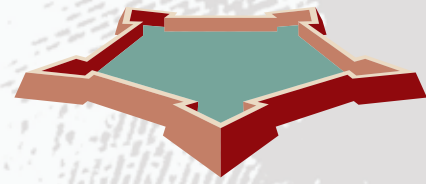


# Monuments for Peace, Culture and Tourism

Germany • Poland • Lithuania • Russia

**Baltic Fort Route**



## **Baltic Cultural and Tourism Route Fortresses**

Results of trans-national cooperation in INTERREG-III-B project  
2005–2007



## **APPROPRIATE MONUMENTAL USE OF FORTRESSES**

Documentation and recommended proceeding

## Saving of the European Cultural Heritage Fortresses



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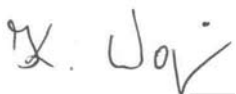
**I**t is a wonderful time, where what has divided in the past, now unifies. For centuries, fortresses were turned against their neighboring states, per se. The maintenance and extension of fortresses was an act of virtual aggression against the outside world. Thus tensions were generated, even at peaceful times, which then unleashed in acts of war.

Today, the maintenance of fortifications can bring people together. As cultural and historic monuments, they remind of a changeful and complicated history of towns and regions. It is through the understanding of the multifarious past, that a dangerous conception of a single state or nation creates a monolith of culture, history, and interests. The diversification of the understanding of history overlaps, thus creating common fields for people and national structures.

The research on fortresses as cultural objects broadens the new understanding of history. Entanglements in acts of war, represent only a small fragment in the history of a fortress. However, the remaining life was fulfilled with peaceful and humanely matter: the daily work of soldiers and civilians, commercial activities and private life. An objective representation of fortress history, revalues everyday life and denotes fighting.

The concepts of new forms of utilization of fortresses (tourism, cultural site, historic exhibit, and entertainment site respectively) are nowadays a criterion to what extent a city or region can create impulses for its own development. Whoever can accomplish to turn the ruins of a fortress into an attractive asset, will be able to do the same with a factory, a biotope, or a landscape.

All these aspects coalesce in the project "Baltic Fort Route", which has been coordinated by Mrs Ramona Simone Dornbusch, in the years from 2005 through 2007. As the Director of this institute, which has been engaged significantly, I would like to congratulate all participants on their idea and result of the work. May the fortifications bloom and flourish. In their contemporary meaning, of course.



**Dr. Krzysztof Wojciechowski**  
*Director of the Collegium Polonicum*

A joint institution of the European University Viadrina Frankfurt (Oder) and the Adam-Mickiewicz University Poznan.



## Introduction and Acknowledgements

The EU-INTEREG-III-B-Project “Baltic Culture and Tourism Route Fortresses” (BFR) is allowing documentation to be prepared in connection with Work Package III “Utilisation and Management Methods” that discusses the problems of use of the partner fortresses represented in the project and, moreover, offers an opportunity for drawing comparisons with other European fortresses.

The present paper, which originated during the project period, is a first step in this area. Comparable research of greater extent has not so far been undertaken. Consequently, the study is therefore also in the nature of a model.

The documentation is based on the project documents of the project partner BFR hitherto existing in the Transnational Information System (TIS) and on knowledge acquired in all workshops and network meetings of the BFR Project. A BFR seminar in spring 2006 in the Fortress of Königstein in Saxony and the BFR expert discussion in June 2007 in the Citadel of Spandau in Berlin, but also the international scientific conference in March 2007 at Kaunas offered an opportunity, internally and externally, for public discussion of the problems of fortress use and for further consideration of the problems and potential solutions. Many of the participants attending and also the project partners had already participated in the two international conferences in 2001 in Berlin and 2005 in Magdeburg on the subject of “Maintenance and use of historic citadels and major fortresses” and were therefore fully familiar with the problems.

Not least, the creation of the documentation is due to the experiences of the compiler and all those who contributed by making their works available. The scientific guideline is based on the specialist bibliography listed in the Annex.

The European University Viadrina Frankfurt (Oder) has assumed responsibility for preparing the present documentation. Its thanks are due especially to all project and external contributors who have provided additional work on the following fortresses in written form:

**Mr Zdzislaw Balewski** for Fortress Wislamouth in Gdansk / Danzig

**Ms Karolina Bilska** for Kolobrzeg / Kolberg

**Mr Pawel Cieszynski** for Kostrzyn / Küstrin

**Mr Manfred Kühne** for Spandau Citadel in Berlin

**Mr Christoph Malcherowitz** for the Malzhaus bastion in Peitz

**Mr Frank Riesbeck** and **Mr Gunar Ißbrücker**, Humboldt-University at Berlin for Forts V in Kaliningrad and Kaunas

**Mr József Pohlmüller** for Komárom

**Mr Hartmut Röder** / GKU, Berlin for Kostrzyn / Küstrin and Fort Gorgast

**Mr Jürgen Scharnweber** for the citadel at Dömitz

**Mr Piotr Stoppa for Fort Grodzisko** / Hagelsberg in Gdansk / Danzig

**Mr Rimvydas Strazdas** for the major fortress of Kaunas

**Ms Angelika Taube** for Fortress Königstein

**Ms Andrea Theissen** for the Citadel and Fort Hahneberg in Berlin-Spandau

Particular thanks are due to Mr Hans Smith in London for ongoing translation work and to Ms Emilia Rieger / GKU Berlin for the preparation and data transformation of numerous pictorial documents.

With the presentation of this document, the compilers express the hope that the project will be continued and additional fortifications around the Baltic from Latvia, Estonia, Russia, Finland, Sweden, Norway, Denmark and Germany can also be included in the area of research. It would also be desirable for the study to be evaluated and supplemented at a later date, and extended with regard to the need for political action.

For the European University Viadrina

**Ramona Simone Dornbusch**  
*Chair of Monument Preservation*  
*“European Cultural Heritage”*

For the “Baltic Culture and Tourism Route Fortresses” Project

**Hans-Rudolf Neumann**  
*Sc. Coordinator BFR*

## **Uses and Usefulness: Aspects of the utilisation of historic fortresses**

Hardly a subject seems more suitable for comprehensively reflecting the international and interdisciplinary aspects of conservation, and its tasks and developments, in a variety that only few categories of European architectural history achieve.

Already in antiquity, cities, centres of political control and military encampments were protected by walls, palisades, towers, gates, walls and ditches (1). Even in the medieval world, castles, safe houses and fortified settlements shaped the day-to-day picture of landscapes and cities. Starting with the ring castles, walled enclosures of the Slavic and Viking times (2), the imposing castles and fortifications of the late Middle Ages that have survived throughout Europe (3) to the numerous city surrounded by towers, walls and ditches even today (4) reflect not only origins and consolidation of European cities accompanied by wars, alarms and conquest, but also the daily experience of life and the environment of a large part of the civil population. With the rise of artillery, the fortress developed as an architectural necessity into ever more complex and demanding systems of bastions, citadels, casemates, forts and outer works, their integrated whole cities and landscapes into a complicated network of sophisticated military defence lines (5). Since the Renaissance and the age of the Baroque, engineering and military architecture were amongst the chief concerns of the architects, who, like Claude Perrault or Balthasar Neumann, often began their careers in military service. The numerous treatises surviving of “military building art” further, even today, provide evidence of the lasting influence of this approach on the general development of architecture. With the development of modern war technology, these defences lost their strategic importance in the twentieth century. Nonetheless, the remains of such installations as the Maginot Line and the Atlantic Wall or East Wall must in the broadest sense be included amongst the defensive structures of the modern age (6).

This brief and superficial overview of “fortresses” and “fortifications” as architectural phenomena already clearly shows that most of them consist of extensive spatial facilities and frequently also of works with a marked local character. When clas-

sifying properties of this kind for conservation purposes, not only the various types and categories of monument are intended (structural facilities as individual or multiple properties, ensembles, conservation areas or parts of these, horticultural and green monuments, protected land, and possibly urban monuments), but their conservationist care, maintenance and development further frequently depends also on the responsibilities of various authorities or different specialist bodies, cooperation between whom requires overlapping conceptual outline planning. This applies the more so since the future use of historic fortified works is now commonly undertaken within the framework of tourist objectives and product strategies with a marked event culture, which from time to time run counter to conservationist interests.

Nonetheless, the pronounced monumental character of historic fortresses and fortifications does not conflict with the idea in principle of economic use, provided this does not reduce or worse still eliminate the monumental value of the work. Consequently, in Germany and in other European countries, the law and conservation practice share the view that the maintenance and care of listed buildings can be ensured in the long term only through use. Unused listed buildings are far more often exposed to degradation than those whose use is in an economically sensible relationship to the cost incurred through maintaining them. It is true that the maintenance and repair duties derived from the German conservation laws make only limited requirements as to suitability for use (7). However, changes of use are predominantly enshrined in the official approval procedures and consequently always require a decision to be taken in the light of the individual premises. Finally, the direct environment of a monument is subject to a restriction on use insofar as the fabric or appearance of the property is jeopardised.

Cultural monuments often also underwent changes or extensions of use in the past, and have frequently survived to the present day only in consequence. A prominent example of the retention of a historic fortification through reuse is the Marienburg in the former Province of East Prussia, which fell to

Prussia during the Polish partitions. Since the royal Prussian financial administration considered retaining this massive stronghold and many other fortifications of the period of the German Knights as too costly in the absence of suitable use, Frederick II had cost-benefit plans drawn up in each case that compared the expenditure on potential demolition with the cost of converting the works. In the case of the Marienburg, the State authorities decided on conversion to a barracks with forage store, so that the building was in fact badly mutilated in the subsequent period. In many further cases, buildings that could not be put to suitable use were in fact totally demolished (8). The lessons from this historic example are manifold. First of all, it is clear that meaningful use is often appreciably cheaper than drastic measures or even demolition. Moreover, the Castle of Malbork, is now, as an outstanding witness of its turbulent history, an incomparable tourist magnet endowing the entire region with an economic future.

Major conserved properties are not only a recognised token of a region in view of their often varied links with its history but also from a purely physical-optical aspect are a landscape factor with a high image value because of their dominant pictorial effect and striking appearance. Having regard to use in the “fortress” conservation category, this often presents the authorities with the task in practice of establishing innovative strategic concepts and forward-looking monument management, within the context of conservation, urban and regional development and theme-related location marketing, in order to make best use of the multiple opportunities for social, cultural and economic synergies available. They include to an undeniably great extent also an effort to promote awareness of these monuments with their special history, often also associated with problems in the public mind, and their local and regional environment, and to introduce considerations as to their use actively into public discussion.

In this context, the concept of “valorisation” already established in the area of town planning and cultural landscape and ecological development, has been adopted. Strategies for the “valorisation of major or large scale properties” presuppose recognition of their specific value, an effort to maintain this value (9) and to revive and experience it, and through specific measures are aimed at gaining benefit and im-

age. The concept developed by the Rhineland-Palatinate castle management of “Castles, Stately homes and Antiquities of Rhineland Palatinate (B.S.A.)” and other partners for the fortress of Ehrenbreitstein near Coblenz is exemplary of such compilation of use and usefulness. The fortress, built between 1817 and 1828 to secure the Rhine-Main-Moselle area, now acts as an intensively used cultural centre for the region, visited by an average of 400,000 visitors in the so-called fortress season between March and November and provides work for some 100 staff. Amongst other things, parts of the fortress are used as a youth hostel and restaurant and various stores. The cultural history effect of the location as a factor establishing identity and crystallising regional history is underlined and utilised by means of a quality museum-archaeological presentation of the history of the Fortress itself and additional museum exhibitions in conjunction with the Department of Archaeological Conservation of Rhineland-Palatinate and the Land Technical Museum of Coblenz. In addition, the Fortress ditch and appurtenances offer a unique, imposing stage for mounting cultural events. An information, guidance and orientation system for visitors already distinguished with the design prize from the Land of Rhineland-Palatinate, contributes towards authentically imparting an unmistakable identity for the location and at the same time imposing the character of the monument on the necessary infrastructural facilities. Altogether, the unmistakable aura of the place has thereby been successfully emphasised, by stressing the inimitable aura of the site with a multiplicity of measures, and thereby putting it to a high degree of both tourist and economic use without reducing its authenticity.

This example, of which there are many, shows to what extent conservation aspects can be usefully integrated into complex management. In addition, as the historic process of the Marienburg in East Prussia shows, this can be extended from the present profitable purely financially oriented assessment to a conservation benefits analysis (10) the object of which is to examine complex alternative action against the preferences of a defined target system. Here, less attention is paid to the efficiency of the project than to its effectiveness, i.e. its overall contribution towards the material (conservationist) and economic maintenance of a monument having regard to its stated objective. The overall

benefit or total contribution is the result of the sum of individual contributions. The concept of a benefits analysis doing justice to the monument is based on the introduction of a hierarchical system of objectives, at the top of which stands conservation as the ultimate aim in line with the modern economic and ecological objectives of sustainability. The total contribution can be broken down in to individual parts according to objective, the contribution of which to the overall goals can therefore be assessed. The basic logic of the valuation approach lies in making the complex area of assessment for decisions structurable through qualified individual-contributions and operational according to established criteria, which in turn are consistently aligned on cultural, social or even ecological aspects.

In addition, such factors as conformity to location, the cultural historical aspects of a region, its cultural coding in terms of “creating pictures and myths” or even the “stage managing of places” are of decisive importance and may advantageously iron out possible economic disadvantages with the necessary expenditure on maintenance. A large scale planning approach of this kind aligned on the safekeeping of cultural resources has long been adopted in France, and, since 2003, also in Poland under the motto of “Economic investment through investment in conservation”. Both countries have opted for a model for the large scale demarcation of protected areas (11) applicable not only to conservation but also to ecological objectives, based on suggestions taken from e.g. the Granada Charter for protecting architectural heritage, but especially from the futuristic formulation of new guidelines within the EUREK European Physical Planning Concept (12) for circumspect handling of the cultural and natural heritage of regions. The core of these concepts is an integrated approach with different specialist policies expressed within the framework of a “Round Table” concept for common objectives in the protection of cultural and natural resources, to which other goals of town planning and location development are subordinated. In addition, it is the jointly declared intention of all actors concerned to establish a comprehensive set of rules to strengthen regional identity as soft location factors and at the same time to re-establish the value of peripheral areas (13). Interestingly, fortifications of minor or major extent in both countries now belong amongst the preferred properties for the

demarcation of cultural history-oriented protected areas of this kind (14). In addition, the general conservationist interests are accompanied beyond the complex planning approach especially by an extended cultural historic regional association between the various locations, which opens up further roads to providing information and revalorisation. In particular, the French system displays a consistent interest in involving the public. This also includes cooperation with the Association des Centres Culturels et de Rencontre (ACCR), which aims to record and impart the frequently existing knowledge concerning monuments and their regional history. A further economic advantage of funds invested in the valorisation of protected areas and their listed buildings lies in their planned inclusion in national tourism advertising, with specific marketing structures (15).

The valorisation, tourist development and economic use of fortifications on conservation principles is a management task of a complex order. Concerns regarding the maintenance and requirements as to the use of a resource must not be forgotten, but must be supplemented by a concept aligned on the established ultimate goals. The topical property of a “architectural monument” and, in this case, the special group of “fortresses” even more so, not only needs special technical competence in approach but, moreover, an high degree of creativity in development, information providing and public relations. Nonetheless, many positive examples show that precisely the topic of “fortresses” or in an extended sense “military history” offers a perfect platform for making use of the increasing interest in the historical aspects of regions and corresponds to an increased desire for identification and local orientation. Based on a broad focus of cultural specimen codings, fortresses should not only be thematically developed individually but also appear particularly suited to being included in integrated cultural landscape development concepts, marketing approaches and identity plans. In addition, there should be a prospective targeting in the simultaneous activation of the public to gain innovative skills in developing research and knowledge and in imparting sustained demand for quality cultural and structural facilities (16). The valorisation of fortresses from conservation aspects therefore appears as a cross-sectional task beyond the resources of any one department, and requiring particular management skills. It requires a

high degree of knowledge, competence and creativity from those concerned and the continued willingness to communicate and make compromises, which can be verified against quality management aligned on the objectives of conservation of monuments. Ultimately in its objective predominantly dependent on public acceptance and demand, the theme property of “fortress” is above all designed

for a plethora of uses within the framework of cultural tourism concepts and can especially contribute towards qualifying areas of experience linked to the townscape and cultural landscape. In the consistent evaluation of their location and user potential and their physical structural surroundings, the particular importance and quality of this species of monument becomes manifest.

**Professor Uta Hengelhaupt**

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*Europe-University Viadrina Frankfurt (Oder)*

Notes:

- (1) Implicitly informative but also superficially still preserved in striking buildings are, for example, in Germany, the fortifications of the Roman military camps in Regensburg, Cologne, Xanten and Trier.
- (2) For example, Gross-Raden in Mecklenburg-Vorpommern, Raddusch in Brandenburg and Fyrkat in Jutland.
- (3) In view of their multiplicity, it is almost unnecessary to mention examples here, such as the powerful castles of the Normans in Britain, France and Italy, the fortifications of the crusaders in the Mediterranean area and of the German Knights in Northern Europe, the baronies and castles of the Rhineland and the fortifications for the time of the Turkish wars in South-Eastern Europe
- (4) Here, too, just some examples from the many are Carcassonne in France, San Geminiano in Italy, Hermannstadt / Sibiu or Schässburg / Sighisoara in Transylvania, Dubrovnik in Croatia or also Ochsenfurt and Rothenburg ob der Tauber in Franconia.
- (5) Apart from the imposing early new-period citadel of Siena, the Order of St John in Rhodes, etc, reference may also be made here to the Dutch defensive concept of the “Waterline” and the retained ring of extant forts round Amsterdam.
- (6) In public thinking on this subject, there is, at least in Germany, some widely shared echo with regard to works of the First and Second World War, which nevertheless does not stand in the way of the essentially monumental character of these buildings. In addition, both the forms of deliberate neglect and also, sometimes, an occasional unreflecting military tourism draw critical comment. The surviving protective works and Marshall Zhukov’s command post on the Seelow Heights have recently undergone protective conservationist maintenance under museum management. The Seelow Heights Museum provides a balanced didactic account for this.

- (7) Article 5 of the Bavarian Monuments Act, which states that listed buildings should preferably be used for their original purpose, goes furthest here. Where that is not possible, as similar a use must be aimed for that permanently guarantees the retention of the monumental fabric (cf. U. Hengelhaupt, Article on Use and Restrictions on Use, Proper use of listing buildings in: Manual of Monument Protection and Conservation, published by D. Martin and M. Krautzberger, (2nd edition) Munich 2006, pp. 221 et seq.
- (8) On the history of the Marienburg, see amongst others Bookmann, Hartmut, Die Marienburg im 19. Jahrhundert, Berlin 1982.
- (9) Thomas Metz, In Wert setzen, Status Report on work on castles, stately homes and antiquities in Rhineland-Palatinate, in "Wirtschaftsgut Denkmal? Conservation series, published by "Erhalten historischer Bauwerke e.V." pp. 43—55.
- (10) The model for useful value analysis is attributed to Christof Zangemeister, Nutzwertanalyse und Systemtechnik; Eine Methodik zur multidimensionalen Bewertung und Auswahl von Projektalternativen, Munich 1976.
- (11) ZPPAUP and culture parks
- (12) Offprint of the EUREK-Text: European Community Official Publications Office, Luxembourg.
- (13) In preparation of a target definition, comprehensive scientific-conservationist documentation of the area is prepared with regard to its cultural, ethnological, typological and topological features. This selective compilation of regional identity creates a definition of "revalorisation projects" (mise en valeur), explicitly concentrating on maintaining the defined features and potential value of the region. The process is thereby characterised not in that the resources are made suitable for profitable stage management but for rehabilitation, use and marketing oriented on the needs and sensitivities of the potential.

Characteristic of the French approach is that the criteria of area protection to be defined vary from one area to another and can be ascertained only in the round table discussion process. A process of participation and comprehension is therefore aimed for, with positive effects on acceptance of the measure as a whole.

- (14) For example ZPPAUPs in the Region Haute Rhin und Alsace. Mention may be made of amongst other sites Fort Hagelsberg / Grodzisko near Danzig (Park Kulturowy Fortyfikacji Miejskich Twierdza Gdańsk) in Poland.
- (15) Source: Ministère de la culture et de la communication en France. The State Tourism agencies promote the labels reserved exclusively for the designated protection areas: „The fine city of art and history“ and „Small cities of character“
- (16) See inter alia Ulf Matthiesen and Manfred Kühn, in: Matthiessen, Stadtregion und Wissen, Wiesbaden 2004; and: Auf dem Weg der Regionalen Kulturpolitik in der Kulturregion Münsterland – Draft – Guide presentation and Profile, Dusseldorf 1998

## Subject-matter of the documentation

### 1 What is it about?

The present work is concerned with the problems of empty fortress and garrison buildings that no longer serve any further purpose now that their original, military function has been relinquished. These buildings are for the most part facilities and structural shells of the 19<sup>th</sup> and early 20<sup>th</sup> centuries that up to the outbreak of the First World War were designed to secure cities and parts of the country and generally accommodated military personnel. The facilities consist mainly of casemated walls surrounding a city in the form of a defensive wall or assume protective functions as isolated forts well beyond the city (Kaunas, Kaliningrad, Modlin, Kostrzyn). Shell buildings contained barracks or other garrison quarters including such utilities as military railway stations, bakeries, abattoirs, stores or airship sheds – buildings serving the infrastructural support of a fortress and military garrison.

Many of these fortifications and buildings continued to be used after the First World War, except where individual parts were sold off to the cities and municipalities concerned. With the departure of the Soviet forces after perestroika in the nineties of the previous century, many of these facilities and buildings suddenly stood empty in the countries of Eastern Europe and began to decay. Ownership and responsibilities for building maintenance were in many places unclear and no further use could generally be found, not even in the military sector, since the need of the national forces concerned for personnel and technical support was similarly reduced as a result of disarmament and there was therefore no need for recourse to existing structural facilities. However, in many places, fortifications and representative military buildings were recognised as cultural architectural assets of historic importance, which were initially placed under ancient monument protection without any clear idea initially as to future opportunities for improved use, let alone in general terms.

These shortcomings led many cities and municipalities to become partners in the INTERREG-III-B European projects “CONVERNET” and “BFR”, using the opportunities offered here for opinion-forming and an exchange of experience, and in order to look for solutions for tackling the problem described above.

### 2 Background to the documentation

The background to the present work is formed by the terms of reference for the INTERREG-III-B project “Baltic Culture and Tourism Route Fortresses” in Work Package 3: “Development of heritage compatible and economic utilisation of fortresses”. Potential uses to which vacant structures and sites can be put will be identified in a seminar and in local meetings with EU Project partners over a processing period of 2 years.

However, we shall not only be looking at the present situation with the Project Partners’ fortified sites. The subject had already been aired before the EU approved the outline project in 2004/2005. The topic was a problem from the start: wherever a site was abandoned and began to stand empty, people began to think whether existing shells might not be further used or reused or deployed for a similar but other purpose. These considerations have been voiced Europe-wide, whether in Italy, France, the Netherlands – traditional countries with an insurmountable number of historic fortifications, in Germany, which after the Versailles Treaty of 1919 had to decommission a vast number of its fortifications and nonetheless still to this day has to look after a wealth of splendid fortified sites and garrison buildings, and now also in Eastern Europe following the departure of the Soviet troops: countries such as the Baltic and associate Project Partner states, but also White Russia, the Ukraine, Hungary, the Czech Republic and Slovakia. Various meetings and conferences have

been held on this subject of re-employment in Western Europe in the past, a series of annual meetings of the Deutsche Gesellschaft für Festungsforschung e.V. [German Fortress Research Society] having been held in Germany since 1980, two international meetings in 2001 at Berlin-Spandau entitled "Maintenance and Use of historic Citadels" and in 2005 in Magdeburg, entitled "Maintenance and Use of Major Historic Fortresses". The meeting on "Military Buildings and Conservation" organised at Mühlheim an der Ruhr by the Rheinische Landesamt für Denkmalpflege [Rhenish Land Office for Conservation]. A meeting in Lille, France, already discussed the same problem in December 1992 under the title of "Quel avenir pour le patrimoine fortifié?" („What future for fortified heritage?").

This is now all the more worthwhile since following the departure of the former occupying forces virtually no interim use has taken place, so that the structural deterioration through standing empty is still slight and is therefore every prospect of retaining the architectural substance in the long term at relatively low expense and contributing to its rehabilitation through tourism or some other appropriate use.

### **3 Partners in the documentation (within and outside the project)**

The partners cooperating with the present documentation are firstly the project partners themselves. They are the Europe University Viadrina at Frankfurt/Oder, the German Fort Hahneberg at Berlin-Spandau, the two Polish cities of Kolobrzeg (Kolberg) and Kostrzyn nad Odra (Küstrin), the Museum Park in Gdansk (Danzig) and the associated Russian partners at the Spatial Planning Institute in Kaliningrad. Guest partners within the Project are also the Polish city of Nowy Dwor Mazowiecki with its Fortress Modlin. Others from outside the project include Fortress Königstein in Saxony (Germany).

As a Partner in the so-called "brain-pooling" for the Project, the Europe University of Viadrina offers the best opportunities for implementing the present documentation. Its scientific competence through its Chair in Monument Study ensures by means

of masters degree course in "European Cultural Heritage, Protection of European Cultural Heritage" that the basis and prerequisites of conservation are appropriately taken into account and appreciated when dealing with historic fortification architecture.

Fort Hahneberg was built in 1881 and until 1945 served the most varied military purposes. Because of its position within the inner German boundary, the fort lay in so-called "No man's land" until Reunification in 1989 and was therefore largely spared structural encroachment. Immediately following Reunification, the citizens of the surrounding municipalities began to use the Fort as a quarry to repair their own homes. This was quite soon stopped by placing it under protection as an ancient monument and forming an association. The Fort is now in a cross-fire between conservation and ecology and is closed for the present.

The Polish city of Kolobrzeg (the former Kolberg) still possesses some remarkable Prussian fortress architecture of the 18<sup>th</sup> century within its city area and a number of properties at the city's edge that are still in military use. Proposed uses are at present limited to the historic brick buildings of the Old City. Even though only partly used, improvements should be aimed at, to improve them as a tourist attraction.

The question as to future use of historic fortress structures in Kostrzyn nad Odra (Küstrin) is altogether more difficult. The completely destroyed Old City still exists, situated directly by the River Oder which also forms the city boundary, with its fortified walls surviving from the 16<sup>th</sup>/17<sup>th</sup> centuries. Gradual renovation of these fortifications, including the Berlin Gate, and the reconstruction of the Old City in modern architecture are planned. In addition to the Old City, the Old and New Cities were surrounded with a girdle of forts in the 19<sup>th</sup> century, of which Fort Gorgast is located on the German side and the three Forts of Sarbinowo (Zorndorf), Czarnów (Tschernow) and Żabice (Säpzig) on the right hand, Polish side of the Oder. Fort Gorgast is maintained by an association and is also in full use. The forts on the right bank of the Oder are partly or wholly demolished but form striking and attractive features in the landscape through their ruinous architecture or topographical location.



Of the Museum Park in Gdansk (Danzig), the old Prussian Fort Grodzisko (Hagelsberg), situated in a dominant position in the City above the central station, has been maintained. The Fort's structural condition, with its high walls and masonry casemates, can be described as good even though there is a clear need for ongoing maintenance work. However, large parts of the Fort are not or only inadequately used. This also applies to the internal buildings.

Kaliningrad, the former German city of Königsberg in East Prussia, was not only surrounded with a brick-built and embanked enceinte but also with a girdle of outlying Forts at a distance of several kilometres from the city centre. Various city gates in the enceinte are in use as museums, such as the Dohna Tower, as an amber museum, the Friedberger Gate, as a historical museum, and the Königstor, as a small city museum, freshly restored in 2006 for the 750<sup>th</sup> anniversary festival. The fortress system with its 15 forts and intermediate works is largely unrecorded. Fort 1 (Fort Stein) is privately maintained and inhabited, the external works of Fort 5 serve as a military memorial. Considerable importance is being attached to the Prussian fortifications as part of the City's future development and consequently also as an enhancement to its tourist attractions, in connection with the initial considerations for a replanned (?) reconstruction of the Dominsel (Cathedral Island) and Inner City.

Modlin was formerly a 19<sup>th</sup> century Russian re-trenched camp, with its origin reaching back to the 18<sup>th</sup> century. The Soviet troops who occupied the fortification until recently left on their departure a broad, fallow exemplar of European fortification art. Mention may be made of the citadel and a girdle of external forts, some of which are still in use by the Polish army. Modlin is now part of the City of Nowy Dwor Mazowiecki, to the north of Warsaw at the confluence of the Vistula and Narew. The German fortress of Königstein in the Federal state of Saxony is a mountain fastness that already served as a fortified stronghold in medieval times and can display all development levels of the modern art of fortification. Following German reunification, substantial securing, repair and improvement works were undertaken. The introduction of a new management model will attract a very large number of visitors in the tourist sector in cooperation with

the attractive and comprehensively used structures and fortress features and additionally guarantees an ongoing audience for its attractive calendar of events.

Additional examples have moreover been selected from Germany, Poland, Russia, Lithuania and Hungary, who are not partners in the BFR Project (see below), but where further development work is necessary.

#### 4 Purpose of the documentation

A properly used historic structure (every one of them essential) prevents decay and requires little expenditure to maintain its fabric. This is a recognised principle not only in the case of conservation but also in the property world generally. The present documentation therefore initially serves to provide good examples of how suitable uses can be created in order thereby to put fortified sites and garrison buildings threatened with neglect back into use and so obviate long-term decay. The present survey is also intended to show why only certain uses lend themselves to buildings of this kind and why other, often desirable uses are impractical by their very nature.

Putting to use to prevent structural decay is one aspect. Putting to attractive use is another. This requires special attention over and beyond actual use, since through attractive employment, additional effects can be expected for the site or the building, for the most part connected and interlinked with tourism. Achievable usage to boost attractiveness creates a basis for organising special events. These should in turn be seen with a view to growth and an ongoing flow of visitors and tourists. And so the circle is closed: a properly used, maintained and cared for building not only forms a structural centrepiece for its environment but is also an attraction to visitors and tourists who bring in money and leave money behind. This in turn benefits the building.

The present documentation is therefore also intended to propose recommended action, to be derived from good examples and illustrating the many facets to be taken into account when dealing with the problem of an empty or poorly maintained architectural work.

## What kinds of fortification are there and where do the problems with their use arise?

Fortresses and fortifications are as old as the history of mankind itself. From time immemorial, man has sought to protect his family, his possessions and his property. The simplest means of doing so in ancient times were the ditch and rampart. Fortress walls have been known since Jericho, even though the outcome of the bastion can already be found in Ancient Egypt.

The history of new-period fortification begins with the invention and use of black powder in Europe during the 15<sup>th</sup> century. Black powder offers the attacker new opportunities to improve his artillery; cities are forced to find a response to the new threat.

European cities in search of protection have since the 15<sup>th</sup> century been surrounded with walled ramparts fronted by ditches. The basic form of the rampart varies and depends on the offensive tactics adopted by a possible besieging army. Examples can be found in the Mediterranean area, not least also amongst the fortifications of Constantinople; the greater the advance is in fortress architecture, the lower the once high surrounding walls became. The bastion became the predominant element in the Italian, Dutch and French manner of fortification; past masters of this fortification art are Francesco Marchi, Menno van Coehoorn and Sébastien le Prestre de Vauban. Architects of the Old German fortification manner include Dürer, Georg Rimpler and Daniel Specklin. The cities girded with bastioned fortification rings in the 17<sup>th</sup> and 18<sup>th</sup> centuries resulted in city fortifications, with an all-round embracing rampart that substantially prevented their expansion.

At the turn of the 19<sup>th</sup> century, this method of fortification was also already superseded by later developments. The system of large fortresses emerged, which gradually developed from the polygonal to the ring fort system. A characteristic feature of the major fortress are its outlying forts: individual, self-contained fortified works whose task it was as far as possible to prevent an attacking enemy from firing directly into the inner city. At the end of the major fortress period, these forts were in some cases removed from the centre of the inner city by as much as 15 kilometres. Their construction in-

involved tremendous infrastructural facilities such as barracks, streets, railways and supply organisations that not infrequently structurally changed a city into a large, properly functioning military camp and consequently substantially influenced the social framework of the city's population.

What is a fortress? A fortress consists of many parts and must always be understood and seen as a whole. Individual fortifications were intended not only as a structural shell for one or other function but also as State buildings manifesting the full power of the State and Nation. This is an aspect that must be taken into account in all matters of further employment or reuse, if justice is to be done to the importance of these structures as valued monuments.

To briefly summarise the most important forms of the new-period fortress as they emerged from history in the course of their development, we have the following characteristics:

Individual fortifications: Fortified individual works such as e.g. a mount fastness, citadel or fort

City fortifications: Ramparts (enceinte) in the form of bastion-forts, round bastions, artillery bastions, possibly in conjunction with a citadel

Major fortifications: Fortified complexes consisting of a number of works, city walls in a polygonal line, ramparts with forts, ramparts with forts and barracks, and military infrastructural facilities.

Research into historic new-period fortifications is still at an early stage. A number of countries such as e.g. France, The Netherlands, Germany, Poland and Russia are only just beginning to work up the history of their fortifications and in doing so provide a typological overview. This research area was developed only in the eighties of the past century but on account of its importance to conservation, city planning and European history, is altogether a factor no longer to be ignored in the European cultural and research landscape. Having regard to these findings and in view of the pragmatic events in their slow but progressive conversion into the former fortifications in military use, the need has neces-



A major problem in dealing with fortresses and military works is the history and attitude of the local population. Local people have always regarded fortresses as military premises, always occupied by soldiers in uniform, and in the past less as a potential deterrent against an external enemy than, more often than not, as a threat to the individual. Following the partition of Poland, the new Russian fortified camps were undoubtedly initially built to secure the new Russian western frontier and were also regarded as defensive bulwarks in a strategic defensive context for the Russian empire. However, the local Polish population regarded these devices as an instrument of oppression and repression and the later history of the 19<sup>th</sup> century proved them right. The Polish rebels captured following the events of 1863 languished in the casemates of Fortress Kiev. So, as formerly the Bastille in France, the concept of the fortress became a symbol of sovereign violence against the subject.

Mentalities of this kind are invasive, since the period of dismantling was initially also superficially one of “relaxation”. The immediate threat disappeared insofar as fortifications had also to be demolished in Germany following the First World War, under the Treaty of Versailles. Local people did little to retain these buildings as historic monuments; rather, it was the politicians who, on utilitarian grounds campaigned for the retaining of many fortifications: they offered a potential for future use on account of the enormous available space. In other countries where demolition was not imposed by law, fortress buildings continued in uninterrupted military use so that the mentality was different here.

Dismantlement gave rise to new problems. Fortifications could never be removed like a tree with its roots, but generally only demolished down to the surface level of the ditch, or thereabouts, unless new building also required the parts below ground level to be removed. Contemporary photos by the dismantling authorities show that demolition of the ramparts generally simply meant filling the ditches. The rising ditch walls for the most part remained intact and many fortified cities have today to cope with the archaeological phenomenon where new buildings repeatedly encroach on the foundations of former fortifications and their footings. Numerous examples of recent times show this. In Mainz, the

complete remains of a rising Fortress gate were dug out again a few years ago on the site of a new radio station. A quite different user problem arises here: an archaeological one, taking us into the “Building into the Stock” area, which we will not, however, discuss further in the present documentation.

All these events of historic origin have led and still lead to a certain reticence in approaching or even accepting these relicts without some prejudice, as compared with e.g. churches, castles, palaces, stately homes, the homes of the famous, and the like. This includes above all developing awareness for thinking up other uses for still extant fortresses and military installations than the purely military. Can the population’s lack of interest or even that of the institutions and authorities responsible for them not be influenced accordingly and will there not always be a certain fear when it comes to investing in such structures or generally accepting these problems and dealing with them in a positive light.

The second area in dealing with problems of fortress use lies in the buildings themselves.

As former State property, fortresses are generally powerful, spacious works. Even individual fortresses of manageable proportions are complex engineering structures. Seen from the air, the generally geometrical outlines of many fortresses come as a surprise. Even the major fortresses of the 19<sup>th</sup> century are striking through the generally radial layout of their outer forts, where they do not have to take account of some special topography, as does the geometrically polygonal city circumvallation. On the ground itself, the context cannot be comprehended: anyone who has ever investigated the apparent confusion of ramparts, ditches, forward sconces and lunettes quickly loses an overall view and can generally determine the direction or his whereabouts only by means of a site plan. That a well considered, mathematically established arrangement of spatial and visual relationships exists here, with its layout originally dictated by the needs of artillery, will not be implicitly evident to the observer on the ground. Casemated “bomb-proof” buildings, as customary in the 19<sup>th</sup> century, are imposing through their strength and almost endless rows of casemates and vaulted rooms, the so-called casemate corpus. Here, too, a sense of di-

rection is quickly lost due to the apparently unending monotony, occasionally relieved only by gate or door openings, passageways in yards or deliberate, purpose-built architectural features. The buildings were created to fulfil a function that at the time they were erected was imperative and necessary; when built, especially in the 19<sup>th</sup> century, the need for multifunctionality was undoubtedly observed in order to save on costs; however, there was no need during their construction to consider what would become of installations thus laid out a century later.

However, the size of the premises also present problems with use.

The dimensions of garrison buildings such as barracks have always been based on certain standards for rooms and space set out in military civil engineering manuals. More often than not, whole assemblies of military troops such as companies or battalions had to be housed, so that barrack buildings included a “hotel structure” with all the necessary facilities such as washrooms, showers, service rooms, and the like. The actual fortifications were more complex in their structure. Here, the casemates above all created the necessary room units. Casemates were specially designed and had to take account of technical and in particular, artillery interests as immediate battle structures. Nonetheless, they were generally multi-functional in design, since they were rarely called upon to fulfil their special warlike purpose; they already had different tasks in peacetime, such as space for storing technical equipment or for accommodating soldiers. These premises, too, could not exceed a certain size. Their dimensions depended on the topographical position in which they were incorporated, on the space taken by technical fixtures (guns, utilities) or the troop units to be housed, who could form part either of the fortress troops or of the garrison.

Further difficulties in dealing with subsequent uses are due to the condition of the building or fortifications.

Since fortresses and garrison buildings are in each case State property, the State had an interest from the start in its buildings being economically designed but of the best quality. With defensive works like fortresses, their having to withstand a possible

siege, even direct bombardments by a potential enemy’s artillery, was an added factor. Particular attention was therefore always paid to the quality aspect, as well, when erecting the structure and a mass of inherited technical instructions and regulations still testify today how seriously the engineer officers of the time regarded their duties. Emphasis was placed in this case on the stability of each structure and on good dryness and ventilation, as it was well known that humidity and damp could damage a structure and in the long run result in its destruction. The fact that humidity further impaired the health and consequently the morale of the men of the garrison was realised only in the 18<sup>th</sup> to 19<sup>th</sup> centuries, when the permanent garrisoning of major bodies of troops was the rule and the associated hygienic risks could seriously threaten the potential deployment of fortress troops.

However, returning the structure simply to good condition was by no means all. On their completion, regular maintenance also began. Barracks such as fortress buildings have to be maintained, i.e. structurally looked after. There were plenty of reasons for their structural impairment: especially the effects of the weather, degradation of the material, impairment through ongoing use such as wear and tear and the like. In particular, damage through water seepage had to be avoided, as could happen e.g. through rain penetrating untight roofs, blocked or even burst water mains and drains, and the like. Ongoing maintenance of the structure was therefore particularly important for all military buildings if they were to be kept in serviceable condition. The powder magazines, especially, were under permanent observation and inspection: they had to be dry and protected against lightning. Nonetheless, major accidents were not uncommon: exploding powder stores could destroy whole parts of a city quarter even in peacetime. Perhaps this was also one of the reasons why powder magazines were generally pulled down as quickly as possible after their military properties had been abandoned, since it was from these buildings that the greatest risk emanated; only rarely do we still find remains of this typical fortress facility today.

Neglected, inadequate or even absent of building maintenance very quickly resulted in incipient signs of neglect. The reasons for faulty or inad-

equate building maintenance could frequently be: lack of specialist personnel, insufficient funds for necessary expenditure, departure of troop units, or sale of a building to the city or to private persons who intended them for other uses and left the premises standing empty for lengthy periods. Standing empty always harboured the risk of outsiders taking up temporary residence and thereby contributing their bit to the structural neglect of buildings and other space.

Buildings entirely abandoned by the military and finding no subsequent user ran the greatest risk of slowly but surely becoming ruinous. While initially it may only have been the weather that began to soak the buildings into the fabric, it was generally then unauthorised outsiders who began to carve up the building for useable materials. The building became more and more dilapidated, being soon reduced only to the bearing structures, and these were often also victim to ongoing destruction by the weather and vandalism. The more that destruction progressed, the less were the chances of ever using the building again. The cost of basic repair and reinstatement for serviceable use rose all the more the longer the building was neglected. This process was all the worse for the actual fortifications, since precisely these parts were the most difficult to put to any subsequent use. As soon as fortifications were deprived of military maintenance, there was nothing further to stop their gradual deterioration. Unless they were taken over by a new owner and could be put to some use, they stood empty and were exposed to dilapidation and destruction. Once they had become a ruin, they very soon presented a problem to the environment and society, since ruins harbour substantial risks to man and these risks had to be eliminated if people were not to be exposed to lasting damage to life and limb, not least through accidents such as e.g. death through falling into "black holes".

Particular importance attaches to the development of a fortress installation or a garrison building for ongoing or subsequent use. At the time the building was erected, the question of development had a simply answer: all buildings had by the most economic means to be as comfortable as possible and not visible or accessible to the enemy. This applied especially to fortifications and to forts lying outside the city; the individual parts had to be so

accessible that its defence was still ensured even when under fire from a hostile army. It had to be possible to move reserves, ammunition and equipment forward to the individual positions as rapidly and easily as possible. Communications systems had to be maintained. Many roads that today still mark the cityscape were already built for this purpose when the fortification originated. These include the so-called military ring roads that connected the individual fortifications with each other. Traces were also prepared at many points for narrow-gauge railways and tracks placed in store to enable a provisional railway network to be assembled at short notice during a siege to transport heavy weapons and their ammunition. These traces can today still be seen all over the landscape and to what extent they could be used for development work must be considered as part of the reinstatement and measures for further use. The development of garrison buildings within the fortified city depended above all on the construction site that was available. Above all, the water supply to the building and its drainage were also decisive for continuous, satisfactory maintenance. Even today, we find that the garrison buildings generally occupied the best positions within the city framework. Garrison buildings, too, had to be easily reached and transportation of men and equipment had to be ideally guaranteed at all times.

Access roads to the outlying forts consisted generally of field tracks, more or less laid down with hardcore, in view of their length. It also had to be possible to move guns during wet weather. Access roads usually disappeared when the work was abandoned, unless they were passed on to the appropriate forestry or agricultural authorities, who have maintained them. Even today, access to outlying forts standing empty outside the dry summer months is difficult without an off-road vehicle. Consequently, restrictions in developing such works may be substantial in view of inadequate or even absent access roads and many a rehabilitation project eventually failed not least because the cost of repairing or reinstating access to the work could not be met.

Development includes not only traffic connections but also the provision of "utilities". Utilities mean the provision of drinking water, power, gas, and electricity and communications lines, and ultimately also drainage and the disposal of industrial

water. Attention was paid to this aspect when garrison buildings were erected in accordance with the state of the art and social development. This was all the less problematical if the building lay within a city structure and recourse could be made to existing supply infrastructures. This was more difficult with actual fortress works that could no longer be linked to an existing utility main. This was the case above all with the outlying forts, which were erected and fitted out as self-contained buildings as far as supply was concerned. Not infrequently, wells had to be dug for fresh water; arrangements were made to dispose of wastewater in line with the topographical position. In the 19<sup>th</sup> century age of industrialisation, the city quite often erected telegraph poles and electricity pylons to the outer fort in order to make use of progress in technology in this area of scientific development as well. Consequently, when rehabilitating a fortress building that has been standing empty, a check should always first be made to what extent the structural prerequisites for utilities had then already been created and whether such special structures such as e.g. sewers might not again be made useful fit to receive technology.

The third major area in dealing with utilisation problems is maintenance and the operation of fortress structures and former garrison buildings.

As already explained above, building maintenance is an important factor when considering the satisfactory safekeeping and use of fortified works and garrison buildings. Whatever use a building shell is put to, everything ultimately depends on how well the building is maintained and protected to survive the times. However, the following must be taken into account.

There is generally a number of reasons why these works have stood empty following their abandonment by the military, mostly for a length of time. What are these reasons preventing maintenance and operation?

Firstly, there is the lack of any concept of use. Much reuse or new use already fails through inability to imagine what can be done with the existing so that in the problem is pushed out of mind. Here, imagination above all is necessary, however Utopian — only ideas provide the necessary impetus

for developing viable alternatives and comparing them with each other. Ideas and concepts often emerge as of their own accord: young people have already been using the empty casemates of a fort as a meeting place for various leisure activities. Empty casemates serve as dry space for flea markets. Assembly rooms or sheds offer accommodation for alternative concert events. Whenever premises stand empty but, on the other hand, there is demand for empty space, subsequent uses usually develop quite quickly. The position is different in areas where properties stand on attractive sites or in a valuable environment and where the owner wishes to invest money to make the premises profitable, i.e. where marketing takes place in the economic sense. Here, “planned ideas” will be up for discussion and many of the proposed uses then prove incompatible with the opportunities that the premises themselves offer. An example of this was the planning process in the eighties of the previous century: a national military museum was to be set up in a well-known Rhine fortress and also house aircraft. In the planning euphoria, it was forgotten that aircraft fly only because their wings have a considerable span and exhibiting them in the casemates of this fortress would have meant either robbing the aircraft of their wings or removing the bearing walls of the casemates in order to create sufficient space for the museum exhibits. However, removing the bearing walls would also have resulted in simultaneous destruction of the casemates and consequently of the fortress, so that this idea as to its planning and utilisation was quickly abandoned. This example clearly shows that a historic fortress cannot, and should not, be put to every conceivable—or inconceivable—use at any price. The requirement that utilisation should where possible be consistent with the original work is no longer based on the maxims of conservation but is logical, since only the original appearance of the fortress endows the site concerned with an unmistakable identity and consequently makes a real contribution towards boosting the attractiveness of the area. This is an important prerequisite for potential marketing of a former military property as well.

Lack of investors or investments are further obstacles to rescuing abandoned or empty or unused fortress installations and military buildings for the future. Large parts of the polygonal ramparts, generally situated within the city, are lying fallow. In

the past, this land could be used for building city motorways or tracks for the railway. The railway authorities generally took over the casemates as welcome storage rooms or support points for operational equipment or working units. Ramparts were parcelled out as garden plots or allotments. Restructuring and savings generally resulted in these installations also being abandoned. Enormous potential lay fallow here, which at one time or another was also threatened with demolition, unless way could be found in good time by thinking up future use for investors and consequently for financial investment. Many of these installations are owned by the local authorities. All too often, the need for finance from the public households gives town councils and city administrations food for thought, with a view to selling these properties to an “investor” in order, on the one hand, to get rid of the problem of maintenance and security and, on the other, to obtain cash for their own budgets. The fact that problems were thereby simply shifted from one level to another is generally overlooked: for the most part, the new owner realises that he has not just taken up land at a prime city location but also that there is inherited property on it, the costs of removing which—if it is not under monument protection or if this has been suspended—will alone amount to more than the entire investment. However, good solutions can be found with the good will of all concerned, such as citizen initiatives (if existing), conservation, city administration, owners and/or investors, together with the city planners and architects, that allow the old to be combined with the new and thereby bring new functions to life against the odds. This is extremely difficult but usually produces excellent results (see also further below).

It may be perfectly possible for a building to be reinstated and made operative. Former barracks can be converted to new shops and dwellings. Nonetheless, it may happen that the shops can no longer be used to capacity or the dwellings can no longer be let for one or other reason, or the turnover is too great. There is a risk here of plans not being investigated in good time to discover knock-on effects or being implemented without an eye to the market. As a worse case, demolition threatens, but no such cases are known in practice, since it is in the interests of urban developers as of the property market to refinance investments as rapidly as possible so that ways and means are generally found to combat this.

The greatest risk to works standing empty is due to the fact that no potential user/operator can be found, nor can the necessary cash, in order to invest in the first place and consequently to take the first steps towards new use, reuse or rehabilitation. The absence of subsidies for this purpose must also be added to the operation and maintenance required after repairs and reinstatement have been undertaken, in order to keep the buildings functional in the long term.

Summarising, it may be said that there are a series of factors that oppose the reuse or new use of former and now empty fortress works and garrison buildings. Reuse and new use are processes of rehabilitation that can be promoted by various partners depending on the type of building and the size of the site. These rehabilitation plans begin with ideas that are converted to preliminary and development plans. Step by step, the factors that obstruct rehabilitation are eliminated. This is a laborious, tiresome process, the successful completion of which is not always guaranteed. The military relics still to be found today in many former fortress cities are proof of this.



## Basic and essential factors of importance in solving the problems of Fortress use

While the previous chapter entered further into the problems of using fortifications and military buildings, we shall now attempt to highlight some basic and essential factors that have a bearing on a solution to these problems.

### 1 Topography: The position of the building and fortification

For good, lasting use, where the building or the individual parts of the fortification lie will always be important. Good, rapid accessibility increase their attractiveness and offer good prospects for multiple uses. Buildings and other works lying far from the city centre are difficult to reach with public transport or by car. The time travelling to and from the buildings or the works adds to the actual time spent there. The longer the travel time there and back, the less potential visitors will want to visit these sites, unless outstanding attractions are available there. However, appropriate use of the individual fortresses or forts will also depend on this potential visitor fluctuation.

Considerations as to sustained use are also determined by whether the building/fortress lies near water, on level ground or at a major elevation. Works near flowing water can expect flooding. Annually repeated or irregular floods may substantially limit the uses to which they can be put. Even if the original architects also took this aspect into account when building the work and made due provision, this may nonetheless have changed or been modified in the course of time and the absence of building maintenance may have caused destruction which will impair or have entirely destroyed the flood protection. Damp in the foundations and foundation walls, which cannot be effectively combated, will make the building unusable in due course. If rising damp can be stopped in the long term or even inhibited, the floors and storeys above will be serviceable provided that good ventilation is ensured and the damp cannot encroach on the room climate and comfort on continuous use. Wet rooms cannot be used at all, unless the damp atmosphere is used to grow mushrooms or the like. On the other hand,

buildings and works located near water can through their natural position offer good value and use, provided the surrounding nature is not affected and the buildings and natural structures are in balance.

Works and buildings located at a height may have to battle with geological problems or erosion, unless due account was taken of these problems when they were erected. Not infrequently, whole parts of a building have collapsed because the foundations have softened the soil following long wet spells and caused subsidence, shifting or earth slip. An added factor are difficulties with transportation—an elevated fortress is more laborious and difficult to supply than one on the level. This is also true of use in the present time. Tourist development and use of a mountain fastness requires different and more comprehensive development measures which may even include the installation of lifts (e.g. the two lifts at Fortress Königstein, Saxony). This may also result in higher operating costs.

Also decisive as to the position is whether the works are located in an area affected by earthquake or other underground influences (mining, geological peculiarities). Seismological vibration, however slight and unremarkable, results in the course of time in slow but steady dissolution of the structural bonding in brickwork and vaulting (Kaiser Franz fortification complex in Coblenz). Here, too, use is very difficult because it is impossible to say whether such movement will stop at some point or whether its destructive force will continue to be felt.

A further influencing factor as far as position is concerned, is whether the building or works adjoin railway installations or roads. Many fortifications and barracks were and today still are located at busy railway installations. The railway traces have hardly changed over the years and 19<sup>th</sup> century fortifications in particular must also be considered in conjunction with the railways. The present use of military installations, lying close to busy railways or roads is virtually prevented by continuous traffic: the noise, especially at night, is enormous and can generally not be eliminated, even with noise prevention measures, on account of the extent and cost. Fortifications were also frequently

intersected by railways or road systems so that the site is portioned off and large-scale solutions such as e.g. reallocation as recreational or leisure space are no longer possible. The introduction of these later infrastructures disrupts the original overall, functional picture as a whole, which also permanently affects and influences their value of the site as experienced today. However, roads can also have a positive effect on development. Consequently, with regard to potential use, the question also arises as to how the sites have developed. Generally speaking, they have developed because they were already once put into use. New developments can therefore generally build on the previous. The extent of present-day traffic is not the same as in the 19<sup>th</sup> century. The car is a universal means of transport and carriage so that more often than not the development aspects will depend on the laying down, extension and fitting out of appropriately dimensioned car parks. These must be so planned that neither the external appearance of the installation (generally under conservationist protection) (a poor example: Querfurt in Saxony-Anhalt) nor the proposed use are detrimentally affected. Furthermore, all utilities such as fresh water, wastewater, gas, power and communications must be examined.

## 2 Nature and ecology

It has already been mentioned that a group of buildings in harmony with nature can perfectly enhance the value and attractiveness of their environment, provided the building is technically sound and the surrounding nature has not been disturbed. Ecological components can result in prohibitions and instructions regarding use. For example, bats have settled in the casemates of a citadel which, because they are protected as a species, may not be disturbed during the winter months. This means that that part of these casemates, where the bats have taken up residence, may not be entered and they are not therefore available for different kinds of use. The same applies to a standing fort: fauna and flora include rare plants and protected species. This can restrict use or channel it into a different direction. However, nature and ecology must also be nurtured like the building itself if culture and cultivation are to coexist for the duration.

## 3 Damaging effects

The most important factor influencing a solution to problems of fortification use is man himself. Future use is determined not only by how a person acts towards a fortress. Does he walk past it unmindful, regarding it as “an old bit of wall”? Does the fortress engage his attention? What does attract his attention? Once his attention is aroused, does he start taking an interest in the work? Does he begin to ask questions—questions as to its history, the construction process, former uses, the people who built it and used it? Depending on how far and intensively his attention is caught, his general curiosity will soon result in a more far-reaching questioning of the work itself, which may eventually raise the question: can we not do something with it, can we use this building further, depending on its condition, put it to new uses, even earn money from it? It therefore ultimately depends on the person himself whether these works can be usefully saved in the future, or whether, in fact, his inattention or, rather, indifference, will result in the structure falling into slow neglect and therefore oblivion. Man himself can have a damaging effect on the further development of a fortification. To counter this, people can be informed, told of its history and importance, and the value and opportunities inherent in such a structure. This applies less to the individual than to the broad mass of the population. Such clarification, not to say education, already starts at school—in teaching local history, general history or geography. A positive attitude on the part of population generally also results in a positive attitude by authorities and government, but also amongst politicians and political parties. Knowledge of one’s own history, of the history of the construction of such works usually forms a basis on which further considerations can fruitfully flourish as to: what should we do and how can this kind of building be used?

There are many examples in Europe that demonstrate this. It is worth noting here that even political indoctrination has been unable to inhibit or even suppress the curiosity of the individual as to his history and that of his homeland. There are many examples in Eastern Europe where attempts to make people forget their own past have proved unsuccessful. What is more, major fortresses of the 19<sup>th</sup> century in Poland, which as we know were never

built under a Polish leadership, are again accepted by the Polish people as part of their own history, because the Poles participated in their construction — whether under the Russians, Prussians or Austrians, and they now even revere these works as national monuments and are starting to put them in order and give them new uses and tasks. Even the 18<sup>th</sup> century Fortress Silberberg, built under Frederic the Great, is on the list of Polish national monuments and has been under repair for two years now.

We can therefore say in principle that people's inability or unwillingness to recognise the structural, cultural, social or historical value of a fortification is still the most important influential factor when dealing with problems of function or use. However, the individual will be able to do little by himself when it comes to implementing solutions. Many hands are required for this work, starting with the owner and future users through the architects to the planning, building and approving authorities.

Initial decisions as to what can be done with abandoned fortifications are already taken during the planning consent process, but all the more so, however, under town maps of former fortified cities. Depending on the extent to which fortified space can be identified in the future use of space by a local authority or city, planning statements, in the Federal republic of Germany, for example, are incorporated into the town plan. This shows the intended urban development, which it then portrays the method of land use for the municipality or city area as a whole. Its particular importance as part of urban development lies in a city's or local authority's essential decision as to how and for what useful purpose (development, traffic, agriculture, forestry, recreation, major protection, etc) the existing space can be and should be sensibly and expediently used. The town plan, the drafting and implementation of which are a legal process in which individual citizens should participate, is therefore the most important instrument with regard to future ideas as to the use and functioning of fortified space or fortress and garrison buildings. Should a former or still existing fortified space be released for new building or development, this can already be shown in the town plan. A town plan, which in any event requires constant revising in order to take account of the latest socio-demographic or economic devel-

opments, may include survey maps and detail plans. The town plan of the Land Capital of Magdeburg of 2000, for example, includes a survey plan of "Former Fortifications and Military Installations". This is supplemented by a monuments care plan providing information on the cultural validity of fortress buildings. The target and implementation plans indicate how the works are to be dealt with in the course of future urban development. Selected specimen works may be stressed and proposals made as to their repair or structural enhancement ("Building up the Stock") and their opening to the public. A town plan that leaves fortified assets out of account is a result of a lack of awareness amongst specialists or the public, or the disregard or rejection of these buildings altogether. The reasons for this have already been explained above. The same applies to the provisions of a local plan that fail to take account of fortified space. The local plan is developed as a subsequent planning tool from the town plan, which contrary to the summary nature of a town plan, allows detailed presentations to be made.

Essential basic influencing factors can therefore already be created in and with the various planning procedures of a local authority or city, which will accordingly contribute to the positive or also negative solution of problems of using former fortifications. However, these plans form a legal basis on which the further fate of the buildings is decided. In a system governed by the rule of law, a future user will always have to rely on the provisions of a legally established planning document if he wants to invest profitably in his property in the long term.

Examples that may produce negative solutions to problems of using fortified space are roads and bridges that fail to take account of existing structures. In the mid-eighties of the previous century, the gorge tower of Fort Großfürst Konstantin in Coblenz was at risk of being completely demolished as a result of the pierced extension of Federal Highway 9, squeezed between the tracks of the adjoining Central Station and the glacis of the fort. Demolition could be prevented. The gorge tower now houses the first Carnival Museum along the Central Rhine. Rough archaeological treatment of dismantled fortifications has also generally produced major problems. Since they are embedded in the ground and are consequently out of sight, these structures

are generally unknown unless extensive studies have been made beforehand of the historic plan material. The owner allows the building trench to be dug; not infrequently, parts of walls of major dimensions emerge, often also revealing viable rooms and casemates. Demolition integration into a new structure are alternatives and a decision on them is all too often taken under very strong investor pressure.

Influences harmful to the buildings themselves can often occur on sale to investors who do not wish to do anything with the buildings or structural installations but base their speculation purely on the land adjoining the city. Depreciation models and the like often result in purchases being made without prior inspection of the property or the building. The unhappy awareness comes at the point when the architect draws up the detail plans and the desired space programmes are to be implemented, as they do not fit the structural works. These discoveries are a painful experience that cost a great deal of money. An undesirable side effect is where the building deteriorates through lack of maintenance and, if the site is returned to the original owner, becomes yet more neglected than at the time of its sale. With good reason, the Federal Republic of Germany made it a condition for the sale of the Provisioning Store to the City of Mainz that the entire building would revert to the original owners after ten years should the City not succeed in finding an appropriate use within that period and render the building operative again.

Absent or faulty maintenance of fortified buildings as a negative influencing factor have already been discussed. The absence or faulty nature of maintenance of buildings is generally due to their being left empty or neglected by the owner. The degree of damage resulting through faulty or absent maintenance

has a bearing on the repair and renovation cost that a future owner must incur. "Ownership obliges"—says the German Constitution—and this obligation also includes secure maintenance of owner-operated property. However, public owners rarely set a good example. Simply years of discussion about possible uses of properties standing empty and wishful thinking as to rapid sale not infrequently result in maintenance of the building being lost from sight and the works being left to their fate. However, a work abandoned by people in due course results in neglect, accelerated by vandalism and malicious destruction. Quite often, the buildings then develop into hazardous sites for so-called "adventure holidays", that present further risks to the structure and to life and limb.

Misuse does not help to solve the problem of the use of fortifications. Because of their size, aircraft do not fit into casemates (see also above), nor do ships or other large objects for which special hangers or open space surrounding the fortress such as e.g. courtyards, ditches or the like must be made available. The setting up of a museum depends on its location and accessibility to the public; many a fortress has, due to its development history, become a memorial that of its own accord prevents any different use. Misuse may result in an existing building being destroyed if the new use requires such massive encroachment on its fabric that what exists is no longer recognisable and can no longer be identified as a fortification. Generally speaking, however, fortified buildings are under conservation protection and this consequently plays a decisive role in all matters of future new or converted use. As a future user, one is well advised to call upon monument experts as specialists in good time and involve them in all decisions.

#### 4 State of preservation—condition of buildings and works

Whether a fortification can still be profitably used at all depends not least and quite decisively on its state of maintenance. In principle, the state of preservation falls into four categories, as follows.

**Beyond repair:** the Fortress is still recognisable as a heap of rubble. The walls lie below it and have generally been slighted. The ramparts have collapsed; uncontrolled vegetation luxuriates everywhere and covers the rubble and ruins. The contours on the site can still be made out from historic plans.

**Ruinous:** In a ruinous fortress, parts of the rising brickwork still exist. However, it will be dilapidated, while windows, doors and embrasures are missing. There is a risk of bearing or covering structure collapsing at any time. Water penetrates the brickwork and buildings unhindered through defective roofs and contributes to progressive erosion. The ramparts are defective or broken into parts, the earth has fallen into the ditches, the drainage channels are destroyed and consequently prevent water draining into the soil so that, in turn, it rises into the revetting of the ditch as damp and begins to destroy it. The vegetation luxuriates out of control, being nourished and held by the saturated brickwork and penetrates the structure throughout. Roots of wind-sown trees and bushes split the covering slabs and all brickwork. The transition from ruin to the beyond repair stage is generally a question of time.

**Empty:** In an empty fortress, the structural space and roof are generally intact. Insofar as building maintenance is applied, steps are taken to prevent water from penetrating. The works and openings to the buildings are locked and prevent unauthorised persons and animals from entering the property and setting up home there. There is supervision, with regular checks. The building maintenance furthermore guarantees the regular cutting back of uncontrolled, rampant vegetation and thereby prevents damage to the structure. The empty fortress can be used at any time and is ready for installing new facilities without major structural investment in the fabric.

**Conserved:** A feature of a conserved fortress is that its facilities are generally in use. Maintenance and repair work are regularly carried out, which also includes regular garden work. The walls are regularly examined for wild growth and damaging infestation, and their stability is checked. Internal and external drainage are under ongoing control. Weather damage is remedied immediately. Damage to the stucco or façade is made good.

#### 5 Considerations as to use (in relation to the initial position)

Finally, the actual considerations as to use should be included under “influential factors”. Two situations apply:

1. The building or the work must first be improved, before use can take place.
2. The building or the work is already in a condition for immediate use.

**Point 1:** The building or the work must first be improved before it can be taken into use. Even if functional use is available and it is clearly recognised that future use is compatible with the existing fabric of the building from a planning and technical aspect, a costs-benefit analysis can nonetheless reduce all plans in this connection to nothing. Structural repair and renovation costs, in particular, may be beyond amortisation. For a private investor, the result of such a costs-benefit analysis will always be a guiding factor; State investment will further be determined by factors that are decided e.g. by the need to open historic buildings to the public or the like. Ultimately, however, the question will always arise whether investing money will be worthwhile in the long term and what purpose the outlay will serve and what objective will be achieved.

If investment is decided on, the actual influencing factors must be known for the planning and use procedure as well. Influencing factors under planning procedures are determined above all by:

- The extent and nature of the user's requirements
- The qualifications of the planning architect
- The state of the building (see item 3.4) and the resulting structurally necessary financial outlay
- The requirements under current building, environmental and consent laws
- The requirements of current operating licences.

Influencing factors for the use procedure may be determined by

- The extent and nature of the use itself
- Lasting certainty for operation or maintenance under the desired use
- Provision of utilities
- Availability of sufficient capital to undertake preparatory planning, including appropriate detail investigations and special opinions
- Financing strategies.

Only when all these individual requirements are satisfactorily clarified is there any prospect of developing functionally and financially secure user and operating concepts in the long term, that would make appropriate investment seem justified from the structural aspect.

Point 2: The building or installation is already in a condition for immediate use.

An installation already repaired, improved and ready for use is worthwhile to a future user insofar as when considering use, the cost of the building measures is initially irrelevant. The question is therefore focused on other priorities:

- The search for interested users: what do they intend to do with the building or installation? Are they qualified, suitable persons or companies who are able to use and maintain the installation sensibly and with value added in the long term?
- Is the projected use compatible with the building and installations and are structural changes/additions necessary?
- Should temporary or permanent use be considered and maintained in the short, medium or long term?
- Is "active" or "passive" use intended? Will "active use" exclusively concern events with fluctuating audiences and with "passive use" include the installation of offices or archives?
- Is tourist use intended, which will allow the fortress to be revived as an attraction, but make it conditional on the need for installing tourist infrastructures?
- Should tourist use be achieved in conjunction with event use?

In this connection, there is also continuity of use. What was intended as accommodation in the past is generally also suitable for accommodation in the future. The more subsequent use is on all fours with the previous use, the easier operation and maintenance will become. Expensive conversions or additions that a new use may require are not necessary. Elimination of these cost factors is a not insubstantial argument in all discussions regarding the use of such buildings and installations.

The summary shows that basic and essential factors influencing a solution to the problem of use of former military buildings and historic fortifications are determined by man—the building—the nature of use and money. Each individual factor must be considered if the necessary harmonisation of the complex as a whole is to be achieved in advance—harmonisation which would in due course be necessary with a view to successful use and maintenance and operation.

## Research and documentation area within the bfr framework

### 1 Description of the recorded fortresses

For a better understanding of the problems with the use of and potential solutions for fortresses located within the project area, we must begin with a description of the various works. The listing is made in line with the national breakdown of Germany—Poland—Russia—Lithuania.

#### 1.1 Dömitz: Citadel

The Dömitz Citadel located on the bank of the River Elbe in Mecklenburg is one of the few very well maintained 16<sup>th</sup> century flatland fortresses of Northern Germany. Arranged in the form of a pentangle, with bastions and vaulted casemates, it is a textbook example of the impressive military architecture of the Renaissance.

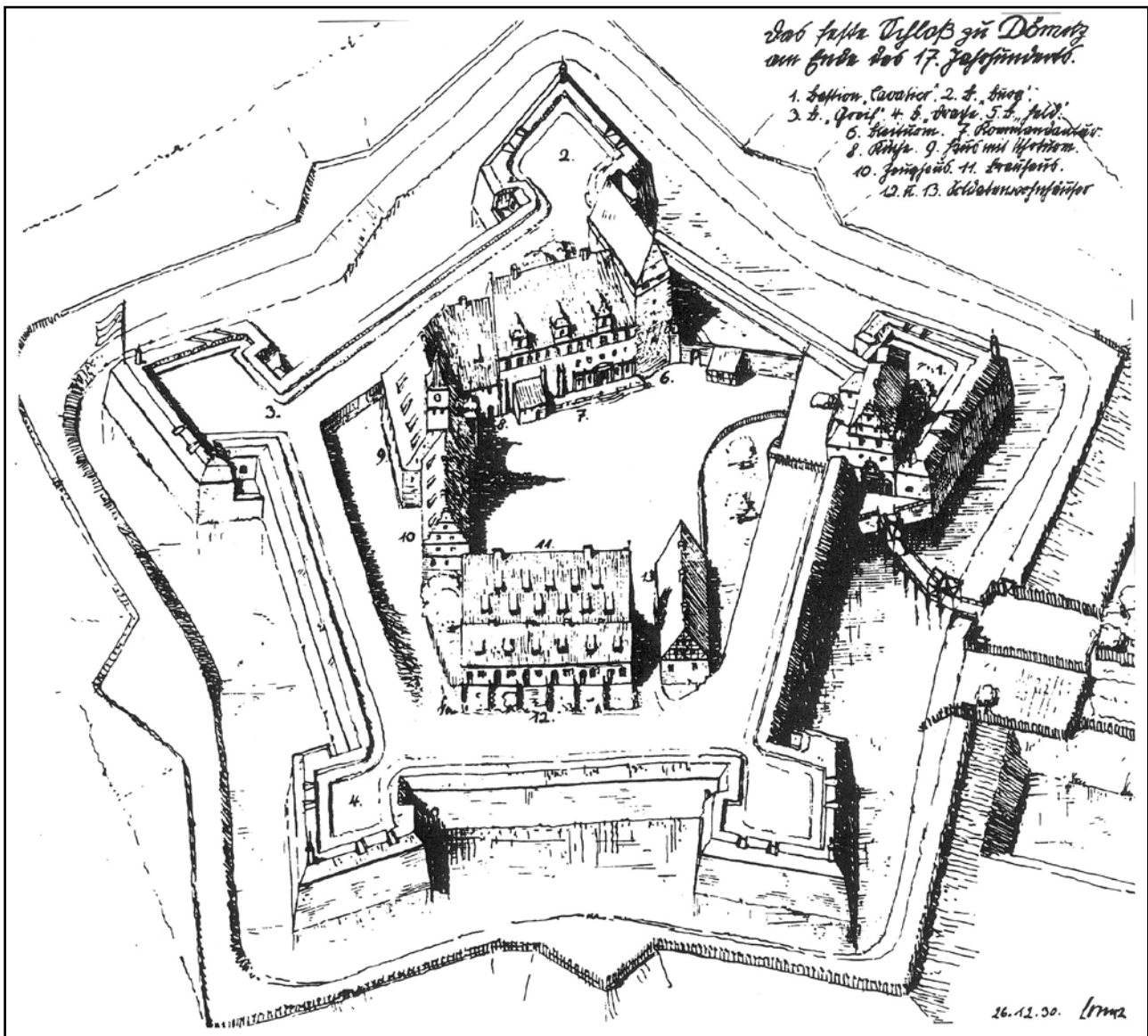


Fig. 2: “The fortified position at Dömitz at the end of the 17<sup>th</sup> century”. Isometric drawing by Lorenz from 1936.

It was placed under monument protection in 1975 because of the special nature of its structure and its extraordinary state of preservation. The fortress walls have since 1953 accommodated a museum for the region and city of Dömitz.

The Dömitz Fortress Museum is essentially a civic history museum with a versatile, well mounted display of the City's historical development from the 17<sup>th</sup> century up to the present. The regional history character of the museum is further stressed by an exhibition of the importance to the City of Dömitz of navigation of the Elbe and an extensive ethnographical department concerned with the "Griese Gegend" area.

The visitor is given a good insight into the almost 800-years of history of the Fortress in the powder magazine, the Museum's finest and most expressive exhibition area.

After visiting the Governor's house and the tower, the visitor can also tour the Fortress' outworks. He or she will obtain an overview of the Fortress' installations and defensive system on the bastions and casemates.

### **1.2 Spandau: Citadel**

Spandau Citadel was built between 1560 and 1594. Work started during the reign of the Brandenburg elector Joachim II. Two Italians, Chiaramella and Rochus Guerini Duke of Lynar, were employed as master masons. Apart from its military function of securing the roads and waterways, the Citadel had at the same time to serve as a safe house for the nearby Court, as it did in 1757 when Berlin was threatened by Austrian troops. The Citadel was besieged once only, in April 1813, when Prussian troops fired on the fortress while it was then occupied by the French in the Wars of Liberation and the powder magazine behind the curtain between bastion König and bas-

tion Königin blew up. The Julius Tower passed into history because of the gold reserves stored there in 1874 as French reparations, which had to be returned to France at the end of the First World War. The Citadel was taken by the Soviet army in May 1945 without a shot being fired; the British forces stationed there subsequently protected the structure and maintained it as a historic monument. The fabric was secured and renovated repeatedly in subsequent years. Federal funds were made available for essential repair and safeguarding work in the 80s under the Future Investment Programme (ZIP).

### **1.3 Spandau: Fort Hahneberg**

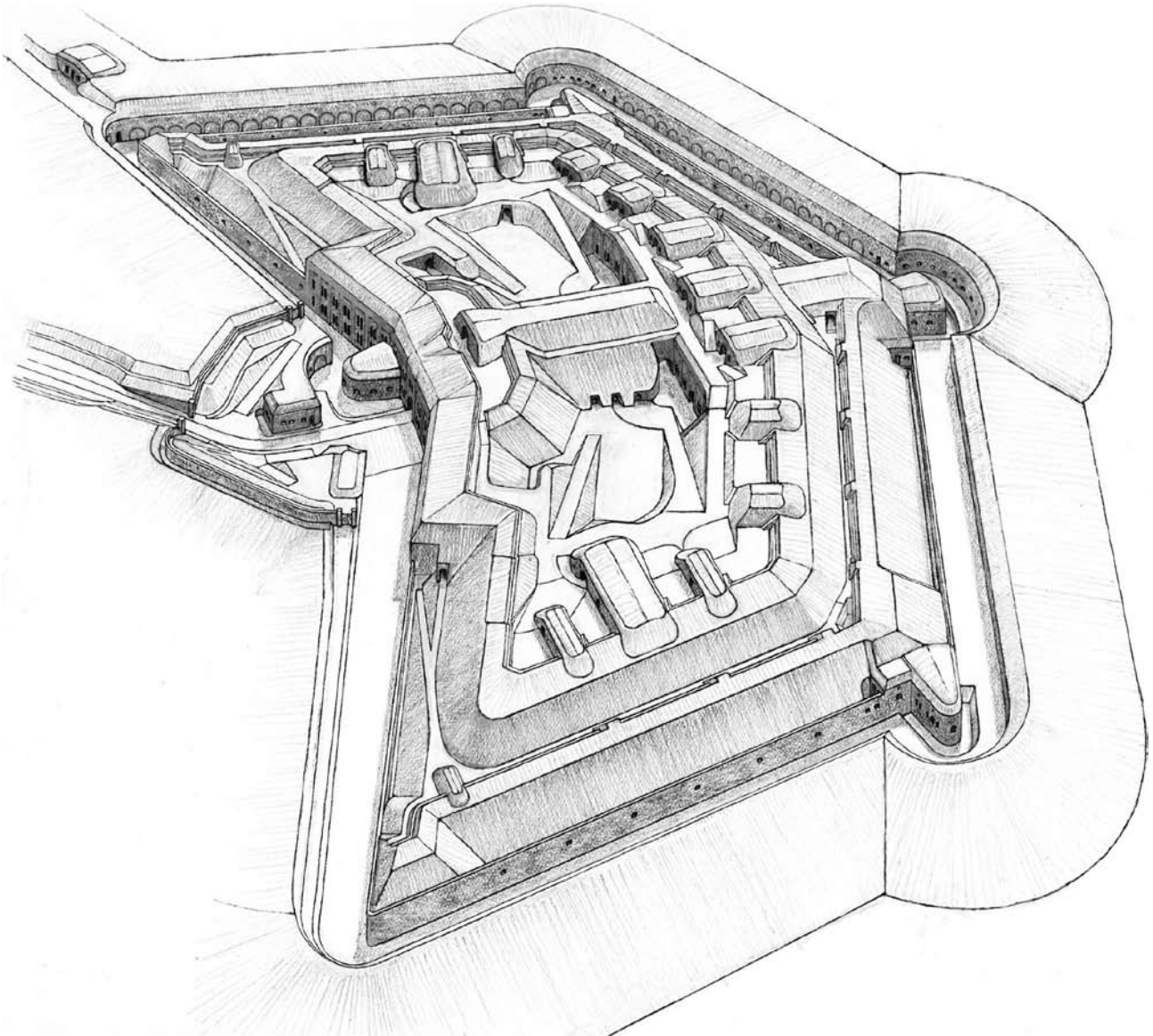
Fort Hahneberg was built between 1882 and 1886 as detached Fort II of Fortress Spandau. The strengthening of imperial fortresses such as Metz, Cologne, Ingolstadt and Spandau with a girdle of forts had already been decided in 1873, in the "Notice concerning the Extension of Fortifications". Of the four forts planned for Spandau, only Fort Hahneberg at Staaken was built. Even before the fort was completed, the so-called "bursting shell crisis" shook the whole basis of fortress construction; with the introduction of high explosives, fort masonry and brickwork became outdated. You can see the pointless attempts at Fort Hahneberg to counter this development by subsequently fitting concrete and iron girders.

Building work was recommenced at Fort Hahneberg with the re-armament as from 1934. Apart from the erection of further barrack blocks, substantial conversion work was undertaken in the gorge barracks. The gorge ditch defence was converted to a canteen and the fort as a whole was electrified and provided with new domestic engineering. It sustained no appreciable damage during the War. However, parts of the wall were demolished on the basis of the Demolition Order of 1949 and stone used for reconstruction. These measures are the main cause for the present damage to the masonry.



On its inclusion into the no-go area along the East German border, Fort Hahneberg became a “sleeping beauty” for decades on end. The border was fixed as from 1961 with the construction of the Wall, which runs precisely along the glacis. From now on, the fort was fully inacces-

sible, officially at least. Nature took the opportunity to expand unbridled during these years. The fort was successfully “taken by storm” for the first time in 1990, after the border was opened. The National Monuments Office placed the fort on the listed buildings list in 1991.



**Fig. 3:** Isometric overview by Wichrowski dated 2003 of Fort Hahneberg in Berlin-Spandau built in 1882—1886.



**Fig. 4:** Peitz. Digital isometric reconstruction of the fortifications around 1750 facing north. The sharply angled bastion at the centre front of the picture is the Malzhaus bastion. The Malzhaus bastion lay between the powder tower bastion (front left) and the Office bastion (front right). Today, only vestiges of the Malzhaus bastion remain.

#### **1.4 Peitz: Malzhaus bastion**

The Malzhaus (Malt House) bastion, also called the “Small Bastion above the Malt House”, was built in the mid-16<sup>th</sup> century and consisted originally of five casemate-type vaults, put to both military and civil use. These casemates originally contained the former maltings of the Peitz Civic Administration. The beer regulations drawn up in 1567 by the Margrave Johann von Küstrin for the Pietz Office required all thirteen baronial villages to obtain their beer from the City of Peitz. Pure spring water, hops and malt had to be provided to produce the beer.

The Malzhaus bastion is a brick-built building whose vaults were rendered bomb proof through the application of heavy layers of earth and loam. The bastion’s gun platform was reached by a ramp on the western side. This served as an extensive cavalier for the Fortress artillery. The bastion was defended by a protective earthwork and a wet ditch. This earthwork and the ditch secured the northern side of the Fortress and prevented an enemy from penetrating into the interior. The Malzhaus bastion was originally square in plan, with the magazine building (Mauerstrasse) adjoining its western side. It contained the Fortress stores. Smaller civil houses flanked the eastern side of the bastion.

### 1.5 Küstriner Vorland: Fort Gorgast

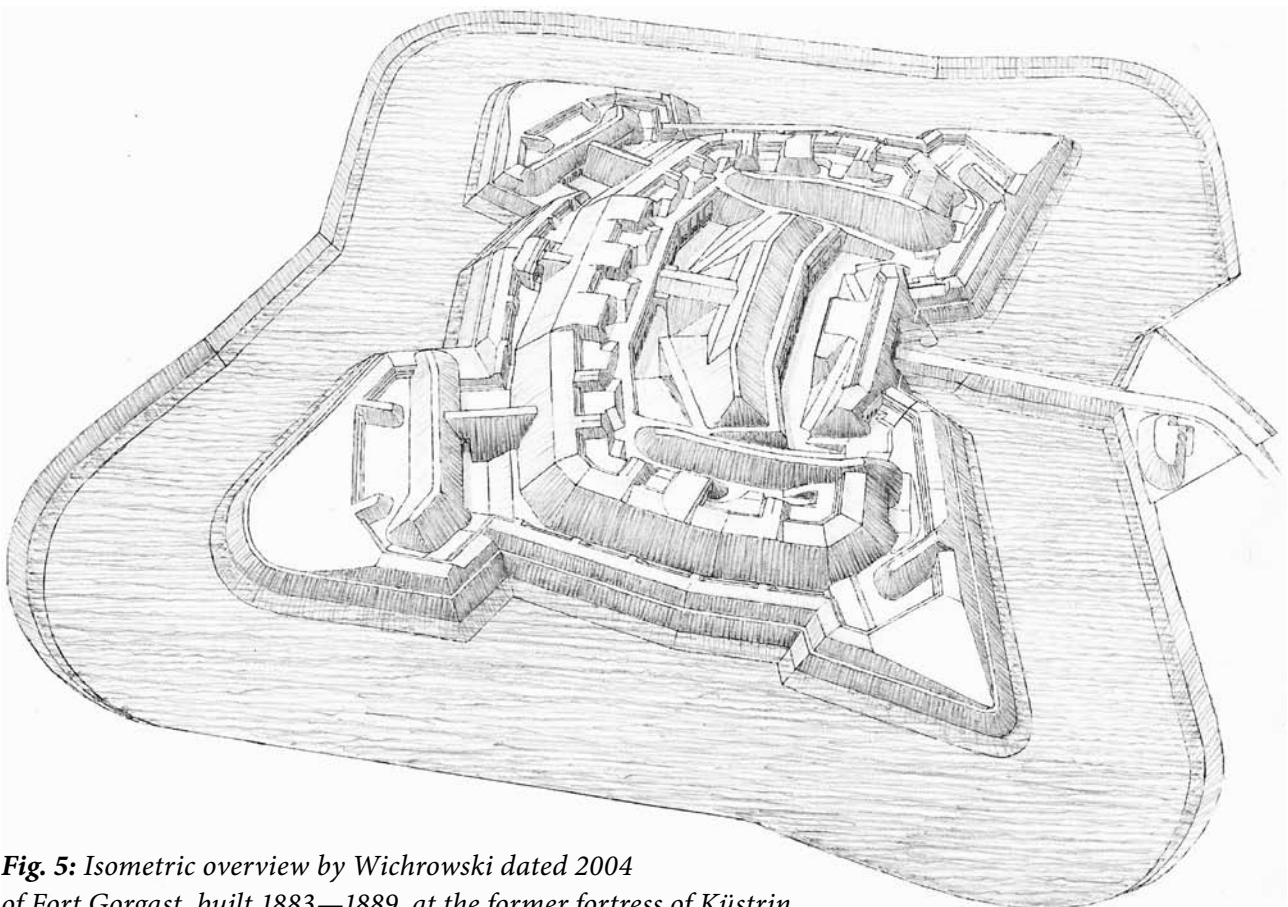
By order of the Imperial Cabinet in 1883, Fortress Küstrin was to receive a strong defensive ring of four forts as part of the modernisation work in Germany following the Franco—Prussian. Fort Gorgast, built between 1883 and 1889, is the best preserved of the external works of the former Fortress Küstrin. As an isolated fort, it was to control the western bank of the Oder and form a strategic troop concentration point. The fort was built of fair-faced brick on farmland and is surrounded by a wet ditch 42m wide and 3m deep. Convicts from the Sonnenburg prison were used for its construction.

It was designed for a garrison of up to 310 Men (200 to 300 infantrymen and 60 artillerymen) and consists of single-storey fair-faced brick buildings. They include, amongst other facilities, the so-called blockhouse (with place d'armes the gatehouse with obstacle grille, drawbridge and guardrooms), the war powder magazine (in the central barracks), barrack blocks, and a water drawing installation (artesian well with tank), which still functions today.

The Fort's residential and working accommodation was equipped with stove heating. The vaulting over the powder magazine and the ammunition stores was already strengthened with a layer of concrete in 1892/1893. Even so, the fort was militarily outdated at its completion as a result of the advances in the development of weapons technology and changed military strategies, and served in subsequent years chiefly as a depot and barracks.

The Fort survived the slighting of Fortress Küstrin following the First World War unscathed. Despite the fierce battles for the Seelow Heights in the spring of 1945, Fort Gorgast, then in use as an auxiliary hospital amongst, also survived the end of the Second World War undamaged. The Fort was occupied by the Red Army, who demolished parts of the site after 1945 with explosives.

Fort Gorgast was initially used by the Red Army, which subsequently handed it over for use by the National People's Army of the German Democratic Republic (inter alia as ammunition store). Following German reunification, the Gorgast Municipality



**Fig. 5:** Isometric overview by Wichrowski dated 2004 of Fort Gorgast, built 1883—1889, at the former fortress of Küstrin.

obtained possession of the Fort and together with an association of friends saw to its maintenance and use as an historic monument. Fort Gorgast has been a listed building since 9 September 1997.

### **1.6 Kostrzyn: Old City, Fort Sarbinowo (Zorn-dorf), Fort Czarnów (Tschernow), Fort Żabice (Säpzig)**

The small Polish city of Küstrin / Kostrzyn nad Odrą lies some 80 km to the east of Berlin on the right bank of the Oder. The greater part of the city, then situated on either side of the River Oder, fell to Poland after the Second World War, while the former suburb of Kiez on the west side of the Oder remained German and now belongs to the Brandenburg municipality of Küstriner Vorland.

#### **1.6.1 Old City**

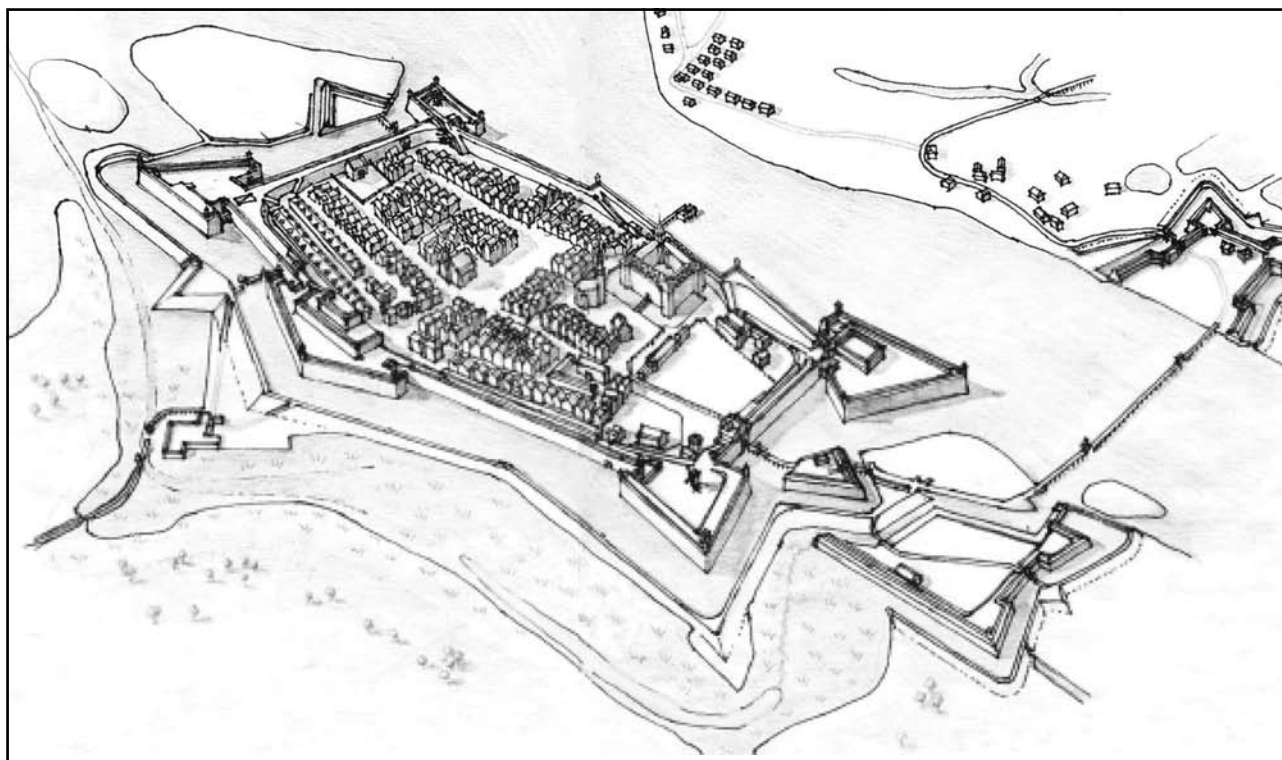
The Old City and Fortress of Küstrin are located on a peninsula at the confluence of the Oder and Warthe. Küstrin was elevated to Residence status by the Margrave Johann von Brandenburg-Küstrin (also known as Hans von Küstrin) in 1536 on account of its strategic importance, and developed as a fortress. The two rivers provided natural protection, boggy meadows preventing an approach to the fortress on the landward side. Construction work on the stone-build fortress continued up to 1557. The Margraveship of Brandenburg-Küstrin reverting to the Brandenburg Palatinate following the death of the Margrave in 1571. The fortifications consisted of the curtains with the Berlin and Keats gates, the König (King), Königin (Queen), Kornprinz (Crown Prince), Kronprinzessin (Crown Princess), Philipp and Brandenburg bastions, and numerous outworks (e.g. Albrecht Bastion). The fortress surrounded the City with its castle, church, marketplace and military installations which included a hospital, magazines and gun foundry. The Fortress garrison was quartered in private houses.

From 1627 to 1633, the Brandenburg Prince Palatine and subsequent elector Frederic William lived in the fortress. During his period of governorship,

from 1640 to 1688, he had Küstrin developed into one of Germany's strongest fortresses, although it played no military role in the Thirty Years War. Following his attempted flight from Prussia, the Prussian Crown Prince Frederic was kept a prisoner in Küstrin Castle by his father King Frederic Wilhelm I. of Prussia, from 1730 to 1732. On 6 November 1730 the King had the Crown Prince's friend and abettor in his flight, Hans Hermann von Katte, beheaded on the Brandenburg Bastion before the Crown Prince's eyes. During the Seven Years War (1756—1763), Küstrin was besieged by Russian troops on 15 August 1758 and set on fire, without the Fortress being captured. King Frederic II relieved the Fortress and defeated the Russians on 15 October 1758 to the east of Küstrin at the Battle of Zorndorf. On 1 November 1806, Fortress Küstrin to the French was handed over without a struggle, and capitulated only after a year's siege on 20 March 1814. The founder of German gymnastics, Friedrich Ludwig Jahn, was incarcerated in the Fortress in 1819. The infantry barracks were built in 1876 and the fortifications facing Küstrin Castle demolished in 1901/1902. Under the Treaty of Versailles, all fortifications on the northern and eastern sides were demolished between 1921 and 1931. With rearmament during the Third Reich, contingents of troops were again stationed there, so that the garrison strength of imperial times was reinstated and exceeded by the start of the Second World War.

Following the Second World War (1939—1945) the City of Küstrin and its fortress were almost completely destroyed as a result of desperate fighting. They were not rebuilt and are today uninhabited. However, the following fortress installations have survived: the Ramparts, the Berlin Gate, the Kietz Gate, two Ravelins—August Wilhelm-Ravelin, and remains of the Christian Ludwig-Ravelin, three bastions: the König, Philipp and Brandenburg Bastions, and the inner ditches. Following decades of neglect, the streets and remains of buildings were uncovered in the 1990s. Apart from the lines of the streets, only entrances, ground floor walls and the remains of foundations are still visible of the buildings, including the castle and city church. The Old City is now also known as “Pompeii on Oder”.

The area between the Oder and the Oder Front Relief Canal (the so-called “Oder Island”, a military



**Fig. 6:** Outline sketch of Fortress Kostrzyn around 1650 from Wichrowski dated 2002. The draft corresponds to Merian's illustration.

no-go area from 1945 to 1991) forming part of the Old City up to 1945 and now attached to Küstrin-Kietz, includes the former artillery barracks of the German Army, occupied by Soviet forces following the end of the Second World War up to their departure in 1991 and now standing empty and unused. Similarly also out of service is the Küstrin-Altstadt Railway Station located here, on the line between Küstrin-Kietz and Kostrzyn and Odra.

Plans for the reconstruction and restoration of the Old City and Fortress are taking shape bit by bit. The rubble has been removed from the ruined houses and streets. The Old City is now a favourite destination and major attraction for tourists. The reconstruction of Küstrin Old City commenced in 1994 and has now produced many important initiatives and activities, as the publication of various books on the subject, newspaper articles, events and exhibitions prove. The "Küstriner Festungstage" ["Küstrin Festival"] has been held regularly here since the year 2000. Many cultural and open-air activities are held within the Old City; concerts and exhibitions of modern art are organised in the Philipp Bastion Artists from nearly the whole of Europe exhibits at this location.

In 1999, a study was published entitled "Virtual Reconstruction of the Fortress and Old City of Kostrzyn nad Odra". All these studies are concerned with the introduction of new buildings, forthcoming functions, preservation and maintenance, forming a basis for future activities and plans for the rehabilitation of the Old City area. The local area management plan was worked up in 2001—2003 and adopted for the area of the Old City. This plan sets up the legal framework within which all investment—public and private—can take place.

The cross-border revitalisation study for the Old City of Küstrin, published in 2004, is the next step in a project for the restoration and management of the Old City area. It is also the prerequisite for forming a basis for the promotion, organisation and coordination of investment in the Old City area of Küstrin.

Reconstruction work on the Old City has already commenced. As part of the BFR-Project, space in the Berlin Gate has been fitted out on a leasehold basis with a tourist information centre, to be ready by 15 July 2007. A showroom will be opened here, with a tourism information service, and adequate facilities for a person to run the service. The resto-



ration and adaptation of the Berlin Gate will help to set up a documentation centre and history presentation of the Fortress and Old City of Küstrin. The total cost of this project is Euro 120,000.

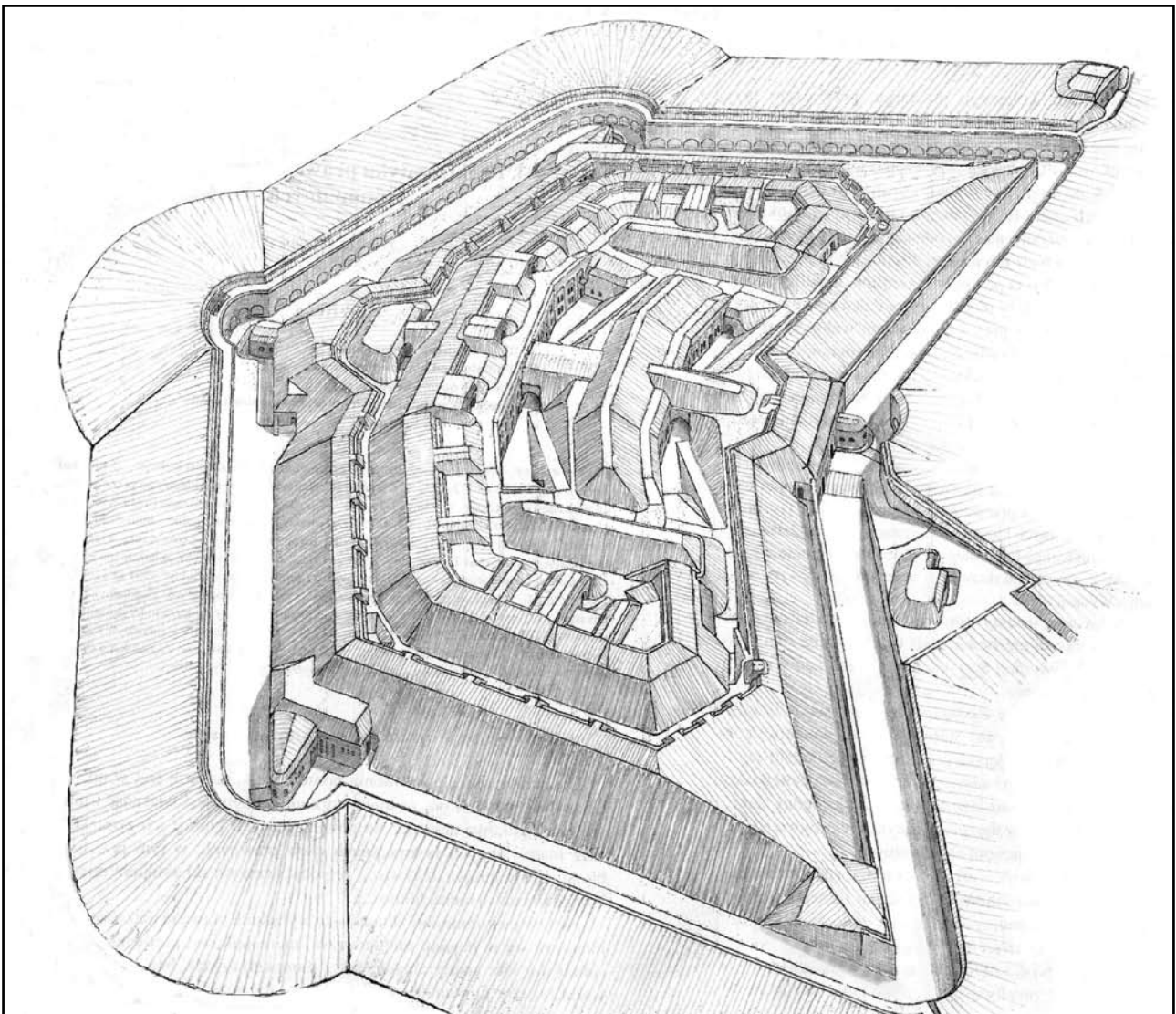
Part of the City will at the same time be provided with sewerage and a water supply system. The lease also includes maintenance work on Bastion Philipp and the Kietzer Gate. This task will be completed by 30 July 2007, at a total cost of Euro 1 million.

“Kostrzyn’s Pompeii” or the “Polish Hiroshima” (another name for the Old city and Fortress ruins) is beginning to change the shape of the Old City and to bring it back to life after years of silence and oblivion.

The Fortress also includes four outer forts which were built round the city and Fortress at the end of the 19<sup>th</sup> century: Fort Sarbinowo (Zorn-dorf), built 30.04.1883—December 1887, Fort Czarnów (Tschernow), built 1888—05.11.1890, Fort Żabice (Säpzig), built 14.11.1887—19.08.1890 and Fort Gorgast, built 26.04.1883—July 1889.

#### 1.6.2 Fort Sarbinowo (Zorndorf)

In its external form, Fort Sarbinowo (Zorndorf) is a traditional “Biehler-Fort”. It was built between 1883—1887 as a brick structure with an outer and supporting wall and strengthened in 1890/91. Fort



**Fig. 7:** Isometric drawing from Wichrowski dated 2004 of Fort Sarbinowo in Kostrzyn built 1883—1887. The drawing shows the planned form of the work, details of which were never completed.

Zorndorf has two separate water supply systems and a cistern well in a casemate, above an artesian well in the gorge ditch and system. The work was designed to accommodate a company in the front, central and gorge barracks. The surrounding dry ditch was protected by a brick wall approx. 7.50m in height. The fort is accessed by a carriageable forest road.

Fort Zorndorf was used by the Polish army up to about 10 years ago and it now stands empty. It is owned by the “Agencja mienia Wojskowego” (Military Property Agency). It was put up for sale but without attracting a buyer. A procedure to give the fort listed building protection has been introduced.

Unfortunately, parts of the fort are ruinous at various points through the robbing of brick: the entrance block with the destroyed blockhouse on the place d’armes, the demolished gorge caponier, the two-storey barracks inside the work (including demolition of the ceilings) and the right-hand shoulder caponier.

Water damage to the brickwork and tree growth in the vaulted ceilings has also affected the condition of the work. If radical measures are taken, there is a risk of parts of the walled structures being destroyed if unless some older trees are removed with particular care.

### 1.6.3 Fort Czarnów (Tschernow)

Fort Tschernow, situated on a slight prominence close to the village of Czarnów, was built between 1888—1890. The construction of bomb-proof gorge barracks was deferred to the armament works in 1914 on cost grounds. The barracks now no longer exist. The stone from the installation was sold. The work was planned and built as a pentagonal closed redoubt. Parts of the barbettes can still be recognised beneath the undergrowth on the embankment.

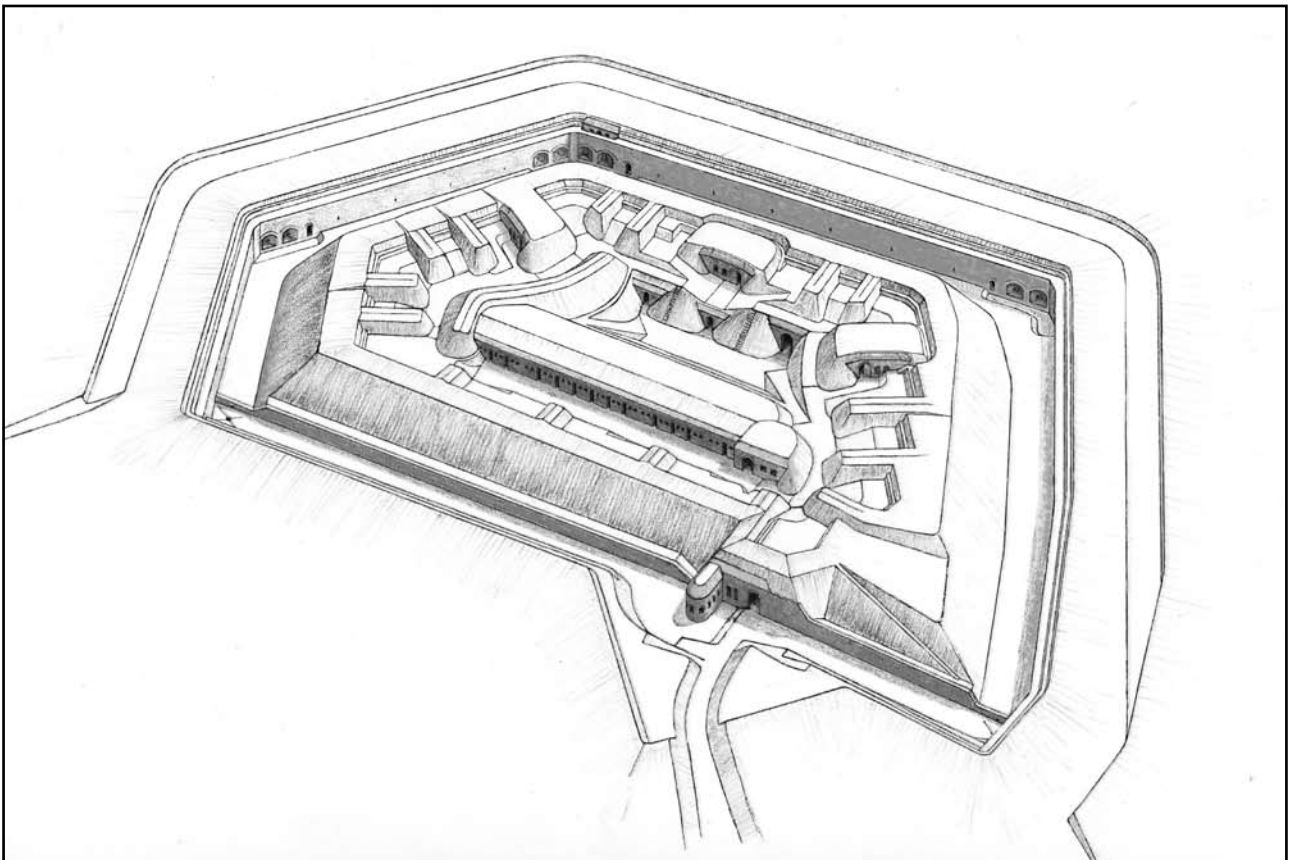


Fig. 8: Isometric overview from Wichrowski dated 2003 of Fort Czarnów, built 1888—1890, at Fortress Kostrzyn, hypothetical condition.

The fort was built only after General Biehler's retirement, when the strict rules for a "unitary" fort had been relaxed. The garrison was served by an artesian well. The work is surrounded by a dry ditch approx. 10 m wide. The fort belongs to the State forest (Nad-lesnictwo Osno) and is used by the "Knieja" (Osno Lubuskie) hunting association as a hide.

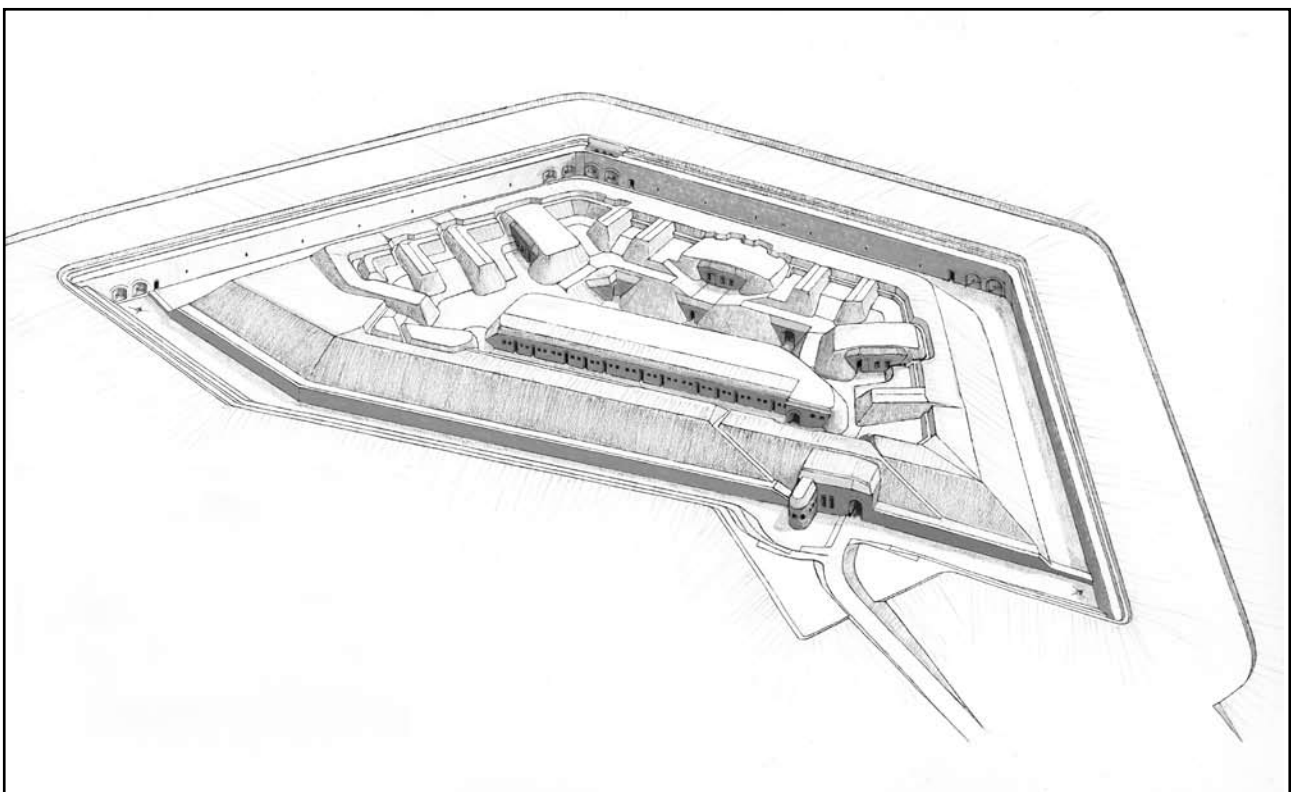
#### 1.6.4 Fort Żabice (Säpzig)

The fort was planned and built as a closed redoubt at the south-western angle of the girde of forts round Fortress Küstrin, in 1897—1890. The fort consists of a ditch-and-rampart, system, a glacis with a covered way, hollow traverses with accommodation, and barbetstes on the rampart. Bomb-proof gorge barracks covering an area of 1,080 m were built only in 1914. The accommodation for garrison, workshops, magazines etc still exists today. A power supply was linked up only after the First World War. Drinking and service water were drawn from a well.

The fort is accessed by a forest track; it is hardly visible from the outside. The fort is owned by the municipality Gorzyca and is now no longer in use.

#### 1.7 Świnoujście: Various individual works of the 19<sup>th</sup> and 20<sup>th</sup> centuries

Fortress Swinemünde consists of a series of new-period and modern defensive works, which have survived in good condition. They were built at the mouth of the River Swine. This position has always had a strategic importance militarily although little remains from the earliest defensive period. The oldest 19<sup>th</sup> century defensive works still extant and accessible to the visitor protect the Swine estuary and the port from attack by water or land. Conversions were made in the course of time and heavy batteries were added. Further extensions and additions for heavy artillery were made early in the 20<sup>th</sup> century and as from 1934. Long-range, anti-aircraft and shore protection batteries were



**Fig. 9:** Isometric overview from Wichrowski dated 2003 of Fort Żabice, built 1887—1890 as a storm proof battery, at Fortress Kostrzyn, condition as in 1914.



built up to the Second World War. After the War, Swinemünde became a marine station for the Soviet Baltic fleet. At the same time, the forces of the former People's Republic of Poland were given the task of coastal defence. Later fortifications originate from this period, interlinked with earlier defensive positions. Altogether, 10 installations should be mentioned: Fort Anioła (Engelsburg, Work III), the gate to the western fortress area, Fort "Zachodni" (Western battery), Fort "Gerharda" (Eastern battery), Battery Brzegowa (Beach battery), Central position East, Eastern Beach barrier battery, Batterie Leśna (Forest battery), fire control for Battery Göben, and the battalion defensive area. Several works will be discussed further on account of their architectural and technical interest.

#### 1.7.1 Fort Anioła (Engelsburg of "Angel Fort", Work III)

The tower fort was built in 1854—58 on the left bank of the Swine and was intended together with Fort Gerhard opposite to protect the Swine estuary. The regular pentagonal layout was surrounded with a double wet ditch and a rampart. Gun positions were placed in the tower casemates, on the rampart and on the terrace. Conversions took place from 1870 to 1880. Radar installations were placed in the work during the Second World War. Numerous accretions were made in reinforced concrete. A Soviet radio post was located here in the post-war period. The Fort owes its name to its similarity to the eponymous mausoleum of the Roman emperor Hadrian.

#### 1.7.2 Fort "Gerharda" (Eastern Battery)

Work on the Eastern Battery (Fort Gerhard) began in 1856. It lies on the right bank of the Swine close to the lighthouse. The entire site was long covered with bushes and trees. It was leased in 2001 by an enthusiastic "Fortress commander" who wants to restore it further as an attraction and open it up to the public.

#### 1.7.3 Beach battery on the coast

A very worthwhile site along the Fortifications Route is the set of buildings of the former "Beach battery" at the water's edge. This fortification owes its name to its position close to the beach. The battery was built in 1909—1910. It consisted of a large, underground blockhouse with an artillery position and protective facility for an optical range finder. The battery was armed with four 150 mm guns with a range of nearly 20 km. Within the block house are ammunition stores and an engineering room for the battery. The command post with a separate protective facility for the blockhouse was fitted with a very large optical range-finder for observing targets on the water and guiding the battery's fire. The battery was in use during the First World War, in the inter-war period, and during the Second World War. The Russian set up their own 130 mm beach battery here in 1945, which functioned up to the late fifties. This unusual and consequently unique fortification is now open for visitors.

#### 1.7.4 Anti-aircraft barrier battery "East Beach"

Several fortified anti-aircraft batteries were built round Fortress Swinemünde during the Second World War to protect the port from air attack.

Several of them were placed amongst the dunes on the beach. These are the so-called "Barrier batteries", intended as an anti-aircraft defence and also against ships at sea. The "East Beach" battery was also earmarked for this task, and now lies on the Fortifications Route. It owes its German name to its position on the eastern beach at Świnoujście. The battery was armed with 105 mm anti-aircraft guns and an optical range-finder. The guns stood on a concrete slab in pivoting armed cupolas. The entire battery complex consisted of defensive barracks, the concreted gun site, the power plant bunker and a munitions store. The East beach battery was manned by naval artillery men; it functioned up to the last days of the war. It withstood Allied air attacks over

Świnoujście, in which many people lost their lives. After the war, the premises were used by the Russians, who installed their own anti-aircraft battery nearby. The battery can now be viewed. Its well preserved blockhouses and former defence positions provide an excellent insight into the way coastal defence was operated. These installations can be found only along the Baltic Coast and the Atlantic Wall.

#### 1.7.5 *“Forest” coastal battery*

This is a further, unique monument to military architecture on the Fortifications Route. The concrete buildings of the battery were erected in 1908—1910. To remain concealed from attack by an enemy fleet, they were placed inshore away from the beach. Only the fire control post remained on the beach. The German name “Forest battery” indicates that these batteries were then surrounded by woods. The battery armament initially consisted of six heavy, already outdated 210 mm coastal mortars. The battery was ultimately equipped with long-range guns of the same calibre. The battery buildings consisted of three massive ammunition bunkers and a single, somewhat lighter protective blockhouse for the garrison. The ammunition bunkers included tunnels for railway traffic; their walls are two metres thick and their strength is impressive even today. The battery never fired a shot in anger. It was disarmed after the First World War and evidently never again used for military purposes. Because of this it retained its original spatial arrangements and the unique architecture of its individual elements. The two batteries at Świnoujście (the “Forest” and “Plantation” batteries) are two of the only four structures of this kind anywhere on the Polish coast.

#### 1.7.6 *Beach battery “Forest” control bunker*

A further monument to military architecture at Świnoujście is the fire control bunker for the “Forest” beach battery. This building was one of a total of four bunkers of this type built at the mouth

of the Swine in 1908—1911. Two of them saw duty on the Island of Usedom and the others on the Island of Wollin. The bunker on the Fortress trail was subordinate to the “Forest” Beach bunker, although it was really working in tandem with its twin units at the “Vineta” battery. Two of these locations plotted the same target at sea with optical appliances to provide information for the fire from two beach batteries. The control bunker lost its importance after the First World War. During the Second World War, it was used as an observation post and an auxiliary position for coastal artillery. Until the fifties, they were used by the Russians. Three control bunkers of this kind are still existent today, two of them on the Island of Wollin. The two still possess their original armoured observation domes. This is unique in Europe.

#### 1.7.7 *Fire control position / control bunker for the Beach battery “Göben”*

The most original architectural structure amongst the fortifications at Świnoujście is the so-called “Bell”, i.e. the former fire control position for Beach battery “Göben”. The blockhouses and guns were located in the wood between the villages of Ognica and Przytór; the control point was located at the top of the tower. The blockhouse was built in 1939 but not fully completed. The underground part contained the engineering rooms and a power plant. The upper floors were earmarked for social and telephone rooms. A range-finder was to be mounted in a pivoting armoured dome at the tip of the tower. However, these appliances were never fitted. War broke out while the lower social and engineering rooms of the bunker were being fitted up. In 1940, the Germans were directing their attention at the Atlantic coast. The guns of the “Göben” battery were taken to the Island of Tarava in Norway the same year. The blockhouse served further as a fire control point for the “Vineta” battery. After the war, Polish artillery men from the battery near Międzyzdroje used it. It was now modernised and re-employed as a fire-watching tower by the State Forestry administration. The tower is the only building of this type in Poland and is one of the very few in Europe.

### 1.7.8 Battalion defensive area

A quite unique item along the Fortifications Route is the complex of provisionally erected fortifications from the “Cold War” period, intended to prevent invasion. Systems of engineering barrier works and fortifications of this kind of prefabricated concrete blocks were built en masse along the Polish coast. They were to form the initial defence line against a landing by NATO troops. These company and battalion strength defence points normally stood empty. The military occupied them during troop exercises or if hostilities were impending. They generally covered a network of trenches that interconnected

the gun sites, Tobruk turrets, mortar and light anti-aircraft artillery positions and cover for tanks and vehicles. They were additionally strengthened with barbed wire and anti-tank defences. Installations of this kind were generally scattered in the broad dune land and forests along the coast. They were built by engineering troops, civil defence operational units and State companies under military orders up to the end of the fifties. Their construction was subsequently abandoned. Although there are no buildings of a listed type and their architecture is not compelling, either, they are nonetheless relics of a non-too distant past and evidence that Świnoujście was until quite recently regarded as a functional fortress.



**Fig. 10:** Kolobrzeg. Fort Münde, present structure referred back to 1832—1836. The lighthouse was built on the fort in autumn 1945.

## **1.8 Kolobrzeg: various isolated 18<sup>th</sup> buildings**

### *1.8.1 Guelders-Gate*

Built in 1708. The exit road from the Fortress towards the west formed a large arc here from the defended bridge over the Persante to the bridge at Holzgraben. Today it is privately owned.

### *1.8.2 Fortified bridge (Batardeau)*

The only bridge across the Persante of the medieval town and during the fortified period. There were gates here, as well, to regulate the water level in the ditches and to conduct artificial flooding round the fortress. Galleries with embrasures facilitated artillery and rifle fire along the river. The Northern Gallery still existed up to 1988.

### *1.8.3 Fort Münde*

Built in 1770 to 1774 according to French examples in the form of a three-storey tower with a well, to defend access to the port, and rebuilt in 1832 to 1836. A lighthouse built in 1945 now stands on the fort.

### *1.8.4 Morast-Redoubt*

Built in 1770 to 1774 on the northern tip of the Salzinsel between the Persante and Holzgraben as part of the port defensive system. Now used as a marina.

### *1.8.5 Saltings Redoubt*

Built in 1832 to 1836 as part of the port defence system. It now acts as a watersports centre for the Polish scout federation “Związku Harcerstwa Polskiego”.

### *1.8.6 Wolfsberg-Sconce (Fort Wilczy)*

Built in 1806/1807 to defend the port entrance from the east and the scene of heavy fighting in 1807. Extended in 1822/1836. The interior of the Sconce was converted to an amphitheatre in 1925.

### *1.8.7 Waldenfels-Sconce (Szaniec Kamienny)*

Built in 1832 to 1836 to defend the port entrance and the coast from the east. Converted to a restaurant at the end of the 19<sup>th</sup> century. The Sconce was used as area defence in March 1945.

## **1.9 Gdansk: Fort Grodzisko (Hagelsberg)**

Grodzisko Fort is located in the very centre of Gdansk, in the closest distance to the Main Railway Station and Central Bus Depot. Grodzisko Fort is located on the Gradowa Hill which is of more than 40 m height and dominates over the centre of Gdansk. The place was being fortified from the 17<sup>th</sup> century and—together with Bishop’s Hill—formed the western front of Gdansk fortifications. In the 1807 Fort was the place of the main attack at Gdansk of Napoleon’s army. Besieged by Polish and French soldiers it was finally captured. Napoleon’s Army during its stay in “Free City of Gdansk” left one great brick building, Napoleon’s Redit, built in 1812. In the 1813 Grodzisko once again became a battlefield. Napoleon’s Army was defeated and left Gdansk. Prussians kept control over the city for the next 100 years.

In its present shape Grodzisko Fort origins from the 2nd half of the 19<sup>th</sup> century when the great building works were undertaken by Prussians. It was rebuilt as polygonal fort.

In the 1920s, after demilitarization of Gdansk, the area was redeveloped as a town park and became a popular place for relax. Without any military importance the whole area survived the time of the



**Fig. 11—14:** Gdansk. Present condition of Fort Grodzisko (Hagelsberg). An excellent view of the city of Gdansk is obtained from the heights

2nd World War almost without any destruction. Today, Grodzisko is a very attractive place for inhabitants and tourists. The area of over 20 ha is open the whole year. It is a great place for sightseeing. Historical buildings, also underground, can be explored by tourists (only with guide). Few viewpoints at the Gdansk Bay, shipyards and Old Town are very picturesque. The post-fortification park, biggest in the city centre, is a place of living of many species of animals and plants. That is why the educational route about ecology was created. In the closest future Grodzisko will become a place of big investments and redevelopment. All buildings will be repaired and adapted to new functions. New exhibition areas will be created. New walking paths, lamps and small architecture will be built.

#### **1.10 Gdansk: Fortress Wislamouth (Weichselmünde)**

The first structural works at this location are known from the 14th century. A brick tower was built here in 1482 as a defence and lighthouse. Timber defences were placed round the tower between 1518 and 1521. The fortress achieved its present form with a four-bastion trace from 1586, replacing the timber fortifications. The work was surrounded with wet ditches which have survived to the present. An advanced work was added to the east in 1624 to 1626, comprising five earthworks with ditches, with a further advanced work on the west still later, on the left side of the Vistula; both sites were in continuous use throughout the 18<sup>th</sup> century. Prussia took over the fortress in 1793 and strengthened it further during the Napoleonic wars. It lost its military function after the First World War. The structure was destroyed during military operations in 1945 but was partly reinstated during the 1960s. Fortress Weichselmünde has been under the care of the Danzig Historical Museum since 1974.





*Fig. 15—19: Gdansk. Fortress Wislamouth. Various views as from the Vistula and from a bastion.*

### 1.11 Giżycko: Fort Boyen

The Prussian fortress “General Hermann von Boyen” was built in 1843 to 1856 between Lake Löwentin and the Klein Pfaffenteich pond according to plans by Aster and Brese. The fortress received six defensive lines, dry ditches and three gates on the landward side. Up to 1870, the fortress also had a water gate, connecting one of the port basins with Lake Löwentin. The fortress at Lötzen made a substantial contribution towards victory over the Russian armies in 1914. To create a clear field of fire for the artillery, the buildings at the Olsztyńska Road (Königsbergerstrasse), the Nadbrzeźna Road (Uferstrasse) and the Nova Villa settlement were razed.

### 1.12 Nowy Dwor Mazowiecki: Fortress Modlin

Little can reliably be said at the present time as to the origins and building history of the former Russian fortress of Modlin, not far to the north of the

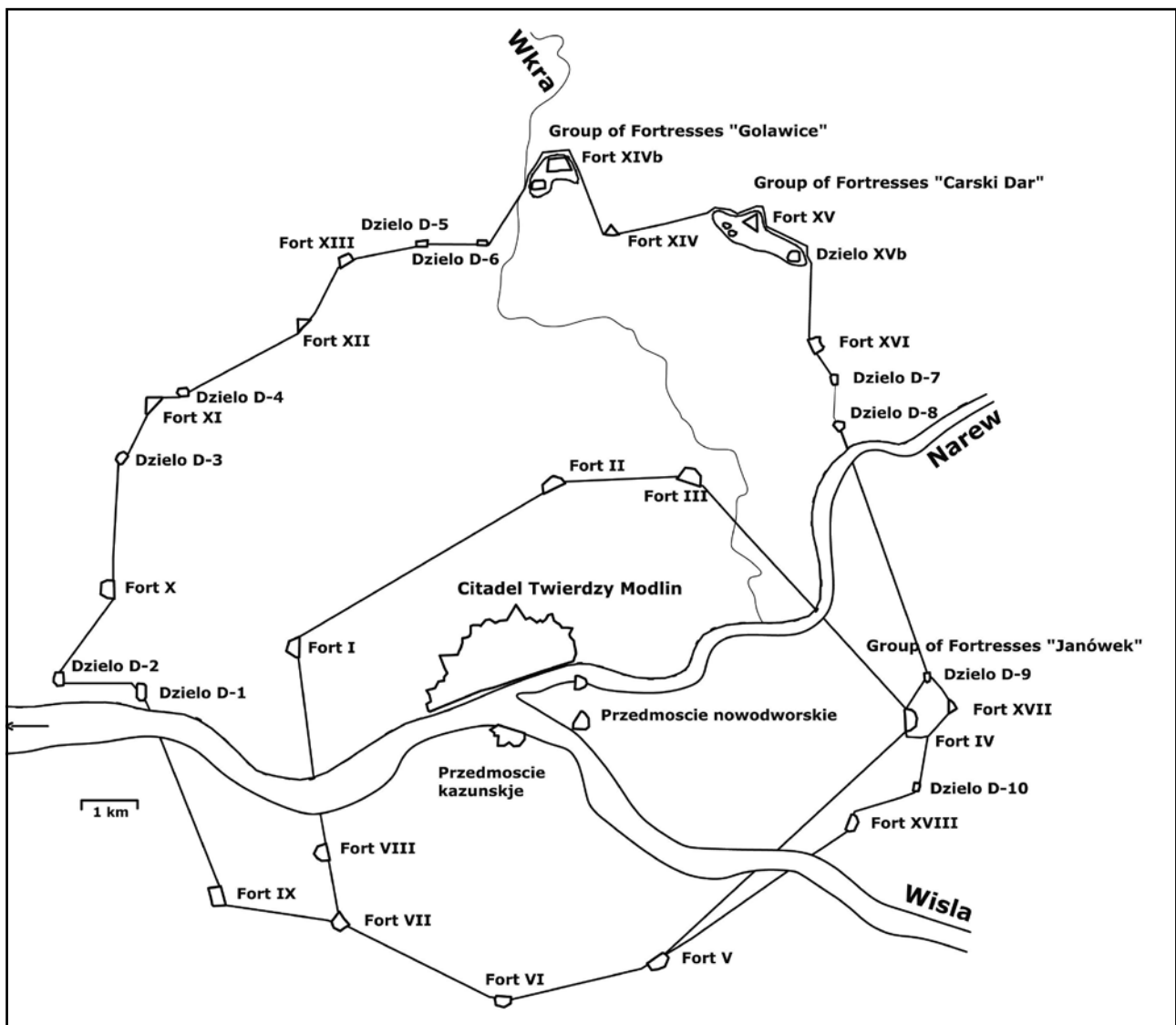
present capital of Warsaw, at the confluence of the Vistula and Narev. We know that a Swedish camp existed until 1660, the remains of whose fortifications survived to the early 19<sup>th</sup> century. As the Swedish king Charles Gustavius had already done, Napoleon recognised the strategic importance of the area and on 8 January 1807 ordered the construction of new fortifications. The original design was by the French general Chasseloup-Laubat. Building work continued to 1812, the French troops capitulating on 25 December 1813 and the fortress falling into Polish hands. Russia took over the fortress in 1830 when the Polish kingdom lost its autonomy. Fortress Modlin was given the name of Nowogiesorgiewsk in 1834. The Russians completely modernised the fortress in 1832 to 1841 on the basis of designs by generals Jan Dehn and Aleksander Ivanovich Feldman. The forts built in 1810 to 1812 were developed into larger, regular works, surrounding the fortress. After 1840, one of the longest barrack facilities of all time, measuring 2,250 metres, was built within the citadel over a period of ten years, for a garrison totalling 20 to 30,000 men. Eight brick forts were built



*Fig. 20: Giżycko. Boyen fortified complex, view from the inner parade towards the main entrance gate.*

in 1870 to 1880 at distances of 2 to 6 kilometres from the citadel. A further girdle of forts was erected in 1912 to 1914 with 10 concrete structures at distances of 5 to 10 kilometres from the citadel, forming a ring of approx. 50 kilometres. These works were still under construction when the First World War broke out. The Germans broke through in 1915 and took both Warsaw and, after a week's siege, Modlin on 20 August 1915. Modlin was reoccupied by Polish troops in November 1918 and developed into a prominent military garrison in the years following. In view of the political developments in Europe and in accordance with military requirements at that time, the construction was started in April 1939

of five reinforced concrete bunkers on the fortress lands, with two additional bridges across the Vistula and Narew, and numerous tank barriers and field fortifications in the forefield of the fortress. After the outbreak of the Second World War, the German forces took the fortress on 22 September after an 11-day siege, despite the heaviest bombardment. The fortress played no part during the war, Fort III serving the Nazis as a torture centre for thousands of civilians. German occupation continued to 18 January 1945. The local authorities of Modlin, Nowy Dwór and Zakroczym erected a monument in the victims' memory in 1957, Fortress Modlin being decorated with the Order of the Grunwald Cross, Class II.



**Fig. 21:** Nowy Dwor Mazowiecki: Overview sketch of the major fortifications at Modlin.







- Oberteich-Front: The main wall between Bastion Oberteich and the Dohna-Tower, the Dohna Tower, the crenelated wall at the Oberteich between the Dohna and Wrangel towers, the Wrangel tower, the main wall between the Wrangel tower and Bastion Tragheim
- the Upper Krauseneck Front: Bastion Tragheim and the Tragheim Reduit, the main wall between Bastions Tragheim and Krauseneck, the Bastion Krauseneck and Krauseneck Reduit, the main wall between Bastions Krauseneck and the Observatory, the Observatory Bastion and the Observatory Reduit
- the Lower Krauseneck Front: The main wall between the Observatory Bastions and Pregel (in the section of the main wall with the Bastions Butterberg and Laak).

Up to this point the Fronts were collectively known as the “Northern Front”. The “Southern Front” included:

- the “Brandenburg Front”: Fort Friedrichsburg with projecting envelope, the connecting front, the Railway Salient, the Alter Garten Bastion, and Bastion Brandenburg
- the “Haberberg Front“: Bastion Haberberg, Ravelin Haberberg, Cavalier Haberberg, Ravelin Friedland, Cavalier Friedland and Bastion Pregel.

By Government order of 24 June 1872, the construction of detached force was also initiated for Königsberg. The Fortress was supplemented from 1874 to 1885 by a ring comprising 11 forts, a further two intermediate works and a 12th fort being added between 1887 and 1890. Under the renaming of the Forts in 1894, the detached Contienen Redoubt, belonging to the inner defensive ring, was given the name “Auerswald Work”. The other names were:

Fort I	Fort Stein
Int. work Ia	Intermediate work Göben
Fort II	Fort Bronsart
Int. work IIa	Intermediate work Barnekow
Fort III	Feste König Friedrich III.
Fort IV	Fort Gneisenau
Fort V	Fort König Friedrich Wilhelm III.
Int. work Va	Intermediate work Lehndorf
Fort VI	Fort Königin Luise
Fort VII	Fort Herzog von Holstein
Fort VIII	Fort König Friedrich I.
Fort IX	Fort Dohna
Fort X	Fort Kanitz
Fort XI	Fort Dönhoff
Fort XII	Fort Eulenburg

The system was consolidated up to the outbreak of the First World War with 280 chambers (infantry, artillery, machine gun and accommodation positions), 9 support points and 25 sconces and several outposts along the Lauther position to the north-east.

**Fig. 23—28:** Impressions, April 2007 from Fortress Modlin. Core work “General Dehna”, Water tower inside the citadel of 1847, of one of the main entrance gates, external view of the 2.2 km long barracks block, view of one of the two corner towers of the barracks block, barracks block seen from the inner parade.



### 1.14 Kaunas: Fortifications

After the third partition of Polish-Lithuanian Commonwealth at the end of the 18<sup>th</sup> century, the Russian Empire began to make a lodgement in the occupied territory. The project of developing fortification far Kaunas on the Ažuolų Hill, which commenced as early as in 1796 by de Witte, remained unfinished. At that time Russia had fortresses in its western lands, in Riga and Kiev, and was erecting fortresses in Daugavpils and Bobruisk. Being perturbed by the outcome of the Franco-Prussian War, Russia resumed the construction of fortresses at its western borders. Chains of fortresses on the western borders of the Empire were mapped out for defence against a potential invasion from the Germans in the West. On the 7<sup>th</sup> of July 1879 the Russian Emperor Alexander II approved a proposal from the Russian military leadership to build the fortress in Kaunas. The initial general layout of the Fortress was prepared by Obruchev, the adjutant-general of main headquarters, together with generals Zverev and Volberg. The layout configured the city's encirclement with a ring of seven forts and nine interjacent gun batteries, equipping the central fortification, laying of roads, erection of a military railway station on the left bank of the Nemunas river (in Freda), workshops, food warehouses, ammunition magazines etc.

The Forts and gun batteries of the Fortress extended in a circle at the approaches to the city at more or less even distances (every 2—2.5 km), almost in a regular oval shape. The fortress was divided into four defensive sections. The first section included three forts and four interjacent gun batteries, positioned along the Nemunas towards the Jiesia rivulet in the south-eastern corner of the Fortress. Behind the Jiesia rivulet and to the Nemunas and Kaunas Lake, there are fortifications of the second defence division: two forts and two gun batteries. In the third defensive section there are two Forts and three gun batteries. The sixth Fort is close to Petrašiūnai, and the seventh—close to Eiguliai. The Fourth defensive section is located between the right bank of the Neris river, and the Nemunas. Here, for the reinforcement of north-west side of the Fortress, the eighth Fort was erected according to the original project of Glinka-Yanchevski in 1887—1889. It was the first concrete fort in the entire area. During the period 1902—1911 the ninth Fort was built,

this time according to a new typical scheme of “Velichka” concrete fort. Immediately after finishing the construction work, decisions were made for significant improvements to the Fortress, by partially reconstructing previously built forts and fortifications. New plan for the development and rebuilding of the Fortress was prepared in 1911 and approved in 1912. The plan scheduled 12 more new forts, 9 redoubts, new fortification ramparts, warehouses, shelters. New defence ring had to encircle the entire City together with old defensive fortifications. At the end of the 19<sup>th</sup> century Kaunas fortress occupied a territory of more than 25 km and by 1914 its area expanded to 65 km<sup>2</sup>. The number of forts grew from 8 in the first ring of forts to 21 in both rings.

When the frontline approached during the First World War, the expansion and strengthening work of the Fortress were interrupted. The German Army attack of Kaunas Fortress selected the strip between the Nemunas and the Jiesia rivulet for the strike, as it contained the first three outdated brick forts. The Kaiser's army brought powerful howitzers for the Fortress attack—42 cm siege “Berthas”. During the War, the Kaunas Fortress garrison consisted of about 90,000 men, comprehensively provided with artillery and military paraphernalia. Separate Fortress units persistently struggled against German Army, but after the attack that lasted 11 days, the fortification ring was broken. General Grigoryev, commander of the Fortress defence, hastily retreated. On August 18, 1915 the Kaiser's Army crossed the Nemunas and entered Kaunas, capturing at the same time the 6<sup>th</sup> and 7<sup>th</sup> forts in the north-east part of the city. The Tsarist Army persevered a bit longer in the 8<sup>th</sup> and 9<sup>th</sup> forts. During the Fortress attack over 4,000 defenders and 4,343 German troops were killed. 20,000 Tsarist soldiers were taken captive, together with 1,358 different pieces of artillery and much other stock earmarked for a long-term Fortress defence in the campaign. After the war forts were deserted, even though until 1924 the Kaunas Fortress was kept by the Lithuanian Army unit, which was later liquidated as obsolete. Part of the fort constructions and fences were disassembled, but most of them were utilized for military and municipal needs. Later, in some forts they arranged flats for the poor, a military prison in the 6<sup>th</sup> Fort, Central Archive in the 7<sup>th</sup>, workshops in the 5<sup>th</sup>, and prison divisions of hard labour were

located in the 1<sup>st</sup> and 9<sup>th</sup> forts. During the Second World War the Kaunas Fortress was not used for defensive purposes. 6<sup>th</sup>, 7<sup>th</sup> and 9<sup>th</sup> forts were converted into concentration camps. Thousands of war prisoners and civilians were imprisoned and killed in them. After the war a monument for the Holocaust victims was erected at the 9<sup>th</sup> Fort.

#### 1.14.1 Forts No 1—7

Forts from the first to the seventh and nine gun batteries were built according to typical Russian brick fort scheme. Every fort is surrounded by a deep defensive ditch with a brick contrescarp wall of approx. 6 m height. At the turns of the ditch there are caponieres. In the Fort rearward are barracks, linked by poterns to the yards or caponieres. Insides of the forts are divided by traverse ramparts into separate yards, with dislocated ammunition magazines, cannon shelters, and water wells.

#### 1.14.2 Fort No 8

For the reinforcement of north-west side of the Fortress, the eighth Fort was erected according to the original project of Glinka-Yanchevski in 1887—1889. It was the first concrete fort in the entire area.

#### 1.14.3 Fort No 9

The ninth Fort was built, according to a new typical scheme of “Velichka“ concrete fort. Immediately after finishing the construction work, decisions were made for significant improvements to the Fortress, by partially reconstructing previously built forts and fortifications.

#### 1.14.4 Barracks

The barrack townships were built for the accommodation of the garrison: in 1886—1896 in Žemieji Šančiai, and 1895—1899 in Aukštoji Panemunė. In

addition, barracks were built in Vienybės Square, at Radvilėnų road, and in Freda. Officers had two-storey brick houses with separate flats; sergeants—wooden one storey houses, and soldiers—two & three storey brick buildings with common premises. These houses are a brick style decoration in the entire Fortress.

#### 1.14.5 Infrastructure

Before commencing the construction work, the major roads, usually cobbled, were laid. Roads connected important military installations with each other, and with the city. It was of the utmost importance to the growth of the City and suburbs.

In Panemunė is the area of the engineering squadron of the Fortress, next to the Aeronautical division, the airport with hangars for aero-planes, later also for airships, was equipped in 1912.

A large number of barracks and different military warehouses were erected in Žaliakalnis and Viliampolė. Gas mill, food repositories and water tower—in Aleksotas. New headquarters buildings were also built in Naujamiestis: Commandant palace, headquarters, gendarme and engineer administrations, intendant office, telegraph, telephone and radio stations.

Defence installations and complexes of other buildings deployed in a territory spanning an area several times that of the city itself, determined the formation of the road network. 195 brick and 253 wooden military buildings were built in the territory of the Fortress.

#### 1.14.6 Commandant Palace

Decorations of the Fortress headquarters are especially distinctive and can be seen in the Commandant palace and the house of the Engineering administration governor. The Commandant palace features a marble staircase made by Warsaw stone-cutters, leading to the second—reception hall - floor. The palace also has several ornately decorated cabi-

nets and a hall. The Commandant was surrounded by fine work of Dutch-tile stoves, marble mirrored fireplace decorated with stucco. Ceilings and walls were decorated with stucco, with polychromatic painting. Bronze chandeliers illuminated the space.

#### 1.14.7 Cathedral

From 1891—1895 the military engineer, Konstantin Limarenko, led a project to build the Cathedral of St. Peter and Paul for the Garrison, chapels for army in Šančiai and Freda, military cemetery established in A. Šančiai. After the major Fortress institutions settled in Naujamiestis of Kaunas and the Garrison Cathedral was completed, this de-facto established Kaunas as a military fortress city.

## 2 Problems with the use of recorded fortresses

### 2.1 *Dömitz: Citadel—Tourist interest*

Before the Second World War, the Citadel served as a local interest museum; after the war, the City and Fortress fell in to the no-go border area between the two Germanies. With the fall of the Berlin Wall in 1989, Dömitz citadel was again accessible. Unknown to the general public for more than half a century, the main problem is clearly that of working up and focusing on the artistic and cultural importance of the history of the buildings and making them known beyond the provincial border. Because of its cultural historical importance, the citadel is ideally suited for developing as a tourist venue, which will, however, have repercussions on the structural and spatial fabric.

### 2.2 *Spandau: Citadel—Tourism and events*

The Southern, Eastern and Western Curtains, the bastions Kronprinz and Königin and the casemates of Bastion König were restored in accordance with conservationist principles as from

1977 with funds from the Berlin Future Investment Programme. The work was completed in 1983. A user concept was already out in 1978, which then, with certain modifications, formed the basis for a Senate Bill discussed in the Berlin House of Representatives in 1985 (no. 132 : “Status of Planning and Implementation for the Design, Safekeeping and future Use of Spandau Citadel”). This set out the task of creating a museum, culture and leisure centre in a historic building of high status.

Up till 2005, important areas accessible to the public were developed in accordance with the design: the Commander’s house, the Palace with lobbies A and B (here, presentation of excavation finds in situ), and the Armoury with the City Historical Museum. Other buildings have been made ready but have received a different use: such as the cavalier of Bastion Kronprinz, which was originally projected as an educational construction site with workrooms for artists and craftspeople and a boat room for white water canoeing (in the port basin) and the ground floor of which now houses exhibition rooms and the upper floor a young people’s art school. The restoration work in the Cavalier in Bastion Brandenburg with the Italian courts was completed only quite recently (2003). A multi-functional meeting centre emerged here, put to commercial use. Three of the large buildings surrounding the court have not yet been restored: building 4 in the west (a laboratory building of the 1930s), building 6 to the north (barracks from the mid-19<sup>th</sup> century, the external façade having been restored here), and building 8 to the east (a magazine building, parts of which still originate from the 16<sup>th</sup> century). That nothing has been done here as yet is largely due to the reorientation of the State Prussian Cultural Heritage museums following reunification. While under the original plan, these buildings were wholly or partly (Building 8) earmarked for the Museum of Early and Pre-history (MVF), which had already drawn up a detailed plan for its use, the MVF was now to moved with other archaeological museums to the Museum Island. However, the Foundation notified its final refusal orally to the Spandau District Office only a short while ago, so that new use must now essentially be found. Interim use, which has proved worthwhile both financially and culturally has already been found for the former laboratory building (Building 4). Here, 30 artists and craftworkers have their stu-



**Fig. 29/30:** Berlin-Spandau. Citadel. Optical impairment of the fortress architecture by mobile and over-dimensioned fittings for the period of major events. Added to this is impairment through exorbitant noise, which possesses questions as to suitable monumental use.

dios and workshops. A new user concept was developed for the entire Citadel in 2006, put to the Central Committee of the Berlin House of Representatives and adopted in Autumn 2006.

### 2.3 Spandau: Fort Hahneberg—Nature park

Fort Hahneberg has been owned by the Land of Berlin since 1999, which has assigned it to the specialist section of the Spandau District Office. The District Office is therefore faced with the difficult task of ensuring the upkeep of the building and appropriate use. Of course, a wide variety of actors have shown interest in the Fort in the meantime, which must be taken into account when working out a user concept.

We have here, first of all, nature protection, which is concerned with “securing and developing the potential protection for nature existing on the ruined fortifications”, whether scrub, wild grass, black-beetles or bats. Arbeits-und Schutzgemeinschaft Fort Hahneberg e.V. (Fort Hahneberg Work and Protection Society) has been active on the site since 1990. It arranges guided tours and concentrates on exposing and developing parts of buildings and roads. The Knobelsdorff School (Senior Construction Technology I Centre) runs a teaching workshop on the land and has since 2002 acted as pilot school for the German Monuments Protection Foundation.

These actors worked together for a long time, often also against each other. However, they are now on the right road towards formulating common goals that promote the upkeep of the monument, protection for flora and fauna, opening to the public (creation of a biological-historical educational trail) and the development of a training centre, in equal terms. However, future use must ensure plans for structural security, maintenance and enhancement. These include conservation measures for the site (maintenance, building care), remedial action if the fabric is threatened, measures to guarantee stability, measures to ensure safety for traffic (creating a trouble-free situation from the legal aspect) and measures to supplement structurally lost parts to improve legibility. The selection of methods differs according to the degree of jeopardy and the user requirement: on the one hand, urgently necessary structural measures to avert risks and rescue the fabric and to ensure stability and safety for visitors, on the other, structural additions to restore legibility and comprehension (securing and displaying structural finds, equipping for potential use). Necessary structural reinforcement had been undertaken adjusted to the site and using the right materials. Additions in modern form to secure functioning (protective roofs, railings, functional buildings) will be made very sparingly and emphatically.





**Fig. 31:** Berlin-Spandau. Fort Hahneberg. Remedial work on the gorge caponnier. Basic use of any kind will require stable, secure structures.



**Fig. 32—34:** Peitz. Malzhaus bastion. Partly open structure, not hitherto receiving building maintenance.



#### 2.4 *Peitz: Malzhaus Bastion—Tourist interest*

The problems with using the Malzhaus (Malt house) Bastion in Peitz is relatively easily summed up: two empty casemates, which after decades of neglected maintenance and care are in parlous state. Added to this is the location of the work and its lack of links to other fortifications that could make the original context comprehensible and palpable. Furthermore, there is no free space roundabout which could under certain circumstances be put to a new use.

Further problems arise with the low position of the casemate floor: it lies deeper than the pavement and street. Development is therefore possible only downwards. The same applies to keeping out rainwater and street overflows which must be prevented from entering the rooms in the building.

Since future use is only temporarily guaranteed, possible employment is limited, and also raises security and safety questions.

#### 2.5 *Küstriner Vorland: Fort Gorgast—Tourist and events interest*

After years of rebuilding and various restoration and maintenance works, the Fort is now in a condition that may be described as acceptable with regard to certain functions. The overall development of the infrastructure, including sanitary and heating facilities, continues to cause concern. These require attention before various uses can be contemplated.

#### 2.6 *Kostrzyn: Old City—Tourist and events interest*

*Fort Sarbinowo (Zorndorf)—Nature reserve*

*Fort Czarnów (Tschernow)—Nature reserve*

*Fort Żabice (Säpzig)—Nature reserve*

Even when the decision is taken to rebuild the Old City of Küstrin, it will still take years before the plan becomes reality. The Old City would then regain its intended function as a residential area together with all urban functions. The surrounding fortifications

are a greater cause for concern. These require ongoing care and maintenance, so that the escarpments do not collapse and the vaults in the bastions remain safe. This means a permanent watch over the areas at risk, especially after the annual flooding of the Oder, which never occurs without some damage to the brickwork and foundations. It is not known whether a special building fund exists to finance this work, but the survival of such an extensive site as Fortress Küstrin will require substantial financial outlay.

The problems with the three outer faults are similar. All three are in various states of disrepair. Fort Sarbinowo (Zorndorf) in the north-east of the city is accessible by a carriageable forest track. Fort Sarbinowo was used by the Polish army up to ten years ago or so and stands now empty. Unfortunately, parts of the Fort have been ruined through the removal of bricks at various points. The entrance block with its destroyed blockhouse on the place d'armes, destroyed gorge, the two-storey barracks on the inside of the work (including collapse of the ground floor ceilings), and the right-hand shoulder caponier. The condition of the work is also deteriorating through water damage to the brickwork and through vegetation penetrating the vaults. On the one hand, the Fort forms an architectural group of particular interest as a fortified work, despite its poor overall condition, while, on the other, this site with its luxuriant vegetation exerts a silent, thoroughly unmilitary magic, whose attractions can and should be developed for tourism with just a little remedial touching up.

Fort Czernów (Tschernow) lies on a slight rise close to the village of Czernów, to the south-east of the Old City. The formation of a bomb-proof gorge barracks was deferred up to the rearmourment of 1914 on cost grounds. The barracks now no longer exist. The stone of the work has been sold. The site was planned and built up as a five-storey enclosed Redoubt. Parts of the fire steps can still be traced beneath the vegetation on the rampart.

Fort Zabice (Säpzig) was planned and built at the south-western angle of the fortress girdle as a closed redoubt. The quarters for the garrison, workshops, magazine, etc still exist today. The Fort can be reached by a forest track; it is hardly visible from the outside. It is no longer in use today. Individual



**Fig. 35/36:** Küstrin. Condition of the old city in 2006. After removing the rubble, nature begins to take control of the City. Streets, basements, staircase entrances are left.





*Fig. 37—40: Kostrzyn. Impressions of Fort Sarbinowo, 2006.*

parts of the fort have been destroyed (parts of the barracks defences, gorge caponier). Altogether, however, the work is still in relatively good condition. The Küstrin City administration has drawn up a list of requirements that highlights the present problems and which the authorities feel must be tackled in order to cope with the problems for using the Old City area and the external forts:

1. Setting up of a special department within the organisational administration of the Küstrin Town Hall. This department would have as its sole task the maintenance and use of the fortifications, especially with a view to tourist development. The absence of such a department is regarded as a particular problem underlying the lack of positive developments for the introduction of future user structures for the fortifications.
2. Undertaking of permanent maintenance work on the Fortress from the protection and reconstruction aspects. The technical condition of parts of the Fortress is unsatisfactory and does not therefore make for easy sightseeing.
3. Drafting of a remediation plan for preservational work. This must be related to the safety of the building, the compatibility of use with certain parts of the Fortress, and the identification of particular points of interest.
4. Introduction of intensive investment work in the Old City. Only by building up the Old City will the fortifications be secure and can the infrastructure, still largely decayed, be restored.
5. Introduction of effective, visible marketing strategies to identify and promote the Old City with the Fortress as a real tourism product. This also includes signs for certain parts of the Fortress in the Old City area.
6. Construction of additional infrastructure (hotels and restaurants) to persuade tourists to extend their visit to Küstrin

#### ***Fort Sarbinowo (Zorndorf)***

On the one hand, despite its poor overall condition, the Fort is architecturally a very interesting ensemble as a fortified work; on the other, this place with its luxuriant vegetation exercises

a silent, thoroughly unmilitary magic, whose attractions can and should be developed for tourism through just a little, careful touching up.

#### ***Fort Czarnów (Tschernow)***

The Fort offers little hope of meaningful restoration having regard to its poor state of maintenance. The internal earthen structure is heavily impaired. All that remains intact are the main posterns and the earth-covered parts of the ruined walls.

#### ***Fort Żabice (Säpzig)***

Individual parts of the Fort have been destroyed (parts of the barracks basement, gorge caponier). However, the work is still in relatively good condition overall. A few years ago, toxic waste was illegally dumped here, producing poisonous vapours. After the toxic waste had been removed, the entrance to the blockhouse was walled up.

#### ***2.7 Świnoujście: Fort Gerhard—Tourist and events interest***

##### ***Individual features 19/20<sup>th</sup> Century***

##### ***—Nature, tourism and events interest***

Parts of the Fortress have always been in use; since the army left, they were entered private hands and are run as a museum and tourist attractions.

#### ***2.8 Kolobrzeg: Individual 18<sup>th</sup> century features*** ***—No tourist use at present***

Even though individual works at the former Fortress Kolobrzeg are at present fully employed, a reliable plan for permanent use is still lacking. There are a number of problems due, not least, to the unclear position with the lease, especially as far as the duration of the concession is concerned.





*Fig. 41: Świnoujście: Orientation table at Fort Gerhard.*

Consequently, the City has little influence on the activities taking place within the fortifications. The individual tenants have not adopted a uniform user strategy and do not approach the City, either, with regard to maintenance and monument care.

The City is faced with the problem that it does not have appropriate funds at present for remediation and maintenance of the fortifications. For example, no funds are available at present for restoration of the Batardeau.

The individual fortifications are in seasonal use. One reason for this is the absence of heating in the antiquated installations. There are virtually no tourists during the autumn and winter months.

The Saltings Redoubt serves as an example of the lack of management organisation for the fortifications, its evident opportunities for marketing not being used, and it is kept open in the summer only for children's events. The problem with proper marketing is also due to the fortifications, apart from Fort Ujście, lying off the tourist route and there

being no events that would promote the Fortress and its history. Links between the fortress installations and the development of the City and tourism are few, because tourism in Kolobrzeg is more than 90% aimed at the health sector and elsewhere.

## **2.9 Gdansk: Fort Grodzisko—Events interest**

Despite Fort Grodzisko's excellent position above the Gdansk main railway station, there are numerous problems that directly affect all further considerations as to its use. This includes the development, the provision of information, special attractions for tourists and locals, infrastructure and the present residents of the fort, ecological and conservation problems and questions of fort management.

### *2.9.1 Position and connections*

The Fort's prominent situation does not conceal the fact that reaching it is difficult. Access is narrow and





*Fig. 42—49: Świnoujście. Impressions from 2004: Remains of coastal batteries from the first and second world wars to secure the Baltic Beach.*





*Fig. 50—56: Świnoujście. Further impressions from 2004: Empty or partly used casemates of coastal batteries, empty and unused former military properties in good state of repair, observation tower of a converted fire control position, former firing ramp for a V 3 position.*



*Fig. 58: Gdansk. Fortress Wislamouth. View from tower on to the parade ground. Only part of the structure has been fitted out for temporary use.*



*Fig. 57: Gdansk. Fortress Wislamouth. The mole in front of the bastion provides protection from the wakes of ships entering the Vistula.*



decayed. The main communication with the City is complicated by the railway facilities and is at present possible only through a tunnel beneath the tracks. Because of the location of the central bus station at the foot of the Gradowa Hill the appearance of the fortification from a distance is impaired. What is more, the Fort's elevated position makes access difficult.

### 2.9.2 *Provision of information*

Barely any local in the City of Danzig knows that fortifications exist at this point. In addition, the area has the reputation of being dangerous and a popular point for the drug traffickers. There is no information at the entrance and no signs concerning the fortifications and their history. The absence of signboards and individual descriptions of the buildings on the site itself is noticeable.

### 2.9.3 *Attractions for tourists and locals*

The work is at present not in the least adapted either for tourists or for locals. This is particularly evident in the absence of regular events for tourists, the absence of a restaurant and other catering facilities, the lack of attractive features inside the building for tourists, and the absence of a tourist information centre and souvenir shop. In addition, there are no toilet facilities for visitors; the issue of a tourist guidebook to the Fortress area is also desirable.

### 2.9.4 *Infrastructure*

At the present time, there are no properly marked or maintained footpaths, roads or steps. The underground utility pipes are in poor condition; there is no electrical lighting in certain parts of the fort. Similarly, there is no car park; the buildings are also in poor condition.

### 2.9.5 *Residents of the Fort*

The Fort site is still inhabited. People live in several buildings from the post-fortification period: in the artillery carriage store, in the guardroom and two other buildings. These structures are in poor condition and unsuitable for this kind of use. All this prevents their adaptation for tourist purposes.

### 2.9.6 *Maintenance and restoration of the buildings*

The total area is under the protection of the regional monuments curator. The result is too many restrictions on possible new uses. This also means time is lost for building and repair work, which in turn leads to higher costs. At the present time, there are also problems amongst the specialists responsible for reconstruction of the Fortress: planners, conservation officers and craftsmen.

### 2.9.7 *Nature*

There are problems with trees growing on the earth cover of the buildings, and similarly on the earthworks. Restrictions have been placed on the use of certain parts of the fort on account of rare plants and animals.

### 2.9.8 *Management*

As the work is maintained from the City's budget, the organisation and implementation of activities takes some time because of the administrative processes. The Public Procurement Act is one example.

## 2.10 *Gdansk: Fortress Wislamouth (Weichselmünde)—No use at present*

The Wislamouth (Weichselmünde) Fortress stands empty at present. The entire work is fully exposed to environmental influences. These include, on the one hand, the surrounding water presenting

a permanent hazard to the fabric of the structure. The wakes of passing ships continuously eat into the brickwork. During the spring and autumn storms, the water level rises by more than a metre above the normal. In winter, floating ice floes break against the brickwork; during frosts, there is an ongoing risk spalling. Furthermore, the Fortress is exposed to strong winds and storms that carry dust and mud from the surrounding factories.

So far, the authorities have been unable to say what medium to long-term user concepts apply to the work. The Fortress itself is a tourist attraction, provided that the infrastructure for access from Danzig can be improved (if it can be introduced at all). The Fortress can be visited only by prior arrangement. The site is also used to organise events and can serve for small and large family and office parties. A major marketing potential, insofar as this is desirable, exists in its links to the Westerplatte in the immediate neighbourhood.

### **2.11 *Giżycko: Boyen fortification complex*** —*Event attraction*

The Boyen fortified complex has been partly developed for tourist and cultural attractions and events. There is an open air theatre in front of the complex, used for performances in the summer months. Nothing happens inside the Fortress, since it still contains many buildings that have been destroyed through vandalism and where restoration has not yet been taken in hand in the absence of plans for their use. The two casemated barracks serve firstly as a Fortress museum and secondly as accommodation for young people, and are consequently also kept in serviceable state. A major part of the work is used by a building contractor as a plant park. The ramparts and walls of the Fortress appear to be more or less intact and require no major repair work. Student holiday camps are organised within the Fortress now and again during the summer months. They cater for students from the architectural faculty of the Technical University of Warsaw, who as an exercise in building surveying, conservation list and building history also look

at the problems of revitalising and reusing existing empty buildings and list them accordingly. A particular problem with using the Boyen Fortified Complex is that no ongoing plan has been found for use of the site as a whole throughout the year. A major part of the work and buildings is used for extraneous purposes or suffers from vandalism.

### **2.12 *Novy Dwor Mazowiecki: Fortress Modlin*** —*No use at present*

#### ***Forts—No tourist use at present***

No survey has so far been made of individual parts of Fortress Modlin regarding projected use. A list of the external forts was recently prepared by P. Boguszewski (April 2007). According to this, the outer ring contains:

- Fort IX—Grochale  
D-1 Wolka Smoszewska  
D-2 Old Trebki
- Fort X—Henrysin  
D-3 Strubiny
- Fort XI Strubiny  
D-4 Strubiny
- Fort XII—Janowo
- Fort XII—Blogoslawie  
D-5 Falbogi Borowe  
D-6 Sniadowko
- Forts group “Golawice”  
– Fort XIV—Golawice  
– Fort XIV (b)
- Forts group “Carski Dar”  
– Fort XV  
– Fort XVI – Czarnowo  
D-7 Czarnowo  
D-8 Czarnowo
- Forts group “Janowek”  
D-9 Janowek  
– Fort XVII—Janowek  
D-10 Janowek  
– Fort XVII—Old Grochale



**Fig. 59:** Giżycko. Boyen fortified complex. Layout plan of the installation as a whole. Redrawn by Ernst Ludwig von Aster in 2006. Many of the buildings shown on the parade either no longer exist or are in ruinous condition.



**Fig. 60—62:** Nowy Dwor Mazowiecki. Fortress Modlin. The structural maintenance of the works, such as the Carnot wall shown here within the citadel presents owners and operators with a tremendous challenge. The attack by nature is immense and continues to damage the brickwork.

The ownership of the individual parts of the Fortress is shared as follows:

- the City of Nowy Dwor Mazowiecki, the Citadel and the surrounding bastioned enceinte.
- the State of Poland, the bridgehead, at present still occupied by pioneer units of the Polish army and consequently in military use`
- the surrounding municipalities and no doubt also the Polish State with regard to the outer Forts, although we do not know at present which Forts are owned by whom. During the site inspection on 23 April 2007, Fort X was visited, which was erected shortly before the First World War as one of the apparently incomplete concrete forts and serves as a residence today for a farmer and horse enthusiast. He has not only built a home for himself inside the Fort but also uses the casemates as stables and the ditch as an exercise ground.

The citadel is similarly hardly used at all, only the officers' quarters having been restored and serving for various events. The former sickbay acts as kindergarten and is to be converted and fitted out as a tourist information and contact centre as part of the BFR INTERREG-III-B project. A small part of the 2.2 km long barracks is being used by the Polish military archive, the remainder standing empty. The circular building forming the rear Redoubt is similarly empty, a private operator attempting merely to build up a small garrison museum on the ground floor. The two-floor casemated Ostrołęcka gate, built in 1836 at the lower entrance to the citadel, now houses a small restaurant on the ground floor and the former passage through the building is used as a store. The upper floor has been developed as a multifunctional meeting and events room.

The ditches and scarp walls of the surrounding enceinte are overgrown and abandoned.

With a cohesive use in view, that could allow the ensemble to be preserved as an historic monument, we learned that there exist plans for building a new airport for Warsaw in the northern area, that could affect such potential uses. In addition, each of the surrounding municipalities would have their own interests, which are difficult to coordinate, if the former military property were to enter into their possession.



The citadel site is at present earmarked for tourist use. More far-reaching solutions to the problem of using Fortress Modlin are not known at present.

### **2.13 Kaliningrad: Fort complex —No tourist use at present**

The former Prussian fort complex of Königsberg is hardly visible on the outside, even though the inner ring of the enceinte becomes repeatedly evident on a stroll through the Inner City, in this case especially the former gatehouses, the best known of which, the Königstor (“King’s Gate”), was impressively restored only recently in connection with the City’s 750<sup>th</sup> anniversary. The Dohna Tower houses the Amber Museum and the Friedland Gate was similarly converted recently to a local history museum. Barracks and caponiers along the course of the enceinte have for the most part survived, but have not yet been listed. The rampart has partly been removed.

The external forts appear all to be still extant. Fort I (“Stein”) is in private use, Fort V serves as a military open-air museum and memorial to the former Soviet Army. Major exhibits of the Prussian Museum, which were buried before the confusion of the War, were discovered in Fort III in the year 2000. Otherwise, we know virtually nothing about the present use and function of the external forts. Information existing on the numerous intermediate buildings, fire points and sconces is similarly scant.

**Fig. 63—64:** Kaliningrad/Königsberg. Gorge casemate body in Fort V. The fort is unused and houses a memorial connected with the Second World War and the capture of Königsberg by the Red Army in April 1945.



### **2.14 Kaunas: Fort complex—No tourist use at present (except for: Fort IX)**

The problem with using Fortress Kaunas is driven by a number of factors. Firstly, there is a question of mentality having regard to the attitude of the citizens of Kaunas, especially older people, towards the fortifications. In their view, these are Russian and Soviet military relics, that require no cultural protection of any kind. Secondly, there is no money to maintain and restore the individual forts or other, partly demolished fortifications. There have been no recognisable efforts nor are there sufficient events that would make the fortress together with its history known at local, regional or even international level. There is virtually no advertising in other European states to get the City and district of Kaunas known. Moreover, there are no tourist or recreational facilities for the various units of Fortress Kaunas, especially in the autumn and winter. The ownership of all forts and fortifications differs widely, two of the forts (Forts 1 and 3) in fact lying outside the City on regional territory. This may partly explain why no one has so far succeeded at government level in arriving at a general strategy and plan for the reconstruction and use of Fortress Kaunas.



### 3 Attempted solutions towards potential uses

As will be evident from the above descriptions and explanations, attempts to find a solution for potential use of the individual fortress facilities have produced widely different results. The main reasons for this are the differences in the state of preservation and both the quantity and quality of maintained structures. The works will therefore be considered further below with specific reference to each country.

#### 3.1 Works in Germany

Potential uses for the German fortress works included in the project can be defined as building-related or opportunity-related. Both the citadel in Spandau and that in Dömitz are in continuous use and enjoy permanent, continuing occupation. Fort Hahneberg

in Spandau and the Malzhaus Bastion are empty and ruinous, and new potential uses can be achieved for them only after the structures have been made safe.

##### 3.1.1 Spandau Citadel

An international congress discussed the topic of “Maintenance and Use of historic fortresses” in 2001, dealing also with future user strategies for the citadel in Spandau.

The citadel has recently been developed into a lively cultural centre. Concerts and exhibitions take place here, artists have their studios and craftworkers their workshops. Theatrical performances are mounted and bats can be watched. Castles are displayed. The Spandau City History Museum is also located here, accommodated in the armoury built in 1856—58 to plans by Karl Ferdinand Busse, a pupil



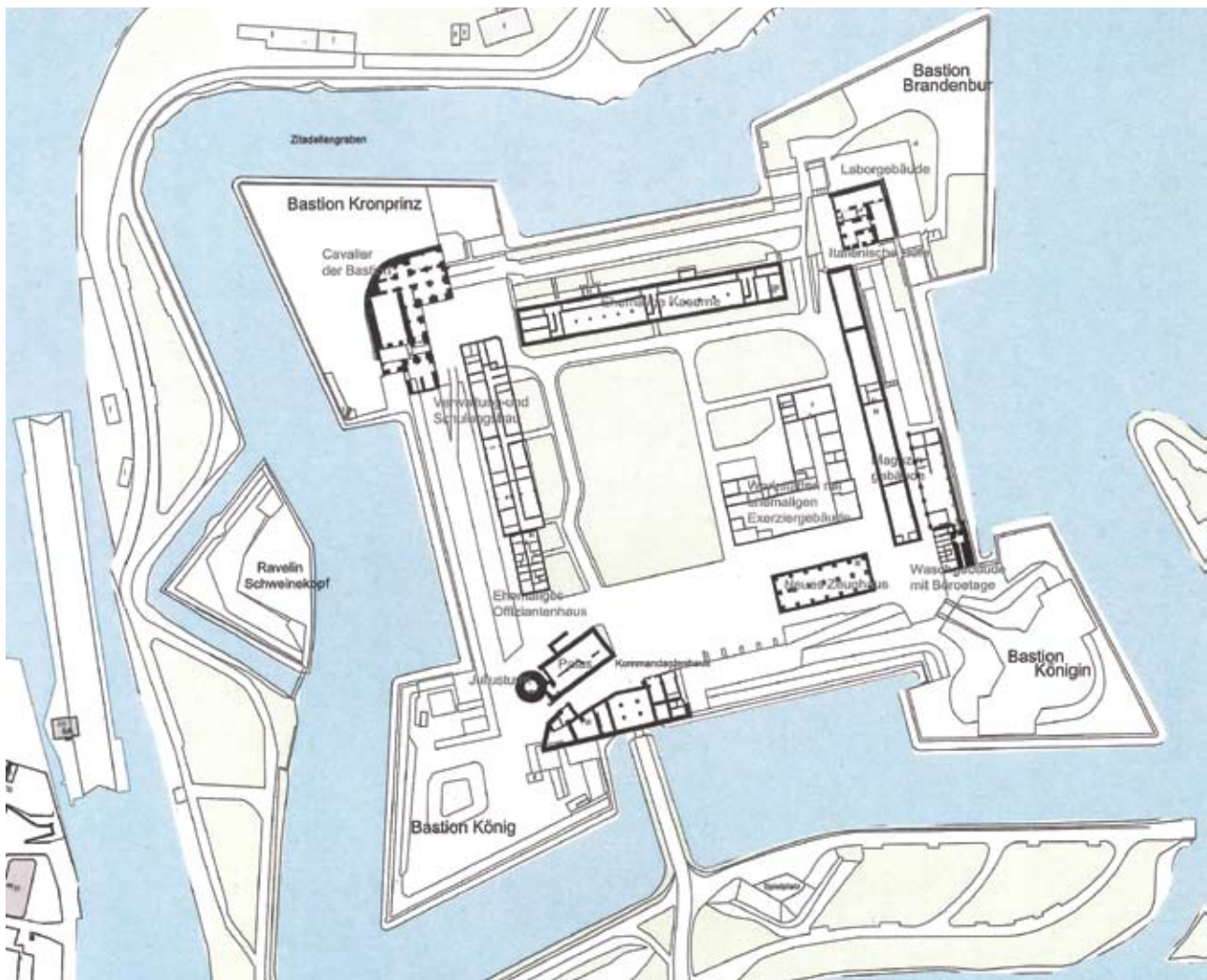
**Fig. 65—68:** Kaunas. Fort V. Many of the fortress facilities in Kaunas are in a condition similar to that of the casemate body in Fort V. Even though relatively many casemates are still in good structural condition, vandalism ensures that unbridled destruction continues.



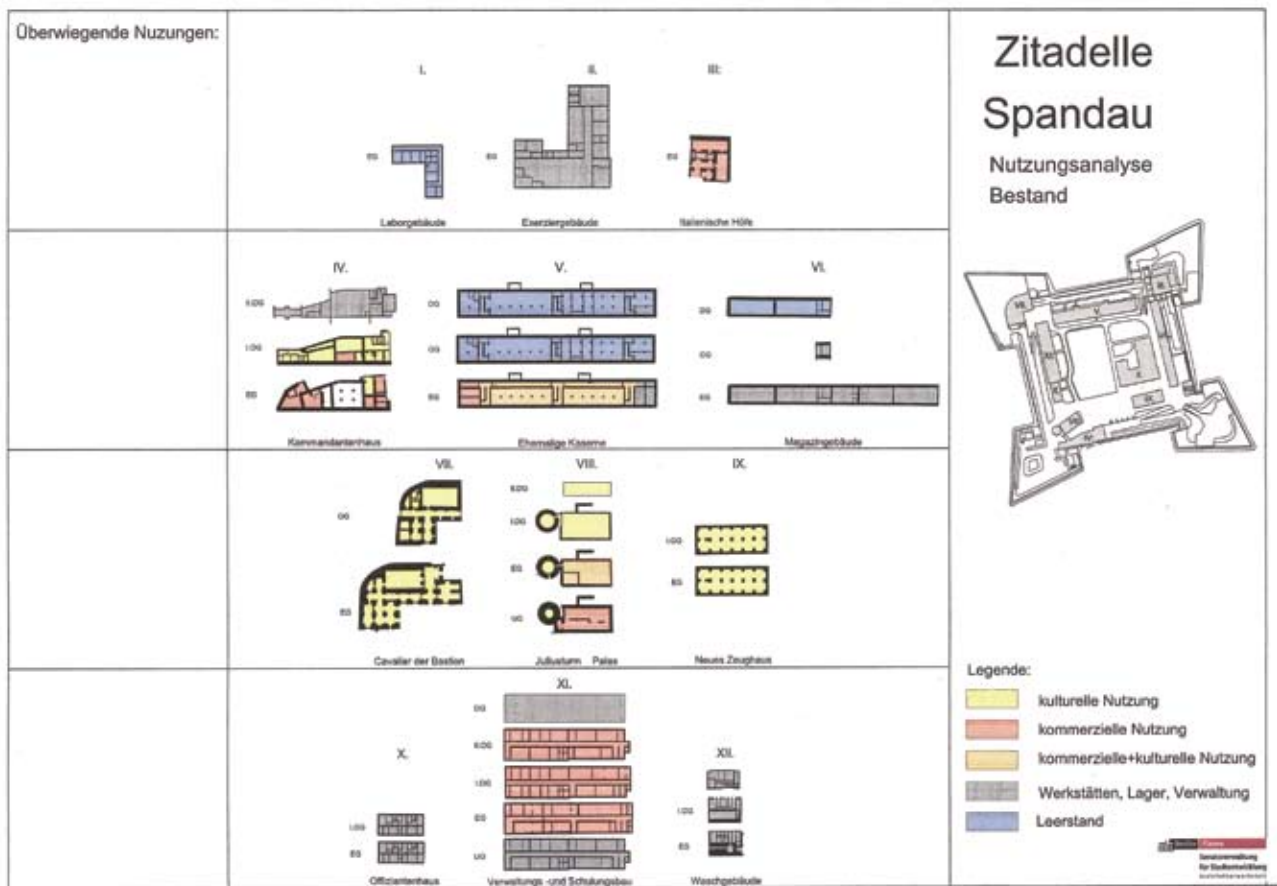
of the architect Schinkel. Such use has grown over the years. The new user concepts developed by the Municipal City Development Division, especially by the Senior Conservation Authority, and the Spandau District Office has introduced further cultural emphasis. There are plans for installing a permanent exhibition of the history of fortification, in cooperation with the German Historical Museum, in the barracks block on the northern side of the citadel parade, originating from the 19<sup>th</sup> century, and for making the citadel even more attractive for tourism. In addition, however, this new user concept is also exploring new avenues in the area of marketing. Lettings, an improvement in catering facilities and a museum shop, which also lives up to its name, are indispensable parts of this. Implementation of these plans depends on appropriate financial backing.

The user concept for the citadel as it at present stands (July 2007) in conjunction with the EU's "Baltic Culture and Tourism Route Fortresses" project, can be described as follows:

Under the Berlin tourist concept, the topics of "Extending the Experience of History and Politics specific to Berlin" is being given priority. Building on this, a locally related tourism concept is being developed for Spandau (promoted by EFRE funds), which is clearly focusing on the most important historical and architectural of the area's distinctive features, with "Citadel City Spandau" as its marketing emphasis. This tourist concept is now being extended and given shape for the immediate area of the Citadel and should be completed by March 2007. In addition, the concepts for developing the



**Fig. 69:** Berlin-Spandau. Citadel. Potentially usable structures are edged in black.



**Fig. 70:** Graphic coloured representation of the predominantly existing uses at Citadel Spandau following a compilation by the Senior Conservation Authority Berlin, dated 2006.

citadel are being incorporated at international level by their inclusion in the EU-financed project to form a tourist theme route, which will link important historic fortresses within the EU promotional region of the Baltic with each other (InterReg III B-project “Baltic Culture and Tourism Route Fortresses”).

*Activation of commercially viable buildings*

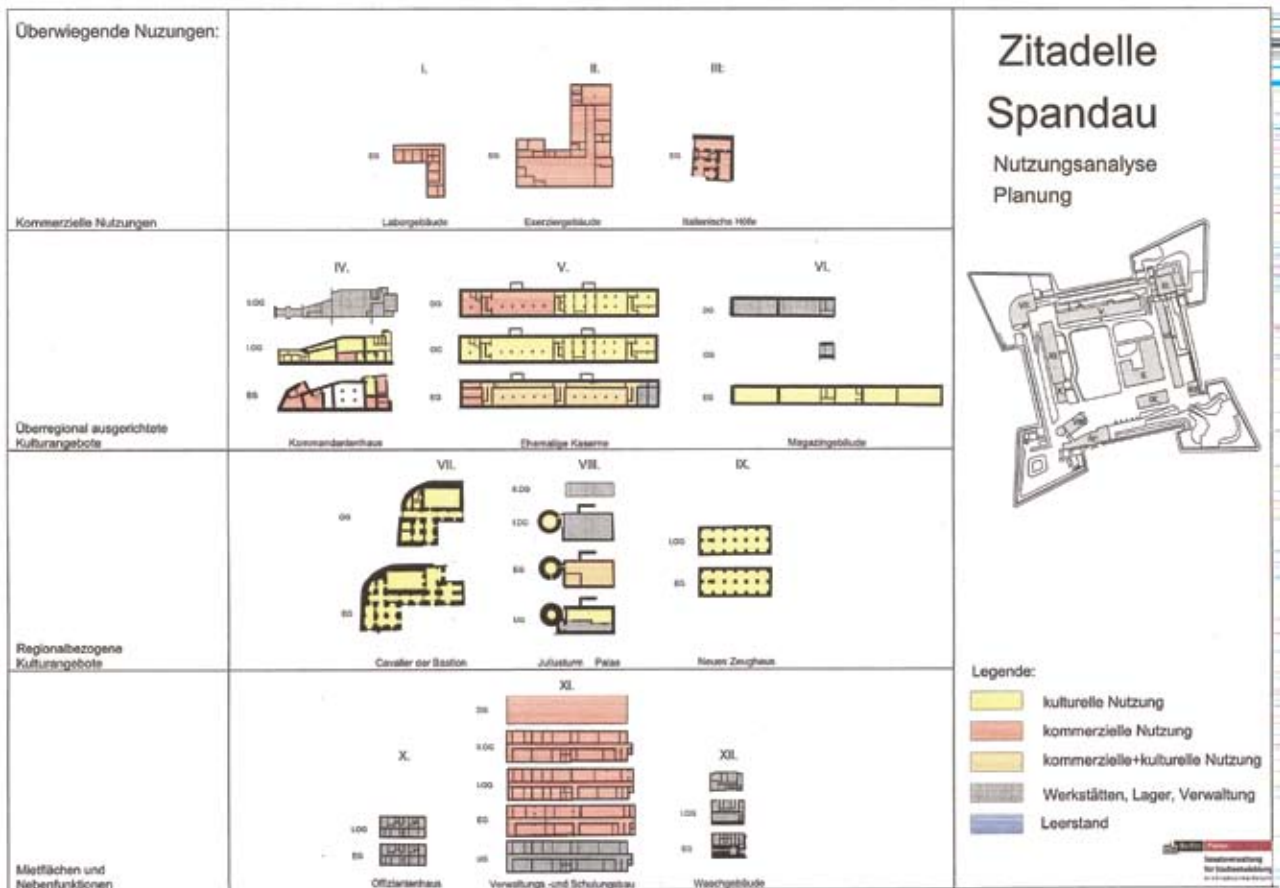
Commercially viable potential for space within the Citadel is being examined and its possible extension by private finance investigated.

As a result of a survey and test designs, four buildings or parts of buildings have proved suitable for commercial use, such as e.g. catering, event and meeting organisation, craft market, and the like, in view of their position and properties. These projects can boost the proportion of commercially supported uses within the citadel from the existing 4% to a future 22%.

*Research into possibilities for hotel use*

In order to avoid an excess of catering facilities that are inappropriate to the historic site and hardly to be supported economically all year round, and promote traditional crafts, the suitability of the building for hotel use from the tourist aspect has been investigated. The general disadvantages of the location became obvious. Unlike other potential hotel locations in the neighbourhood, the ramparts prevent hotel guests from obtaining an attractive view of the Spandau water and city landscape. In addition, travel to a hotel location within the Citadel and car parking within a reasonable distance are not feasible. The main season is also likely to produce ongoing conflict between the need for quiet for hotel guests and the noise from major events in the Citadel. In addition, Building 6, erected by the leading architect August Stüler as a barrack block in the mid-19<sup>th</sup> century, is also not particularly suitable for hotel use. The minimum space required for





**Fig. 71:** Graphic coloured representation of future uses at Citadel Spandau according to a compilation by the Senior Conservation Authority, Berlin dated 2006.

profitable hotel operation undoubtedly exists, but in the light of experience, project developers are hardly likely to accept the historical layout with three vaulted staircases and connecting corridors on the rampart side, which allow hotel rooms to be situated on one side only. On the other hand, complete gutting of the building would neither improve suitability for hotel use to new building standards nor take proper account of conservationist interests.

### *Extending the supra-regionally important exhibition potential*

With the cultural facilities in the Citadel, the proportion of supra-regionally attractive facilities is intended to predominate over the local. Local facilities are to be maintained on the existing site, while the supra-regionally oriented facilities will be extended to the commercially viable areas. The

existing management, staffing and hospitality resources of the Spandau District Office are to be used to attract project-related backing, in order to strengthen the offer of supra-regionally attractive exhibition and event activities. Suitable buildings (not commercially viable) are being fitted out at present for such interim use and will be developed for permanent exhibitions in the medium and long-term, by means of minor, gradual extensions.

As the provisional refitting of the ground floor for an exhibition by the Terror Topography Foundation for the 60th anniversary of the end of the War of 1945 showed, there is every opportunity, in design and economic terms, for fitting out the extensive space, which is ideally suitable for exhibition purposes, with little expense on building work and using project-related funds, initially for interim purposes and for suitably mounted exhibitions, with a more demanding interior climate, only when further funds become available.

*Projects for extending the supra-regionally important exhibition space in the citadel*

- Permanent exhibition of Fortress and Military history

Conversion and refurbishing of Building 6 as a place for visiting exhibitions on the ground floor and, in the long term, for permanent exhibitions dealing with the first floor, on the subject of fortress and military history, to be set up in conjunction with the German Historical Museum.

- “Searching for Traces” exhibition project

As Building 8 magazine block, consisting of four stretched-out rooms, with its basic fabric from the 16<sup>th</sup> century, no longer possesses its mezzanine floors since it was used as a laboratory in the Second World War, it is earmarked as a site for large sculptures. Monumental sculptures, in particular, that were intended to be set up at various points in the city, can be offered ideal space here, with references to historic city roads.

The ideal use already long pursued will be implemented with the “Seeking Traces” exhibition project, which is to be implemented in 2009 by the New Culture Foundation with Lottery Funds. Presenting the history of politically motivated monuments in the public area in Germany and especially in the German capital of Berlin between 1871 and 2005, this exhibition project is likely to make a significant contribution to supplementing Berlin’s intellectual landscape in a thematic way hitherto unavailable anywhere else.

The display, for the most part, of large sculptures will enable exhibition space to be fitted out for this purpose in Building 8 with similarly small financial outlay, as was already done in Building 6 in 2004/5. The further development of the premises initially for temporary exhibitions and then gradually through structural adaptation as space for permanent exhibitions, will then also follow depending on the availability of further funding. The placing of sculptures hitherto hardly, if at all, accessible to the public on permanent display in the Citadel will not only substantially strengthen this tourist attraction commercially but also provide relief for the sites where they were previously

kept. This will release space in other premises or allow areas to be marketed more effectively, as for example at the Lapidarium in Kreuzberg.

*Projects to extend commercial use of the Citadel*

a. Former exercising hall

The former exercising hall lies at the centre of the Citadel parade and is especially suitable, because of its undivided space and its generous doorways, as a large-scale catering and events location all year round, especially also in conjunction with neighbouring open-air events. Guns and artillery artefacts are at present still stored here. When they have been shifted, which can be done at short notice, leasing to a private operator will be possible without preliminary investment in the structure. The artillery at present on display must be shifted in consultation with the German Historical Museum and the Defence History Study Collection in Coblenz, loan exhibits from which are at present housed in the Exercise Hall (and elsewhere).

b. Former laboratory building

The former laboratory building on the Brandenburg Bastion is the only suitable place in the Citadel, on account of its position on the ramparts, to be developed as a café with a large catering area and a good view over the city and water landscape of the upper reaches of the River Havel. This will require extensive conversion by a future private user.

c. Roof storey, Building 6

The attic of Building 6 offers attractively designed space from the 1950s, albeit requiring basic reinforcement before it can be used, and large-scale roof areas with excellent lighting from skylights on both sides.

In addition, the Northern Curtain and the future café in the laboratory building can be accessed immediately from this floor. Extending this floor for commercially operated meeting and performance purposes will offer a promis-

	<b>Present distribution of use</b>	<b>Development goal under the new user concept</b>	<b>Change as %</b>
<b>Exhibitions with supra-regional orientation</b>	7%	19%	+12%
<b>Local cultural use</b>	17%	17%	0%
<b>Function rooms (cultural and commercially used)</b>	11%	11%	0%
<b>Commercial use</b>	4% (catering)	22% including appropriate ancillary rooms and storage space (catering and functions)	+18%
<b>Lettings (studios,workshops)</b>	21%	21%	0%
<b>Function, storage and depot space</b>	21%	10%	-12%
<b>Empty</b>	18%	0%	-18%

#### *Overview of development goals for the new user concept*

ing addition in the long term to the space already available in the Palace and the Italian Courtyards, and, in due course, in the Exercise hall.

#### d. Workshop building

The workshop building immediately adjoining the Exercising hall is ideally suited for concentrating craftworkers at present and in future in the Citadel in a kind of market hall aligned on tourist demand. The reuse would require only little conversion work but presupposes essential relocation and would therefore appear possible only in the long term.

#### 3.1.2 Dömitz Citadel

As at Spandau Citadel the fortified works created at Dömitz in 1565 are relatively well maintained. Existing damage due to lack of maintenance is now being made good, also with public works funding by the City. The premises are used as a museum and draw public attention now and again as a site for special events.

Attempts made for potential use can be described as follows. A plan has been drawn up for the Dömitz fortified site, which will consistently enable the City of Dömitz as owner of the Fortress and founder of the Museum to extend the fortress essentially as a museum of the history of fortification and as a research centre for the military history of the Land of Mecklenburg-Vorpommern. However, in addition to the local history connections, developments and links with European fortification will be explained to the visitor.

The structure of the armament and buildings of the Fortress, now listed buildings, are being examined to see if they can be used as a modern museum site.

What particularly appropriate opportunities the Fortress offers for its use must then be examined. The potential for exhibitions and displays has at present reached its physical limits. New opportunities must be found here for the future. A new exhibition and magazine building compatible with the Fortress ensemble is being designed and planned (see drawing attached).

Apart from their function as a “Museum of the history Mecklenburg defences” (working title) the fortifications will also continue as a site for cultural events. However, future use as a site of this kind will have to take account of content and the historical relationship to the Fortress, the City or local history. A mass of spectacular events does not create a basis for establishing demanding, charismatic, economically viable use.

### 3.1.3 Spandau: Fort Hahneberg

The basis for achieving common objectives between nature protection and conservation is, in Fort Hahneberg’s case, a conservation report issued in October 2004. It forms the basis for formulating a common goal between nature protection and monument care at Fort Hahneberg. Item 7 of this Report describes proposed uses. The proposed uses are based on the limited opportunities with a secured ruin, allowing for conservation, nature protection and museum use. Only parts will in each case be made accessible for use. In addition, the areas released for use can vary according to season (e.g. having regard to the protected winter quarters for bats). Permanent exhibitions that require the premises to be heated would be unsuitable. A café with WC facilities can be housed in the Blockhouse Location without damage to the fabric, such as e.g. in the gorge caponnier. The conditions and restrictions for tolerable use presuppose, amongst other things, that the work can be reached from the car park only along the road to the main entrance by the covered way. Visitors will be unable to drive up by car. The work is therefore accessible only in part. Not all parts of the work can be made secure for traffic. The former space divisions (internal walls, windows) will not be reinstated, either. Nor will the cavities be heated, either, being left to natural weathering through the reinstated ventilation system.

Use should be compatible with the character and special features of the structure. Exhibitions and events serving to impart the history of the building and its historic importance and nature conservation and compatible with the condition of the fabric and the demands of nature protec-

tion are conceivable. Educational trails can be set up with different didactic objectives. Use should strengthen an understanding amongst the public of the importance of conservation and nature protection and contribute to maintenance of the fort.

Proposed uses taking account of the interests of conservation and nature protection and the requirements for the above conditions and restrictions include guided tours by the Work and Protection Association (ASG), but also exhibitions mounted by the Arts Office and cultural or technical events connected with nature protection, conservation and craft training or, finally, also use as a teaching site by the Senior Training Centre.

### 3.1.4 Peitz: The Malzhaus Bastion

An initial approach towards possible use of the Malzhaus Bastion in Peitz was made when the premises were included in the EU-INTERREG-III-B project “Baltic Culture and Tourism Route Fortresses”. This plan provides for various uses for the site as a whole. The Malzhaus Bastion in Peitz has been selected as a pilot and demonstration project within the BFR-Project. As part of this project, both vaults of the bastion are being renovated and a barrel vault will be used, after various improvements, for club meetings, concerts and musical events and also as a meeting area. The other barrel vault will, after improvement, be specifically marketed as the Powder Magazine in conjunction with various tourism plans (e.g. exhibit on cities with historic old city centres, use of the Malzhaus Bastion as part of the European Culture and Tourism route, inclusion of the Malzhaus Bastion in historic city tours, etc).

During the archaeological survey of the site, the remains of 16<sup>th</sup> century gun platform were discovered on the Malzhaus Bastion. In addition, the surviving parts of an 18<sup>th</sup> century parapet have been made secure. This gun platform will be used as a viewing and orientation point. This viewing platform on the Malzhaus Bastion will be included in historic city tours through the Old City, to form an integral feature and provide the tours with a satisfactory conclusion.

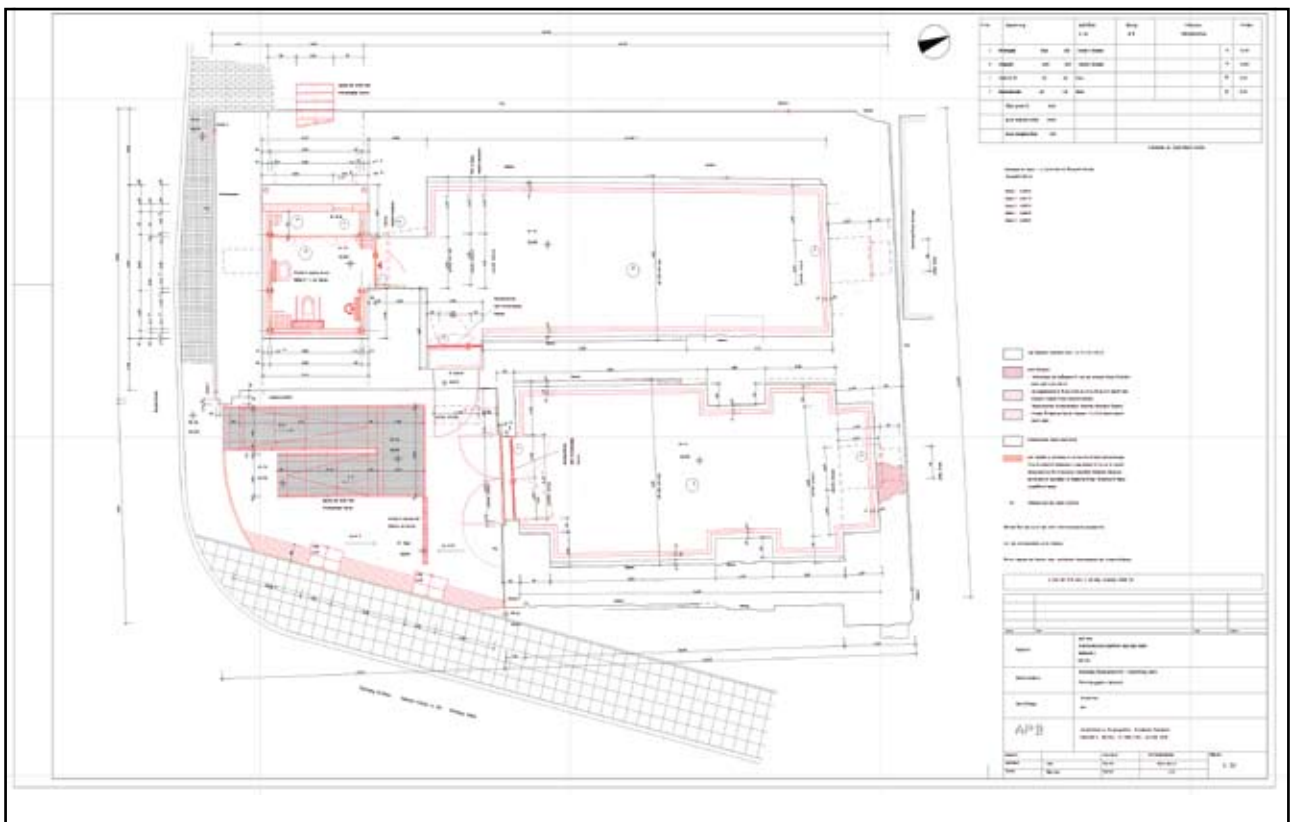
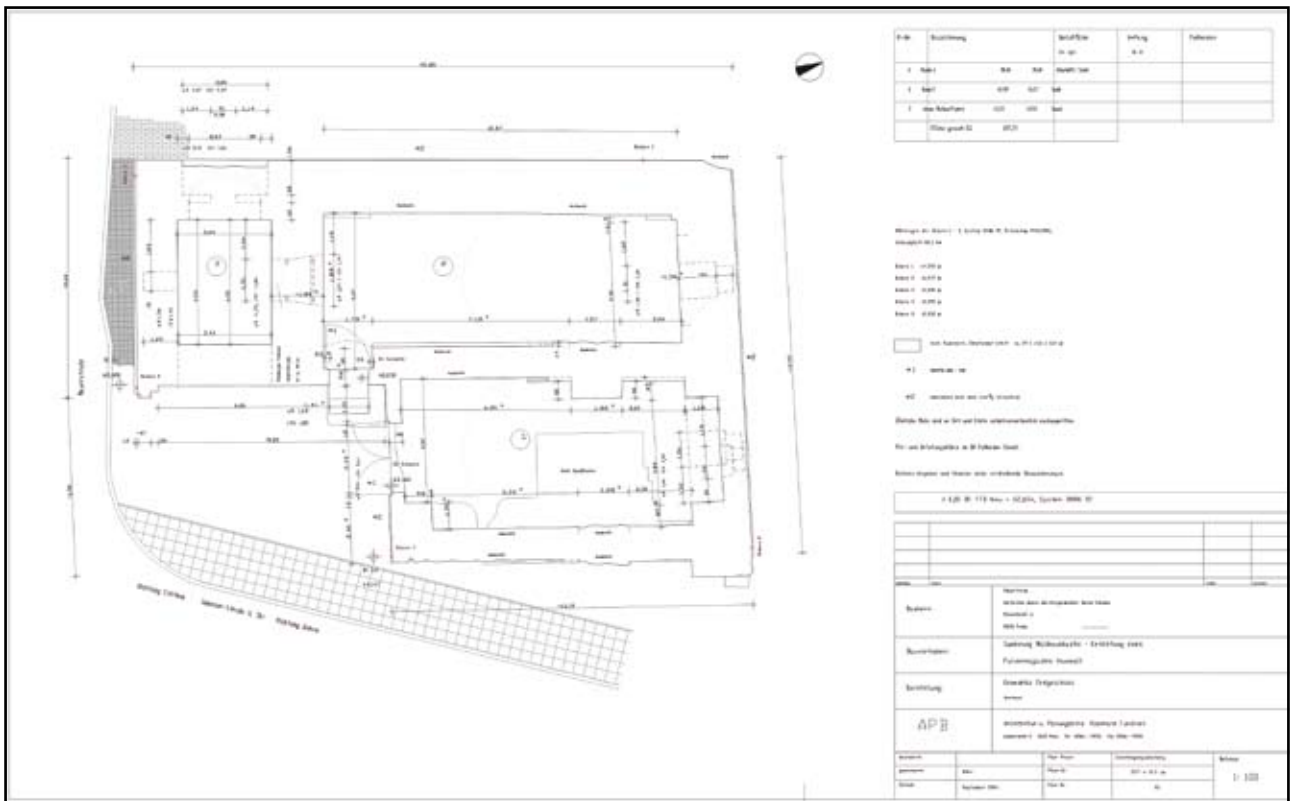


Fig. 72—73: Peitz. Malzhaus bastion. Survey and planning outline drawings for the two casemates and the entire building site by the managing architect Rosemarie Furchner/Peitz, 2006.



### 3.2 Works in Poland

Proposed solutions for potential uses in Poland are based on use of space. This applies especially to the major 19<sup>th</sup> century fortresses, Bearing in mind that not every component—especially those worthy of listing—can be maintained, marketing concepts will range from the creation of educational parks and education landscapes to regional parks. Potential solutions have been arrived at for the project partners' individual fortified sites only an ad hoc basic. This applies especially to small and consequently manageable fortress premises. No attempted solutions for overall use have so far emerged for such major works as Modlin, partly also because of the lack of knowledge regarding individual ownership. Additional works such as Kostrzyn, Kolobrzeg and Danzig / Fort Grodzisko can be summarised as follows:

#### 3.2.1 Kostrzyn

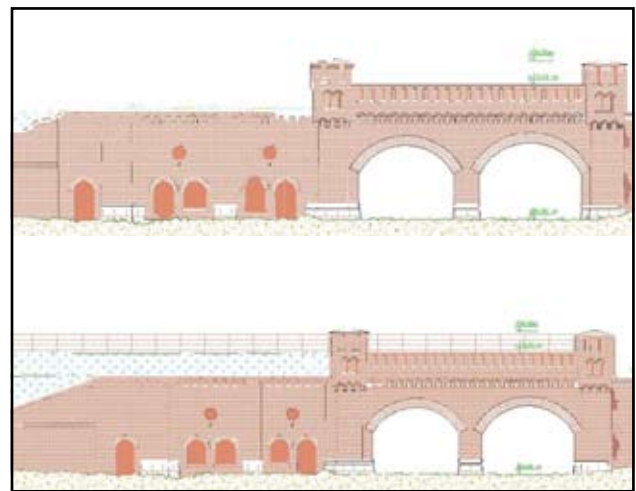
In the City administration's view, direct promotional activities on the one hand and, furthermore, other, additional activities are required to render the fortifications viable for tourist development. Direct promotional activities include the following:

- The working up of a uniform descriptive, informative and promotional concept for the fortress as a system of visual identification
- The implementation of these systems by means of road signs, descriptive boards and the marking out of a tourist trail
- Promotional and information publications (tourist guide, tourist maps, brochures, folders, multimedia shows, postcards)
- Within Kostrzyn, the organisation of international conferences and seminars *to safeguard and make best use of the fortifications*
- Marketing activities for the BFR project in the media (TV, radio, local, regional and foreign newspapers, preparation of a film on the subject of the BFR-Project)
- Setting up of a joint Polish-German museum for the Fortress of Kostrzyn and the Old City

- Setting up of an education trail (history and nature) for individual sightseeing
- Devising of tourist products for the Old City area such as e.g. "Attack on the Fortress"—paintball, military exercises, etc.
- The creation of a quality name for the Old City and Fortress of Kostrzyn and promotion of this feature in Poland and abroad (e.g. "Fortress Küstrin", "Küstrin's Pompeii", "Bastion of History")
- Publication of an events calendar for cultural events in the Old City area
- Organisation of an Advent/Christmas market within Bastion Philipp
- Event information for German residents on the Polish-German border

The following are regarded as additionally necessary activities

- Inclusion of the Old City as a tourist attraction in the regional catalogue
- The setting up of a tourist information and enquiry office within the Berlin Gate and the routing of the tourist border crossing through the Berlin Gate
- The launch of a professional website for the Old City and Fortress of Kostrzyn and the setting of a professional management organisation for the structural maintenance and marketing of the fortifications



**Fig. 74:** Kostrzyn. Berlin Gate in the old city fortification. Survey and reconstruction drawing.

- Use of the management model of Fort Gorgast and its further development as a cross-border tool, and finally
- The introduction of viewing potential for the Old City and the Fortress area in conjunction with a boat tour.

A very attractive boost can be achieved for the external observation of the Fort by setting up a viewing tower at a suitable location, as high up as possible. From a height of approx. 20 metres, an attractive overview can be obtained of the Fort's external structures but also of the adjoining flatlands of the Warthe estuary.

### 3.2.1.1 Fort Sarbinowo (Zorndorf)

Two essentially different but combinable approaches are possible for Fort Sarbinowo:

1. Presentation of the structure from outside. This includes inter alia:
  - Minimum measures to secure traffic
  - Securing the building against further damage, stabilisation of the vaulting
  - Partial removal of the vegetation that has run riot since use was abandoned and which is smothering the structure and its facilities, at least during the growth season, but is also increasingly damaging the vaulted ceilings
  - Laying down of secure tourist trails.

### 2. Presentation of interior rooms

Following remediation/restoration of parts of the Fort, some of the best maintained attractive interior rooms can be released for visiting. Use of the interior rooms for visitors presupposes that these parts of the building are made secure, i.e. possible hazards are removed. One proposal is to glaze the open two-storey frontage openings and therefore also leave them visible. This would produce attractive interior space in visual contrast to the vegetated external space, which can enhance tours of the building but also serve for exhibition purposes.



**Fig. 75:** Küstrin. Old city. Model reconstruction of the old city development within the fortified area.

### 3.2.1.2 Fort Czarnów (Tschernow)

Parts of the work, including limited earth-works, can therefore be exposed and shown in the form of a clean structural cross-section. The essentially interesting internal “sandwich-type structure of the earth/cement/sand and brick layering of the ramparts and vaults can thereby produce a lasting impression.

The Fort is also suitable for observing “natural” re-naturing. How can the work be altered, or what symbiosis do the structure and nature form when man no longer intervenes? Are there certain animals and plants that have settled here only by dint of the historical structure, comparable with the corals that collect on wrecks on the seabed? This can demonstrate the effects of the destruction forces of nature on a potential historic monument. As a result of observation, conclusions can be drawn here for the protection of comparable works of historic importance.

Conceivable would be a nature trail with a description of the plants and animals that have settled here. As far as the conservation is concerned, the entire installation should be placed under nature protection.

### 3.2.1.3 Fort Żabice (Säpzig)

In the case of Fort Żabice, too, the experience gained could most simply be enhanced by a viewing tower in the immediate neighbourhood of the work. Because of the flatness of the surrounding landscape, this would make the fort and its surrounding terrain clearly visible from some distance. On the other hand, a visitor could from the height of a tower observe the entire surrounding valley area and thereby appreciate the immense scale of the fortress as a whole, but also its labyrinthine structure.

In order to visualise the structure of the work more effectively and to protect the building against damage, the vegetation should be removed from the glacis.

To enable visitors to access Fort Żabice without risk, the left-hand part of the barracks basement should be closed off as a hazardous area until it is made safe. In addition, a long-term pollution investigation should reveal whether the risks through the earlier storage of toxic waste have been fully eliminated.

### 3.2.2 Kolobrzeg

Apart from the structural maintenance of the individual works in an area of historic importance, the implementation of marketing concepts above all must be implemented in order to put the existing facilities more effectively to tourist use and incorporate them into the steadily developing city structure. Having regard to the planning and building activities, a competition will shortly be organised to draw up a plan for the use of the Saltings Redoubt for tourist and cultural purposes. The plans for reconstructing the Batardeau have been prepared and are ready for application. The leases with the tenants should be amended with the view to managing the site, while a new tenant or investor should be looked for the Saltings Redoubt.

A number of tasks emerge in the marketing sector. Firstly, the implementation of a “Fortress Kolberg” tourist route within the city area. Trails should be marked out here, information boards put up and a simple map prepared and issued for tourist information points. This also includes a new information point at Fort Munde. The design and content of the information boards are at present being worked out. On the other hand, a management organisation must be formed, a tourism company, look after the fortress and support its promotion. Such promotion would also include a display of the fortifications on the City’s website. Finally, the events organisers should be supported where the “Fortress” history coincides with that of the City.

### 3.2.3 *Gdansk: Fort Grodzisko (Hagelsberg)*

The present situation apart, plans are available for improving the situation of the Fort. These provide for comprehensive work throughout the Fort terrain and within the individual buildings. The cost of the works will be borne by the City of Danzig, the Ministry of Culture and the European Regional Development Fund (EFRE).

The project includes an improvement of the infrastructure such as signage, stairs, lighting, smaller architectural features, reconstruction of the earthen ramparts and toilet facilities for visitors, and also restoration of the building and its re-use for new functions such as e.g. exhibitions of technology and science and the history of the fort and fortress history generally (which is also regarded as a possibility of further revitalising the land).

In addition, an improvement in communication is provided for. This includes structural facilities for new access ways and entrances and car parks. A cableway should lead directly to the Fort from the central railway station. Good, adequate descriptions and signs and information boards are indispensable.

Having regard to the ecological treatment of the installation, this should be combined with the existing nature protection plan. Independently, disruptive and damaged-causing trees should be felled.

Present advertising and information on the Fort leaves something to be desired at. Appropriate steps should be taken here as well, ensure better promotion of the fort, its presentation and reconstruction of the roads leading to the entrance. These measures would similarly include tourist attractions and regular meetings. In addition, tourist guides must be approved, buildings and premises hired for catering purposes, and an “information point” set up with a souvenir shop. Operation of the installation as a whole should in future permit a more flexible approach, with possible changes having regard to the legal status of a management organisation.

### 3.2.4 *Gdansk: Fortress Wislamouth (Weichselmünde)*

Even if, as already explained under item 4.2.10, no long-term prospective use is evident at present, planning and activities are already in progress to achieve this objective. Reconstruction and maintenance works are being permanently pursued, and the City authorities are in discussion with the surrounding factories in order to reduce air pollution. A plan providing for the setting up of a green girdle round the industrial zone will also contribute towards this, so as to prevent encroachment on the historical fabric through air pollution. The development of the Fortress infrastructure will provide for the setting up of a pier to permit tourist ships to berth on their way from Danzig to the Westerplatte. The laying down of a “Nature and Architecture” tourist trail round the area of the Fort is in progress. On the left bank of the Vistula, thought is being given to setting out the same kind of park that exists on the right bank as a “Western Bulwark”. Both should be linked by a ferry connection.

### 3.2.5 *Giżycko: The Boyen fortified complex*

Aware of the fact that at present no viable user concept exists covering more than a year for the work as a whole, the administration of the City of Giżycko recognises the opportunity for enriching existing facilities for tourists and leisure-seekers with new projects. With this in view, they hope to re-dedicate the individual works under conservation as follows:

- The barracks building as a hotel, youth hostel, so-called “green school” and museum premises
- The bakehouse and store house as restaurant, bar, tea room and wine shop
- The stable and carriage sheds as a riding club with storage building for the riding school
- The arsenal for social uses for the sports facilities on the main square, as fitness studio and a sauna

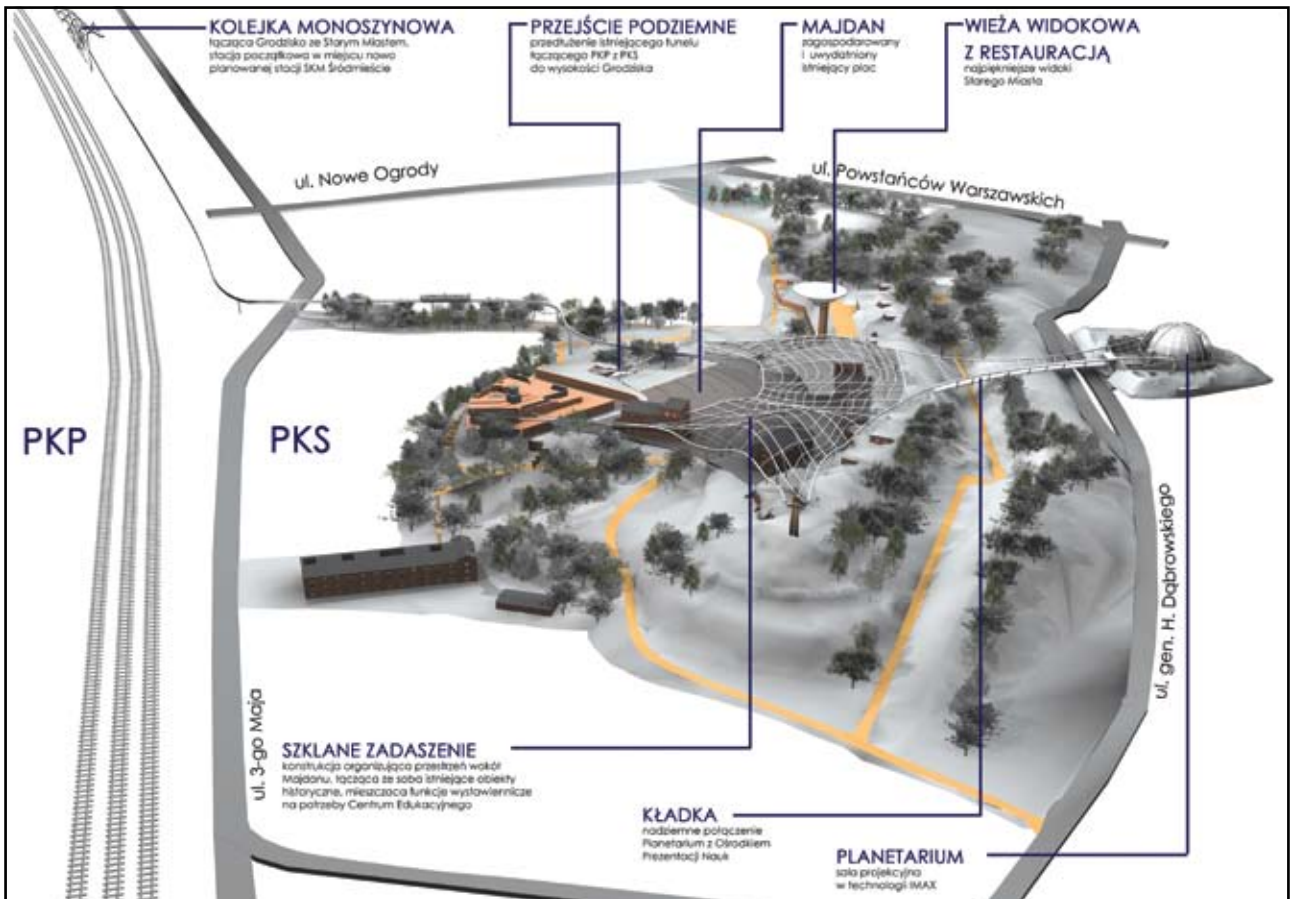




**Fig. 76:** Gdansk. Fort Grodzisko. Development drawing for a post-fortification park by the architect Igor Strzok dated 2002. The plan shows historic buildings and earthworks, bastions and ravelins and also the historic lines of trees. This plan was not implemented. One intention is to erect a building outside the Carnot wall as a documentation centre for the park as a whole.

- The hall and exercise building as recreation rooms, and a billiards and table tennis room
- The artillery workshop as a smithy and workshops for cars, motorcycles, bicycles and tourist equipment
- The sickbay as a first-aid station
- The carrier pigeon station as a postal museum with desk for postal services and rooms for stamp and coin collections
- The powder laboratory as a shooting club with a shooting gallery for airguns, artillery positions, block houses and shelters as recreational and exhibition rooms, workshops, clubs, meeting points and occasional events
- The Fortress ditches as jogging paths, walking route, cycle paths and riding tracks
- The chemins de ronde, the road on the ramparts and the covered way as educational trails
- The artillery positions as exhibition rooms for military equipment and weapons, cannon and guns
- The armoured observation dome as a viewing point
- The barrack building forecourts as tent and camping areas, caravan sites and sport and recreational areas
- Various positions in the Fortress where open-air events can be held for sculptors, painters and photographers, and finally
- The Fortress parade ground as green areas, sports grounds for riders, mini-golf, football and volley ball competitions and other sporting activities.





*Fig. 77—78: Gdansk. Fort Grodzisko. Futuristic designs for the use and development of the fortified site by Natalia Wrzask: Roofing of the fort's main areas, a railway siding and the construction of a planetarium on the Senarmont-Lunet.*



*Fig. 79—82: Gdansk. Fortress Wislamouth. “Re-enactment” in conjunction with catering facilities is now a potential form of use for the fortifications at present still undergoing restoration.*



*Fig. 83—84: Giżycko. Boyen fortified complex. Ditch caponiers in the entrance area of the Lötzen Gate, whose casemates are used for temporary exhibitions.*

While this multiplicity of uses is to be welcomed, it would nonetheless be desirable for a general development plan and a long-term user

concept to be drawn up for the fortifications in which the advantages and disadvantages of individual uses are mutually compared and, especially, the individual types of use can co-exist.



### 3.3 Works in Russia (Kaliningrad)

With the exception of the fortifications and barracks close to the city, which can be put to immediate use, no major potential solutions for the externally located forts are evident. They are as far as one can tell exclusively owned by the State: decisions concerning their use would lie with the central government and be taken, if at all, in Moscow —perhaps on a proposal by the governor. Acceptance amongst young people appears to exist: Fort No. I (Fort Stein), for example, is inhabited and maintained by a young family. A major obstacle in the way of more far-reaching considerations as to use is the absence of a complete listing of all the fortifications. Considerations for using the Fortress must above all be seen with due regard to and in conjunction with an incipient discussion on improving the historical cityscape of Kaliningrad.



*Fig. 85—86: Kaliningrad/Königsberg. The Dohna Tower accommodates an amber museum.*

### 3.4 Installations in Lithuania

The essential and important fortifications in Lithuania include Klaipeda (Memel) and Kaunas. The formation recently (2006) of a fortification society in Kaunas, which it is hoped will take over the city's entire fortress complex, has created the basis for ongoing planning and implementation. The society includes private and institutional members and therefore has local roots. Its tasks could be taken to include encouraging long-term, necessary user strategies, involving the city planning authorities, and initiating such strategies themselves, arranging study research in conjunction with the two universities (student designs, etc) and launching a model project within the BFR framework for individual works (e.g. Fort V).

The city of Kaunas itself has set itself the following medium to long-term objectives for its historic fortress with a view to its appropriate use. The newly formed "Kaunas Fortress Society" is a public body

and has the objective of initially combining various specialists in order to consider maintenance and problems with the use of individual fortifications. Local and regional tourism organisations are to be involved in this work in order to obtain proper backing and advertising. This includes information providing and the laying down of new tourist routes that would include Fortress Kaunas.

Changing people's attitudes—whether in Kaunas or in Lithuania as a whole—Fortress Kaunas is regarded as particularly important, so that local people see the fortress is regarded in their minds as a valuable historical and architectural monument of European dimensions.

Finally, private capital and European funds should be obtained from various sources to continue with the maintenance and renovation of Fortress Kaunas for new dedicated uses.



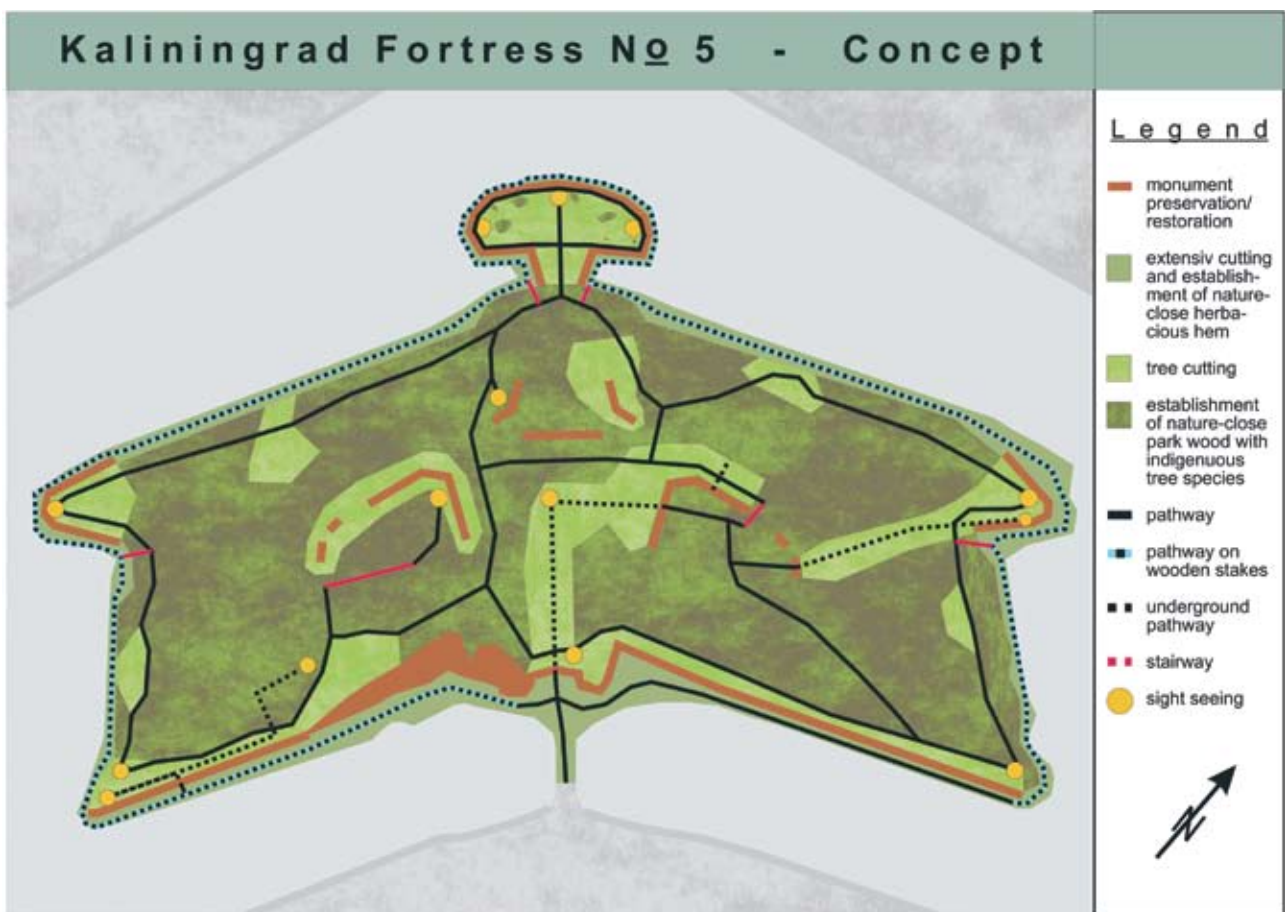
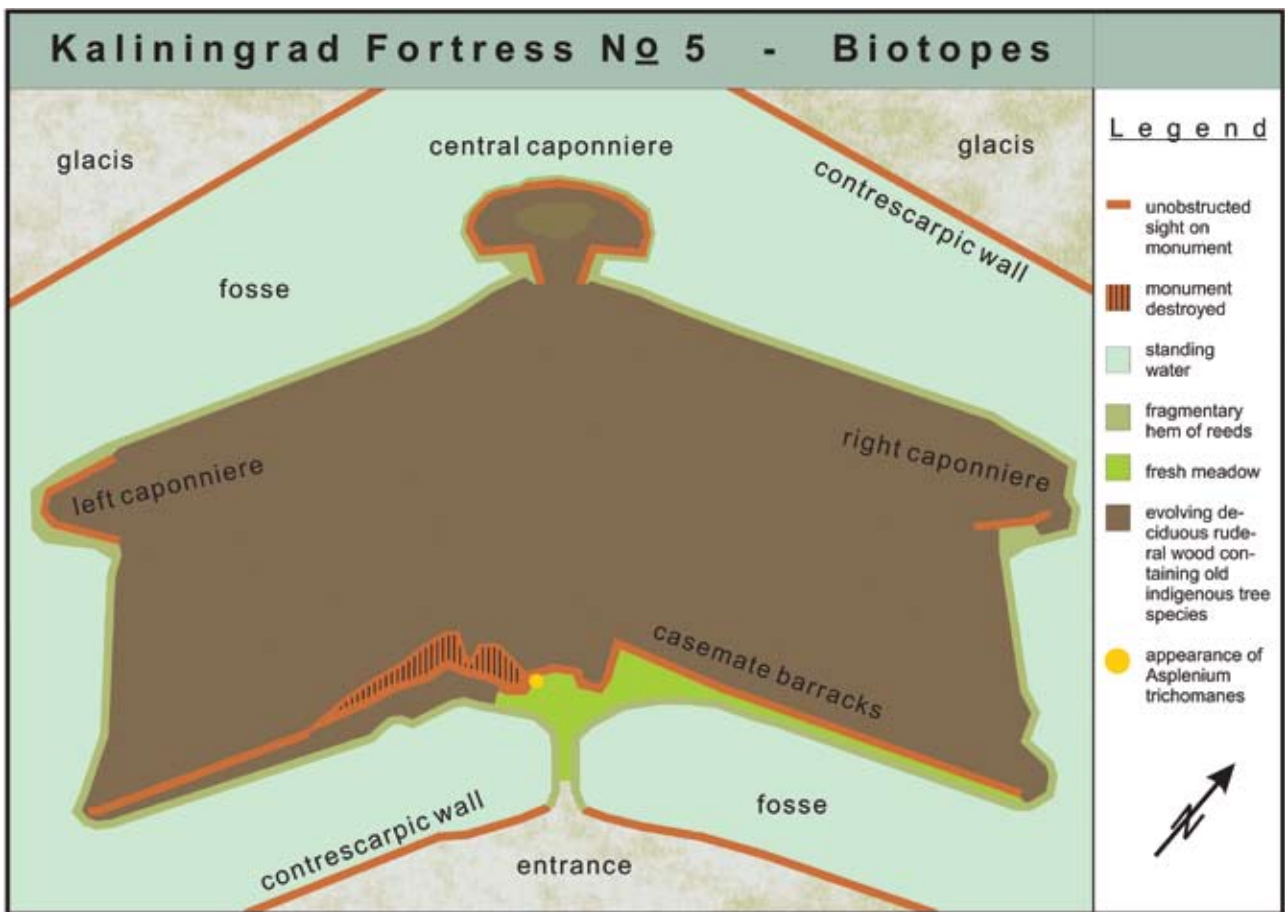
**Fig. 87—88:** The recently restored Königssturm is housing several collections.





*Fig. 89—91: Kaliningrad / Königsberg. The Friedländ Gate has been converted to a museum and displays historic and everyday articles of Königsberg local history.*





### 3.5 National / cross-border solutions

Cross-border cooperation could also offer potential solutions for planned use. Mention should be made here in particular of the Kaliningrad area, which has good potential connections both to the west and to the east. However, this presupposes that the topographical physical and historic links to the former East Prussia are recognised and utilised. This can be done only on a tourism basis. At the present time, border barriers between Poland and the Russian enclave and also with Lithuania hinder untrammelled communication both with the region of the Mazurian Lakes (Gizycko with the Boyen Fortress complex) and with Klaipeda / Memel or Kaunas in Lithuania. Above all, more intensive neighbourly contact is desirable here, which on the basis of the fortress heritage would facilitate cross-border, tourist-inclined solutions and consequently be reflected in dedicated potential and future user plans for the Fortress facilities.

Another example could be the area around Kostrzyn, where Fort Gorgast is located on the German side and the remaining part of Küstrin Fortress on the Polish side of the Oder. Unlike Kaliningrad, intensive contacts have already been built up here across the border and river, at present extremely positively reflected in the events that will be arranged and which will be mutually self-enriching. Considerations on further use are reciprocal and interlinked and attempt where possible to supplement and not to hinder each other. At the present time, new cooperative projects are in mind which, one hopes, will be implemented with further funds both from the national states and from the EU.

### 4 BFR Pilot and Demonstration project: Kaunas Fort V

Within the framework of the Baltic Culture and Tourism Route, Fort V in Kaunas is an example of re-use with limited funds. This is a pilot and demon-

stration project of the Humboldt-University in Berlin in conjunction with the Kaunas City Administration where an attempt is being made, on the one hand, to obtain a model concept for youth, culture, sport and recreation and, on the other, harmonisation between cultural and tourist use and nature protection.

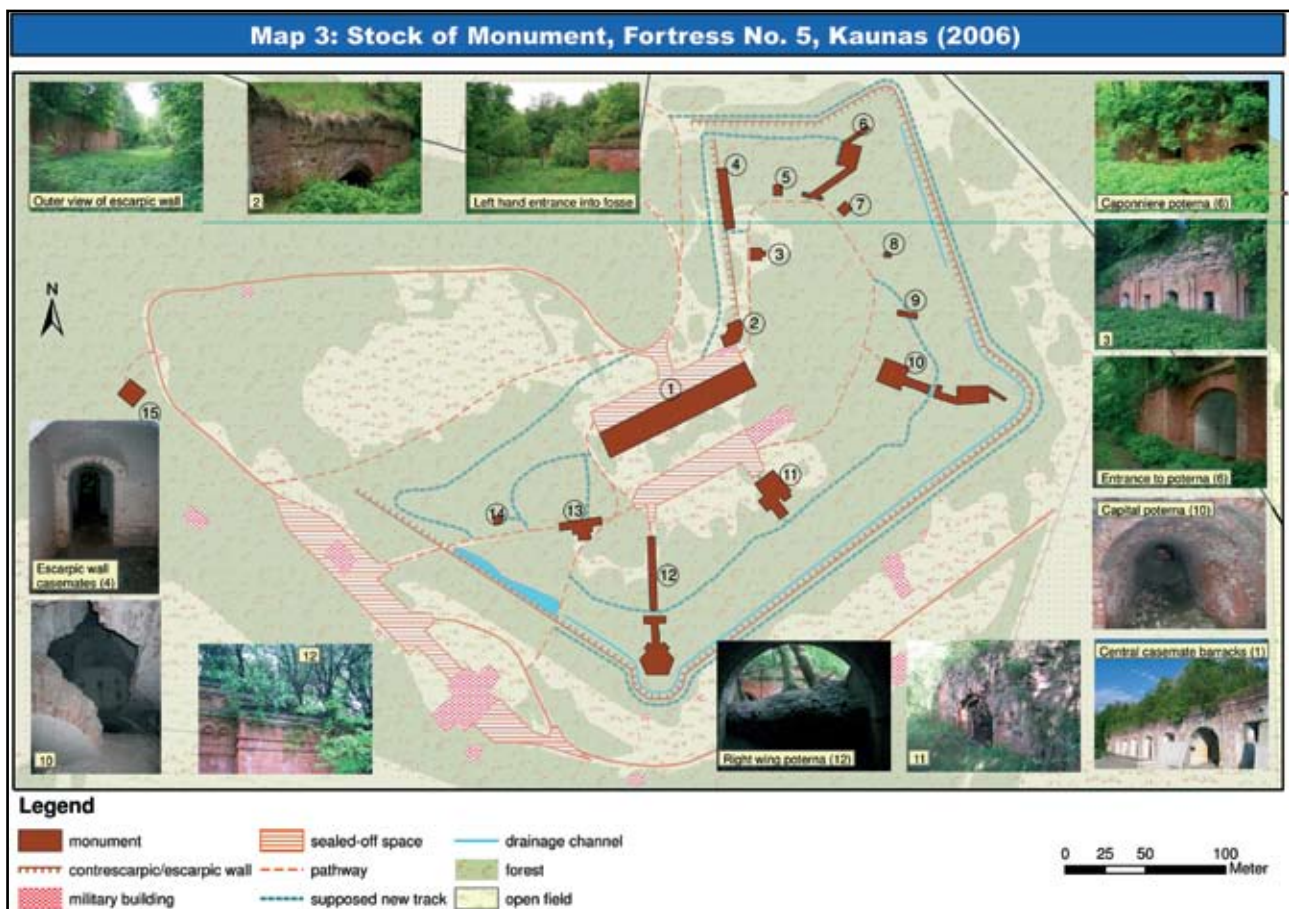
On the basis of an ecological survey, the two compilers Gunar Issbrücker and Max Lachmann have come to the conclusion that the research area of Fort V has major location and nature park potential. By tending to the existing tree stand, an exciting nature landscape will be created with protected species, that could be developed further without risk to the existing brickwork. Care of the monument with treatment of the brickwork provides for the removal of vegetation in the area of the scarps, counter-scarps and casemate walls, as this growth is causing particular damage. The compilers have shown the reciprocal effects between nature preservation and the building fabric on a number of maps. Apart from organising guided tours along the paths, they are seeking the removal of unnecessary buildings not consistent with the monument, the retaining of existing buildings, which are already in use, and repair and maintenance of structures under conservation as befitting a monument. Here, in their opinion, further use would be conceivable in the form of small shops, cafes, studios, art workshops, art galleries and arts and crafts, and arrangements on specific themes with showcases, information boards or the like. They feel that one of the buildings is suitable, on account of its interesting structure, for conversion to a museum, and that the postern can be developed for 'son et lumiere', and finally that the indoor parade ground with its concreted open space at the centre of the fort can be developed as a concert hall or theatre or a discotheque for outdoor or indoor events — an alternative to this would be to pull down or convert the building and erect a visitor centre with indoor services such as information, cinema, slide show, exhibitions and games. The setting up of viewing platforms at selected places with links to the counter-scarp wall has been given particular attention.

**Fig. 92—93:** *Kaliningrad / Königsberg. In connection with the Community Project mounted within the BFR by the Humboldt-University in Berlin for the conservationist and ecological development of Fort V.*

Taking account of the following further use aspects and the question of visitor potential (locals, tourists, young people, old people, etc), the need for cultural and tourist potential in and around Kaunas and also for profitability (charging an entrance fee) would undoubtedly also provide for further uses, especially within the fortress site. These could consist of the laying down of a mini-golf course, an adventure playground with slides, climbing frames, cableways, etc or the alternative formation of an open-air stage for theatre events. By raising the tower on the northern side, an observation platform could be established with a view of the “Kauno Marios” artificial lake located outside the Fortress premises, where in turn watersports facilities could be introduced. In addition, the investigation has revealed the potential for setting up an open space within the Fortress ditch. The scarp and counter-scarp walls offer a good prerequisite for installing a bear shelter as an animal protection measure in combination with protection for selected vegetated areas for animals that need not be kept under species-specific conditions (e.g. as a zoo).

Finally, all user potential is also being examined from the aspect of “how does further use fit into the overall concept of the “Baltic Fort Route”?” An attractive, not every-day use will attract tourists, while facilities for rest and recreation in conjunction with cultural services could also create attractions that seem thoroughly worthwhile, making the Fortress known beyond the region and advertising its visitor quality.

Even if the potential uses highlighted in the present investigation are only ideas, they nonetheless show what opportunities lie in a fortified site of this kind. However, they also show that basic analyses are required that can be developed further only in conjunction with certain requirement structures or perhaps also already with existing plans for temporary or periodic use, in order to achieve viable use concepts that will be meaningful in the long term. This is also a work that must be undertaken on the spot. Instruments may be scientifically applied, perhaps also statutory regulations — ultimately local conditions and the ownership structures will decide how a fortified site can be put to future use.





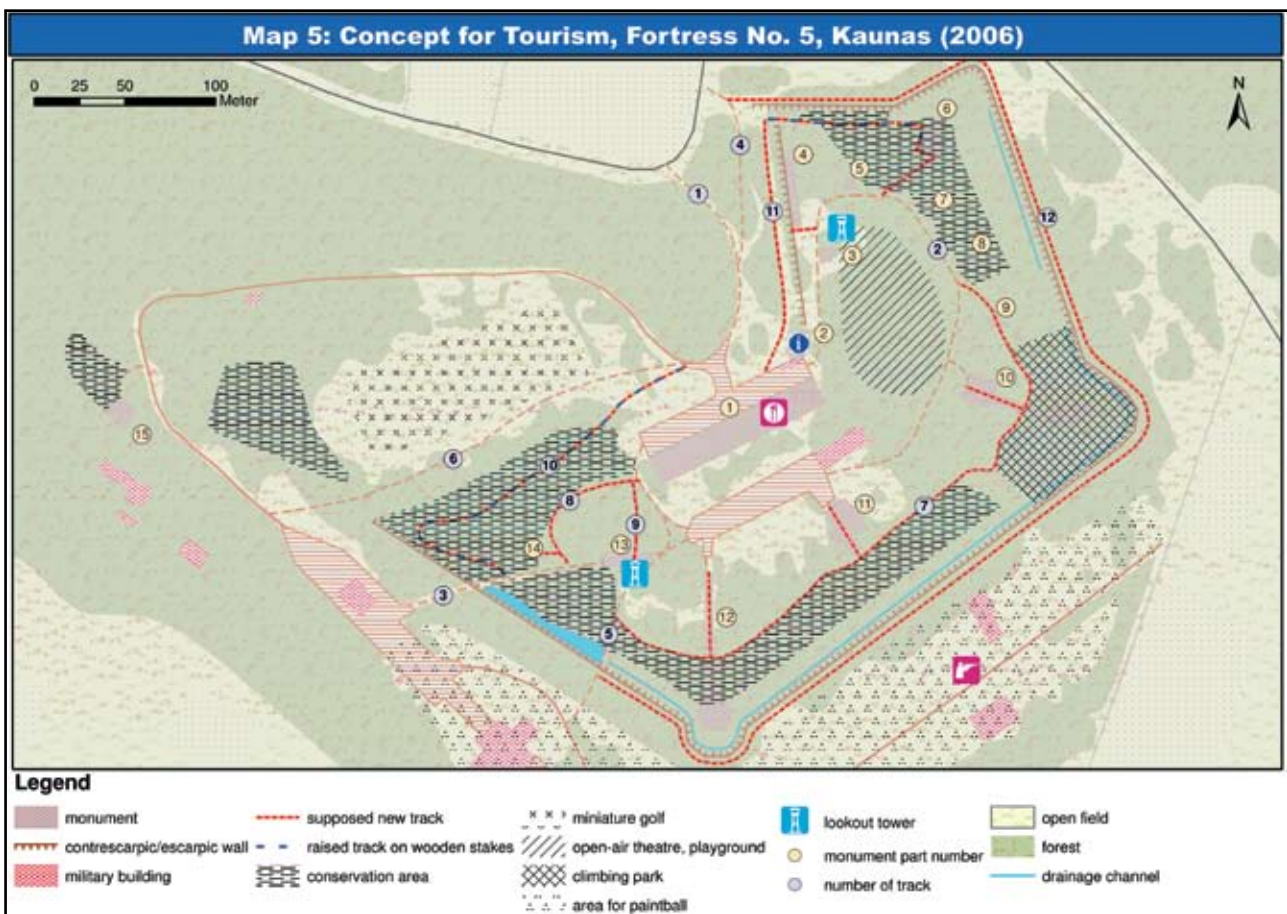
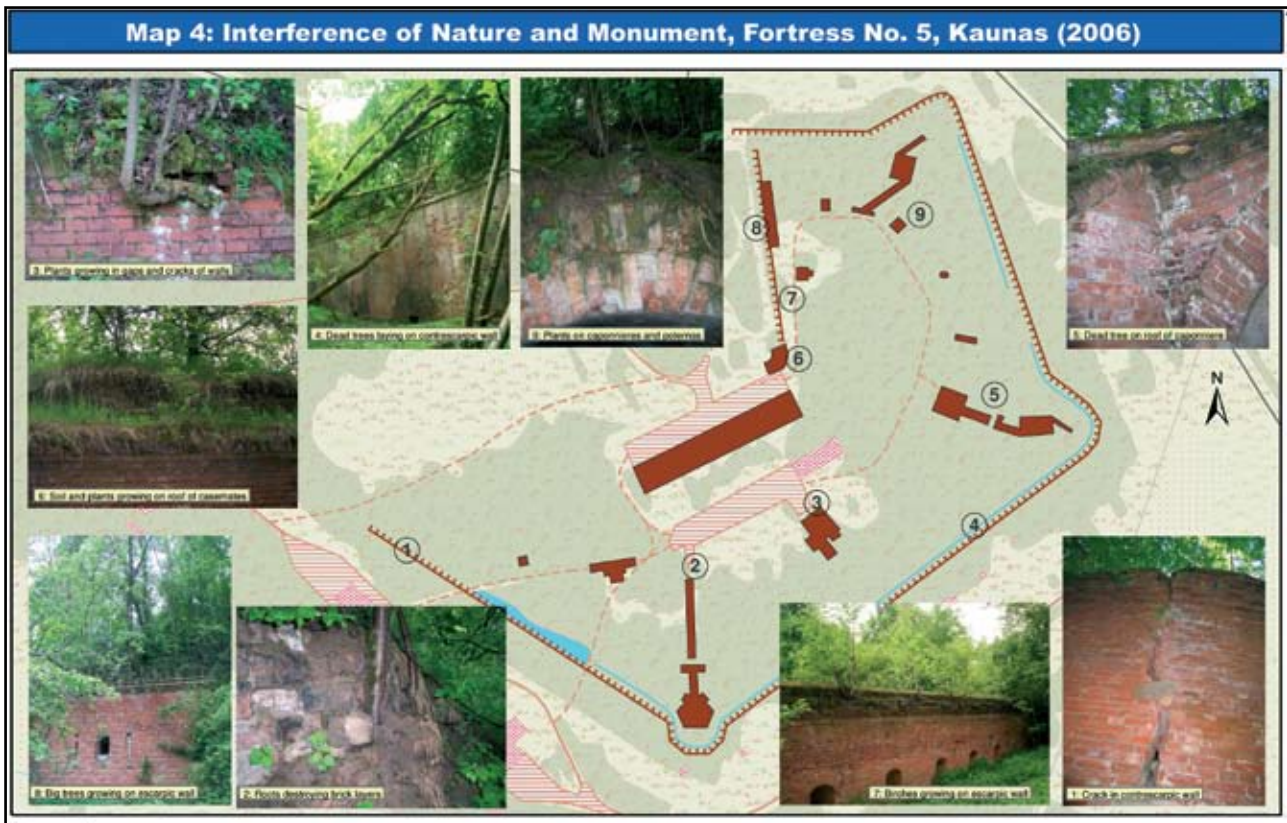


Fig. 94—96: Kaunas. Project design for Humboldt-University, Berlin, in conjunction with the city administration of Kaunas for the development and tourist use of Fort V in Kaunas while taking account of conservationist and ecological interests, 2006.

## Specimen cases outside the research area

When tackling problems specific to fortified sites, it is more often than not useful to look at other premises and other examples to compare whether their initial situation may have been similar or even the same and to study what avenues were explored and ideas found in order to “re-economise” the sites concerned. When reference is made here to “fortified sites” we must first of all distinguish between the actual battle control facilities with their special structural and technical features, such as a typical external fort, and the garrison and logistics buildings supporting these battle control facilities, which include especially barracks and magazine buildings.

### 1 Major fortress installations

With regard to major fortress installations, examples are drawn from Cologne and Coblenz in Germany and Komorn in Slovakia/Hungary. It is perfectly easy to see from here what initial position and effort has been made to revitalise them and, especially, what steps had to be taken in order to initiate repair measures and achieve longer-term user concepts.

#### 1.1 Cologne

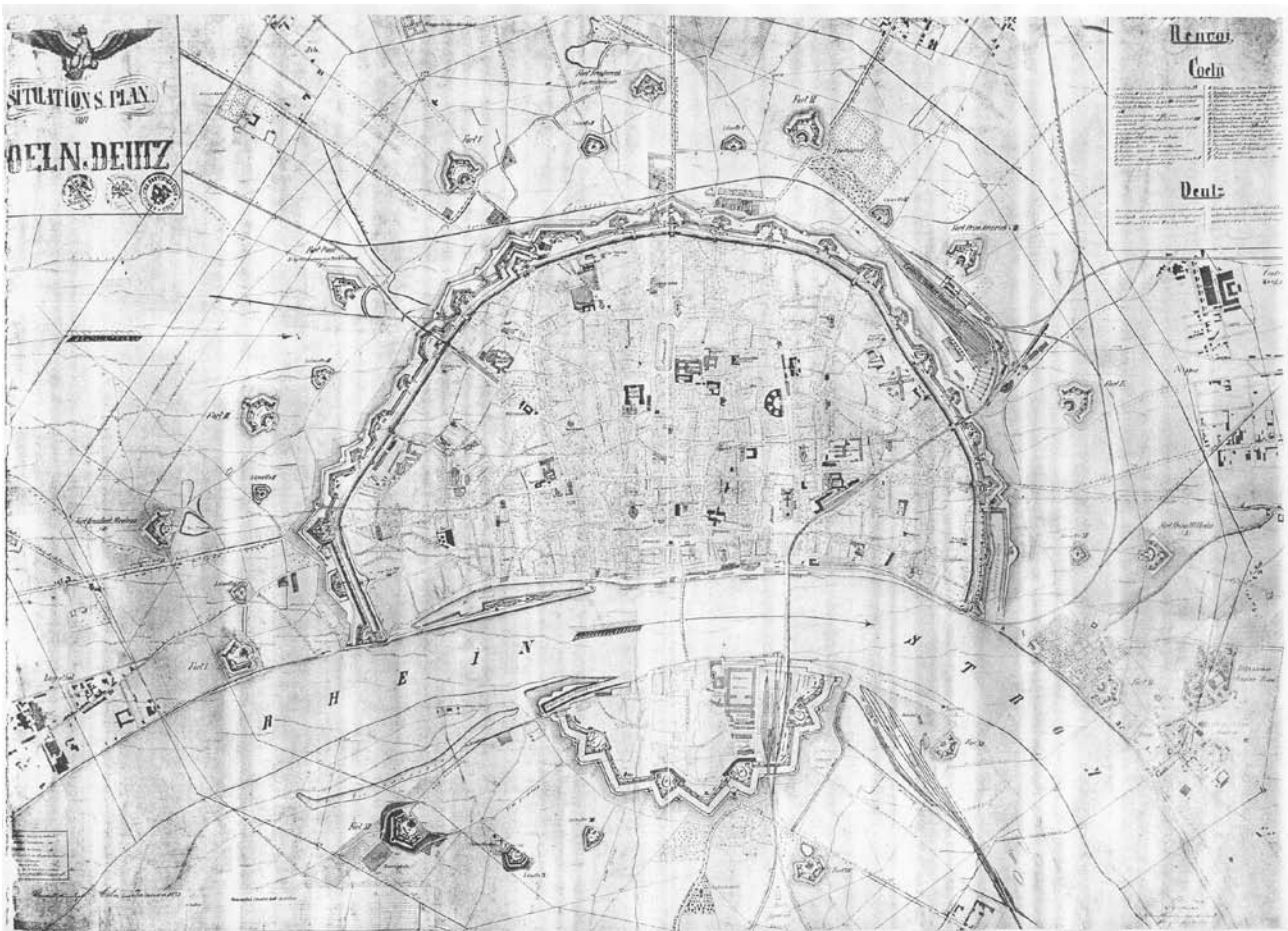
Cologne with its two fortified rings and almost unmanageable number of forts belonged to the German Empire’s largest fortified sites in terms of area. Following the First World War, the fortifications had to be demolished under the terms of the Versailles Treaty. The then Senior Mayor Konrad Adenauer succeeded with the Allies’ consent to exclude a number of forts from destruction and put them to civil use. This was helped, not least, by the City planners realising the opportunity of establishing a green belt round the City on the abandoned fortified terrain, which in particular loosened up the development of the outer city, restricted up till then, and provided the city population with the recreational premises and space then urgently needed. The fortifications handed over and excluded from the demolition were for the most part integrated into this green belt and were used for cultural, charitable, sport-

ing and administrative purposes. These uses have continued until quite recently. The inhabitants of Cologne began to regard the fortifications again as an historic structural heritage, reminding them of the past, of only a few years back. Newly formed associations and numerous private persons helped to promote this awareness and realisation as a cultural asset within the existing constraints. Since 2004, a “Fortress Cologne Day” has been organised each year, on which — as for the “Day of the Public Monument” fortifications otherwise locked up are opened to the visitor and guided tours explain their structure and reveal the architecture, construction and original purpose, and numerous accompanying events are organised. This has resulted in thought being given to better use of various forts, to do justice to the demands of conservation and consequently to the structure itself. This process is at present in progress and is not yet complete.

What the position was in 1999 regarding problems with using the Cologne fortifications is clear from a newspaper series in the “Kölnische Rundschau” written by two authors Dagmar Helmig and Jan Stüve, which included a total of 16 articles over the period from 24 November 1999 to 16 March 2000 on individual fortifications and informed its readers on the condition and present use of the sites. This series reflects possible uses for fortified sites, especially the external forts. However, when we take a closer look at these uses, it quite soon becomes clear that most of them are “fortuitous”, the resulting of attendant circumstances, and that coincidence generally also played a major role. Generally, a desire for certain kinds of accommodation appeared on one page, while casemates standing empty provided precisely the opportunities for using on another page. Many of the former “external” forts had in the meantime been integrated into urban development and could be used for environmental improvements.

The following series of articles in the “Kölnische Rundschau” is listed below by title. In some cases, the individual titles already reflect part of the structural history of the site concerned. A pithy approach to the subject not only makes it easier for the reader to learn about it but also from time to time arouses his curiosity.





**Fig. 97:** Cologne. Condition of the Fortress in the mid-19th century after the first girdle of forts had been built on either side of the Rhine round the Cologne and Deutz enceintes.

Article title:

(1) 24.11.1999 edition:

The charcoal oven in the old fortress warms up the carnival attendees. Fort X was one of the chief defensive installations in Cologne – well preserved walls relieve the Monuments Office of much work

(2) 02.12.1999 edition:

Study rooms behind thick old fortress walls. After its military career, Fort V served as a hospital and university institute

(3) 09.12.1999 edition:

The “Green” fort was open at all levels. The defences in the Volksgarten were a favourite destination for excursions

(4) 16.12.1999 edition:

Trutzburg with the war memorial in the Peace Park. Fort I in the south of the city offers numerous examples of military tradition — rock and rose gardens were unique.

(5) 30.12.1999 edition:

The Association wants to make the overgrown gardens re-accessible. After the Second World War, Fort VI served as emergency accommodation for bombed-out locals

(6) 06.01.2000 edition:

Citizens formerly exercised at the foot of the fortress walls. Fort IV served as a sports facility after the First World War — luxuriant vegetation all round.

(7) 13.01.2000 edition:

School children learn about the “lucky” hens. Intermediate work Va in Müngersdorf is in intensive use — open air and garden school on the Belvederestrasse was formed in 1925

(8) 20.01.2000 edition:

A cool beer between the trenches and vaults. Intermediate work VIIIb is to be used for catering purposes

(9) 27.01.2000 edition:

Air, sun and movement for people in the rock desert. Intermediate work IIIb formerly included a forestry school — it now functions as radio-club

(10) 03.02.2000 edition:

The gorge barracks are now used as stables. Westhovener Riding School continues the Prussian tradition in Fort IX

(11) 10.02.2000 edition:

33 concrete heads presented the authorities with a mystery. Almost forgotten Intermediate work IXb in the Gremberger Wood

(12) 17.02.2000 edition:

Fortification converted to a gym. Intermediate work XIa is one of the few completely untouched Cologne Fort ensembles

(13) 24.02.2000 edition:

A ‘knights of old’ display appears in the corridors. 14 groups make Fort X their home — improvements cost one million Marks — fortress association is persuing maintenance

(14) 02.03.2000 edition:

Sun and “Air” bathing on the fortification walls. Intermediate work XIb: converted to recreational complex in 1927

(15) 09.03.2000 edition:

Zeltinger also played in the old Fortress. There are practice rooms for musicians in the idyllically situated Fort XI

(16) 16.03.2000 edition:

“The defensive installation is likely to collapse soon”. Bahn AG (Railway), Owner of Fort VII, is urgently looking for investors

Examination of the individual articles indicates the following uses:

(1) Fort X:

Carnival companies

(2) Fort V:

Institute building for the University of Cologne

(3) Fort IV:

Artists’ studios

(4) Fort I:

War memorial

(5) Fort VI:

Sports association, let for private parties

(6) Fort IV:

Sports association, motorcycle club, monument protection depot

(7) Intermediate work Va:

Open air and garden school

(8) Intermediate work VIIIb:

Catering establishment (projected)

(9) Intermediate work IIIb:

Forestry school, amateur radio club

(10) Fort IX:

Riding and driving association

(11) Intermediate work IXb:

Depot, empty, motorcycle club

(12) Intermediate work XIa:

Gym, administrative rooms

(13) Fort X:

14 Associations

(14) Intermediate work XIb:

Recreation complex, music practising (military band)

(15) Fort XI:

Practice rooms for musicians, scouts and Green Space Office

(16) Fort VII:

Bahn AG, Repair establishment



**Fig. 98—100:** Cologne. Fort X. The gorge barracks of Fort X situated on the Right (Deutz) side of the Rhine is being used by carnival associations as a storehouse and for potential accommodation. Status 1999.



**Fig. 101:** Cologne. Fort X Prince William of Prussia on the left (Cologne) bank of the Rhine. The work is used by departments of the Cologne Garden Office. Status 1999.

If all these uses are combined and evaluated according to their frequency, the overview is as follows:

Associations	8 x
School	2 x
Workshops	4 x
Administration	2 x
Sport	3 x
Artists' studio	1 x
Depot and stores	3 x
Memorial	1 x
Leisure and recreation	2 x
Science	1 x
Catering	2 x

There can therefore be no doubt as to the attractiveness of buildings of this kind to local associations. The casemate building is also best suited for the installation of workshops, and for depot and storage purposes. Individual fortifications could be usefully refitted for certain uses and converted, as e.g. Fort V was as a scientific facility for the University of Cologne. The spatial arrangements in a fort often form the basis for mixed uses or mixed functions: such as e.g. facilities for city horticultural establishments, where working and storage functions, on the one hand, and administrative and office accommodation also co-exist, on the other. The original multifunctionality of the casemate building provides the best prerequisites for this: the casemates were, after all, generally intended for soldiers to live in and have therefore met minimum requirements from the start as to room size, natural lighting and ventilation. Larger conversions are therefore hardly necessary.

However, there is one precondition, in the case of all uses mentioned here, subsequent use also existed that would prevent a building from standing empty over a lengthy period. At the point when the building is used, it is also generally being maintained and, however small they may be, this will at least prevent water from entering the premises, the rooms and the walls; luxuriant vegetation, bushes and trees will be removed in good time, and further encroachment on the building's fabric will thereby be prevented. Simply the fact that the whole of the building is being used, however, briefly, will prevent vandalism and therefore further destruction. The user will in any event provide security against burglary and theft, even if such premises, which are generally fairly remote in access, seem to invite breaking and entering.

## 1.2 Coblenze

Unlike Cologne, is the example of the former Prussian major fortress of Coblenze. While in Cologne the individual forts lay almost uniformly round the city, the topography of Coblenze required a different approach. An added fact was that the facilities at Coblenze were built earlier than the Cologne Fortress; the Coblenze Fortress was so to say the prototype for the new major fortresses — here, all those elements were developed and implemented for the first time that subsequently established the reputation of the new style of Prussian fortification and was especially imitated in Russia. For that reason alone, the major fortress at Coblenze is undoubtedly different and more important than all installations subsequently built, from architectural, structural, cultural, art-historical and monumentcare aspects as well.

However, this approach was only partially honoured at the end of the First World War. The terms of the Treaty of Versailles also affected the Coblenze installations like all other fortifications along the Rhine. Here, too, all fortifications were to be demolished. However, an American general then already recognised the pointlessness of these provisions and pleaded that Fortress Ehrenbreitstein should be fully maintained as an outstanding cultural and historic monument. He was supported by local monument enthusiasts and authorities. The fact that the requirements did not extend to the fortress complex as whole was undoubtedly due not only to the system not yet being recognised as such and as a whole within the framework of a cultural-historical approach, (this was done only by Fritz Michel some 40 years later) but also to the political confusion of the twenties and thirties of the last century, that undoubtedly blocked the way to such a discussion. The same thing happened after the Second World War.

The fact is that it proved possible to retain fortress Ehrenbreitstein as the most important component of the Coblenze complex. Most of the forts, such as Fort Grossfürst Konstantin, Fort Asterstein and the Kaiser Franz fortified complex were destroyed only because the space they occupied was needed for housing. Sustained destruction began only after the Second World War, when much emergency accommodation was cleared in the fortified works and



the empty casemates began to deteriorate. Research into and validation of the cultural-historical importance of the fortress complex began only in the nineteen eighties, accompanied by an effort to save structurally what could still be saved and the public are now beginning to understand even in Coblenz, that the fortress complex is a classic architectural unit which is not only unique but above all could play a special role in the development of the valley of the Central Rhine in line with existing plans.

The present status at Coblenz having regard to future use is associated with the ownership position and can be described as follows:

Fortress Ehrenbreitstein is owned by the Land of Rhineland Palatinate and has recently been revaluated with great enthusiasm. It is true that in the past the buildings were regularly maintained, so that major damage and destruction could be avoided, however, maintenance could be extended in each

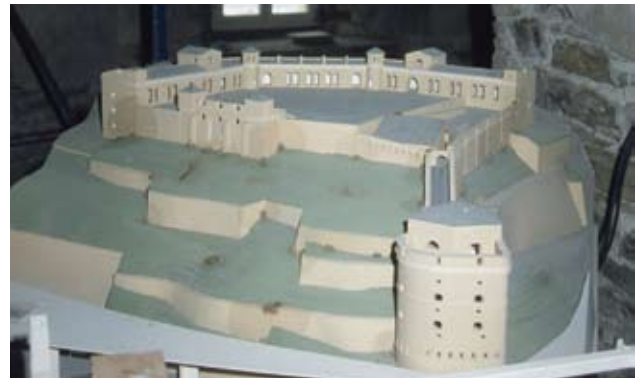


**Fig. 102—104:** Coblenz. Ehrenbreitstein Fortress on the right bank of the Rhine—the main fortification within the Classical Major Fortress of Coblenz. As part of the Central Rhine Valley “World heritage”, particular importance attaches to the visiting of individual parts of the fortress. The classical structural style is unique. Plasterwork inside the casemates does not always conform to the conservationist standard.





**Fig. 105—106:** Coblenz. Kaiser Franz fortified complex: Egyptian style entrance gate and abandoned parade ground between the former main redoubt and the gorge tower, 1999.



**Fig. 107—108:** Coblenz. Fort Konstantin. Archaeological digs in the parade ground; the model clearly shows the dominant hanger above the Central Railway Station.

case only to parts that were in use. Major sections of the Fortress stood empty. With the planning of new uses and an extension of existing functions, maintenance will in future extend to these parts which hitherto have stood empty. The projected Federal Garden Show in 2012, which includes the fortress terrain, will also provide a boost in this direction. Only this major event has persuaded the Land of Rhineland-Palatinate to make additional funds available for restoring the external installations. Today, the Fortress is already the scene for numerous major and large-scale events, including amongst other things the final fireworks for the “Rhine in Flames” spectacle. Seen in the long term, Fortress Ehrenbreitstein will continue to enjoy the attention of many tourists and visitors — not least because of its predominant position on the right bank of the Rhine — and so ensure that a versatile range of museums and events can be guaranteed, associated with appropriate building maintenance measures. Its association with the Central Rhine Valley which

is on the World Heritage list, will help to present the entire installation yet further than in the past to a World audience, which in turn will ensure that uses and events will reach an extended horizon. The Grossfürst Konstantin and Asterstein and the Kaiser Franz fortress complex are owned by the City of Coblenz. Originally earmarked for demolition, the works were to be removed after the Second World War at the latest. The fact that these works provided a shelter for many refugees and displaced persons, prevented this. The installations were finally empty in the seventies of the past century and began to suffer from neglect. Their removal was now no longer implicitly possible on account of the risks to the surrounding housing if they were to be blown up and the anticipated heavy cost. The City began spasmodically to produce plans for re-use, e.g. for the Fort Asterstein redoubt as a colombarium for the adjoining District Cemetery. However, these plans came to grief against the anticipated cost. Neglect has in the meantime resulted in the slow and

steady destruction of the building fabric. Vandalism, facilitated in the buildings through the lack of anti-burglary protection and the pointless breaking of the window parapets, stairs, etc have promoted the degree of destruction. Fires in the empty casemates have caused structural damage to the fabric of the vaulting. Although the City of Coblenz made little

effort to devote city funds to the fortress complex as a whole during this period, it at least invested more in the future of Fortress Ehrenbreitstein and subsidised its maintenance and extension, such as e.g. its conversion into a youth hostel, with city funds. An added, complicating factor, however, was that knowledge about the Fortress complex was

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## Kultur regional

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Nr. 200 – Dienstag, 29. 8. 2006

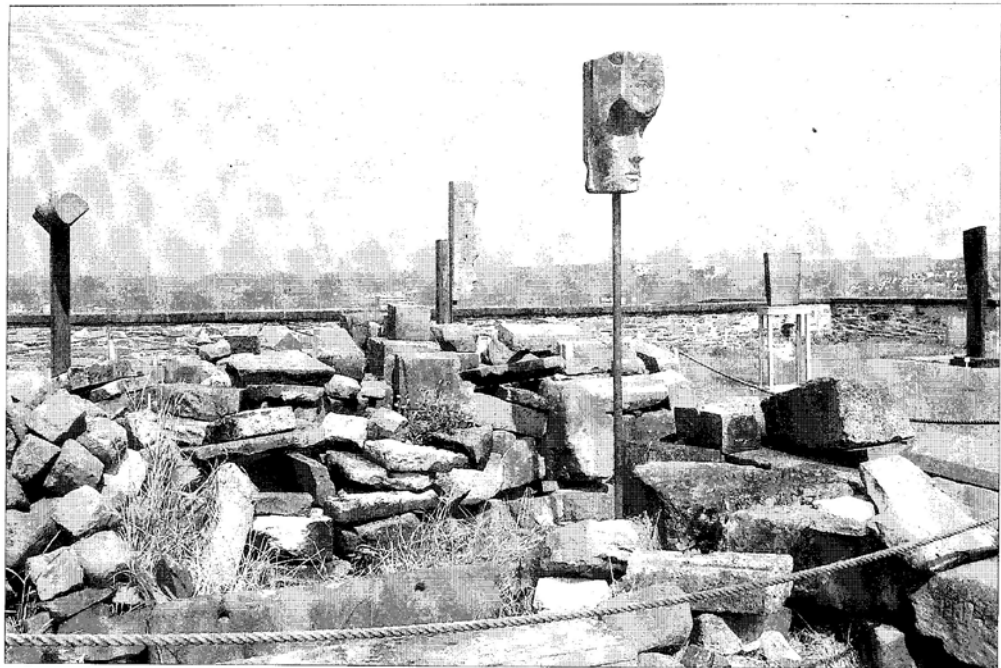
# Das Fort Konstantin ist nun eine Skulpturen-Galerie

Die Arbeitsgemeinschaft bildender Künstler am Mittelrhein (AKM) präsentiert Plastiken auf „Koblenz' schönstem Balkon“

KOBLENZ. Das Panorama ist an sich schon reizvoll – der Blick auf die Stadt und den gegenüberliegenden Ehrenbreitstein. Zum Bild erhoben wird es gegenwärtig durch einen aparten Rahmen, eine leuchtend rote, halbkreisförmige Plastik von Michael Post, wie ein Signal auf der Mauer des Fort Konstantin postiert und Teil der von der Arbeitsgemeinschaft bildender Künstler am Mittelrhein organisierten Ausstellung „Skulptur im Fort“.

Ein Projekt, das für diesen Ort wie maßgeschneidert ist und beispielhaft zeigt, wie vielfältig sich eine ehemalige preußische Festung nutzen lässt. Die Kasematten des nach einem Bruder des russischen Zaren benannten, überwiegend als Truppenunterkunft genutzten Forts, das den Abbruchmaßnahmen nach dem Ersten Weltkrieg weitgehend entging und nur heftig vom Zahn der Zeit angenagt wurde, verleihen dem Platz Amphitheater-Flair. Die weiten, von Mauern umschlossenen Rasenflächen bilden so die ideale Bühne für eine Präsentation der Plastiken. Gerade weil das Fort kein x-beliebiger Ausstellungsort, sondern einer mit ausgeprägtem Eigencharakter ist, ergeben sich spannende Beziehungen zwischen an sich schon militärische Funktion und ästhetische Schönheit verbindende Architektur und Kunst.

Da wachsen die monumental-archaischen, aus gelblichem oder rötlichem Sandstein gemeißelten Köpfe des aus Traben-Trarbach stammenden Jürgen Waxweiler wie natürlich aus den Steinhäuten, die der seit mehr als zehn Jahren emsig um die Erhaltung des Forts kämpfende Verein „Pro Konstantin“ für



Jürgen Waxweiler lässt seine aus Sandstein gemeißelten Köpfe aus dem Baumaterial für die Restaurierung von Fort Konstantin „wachsen“ – noch bis zum 17. September ist die Festungsanlage über dem Hauptbahnhof in Künstlerhand. ■ Foto: Sauer-Kaulbach

die Restaurierungsarbeiten verwendet. Die mit der Kettensäge aus Zedernholz geschnittenen, so doppelt maskulinen Figuren Jan Schröders flankieren wie Wächter einen der Eingänge in die ehemaligen Kasematten – eine Funktion, die sie mit der „Skrokiaan“ betitelten Bronze des Darmstädters Detlef Kraft teilen könnten, afrikanisch beeinflusst, ein Bündel an Kraft und Rhythmus.

Vom klassischen Thema der Bildhauerei, der menschlichen Figur, gehen auch die Engel von Georg Ahrens aus, weit entfernt allerdings von aller barock-puttigen Süße,

dem Stein, dem Basalt oder Trachyt eher entlockt als aufgezungen. Noch reduzierter, konzentrierter, trotzdem fast schwungvoll elegant ist eine „Angelehnte“ Martine Andernachs aus rötlich-braunem Cortenstahl, gestützt von einem bereits verputzten, halbrunden Baukörper.

Ähnlich nach der Verdichtung der Form streben die Eisenplastiken Peter Goehls, schlicht „Form“ oder „Stele“ betitelt, trotzdem zumindest mit figurlichen Reflexen, mit Anklängen an Helme oder Köpfe behaftet, wie Hans-Otto Lohregels großformatige, Kantiges und Rundes, Schar-

fes und Harmonisches kontrastierende Arbeit.

Fast naturalistisch erscheinen im Vergleich die Steinköpfe Günter Thelens, selbst wenn auch sie eher Archetypischem als Individuellem nachstreben. Spielerisch geht der Luxemburger Bertrand Ney in vergoldeten oder versilberten Bronzeplastiken mit Figürlichem um, unübersehbar wie Siegestrophäen auf dem kleinen Plateau aufgepflanzt, auf dem sich einst das Pulvermagazin befand.

Unmittelbar unterhalb, flankiert von den Grundmauern der bei den Restaurierungsarbeiten entdeckten

Kapelle des Kartäuserklosters aus dem 12. Jahrhundert, finden die Plastiken Beni Cohen-Ors ihren Platz, Konkretes in strahlendem Grün, Rot und Gelb, Objekte wie aus dem Baukasten, trotzdem überlegt und konsequent konstruiert wie die liegende Stahlblechplastik Heiner Thiels, den Wandobjekten des Künstlers verwandt in der Variation von Kreis- oder Kugelsegmenten.

Lieselotte Sauer-Kaulbach

■ Die Ausstellung im Fort Konstantin ist bis 17. September zu sehen, dienstags bis freitags, 14 bis 17 Uhr; samstags und sonntags, 11 bis 14 Uhr

**Fig. 109:** Coblenz. Fort Konstantin. Empty but the casemates are dry and a large enclosed parade ground offers a panoramic view with virtually ideal facilities for sculptural exhibitions.



lost in the years following the Second World War. Public disputes regarding the construction date of Fortress Ehrenbreitstein in the local press were not infrequent. A scientific approach to the history of its construction and research into the monument value of the work as a whole began in the eighties. The results were more than surprising and revealed the entire Fortress complex as a unique architectural and historically valuable ensemble in the late classical style. These results and their publication on a broad basis fortunately resulted in local associations being formed that began to make their voices heard against the progressive collapse of the Forts. The intention was still to disinter the demolished redoubt of another fort (Bubenheimer Cemetery) as part of the projected Federal Garden Show and included in the whole. However, the City Council of Coblenz has had to admit in the meantime that the task mooted by the associations is too enormous and that it has already reached the limits of its capabilities. Despite numerous efforts in the past 25 years, there are still no signs of a convincing plan for the Fortress as a whole. However, now that the gorge tower of Fort Konstantin has already been rescued and taken into use, work is now (2006) starting on the Kaiser Franz Fortress complex with a view to structural security measures — without it being known as yet to what future use it could be put. However, the fact that they are willing to lay out funds on security ensures that following successful remediation of the fabric, altogether appropriate use will be found for the structure and its position accordingly. Work on Fort Konstantin is also continuing. Following re-use of the gorge tower (see above), the interior of the fort is now available for events. Since we know that the Fort already served in its past as a practice ground for military bands and as a scene for special events, it stood to reason that today, too, it could again be used to stage musical events. That this could prove a successful concept is proved by the numerous events and performance programmes that attract visitors and audiences and that are slowly but surely creating appropriate acceptance within the cityscape, not forgetting the takings that will contribute — albeit not entirely — to maintaining the Fort. More difficult, on the other hand, is a future for Fort Asterstein. Here only the keep has survived; the outer area is neglected and partly occupied by

the neighbouring District Cemetery. This already prevents certain uses. An added factor is its somewhat remote, elevated position. The property can be accessed from the Rhine only by a serpentine road, the potentially more convenient access road leading through other parts of the area. Undoubtedly, the question of a satisfactory intended use is more difficult to answer here, the more so since the direct connection with the anticipated cost of repairs will have a bearing. Despite its unique architecture, the fate of the structure will ultimately be decided by whether people can spend time here permanently in future or whether the building can be developed into a depot or storehouse or something similar. If, one day, no further human activities can be accommodated at all are recorded, the building will eventually collapse into ruin, possibly even as a quarry for its stone.

Coblenz can consequently be regarded as an example of an outstanding cultural monument under heritage protection (national monument) with user activities and user deficits, whose maintenance is causing particular trouble despite its architectural and art-historical importance. This is especially due to the ownership situation and the fact that use of many parts of the Fortress was interrupted, the consequences of which are serious having regard to the elimination of damage due to vandalism and neglect. Various staged plans will apparently still have to be worked out to tackle the problem as a whole — with the introduction of a long-term user strategy.



### 1.3 *Komorn (Slovenian: Komarno / Hungarian Komárom)*

Komorn, situated on the Danube half way between Vienna and Budapest, has for centuries possessed important fortified buildings worthy of protection in view of its strategic importance. The city's first defences were built by the Romans. After the area achieved autonomy, the so-called "Old Castle" was extended and — supplemented by the so called "New Fortress" — was able to withstand the Turkish armies at the end of the 17<sup>th</sup> century.

#### 1.3.1 *Komarno / Slovakia*

Work on extending the Fortress system of Komorn began in 1809 concomitant with the Napoleonic Wars and was completed in 1877. A gigantic barracks with a U-shaped plan was built on the courtyard of the new Fortress in 1810, followed in 1815 by a command building on the southern side and conversion of the "Old Fortress" in 1827 to 1839. A defensive line of the new Prussian type was created on the north-west of the City in 1839 to 1847, whose pentagonal bastions were linked together as a cohesive chain with six ramparts and further fortifications. It was called the "Palatine Line". After 1866, the City was protected with a further defensive line towards the River Waag.

Since the works on the Palatine Line in particular have survived to this day, with one exception (link to Bastion I), the user concepts and the steps taken to implement them are of interest here. The planning of the site, well maintained up till now, the relatively good technical condition of the buildings allowing for the favourable geographical position, and the unusual monumental scope having regard to the topographical situation required a timely general, which not only facilitated the rescue of the valuable fortress complex itself but also its optimum use in a broader social context. In addition, the concept was also able to meet new functions to achieve which alternative measures would have proved more expensive and more difficult to implement in the course of time.

The choice of the buildings for general social use of the Fortress as a whole has already been made.

As far as the similar bastions, maintained to varying extents, is concerned, certain changes became possible, especially with a view to the best surviving premises being adapted to museum or similar purposes. The parts of the Fortress system were to be integrated into the organisation of the continually growing city, with simultaneous creation of recreational space for Komorn's inhabitants. Since the present planning work may result in changes in the use and renovation of the buildings — this depends especially on the future users and the general social requirements — general use of the Fortress, the Palatine Line and the Waag connection, had to be replanned. Such efforts are also evident in the sister city Komárom, which under the Hungarian Republic is taking useful steps towards revitalising the advance Forts, and especially Fort Igmánd, the Danube Bridgehead and, especially Fort Sandberg, which like the Old Fortress was evacuated by the Soviet troops (see below).

The bastions on the Palatine Line are similarly arranged; unique in shape are bastions VI and VII on the Waag Line. The primary task was therefore to retain the basic types of the fortifications along the defensive line. For this purpose, a complex conservation renewal of Bastion V, the casemates lying between Bastions V and VI, and of Bastions VI and VII was proposed. The subject of the initial conservation work was Bastion VI with the adjoining rampart system this being completed in 1982 to 1991. The selection of Bastion VI as a first choice for reconstruction was especially dictated by the following three factors:

- it is the most characteristic of the type of fortifications erected in the mid-19<sup>th</sup> century, with outstanding examples of bastion fortification.
- its geographical position predestined it for a new use with direct linkage to the nearby City recreation area.
- the release of space in Bastion VI was the last of a problem for renovation.

Increased attention was paid especially to the reconstruction of the destroyed and disintegrated ramparts, doing so on the basis of the original drawings and with emphasis on the artillery access ramps, and the artillery tracks. The original sewerage systems, social institutions, washrooms



*Fig. 110—117: Komarno. Palatine Line. Well maintained and appropriately used forti-fied building of the Palatine Line to the west of Komarno, partially distinguished with the Europe Nostra prize. Status 2001.*

and wells emerged during the preparatory cleaning work, which in particular comprised the removal of layers of soil deposited in the inner rooms and yards. Under the new arrangement, they look authentic despite the changed spatial function.

Further reconstruction work took place recently, executed by well endowed contractors who at their own expense renewed buildings for their own use and so contributed to the rescue of the common cultural heritage. Positive examples are Bastion I with the Pressburg Gate, Bastion IV and Bastion V, where a private gallery has been established. As the fortification system is intended above all to serve visitors and the City's population as a recreational and leisure area, a "historic educational trail" has been proposed in the section between Bastions IV and VII, which contributes to further knowledge of the local culture and shows off the versatile monument and its masterly architecture to the onlooker. The route of the education path will be so arranged that visitors will come into contact with all aspects of the fortifications and all types of space: wet ditches, communications and gun galleries, artillery casemates, traverses and bastion covered ways. Renovation and reconstruction to the original state allows not only presentation of an important cultural monument, which has no equal in Slovakia and reflects the ultimate efforts of 19<sup>th</sup> century military architecture of this kind, but also enables the creation of a recreation and leisure area for the population of Komárno and for the increasing international tourist activities of the City.

### 1.3.2 *Komárom / Hungary*

The Komorn fortifications as built up to 1877 on the right bank of the Danube included the Star Fort (Danube Bridgehead), Fort Monostor and Fort Igmand. The task of this defensive system was to protect navigation on the Danube, the crossing points and the road from Budapest to Vienna. Construction of Forts Monostor and Sandberg is linked to the defence of the town of Új Szőny (the present-day Komárom in Hungary) against enemy attack from the west. The local hill known as Sandberg was fortified in 1849 on the orders of General Georg Klapka, the Fortress Commandant and Commander of

the Revolutionary Army. Fort Sandberg was built after the Revolution in 1850 — 1871 according to plans of the pioneer command in Komorn and became an inseparable part of the fortifications.

Fort Monostor is one of Central Europe's largest new period forts. When built it appeared impregnable, but quickly became outdated following developments in artillery technology. No mention therefore appears of this fortress as a theatre of hostilities in Hungarian history. The group of buildings was used by the Royal Hungarian Army between the two World Wars as barracks and training centre before serving as the Soviet Southern Army Group's largest ammunition depot from 1945. The Fort was declared a national monument in 1990 following the departure of the Soviet troops. The "Fortress Monostor Charitable Society" was set up on 17 March 2000 for its use and reconstruction, its founders including the Inland Revenue, the Ministry of National Cultural Heritage, the Ministry of Defence, the municipal administration of Komárom-Esztergom and the local authority of the City of Komárom. Fort Igmand and the Star Fort have also been taken into the Society's custody in the meantime.

The territory covered by Fort Monostor is 104,000 m<sup>2</sup>, of which 28,000 m<sup>2</sup> are built over. The work is regarded as a landmark of military history, which since its erection has survived the process of time practically unscathed.

The annually organised cultural and leisure activities, including amongst other things family days, concerts and theatre shows, the Day of the Open Door, the memorial days, holiday camps for artists and creative persons, permanent and temporary exhibitions, and lectures and festivals have attracted particular interest.

To put this unique Fortress, which is owned by the Hungarian State, to good use and give it a new function, the Hungarian government started up a long-term development programme in 2000. The main objectives of this programme can be described as follows:

- to promote the development of a complex work through suitable use of the buildings: a theme park, which with its historical and cultural im-

portance can play a leading role in the cultural and visitor facilities of the country and the Central European Region and promote links between military history and the civil population;

- to bring the complex of buildings and the associated overall fortification system, which is under monuments protection, and its cultural values to a wider public;
- gradually to secure an extended range of programmes by building up financial resources and a timetable for the individual restoration work, and
- to involve not only State sources but also private actors in aspects of the user programme to an ever increasing extent, although the land is State owned.

Use of Fort Sandberg which is a listed monument, will be facilitated by a complex programme providing for the implementation of a number of functions strengthening and supplementing the synergies with the groups of buildings. Each element of the development programme takes account of the features of the site and above all on the substantial aspects of the perceived background that the Fortress represents. These elements are consecutively arranged to create a theme park, the centre for the “Fort Sandberg” military environment. In this connection functions associated with culture and education, museums, recreation, tourism and trade are linked to the military history themes. This renders the site attractive both to the public at large and to interested specialists.

The most important elements of the programme are:

- Cultural and communicative arrangement: primarily in conjunction with the new role of the military in Eastern and Central Europe, the theme park can, through the formation of the institutions required for a communications programme with international organisations, play a decisive part in the educational and research activities associated with the programme.
- A War Museum and Exhibition: war history and technical displays of international and regional importance by setting up permanent and temporary exhibition points.
- A weapons exhibit and market: suitable places for displaying modern weapons systems and for

trading at Central European and regional level, depending on the interest of the manufacturers, dealers and consumers concerned.

- A centre for strategic and historic games: the Fortress may serve as a basis for war and tactical games and interest groups and as a centre for this games world. A system of new games could emerge promoting strategic thinking and extending the media programme associated with it.
- A basis for tourist events and leisure centre: by implementing the tourist attractions associated with the elements mentioned above and laying down a demanding, generously proportioned leisure park, the Fortress can contribute significantly to the programmes offered for international and, no doubt, growing domestic tourism as a leisure centre with its own special characteristics. Spectacular events and games that require active participation by the public and various forms of mass sport with a programme of daily events will also suitably attract the public at large.
- Tourist travel services: the services offered to the visitor – shops, restaurants, accommodation – can, on the one hand, supplement the principal functions and, on the other, occupy an independent place in the programme of activities.

Summarising, the fortifications at Komorn may be taken as a good example of event use and urban planning improvements through individual use of the infrastructure. The emphasis here lies on an urban planning improvement on the Slovak side and on effective event organisation on the Hungarian side. It is at the same time an example of “cross-border” development which — additionally complicated by the topographical features of the Danube as a separating river barrier — shows that existing cultural assets and stonebuilt witnesses of events during troubled times can play a part in promoting the values of future urban development, despite such obstructive institutions as political or natural frontiers.

*Fig. 118—121: Komárom. The core work of Fort Sandburg situated directly on the Danube bank is used today as an open air theatre for drama performances; its inner works house powerful vaulted and casemated hidden space. The model set up in the entrance area clearly shows the dimensions of this originally fortified camp.*





## 2 Individual fortresses

Unlike the major fortresses, which because of the ground they cover and varied structuring pose different requirements as to further use, individual fortresses are manageable and because of their size and the space they occupy impose different requirements as to compact use and the associated management structures. Two geographically relatively close lying fortresses will make this clear. The one fortress — Königstein in Saxony, Federal Republic of Germany and Srebrna Gora (Silberberg) in Silesia, Poland, as the second fortress, display two quite different initial positions, when it comes to discussing their potential uses. The former was in permanent use and also withstood the period of the former East Germany relatively unscathed, the lack of building maintenance during this period apart. The latter was not only abandoned by the military but also suffered from decades of non-use following the Second World War, with all the resulting consequences.

### 2.1 *Königstein, Saxony*

The Fortress of Königstein can serve as an example of all-year-round tourism and event use and additionally as an example of successful conversion to a businesslike, profitable asset following the collapse of the Democratic Republic. The “Königstein model” provides for structural maintenance of the property by the Land of Saxony and its operation by a private company (GmbH), supported by mixed use of the work. Such mixed use includes both active and passive activities, tourism and the organisation of events. A target plan was issued in June 2006 on instructions from the Free State of Saxony, relating to the further use of Fortress Königstein. Under the title “Fortress Königstein target plan”, this study was prepared as at September 2006 by the general manageress of Fortress Königstein gGmbH, the Dresden Centre of the State Stately Homes, Castles and Gardens of Saxony and the Dresden Centre and Dresden 1 Branch of the Saxon State Property and Building Management establishment, and compiled and drawn up by the Dresden Architects h.e.i.z.Haus architektur.stadtplanung. The Study is based on 15 years’ experience in dealing with the problems of using historic Fortress structures; in effect, it

amounts to a specimen implementation that could also point the way for works of similar construction and similar size. It will therefore repay further examination at this point. The following terms of reference serve as a useful introduction to the study.

Fortress Königstein is a unique ensemble of monumental buildings with nearly 800 years of history. Apart from architectural witness from the period of the royal Bohemian castle (13<sup>th</sup>/ 14<sup>th</sup> century) with high art history value, we can see here, above all, the development of the art of fortification from the late 16th to the end of the 19<sup>th</sup> century.

Fortress Königstein is run by a charitable trust (see above), whose task is the administration, care, maintenance and use of the structural unit. This includes accessibility to the Fortress by the public, the running of a museum including the presentation of exhibits, and finally the scientific working up and dissemination of the history of the Fortress and its museum collections.

The entire work now forms an open air museum covering more than ten hectares. Its exhibits are above all the sixty or so well maintained individual aboveground and underground structures covering various stylistic epochs from the romanesque to the military architecture of the German empire and the outworks such as e.g. the Linden round bastion and the Commandant’s garden. Supplemented with interior exhibits and explanatory notices, the buildings and works also have something to tell of their earlier use, from the route of the garrison formerly accommodated here, State prisoners, Court guests and the function of the Fortress as an annex for housing the Saxon state treasure. This fulfils a basic need for Fortress visitors, who above all want to know how the occupants lived and worked in Fortress Königstein in the past. With the deepest well in Saxony, whose historic lifting mechanism can again be seen working after many years, the oldest Saxon garrison church, in which services and concerts regularly take place, the baroque Friedrichsburg with its “machinery board” and a magnificent view in all directions, Fortress Königstein additionally offers unique, valuable tourist features that each year attract more than 500,000 visitors — including many travel groups.

The hitherto successful plan for its use will be further implemented and updated on these lines. In particular, this will include the following. Although numerous individual structures have already been restored and rendered viable, the need for improvement is still very great. The objective should be to repair the entire Fortress and all its structures, open space and other historic facilities in such a way that their historic character is maintained at all times and modern elements required

for its use are tastefully applied and integrated. A positive example of this worth stressing is the garrison church. The more that buildings are made accessible to the public, the more that external works are reconstructed or reshaped on the basis of historic sources, the greater the demonstrative value of the Fortress as a whole, and the more visitors can be recruited, and they will therefore be the more willing to pay an appropriate price for it.

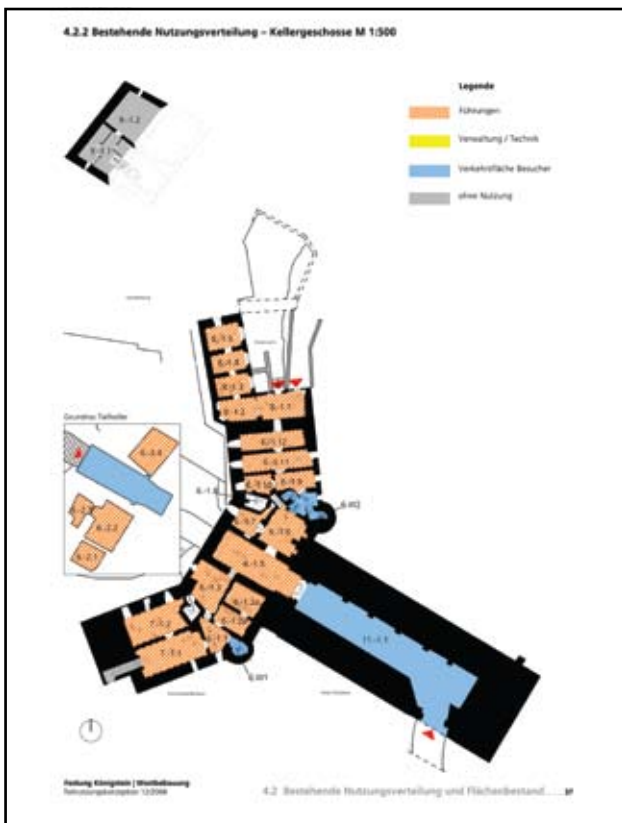


**Fig. 122:** Königstein/Saxony. Even a fortress lying on a flat-topped mountain like Königstein, need not present itself fully to the observer from outside. Unfortunately, the lower external works cannot be seen from below. As the surrounding land is privately owned, prospects of improving the appearance of the fortress in the light of its earlier function (open field of fire) are altogether few.



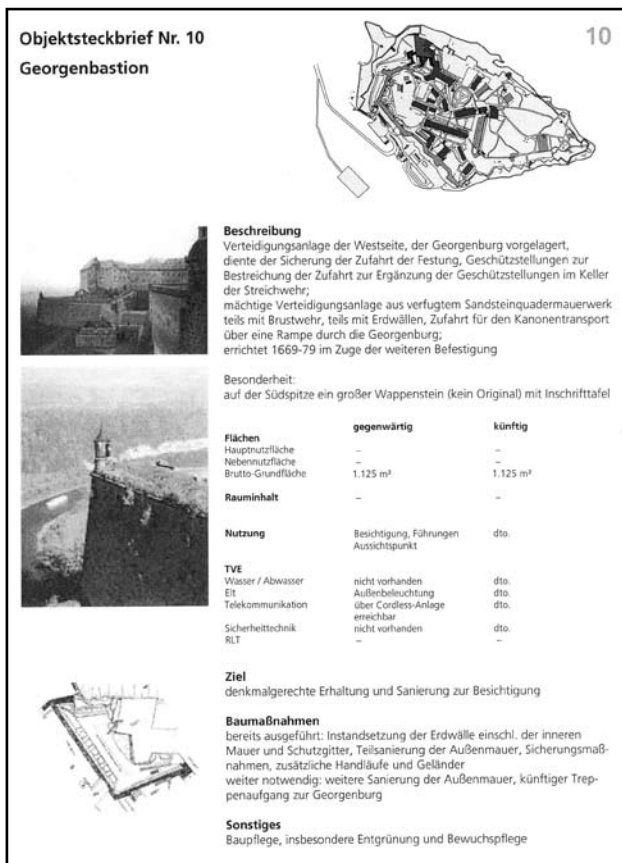
**Figs: 123—124:** Königstein/Saxony. The well-house built in 1735—37 has been renovated and forms a focal point within the fortress lands. A modern stair as an emergency exit for the top floors has been unobtrusively and harmoniously added to the structural ensemble at the rear (“Building on the existing”!).





**Fig. 125—127: Königstein/Saxony.** Graphic visualisations of various user areas and of the property as a whole, and also of individual buildings or parts of buildings, dated 2006. The various functional areas are highlighted in colour and because of its clarity substantially lighten the task of fortress organisation management.





**Fig. 128: Königstein/Saxony.**

A “property specification” as for the George Bastion in this case describes and briefly assesses the structure, sets out its spatial features and potential uses and lists objectives for future consideration and the possible extent of necessary structural measures.

Since the proceeds from entrance charges (which in each case are collected for the entire Fortress once only) constitute the most important source of income and the price-performance ratio must remain reasonable, continued improvement of the entire complex is of essential importance to the Society. Apart from extending the range of buildings to be visited, the interior exhibits and the outer installations (see Partial use concept “External Works”), the Society is pursuing its aim of presenting the history of the site from its Mediaeval beginnings to the formation of the Museum in 1955 in a major permanent exhibition in the Gatehouse/Flanker area. The interior exhibits can always provide information only on individual aspects of the Fortress’

history. The major permanent exhibition will in future offer a general historical overview, highlight developments and, above all, deal with events and personalities that can at present be introduced only peripherally, if at all. This consequently offers visitors a substantial boost in museum quality which will also be reflected in the entrance charge and will consequently be an important economic factor. A virtually indispensable component of the exhibition programme for Fortress Königstein are the two military history exhibits in the Old and New Armouries set up by the German Army’s military History Museum in Dresden. Since the New Armoury immediately adjoins the Gatehouse and is physically connected to it, the exhibition in the New Armoury will be included in visitors’ tours by a new permanent display concerning the history of the Fortress.

The majority of visitors to Fortress Königstein—assessed at over 50%—come from Saxony and the adjoining Federal States. They use Fortress Königstein as an excursion destination at weekends and on public holidays. To retain the loyalty of this public, special visiting exhibitions are required each year, by means of which attention can repeatedly be drawn to the Fortress and offer an inducement to visit it again. The structural prerequisites for quality special exhibitions of high quality, as in the Magdalenenburg, for example, must be created accordingly.

Events of the most varied kinds, especially those in the open air, must attract audiences from the wider environment. This will also require structural improvements (e.g. a stage suited to the natural situation and temporarily roofed, and media connections for open space at or in the neighbouring buildings). Since evening events are becoming ever more popular, an appropriate external lighting plan must be introduced.

Short-term lets have been developed as an important economic factor. Weddings, private and business functions, meetings and presentations fit within the historic ambience. In this connection, the internal improvement of the peace-time sick-bay, the outside of which has already been refurbished, as an accommodation facility is extremely desirable. The management sees further opportunities here for value added.



**Fig. 129:** Königstein/Saxony. Contrary to the position with many fortresses, the “flesh” (pointed redan) has been cleared of all trees and bushes and allows the observer an unhindered view of the original shape and structure. The well cared for exterior of the redan as a whole is impressive.



**Fig. 130:** Königstein/Saxony. Models form an important component for assessing the special features of the site. A three dimensional presentation opens up contexts for the beholder that a layman cannot easily infer from the planning documents. The model shown here is in the Fortress gatehouse.





**Fig. 131—133: Königstein/Saxony.** The stylish ambience of the Friedrichsburg high above the Elbe with a wide view of “Saxon Switzerland” is popular with wedding parties. The extended casemates offer opportunities for meetings and catering.

The traffic parked and passing at the foot of the Fortress is an important component of the infrastructure and of visitor services for Fortress Königstein. It urgently requires reorganisation and reshaping. With this in view, the study includes a precise description of existing and potential user plans which form a point of departure for meeting further structural requirements such as maintenance, repairs, conversions and the like.

The chapter on “Use” covers three subsidiary themes:

- the present and future use of the buildings and external facilities
- necessary partial use plans and
- the mutual relationship of buildings and external facilities

The present and future position regarding use is listed in a table and is further graphically supported by a site plan. The site plan includes a listing and description of necessary subsidiary use plans. The main and ancillary routes for visitors, meeting areas, emergency exits and vehicle traffic govern the relationship of the buildings and external facilities to each other.

The chapter on “Structural Interests” lists complete and partly completed and projected building measures in table form (1) and sets out a list of priorities (2) for the planned building measures, with costs. The “Building Specification” (3) devotes a page to the component in question, with appropriate photo, section from the site plan, and marking on the plan, with a description and short indication of the time required for its construction or creation. It identifies areas for present and future use and describes the user function, deals with the technical utilities such as water, waste water, power supply, gas, heating, ambient air, telecommunications and safety technology. The specification is rounded off with a description of the objectives such as e.g. maintenance as a monument, a description of the construction measures and a reference to other points. The utility measures already briefly stated in the building specification are described in detail in a special chapter (4) and in diagram form, distinguishing between electrics, drinking water, waste water, rain water, information, building control and hazards reporting technology (bell current), gas/heating and external lighting.

The study as a whole will be rounded off with annexes containing a monuments-based outline target plan, the layout plan, references to sources, an overview of building numbers, the overview plan in a scale of 1:1000 and the “Public Development” site plan in a scale of 1:2000.

The operator or user of the Fortress facility will thereby obtain not only a reliable compendium as to the present situation and future planning but will also have investment and financial plans at his disposal. The latter in particular correspond to the income anticipated or to be obtained from running the Fortress, but also from funds made available by the public authorities such as e.g. the Land of Saxony or other possible donors.

As part of the current EU “Baltic Fortresses Culture and Tourism Route”, a seminar was held in April 2006 for the participating project and guest partners at Fortress Königstein entitled “Utilisation of Fortresses”. The purpose of this seminar was, on the one hand, to get to know and understand a properly used fortress installation and how even complex components (casements, posterns, gun lifts) can optimally be put to new use. Secondly, the seminar was aimed at opening an opportunity for participants to embark on comparative studies with their own fortress installations, by checking whether a user concept developed at Fortress Königstein for a particular component might not be transferred and implemented for a similar or analogous component at a fortress cooperating in the project. A three-part questionnaire developed especially for the seminar provided a compendium of information for this purpose with regard to the external works, environment, nature and buildings, ditches and ramparts, overall impression, the use of various buildings relevant to tourism, and the use of underground installations and former battle stations such as galleries, casemates, magazines and the like. Being practically employed on applying and analysing the questionnaire, the seminar participants very quickly became aware where deficits lay in their own areas and—far more important—where means should be sought for eliminating these deficits in the medium and long term.

## **2.2 *Srebrna Gora / Silberberg: An example of incipient measures with ancillary uses***

Unlike the Saxon Fortress Königstein, the neighbouring Fortress Silberberg is only taking the first step towards new, prospective tourist and cultural development.

The former Prussian Fortress of Silberberg, now Srebrna Gora, lies in Silesia at a place where traffic using a pass in the direction of the Glatz Basin could be controlled and where today a panorama is offered towards the Sudetenland, especially the Eulen Range and the Wartha Mountains. The Fortress consists of a keep and several forts and may be regarded as one of present-day Poland’s most interesting fortress complexes. Built in 1765



to 1777 by Frederic the Great, it fulfilled its function as a military facility for nearly 100 years at a strategically important place close to the Silesian-Bohemian border. It was abandoned in 1860 and partly demolished. During the period between the Two World Wars, safeguarding and restoration measures were begun on the site from 1935, but were not continued after the Second World War. Over sixty years following the end of the War, the

Fortress appeared abandoned and overgrown. Despite its sorry fate following the Second World War, the Fortress seems ready for revival. Work on cutting the keep free began in 2004. Entirely neglected Fortress walls emerged, robbed of their cladding. These activities were facilitated by the fact that Fortress Silberberg is one of 26 monuments on the list of Polish monuments of national importance. Two initial studies and outline designs



**Fig. 134—136:** Silberberg/Silesia. Frederick the Great's former barrier fortress, long neglected after the Second World War is now being restored bit by Poland as a monument of international importance. The structural security problems are enormous; nonetheless, thousands of visitors have found their way to the fortress following the opening of the work. Because of its position, architecture and history, Fortress Silberberg should develop into one of Silesia's major tourist attractions and also acquire particular importance for the "three-country corner" of Poland, the Czech Republic and Germany.

from 2005, commissioned by the Polish Ministry of Culture in Warsaw and produced by specialists from Wrocław and Warsaw served as a basis for the initial rescue and safeguarding measures. The Fortress occupies a dominant position in the landscape and could one day serve as a tourist attraction in an otherwise under-endowed region.

A specialist meeting of Polish architects, city planners and fortress experts brought together by the Municipality of Srebrna Góra was organised on 22 and 23 June 2006. After a specialised scientific meeting on the historical reclamation of fortification had already been held in November 2005, this new meeting further considered problems with renovation, restoration and use and the creation of a Polish educational park. The meeting ended with the experts visiting the central area of the fortress, especially the keep.

The Polish Ministry of Culture alone provided EURO 150,000 for 2006 from the Polish national budget and a further EURO 40,000 from the Norwegian Fund, altogether some one million Polish Zlotys, to restore service roads, bridges and posterns and to refurbish the gates. Further funding plans will be developed and drawn up in the coming years, in anticipation of EU participation. A team of planners and architects is drawing up detailed plans on the spot for the rehabilitation of individual focal points, looking to Germany for technical know-how.

This meeting also produced new knowledge and support on the use of a work of this kind. Societies for so-called “educational parks” are at present being set up in Poland, with the task of financially and structurally maintaining large-scale, major cultural facilities, which may be taken to include fortresses. An educational park of this kind has also been created for Silberberg, although efforts are now still on the drawing board. Examples from all over Poland such as Gdansk, Klodzko or the Lublin area bordering on White Russia (Terespól-Brest) nonetheless show that this development is proceeding in the right direction.

Remediation of the Silberberg is now regarded by planners and others concerned with the structure as a European task, extending into the Czech Republic, which must be brought to fruition. Nearly five hours

by car from Berlin on a well constructed motorway to Wrocław thoroughly renovated in the past five years, the visually charming countryside is also a recreational tourist paradise of a special kind, which can still be enjoyed to the full. The next few years will show how this will progress and whether the project can and will develop into a Polish-German cooperative venture. However, activities are at present focussed on recurring the existing structure and making it secure. Its attractiveness as an outstanding cultural monument and its acceptance for tourism will therefore help to decide what long-term uses can be established in the individual areas of the Fortress. This also depends on what the future has in store for the hamlet of Silberberg with its barracks at the foot of the Fortress. The architecture and village vernacular, which differs from the Silesian countryside contributes not insubstantially to combining the fortress with the village into a visual ensemble, whose reciprocal effects should not be left out of account as an accompanying infrastructure, so to speak, for future uses.

### **3 Individual Fortress and Garrison buildings: the example of Ingolstadt, Germany**

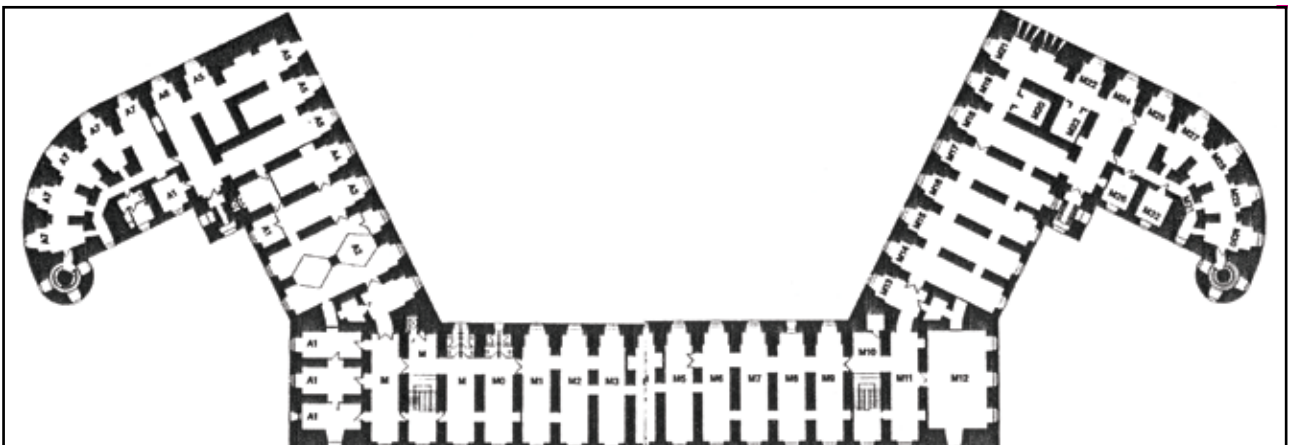
As in the case of Coblenz (see above), Ingolstadt is a former Fortress city lying on a great river, which played a special role in the 19<sup>th</sup> century and was expanded into a major fortress. But unlike Coblenz, where an American general supported the ongoing preservation of Fortress Ehrenbreitstein after the First World War, the Americans after the Second World War showed little understanding of military architectural history and as from 1945 with one exception simply blew up all Ingolstadt's outer forts, even after these had lost any vestige of military usefulness. Nonetheless, Ingolstadt can be mentioned as Germany's only city that has carried out outstanding remedial work on its old fortifications. The classic components have a value in architectural and cultural history that is uniformly recognised today. However, this did not go without saying. True, the Bavarian Monuments Protection Act of 01.10.1973 officially designated the fortress works as a monument, but this in no way led to political or administrative acceptance, especially within

the municipal administration itself. Eight months previously, it was decided only after heated debate on the City Council to retain the Hepp Cavalier and put it to new use. A supporting factor for this decision may have been the fact that in 1960 the Sprei Cavalier was pulled down at enormous expense, so that that people are now aware how expensive it is “to want an empty space instead of a fortification” (Christoph Hackelsberger, 1982).

### 3.1 *The Hepp Cavalier*

The Hepp Cavalier was in a fully ruinous state at the time it was decided to put it to new use. Before and during the Second World War, the structure served the Ingolstadt defence authorities as an office. After the War, emergency accommodation was set up. The room layout did not favour residential allocation; poor heating, ill-fitting windows, a lack of mainte-

nance in and on the building—especially the roof, led to increasing neglect, which gave it an overall neglected appearance and resulted in plans to pull it down rather than maintain and reuse it. Nonetheless, consideration had been given over a lengthy period of time as to what could be done with the building and to what use it might be put. In due course, it was recognised that the building would provide ideal accommodation for the itinerant city archive and City Museum. The structural situation permitted ideal working conditions to be planned and all technical requirements to be built in, such as supply and disposal utilities, lifts, safety technology, mobile filing shelves, photo laboratory and the necessary restoration workshops. An additional benefit was the room temperature, influenced by the thickness of the walls, which proved a natural climatic condition for the intended purpose — especially as an archive store, the scientific library and public area.



**Fig. 137—139:** Ingolstadt. Cavalier Hepp. former significant fortification within the Ingolstadt enceinte Ingolstadt. Cavalier Hepp has been converted to a City museum. Despite the small dimension of its casemates, the structure’s display space also offers an opportunity for coffee, as in this case for participants from the British Fortress Study Group who travelled here for a visit in May 1999.



Before actual remedial work was begun, the building was cleared of all superfluous and disfiguring adjuncts and returned to its original structural condition. This included exposing the vaulting and displaying it as an architectural structure. The architect entrusted with the plans recognised that the building required no modernist additions: he aimed to reconcile the needs of the future users with the features of the structure. The new additions were to emphasise the alignments of the rooms, provide a view of the landscape outside and thereby subordinate the building to the existing architecture as imperceptively as possible. Architectural or structural details such as e.g. existing niches were all included into the exhibition concept.

Externally, the roof and frontage were restored. The roof frame had begun to rot and parts had become brittle at the turn of the 20<sup>th</sup> century, but even so 60% of the original structural timber could be reused. To comply with the fire protection regulations, solid fire walls were planned for the roof area. The massive traditional reticulated tracery, including the former natural stone chimney caps was restored in conjunction with the roof renovation. The frontage had been damaged through hostilities in the last days of the Second World War. With the removal of the metal sheathing in the post-war period, rainwater could enter the eaves along the frontage and soak the entire brickwork through and through. Frost had caused large areas of the tiled façade to spall. Finding tiling materials matching

the façade proved difficult and time-consuming, so that eventually an appropriate industrially produced brick was used. Damaged tiles were cut out and replacement bricks skilfully inserted by hand. The entire frontage was cleaned with high pressure steam jets before further pointing. Artificial stone was used to repair the natural stone.

The building received completely new technology, including a passenger lift. The vaulting had to be repaired at two points purely for structural reasons. The vaulting and wall surfaces were plastered, new parts being used in such a way that the old forms remained recognisable and visible.

The Building Office expressed its satisfaction in the final documentation that “the restoration of this magnificent structure has set a memorable, futuristic pattern for the further reinstatement of other of Ingolstadt’s fortifications”. At the same time, it found that craftsmen could then still be found who were able to execute the work properly in a way now absent in industrialised construction and therefore also contributed to job retention.

Cavalier Hepp is a good example of how a former fortification can with political reticence and appropriate understanding of the techniques and materials be given a new lease of life and how a new function can be implemented for medium to long-term use.



**Fig. 140:** Ingolstadt. Tilly Redoubt. This structure is one of the finest of classical fortified works in the Federal Republic of Germany. The Redoubt now houses the collections of the Bavarian Army Museum and is one of the major attractions of the City of Ingolstadt.



### 3.2 *Bridgehead on the right of the Danube: The Tilly Redoubt*

The foundation stone for the bridgehead fortification on the right bank of the Danube was laid in 1828; the bridgehead took some 15 years to build. It was intended to secure the right bank of the Danube and the bridge to the City. The core of the installation is the Tilly Redoubt, flanked on either side by the identical fortified towers Triva and Bauer. Toward the field to the south, the bridgehead is protected by a rampart with casemates, strengthened at the front by two external ditches. Towards the river, it was defended only lightly, by a four-metre-high brick wall. The Tilly Redoubt consists of a two-storey, semi-circular main building (outer radius 73 metres) facing the south - towards the field - with 34 artillery casemates each and two single-storey flanking batteries with 6 casemates each projecting for 44 metres laterally. A tower-type gatehouse forms the gorge terminal of the fortification with a musketry wall. For flanking fire, the wings of the main building (traditor batteries) each project beyond the gorge wall. Building work was commenced in 1828 and completed in 1841. The fort is named after general Johann Tzerklas, Duke of Tilly (1559—1632). The Tilly Redoubt was intended as a safe haven for the king and as centre of the kingdom in times of greatest risk. However, the Fort never had to prove its worth in a war. Superseded by military technology and consequently rendered useless as a fortification, the Redoubt was converted to barracks at the end of the 19<sup>th</sup> century. Emergency dwellings and businesses were housed in the fortification following the Second World War.

Encouraged by its experience in renovating Cavalier Hepp (see above), the Free State of Bavaria as owner of the work decided to renovate the Tilly Redoubt completely, the task taking more than 14 years. Remedial work began in 1975 (measures to safeguard the fabric having been introduced a year earlier) and ended with its handing over as a museum in 1989; the museum was opened in May 1992. The cost at the time amounted to some DM 16 million, in present terms Euro 8 Million; the converted space covers 56,400 m<sup>3</sup>; with a net plan size of 4,850 m<sup>2</sup>, the main useful area is 3.000 m<sup>2</sup>.

The displays of the Bavarian Army Museum as a new user became an optimum attraction on nearly three thousand square metres of exhibition space and the thick walls also ensured ideal climatic conditions. Despite the rows of identical rooms, a corridor through the casemates provides an unforgettable impression with changing lighting effects, due to the semi-circular ground plan and in addition, to the contrast between the sparingly lighted ground floor and the upper floor with its generous windows towards the yard. In line with the museum theme and the exhibition concept, compromises had to be made in the reciprocal effects between architecture and the constructive use of space.

The remedial work was recorded by the Bavarian State Building administration and introduced to the public in 1992 by two articles in the journal "bau intern". The writer of the articles, on the text of which the above summary is based, come to the conclusion that "... the work on the ancient monument [was] fascinating and always full of surprises. As familiarity increased, respect mounted for the Fortress masons and their highly developed handicrafts. This is especially evident in the quality of the brickwork and ashlar, which is executed with inimitable precision. The declared intention of the royal owner can be seen everywhere, that the fortification should create a memorial providing a yardstick of contemporary architecture and a national example to masons and bricklayers ..."

Today, the Redoubt is one of Ingolstadt architectural jewels and in addition occupies a leading position amongst European military museums. It not only attracts thousands of visitors each year but is also a centre for science and research. Despite the debate regarding its possible demolition on account of its neglected exterior it succeeded through hard fought battles and arguments in maintaining its survival and at the same time found a new use and with the renovation of the towers beside it enhanced a group of historic buildings, which is both attractive and charming in city planning terms. The Tilly Redoubt provides a lesson that major fortress buildings can also be put to meaningful use, even if the process can take longer than a decade. It is an example of perseverance rewarded.



*Fig. 141—144: Ingolstadt. Tilly Redoubt. Impressions from the bridgehead area. Tilly Redoubt: entrance gatehouse and frontage of the central structure. Above the cornice, the profile of the rampart as a stone finish. The access gate to the right and parade ground below.*



*Fig. 145—146: Ingolstadt. Tilly Redoubt. During the plastering work, particular care was taken with technical details in the casemates, unlike the case at Fortress Ehrenbreitstein. Here, all the recesses for anchoring the wooden beams, which were to serve to safeguard the casemates and separate them from each other in wartime, are still existent.*

### 3.3 Armoury

Apart from the purely defensive buildings—of the outer works only one fort remains—there were a series of other buildings that were required for logistic support and to maintain fortress operations. These included in particular the barracks but also the magazine, food stores and arsenals. The Ingolstadt Arsenal owes its survival to the Bavarian Monuments Protection Acts of 1973. Placed under the aegis of the Act, its survival was officially endorsed. This building, too, shows signs of wear that would sooner have resulted in its demolition than its preservation. The fact that the building was not demolished in spite of its neglect during the post-war years is due not least to the robust nature of the fabric. On its being listed, the search began for appropriate use, which ended with the decision to convert the Arsenal into an industrial training school.

The surface area of the existing building was insufficient to accommodate the anticipated programme and structural additions were required, with new parts being added to the building. Nonetheless, the Arsenal was considered as a viable structural resource, because the location was suitable and offered a series of advantages despite the high cost of planning and funding, which lay above all in maintaining, renovating and using a listed building of importance of the City in which the industrial training school could be housed at a location within the City that ideally suited the school and offered a substantial boost to the development of the northern quarter.

By combining a historic monument with use as a modern training centre, the City was consequently able to create a place for craft education of importance both to itself and to its region.

## Recommended action

Fortresses—of whatever design and of whatever epoch—are undisputedly ancient monuments. They were State buildings erected by a political power to protect or control its territory and moreover, were a mirror image of prevailing social conditions. To preserve them wherever possible is now also a social duty. New uses facilitate and extend the room for action towards their preservation.

However, from conservation aspects, new use also requires certain rules to be observed that the well-known Polish conservator Andrzej Tomaszewski impressively laid down in his 1987 paper “Building history - Building research - Conservation”. The structural monument expects and requires respect for its history and its architectural and structural qualities: these must be researched and investigated before dealing with more far-reaching questions as to new or different types of use. Only complete knowledge of the structure will allow a comprehensive answer to the questions of preservation or alteration.

Experience in dealing with fortified works shows that this approach is largely ignored. Generally speaking, plans are drawn up and building proceeds without appropriate research and intensive conservatory investigation beforehand. The fabric of the fortress serves architects and users as an experimental area to which they can apply their pet ideas. Masonry details of whole casemates are plastered over, as happened at Fortress Ehrenbreitstein, so that a visitor can no longer see or appreciate this space with its original expressive force. The carefully inserted recessed reveals, intended to hold wooden beams to partition the casemates off from each other in the event of attack, disappears as an important structural detail from which the function and task of a casemate could be read. The converse may also be found: original plaster in powder magazines is chipped away, as happened at Fortress Königstein because the appearance of the fair-faced brickwork happens to fall in with the prevailing architectural fashion, pandering to attitudes of the moment and expressing a fleeting view.

There are general rules for dealing with historic structural fabric that also fit fortresses and are applicable to them. However, there are no rules as to how a fortress can be usefully and successfully employed in the longer term. This must be considered on the merits of each case, which must be investigated and dealt with in conjunction with all those concerned with construction, planning and use.

However, facts from the past and the results after examining the available documentation allow some inferences and conclusions to be drawn that should be observed when developing tolerable user concepts for fortress works.

## Political will

Generally speaking, surviving fortress works are in municipal or State ownership. Few cases have so far become known where fortifications have passed exclusively into private hands. There are many reasons for this, not least the deterrent cost of demolition or—because demolition is not possible—the anticipated follow-on costs. Consequently, the former State or municipal owners appear to suffer from the delusion that the sale of a fortress will solve all of their problems. The private investor finds out what kind of property he has acquired only after intensive examination of the fortress structure and discovers very quickly that none of his investment is likely to prove profitable in the near future from the economic aspects. The consequence is that the fortification continues to lie unused, released from the protection of State or municipal maintenance obligations, and begins to disintegrate. Consequently at the outset of any discussion as to use, the question must be clarified whether anything at all can be and should be done—a political decision must be adopted, based on civic attitudes, and put into practice through the authorities over appropriate periods of time. These periods are lengthy: in Coblenz battle has raged for more than 25 years regarding the maintenance of the city’s own fortifications, the discussions regarding the food store in Mainz went on for more than 20 years, and since Reunification in 1989, decisions



as to the use and conversion of most of the fortifications in Magdeburg are still awaited. In Ingolstadt, too, repairs must be approved for a period of more than 30 years, and they will even then not be complete. At Germersheim am Rhein, repairs on individual fortifications have been in progress since 1972 costing a total, recently converted, of Euro 25 million. Work is continuing.

Clearly, the discussion regarding new concepts for using fortifications and their implementation is bound to continue for more than a generation. Political intention-forming and decision-taking are therefore of key importance, hardly a matter, either, for party political debate, since these political decisions will decide the future of the community, city, economic development, art and culture of those taking them. They are, moreover, decisions affecting each individual citizen since past experience has also shown that citizens are very rapidly prepared to act for their cultural heritage and see to its preservation, use and care. In Coblenz, there are five citizen associations, in Cologne too and in Magdeburg an association has been formed only recently. More often than not, these associations produce useful proposals for re-use or further use, because each individual is closer to the structure and is intensively identified with it. Aware of this situation, an association has been formed in Kaunas as part of the EU "Baltic Culture and Tourism Route Fortifications" project, comprising representatives of the city administration, science and local residents, and is devoting itself to the future of the major fortress of Kaunas.

### **Implementation of political will**

Once the political decision has been taken and the road to be travelled is apparent, there are various opportunities for its implementation which, however, ultimately depend on the condition of the buildings and works, but also on the possibilities of the planning supervising architect. The following points must be observed without fail here and also worked to as far as possible.

### **1. Description of the works and structures with an analysis of their condition**

As already pointed out by Tomaszewski, a description and analysis of the existing structural fabric and space are an indispensable prerequisite for any further planning and action. When considering fortified works, it will very soon become apparent that the works formerly covered a different physical area than is visible today. Consequently, on intensive consideration of these works, context will also emerge that is not apparent at first sight. This fact alone can already substantially affect future use from the town planning aspect that, under certain circumstances, will incorporate the environment more or less intensively into a new concept. The precise description of the individual component, possibly requiring new status plans to be drawn up, will indicate what kind of site is concerned with and what space is actually available for future use - indispensable components when drawing up designs and bills of quantities. As part of this status survey, not only the fabric above ground must be taken into account but recourse must also be made to the archaeological register and this may need to be revised. A fortress structure was initially an underground one, and even today, fortified cities have the most pressing problems with underground works when encountering mineshafts, forgotten casemates, scarps and counter-scarps or demolished bastion walls which in turn not infrequently and surprisingly reveal new spatial elements such as internal vaulting, galleries or posterns. Questions affecting the cultural landscape must also be considered, especially in the case of forts and intermediate works in the outlying area, with their not insubstantial glacis, extending into the surrounding landscape and into the associated villages and residential areas.

## 2. Development of user programmes

User programmes should, when planning future use, be incorporated into a target plan. This target plan will reflect town planning considerations regarding the preparation of plans for area use or detailed development. User programmes are developed in accordance with the opportunities offered by existing buildings and space (and in the course of this refer back to the status survey, see above), also having regard to the social and spatial environment and, finally, tourist demand (if this already exists or must still be initiated). However, the wishes of a potential investor or future user already identified at this stage of planning will appreciably influence the development of user programmes. The user programme must be uniformly coordinated and brought into line with existing laws and regulations. Not infrequently, poor coordination with precisely these legal aspects holds up political decision-taking (see above), as we can at present see and study at Fort Hahneberg in Spandau.

## 3. Development of financing and management concepts

Financing and management concepts should generally be developed in parallel with the development of user programmes. The financing plan will, on the one hand, cover the necessary financial expenditure on the actual conversion measures required for a new use, but also a financial appreciation of future building maintenance once the part of the fortress has been repaired and reused. The management concept depends on final use. If parts of a fortress are in private use, it is up to the owner to take suitable steps for maintaining his property. If parts of the fortress are in public use, e.g. for tourist development and marketing, in what form the plans should be pursued must be decided. An example is Fortress Königstein in Saxony: the building fabric of the State property is the responsibility of the Free State of Saxony while a charitable body has been set up for implementing marketing strategy. The development of financial and marketing strategies also depends ultimately on the merits of each case, the size of the work, the ownership position and plans for future use.

## 4. Planning implementation

The status survey and analysis (see above) serve not only political decision-taking on the drafting of user plans but also form the general basis - especially including a detailed large-scale photograph of the structure - for all further planning. On this basis, the desired programmes are converted to complete structures. The planning stage already commences with the drawing up of the land use plan: is it meaningful and necessary that existing, recognised parts of a fortress presumed to lie under the site are already shown on the land use plan as special areas or structures? The same applies to the preparation of the development plan: here, too, to what extent fortifications will be shown and whether it is already possible to include potential uses in accordance with the development plan rules will need discussing. In this connection, compatibility checks are especially important in Germany. They must be made in accordance with the existing fabric and conservation requirements and proved with appropriate decisions. Also worth mentioning are the possibilities and permissibilities with regard to environmental checks that would apply if the environmental capability verification (UVP) and strategic environmental verification (SUP) already existed - working with these instruments is a question of observation and consists of legally established, systematic verification procedures by means of which the effects on the environment of major planning projects are examined and evaluated.

The structural detail plan will convert the designs (Scale 1 : 100) into user concepts for planning purposes and fit them into the existing fabric, while the working plans (Scale 1 : 50 and over) will then be used for preparing building plans for the site, to provide the contractor with a reliable instrument for calling for tenders and site management. The building log to be kept up to date while works are in progress will not only indicate advancement with the works but also describe all special features and unexpected events - an indispensable instrument, also legally prescribed in Germany, in order to keep tabs on a project, especially when building on an existing site.

## 5. Structural implementation through maintenance, repair and improvement measures

Unlike a major, comprehensive improvement measure as described above, the gradual reinstatement of parts of a fortress is more usual. However, here, too, the above rules will apply: without a basic survey of the existing status and the reconciliation of conservation measures, further planning will hardly be possible. Here, again, experience has shown that structural implementation will prove far less expensive if a thorough preview and detailed user plan are produced than if a start is made with “immediate measures” for the structure. This is tried time and again - the problems arise at the point when the existing fabric produces unexpected discoveries and further information: it may be that the structure is on the point of collapse or that materials are no longer serviceable and weather effects, infestation or fouling have broken the seal, or whether the unexpected penetration of water has nonetheless rendered a site a first-class hazard. In Germany, at least, supervision by the building authority also applies to building on an existing site and ensures that building specifications have been approved and all craft works have been mutually reconciled.

## 6. Planning and building on an existing site

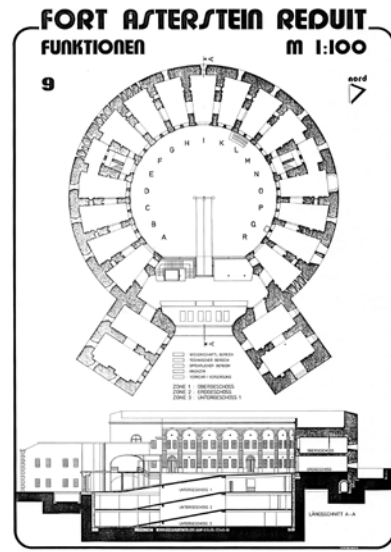
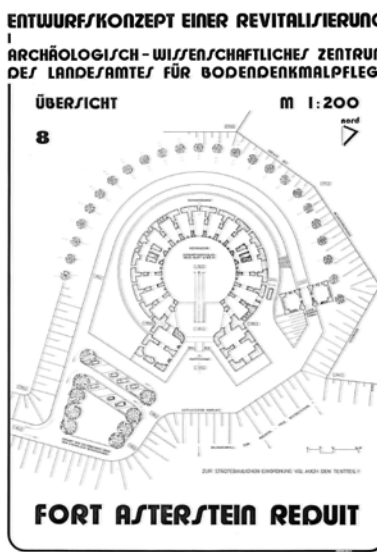
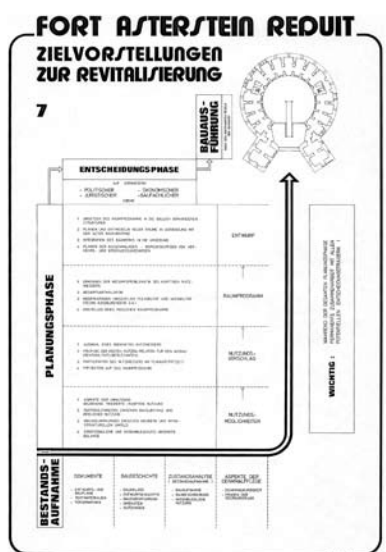
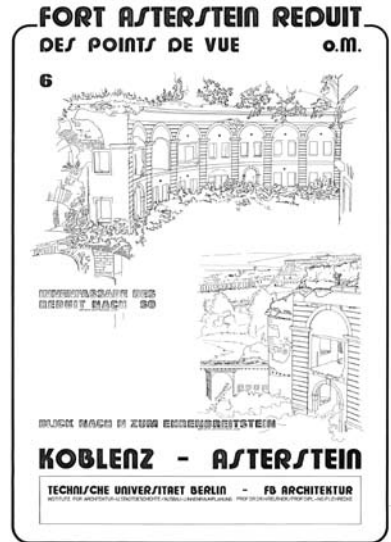
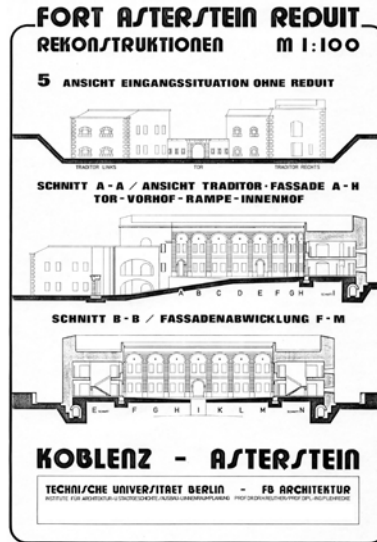
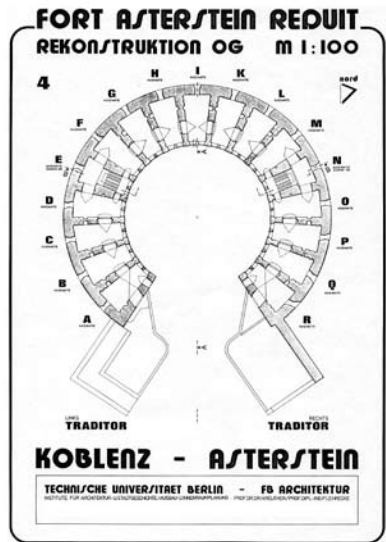
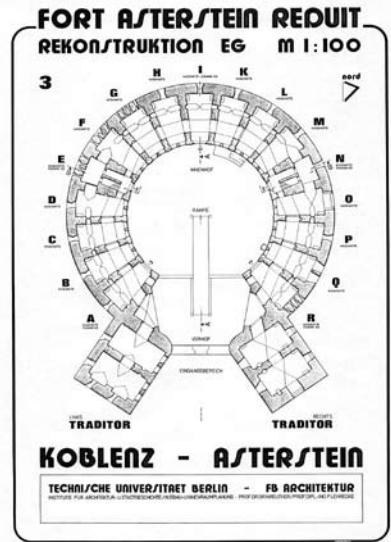
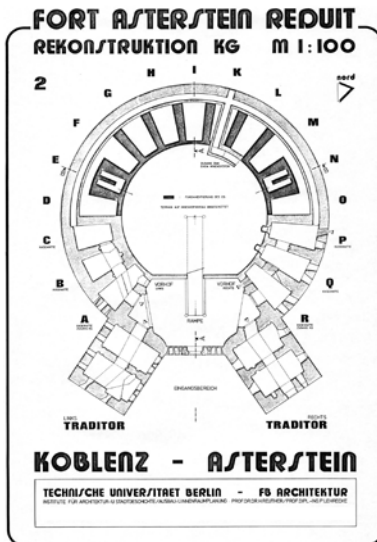
Plans where desired user programmes have been successfully accommodated in existing buildings may be regarded as the ideal case. This is not always possible. New structures are then required which must be set up and operated in conjunction with the existing fabric of the building - in our case the existing fortress structure. Accommodating architectural designs in existing work is not a simple task. Firstly, account must be taken of the Owner's wishes, secondly, best use must be made of the new building fabric in addition to that existing without being subordinated to it or dominating it, either.

Architectural students at the Technical University of Warsaw attend the so-called Summer Academy at the Giżycko Boyen / Lötzen fortress complex once a year on the Mazurian Lakes in order not only to acquire building survey skills but also to practise designing new architecture in conjunction with historic fabric. A recent example is the structural ensemble on the Kirchberg-Plateau / Luxembourg where an attempt has been made, on the one hand, to reinstate the former Fort Thüngen as a Fortress museum and, on the other, to erect a new building for the “Musée d'Art Moderne Grand-Duc Jean“ in its immediate proximity. Both have proved outstandingly successful, but not without years of battling for symbiosis.

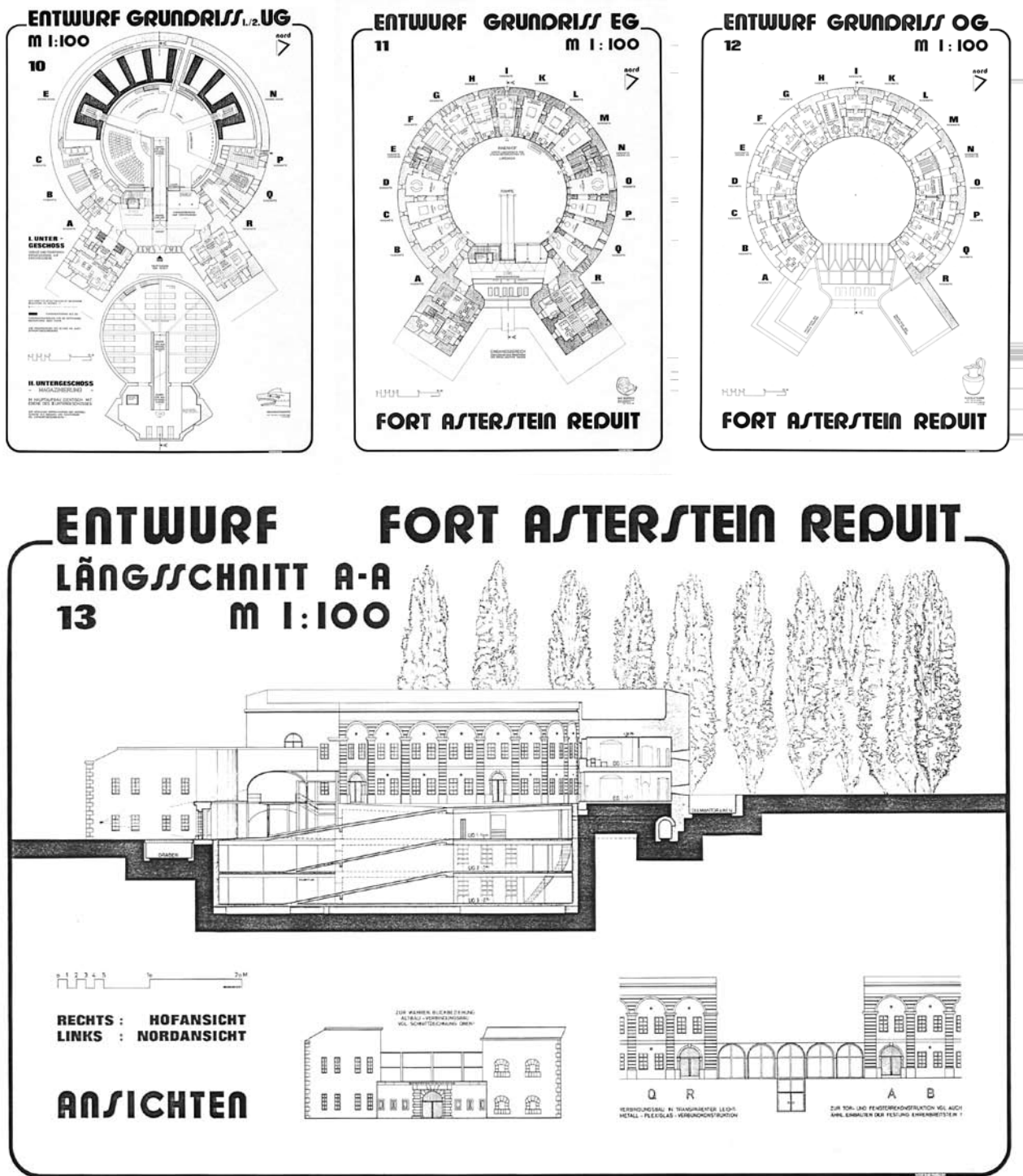
Building on an existing site is a process that presupposes lengthy lead times for analysis, evaluation and planning, and not only to answer the question “Where do I find the money for the next tendering for any kind of work”.

## 7. Operational application of the user programme

A last recommendation for action is the aspect of the operational implementation of the user programme. This usually presupposes a long term view. The implementation of user programmes in historic buildings, especially fortress works, must be beneficial in the long term, the operators wishing to work and operate profitably. The development of operator models goes hand in hand with the development of user concepts. As the example of Fort V in Kaunas shows, user considerations depend not least on whether user concepts can be financed and maintained in the long run free of charge or through entrance fees. Economic concepts therefore also depend on the attractiveness of a user concept.







**Fig. 147—159:** Coblenz. Diploma work on Fort Asterstein with a view to a conversion and revitalisation study by the Technical University of Berlin in 1981. Extensive surveys together with archive research were undertaken before commencement of the actual user planning. Only after the fabric had been examined could consideration be given to future use. The individual steps are explained in table 7 “Objectives toward revitalisation”, as required to achieve optimum reuse.

In August 2003, an international specialist group discovered an almost identical structure when attending a congress in Kiev. This is Tower IV (1833—1839) of the “Vasilkivske Ukriplenja”, which was at this time being gutted and prepared for new use. Of interest in this case were the procedure and target plans which largely reflected what had already been investigated two decades earlier for the Asterstein—Redoubt. The time factor played a quite substantial role in both cases.

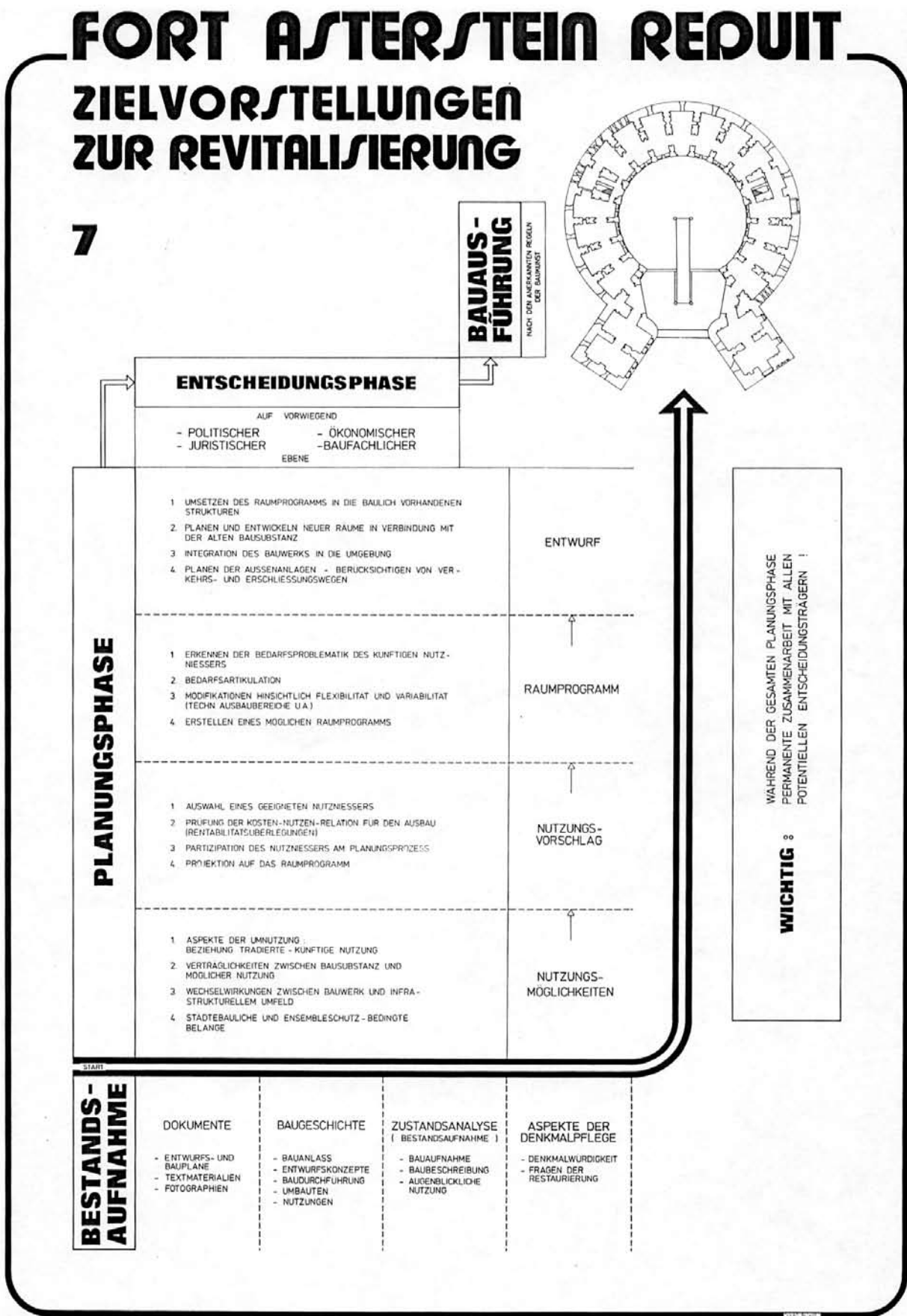


Fig. 160: Coblenz. Table 7 from the diploma work referred to above. Action sequence for implementation of a user strategy.



**Fig. 161—165:** *There are no limits on use and viability, as at Fort IX in Kaunas (above) used as a fortress museum or Fort X in Modlin where an abandoned battery is used as stables—the opportunities are unlimited and on appropriate handling of the structure very often also result in good conservationist solutions.*



## Dealing with fortifications as historic monument

Europe possesses a rich heritage of fortified works, including a multiplicity of works, sometimes of considerable size. These works are in some cases intimately bound up with the social history, the urban development and economic life of the territory concerned and with the landscape. On elimination of their original military uses, numerous installations were demolished, left to fall into ruin or put to civilian use. In their varied states of maintenance, many installations today present a major challenge, especially for the conservation of historic monuments. Although many kinds of attempted solutions already exist for this purpose, the topic still requires a broadly based approach.

The maintenance and use of fortifications presents a multiplicity of problems:

- They are not usually well-researched,
- Only rarely are they fully maintained,
- They are difficult to maintain for technical reasons,
- They are usually costly to maintain,
- They are difficult to use,
- The ownership situation is frequently complicated,
- They are "uncomfortable" in view of their history, and
- Their maintenance not infrequently also gives rise to political or ideological problems.

Fortresses and their architecture are dealt with in different ways by the countries of Europe. In Germany, for example, questions of this kind still face a lack of acceptance by the general public, even after six decades of freedom. However, fewer problems exist in the attitude to ancient or medieval defensive sites such as the Limes, the remains of Roman watchtowers or castra, celtic sanctuary forts, city walls with their towers, or the numerous castles (1). They are more often the subject of romantic depiction in art and literature and ever since they began to be protected have been included amongst preferred ancient monuments and are therefore unquestioned as heritage. More recent guardhouses, magazines, barracks, military

administrative buildings and city gates, above all, also usually present no problem if they continue to be used or their use can be altered without complications (2). The process of destroying military architecture, especially in the new German Federal states, is by no means at an end as yet, and in some cases has not even started (to the extent that may be expected). In Germany alone, 300,000 monuments have been pulled down in the past 30 years, no details having been published as to how many of these must be classified as fortress architecture (3).

Wartime and post-war losses of fortifications and military architecture have not so far been separately recorded and listed, but can only be incompletely inferred from the documentation on lost architecture and historic buildings (4). Only quite recently has research begun at all into major fortresses and individual fortified works of the 19<sup>th</sup> century, for example. The first published list, of 2005, has already been extended by 170 items and this is only a start (5). Fortifications from the 16<sup>th</sup> century to the early 20<sup>th</sup> still await recording. To assist with future decision-making, as complete a record as possible will be important as a basis for consideration. It must indicate what works actually ever existed at all and what, if anything, is left of them today. So far, no surveys have been made in other European states, either, providing information on fortresses and parts of fortresses already under listed building protection.

At international level, UNESCO is drawing up a list of world heritage in which, however, protected fortifications can be identified only with difficulty. Seven years following the effective date of the World Heritage Convention of November 1972, the first fortresses were included in UNESCO's world heritage list. They include a coastal strip 500 km in length between Keta and Beyin on Ghana's so-called Gold Coast, where numerous European fortifications were built from the 15<sup>th</sup> to the 18<sup>th</sup> century, generally as trading strong points. In 1979, UNESCO included eleven of these fortresses in its list of world cultural heritage as unique examples of 500 years of trading between Europe and West Africa. This international interest, concentrated predominantly on Africa, Asia and America, has continued up till today at a rate of two inclusions per year. Only in the past 30 years or so has Europe shown increased interest in protecting and maintaining fortified works. The



most recent efforts include the present proposal by France to include Vauban's fortifications, totalling 14 works, into UNESCO's world cultural heritage.

In Germany, conservation is a matter for the State, left to the cultural sovereignty of the individual Federal States under the powers enshrined in the Constitution (6). Most State constitutions consequently include appropriate provisions for the protection of listed buildings. The 16 different individual state laws regarding their protection and their care approach the task in different ways. However, as to their core purpose, all the laws are comparable (7).

Numerous further legal provisions at national and international level can—and must—be applied to protect fortress works (8). A plethora of national, European and other international rules and conventions are applicable to the specific approach to such structural works, each of which must be reconciled with national laws and they are consequently no longer easy to apply (9).

Fortresses each not only have a marked influence on the ground plan and appearance of the area concerned, depending on their size and the space taken up, but also consistently influence the landscape and social topography and the establishment of industry and crafts. The ensuing socio-typological structures of the city population, the effects on housing and urban development, the representative public buildings and the industrial and traffic facilities etc. must usually be included in this context (10). Relevance to an historic monument can therefore quite easily include all the identification categories mentioned above.

For institutional conservation, fortresses are a traditional field of activity according to the conservation laws. It is not initially decisive in this case whether civil architecture or military architecture is concerned (11). The conservation laws usually distinguish between structural installations (buildings), technical installations (technical buildings), garden installations or other parts of landscape shaped by man (horticultural monuments), groups of structural installations/technical installations/horticultural installations (monumental areas), movable property, collections etc. (movable monuments) and movable and immovable structures in the soil/water (ground monuments). Fortresses are for the most part not

mentioned separately as a species of monument in the legal principles. Certain conservation laws, such as those concerning Bremen, Rhineland–Palatinate, Saxony-Anhalt and Thuringia, however, specifically mention them as worthy of protection, including retrenchments and land defences.

Fortresses regularly meet the definition of an architectural monument, unless they consist of ruins entirely beneath the earth's surface; they are then ground monuments. Ensembles or monumental areas may also occur in the case of spacious works. If a work is properly formed, it can also act as a green memorial; this must not be confused with the property of "nature memorial", which may occur e.g. as a result of a structure becoming overgrown. A component of the fortress concerned is - if existing - its permanent and mobile equipment; this may also include open space and collections and archives. Having regard to their dimensions, fortresses are usually most effective in their environment, generally also protected by conservation law; they may determine the admissibility of measures in their proximity (12).

Problems may arise when associated fortress works are divided up into individual protected assets for conservation purposes, e.g. if an entire installation such as a city fortification is "distributed" into various sub-works, gardens, open space, collections and surrounding areas. This undoubtedly results in an isolated approach to and method of treating the individual protected asset and may, moreover, result in substantial difficulties in interpreting the former holistic character of the work. Since conservation law requires each work to be considered on its own merits, imparting aspects of preserving the consistency of the interpretative value in relation to the former fortress as a whole, especially towards private owners, presents some difficulty. This can lead to insoluble problems with acceptability, a specific feature of German conservation law, which favours private property particularly strongly under article 14 of the Constitution (13).

A further problem with fortifications arises in assessing the importance of greenery and water originally forming part of the fortress. Since fortresses were always fitted into the features of the landscape, there are many references to the specific nature of the affected. Since many fortresses had

to be largely "invisible", the environment was intensively incorporated into their planning. This includes, on the one hand, approach obstacles, e.g. ditches and hedges, and natural camouflage. Insofar as wet ditches, for example, are in the immediate proximity of retrenchments, they generally form part of the protected property. On the other hand, this is not usually the case with the remains of natural camouflage. The latter may in some cases benefit from nature protection.

Fortress greenery is today seen entirely differently than when it was planted. With the abandonment of military use, there was no further point whatever in continuing to plant up the original, functional greenery as then intended. Rather, with the abandonment of specific care and the dilapidation of structural works, new fauna and flora appeared, often forming biotopes (14). The conflict that often arises with the maintenance and repair of fortress installations is due to differences in approach and evaluation of such conditions. A fort, for example, was not originally designed as a biotope but became such only in the course of time. If the structural maintenance of such a work is neglected or obstructed with so-called ecological arguments, this is to overlook the fact that on further acceptance of structures at present regarded as worthy of conservation, they will one day themselves disappear and consequently again be degraded to a featureless site. Here, a cultural-ecological approach in particular must be adopted, specifically aligned on the features of fortresses.

The character of fortresses as cultural monuments is undisputed today. They require research, protection and care. An important prerequisite is that skilled staff should be responsible for these topics in the conservation offices. Recording and listing are the prime task here. Article 17 of the "Convention for the protection of architectural heritage in Europe" of 3 October 1985 already requires "the contracting parties [to] undertake to exchange information on preservation measures, e.g. above all, the methods of recording, protecting and maintaining assets with due regard to the historical development and onward growth of the architectural heritage" (15). A system of protection must be agreed at European level since fortresses, as we see them, also constitute an ancient European phenomenon.

Protection must be preceded by listing, as mentioned, to be undertaken on the basis of a common glossary and a jointly determined system. On the basis of these results, the protected assets can be more precisely ascertained at national level. This means, on the one hand, that when identifying protected assets, the dividing up of fortresses, as stated, into many individual protected assets must be avoided and, on the other hand, it must be possible for the surviving witnesses of this species of monument to be more appropriately evaluated.

The most difficult chapter in dealing with a fortress as a monument is its use. The conservation protection laws regularly require monuments to be not only researched and maintained but also used. The basic idea here is the generally recognised principle that the survival of monuments can be guaranteed only by their long-term use. The best use for a monument is in all cases continuing the use for which it was originally designed, which in the case of fortresses is certainly not desirable. Day-to-day practice in monuments care further demonstrates that the majority of monuments are continuing with use structures other than those originally intended. Fortresses, because of their design, are particularly difficult to put to new uses. The more extensive the works, large parts cannot be used other than as museum pieces or "simply" as monuments (16).

Maintaining fortresses as protected assets requires an essential weighing up between public and private use. Not every use is meaningful or appropriate, or worthy of the importance of the work. A cohesive thematic multiplicity of uses can be quite positive. However, the new use may not conceal the relationship to the monument itself. The yardstick for monument compatibility is not a kaleidoscope of all conceivable forms of use (17). Rather, in terms of the basic idea in the Helsinki Declaration:

"Cultural assets are authentic witnesses of cultural history and human civilisation. It is an essential duty of present and future researchers to ensure that they are investigated, recorded and maintained. The educational work in connection with cultural heritage must reveal the historical, artistic and ethical values of the cultural inheritance for different identities, the development of tolerance and resistance to inequality and discrimination. The quality and

objectivity of the educational message depend on the values of those who interpret the inheritance. Just as important is the passing on of specialist knowledge, which is necessary to safeguard the cultural heritage. This can be promoted by broadening and exchanging information and specialist knowledge within and amongst member states“ (18).

Tailor-made solutions cannot for the most part be expected; rather, every fortress requires individual consideration and an individual approach.

Notes:

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- (11) Ibid. p. XLIV.
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- (13) As Note 8, pp. 522 et seq.
- (14) Kalesse, Andreas: Das Fort Hahneberg – eine denkmalpflegerische und kulturpolitische Herausforderung. – Bauwelt 81 (33) 1990, pp. 1633–1635.; Feist, Peter: Fort Hahneberg. – Der historische Ort No. 64. Berlin 2004.
- (15) As Note 9, pp. 163 - 173; BG BL. II 1987, p. 623. The 4th European Conference of Ministers responsible for architectural heritage reconsidered these principles under the "Helsinki Declarations and Resolutions" on 31 May 1996 and even stressed them more strongly (Ibid., p. 275—278).
- (16) Kiesow, Gottfried: Einführung in die Denkmalpflege. 4th edition, Darmstadt 2000, p. 126.
- (17) There are internationally accepted rules for dealing with historic monuments in a proper way that protects the fabric, which are largely adopted in practice (e.g. ICOMOS, Publ. 1992: Reversibilität - das Feigenblatt in der Denkmalpflege? A Conference of the German National ICOMOS Committee and Special Research Area 315 of the University of Karlsruhe (24—26 October 1991). Vol. VIII. Munich, 86 pages; ICOMOS, Publ., 1992: Grundsätze der Denkmalpflege / Principles of Monuments Conservation / Principes de la Conservation des Monuments Historiques. Vol. X. Munich, 68 pages. See also the papers on monument compatibility in Martin/Krautzberger op. cit. (Note 8), Part D.
- (18) As Note 9, p. 277.



## Glossary

**AA battery:** Anti-aircraft defence

**Armoury:** Building for keeping weapons and military equipment

**Atlantic Wall:** Defence line constructed in the Second World War along the European Atlantic coasts from Norway down to Southern France

**Barracks:** Accommodation building for soldiers

**Bastille:** Small bastion, synonymous with the specially fortified city gatehouse in the East of Paris

**Bastion:** Polygonal fortification built of earth and masonry

**Batardeau:** Water-filled structure flooding the fortress ditch

**Battery:** Defensive position for several guns

**Battery:** Platform for setting up rampart guns behind a parapet

**Bell:** Steel combat or observation position inserted into a concreted space

**Blockhouse:** Wooden or stone building with embrasures, generally for musketry defence

**Bridgehead:** Fortified work on the opposite bank of a fortress to cover the river crossing

**Bulwork:** Round or semi-circular defensive position in front of a city wall

**Bunker:** Concreted blockhouse and combat position (20<sup>th</sup> century)

**Caponnier:** Casemated hollow structure in a fortress ditch (ditch defence) or between fortified positions permitting lateral fire

**Casemate:** Vaulted bomb-proof room in a fortress

**Cavalier:** Elevated position on a rampart or bastion

**Citadel:** Independent fortification within a fortress or along the length of the enceinte with facilities for selfdefence when the rest of the fortress has fallen

**City fortification:** Ramparts (Enceinte) in the form of proto-bastions, round bastions, or full or half bastions, and possibly linked to a citadel (up to the end of the 18<sup>th</sup> century or so)

**Coastal mortar:** A gun permitting fire on a vertical or curved trajectory

**Counterscarp:** Outer ditch wall

**Cunette:** Lengthways running gutter within a fortress ditch to discharge water

**Curtain:** Section of the main rampart running between two bastions, generally in a straight line

**Detached:** Separate

**Detached fort:** Independent fortification capable of selfdefence

**Dismantlement:** Demolition of a fortress or fortified enceinte

**Ditch:** Excavation in the soil extending over a length

**Dutch manner:** Historic defensive manner

**Earthwork:** A defensive work or entrenched camp with an earthen rampart

**Enceinte:** Surrounding ramparts or walls

**Field of fire:** Free area in front of the fortress rampart, generally across the glacis, to cover the outer field of a fortress by artillery

**Fire control position:** Advanced bunker within a coastal battery

**Fort:** Self contained fortification

**Fortress:** Military work to defend a city or fortified position

**Fortress complex:** Defensive position with several individual works spread over a distance

**Front:** Part of the defensive system

**Galleries:** Underground passages for supply or combating mining

**Garrison:** Occupying troops

**Glacis:** Flat area of earth deposited in front of the fortress ditch

**Gorge barracks:** Barracks, generally casemated, located in the rear part of a fort

**Gorge defence:** Casemate covering the gorge of a closed work

**Gun:** A heavy tubular weapon not suitable for hand use. The term “gun” covers mortars, howitzers and cannon; mortars possess a low ratio of calibre to muzzle length (few calibre lengths), howitzers a medium and cannon a large ratio. However, the terms are not sharply delimited. Guns are combined within the military term “artillery”

**Gun lift:** Technical facility for lifting guns onto the rampart

**Howitzer:** Type of gun between those enabling grazing fire and those enabling vertical fire

**Imperial fortress:** Fortresses and fortified cities of the German Empire (1871—1918)

**Infantry position:** Space for infantry

**Intermediate work:** Fortified strongpoint between two outline forts

**Keep:** Core work or redoubt as the inner work of a fortified site

**Keep:** Multi-storey structure designed for gun use within an independent fortification (fort) located behind the main rampart

**Lunette:** Pointed, advanced fortified work similar to a bastion or ravelin

**Major fortress:** Fortifications with several fortified areas, city ramparts in a polygonal line, enceinte with forts, ramparts with forts and barracks, military infrastructure facilities (around 1814—1918)

**Mountain fortress:** Isolated fortress generally on a controlling ridge

**New Prussian System, new Prussian fortification manner:** Fortification manner of the 19<sup>th</sup> century

**Observation bell:** Armoured observation position

**Place d'Armes:** Collecting point for troops, designation for entire forts, entrenched camps, smaller points within fortresses

**Polygon:** Joining together of long defensive lines, at obtuse angles where possible

**Postern:** Underground connecting corridor within a fortress for transporting soldiers, weapons and ammunition

**Powder magazine:** Building for the safe, dry storage of ammunition and gunpowder, located away from the city if possible

**Powder store:** Space for storing gunpowder

**Proto-Bastion:** Round bastion, forerunner to the round bastion

**Rampart:** Earthen embankment surrounding a fortified position on all sides enabling artillery and in-

fantry to defend themselves against an attacking enemy

**Ravelin:** A self-contained fortified work surrounded by a ditch lying in front of the curtain, generally with a triangular or polygonal layout

**Redoubt:** A fortified work consisting of projecting angles only, generally trapezoid in ground plan

**Retrenchment:** Earthworks for defending a position or fortification

**Scarp:** Inner ditch wall partly sloping diagonally into the ground, often standing at right angles and with a ditch wall protected by a revetment wall

**Shoulder caponnier:** Ditch defence at the intersection of the face and flank of a fortified work

**Slighting of a fortress:** Demolition of a fortress by removing the ramparts and filling the ditches

**Strongpoint:** Generally fortified small position to hold troops

**Tower fort:** One or multi-storied casemated round structure for guns

**Wall:** An uninterrupted defensive line consisting of a rampart and ditch enclosing a fortified position

**Work:** Term for an individual fortification

For further definitions see Glossarium Artis, Volume 7: Fortress; Munich/New York/London/Paris, 1990 (2<sup>nd</sup> Edition).

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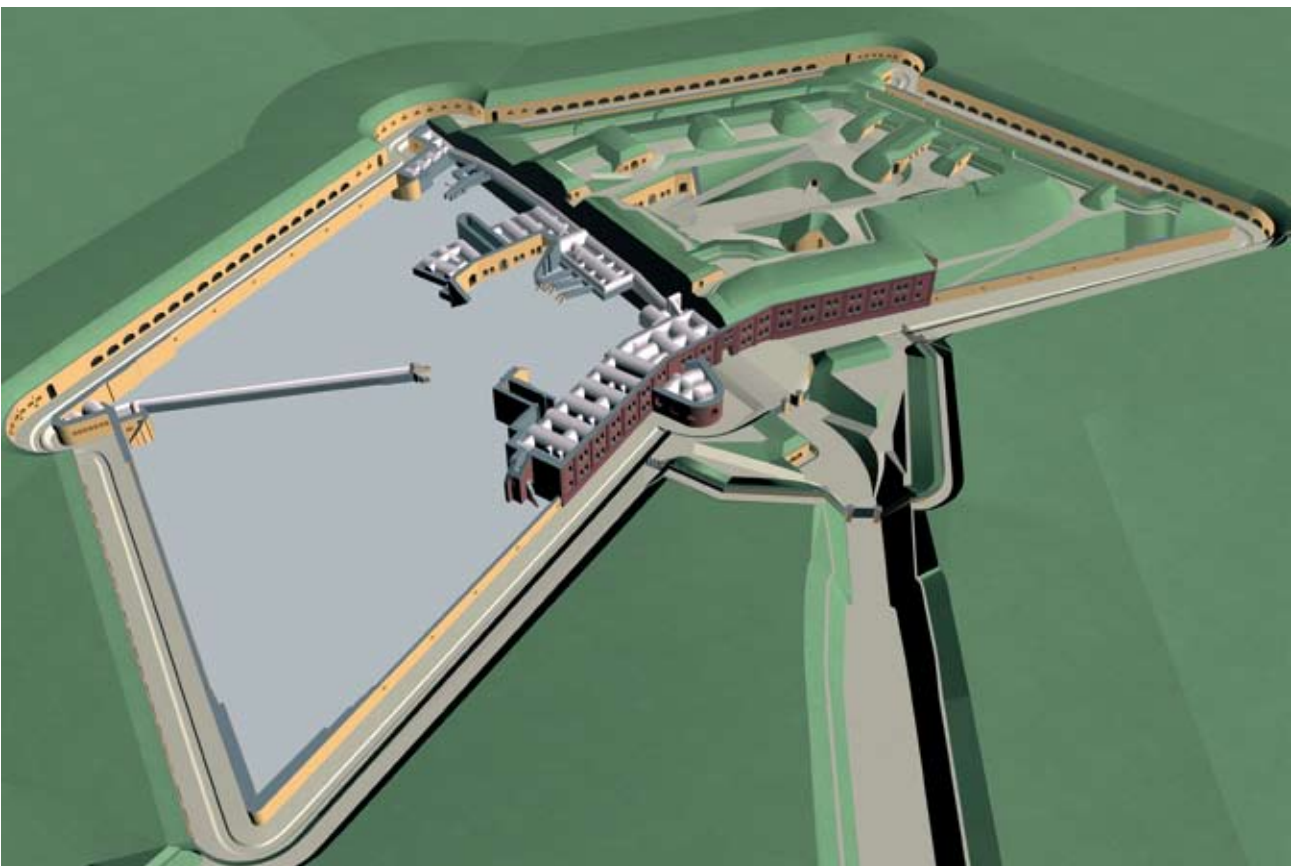
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*Fig. 166—167: Visualization of Fort Hahneberg, Berlin-Spandau*

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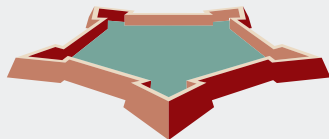
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