



Documentation

WP 6.2.4 “Pre-investment: Exemplary technical conception for stabilisation”

Pre-investment activity: Development of exemplary technical conception for stabilization of fortress construction for the planned national information centre

Responsible Project Partner:

Thuringian Institute for Advanced Studies reg. ass. (TIAW e.V.)
Juri-Gagarin-Ring 37
99084 Erfurt
Tel.: +49-361-5963330
Fax: +49-361-5963333
info@tiaw.de

Table of contents

1.	Origin of the investment	3
1.1.	Pilot investment in Erfurt	3
1.2.	The needs	3
1.3.	The solution	3
1.4.	The preparation	4
1.5.	Functions of the investment	4
1.6.	Beneficiaries of the investment	5
1.7.	Expected Impacts	5
1.8.	Transnational added value	6
1.9.	Sustainability	6
2.	Selection of suitable buildings	7
2.1.	War powder magazine no. 1	7
2.2.	Property description	7
2.2.1.	History	7
2.2.2.	Location	9
2.2.3.	Current building condition	11
2.3.	Status quo survey: floor plan, sections and section views	13
3.	Future utilisation in variants	16
3.1.	Variant A: Protection vault (National Info Centre FORTE CULTURA an exhibition of traditional building construction)	16
3.1.1.	Utilisation description	16
3.1.2.	Structurally specific aspects	16
3.1.2.1.	Gun powder storage room (experimental building lodge with fortress building site)	17
3.1.2.2.	Front house (history and function)	18
3.2.	Variant B: Protection vault (info centre Forte Cultura and event stage)	19
3.2.1.	Utilisation description	19
3.2.2.	Structurally specific aspects	19
3.2.3.	Powder storage space (event stage)	20
3.2.3.1.	Utilisation description	20
3.2.3.2.	Structurally specific aspects	21
3.2.4.	Front house	21
3.2.4.1.	Utilisation description	21
3.2.4.2.	Structurally specific aspects	21
4.	Discussion and recommendation for utilisation	22
4.1.	Discussion of variants A and B	22
4.2.	Recommendation for an utilisation variant:	23
4.3.	Cost estimate for investment	23
5.	Amendments to the status of the investment	23
6.	Bibliography / List of publications	24
7.	Appendix	25

1. Origin of the investment

1.1. Pilot investment in Erfurt

It is foreseen to realise an investment at the Citadel Petersberg within the FORTE CULTURA project. In close cooperation with the city administration it was agreed to install a National Information Point Germany to Fortified Heritage as an exemplary model for a national information centre to the fortified heritage of Central Europe to imitate it in each CE-member state for a future linked CE-net of national information points. The Petersberg currently lacks a central information point. Visitors usually get their requested information at the city marketing and tourism office downtown. It is planned to select a so far unused and empty building therefore.

1.2. The needs

The fortified heritage is not present in the public and the tourist market. A systematic overall public presentation to the fortified heritage in Central Europe doesn't exist. Only single fortress monuments try to make visible and to achieve the tourist market. In the same time different and qualified information to the fortified heritage is missing. It needs a new quality of information, systematic presentation with modern pedagogical concept, high attractiveness and interactive communication forms.

1.3. The solution

The pilot project intends to develop and to implement an exemplary national information point on the example of the national German fortified Heritage, including the German regions outside of Central Europe. Simultaneously its function is to present the new culture route FORTE CULTURA and other cultural offers in the fortress monuments.

This exemplary model of national information point should localize in the big Citadel Petersberg, in the centre of the capital Erfurt of Thuringia, near by the tourist agglomeration area of the city, under using and restoration of the historical building war powder magazine in the fortress.

The national information point Germany should be the example and the prototype for further national information points to the fortified heritage in all CE-member states, localised in a high frequented fortress destination. This future national information points should use all experiences and solutions from the prototype in Erfurt and should be linked and cooperate for a common market presence of fortified heritage and FORTE CULTURA under highlighting of the national characteristics.

1.4. The preparation

The pilot investment should prepare with discussion of aims, content, and methods in the WP with the partner, which used for the development of a conception. All positions will be discussed with the City Erfurt as owner of the fortress monument, to ensure the realisation and durability of the national information point.

1.5. Functions of the investment

The National Information Point Fortress Heritage Germany (NIP-D) should combine some functions:

1. The function as general information centre to the national fortified heritage in Germany, to enable the visitors the access to detailed information to the fortified heritage in Germany and general information to CE-heritage. This concern i.a. the location, the history, the architecture, historical events and highlights, documentations and publications etc.. The historical fortified heritage of Germany overlaps to Poland and Lithuania and is a task for European integration and cooperation.
2. Therefore the NIP-G should linked with other information sources and databanks, will be developed during the project FORTE CULTURA, like the Transnational Information System Fortified Heritage (output 4.4.3) and to the agency of the culture route (output 5.5.3), as well as to the individual homepages of fortresses. In synergy with Baltic Sea Region should also present the culture route Baltic Fort Rote, connected with FORTE CULTURA.
3. The NIP-G should also present the cultural and tourist offers of German fortified heritage, especially the presentation of the culture route FORTE CULTURA during Germany and the connections to the other CE-states. This includes information to thematic routes, annual events for different target groups in fortress monuments, the quality of adventure and the attractiveness of the fortified heritage.
4. Attractive and interactive exhibition with modern communication technology, equipped universal as a multi-functional space with multilingual and audio-visual environment, to use it as for movies, seminars or workshops. This pilot project should be the example and prototype for NIP in the other states of CE, highlighting their national fortified heritage and the connection and linking as a common European cultural heritage. Due to its location very close to the city centre, its special reconstruction state and its location within Central Europe the citadel Petersberg presents itself as the ideal location for NIP-D The buildings "war powder magazine I and V" are preserved examples for mastership in fortified monument construction itself and get further attractiveness by the intended usage. Both buildings should be integrated as exhibition area, furthermore the planning and realizing of the proposed centre inside. TIAW will offer a conception for discussion in the work package and network meetings, as basis for a project task for the realisation phase, starting with engineering of construction and infrastructure, planning of the equipment and communication infrastructure.

1.6. Beneficiaries of the investment

First of all the city and the citadel Erfurt with higher attractiveness and information quality in the fortress monument and new utilisation of renovated monument building, will generate more tourists and visitors with economic and financial effects.

Furthermore a broad scale of visitors from over the world with a high quality of information, linked to other information sources to fortified heritage, including schoolboys, students, young generation, experts, tourists etc.

Also the project partners and member states of Central Europe with a prototype for their National Information Points of Fortified Heritage will be beneficiaries of this investment.

The fortress heritage, especially the German, will get more market presence and tourist information quality, to stimulate more tourists for all fortress monuments in Germany and CE.

The new Network of Fortified Heritage, to be established during this project will get an attractive and effective exhibition of their members.

Finally the Culture Route FORTE CULTURA will make use of this centre as direct market presentation.

1.7. Expected Impacts

On the local level, the pilot investment demonstrates a concrete method to capitalize the heritage of fortress monuments. It makes the fortress more attractive, increases the information quality and the entertainment value for both visitors and tourists. As result the number of visitors and tourists per year will be increased. A contribution to a more profitable gastronomy and accommodation business, tourist services and infrastructure is expected.

At the same time the target groups of visitors and users of the centre enlarge. More attractiveness and entertainment value will lead in addition to an increased purchased power to the city Erfurt and the Thuringia region. A contribution to a more profitable gastronomy and accommodation business, tourist services and infrastructure is expected.

The investment meets the WP-objectives since this pilot is an effective contribution to capitalise the fortified heritage for economic growth of cities, regions and national states, makes it more attractive and visible and implement it into markets. The NIP-D in specific is an activity for information and market implementation of cultural heritage fortified monuments and to ensure the durability of project results, the main objectives of WP3. It's a permanent activity after end of project. It's also linked with the results of WP5 (marketing for FORTE CULTURA).

1.8. Transnational added value

The pilot project delivers the model and prototype for similar NIP's for the fortified cultural heritage in the other member states of CE. For imitation in all CE-member states, the project delivers the best practice for concept and guideline for NIP-development, concerns the method and systematic, the content, the equipment and communication concept, localisation aspects, design etc. It also can be seen as the starting point for the future establishment of a linked network of NIP's as a wide information basis to the fortified heritage in CE, highlighted with the national heritage, but linked with the whole CE fortified heritage, as well as linking the cities and regions in CE.

It enables capitalising effects with increasing fortress tourism and culture tourism in whole CE on the basis of a common marketing for common economical effects.

The planned NIP increases the information quality in all CE-member states with modern communication methods and is an activity for information and market implementation of cultural heritage fortified monuments and to ensure the durability of project results, the main objectives of WP3. It's a permanent activity after end of project. It's also linked with the results of WP5 (marketing for FORTE CULTURA).

The development of NIP-D is embedded in trans-national activities, starting with discussion of conceptional questions in the WP3-meetings, (outputs 3.1.1, 3.3.1) and network meetings, for exchange of experiences, knowledge and expertise. The project development is connected with the outputs 3.3.2-3.3.5, development of utilisation concepts and management models and using of traditional knowledge for reconstruction of the historic building, to evaluate in transnational conference (output 3.3.6). It plays important role in the installation of the CE-Network fortified heritage (output 3.4.6). The summarizing report to the results of NPI-D-development (core output 3.6.5) will be used from all other partners as example for new NPI's.

1.9. Sustainability

The sustainability of the pilot project will be ensured. The local implementation in a historical building of the citadel, adjacent with other tourist offers and infrastructure ensure the permanent installation and operation with synergy effects, as well as financing and operating.

For the future management the city of Erfurt intends to install an appropriate management body that shall be responsible for the citadel Erfurt as whole. The optimal management model and the installation of this management should developed during the project FORTE CULTURA (outputs 3.3.3, 3.3.4, 3.3.5), as practical example and best practice for evaluation and implementation for other fortress monuments and cities. The centre will be run and managed after the conclusion of the project by the management body for the citadel Erfurt that will be formed in relation to the Federal Horticultural Show to be held in Erfurt in 2021.

Further extending is not planned, technical and financial resources for extending are not necessary.

The content-wise development will be ensured in direct cooperation with the network of fortified heritage and the linked NIP's in other member states of CE, under support of the scientific institutions PP5 Humboldt-University Berlin and PP11 Slovenian Institute.

Furthermore the info centre contributes to the attractiveness of the Petersberg as a whole and its planning and installation is linked to the preparation process for Federal Horticultural Show 2021. The sustainable existence of the Living Heritage Info Centre will give useful impulses for the further development of transnational experience exchange and Europe-wide tourism. The Federal Horticultural Show will promote the info centre in future and will therefore increase the touristic interest in a massive way. In addition the area of the Petersberg citadel is implemented in the cultural concept 2020 of the city Erfurt. Both concepts are going to be connected with each other's. That provides high potentials for sustainable existence.

2. Selection of suitable buildings

2.1. War powder magazine no. 1

During the preparation phase of the investment status analyses of suitable existing and empty buildings and their construction status were carried out. In detail the following aspects were checked during this survey:

- Status of the constructional condition
- Grinding allowance of construction components like built-in components, closed windows, major construction damages, new or non-existing doors, extensions or modifications that did not exist in drawings

The survey was carried out on the basis of ground floor drawings, made by the city department in March 1965. All existing drawings were digitalized and completed.

A number of criteria were pre-set and on the basis of this the war powder magazine no. 1 and eventually war powder magazine no. 5 were selected.

Following the war powder magazine no.1 is described in detail. Amongst the available buildings it is by far the most attractive and architectural most outstanding objects at the citadel.

2.2. Property description

2.2.1. History

The War powder magazine No. 1, located on the bastion 'Franz' at the Petersberg Citadel in Erfurt, is historically and architecturally unique in Germany and Europe. It is one of the few that remained gunpowder magazines in Germany that date back to the evolution of French military civil engineer Sébastien le Marquis de Vauban

Prestre. The original three-storey building shows features such as inner wall vents and new-prussian enforcements that are unique in the Federal Republic of Germany and are believed to be not found in Europe at any other existing powder magazine. The powder magazine was built or strengthened in four phases:

- 1726/28 construction of the building as a war powder magazine at the behest of Elector Lothar Franz von Schönborn, as master-builder and architect Maximilian von Welsch and as local supervisor the engineer Haunold are recorded
- By 1830, construction of a anteroom
- 1852 increase in the anteroom to two floors
- 1861 new-prussian reshaping / gain of the powder magazine with vaulting of the circumferential trench.



Fig. 1. Historical photograph of the year 1912



Fig. 2. Historical photograph of the year 1912

2.2.2. Location

The Petersberg fortress is characterized by eight bastions, which were created in the first phase 1665-1704. The war powder magazine No. 1 is on the bastion 'Franz', named after the owner and Archbishop / Elector of Mainz Lothar Franz von Schönborn. The Bastion Franz points to the east.



Fig. 3. Aerial view of the citadel Petersberg with the war powder magazine no. 1

The War powder magazine No. 1 is accessible in several ways:

- From the north from the direction Gutenbergstrasse / Blumenstrasse using the current construction road on forage barn (now building lodge Petersberg), the gun caponier No. 2 and the Lower Barracks (now Birthler Authority) towards the Bastion 'Franz'
- From the east using the stairs from Andreasstrasse to the Bastion 'Franz'
- From the south using the main entrance (Peterstor), crossing the upper plateau (bastions 'Leonhard' and 'Philip'), via the east side of the defense barracks, use the stairs down to the Bastion 'Franz'

The following map illustrates the pathway relations described (marked in blue).

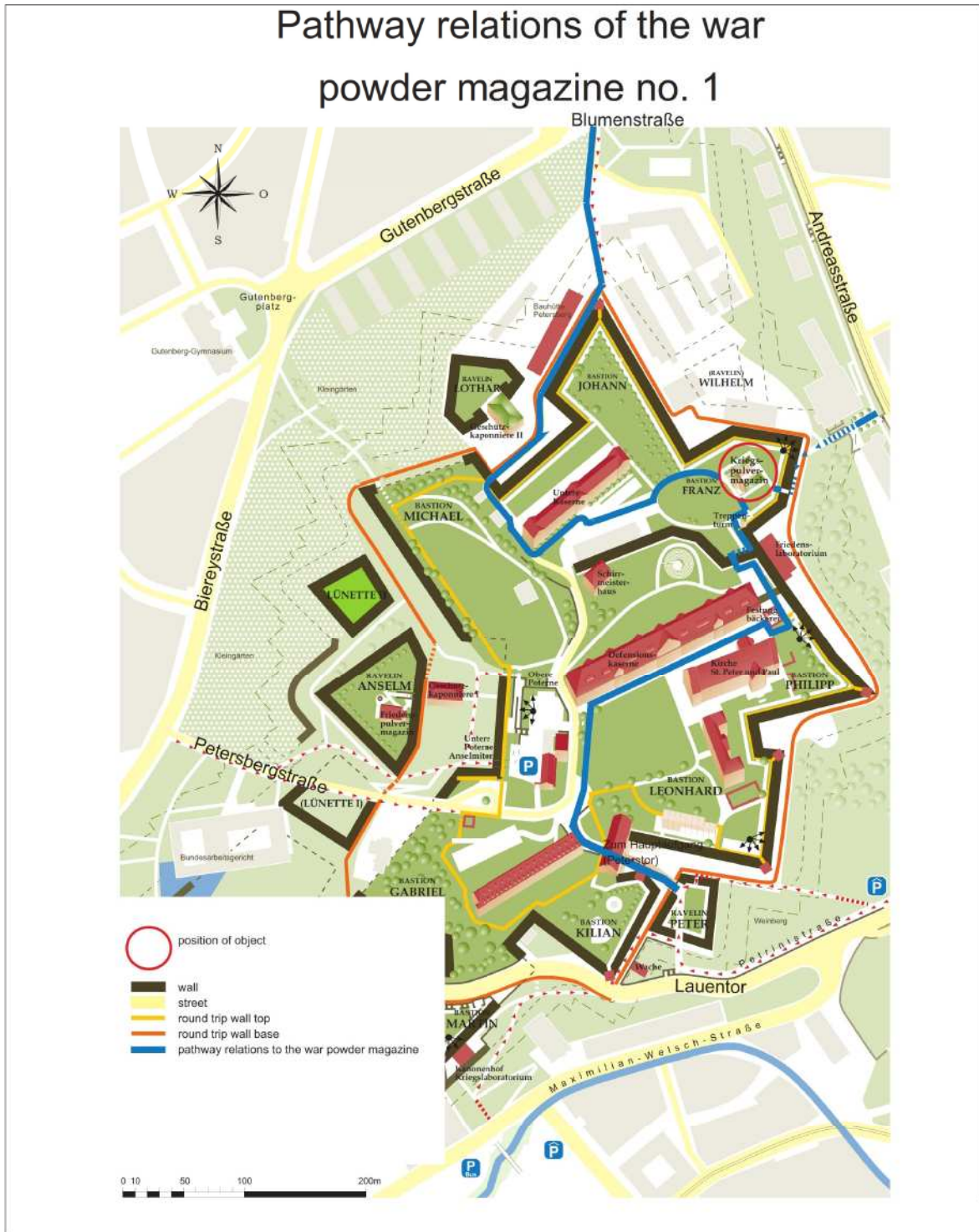


Fig. 4. Pathway relations at the citadel Petersberg

2.2.3. Current building condition

The building was badly damaged by a blasting in 1982. It was later uncovered by employees of the building lodge Petersberg. The existing building condition is secured. The curtain wall was rebuilt. In recent years the building was put in a good state of preservation. The following photographic images document this progress in an impressive way.



Fig 5. photograph of the year 2002



Fig. 6. photograph of the year 2004

FORTE CULTURA

Capitalising of fortified cultural heritage for sustainable development and competitiveness of cities and regions



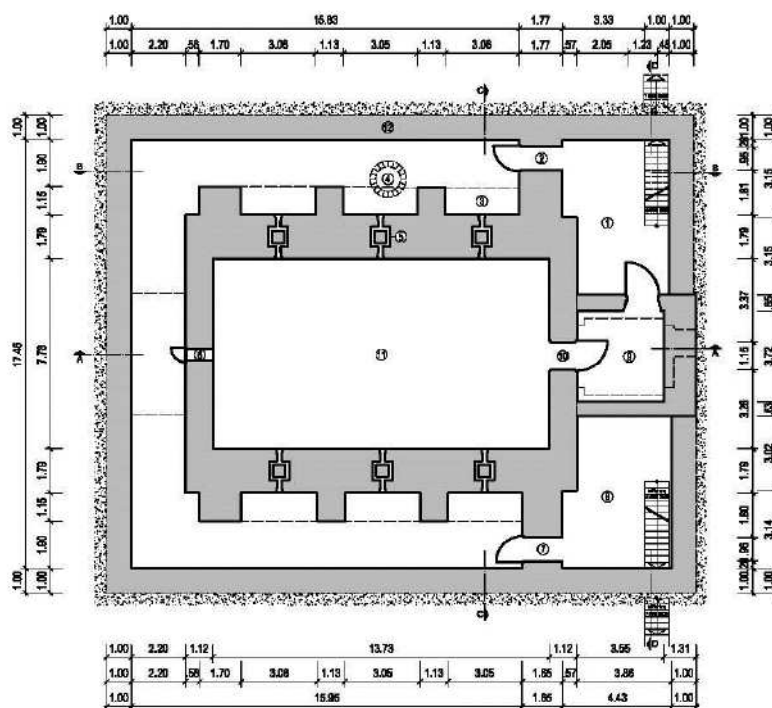
Fig. 7. photograph of June 2006



Fig. 8. photograph of April 2009 (current condition)

2.3. Status quo survey: floor plan, sections and section views

For the detailed planning of the investment a status quo survey had to be made. Floor plan, sections and section views of the war powder magazine no. 1 were produced.



Legende

- ① rechter Vorhof
- ② Zugang zum überwölbten Umgang
- ③ Pflanzmischen / geplante Ausstellung
- ④ Sickerbrunnen
- ⑤ Lichtkuppe
- ⑥ Leuchteröffnung mit Festverglasung und Abzugsöffnung
- ⑦ Ausgang
- ⑧ linker Vorhof
- ⑨ Vorhaus, 3geschoßig
- ⑩ Zugang zum Magazin
- ⑪ Pulvermagazin
- ⑫ äußere Grabenmauer

Index	Datum	Anderungen
Projektgruppe Petersberg		
<small>vom THW e.V., J.-Gagarin-Ring 37, 98084 Erfurt für den Bau- und Gebäudemanagement, Bautzke Petersberg, Peenaberg Haus 25, 8002 Erfurt</small>		
Zeichnung		Plan-Nr.: CPB - KPM - 1
Citadelle Petersberg Bastion Franz Kriegspulvermagazin Grundriss		<small>Diese Zeichnung wurde in Auftrag der Hochschule der Bau- und Gebäudemanagement aufgestellt. Die Verantwortlichkeit für die Abweichung mit dem gezeichneten Maßstab</small>
Maßstab: 1:200	gez.: E. Bruchner	

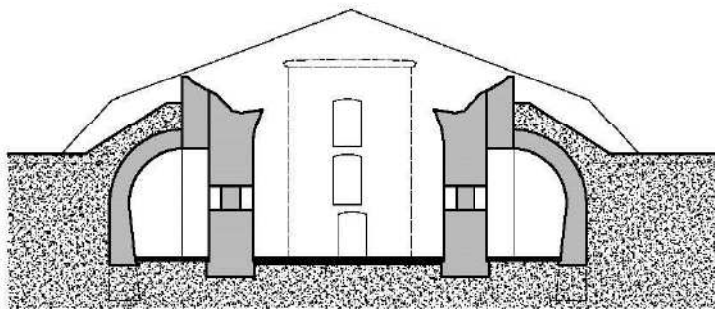
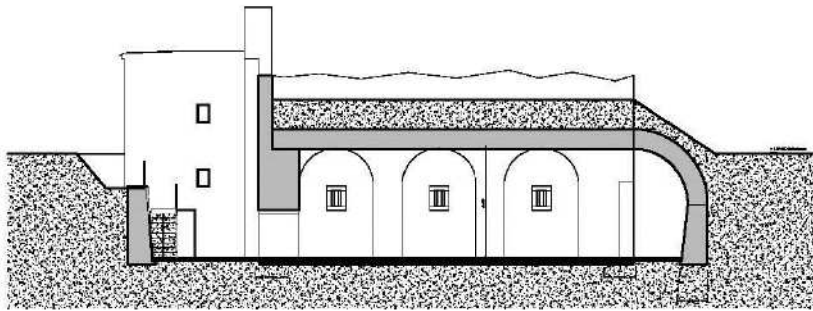
Fig. 9 digitalised floor plan of the war powder magazine no. 1

FORTE CULTURA

Capitalising of fortified cultural heritage for sustainable development and competitiveness of cities and regions



Also section views were produced.



Index	Datum	Änderungen
Projektgruppe Petersberg		
vom TWA e.V., J.-Gagarin-Ring 37, 6004 Erlat Büro für Hochbau und Gebäudetechnik, Beulitz-Petersberg, Petersberg-Neus 20, 90092 Erlat		
Zählung		Plan-Nr.:
Citadelle Petersberg Bastion Franz Kriegspulvermagazin Schnitt B, Schnitt C		CPS - KPM - 2
Maßstab: 1:200		gez.: E. Bruchner
Diese Zeichnung wurde im Auftrag des Hochbauamtes der Stadt Erfurt erstellt. Die Verantwortlichkeit und die Verantwortung für die Ausführung mit dem genannten Maßstab.		

Fig. 10 digitalised section view of the war powder magazine no. 1

Finally 3-D animations were produced to complete the set of drawings.

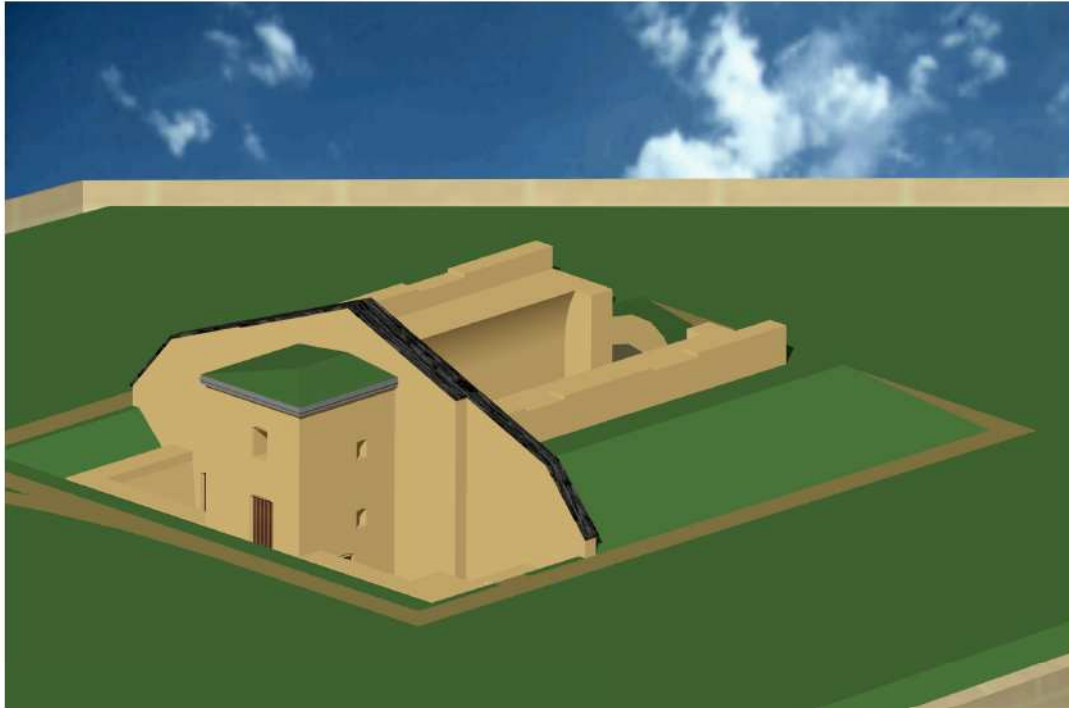


Fig. 11. Digitalized view from south west

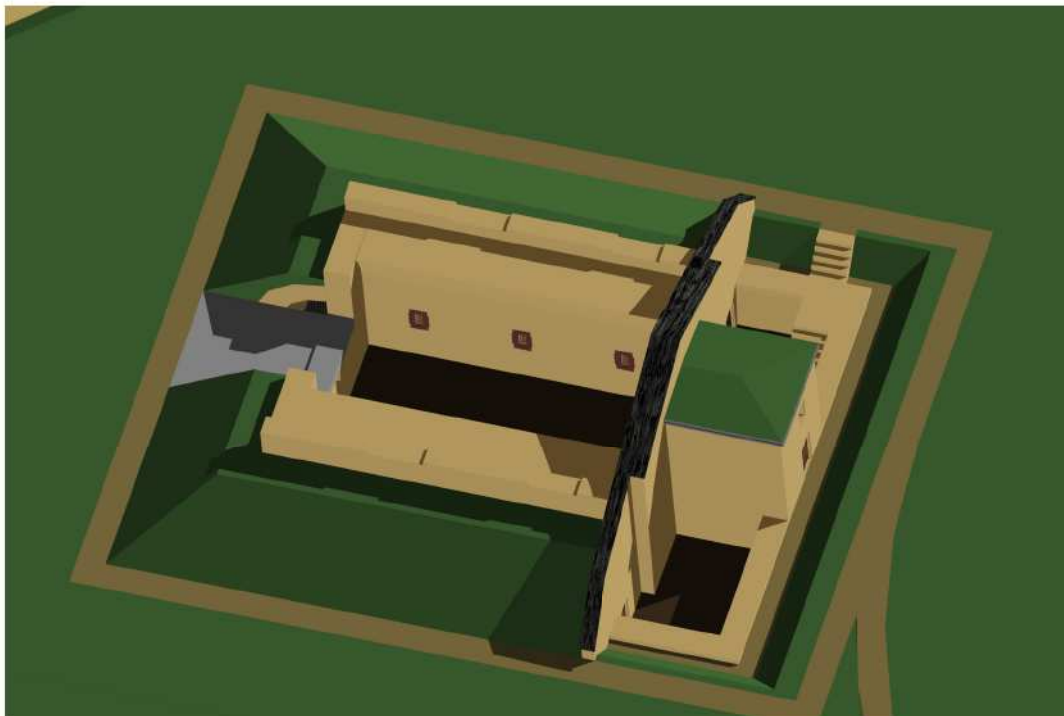


Fig. 12. Digitalized view from north west



3. Future utilisation in variants

3.1. Variant A: Protection vault (National Info Centre FORTE CULTURA an exhibition of traditional building construction)

3.1.1. Utilisation description

For the future use of the protection vault two approaches are planned: first the National Information Point for Fortified Heritage. This investment was described in detail in the earlier chapters of this report.

The second approach is to install an exhibition of historical building construction and the corresponding trades and handcrafts. Their tools, machinery, construction technologies and materials used in construction should be taught in an easy to understand format. This effect is mainly achieved when the visitors gets not only textual sources, but also artifacts. On information boards the living and working conditions of employees and craftsmen at the fortress, their work organization, catering, accommodation, payment etc. are documented. These panels could be found on the walls of the vaulted passage and, in addition to the space for the National Information Point for Fortified Heritage, in the structural given niches (see floor plan).

To illustrate the blacksmithing, the existing fort forge, which is located below the Bastion Franz, is to be used. The forge is accessible in two ways: via the stair tower on Bastion Franz or using an entry on bastion base, which can be reached from the moat and up the stairs Andreasstrasse from downtown. A sign to the fortress forge is installed below the Bastion Franz.

3.1.2. Structurally specific aspects

The access to the exhibition area "protection vaults" will be given via an existing staircase with historical steps in the lower flight of stairs. For public and touristic use the stairs could be equipped with a railing corresponding with the Petersberg scheme.

Access solution	Based on the assumption of independent inspections by visitors a turnstile with swipe card or coin could be installed in the lower courts. This would also provide an escape route for emergencies, e.g. be reversed open able. In case of a permanent attending staff member such solution is redundant.
Niches	The interior wall surfaces have been designed surface finish during repair. In the niches display shelves can be placed to arrange the exhibits ore boards. The explanation of these could be draped in custom-designed, air-tight frames on the walls of the niches.

Protection of exhibits	To protect the partly valuable historical objects from theft and damage it is planned to place sliding glass doors in front of the niches. These come with locks and safety glass B3 (according to DIN EN 356: P6B). The glass panels in the size of each 3 pcs x 1.06 m * 2.35 m per niche run in aluminum rails top and bottom and carried the lower mounting means anchors in the floor.
Lights	The upper mounts are to be fixed to a steel profile, which could serve as a support rail for the illumination means (radiator) at the same time. In the open inward profile the electric wiring can put. The hanging information panels should also get a spotlight system on a suspended rail. The attached media projector is to be installed on a separate shelf in about 2.50 m height and can be operated by a pulley. The existing cross-corridor light hatch is to be provided to the powder magazine with a fixed glazing. In the hatch a functioning petroleum lantern is to be installed and secured against theft.

3.1.2.1. Gun powder storage room (experimental building lodge with fortress building site)

3.1.2.1.1. Utilisation description

As part of this utilisation within the National Information Point for Fortified Heritage it is planned to illustrate in the former powder magazine the hardships of fortress construction trades with practical examples. For this, selected areas of a fortress construction site modeled and are brought to life for visitors. In particular, it is envisaged that children and adults under the guidance of the staff can put functional replicas in motion and to learn in a playful way about working in the world of the fortress builders - by touch, experiment / experimentation.

3.1.2.1.2. Structurally specific aspects

Floor	Due to the size and mass of the exhibits the existing concrete floor can be left and covered with historical cobblestones. Dewatering is available. In the southwest corner of the room for about 1 square meter floor area is to be opened in order to represent the original structure of the floor. This area is planned to have a walk-on, armored glass plate which can be internally illuminated.
Escape ways	For evacuation of the inner area a second rescue way on the east facade will be installed as emergency escape ladder. To have only a little disturbing effect due to the historical space a Jomy folding ladder is planned. This fire rescue ladder to be folded in its overall length into a box profile with a cross section of about 14 x 14 cm ² and in case of need operated by a hand lever.
Vault	The water drainage is given by the previously built components. Guardrails are already available after the reconstruction of the parts of the wall. Above the vault the soil cover in its last historical Prussian manner shall be visible.



3.1.2.2. Front house (history and function)

3.1.2.2.1. Utilisation description

In the front house an exhibition on the history and operation of the war powder magazine no. 1 is planned. Therefore the restoration of the suspended ceiling and the access is required. By eliminating the planks in the second floor to the visitors get the opportunity to look at the vaulted ceiling of the anteroom. This can be illuminated by spotlights.

Information boards will explain the architectural history and functioning of the war powder magazine no. 1 in concise form. A special focus is on different builders and architects the various stages of construction. The construction period spans a period from 1726/28-1867, produced an architecturally unique building (powder magazine under Kurmainz in Vauban manner, vestibule and protection vaults in new Prussian manner). With this war powder magazine Erfurt has to offer an European rarity and no other place at the citadel is more suitable for a National Information Centre for Fortified Heritage.

3.1.2.2.2. Structurally specific aspects

Ceiling over ground floor	For this ceiling cross beams may be fixed to the existing supports and covered with wide floor planks.
Ceiling over first floor	The formerly existing ceiling is to be indicated only by the laying of the cross beams.
Stairs	The up leading wooden staircase can be run as simply designed notched staircase with a slope ratio of 18 * 28 cm. Assuming a top ceiling of 2.34 m 13 steps with a width of 1 m would follow. The staircase is planned as 2 x-shaped stairs.
Escape ways	As second escape route a door in the height of the first ceiling is foreseen. This leads directly into the open. At the height of the overlying ceiling a second escape route can't be guaranteed and therefore tis areas can't be opened to the public.
Window and door openings	The doorway on the northeast side of the room in first floor will be equipped with a railing in "Petersberg manner", likewise the door opening in the height of the second floor. The existing window openings are vertically barred in the soffit.

The utilisation variant A for the war powder magazine no.1 is laid out in the following drawing. The three parts of the building are colored differently for better reading.

3.1.2.2.3. Implementation of nearby buildings

The forge, which is located in neighborhood of the war powder magazine no. 1 is an important object for inclusion in the exhibition design of the fortress trades. South of the war powder magazine a stair tower serves as access to the forge. The stair tower to the forge is currently not accessible because the electrical system, lighting is particularly failed due to moisture damage. In the course of further renovation of the war powder magazine no. 1 it is important to make the forge quickly accessible again.



Fig. 13. Access to fort forge via stair tower

3.2. Variant B: Protection vault (info centre Forte Cultura and event stage)

3.2.1. Utilisation description

The use of the protection vault is described in variant A.

3.2.2. Structurally specific aspects

See the described aspects in variant A.

3.2.3. Powder storage space (event stage)

3.2.3.1. Utilisation description

The variant B provides a construction of a stage with a stationary seat construction for seasonal use in accordance with appropriate guidelines for the operation of venues. During the day, a gratuitous use of the cabaret by kindergartens and schools for the staging and demonstration own ideas are provided. Such projects could be applied for through the relevant government agencies (the city of Erfurt Cultural and Social Affairs of the state of Thuringia, Office of Education, youth office, social office).

In the evenings, the stage space shall be used for seasonal performances that are adapted to the spatial conditions. This could be, for example:

- readings,
- cabaret,
- puppetry,
- songs and chansons and
- chamber music.

These events are subject to fees and support the generation of revenue.

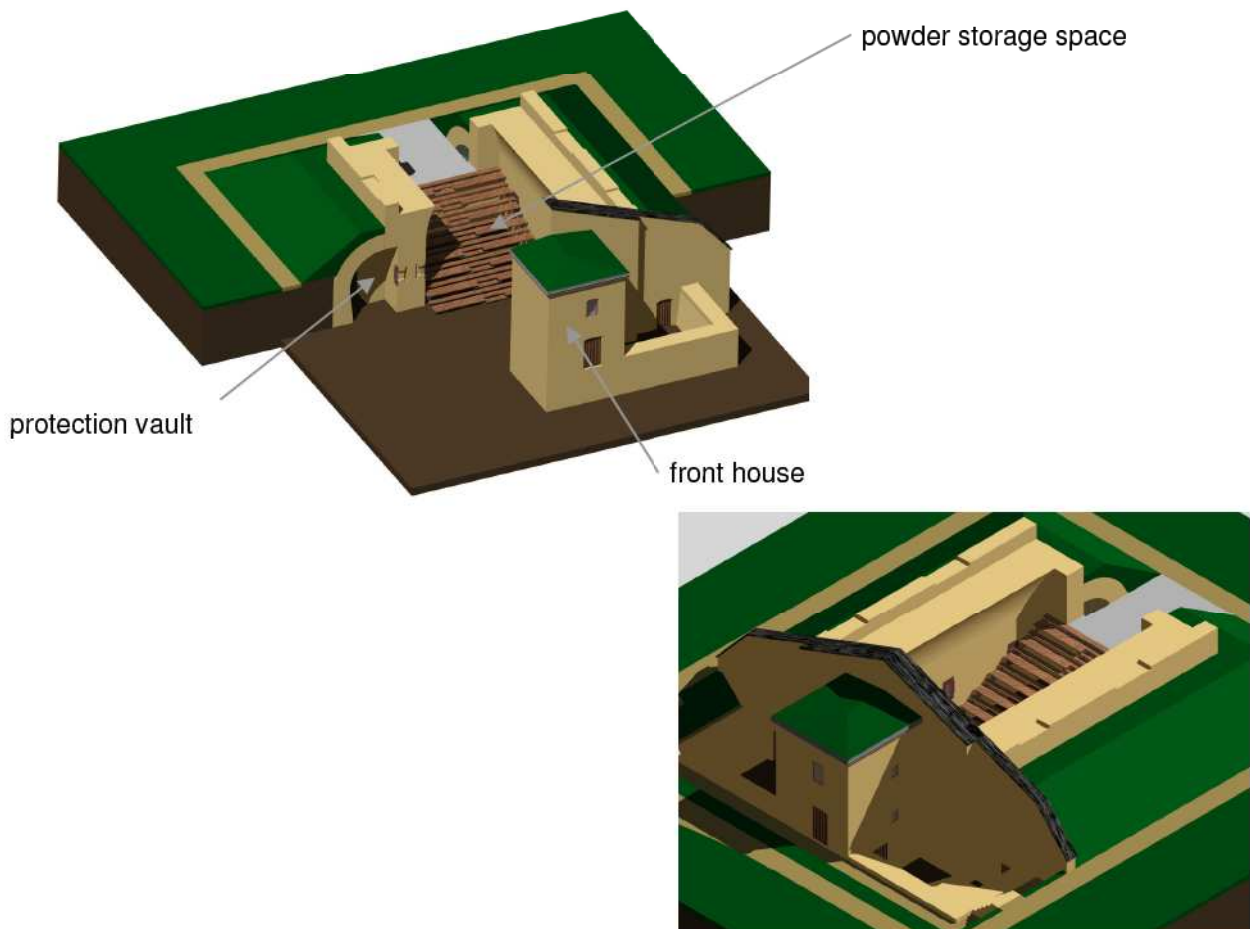


Fig. 14. and 15. 3-D animations of inner space with optional seats

3.2.3.2. Structurally specific aspects

The planning reports an optional platform stair that could be built from layer lattice rods. Other equivalent solutions may also be considered. Due to the arrangement up to 100 seats are available. On both sides the installation is bounded by railings. The middle section is used as a staircase.

Escape ways	The second escape route should be created through the front house. The first escape route may lead between the rows of seats on the upper, eastern platform to the outside.
Floor	Due to the size and mass of the platform stair the existing concrete floor can be left and covered with historical cobblestones. Dewatering is available.

3.2.4. Front house

3.2.4.1. Utilisation description

The front house in this variant is used on two floors as storage and preparation room for the performers and their utilities and is not for public use.

3.2.4.2. Structurally specific aspects

Ceiling over ground floor	For this ceiling cross beams may be fixed to the existing supports and covered with wide floor planks.
Ceiling over first floor	This ceiling can be fully restored since the resulting space will not be a reception room.
Stairs	The up leading wooden staircase can be run as simply designed notched staircase with a slope ratio of 18 * 28 cm. Assuming a top ceiling of 2.34 m 13 steps with a width of 1 m would follow. The staircase is planned as 2 x-shaped stairs.
Escape ways	As second escape route a door in the height of the first ceiling is foreseen. This leads directly into the open. At the height of the overlying ceiling a second escape route can't be guaranteed and therefore tis areas can't be opened to the public.
Window and door openings	The doorway on the northeast side of the room in first floor will be equipped with a railing in "Petersberg manner", likewise the door opening in the height of the second floor. The existing window openings are vertically barred in the soffit.

The utilisation variant B for the war powder magazine no.1 is laid out in the following drawing. The three parts of the building are colored differently for better reading.

4. Discussion and recommendation for utilisation

4.1. Discussion of variants A and B

The proposed recommendations are based on the findings of the project initiative at the TIAW and the third party contracted surveys. This is the basis for further discussions with responsible departments of the city of Erfurt and the project partners.

Following pros and cons of the two described variants are shown:

utilisation	Short description	advantages	disadvantages
variant A	<p><u>Protection vault:</u> National Information Centre and handcraft exhibition</p> <p><u>Powder storage:</u> Erlebnisbauhütte mit Festungsbaustelle</p> <p><u>Front house:</u> Exhibition to the history of the war powder magazine no. 1</p>	<ul style="list-style-type: none"> - unique national information point to European fortified heritage - comprehensive exhibition of traditional handcraft - experimental building lodge and site - the entire building is used; high efficiency of space - target groups of all ages ensure stable visitor numbers and revenue 	<ul style="list-style-type: none"> - high expenditures for installing and de-installing exhibitions in the storage area for alternative content - powder storage depending on weather (just seasonable use)
variant B	<p><u>Protection vault:</u> National Information Centre and handcraft exhibition</p> <p><u>Powder storage:</u> Event stage</p> <p><u>Front house:</u> storage, locker</p>	<ul style="list-style-type: none"> - additional offer for cultural events in Erfurt in a historical surrounding - especially for school kids interesting offers towards European fortified heritage in general and traditional fortress construction mastership in special - possibility for own artistic activities 	<ul style="list-style-type: none"> - investment and sustainable management unsure (especially event stage) - target group are schools (no revenue) - use of powder storage not flexible for alternative use - powder storage depending on weather (just seasonable use) - front house not applicable as exhibition space - only limited revenue

4.2. Recommendation for an utilisation variant:

As a result of the analysis of advantages and disadvantages variant A is recommended due to the following aspects:

Content:

- variant A describes a both for Germany and Europe so far unique information centre and exhibitions concept and is therefore a unique selling point
- variant A combines theory and practice in the best way. The learned and heard is combined with experimental experience and is perceived with all senses

Efficient use of the give space:

- In variant A the building with all its space is most efficiently used
- The front house in its unique originality is included in the exhibition concept of variant A and accessible for visitors

Visitor numbers:

- Due to wider target groups fort he offers in variant A it can be predicted that this variant will attract a larger number of visitors
- Taking into consideration that not all offers and services are free of charge a better revenue is predicted also

4.3. Cost estimate for investment

In the application phase of the project a cost structure for the planned investment was given. Meanwhile the planning of measures was done more detailed. A table of estimated costs is attached in the appendix.

5. Amendments to the status of the investment

The given paper reports the status of the investment planning as of 07/2013. The planning work was already carried out to a large extend. Also the tender for the construction work was in preparation.

Due to objective reasons the planned investment in Erfurt will not be realised. As informed by the project management an investment can only be made if the project partner is the owner of the property. This is for PP07 not the case. This information was not known at the time of project application.

Nevertheless the TIAW in cooperation with the city of Erfurt will do everything to realise at least parts of the planned measures.

Dr. Katrin Langer,
Dr. Detlef Wahl,
TIAW e.V.

6. Bibliography / List of publications

Langer, Katrin: „Management structure and practical experiences of management of the Citadel Petersberg Erfurt“, TIAW e.V.; Transnational workshop FORTE CULTURA, Kostrzyn 12.02.2013

Planungs- und Ideenfindungsgruppe zur Förderung des Petersberges am TIAW e.V.: Arbeitsplan zur Umsetzung des Leitbildes „Lebendiger Petersberg“ – Lasten und Pflichtenheft zur Umsetzung des Ideenwettbewerbes „Der Petersberg zu Erfurt: Traditionen erhalten – Innovation erleben“ der Landeshauptstadt Erfurt und der ARGE Erfurt“; Erfurt, 20.08.2009

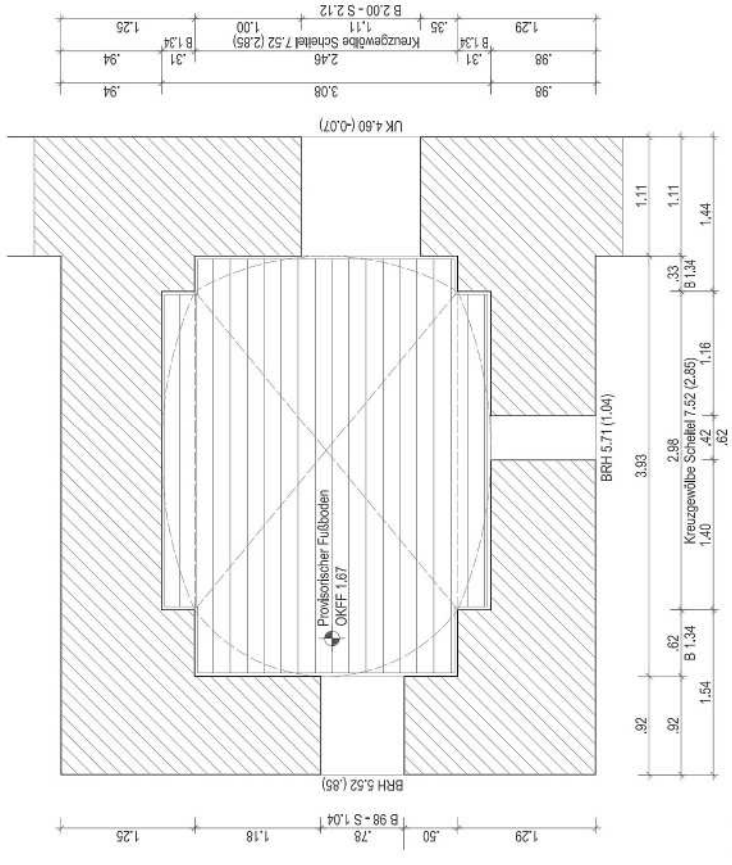
Stadtinitiative „Lebendiger Petersberg“ in Trägerschaft des TIAW e.V.: Lebendiger Petersberg – Ein Erfurter Kulturdenkmal im Wandel. Ergebnisdokumentation der Planungs- und Ideenfindungsgruppe Petersberg Jahre 2005-2011; Erfurt, 03.05.2011



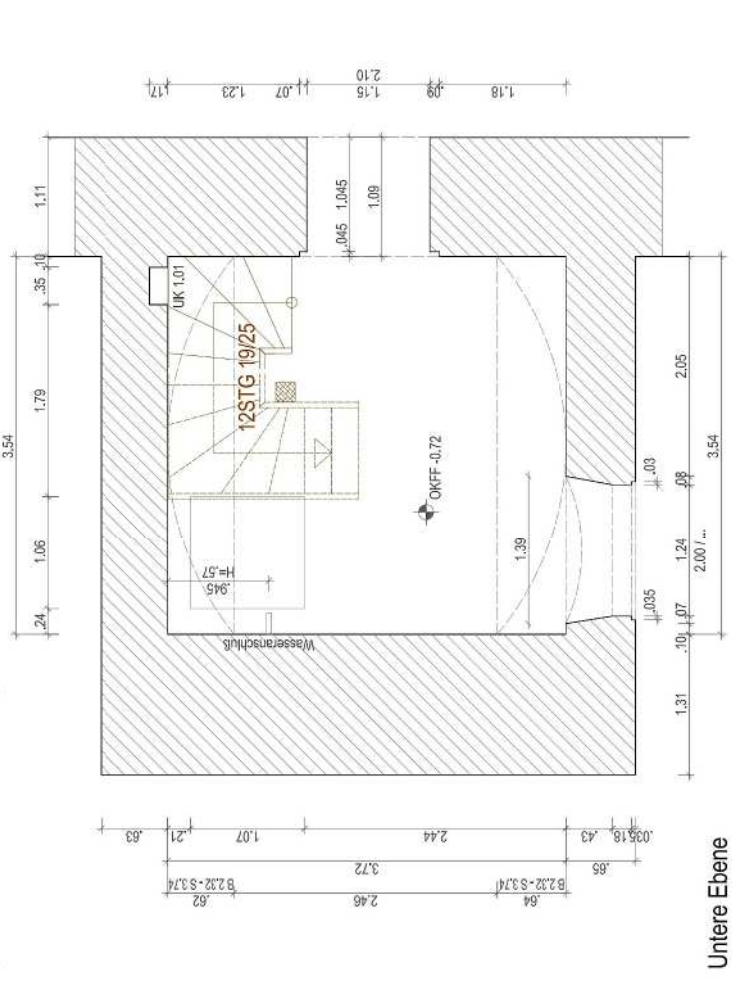
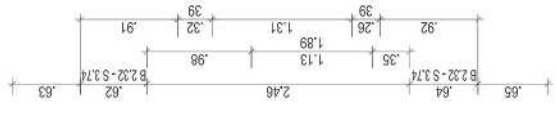
7. Appendix

On the following pages several annexes are added. These are

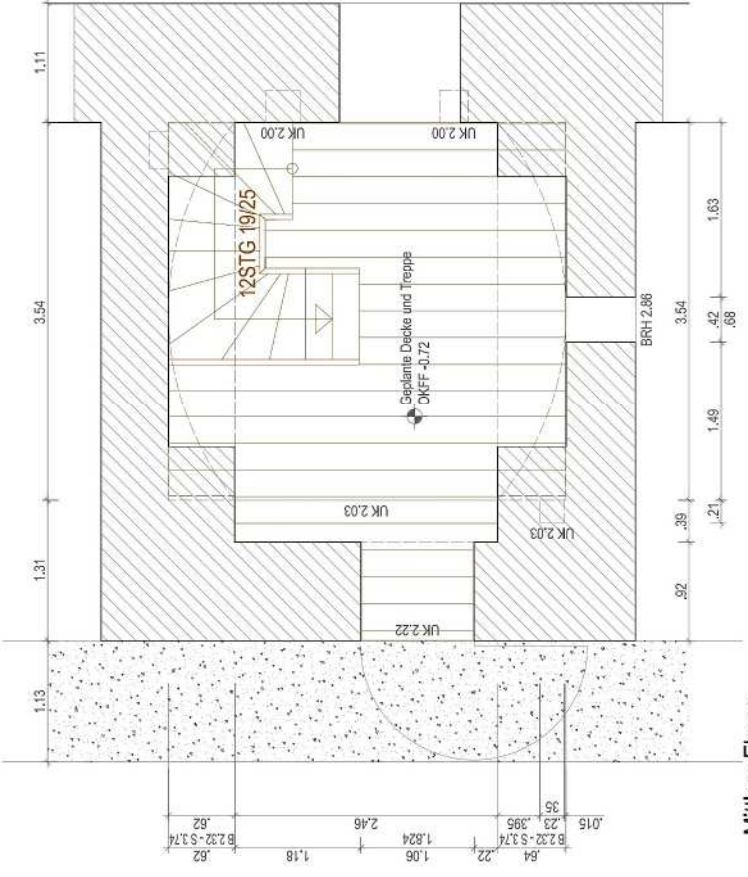
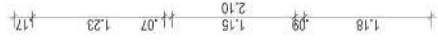
1. Front house ground floor drawing
2. Front house section view 1 and 2
3. Draft variant A
4. Draft variant B
5. Cost estimate for the planned investment 08/2013



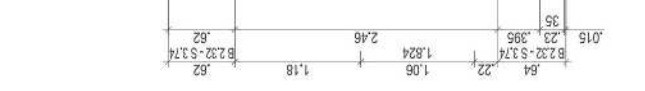
Oberer Ebene
(Provisorische Decke)



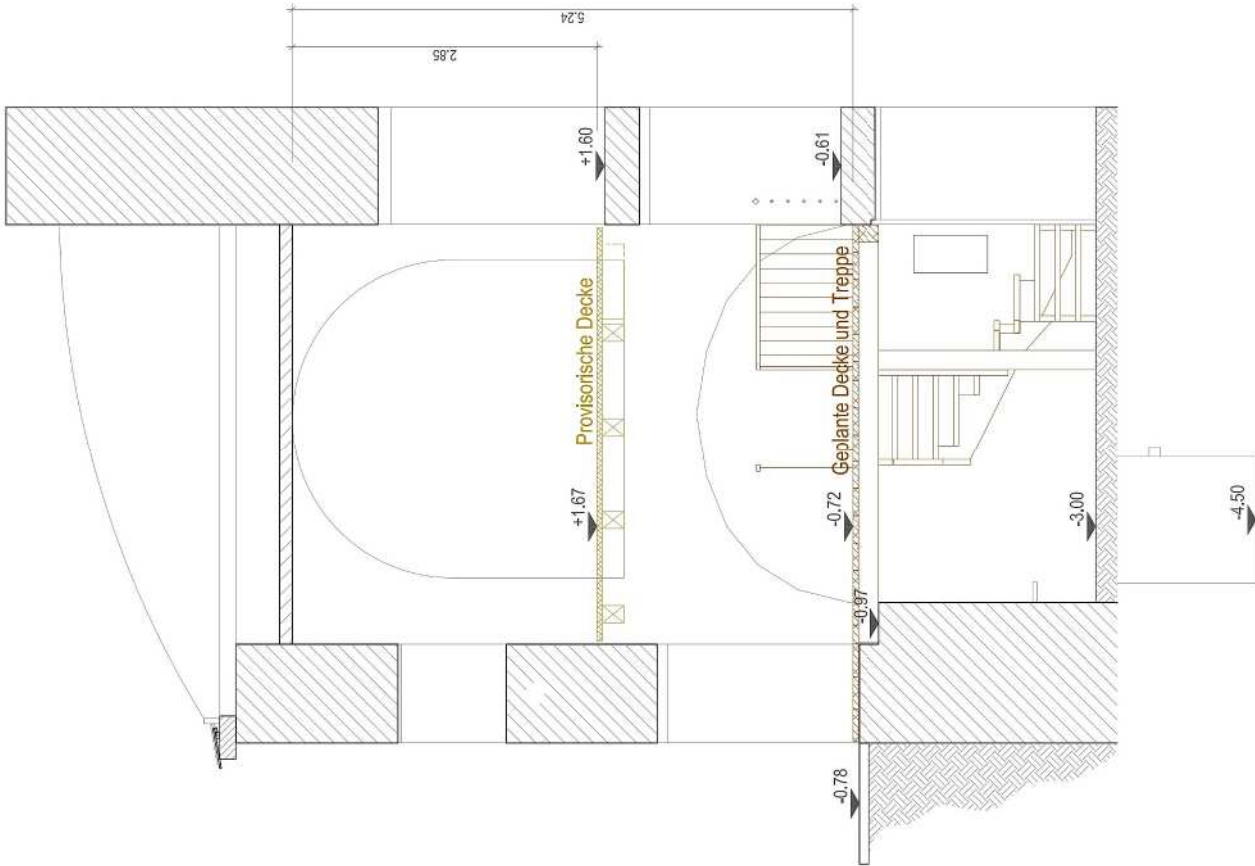
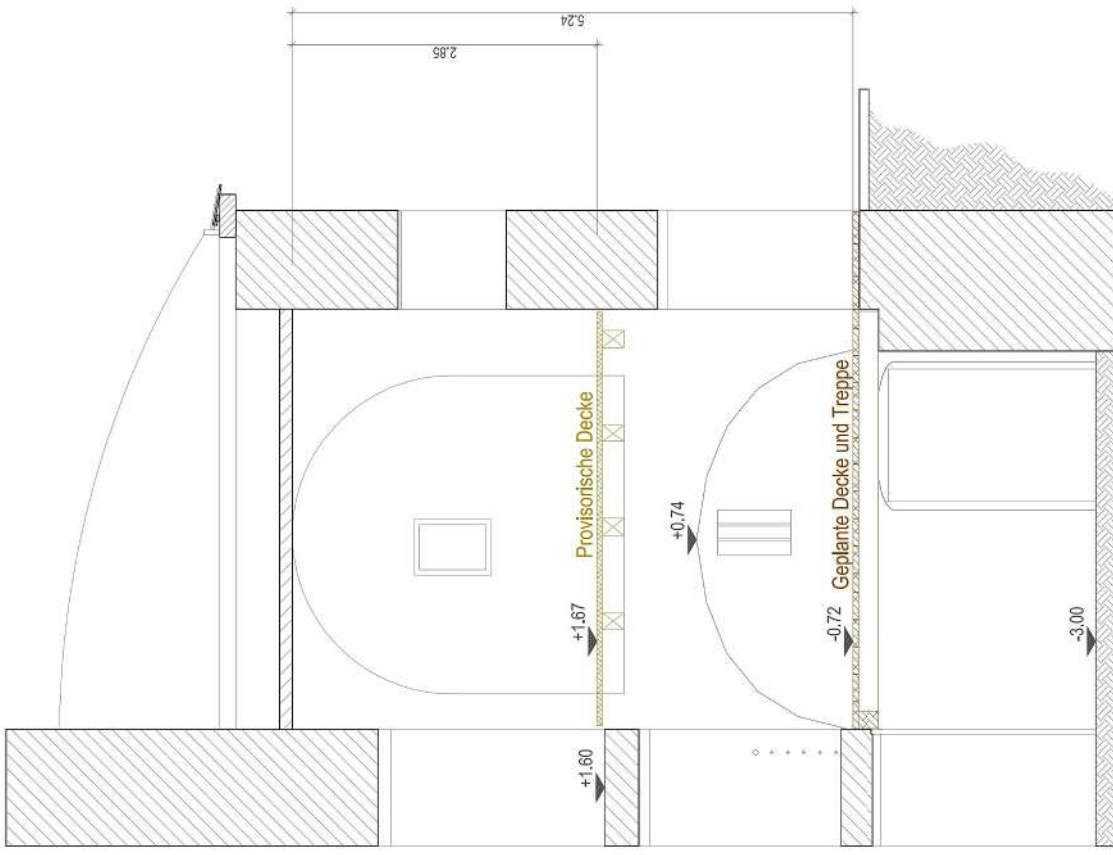
Untere Ebene



Mittlere Ebene
(Geplante Decke und Treppe)



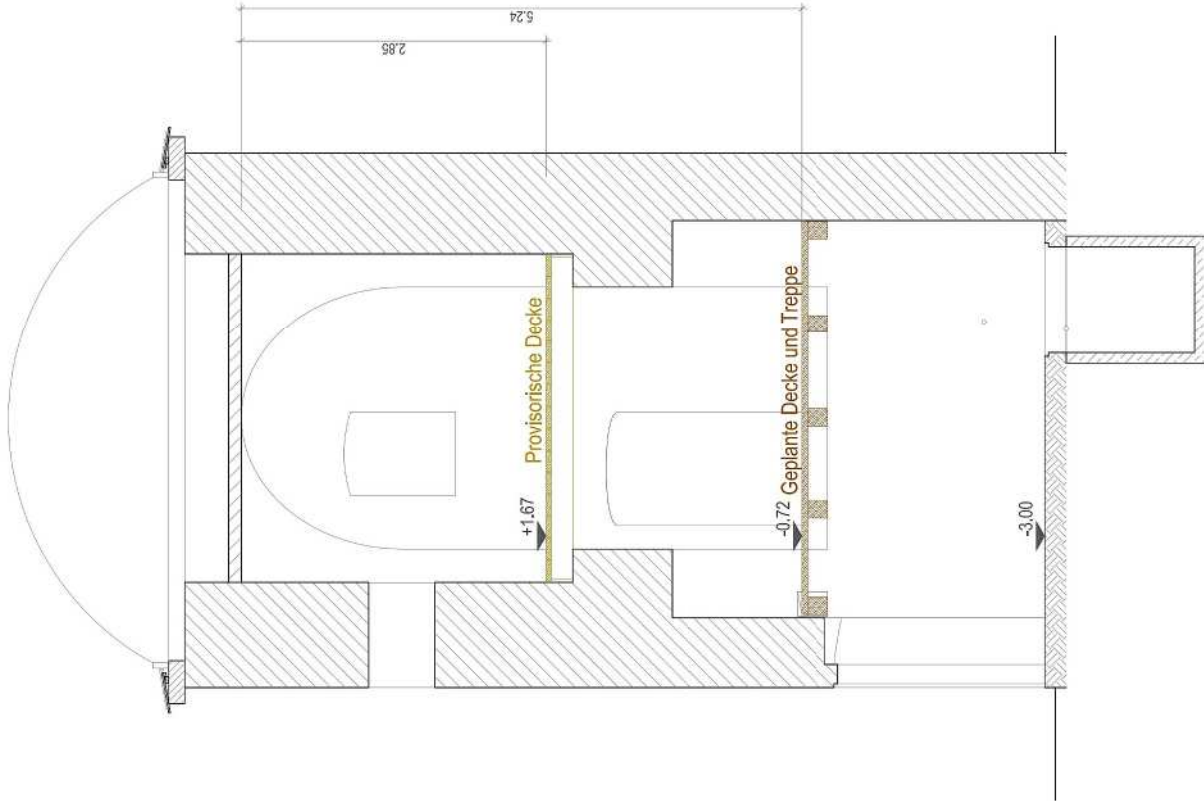
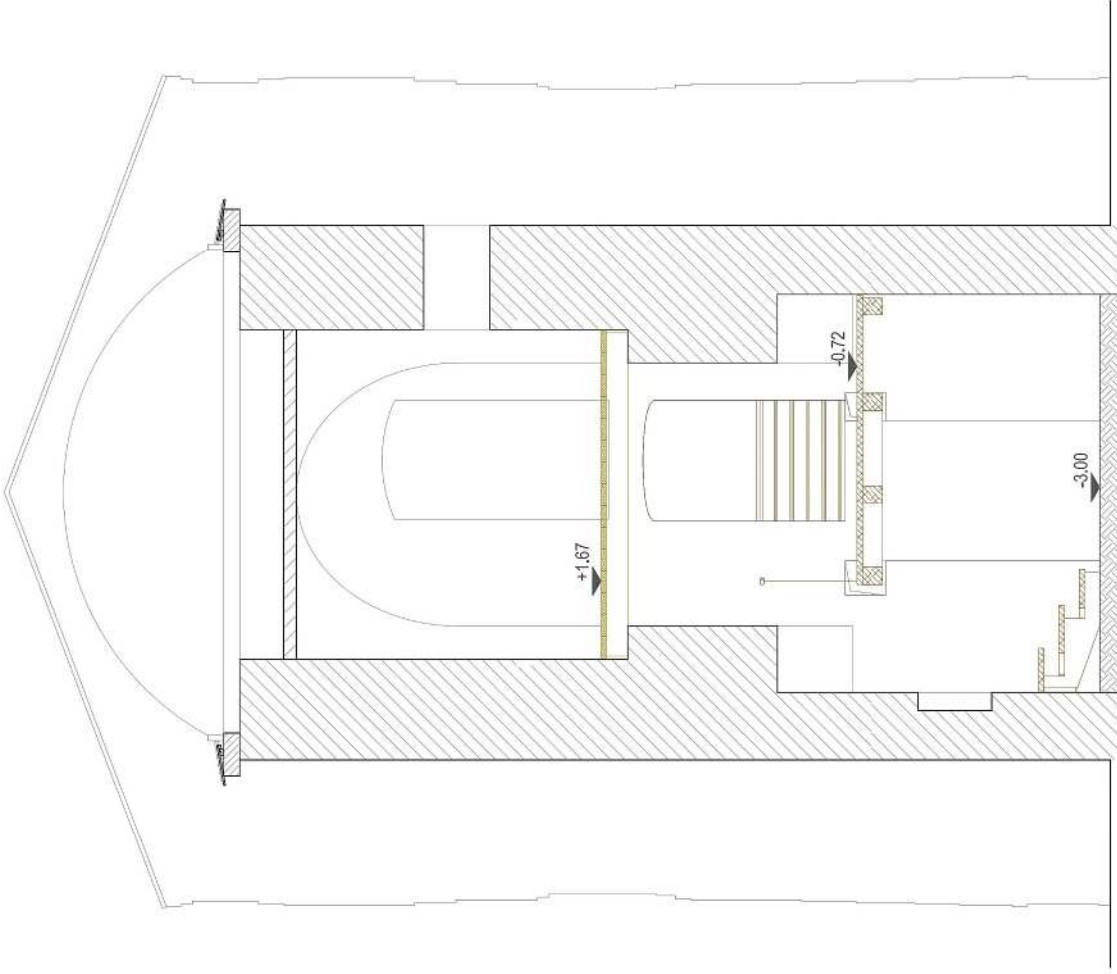
Index	Datum	Änderungen
Projektgruppe Petersberg		
von TWA e.V., Ladegangweg 37, 81664 Erlau für den Bau des Neubaus und Gebäudemanagement, Bauhaus Petersberg, Bauabschnitt 2A, 99092 Erfurt		
Zeichnung		
Plan-Nr.:		
Diese Zeichnung wurde im Auftrag der Stadt Erfurt erstellt. Die Verantwortlichkeit und die Angelegenheiten sind dem gezeichneten AG zuzurechnen.		
Kriegspulvermagazin Nr.1 Vorhaus Bestand Grundrisse		Datum:
Maststab: 1:150		gez.: E. Bruchner



nach Süden

nach Norden

Index	Datum	Änderungen
Projektgruppe Petersberg vom TWA ev.-L. (Lageplanung 37, Bild 2 Erfan zur Art der Vorhaben und Gebäudenutzung: Bauhalle Petersberg, Bauabschnitt 2A, 98092 Erfan		
Zeichnung		Plan-Nr.:
Diese Zeichnung wurde im Auftrag der der Stadt Erfurt erstellt. Die Verantwortlichkeit und die Abgrenzung mit dem genehmigten AG erdigen.		Datum:
Kriegspulvermagazin Nr. 1 Vorhaus Bestand Schnitte		Maßstab: 1:50 gez.: E. Bruchner



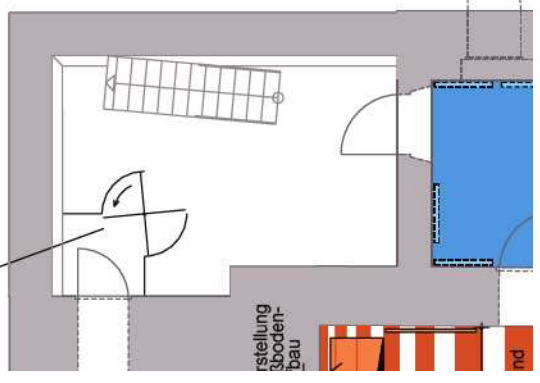
nach Westen

nach Osten

Index	Datum	Änderungen
Projektgruppe Petersberg <small>von TWW e.V., Lägerberg 37, 01064 Erfurt für den Bau von Hochhaus und Gebäuderverwaltung, Baufläche Petersberg, Bauabschnitt 2A, 99092 Erfurt</small>		
Zeichnung		Plan-Nr.: ...
Diese Zeichnung wurde im Auftrag der der Stadt Erfurt erstellt. Die Verantwortlichkeit und die Abgrenzung mit dem genehmigten AG erdigen.		Datum:
Maßstab: 1:50		gezeichnet: E. Bruchner

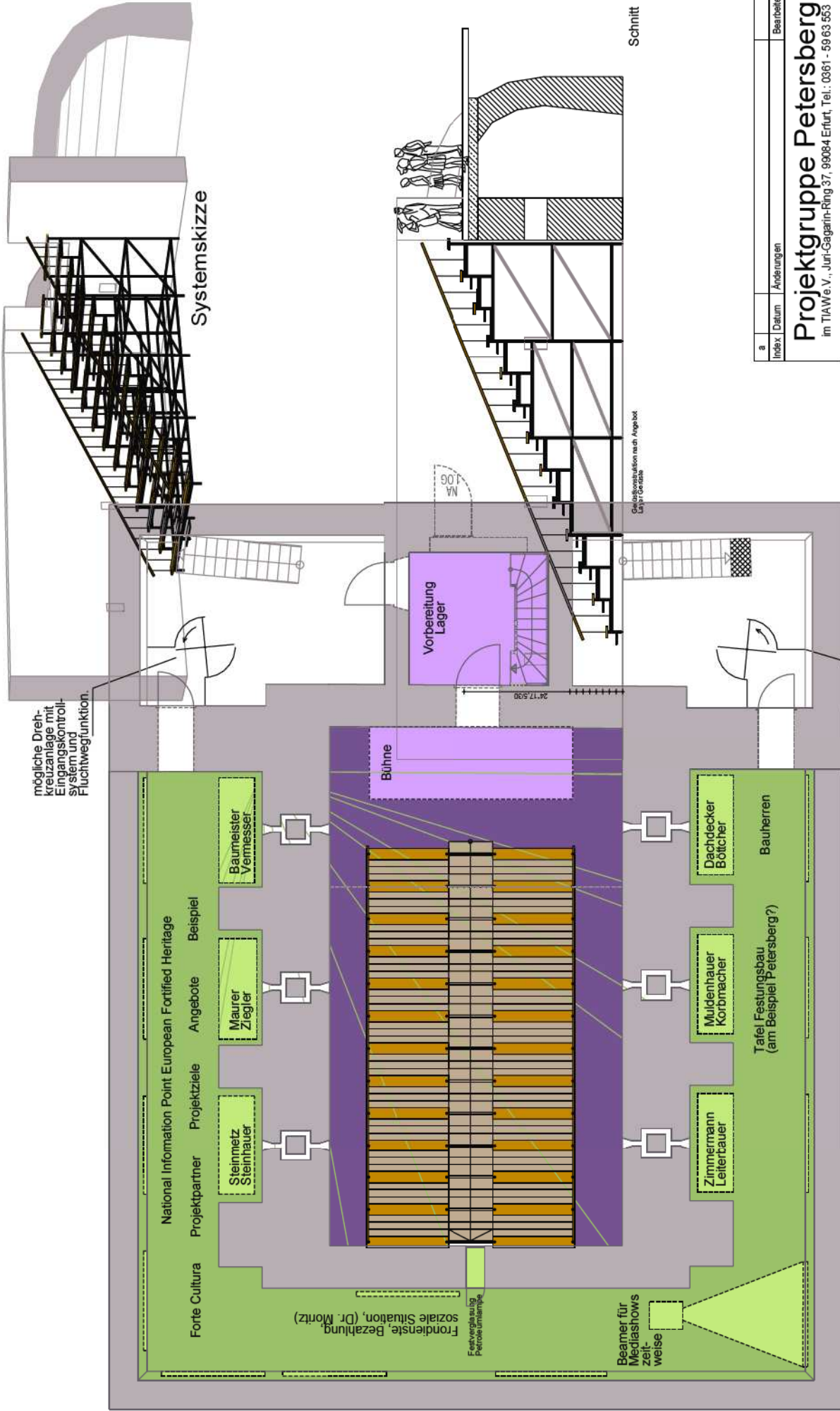
Kriegspulvermagazin Nr.1
 Vorhaus
 Bestand
 Schnitte

Die Dreh-
anlage mit
Kriegspulvermagazin
und
Schautafel



Erstellung
über
den

Geschichte und Funktion des
Kriegspulvermagazins 1
auf 2 begehbaren Etagen in
Schautafel (Hr. Grobe).
Decke über dem 1. OG nur



mögliche Drehkreuzanlage mit Eingangskontrollsystem und Fluchtwegfunktion.

mögliche Drehkreuzanlage mit Fluchtwegfunktion.

Schnittfunktion nach Angebot

Schnitt

a	Index	Datum	Änderungen	Beauftragter
Projektgruppe Petersberg im TIA We. V., Jun-Gagarin-Ring 37, 99084 Erfurt, Tel.: 0361 - 59 63 553				
Zeichnung		Plan-Nr. KPM - 3 - 006		
Kriegspulvermagazin 1		Entwurf NIP European Fortified Heritage Kleinkunstbühne mit Ausstellung		
Maßstab 1:100		gez.	Planung: DI Falkenstein	Datum
<small>Legende basieren auf dem digitalisierten Kadastreplan der Stadt Erfurt - Gena-Nr. 62/100/16106 und 62/100/13508</small>				

1 m

10 m

Beamer für Mediashows zeitweise

soziale Situation, (Dr. Moritz)
Fronde, Bezahung

Fortes Cultura

Projektpartner

National Information Point European Fortified Heritage

Projektziele

Angebote

Beispiel

Steinmetz Steinhauer

Maurer Ziegler

Baumeister Vermesser

Zimmermann Leiterbauer

Muldenhauer Kornmacher

Dachdecker Böttcher

Tafel Festungsbau (am Beispiel Petersberg?)

Bauherren

Bühne

Vorbereitung Lager

Systemskizze

Investitionskosten KPM 1 - National Info Point Fortified Heritage and exhibition -				
Kostenschätzungen Stand 08/2013				
	Materialkosten + Lohnkosten (Fremdleistungen)	Menge	EP	GP
Turm	Glastüren, 3-teilig Verbundsicherheitsglas	3 Stk.	1.050,00 €	3.150,00 €
	Deckenbalken	2* 14,36 m ²		4.500,00 €
	Bohlenbelag	1* 14,36 m ²		
	Innen-Holztreppen	1 Stk.		
	Türen, Stahl abschließbar	5 Stk.		vorhanden
Luke	Glasscheibe fest	1 Stk.	150,00 €	150,00 €
	Klappe vor Lichtluke - Restauration	1 Stk.		
	(Haupt-und Unterverteilung vorhanden)			
	Elektroanlage Umgang			500,00 €
	Strahler	25 Stk.	85,00 €	2.125,00 €
	Fluchtwegbeleuchtung	7 Stk.	115,00 €	805,00 €
	Elektroanlage Innenhof	20 m	6,00 €	120,00 €
	Strahler	8 Stk.	85,00 €	680,00 €
	Laterne	1 Stk.	100,00 €	100,00 €
Innen	Gewölbedecke incl. Aufbau	bis 1. Strebpfeiler	ca.4,50 m	6.000,00 €
	Geländer und Absperrung auf Gewölbe	9 m	100,00 €	900,00 €
	dazu ev. Acrylglas	14 m ² .		2.000,00 €
	Geländer an der Ostseite	8 m	100,00 €	800,00 €
	Fluchtleiter, Typ Jomy, abklappbar	5,50m		6.500,00 €
	Außenbeleuchtung, Bodenstrahler	6 Stk.	100,00 €	600,00 €
	Pflasterung im Innenhof			5.000,00 €
	Summe Material		33.930,00 €	
	Personalkosten			
	Planungs- und Ingenieurleistungen		12.000,00 €	12.000,00 €
	Management und Organisation		6.400,00 €	6.400,00 €
	Arbeitsleistungen (Vergabe)		23.600,00 €	23.600,00 €
	Summe Personal		42.000,00 €	
	Ausstattung			
	Ausstellungsmöbel	3 Stk.	2.000,00 €	6.000,00 €
	Ausstellungstafeln, Glas, Rahmen	15 Stk.	75,00 €	1.125,00 €
	Beamer mit Zubehör	1 Stk.	4.000,00 €	4.000,00 €
	Summe Ausst.		11.125,00 €	
	Summe Investitionsbedarf		87.055,00 €	