

# Confronting Wicked Problems: Adapting Architectural Education to the New Situation in Europe.

## **1st Wicked Workshop on Architectural and Urban Sustainability**

19 to 25 April 2015

*Faculty of Architecture and the Built Environment  
Delft University of Technology | Netherlands*







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# 1. Introduction

## Confronting Wicked Problems: Adapting Architectural Education to the New Situation in Europe

*Enabled by the granted Erasmus+ application 'Confronting Wicked Problems; Adapting Architectural Education to the New Situation in Europe' the Delft Department of Architecture / Chair of Public Building have been invited to organise in collaboration with the Politecnico di Milano and Ion Mincu Technical University in Bucharest a one week workshop focusing on Sustainability in Architectural Design. Parallel and within the same Erasmus+ application there will be also workshops addressing the issue of 'heritage' and 'architectural education and professional knowledge' at other European architecture faculties.*

*The sustainability workshops will host 10 students from Delft and accordingly each 5 students from Bucharest and Milano. The workshop's point of departure is the acknowledgement that architecture as an education, a discipline and a profession has to redefine and release its potential for problem-solving and innovation within a new economic, societal and ecological context. Architectural design is here understood as an integrative activity and a means to imagine, plan, project, realize and communicate the architecture of the city for a sustainable and inclusive society in Europe.*

*The program of the Wicked Workshop Week enhances a field trip to Rotterdam visiting projects like the water square and Justus van Effenblok, daily thematic lectures, subsequent design workshops, by positioning the urban block at the centre of our investigation and in different scales and dimensions, address Rotterdam's urban metabolism including green and water retention, the transformation and hybrid program of an urban block as an architectural entity in relation with private sphere and public realm, and the craftsmanship needed with regard to materialisation and the sustainable 'making' of buildings. Additionally, excursions are scheduled to Delft 'Hoffjes' and Amsterdam.*

*The project's point of departure is the acknowledgement that architecture as an education, a discipline and a profession has to redefine and release its potential for problem-solving and innovation within a new economic and societal context. This new normal implies that the knowledge basis, teaching methods and role models transferred in architectural education have to be adapted to a new reality. There is a strong demand for diversification both in architectural education and in practice.*

## The wicked problems in European architectural education

*The architectural profession continues to suffer from the economic crisis. Between 2008 and 2012 construction output fell at a faster rate than GDP in general, impacting workload salaries and profits in the architectural profession, and leading to higher unemployment rates and more architects working part time. Alongside this development more architects are educated in Europe than ever before, the number of architects in Europe increased by 13 % between 2008 and 2012. This creates an evident mismatch between supply and demand as more architects are chasing less work; a large, and increasing, proportion of the European architectural workforce is young and unemployed.*

*This new normal also implies that the pressure on the architects employed is increasing; longer working hours, more work with the risk of no fee, longer careers before one can afford to retire. Large practices have cut staff levels. At the same time the large practices are the only size of practices that have increased revenues and profits since 2010. Alongside the higher unemployment rate, more micro practices are established as newly redundant architects have set up new offices. As a result of the socioeconomic situation architects are experiencing a decrease in reputation and career satisfaction. We also see a north south split in Europe. There is a better market and optimism in some central and northern European regions than in the south.*

*The project including its workshops addresses the Wicked problem of what should be the education sector's contribution to a successful adaption to the "new normal". How can the way we teach architecture contribute to strengthening the architects' ability to face the challenges at hand? What is e.g. the proper way to balance and integrate cross-professionalism, creativity and flexibility in the curricula and teaching methods to better lay the ground for entrepreneurship and employability? And in the longer run: How can adjustments in architectural teaching better foster good ideas for implementation in "the real world", and thus empower architectural graduates to define the future of European building?*

*As part of the challenge of adapting to the new normal, the project puts specific emphasis on the architectural subtopics of sustainability for environment and cities, and architectural heritage design.*

*There is a strong demand of diversification as architects broaden the services offered, not just building design. Re-design and re-use of old buildings is becoming an increasingly important area in the European architectural*

*practice, as is of course sustainable urban development. Thus, in order to successfully shape the future architect it is necessary to also develop architectural education within these subtopics.*

*With the following main aims the project will create synergies both between European architecture schools, and between the educational and professional sectors:*

- Improve the architectural teaching methods in European schools.*
- Strengthen the architectural graduates' ability to face the wicked problems at hand, and thus improve their employability.*
- Strengthening cooperation and exchange of good ideas and best practices within the European Architectural Education Area, and strengthening the EAAE as the central infrastructure/arena for production and dissemination of relevant new knowledge.*
- Strengthening the bonds between the profession sector (ACE) and the education sector (EAAE) and connecting Academia, Education and Profession facing the 'New Normal' in Europe*
- How to teach sustainability in architectural education within this new normal?*

*The issue of sustainability and cities includes almost all of our Built Environment. As a wicked problem it faces, rather fundamental contradictions. For example, how to deal with the tension between the need to condense cities' footprint with regard to the use of fossil energy on one hand and the need for urban green and clean air for city inhabitants' well being and health on the other? In order to address these kind of wicked problems correct research questions are needed running through all urban and building scales from city to detail, from building to territory. Additionally specific technical knowledge and innovative solutions have to be combined with design knowledge in order to develop adequate future architectural and urban models. All of these models are related to the un-going transformation of our Built Environment and have to take into account contemporary socio-cultural, technical, economic and political changes.*

*Innovation is ensured by systematic studies of best practices in European architectural education. The project will test and develop innovative practices in local "teaching laboratories", and provide a platform for making the results available to relevant schools.*

*The wicked problems described must be discussed at a European level. Due to the European "new normal" there is a stronger need than ever for European architectural educators to stand together and share best practices. In a global context it is Important to strengthen the European architectural education area to face competition from other regions.*

# The research and education profile of Faculty of Architecture and the Built Environment, Delft University of Technology

*The Faculty of Architecture and the Built Environment, Delft University of Technology comprises seven research groups: Architecture, Design & History, Computation & Performance, Green Building Innovation, Urbanism, Real Estate & Housing, Innovations in Management of the Built Environment & Housing Quality that allow a broad approach to issues of sustainability and cities, ranging from design innovation to technical solutions.*

## Research Program

*The specific characteristics of the faculty's research are referred to by the concept of 'design-oriented research'. Central to the discussion on 'design-oriented research' is the level of scientific rigor of the design activities. These activities involve building theory, appropriate research methods, communication patterns, scientific critique, and so on. This scientific rigor, however, has to be balanced with specific contextual demands of this field such as reflection and creativity in the design process. The concept thus encompasses a broad typology of research activities situated on an imaginary axis ranging between intuitive design on the 'art' side of the axis towards optimizing scientific research on the 'science' side of the axis. This broad typology is reflected in the various ways in which the concept of 'design-oriented research' is defined.*

*The following categories of research can be distinguished:*

*[1.] evaluation research, which is characterized as the empirical study of existing objects and processes. It analyses the effects and consequences which manifest themselves once architectural objects or processes have been realised.*

*[2.] historical research, which interprets, understands and explains designs, while taking site characteristics into account.*

*[3.] conceptual research is exploratory and experimental and aims at innovative, revolutionary concepts, manifestos and visions of the built environment.*

*[4.] practical research is a research done for educational purposes and for professional practices and refers to the research architect's need to find optimum solutions for certain building assignments.*

## Bachelor Programme

*In Delft students acquire their basic knowledge during the Bachelor's programme, including courses which are part of the university-wide institutional package. The development of design skills is central to the programme: a semester-long integral design-project forms the core of the*



*six semesters where the knowledge and skills taught in other programme elements (fundamentals of Architecture, Technology, Media, Management) are applied in the design-process. The final sixth semester offers an elective programme oriented at orientating the student to one of the specialized Master programmes. A successful completion of the Bachelor grants admission to the four Master of Science programmes of the Faculty.*

## Master Programme

*The five Masters are Architecture, Building Technology, Real Estate & Housing, Landscape Architecture and Urbanism.*

*Each specialisation offers one or more programmes and electives, culminating in a final project and finally leading to a Master of Science degree. Within the programme of the MSc.- Architecture students are offered a range of choice between four integrated courses and elective courses. The programme provides a large degree of flexibility in the first year of the MSc within an ordered curriculum including the possibility to spend up to one semester at a partner university of TU Delft (second semester). The Architecture Track's educational program addresses a wide range of social issues such as the design and lay-out of the built environment, the growing demand for high quality homes and residential districts, urbanisation processes and density strategies, the management of building supplies, architectural integration of infrastructure and the accessibility of public facilities, sustainable construction and the development of new building materials and structures.*

## Sources:

*Erasmus+ Application Confronting wicked problems: Adapting architectural education to the new situation in Europe, spring 2014*

*EAAE guide, European Association of Architectural Education <http://www.eaae.be/>*

*Program Wicked Workshop Week Delft*

## 2. **1st Wicked Workshop: On Architectural And Urban Sustainability. TU Delft, April 2015**

*Next to lecture series and site visits, the subsequent three-day charrettes aim at providing an intense experimentation on the proposed topic. To establish an aligned thought-line in addressing the wicked problem of sustainability and education, it was necessitated to work with three different scales, methods and design tools. This thought-line is concerned to position the problem in a bigger context and to take distance from mere generic-technical problem-solving in fragmentary situations. Thus, by positioning the urban block at the centre of our investigation and design, we will focus on the wicked problem of sustainability in architectural design. In this case we study the urban block not only in regarding to various scales –as an urban entity, as being part of an urban section and urban metabolism such as its relation to water and greenery and as well as in craftsmanship of the details- but also in relation to private sphere and public realm and eventually in its very act of drawing and making.*

*It is also worthy to mention that perhaps the problem of sustainability- which has been recently intensively discussed- can be better integrated to the architectural discourse, from theory and research to the practice. Specifically in educational perspective, a more polemic critique and terminology can provide a more inspiring field for architecture and design processes, methods and tools.*

*Thus, the workshop includes a three-day charrette which begin with a lecture by academics and practitioners in TU Delft. Then it continues with a charrette which exercises specific point of view, method and tool of design. These approaches and methods are the ones which have been practiced and examined within the educational curriculum at TU Delft. The first day charrette, addresses the problem of sustainability within the scale of an urban block and in relation with the changes of the city. The students are expected, through working with '3D models/ Maquette', to reflect on a specific urban block in Rotterdam. The second charrette focuses on the territorial scale of the topic by working through a 'territorial section' of the site, in order to address the processes and inter-relations involved in approaching architectural sustainability. Eventually, the last charrette, raises the problem of materialization and the exercise of focusing on specific 'point' through making 'drawing', as the proposed tool for this exercise.*

*At Last not least, in this workshop our aim is not to provide a holistic recipe for architectural education regarding the topic of sustainability, rather we hope to provide a small platform for encountering of diversity of approaches, definition, methods and tools, as well as students.*



### 3. Partners and Participants

Erasmus+ Workshop  
*Subgroup 'wicked' sustainability*

#### **Delft University of Technology**

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#### **Politecnico Milano**

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Maria Vittoria Cardinale	arch_vittoria.cardinale@hotmail.it

#### **EAAE**

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#### **ACE**

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#### **Groups:**

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Jirka Kabelka	j.kabelka@gmail.com



## 4. Program

**19th April** arrival NL + walking tour  
**Sunday**

**20th April** Delft : lecture + faculty tour + studio meeting + lunch  
**Monday** Fieldtrip Rotterdam: site excursion + reception + dinner

**21st April** lecture + lunch + charrette  
**Tuesday**

**22nd April** lecture + lunch + charrette  
**Wednesday**

**23rd April** lecture + lunch + charrette  
**Thursday**

**24th April** closing lecture + charrette presentations + lunch + conclusions + dinner  
**Friday**

**25th April** excursion to Amsterdam  
**Saturday**

**26th April** departure  
**Sunday**



**19th April**  
**Sunday**

**accomodation** arrival in NL

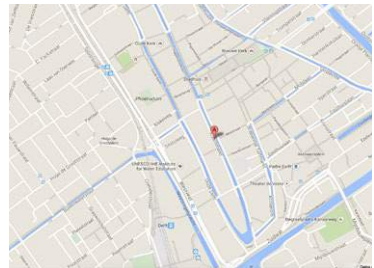
**King Jong hostel**  
*Witte de Withstraat 74*  
*3012 BS Rotterdam.*

Maria Faraone  
Stanescu Radu Andrei  
Gheorghe Razvan  
Corina Teodora Chirila  
Claudia Gabriela Pipos  
Raluca Elena Dobre  
Alice Corno  
Erpinio Labrozzi  
Marco Lunati  
Joseph Rigo  
Lucia Croci Candiani .



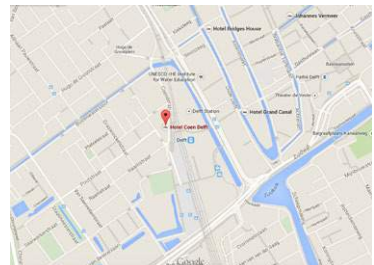
**Royal Bridges Hotel**  
*Koornmarkt 55-65*  
*2611 EC Delft.*

Maria do Carmo Caldeira  
Ana-Maria Dabija

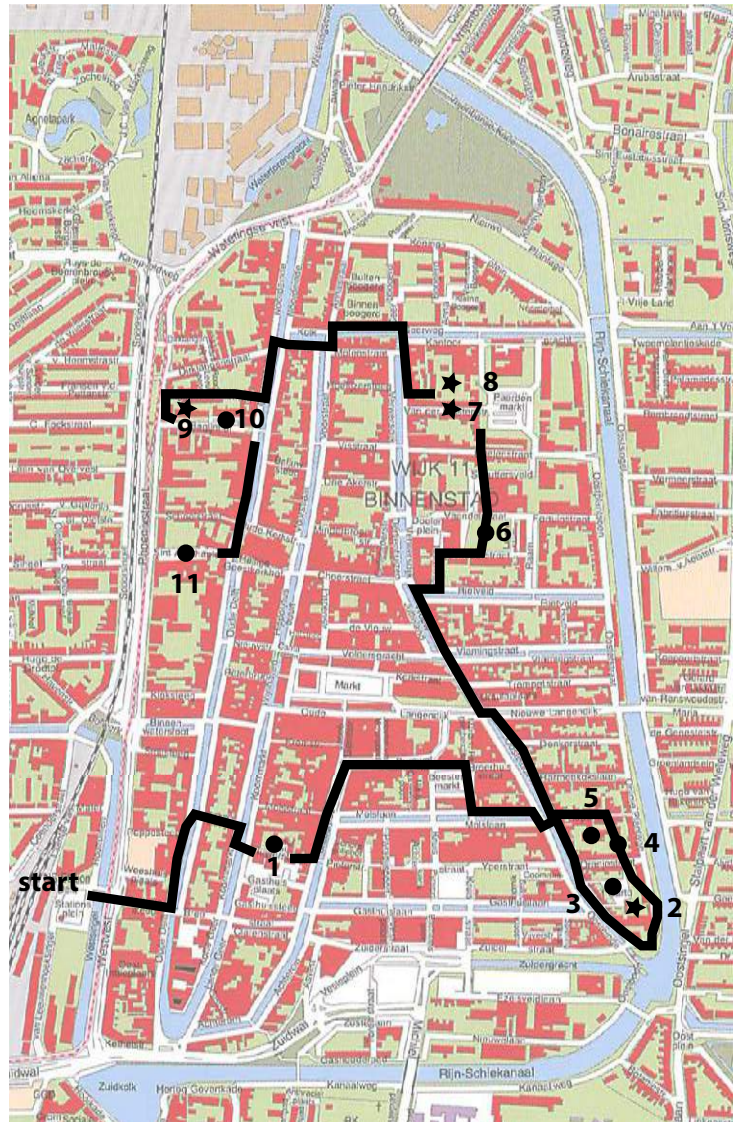


**Hotel Coen**  
*Coenderstraat 47*  
*2613 SN Delft*

Veronika Schröpfer  
Adalberto del Bo  
Maria Vittoria Cardinale  
Daniele Beacco (PhD)



**16:00 Walking tour : DELFT INNERBLOCK** Sustainability tour.  
Meeting point: Delft Train Station Hall  
*Willemijn Wilms Floet*



- Start: Station
1. Huyterstraat
  2. Klaeuw's hofje
  3. 't Carto
  4. Hartjesveld
  5. Hofje Hopstraat
  6. Doelentuin
  7. Hofje van Gratie
  8. Hofje van Pauw
  9. Hofje van Almonde
  10. Bagijnhof
  11. Prinsenhof



## 20th April Monday

- 9:15** Register and welcome  
*Room 01+.Oost.430*
- 9:30** **Opening** by **Susanne Komossa**  
*'Introduction; program, themes and charette approaches'*  
*Room B*
- 9:45** **Lecture** by **Henri van Bennekom**  
*'TU Delft's curriculum Master of Architecture'*
- 10:15** **Lecture** by **Peter Teeuw**  
*'Technology in Sustainable development (TiSD) @Faculty of Architecture and the Built Environment'.*
- 10:45** Coffee Break
- 11:00** **Walking Tour** through the Faculty of Architecture by **Mar Muñoz**
- 12:00** **Studio Meeting** *Room B*
- 12:30 - 13:30** Lunch at the Faculty *Room K*
- 14:00 - 18:00** (Site) **Excursion Rotterdam**, Walking/ Biking tour  
*Meeting Point: entrance of bike parking (front square) Central Station*
- 18:30** Beer at De Witte Aap  
*J. Witte de Withstraat 78 3012 BS Rotterdam*
- 19:00** Diner at De Bazaar  
*K. Witte de Withstraat 16 3012 BP Rotterdam*



## Excursion Rotterdam, Walking/ Biking tour

*A. Rotterdam Central Station.*

*B. Water Square*

*C. Schieblock/Luchtsingel*

*D. New City Hall*

*E. Market hall*

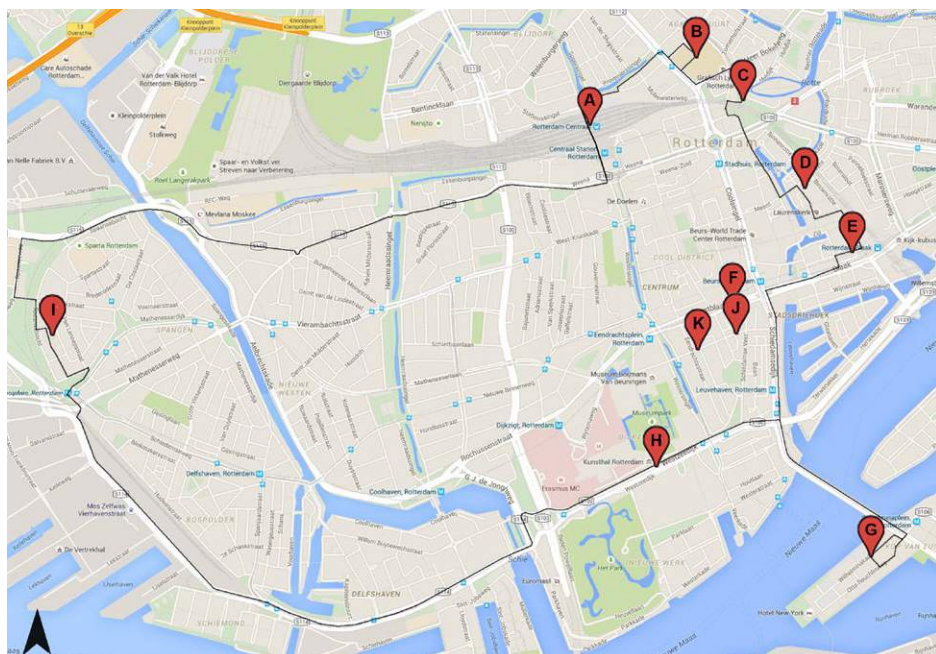
*F. Cinerama Urban Block at Blaak*

*G. De Rotterdam*

*H. Kunvthal*

*I. Justus van Effenblock*

*J & K. Witte de Withstraat*



## 21th April

### Tuesday

**9:00**

**Lecture. Nicola Marzot**

*‘The building block and the city: from assimilation to competition’*

*The lecture will focus on the urban block as a challenging subject of endless creative imagination. Constituting an intermediate scale between the individual private house and the public city, it usually offers the possibility of mapping the societal unconscious claim for a new project of the city. Limiting the discussion to the period from the post-industrial revolution onward, the main aim is therefore to elucidate and map the raising emergence of new urban block in relation to new urban strategies. A thematic timeline will be offered to students. The experimental character of the work on the urban block sometimes has lead to successful prototypes, sometimes solely to unique proposal without future. In that direction, the lecture will try to explains the reasons of the success or those of a failure. Finally, the issue of “sustainability” will be targeted through the capacity of the creative imagination to make use of the existing building structures, putting them into a new meaningful horizon which completely question their original significance.*

*Room P*

**9:45**

**Coffee Break**

**10:00 - 17:00**

**1st Charette**

*Theme: ‘The Architecture of the extremely condensed Urban Block within the City of tomorrow.’*

The site of the intervention is the Cinerama Block on WestBlaak street in Rotterdam. The workshop concerns the ‘Wicked’ Speculation on the possible future of the urban block which is exercised through (re)making architectural models as the tool for design.

*Room P*

**12:30 - 13:30**

**Lunch at the Faculty**

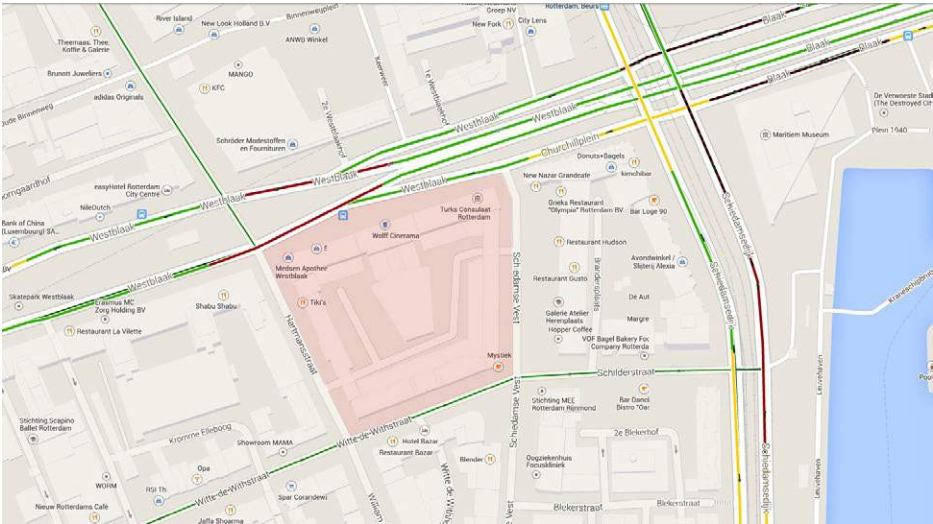
*Room P*

**18:00 - 22:00**

**Coordinator’s meeting**

*Room 01+.Oost.840*

The Cinerama Block, Rotterdam



## Study Site: A Brief revisit of the Cinerama Block

*Today, the Cinerama is a hybrid block including theatre, cinema, housing and shops. This block has experienced various changes to accommodate/initiate the changes of the city. Being considered as a multifaceted block and in respect to its central position in the city of Rotterdam today, the Cinerama Block can provide an interesting and potential point of departure for this workshop.*

*'This is Cinerama!' was the catchphrase used when the cinema opened its doors in 1960. Its name refers to the immensely popular projector system used in the cinema. More than fifty years on, it is the oldest film theatre in Rotterdam.*

*This theatre would initially bring about the revival of a cinema called Scala which was designed by the architect B. Hoogstrate. Expectations were high when it opened in 1957. Newspapers raved about the biggest film theatre in Rotterdam. Even Charlie Chaplin sent a message, saying: "It is heartening to know that the beloved Scala of Rotterdam has risen again. Good luck and best wishes for its future." That Scala of all places would not have much of a future, Chaplin could not have foreseen.*

*However, by 1958 the Cinema was forced to close its doors because of its failure to attract public interest which is often was blamed by its position in the city at the dead-end street of WestBlaak at that time whose extension had been provisionally postponed. While today Westblaak is one of the most important thoroughfares of Rotterdam, before the plot was located in a remote corner on a dead-end street.*

*After that in 1960 by the introduction of a new projector system (Cinerama) to Cinema by Herman Ilmer, the building was reopened. To adopt to a brand new building, a lot of changes had to be made in the building. However, the change was a great success. Everyone wanted to witness the spectacle. Special day trips to Rotterdam were even organised. After a boat tour on the Spido and a visit to the Euromast visitors could easily take in a show at Cinerama.*

*In spite of its popularity, because of the complex filming process only seven Cinerama films were ever made eventually the limited supply of seven films was not enough to sustain interest.*

*As a result, after a few years, Cinerama became a regular cinema. Its interior was adapted to its new purpose and rooms were added. The building kept its name and the original façade received protected status. The*

*entrance, with its side walls made of small coloured stones, has therefore remained virtually unchanged. The colourful artistic panels were put back in the foyer after careful restoration. The original purple mosaic pillars can still be seen in the room above the hall.*

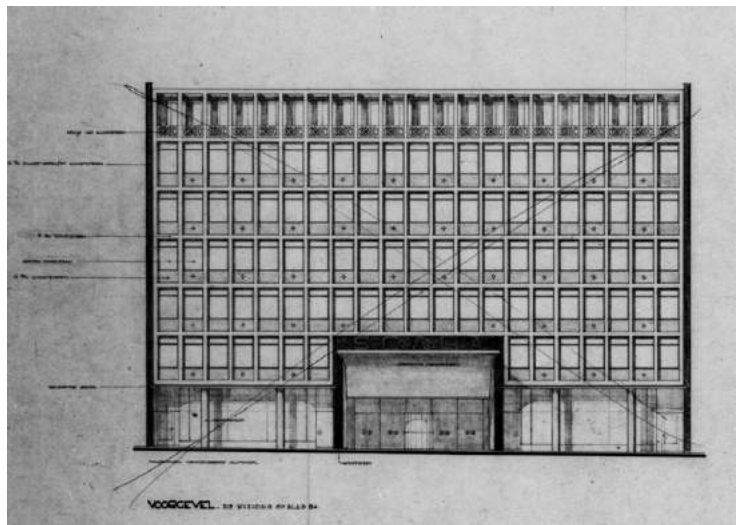
*Sources:*

*Gemeente Archive under: B2-94-1953 and 2007-2518*

*BIOSCOOP ROUTE ROTTERDAM, <http://bioscooprouterotterdam.nl/en/cinerama.html>*

*Berg, Henk, Over Stalles en Parket Rotterdam en het Witte Doek, Een Populair-historisch Overzicht van de Rotterdamse en Schiedamse Bioscopen 1896-1996, AD. DONKER (ROTTERDAM: 1996)*

Gemeente Archi-  
ve, Rotterdam,  
B2-94-1953



## 22th April

### Wednesday

**9:00**

**Lecture by Nico Tillie**

*'Urban Metabolisms, urban green and water retention; Case Studies'*  
The lecture focuses on the issue of planning and studying the problem of sustainability, in relation to the specificity of a context, in this case Rotterdam. Nico Tillie presents, The projects and interventions which has been carried on already for several years, to deal with the wicked problem of sustainability in urban and architecture design and in various scales in this this city. In this lecture he addresses how through their projects they define strategies to deal with the urban green and water; data collections and analysis, densification and urban agriculture and energy consumption. As being part of the few Delta regions in Europe, in the Netherlands the cities, had to find their own ways to encounter the challenges of the constant changes of sea levels. These interventions, expand from national water works till small intervention in the city. The relation between scales is crucial specifically in relation to the recent climate changes. This lecture also tries to address how and till which level there can exist a productive dialogue between the specificity of the sustainability problem in a certain context and the techniques which are used and examined in a global level.

*Room R*

**9:45**

**Coffee Break**

*Room 01+.Oost.230*

**10:00 - 17:00**

**2nd Charette:** Theme: *The Urban Metabolism during seasons and through time; designing with Green and Water or the 'Wicked' Scenario Writing through Section*, A look at traditional approaches of city planning and building design. By including the Cinerama Block, the chosen section request for positioning the previous exercise in a territorial scale in relation to various relations within the city. Here the section is understood as the tool for the design speculation.

*10:45 Room A 12:45 Room C*

**12:30 - 13:30**

**Lunch** at the Faculty

*Room C*



## Short introduction to the history of Rotterdam in relation to issue of water.

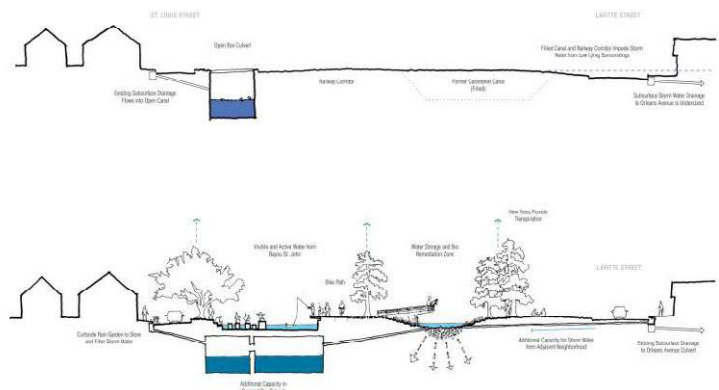
*Expanding at the shore of the Nieuw Maas, with the construction of a dam on Rotte river, Rotterdam's history as a harbour settlement goes back to 13th Century. During the time, Slowly, Rotterdam grew into a major logistics and economic centre. Today the port of Rotterdam is one of the largest cargo port in Europe and one of the main hubs for trade in crude oil and oil products.*

*In Rotterdam, the symbiosis between the city and Harbour has determined tight relations culturally and spatially. Here the water has had the main role in connecting the harbour and the city, specifically before late-18th and early-19th century, when within few decades the entire city, which was previously surrounded by dikes, transferred its economic heart to the areas beyond the dikes. Since then, Rotterdam's harbour colonized the whole length of the Nieuw Maas till arriving to the sea dikes. On the other hand, the deconstruction of the city centre during the 1940 bombardment, created a tabula rasa for modernist intervention to (re)construct the city of Rotterdam.*

*Today, again Rotterdam is dealing with (re)establishing new relations with water and harbour infrastructures. For this, the close look at the existing and possible processes and scenarios within a territorial scale of city's architecture are considered to be of importance.*

*Therefore, for this workshop the concern is to exercise the drawing of a territorial section from a specific part of Rotterdam, by focusing on processes and scenarios related to water.*

Lafitte Greenway  
Sustainable Water  
Design  
New Orleans,  
Louisiana





## 23th April

### Thursday

**9:00 - 17:00**

**3rd Charette:** Theme: *'Public Building: Designing today the heritage of tomorrow' or 'Wicked' Craftsmanship of Drawing Building with regard to the materialization of future public buildings.*

The last exercise is aiming at focusing on the materialization and craftsmanship of specific part of the Cinerama Block in relation to the territorial section. For this workshop, the drawing itself is considered as the main tool of the design.

*Room K*

**10:45-11:00**

**Coffee Break**

**11:00-11:45**

**Lecture by Kees Kaan**

*'Designing today the heritage of tomorrow; materialization of the public realm for a sustainable and inclusive society'*

*This lecture focuses on the topic of sustainability in architectural design practice as being implicit de facto in various limitation and possibilities of which each project faces and it might get different forms and definitions.*

*The lectures starts with a brief review of recent history of the raising of the wicked problem of sustainability as an issue in our profession. It poses some general questions as a way of statement, such as: Is Architectural sustainability sustainable? Is sustainability a technical issue? Is it related to the life style?*

*Afterwards through to the presentation of and discussion on various projects from the Kees Kaan's architectural office, this lecture addresses the ways and strategies which define the sustainability through design practice.*

*Room K*

**12:00-12:45**

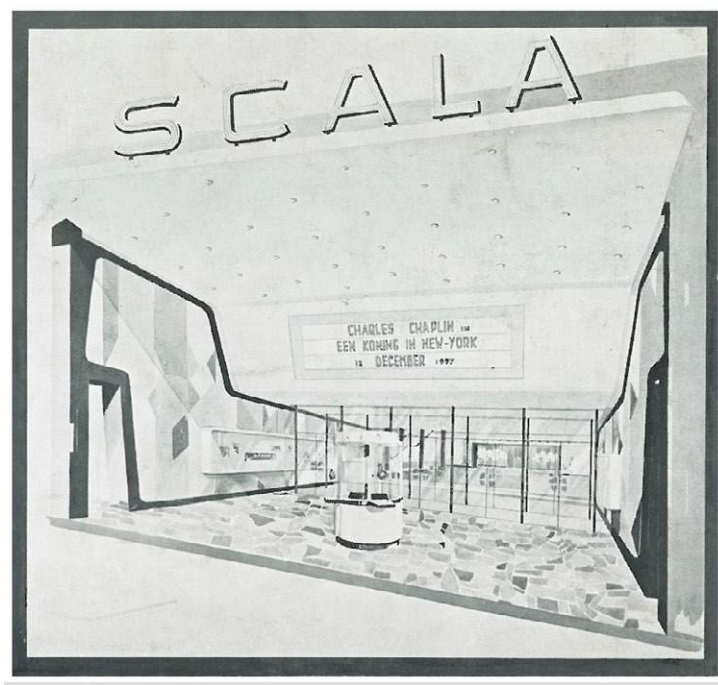
**Lecture by Luigi della Sala**

*'The GtoG Life+ project: first steps towards a gypsum circular economy.'*

**12:30 - 13:30**

**Lunch at the Faculty**

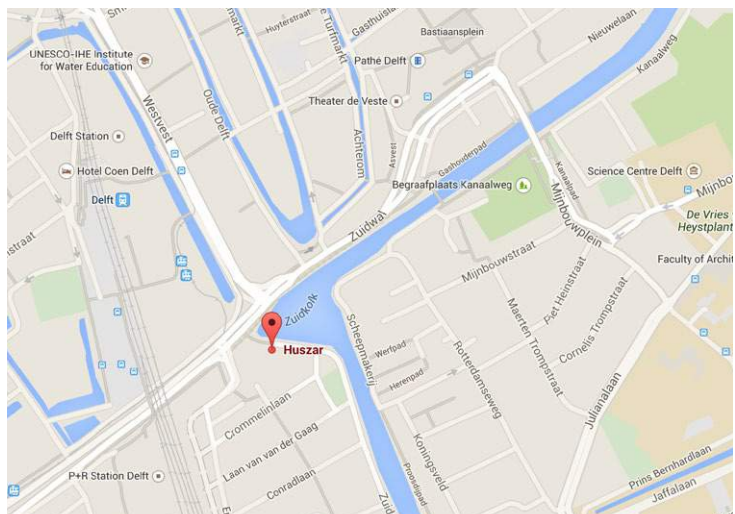
**The Cinerama Block, Rotterdam**



## 24th April

### Friday

- 9:00**                      **Lecture** by **Negar Sanaan Bensi/Susanne Komossa**  
*Charette Observations*  
*Room P*
- 9:45**                      **Coffee Break**
- 10:00 - 12:30**        **Presentation of the results** of the 1st, 2nd and 3rd charette & drawing conclusions, 5 Groups (each 20 min. presentation + 10 minutes comments & questions).
- 12:30 - 13:00**        **Formulating the program** for the next charette meeting
- 13:00-14:00**        **Lunch** at the Faculty  
*Room P*
- 14:00 - 17:00**        Preparation of the **final rapports** of the 3 charette days by the students (template will be provided)
- 19:00**                      **Closing diner** for teachers and students.  
Huszar Restaurant  
Hooikade 13 2627 AB Delft



## 25th April Saturday

**10:30**

Meeting at the **Station**

10:19h Track 1

Delft Train Station

10:07h Track 9

Rotterdam Central Station

**11:30 - 16:00**

**Excursion to Amsterdam**

*A. Amsterdam Central Station*

*F. Rijksmuseum*

*B. EYE Filminstituut*

*G. Hermitage Amsterdam*

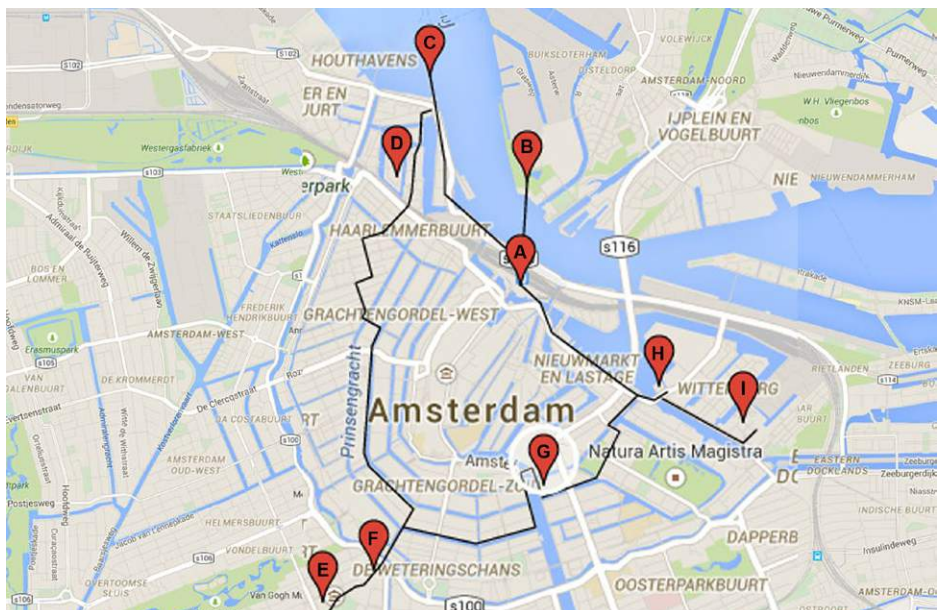
*C. Silodam*

*H. Scheepvaartsmuseum*

*D. Westelijke Eilanden*

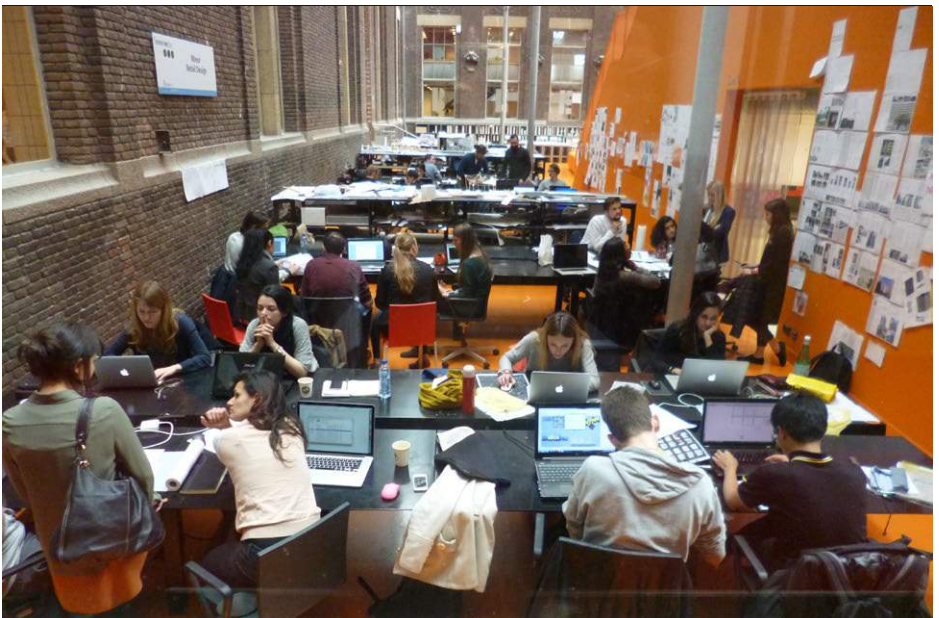
*I. Oostelijke Eilanden*

*E. Stedelijke Museum*





## 5. Final Report of The Workshop





## Final Report of The Workshope

### Topics :

*The architectural profession continues to suffer from the economic crisis. Between 2008 and 2012 construction output fell at a faster rate than GDP in general, impacting workload salaries and profits in the architectural profession, and leading to higher unemployment rates and more architects working part time. Alongside this development more architects are educated in Europe than ever before. This new normal also implies that the pressure on the employed architects is increasing. This project, including its workshops, addresses the Wicked problem of what should be the contribution of education's sector to a successful adaption to this "new normal".*

*With the following main aims the project will create synergies both between European architecture schools, and between the educational and professional sectors:*

- *Improving the architectural teaching methods in European schools.*
- *Strengthening the architectural graduates' ability to face the wicked problems at hand, and thus improving their employability.*



*- Strengthening cooperation and exchange of good ideas and best practices within the European Architectural Education Area, and strengthening the EAAE as the central infrastructure/arena for production and dissemination of relevant new knowledge.*

*- Strengthening the bonds between the profession sector (ACE) and the education sector (EAAE) and connecting Academia, Education and Profession facing the 'New Normal' in Europe.*

*Thus, Adapting Architectural Education to the New Situation in Europe, the Delft Department of Architecture / Chair of Public Building have been invited to a one-week workshop which was focusing on the wicked problem of Sustainability in Architectural Design. The issue of 'sustainability' and cities includes almost all of our Built Environment. As a wicked problem it faces, rather fundamental contradictions.*

*In order to address the various dimension of 'sustainability', correct research questions are needed, running through all urban and building scales from city to detail and from building to territory. Additionally specific technical knowledge and innovative solutions have to be combined with design knowledge in order to develop adequate future architectural and urban models. All of these models are related to the un-going transformation of our Built Environment and have to take into account contemporary socio-cultural, technical, economic and political changes.*





## Planning :

*The planning of the workshop included a matrix of various organizations which enhanced the possibility of revealing the complexity of the thematic, i.e. sustainability and the introduction and experimentation with various design scale, tools as well as educational method.*

### *- The program of the one-week workshop:*

*the program of the Wicked Workshop Week included several field trips to Rotterdam and Delft and Amsterdam, visiting projects which address or deal with this theme from various points of view. Moreover, the daily thematic lectures and subsequent three- day intensive design workshops were organized to stimulate and activate the involvement of the students and tutors and lecturers. Hence, the first day (19th April) began with a walk tour in DELFT INNERBLOCK, for the second day (20th April) two lecture series on the topic of the educational curriculum of Master of Architecture in TU Delft and afterwards a site visit and field study in Rotterdam, was planned. The next three days (221st, 22nd, 23rd April) were assigned to a three-day charrette, starting with a lecture by an academic or professional on a specific topic regarding the sustainability, continuing with the intensive work of students and tutoring sessions and ending with a short presentation in which the outcome of the day was discussed and debated. The last day of the charrette (24th April) included the final presentation of the students, concluding notes by the organizers and a final meeting with*



*the students in which they were asked to reflect on the outcome of workshop and teaching methods. And eventually the last meeting among tutors from various institutions and academia to discuss and evaluate and debate the results of the workshop and to propose new ideas for the next coming Wicked Problem Workshop in Bucharest.*

**- Charrette working methods:**

*The wicked problem of sustainability must be discussed at a European level. Due to the European 'new normal' there is a stronger need, than ever before, for European architectural educators to stand together and share the best practices. Hence, the sustainability workshop hosted 10 students from Delft and accordingly 10 students from Ion Mincu University of Architecture and Urbanism in Bucharest and Politecnico di Milano in Milan (each university 5 students). To maximize the interaction among the students from various universities (thus different teaching methods and cultures), the students were divided in five mixed groups to enhance the possibility of sharing, discourse and exchange and thus learning and experimenting.*

**- Charrette contents:**

*Regarding the theme of the workshop, i.e. sustainability, our aim was- while addressing the complexity and multi-faced of the topic- to provide the possibility of a rather deeper understanding of specific selected dimensions*



*of the problem and an intense experimentation on the proposed topic and teaching methods.*

*To do this, it was necessitated to work with three different scales, methods and design tools. The concern was to position the problem in a bigger context and to take distance from mere generic-technical problem-solving in fragmentary situations. Thus, by positioning the urban block at the centre of our investigation and design, we focused on the wicked problem of sustainability in architectural design. In this case we studied the urban block not only in regard to the various scales –as an urban entity, as being part of an urban section and urban metabolism such as its relation to water and greenery and as well as in craftsmanship of the details- but also in relation to private sphere and public realm and eventually in its very act of drawing and making. The first day charrette, addressed the problem of sustainability within the scale of an urban block and in relation with the changes of the city. The students were expected to reflect on a specific urban block- the Cinerama Block- in Rotterdam. The second charrette focused on the territorial scale of the topic by working through a ‘territorial section’ of the site, in order to address the processes and inter-relations involved in approaching architectural sustainability. Eventually, the last charrette, raised the problem of materialization and the exercise of focusing on specific ‘point’ through making ‘drawing’, as the proposed tool for this exercise.*



## Management :

*Delft Faculty of Architecture, A2 BE managed the preparation and organization of the workshop and hosted the meetings . Next to the two representatives of TU Delft architecture faculty (Susanne Komossa and Negar Sanaani Bensi), one secretary from Architecture faculty (Salma Ibrahim) and one student assistant (Mar Muñoz Aparici) were involved in the preparation of the workshop. Regarding the lectures, several colleagues- teachers and professors- kindly contributed to our workshop in giving introductory lectures of each day, in relation to the proposed topic by the organizers. Conclusions: the workshop and charrette days followed two main purposes: on one hand, the aim was to transfer knowledge about sustainability to students and unfold the complexity and importance of such a wicked problem; thus to assist them to develop discursive and design skills in dealing with sustainability. However, more than finding solutions the attempt was focused on urging the students to ask proper questions.*

### - Conclusive Notes for the next workshops:

*from this one- week workshop there were various results achieved in the level of didactic and student's material productions. On the other hand, the workshop was a testing ground for didactical and teaching methods and communication with the students. For this reason, we tried to change and evaluate our teaching methods at the end of each day of the workshop and putting more emphasis on an open discussion and experimentation next to*



*the intensive student's work.*

*Things to learn from this workshop in the level of didactic and organization and their application to the next workshop series of Wicked Problems :*

- *Having a better emphasis on the local conditions, field work and contextual understanding of the wicked problem in relation to the chosen site of the exercise for the workshop.*
- *Speculations on an interactive/ innovative teaching methods to further involving the students in discussions. For example applying the seminar formats rather than lecturer/ Audience format. This means: more experimentation and intuition on improving the communication and exchange of knowledge and ideas between teachers and students. As a result, the workshop should encourage the students to be creative, to develop a critical way of thinking and to speculate outside the box, come up with innovative strategies and rather more precise and alternative definitions and terminology.*
- *A priori and better introduction of the teachers to each other and to the students and the better organization of the teaching teams.*
- *giving some exercises, in relation to the topic, prior to the workshop to the students to activate them for thinking and taking positions and requesting the students to read some chosen materials in relation to the topic prior to workshop. In this sense, it is suggested to introduce more accessible and concise, multiple media sources and alternative means of communication, for further involvement of the students prior to the beginning of the workshop such as videos, blog posts, social media environments . To initiate this attitude, the creation of a Wicked Workshop Facebook page was proposed as a means to continue the dissemination of information acquired so far and start a wicked workshop community.*
- *The tutorship should maintain an open approach attitude to allow to dialogue and debate, with enough feedback from the tutors.*
- *education should become a global issue where exchange of information and cross institutional knowledge transfer is crucial.*
- *To organize an interdisciplinary workshops where not only the tutors and lecturers, but also the students come from different disciplinary backgrounds.*

*In the methodological level, not only the various discipline but also different scales of intervention should be included in the design process.*

## **8. Charrette Results**

### **Group 1: The Sponge**

Vincent Marchetto | Raluca Dobre | Erpinio Labrozzi

### **Group 2 : TAKING IT BACK**

Wiebe de Boer | Tiwánee van der Horst | Claudia Pipoş | Lucia Croci Candiani

### **Group 3 : The Hidden Icon**

Alice Corno | Francesco Paolo Rolfo | Radu Stanescu

### **Group 4 : FROM BACKYARD TO COURTINGYARDS**

Corina CHIRILĂ | Lana FATTAH | Jiří KABELKA | Joseph RIGO

### **Group 5 : Cinerama Block, Water, Dance, Ballet**

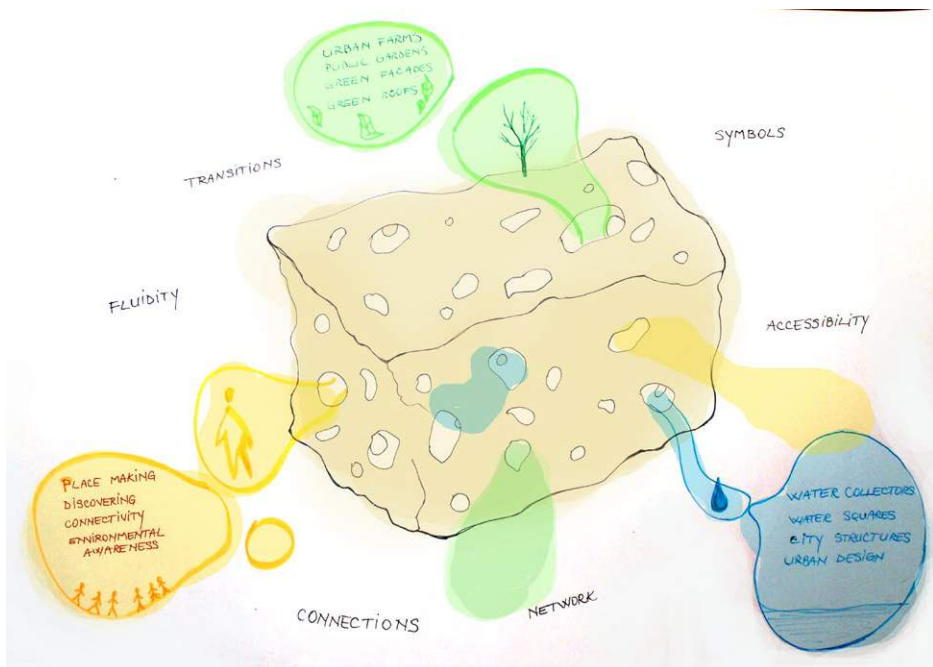
Razvan Gheorghe | Marco Lunati | Daniele Beacco | Aly Hajhassani

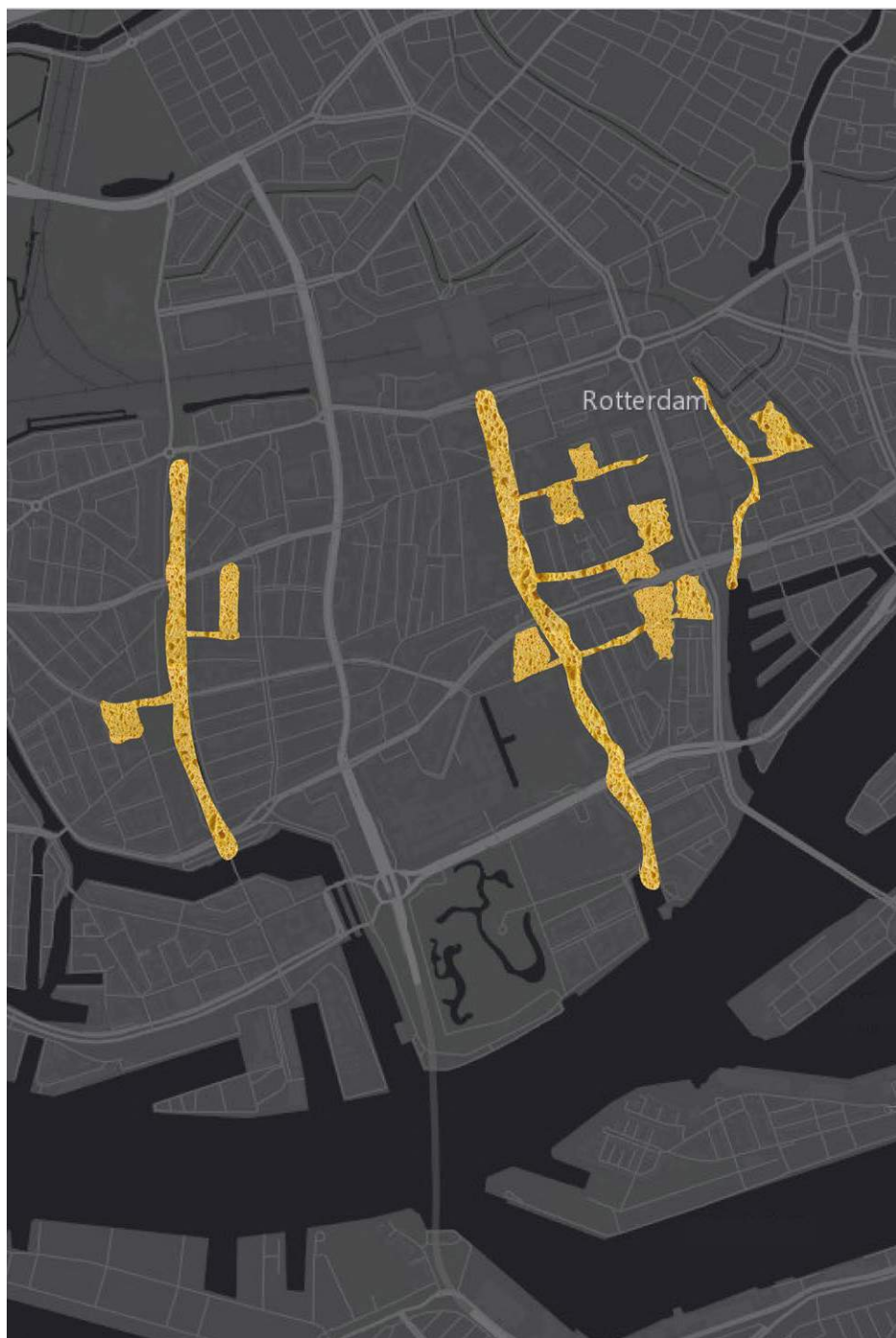


## Group 1: The Sponge

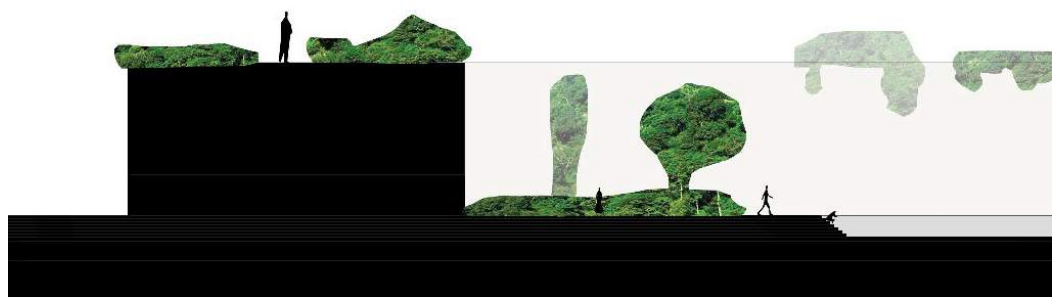
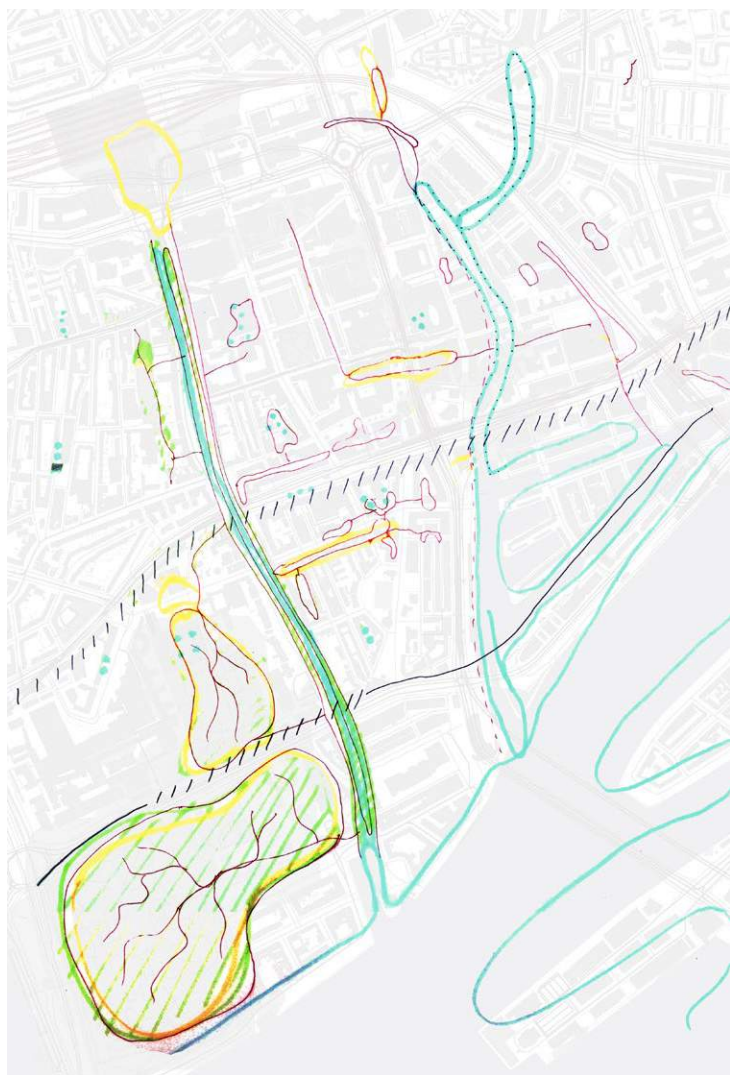
Vincent Marchetto | Raluca Dobre | Erpinio Labrozzi

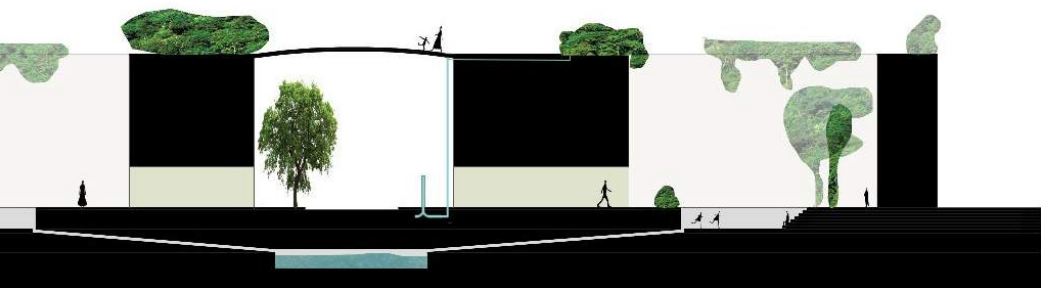
*This project uses the metaphor of the Sponge to restructure the city. The system is based on spines (connections) and cells (spaces). The “sponge” is able to absorb and release many fluid elements inside the city such as green areas, people and water. This project is about rethinking the Dutch courtyard typology by creating places (small events) and integrating them into a sustainable system. The courtyard works as a sponge by absorbing water and green spaces, once it is revitalized it becomes a people absorber. Each cell is connected to a spine which forms network that works together to increase the urban quality of Rotterdam and increase the city’s resilience against extreme climatic events. This network is visual connected with a bioluminescent system that provides electricity free lighting, and awareness about sustainable practices.*

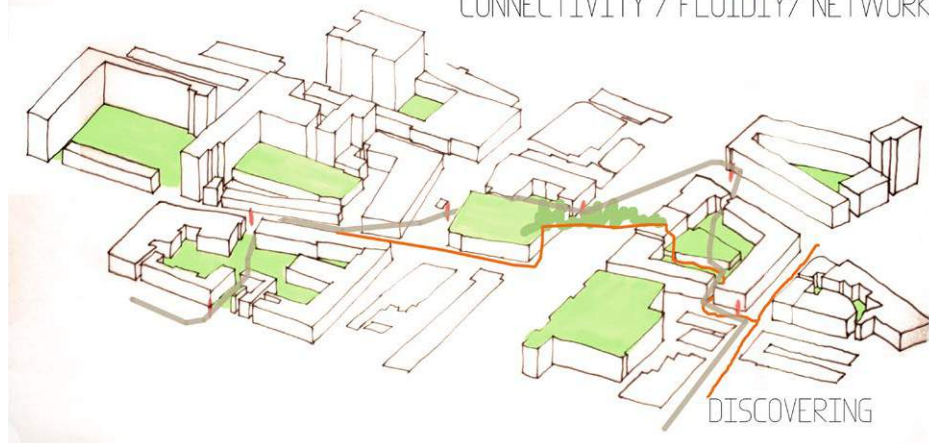
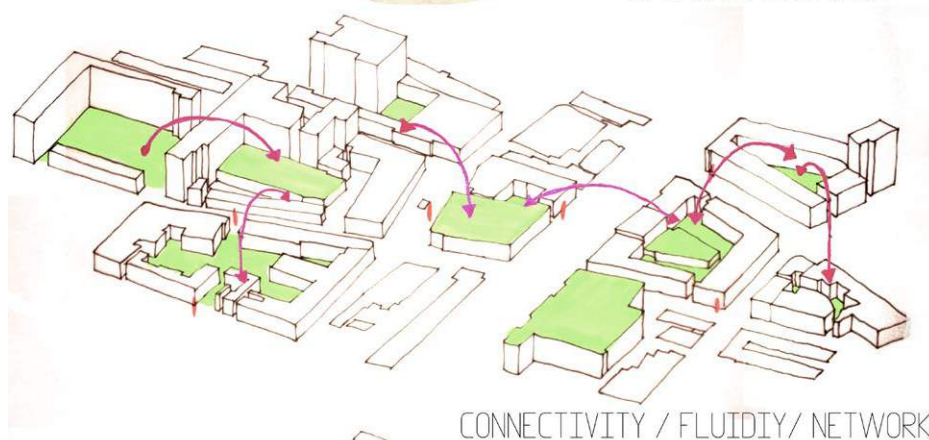
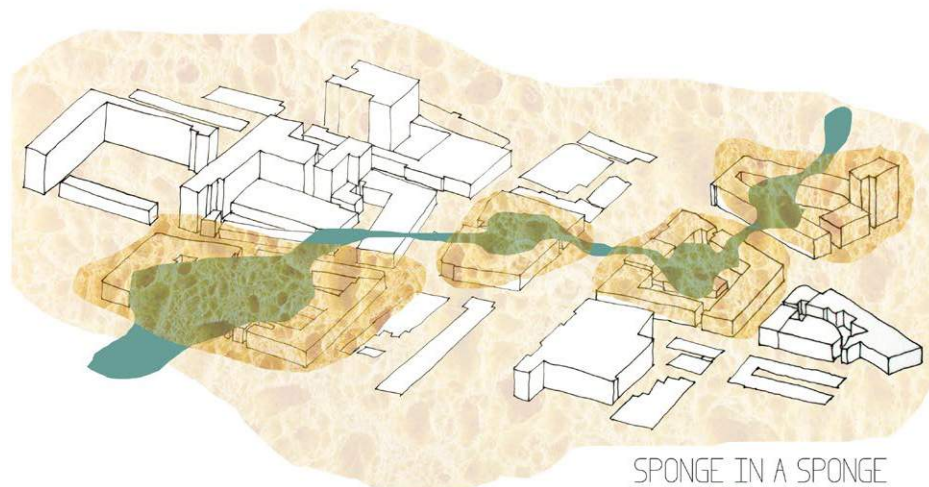












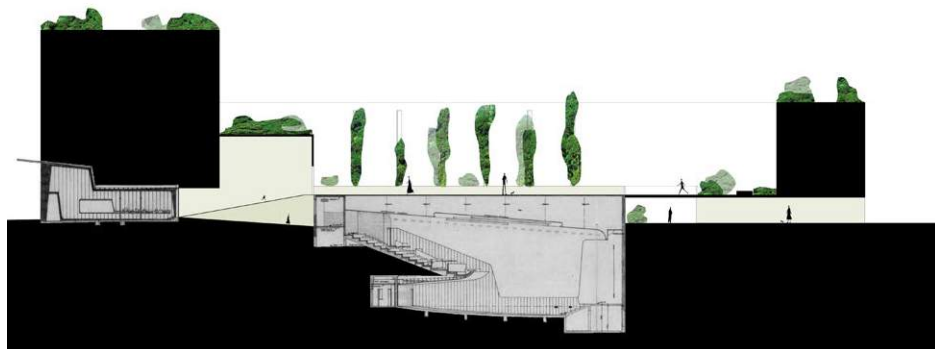
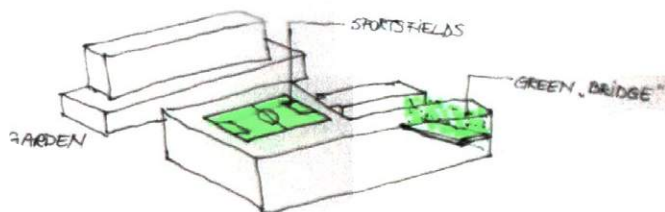
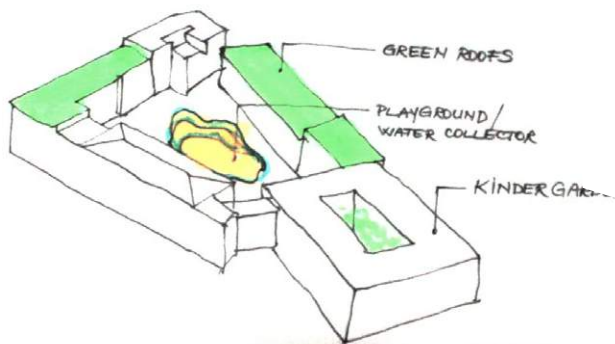
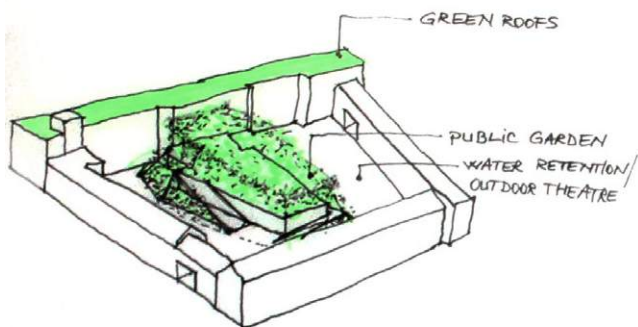




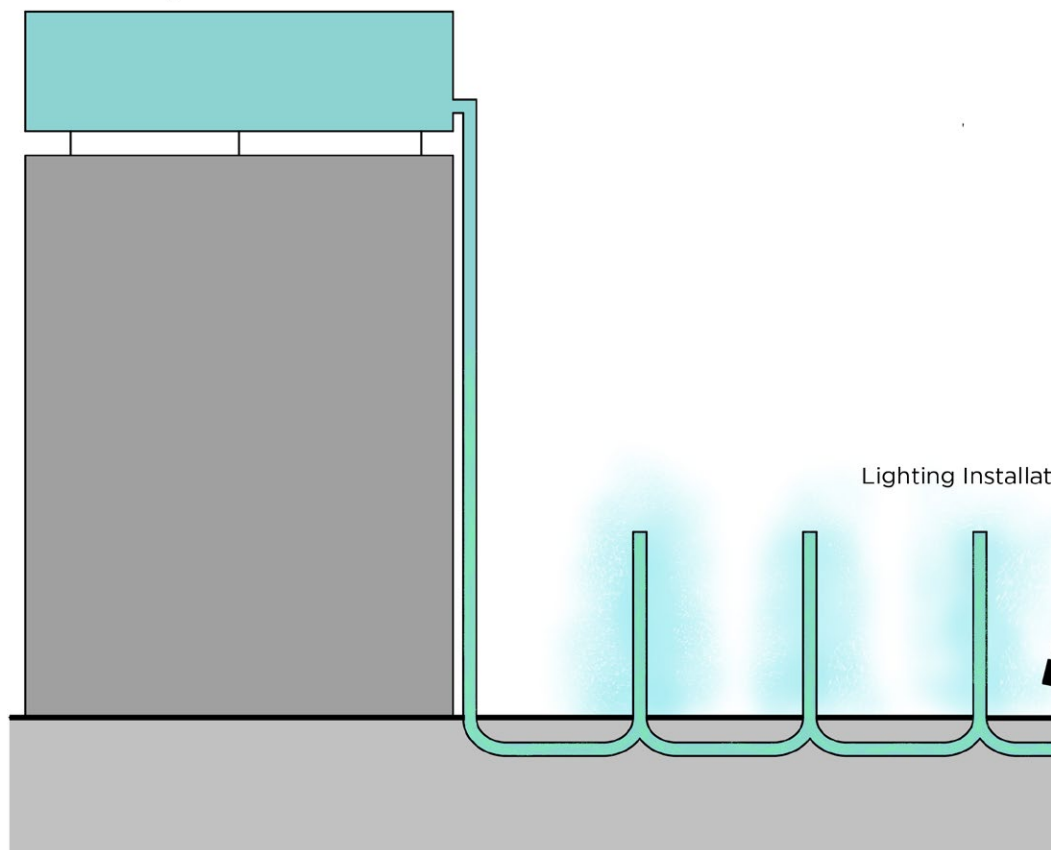


Fig. 1 Bioluminescent Algae in Nature



Fig. 2 Bioluminescent Algae Li

Rainwater / Waste Collection  
Algae Cultivation

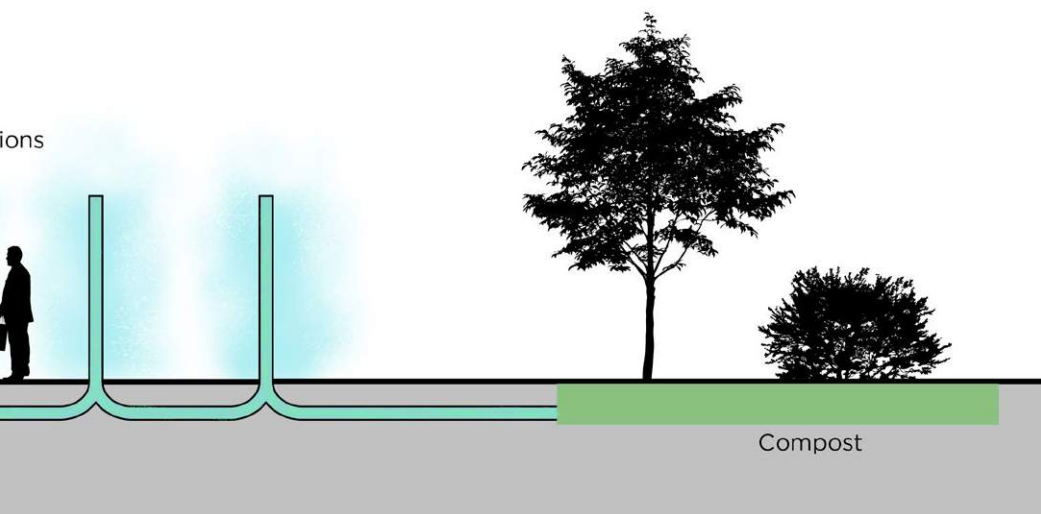




ght by Philips



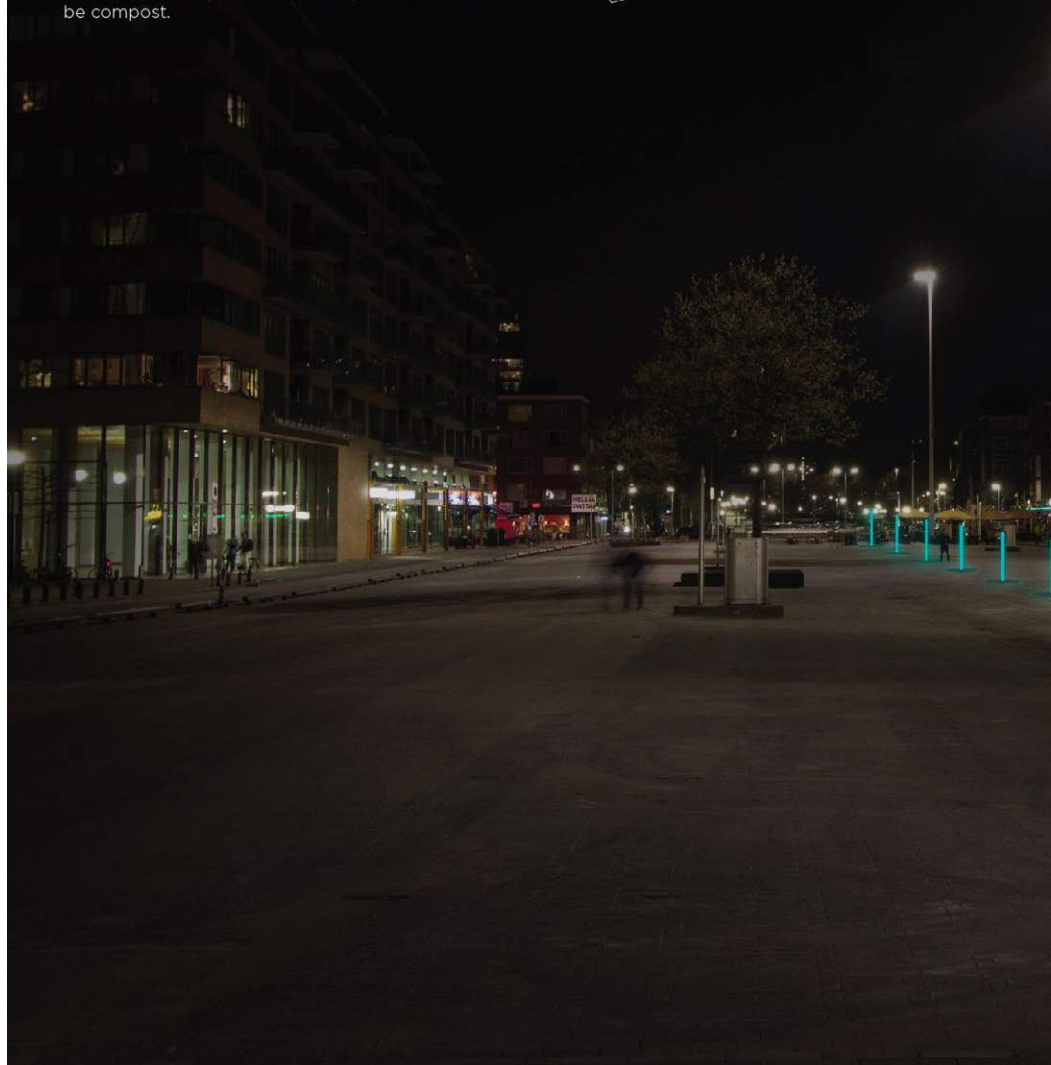
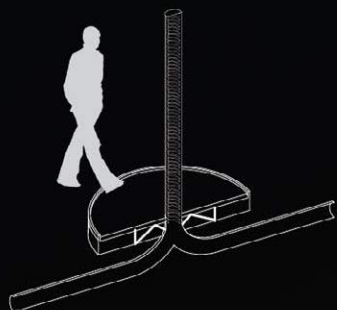
Fig. 3 Bioluminescent Trees by Daan Rosengarde



# ALGAE PATH

The Algae Path is a series of glowing trailmakers that work using bioluminescent algae. On roofs of buildings or other high points in the city water is collected and then used to cultivate algae. When this algae moves it lights up which is a defense mechanism they develop over billions of years of evolution.

The algae is then pumped through a pipe that makes itself present in the public realm at key points. Ultimately the algae ends up in a place where it can be compost.



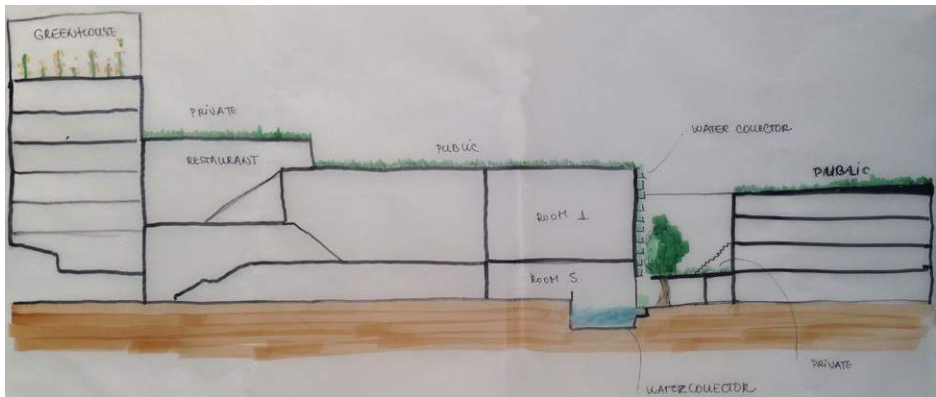




## Group 2 : TAKING IT BACK

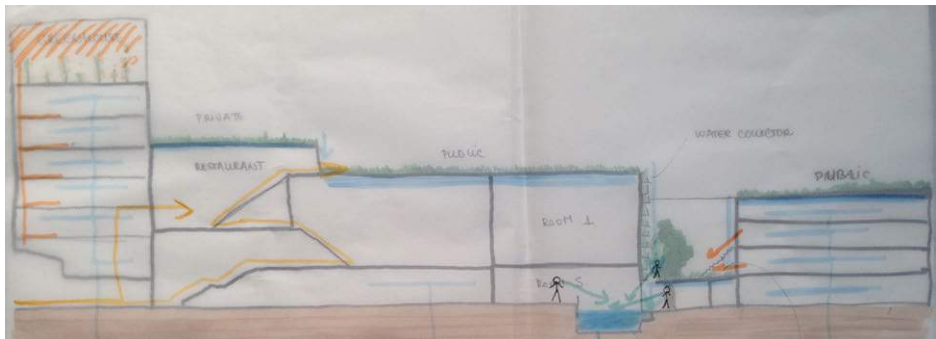
Wiebe de Boer | Tiwánee van der Horst | Claudia Pipoş | Lucia Croci Candiani

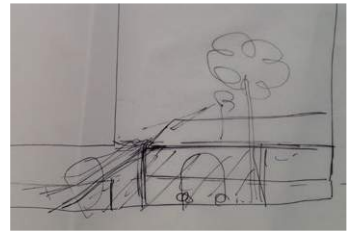
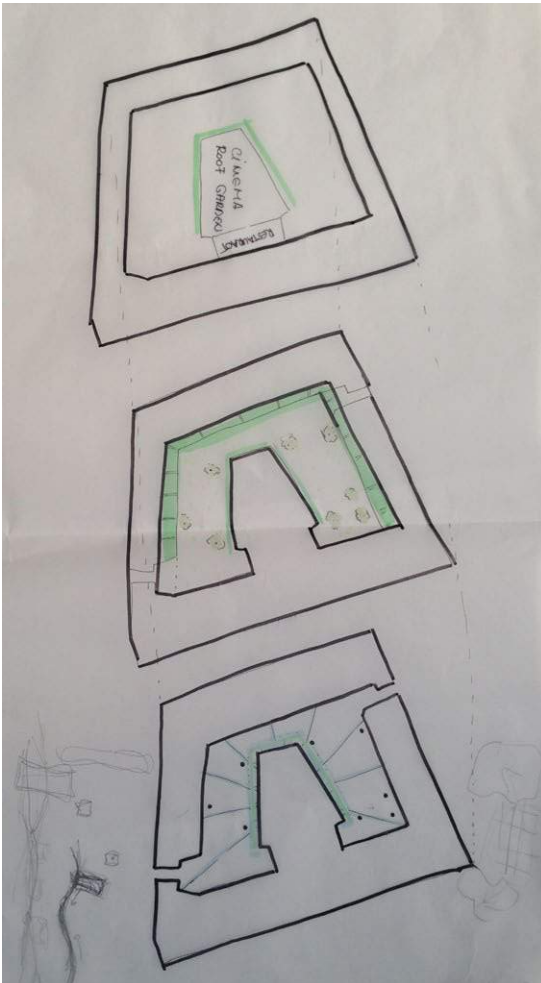
*The urban block will be reactivated by densifying the program with a restaurant and greenhouse, while all the roof areas will become private and public green areas. The green area both add life quality but also retain water that is gradually funnelled to the central cistern. The water in the central cistern will be used for heating, cooling and flushing. Over the course of history Rotterdam has tried to cope with the rising sea level by protecting the city with dykes. Now we see a shift in trying to work with the water and not against the water. This design is a future vision of how the synergy between nature and building can be developed as a continuous taking and overtaking of land.*



*Above: Section of the densification, the green roofs, living facade and the inner courtyard*

*Below: Diagram of the routes, thermal transport, green roofs, and water retention areas*





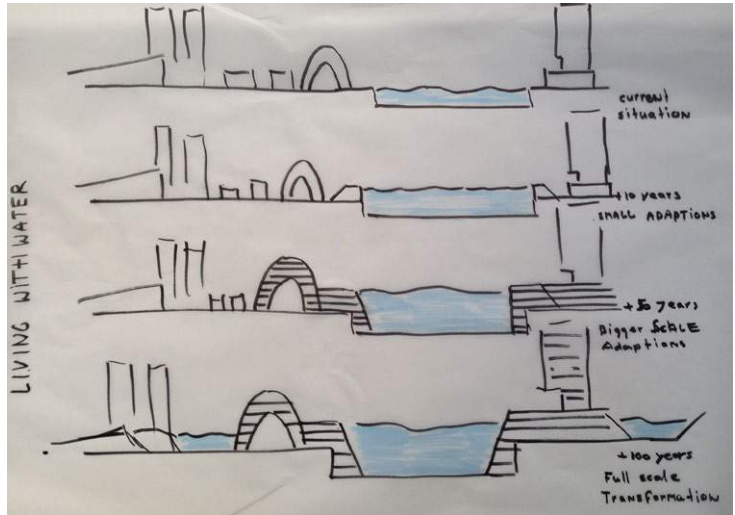
above: first sketch  
left: diagrammatic floorplans



above: inspiration roofs and layering

below: cistern in istanbul as inspira-  
tion for water collector

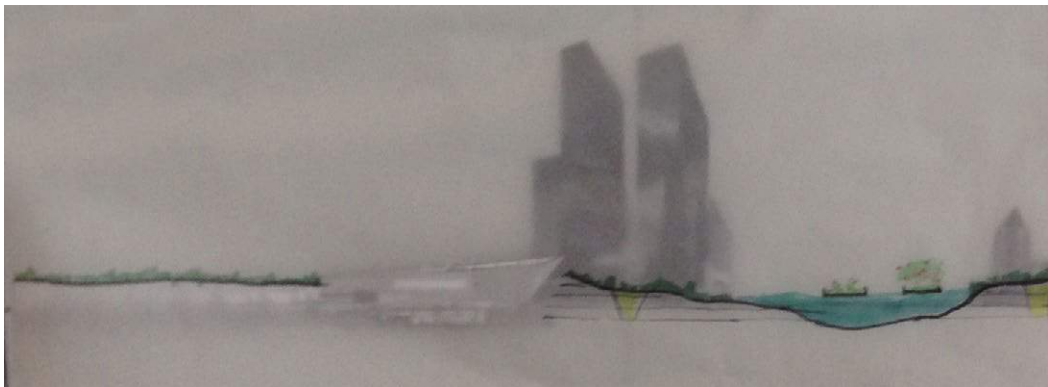




Right:  
Initial sketches



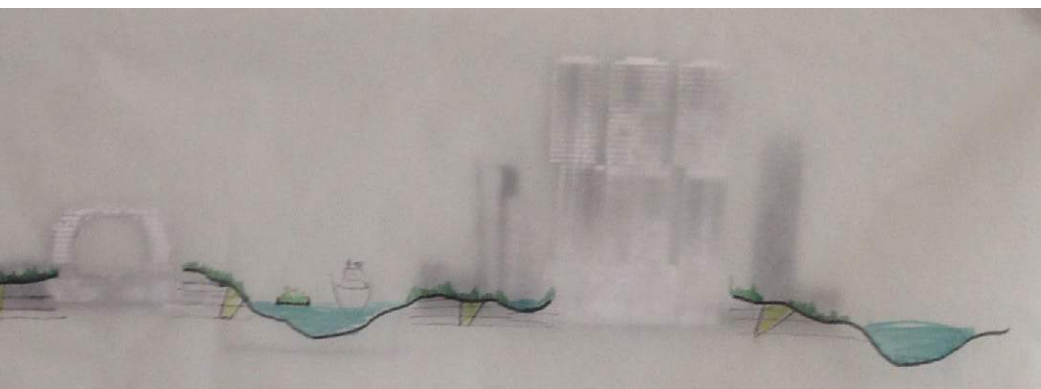
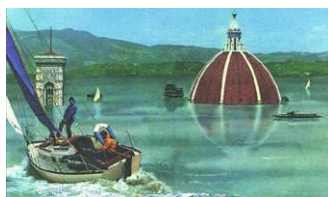
below:  
Final section  
estimated for 2100



Right:  
progression sketch  
and visualisation



Right:  
Inspiring collages

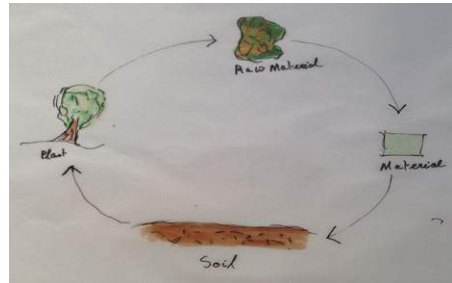




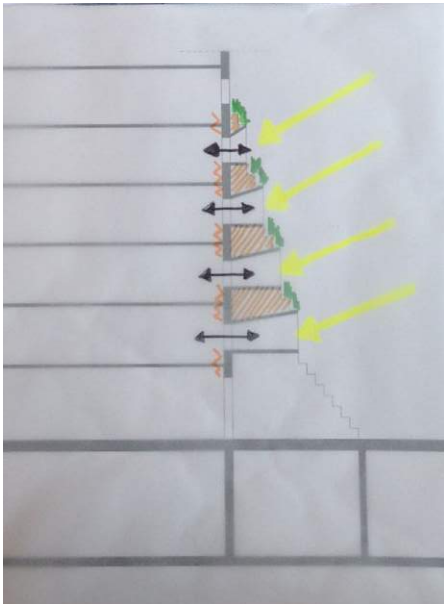
*To reduce the ecological footprint of building construction, architecture needs to work with nature. The decomposability and reusability of biomaterials as a building material can facilitate this. In this way structures below sea level will degrade and through sedimentation will naturally form dykes.*



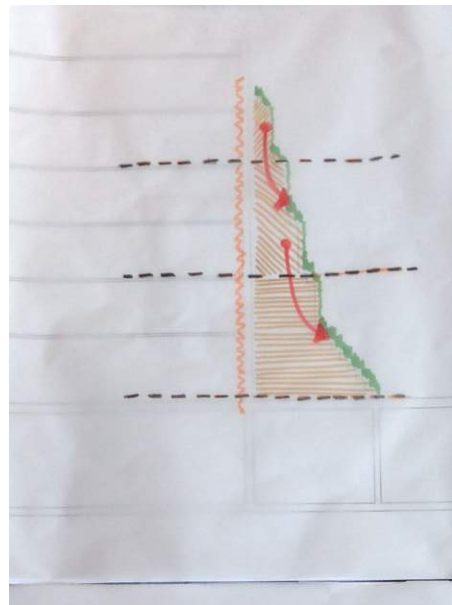
*Reference concept*



*Material life cycle*



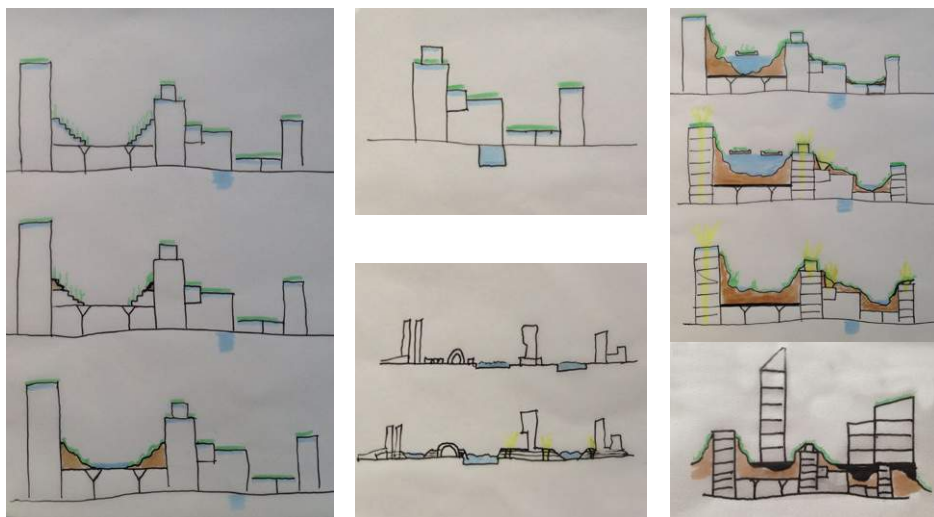
*Detail extending dwelling and letting in light*



*Detail degrading over time forming dykes*



*Visualisation showing original entrene underneath the deck and nature on the decayed dyke*



*The progression of the structure over time, connecting the urban block with the future scenario of Rotterdam*

## Group 3 : The Hidden Icon

Alice Corno | Francesco Paolo Rolfo | Radu Stanesco

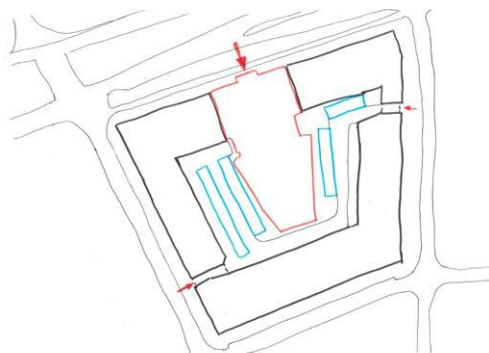
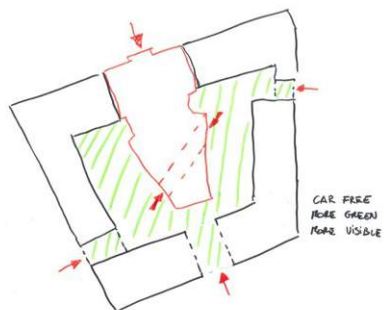
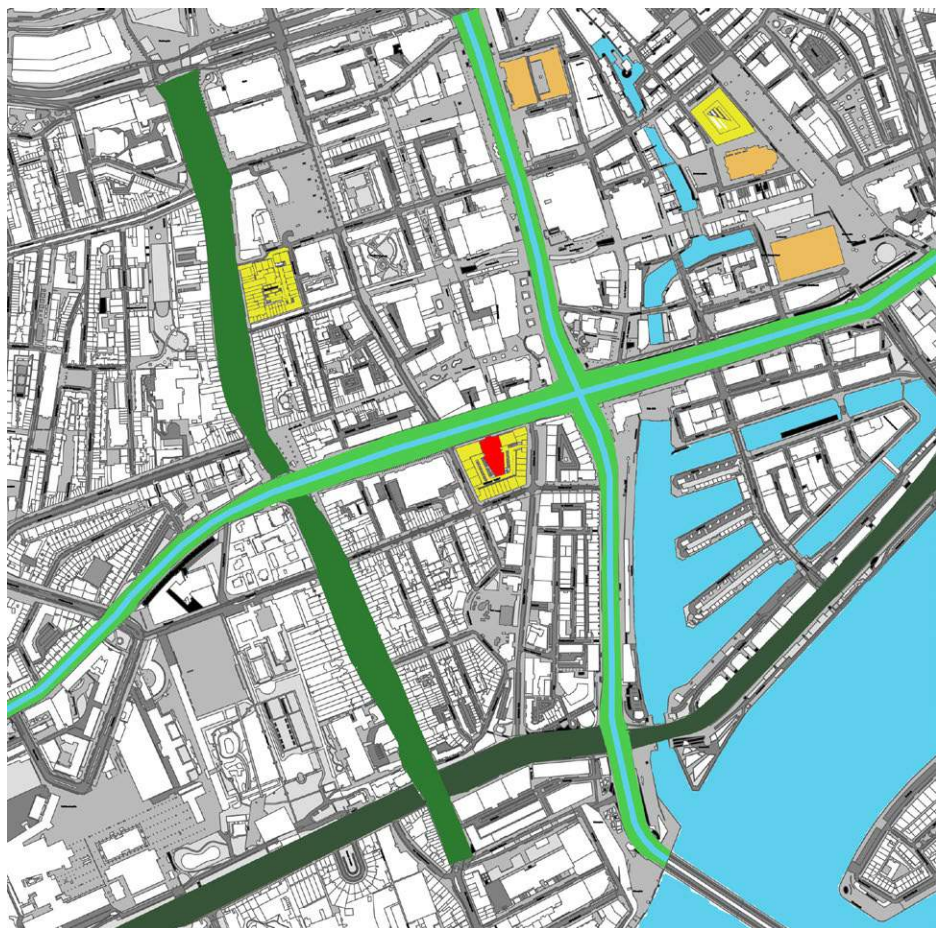
*The aim of this project to propose a strategy which can be expanded through the city. In the Cinerama block the courtyard will be transformed to a public space, where people can find a meeting point in their free-time. Moreover, this courtyard can be also used as water collector.*

*About the intervention on the block we designed a cut through the cinema for create a visual connection between the existing gates that provide the access to the courtyard, so that the space can be felt as a continuous area linked to the city. Furthermore, the Cinerama block would be linked to the city as a part of the water collector network, in which we aim to link the existing dyke ( Westzeedijk ) and the water collector ( Westersingel ) to our new interventions on the two of most important streets, passing through the city center, i.e. Westblaak and Schiedamsedijk. Our idea is to build two tunnels to move the traffic underground, so that the space above the tunnels could be used as green space and water collector. In extreme scenario also the tunnels can be flooded to store more water.*

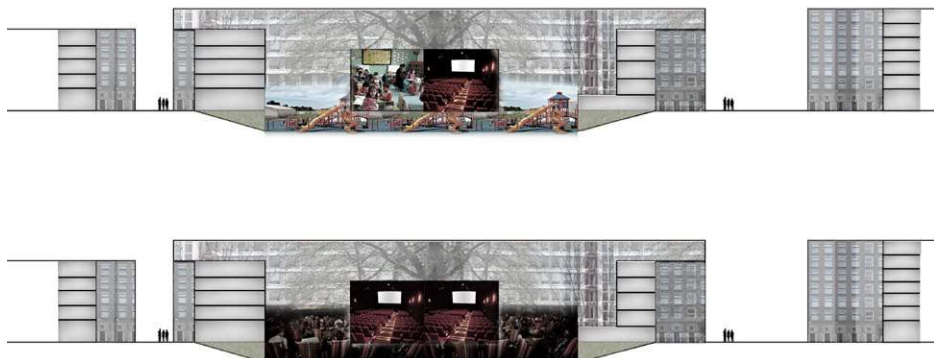
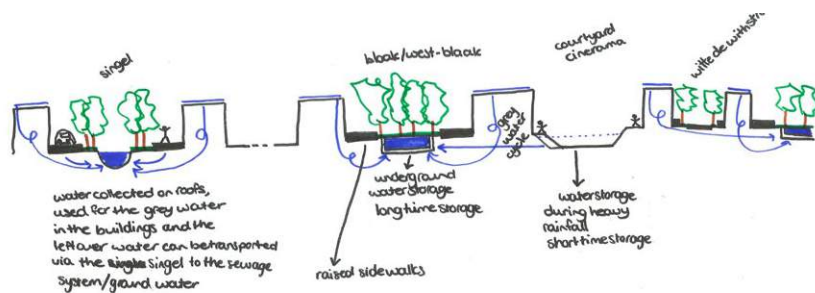
*By this project we would hope to give another life to the Cinerama block, through thinking of new functions for the block and providing a better connection with the city.*

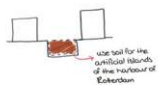
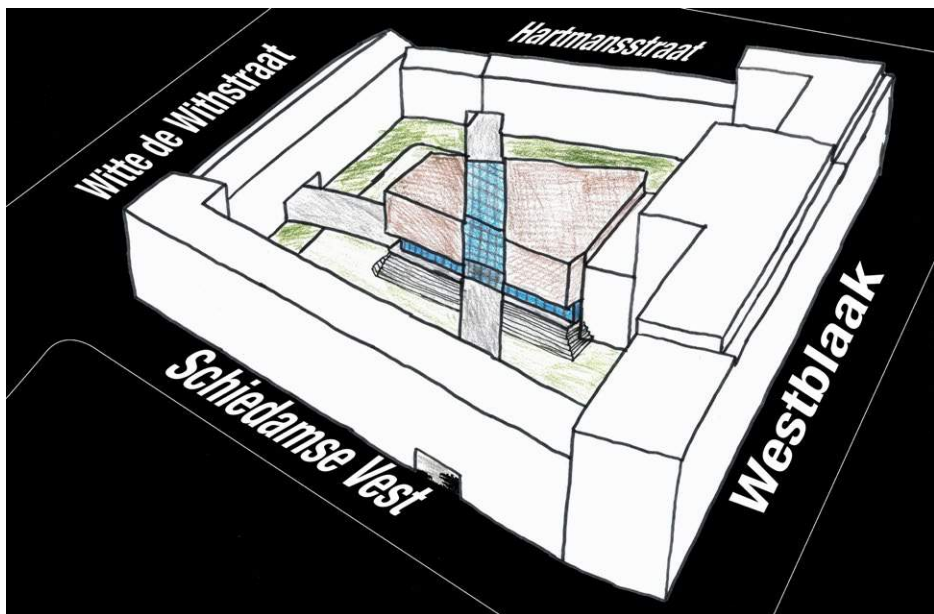






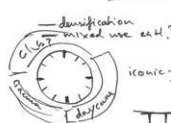
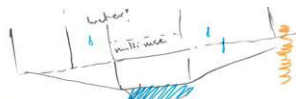




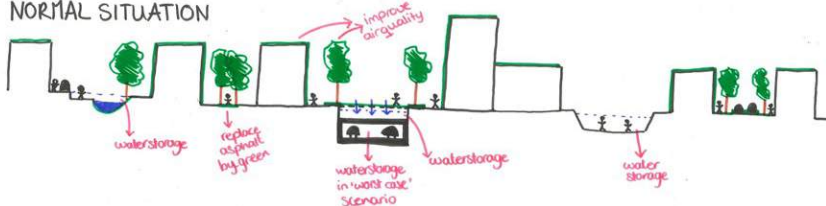


GREEN + WATER - CARS  
=  
better AIR & LIVING quality

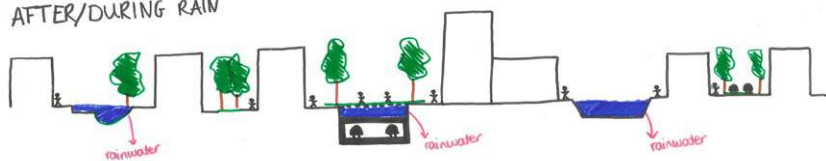
- day time functions:
- day care
  - parking
  - market place
- night time:
- cinema
  - bar



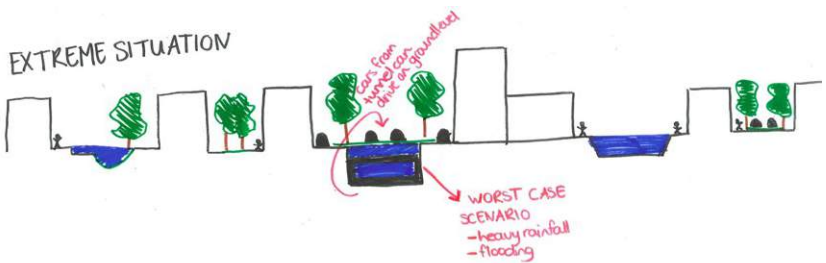
## NORMAL SITUATION



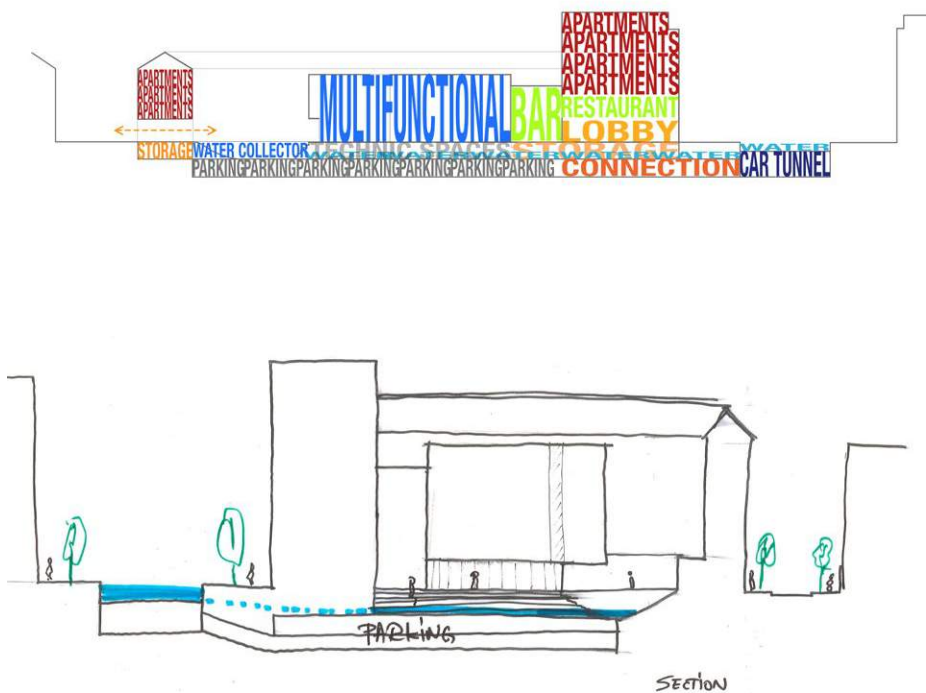
## AFTER/DURING RAIN



## EXTREME SITUATION







## Group 4 : FROM BACKYARD TO COURTYARDS

Corina CHIRILĂ | Lana FATTAH | Jiří KABELKA | Joseph RIGO

*The concept originates from looking at the block in relation to the courtyard with a strong focus on existing functions and spaces. Sustainability is practiced not only in the sense of traditional green design but also through the conservation and regeneration of the Cinerama.*

*The primary intervention is to negotiate between these two and to densify through addition of space and condensing function to allow extra functionality.*

*From here we zoom out and consider the city and its existing urban fabric. The block extends and interacts with the others through a water network. This is realized through a functional and visual quality. As the main material, water is utilized to create a sustainable intervention when placed back into the smaller scale of the courtyard.*

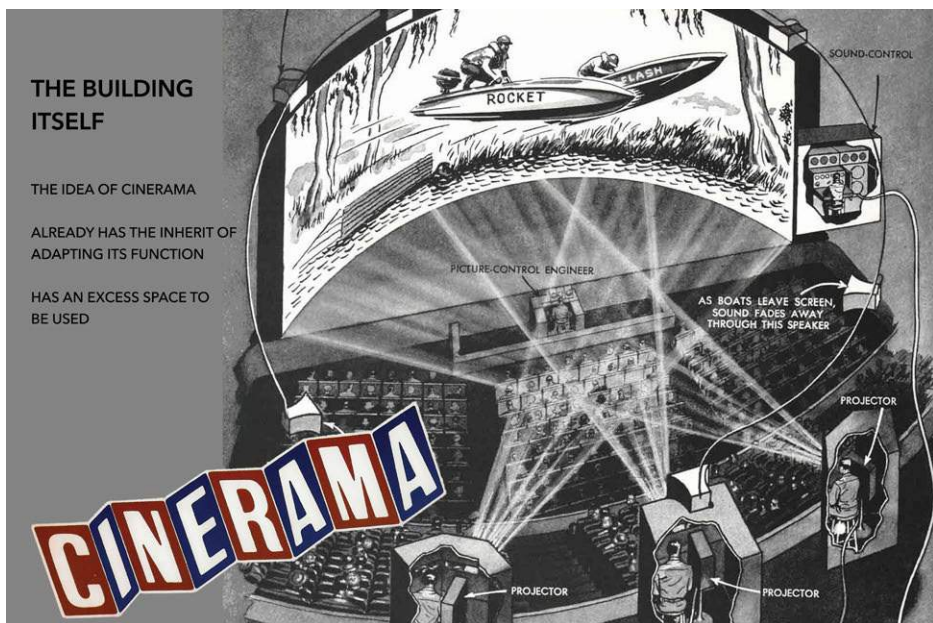


## THE BUILDING ITSELF

THE IDEA OF CINERAMA

ALREADY HAS THE INHERIT OF ADAPTING ITS FUNCTION

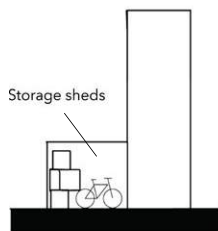
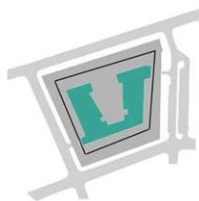
HAS AN EXCESS SPACE TO BE USED



MEDIUM SCALE



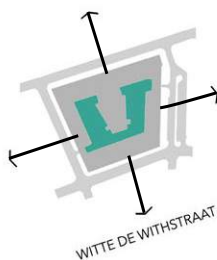
## The Courtyard Problems



STRANGE SHAPE  
TURNS BACK ON PUBLIC  
EXISTING STORAGE SHEDS  
DOES NOT CONTRIBUTE  
TO CREATE A LIVELY AREA



## The Courtyard Potential



DYNAMIC FROM EXISTING  
VOLUMES AND SPACES  
POSITION AND CONNECTION  
TO CITY  
NO BIAS BETWEEN FRONT  
AND BACK ELEVATION

HUMAN  
ENERGY

# Negotiation of Spaces and functions

How?

making connections through Decks

reuse and revitalise the existing urban fabric

# SUSTAINABLE

Balance of taking and giving

Contextual Sensitivity

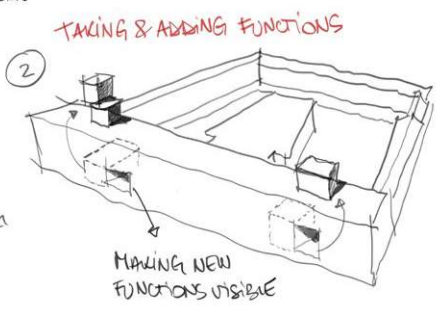
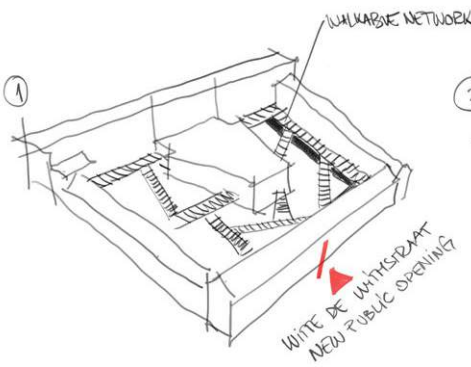
Reuse Existing

Green Approach

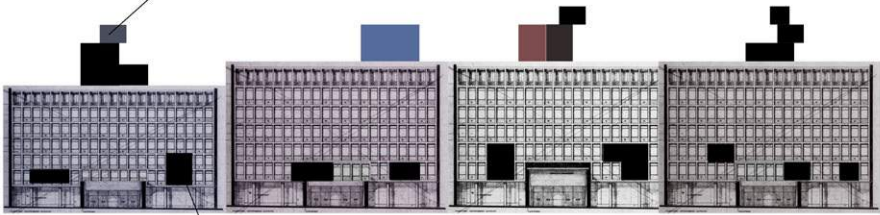
deconstruction for a new use and reconstruction to replace this in another part.

social - improving quality of the space  
Future- could this be extended to the next

Increasing potential for same area With aid of the existing character and energy of the street



Balance between taking&giving  
Different functions (mainly residential - a new density)



See through cuttings that relate to public functions



## Urban Scale and Water Metabolism

*A system of courtyards are connected through the water: the character of the water court, functionally and spatially, is based on the potential local identity of each block.*

*The existing courtyards interact with each other through the created water network*

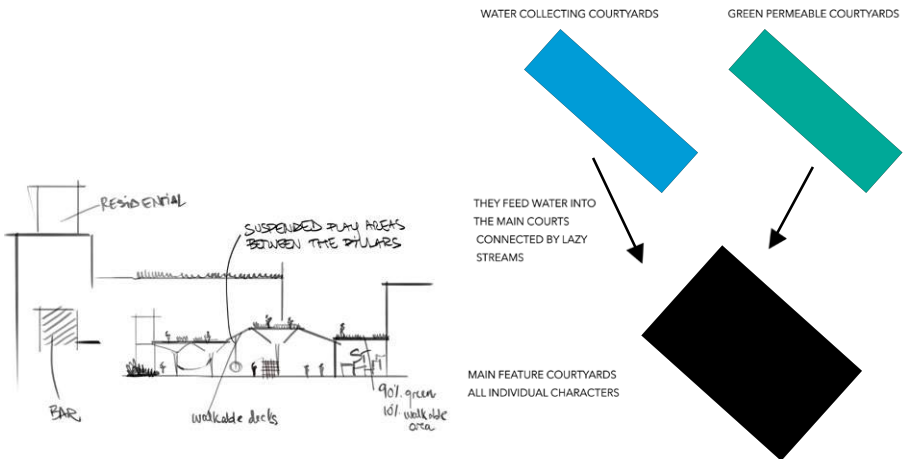
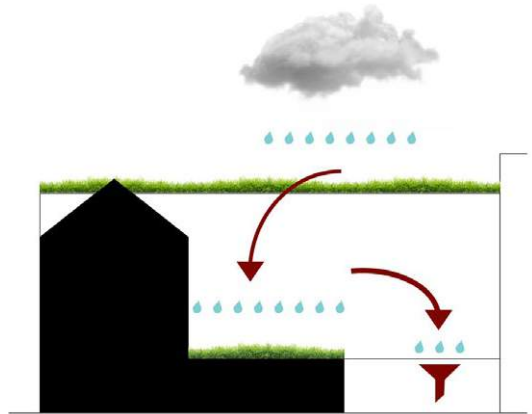
*The water network is a proposed to slow down the passerby on his/her journey through the city.*

### LAZY STREAM

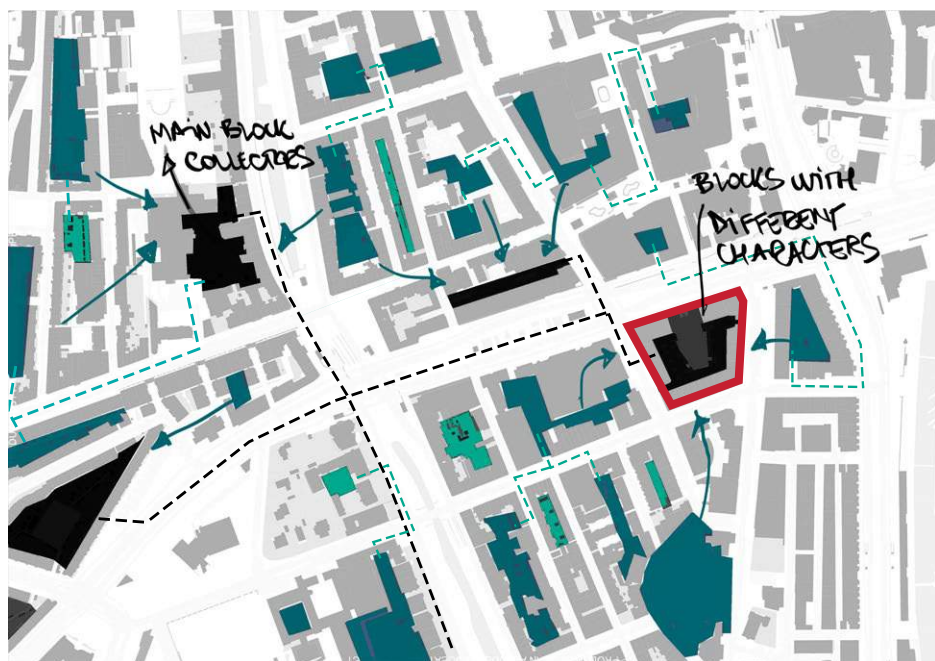
*Visual impact making you aware of the surroundings.*

### LAZY WATERFALL

*Functional intervention, focused on the courtyard itself.*



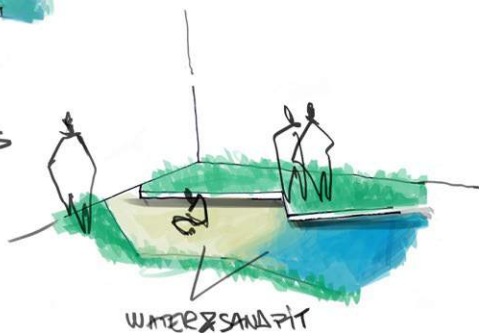
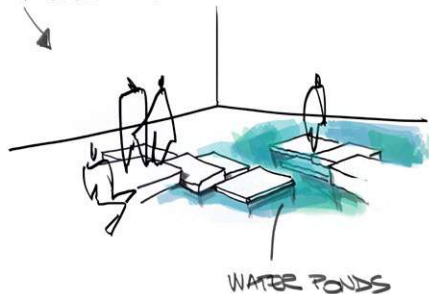


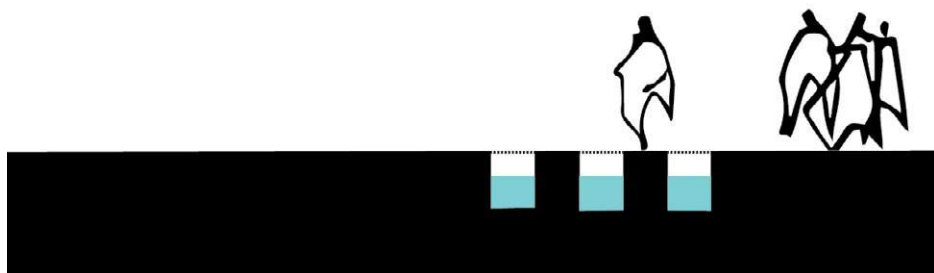
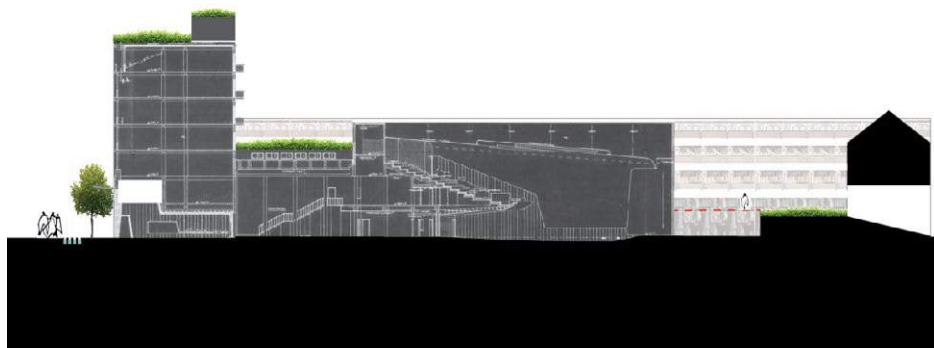


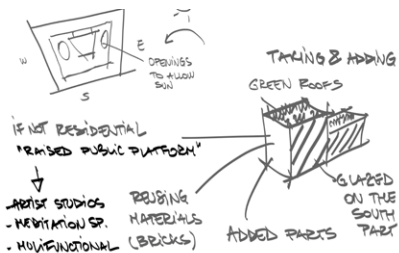
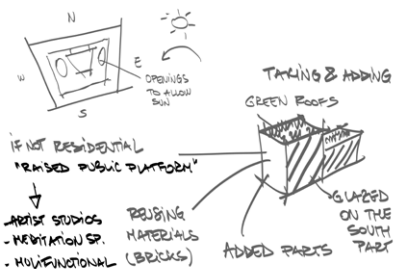
URBAN SCALE & WATER METABOLISM



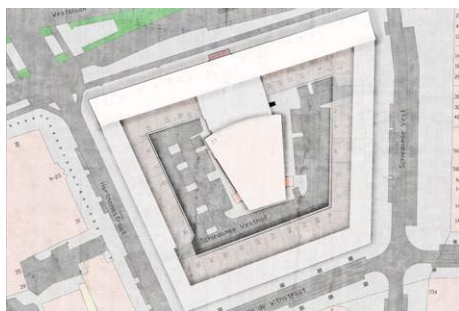
EACH COURT HAS AN INDIVIDUAL CHARACTER



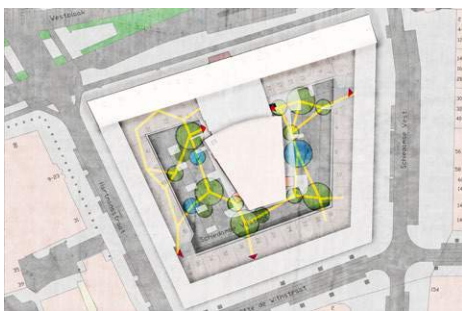








MEDIUM SCALE



## Group 5 : Cinerama Block, Water, Dance, Ballet

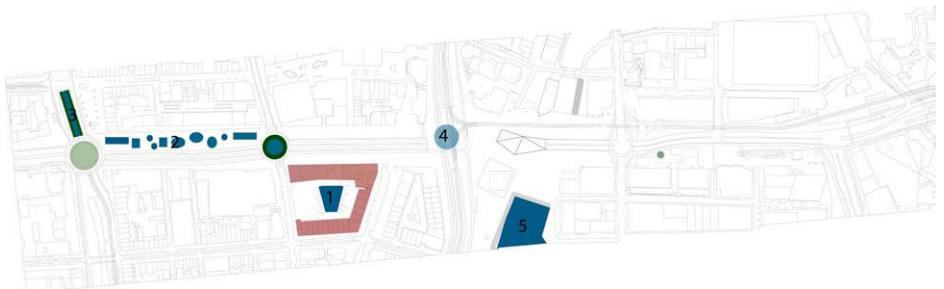
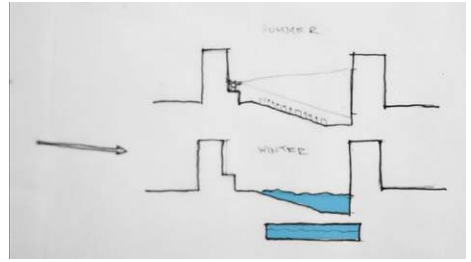
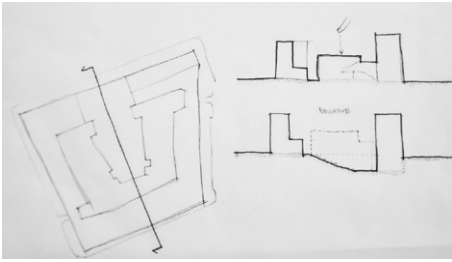
Razvan Gheorghe | Marco Lunati | Daniele Beacco | Aly Hajhassani

*The architectural proposal aims to re-define the Cinerama urban block integrating elements, designing each part as complex unity and each building component following the sustainability goal in a wider meaning. The main elements are designed regarding the upgrading of the public space, increasing cross connections, the development of double-side shops/bars, open auditorium and a green space. The sustainability is also researched thinking about solar energy retain covering the courtyard, the water retain is faced by the constructing a water tank (in winter) and an auditorium (in summer). The existing Cinerame will remain as a memory of the city.*



Razvan Gheorghe, Marco Lunati, Aly Hajhassani, Daniele Beacco

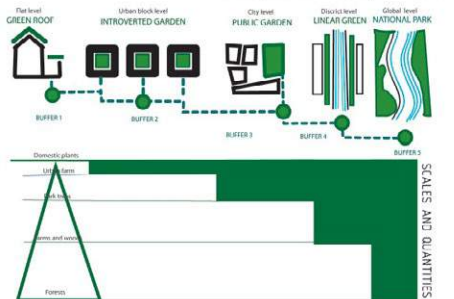
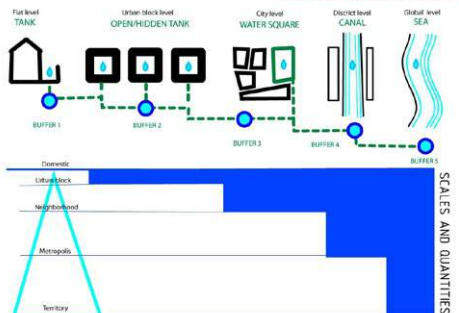
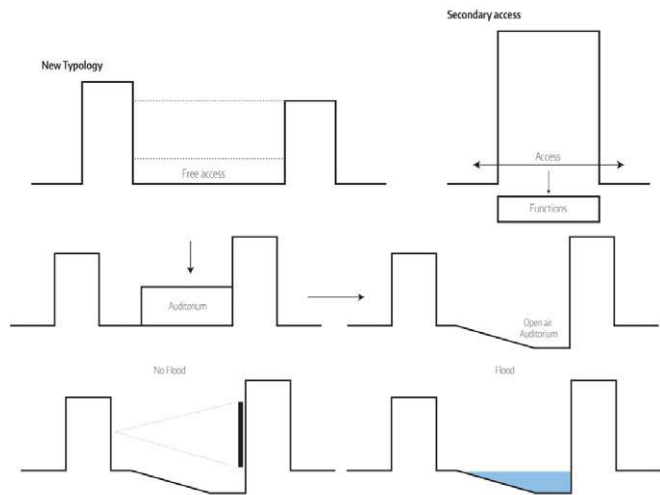




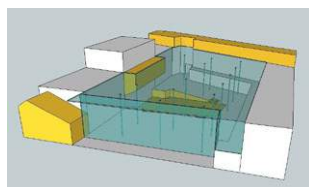
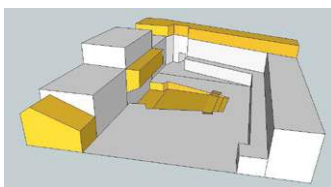
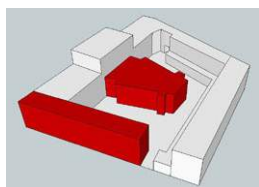
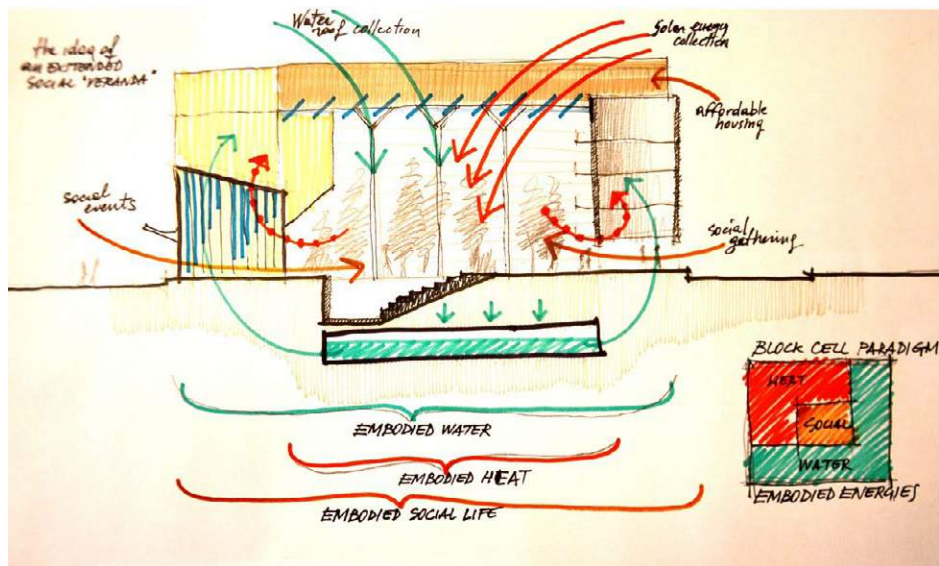
Different uses of water



*The first step takes place at a DOMESTIC level. Rain water is used to watering grass roof and terraces, then it's collected in gray-water tanks in order to use it once again before directing it in the sewerage system. The second step concerns the scale of URBAN BLOCK. The excess grey water of each urban block is collected in several hidden and surface tanks and from there it is spread across the neighborhood. The third step is the CITY scale. Water is directed in water squares as a source for citizen' recreational activities. As fourth step all the water squares are connected to a canal system which is used for the watering of the countryside fields. Eventually, excess water reaches the sea, going to a GLOBAL scale.*







## 6. Reading List

- Kees Christiaanse, Nicolas Kretschmann, Martina Baum, Simon Kretz,, „*OPEN CITY*” *ROTTERDAM*, Chair of architecture and Urban Design, Urban Design Studio 2009
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- Rotor, *Behind The Green Door, A Critical Look at Sustainable Architecture through 600 Objects*, (Oslo Architecture Triennale: 2014)
- Andres Lepik, *Small Scale, Big Change: New Architectures of Social Engagement*, (MoMA: 2010)
- V. Beumer, H. Hulsman MSc., E. Koning, *Exploring Opportunities for Green Adaptation in Rotterdam*, National Research Programme Knowledge for Climate/Nationaal Onderzoekprogramma Kennis voor Klimaat (KvK) , 2012
- Bobbink, Inge, *Water in Sight, An exploration into landscape architectonic transformations of polder water* (TU Delft:2014)
- Brugmans, George and Strien, Jolanda (ed.), *IABR-2014, Urban by Nature* (Rotterdam: IRBR, 2014).
- F. McLennanThe , Jason, *Philosophy of Sustainable Design: The Future of Architecture* (Kansas City: Ecotone Publishing Company LLC, 2004)
- Altomonte, Sergio (ed.), *Sustainable Architectural Education*, The University of Nottingham, Architectural Association of Architecture, Université Catholique de Louvain, Architecture et Climat, Technische Universität München, Dipartimento DATA, Università di Roma La Sapienza, Seminario de Arquitectura y Medioambiente, Budapesti Műszaki és Gazdaságtudományi Egyetem (Nottingham: EDUCATE Press, 2012)

