Open Structures
Open Structures master class
In the week from 19-23 November 2012, The Berlage organized a master class on Open Structures leaded by Herman Hertzberger. The notion of Open Structures was formulated by Hertzberger: ‘open structures are... open to interaction with the outside world; they can influence their surroundings and also be influenced by their surroundings. In architectural terms this mainly relates especially to consequences in time and therefore to expansion or transformation.’ In preparation for the master class texts had to be read and analysed. The master class exercises and texts concerned the investigation of essential architectural conditions for the consideration of open structures. Through two group assignments these conditions had to be defined. Our first assignment concerned the analysis of the NHL school in Leeuwarden, designed by architectuurstudio HH (Herman Hertzberger) in 2010. The second assignment was a design proposal for the transformation of the Ministry of Social Affairs and Employment, designed by Herman Hertzberger in 1979.

Structuralism
The notion of open structures was discussed in the fifties by CIAM and by the Metabolists and Team X in the sixties. The theories and ideas derived from those architectural groups have been influential for the development of the structuralists in the Netherlands including Herman Hertzberger. The noble ideas of this lyrical era are now glorified by retired members of the collectives, and new generations of architects with an interest for either the ideological or formal language of structuralism. With a total of seven million square meters vacant office buildings in the Netherlands, the urge for solutions is pressing. The master class on open structures aimed to revive and reconsider the ideas of structuralism, providing solutions for the vacancy problem and the incorporation of flexibility in new architectural projects.

Relevance and outcome
The increasing call for flexibility in architecture made the workshop a valuable experience to analyse and discuss the ambitions of a flexible architecture. Not only the assignments, but especially the provided references have been inspiring for rethinking the design of flexibility and specificity in architecture. For this reason the report not only highlights the results of the design exercises, but also focuses on the documentation of historical precedents. Through quotations and imagery the report aims to provide a concise overview of the elements from the master class, considering notes on the read texts and results from the group assignments. This approach provides an inspirational summary of notions and pictures that can be read in any direction, in favour of the typical report that guides you from beginning until end.
PRECEDENTS
'No real invention without tradition' – Kenneth Frampton.

**Centraal Beheer**

Centraal Beheer is inspired by a visit to New York. The grid with its sight lines provide a spatial quality that is incorporated in the design. In 1968 Dutch society opened up on a cultural level, this was another major influence for the design of Centraal Beheer.
Plan Obus, Le Corbusier 1933
The Venice Hospital is an open ended building, freely fanning out across the water. The project is characterized by small building units, articulating the large volume. The result is a unified entity.

[7] Venice Hospital, Le Corbusier, 1965
MAT Building
- Epitomises the anonymous collective
- Functions come to enrich the urban fabric
- Individual gains new freedoms
- Interconnection as tool for design
- Close-unit patterns of associations
- Possibilities for growth and change
- System is open in both directions (plan and section)

Mat building is an organizational strategy for an architectural effect. The architectural objective is a shallow but dense section, characterized by ramps and double height voids. The building exploits the unifying capacity of the large open roof, lets the city flow through the building, uses a delicate play of repetition and variation and incorporates time as an active variable in an urban architecture. In Mat-building there are no questions on style, there is an emphasis on organisation. Mat-building is an urbanistic question. Mat-building is anti-figural, anti-representational and anti-monumental.

What's an Open Structure?
Open structures can influence their surroundings, and be influenced by their surroundings. Open structures are open to interaction with the outside world.

The works of Josic Candillis Woods designs new freedoms of action. Its result is an accommodating or infrastructural architecture.

Aldo van Eyck’s ideas on city planning was inspired by Richard Paul Lohse paintings.
Understatement and Overdesign
The difference between the Smithsons and Dutch Structuralists is emphasized by Alison Smithson’s notion of: Understatement (Smithsons) and Overdesign (Dutch structuralists).

According to Alison Smithson the Dutch used a language that consistently articulated individual units, cells, corners, doorsteps and other spatial transitions. Works like those of Piet Blom where considered too formalistic.

Casbahism (Piet Blom) concerns the glorification of small spaces at the scale of the user.

CIAM and Blom
CIAM worked with the themes: dwelling, work, recreation and transport.
CIAM, the Metabolists and Blom all use technology and technocracy as prerequisites.
Served and Servant Spaces
Louis Kahn distinguished two forms of spaces within architecture: served and servant spaces.

Modernism vs Structuralism
Modernism is defined through architectural means
Structuralism is defined through activities

In structuralism small scale elements form together the whole
In structuralism autonomous shaped buildings together form the completed composition

Two opposing tendencies coexisted since the earliest experiments of modernism:

1. Iconic objects that register symbolic or metaphorical new conditions of modernity
2. New spatial formations enact the organisational and social dynamics of modernity
The major contribution of Team X is the design of the corridor as street.' Hertzberger: 'a properly functioning apparatus itself becomes an instrument. A properly functioning apparatus does the work for which it is programmed that which is expected of it – no less, but also no more. By pressing the right buttons the expected results are obtained the same for every one.'
Notions on an open architecture (Tom Avermaete)
- Architecture is always open, it's the degree of openness that defines an open architecture
- Openness is not abstract, it's architectural
- Openness involves specific attitudes towards user, surrounding and time

'I'm tired of the loft'
A POSSIBLE NEW USE
- student accommodation
- elderly housing
- educational facilities

CENTRAL VAN NOI
- 30 minutes to everywhere

INTERDEPENDENCY OF THE INHABITANTS AND PROGRAMS

Design approach

[16] Ministry of Social Affairs and Employment, proposal group 3
Villa VPRO
According to Herman Hertzberger the design of the Villa VPRO is combination of ideas from van Eyck and Koolhaas.

Ordering device
Van Eyck: Carpet and chandelier
Koolhaas: Ramps and Voids as

(Koolhaas blamed MVRDV for stealing ideas from his design for the Jussieu library)
[18] Ministry of Social Affairs and Employment, proposal group 8
Polycentricity and organizational logic

Polycentricity
During the analysis of historical precedents we concluded that truly open structures have multiple centres. This notion we called polycentricity: it provides the structure a possibility to transform departing from different points. The Victory Boogie Woogie and the Free University of Berlin are examples of polycentric open structures.

Organizational logic
The organizational logic of a structure either limits or opens up the possibility for transformation. A clear and strong organizational logic guides the project through future change. Like the painting of Richard Paul Lohse, which inspired Van Eyck’s orphanage, and the Venice Hospital from Le Corbusier, a strong organizational logic is provided leading to a high degree of openness.
Proposition for the Ministry of Social Affairs and Employment

In our proposal for the transformation for the Ministry of Social Affairs we exploited the notion of polycentricity and permeated our design with the characteristics of a Mat Building: enriching the urban fabric, designing interconnectivity, providing openness in both plan and section. The combination of those two concepts leaded to the project title Polycentric Mat-ness. To provide space for transformation we distinguished the specific and generic parts of the building. The generic parts are assigned as polyvalent spaces, located in between the specific functions. To allow program to grow in all directions, the generic space for growth is located in between the floors and in the atrium. With the concept of polycentricity and Mat-ness transformation can start anywhere in the building, growing or shrinking in all directions.
Polyvalent spaces (blue)

Polycentricity

Design of the unit

Polyvalent units

Determining space for growth

[22] Polycentric Mat-ness
OPEN STRUCTURES

Conclusion
The master class was an inspiring week to discuss the possibilities of a flexible architecture where buildings were considered as the opposite of art works: unfinished and therefore open for change. The master class provided a valuable historical overview in which Kahn’s served and servant space was put next to the notion of a Mat buildings, Corbusier’s ideas about flexible structures was compared with Piet Blom’s Casbahism, but most striking was the taboo to discuss the Dutch overdesign in comparison with the notion of understatement as formulated by the Smithsons. Herman Hertzberger’s presence seemed to make it impossible to doubt the formalistic intentions of the Dutch structuralists, still present as a source of inspiration for offices like MVRDV.

The overlap between theories and projects from the sixties, seventies and eighties is striking. For example more than half of the characteristics of a Mat building can be applied to the concept of Collective Form as formulated by the Metabolists. The highly contextual approach in which time is a tool for design can be found among others Candilis, Josic, Woods and Kenzo Tange. It is the vocabulary and formal outcome that distinguishes the architects, more than their underlying ideas. What the Metabolists call generic and specific, Kahn calls served and servant. Le Corbusier’s Domino House could now be Lacaton & Vassal’s architecture school. What the master class nevertheless showed is that a set of columns and floor plates does not guarantee a successful open structure.

For a successful open structure answers are sought beyond the appearance of the loft. The most valuable insights provided ideas for the incorporation of multiple centres in buildings embedded in a strong organizational logic and after all intelligently tied to their context. Those concepts provided a design proposal for the transformation of the Ministry of Social Affairs and Deployment. The design shows that the ideas on open structures can anticipate on the disadvantages and possibilities of a secretive building. This not only showed the potential of future purposes, but also the restrictive architectural outcome of the liberal ideas during the structuralist era. This made me conclude that not the absence of good ideas and concepts during the sixties, seventies and eighties is the cause of a hermetic building stock as result, but the untameable need for formalistic gestures. In this light it is doubtful if it was righteous to revise the theoretical concepts of open structures instead of its formal outcome.

Frank Loer, 26 February
CERTIFICATE OF PARTICIPATION

Mr. Frank Loer

has successfully completed the Master class “Open Structures”

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Final presentations with
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Delft, 19-23 November 2012

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