

# Introduction

## Studio

Many buildings lose their function overtime, due to changing needs. This leaves a lot of buildings vacant and unused, in need for a new function. The chair of RMIT does tries to find possibilities for transforming the existing building stock and giving it a new future. This graduation RMIT studio focuses on a selection of these building in The Hague and Delft. The case study building for my graduation studio is the Armamentarium in Delft.

## Motivation

The approach of RMIT appeals to me. I think it is very interesting to develop an existing building and to give a building a new life. The development of a building over the years give it an history, which causes it to have an additional layer not present in newly built projects.

The Armamentarium is a very special building for me. Almost daily I pass by the building, but I never really get an idea what happens inside. The size, strong appearance and isolated situation, on this very visible spot in the centre of Delft, give the building something mysterious. It is very exciting right now to be able to fully explore the building and to be given the opportunity to develop my graduation project with this building.

## Structure P1 report

The P1 report is a collection document of the first quarter of the studio. This quarter has focussed on analysis on the different scales, related to the Armamentarium. In this document, a selection of my analysis done in the scale of the city (urban), the building (architecture) and the technology (building technology) are displayed.

The theme for the urban analysis has been the programmatic- and infra-structures in Delft.

For the architecture I have focussed on the character of the spaces inside the Armamentarium.

In the building technology analysis the focus is on the used materials.

At the end of the report, the value assessment does describe the important values derived from these analysis.

# P1 report Armamentarium Delft

Msc 3 Graduation project | Mixed projects  
04-11-2013

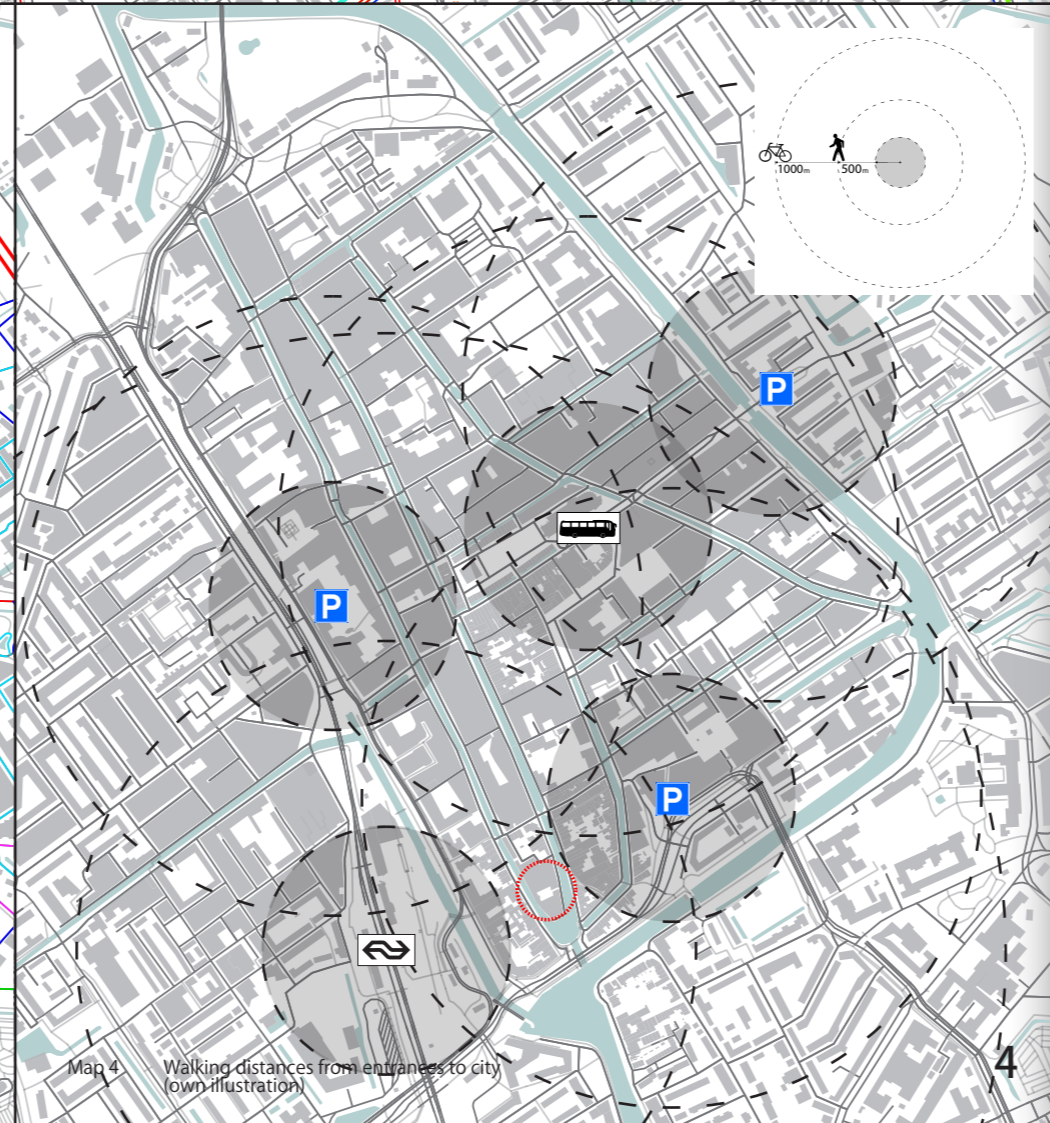
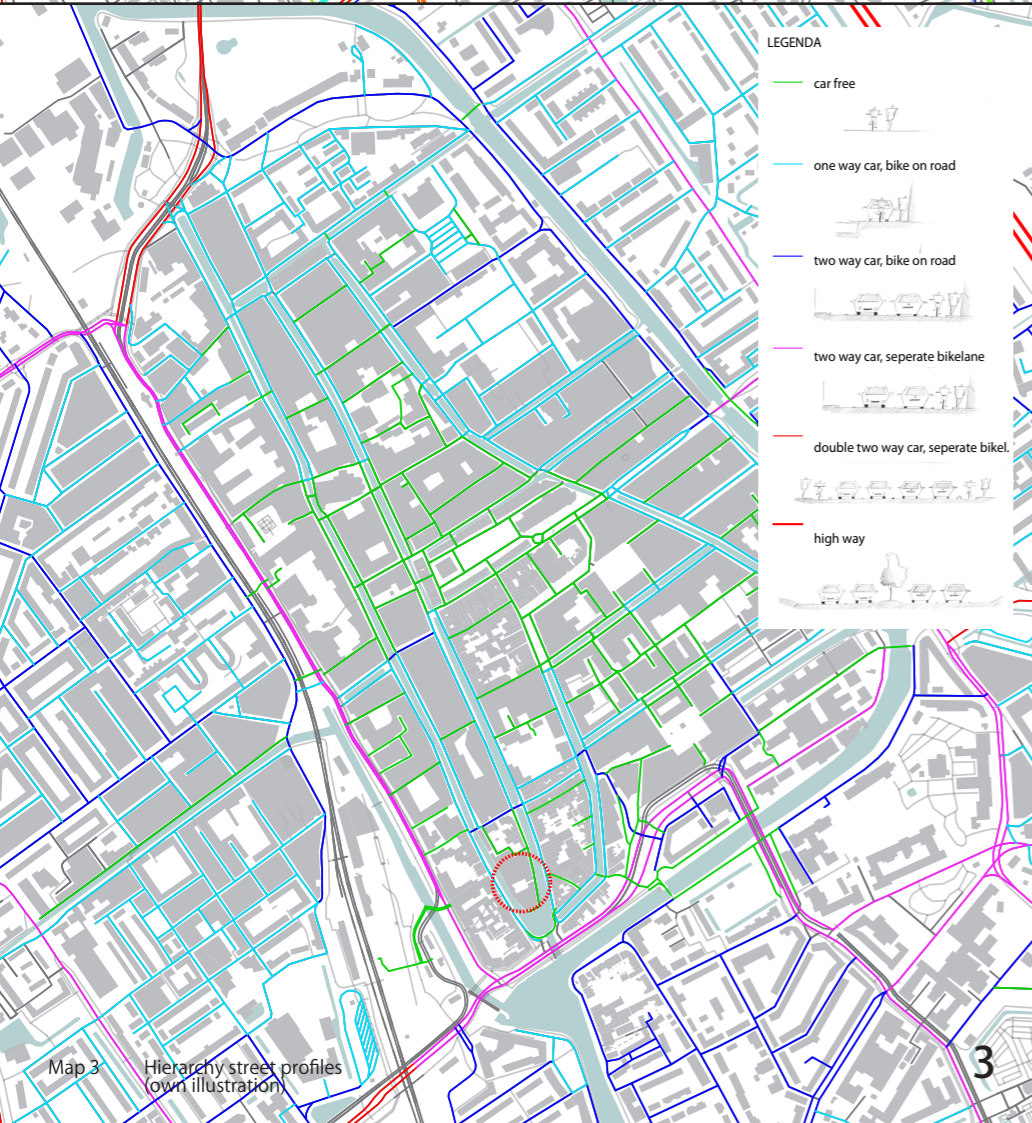
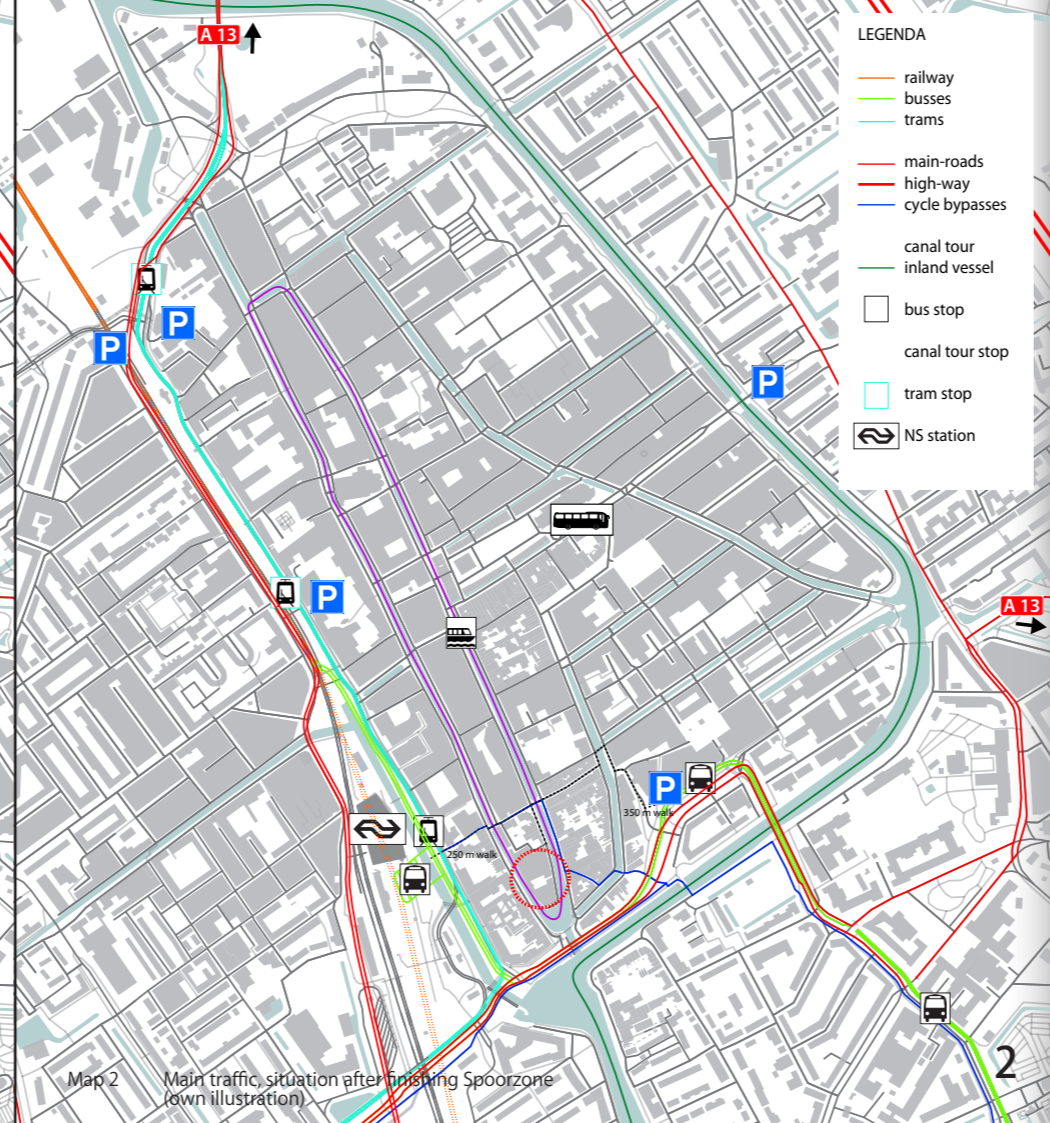
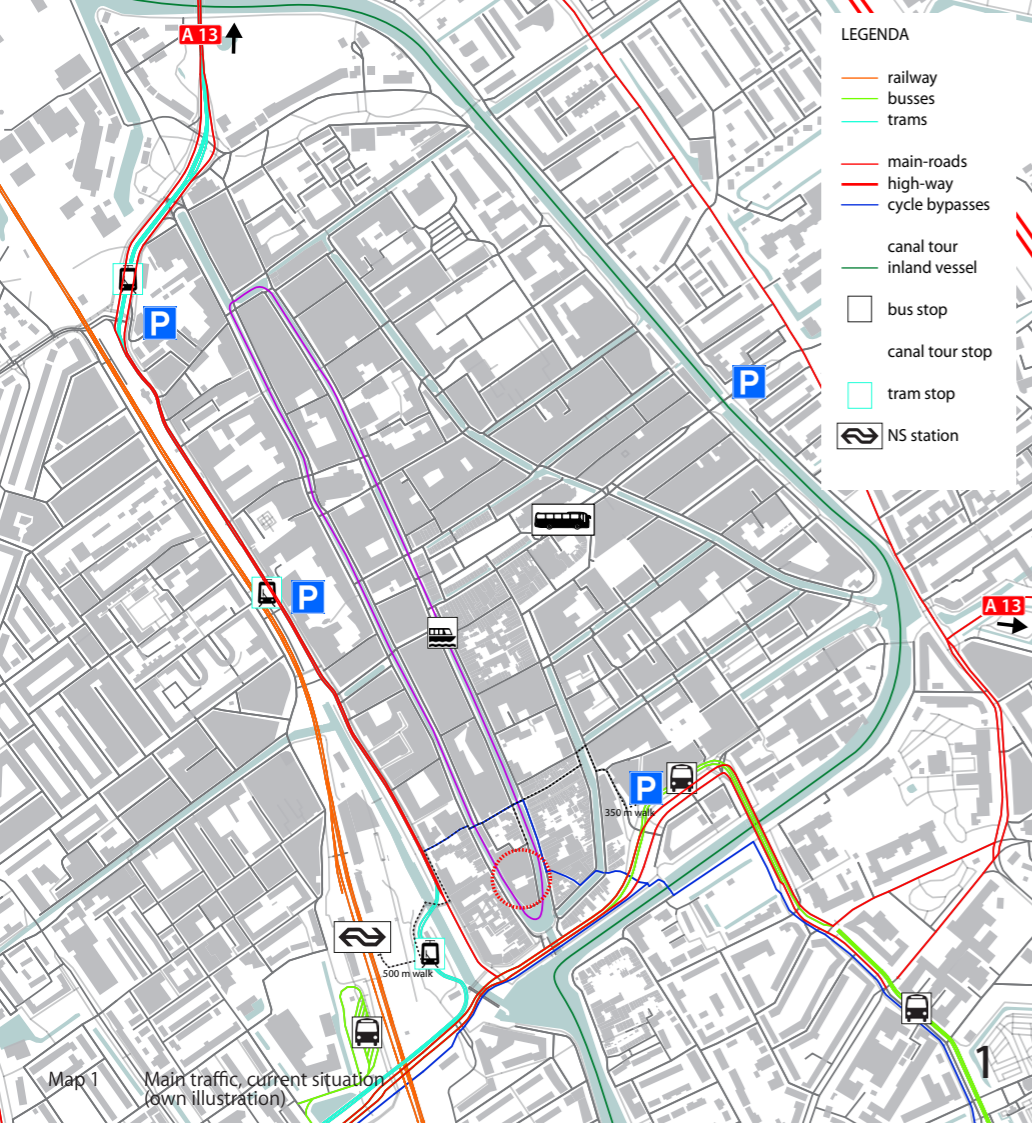
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## URBAN Infra and programmatic structure

To get an idea of linkages in the city, it is interesting to research the infra- and programmatic structure. In this case it is also interesting how the Armamentarium is linked in these structures. Hereby I will get a good understanding of the way the city functions, on which I can react on in the design process.

**Research questions**  
 'What is the main infra- and programmatic structure in Delft?'  
 'What are the programmatic statistics compared to some benchmarks?'  
 'How do different visitors of Delft use the city?'

### Infra structure

Map 1 shows the main traffic-routes through Delft, the main parking-garages and the main stops of public transportation. Here can be noticed that the Armamentarium is very well linked in the infra structure. Public transportation is close by. The ring road is also very close by and in good connection with the arterial roads and the highway.

Map 2 shows how the current situation will change, when the construction of the station will be finished. The ring road is moved to the backside of the station.<sup>1</sup> The Westvest will become a boulevard, designed for pedestrians and in close contact with the inner city (see fig. 1 & 2).

Map 3 shows a hierarchy of the types of roads through the city. It is visible that the Armamentarium is located in the area in between the car-free inner city and the car-friendly ring road.

Map 4 shows the perpendicular distance from some important hubs in Delft. Research has shown that people are willing to walk up to 500 meters to their destination.<sup>2</sup> Above this figure, people feel obstructed. From the station and the closest parking garage, people can reach the Armamentarium within the 500 meter limit. From the drop-off spot for touring cars (next to the market square), the Armamentarium is located just outside the 500 meter limit.

**Conclusion**  
 From this infrastructure analysis can be seen that the Armamentarium is very well linked in the infrastructure of Delft. The location is easy to reach by public transportation. Since the Armamentarium is located in the edge of the inner city, the reachability by car over the ring road is very good. A parking garage is also close by. The development of the Spoorzone, including the realisation of the boulevard, will induce a better connection between the station and the inner city. The Armamentarium is located in between both and will profit from this development.

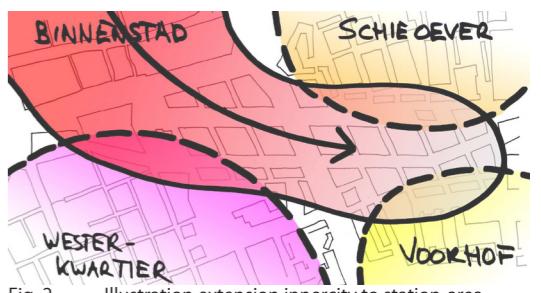
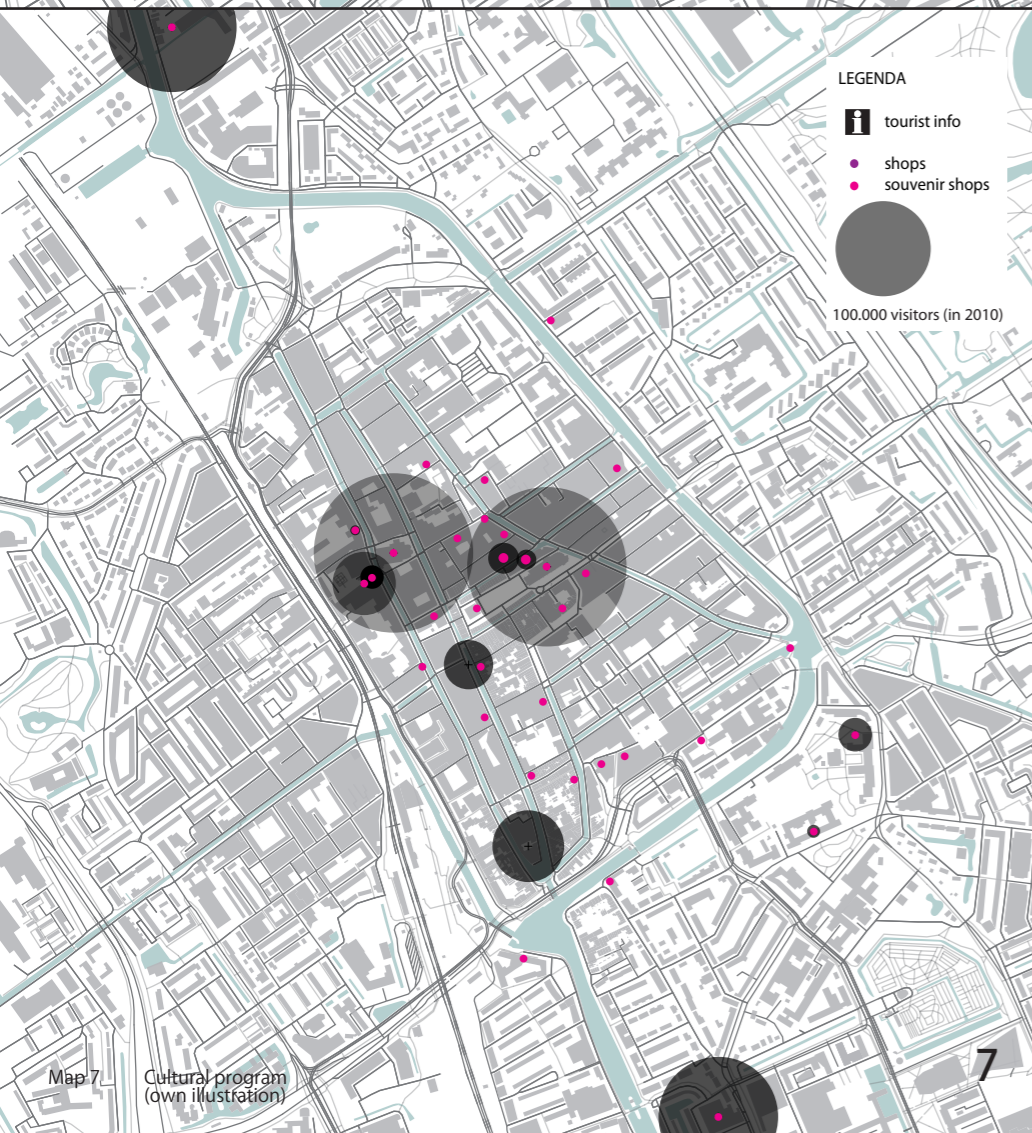
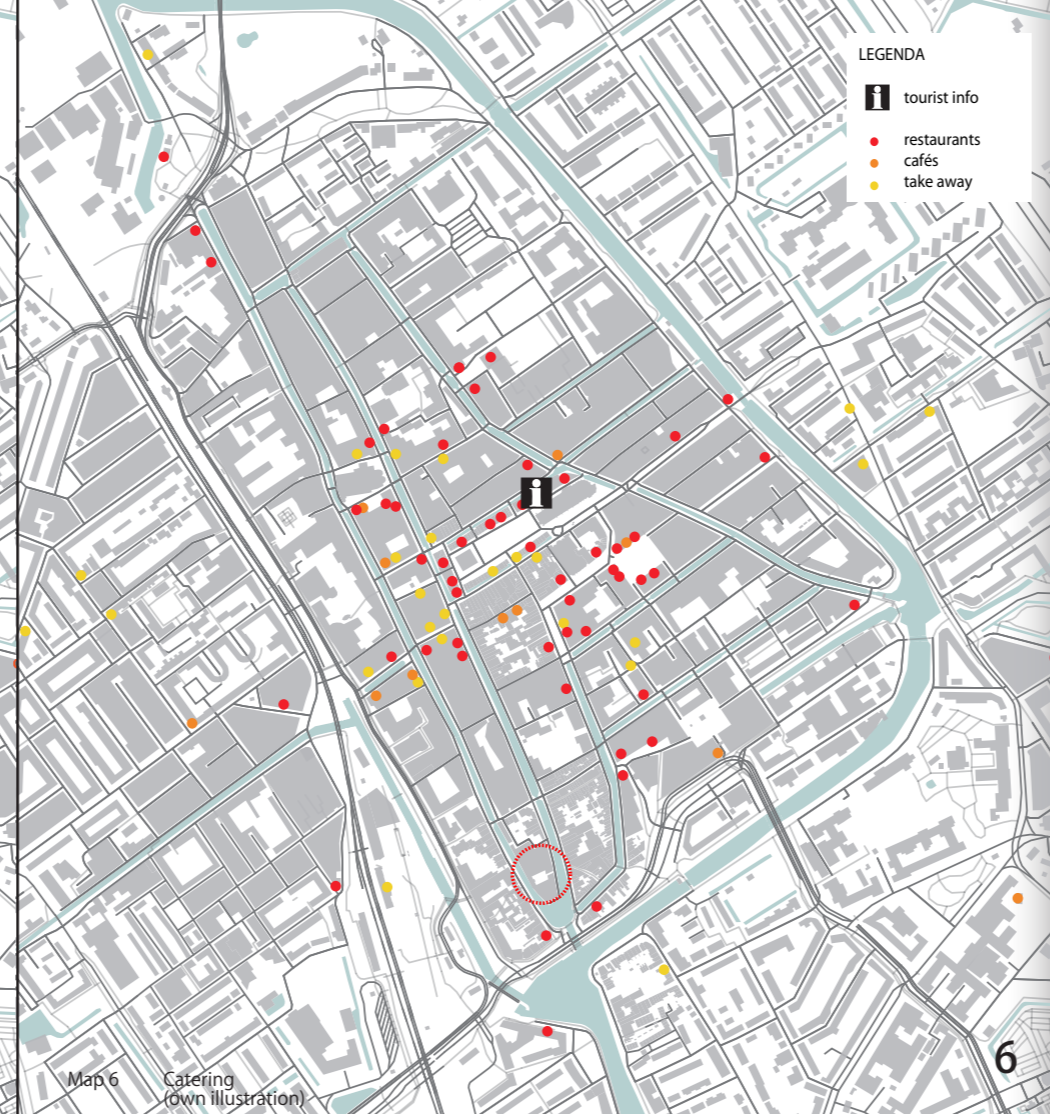


Fig. 1 Impression boulevard and station hall (Beeldkwaliteitplan Spoorzone, 2009)

Fig. 2 Illustration extension innercity to station-area (Beeldkwaliteitplan Spoorzone, 2009)

<sup>1</sup> Gemeente Delft. (2009). Beeldkwaliteitplan Spoorzone Delft. Delft.  
<sup>2</sup> Planning Commission TOD Committee (Producer). (n.d.). Walking Distance Research. Retrieved from [http://www.fairfaxcounty.gov/planning/tod\\_docs/walking\\_distance\\_abstracts.pdf](http://www.fairfaxcounty.gov/planning/tod_docs/walking_distance_abstracts.pdf)





## Programmatic structure

On map 5 you can see a selection of the public program existing in Delft. This information has been partly obtained via an interactive map online<sup>3</sup>, partly through the tourist information of Delft<sup>4</sup> and partly by self exploration of the city. There is a gradation of density in public program visible, from the car free centre of the inner city to the outskirts. The area around the Armamentarium is not very much used for public program.

Map 6 is an abstraction of map 5 and shows the important catering places. Most of the catering program in Delft is located in the car-free area in Delft. A lot of restaurants and cafés can be found around the bigger public spaces, like the market square and the Beestenmarkt.

In map 7 is been shown the cultural and touristic program in pink. The black bubbles show the amount of visitors the most important touristic program of Delft receives.<sup>5</sup> The cultural program is quite spread throughout Delft, with two mayor hot-spots outside of the city centre: Delft Pottery 'De Delftse Pauw' and De Koninklijke Porceleyne Fles/ Royal Delft. These two hot-spot do however receive relatively a lot of visitors.

Map 8 shows the shops and souvenir shops in Delft. Visible is that most of the shops are located in a line from the market square to the Bastiaansplein, in the car free zone. Souvenir shops can be found around the market square.

[next page]

Map 9 shows the locations of large offices in Delft. They are all located in the periphery of the inner city of Delft, close to the ring road. Most of them can be found on the Oude Delft or the Phoenixstraat, in the west of the inner city.

Map 10 shows the currently vacant commercial spaces in Delft.<sup>6</sup> The Armamentarium is, with 11.000 m<sup>2</sup>, one of the bigger vacant buildings. Close by is a yet to develop project for sale, with 1.700 m<sup>2</sup> of space available. A lot of smaller vacant buildings can be found in the centre of the inner city.

<sup>3</sup> OrangeSmile B.V. (2013). Sightsmap. Retrieved 14-09-2013 [http://www.orangesmile.com/geolocation/en/sightsmap\\_full.php](http://www.orangesmile.com/geolocation/en/sightsmap_full.php)

<sup>4</sup> Gemeente Delft. (n.d.). Discover Delft. Retrieved 14-09-2013 [http://www.delft.nl/delften/Tourists/Discover\\_Delft](http://www.delft.nl/delften/Tourists/Discover_Delft)

<sup>5</sup> Gemeente Delft. (n.d.). Feiten en cijfers, Musea en attracties. Retrieved 14-09-2013 [http://www.delft.nl/Toeristen/Delft\\_Marketing/Feiten\\_en\\_cijfers/Musea\\_en\\_attracties](http://www.delft.nl/Toeristen/Delft_Marketing/Feiten_en_cijfers/Musea_en_attracties)



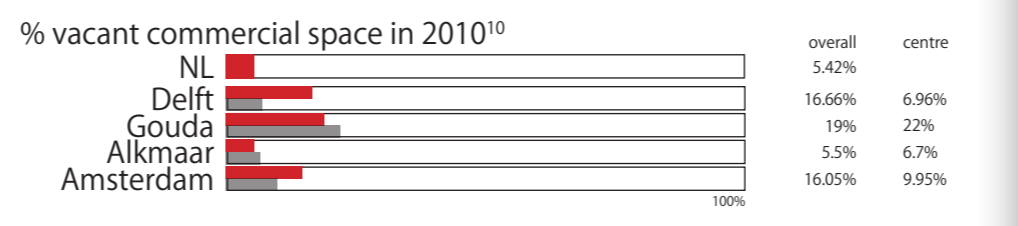
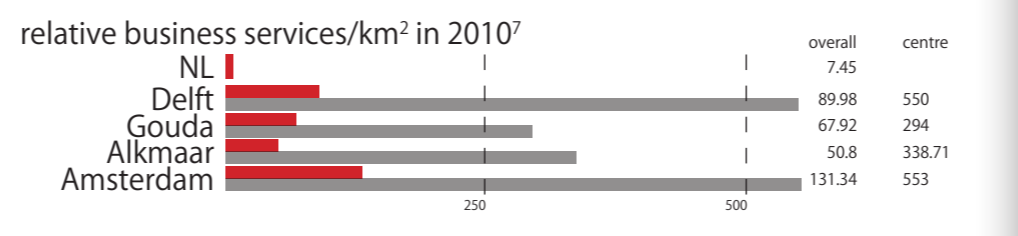
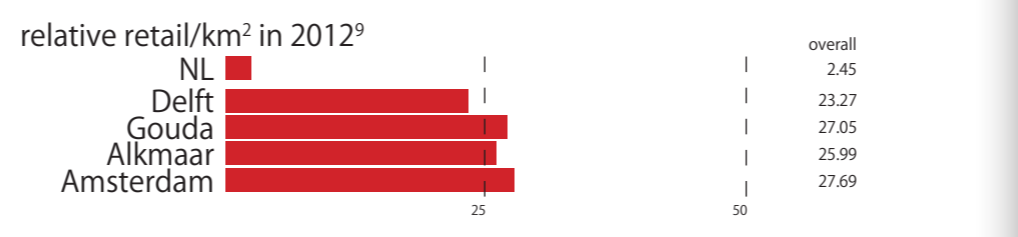
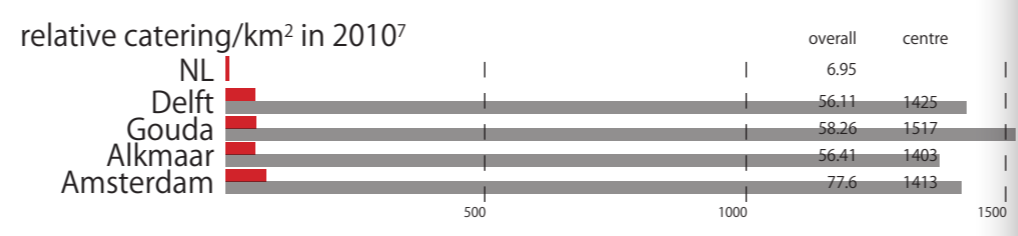
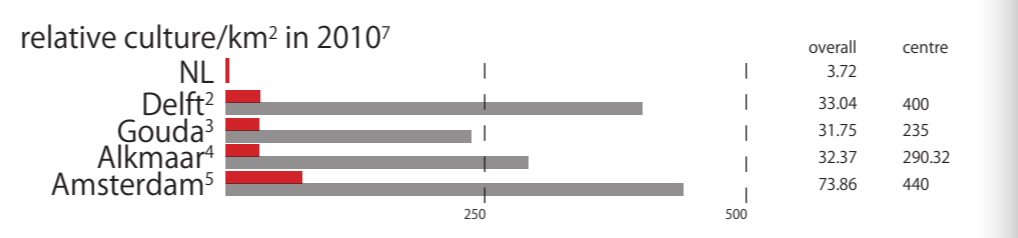
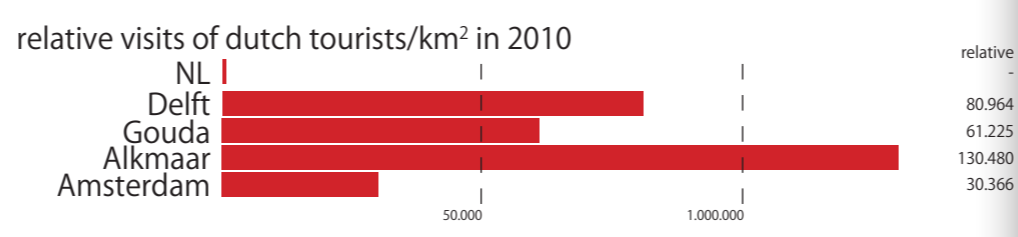
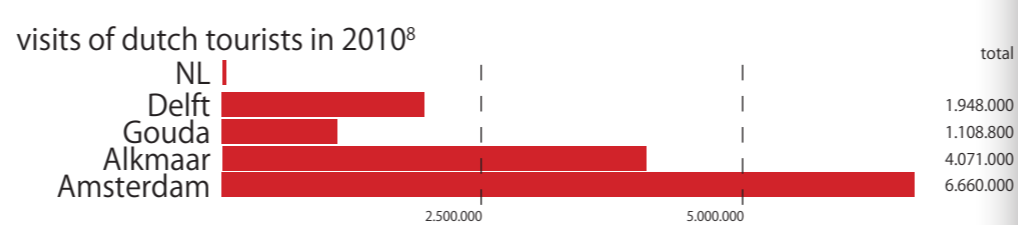
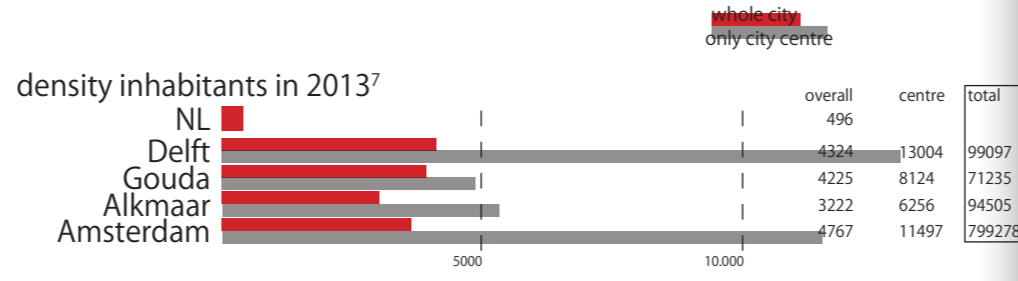
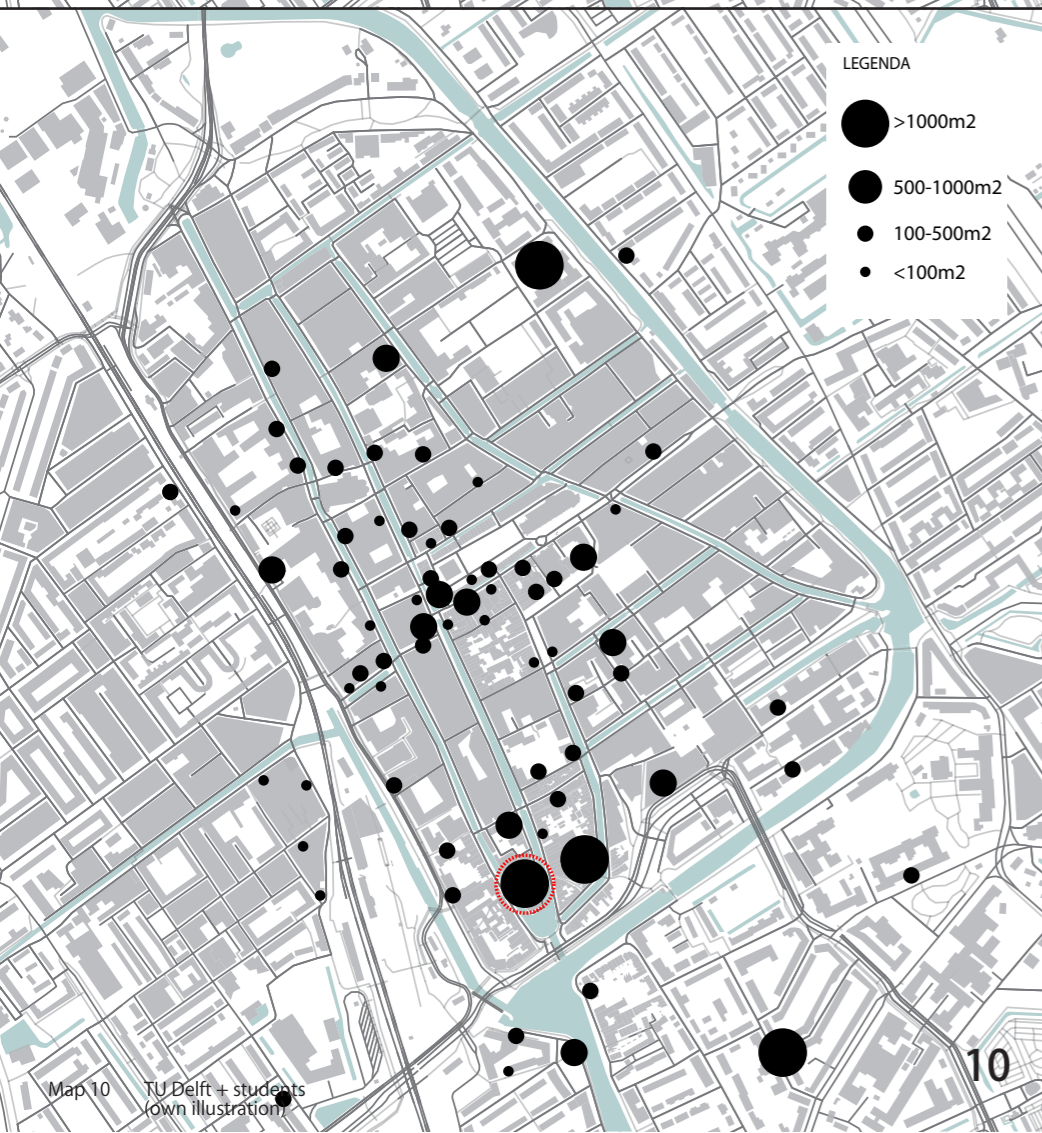


Fig. 3 Statistics Delft, Gouda, Alkmaar, Amsterdam (own illustration)

## Programmatic structure (continuation)

In figure 3 several statistics of Delft are compared to some benchmarks. The benchmarks are Gouda, Alkmaar en Amsterdam. Gouda en Alkmaar are in terms of size quite comparable. Amsterdam is approximately eight times bigger, but still relevant for this comparison, since the program of Amsterdam is been regarded very developed.

When looking at the density figures, one can see that the inner city of Delft is very densely inhabited, even compared to Amsterdam.

In the amount of visits of Dutch tourists, Delft can not compete with Amsterdam or Alkmaar in absolute figures. In relation to its size, it is noticeable that Alkmaar still has more than double the amount. Gouda on the other hand, has approximately 25% less visits (relative). Unfortunately, there are no figure known about international tourists.

Delft provide a quite extensive cultural program. The figures can almost compete with Amsterdam and do overcome the figures of Alkmaar and Gouda. This extensive cultural program might be related to the density of Delft.

The statistics for the catering program of the given cities do no vary much. It is remarkable that the figures of Gouda are this high, since the touristic and the density figures of Gouda are less than the other benchmarks.

The figures of retail in Delft stay behind, compared to the considered cities.

The settlement of business services on the other hand are fairly high, Delft can even compete with Amsterdam.

The percentage of vacant commercial space in Delft overall is at the high end, where the figures of the inner city of Delft are not bad at all.

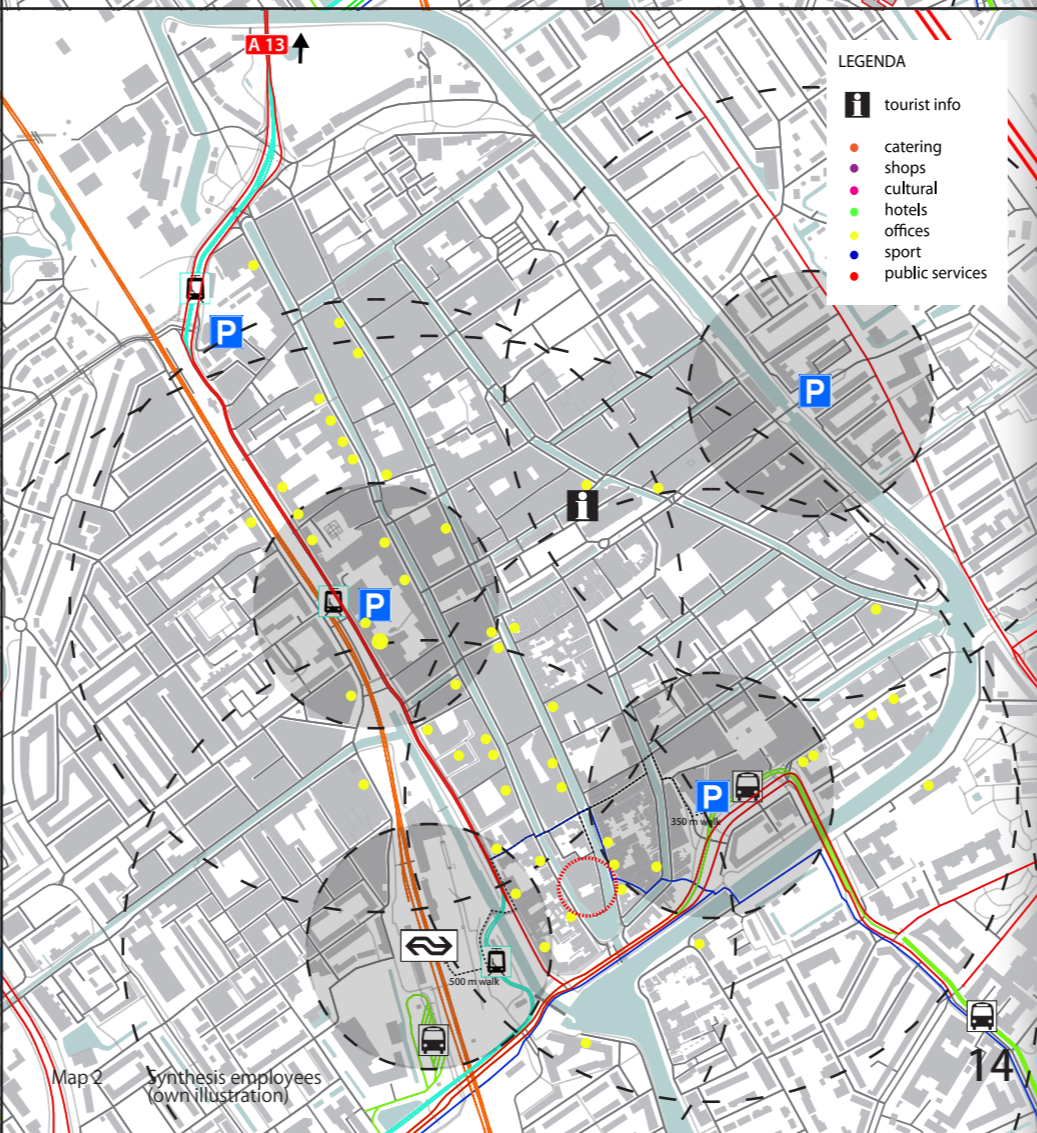
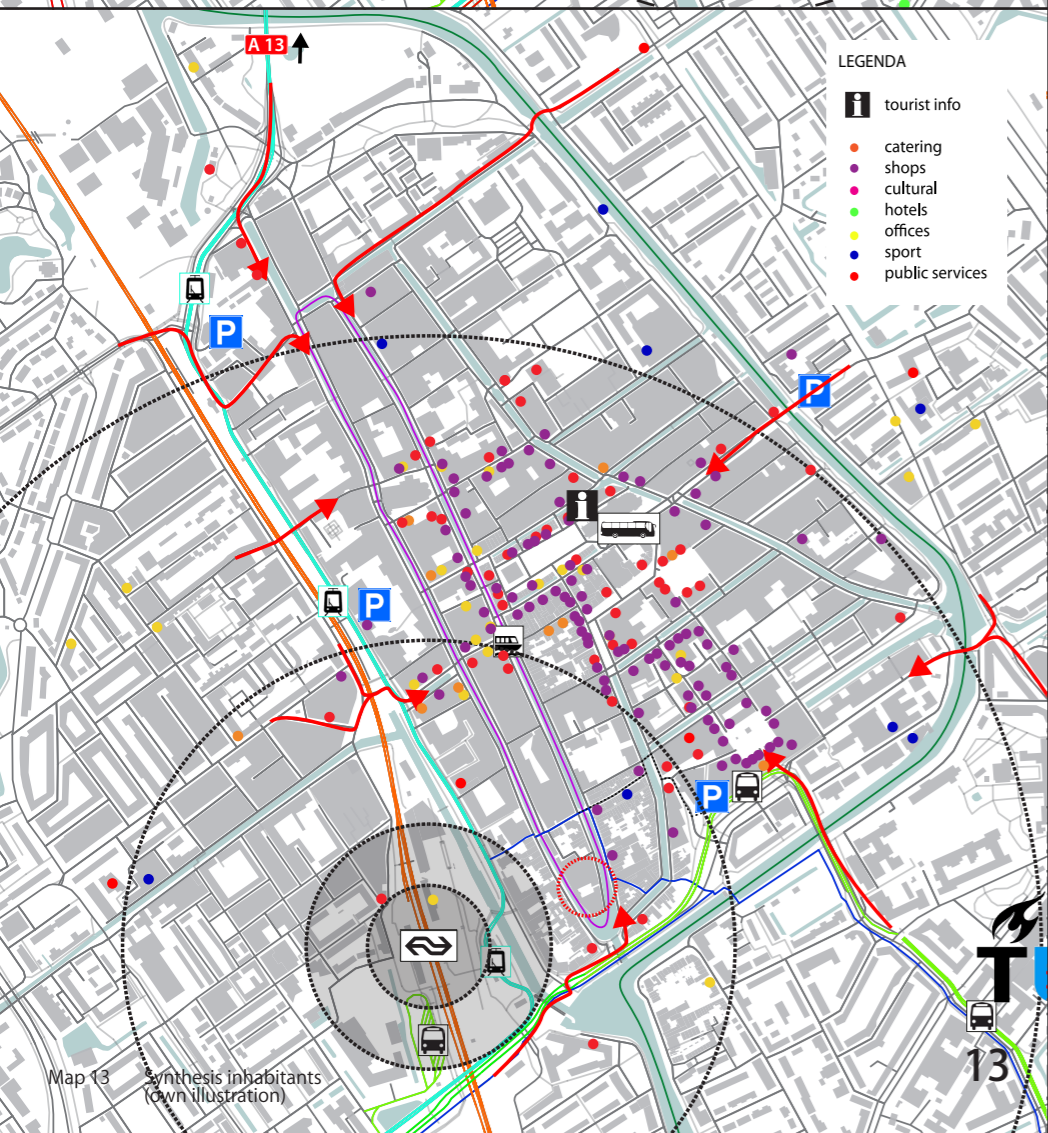
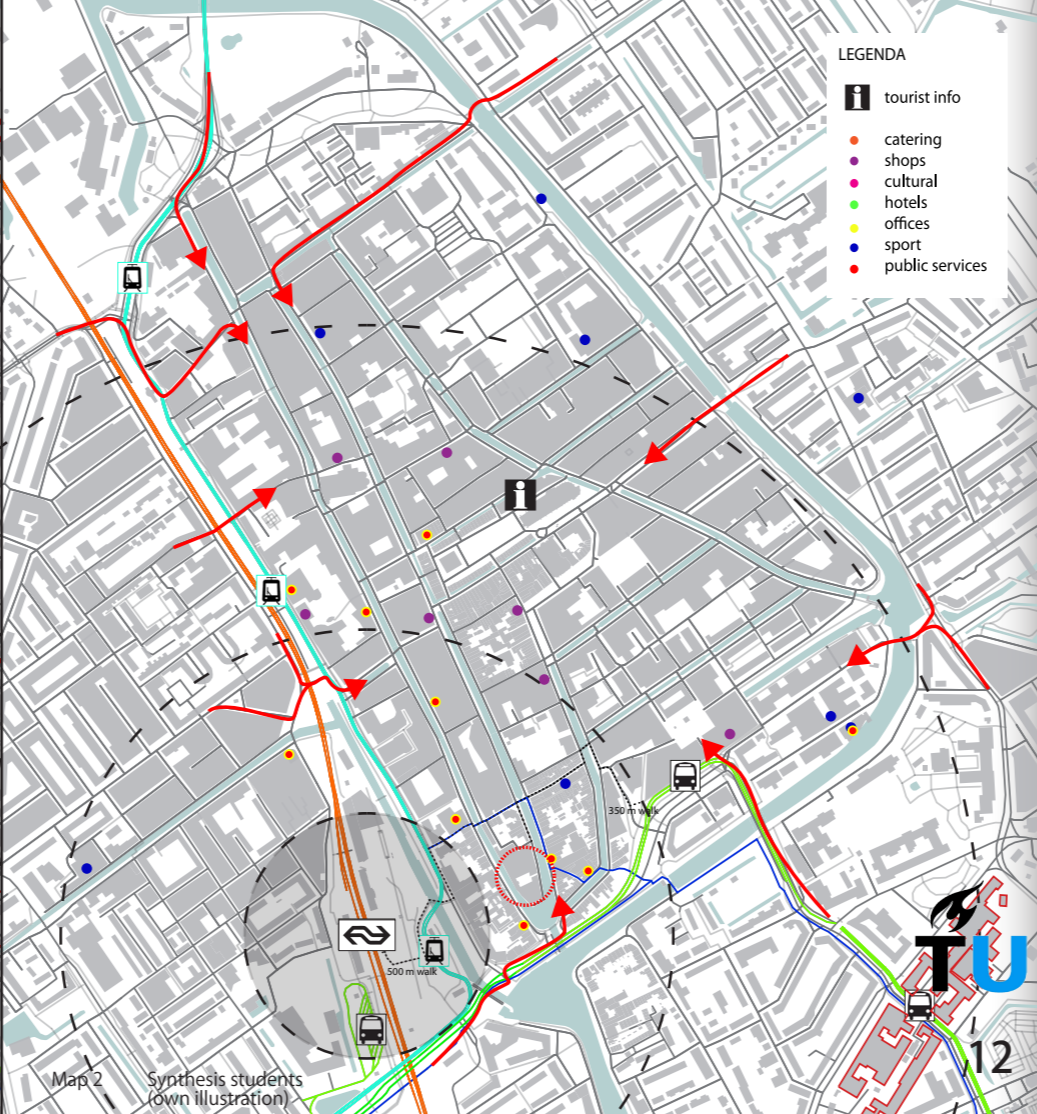
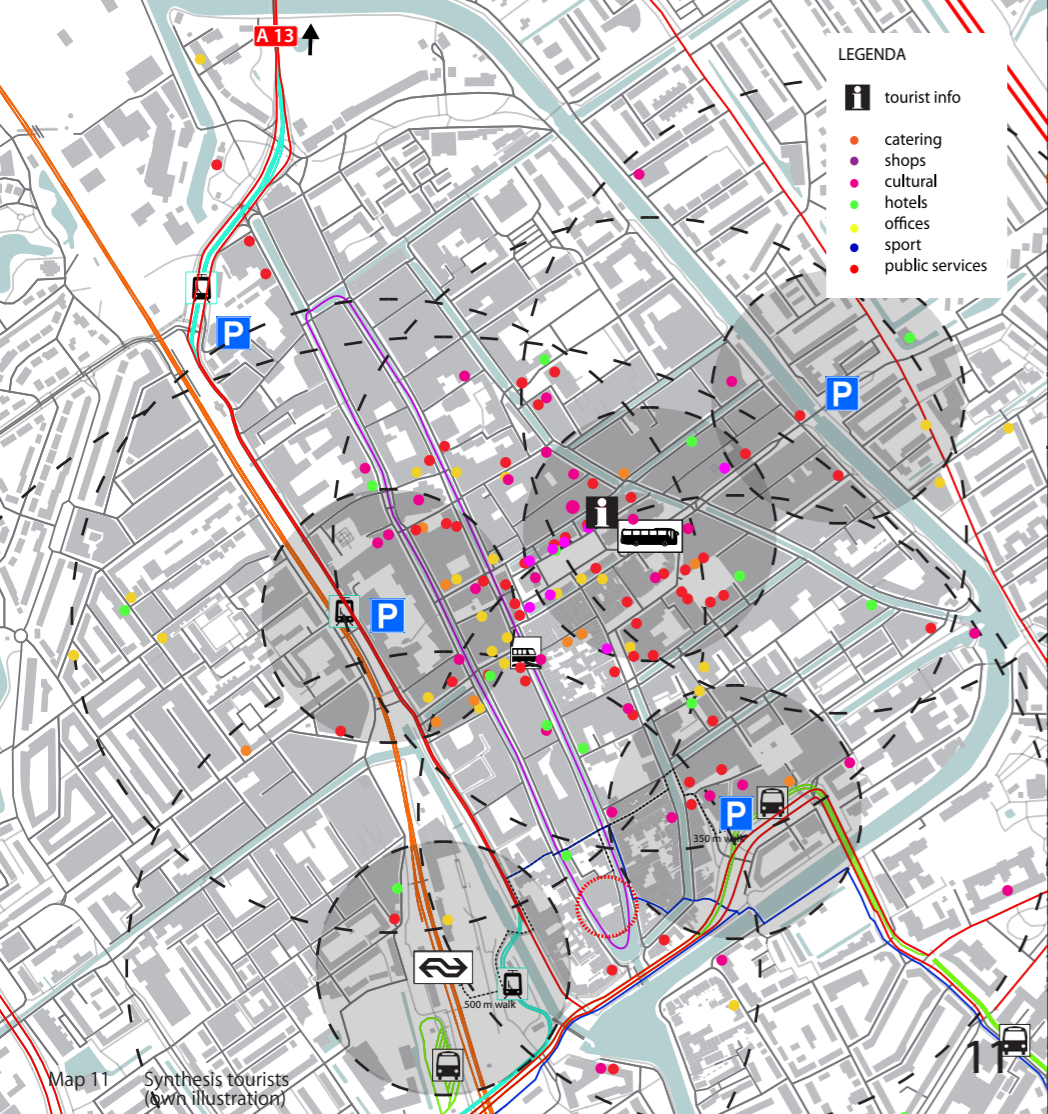
### Conclusion

The Armamentarium is not very well linked in the structure of public program in Delft. This program is mostly located in the car free centre of the inner city, where as the Armamentarium is located on the edge of the inner city. The offices of Delft are located in the periphery, in which the Armamentarium is also located. At last, around the location are some of the bigger vacant commercial buildings Delft.

The statistics show that Delft is densely inhabited. The further figures show that the programmatic structure of Delft is solid, the only part where it does stay behind, is the amount of offered retail.

<sup>6</sup> Steenworp BIS. (2013). Database bedrijfspanden Retrieved 22-10-2013, from bis.steenworp.nl/  
<sup>7</sup> CBS. (2013). Kerncijfers wijken en buurten. Retrieved 22-10-2013, from Statline statline.cbs.nl  
<sup>8</sup> CVO (Producer). (2010). Onderzoek binnenlands toerisme. Retrieved 22-10-2013 via Memo toeristisch bezoek Gouda from www.gouda.nl/ris/  
<sup>9</sup> HBD. (2012). Aantal winkels per gemeente. Retrieved 18-10-2013 from http://www.hbd.nl/pages/15/Winkels/Detailhandel-totaal/Aantal-winkels-per-gemeente.html?subonderwerp\_id=25  
<sup>10</sup> CVO (Producer). (2013). Memo en notitie leegstand Retrieved 22-10-2013 from www.gouda.nl/ris/





## Synthesis users of city

### Synthesis tourists [11]

For tourists, it is important that their intended program is in a walk able distance. A lot of the tourists enter the city from the drop-off spot for touring cars, next to the market square. Much of the program for tourists is in a walk able distance from this spot. However, the Armamentarium is located on a slightly remote spot for the tourists and is outside the 500 meter limit.

Two of the main touristic attractions in Delft are located outside the inner city. Still they receive a great amount of the tourists of Delft. If the Armament gets a touristic function, it should also become a distinct attraction, where people go to intentional.

### Synthesis students [12]

The Technical University is a very important part of Delft. The Armamentarium is located next to the main route from the station to the TU district.

### Synthesis inhabitants [13]

For inhabitants the public program of the city is important, for which a similar conclusion can be derived as for the tourists. On a daily base, not all the public program of the city is needed. An easy access to daily-shops, public services or public transportation is important. An easy access to the inner city by bike is therefore desirable, which is present by the several accesses designed for bikes/pedestrians.

### Synthesis employees [14]

For employees, a good connection to public transportation and arterial roads is important. Besides this, enough and close by parking lots are desirable. The edge of the inner city, in which right now most of the offices are located, is good accessible by public transportation. The distance from the station and the several parking garages to the offices is very reasonable. The location of the Armamentarium fits in the aforementioned profile: the distance to the station, a parking garage or the arterial road is very small.

### Conclusion

The Armamentarium is quite separated from the public and touristic program of Delft. If the building will house a public or touristic function, it should have a distinct attraction. People have to go there on purpose. An integration of the building in the office program of Delft is very easy, since the building is located in the periphery of the inner city, close to public transportation and the ring road.

The Armamentarium could easily form a relation with the TU, since the building is situated on a visible spot next to the route from the station to the TU district.



The spaces inside the Armamentarium have a special character, which is quite specific. This character is formed by its history of a warehouse. My intensions are to capture this character and try to preserve this in the intervention.

Research question

'What is the character of the spaces inside the Armamentarium?'

'Which parameters do define the character of a space?'

'How have case studies dealt with the existing character of the building in the intervention?'

	1602   floor 0	1602   floor 1-2	1660   floor 0	1692   floor 0	1692   floor 1-2	1802   floor 0	1989   van Velsen	2005   Thewessen
light								
scale								
contact external								
contact internal								
materials								
detailing/ornament style								
specific elements								
value								

How we experience a space, is dependent of our sense: **sight**, hearing, taste, touch, smell. In this research is mainly looked at the visual experience of a space (sight).

Peter Zumthor describes in his book Atmospheres which element for him define the atmosphere in a space.<sup>11</sup> This book has helped me defining which parameters define the visual character of spaces for me. For this research, I have focussed on:

- light
- scale
- contact with surrounding
- contact internal (physical and visual)
- materials (grade of finishing)
- detailing/ornamentation

In this matrix is notable that the spaces of the 1692 building, connecting building 1660 and the ground floor of 1602 building have a shared character. They are very isolated spaces (internal as well as to surrounding), are quite dark, have a rough unfinished material use and a focused detailing without ornamentation. The spaces are big and you can not experience the whole space at once. However do the height of spaces and the row of columns reflect to the human scale

The first floor of the 1602 building is a interesting exception. This space is much lighter and has more contact with surrounding, because of the bigger window openings. The space is a lot higher. Furthermore are the surfaces much more finished and detailed with ornamentation.

The entrance building and internal interventions of van Velsen do form a relation with the original character, in its focused appearance and finishing, as well as in the isolation of the spaces. The intervention is however still readable as a new insertion.

The entrance building of Thewessen forms less a relation with the existing building. The material use is more finished. The transparency of the facade is much higher, by which the spaces are lighter and in closer contact with the surrounding.

On the next pages, two visually dominant spaces are examined more deeply.

<sup>11</sup> Zumthor, P. (2006). Atmospheres: Birkhauser Architecture.

Fig. 4 Matrix character, original size A1 (illustration in collaboration with Merwin de Bruin)





1692 | level 0

Light

Scale

Contact surrounding

Contact internal

Finishing materials

Detailing/ornaments

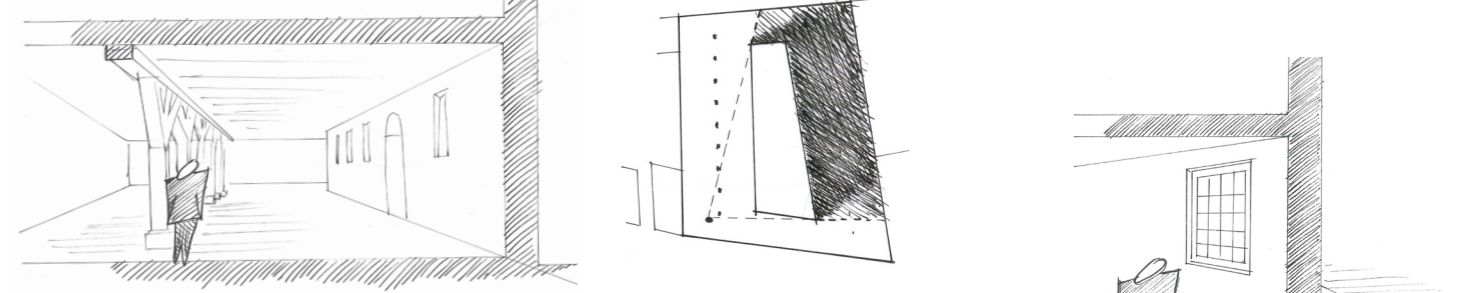
### Conclusion

The ground floor of the 1692 building of the Armamentarium is a recognisable space for more spaces in the complex. The facade is very closed, whereby the internal space is dark. The contact with the surrounding is minimal, since the small window openings are located too high to be able to look out of. Using the existing doors as window will improve both before mentioned. Visual internal contact is very poor, since the floor is very closed (no atrium) and the vertical circulation is designed very closed. Physical contact is however pretty good, since there are five vertical circulation elements available in this part of the complex. The used materials are all very pure and rough applied. All the surfaces are unfinished, the materials are not treated. The used materials are very elementary, like natural stone, timber and brick. The detailing is very focussed and has only a functional purpose. There is no additional ornamentation.

### Light

Ratio openness facade/floor surface	Ratio openness facade (incl. doors/floor surface)
3.03%	8.64%
26.2m <sup>2</sup> window surface facade 15.2m <sup>2</sup> window surface courtyard 1365m <sup>2</sup> floor surface	46.4m <sup>2</sup> door surface facade 30.2m <sup>2</sup> door surface courtyard

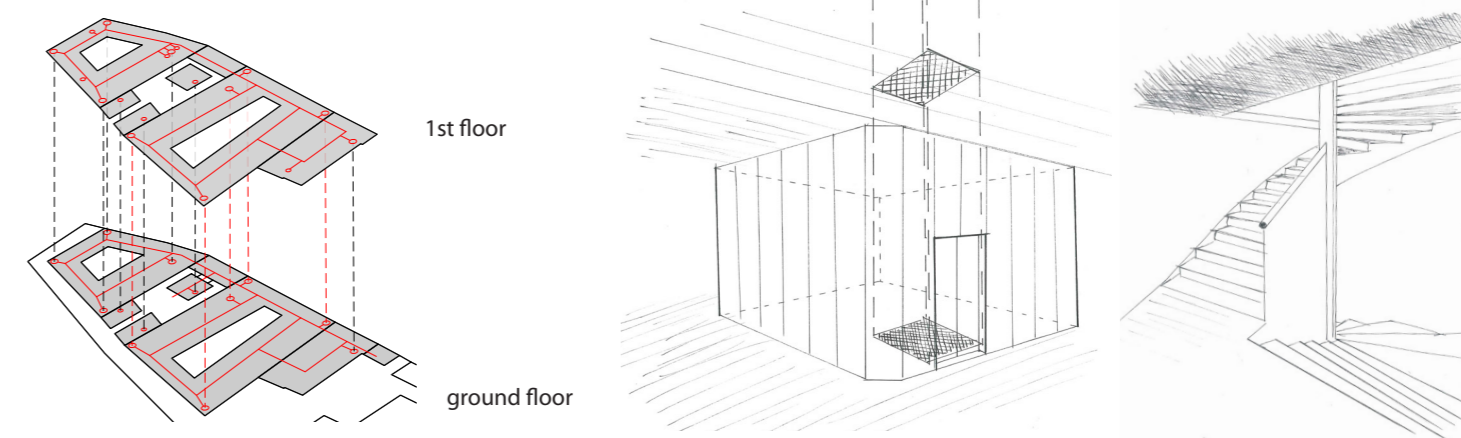
### Scale



### Contact surroundings

Ratio openness facade/ surface facade	Ratio openness facade (incl. doors/floor surface)
4.02%	11.14%
26.2m <sup>2</sup> window surface 46.4m <sup>2</sup> door surface 651.5m <sup>2</sup> facade surface	

### Contact internal



### Materials

- 1 brick flooring, anthracite
  - 2 bear brick walls, red
  - 3 wooden door, painted green
  - 4 wooden ceiling, no treatment
  - 5 wooden structure, no treatment
  - [6 steel WC/elevator box, grey
- unfinished  
unfinished painted  
unfinished  
unfinished  
powder coated]



### Detailing

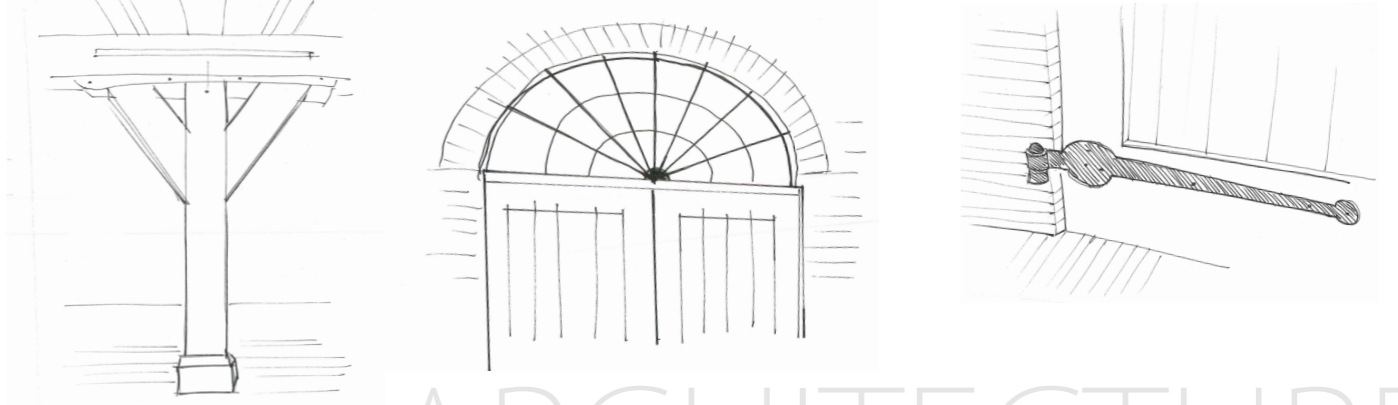
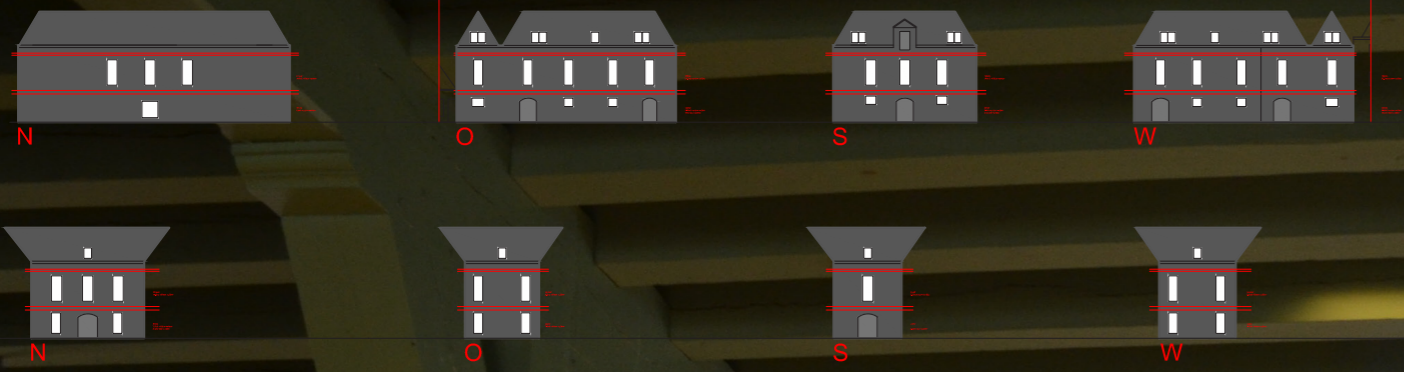


Fig. 5 photo ground floor 1692 Armamentarium (own photo)





1602 | level 1

Light

Scale

Contact surrounding

Contact internal

Finishing materials

Detailing/ornaments

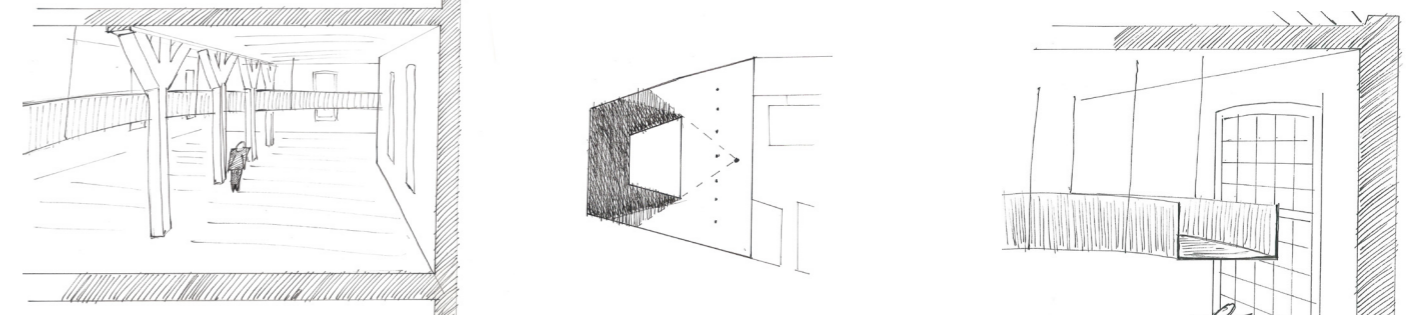
### Conclusion

The first floor of the 1602 building is a major exception in the complex. The facade is much more transparent, by which the interior is very light. The contact with the surrounding is also much bigger, since the larger window openings are located on a height related to the human scale. Visual internal contact is still poor, however one stair is designed quite open. Physical contact is pretty good, with four vertical circulation elements available in this part of the complex. The materials in this space are all finished and treated applied. The walls are plastered, the wood is painted. The detailing in this part of the building is treated with more care and is enriched by some additional ornamentation. The appearance is more representative, instead of focussed.

### Light

Ratio openness facade/floor surface  
 17.11% 82.6m<sup>2</sup> window surface facade  
 41.3m<sup>2</sup> window surface courtyard  
 724m<sup>2</sup> floor surface

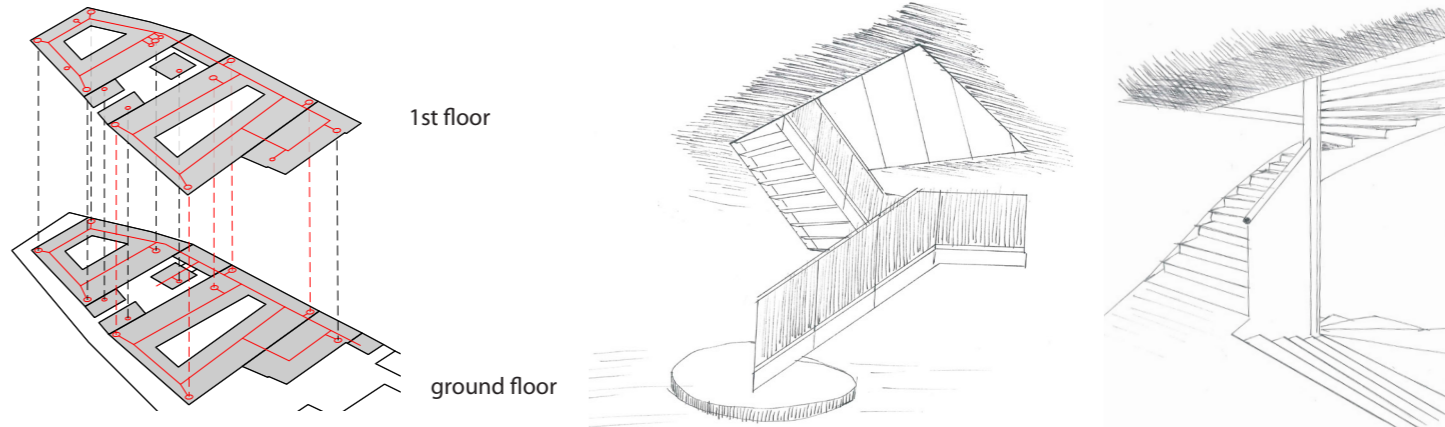
### Scale



### Contact surroundings

Ratio openness facade/ surface facade  
 13.11% 82.6m<sup>2</sup> window surface  
 0m<sup>2</sup> door surface  
 630m<sup>2</sup> facade surface

### Contact internal



### Materials

- 1 plastered walls,
  - 2 wooden structure,
  - 3 wooden ceiling,
  - 4 wooden floor,
  - [5 steel walk-around, grey
- 1 painted white
  - 2 painted green
  - 3 painted green
  - 4 clear varnish
  - 5 powder coated]



### Detailing



Fig. 6 photo first floor 1602 Amsterdam (own photo)





## Precedent | Neues Museum Berlin

Architect (original)	Friedrich August Stüler
Architect (transformation)	David Chipperfield
Year of construction	1841
Year of transformation	2009
Size	20.500m <sup>2</sup>
Monument status	national monument
Old function	museum
New function	museum
Owner	-

## Transformation

1. bombed part of building reconstructed in new way, but with respect to original dimensions, transparency
2. when possible, parts have been restored, no new intervention visible
3. new element are clearly new, but with in relation with existing (dimensions, color)
4. original lay-out/partitions has remained

interventions are largely a reconstruction

## Value intervention related to character

	before intervention					after intervention				
Light										
Scale										
Contact surrounding										
Contact internal										
Finishing materials										
Detailing/ornaments										

these character-related parameters has stayed roughly the same before and after the intervention

## Conclusion

The character of the original building has remained and gained very good in this intervention. If possible, bombed parts have been restored to their original appearance. In these parts, no intervention is visible. Completely new additions are clearly new, but have been highly influenced by the original: for example the dimensions, colour, transparency of facade and light are based on the original. Also the spatial character has not been changed.

This attitude towards interventions does appeal to me very much. The intervention is honest (clearly new), but is in great dialogue with the existing/original building. In this way, the character of the space does remain.





## Precedent | Hermitage Amsterdam

Architect (original)	Hans Petersom
Architect (transformation)	Hans van Heeswijk architecten
Year of construction	1681
Year of transformation	2009
Size	15.000m2
Monument status	national monument
Old function	retirement home
New function	museum
Owner	Stichting Hermitage aan de Amstel

## Transformation

1. appearance exterior has not changed much
2. specific elements in interior have stayed
3. new elements are clearly new
4. finishing of interior all new
5. existing lay-out/partitions completely changed
6. floor have been removed -stairs added- to improve vertical contact
7. added sky-lights improve light, but are not visible from exterior

interventions are not easily reversible

## Value intervention related to character

	before intervention					after intervention				
Light										
Scale										
Contact surrounding										
Contact internal										
Finishing materials										
Detailing/ornaments										

these character-related parameters has changed quite a lot before and after the intervention

## Conclusion

The intervention for the Hermitage is somewhat less modest. The visible interventions to the exterior are minimal: the new entrance to the courtyard is well resolved in the original facade. In the interior some specific, recognisable element have stayed, like the organ. Other interventions are more radically. Floors have been opened up to create atria, with more visible connections between the floors. New stairs have been added, in a completely new execution without relation with the existing. The lay-out has changed, whereby the spatial character has changed. At last, all the surfaces are newly finished, which have removed the aesthetic character. Inside you feel like being in a new building, the character of the history of the building is for a great amount lost.

This attitude in interventions does not appeal to me. The original character is being lost too much.





### Door

material: fir wood (26mm), steel plate (3mm), triplex with sawn grooves (6mm)  
 colour: painted dark green  
 other: transom window with radial grill (spinnenkopraam) additional glass door  
 state: very good  
 authenticity: doors replaced in 1981 (Walraad) glass doors added in 1989 (Velzen) transom window added during construction in 1692 or 1754<sup>12</sup>



### External walls

material: plastered  
 colour: painted white  
 other: dummy joint in block motif  
 state: very good  
 authenticity: wall originally bear brickwork with natural stone current plaster is from 1981<sup>12</sup>



### Roofing

material: ceramic roof tiles  
 colour: red  
 other: old dutch roof tiles  
 state: generally good, valley gutter does create leakages  
 authenticity: 1751?<sup>13</sup>



### Sill

material: natural stone  
 colour: anthracite  
 other: -  
 state: very good  
 authenticity: added in 1985 (Walraad)<sup>12</sup>



### Pilaster

material: bentheimer natural stone  
 colour: painted off white  
 other: keystone (sluitsteen) with lion head  
 state: very good  
 authenticity: pilaster added during construction in 1692 or 1754 (incl. transom window)<sup>12</sup>



### Walls courtyard

material: brickwork with bentheimer natural stone  
 colour: red brickwork, painted natural stone  
 other: cross bond brickwork size 215-225\*100-110\*40-45<sup>[1] 13</sup> relieving arch above windows (ontlastingsboog) radial transom window with grill (spinnenkopraam)  
 state: very good  
 authenticity: mostly original window openings changed during construction in 1754<sup>12</sup>

## BUILDING TECHNOLOGY Materials

The Armamentarium is an historical building, constructed with basic and simple materials. For the design process of the intervention, it is good to know which materials are present, what their quality is and how authentic they are. In this way, I can adapt my design on this.

### Research question

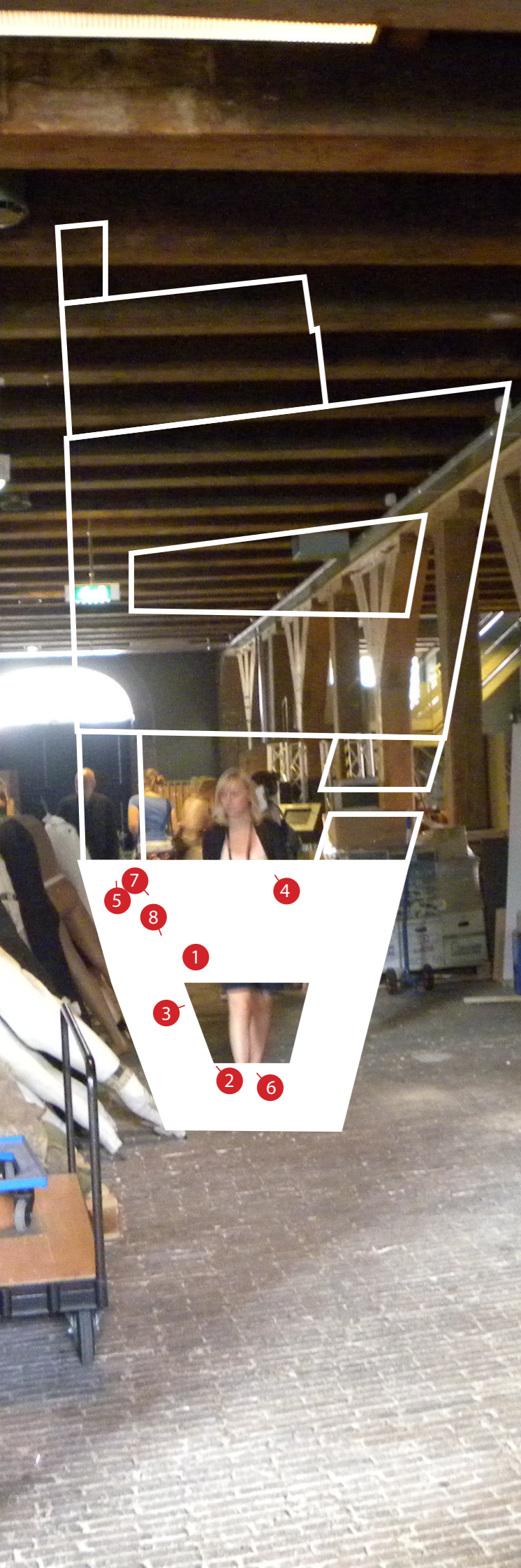
'Which materials are present in the Armamentarium and how are they processed?'

'What is the state of the present materials?'

'How authentic are the present materials?'

The results for this research has been combined in a material report. This report addresses all the separate buildings of the complex, internal and external. In this P1 report, the materials of the 1602 building is being displayed.





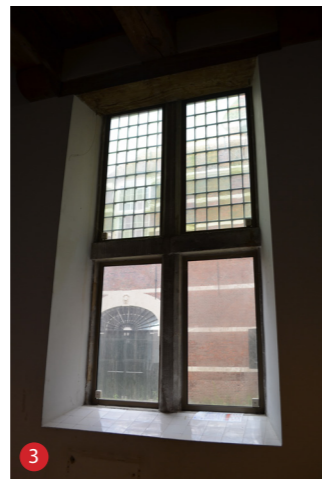
### Flooring

material: brickwork, stretching bond  
 colour: dark anthracite  
 other: size [yet to measure]  
 placed directly on the sand  
 state: very good  
 authenticity: mostly original 1602<sup>13</sup>



### Footing

material: natural stone; type unknown  
 colour: dark anthracite  
 other: to prevent rising moisture in structure  
 state: very good  
 authenticity: original from 1602<sup>13</sup>



### Windowframe

material: bentheimer natural stone  
 colour: anthracite  
 other: cross frame (kruisraam)  
 state: good, only aesthetic improvement possible  
 authenticity: original cross frame from 1602<sup>12</sup>



### Ceiling

material: pine  
 colour: untreated  
 other: sleeper (moerbalk) 395\*320 mm<sup>13</sup>  
 secondary beam (kinderbalk)  
 beams laid on timber corbel (sleutelstuk)  
 state: very good;  
 authenticity: beam ends mostly replaced in 1981 (Walraad)  
 others original 1602<sup>13</sup>



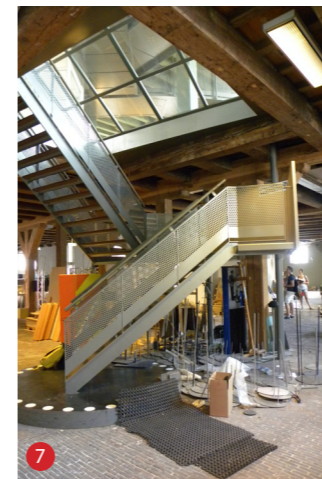
### Walls

material: plastered  
 colour: painted light green and white  
 other: plinth of one layer of white tiles  
 state: very good  
 authenticity: no information



### Pilaster

material: bentheimer natural stone  
 colour: brickwork  
 other: anthracite  
 state: keystone (sluitsteen) with lion head  
 very good  
 authenticity: pilaster added during construction in 1692 or 1754 (incl. transom window)<sup>12</sup>



### Stairs

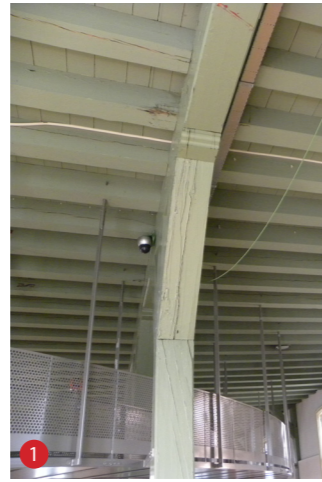
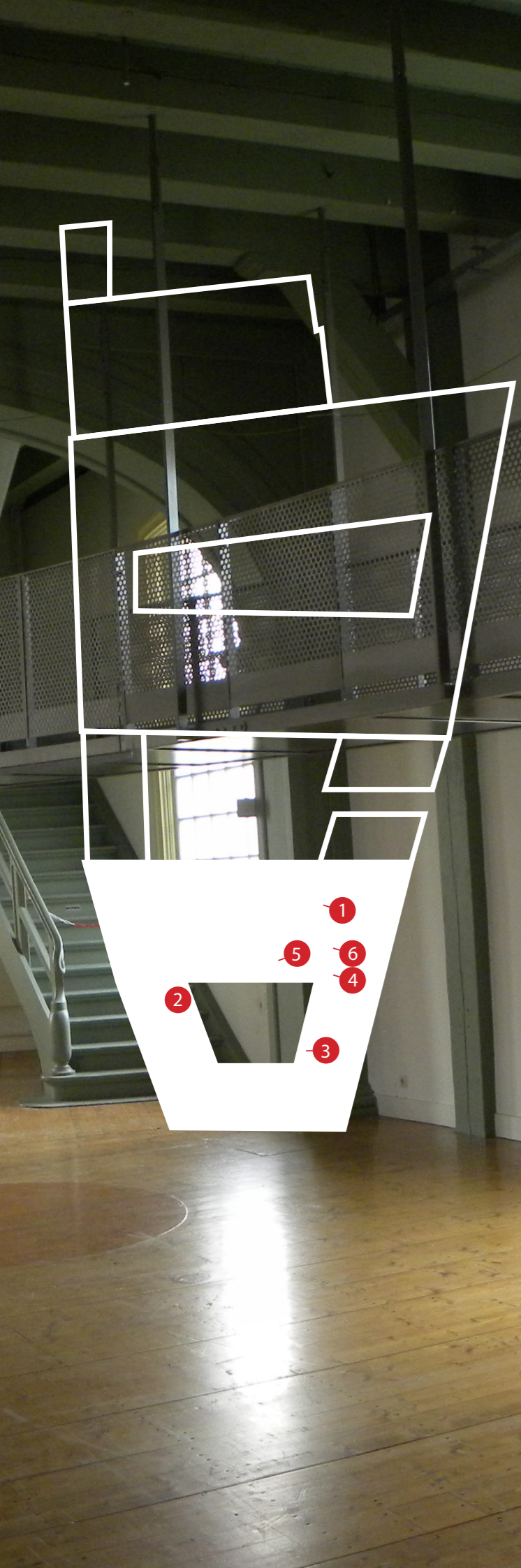
material: steel with wooden steps  
 colour: steel: grey powder coating  
 wood: clear varnish  
 other: landing stairs  
 state: very good  
 authenticity: added during construction in 1989 (C. van Velzen)



### Structure

material: pine  
 colour: untreated  
 other: size 320\*360mm  
 knee brace structure (standvink)  
 double pen and tenon connection  
 state: very good;  
 authenticity: partly added (1751)  
 partly original (1602)





### Ceiling

material: pine (presumed)  
 colour: painted green  
 other: tie beam 295\*240mm  
 state: very good;  
 authenticity: renewed during construction in 1751<sup>13</sup>



### Flooring

material: pine wood  
 colour: clear varnish  
 other: additional flooring above original, in between is a cavity for piping  
 state: good;  
 only aesthetic improvement possible added during construction in 1986<sup>13</sup>  
 authenticity: original floor from 1751 still present underneath



### Window frames

material: no information  
 colour: sand-yellow fixed frame; white infill  
 other: single glass  
 original movable, sliding window  
 state: very good;  
 authenticity: window openings of this level changed in 1751<sup>13</sup>



### Suspended walkway

material: steel  
 colour: powder coated gray  
 other: suspended from ceiling  
 state: very good;  
 authenticity: added during construction in 1989 (Velzen)<sup>13</sup>



### Walls

material: plastered  
 colour: painted white  
 other: recessed where beforehand the second floor was ( $\pm$  3m above floorlevel)  
 state: very good;  
 authenticity: no information



### Structure

material: oak  
 colour: painted green  
 other: knee brace structure (standvink)  
 double pen and tenon connection  
 state: very good;  
 authenticity: renewed during construction in 1751<sup>13</sup>

## Conclusion

The used materials in the Armamentarium are very elementary in nature and mostly unfinished in application. The different kinds of used materials is little: natural stone, brick, timber, plaster, glass and ceramic roof tiles. In more recent interventions the material steel has been introduced and glass has become more important.

The state of all the materials is very good. In most of the materials is no improvement necessary. Sometimes an aesthetical improvement is possible, but the technical state of the material is still good.

The building has been modified and renovated several times over the centuries. Lots of materials are therefore not authentic anymore (from the year of construction). Despite this: since the used materials in the modification and renovations have followed the existing materials, the not authentic materials are not directly apparent. Materials of recent interventions are not always in harmony with the existing, whereby they are apparent as recently added.

<sup>12</sup> Emmens, K. (2010). Demarcatierapport Armamentarium. Delft: Rijksgebouwendienst.

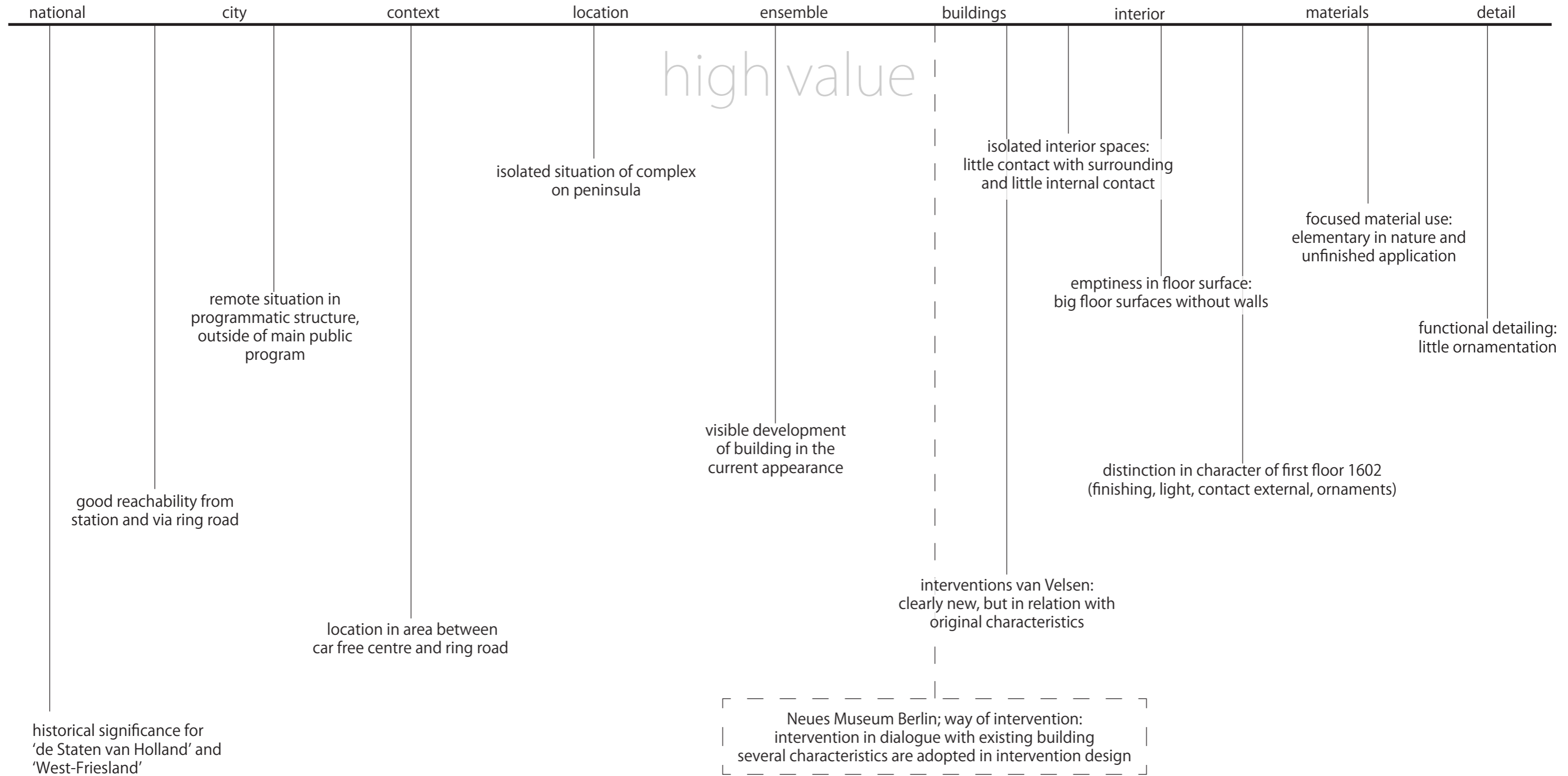
<sup>13</sup> Kamphuis. (1997). Bouwhistorische documentatie, Armamentarium; Deel 1. Delft: Rijksgebouwendienst.



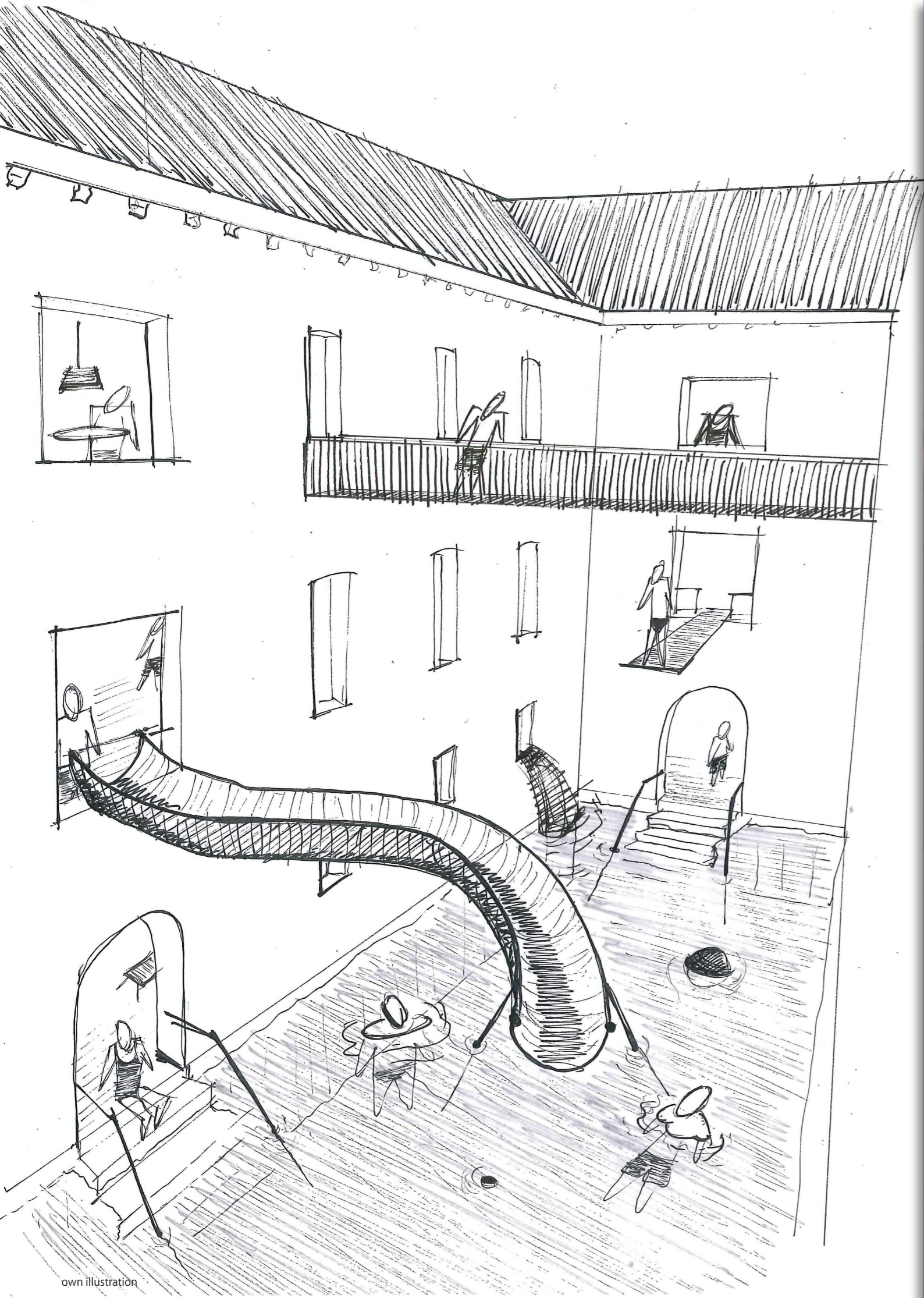
## Urban analysis

## Architectural analysis

## Building technology analysis







own illustration



In this first design idea, the Armamentarium is transformed in a Wellness centre for Delft. The isolation of the plot and the variety of closeness of internal spaces, in combination with the several courtyards,. The idea of isolation and revelation could form an interesting starting point for the intervention design.

own illustration

FIRST DESIGN SKETCH