International Workshop of Architecture

# USINE du VOULDY

2015



International Workshop of Architecture 2015

Reconversion of the former spinning mill Vouldy, Troyes



With the support of the Grand Troyes community of agglomeration and the city of Troyes





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#### **INTRODUCTION**

The agglomeration of Troyes is an attractive territory that counts approximatively 10 000 students. It offers a wide panel of 150 different trainings from which you can find courses of the ESC Group, UTT, ESPE, IFSI, URCA and EPF. All those courses are very dynamic and they possibly lead to identified jobs and new talents. This sets the city of Troyes into the second post-graduate teaching and research pole of its region. The community of agglomeration of Troyes put the post-graduated teaching and research upfront the Champagne-Ardenne region's preoccupations of development.

Grand Troyes therefore established a partnership with the Nancy School of Architecture in order to develop collaborative projects within the post graduate teaching and research frame. This 2015 workshop, organized by the Nancy School of Architecture intended to enrich the city of Troyes and its partners' reflexion over the reconversion of the former industrial site of the Vouldy factory. Troyes and the city agglomeration facilitated the access to information on this site as well as any documentations putting student into a professional situation. Grand Troyes was the privileged interlocutor of the Nancy School of Architecture, the technologic university of Troyes and the engineering school EPF.





#### Aerial view of the west of the site

Urban requalification phenomenon intensified since 2000 with the local plan of urbanism, the state financial help for elevation refurbishments and the urban square requalification. In order to extend and develop this urban requalification, in 2003, the city of Troyes decided to apply a PSMV (Protection and valorisation plan) on its territory. This PSMV is currently under modifications. Troyes decided as well to valorise the industrial suburb with the adoption of a ZPPAUP (Architectural and landscape heritage protection

Factory chimney viewed from south



zone). This protection zone, operative since 2005, permitted to save an interesting legacy composed by bourgeois houses and factory site built between 1850 and 1950. Nowadays, these factory sites bring extra square meters of available surfaces in Troyes to create housing, offices inside the heart of the urban agglomeration. It is the case for the site concerned by the workshop.





Project's site. Usine du Vouldy 13th - 15th centuries

(1) Exterior. Machine hall, chimney(2) Interior. Manufacture building

The factory chimney (above) and the metallic grid (at left) inside of the building are two remarkable landmarks in the Vouldy site.

### PROJECT

Troyes currently prepares the complete renovation of all of its museums. This difficult task intend to give back the 200 years old museum collections to the public. Those collections are divided into two different poles next to the St-Pierre and St-Paul's cathedral. The first one. the former bishopric and the former apothecary will be devoted to history, ancient art and modern art. The second site, the Vouldy site will host collections belonging to the scientific, technical and natural legacy department. This site, organized into a former netting factory will also welcome the European centre of the fashion «Maille Mode Marques» which is celebrating the industrial adventure and history and economy of Troyes who is nicknamed the netting capital. Within an entirely new architecture, Troyes's museums will offer all the functionalities and services that one can expect from.



Industrial shop



Workshop of manufacture



## **PARIS** Industrial Heritage

The workshop visited several historic and industrial legacy refurbishment projects

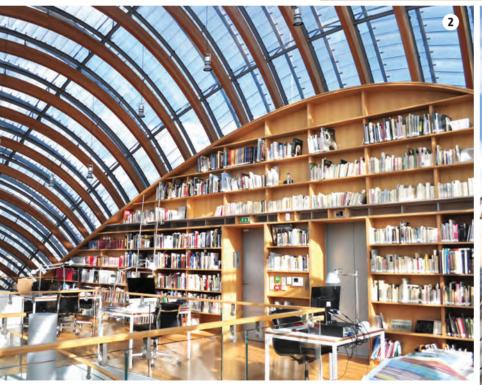


Pathé Foundation, 2006-2014 Renzo Piano Building Workshop, architects

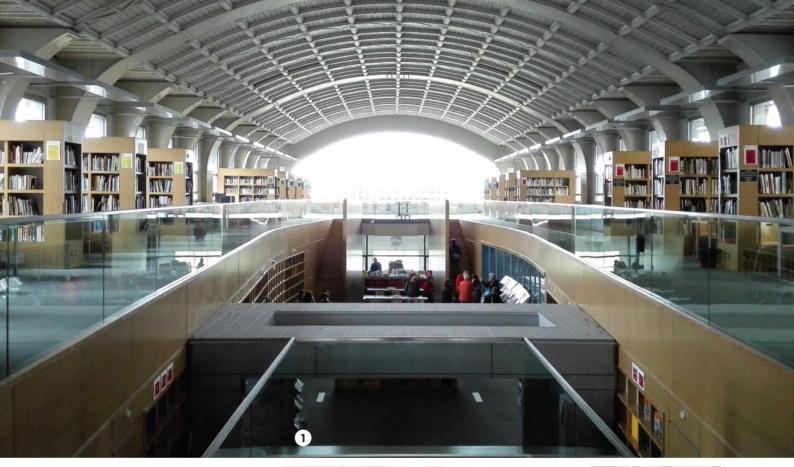
(1) Construction's details (2) Interior

- (3) Roof covering











École nationale supérieure d'architecture de Paris-Val de Seine

(1) Library

- (2) The main entrance
- (3) The old building facade
- (4) New facade













Grands Moulin de Paris

(1) Grands Moulin de Paris.Panorama(2) (3) Garden

# Poissy

Restauration of the Villa Savoye

Pascal Prunet, architect of French listed buildings explains its refurbishment and restoration work regarding the Villa Savoye by Le Corbusier.

#### Villa Savoye, 1928-1931 Le Corbusier

 Workshop's educational team: Prof. Christian François; Pascal Prunet, ACMH; Prof. Flaviano Maria Giuseppe Lorusso; Prof. Benito Sanchez-Montañés Macías; Prof. Klaus Dieter Köehler
Terrace with roof garden
Ramp











Located at 140 km of Paris, the city of Troyes, historic capital of the Champagne region is the chief town of the department of the Aube. Human-sized town, Troyes spreads over 13,2 km<sup>2</sup> and hosts 61 009 inhabitants. Troyes is the centre-town of the Grand Troyes community agglomeration which counts 126 000 inhabitants. Since the Middle Ages, Troyes is a renowned textile city. Hosiery Learning centre and famous brands such as Petit Bateau, Dim, Barbara, Lacoste, Zadig & Voltaire or Olympia are present since 1746. From these brands and factories were born, during the 70's, famous factory outlets that attract around 4 million of visitors each year and led to an industrial heritage. The historical centre, called the 'Bouchon de Champagne' because of its champagne cork form seen from aerial view contains a remarkable heritage and an impressive amount of artistic and architectural treasures including 9 listed churche





Cathédrale Saint-Pierre-et-Saint-Paul de Troyes, 13th - 15th centuries

(1) Exterior(2) Interior. Catherine window

Students work in the University of Technology of Troyes



# WORKSHOP

# Atmosphere









# Participants

Prof. Christian François, **ENSarchitecture Nancy** Prof. Flaviano Maria Giuseppe Lorusso, **UdS Firenze** Prof. Benito Sanchez-Montañés, **ETSA Sevilla** Prof. Klaus Dieter Köehler, **HTWdS Saarbrücken** Prof. Helena Zemánková, **VUT Brno** 





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Ř

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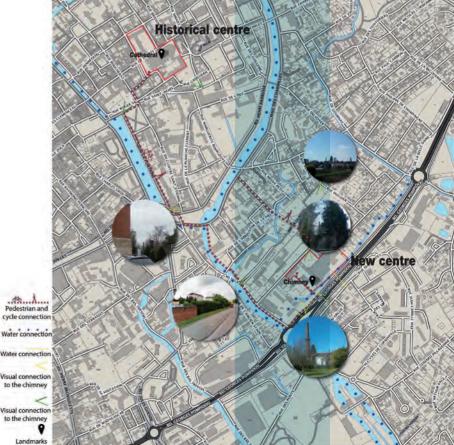


# Workshop | Results



#### ANALYSIS

Our starting point of the project was to look at the neighbourhoods around the historical centre and the new project area and see what the newer centre is lacking in comparison. We could see clearly that the new area needed to draw in a much more diverse population, such as students and tourists since it was primarily residential at the moment. We therefore wanted to have a library and significant café/retail space as well as the large museum on the site, linked to the city centre with more sustainable transport routes like cycling and pedestrian paths. The key urban scale elements we wanted to give to emphasise in our project was the public and green spaces, gardens, and museums which create a vibrant centre for the area.



#### MASTERPLAN





▶ VIEW ONTO THE NEW SQUARE

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new facade

In terms of the entire site, we wanted to re-use as much of the historical fabric as possible but remove the detrimental additions that have been added after the initial buildings and which confuse the spaces inside and volumes outside.

We proposed to replace the area in and around these demolished buildings with one strong new volume which fits better between the existing volumes to give a clear contrast while still integrating itself with the historical fabric. Each clear volume and building of the factory site would be given one use to give a clear organisation of the spaces. There was a large exterior space which we thought could act well as the main public square, accessible at all times, surrounded by the various buildings with varying uses to enliven the new public square. This would be complimented by a public park more tucked away behind the main buildings and a botanical garden linked to the museum, providing a sense of nature to the heavily industrial site.

Since the square acts as the public entrance for the whole site, all the entrances and public spaces face onto it. In that sense we decided to use the existing one-storey building

old facade

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▶ SECTION

chimney

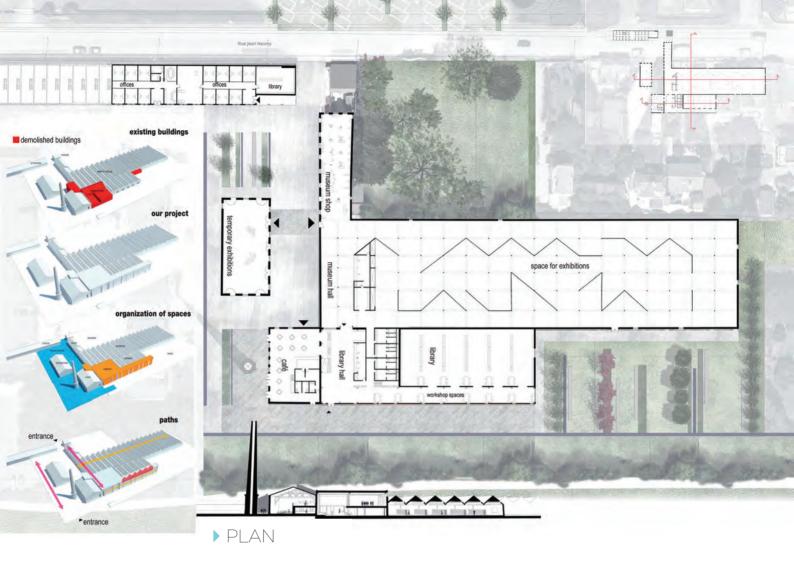
in the middle as a flexible space like a continuation of the public square, to be used for temporary exhibitions and arts performances more open and easily accessible to the public than the main museum spaces. The building to the north would be used for offices and amenity space for the museum and its research. The space is clear and easily re-used, we propose to partition it with glass screens and movable furniture. The spaces off the main square are the most public, with a large lobby as part of the main museum building with reception, access to the museum shop, and which also flows into the lobby and shared amenities for the library. The double height building next to the chimney will be the café, accessible on all sides, with an added mezzanine containing extra seating and the café bar and toilets, allowing it to be open separately to the museum and library. The library is located at the quieter side of the site, and takes up much of the new addition. The main collection of books. however, will be housed in the second part of the sawtooth building. We plan to remove all unoriginal and irrelevant interior partitions inside the historical buildings to return them to their original states and only add temporary or light interventions that respect the original fabric, such as wooden mezzanines. reception pods and light glass partitions for the offices.



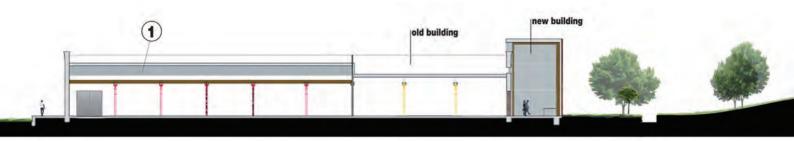
#### ▶ FACADE REFERENCE

#### ▶ VIEW INTO THE NEW LIBRARY





▶ SECTION



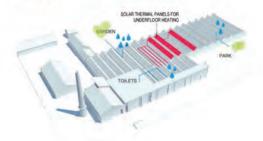
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#### facade inversion

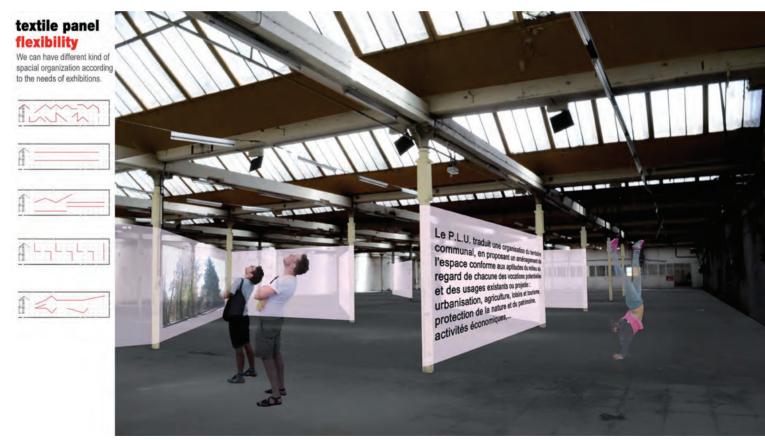
With a new building we transform the outside facade in an inside facade.

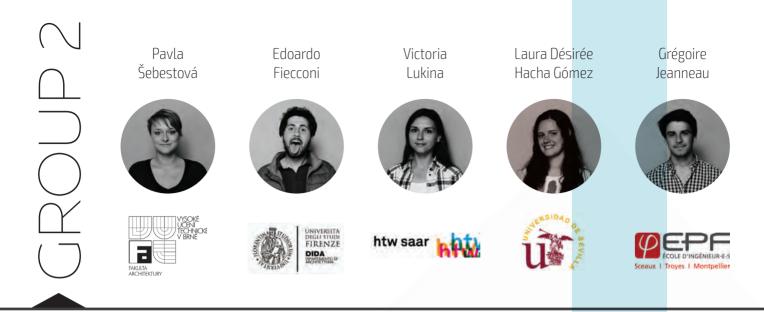
#### sustainable design water





#### ▶ VIEW INTO THE EXHIBITION HALL



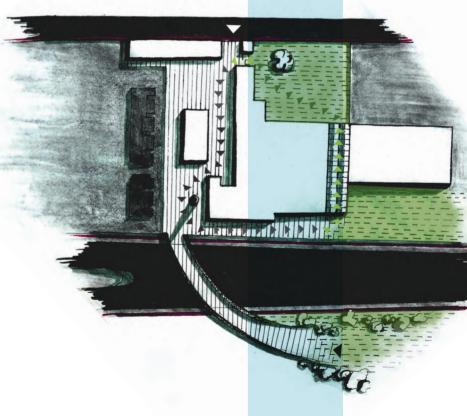


#### DESIGN



The main idea of the project was to show how architecture industrial can be ecological while existing in harmony with nature. The Chinese philosophy Yin and Yang was the foundation of this concept. There are industrial part of old factory, small green park and two main points chimney and sequoia, that are two highlights of project - the symbols of industry and nature, of death and life, Yin and Yang.

In the project these symbols were put together to create a strong connection between them.



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► CONNECTIONS







#### ▶ VIEW IN THE EXHIBITION HALL

Glass passage is the central part of the fabric. It is a greenhouse that connects two parks and two museums - natural museum and the industrial exhibition area.

There is also a connection with southern dwelling region. A winding pedestrian bridge that goes over Boulevard George Pompidou leads to the chimney that acts as a symbolic lighthouse, and has a function of meeting point on the square.

The main function of the building is exhibition area, which consists of 8 strongly different parts. They are temporary exhibition, educational block, textile museum, passage, eating block with cafés, info point, commercial block for offices and shops. The principle of separation was already existing. The block of housing in the eastern part of the site was separated from the industrial territory with a natural border.

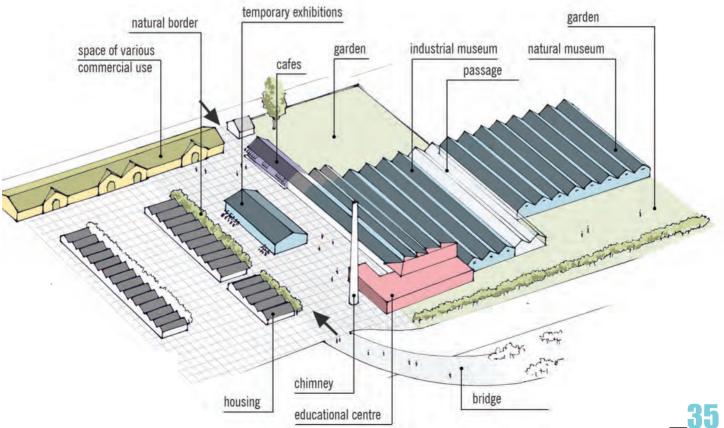
The exterior of the fabric is saved as much as possible to emphasize historical significance of the building.

By planning the inside area the idea of Yin and Yang is also saved. There are two museums in project: industrial and natural by visiting each of the exhibition

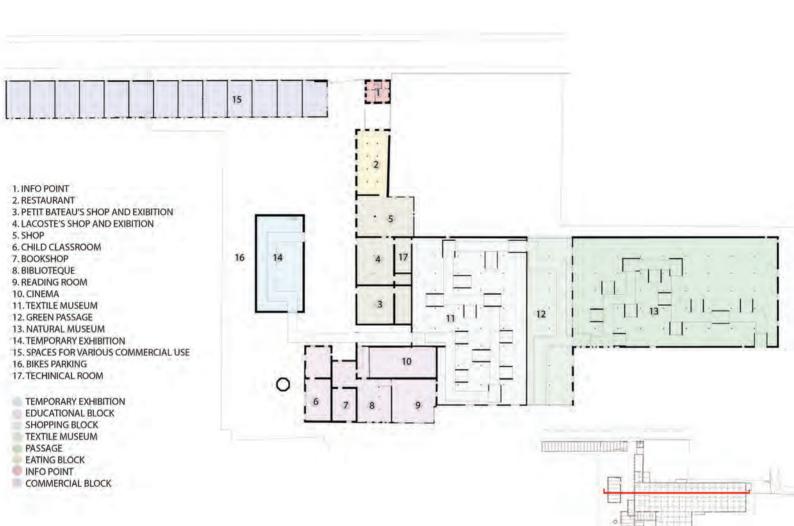
▶ SECTION

spaces, the visitors can clearly see the difference: the interior of industrial museum was projected with Corten elements and the natural part is planted with trees and grass. Inside of the room the portable boxes were placed, that give an opportunity to make some changes of exhibition.

#### ► FUNCTIONAL SCHEME

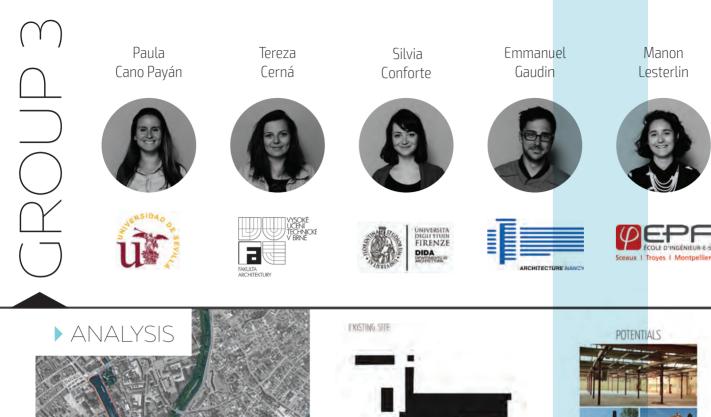








### ▶ VIEW IN THE GREEN PASSAGE



At first, we decided to recreate connexions between the city-centre and this neighbourhood with soft links near the Seine River.

Thanks to its strong built presence, it seemed inevitable that this place would become a centrepiece of the neighbourhood. A centrepiece that inhabitants could appropriate to themselves.



DESTRUCTIONS FOR THE PROJECT



NEW CONSTRUCTION



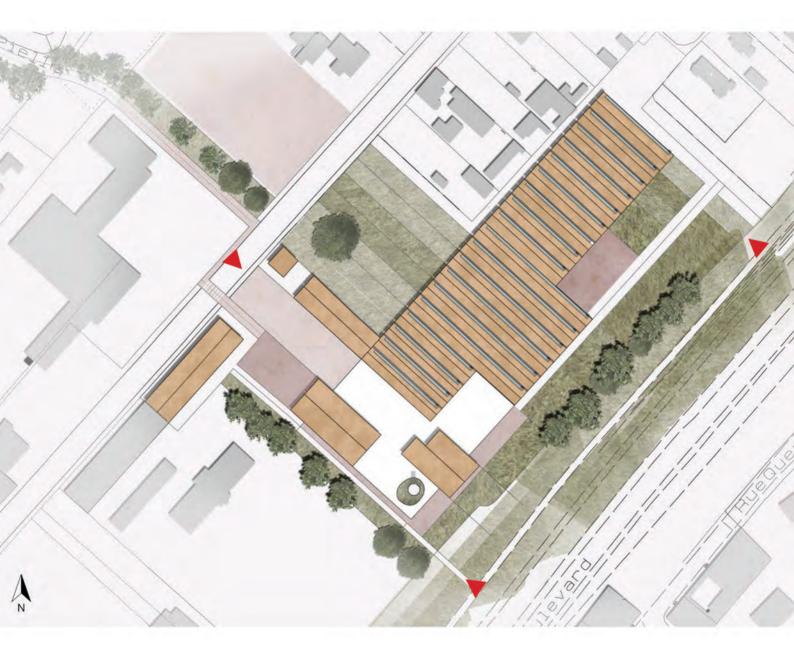
CONCERNED BUILDINGS







# ▶ MASTERPLAN





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▶ FACADE



Because some parts of existing buildings were extensions realized after the original construction and presented less patrimonial and architectural values than the rest, we decided for this project to destroy them. It allowed to enlarge the opening on the street, giving more visibility onto buildings. Along the street, the former stocking building becomes a space for the artists and the creators who can expose and sell their productions. The buildings along the park are reserved to the gatekeeper, the administration and the archives.

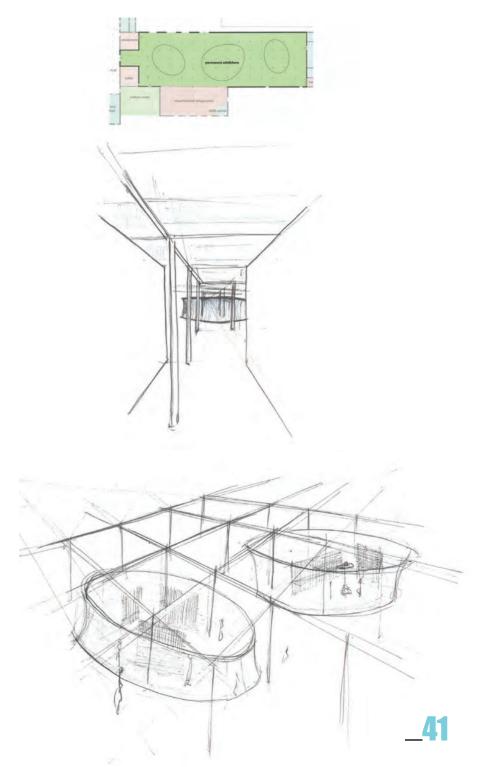
A new construction, fully glazed is implemented to create a connexion between the various strong entities preserved. It hosts a large hall, which is a real public interior place promoting exchanges between media and cafeteria in the centre building. The old boiler room becomes the temporary exhibition room while the museum space takes place in the old fabric. This large space is structured by the columns and the beams supporting the roof. They allow soft and constant lighting and make permanent exhibitions enjoyable.

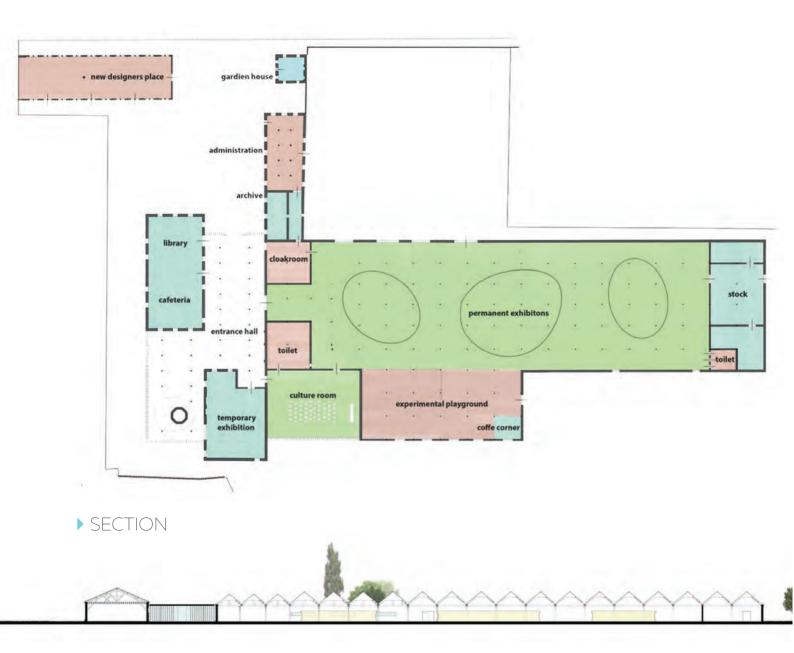
The scenography is made by light elements with a textile oval form to preserve the regularity established by the existing structure and the beauty of this big industrial volume. Around this main volume, we find the technical rooms at each part of the building, an experimental playground reserved for the children and a coffee corner opened towards the garden.

Complementary to the entrance hall by its sober and transparent architecture, the cultural room is opened on the garden and can receive conferences or seminars given by the actors of the neighbourhood or the city. It contributes to the influence of this equipment and its multi-functional and multi-cultural aspect.

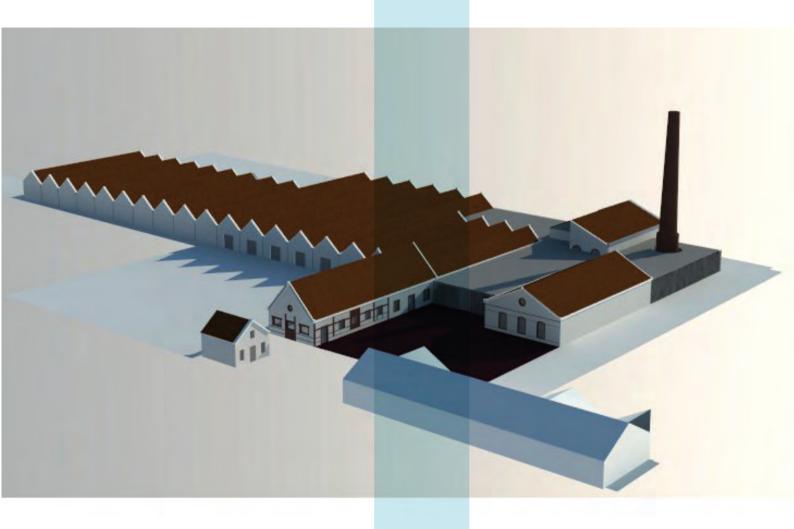
The extension -which integrates the chimney by a patio surrounding it- was inserted and drawn to be the most abstract as possible in order make the site's identity last by preserving the different heights of each constructions.





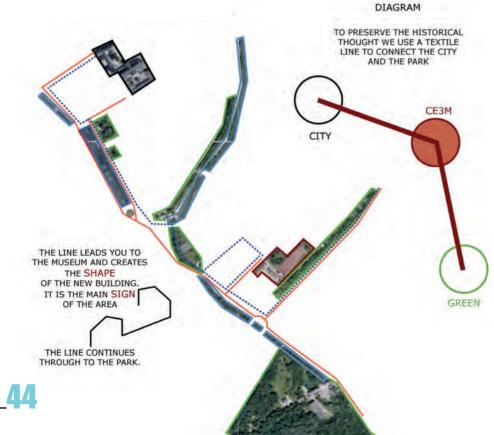


### ▶ GENERAL VIEW OF THE SITE





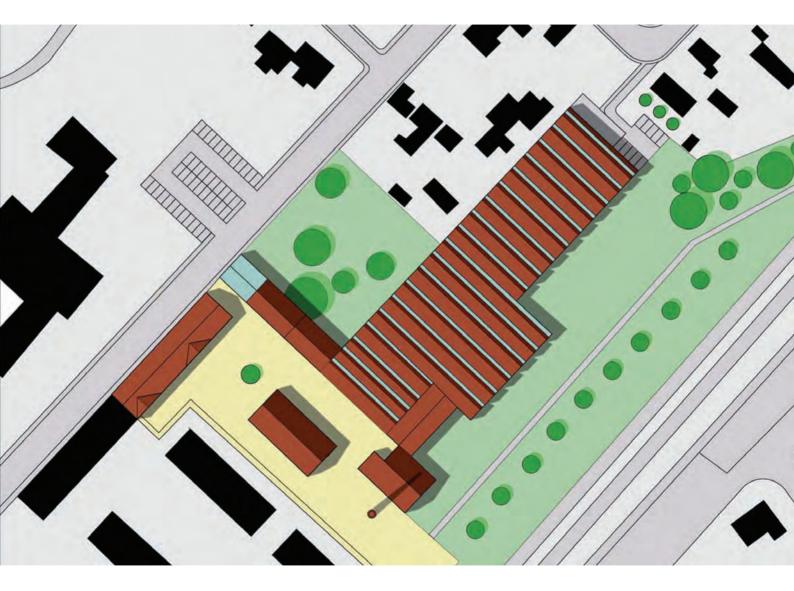
ANALYSIS



The project took place in Troyes where one museum already existed, second one was created by transformation from factory and third one is supposed to created.

The main idea of the project was to create the 3rd museum in Troyes and build a pathway which would connect all of the tree museums. At the same time it would form new exposition.





#### TEXTILE LINE





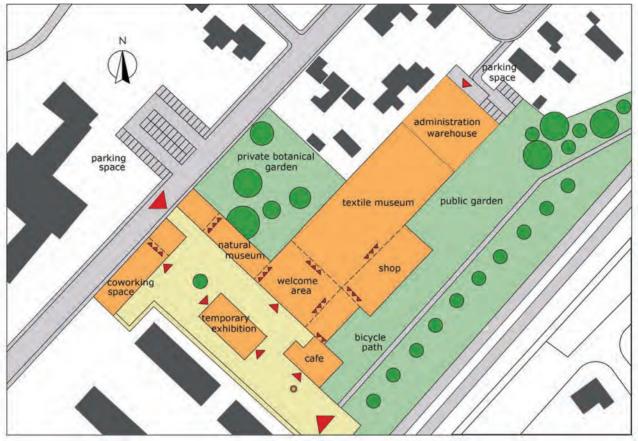


The concept stems from the current situation: the unused area of former textile factory CE3M and its transformation into a museum of textiles, office for emerging artists, studios, shops and library. The area will create new functional space which will be multifunctional and also serve as an artistic venue. The new pathways linking the museums together, will be built with panels where the outdoor exposition will take place, therefore creating a linking concept of the project. The new natural history museum was moved to a nearby park at the factory site.

Master plan is based on an assessment of existing buildings and greenery. which Buildings havenít had architectural value were demolished and were replaced by new buildings which were designed to complement the existing buildings and connect them into one. The area has two entrances. One of them is for pedestrians who can use the newly created pathways and the other one for visitors arriving by car. The resort is designed for indoor and outdoor activities. Together with the museums comes also an outdoor garden which freely goes into the interior of the museum and thus connects the outdoor and indoor world. A world

SECTION

### ▶ ORGANIZATION PLAN



#### ENERGY PRODUCTION

#### Solar pannels

- Roof of 3000 m<sup>2</sup>
- South-west orientation
- 50° inclination

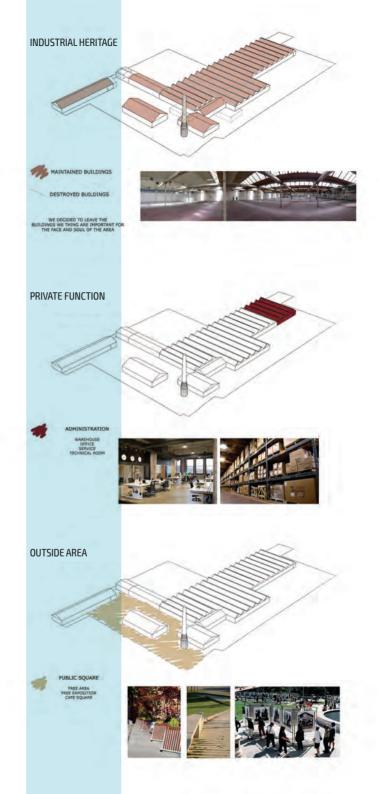
#### **Rainwater collection**

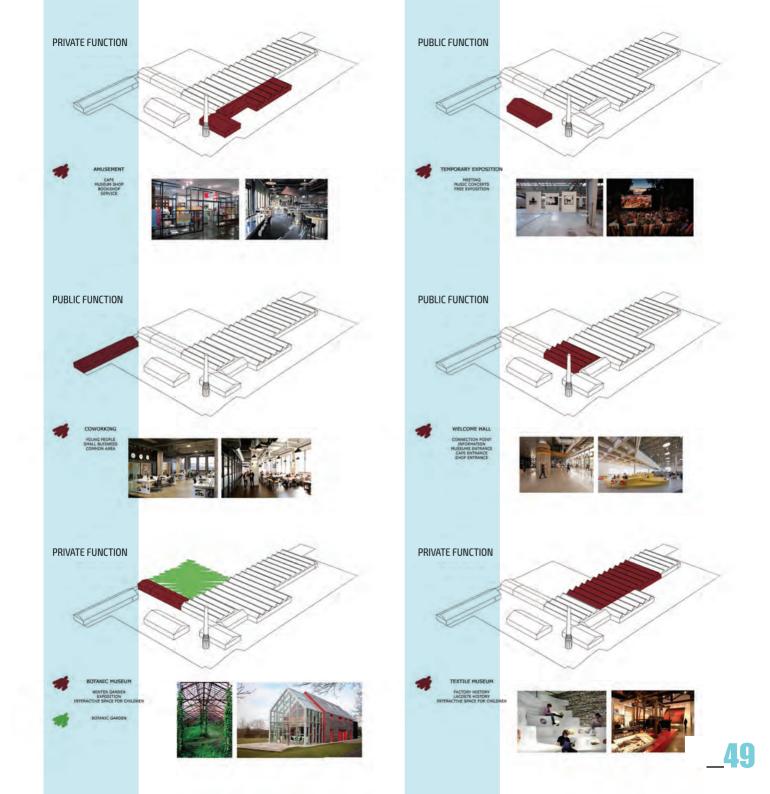
- Irrigate the botanical garden
- Roof of 5200 m<sup>2</sup>
- Rainfall: 644,8 L/m²/year
- Loss coefficient due to the tiling: 0.9
- Maximal capacity of 3000 m³/year of rainwater

where children play a major role and can try production of cloths and play in cotton jungle gym. The museum offers permanent and temporary exhibitions of textiles, accompanied by interactive elements and costumes. The area of museum is connected to coffeehouse, studios and ateliers of emerging artists.

The facade of newly designed buildings is complementing the existing buildings. Facades are designed from Corten sheet in combination with a brick. The buildings undergone existing reconstruction where new windows were provided. New feature of the project is that the buildings use rainwater for watering gardens and flushing toilets. Solar collectors, together with the natural recuperative heat exchanger unit provide heating in the building.

The area has not only served as an exhibition space, but also as a nice place where you can come to relax from everyday life.

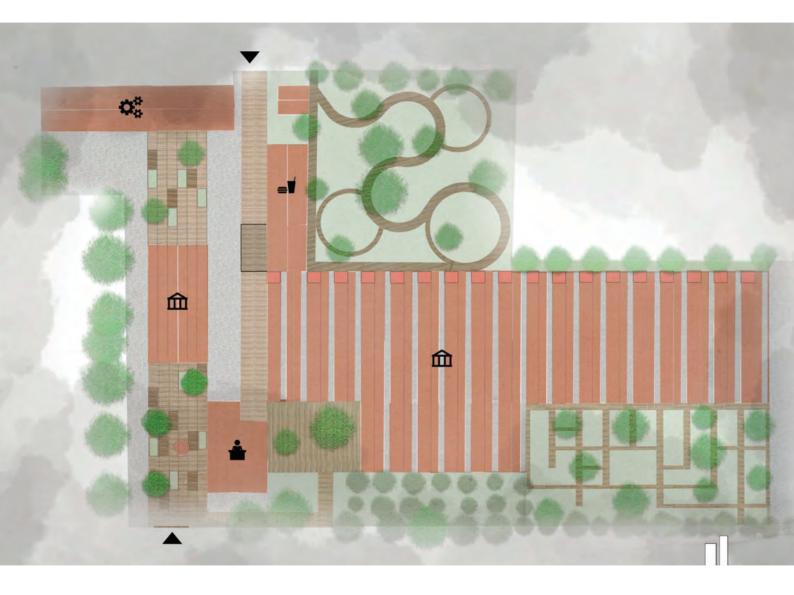




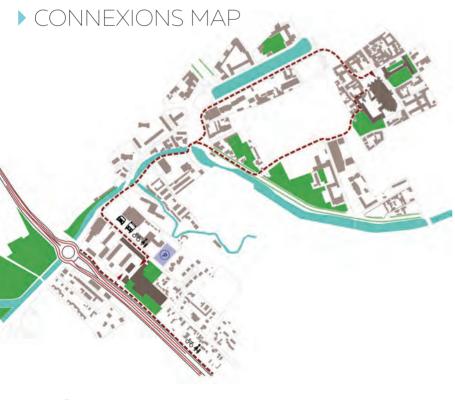


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# MASTERPLAN





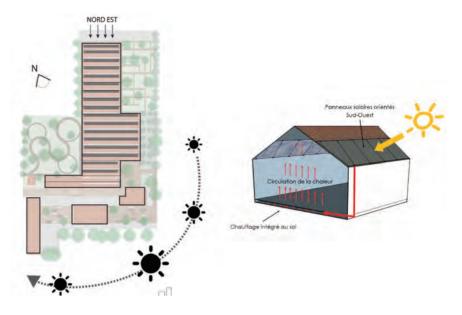


The former factory is transformed into a multi-function cultural centre that will revitalize the neighbourhood. This centre will be equipped with a research area, a restaurant café and two museums (Natural history and Netting fabric). These two museums come with their own administrative spaces. Two green areas also take place into this new centre. One is a botanic garden and the second is a leisure garden. Those garden will bring vegetated spaces to the neighbourhood.

Through an architectural point of view, the project organizes itself around the conservation of built heritage and its refurbishment. The oldest and original buildings present architectural interest directly linked with their own past. They are full actors of the site's memory. The typical post and beam structure of the used-to-be factory is very interesting for the project's composition because of its regularity. The shed type roofing is as interesting as the structure for the new project. These two components are therefore preserved and used as a grid in the new museum's distribution.

The main entry is made with wooden structures that indicates accesses to the visitor. An information and welcome point as long as a chill zone are set in this wood structure. Then, a long corridor, partly glazed guides and encourages the visitors toward the museum. This corridor is a main space in the project. Indeed it is a communication tool for the centre and it also bring direct visual connexions between the gardens and the museum exhibition spaces. In that way, museum spaces benefits for natural lightening as well as magnificent views toward botanic garden. Outside spaces are designed in a way that the visitor can observe a certain continuity between inside and outside spaces.

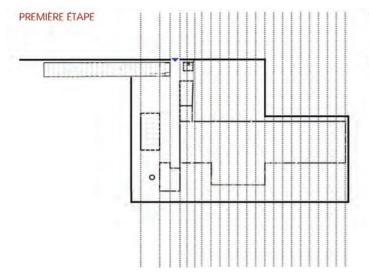
### DESIGN DETAILS

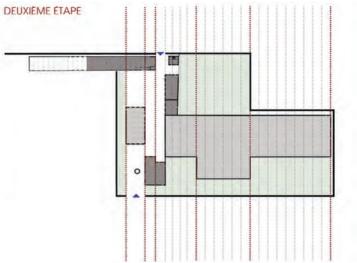


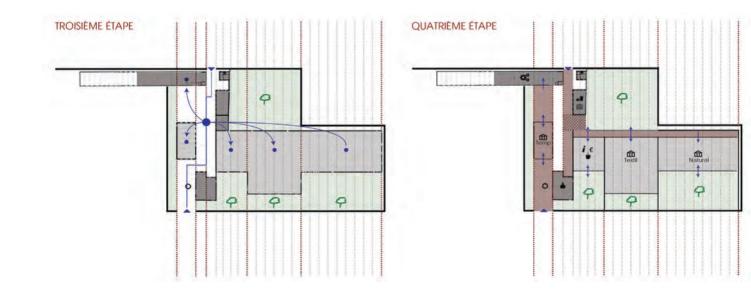
# VIEW IN THE GARDEN



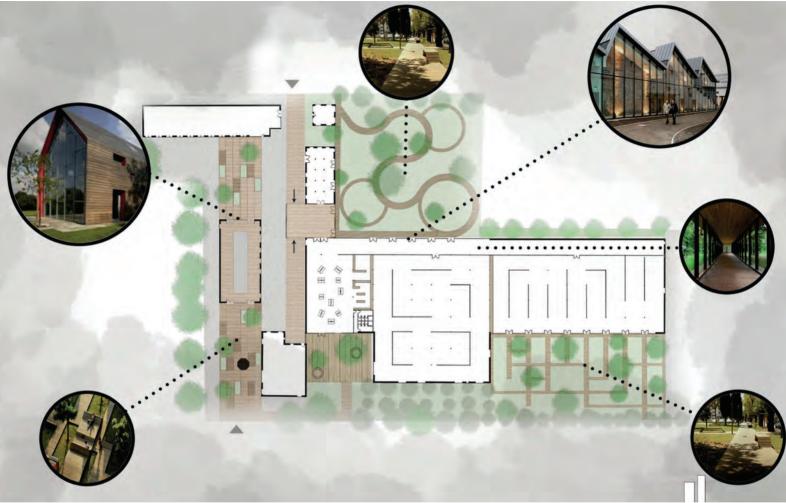
# DESIGN PROCESS



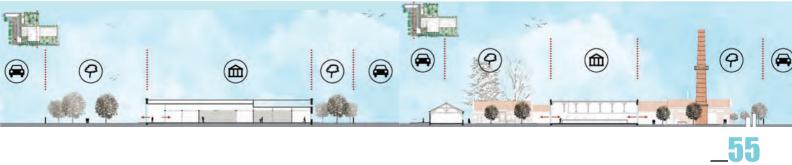




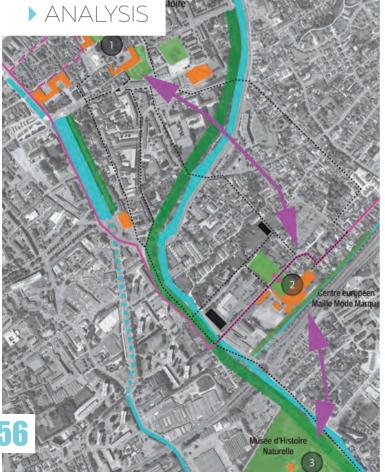
# PLAN



▶ SECTIONS





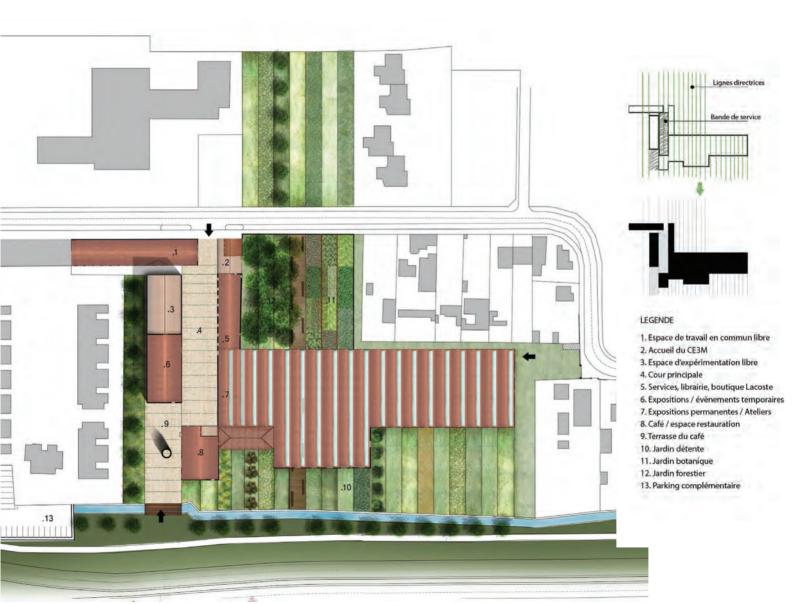




The site and its environment hold numerous potentialities which will allow us to recreate links. First, roads around the Vouldy site will be extended and reorganized. Then, legacy and historic places as long as cultural and entertainment buildings will be valorised. Finally, existing networks such as cycle paths, bus path and green, pedestrian path will be reinforced.

While analysing the program and the site's context, it became clearer for us that the museum system in Troyes should be organized within 3 sites which would, each, have its own identity. That is why we decided to locate the netting part of the museum program entirely in the Vouldy site instead of having half of it in the existing museum. We decided as well that the natural history part of the museum should be settled in the Parc des moulins. A site located near the Vouldy site as you can see on the map at left.







### VIEW IN EXHIBITION HALL

The project's design on the Vouldy site is in three points. First, we dispose of all the additional volumes (garages etc.) in order to give the original lecture of the site. Then the design of the outsides uses large stripe that draw a rhythm according to the one already existing in the roofing and the inside grid. This act as if the building was extending on its sides to link with the nearest public garden as long as the green pedestrian path mentioned earlier. Last but not least, the intervention limits itself to the construction of 3 wood volumes: on that hosts the welcome desk, another one that finishes the main façade and a last one that enlarge the courtyard pavilion.

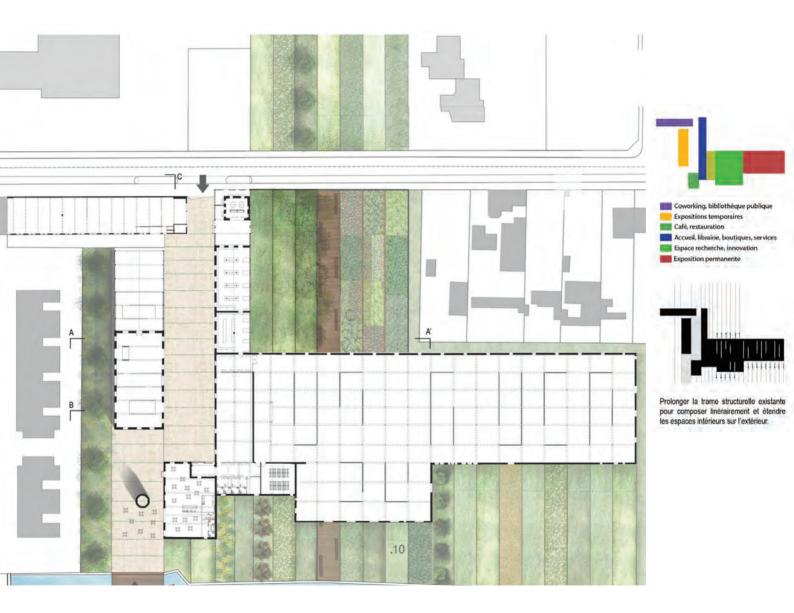
In the first building also hosts working spaces and a public library opened for the neighbourhood. The second one is built for temporary exhibitions such as fashion, ballet or arts. The last one contains the café, which works independently of the rest of the museum.

The former factory building keeps its original rhythm, grid and fabric while modifying its inside. Within the first part, near the courtyard, is settled the bookshop, the Lacoste corner and kindergarten. The main exhibition occupies the rest of the building with a presentation of the netting history in the city. This exhibition deliberately chooses a suspended scenography, light and modular for a free space organization. A research and innovation pole also takes place in this part of the building.

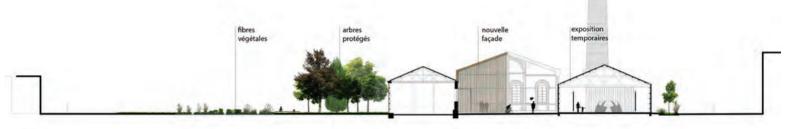


### ▶ VIEW IN EXHIBITION HALL









### ▶ REFERENCES





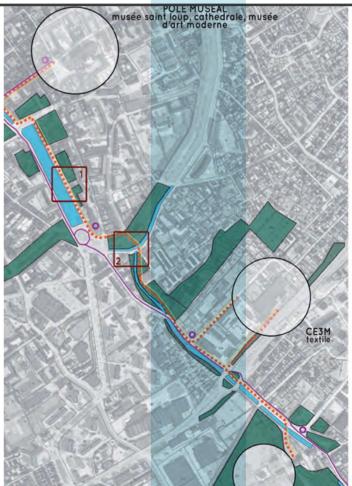
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► ANALYSIS

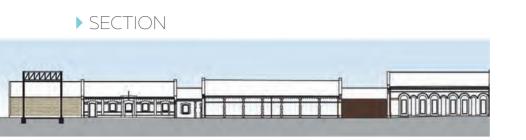


From the beginning, it was pretty clear to us that the Vouldy factory would only host the CE3M netting exhibition place. We decided to follow this lead and set the natural sciences museum outside our project site into the bourgeois housing of the Parc de Moulins. This action would create three distinct and separated museum entities in the city of Troyes. The strong presence of water in Troyes and the interesting potential of green spaces inspired us into creating urban installations that would link the three museums through the city. This link would be a pedestrian, cycle and pub pathway.









The Vouldy factory is a strong piece of building by its construction variety and by its exterior spaces. This project was about valorising building's structure and the introduce new architectural features while respecting existing forms and volumes. We designed for this project a multi-program centre. Shed volumes of the main building seem to be perfectly fitted with permanent and temporary collections of the netting museum. We also set a new auditorium, open space workshop rooms and offices available for netting companies and businesses. Those new functions were precious to us in the sense that they would bring life to the building throughout the entire year.



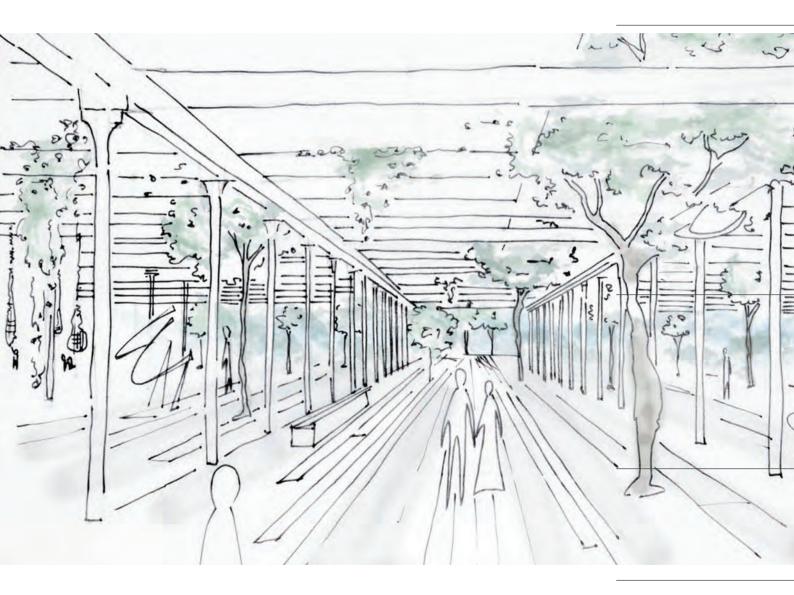


### VIEW ONTO THE MINERAL COURTYARD

Two accesses are created for this centre. A public entry dedicated to workers and visitors and a maintenance entry located in the rear part of the building. Thus the project face its back to the highway situated on the south part of the plot.

Exterior spaces are treated with two different ways of thinking. The mineral square is refurbished and allows the building to be accessed while the botanic garden is only here to be enjoyed by view. The botanic garden is also having fun with the main building as it can grow inside a part of it and becoming a winter garden. It seemed important to us to create this winter garden to artistic, interactive and contemporary exhibitions purposes. Thus the industrial heritage of Troyes and contemporary creation could easily meet in this unique place dedicated to textile.





# Imprint

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