A R C H I T E C T U R E C I V I L E N G I N E E R I N G

The Silesian University of Technology



ARCHITECTURAL FEATURES OF MILITARY ARCHITECTURAL STRUCTURES IN POZNAŃ

FNVIRONMENT

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Abstract

This paper aims to present architectural and educational features of historic military architectural structures in Poznań. The issues treated herein include the preservation of forts today and the resulting opportunities as well as difficulties in the use thereof for new functions reflecting the contemporary needs of a city. The paper provides three detailed examples of Polish and international military architecture refurbishments. The Graf Kirchbach Fort III in Poznań was chosen for the needs of the paper. The research material was developed on the basis of literature research, fort III survey and information obtained from Poznańskie Towarzystwo Przyjaciół Fortyfikacji [Poznań Friends of Fortifications Association]. The knowledge and research contained herein demonstrate the potential of post-fortification architecture, its cultural value as well as conversion opportunities in accordance with sustainable design objectives.

Streszczenie

Celem artykułu jest przedstawienie możliwości architektonicznych i edukacyjnych zabytkowych obiektów architektury militarnej w Poznaniu. Problematyka porusza temat stanu zachowania fortów w obecnych czasach i wynikających z tego możliwości oraz trudności w ich wykorzystaniu na nowe funkcje odpowiadające współczesnym potrzebom miasta. Artykuł podaje trzy szczegółowe przykłady polskich i międzynarodowych rewitalizacji architektury militarnej. Na użytek artykułu wybrano obiekt Fort III Graf Kirchbach zlokalizowany w Poznaniu. Materiał badawczy został opracowany na podstawie badań literaturowych, inwentaryzacji fortu III oraz informacji uzyskanych od Poznańskiego Towarzystwa Przyjaciół Fortyfikacji. Przedstawiona wiedza i badania wskazują na potencjał architektury pofortecznej. Prezentuje jej wartość kulturową i możliwości adaptacyjne zgodne z założeniami projektowania zrównoważonego.

Keywords: Military Architectural; Forts; Poznań; Revitalisation; Historic structures.

1. INTRODUCTION

The paper endeavours to broach the subject of revitalising historic structures using 19th century Graf Kirchbach Fort III architecture as an example. The research depicts the fort's history, its design use and location in the Poznań Fortress urban fabric. Opportunities to convert the fort to serve new functions reflecting the dynamic growth of the city it finds itself in are described herein. A survey of the structure was carried out in order to depict military architecture design issues. The conservation of the historic monument is then assessed according to criteria established by the Historic Objects Conservation Department at the Warsaw University of Technology's Faculty of Architecture (WAPW) Sections which survive despite the passage of time as well as those which have been destroyed are identified.

Subsequent parts of the paper present selected examples of revitalisations of fort structures with the aim of

depicting conversion opportunities for architecture of this type. A SWOT analysis was carried out, the local spatial development plan for Poznań's "Malta" region was reviewed together with the local development documents for the city of Poznań "Studium uwarunkowań i kierunków zagospodarowania miasta Poznania" [1] in order to obtain design and legal criteria for the chosen structure. Architectural and Construction Historic Monuments registry entry as well as the "Revitalisation Act Objectives" [2] dated 17 November 2014 were used to complete the obtained information. Design guidelines were collated resulting from the conducted research.

2. AIM OF THE RESEARCH

The research aims to present fort structures' architectural facilities using the surviving Fort III in Poznań as an example. A survey of the structure and collected historical documents make it possible to assess the state of preservation of the historic object. Urban analyses depict the planning and location issues faced by the fort against the backdrop of a modern city. The presented historic and architectural value highlight the structure's historic value. The collected materials make it possible to identify the conversion possibilities and properties for structures of this type. The cited revitalisation examples depict the opportunists for putting military architecture to further use and adapting it to the needs of contemporary users.

3. RESEARCH METHODOLOGY

The Graf Kirchbach Fort III in Poznań was chosen for research purposes. The city's fortress structures location context was analysed on the basis of literature and historic sources. The "Malta" region, where the fort is located, was studied. Urban and functional barriers of the area subject to research were established. The fort was thoroughly surveyed on the basis of survey measurements documentation as well as Architectural and Construction Historic Monuments registry entry No/022 drawn up by A. Pryszczewski MSc [3]. Sections which survive despite the passage of time as well as those which have been destroyed are identified. Photographic documentation was established and additional information was collected from Poznańskie Towarzystwo Przyjaciół Fortyfikacji members. The research also made use of information contained in the local development documents for the city of Poznań of 23 September 2014 and Resolution of the Poznań City Council No. LXXXV/982/III/2002 of 23 April 2002 concerning the "Malta" region Local Spatial Development Plan [4]. The paper uses information contained in the 1987 WCED Our Common Future report pertaining to the principles of sustainable design. To identify revitalisation features, guidelines set forth in the Leipzig Charter on Sustainable European Cities of 24–25 May 2007 [5] were used. Examples of revitalisations were analysed using selected examples in Poland and abroad.

4. THE POZNAŃ FORTRESS

The outlines of two rings are still noticeable in the city's urban fabric. These are traced by fortification structures or the remains thereof. The first ring is a ring of inner forts, it is older and the Citadel [Cytadela] is its characteristic feature. This ring was constructed over a number of stages, starting in 1828. The construction of the fortifications began in the northern part of the city. In 1840 the core on the left bank of Warta River was constructed from the West, whereas works on the right bank core started in 1835. Construction of the polygonal fortress was completed in 1869. In subsequent years, the fortifications were subject to reconstructions and modernisations.

In 1902 an official decision was made to demolish the fortifications on Warta's left bank. In order to retain the forts' historic names, it was decided to transfer them to the forts of the external ring.



The forts of The Poznań Fortress in 1896. By Mariusz Wojciechowski

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The layout of the external forts and fort III began to take shape in 1876. Works on it continued, as a result of which in 1896 it comprised 9 main forts and 9 intermediary forts [6]. The layout of fortress roads survives as part of modern Poznań's road system. Main and intermediary forts differ in size and complexity, even though their defence systems were similar. The discussed Fort III is a main fort. The fort's design was developed at the 3rd branch of General Fortifications Inspectorate Engineering Committee under the supervision of Hans Alexis von Biehler. The design is a faithful copy of the Strasbourg fortress. Plans of the main forts were based on two models. They differed in size and angles between head sections, as well as the locations of barracks. Type I was a larger facility, and the barracks were located in the "gorge" section and encompassed 8 recessed rooms, 6 in the wings and latrines. The angle between the head sections was 140°. Barracks in type II forts also included 14 rooms, however, only 4 were located in the recessed section and 10 in the wings (as well as the latrines). The angle between the head sections was 1300. Forts II, III, V, VII and IX are based on the first model, whereas forts I, IV, VI and VIII on the second. In later years, the forts were subject to reconstructions and modernisations as a results of which their footprints changed. The decision to add connected artillery batteries, with access from the moat is an example of such works. Railtracks also run along the moat, which were used to transport gunpowder to the artillery batteries.



Figure 2.

Fort III in Poznań, photograph taken in 1970, Poznań Zoo photo., source: www.mrowkojad.wordpress.com (19.05.2015)

5. GRAF KIRCHBACH FORTY III SUR-VEY

Urban development of the city and pursuit of a functional programme which reflects the contemporary needs of the residents has led to a modification of the military structures' communication system. Fort III is located within the Wielkopolski Ogród Zoologiczny in the Eastern part of Poznań. The main entrance to the zoo is located to the west, 200 m away, with an internal road in direct vicinity thereof, which leads to the fort entrance. Entry to the fort from the internal road is on the west side, in the direction of the city centre. The surrounding area is rather flat to the south and west, and further it drops towards "Malta" lake. Graf Kirchbach Fort III (or Gröber) was erected between 1877 and 1881. The construction works were supervised by "C. Francke u. Co." [3]. Officers (porucznik) Milde and Geisler I as well as captain Knappe were in charge. In 1889 six and ten position connected artillery batteries were added. It was conduring the Wielkopolska quered Uprising (1918–1919). During the inter-war period, it was used by the Polish Military, and during WW2 the German Army located production facilities therein. To improve production, the fort was partially modified. A roof was constructed over the moat and concrete platforms were built on its bottom. The interiors were also changed, some openings were bricked up. After the war the facility was used by the L.W.P. (Polish People's Army).

Since 1972 the fort has been part of Wielkopolski Ogród Zoologiczny. Also since that time attempts have been underway to adopt the structure for zoo functions, floor-ceiling gorge barracks assemblies were demolished and the bridge was rebuilt, the works were interrupted. In the north gunpowder storage room a "lounge with a fireplace" was arranged, the room was refurbished and adopted for commercial use. The structure of retaining walls was constructed using ceramic bricks laid head to head. Wall corners were profiled to avoid tearing uniforms. The fort features brick ceilings, covered by a layer of sand and then a layer of crushed concrete (up to 1.0 m thick) and another layer of sand (0.2-2.5 m thick). The main postern, side posterns of the head barracks as well as gorge and head barrack casemate feature lunette vault ceilings. Barrel vaults are found in the gunpowder storage rooms and adjacent posterns. Lunette vault ceilings with arches resting on half round binding joints are found in the gorge barracks side postern. Dome type ceilings are located at the junction of the head barracks posterns. Half dome ceilings were installed



Modern layout of the Zoological Garden together with Fort III buildings

near gorge barracks exits to the yard. Retaining walls counterscarps were reinforced using hollow arches made in the form of brick vaults. The main gate opening is enclosed by a full arch. Most gate and internal door openings are crowned with brick segmental arches, others with round arches. Window openings in the barracks are partially preserved, crowned with round and segmental arches, some openings are paired. Ammunition recesses in bunkers are covered by brick segmental arches. Rectangular embrasures, crowned with lightly traced segmental arches. Entry gate preserved, double winged, sheet metal reinforced using usections in the form of strips and struts, riveted. The rebuilt bridge features a modern wooden surface. There are spiral stairs in the gorge barracks and side posterns. Floors are made of bricks with concrete topping or stones. The facility is surrounded by a dry moat with a concrete bottom. It is 10 m wide and 5 m deep. The fort features a "Rundbogen" (semi-circular) brick façade. The front façade of the gorge barracks was constructed with a clear axis of symmetry, however, the given segments vary in length slightly. The façade plane opens up on both ends in an obtuse angle, establishing a space which widens the moat in the entrance area. The facade is two storeys, with the gate opening along its axis, with a brick half-hip roof. The opening is flanked by pilaster strips. The whole makes up a slight avant-corps, decorated with a cordon, toothed, multistepped cornice. There are three friezes above, and a sign with the name of the fort in the middle. The whole

is crowned by a stepped cornice. On the sides of the façade the symmetry of window openings separated by pilaster strips is clearly visible. A cordon cornice in the upper part and two strips of toothed cornices add variety to the façade. Friezes cover the structure. On both sides, in the middle of the facade a brick slanting retaining wall was constructed supporting layers of earth which cover the structure. The side part of the facade is linked with a wide frieze with embrasures and segmental arches. A cordon cornice is used on the frieze. There are two window openings near the corner, with a semi-circular finish. This section of the façade is crowned by a multi-stepped cornice. There are pilaster strips on further part of the two-storey facade and wide openings topped off by a segmental arch in the bottom storey. Windows are coupled and crowned with semi-circles in the top storey. Friezes isolated by pilaster strips feature a cordon cornice. The façade is crowned off by a toothed, multi-stepped cornice. The gorge barracks façade becomes the moat retaining wall. The wall is crowned off by a profiled cornice. An old fortress grill above the counterscarp wall made using forged bars. Caponier facade with embrasures crowned by a significant cornice, a layer of earth above constricted by a slanted brick wall. In the external part of the fort there are small façades of first aid shelters located at a certain distance apart and barracks entrances via gate and door openings capped with round arches. Given parts are crowned off by brick, toothed cornices with a layer of earth above.



A graphical depiction of the preservation state of Fort III

6. PRESERVATION STATE OF FORT III

The technical condition of th structure is assessed to be "relatively good - slight damage and loss of historic material, which does not constitute a risk to the entire structure". The preservation of the fort was determined using criteria developed and used by the WAPW Historic Objects Conservation Department. The fort structure, or structural walls, ceilings and foundations are preserved apart from inter-storey floor-ceiling assemblies in the gorge barracks. The fact that these floor-ceiling assemblies are missing does not endanger the structural stability of the building. Embankments and earth fortifications survive only partially. The north connected artillery battery was entirely demolished. The zoo pavilion was built on its site. Walls, ceilings, retaining walls are in good condition. Missing inter-storey floor-ceiling assembly in the gorge barracks prevents accessing the latrines. The condition of some of the fort's earth elements and bunkers is good. Remaining, clear system of outer yards. Missing parts of walls covering relief arches. Partially surviving fortress grate. An observation post with an armoured cupola survives W.T.Neu. Right connected battery in good condition. Façades preserved but some window openings partially bricked in. Exits from gorge barracks onto the yard also bricked in. All internal ceilings preserved. In some rooms openings partially redesigned and eliminated. All stairwells preserved. Many iron window shutters survive in the barracks, wooden embrasure covers and small metal details. Original elements also include a pump and a well in the right section of the gorge barracks. Fort III is one of the best preserved structures of this type in Poznań. It provides exploitation opportunities not only in terms of tourism but also education. This structure is valuable when it comes to historic awareness and as an example of a complex military architecture design. Correct development of the adjacent areas which includes the preservation of earth embankments within the fort. The fort elements which have not survived include a bank which surrounded the structure along its external outline. It comprised an approximately 20-30 m

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wide earth slope. From the side of the fort it ended with a scarp which hid a road circumnavigating the entire footprint of the structure. From the entry courtyard, the purpose of the bank was to provide an optical cover for the entry gate looking from the perspective of a person. It was a key element of the structure's defences again an enemy.

Table 1.

Images and descriptions of surviving fort III elements

Description Inside the left part of the gorge barracks. Inter-storey floor-ceiling assembly was demolished during an attempt to modernise the fort to be used as part of the zoological garden. The gate vault and window openings well preserved. Retaining wall of the moat

which runs around the fort. Wall structure together with arches survives. Reinforced concrete beams are not part of the original structure and were installed during an attempt to modernise the fort.



Images

Surviving well and pump. This element is located in the right section of the gorge barracks.

Ventilation opening located in gorge side postern. Ventilation runs along the structural part of the fort's roofing.

Door opening in the right gunpowder storage room. Lamps and illumination installed by Poznańskie Towarzystwo Przyjaciół Fortyfikacji.



One of the documents used to create design guidelines is the local development documents and figures for Poznań. Fundamental information associated with the studied area are part of Volume I of the study and pertain to vegetation, protection of historic monuments and communication. The conclusions stemming from this part of the document confirm that the plot includes an area which has been entered into the register of historic monuments, and that it is part of the major vegetation belts. Analyses also point to good location of the grounds, both in terms of public transport as well as road traffic. Information pertaining to the fact that a "Vm" symbol local plan was adopted for the area in question can be found on subsequent diagrams. Equally important information can be found in Volume II pertaining to the directions for spatial development. The "2030 Vision of the City and City Mission" contains important information, where one can find the following motto: "Poznań is a metropolitan city with a strong economy and high quality of life, the growth of which is based on knowledge". The objectives for the city's development listed therein are as follows: "Poznań as the capital city of Wielkopolska, with its rich traditions: looks after sustainable development" and "ensures varied forms of leisure within the scope of culture, sport and recreation". The strategic goals adopted together with the resolution are also important: "increasing the city's significance as a knowledge, culture and sports hub" and "improving the quality of life and attractiveness of the urban space and architecture". In striving to convert the city into a metropolis, the resolution emphasises the significant role played by education and culture functions, which are to be ensured by "an increase in the significance of the institution of culture, hosting cultural events of a high rank". Information directly pertaining to the fort was included in chapter "Areas with special development conditions", which assigns the symbol UF to the plot and defines "post-fortification structures with locations for commercial functions and accompanying vegetation". The resolutions set forth the primary use direction to be the preservation of post-fortification structures and a complimentary direction in the form of accompanying commercial facilities. The development principles determine the height of buildings to be low and emphasise the historical nature of the fortifications. New developments also have to comply with the principles applicable to Natura 2000 Protection areas (code PLH 300005) and "Poznań Fortifications" SCI (Site of Community Importance). The initial design features stem from the guidelines found in chapter 4.2.9 of the Act entitled "Forts of the external ring of fortifications":

"At the stage of drawing up a local plan for the external fortifications ring of the Fortress ensure that:

- 1) all elements of the forts are protected (buildings, earth embankments, fortress vegetation, historic landscape) with transformation into park greenery acceptable;
- 2) current structures cannot be expanded and new structures cannot be built with the exception of:
- fortification elements reconstruction;
- recreational paths as well as street furniture elements;
- technical infrastructure and required transport infrastructure;
- information boards pertaining to historic structures;
- buildings which support the commercial functions fulfilled by adopted post-fortification structures, taking into account the restrictions stemming from the "Poznań Fortifications" SCI area and the historic nature of the fortifications.
- 3) strive to restore the old parallel fort road system, also by establishing alternative connections through vegetated areas, facilitating the creation of a cohesive system,
- 4) strive to secure and expose uncovered fortification elements with an option for their partial reconstruction;
- 5) strive to preserve the system of auxiliary structures and military devices."

The fact that the plot is part of a Natura 2000 Protected Area is equally important. The site was classified due to the presence of bats wintering in Fort III. When converting buildings one should remember to protect the habitats of these animals, and also take into account their wintering period (October–February), during which conservation works are not permitted.

Guidelines stemming from the local spatial development plan for the "Malta" area in Poznań.

The selected area is located by ul. Krańcowa 81 on plot number 29/2, marked with a 1ZO symbol on the

local plan (zoological garden). It is one of the sites which are home to the Zoological Garden. The adopted local plan for this area emphasises that it is to be used for investments which fulfil leisure and entertainment functions for Malta Park users. More detailed guidelines in the plan prescribe, that within the zoological garden, and as such on the fort plot, "the current use class is maintained, i.e. zoological gardens as a site for keeping animals comprising species which live in the wild and the associated research and development, educational, exposition, popularization and recreational activities". Further provisions which apply to the fortress structures are:

- "Within the 1ZO site the structures and devices associated with the operation of the zoological gardens shall be maintained and developed, on the basis of a prepared operations and development programme, subject to it not resulting in a change to the water balance, and in particular lowering of the water table or polluting the ground as well as waters and the atmosphere within the garden and its vicinity"
- "Structures or devices located within the zoological gardens, not associated with garden's operations, may only be used in a manner which does not collide with the functioning of the garden"

Guidelines by the Conservator and Restorer in the plan pertaining to Fort III:

- "protection of historic object Fort III (reg. no. A-245), as an element of the external fortifications ring located within a 1ZO site"
- "a partial reconstruction of fort structures and their adaptation for recreational services as well as a zoological garden is acceptable, subject to the structural character and urban plans being maintained"
- "all required activities or those associated with works as specified in par. 2 within the protected area require permission by the appropriate historic objects protection body" [1].

8. RESEARCH RESULTS

Analysed documents show that newly developed architecture in Poznań has to be designed in accordance with the sustainable development principle. Pursuant to the 1987 Our Common Future WCED report, this means "development, which satisfies the basic needs of all people and maintains, protects and restores the health and integrity of the Earth's ecosystem without endangering the aspirations of future generations and without breaking the long terms capacity thresholds of Earth's ecosystem". Newly designed structures have to be adapted to the current needs of the city and its users, but should also foresee its development and the associated functional and spatial changes. The local development plan assumes a continuation of the functions associated with the Zoological Garden on the plot. Since the time the fortress became part of the Zoo (1972), there has been an attempt to adapt the structure for the needs associated with expanding the garden. The fort was to have been re-designed, most probably to house a dolphinarium, which did not come to pass. This interference resulted in missing floor-ceiling assemblies in gorge barracks and lack of access to the latrines. The project was interrupted probably due to functional and technical reasons. During the year, the temperature of the structure oscillates between 12 0C and 14 0C, and the construction of a heating system would ruin the substance associated with heritage, historic bricks and even the Fort's stricture. The fortress is not suitable to fulfil zoo functions, to house live animals, and its reconstruction is contrary with the objectives of the Conservator and Restorer set forth in the local plan and local development documents for Poznań. Buildings to be designed cannot interfere with the existing communication system of the zoological garden nor the existing historic fabric plan. The facility's revitalisation should be planned so that "historic elements should be a manifestation of a spatial strictures' development historical continuity and changing use requirements". In designing a new structure one has to skilfully find the equilibrium in selecting new forms, so as to avoid "adding elements which are not harmonious in shape, colour or material, but as this work is not only beautiful, but also a document of art and history, the most thorough method should necessarily be chosen in maintenance". The new architecture should emphasise the qualities of the historic object and highlight them in an architectural and functional manner. It is not only the conservation and restoration of the historic substance which dictates an object's durability, but first and foremost its use continuity and supervision of persons associated with looking after the historic monument. Thus, to guarantee its survival, an appropriate quantity of users has to be ensured and interest has to be aroused amongst residents and tourists (activities within the scope of revitalisation tasks). All design and pre-design stages and the associated decisions have to be in accordance with the "Act on the protection and care of monuments". The design scope, as already mentioned, reaches numerous planes. The design includes a historic monument, thus it was necessary to get in touch with the office of the Municipal Historic Monuments' Conservator and Restorer as well as associated entities. Cooperation with Poznańskie Towarzystwo Miłośników Fortyfikacji significantly impacted the research. Members of that organisation supervise and promote Fort III. The knowledge provided by them pertaining to Poznań's fortifications made it possible to find the missing data on the monument.

9. POSSIBILITY OF ADAPTATION OF THE EXAMINED OBJECT

Factors affecting the urban and functional development of the city, resulted in a growth of new commercial, residential and cultural developments. New structures and areas are continuously added to the dynamically changing map of Poznań. New investments may collide with protected areas or historic monuments. Nowe Zoo [The New Zoo] in Poznań, spans the entire Fort III area. "Malta" is near the city's main square, within the strict city centre and is one of Poznań's characteristic places. There is a lot of vegetation here. These include a "Natura 2000" protected area. Presence of the Lake Malta [Jezioro Maltańskie] as well as other reservoirs constitutes a dominant feature. Residential areas are spread in harmony along the main communication routes. Recreational and cultural grounds, which reflect the tourist potential of the area and the city, are small when compared to the total area. Commercial areas overlap the dominant features and public squares. The distribution of tourist attractions skews the urban system in the direction of the Old Square [Stary Rynek]. Green areas, which are home to fort III, dominate in the opposite direction. Malta lake is the urban connecting element between the two zones. The "Maltanka" narrow gauge railway is also a tourist attraction, which connects "Rondo Środka" a public transport node with Wielkopolski Zoological Garden, and thus with fort III. The area is well communicated with the city centre and also with the rest of the province. Five main roads traverse "Malta", including two fast traffic trunk roads. Fort III is accessible via one of these. Public transport in the guise of tram tracks facilitates full use of the area. and the presence of cycle routes further raises the quality of the area. Urban and planning analysis of Malta indicate a strong dominance of green areas. Apart from high and low vegetation, Malta also includes "Cybinka" allotment gardens as well as woodland and forest stand areas. Negative effects of vegetation can be observed within the design area, it is destroying the historic substance and devastating protected earth embankments. Most destructive low vegetation and small trees were removed by Towarzystwo Przyjaciół Fortyfikacji, however, some still remain. In order to protect the historic monuments, the destructive vegetation should be thoroughly cleared and its re-growth should be prevented by the application of appropriate chemical means.

10. REVITALISATION EXAMPLES OF MILITARY ARCHITECTURE HISTORIC MONUMENTS IN POLAND AND ABROAD



Figure 5. Velturada cultural centre, Spain, interior. Source: www.archdaily.com (19.05.2015)

The problem of designing new functions in a historic structure was successfully solved in the revitalisation of former army barracks in Madrid. Rafael de La-Hoz is the designer behind the revitalisation. The structure was converted into the Venturada cultural centre. Introduction of new exhibition spaces was possible due as non-load bearing elements were removed from the interiors of the barracks. The design made use of technologies which facilitate recovery and re-use of energy. The used architectural elements contrast with the historical substance and highlight its nature. By revitalising the barracks, the city performed its functional programme and the historic monument was given an opportunity to survive.

An excellent example of protecting historic buildings is the Sea Museum in Las Palmas de Gran Canaria (Spain). Architects from Nieto Sobejano Arquitectos are responsible for the design. The design converts fort structures into museum functions. Apart from appropriate development of the interior spaces, the surroundings of the building were also planned. Architectural layers which do not reflect its original design were removed from the fort. This operation made it possible to obtain appropriate internal spaces. Materials used in the design include glass, concrete and rust-imitation sheet metal. A contemporary finish provides the backdrop for the historic substance and highlights the designated use of the functional zones. The added architecture provides a positive contrast with the historic forms and allows the observer to distinguish between the historic structure and the contemporary design. Architectural and urban planning efforts pertaining to this design area provide it with an opportunity to be used once again and to elevate its position in the urban fabric of the city.



Castillo De La Luz Museum Extension, Spain. Source: www.archdaily.com (19.05.2015)

Military architecture structures are scattered throughout Poland, across its various regions. They differ in their spatial development plans, architectural footprints and functional programmes. Taking into account their level of preservation and location dependent diversity, one may notice that each one constitutes a separate and unique historic value. Therefore, revitalisations of structures of this type exclude the possibility of ending up with a copy of another object, and thus enrich cities by unique architecture and spatial form. The city of Poznań unveils an exemplary investment comprising the establishment of a park within a former citadel. It uses the historic space of military architecture for new functions. A new park has been designed on the site the Citadel, where museum functions of a patriotic nature will be intertwined with vegetation. The park makes use of the remains of structures as exhibition spaces and the remaining areas as stages for sculptures, monuments and recreational grounds. Visitors to the facility can also enjoy two on-site restaurants. The remaining attractions include an amphitheatre, Rose Garden and "Harcówka" Youth Culture Centre. This is an example of a revitalisation spanning an area of approximately 100 hectares.



Figure 7. Poznań Citadel: a bird's eye view. Photograph by Marcin Walkowiak

11. SUMMARY

The described examples show how a conversion affects the lifetime of a historic monument and furthers sustainable development of cities. An appropriately created design, reflecting the needs of a contemporary user, one which works well with the existing structures, guarantees that a unique site will be established in an urban space. Such efforts not only guarantee care for national heritage, but also stand testament to the awareness and respect for history of a given society. Actions which aim to improve the quality of current space by highlighting its qualities and using its benefits are reflected not only in the urban planning sphere, but also in the social and economic realms. Designs of this type are one of a kind and impossible to copy in any other place in the world. These properties mean that they are unique and not only guarantee the physical survival of the structures, but also that they remain deeply rooted in social conscience. Results of research on fort III in Poznań show that design works on this type of architecture should be preceded by thorough analyses of the legal regulations and a survey. In order to create a structure which is in accordance with contemporary needs, one has to be familiar with sustainable development design principles. Analysis of fort III and the adjacent areas depict design issues stemming from the need to find a balance between a historic monument and contemporary urban planning and architecture. Military architecture structures carry a design potential, which should be skilfully used. A thoroughly prepared and executed revitalisation of a historic monument guarantees its survival and provides one with an opportunity to create a unique architectural object.

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