

VOID STUDY

UNSTUDIO PROJECTS

APRIL 2015

CONTENTS

UNSTUDIO PROJECTS

1. RAFFLES CITY HANGZHOU | HANGZHOU, CHINA
2. RIVM & CBG HEADQUARTERS | UTRECHT, NETHERLANDS
3. STAR PLACE, INTERIOR | KAOHSIUNG, TAIWAN
4. GALLERIA CENTERCITY INTERIOR | CHEONAN, KOREA
5. UNSTUDIO TOWER | AMSTERDAM, NETHERLANDS
6. RESEARCH LABORATORY | GRONINGEN, NETHERLANDS
7. EDUCATION EXECUTIVE AGENCY & TAX OFFICES | GRONINGEN, NETHERLANDS
8. CASTLE TOWERS | SYDNEY, AUSTRALIA
9. MERCEDES- BENZ MUSEUM | STUTTGART, GERMANY
10. THE NATIONAL ART MUSEUM OF CHINA | BEIJING, CHINA
11. SINGAPORE UNIVERSITY OF TECHNOLOGY AND DESIGN | SINGAPORE
12. FLAGSHIPSTORE LOUIS VUITTON | JAPAN

18TH APRIL 2015

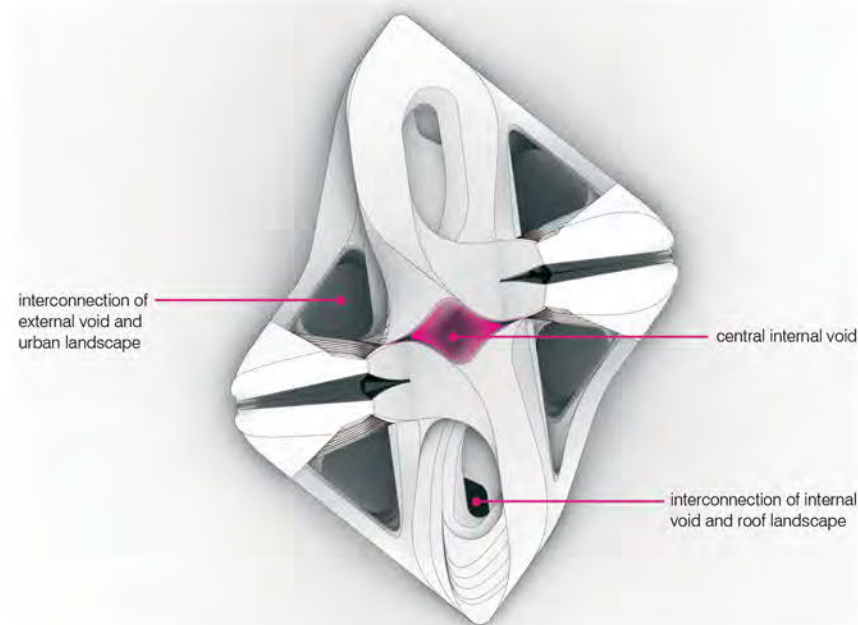
RAFFLES CITY

Title: Raffles City

Location: Hangzhou, China
Year: 2008-2014

Status: Under Construction
Building Typology: Mixed Use

Total surface area: 389.489 m²



WHAT

This project is a mixed used twin tower with retail, hotel, office and housing. The requirements of the three programs come together through a transformational process which is based on the concept of the twist; by focusing on where the urban context meets the landscape of the city.

KEY SIGNATURE ELEMENTS

- Twisted void geometry (spiral element)
- A unified formal gesture merging the urban landscape with the building context through the rooftop which is connected with these internal voids.

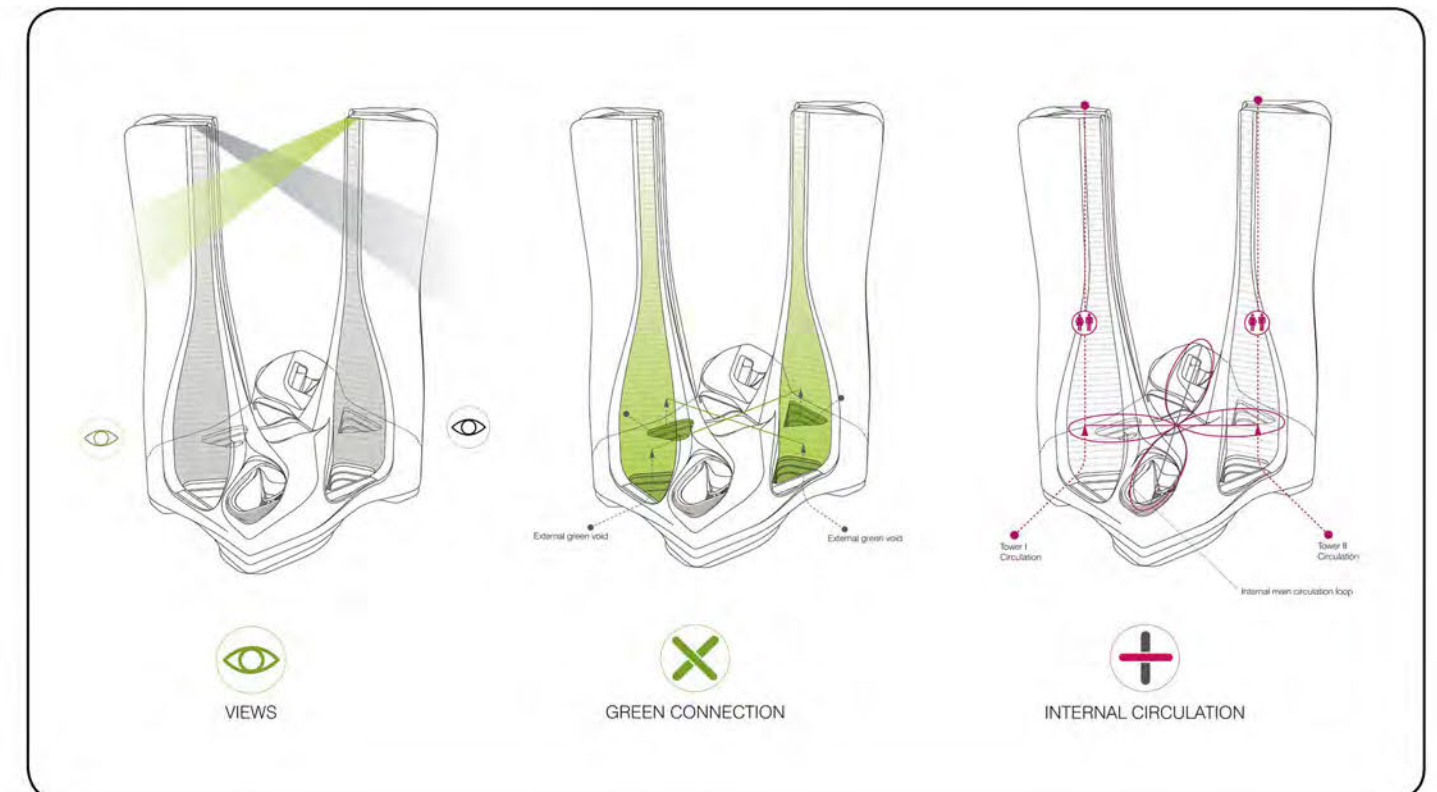
VOID TYPOLOGY

External voids

- 4 green country yards (atriums) interconnected with the urban context.

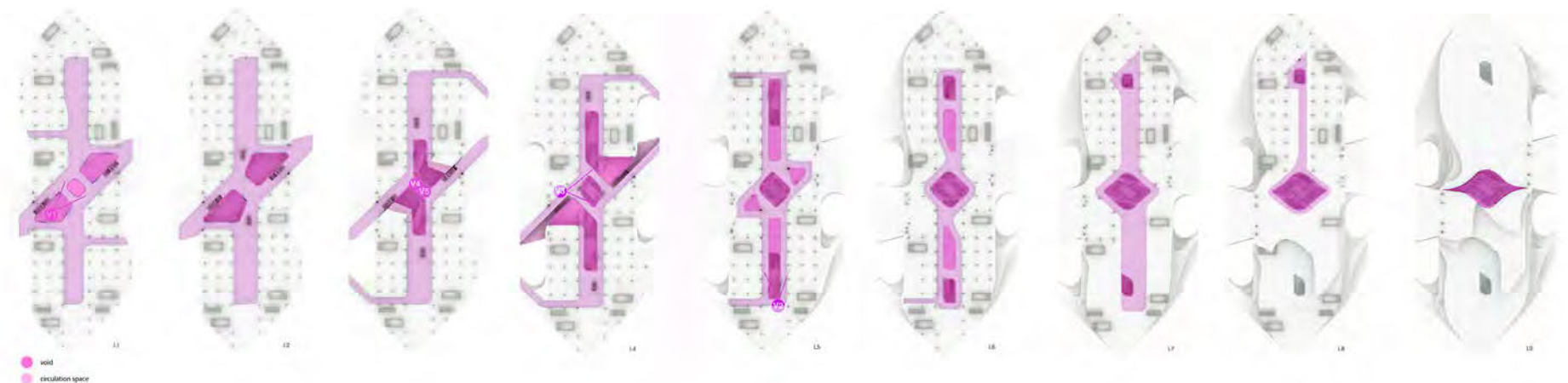
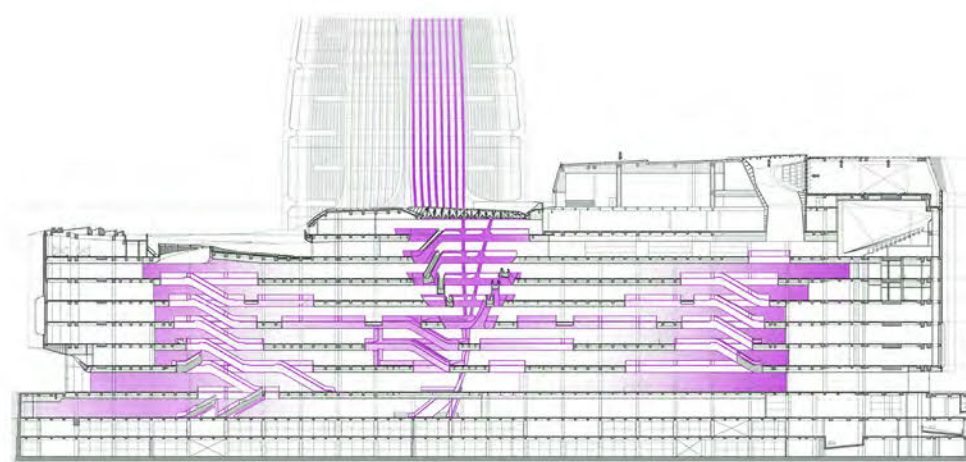
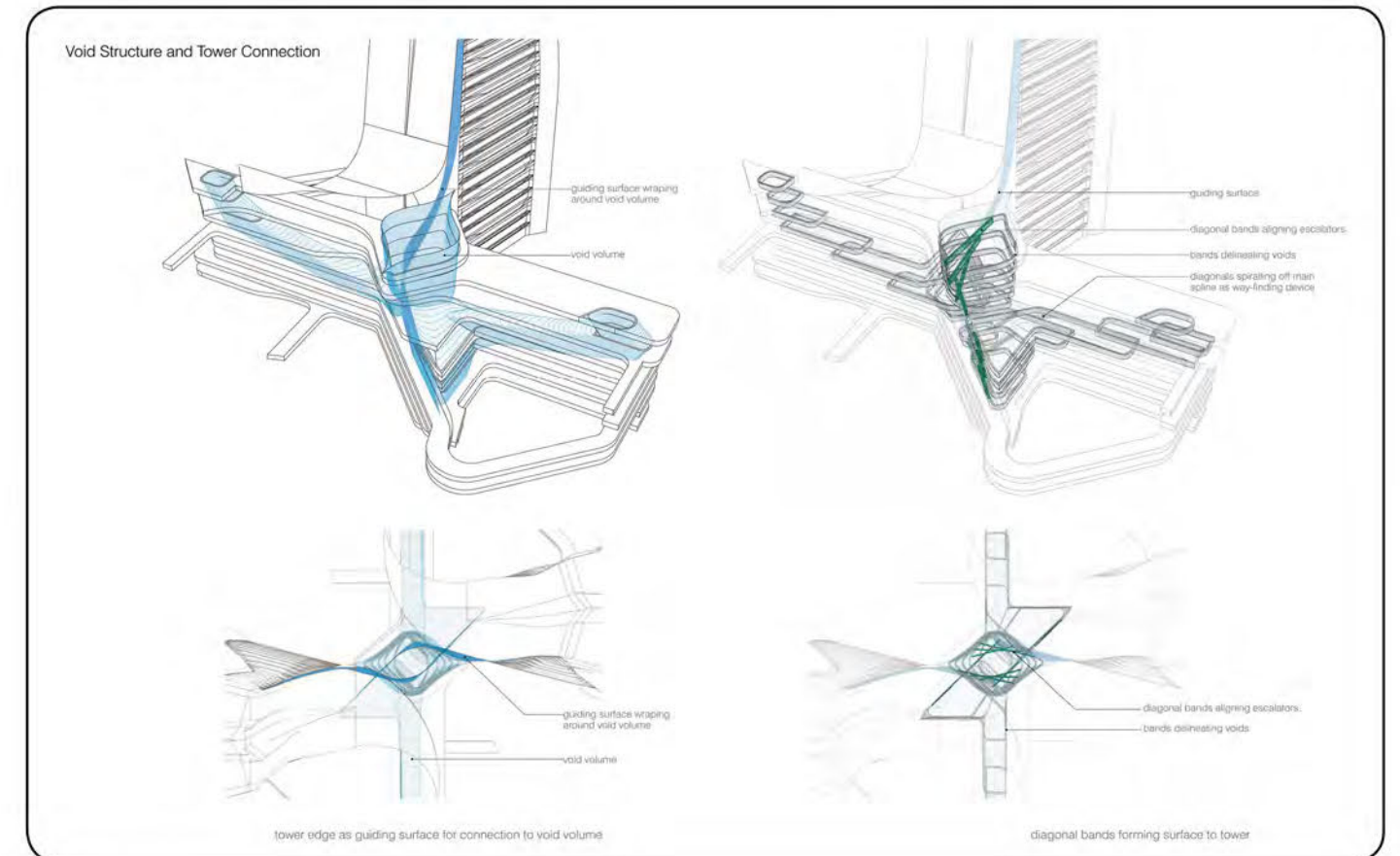
Internal voids

- A system of interconnected voids, with a central twisted void
- Circulation (escalators, lifts, staircases and walkways) organized around this network
- Sunlight penetration and natural ventilation through the rooftop which is connected with these internal voids.



18TH APRIL 2015

RAFFLES CITY



18TH APRIL 2015

RIVM & CBG HEADQUARTERS

Title: RIVM & CBG Headquarters

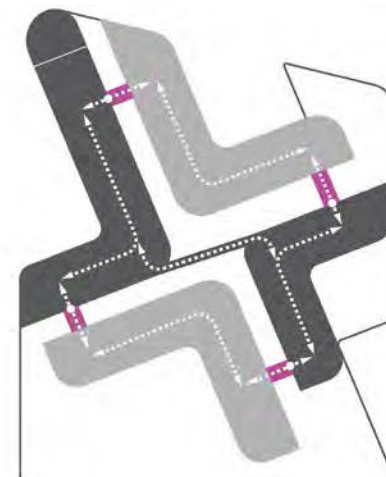
Location: Utrecht, Netherlands

Year: 2012-2014

Status: Competition Entry

Building Typology: Office / Research lab

Total surface area: ca. 70.000 m²



WHAT

The aim of this project is to integrate two organizations in one building in order to promote the synergy of universities, educational institutions, research institutes and knowledge intensive companies. The 'Cross' design model proposed brings together the offices and laboratories into a unified and functional whole, with direct visual connectivity.

KEY SIGNATURE ELEMENTS

A very efficient model of centralized organization, due to the shortened travel distance from the central point to the wing ends

VOID TYPOLOGY

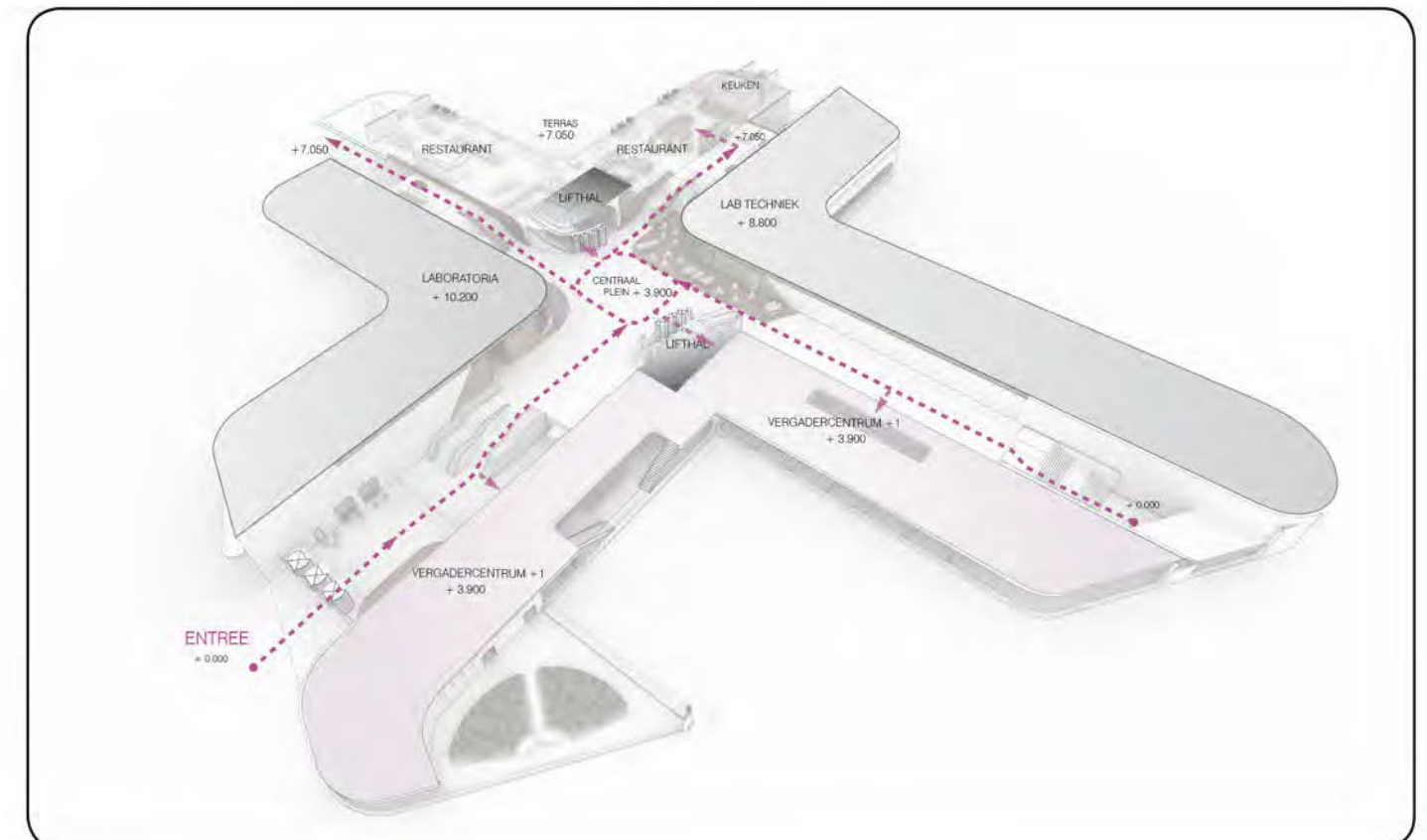
Cross model comprised of a large central hall and branching streets.

The central void:

- A 6-storey, public, indoor square, a communal core that binds together the four wings of the building visually, organizationally and in terms of circulation

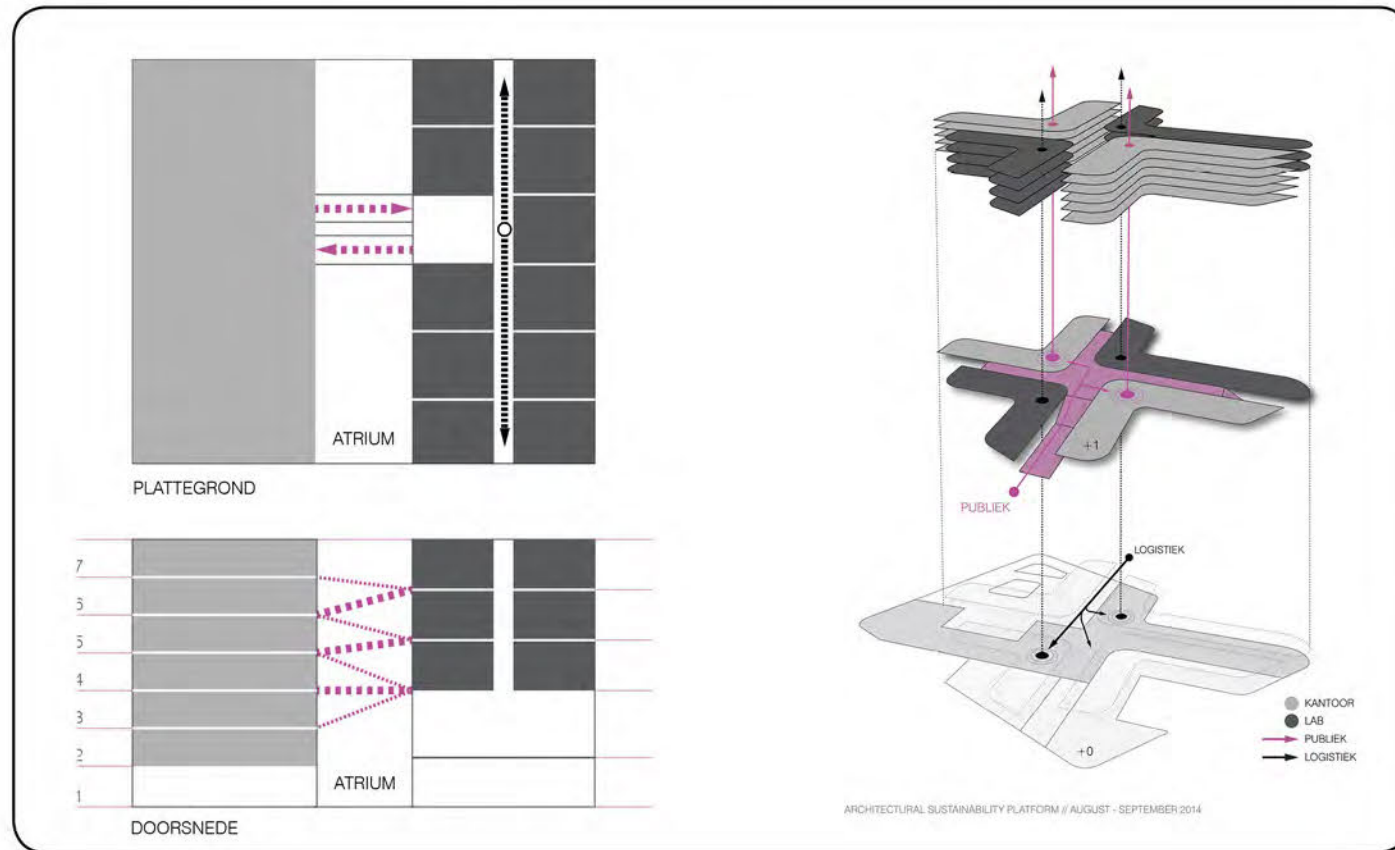
The branching streets:

- four light-filled voids that bring together the two different uses
- Communication is promoted through bridges which connect between the office and the lab wings.

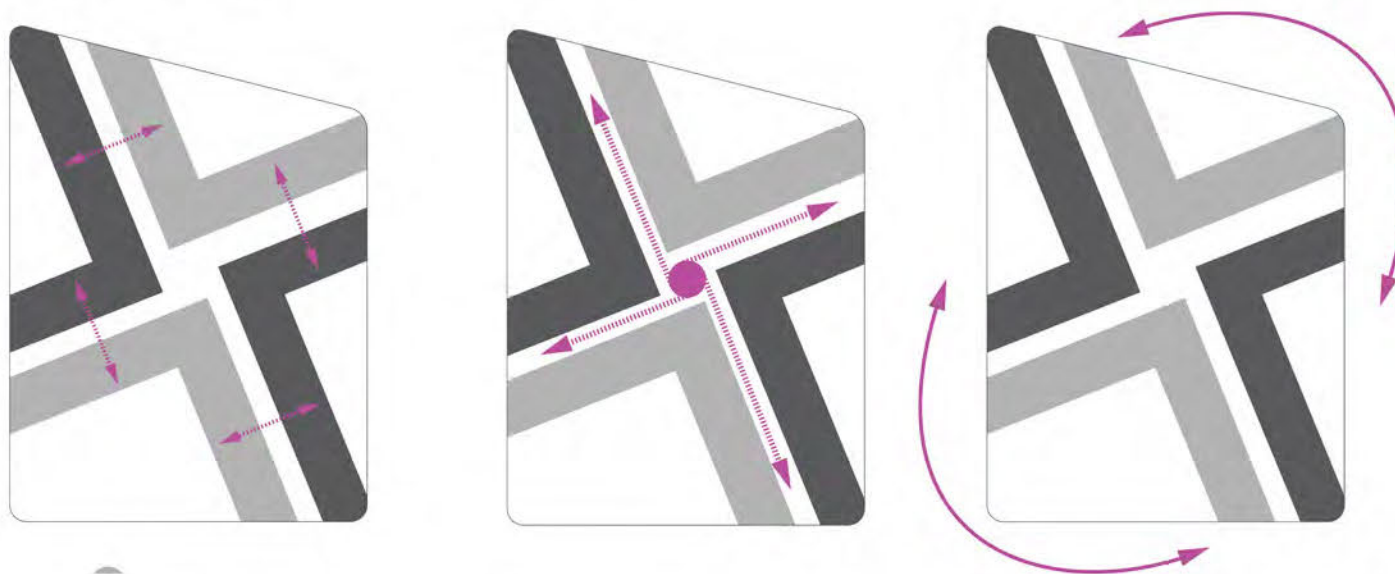


18TH APRIL 2015

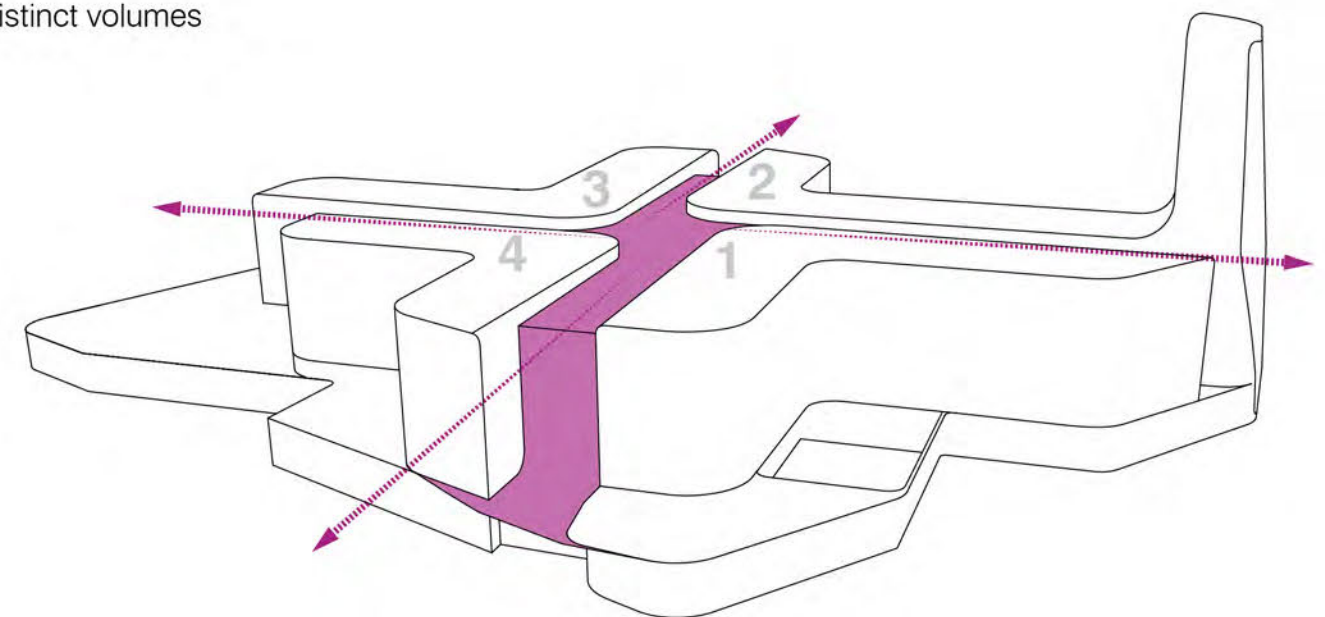
RIVM & CBG HEADQUARTERS



massing concept



distinct volumes



18TH APRIL 2015

STAR PLACE

Title: Star Place

Location: Kaohsiung, Taiwan

Year: 2006-2008

Status: Realized

Building Typology: Retail / Shopping

Total surface area: 25.500 m² +
11.100 m² for parking levels



WHAT

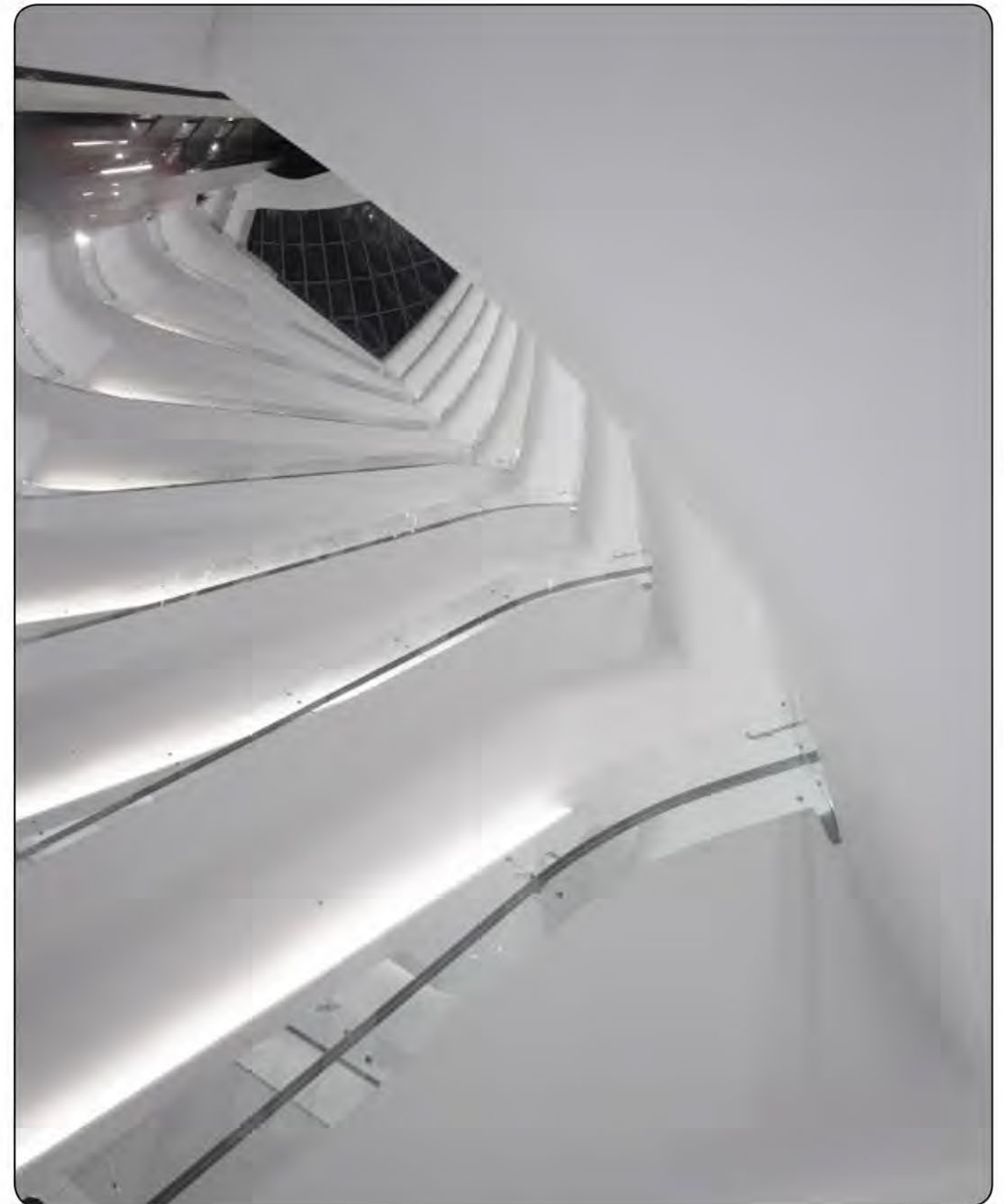
The concept for the interior organization of the Star Place reacts to the ambition to develop a store on several floors with multiple access points. Therefore the central circulation space is designed as a continuous floor space merging in to one vertical void. The geometric principle of the vertical void space is the allocation of the elements of vertical circulation around the central zone of the store. The vertical space also acts as a way-finding instrument and as an orientation point.

KEY SIGNATURE ELEMENTS

- Void twisted geometry
- The vertical circulation (escalators) is used as an expressive design tool.

VOID TYPOLOGY

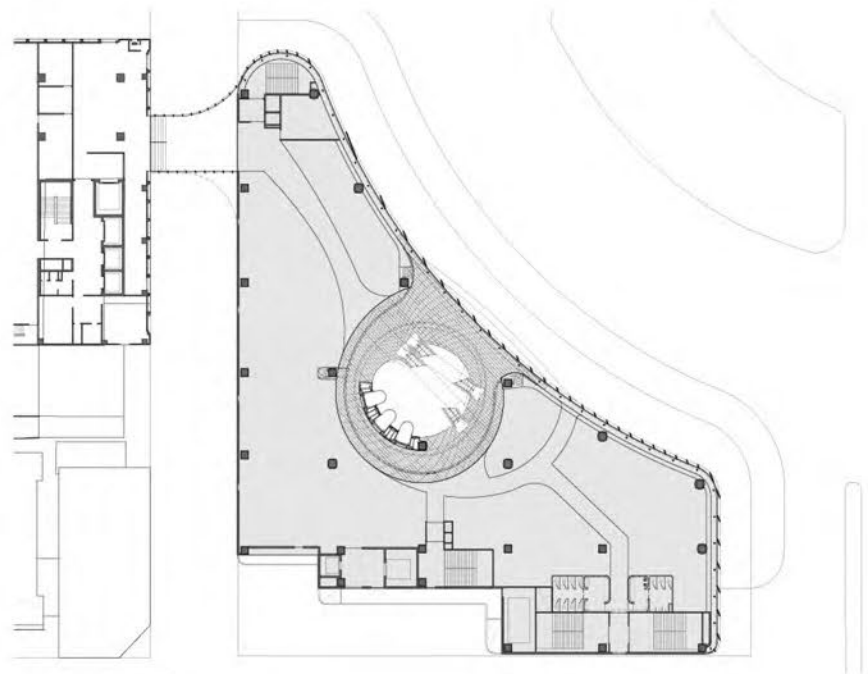
- A central connecting element within the building.
- The vertical circulation (three panorama elevators and two sets of escalators) is organized inside the circular shaped void.
- An open circulation space surrounds the void providing direct access to the shops.
- The atrium functions as a vertical shop window.
- A straight, circular opening slanting and twisting
- The optical effect is generated by the rotation of the escalators (10° per floor, resulting in a 110° rotation from ground level to the roof)
- The 12-floor deep void is attached to the façade, rather than deeper inside the building, in order to facilitate inside-outside relations and sunlight penetration.



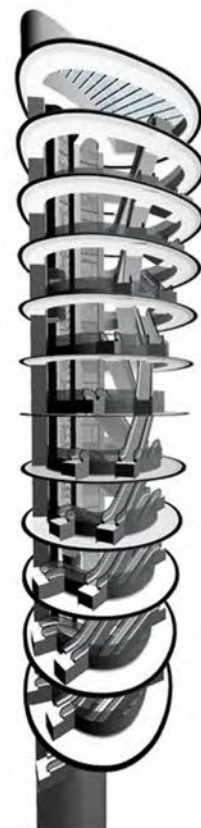
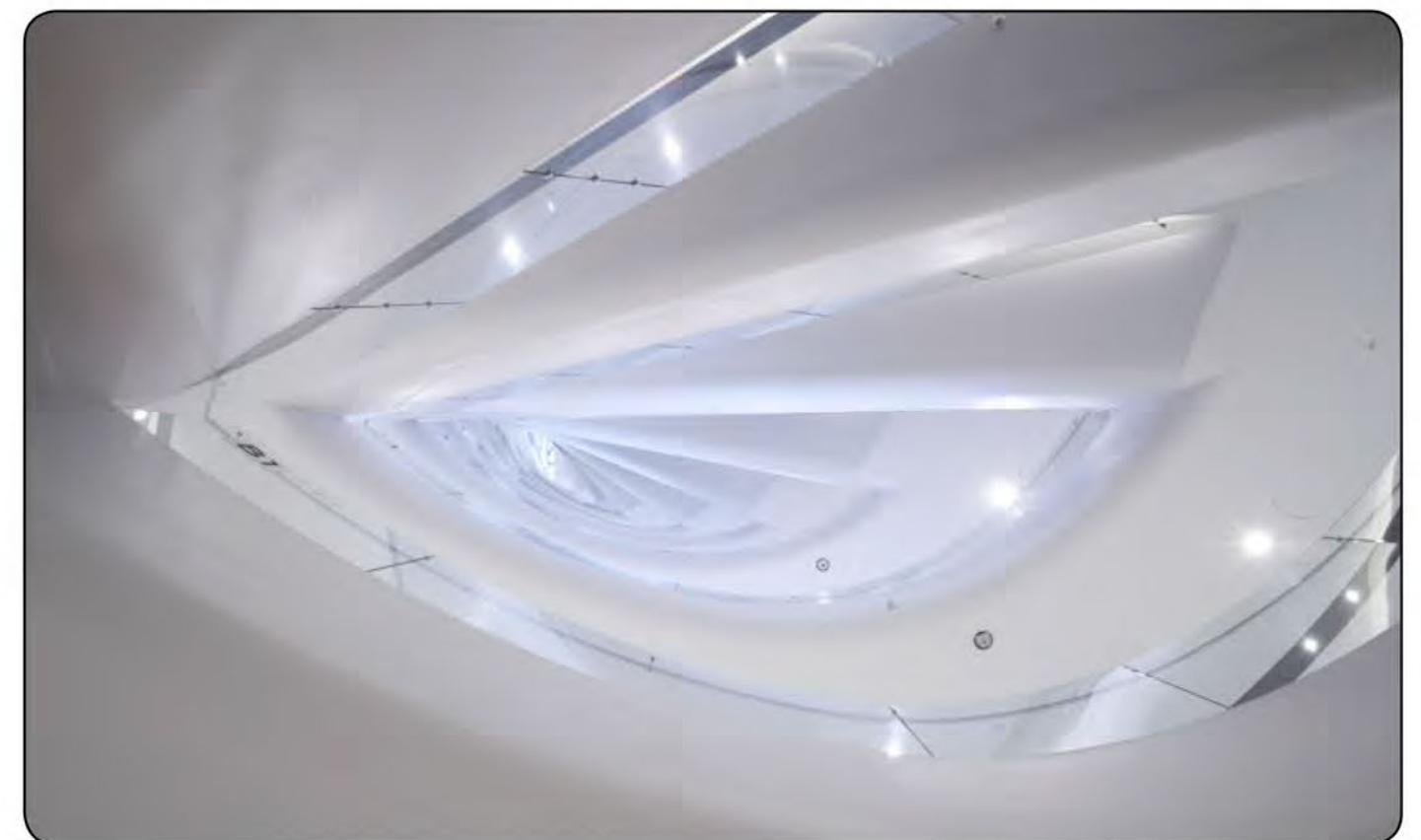
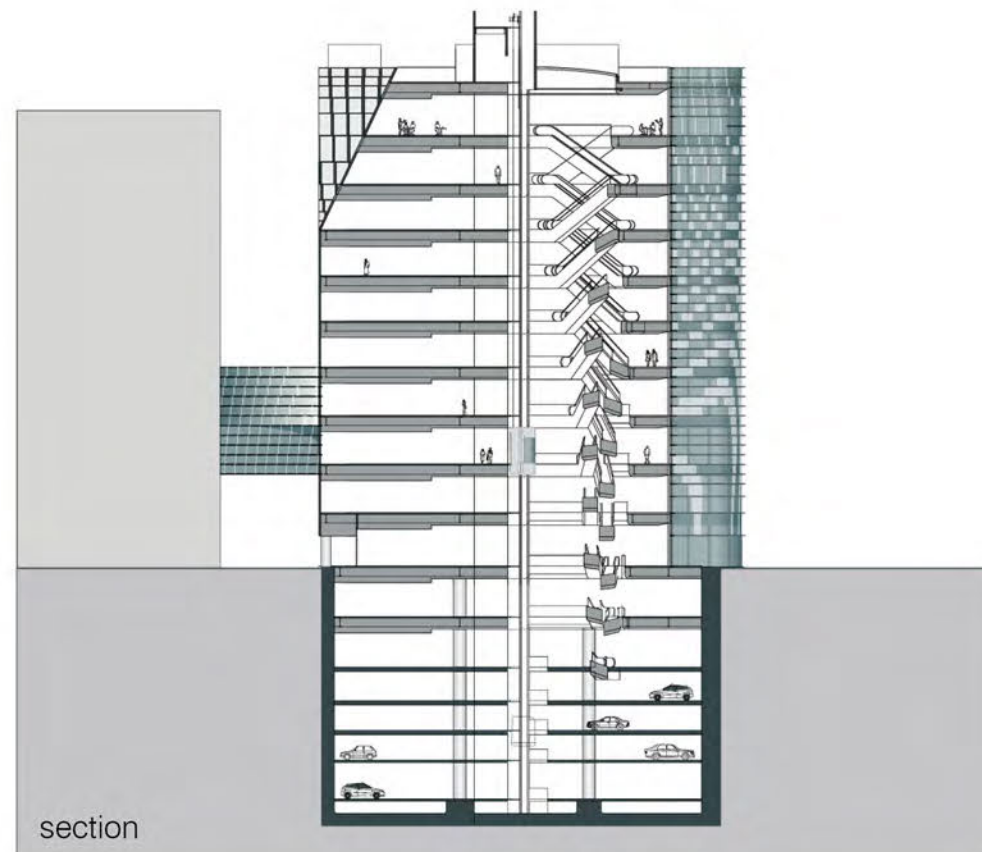
1.0 / VOID ANALYSIS INVENTIVE ORGANISATIONS PLATFORM

18TH APRIL 2015

STAR PLACE



3rd floorplan



18TH APRIL 2015

GALLERIA CENTERCITY

Title: Galleria Centercity

Location: Cheonan, Korea

Year: 2006-2008

Status: Realized

Building Typology: Retail / Shopping

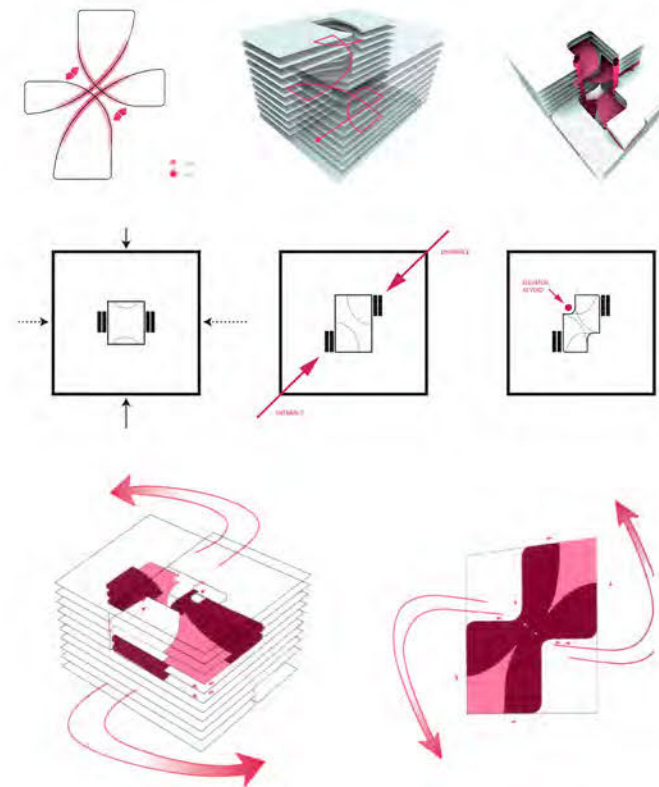
Total surface area: : 66,700 m²

WHAT

This Galleria Centercity department store aims to become an attractor stimulating the customers to prolong their stay on the site. The concept is based on the idea of the propeller. It is expressed as the fluent upstream flow of people through the building, while the propeller wings stream the people outwards to plateaus on the various levels. The public plateaus are related to the facades and as these plateaus are revolving around the central void and stacking the four different zones of the building, this is reflected also in the building envelope.

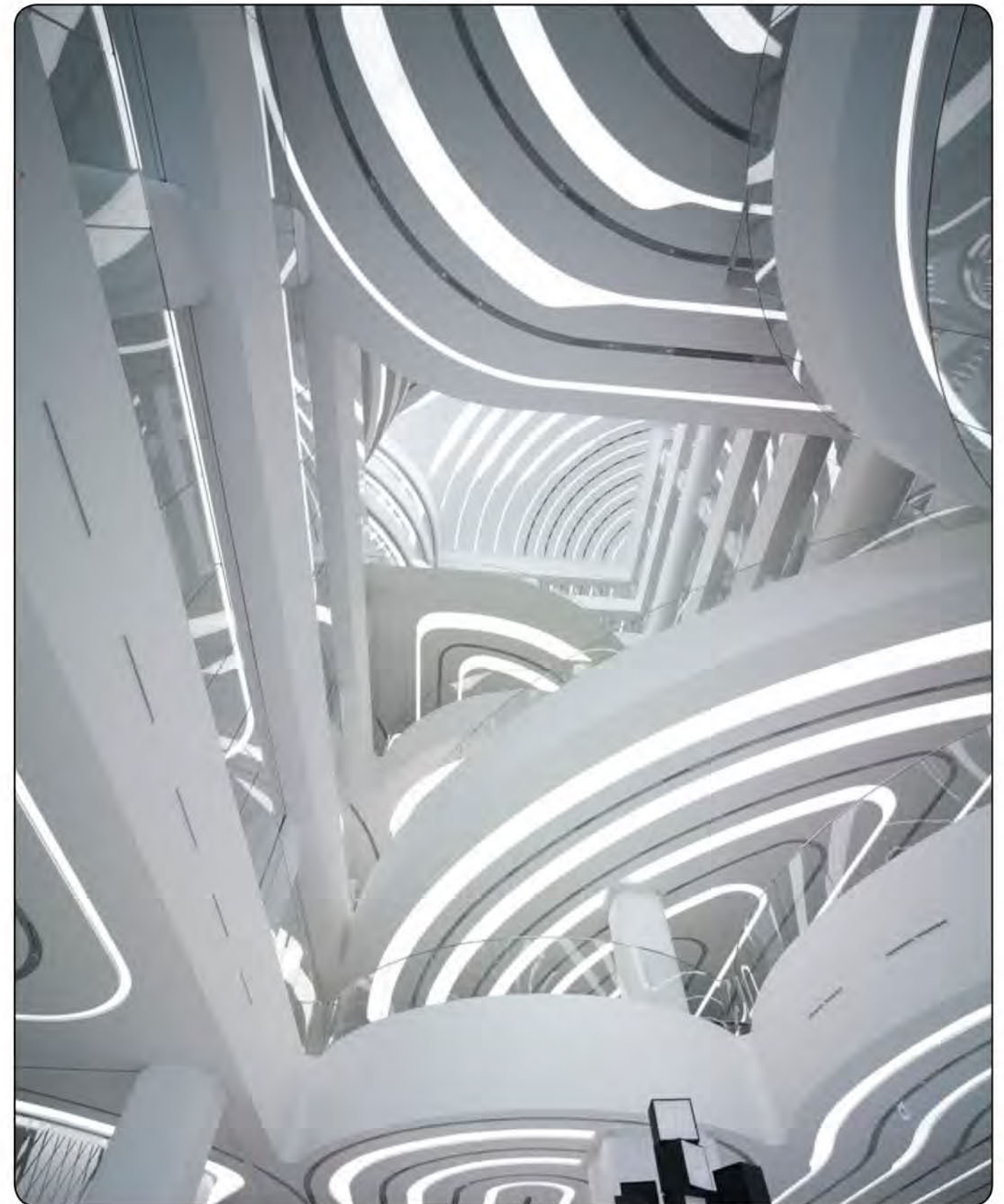
KEY SIGNATURE ELEMENTS

- Sunlight penetration and visual links both within the central space and to the exterior, as the plateaus are pulled towards the facades
- The idea of the continuous contours expressed to the void volume but also to the light design of the ceiling.
- Rotational view / propeller



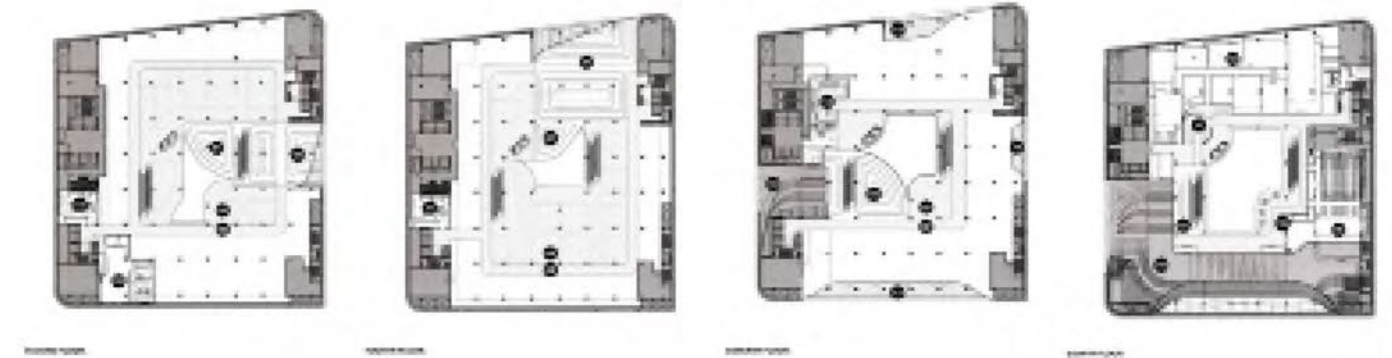
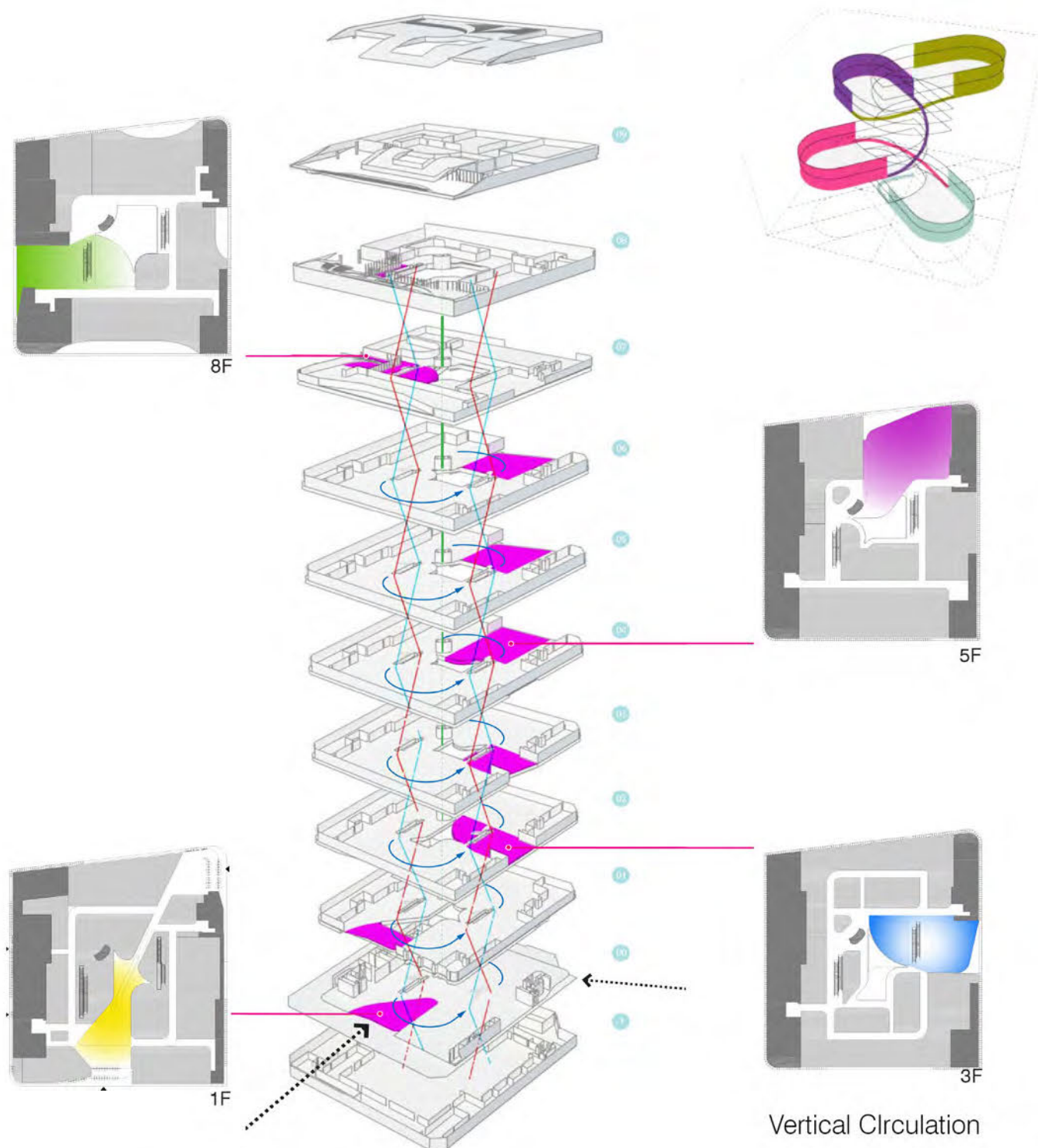
VOID TYPOLOGY

- A central vertical void connecting the several public plateaus spatially with each other.
- The vertical circulation is combined with the void
- The position of plateaus in a rotational manner makes the internal void, a focal point of way finding, vertical circulation, orientation point and main attractor of the department store.
- The central void allows visual links inside the building.
- Openings to the outside allow daylight coming in the void and also facilitate inside-outside relations.



18TH APRIL 2015

GALLERIA CENTERCITY



18TH APRIL 2015

UNSTUDIO TOWER

Title: UNStudio Tower

Location: Amsterdam, Netherlands
Year: 2004-2010

Status: Realized
Building Typology: Office

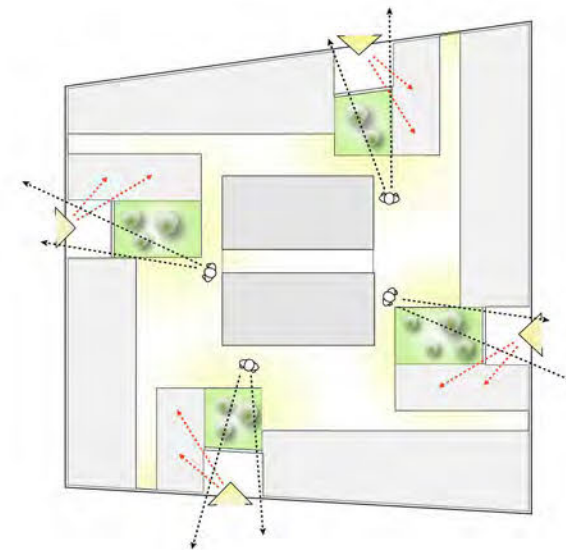
Total surface area: 28.280 m²

WHAT

UNStudio Tower forms part of the Mahler 4 urban complex, a cluster of six buildings located in the heart of the South Axis in Amsterdam. Two main concepts; one is the void concept. Vertical voids are recessed into each façade elevation. The second is the transparency which is incorporated into the facade minimizing the use of artificial light.

KEY SIGNATURE ELEMENTS

- Gradient experience of the inside-outside condition - the transparency of the primarily glass façade, in combination with the vertical voids
- The small outdoor spaces which are incorporated into the recessed voids in the form of roofed balconies which allow for transition.
- Flexibility in their transformation of the voids into (internal and external) individual balconies on each floor for residential use in the future



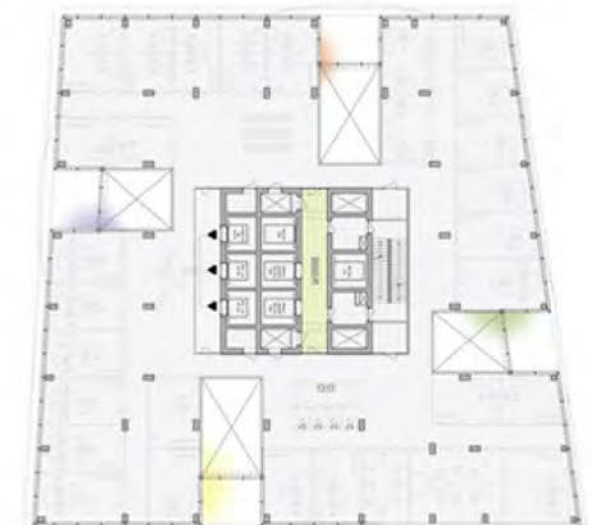
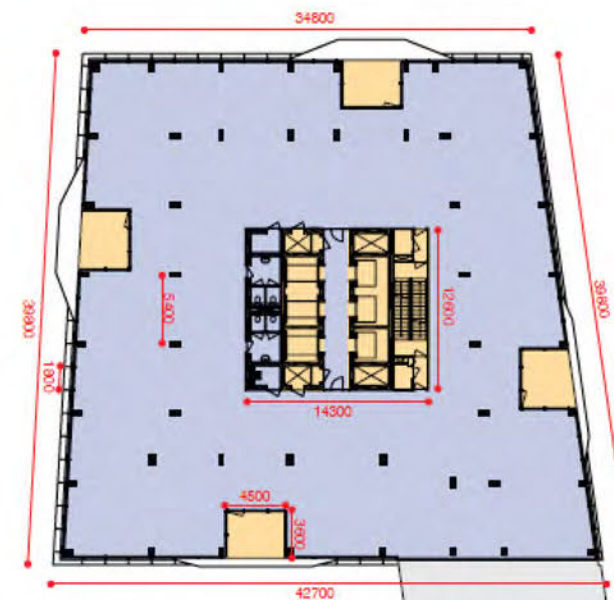
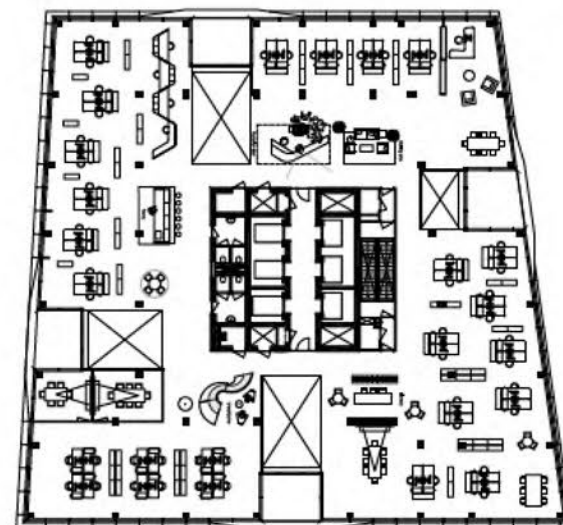
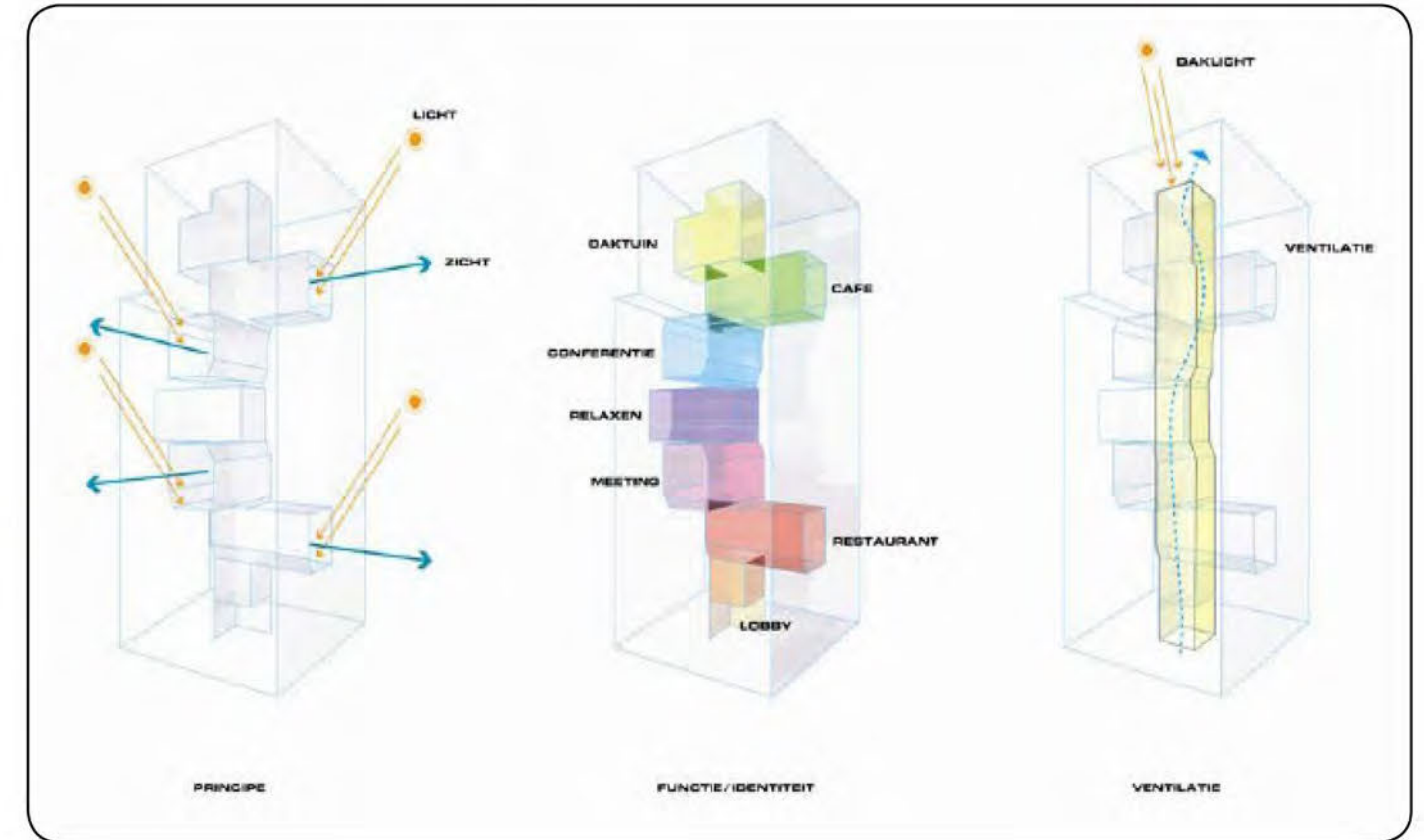
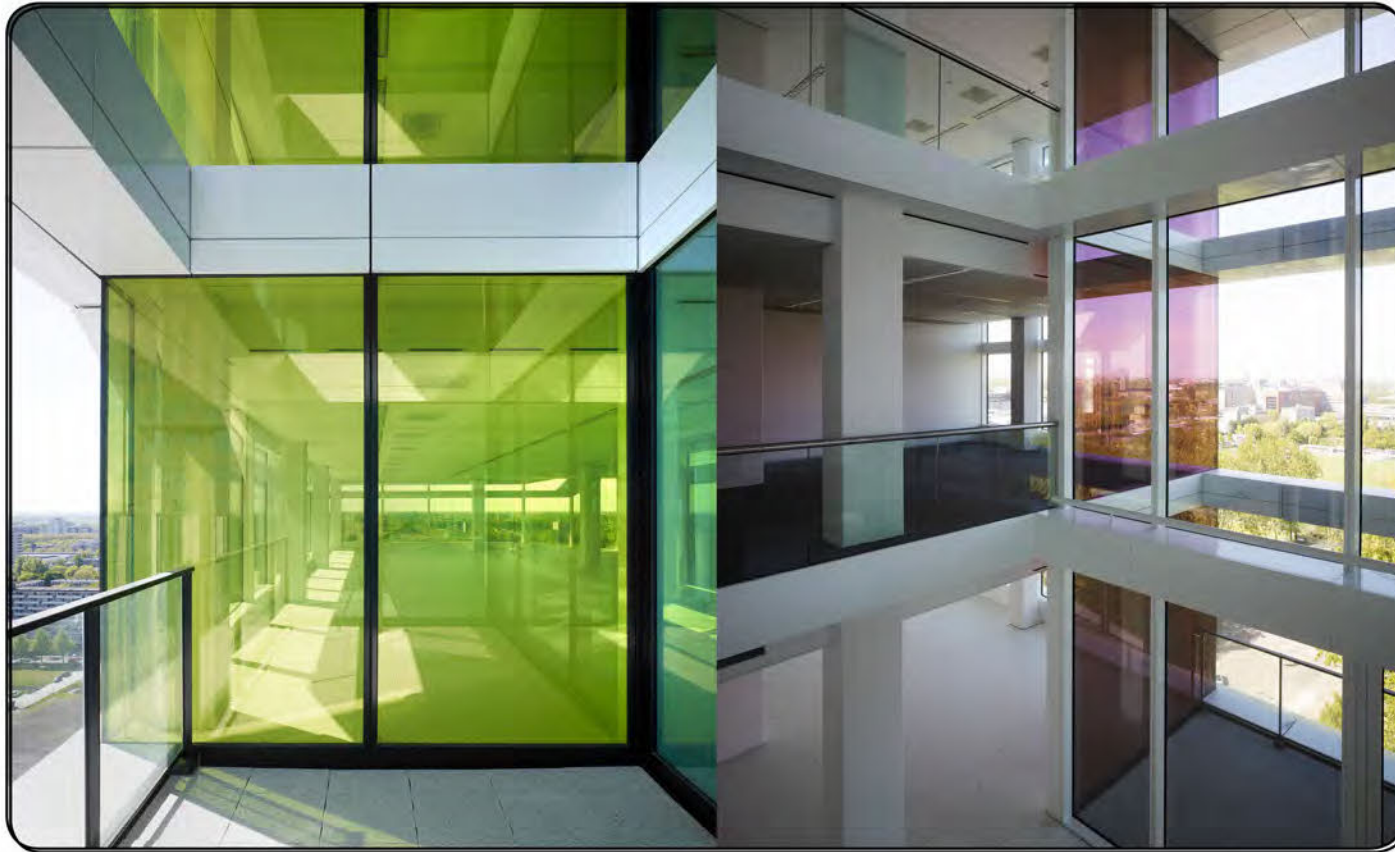
VOID TYPOLOGY

- Vertical accents are formed by voids, recessed into each face of the building and spanning differing numbers of floors.
- Inside-outside relationship which extends the façade envelope and turns the surface of the tower into an active medium affecting the quality of the interior user space.
- Daylight penetration deep into the extensive 40m x 40m floors.
- The voids are not related with the vertical circulation.
- While not located close to public circulation space, they offer space for small meetings or personal reflection, with different spatial qualities.



18TH APRIL 2015

UNSTUDIO TOWER



18TH APRIL 2015

RESEARCH LABORATORY

Title: Research Laboratory

Location: Groningen, Netherland

Year: 2003–2008

Status: Realized

Building Typology: Education

Total surface area: 7.497 m²



WHAT

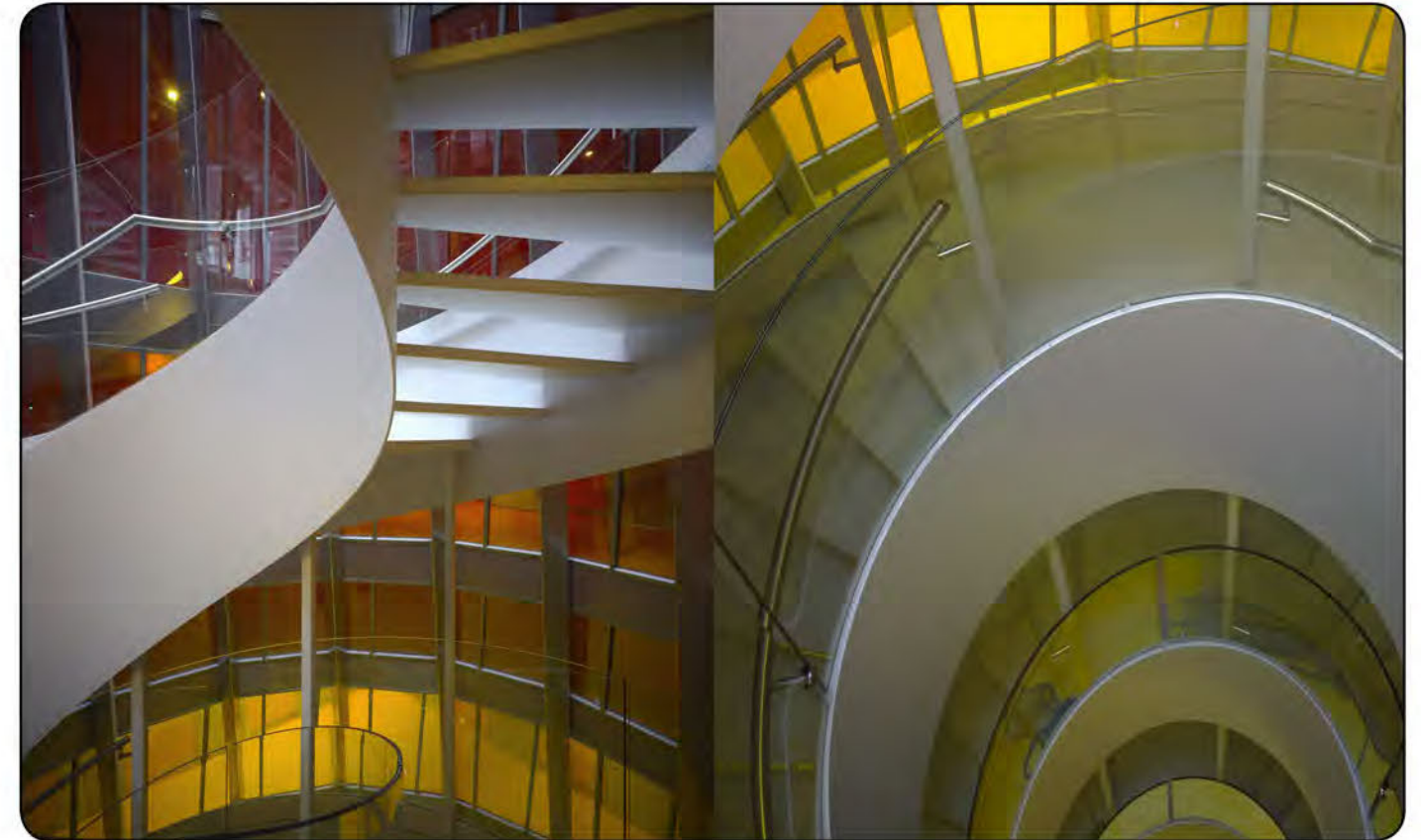
The spatial and functional requirements necessitate the creation of four microbiological levels which are separated from each other by means of barriers. Furthermore, the need for direct sunlight is minimal and visibility into the building is undesirable. The design of the building forbids the typical logic of transparency of the relationship between the build's usage and its appearance.

KEY SIGNATURE ELEMENTS

- Efficient central organization,
- Reduction in the amount of circulation space
- An introverted program creates architectural element as around the internal façade.

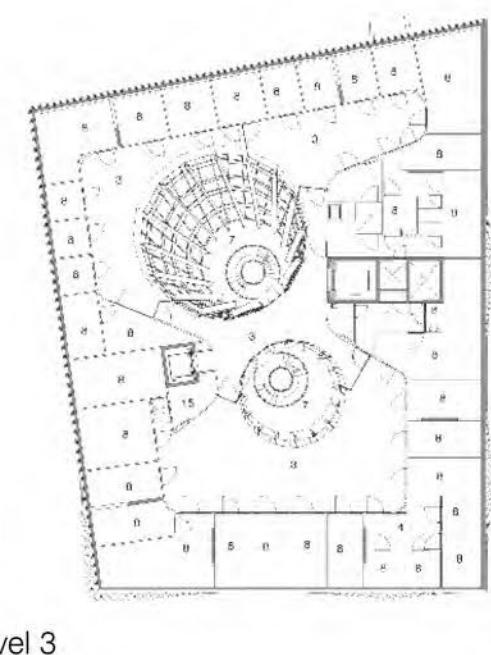
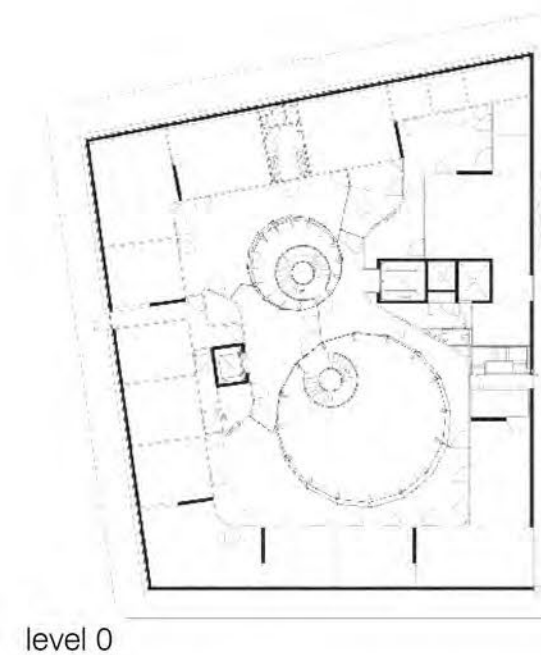
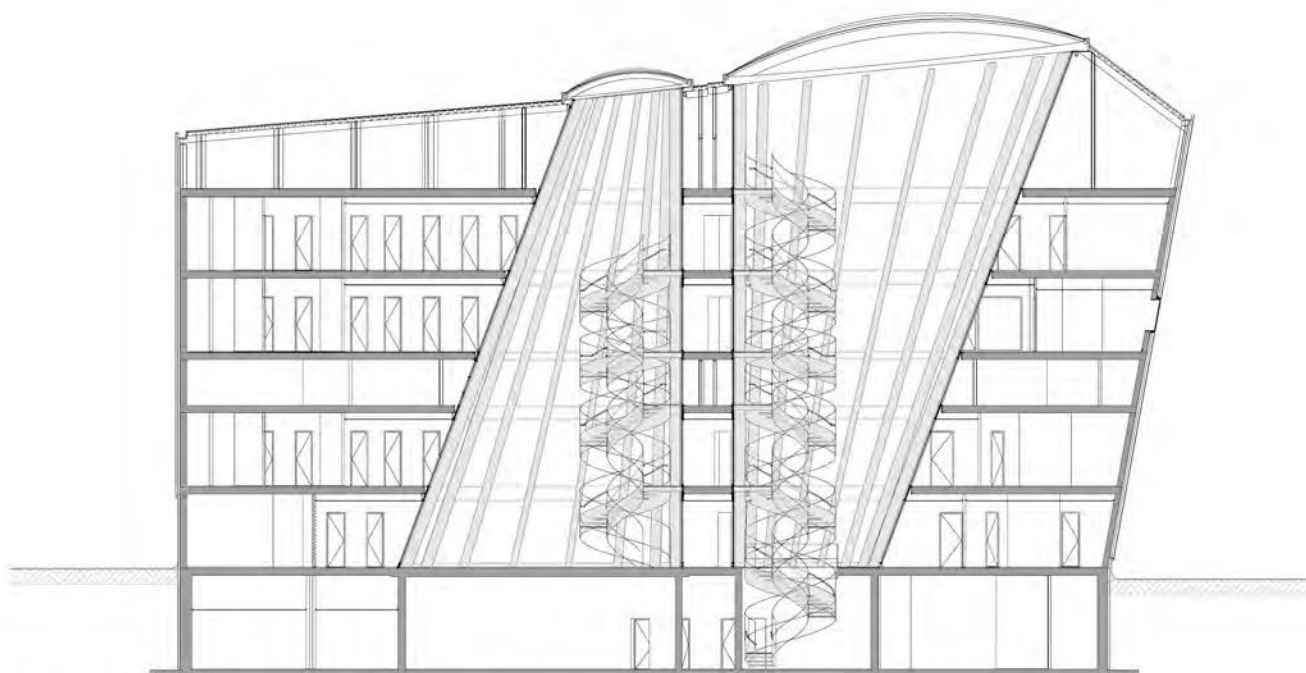
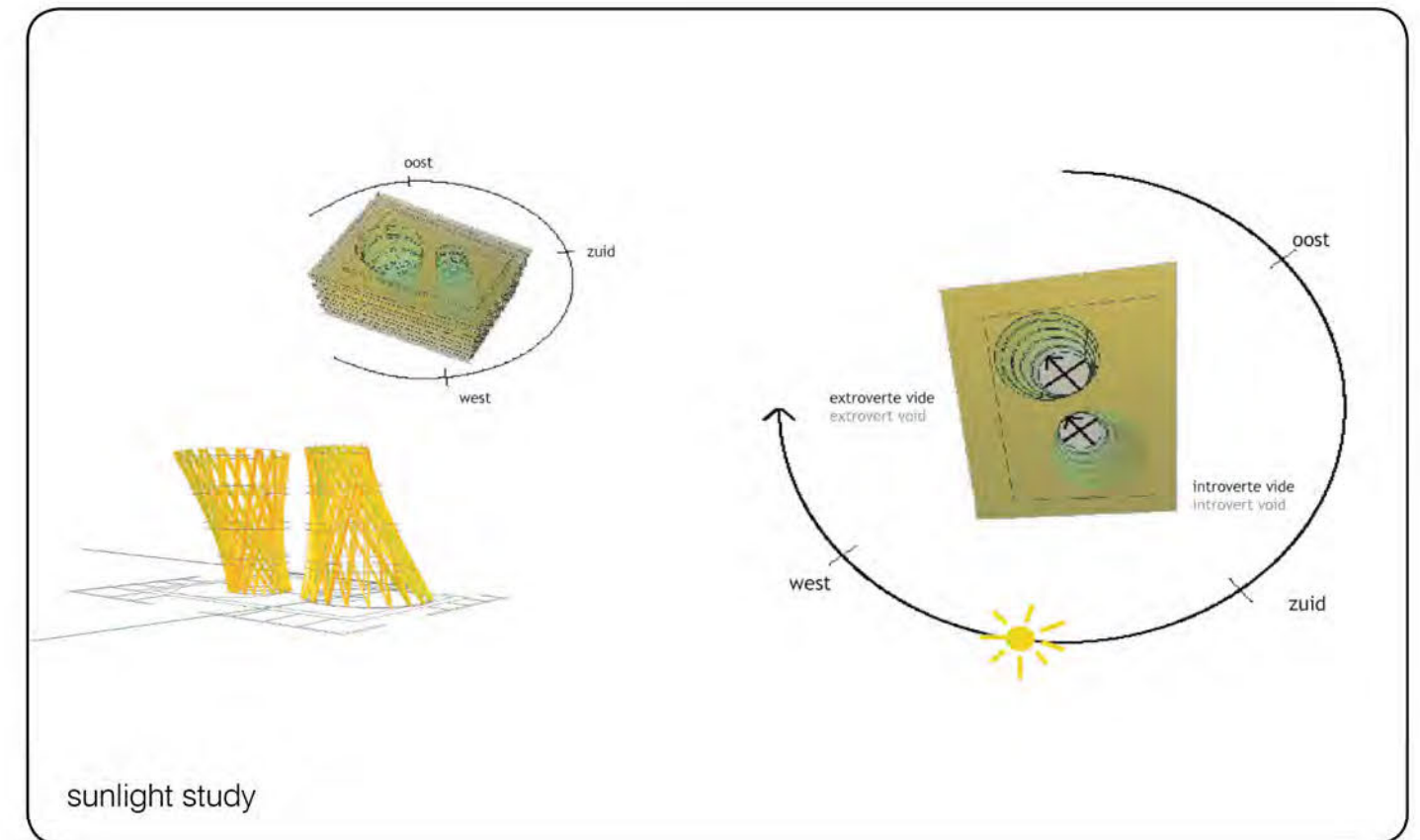
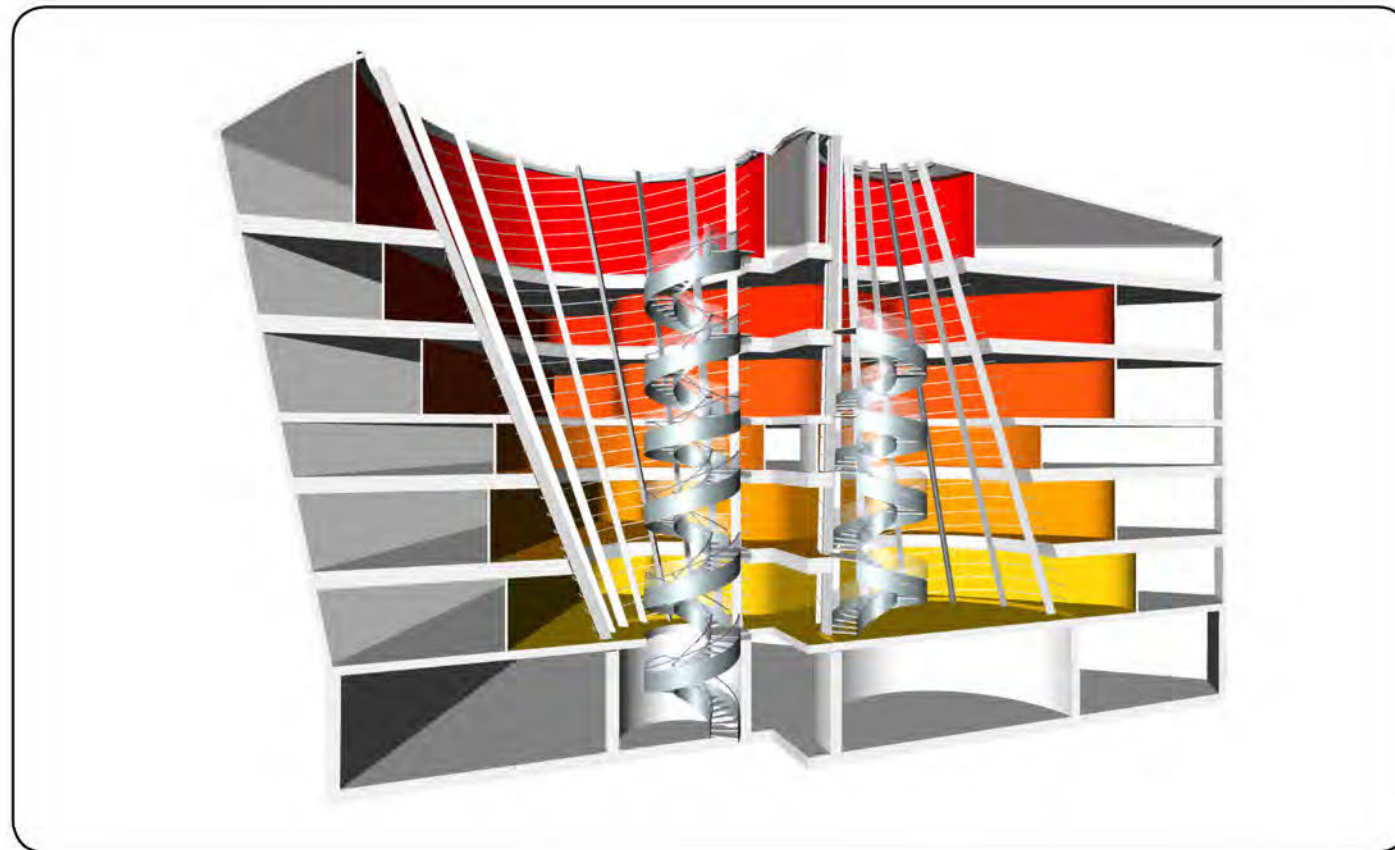
VOID TYPOLOGY

- Two closed internal vertical voids allowing indirect sunlight to enter the interior whilst avoiding visibility from outside.
- Geometry: two asymmetrical truncated cones which mirror each other vertically; so that where one has its wider end at skylight level, the other has its wider end at ground level.
- These glass voids function as a form of internal façade. A mostly column-free space as the lift shafts and the façade structure are used as the constructive vertical elements.
- Horizontal circulation: Shared walkways surround the internal voids
- A clear central organization allowing direct access to the individual laboratories and at the same time avoiding the dark corridor systems.



18TH APRIL 2015

RESEARCH LABORATORY



18TH APRIL 2015

EDUCATION EXECUTIVE AGENCY & TAX OFFICES

Title: Education Executive Agency & Tax Offices

Location: Groningen, Netherland

Year: 2006-2011

Status: Realized

Building Typology: Mixed Use

Total surface area: 70.540 m²



WHAT

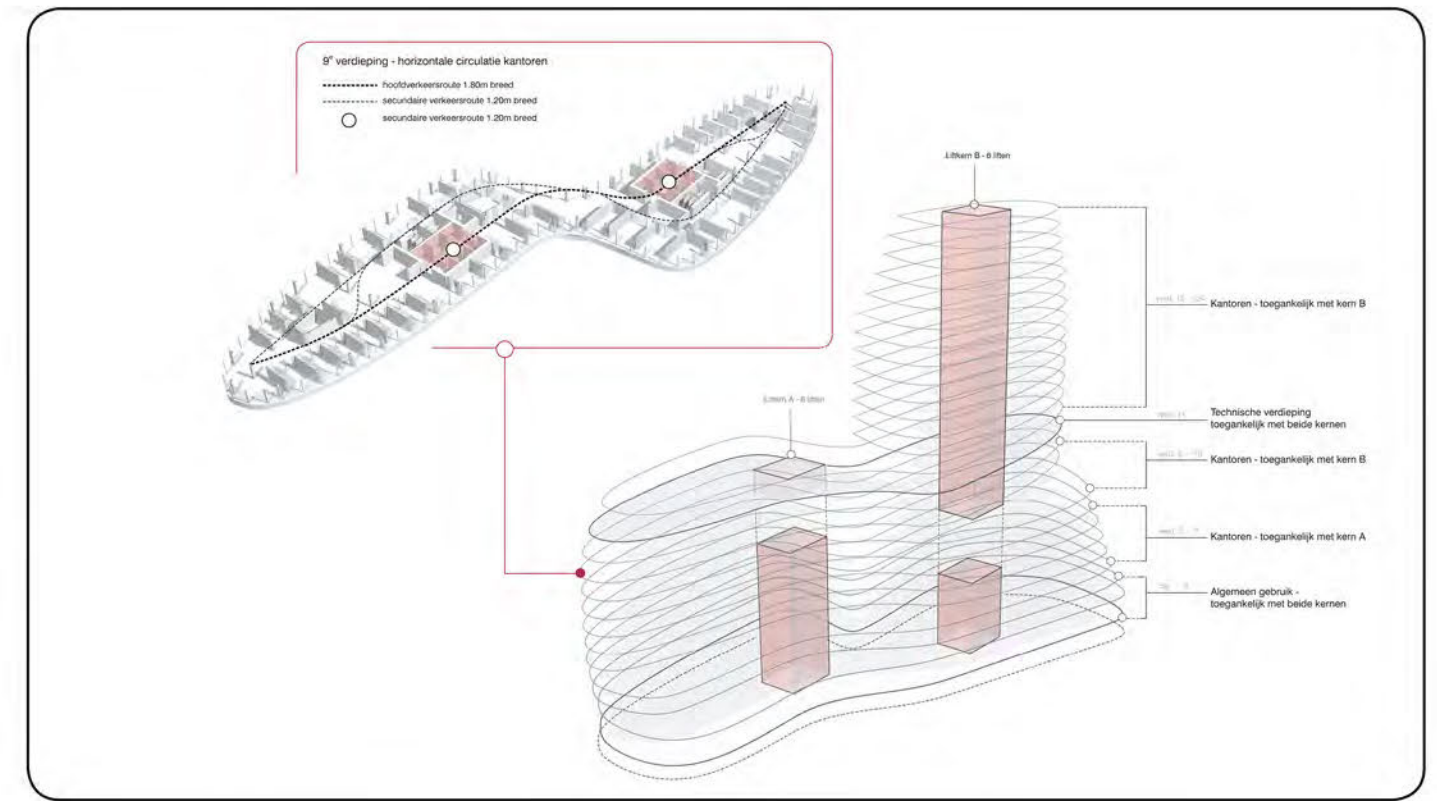
The design for the Education Executive Agency and Tax Office building, accommodating 2,500 employees, reflects and caters for the separate identities of both user groups, whilst simultaneously creating synergy by means of shared use of secondary spaces – among which underground parking facilities, public gardens, a central hall and a pavilion for commercial functions.

KEY SIGNATURE ELEMENTS

- Provide flexibility in office floor deviation for department interfloor communications.
- Stimulate usage of stairs for small distances
- Provide break out spaces for interaction

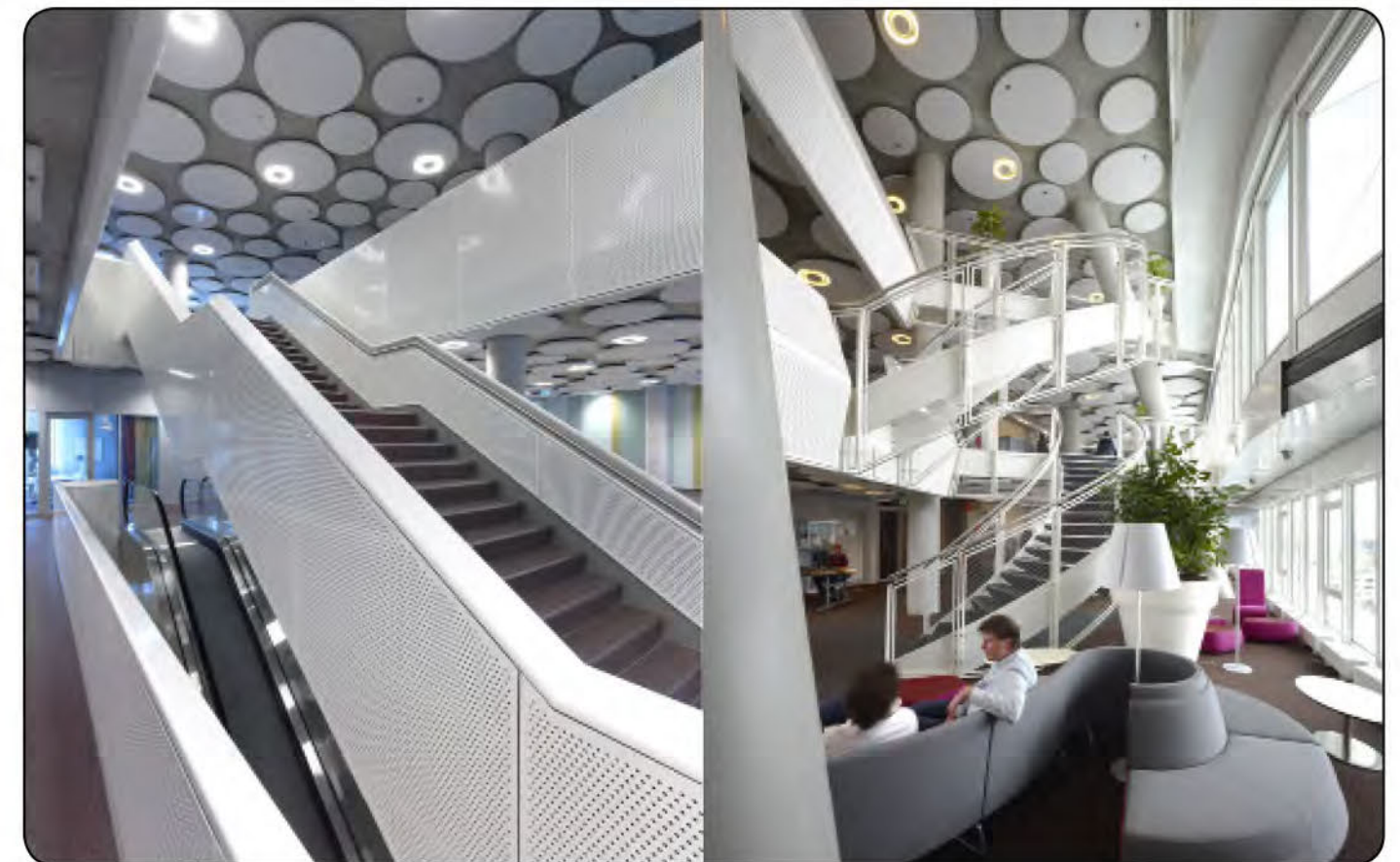
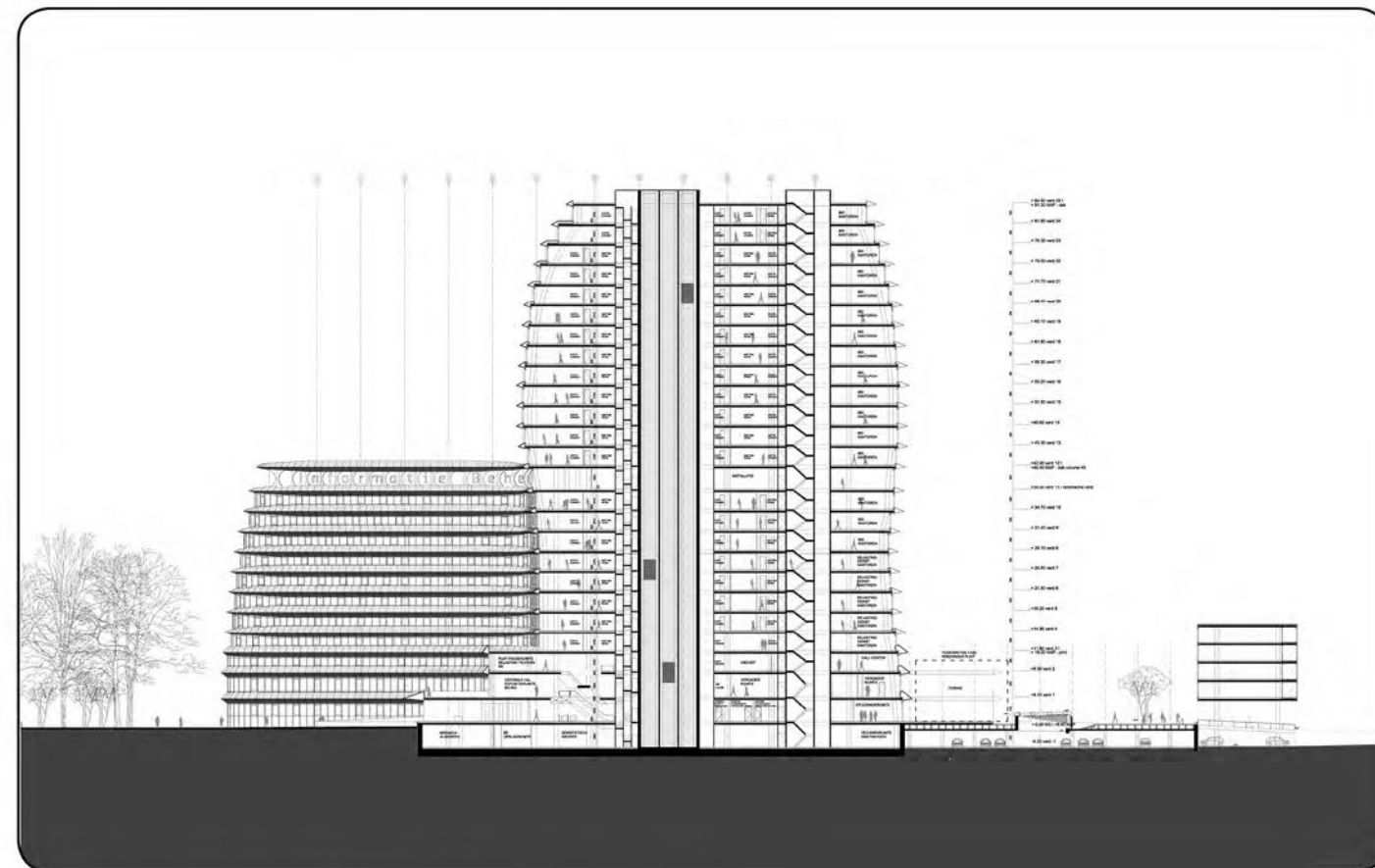
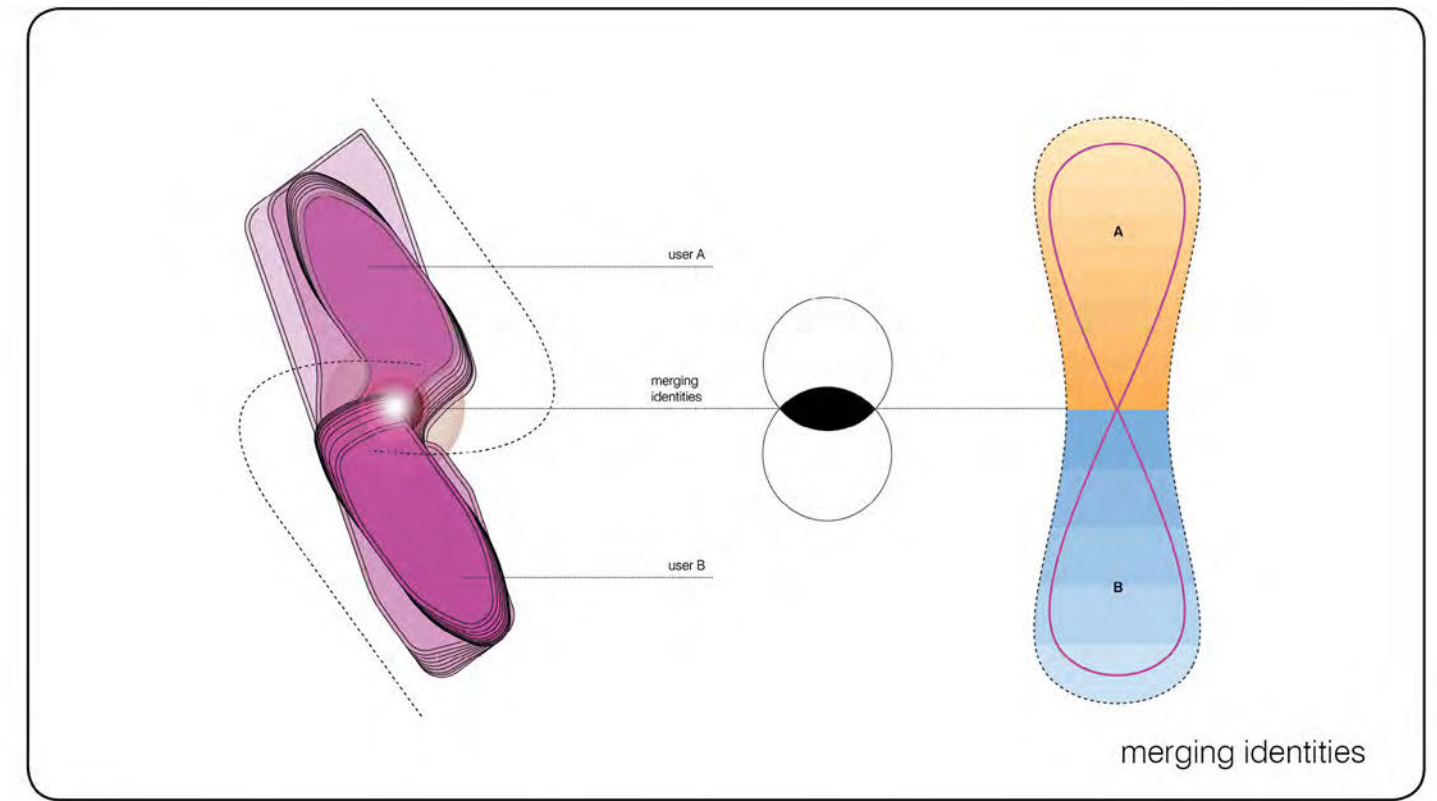
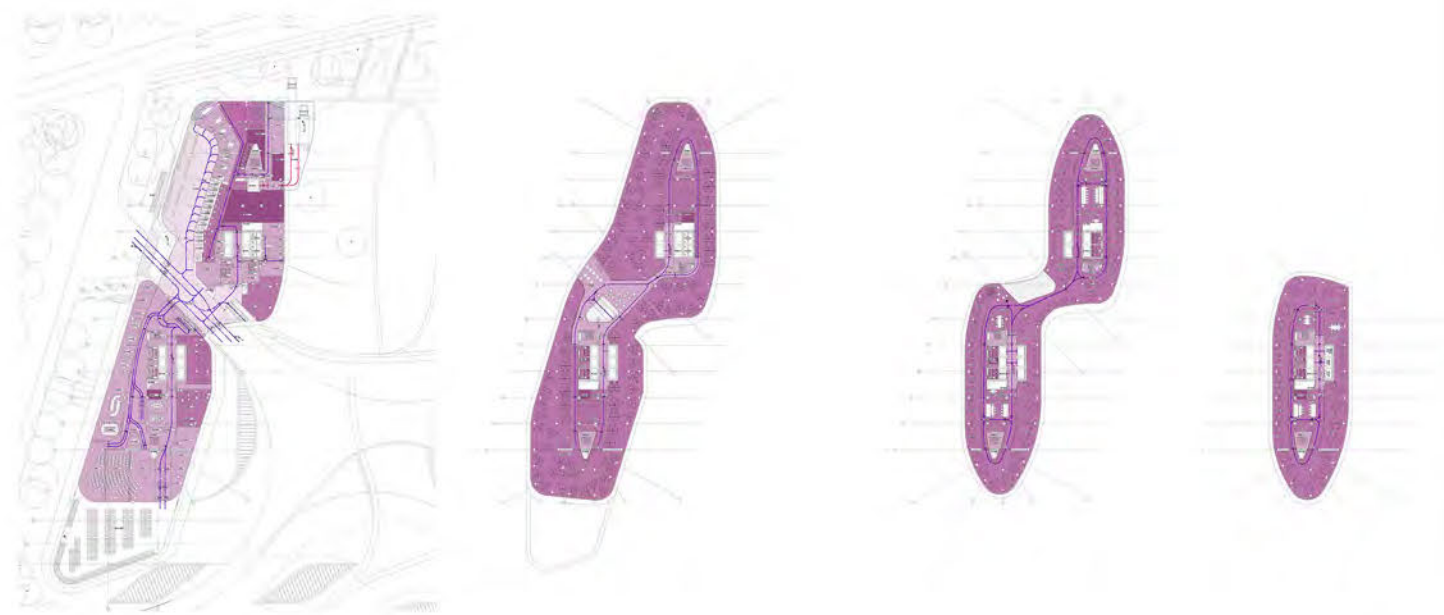
VOID TYPOLOGY

- Horizontal circulation: Not linear endless corridors, but instead each corridor has a route which introduces a kind of landscape into the building.
- Walkways are close to the transparent façade allowing sunlight penetration
- Vertical circulation: Two main circulation cores containing the elevators and the staircases.
- A structural grid of 1,20 m. has been deployed, rather than the conventional office grid of 1,80 m.



18TH APRIL 2015

EDUCATION EXECUTIVE AGENCY & TAX OFFICES



18TH APRIL 2015

MERCEDES - BENZ MUSEUM

Title: Mercedes - Benz Museum

Location: Stuttgart, Germany

Year: 2001-2006

Status: Realized

Building Typology: Museum

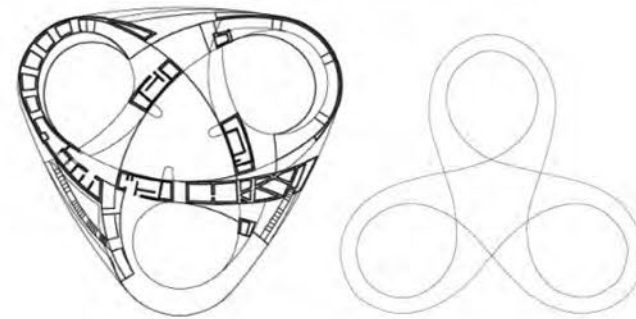
Gross floor surface: 35.000 m2

WHAT

The Museum program is accommodated in an intricate package in which the various exhibits, the public programs and the service and support programs are interwoven.

The design of the Mercedes-Benz Museum is based on a trefoil and is structured as a double helix. The clover-leaf structure mathematically consists of three overlapping circles, of which the centre becomes a void forming a triangular atrium. The leaves of the trefoil rotate around this void, forming six horizontal plateaus which alternately occupy single and double floor heights, resulting in six double-height and six single height exhibition spaces.

The organisation does not involve a continuous, single surface; the six plateaus themselves are level, with slowly sloping ramps bridging the height differences between them.



VOID TYPOLOGY

The void is a central triangular atrium that is formed by the overlap of three circles according to the trefoil shape, connected to the roof-top and allowing sunlight penetration.

Circulation

- Movement upwards: three elevators which are like capsule, located in the atrium
- Movement downwards: two spiraling ramps, two trajectories that cross each other continuously

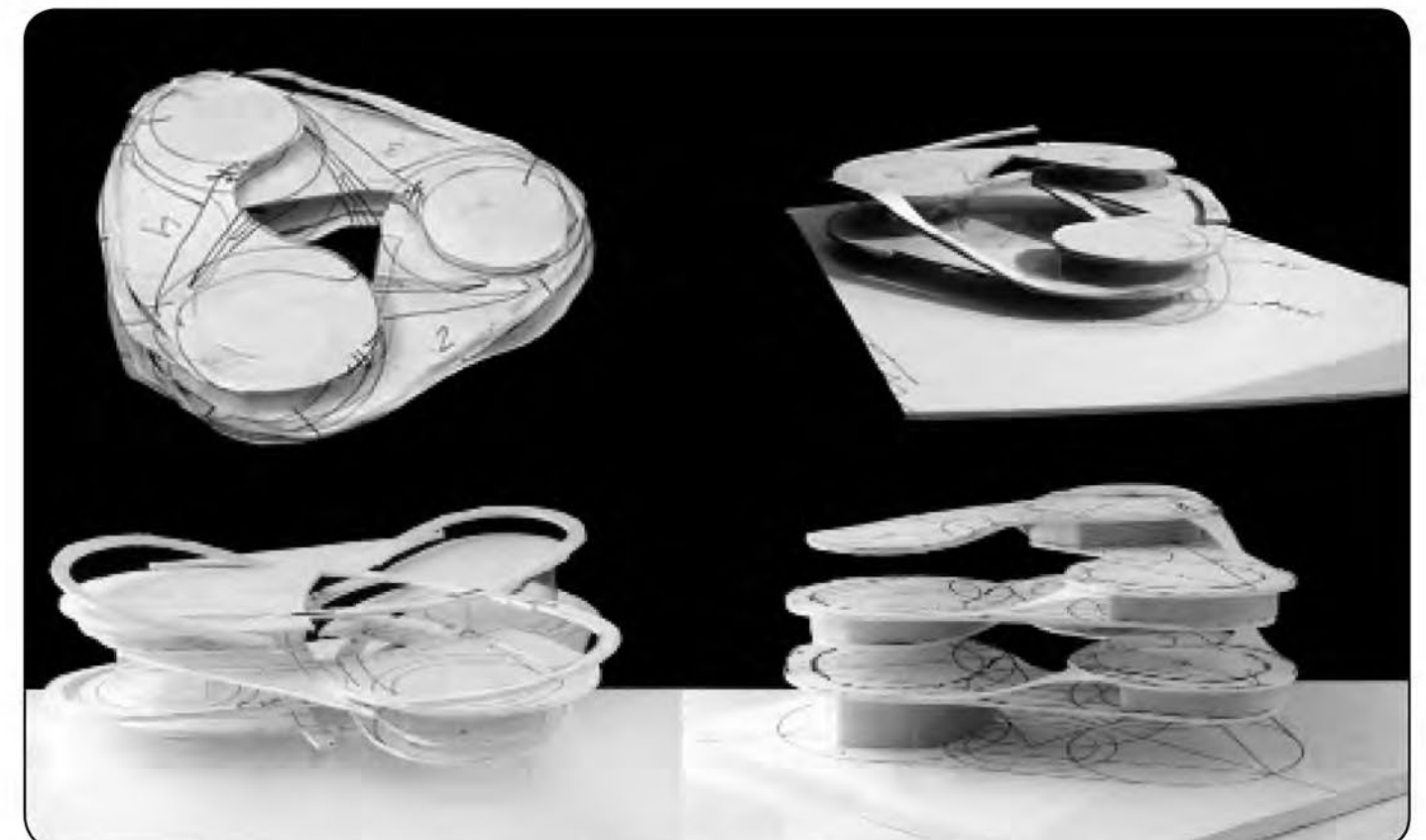
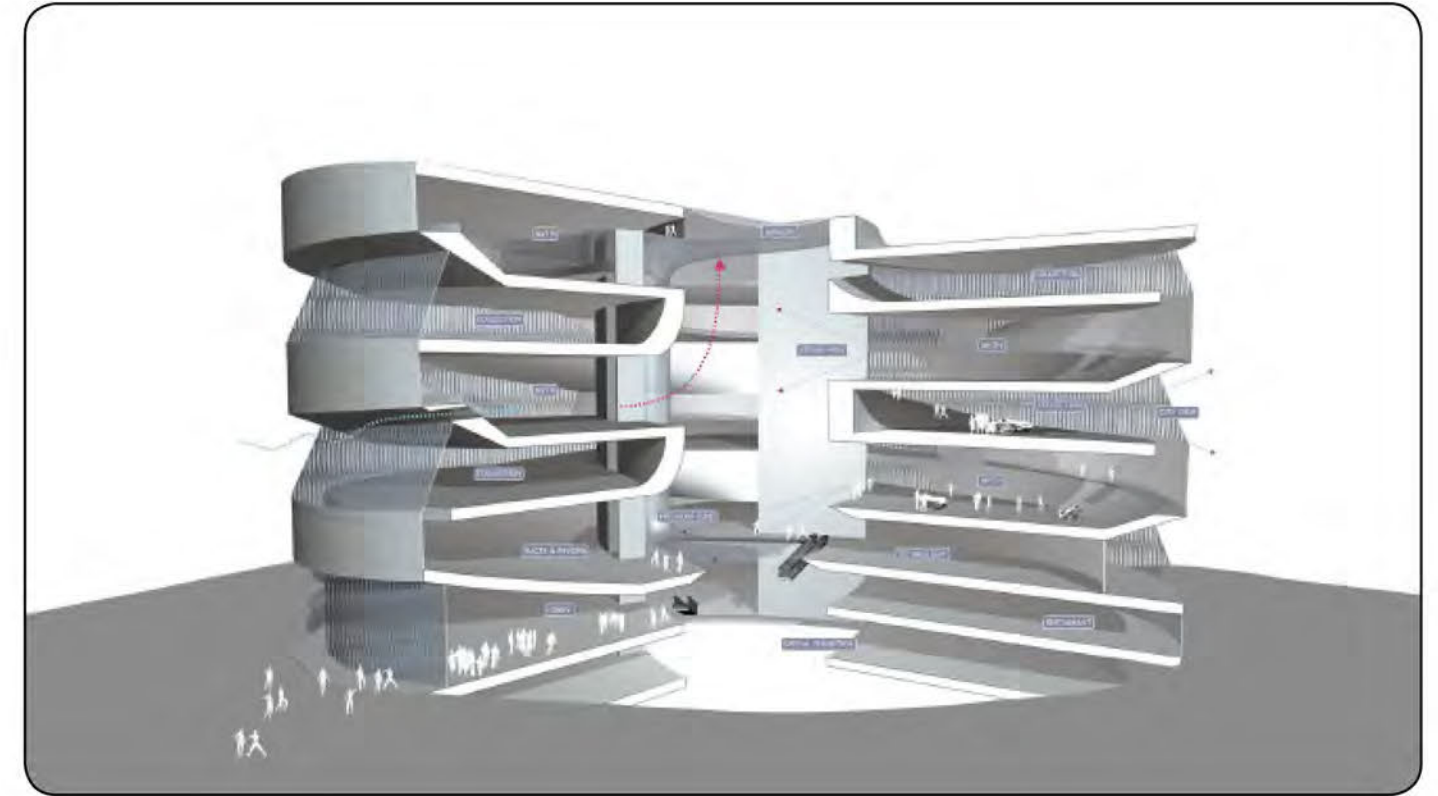
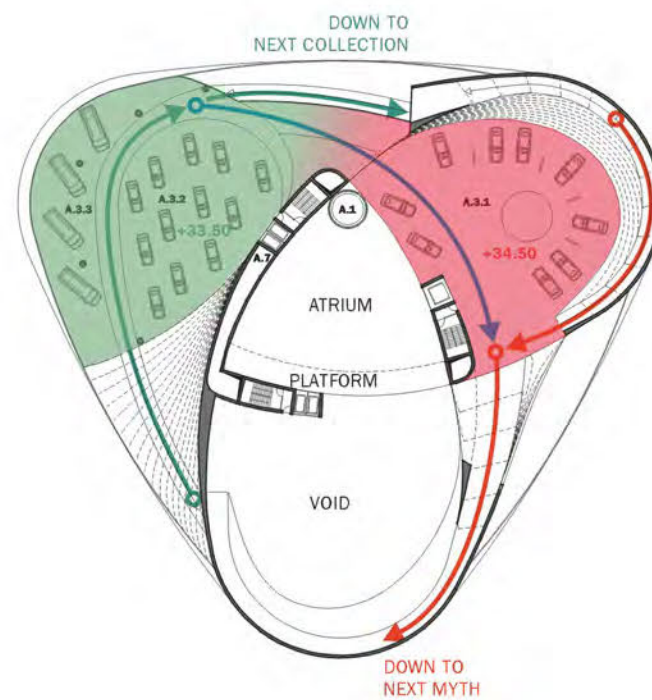
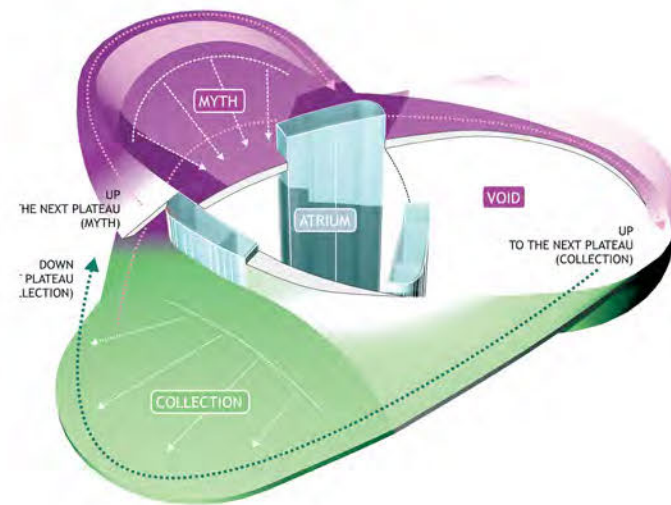
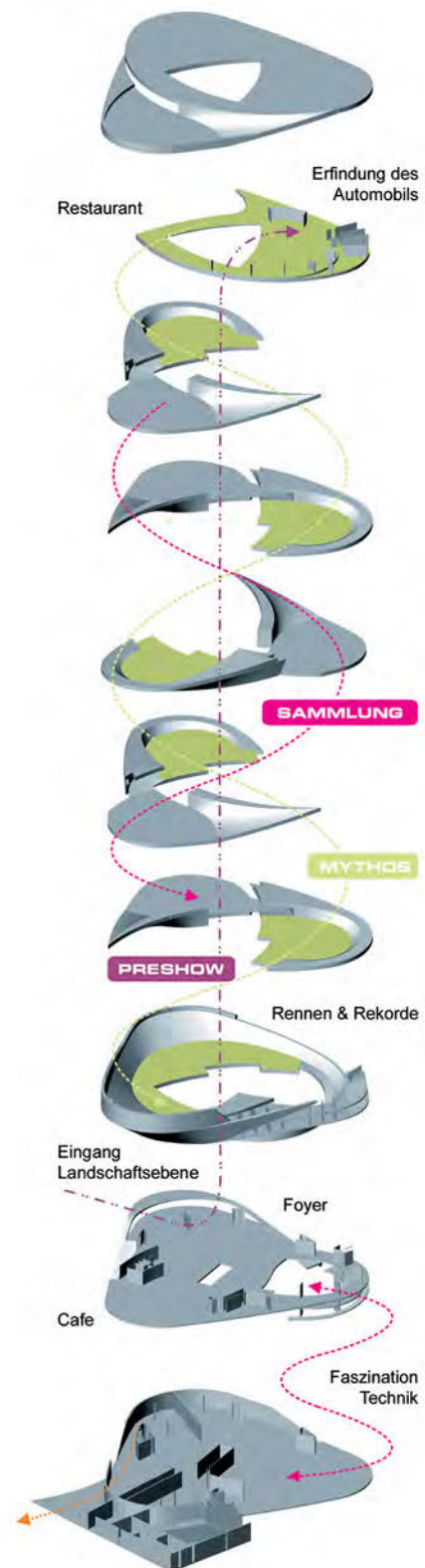
KEY SIGNATURE ELEMENTS

- Way finding and orientation are intuitive and individual, which the visitor is free to follow or to deviate from
- Complex spatiality based on a strong design model
- A wide range of look-through options, shortcuts, enclosed and open spaces, and the potential for continuity and cross-references in the various displays



18TH APRIL 2015

MERCEDES - BENZ MUSEUM



18TH APRIL 2015

THE NATIONAL ART MUSEUM OF CHINA

Title: Raffles City

Location: The National Art Museum of China

Year: 2008-2014

Status: Under Construction

Building Typology: Mixed Use

Total surface area: 389.489 m²



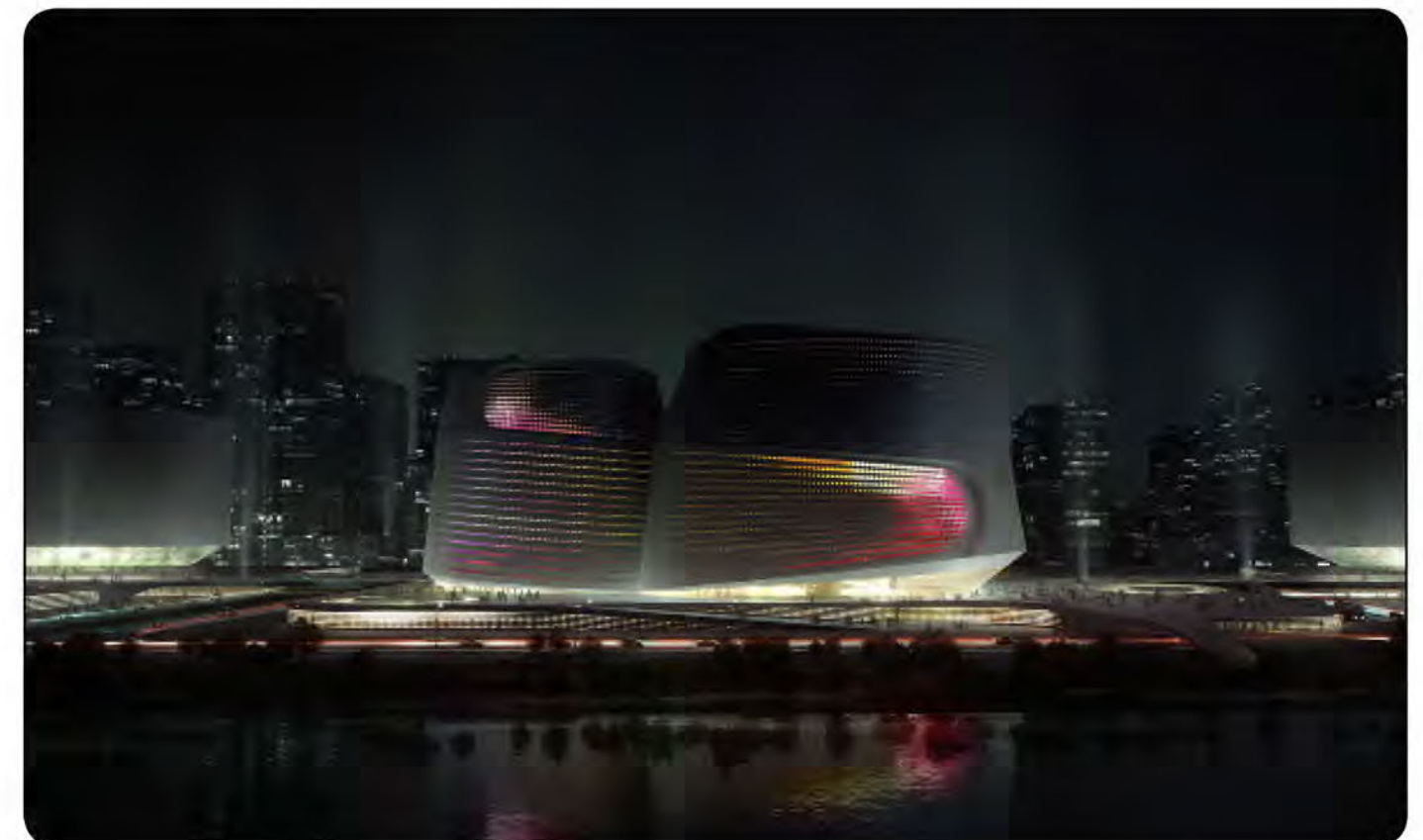
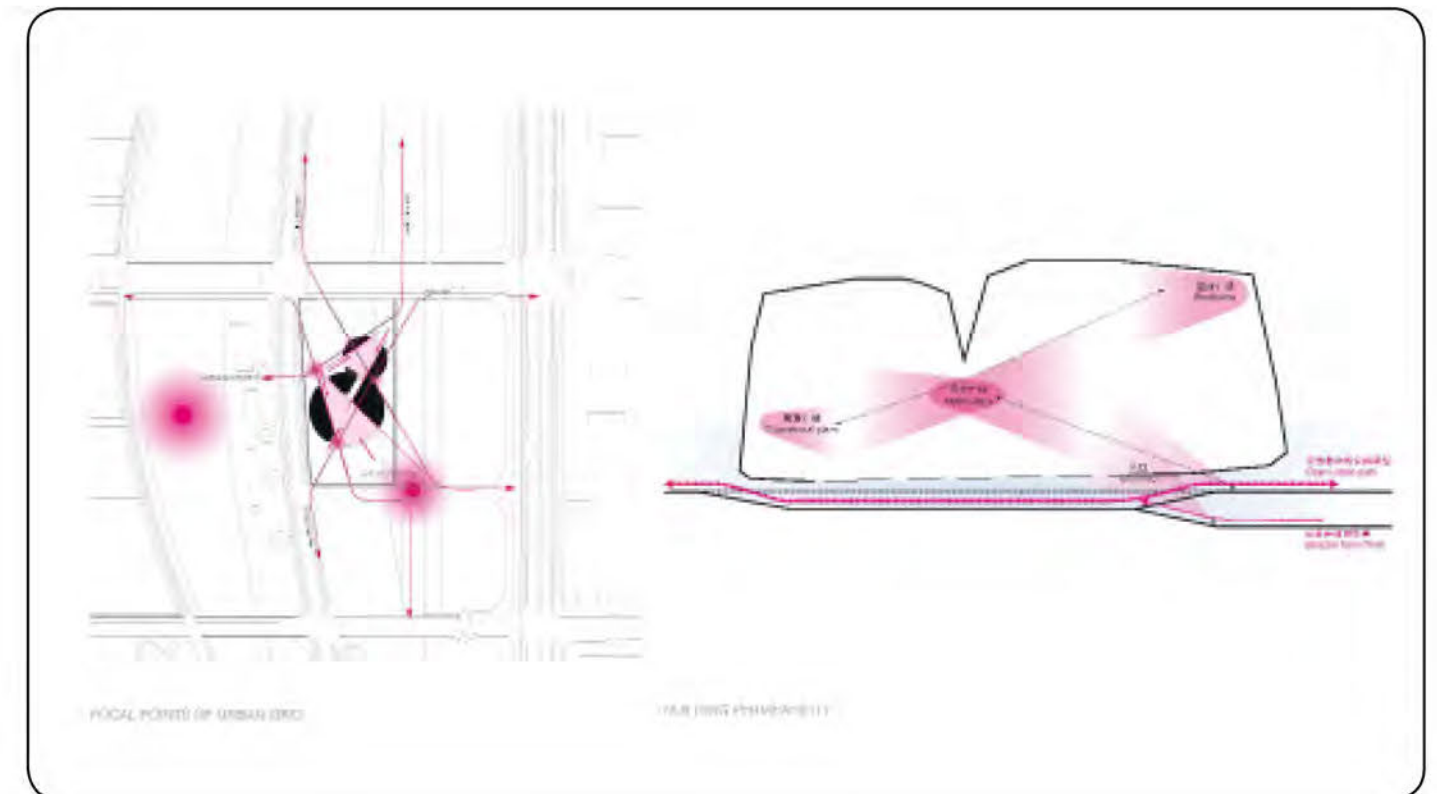
WHAT

The project consists of 2+1 buildings: Two levitating volumes that compose the national museum and the plinth, the 3rd building which works as an urban attractor, towards which surrounding urban axis converge through focal points. Important requirements of the project are the flexibility of spatial arrangements, from intimate, enclosed cabinets to great halls, as well as circulation space that can be flexibly organized depending on the public visitor intensity.

KEY SIGNATURE ELEMENTS

VOID TYPOLOGY

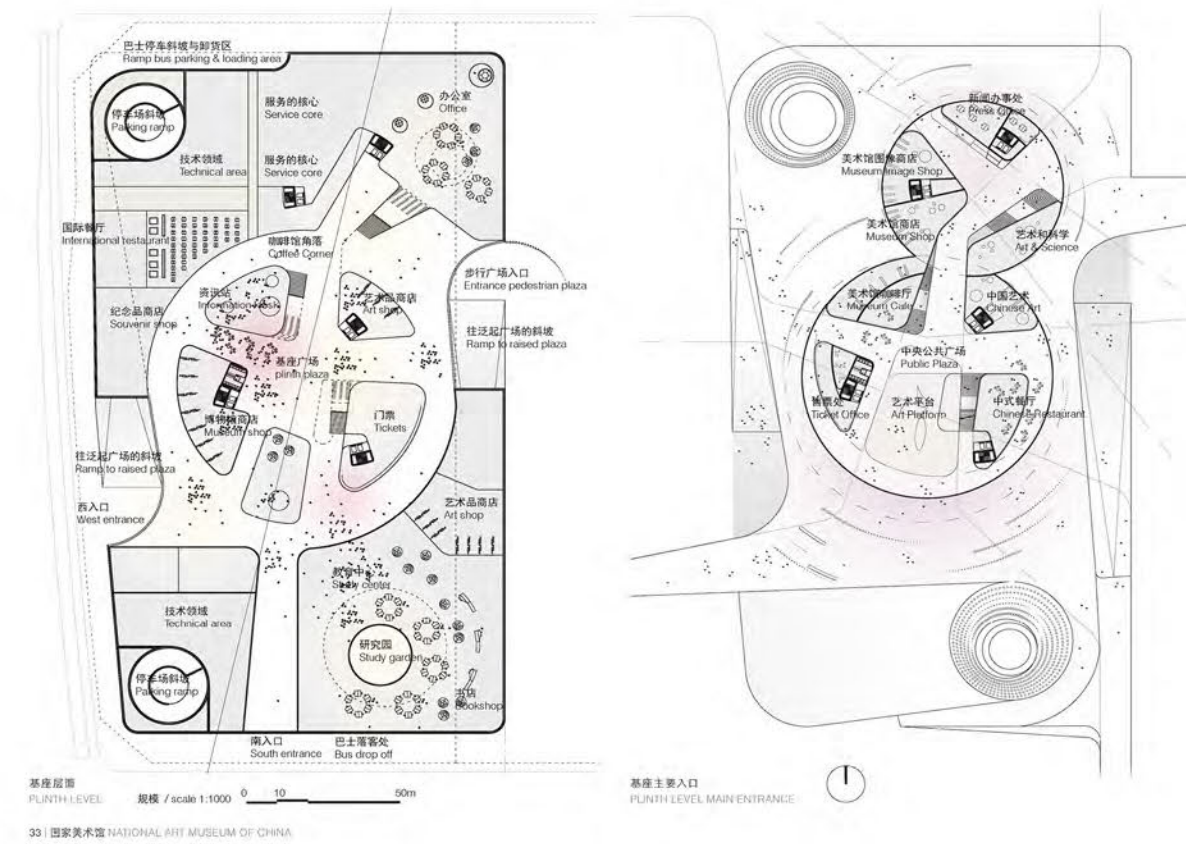
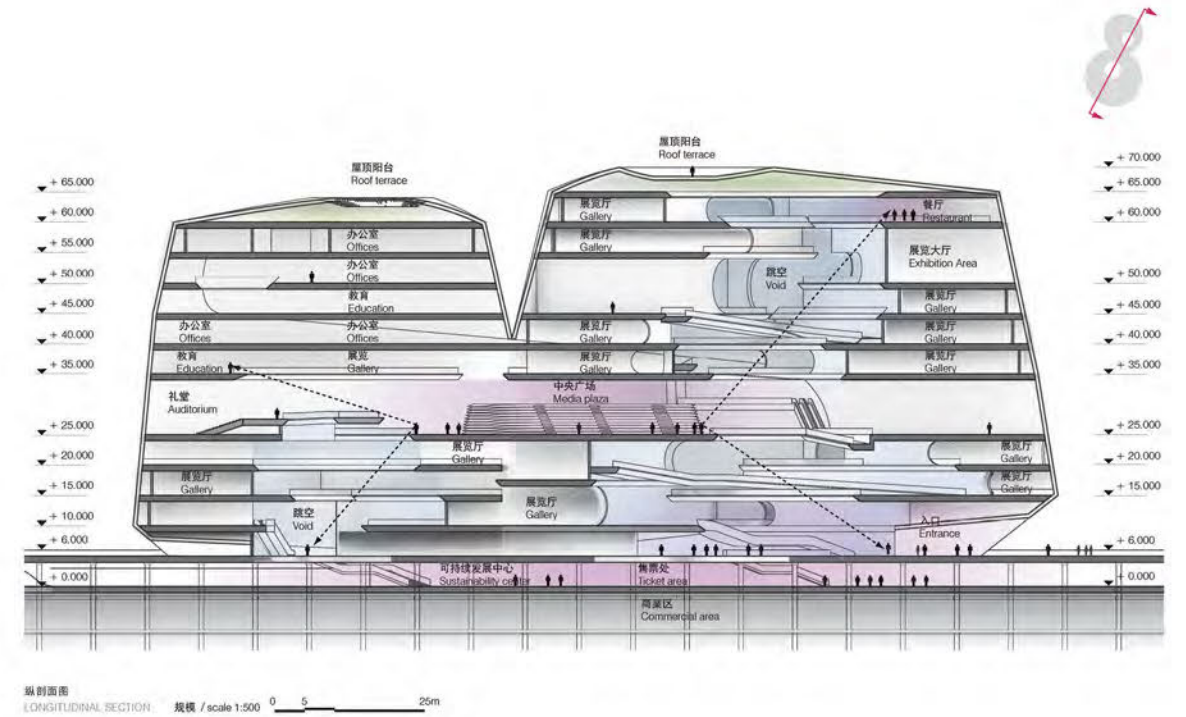
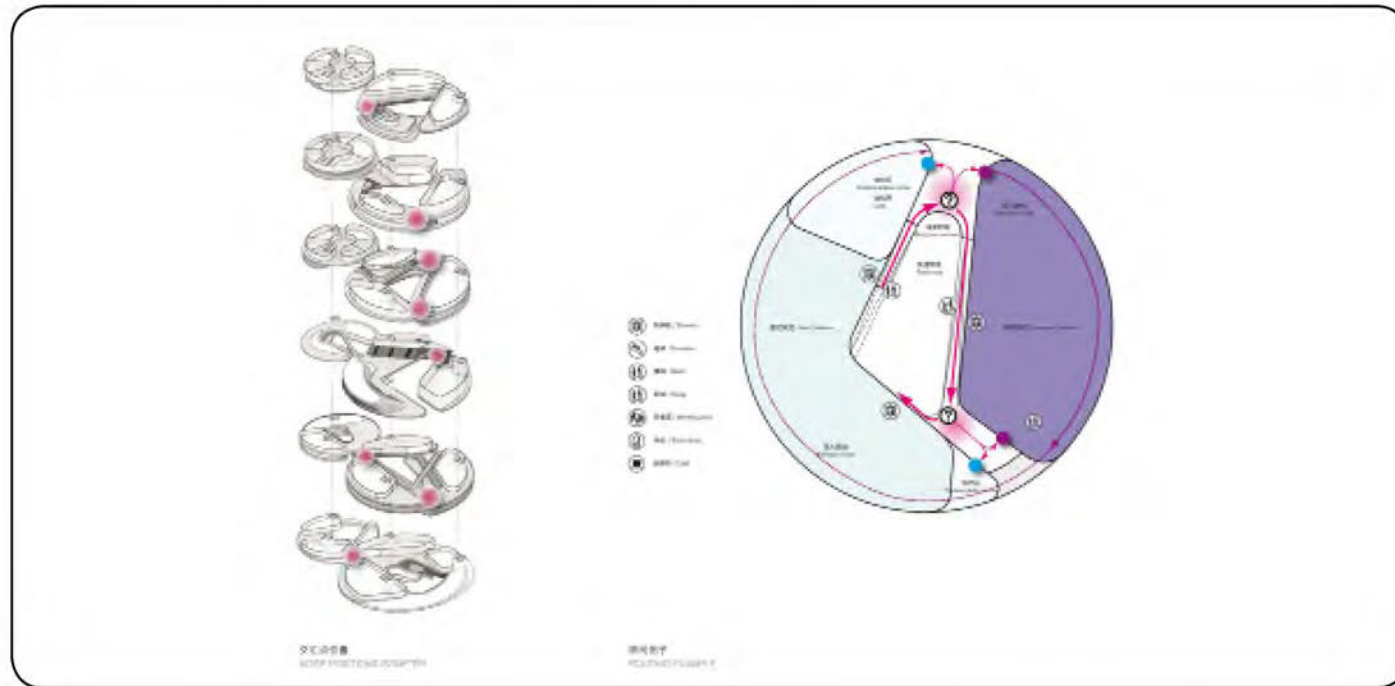
- A decentralized organizing void, creating a unified environment, through which the visitor can move with ease and fluency.
- A network of varying visual links, with openings where a strong visual connection is needed or more obscured areas in order to reduce the amount of access points.
- High levels of circulation space
- Flexibility of the routing, providing a wide spatial experiences from different perspectives and different time scales



1.0 / VOID ANALYSIS INVENTIVE ORGANISATIONS PLATFORM

18TH APRIL 2015

THE NATIONAL ART MUSEUM OF CHINA



1.0 / VOID ANALYSIS INVENTIVE ORGANISATIONS PLATFORM

18TH APRIL 2015

SINGAPORE UNIVERSITY OF TECHNOLOGY AND DESIGN

Title: Singapore University of Technology and Design

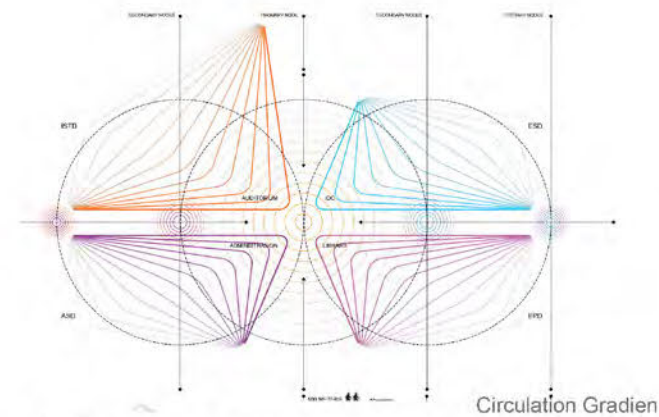
Location: Singapore

Year: 2010-2015

Status: Realized

Building Typology: Educational

Total surface area: 213,000 m²



VOID TYPOLOGY

External voids

An activated void system that promotes public activity and interaction that consists of:

- a variety of open spaces like plazas, sky gardens, roof terraces
- a network of country yards, located in the core of each cluster of the campus
- the design of the country yards follows several sustainable design parameters such as natural ventilation, sunlight penetration, but also allows visibility through the building of the campus

Internal void

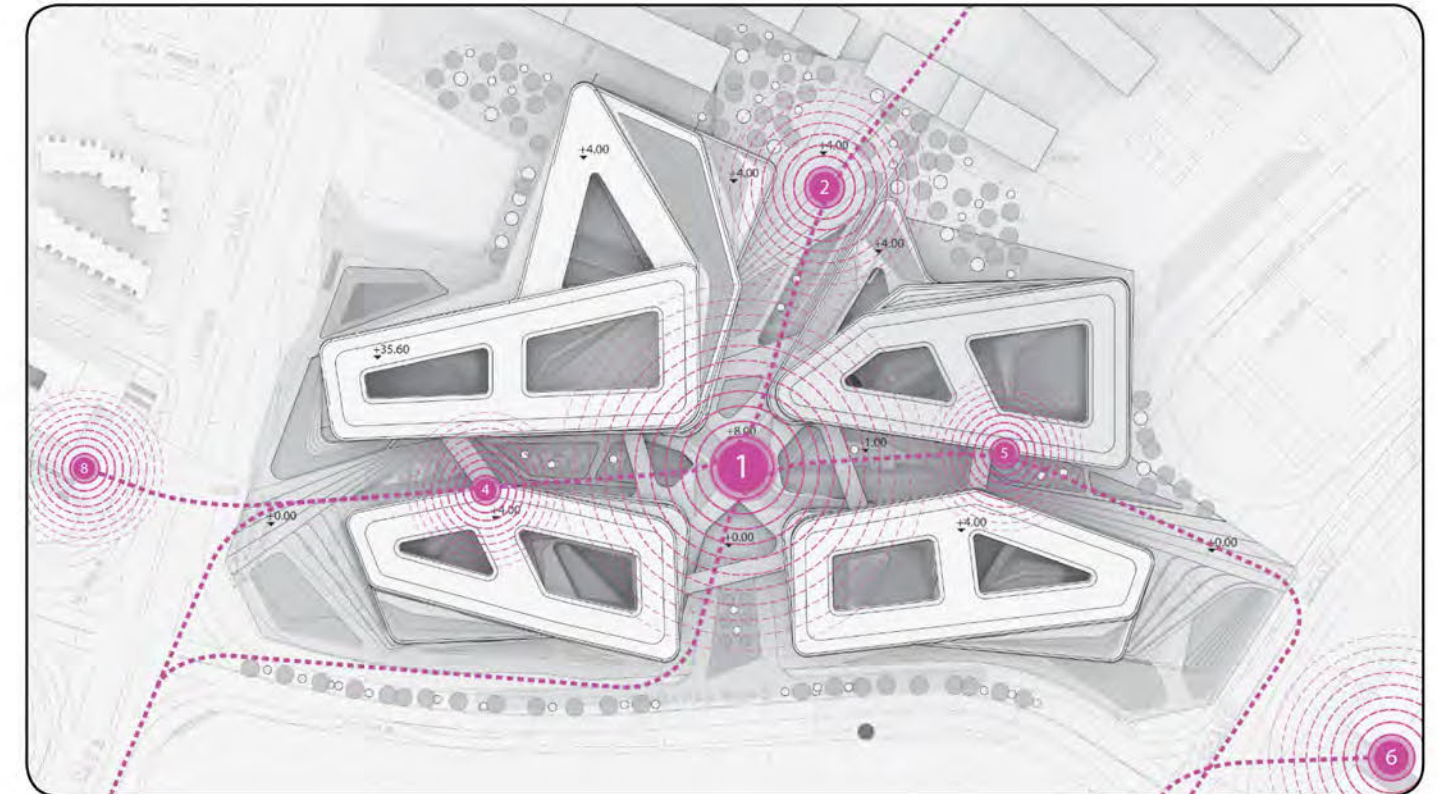
- A system of interconnected voids that has the form of leveled plateaus
- Circulation (escalators, lifts, staircases and walkways) is organized around this network.
- Vertical connection is formed through vertical circulation and the co-labs that work as spaces of interaction
- Sunlight penetration and natural ventilation through the rooftop which is connected with these internal voids.

WHAT

The SUTD campus facilitates cross-disciplinary interaction between different pillars of academia. The orientation and organization of the campus is designed through two main axes; the living and learning spines which overlap to create a central point, binding together all corners of the campus and creating a 24/7 open forum of seamless connectivity.

KEY SIGNATURE ELEMENTS

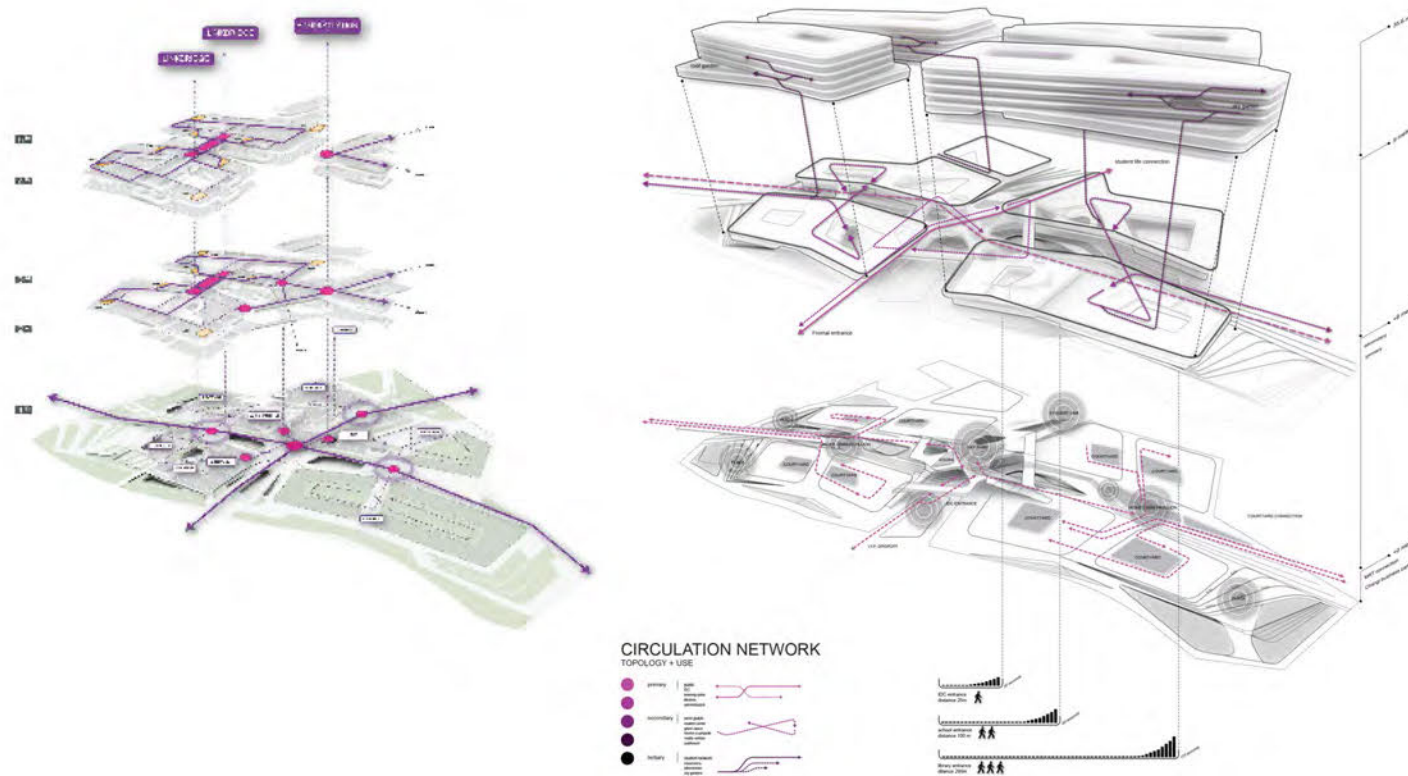
- The void system is the linking element between the clusters of the program
- Different qualities of the inside/ outside condition (sky gardens, roof terraces, outdoor walkways)



1.0 / VOID ANALYSIS INVENTIVE ORGANISATIONS PLATFORM

18TH APRIL 2015

SINGAPORE UNIVERSITY OF TECHNOLOGY AND DESIGN



18TH APRIL 2015

FLAGSHIPSTORE LOUIS VUITTON

Title: Flagstore Louis Vuitton

Location: Japan

Year: 2006

Status: Competition Entry

Building Typology: Retail

Total surface area: ca. 6.000 m²

WHAT

A landmark building with the potential of a strong identity. The structure of the building consists of three levels, each spanning a varying number of split-level floors. Each floor is in principle divided into four spaces, which are set in a spiral pattern. This three-part organization offers clarity; each section is dedicated to a cluster of functions that group logically together. Terrace zones, which offer a mix of functions in a garden setting, mark the different vertical sections of the house.

KEY SIGNATURE ELEMENTS

- From stacking floor levels to a spiral organization
- Clarity of organization, enabling fluent and easy circulation
- Void with a strong sense of spatiality

VOID TYPOLOGY

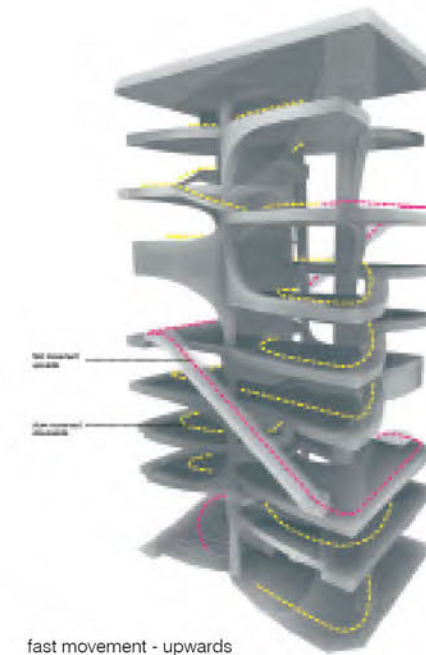
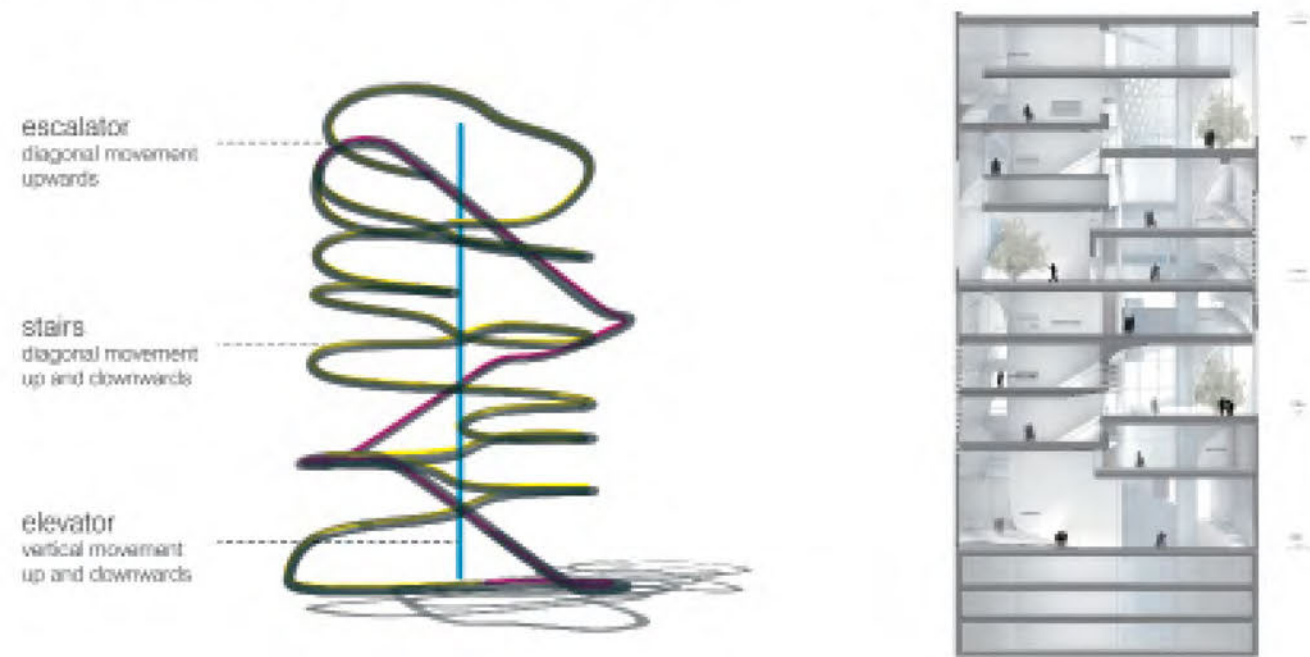
Circulation:

- Fast movement upwards - a central circulation core housing stairs and escalators
- Slow movement downwards - spiral organization of escalators, curved staircases and terrace zones that connect the split-level floors
- The spiral void combined with the peripheral, curved staircases and escalators acts as a way-finding instrument and as an orientation point.
- The terraces zones offer visual connection with the exterior, allowing natural ventilation and sunlight.

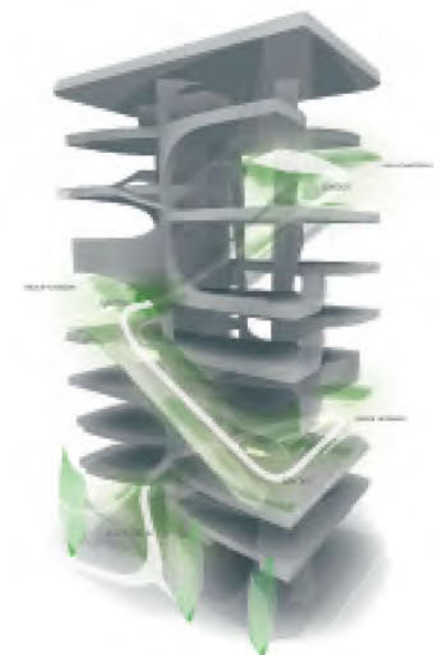


18TH APRIL 2015

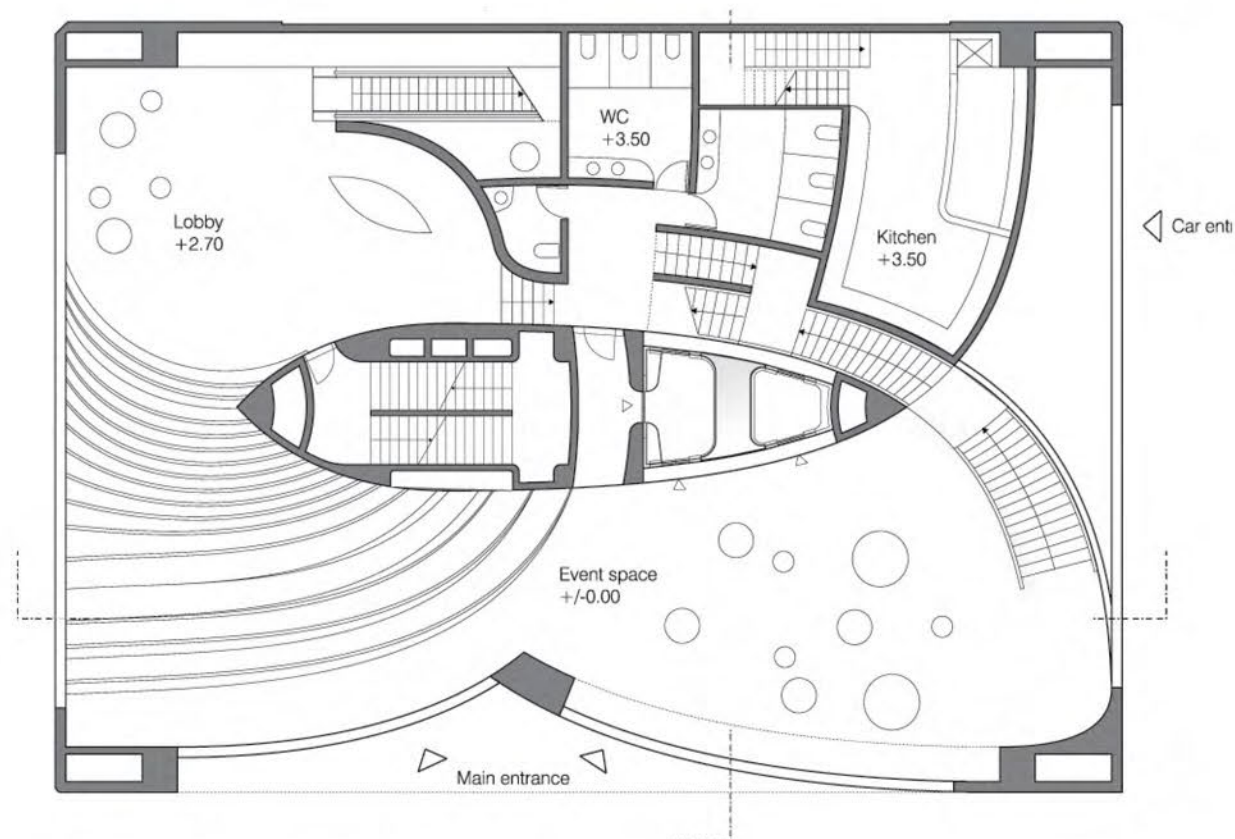
FLAGSHIPTORE LOUIS VUITTON



circulation diagram



climate diagram



VOID STUDY

CIRCULATION

SPATIAL FEATURES

URBAN CONTEXT

VISUAL LINKS

SUNLIGHT

WAYFINDING

INSIDE/OUTSIDE

Raffles City Hangzhou, China							
RIVM & CBG Headquarters Utrecht, Netherlands							
Star Place Kaohsiung, Taiwan							
Galleria Centercity Interior Cheonan, Korea							
UNStudio Tower Amsterdam, Netherlands							
Research Laboratory Groningen, Netherlands							
Education Executive Agency & Tax Offices Groningen, Netherlands							
Castle Towers Sydney, Australia							
Singapore University of Technology and Design Singapore							
Mercedes-Benz Museum Stuttgart, Germany							
The National Art Museum of China NAMOC Beijing, China							
Flagstore Louis Vuitton Japan							