‘From closed city block to open campus’

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Assignment
Location
History
Typology/ Morphology
Location close up
Concept
Urban Masterplan
Architectural design
Building Technology
Redesign the area of routerseiland

Project goals:
- Add at least 10,000 square meters of volume
- Improve connection to the City
- Solve Parking problems
- Improve the outside spaces to make the ground level more attractive.
- Expand the university program significantly
Location

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Routerseiland

- The area is situated within the old city centre of Amsterdam
- The Island is manly used by the University of Amsterdam
- The UVA is clustering its faculties
- The internal space in the island has low quality.
Location

30-6-2010 P 5 Hybrid Buildings: ‘From closed city block to open campus’
Location

Impressions external space Route/seiland

Impression internal space Route/seiland
History

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Amsterdam 1220

River Amstel and position towards the IJ most important reasons for development of City of Amsterdam
Amsterdam 14th-16th century

Amstel and canalsystem created the islands, Fortifications were the borders, also when more space was required these borders caused the increasing density, occasionally you can see buildings outside the city wall but these are no dwellings. Monuments, although in the same structure as houses give diversity in the streets
Urban history

Amsterdam 17th Century

- City in need for extra space
- A big city addition is planned

Basic principles:
Upper Right: Stevins ideal trading city
Under Right: Speckle ideal fortress city
Urban history

Amsterdam 17th Century
Urban history

Amsterdam 17th Century

1. Canalsystem
2. Jordaan
3. Leidse buurt
4. Plantage
5. Harbour

- Discontinuity in the system
Urban history

Amsterdam 1825
**Location development 1680-1840**

Conditions for the first urban development: Roeterseiland is located at the end of the 2nd phase of periphery of Amsterdam. Due to a stagnation of the building industry on the east side of the Amstel at the end of the Golden Ages (17th century) only small businesses were built on the last islands.

**Location development 1680-1840**

Factories replaced small businesses on the islands: 1840 there were two cinders belts and one factory for steam machines.
1875-2005
1891 the first university building Demolished in the 1960s.
1900 H.P.Berlage housing block
1934 A.R.Hulshof Geological Institute
Location History

Location development 1960

1960s A lot of new spaces were needed due to the rising numbers of students.

industrial buildings demolished and replaced by a large functional building.

The entrance was situated at the Sarphatistraat (upper right picture).
2005-future
UvA/governmental vision: “Relation with the city”

The site - living public area connected with its surroundings, metrostation Weesperplein and other locations of UvA, using canal structure
Location Future

P 5 Hybrid Buildings: ‘From closed city block to open campus’
HISTORY

- The canal system is since her existence several times adapted to new use over time. Now none of the original subcanals are left, but there is no limitation to return the water ways if needed.

- The buildings are made in several historical periods. Three buildings today have the status of monuments (Diamond factory, Geological Institute and the Berlage housing block).

- The 1960's addition in the end seemed a failure. As the campus was separated from its surroundings by a massive block.

FUTURE/ CURRENT PLANS

- City plan: Wibaut aan de Amstel: Creating a Eastern entrance for Amsterdam, the axes should connect the Plantage aan de Amstel, Oosteramstel, Amstel poorten with Overamstel as a central spine. For the Router seiland this will mean opening up to the Amstelriver and HvA.

- Local urban plan of Palmboom v/d bout Public spaces and routing: the ground floor facing the canals should be used for commercial and public functions. This would increase the use of the site outside the university hours.

- AHMM Architects: (winner restauration ‘60 buildings) re-integration of the campus into the city - demolition, re-cladding, new structures create new links (physical/visual).
Typology

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Typology history

Typology city centre 14-16th century

Typology according to position in the city

1a. Single direction oriented; canal and street most representative buildings, herenhuisen

1b. Plural oriented; towards the main street perpendicular to the block and parallel towards the inner street (stegen and achterstraten)

Types: representative at main street, small houses, companies, stables and stores

2. Hardly any difference between the relation with city between a public building or a dwelling

Public buildings (religion) are most of the times situated at open spaces, no clear definition of
Typology addition 17th century

Major changes:
- Larger buildingblocks
- Larger buildings
- more homogenous facades
Morphology
Morphology

Three morphological types:

1. Separate buildings with innercourtyard

2. Massive blocks with higher elements

3. Slabs alongside the Sarphatistreet
Typology

MORPHOLOGY, TYPOLOGY, DENSITY

- The plots are determined by canal structure which are the connective elements throughout Amsterdam.

- No fluent connection between the different building periods over time.

- Roeterseiland is an isolated area surrounded by its own walls, functioning as a closed block.

- The density of the area is in comparison to the rest of the Amsterdam canal belt.

- Current open spaces do not add quality.

- No connection of the morphology with the historical canal belt methods exists.
Location Close up

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OPEN SPACES

- If you would combine the light green area’s at Roetereiland, the area could transform into an area which will be used.

- Adding an open space in the university triangle adds quality for living and the use of public spaces.

- Connecting the new open space to the canal provides advantages for this public space. This will create a better public/commercial area.

- Open spaces are important especially in the Amsterdam canal belt as those spaces are rare and wanted.
CIRCULATION PATTERNS

- Entrances are scattered around the area.
- Chance is solving the parking problems on Roetersseiland.
- No clear connection to public transportation.
- The area around the Roetersseiland is very good accessible.
  Therefore structure of the infrastructure is good.
- The local solution of distribution of traffic is worse.
  The main chances of improving the situation is reorganizing
  building entrances and a better parking facilities
Connection 1st/ 2nd order

Students usually don’t live in the city center. their main means of transport is bike or with public transportation.
Connection 1st/ 2nd order  
(incl Entrance Sarpahtistraat)  

The entrance by bike is much more clear in the direction of the Watergraafsmeer/ Diemen and Duivendrecht.

The Oosterpark will be connected better to the U.v.A.
DISTRIBUTION OF PROGRAM

- Close to the subway entrances are possibilities to add commercial functions for quick services.

- Because of the educational functions in the area, there is a need for student dwellings in the area. This will also increase the liveliness of the area.

- The ground floor locations at the Sarphatistraat and the weesperstraat have been very hard to sell. Due to the closed entrances of the current buildings, the buildings are not attractive for commercial business.

- To improve the area some buildings could be redesigned, reshaped or demolished, but take into account that some buildings are monuments.
Conclusion

Location Closeup

- Because of the educational functions in the area, there is a need for student dwellings in the area. This will also increase the liveliness of the area.

- The local solution of distribution of traffic is bad. The main chances of improving the situation is reorganizing building entrances and a better parking facilities

- Connecting the new open space to the canal provides advantages for this public space. This will create a better public/commercial area

- Adding an open space in the university triangle adds quality for living and the use of public spaces

- No connection of the morphology with the historical canal belt methods exists.

- Roeterseiland is an isolated area surrounded by it’s own walls, functioning as a closed block.
Concept

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LOCATION ANALYSES CONCLUSIONS
‘FROM CLOSED CITY BLOCK TO OPEN CAMPUS’

GOALS:
- Open area to the city
- Improve outside space
- Make ground level more lively
- Centralise Parking Facilities
- Add at least 10,000 square meters program.
  60’s extension will be renovated properly

METHODS:
- Add Student living at Roetersseiland.
- Increase commercial conditions Catering facilities.
- Add different functions to groundfloors.
- Adding parking garage for new functions.
- Add secondary entrance or new main entrance.
- Reorganize current building masses
- Buildings in Yellow stay

- Green area will be the intervention area.

- All buildings can be removed as they are almost no addition to the urban network. The status of them being monuments is questionable.
Current situation

Entrances to the area are clustered.

On a city level the place of the entrance is not logical.

Current traffic flow (dark blue: bike, light blue: pedestrians)
New situation

By changing the routing in the area, the connection with the city can be improved.

Creating more traffic along the Sarphatistreet and adding an entrance to the area will create a better visual and traffic connection of the University with the city.

The new entrance will benefit the use of the Oosterpark.

New traffic flow (dark blue: bike, light blue: pedestrians)
The concept for the area exists mainly on one idea:

Constructing a new form on the Roetersdiland, which will fit in the morphological idea’s of the Amsterdam canal belt.
Creating Concept

A main point is a new entrance at Sarpatistreet. This on the connection with the Oosterparkstreet, which connects to the suburbs of Amsterdam. This connection, combined with the presence of a Tramstop makes the crossing the ideal point of a natural entrance of the building/area.
Creating Concept

The inner courtyard created by the introduction of the building block will be separated in an outside and inside semipublic space. (inside space will be an atrium)
Program

PROGRAM
- The UvA is in need of more conference halls
- The UvA also needs more lecture space
- There is a need for more parking places which could be (partly) financed by the government of the city
- More leisure activities are wanted
- There is a need for more and different catering facilities
- There is no need for business industries
Urban Masterplan

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MASTERPLAN

- This plan wants to change the identity of the area drastically
- Transform it from a messy place in a lively university area.
- An central inside space for the university is added.
- By changing the routing in this area, the quality of the outside space increases.
- Also the continuity of the routing inside of the building is improved.
- By adding new University program and connecting it directly to the current program a stronger identity for the area is created.
- By adding a new entrance to the area a much clear connection to the university area on a city level is made.
Current square meters in the area:

1  Diamant factory:  5259 m²
   Current function: Empty
2  Education building: 12227 m²
   Current function: Faculty of Physics
3  Sarphatistraatbuilding: 13139 m²
   Current function: Dwellings

Program redeveloped in architectural intervention: total: 30.615 m²
Goal of addition: + 10.000 m²

New intervention should be 40.615 m²
Plots size of intervention: 16.769 m²

Current FSI: 1,82
New minimal FSI:  2,42
New Situation in Masterplan

New developed complex adds 57,490 m². This is an addition of 26,875 m²

The new Floor Space Index will be: 3.43

2 floors Parkinggarage added of 32,000 m²
Then, the FSI would be 5.34
(=89,490/16769)

The program of this plan:
Education: 34,529 m²
Student facilities: 2,046 m²
Student housing: 20,650 m²
pavilion: 265 m²

---------------- +
total: 57,490 m²

A conclusion that could be made is that a FSI increase is possible without creating a more dense feeling of the urban environment.
Architectural Design

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Floorplan 4th floor +16000
Building Technology

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Building Technology
Construction Principles

There are 2 types of constructions;
1 Generic construction
2 Special/ different construction

Generic construction is Universityslab
Tree different constructions are:

- Construction of the lecture halls above the main entrance
- Construction of the dwellings above the universityslab
- Construction of the main lecture hall
Generic construction

The generic construction exists of the major construction grid/stramien. It had 2 major parts: the parking garage and the major intervention slab with the university function.

The Parking garage has a concrete construction which is poured on site. The university slab is a prefab system with the same grid as the parking garage and its fully placed above the garage.
Generic construction

The prefab system consist of three construction lines, two with columns and one with a prefab wall element which covers the whole space between two gridlines.

On top of the columns there are beams where the concrete floor slabs are placed on.

On top of the hollow concrete floor slabs a pressure layer is placed with base reinforcement for stability.
Construction Dwellings

- The dwellings have an overhang of three meters
- The construction is 90 degrees twisted with a beam spanning the university slab
- By doing this the walls which divide dwellings become load bearing concrete prefab elements.
- This benefits the sound transmission between dwellings by reducing it.
Construction above Main Entrance Sarphatistreet

- Two lecture halls are hanging above the main entrance of the complex.
- For the esthetics of the entrance area it's desirable for its construction to not be in sight.
- The construction will exist of a steel beam construction which is bearing on the concrete construction of the generic building slab.
Construction Main Theater

- This theater is constructed of 4 concrete elements giving shape to the form.
- The concrete elements should be poured on site.
- Between these concrete elements a steel secondary construction is made.
- On this construction the floor/ walls/ roof of the lecture hall are being made.
Installations

- The heating for the university slab is mostly done by floor heating
- To make a flexible system, Air handling units can also participate in the heating of the building
- The main function of the Air handling units is humidity control and guaranteeing the proper ventilation rate
Installations

- The AHU’s are situated in the lowered ceiling.
- Sprinklers and electric facilities are placed in the ceiling.
- This combined with luminaries make the space between ceiling and construction a crowded place.
Installations Main Theater

- The theater has its own installation
- Only Airhandling for cooling/ heating
- The space is heated from the floor up
- By suction the hot air is extracted from the higher parts of the theater.
End of presentation