

A monumental structure with a
durable bearer and a mutable fill

The extended *Brikkengebouw* as part of a new introvert place between the historical radians of
Maastricht



Graduation plan

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01. Personal information

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02. Studio

university Technical University Delft, Architecture, Urbanism and Building Sciences
studio Heritage and Architecture
theme Separation of construction and function / New monumentality
tutors ir. W.L.E.C. Meijers & ir. F.W.A Koopman

Argumentation of choice of the studio

Nowadays transformation of buildings within city centres is a relevant issue. The studio Heritage & Architecture is dealing with the built environment. Personally I am interested in analyzing the values of the existing on different scale levels in order to start the design process. In this work field I want to improve my skills as an architect.

03. Graduation project

Title

A monumental structure with a durable bearer and a mutable fill - The extended *Brikkengebouw* as part of a new introvert place between the historical radians of Maastricht

Location

Sphixterrain

The Sphixterrain is situated at the edge of the city centre of Maastricht. Before 2009, almost the entire terrain was covered with factory buildings. In 2009 most of these buildings were demolished except the *Brikkengebouw* and some other buildings.

In my urban analysis I have compared the Sphixterrain with recent re-developed terrains that lay in a similar relationship in the city. These terrains, including the Sphixterrain, lay behind historical roads (radians) that run from the city centre towards the (former) medieval gates. This morphological structure is still dominant. The places between the radians can be characterized as introvert, containing a mix of functions: mostly dwellings with a more 'serious' function (instead of leisure functions). The radians themselves can be characterized as extrovert, with mostly leisure functions.



Fig. 1 Current situation Sphixterrain, building plot in red.



Luchtfoto genomen rond 1930. (bron; KLM, Aerocarto)

Fig. 2 Sphixterrain in 1930

Area developments

The Frontensingel runs along the western border of the Sphinxterrain and is at this moment a very busy road. Due to infrastructural developments the traffic load will decrease drastically. The Frontenpark (also being developed) on the other side of the Frontensingel will therefore be more accessible.

On the Boschstraat, east of the Sphinxterrain - at the height of the Basin - a lot of developments are currently going on: a venue hall, an art film house, the Pathé cinema and a Student Hotel. Predominantly these are leisure, student/starter related functions. These functions fit within the idea that the Boschstraat (a historical radian) has an extrovert character where historical buildings are dominant. The Boschstraat is one of the radian roads which ran from the city centre to the city gates.

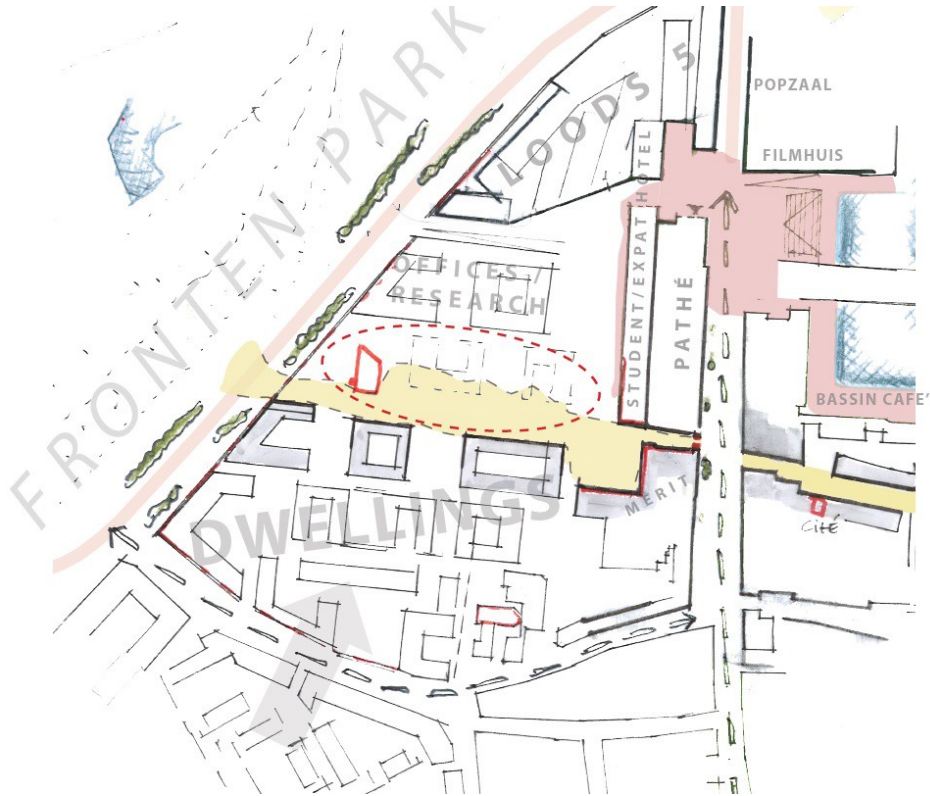


Fig. 3 Introvert and extrovert spaces

Sphinxterrain masterplan

A new development for the Sphinxterrain is needed. The location, being within the city centre, asks for a durable urban fabric that defines public space. The developments in the area provide the opportunity to make a connection between the Frontenpark and the Boschstraat. An introvert character is desirable in order to create a counterbalance towards the extrovert (historical radian) Boschstraat.

I already designed a urban scheme, based on the urban plan made by PALMBOUT urban landscapes in 2007. (This plan, with mostly dwellings, failed due to the 2008 economical crisis.) Besides space for dwellings I will introduce space for research buildings. A building plot has been designed which integrates the *Brikkengebouw*. The dimensions of the plot are 40 x 133 meters. See figure 4 for the urban scheme and building plot.

Function building plot including Brikkengebouw

Based on the previous findings and analysis the chosen function is a combination between a research building and smaller public functions to create an introvert place. The chosen client for the research building is *The Maastricht Forensic Institute*. The MFI's goal is:

1. To satisfy government and private clients
2. Being a conference/meeting centre for interregional purposes.

Requirements for the forensic laboratories in the institute alter due to new research techniques that are being developed. Therefore the laboratories have to be designed in such a way that adaptation to new requirements easily can be achieved (Forensic Laboratory Facility Handbook, p.19), comparable with the rapid changes in organization principles of hospitals. When the construction of the hospital has been completed, its organization principle is already out-dated.

Problem statement

Until 2009 the Sphinxterrain was a mono-functional place in the city. After demolishing most of the factory buildings re-development is needed. The position close the city centre is ideal for realising a qualitatively high city fabric with a mix of functions. This is in the perspective of the social goal. A durable structure is needed that guarantees the plot a long life. My design plot, including the *Brikkengebouw*, is one of the plots. It should handle mutations and still remain durable. I will call the structure that is designed to maintain for a long period the 'bearer'. (inspired by J. Habraken) When the bearer does not loose its quality when mutations occur, the durability will increase. Designing the structure as a *custom-made-suite* for a specific function brings the durability at risk.

The function 'forensic institute' is insecure. In addition, the the programmatic requirements of the forensic institute may expand or shrink.

Research Questions

How can the design (*Brikkengebouw* + extensions) handle future mutations (durability), without loosing its (new) monumental/architectural expressiveness?

Subquestions:

What is the relation between a construction (bearer) of a building and its architectural expressiveness?

How can a bearer be architectural/monumental expressive?

How does the bearer influences the public space?

What are important requirements for the functionality with relation to architectural aspects?

Design Assignment

Designing a flexible monumental structure. The idea is not to create a design for a definitive building with a specific function, but a building that can undergo a certain number of mutations without losing its qualities. The assignment can be divided into two main design tasks. (1) The bearer is designed from the perspective of the architect that serves a social goal by adding qualitative public space for future generations. (2) The 'fill' is designed in favor of the user, which durability is much more insecure. (3) The cultural values of the current *Brikkengebouw* and the Sphinxterrain must be taken into account in the new design, because in fact they already form an existing bearer for the location. Findings of the earlier analysis and value assessment are starting points for the design.

1. Bearer

Make a design of a 'bearer' that satisfies the following requirements:

- the *bearer* defines qualitatively high public spaces
- the bearer allows that other functions can be carried in the future
- the bearer has a potential to be a monument

2. Fill

Make a design serving the client: 'the fill' that satisfies the following requirements:

- the bearer is filled in a manner that the FI functions well:
 - 6000 m2 labs
 - 5000 m2 offices/consultation rooms
 - 6500 m2 specific spaces/expedition
 - 2000 m2 auditorium/conference and meeting space
 - 800 m2 entrance space
- since the FI itself may alter their requirements (this always happens, comparable to hospitals), the bearer should allow these changes
- the fill shouldn't affect the new monumental potential of the bearer

3. The *Brikkengebouw* should be integrated in the building plot in such a way that its monumental values are being justified or used as inspiration.

Starting points already made:

- Define Sphinxstreet again (this was a main road laying on the Shpinxterrain and was dominant between 1850-1950)
- Including the *Brikkengebouw* again in a cluster of buildings (Between 1875-1934 the *Brikkengebouw* was part of a cluster of buildings with more or less the same plot-size.)

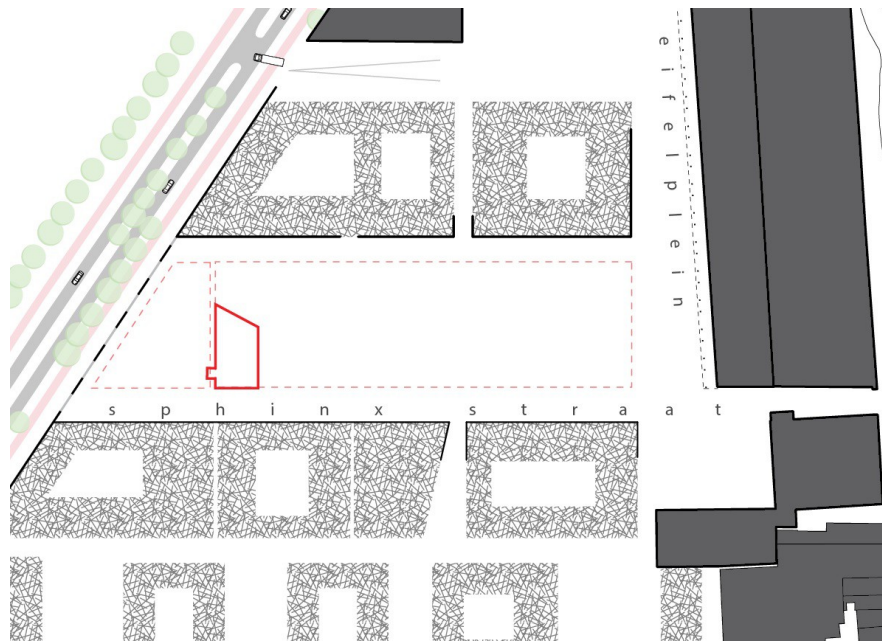


Fig. 4 Design plot

04. Process

Method description

In the P1 and P2 period a value assessment, urban analysis, architectural analysis and building technological analysis were being made. The values that I found together have been used to form the framework of the design assignment.

The idea of designing a durable construction with a flexible fill is not new. A research has to be done on this subject. A number of architects and building systems I want to explore are:

John Habraken – 'drager inbouw'
 Frank Bijdendijk – 'Solids'
 'Long-life Loose-fit'
 'open bouwen'
 'skeleton and infill'

Study typologies

An important method during the design process will be studying precedents. Different design techniques/aspects will be gathered can be used during the design process. The precedents I will use can be divided in the following main themes: building system, program&organization and heritage & design.

Precedents

Bearer and fill

OMA - competition entry city hall The Hague

Industrial heritage

Meelfabriek, Leiden - Zumthor

Forensic institutes

Consolidated Forensic Laboratory, Washington DC – HOK architects
 Netherlands Forensic Institute – Claus en Kaan Architecten

Visit buildings with a similar program will give me two main insights (1) practical information on how the Forensic Institute wants to use their buildings and (2) Learn about interior atmospheres.

Appointments for visiting the buildings are being made in Augustus:

Netherlands Forensic Institute, Ypenburg/The Hague
 Maastricht Forensic Institute, Maastricht
 Laboratories located at Utrecht University

Literature

- Aguilar, J., Del Re, B., Lawrie, B., McClaren, J., Moxam, M. (2011) *Forensic Science Facilities – When a Laboratory is not a Laboratory?*
- Brennan, N., Fisher, R., Reno, J., Robinson, L., Travis, J. (1998) *Forensic Laboratories: Handbook for Facility Planning, Design, Construction, and Moving.*
- Bijddendijk, F. (2006). *Met andere ogen – Over de verbinding tussen mensen van vlees en bloed en een duurzame kwaliteit van gebouwen en gebieden.*
- Hertzberger, H. (1991). *Lessons for students in Architecture.* Uitgeverij 010, Rotterdam.
- Habraken, J. (1972). *De dragers en de mensen.* Scheltema & Holkema N.V., Haarlem
- Habraken, J. (1996). *Tools of the trade; Thematic Aspects of Designing.*
- Habraken, J. (2000). *The structure of the ordinary: form and control in the built environment.* MIT press
- Habraken, J. (2005). *Palladio's Children.*
- Meurs, P. (2016). *Heritage based design.* TUDELFT, Delft
- Palmboom & van den Bout Stedenbouwkundigen bv. (2007). *Sphinx Beeldkwaliteitsplan.*
- Reeth, B. (1983). *Teksten van en over.* Gent
- Rossi, A. (1966). *De architectuur van de stad.*
- Wamelink, J.W.F. (2009) *Inleiding Bouwmanagement.* Vssd
- Werf, F. (1993). *Open ontwerpen.* Uitgeverij 010, Rotterdam.

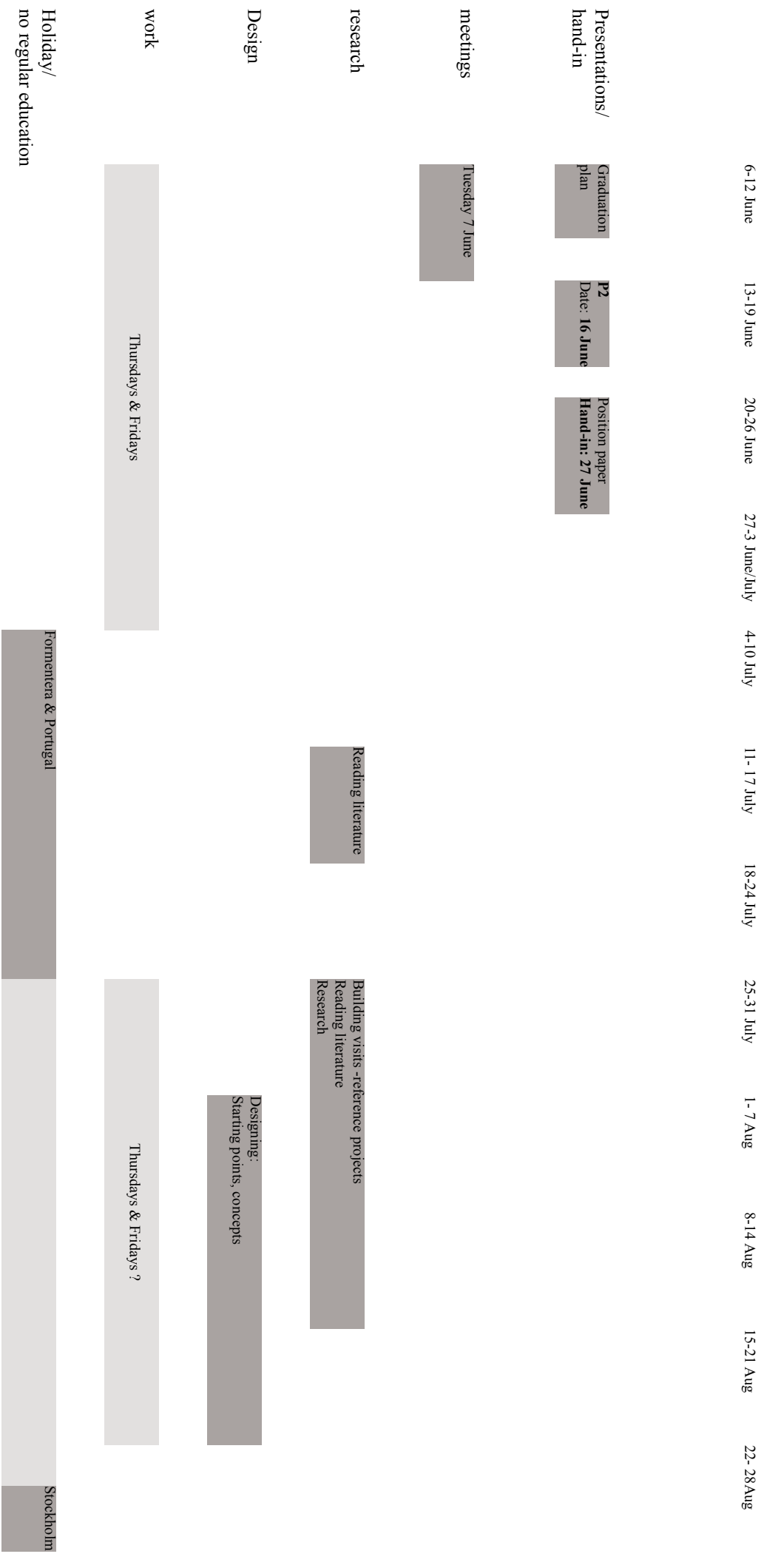
05. Reflection

Relevance

In the real life, the building process is complex and has many stakeholders with different interest. In my graduation project I don't want to simulate this process. By choosing a certain strategy on how to make a durable building, the design process of this graduation project follows one particular path. However this path can show some explicit effects/problems. These found problem could bring insights in the discussion on how to intervene in the existing urban fabric.

Time planning

See next pages.



29-4 Aug/Sept 5-11 Sept 12-18 Sept 19-25 Sept 26-2 Sept/Oct 3-9 Oct 10-16 Oct 17-23 Oct 24-30 Oct 31-6 Oct/Nov 7-13 Nov 14-20 Nov

Presentations/
hand-in

Preparation P3 P3 (period: 1-11 Nov) Preparation P4

meetings

Tuesday 6 Sept Tuesday 13 Sept Tuesday 20 Sept Tuesday 27 Sept Tuesday 4 Oct Tuesday 11 Oct Tuesday 18 Oct Tuesday 25 Oct Tuesday 1 Nov Tuesday 8 Nov Tuesday 15 Nov

research

Conclusions out of research:
- case studies
- literature (bearer and infill / monumentality)

Design

Designing: (architecture & building technology)
Urban plan, ensemble and context, plans, sections, façades, construction, materialisation, detailing

Work

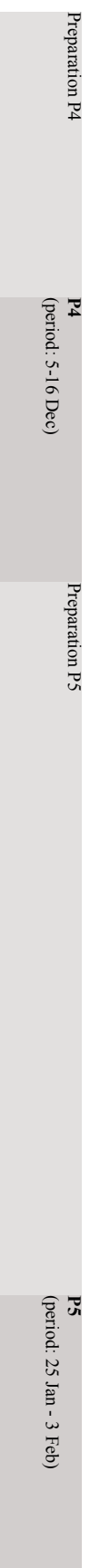
Thursdays & Fridays

Holiday/
no regular educa-
tion

Stockholm

21-27 Nov 28-4 Nov/Dec 5-11 Dec 12-18 Dec 19-25 Dec 26-1 Dec/Jan 2-8 Jan 9-15 Jan 16-22 Jan 23-29 Jan 30-5 Jan/Feb

Presentations/
hand-in

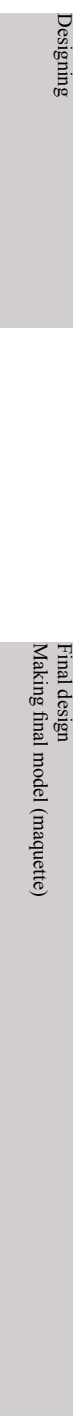


meetings



research

Design



Work



Holiday/
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