



AT-FORT
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development

10 › 12 JUNE 2013

BESANÇON



*PRESERVATION
THROUGH DEVELOPMENT !*



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REPORT

ATELIER VI

Vegetation, landscaping and spatial planning

10 - 12.06.2013
Besançon, France

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Report by Marieke Steenbergen and Marie Mongin, Vauban Network

September 2013



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Introduction to the atelier



The self analysis report introduces the themes of vegetation, landscaping and spatial planning, considered as enabling conditions, as follows:

Spatial planning is an essential enabling condition for the redevelopment of cultural heritage. It enables easy access of the site for visitor streams and connection with other hot spots.

The main question regarding this issue is the way a fortress (from its military origins often a deliberately isolated area) can find a connection to the urban space. This matter can be thought of in different ways: physical/spatial, landscape, public transport and so on.

But also planning and design of touristic routes for walking, cycling, canoeing and driving will guide visitors to and from historic spots.

In Besançon, several original partnerships (military labour force, social rehabilitation) exist for the maintenance of vegetation in the citadel. Two of them have been discussed during the atelier. The self analysis report quotes:

Alternative labour force enhances the value of cultural heritage in many socio-economic ways.

The restoration and maintenance of former military sites often needs an extensive labour force, skilled craftsmen but also just 'hands'. Specialized restoration works, adjusting equipment and facilities and heavy construction works will be accomplished by contractors. But various work is left that can be completed by many different groups of workers, often under guidance of specialists. Examples of students, prisoners and military men that work for a while as part of their training are given.

The report resumes the challenges regarding vegetation and landscaping as follows:

The maintenance of vegetation in a fortified site is expensive because of the great areas that need to be treated regularly and also because of the technical difficulties requiring specialized staff or private enterprises.

The main aims of the atelier were:

- To share knowledge on original purposes of vegetation in defence systems and on efficient, cost effective and sustainable maintenance;
- To share the good practices of the partners on vegetation, landscaping and spatial planning
- To ask the partners for advice on several issues Besançon is facing, of which:
how can the city, through planning and landscaping measures, be made more tourist friendly, and how could the citadel be made more accessible?

The group discussions also concerned the transferability of the good practices presented by the partners during the atelier, which was combined with the midterm event of the project. The leadpartner presentation of the midterm results and the press clippings issued after the press conference are included in the progress report of the project.

Vegetation, partnerships and landscaping

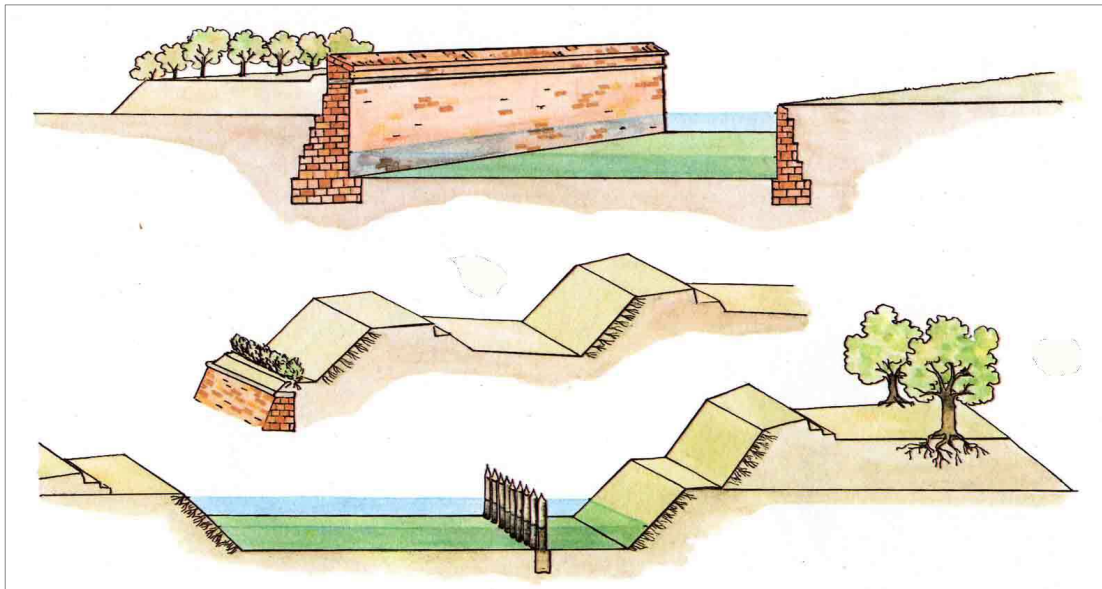
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Grass, lawn, trees and fortification. History and management

Philippe Bragard, Vauban Network

Historical aspects

The original use of vegetation in the fortified systems is very different according to the type and age of the fortification. The presentation done by Mr. Bragard mainly concerned the bastioned system and showed how vegetation (given by trees, bushes and “lawn turf” ramparts) was conceived as part of the defence system.



Several technical treaties, as De Ville (1628) and Dilich (1644), attest a theory in the adoption of vegetation for defence purposes. These historical evidences, matched with on-site analysis, give precious information on different aspects.

The types of essences used were usually several and were chosen to respond to the needs of reserve for tools handle, rifle butt and gun carriage, charcoal production, heating, medicine and food provision, ornament and beauty of the architectural ensemble and of the interior spaces, as well as for their tracing roots and quick growth.

- The ash tree (the most appreciated) due to its many qualities, as light and flexible wood, quick growth, good resistance in different meteorological conditions, easily combustible also when not perfectly dry.
- The lime tree, for its quick growth, long life, good ductility of the wood and also favourable to the production of honey and tea.
- The willow tree, for its quick growth, use of wood for the production of carbon and gunpowder, different use of branches for their flexibility, its leaves

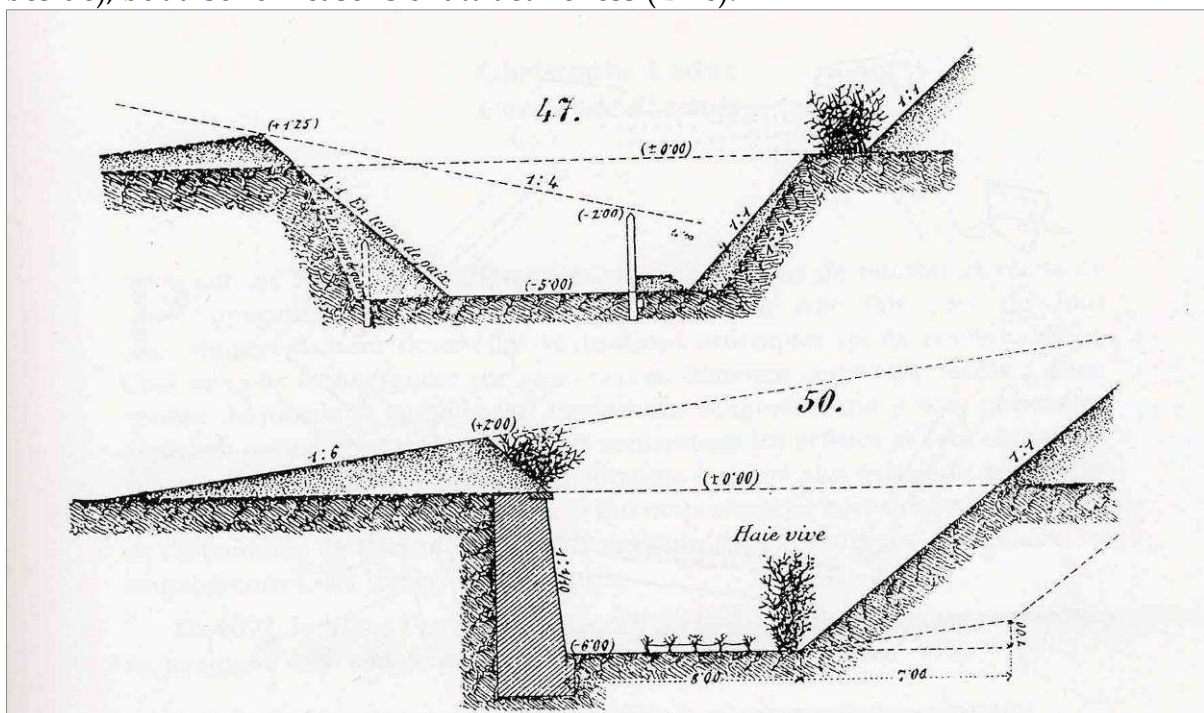
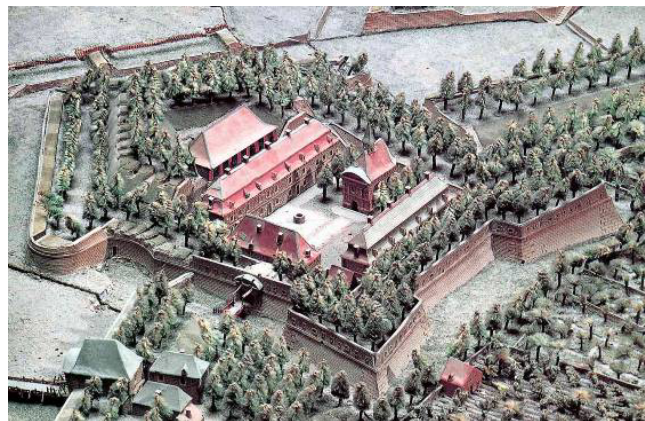
are optimal to feed goats and sheep, its branches are highly combustible and use to set the fire.

- Several fruit trees, fructifying in different seasons, as apple tree, pear tree, chestnut, plum tree, cherry tree.
- Acacia, although delicate to cold climates, it provides alleviation to hungry if used in cuisine.
- The thorn bush, for its quick growth and clear defence use, preventing easy access.

Local essences were preferred for their productivity and mimetic advantage.

Trees and vegetation were usually planted according to a design (historical maps and instructions can be very precise on their location. Example of Gravelines, France, copy of a map by Ramsault, 1761), so aligned and in places not to endanger the fortified structures.

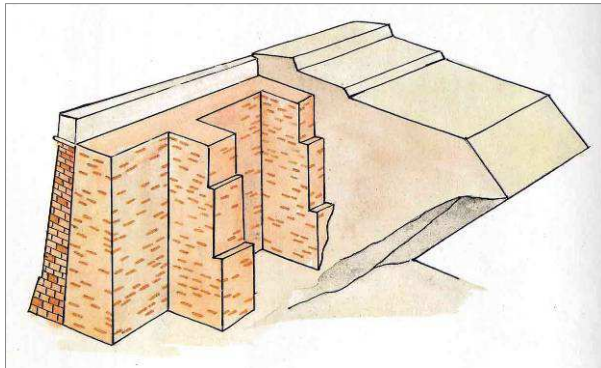
Trees are often planted on the top of the rampart for defence purposes (example of Fort Griffon, Besançon, beside), but also for reasons of attractiveness (Lille).



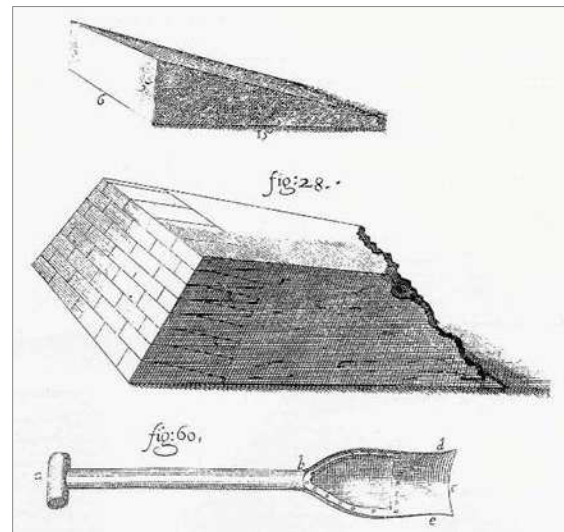
On the glacis, thorn bush had a function of pre-barbed wire (Von Brunner, 1878).

Ramparts were built of earth and masonry, while lawn (means “built with turf”) has been adopted until 1820/30. Of this technique there are witnesses that date back to 4th century A.D., as well as in *De re militari* by Flavius Renatius Vegetius, up to

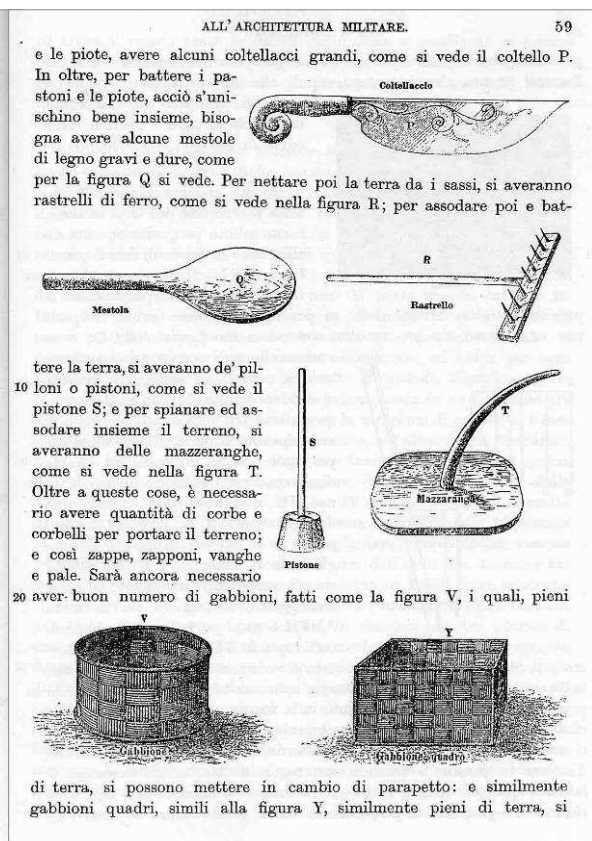
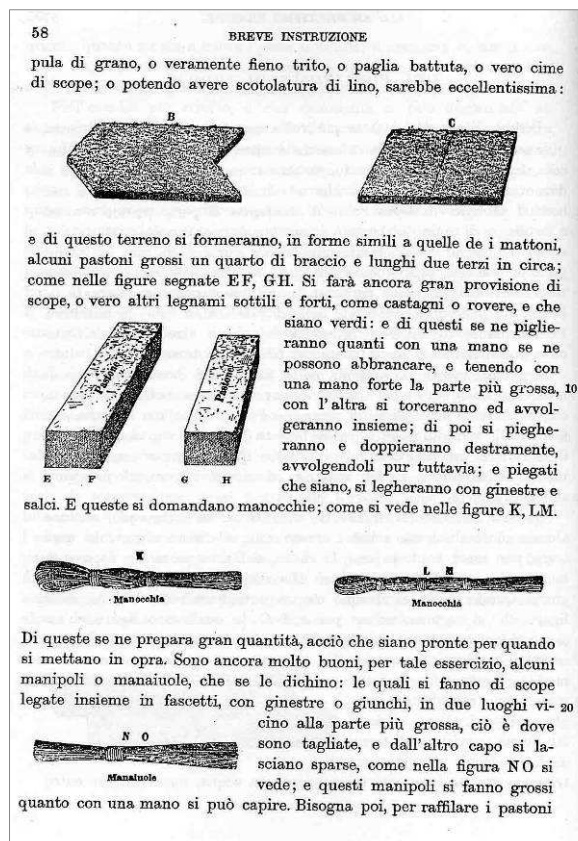
Galileo Galilei and his *Istruzione sull'architettura militare*, where he also showed the tools and techniques used to build earth ramparts and bulwarks, as per figure below.



Early modern fortification wall



Lawn "bricks"



Galileo Galilei, Padova, 1593

Management of earthen fortifications

Since their profiles move slowly over centuries, we nowadays have some difficulties in recognizing them (and even more in their restoration and maintenance).

Trees can seriously harm the perception of the fortifications, as well as endanger the structural stability. In some cases, when for example structures are safely maintained, trees can be acceptable. Special attention should be paid to maintenance of rain gutters and cornices (rainwater should easily flood outside). Profiles of earthen covering (tops of ramparts) should be maintained and clay can provide water resistance.

The design of earthen ramparts should not be too soft and consolidation should be provided through the use of vegetation and/or grass.



A very important dilemma is whether making the fortification visible (thus approaching its original asset) or letting it become or stay as a park (according to the romantic idea of nature prevailing). As a general approach, it is often possible to balance the two aspects, paying attention to the structural stability of the relevant parts of the fortification.



The fortress of Montmédy is a good example of bulwarked fortification with trees, visibility and stability. In this sense, regular maintenance is essential and should guide the decision making process.



Montmédy (F)

Conclusions

- Lawn, grass and tree are real components of military architecture, from roman antiquity until 20th century, all over the world;
- Historical analysis are essential to the decision making process because they often provide important information on the fortification and its former management;
- It is important to make clear choices: nature or culture, garden or historical monument, but this decision should consider not to threaten the structural parts;
- Lack of maintenance put structures in great danger;
- The last historical phase is the reference in case of restoration;
- Close collaboration between historians and botanists is required.

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Vauban's fortifications in Besançon. Landscaping and vegetation maintenance

Fabienne Bénard, municipality of Besançon

Context of the masterplan

Historical aspects

Vauban's fortifications in Besançon comprise the citadel, a double town wall (around the "Boucle" and the Battant quarters), bridge defences and the fort Griffon, as a small citadel facing the big one, as can be seen on the copy of the plan-relief scale model (original from 1722).

During the 19th century, the urban defences were used as public gardens (Chamars).

Today, Vauban's fortifications are still very present in the urban landscape and have only been modified in a modest way.

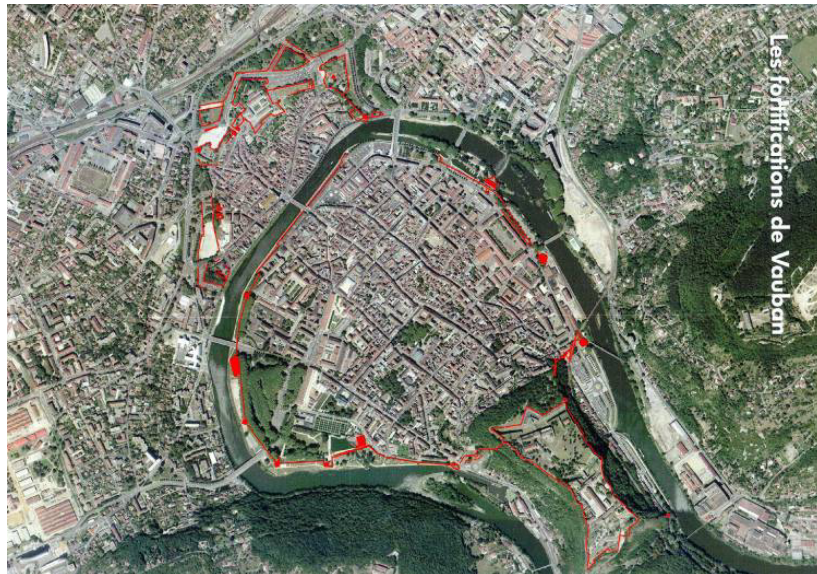


Geographical, geological, natural and social context

The rock is very fragile and regularly pieces of stone fall down: stabilisation operations have been carried out for reasons of public safety.

Because of the presence of protected species (in particular birds), interventions have to be limited to specific periods of the year.

Vegetation grows wherever it is possible, which is generally appreciated by the public (shade providing a certain comfort for leisure activities in the ramparts).



A masterplan combined with a concrete action programme

The enhancement of Vauban's fortifications through vegetation and landscaping is organized through a strategic document combined with an annual action programme.

This masterplan has been elaborated in 2009/2010 by a landscape engineer and a biologist (Atelier Aline Le Coeur), associating various disciplines and municipal and state services.

Its orientations are based on conservational principals (types of vegetation which harm the fortified heritage or not and the ways to treat them), and on an inventory of parcels at stake (some interventions would need to be done on private properties).

Guiding principles

1. Conservational measures

Interventions are carried out as early as possible on ligneous vegetation. Grass and moss do not cause any harm and their removal is planned simultaneously with maintenance of the jointing of the walls.



2. Increasing the readability of the fortified system

Operations of selective clearing are done in respect of the visitors comfort and of other urban equipments (not) to be shown.

Before



After



and spatial

Viewpoints are created by selective clearing at strategic spots.



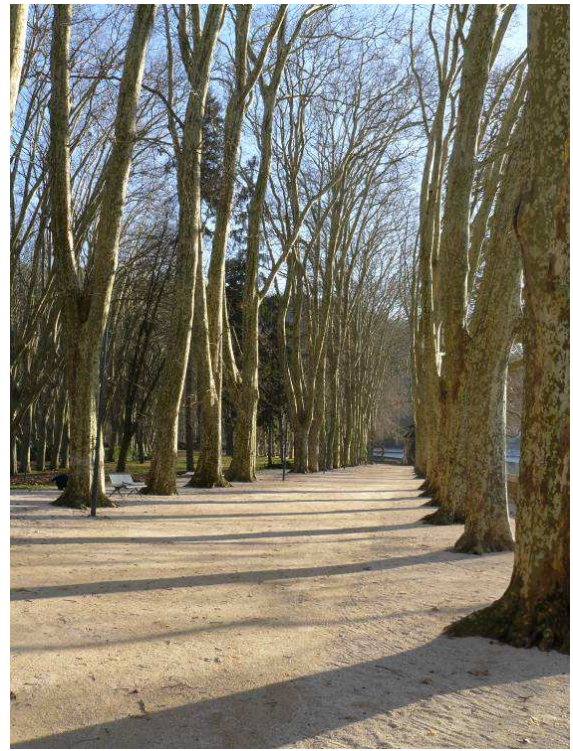
Views from the citadel to the historical city centre



3. Landscaping the fortifications and their direct environment



Footpath connecting the city and the citadel



Requalified Chamars walk

Normally authorisation for interventions in the area surrounding historical monuments can take up to six months. The masterplan makes the procedures easier. During the site visit after Fabienne Benard conference, the discussion arose on the presence of some trees on the playground below the rampart along the river. For the moment it has been decided to keep them while they are providing shade for the users. Some partners would advice to cut them in order to establish a stronger visual relation between the town wall and the river encircling them.

4. Synergy with other projects (for example: the creation of pedestrian trails)

The interventions are planned according to:

- Rules and regulations (natural and cultural): periods of intervention, delays of instruction;
- Permanent evaluation of the impact of the interventions (on the roc, on the landscape, on the fortifications);
- The vegetation cycle: decisions concerning vegetation clearance are made during winter since the transparency favours evaluation of the visual impact;
- The needs for maintenance afterwards.

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Partnerships for maintenance. Citadel of Besançon

Commandant Cocteau, 19th engineering regiment

The citadel of Besançon, the municipality of Besançon and the 19th engineering regiment have concluded a partnership in 1991 aiming at the maintenance of the green areas of the citadel which are not easily accessible.

This partnership makes sense both for the public authorities as for the military (training, positive publicity).

A team of ten servicemen intervenes during the equivalent of three weeks/year, according to the tasks defined by the Citadel authorities. In exchange for this (estimated cost is 5000€), the military and their families have free entrance to the citadel two days a year.



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Nadia Khodja, ADDSEA (association for the protection of children and youngsters)

The aim of this initiative is to foster first employment opportunities for youngsters with social and professional difficulties, by application of article 14 of the French Public procurement Code. A public service contract was signed in 2011 for two years, renewable, with the governing body of the citadel for 140 days per year. The tasks entrusted range from electricity work, plumbing, and cleaning to simple masonry works, laying cobble stones, painting (furniture, window frames, and the entry of the front St Etienne...), vegetation clearance, and providing assistance in the organization of exhibitions.

The ADDSEA targets young people between 16 and 25 years old who encounter various difficulties and have failed on many fronts. These youngsters usually come from underprivileged areas; they have no qualifications or may have educational or therapeutic problems. They have been in trouble with the police, or are accompanied by social workers.

The following partners provide financial support to the ADDSEA: the European



Social Fund (ESF), French Ministry of employment, General council of Doubs, Greater Besançon Authority and City of Besançon.

Three days a week, a team of six youths, supervised by a specialized technical facilitator, works on the premises of the citadel of Besançon where they gain experience in different maintenance trades such as: cleaning, painting, clear-outs, repair works, etc. A weekly work schedule helps the young workers to restructure their lives. They learn to get up in the morning and arrive on time, they learn how to work as a team and how to organize themselves, to follow instructions and gain skills.

This partnership between ADDSEA and the citadel is mutually beneficial. The citadel benefits from a revitalization of its green spaces. The young workers from ADDSEA acquire their first professional experience in a prestigious environment that enhances their self-esteem - a cultural World Heritage site. The work at the citadel allows them to gain self-confidence and develop their professional skills.

Each youngster writes a self-assessment report of the tasks performed during his stay and at the end of his contract is issued with a certificate of skills achieved. Long term results are only partially known, since the ADDSEA has no structural means for keeping in touch with all of the beneficiaries. Feed back is given from time to time, on a voluntary basis.

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Deconsecration: preservation through development

Erick de Lyon, New Dutch Waterline

Erick de Lyon is a designer, specialized in art and architecture, associate of Ronald Rietveld, landscape architecte, The Netherlands.

The New Dutch Waterline was conceived to protect the economical heart of the Netherlands by inundation. The system is mainly composed of forts, sluices, dikes, small fortified objects and inundation fields. It remained operational until World War II.

Nowadays this empty space can be addressed as part of the future.

Some guiding principles for modern interventions in the New Dutch Waterline are:

- Preservation of the natural layer
- Preservation of the panoramas (reminding us of the shooting range)
- Use of original forms and profiles: the original design of these buildings and constructions is very functional. For new elements, this principle should be guiding as shown in the open air theatre at Werk aan het Spoel, designed by following the slopes trajectory.



© Atelier de Lyon

Another leading principle for modern interventions is the respect of existing layers on the site. This principle is illustrated by the bunker cut in two parts. Many identical objects still remain in the New Dutch Waterline, opening up one of them did not harm the significance of the defence line itself. On the contrary, it now can better be understood – without signage, which should absolutely be banned from De Lyon's point of view.



© Atelier de Lyon

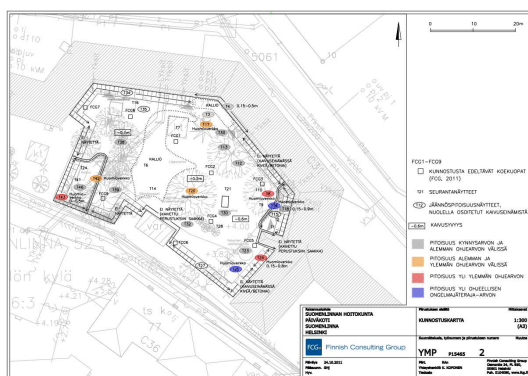
This artistic intervention also refers to the examples of the Buddha's of Bamiyan, Afghanistan, and of the cross-shaped window in the church designed by the Japanese architect Tadao Ando, showing that emptiness in itself fulfils some kind of presence.



© Tadao Ando

Heikki Lähdenmaki and Iina Johansson, Governing Body of Suomenlinna

The positive result of this project was of course the safety of the children's playground. But all archeological values, original vegetation and possible seed banks were lost, and a lot of money has been spent. The polluted earth had to be transported to the refinement plant with the ferry.



Report Atelier VI- Vegetation, landscaping and spatial planning
AT-FORT, Vauban Network, June 2013

reuse of fortified areas. Day care center is perhaps the most sensitive re use. Lower standards can be used for less sensitive activities. To avoid loss of archaeological values and authenticity changing the soil should be kept to minimum. Alternative methods to minimize the risk should be studied.

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Green on and around the Spandau Citadel

Andrea Theissen, citadel of Spandau, Berlin

Nowadays the appearance of fortresses is mostly determined by “green”, for example by trees, grass and bushes. Of course, this development is desirable for recreation and to give fortresses a more civil outlook. But there are some problems to be dealt with.

- Plants often damage the monument (not further developed in the current presentation);
- Fortresses are not visible any more and cannot form the appearance of cityscape.

The history of green on fortresses

Here you can see the first plan of the citadel drawn by the Italian architect Rochus zu Lynar.

Fortresses are special structures. Sovereigns built them since the 15th century to resist newly developed firearms. Characteristic for these fortresses are outer earthworks as glacis and ravelins that prevent direct shooting against the walls. The defence from above is replaced by protection of the flanks. Casemates were built as secure storing places and as defence points. The bombproof vaults were covered by additional earth protection later on.

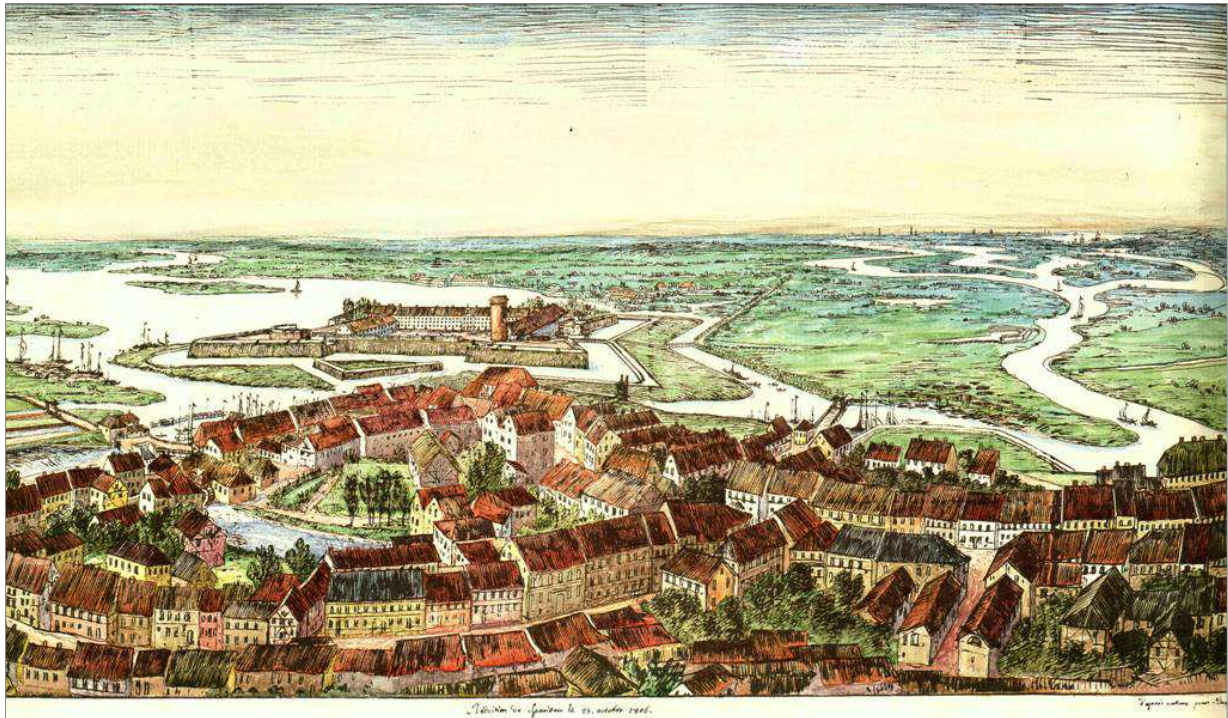
There is little known about planting and gardening in the 16th century, but it is assumed that the linden tree in the courtyard of the citadel was planted in this period. Today the tree is protected as a natural monument.

First hints on “military plantations and gardening” in the surroundings of the fortress can be found at a map drawn about 1680, showing the conventional symbols for trees and reeds. Trees were important for building and heating, fruit trees supplied food for the guarding troops, reeds and willows were used for fascines and for entrenchment baskets.

Replica of such entrenchment baskets have been made for contemporary exhibition in the drill hall.

The picture drawn by Guiseppe Bagetti (who accompanied Napoleon on his campaigns) shows a very open landscape around the citadel. Bagetti made this drawing in the year 1806, in wartime, when a clear field of fire was vital. In peaceful times, though, alder trees, elm trees and willows were planted on the glacis. The trunks of these trees should not exceed 20 to 25 cm in diameter, otherwise it would take too long to cut them down. In addition this size was the best fitting for palisades



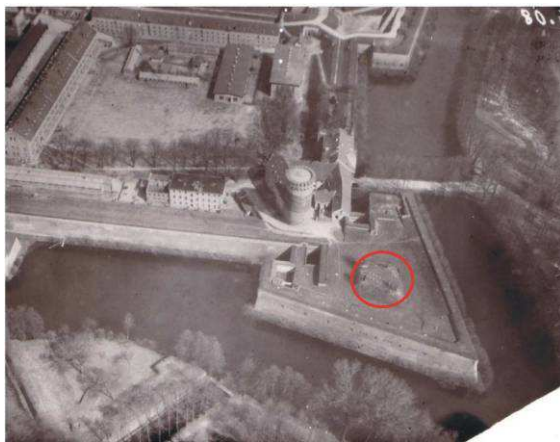


Bagetti, 1806

An important aspect for the disguise of fortresses was the natural impression of the plantings. They should not look artificial. For example trees should be planted in groups.

In the 19th century, many horse chestnut trees were planted in the New Town of Spandau and in the fortress, because they were considered as a good view protection from a far distance. This was particularly important, as the Empire's War Treasure was kept in the Julius Tower after 1870/71.

When these four treetops come into leaf, their common crown amounts to 35 m diameter and the Julius Tower is completely hidden. Today the trees are about 16 m high. Since 2001 they are protected as natural monument.



Group of four horse chestnut trees, planted on 3 m high earthworks on the Bastion King, 1908 (left) and 2010 (right)

Change of the surroundings

In 1903 Spandau lost its status of fortress. Many fortifications were razed and the town walls were torn down, but Fort Hahneberg and the Citadel were kept in duty. After the First World War, between 1920 and 1927, the glacis was changed into a park, open for the public. The open-air theatre from this period is still the place of the Spandau Summer Festival.

The glacis of today is a park with playground for children and the open-air theatre. Most important at the moment are the preservation of rare plants and the safety of the public. The citadel aims at a more intensive cooperation with the people who are responsible for the green space in order to present the citadel as model for the landscape including long vistas to experience the fortress.

In the 19th century Spandau was called "the armament smithy of Prussia". Private industry could develop in the 20th century. Manufacturing plants also dominated the surroundings of the citadel. Until 1990, Spandau was the most important industrial district of Western Berlin. In the last years the factories have been gradually replaced by storehouses, administration buildings and trading firms, without any structural improvement though. Consequently, many tourists are irritated about the unattractive environment.

Town planning for the future

Indeed, the development of the citadel and the improvement of the tourist infrastructure is a task not only for the local authorities, but even more for the administration of the whole city of Berlin. In 2004 the "Senate Department for Urban Development and the Environment" prepared an expertise under the title "Planwerk Westraum Berlin. Ziele, Strategien und landschaftsplanerisches Leitbild".



In this paper suggestions for the future development of the western part of Berlin were made. A public park is planned around the citadel with access to the Havel River. The responsible authorities still have to be convinced that investments in the area surrounding the citadel would be helpful for the city of Berlin as a whole.

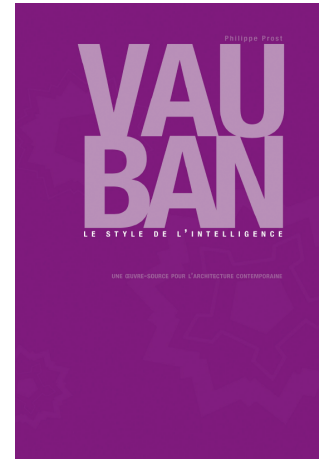
Spatial planning



Fortifications, vegetation and planning: “Le style de l’intelligence”

Philippe Prost, Vauban Network

By the means of examples of the various projects Philippe Prost is carrying out with his agency Agence d’Architecture Philippe Prost (AAPP), but also through the workshops with the students of the Paris-Belleville School for architecture, Philippe Prost makes several important statements regarding the ways fortified heritage can be guiding in urban development or regeneration projects. They are inspired by Vauban’s “style de l’intelligence”, which is also the title of the book Philippe Prost published in 2007.



From his experience, interventions in fortified heritage should be addressed in long term, slow but continuous, transformation perspective, comprising vegetation, built works and their urban setting.



The partnership between the Vauban Network and the Paris-Belleville School for Architecture (ENSA-PB) has been established in 2009 and offers the students as well as the Vauban sites the opportunity to explore the possibilities and the limits of architectural contemporary interventions in a fortified WH-site context.

Vegetation in an around the Lille citadel throughout time

As the Lille citadel study (AAPP, 2012-2013) shows, through the 3 500 documents dating from 1667 till today that have been examined, that bastioned fortifications evolve both horizontally and vertically over time: profiles flatten progressively, and the spatial pattern is gradually being addressed in wider concentric circles.

This is true also for vegetation: different species are planted or cut according to various purposes, changing over time as well (from functional/defensive to more esthetical needs).

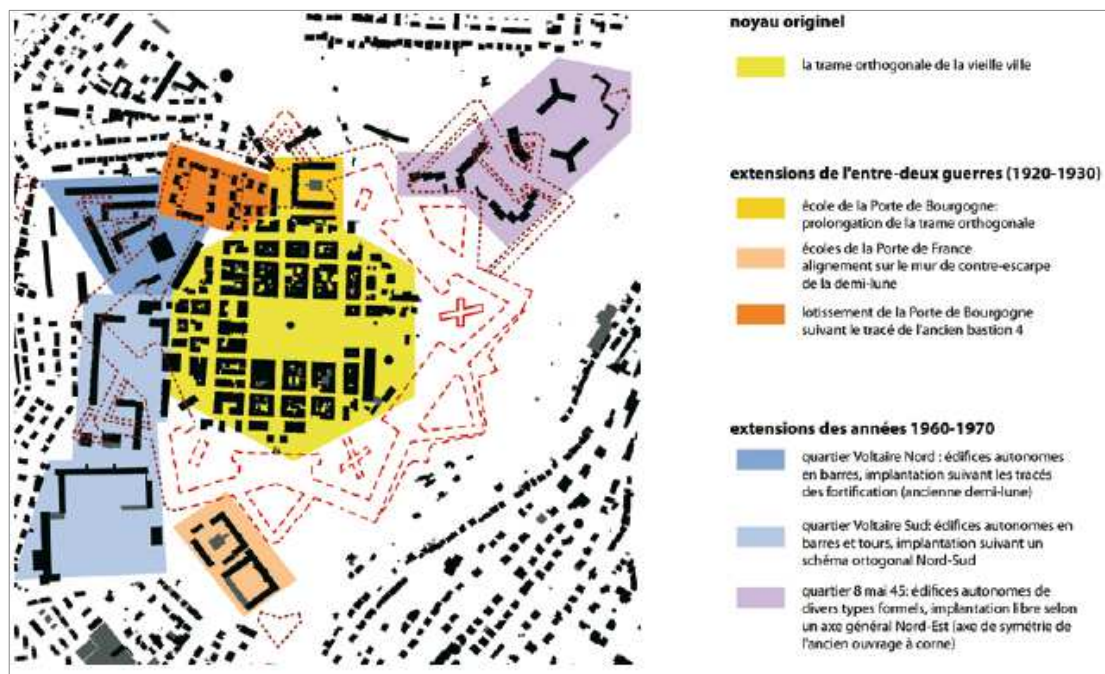
Whereas vegetation in the 17th and 18th centuries was serving exclusively military purposes (defensive, combustion, consumption), and still totally planned until the end of the 19th century (also from a landscaping perspective by 1900, when the outer defences of the Lille citadel became public greenery), the 20th century can be

differently characterized since vegetation becomes spontaneous and is no longer planned in a comprehensive manner.

Every circular area, determined by crossing historical information and the contemporary situation, is referring to a historical period which will be the guiding framework for the forthcoming interventions: restoration, recalling, reconstitution, contemporary design (Lille, AAPP, 2011).

The “Tour de ville” project in Longwy

This example illustrates the ways in which urban regeneration can be related to “heritage regeneration”. In the case of Longwy, a stronghold built from scratch by Vauban, heavily damaged during the first World War, the aim is to reconstitute the original lay-out of the fortified town through urban and social renewal.



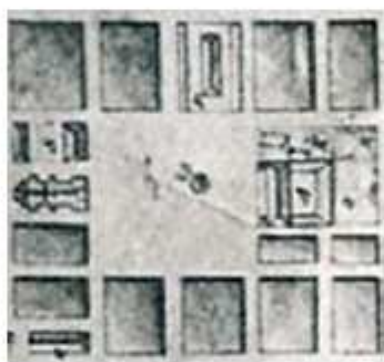
The proposals made by AAPP comprise measures such as the treatment of urban greenery, the resurfacing of public space, some new architecture based on the spirit of military architecture, retracing disappeared layout of the defence system.

It is for example proposed to bring back in dimension the place Darche parade ground and the readability of the defence system in the contemporary urban grid.

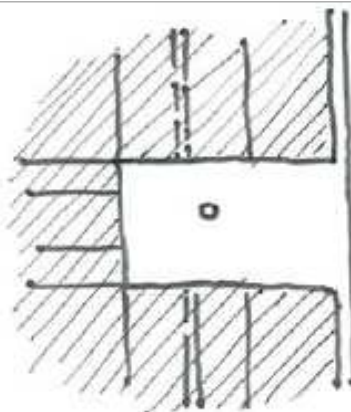
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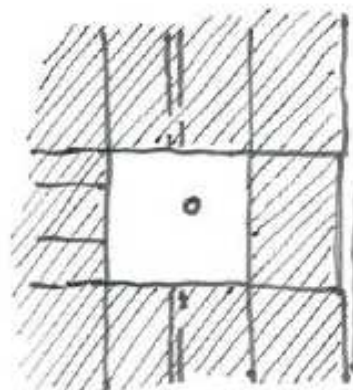
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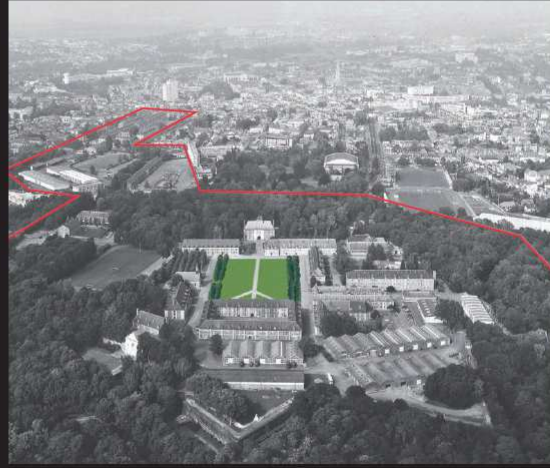
Arras Citadel: creating a new urban district connected to the historical city centre

The citadel, sold by military authorities to the Arras urban district administration, is actually under transformation and should become a public area and new urban district, tightly connected to the historical city centre. New transport and parking facilities are to be planned, new functions to be defined and security measures to be taken in a very short time frame.

The wider urban context is taken into consideration, as is shown by the example of the parade ground, planned to be transformed into a green square as a complement to the very famous mineral urban squares of Arras.

UNE PLACE VERTE ET VIVANTE ECHO DES PLACES MINERALES ARRAGEOISES

EXISTANT



PROJET

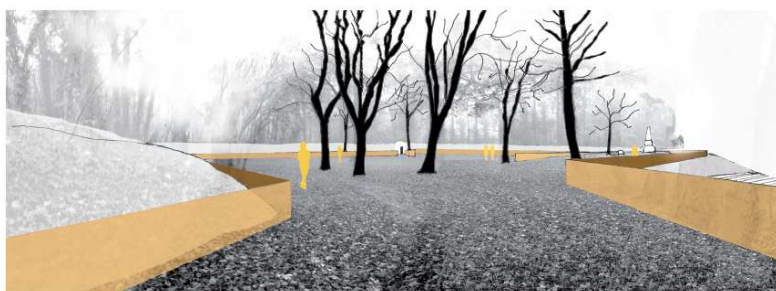
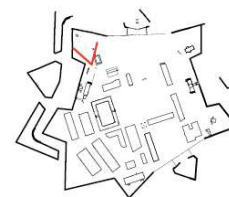
The design of the main entrance of the citadel is an ideal opportunity for enhancing the fortifications (below) on the city-side.



Security measures can help “guiding the eye” for a better understanding of the defence system, as is provisionally realized on the Royal Front of the Arras Citadel (natural, functional, historically used materials, above) and projected on the King’s bastion (below).

MISE EN SECURITE PROVISoire DU HAUT DES REMPARTS (avril 2012 : ouverture du site au public)**MISE EN SECURITE PROVISoire DU HAUT DES REMPARTS (projet : fin 2011)**

BASTION DU ROI - Etat existant



BASTION DU ROI - Etat projete



Référence : Agence d'Architecture Philippe Prost, mise en sécurité du Fort Hoedic



The accessibility issue of the citadel of Besançon

On site presentation by Jean-Christophe Gagnaire, deputy director of urban works, municipality of Besançon



Mr. Gagnaire explains that many studies have been carried out since twenty years in order to create better access conditions for the visitors (almost 300 000 a year). The only access road, coming necessarily from the historic city centre, is narrow, the rock fragile, and the difference of height is 100 meters.

For the moment a regular shuttle bus links the citadel to a big parking space on the border of the city centre. It takes 15 minutes from there to the citadel.

Several other options have been examined, all appear to be very expensive.

During the group discusses on cable car and lift scenarios, the following remarks are made:

- Is it preferable to create an easy en rapid access (lift inside or against the rock) in order to limit frustration and welcome as many visitors as possible? Or should we follow the original access by the glacis, thus privileging the understanding of the original use of the defence system?

- A lift is very fast and the visitor would not experience the difference in level (and the strategic position of the citadel);
- On the other hand, a lift or cable car would be an additional attraction;
- It could become more important than the interest of the site itself...
- The starting point of the lift or cable car at “Rivotte” is situated too far from the historic city center: tourists might not visit it.

General remark on the architectural design in fortresses: just as in the original design, which was based on clear choices for strategic purposes, no compromise should be made. Solutions should be clear and easy to distinguish from the original situation.

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“The Bastion” in the Bregille bastioned tower: an example of reuse

Guided visit by Florian Dantan, administrator of “the Bastion association”

Occupied by musicians since the seventies, the Bastion offers several studios allowing 200 groups to play and perform (30 groups per day).

They pay a fee of 4€/hour for electricity and the equipment rental. The building is owned by the municipality of Besançon and put at their disposal for free.





The vertical connexion: planning for transit in fortifications

Dr. Malcolm Borg, Paola Heritage Foundation

Various solutions and strategies for connecting the cruise terminal and Valletta (85 m. difference in level) have been studied from 2005, before the lift was finally installed in 2009.

Dr. Malcolm Borg presents the decision making process and gives his personal evaluation of the chosen means of transport.

In 2005, a cable car was proposed in reaction to a call for tenders for a lift. Designed through the fortification lines, with three pylons and three stops it connected the Cruise Liner Terminal to Castille Place.



Several arguments put forward through the Environment Impact Assessment have determined the rejection of this proposal:

- Low public support for the visual impact;
- Situation in a wind prevailing area (making the gondolas swing);
- Health and safety reasons (cables crossing over the road);
- The arrival at Castille Station, right in front of the Government seat, would have been problematic for security reasons.

For these reasons, the Upper Barrakka Lift came up as an alternative, on the spot of the ancient hydraulic lift for industrial use.

A Memo to the ministerial cabinet, in April 2005, analyzed the lift as follows:

- *The lift was an early 20th century solution. Whilst retaining that the site is the ideal area for a vertical connection between Castille Place/ Barrakka and Customs House one should examine these within the context of state of the art technology and today's exigencies i.e. car parking which should be addressed.*
- *After analysing the site it is felt that a solution which is a definite better alternative to the Barrakka Lift is an inclined funicular linking the Customs House, Lascaris Ditch and St. John's Ditch.*

Therefore a benchmarking study was carried out concerning funiculars and hybrid (funicular and rail) systems, partially focused on fortified sites: Montmartre/Paris (funicular), Budapest castle (funicular), Perugia (funicular hybrid), Todi (lift)...



Inclined Lift; Todi, Italy.



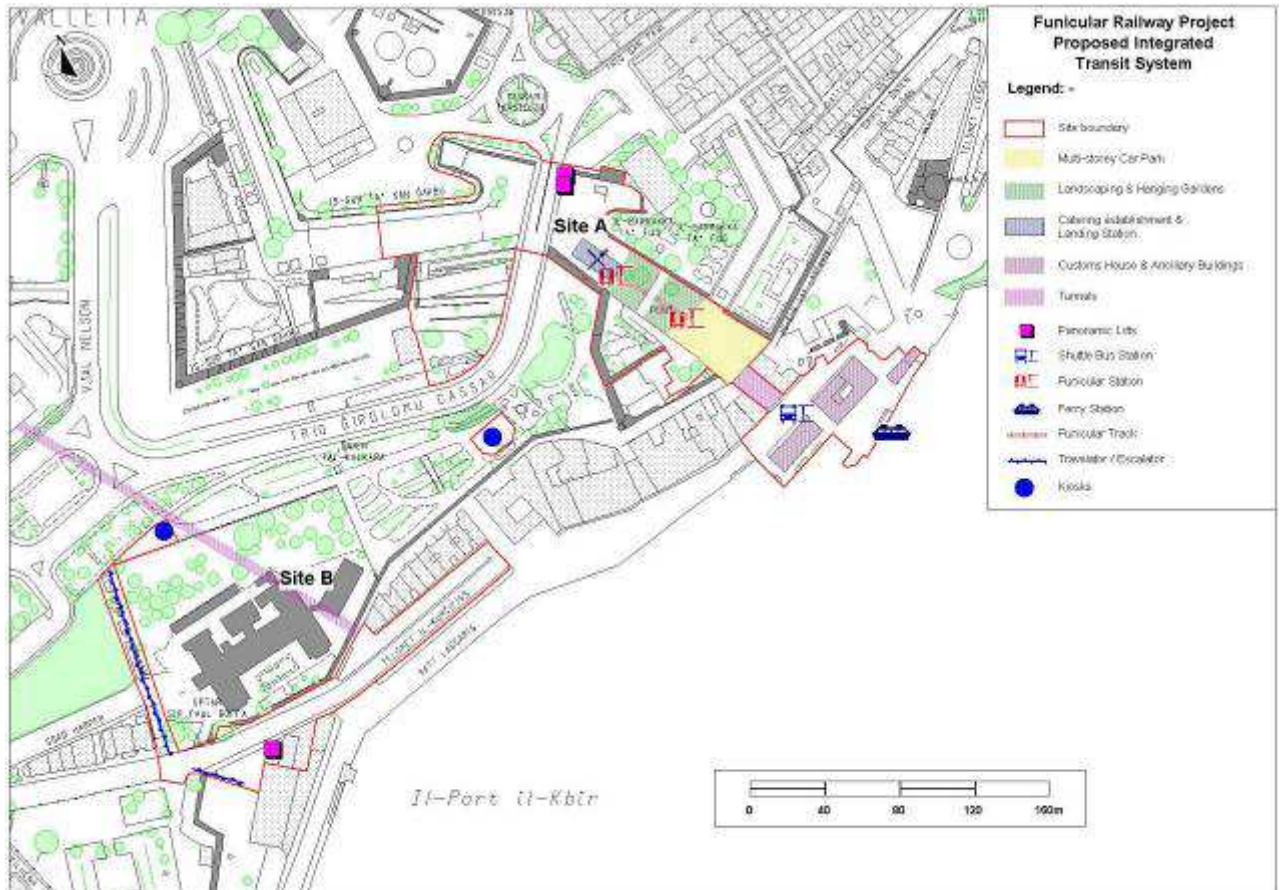
Inclined Lift; Todi, Italy.



Budapest Castle Hill.

A position paper of 2006 stressed the importance of a holistic and integrated approach, considering the park and ride solution as well as ergonomic and aesthetical aspects and the World Heritage status.

The Funicular Brief then issued by the Ministry of Urban Development studied the matter in a wider context, including the various levels, a 400-strong car park as well as the possible use of existing tunnels and of the ditch.



On that basis, a tender was designed in which the bidder was also asked to carry out a feasibility study.

Finally the reinstatement of the old lift was decided, which benefited from ERDF funding (total budget 1,5M€) thus excluding a public-private partnership. This was based on a political decision and technology.



Dr Malcolm Borg's personal evaluation of the lift, compared to the funicular scenario, is that the lift is neither the most integrated nor the most aesthetical solution. Indeed the funicular system would have been better connected to other areas. The transit would have been slower because of the modal split (a ride with the lift only takes 1 minute). In his opinion this would have been preferable to the "against the grain"- lift scenario, which he considers visually too intrusive. Meanwhile it is an efficient means for transit, and 1 million people use it per year (mainly tourists).



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Qualitative ambitions for spatial planning

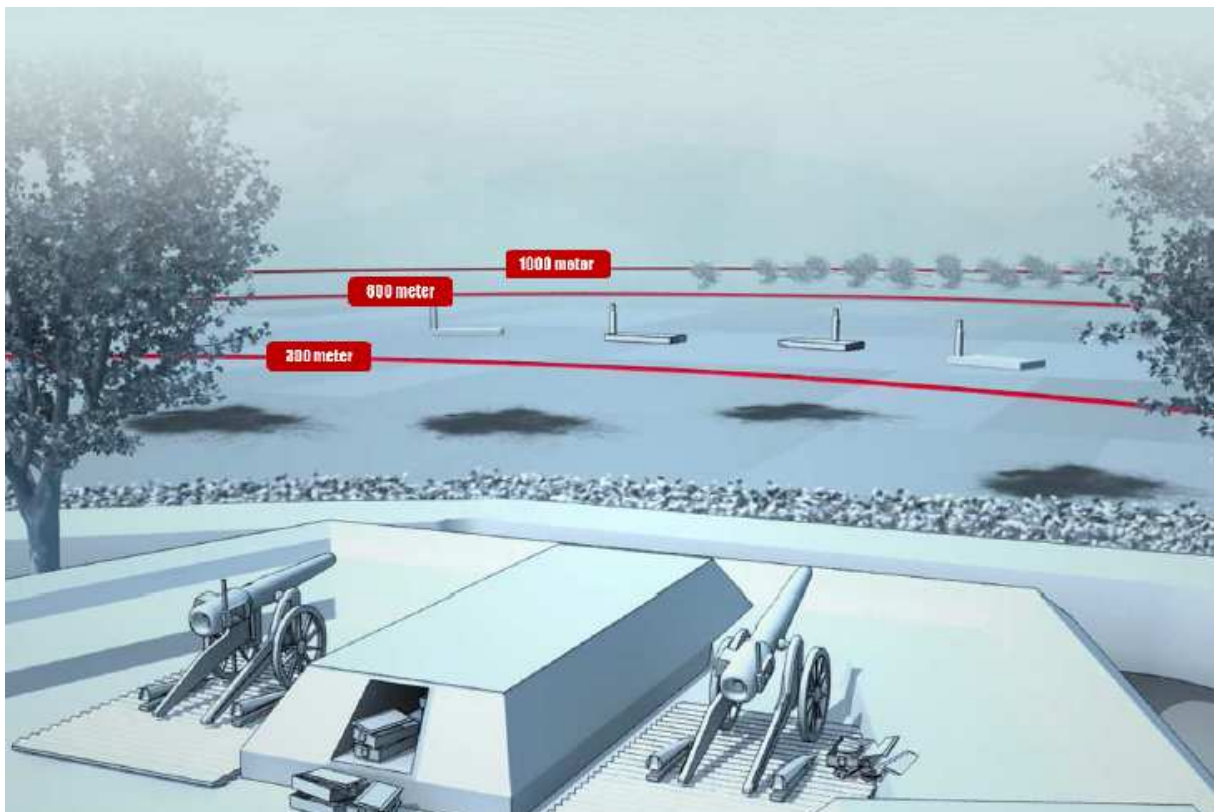
Gert Middelkoop, Member of the Quality team of the New Dutch Waterline

History

The Netherlands first began using water to protect the country during the Eighty Years' War by breaking dikes to flood polders. This was experienced for the first time in 1573, when the city of Alkmaar was saved from Spanish invasion. Existing rivers, dikes and sluices were used for inundation of its surroundings, which turned out to be rather effective. Two factors were deciding for the success of this defence method: the capacity of sluices and the natural differences in height.

The civilians strongly opposed, especially when salt water was used to inundate. The sluices had to be guarded; otherwise the farmers would close them. In 1697 the town hall was built on top of the inundation sluice to protect it. No financial compensation was being offered to the farmers.

In 1672, the first waterline was hastily erected against the invading French forces. Known as the Old Dutch Waterline, it ran from Muiden to Woerden, through Schoonhoven, towards Gorinchem, and westward from the city of Utrecht. After 1815, Utrecht was included within this line of defence as part of the New Dutch Waterline.



In time of war, an open line of fire was considered very important. The area surrounding the defensive works was divided into concentric zones of 300, 600 and 1000 metres – the Prohibited Areas. Within these zones, all sorts of construction and agricultural regulations were applied by the military authorities. For example, the Prohibited Areas Act of 1853 specified that only wood-frame houses could be built within 300 metres of a defensive work, except with permission from the Minister of War. In the middle zone (300 to 600 metres) houses could be built with stone foundations (up to 50 cm above ground), and the chimney could be built in stone, but the rest of the structure had to be built from combustible materials. In the outermost zone, all building materials were allowed in theory, but in case of either an official state of war declaration or a mobilisation ordered by a military commander, all buildings, trees and other obstacles were to be cleared without any legal proceedings. Those who sustained damage received compensation. The clearing of buildings, houses and crops was necessary for an open line of fire. The Prohibited Areas protected Amsterdam, The Hague, Rotterdam, Utrecht and other towns and cities behind the Waterline. In addition, the capital was protected by the Stelling van Amsterdam.

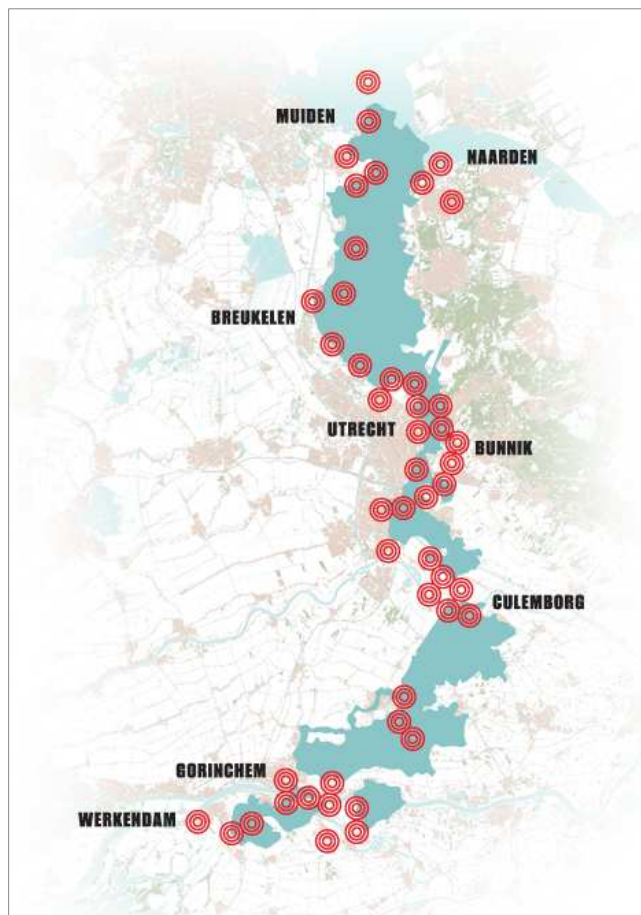
The Prohibited Areas Act of 1853 has never been modified while in force. In 1951 the law was suspended, and then finally officially repealed in 1963.

The New Dutch Waterline legacy

The unified performance of the national and regional administration has resulted in the design and construction of plan Krakenhoff. National legislation in combination with excellent engineering has been the winning combination of the New Dutch Waterline.

Scale is of non- Dutch proportions. Only similar assignments are the river works and coast defence system.

- Length: 85 kilometres;
- Width: varies from 3 to 5 kilometres;
- 10 basins of inundation field;
- 2 castles;
- 5 fortified cities;
- 50 forts with “the Prohibited Areas”;
- Bunkers, group shelters, sluices, canals;
- In total about 1000 elements (80% is still in good condition).



Preservation through development

Around 1990-1995, the New Dutch Waterline became a national project in the frame of a programme called *Belvedere: preservation through development*, supported by the National government.

The Belvedere motto, "preservation of cultural heritage through development," is also a central theme within the new Action Programme on Land Use and Culture. The Action Programme joins together the implementation of the architectural policy and the Belvedere policy into one program. The programme supplements the Policy Document on Architecture Design in the Netherlands (Architectuurnota Ontwerpen aan Nederland) and implements the Belvedere policy, which continued until 2009. The most important aim of the Action Programme on Land Use and Culture is the strengthening of the spatial quality of buildings, villages, towns and landscapes.

The New Dutch Waterline is one of the pilot projects within the Action Programme on Land Use and Culture. Preservation of historical Line hallmarks forms an incentive for new spatial developments in the spatial vision document "Panorama Krayenhoff". The Chief Government Architect is actively involved in the design. The current National Adviser for Landscape, Dirk Sijmons, is also involved in the responsible design of new landscapes and in the integration of large projects, such as the New Dutch Waterline. The Minister of Agriculture, Nature and Food Quality follows the progress. In 1994 the New Dutch Waterline has been included on the tentative list for UNESCO World Heritage nomination.

Governance

How to achieve an effective model with so many public and private parties involved?

There is a minimum of coordination necessary to protect this unique heritage. The ambitions are still there, both on national, regional and local level. But no central administrative unit is there to safeguard this and the risk of fragmentation is enormous.

The Quality Team

Installed by the highest governing body of the New Dutch Waterline, the chairman is the National advisor on Landscape and Water. Members are senior experts in landscape architecture, spatial planning and history of architecture.

Its role is to give advice, both requested and on its own initiative.

It focuses both on authenticity and integrity. *How to handle the New Dutch Waterline with respect? How to help all parties that are involved to prevent fragmentation?*

Several tools are being used:

- Quality guidelines ('Leidraad plankwaliteit'), with common design grammar;
- Atlas New Dutch Waterline;
- Ambition map, focusing on the lines and areas.

Examples of projects the Quality team has been associated to:



Hidden parking space, winner of international A' Design Award



Accessibility, coupure Gedekte Gemeenschapsweg

The overall guiding principle for the Quality team is the need for preservation of the defence system as a structure. Interventions that cannot be planned elsewhere are carefully integrated, not by hiding them, but by respectful design.

Remaining challenges

Governance

- Protection
- Spatial planning
- UNESCO World Heritage

National ambitions have been highlighted again in a recent national spatial vision document, but budgets and responsibilities are shifting to the Provinces and Municipalities. One common set of guidelines is required to prevent further fragmentation. The spatial planning instrument exists, but who is entitled or willing to dictate?

Adaptive re-use

The ambition map focuses on the linear structures and areas. Multiple stakeholders in wider regions make the transition a challenge.

Enabling conditions: long term maintenance

Investments for the fortresses are only partially guaranteed, and long term maintenance and management aren't hardly at all.

Example: Lekkanaal, widening the canal and construction of 3rd sluice

A Heritage Impact Assessment is being made to assess the possible impact of this spatial planning project on the World Heritage Nomination.

The infrastructural assignment is of national importance.

Two options:

- Pretend to be a military engineer and minimize the effects.
- Use the military objects as a statement in the landscape



The Quality team often advises to avoid compromises and to make clear choices and statements.



City and fortifications: from heritage to urban planning

Clémentine Thierry, University of Franche-Comté

Introduction

The conference concerns the thesis on analyzing the link between French cities and their fortifications (especially bastioned fortifications such as Vauban's). The two main questions guiding this thesis are:

- How could French cities manage their military heritage to build a coherent and balanced territory (spatially, symbolically, socially...)?
- How could they produce this space within current constraint of sustainable development and urban renewal? What is the role of military heritage in this process? Which criteria govern new use of fortifications in contemporary urban function?

These questions are addressed by an approach based on methods, tools and concepts stemming from geography, especially spatial analysis and geographical modelling. This short presentation essentially focused on some "reading grids" built on geographical concepts.

Fortifications seen as "heavy" buildings and built elements

Fortifications and military heritage consist in a set of what we call "heavy" buildings and built elements: *prominent by their form and difficult to modify by their social significance*. Fortifications, barracks, historical walls, citadels...

They play a significant role in urban morphologies and history. They were erected to defend cities or a larger territory, that's why they are of singular forms and located in places that were strategic when they were erected. But, they gradually lost their initial military functions. Their size, their volume, their location have protected them from time effects. That's why they are still present in a lot of European cities and territories.

It is possible to analyze and explain this contemporary situation (particular to military heritage), with a reading grid based on three spatial features: Location, Volume and Geometry.

Location, Volume and Geometry

Three specific features when one looks at military heritage through a spatial approach in order to understand their contemporary stakes:

Their location

Originally chosen to address strategic and ballistic imperatives, they nowadays have an accessibility issue in many cases.

Their volume and size

Originally meant to resist to assaults and guarantee security to soldiers and inhabitants, they now are addressed in terms of ground coverage issues, since they cover huge (urban) surfaces.

Their geometry and structure

Designed to address the gaps in natural defences, still have a strong impact on the landscape.

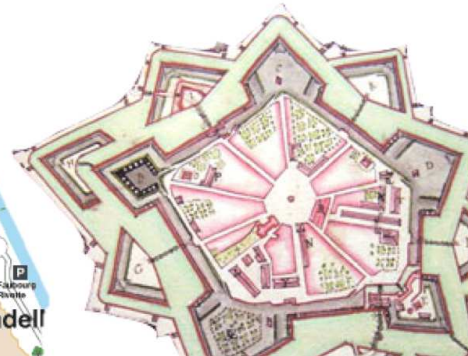
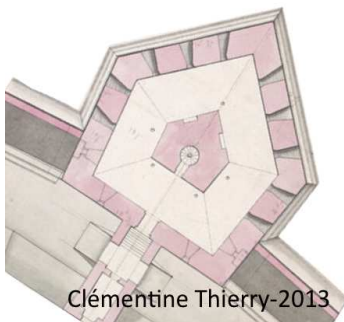
Fortifications : a spatial approach

Consider military heritage as an « urban object » to implement it in contemporary urban projects

Volume and
size

Location

Geometry



Site-Situation, Form-Function

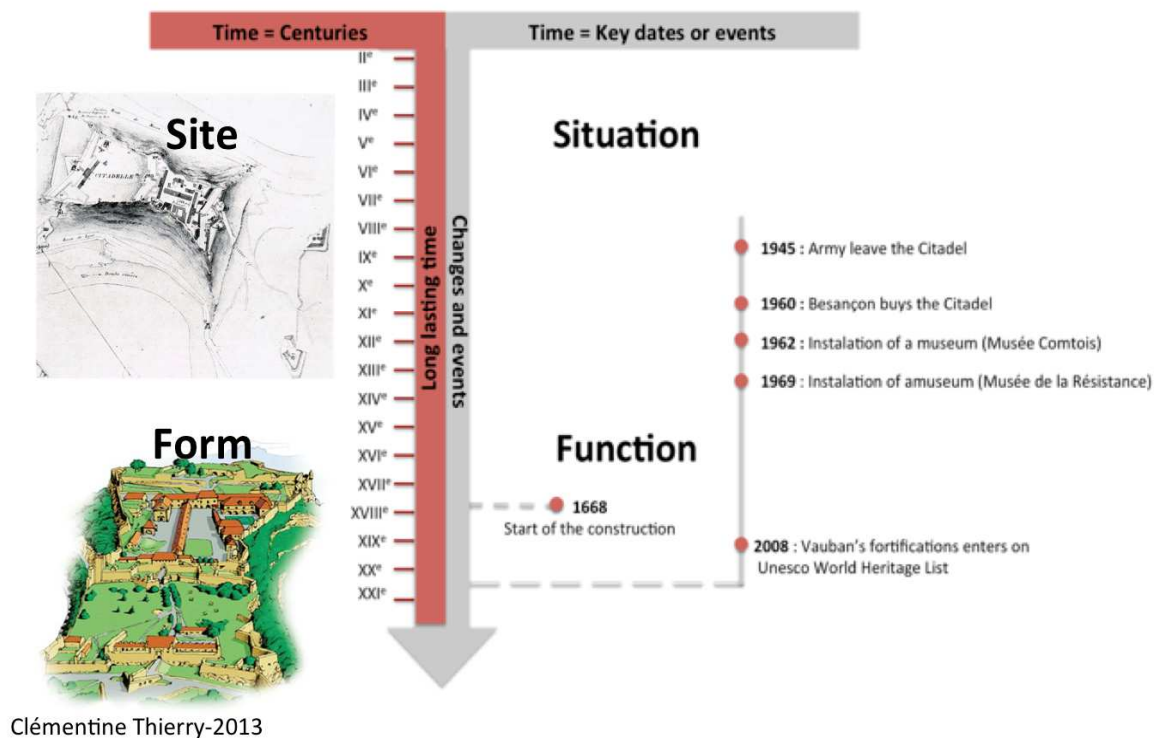
It is possible to introduce another reading grid based on four geographical conceptual frameworks: Site-situation and form-function. These concepts are very useful, interesting and adapted to analyze contemporary stakes of fortifications.

Site where military heritage were build didn't change since they were erected (the same altitude, the same relief, the same geographical coordinates). It is possible to do

the same statement for the form of these buildings: they always keep the same form, the same size, the same ground coverage (except when they were destroyed or completely modified during their history). These features are specific to military buildings, that's why they find shape in Time and History and are inscribed in a time we count in centuries.

Unlike site and form, the situation (spatial context) of these military buildings has gradually changed through time and events. Their environment has changed: (urban) landscape, accessibility conditions, and so have their functions. When we consider this aspect of the issue, we could also observe military heritage as buildings inscribed in a time made of events and important dates (UNESCO inscription, change of owner, etc.).

Legacy of time for space



These reading grids form the basis of a geographical model, designed to understand how military buildings are or could be reinstated in urban renewal projects.

Group discussions



Participants were invited to structure the group discussions based upon three main issues related to the atelier themes:

1. Vegetation.

Suggested questions:

- Is there any research done on the (historic) use of vegetation on your site?
 - Which decisions can be based on that and how can the results influence the “readability” of your site? What is the role the ‘readability’ in your landscape plan
 - Is there a landscape plan and what are its aims?
 - How do you organize the maintenance? How do you maintain your landscape / landscapes, do you have partnerships?
2. Accessibility and spatial planning: how much influence tourism has/may have on spatial planning?
3. Which inspiring good practices did you find in Besançon, and what would you advice to the city?

Vegetation

Research

The atelier introduced the importance of historic research on the different historic layers of vegetation presence in fortified sites. Most of the At-Fort partners did not investigate this aspect as much as necessary, so it was agreed that more historical research should be done, to be used as an additional tool for the decision making process.

A clear distinction should be made between historical research on what has been, and possibilities for conservation, maintenance and landscaping. A good example comes from Malta, where historically the vegetation was not very flourish, so decisions should be taken taking a different reference.

Choices for interventions on vegetation should be clear and coherent, with the necessary



argument to justify and defend them in following stages.

Among general conclusions, if trees damage the structures of the fortifications, their cut should be strongly considered, especially if they do not represent rare essences. Such decision could be also easily supported by an evaluation of maintenance (cutting the trees in an earlier stage) and restoration costs.

Finally, the decision making process should also take into account the maintenance means and measures to be planned for the future (after vegetation clearing), in a long term perspective, recalling the original meanings of trees in the fortification, as providers of food, charcoal, wood for general purposes, etc.

Landscape plan

Several sites have a landscape plan (Suomenlinna, 1980's, Besançon, 2010, Antwerp) or are in the process (Berlin). The landscape plans are different, sometimes privileging the entire readability of the fortifications, sometimes opening optical cones on the most relevant architectural features. Readability of the fortifications is considered as crucial for all further decisions on planning and redevelopment.

A very important suggestion for the future is looking at the new landscaping techniques, which adopt vegetation mixes (reducing maintenance costs and improving pollution conditions) and give value to the fortification in respect of historic vegetation layers (good practices from China were mentioned, see <http://www.turenscape.com/english/>)

Decision making process

Several difficulties are mentioned referring to the decision making process on landscaping and vegetation clearing:

- Ecological interests
- Lack of finances

A planner's decision (based on an overview of all arguments, including the possible impact on the significant features of the fortress) often differs from the political one... Clear guidelines, established in advance, avoid (bad) compromises.



Other aspects to be taken into account in the decision making process:

- Aim at objectivity through a multidisciplinary approach
- Take into consideration the situation of the fortress:
 - Inside a city
 - Outside the city
 - Fortified landscape

Consultation of the public is important for the involvement of the local stakeholders, but it should be clearly defined in advance how much importance will be given to the public opinion. Feedback and information to the public on the decisions that are

taken should also be planned in order to create commitment and understanding (or acceptance).

Maintenance

Various partnerships exist, ranging from student involvement (Humboldt University Berlin) to prisoners and schoolchildren (Suomenlinna), social rehabilitation projects (Vauban Network, New Dutch Waterline/Stichting Herstelling) and involvement of the army (Besançon).

Beyond financial advantages (maintenance costs), the interest of these partnerships is much wider (educational purposes, reemployment programme...).

Partners emphasize the need for professional supervision and tools for these particular labour forces.

The cost of collecting waste and rubbish has been resolved by reducing the number of garbage / waste bins (Longwy and Tatihou)

Spatial planning and influence of tourism on decision making process

Partners appear to have very different relations to tourism. In Malta, tourism makes 50% of the national economy, whereas it hasn't hardly any influence on decisions concerning Spandau citadel (Berlin). In Antwerp, the tourist perspective is systematically taken into account in the decision making process.

Originally, fortresses are not designed to welcome the public and sometimes opening up for the public a historic site is in contradiction with the spirit of place (example Anne Frank house in Amsterdam). The partners advice to bear this in mind. In some cases choosing to cut down the vegetation by the entrance area (Slot Loevestein, Holland) is a way to be more visible and attract visitors.

Some partners argue that the design of newly created accesses should be radical and clearly distinguishable in the landscape (Valetta elevator, entrance fort Vechten), but on sensitive sites, reversibility could be an argument (but not a caution to do anything).

Calculating the carrying capacity and establishing a tourism management plan can be some other valuable measures to guarantee the authenticity and integrity of the place.

Impressions from Besançon and suggestions for the city

The city has a very high tourist potential. Its attractiveness could be further developed by offering more supports and information in English (signage).

Partners are in admiration of the presence and the strong partnership with the 19th Engineering Regiment. They consider it exceptional that relations with the army are



so tight. The maintenance of the walls with climbing was considered as a very good idea that can be exported (Suomenlinna).

Pride and presence of the municipality has also been noticed. Participation of the University could be further developed. During the visit to the citadel, the building site's fence / panels raised admiration.

Annexes



- Programme
- Participants List

Atelier 1 – Landscaping, vegetation, partnerships

Monday 10 june

8.30 | Gathering and departure by foot from bus stop square Saint-Amour to salle Courbet

9.00 - 10.30 | Salle Courbet

Opening:

Peter Ros, project leader At Fort

Marieke Steenbergen, project manager Vauban Network

Introduction to the subject :

Philippe Bragard, historian, Icofort, member of the Vauban Network scientific committee: *Vegetation as part of the defence system*

Fabienne Bénard, Municipality of Besançon : *Landscaping the fortifications of Besançon*

10.30 - 12.00 | Maintenance and landscaping related issues in Besançon

Guided walk in the urban fortified landscape, by **Fabienne Bénard**

It is recommended to wear comfortable shoes

12.15 - 13.30 | Lunch at salle Courbet

14.00 - 15.30 Citadel | Maintenance partnerships for the citadel of Besançon :

- 19th engineering regiment, **Commandant Cocteau**
- ADDSEA (social rehabilitation), **Nadia Khodja**

15.30 - 16.00 | Coffee break

16.00 - 18.00 | Partner presentations on good practices landscaping/vegetation

Heikki Lahdenmäki and **Iina Johansson**, Governing Body of Suomenlinna :

Soil pollution and archeological values in contradiction – case Suomenlinna

Erick de Lyon, New Dutch Waterline : *Deconsecration : preservation through development*

Andrea Theissen, Citadel of Spandau (Berlin) : *Green on and around the Spandau citadel*

Prof. Dr. Giovanna Segre, University of Nova Gorica :

Territorial management and World heritage sites

18.45 | Transfer by bus to the hotels

19.45 | Gathering and departure by foot from bus stop square Saint-Amour to the Town Hall

20.00 Town Hall | Dinner in honor of the European delegations

Tuesday 11 june

8.30 | Gathering and departure by foot from bus stop square Saint-Amour to Cité des arts

9.00 - 10.00 Cité des arts | Lecture by :

Philippe Prost, architect – town planner, teacher and chairman of the Council of the Paris Belleville national school for architecture, member of the Vauban Network scientific committee, author of *Vauban, le style de l'intelligence* (Prix du livre d'architecture 2008)

10.00 - 11.00 | Midterm results of the At Fort project

Perte Ros, on behalf of the partners

11.00 - 12.00 | Guided visit of the Cité des arts

11.30 - 12.30 La Rodia | Press conference with the heads of delegation of the European partners

12.30 - 14.30 | Cocktail lunch

Atelier 2 – Spatial planning

14.30 - 16.00 | Guided visit : *Development of the city of Besançon and its fortifications*

16.00 - 16.30 Cité des arts | Coffee break

16.30 - 18.00 | Partner presentations on spatial planning

Malcolm Borg, Paola Heritage Foundation (Malte) : *The vertical connection : planning for transit in fortifications*

Gert Middelkoop, member of the Quality team of the New Dutch Waterline : *Qualitative ambitions for spatial planning*

Clémentine Thierry, PhD. Geography, University of Franche-Comté : *Urban fortifications : time's legacy to space*

18.00 - 20.00 | Visit of The Bastion & free time

20.00 | Dinner, restaurant La Charrette

Ateliers 1 & 2 – Group discussions / Conclusions

Wednesday 12 June

9.00 | Gathering and departure by bus from bus stop square Saint-Amour to Fort Griffon

9.15 Fort Griffon | Word of welcome by a representative of the Province of Doubs

9.30 - 11.00 | Group discussions on the atelier themes

11.00 - 11.30 | Coffee break

11.30 - 13.00 | Plenary session & general conclusions

13.00 - 14.30 | Lunch

Steering group meeting

14.30 - 16.00 Fort Griffon | Steering group meeting



partners :

New Dutch Waterline [The Netherlands], Vauban Network (France), Provincial Government of Antwerp (Belgium), Department Spandau of Berlin (Germany), City of Venice (Italy), Governing body of Suomenlinna (Finland), City of Kaunas (Lithuania), Medway Council (United Kingdom), Paola Heritage Foundation (Malta), Fort Monostor non-profit ltd. (Hungary), University of Nova Gorica (Slovenia).

Participants List

• • • • • • • • • •

LP	NL	The Netherlands project manager financial manager thematic expert thematic expert member of quality team architect / BunkerQ thematic leader enabling conditions project manager, Castle Loeving	New Dutch Waterline Ros van der Leur van der Zwaan De Lyon Middelkoop Meijer Mulwijk Laroo	Peter Etienne Gijs Erik Geert Gerco Marieke Hanneke
PP2	IT	Italy deputy director general project manager project officer financial manager	City of Venice Bassetto Sferra Olivetti Bellin	Luigi Daniele Gregorio Alessio
PP3	FR	France president Vauban Network project and financial manager communication manager thematic expert thematic expert director, ENSAPB financial director, ENSAPB Director, Ile Tatihou project assistant, Longwy project assistant, citadel of Arras PhD. Geography, University of Franche-Comté project assistant, Greater Besançon Area trainee, Greater Besançon Area municipality of Besançon municipality of Besançon municipality of Besançon municipality of Besançon municipality of Besançon municipality of Besançon director, AUDAB 19 th Engineering Regiment ADDSEA University of Lille 3 délégué régional, Vauban association Student, University of Franche-Comté	Vauban Network Fousseret Steenbergen Mongin Bragard Prost Bobenriether Karoubi Coulot Gustin Floch Thierry Mouquod Mozdzan Presse Govignaux Billot Gagnaire Chareton Bénard Berthet Rouget Olette Khodia Catherine Bois Chernigina	Jean-Louis Marieke Marie Philippe Philippe Jean Pierre Catherine Sylvie Pascale Thomas Clémentine Elisabeth Leslie Françoise Jean-Pierre Roland Jean-Christophe Sylvia Fabienne François Michel Laurent Nadia Denys Roland Anastasia
PP4	DE	Germany head of culture department, Berlin, Spandau district project manager	Citadel of Spandau Hanke Theissen	Gerhard Andrea

		communication manager	Pietsch	Sylvia
PP5	LT	Lithuania project & communication manager thematic expert	Kaunas city municipal administration Baranauskas Rimas	Andrius Saulius
PP6	HU	Hungary project manager financial manager communication manager architect	Fort Monostor Varga Farkas Kalmár Mártonffy	Istvan Erika Zita Gábor
PP7	BE	Belgium project manager financial/communication manager thematic expert	Provincial Government Antwerp Gysen Mertens Dompas	Karen Kaat Anne
PP8	MT	Malta mayor of Paola project manager	Paola Heritage Foundation Spiteri Borg	Roderick Malcolm
PP9	FI	Finland councillor for cultural affairs financial manager thematic expert, architect, head of planning architect cultural lanscape coordinator	The Governing Body of Suomenlinna Laaksonen Roikonen Landenmäki Lind Johansson	Leena Nina Heikki Tuija Iina
PP10	SI	Slovenia conservation architect	University of Nova Gorica Acri	Marco
PP11	UK	United Kingdom project manager historic environment record manager	Medway Council Cable Cumming	Joanne Paul