Brukens hus

Jakob Lundkvist

Handledare/ Daniel Widman
Supervisor

Examinator/ Per Franson
Examiner

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The purpose of this thesis was to, from a given program, investigate how the visitors centre should be designed to suitably relate to a valuable historic context. Within the framework of this task I wanted to use images as a process tool to create a project with a strong contextual anchoring. The objective was to present a well worked through project with an architectural character that is well suited for the site and its role in the history of the Walloon milltowns.

The design questions where:

How should the modern building be designed to be suitable for a valuable cultural historic context?

How, from a given program, should the visitors centre be designed to address the clients purpose of preserving, describing and develop the Walloon milltowns?

How can a design process with a focus on creation of images work as a tool to continuously test the projects relation to physical and cultural context?
The project of the thesis was to create a group project together with four other students. The project was a competition for the design of a visitors centre and exhibition for Österbybruk, a town in the region of Uppland in Sweden. The project was part of the course "Built Environment Design" at KTH Royal Institute of Technology.

The design questions were:

1. How can a design process with a focus on creation of images work as a cultural historic context?
2. How can a design process which is a combination of images work as a tool to continuously use the project within its physical and cultural area.
3. What are the cultural and historic implications of the Walloon mill towns and how can these be translated into a building and exhibition space?
4. How can the exhibition and visitors centre be designed to be a part of the whole region and the Walloon mill towns?

The Walloon mill towns are a collection of communities that emerged in northern Uppland during the 16th century. The iron exported from the area was the core of the Swedish economy for a long time. As early as the Middle Ages, iron was mined in the Österbybruk area, and during the 15th century, munitions were crafted with help from German experts. Sweden was in 1612 forced to pay a heavy ransom to the Dutch to build industrial communities in Uppland that would refine the iron from Dannemora and export it abroad. This was the beginning of a new era in Swedish industrial history. The Swedish iron industry had used so-called "tysksmide" (German wrought) but De Geer... was world leading in iron crafting. The Walloons brought with them "Vallonsmide" (Walloon wrought), which improved the quality of the iron to such extent that it would gain world reputation and be sold at prices twice as high as the next competitor. It is known that about 2,500 Walloons immigrated to Uppland between 1612 and 1620.

The building design was influenced by a number of factors. The building volume was chosen to be a familiar volume and let the strict, simple "shell" contain a rich inside. This is a way of blending in to the context and still be able to give the building a more contemporary design. The closed gables form the entrance and divides the exhibition from the shop. The thick round brick columns give a depth in the facade facing the street, and the space between them is filled with a flexible system of display cases and shelves that create possibilities for exhibiting objects and twodimensional material as well as seating nooks and, if removed, simply a large glass partition. The thickness of the columns and the layer of display cases/shelves should, though being flexible, be a natural part of the building itself, addressing both the inside and outside. This is also a way of giving each of the mill towns a separate exhibition space and incorporate it as a natural part of the building that itself should represent more than only Österbybruk. These display cases can easily be rearranged to respond to the different use of the building that follows the tourist season. The visible gluelam roof construction creates a contrasting grid to the black roof that visually connects the different rooms of the building.

The building will be located in the old part of Österbybruk, where it has a good view of the market square and the Österbybruk mansion property. The building will be built on a former wagon storage building, which will be incorporated into the total design. The building will be connected to the mansion property and will have a good view of the Österbybruk mansion property. The building will be connected to the Österbybruk mansion property and will have a good view of the Österbybruk mansion property. The building will be connected to the Österbybruk mansion property and will have a good view of the Österbybruk mansion property.
The use of materials is inspired by not only by the old, rough industrial buildings in the area, but also by the iron industry itself. The Walloon milltowns are strategically located to the north, employing hundreds of people working with building and burning charcoal stacks, inspired to use Shou sugi ban treated wood as a characterizing material.

The dark brick refers not only to the masonry of the industrial and economic buildings but also to the cinder stone that are commonly found in the milltowns. The concrete floor is meant to have the same nuance as the mortar between the brick, appearing as a layer in the brick volume.

Details in raw steel is used sparsely and in proportion to the other materials in order to present the process of refining the iron ore and the amounts of other natural resources needed to get the precious material. The steel gutters is meant to rust to create a slim steel profile that frames the volume and gives it the precision of a modern building. Interior steel details are used as joints and support for the other materials, as if to demonstrate its strength.

**The Exhibition**

The exhibition consists of two parts. Facing the outside terrace, behind the glass facade, the different Walloon milltowns is represented in separate display cases that can both contain objects and two-dimensional information. What is displayed here is meant to inform the visitor about the many different Walloon milltowns and what is to discover at those particular destinations. The glass canopy has wooden board grid with an angle adjusted to screen direct sunlight and prevent glare in the glass facade. On the terrace, under the canopy, a few larger objects suitable for being outdoors is displayed.

The indoor part of the exhibition is oriented towards the history of the Walloon milltowns and the iron industry in the area and is meant to be of a more permanent character.

**The Playground**

The site where the visitors centre is located has been planned to be used as a playground. Therefore, a playground has been incorporated into the project and can be considered as a good way of taking care of the site and adding to the visitors centre in an unobtrusive fashion. In this project the playground is only presented as a sketch and is not further developed, but is still important for the overall scheme.

**The Process - Images**

Working with images as a process tool was a decision based on a personal reflection on my own design process. I wanted to try to use images throughout the whole process as a way of testing and communicating my ideas, as it is for me the easiest and most direct way of representation. This decision is also based on the nature of the task, designing a building in a context of old, culturally valuable buildings. The old milltown area of Österbybruk is a popular tourist attraction and the old environments are an important resource for the local community. Due to this fact, it was of great importance that the building would “fit” in this context and that the relationship with images could be an interesting approach.

Reflecting upon this process I think that it also was a good way of generating ideas. Using watercolor to paint the surroundings and further on, inserting exterior volumes with the same technique was not only a way of giving the site a subjective interpretation but also to match the level of detail of the site and my addition. Giving the project color was also a way of working with the materials in an early stage. The treatment of the materials became a way of giving the building a narrative that aims to represent the history of the iron industry in the whole region, which is the purpose of the exhibition in the visitors centre.
A. Österbybruk Mansion
B. Wagon storage building
C. The Walloon Forge
D. “Ånghammaren” Forge
E. Residential building facing the site
F. Parish House, Facing the site

Siteplan (org scale 1:500) N
Exterior perspective. View from Dannemoravägen.
The Walloon mill towns is a collection name for a number of industrial communities emerging in northern Uppland during the 16th century. The iron ore from Dannemora mine turned out to be of such good quality that the iron exported from the area was the core of the Swedish economy for a long time. As early as in the middle ages iron was mined in the Österbybruk area and during the 15th century munitions was crafted with help from German experts. Sweden was in 1612 forced to pay a hefty ransom to Denmark, the so called “Hvbsborgs lösen”, and was lended money by the wealthy financier Luis De Geer from Amsterdam. In return he was allowed to build industrial communities in Uppland that would refine the iron from Dannemora and export it abroad. This was the beginning of a new era in Swedish industrial history. The Swedish iron industry had used so called “tyksmide” (German wrought) but De Geer imported workforce from Wallonia in Belgium, where they at the time were world leading in iron crafting. The wallons brought the so called “Wallonsmide” (Walloon wrought) to the emerging industrial towns and improved the quality of the iron to such extent that it would gain world reputation and was at times price twice as high as the next competitor. 

It is known that about 2500 wallons immigrated to Uppland between 1615-1655. After leasing the mill towns, Luis De Geer bought Österbybruk and the close by Gimo and Lövstaholm. Great fortunes were made and well planned, City-like communities grew in the mill towns. The mansions were designed by the leading architects at the time and science and culture thrived. The mill towns were a closed community with a clear hierarchy and laws and rules of their own. The patron decided sovereign everything from who was marrying who to the salary of the workers. Even though the working conditions for the people in the industry could be considered very bad, the companies that produced the iron were the first in Sweden to provide social services for the workers, such as pension, schools and even libraries. 

The buildings in the old part of Österbybruk were mainly built in the 17th century. The oldest preserved part of the wallon forge is from 15th century. With the industrialism emerging in the 18th century the wallon wrought iron got more and more outdated, and at the end of the century a new industrial complex was built a few hundred meters north of the old one. Despite this, the old forges were used even to the 1940’s. Dannemora mine was active until 1992 and re-opened in 2012, before it had to close again in 2015 due to the falling market price on iron ore. Today, Österbybruk is a typical Swedish smalltown with 2272 inhabitants in the urban area (2010).
The plot

The plot has a leftover character though being a part of the Österbybruk mansion property and in direct connection to the park around the old mansion and forge. Reed and high bushes covers the plot down to the small stream running from the dam and the Wallowe forge. The building has been placed alongside "Lilla gatan", the small street sloping up towards the park and mansion, creating a more intimate street section together with an old residential building and the parish house on the opposite side.

The Building volume

A strict pitched-roof volume, inspired by economy and industrial buildings in the area in general, and particularly by a simple storage building for wagons, gives the framework for the visitors centre. Using this familiar volume and let the strict, simple "shell" contain a rich inside was a way of blending in to the context and still be able to give the building a more contemporary design. The closed gables form a simple motif towards the old mansion and, as approaching on the street from the central part of Österbybruk, the slight slope gives the northern gable a slightly taller appearance, announcing the building.

The Program

The building should not only provide exhibition spaces and the shop/tourist information service but also house the association Vallonbruk i Uppland. The association has a coordinating function for the Walloon milltowns and its variety of associations and businesses. The initial feasibility study that was made for the visitors centre showed a need to be able to rent out the auditorium part, creating a sought after resource for the local community. However, the auditorium is considered a room used at special occasions and when rented out. The project addresses this matter with having a stage in the main exhibition room that, when the exhibition is open, works as a storage for chairs and tables which is occasionally brought out to form an "temporary auditorium". Therefore the designated kids exhibition can be closed off and the movable display cases and the model "Lammta" can easily be stored in that space.

A design question built in to the task was how a building in Österbybruk still could represent and be a part of the whole region and the many Walloon milltowns in the area. By letting the use of materials and architectural elements be inspired by the process of refining natural resources that the industry in the area was about, and letting this form a narrative to the building, the aim was to create a visitors centre that would adress this issue. Finding the right balance between blending in and letting the building have its own identity was of great importance during the design process.

The program consist of:

- Exhibition/auditorium 330 m²
- Shop/Tourist information 160 m²
- Office spaces 55 m²
- Staff paus/kitchen/toilet 27 m²
- Public toilets 25 m²
- Kitchen (for rental purposes) 12 m²
- Storage 42 m²
- Technical spaces 55 m²

Total: 706 m²

The exterior measurements of the building is 17x56 m.
Materials

The use of materials is inspired by not only the old, rough industrial buildings in the area but also by the iron industry itself. The Walloon milltowns are strategically located where there was a good supply of forest areas and possible to use water to power the forges. The milltowns’ geographic distribution can directly be related to those factors. The fact that enormous amounts of wood had to be cut down and processed to charcoal before being transported to the milltowns, employing hundreds of people working with building and burning charcoal stacks, inspired to use Shou sugi ban – treated wood as a characterizing material.

The dark brick refers not only to the masonry of the industrial and economy buildings but also to the cinder stone that are a common material visible in all of the Walloon milltowns. The concrete floor is meant to have the same nuance as the mortar between the brick, appearing as a layer in the brick volume.

Details in raw steel is used sparingly and in proportion to the other materials it refers to the process of refining the iron ore and the amounts of the other natural resources needed to get the precious material. The steel gutter is meant to rust to create a slim steel profile that frames the volume and gives it the precision of a modern building. Interior steel details are used as parts and support for the other materials, as if to demonstrate its strength.

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The playground

The site where the visitors centre is located has been planned to be used for a playground. Therefore a playground has been incorporated into the project and can be considered as a good way of taking care of the whole site and adding on to the visitors centre as an attractive destination. In this project the playground is only presented as a sketch and is not further developed, but is still important for the overall scheme.
Working with images as a process tool was a decision based on a personal reflection on my own design process. I wanted to try to use images throughout the whole process as a way of testing and communicating my ideas as it is for me the easiest and most direct way of representation. This decision is also based on the nature of the task, designing a building in a context of old, culturally valuable buildings. The old milltown area of Österbybruk is a popular tourist attraction and the old environments are an important resource for the local community. Due to this fact, it was of great importance that the building would “fit” in this context and to test that relationship with images could be an interesting approach.

Reflecting upon this process I think that it also was a good way for me to generate ideas. Using watercolor to paint the surroundings and further on, inserting exterior volumes with the same technique was not only a way of giving the site a subjective interpretation but also to match the level of detail of the site and my addition.

Giving the project colour was also a way of working with the materials in an early stage. The treatment of the materials became a way of giving the building a narrative that aims to represent the history of the iron industry in the whole region which is the purpose of the exhibition in the visitors centre.

Images on this page show the original paintings of the site which has been used as a background for trying out design ideas.