, located in a state of ruin, is owned by the State Treasury, the State Enterprise “Porty Lotnicze” and several other investors. The structure of the building was partly affected by the construction of the S79 expressway. There are two reservoirs in the fort – one of them is a moat on the shore of which one of the few concrete caponier of the mountain pine was erected in Warsaw, whose powerful ruins still exist today. The second is in the flooded courtyard and is used for diving; the maximum visibility recorded was up to 4–5 meters. The maximum logged depth within the fort’s courtyard is a little over 4.5 meters. | 40 to 60 | 5 | 40 |
| VIIIA Służewiec | – film production company, „Czołówka”, apartments estate | 60 | 3 | 70 |
| VIII Służew | – apartments estate | 11 to 40 | 7 | 65 |
| IX Czerniaków | – a walking park and a museum of the Polish Army. After the war, through the eastern part of the fortification, the street was pierced and in the eastern part of the fort a park was created, while the western one until the 1990s was occupied by the army. Since the early 90s, there was an inaccessible warehouse of equipment collected by the Polish Army Museum, and at the end of the 1990s, the Museum of Polish Military Technology was opened | 1 to 10 | 7 | 50 |
| X Augustówka | – currently, there are organized: modeling, shooting (sport carabiners) and archery competitions. There is also an earth track with obstacles for cyclists. There is an interesting cycling route around the fort | 5 | 30 |
| XIII Lewiepol | – used by the army. In the surrounding forest there are traces of the western embankment (on its foreland a slight curvature of the moat), the trace of the northern embankment of the fort (traversed by a WWII shooting ditch) and characteristic alternate embankments and depressions – traces of the barracks | 40 to 60 | 5 | 5 |

Source: Zaraś and Januszkiewicz, basing on Głuszek (1995), Karpińska (2007)
Śródmieście districts. The situation of forts located on the right side of the Vistula is much worse, where most of them have not been preserved. The general Bem’s Fort was characterized by the highest degree of preservation of the historic substance.

A significant part of the forts included in the building with the best preserved historic substance is at the same time used for leisure. Three of the seven best-preserved forts (Fort Bema and two forts of the Warsaw Citadel – Forts Alexey and Vladimir) are at the same time forts used for leisure (Boguszewski, 2004; Karpińska, 2007).

A comparative table of the Warsaw Fortress forts is showed (Table 1). On its basis, one can get an idea of the access possibilities, the method of use, the size of the trees, the surface, the degree of preservation of the historic substance and the usefulness of the fort in servicing the leisure traffic.

As you can see in each case, the fortress buildings enter the system of urban green areas due to the vegetation and, above all, the high proportion of trees and shrubs. They differ in availability. They are partially excluded from urban use due to their military functions. Their availability is also limited. The reasons for this limitation are: museum functions, housing functions – fort buildings are part of estate greenery within apartment buildings or due to lack of access and difficult accessibility. However, a significant part of these facilities has been absorbed into urban tissues and adopted for modern purposes (Figs. 6 and 7).

However, you can also see that the potential of these objects is not fully used. First of all because of the city landscape shaping. Their mutual connection is not fully utilized, which from the end of the 19th century shaped the spatial order of Warsaw, as well as the areas suburban at the time, and today included in the city’s administrative boundaries.

As a result of the SWOT analysis, the following was identified:

S (Strengths):
- very interesting architecture,
- interesting forms of terrain,
- the most common mature vegetation, mainly in the layer of trees and shrubs, but also in the herbaceous layer,
- a clear spatial composition of the objects themselves, as well as their mutual relationship in space,
- easy access for visitors.

W (Weaknesses):
- bad technical condition of the infrastructure,
- limited access as a result of the management method,
- disturbed spatial relations with the environment typical of a defensive work by, for example, building the foreground.

O (Opportunities):
- easy access to each object allowing to create a clear system of objects of decorated urban greenery, harmonizing with the urban nature system,
- development of military tourism,
- social activation.

T (Threats):
- location attractive for developers,
- no management programme for the entire facility,
- no clear instructions to protect the facilities,
- no information system about the facility,
- individual objects have different owners.

Recently, due to the location of fortification objects (within the city), their market price increases. The lack of free areas for investments in Warsaw creates a great opportunity for the Warsaw Fortress. On the other hand, investments also pose a danger, resulting primarily from ignorance of the advantages and opportunities of using areas. Therefore, you should change the user structure at the beginning to enter only those investments that will be appropriate to historical values. For example, a significant threat is the idea of using forts for garden plots. An interesting solution, however, turns out to be the inclusion of fort objects in the spaces.
of new neighbourhood investments as parts of estate parks (Figs. 6 and 7).

One should also outline the problem of illegibility of the layout of the Warsaw Fortress in the city space. There is no integration of the functional and spatial layout of the city with the fortification, which is why it is very important to legalize the entire former layout of the fortress. The rings of the fortress, the location of buildings along the main exit roads should be exposed to the shaped agglomeration of Warsaw – concentric-band. It should also be aimed at perceiving individual objects as elements of the system. The historical and scientific values resulting from the complexity of the functional and spatial system of the fortress are not legible and fixed in the urban tissue.

Changing owners, previous functions, provisional use, insufficient budget, ignoring conservation conditions contribute to the destruction of objects. A prerequisite is the adoption of adaptation and investment measures that will contribute to the conservation and conservation coopers of the entire fortress system (Głuszek, 1995).

It is necessary to work on a coherent concept of development of all objects of the former fortress, emphasize the value of objects as historical objects. In the Warsaw Fortress, despite conservation restrictions, high-standard, modern functional solutions can be introduced. At the same time, the fortress can be preserved as a monument of military architecture and as a valuable spatial foundation. The fortification areas can play an active role in the spatial layout as well as the natural layout of Warsaw (Molski, 1996).

All actions that are currently insufficient should aim at giving a contemporary form and function that honors all their values, ranging from military and historical values, spatially – architectural, nature and landscape.

Contemporary tourist attraction should refer to the so-called 3xE rules (entertainment, excitement, education), which has supplanted the previously existing 3xS rule (sun, sea, sand) (Richards, 2005). Under the new rule, new ways of development form a coherent educational and entertainment programme.

The developed ways of developing the fragment of the outer ring of the Warsaw Fortress for the needs of military and cultural tourism were also based on the relational structure of the tourist attraction. At the beginning, the tourist presents the attraction of the so-called marker (e.g. guide, information boards). During the visit, the marker is converted into a real view. Below is the relationship between tourists, views and markers (view information) (McCannell, 2002) tourist + marker/view = attraction

Conclusion
1. Defensive work The Warsaw Fortress is a unique object with a very high cultural and historical value. This object has a large impact on the city’s physiognomy due to the current network of streets, which is a continuation of the system of fortress roads of various ranks. Part of the defensive structures has become important park elements or centers around which garden-style estates developed.
2. Currently, one of the compositional dominants of the city is the Warsaw Citadel. The remaining forts constitute existing local dominants, especially those located in the city center. Other undeveloped objects, due to the very interesting architecture and terrain, resulting from the characteristics of the defense works, constitute potentially valuable elements shaping the city space. The condition is to observe the rules of shaping the space around the defense work.

3. In the area of study, military-cultural tourism was not developed at a satisfactory level; full use is not made of tourist facilities belonging to the 19th century Warsaw Fortress for its development. In the area covered by the study, there is no tourist and educational programme. The functioning of forts as tourist attractions is assessed at a very low level.

4. The historical spatial layout of the work is now illegible. Forts are perceived as independent objects, not as objects that are part of a larger system. The main reasons for this condition include improper maintenance, inappropriate way of managing the facilities, as well as inadequate forest management.

5. The ring system of the fortress can be exposed.

6. The objects covered by the study are well communicated – both from the center of Warsaw as well as suburban towns. This applies to collective and individual transport.

7. In the area adjoining the site, there are historic objects that increase the attractiveness of the route connecting the forts.

8. Access to facilities is difficult, primarily through a highly fragmented ownership.

9. Preserved historical elements are often neglected; no adequate measures are taken to secure them.

References

BOGDANOWSKI, J. 1996. Architektura obronna w krajobrazie Polski. Warszawa : PWN, 1996.

BOGUSZEWSKI, P. 2004. Problemy zagospodarowania fortyfikacji na terenie Warszawy. In Materiały z konferencji: Twierdza Głogów – zagospodarowanie budowli obronnich w Polsce. Motyl, K. – Stępień, J. – Rokaszewicz, R. [red.]. Gmina Miejska Głogów, Oddział Zielonogórski Towarzystwa Przyjaciół Fortyfikacji. Głogów : Towarzystwo Ziemi Głogowskiej, 2004, pp. 27–34.

CLARK, D. – GLAZER, S. 2004. Questing. A Guide to Creating Community Treasure Hunts. Lebanon : University Press of New England, 2004.

GLUSZEK, C. 1995. Problematyka konserwatorska Twierdzy Warszawa. In Fortyfikacja. Tom I. [red.] Lewicka-Cempa, M. Warszawa – Kraków : Towarzystwo Przyjaciół Fortyfikacji, 1995, pp. 83–91.

GOLIŃSKA, M. – HERMAN, A. – PRZYBYŁOWSKA, D. 2015. Twierdza Warszawa. http://www.slideshare.net/dariaprybylowbska/twierdza-warszawa-koniec. Access 7. 5.2015.

KRAPIŃSKA, A. 2007. Możliwości wypoczynkowego wykorzystania fortów Twierdzy Warszawa. Warszawa : SGW, 2007.

KRÓLIKOWSKI, L. 2002. Twierdza Warszawa. Warszawa : Dom Wydawniczy Bellona, 2002.

McCANNELL, D. 2002. The Tourist: A New Theory of the Leisure Class. New York Schoken Books. 2002.

MOLSKI, P. 1996. Problemy adaptacji terenów pofortecznych Twierdzy Warszawa do współczesnych funkcji. In Fortyfikacja. Tom IV. [red.] Lewicka-Cempa, M. Warszawa – Kraków : Towarzystwo Przyjaciół Fortyfikacji, 1996, pp. 17–25.

PALUBSKA, K. 2006. Park Kulturowy Twierdza Warszawa jako element systemu rekreacyjnego miasta. www.krajobraz.kulturowy.us.edu.pl/publikacje artykuly/zarzadzanie/palubskapdf. Access 10. 11. 2015.

PALUBSKA, K. 2009. Funkcjonowanie systemu fortyfikacyjnego Twierdzy Warszawa w strukturach miejskich. In Zespół XIX. wiecznych fortyfikacji Twierdzy Warszawa. Konsultacje i założenia do projektu planu ochrony parku kulturowego zespołu XIX. wiecznych fortyfikacji Twierdzy Warszawa [red.] 2009.

PALUBSKA, K. 2002 Biuro Stołecznego Konserwatora Zabytków. Warszawa, 2002, pp. 17–22.

PALUBSKA, K. – MELANIUK, K. 2009. Projekt Parku Kulturowego Zespołu XIX. wiecznych Fortyfikacji Twierdzy Warszawa. In Zespół XIX. wiecznych fortyfikacji Twierdzy Warszawa. Konsultacje i założenia do projektu planu ochrony parku kulturowego zespołu XIX. wiecznych fortyfikacji Twierdzy Warszawa [red.] Palubskia, K. Biuro Stołecznego Konserwatora Zabytków, Warszawa, 2009, pp. 123–145.

Richards, G. 2005. Cultural tourism in Europe. Wallingford : CAB International, 2005.

RÓŻAŃSKA, A. – KROGULEC, T. 2007 Mury i wały miejskie jako czynnik kształtujący krajobraz Warszawy. In Przyroda i miasto. Tom X. Część II. [red.]. Rylke, J. Warszawa : Wydawnictwo SGGW, 2007, pp. 158–166.