

2018 USE

LIVING ON TOP OF TEMPELHOF AIRPORT

Tempel**HUB**

"Co-living Fashion Studio on Tempelhof"



Zhu runzi, Ryan
Ho Kwun Cheong, Anson

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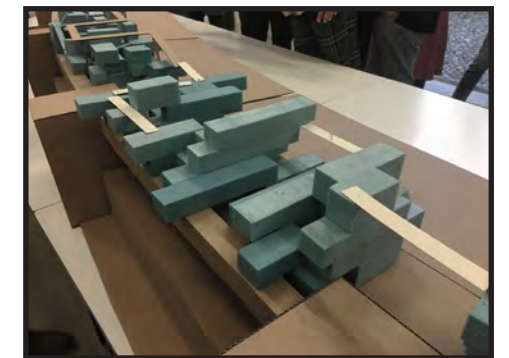
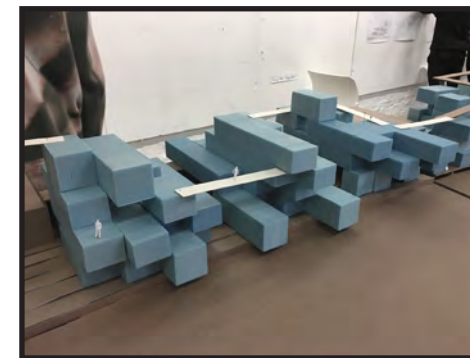
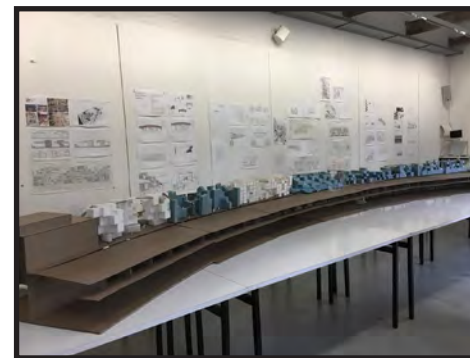
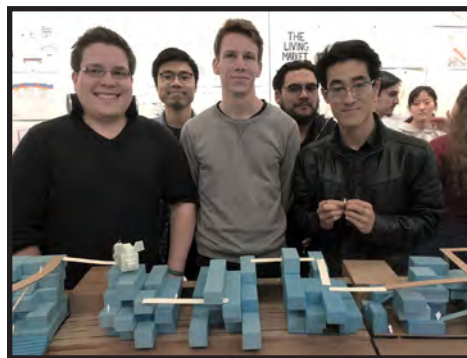
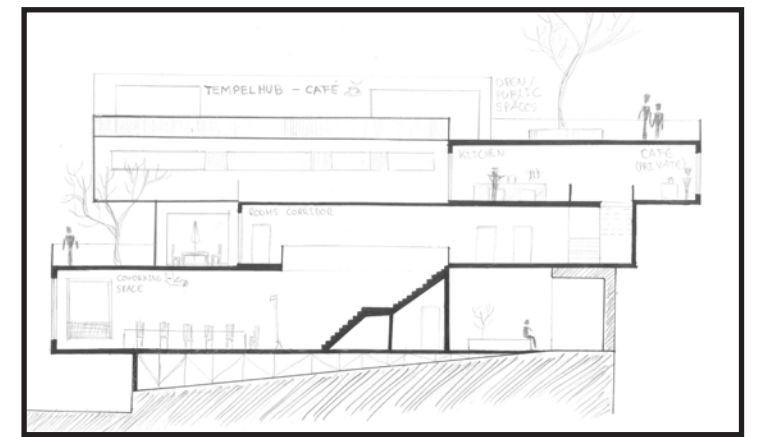
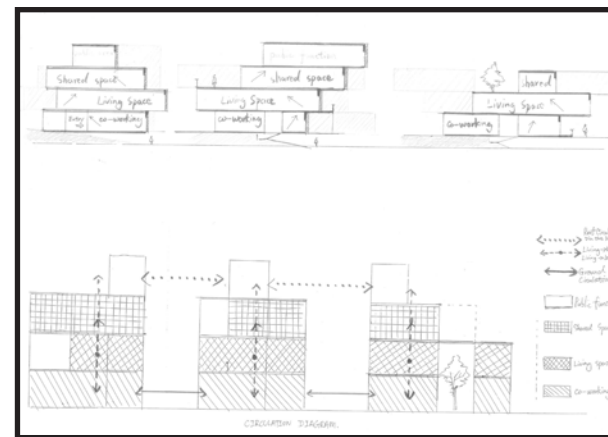
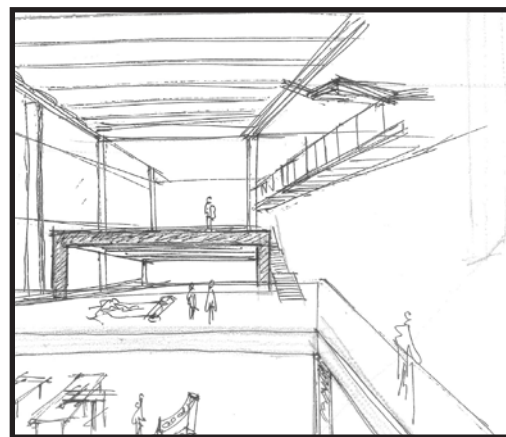
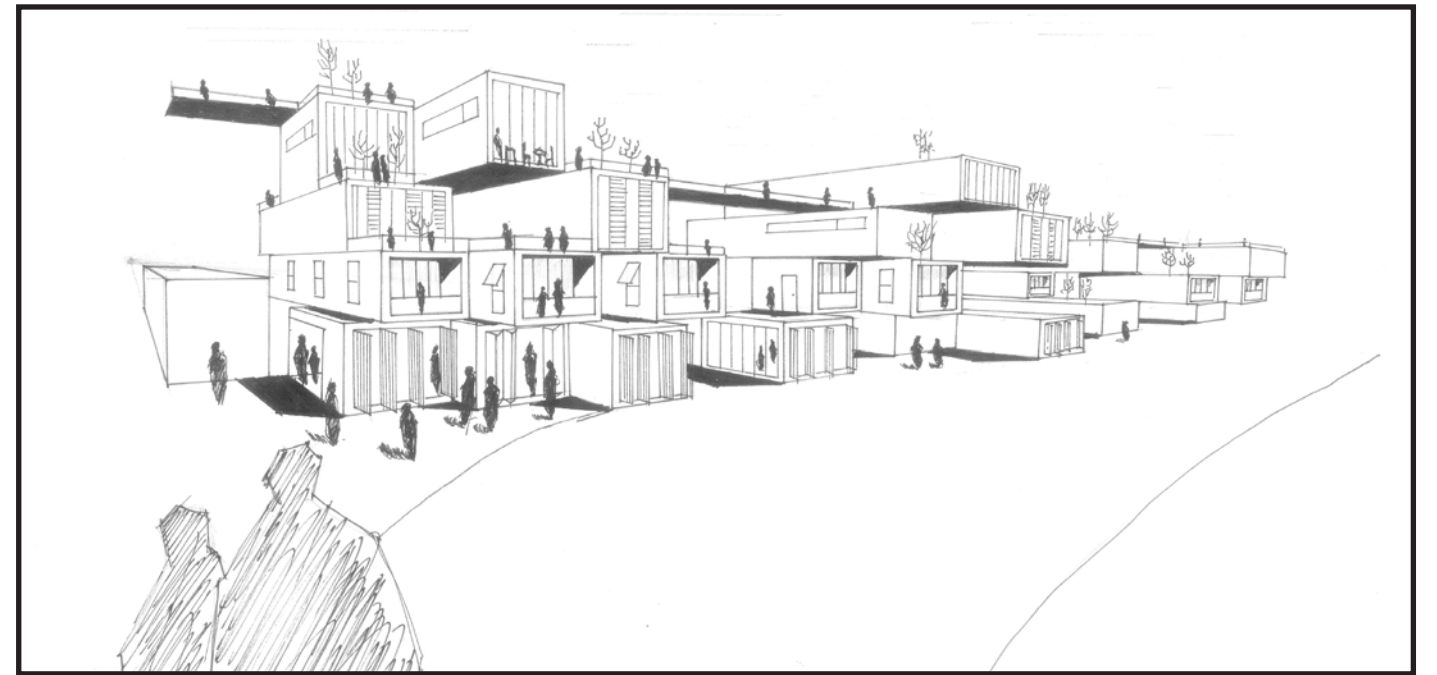
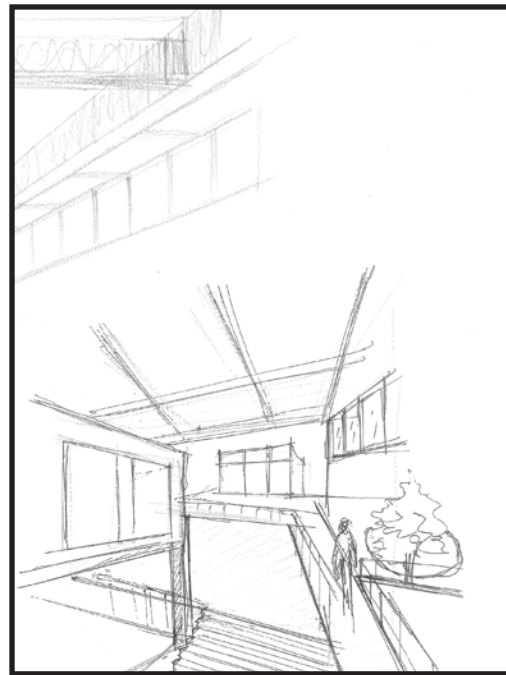
Berlin Intensive Week

Co-Working Housing on Tempelhof Airport

During the Berlin Intensive Week, we worked with the students from different universities with different background.

Students from Germany shared the basic site information to us so that we have the fundamental knowledge about the culture and the history.

We worked together and formed a concept of "TempelHUB" which is a Co-Working Housing on top of Tempelhof Airport. The idea come from the situation when we are having the studio together. We want to strengthen the connection between student therefore we want to create a co-working housing on Tempelhof airport. We started to form by simple linear massing which stretching towards North and South direction.



Design Concept

A Co-living Fashion Studio Connecting North & South

TempelHUB is a temproray facility of housing and fashion studio for students, artists, designers and everyone who can speculate the future and join forces, for a multidiciplinary experience in Berlin today.

We want to strengthen the connection between users so that they can work more effectively and efficiently. The aim of the project is to create the best atmosphere and unique living experience for its inhabitant to create and participate together here in TempelHUB.



Perspective from South



Perspective from North

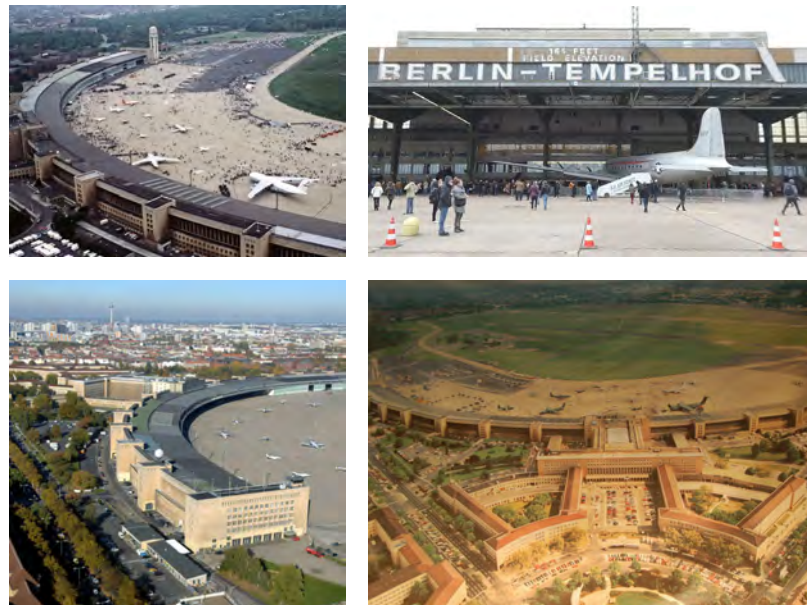


Analysis

Site Location

Tempelhof Airport was one of the first airports in Berlin, Germany. The old terminal was constructed in 1927, and the airport ceased operating in 2008. It is one of Europe's three iconic pre-World War II airports. The design of the airport is different from the common commercial airport.

During the site visit, we have visited the main lobby, aircraft parking ground, the roof, underground refuge area, staff canteen and etc. The spaces has given us an insight to design. As the spaces are different from the normal airport design.



Site images



Site Location Plan

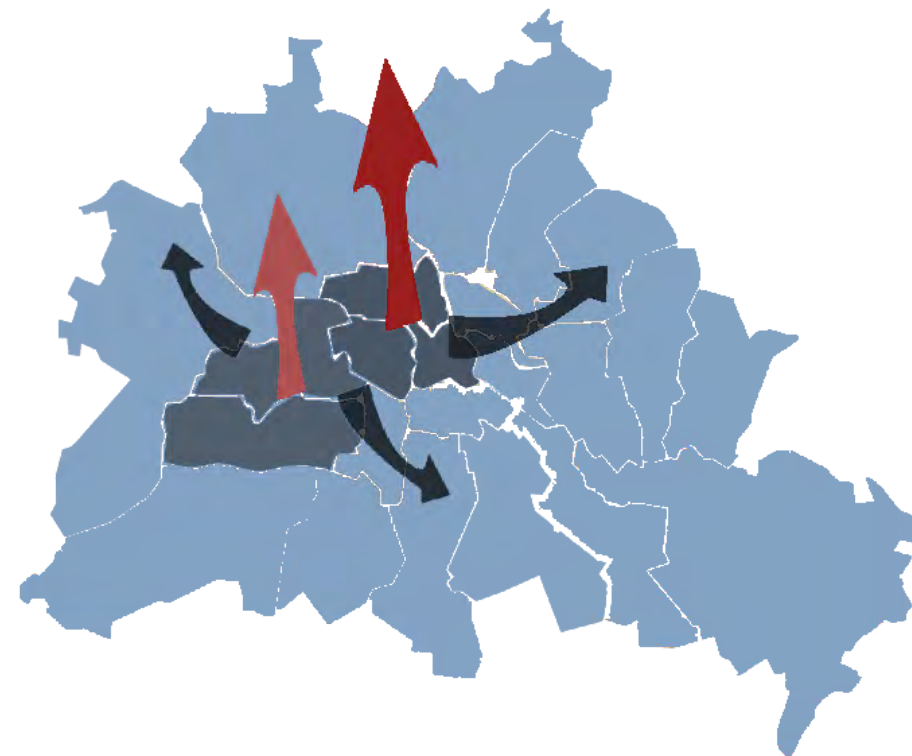
Analysis

The Vacant Nomad - Fashion Activities in Berlin

Over the past 10 years, there has been a rapid growth in fashion activities in Berlin. There are vast number of small fashion companies popping up before the first Berlin Fashion weeks in 2007.

Differnt from the fashion culture in other countries, “anti-elitism” fashion culture has been created in Berlin as it is encouraged that different creatives to get into the fashion industry.

Moreover, after the fall of the GDR and communist in 1989, there were a lot of abandoned space. The start-ups are allowed to privately own the vacant space, and this influenced the fashion graduates work with the urban planners to look for the space for studios and fashion show. Thus, the fashion designer are started to use urban spaces to add meaning to their creations and this is different from the other fashion cultures.



Concentration of Fashion activities

Mitte and Wilmersdorf were the most affluent areas and the most rapid growth over the 10 years. And thus the fashion industries were spreading to remaining area in Berlin.

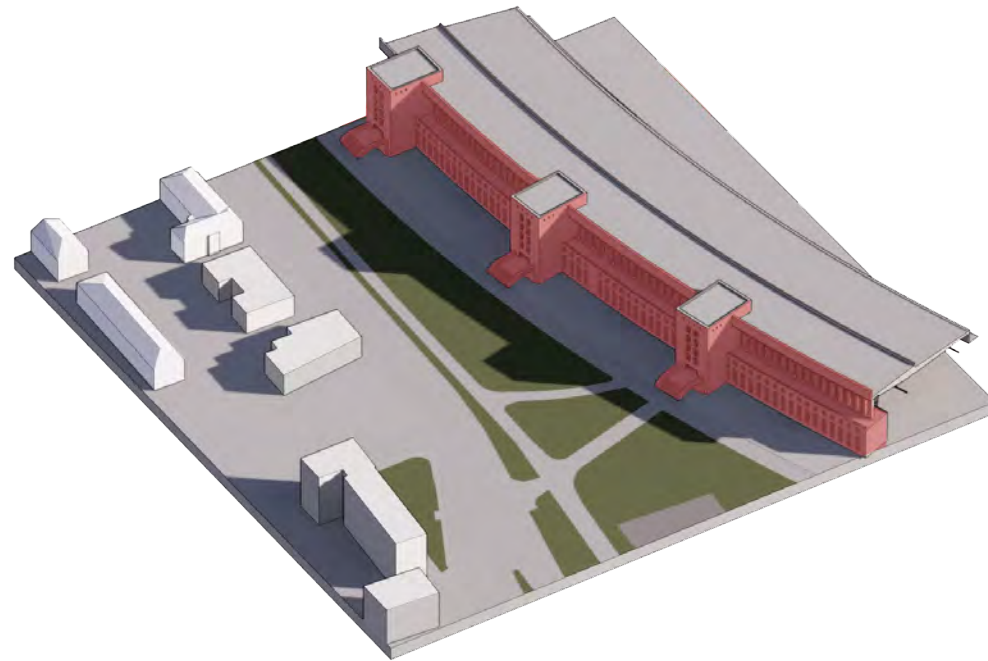


Vitalization of Vacant Spaces

Berlin fashion graduates working with urban planners to find spaces for their studios and fashion shows after the fall of the GDR and vitalize the vacant spaces in Berlin.

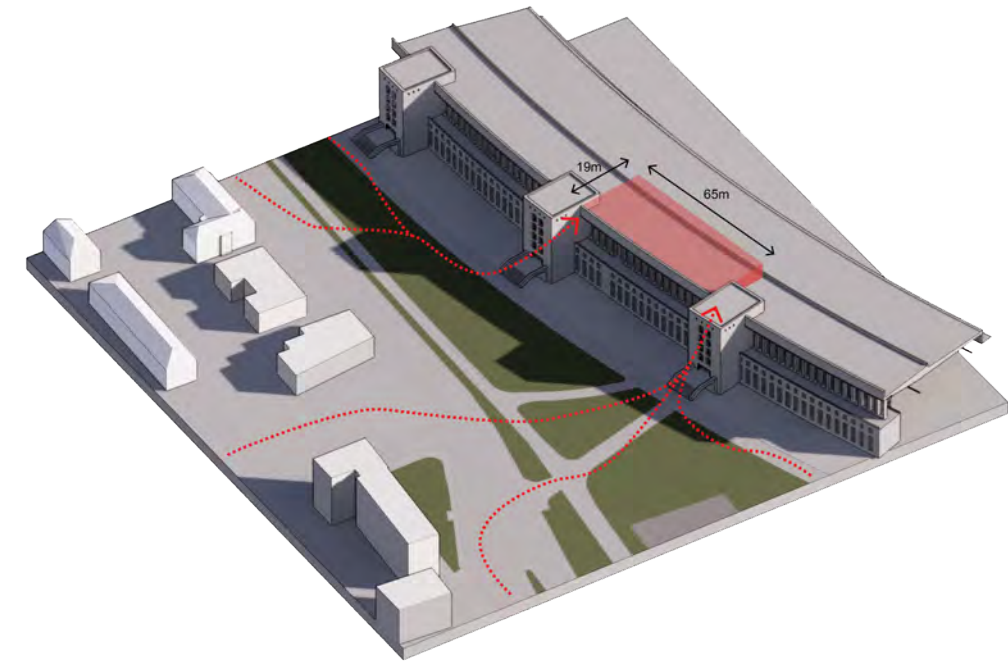
Analysis

Site Constraints [Isolated Site; Street Level Entry; Structure; View]



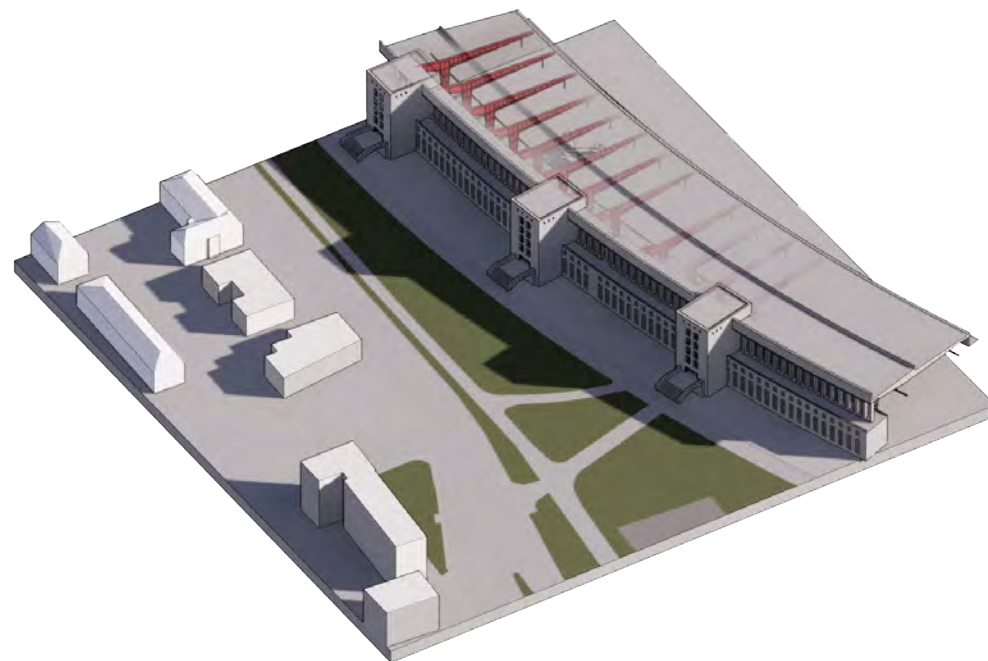
01 Isolated Site

The context of Tempelhof airport is separated from the surrounding urban, making it an isolated architecture in the city.



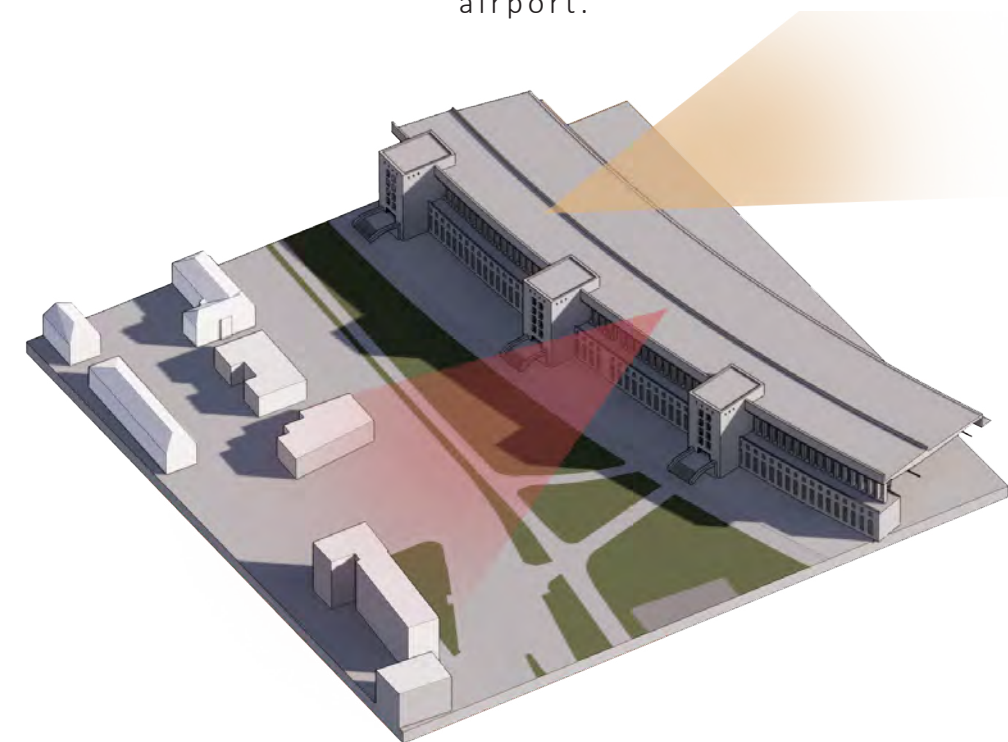
02 Street Level Entry

This site is on top of the airport which needs to consider how people access to the site from the street level to the airport.



03 Hanger Structure

The roof of the airport is supported by massive hanger structure pointing toward the Tempelhof park.



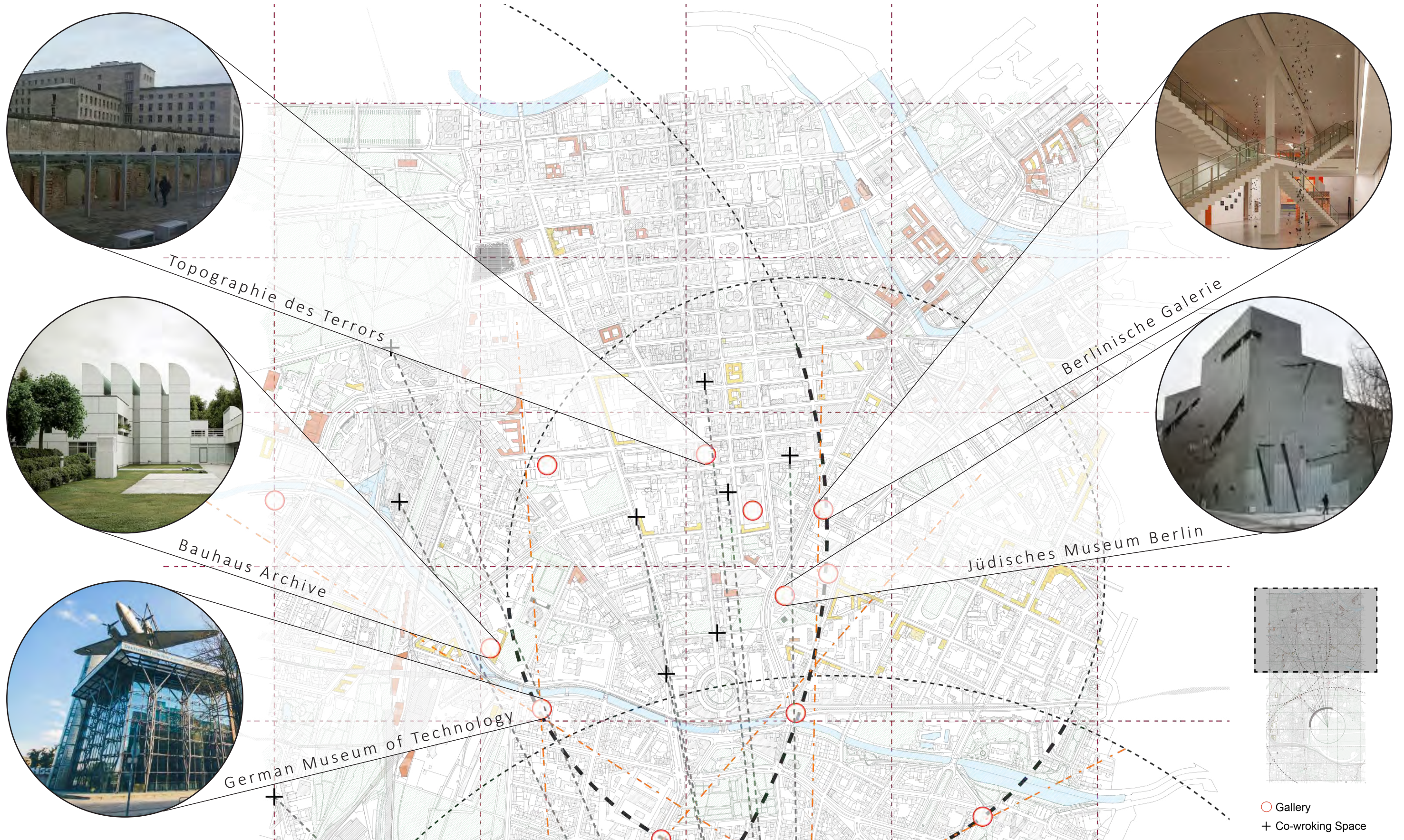
04 North & South View

The airport acts as a barrier to separate two different views, cityscape and the view of the park.

Analysis

Mapping

Berlin is a city full of culture and historical atmosphere. A lot of museums, Artist studio can be found here. The initial idea is try to identify our position in this site, and form a concept in providing a experimental prototype that can provide a space for the group of creators to work and live together in the meantime for certain period.



Analysis

Mapping

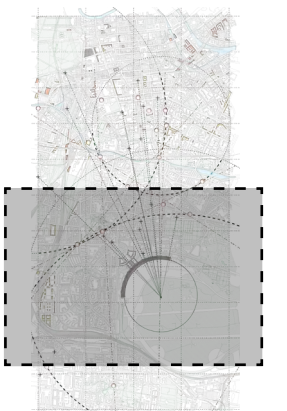
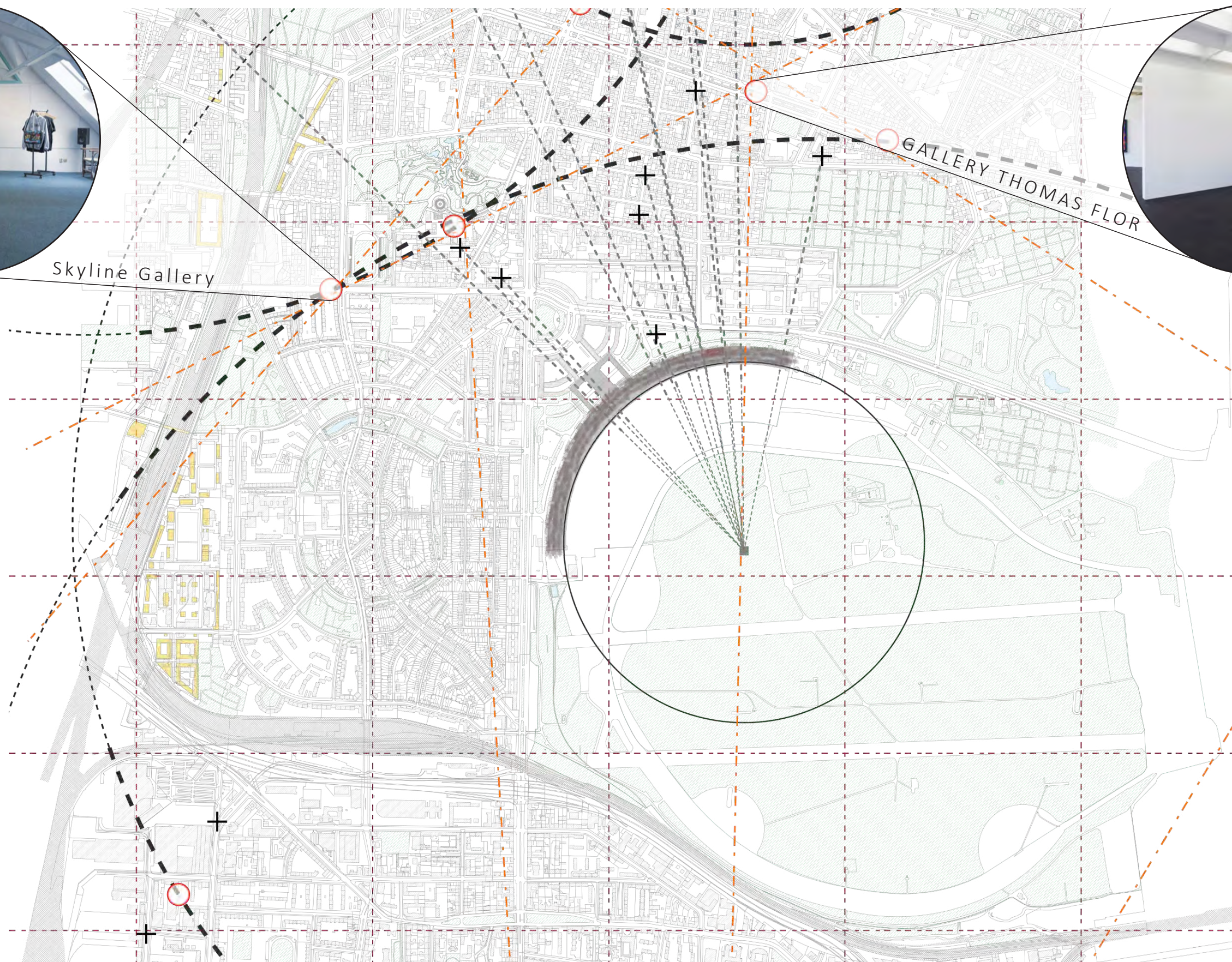
Moreover, the urban fabric of artistic facilities such as workshop and gallery can be somehow reflected and, this urban scale tour can be experienced in human-scale space in our project within the linkage of different programmes and spaces.



Skyline Gallery



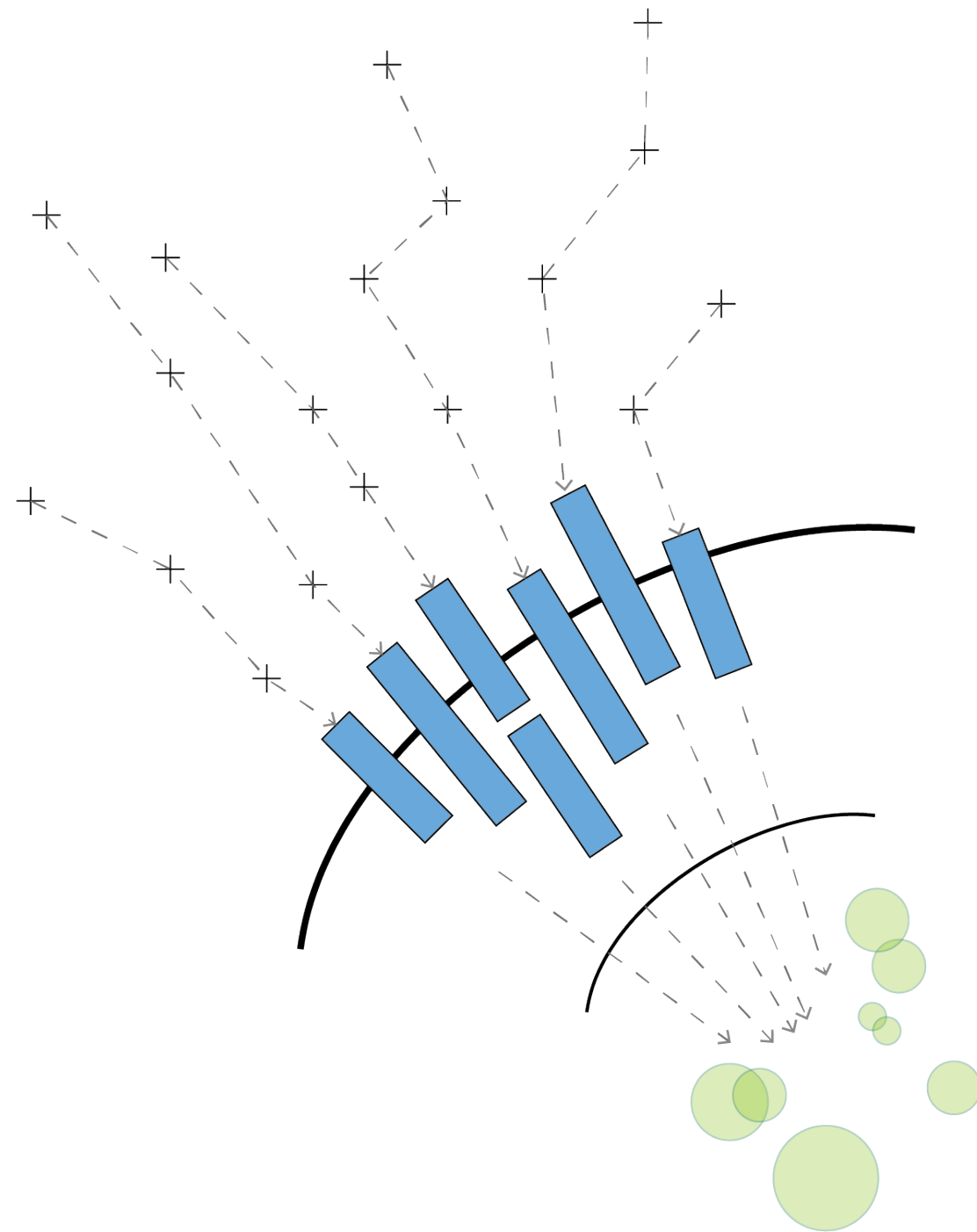
GALLERY THOMAS FLOR



○ Gallery
+ Co-working Space

Narrative

Mapping [Input - Process - Output]



[INPUT]

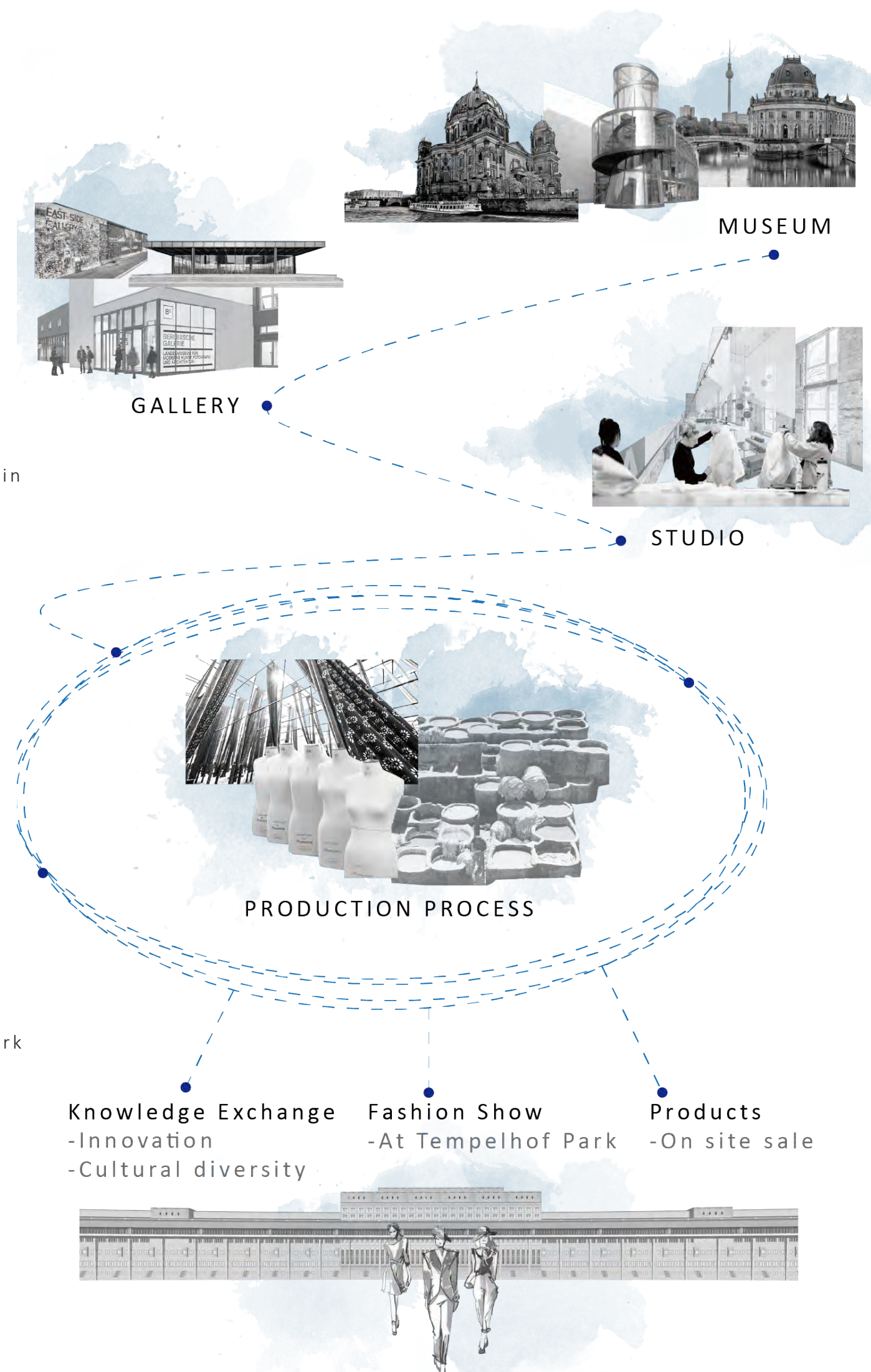
To insert cultural spaces /
fashion industries from Berlin
towards Tempelhof

[PROCESS]

Journey of creating
artwork

[OUTPUT]

Vitalization of Tempelhof Park
as Fashion show
or product display

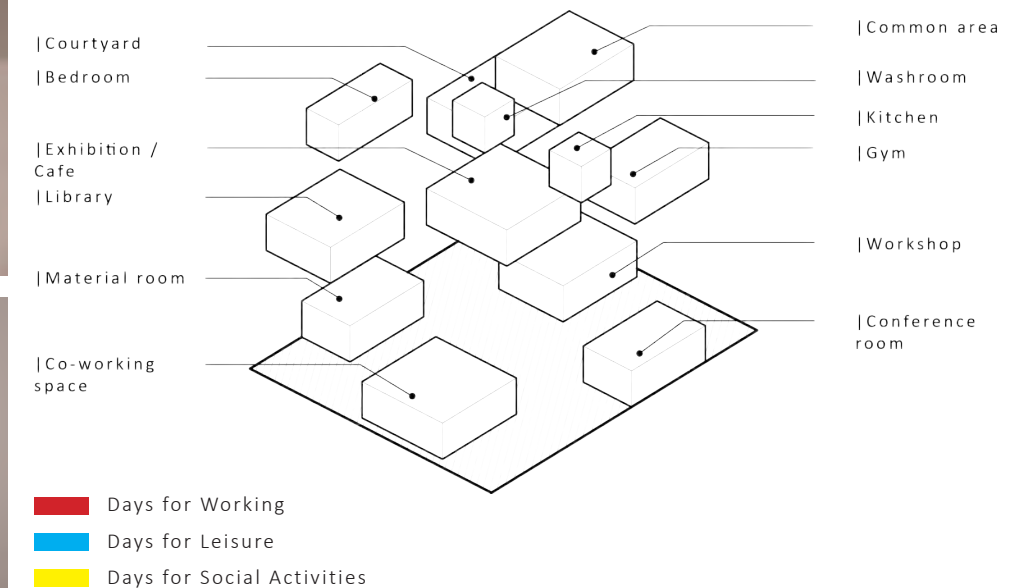
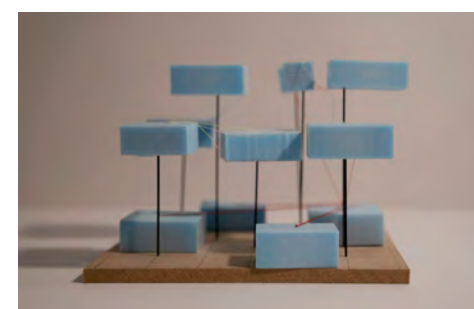
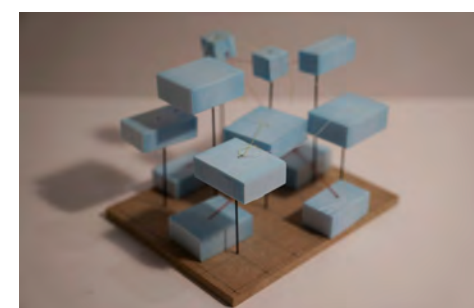
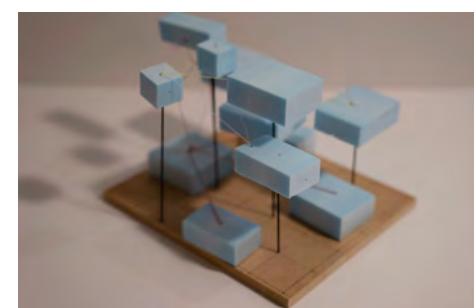
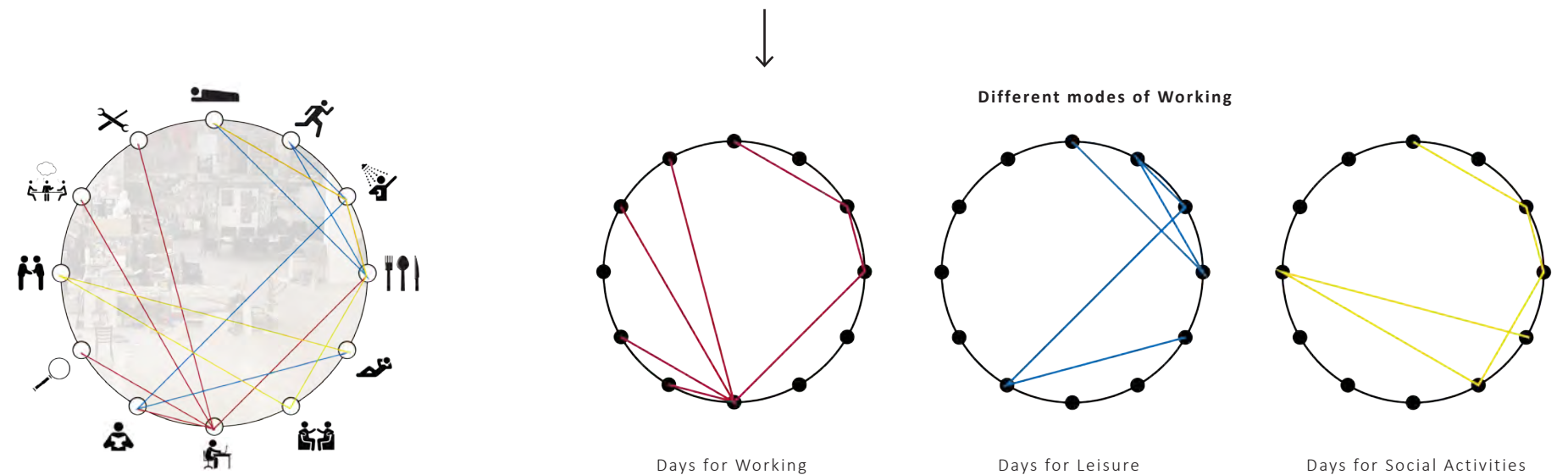
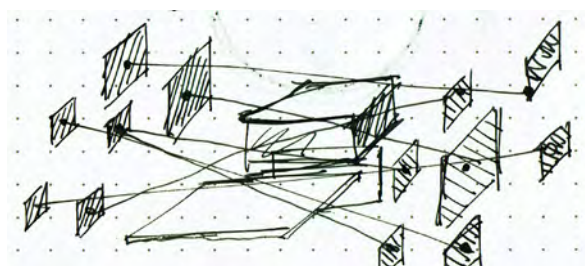
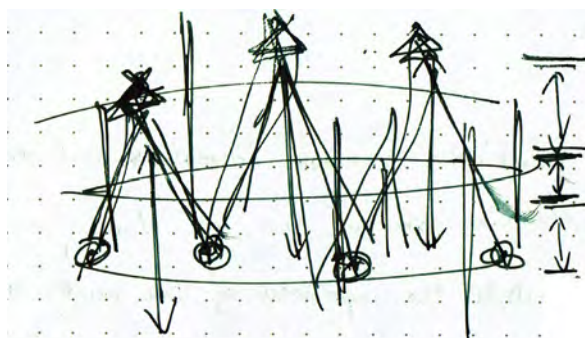
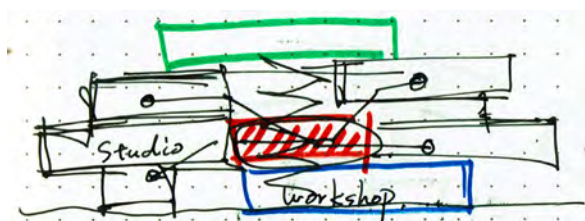


Design Proposal

Programme Arrangement- LifeStyle Pattern

We start designing the programme and arrange their position by investigating the lifestyle pattern and the modes working, we tried to convert the graphics into a 3-dimensional or architectural way.

We strated with some sketches about the relationship of different programme and how the spaces should be and within the linkage. The spaces within the building somehow reflected the linearity of the form. We then created a conceptual model about how the programme is placed according to the different modes of working for people.



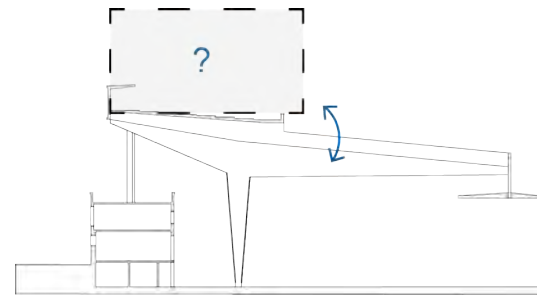
Conceptual Model Testing the Functional Arrangement

Design Proposal

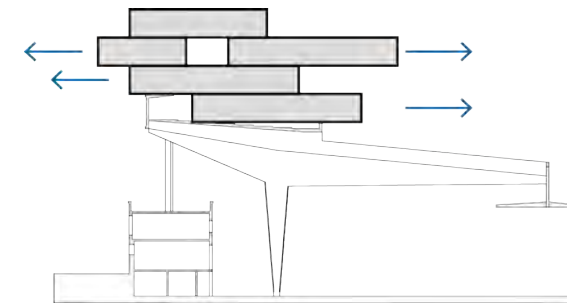
Massing Development

We tested the design by playing with the possibilities of modular unit, and stretching it in northsouth direction to create an visual connection between the north part and south part of Berlin, and somehow response to the both sides with its dynamic form.

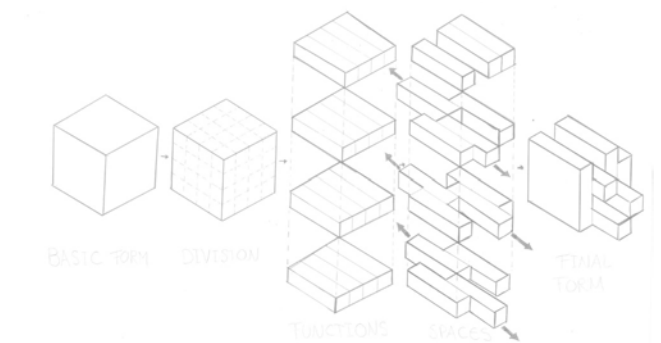
In addition, the linear continuity of Tempelhof will be somehow interacted and reformed.



The form of the building need to be response Tempelhof airport(Structure or form)



Stretching out linear form from a cube



Massing Development

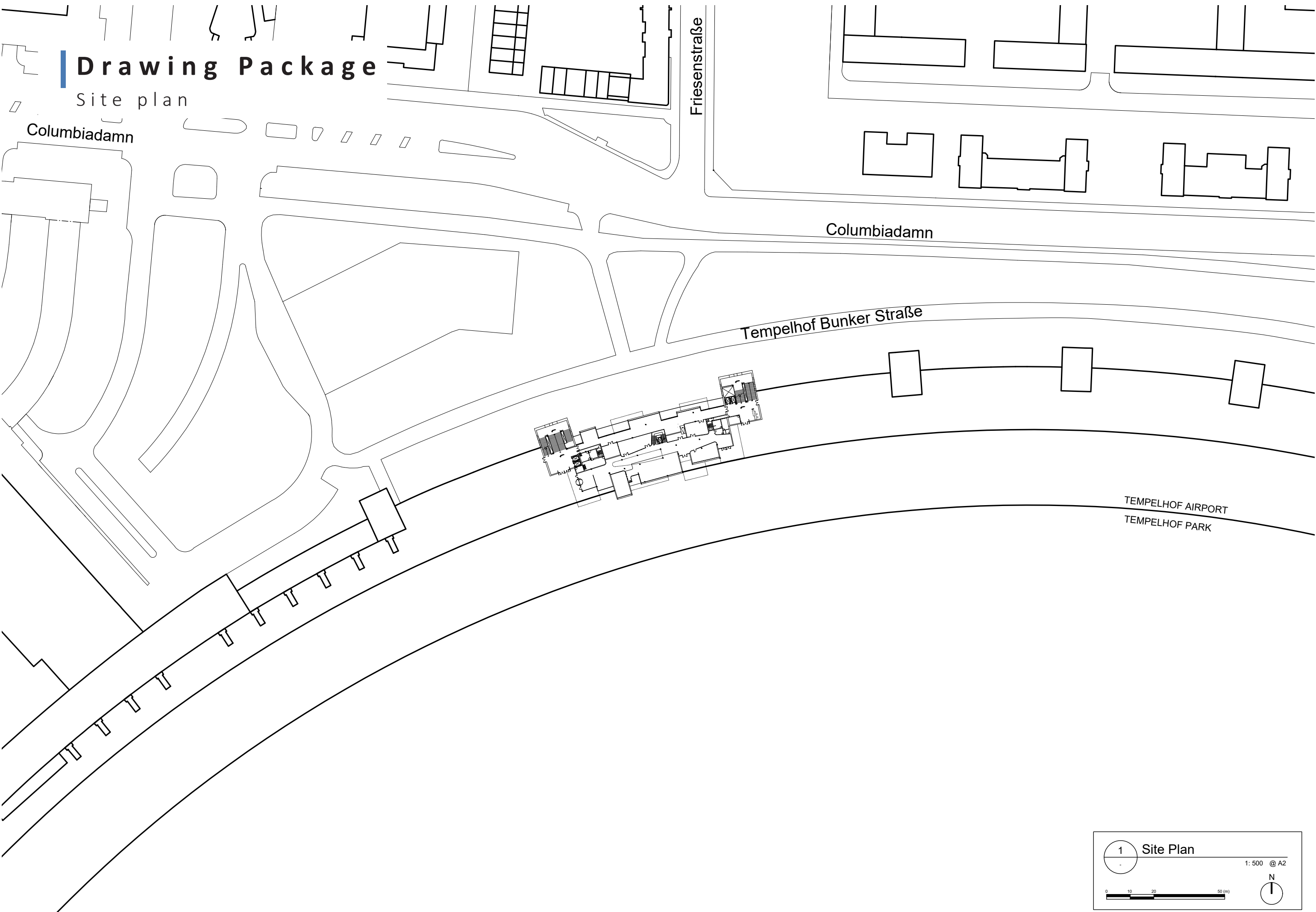


Perspective from North

Drawing Package

Location Plan





Drawing Package

Site plan

Columbiadamn

Friesenstraße

Columbiadamn

Tempelhof Bunker Straße

TEMPELHOF AIRPORT
TEMPELHOF PARK

1

Site Plan

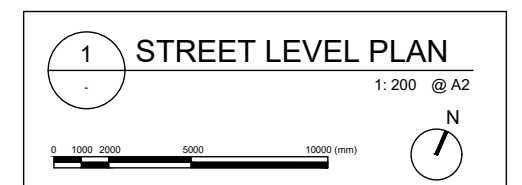
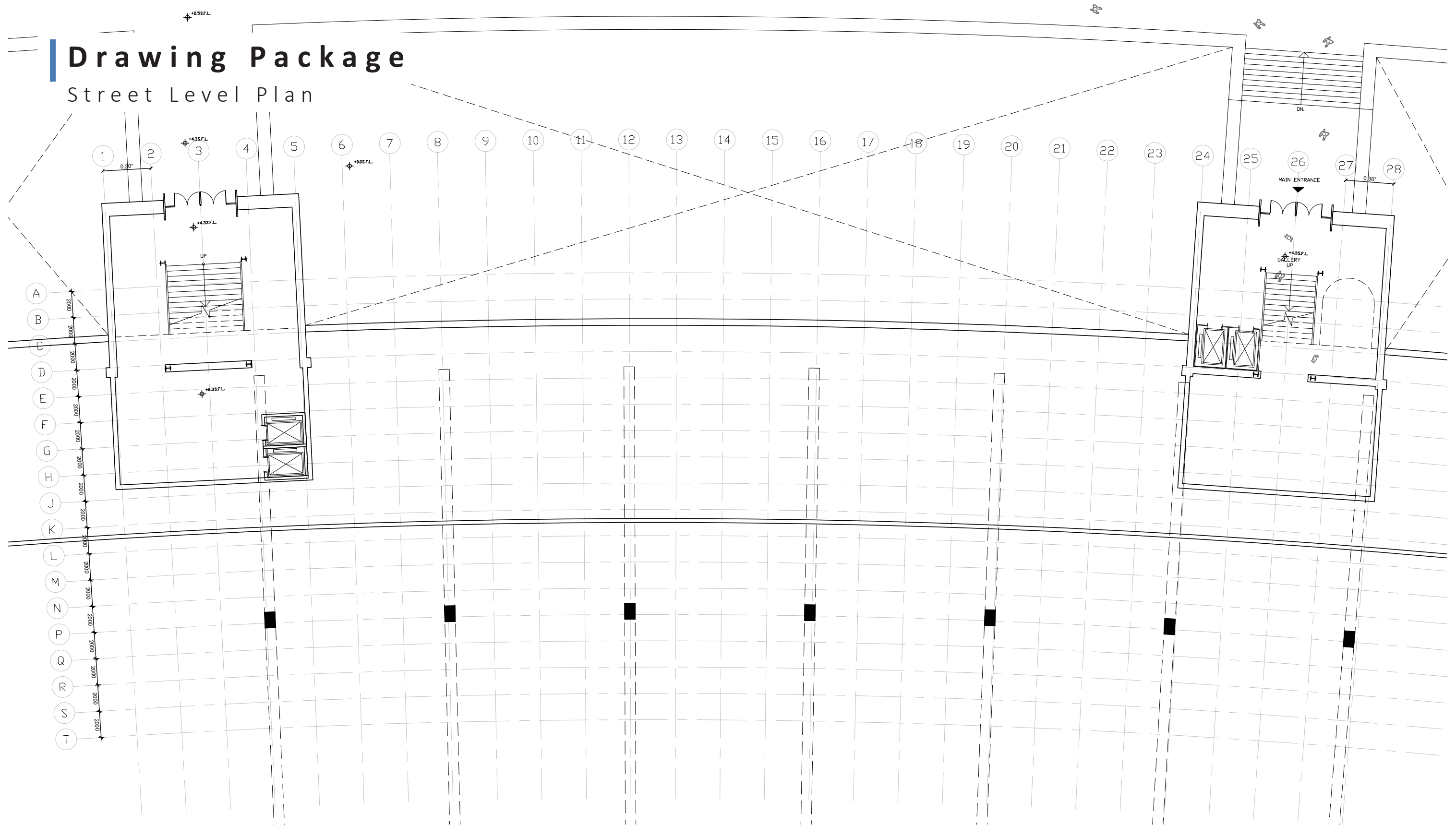
1: 500 @ A2

0 10 20 50 (m)

N

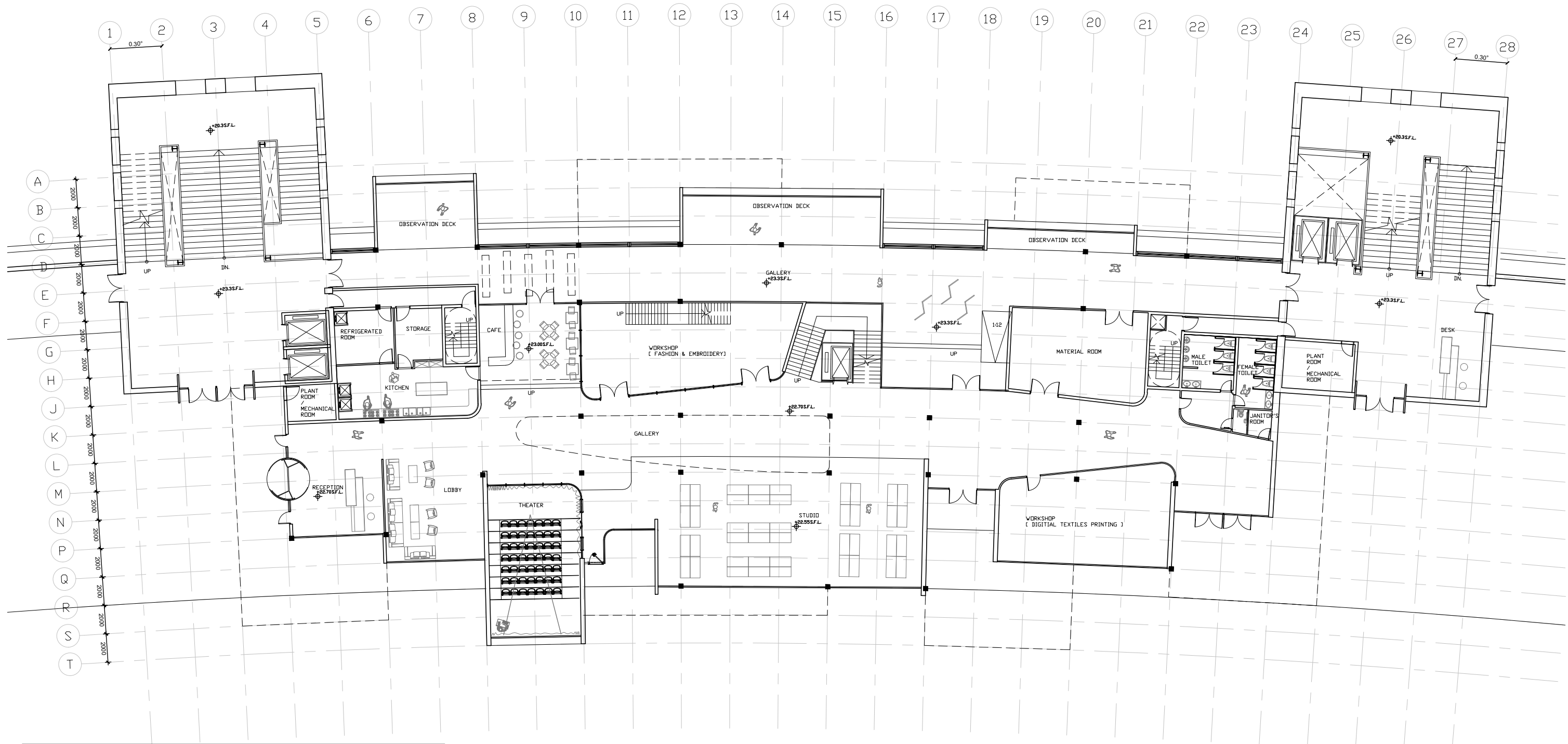
Drawing Package

Street Level Plan



Drawing Package

Ground Floor Plan



Compliance with UK Regulation

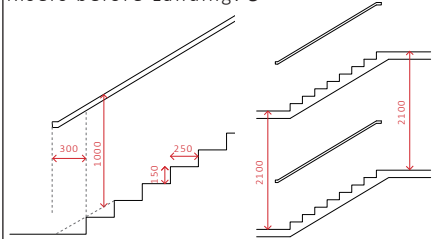
Part K: Stair

Chapter 1.3 Utility Stair-Riser: **Min 150mm ; Max: 190mm**
Utility Stair-Going: **Min 250mm ; Max: 400mm**
Risers before Landong: **Max 16**

General Access Stair-Riser: **Min 150mm ; Max: 170mm**
General Access Stair-Going: **Min 250mm ; Max: 400mm**
Risers before Landing: **Max 12**

Chapter 1.11 Headroom ofr Stairs: **Min 2m**

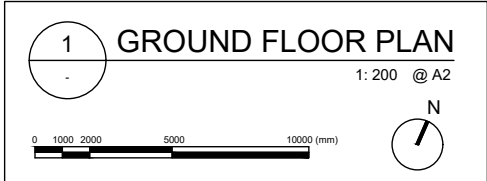
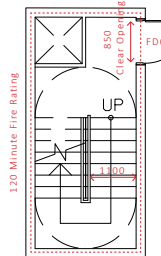
Achieved: **150mm, 250mm**
Risers before Landing: **8**



Part B (Vol2): Fire Door & Escape Stair

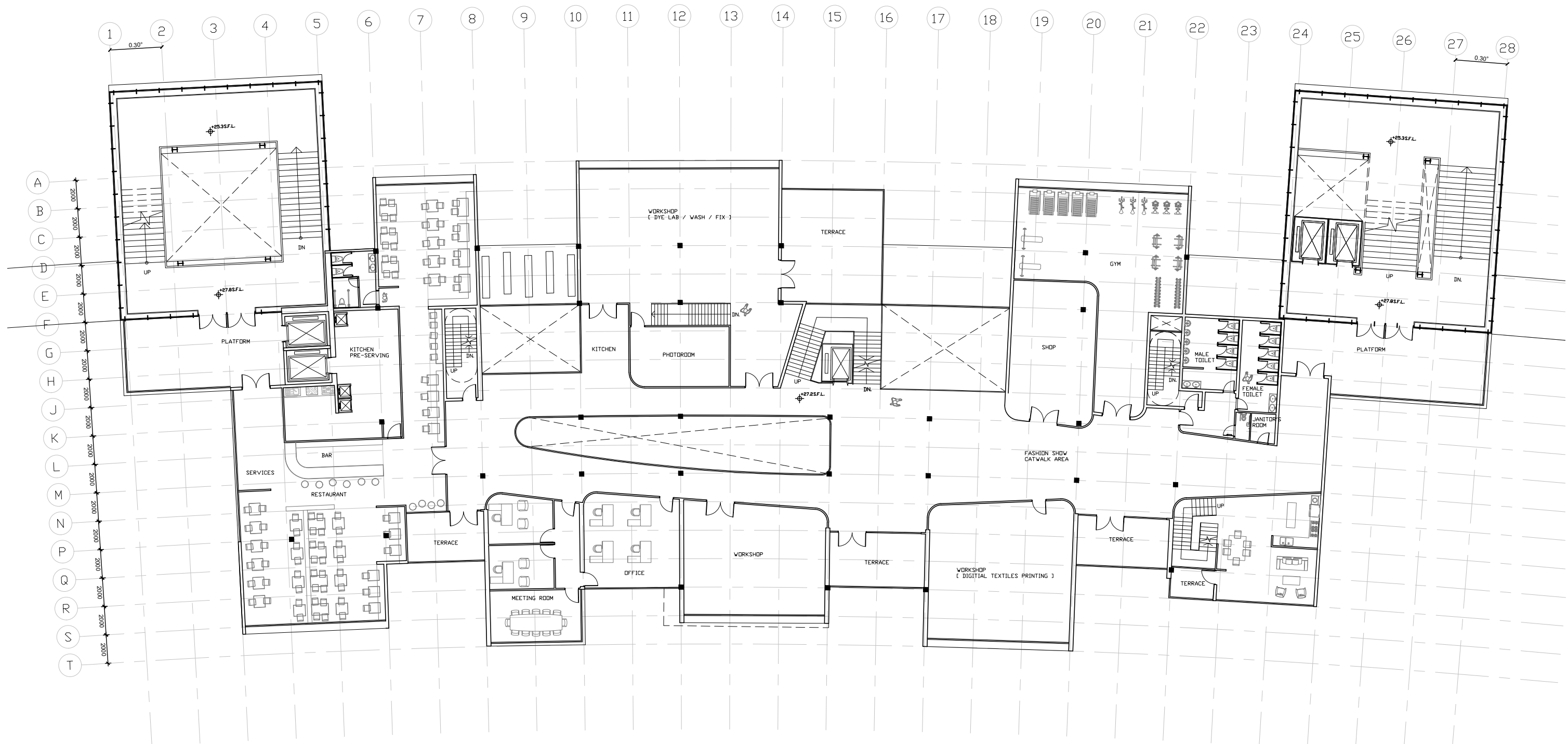
Chapter 2.13 **30 mins** fire resisting construction around entrance hall

Chapter 4.19 Minimum width of escape stair: **1100mm**



Drawing Package

First Floor Plan



Compliance with UK Regulation

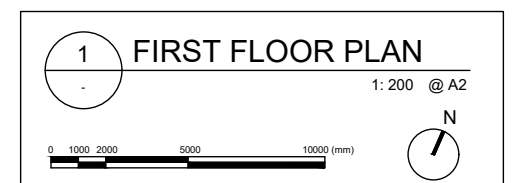
Part B(Vol2): Travel Distance

Chapter 2.2

Travel distance from anypoint of the floor to the nearest entrance no more then **30m** when there is more than one escape stair.

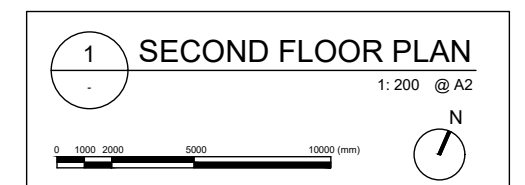
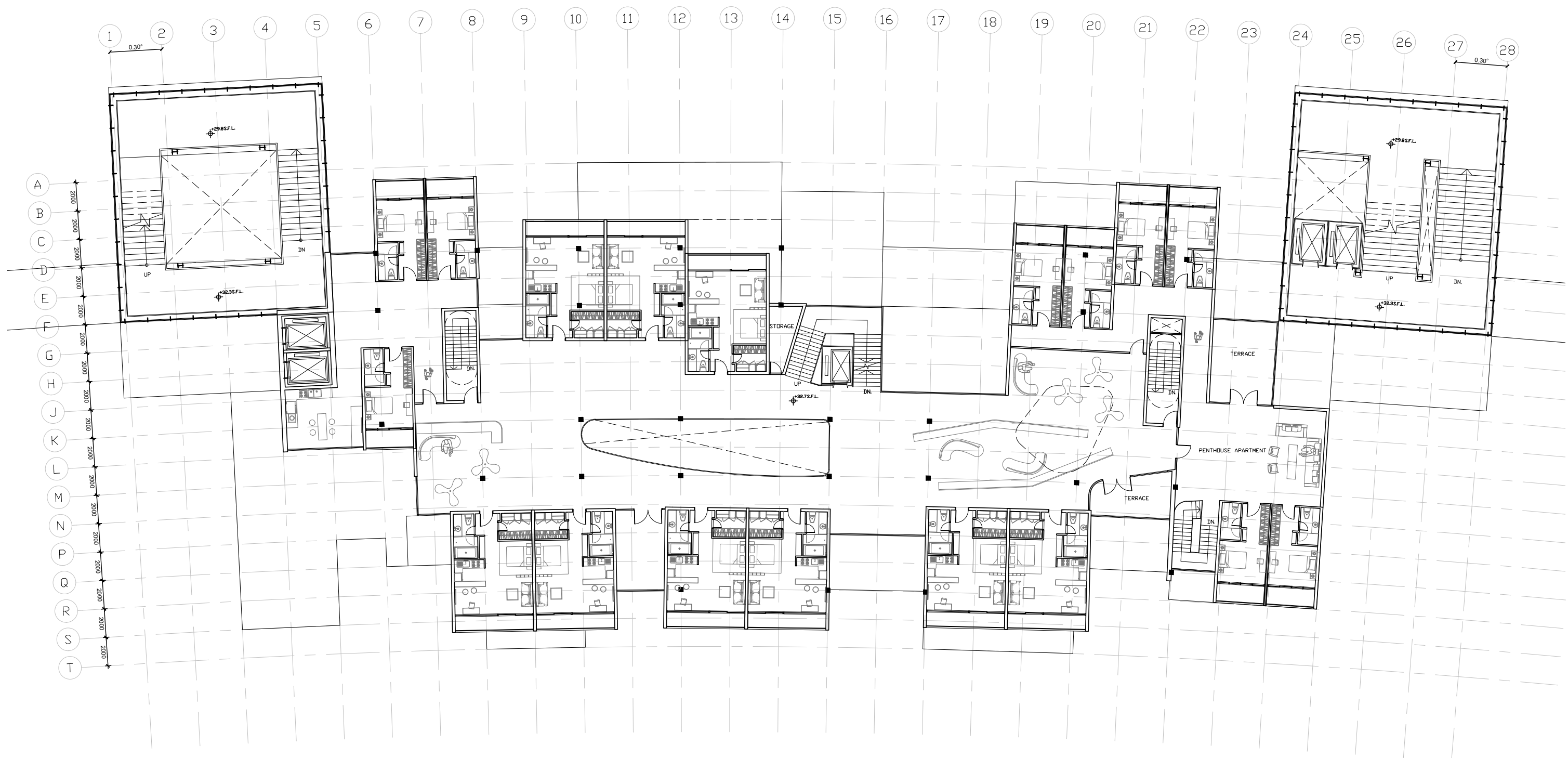


P.17



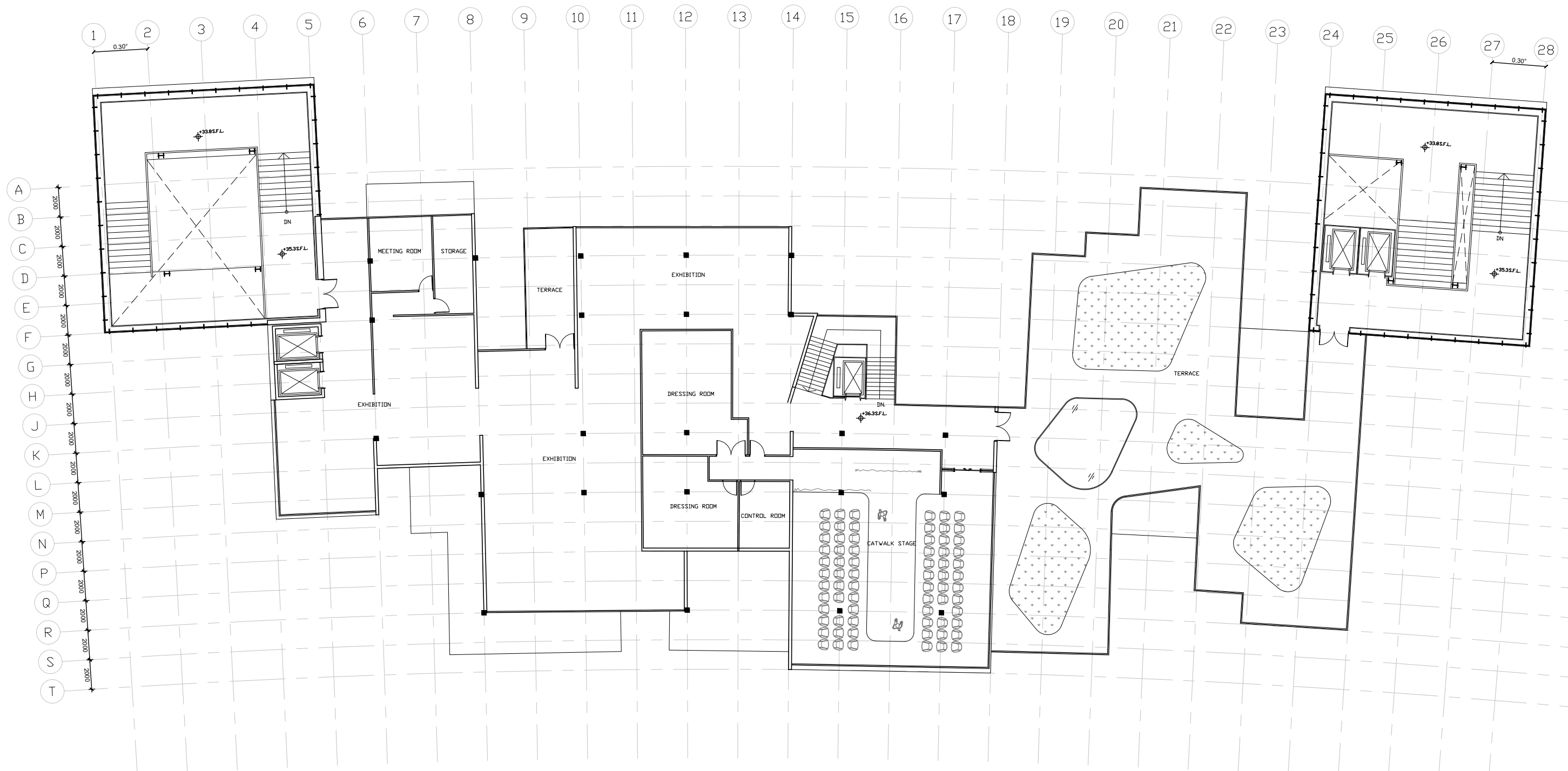
Drawing Package

Second Floor Plan



Drawing Package

Third Floor Plan



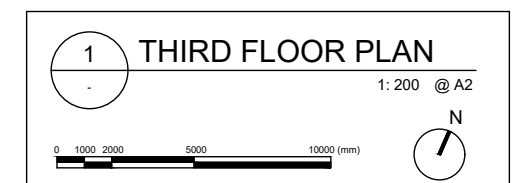
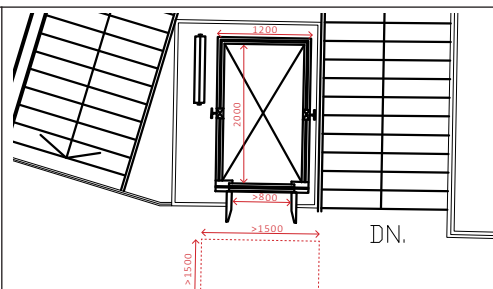
Compliance with UK Regulation

Part M: Elevator

Chapter 3.28 Unobstructed manoeuvring space of **1500mm x 1500mm**, or a straight access route **900mm** wide, in front of each lifting device.

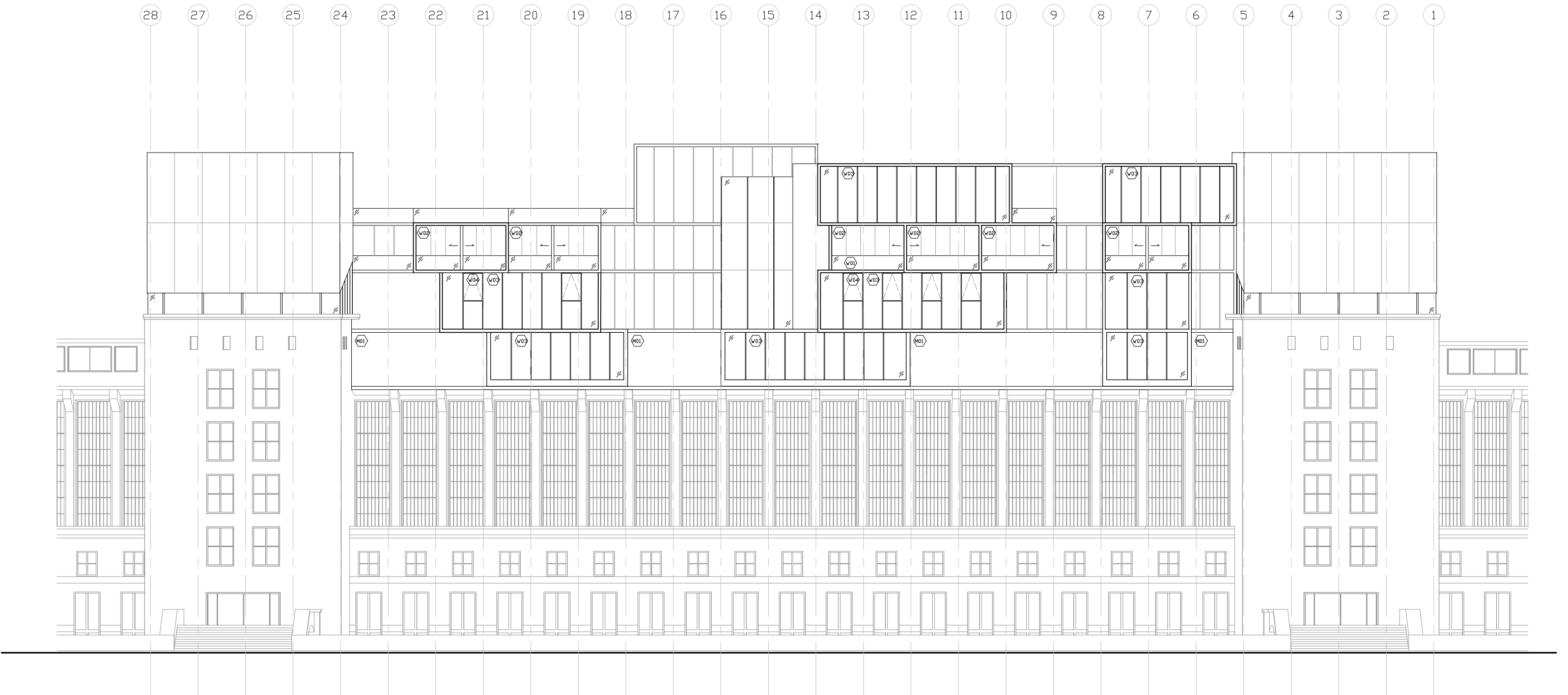
Minimum clear opening of **800mm**.

Minimum **900mm wide and 1250mm deep**.



Drawing Package

North Elevation



Glazing Schedule

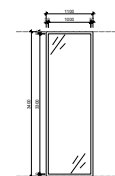
W01 - Glass Balustrade

Frame : Stainless Steel Cover
Cap C/W Satin Finish
Glazing : 15mm Thk. Clear
Tempered Glass



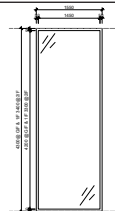
W02 - Living Unit Glazing

Frame : ALUM.
(Light Grey Color PVF Coating)
Glazing : 20mm Dark Grey Tinted Glass



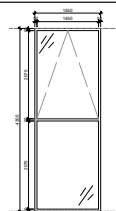
W03 - Glazing

Frame : ALUM.
(Light Grey Color PVF Coating)
Glazing : 20mm Grey Tinted Low-E
Tempered Glass



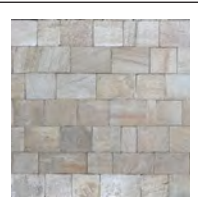
W03 - Openable Window

Frame : ALUM.
(Light Grey Color PVF Coating)
Glazing : 20mm Grey Tinted Glass



Material List

M01 - Stone finish



Location: Exterior wall finish at gallery at
G/F

Description: Same finish as the existing
Temelhof airport exterior wall

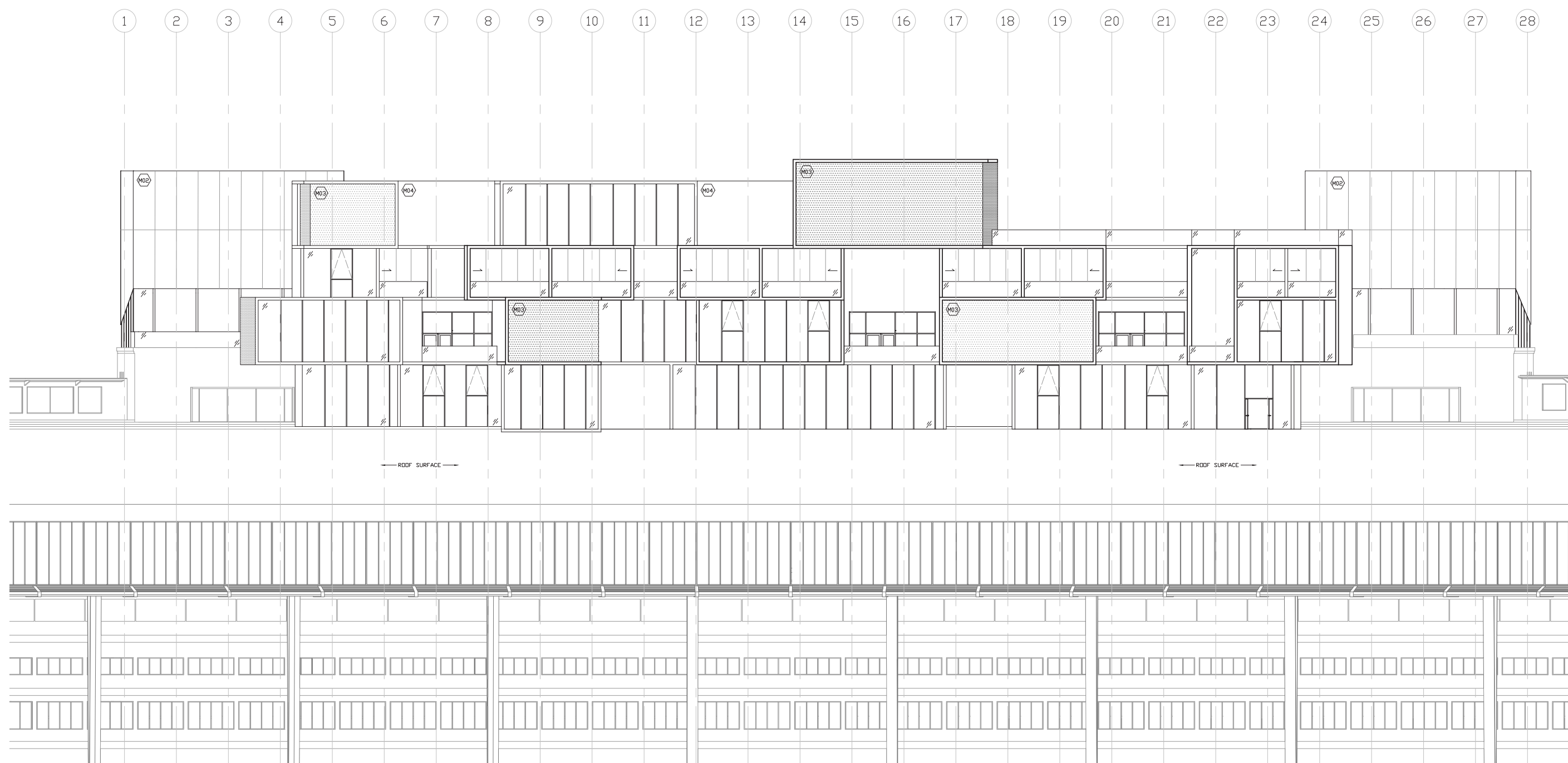
1 NORTH ELEVATION

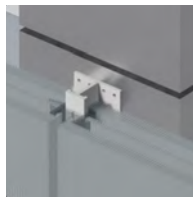
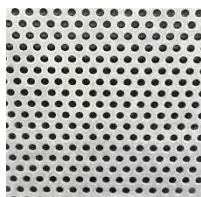

1: 200 @ A2

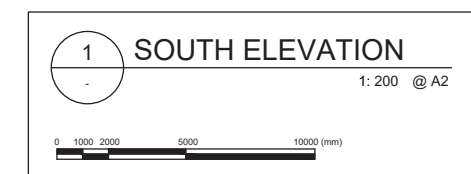
0 1000 2000 5000 10000 (mm)

Drawing Package

South Elevation

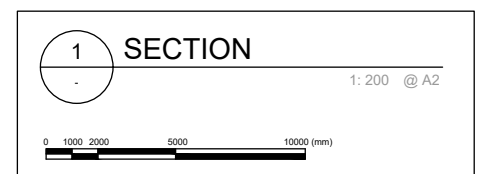
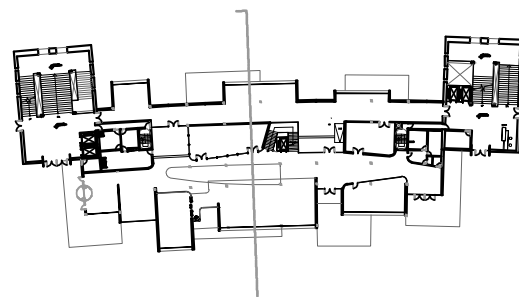
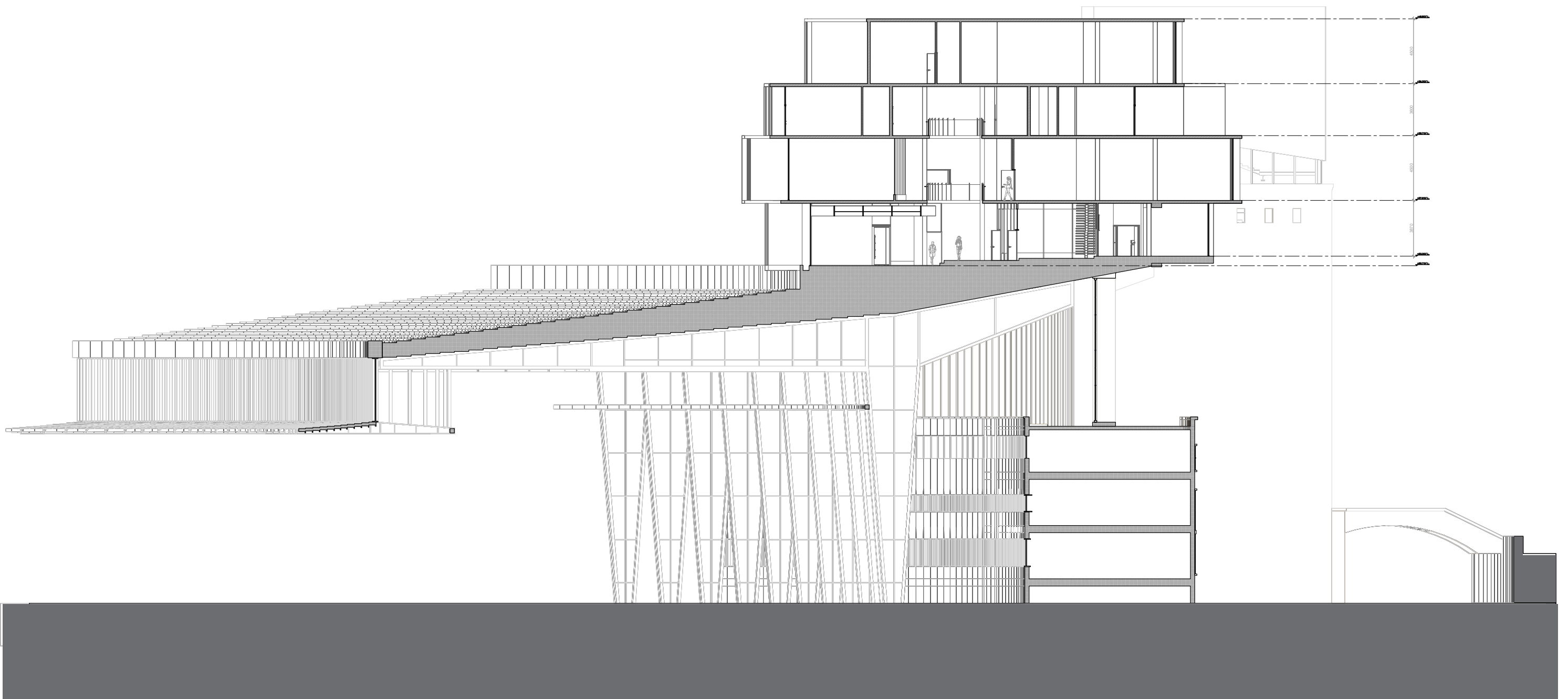


Material List					
M02 - Polycarbonate Panel		M03 - Aluminium Perforated Panel		M04 - Aluminium Composite Panel	
	<p>Location: Facade at the main core</p> <p>Description: Creating semi-translucent effect at the top of main core. To avoid excessive amount of light inside the gallery at main core.</p> <p>Detail: Refer to p.29</p>		<p>Location: At exhibition, restaurant, workshop</p> <p>Description: To avoid excessive amount of light inside the space.</p> <p>Detail: Refer to p.32</p>		<p>Location: All the exterior wall</p> <p>Description: Aluminium composite panel in white color.</p> <p>Detail: Refer to p.30-32</p>



Drawing Package

Section AA'



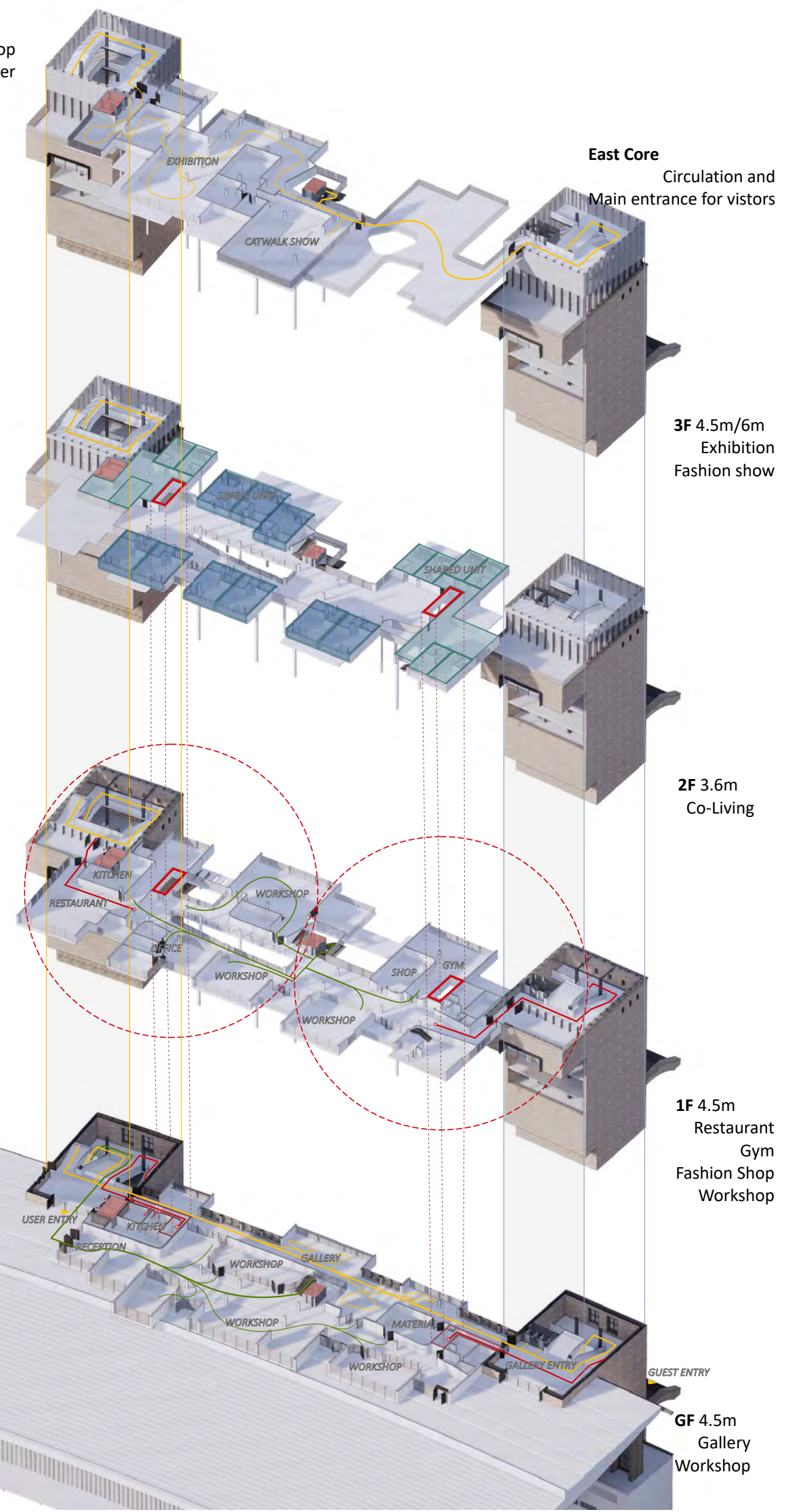
Drawing Package

Exploded Axonometric Diagram



West Core
Gallery from roof level to top
Main Entrance for fashion designer

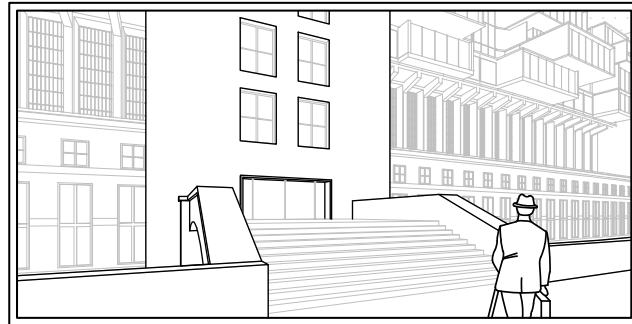
East Core
Circulation and
Main entrance for visitors



Drawing Package

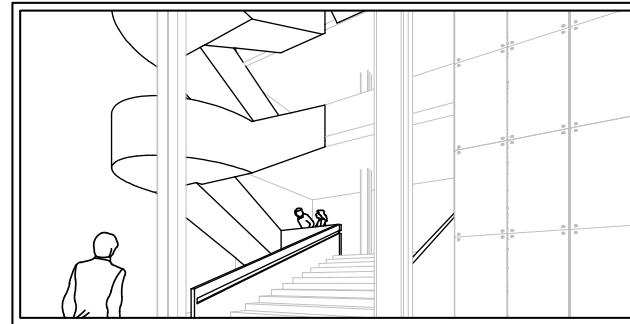
Circulation Diagram - Route for Visitors & Users

Visitors' Travel Route



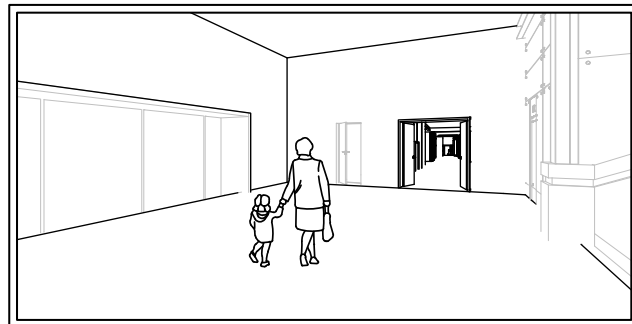
01 Main Entry

Visitors enter the building from the existing West core to start their journey full of gallery and exhibition.



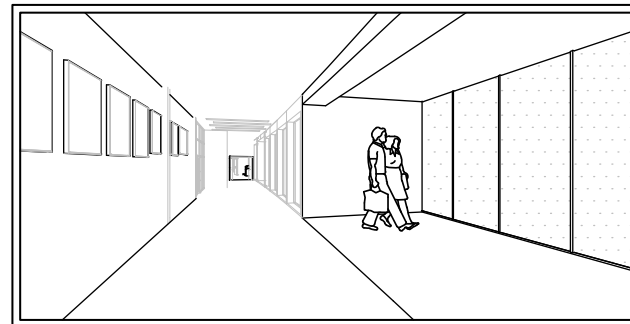
02 New Gallery inside the Core

Visitors can enjoy the gallery through out the route from ground to the roof level. Or they can choose to take the elevator directly up to the Fashion Show level.



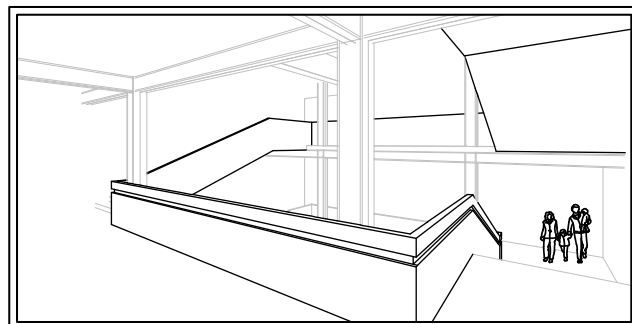
03 Roof Level

Visitors can choose to go out to the terraced roof on the left and continue their journey to the right to the gallery and observation deck.



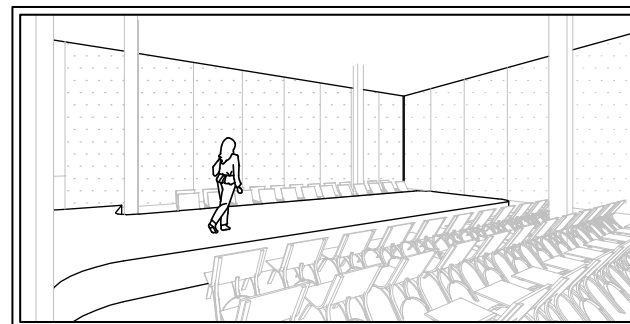
04 Gallery and Observation Deck

Visitors can enjoy the urban view from the observation deck.



05 New Circulation on Top of Existing Core

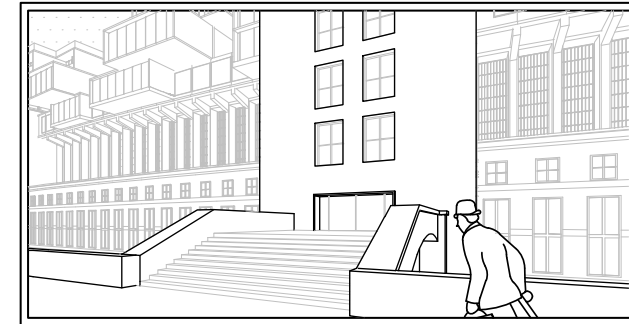
Visitors then go up to the fashion show floor through the newly design circulation inside the polycarbonate panel light box on top of the core.



06 Fashion Show at 3/F

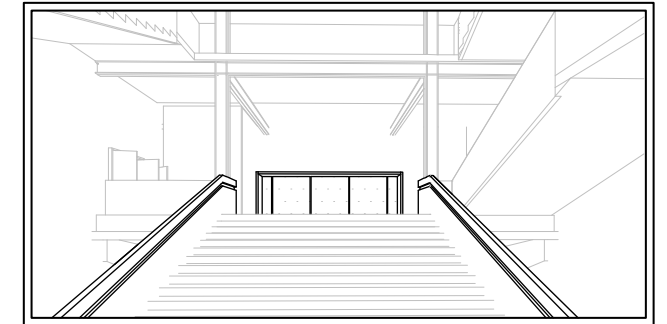
The fashion show take place at the 3/F, having the stunning view of Tempelhof Park.

Users' Travel Route



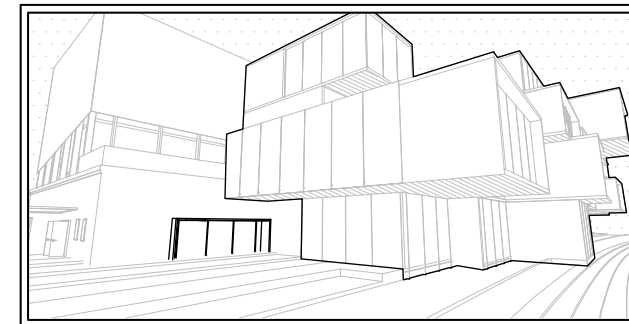
01 Main Entry

The users enter the building from the existing East core.



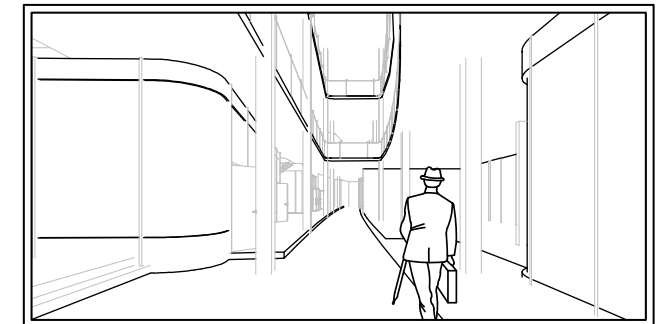
02 Grand Staircase in the Core

The users walk up the grand stairs to the terraced roof.



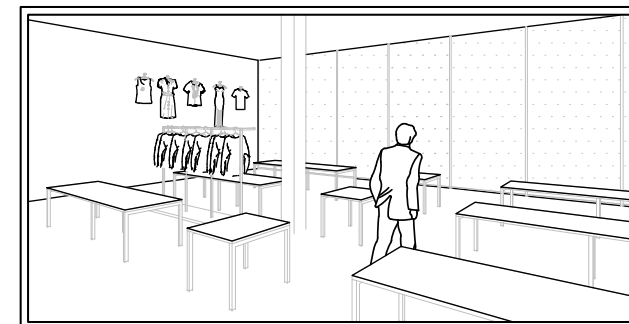
03 Entry of the Building

The users enter the building from the side of the building.



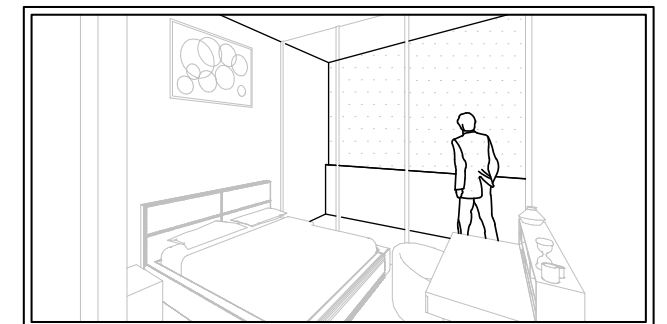
04 Atrium space

The users then entered the building to go across different spaces under the atrium space.



05 Fabric Workshop

The users work in the fabric workshop which they can enjoy the North and South view.



06 Living Unit

Each living unit consist of a private balcony to enjoy the stunning urban view or the view of Tempelhof Park.





Drawing Package

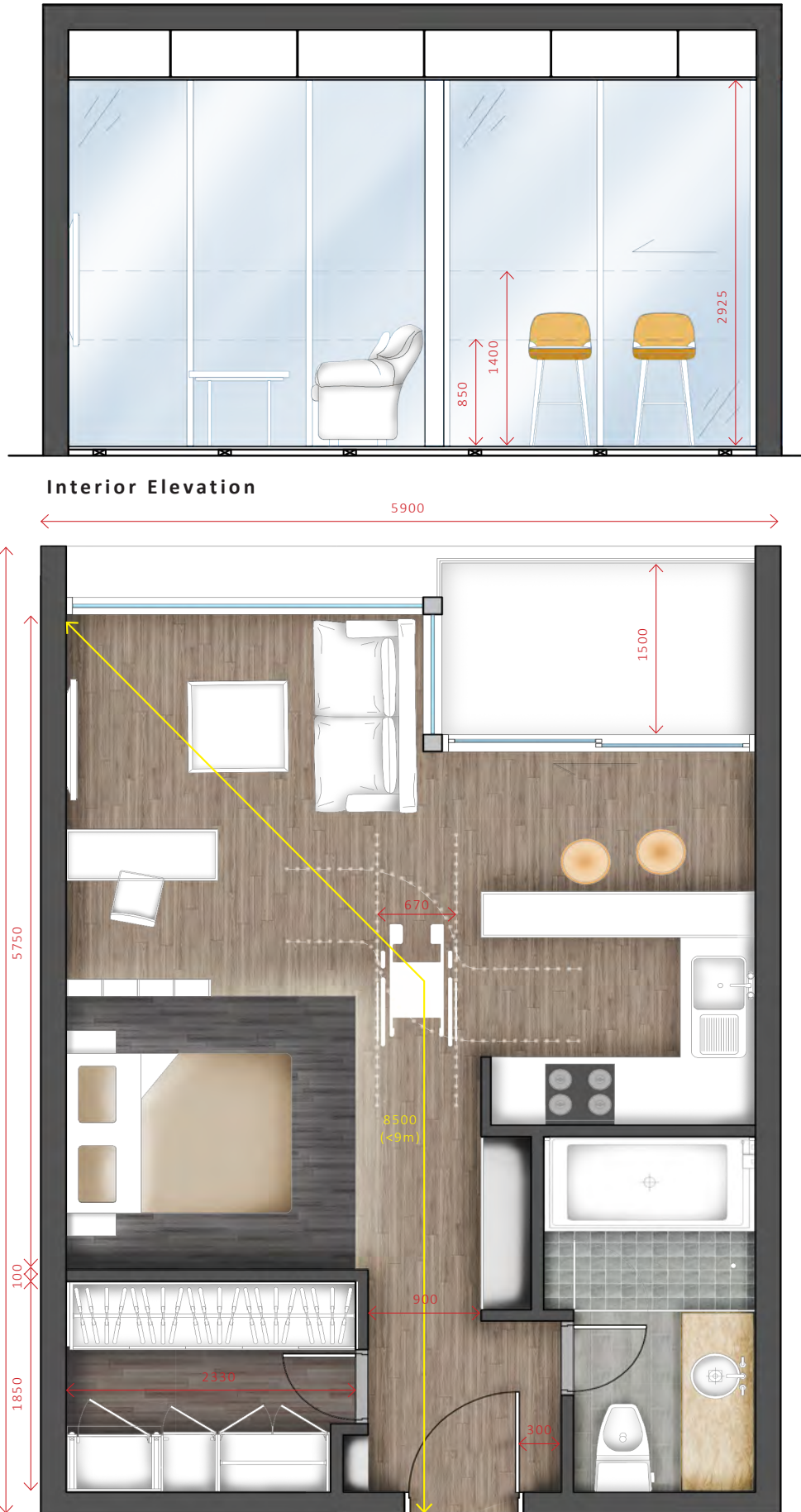
Living Unit - Plan & Elevation

Compliance with UK Housing Design Guide 2010	
Area : Entrance and Approach	
Chapter 3.1.4	Entrance door should have 300mm of clear space to the pull side, and clear minimum widths of 800mm or 825mm depending in the direction.
Area : Shared Circulation within Building	
Chapter 3.2.3	Internal corridor should receive natural light and adequate ventilation .
Chapter 3.2.4	The minimum width for all paths, corridors for communal circulation is 1200mm .
Area : Circulation in the Home	
Chapter 4.3.1	The minimum width of hlaaways and other circulation spaces inside the home should be 900mm .
Area : Living, Dinning and Kitchen Areas	
Chapter 4.4.1	Minimum combined floor area of living, dinning and kitchen spaces for 2 person: 23sqm ; 3 person: 25sqm ; 4 person: 27sqm ; 5 person: 29sqm ; 6 person: 31sqm .
Chapter 4.4.2	Minimum width of the main sitting area should be 2.8m in 2-3 person dwellings and 3.2m for four or more people.
Chapter 4.4.4	There should be space for turning a wheelchair in dinning areas and living rooms.
Chapter 4.4.6	Windows in the principal living space should start 800mm above finished floor level (+50mm) to allow people to see out while seated.
Area : Bedrooms	
Chapter 4.5.1	The minimum area of a single bedroom should be 8sqm . The minimum area of a double or twin bedroom should be 12 sqm .
Chapter 4.5.2	The minimum width of double and twin bedroom should be 2.75m in most of the length of the room.
Area : Private Open Space	
Chapter 4.6.1	The minimum depth and width of all balconies and other private external spaces is 1500mm .
Area : Floor to Ceiling Height	
Chapter 5.4.1	The minimum flloor to ceiling height in habitable rooms is 2.5m between finished floor level and finish ceiling level.
Area : Daylight and Sunlight	
Chapter 5.5.1	Glazing to all habitable rooms should be not less then 20% of the internal floor area of the room.
Chapter 5.5.2	All homes should provide for direct sunlight to enter atleast one habitable room for part of the day. Living areas and kitchen dinning spaces should preferably receive sunlight.
Compliance with UK Regulation	
Part B(Vol 2): Door & Travel Distance	
Chapter 2	Door handle contains 300mm from any obstacles
Chapter 2.13	Travel distance from the netrance door to the door of any habitable room do not exceed 9m .
Part K : Manifestation of Glazing	
Chapter 7.4	Manifestation on level 850mm - 1000mm and 1400mm - 1600mm on glass wall or glass door.

Single Living Unit - Studio Apartment

Total No . of Unit: 9

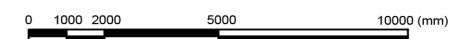
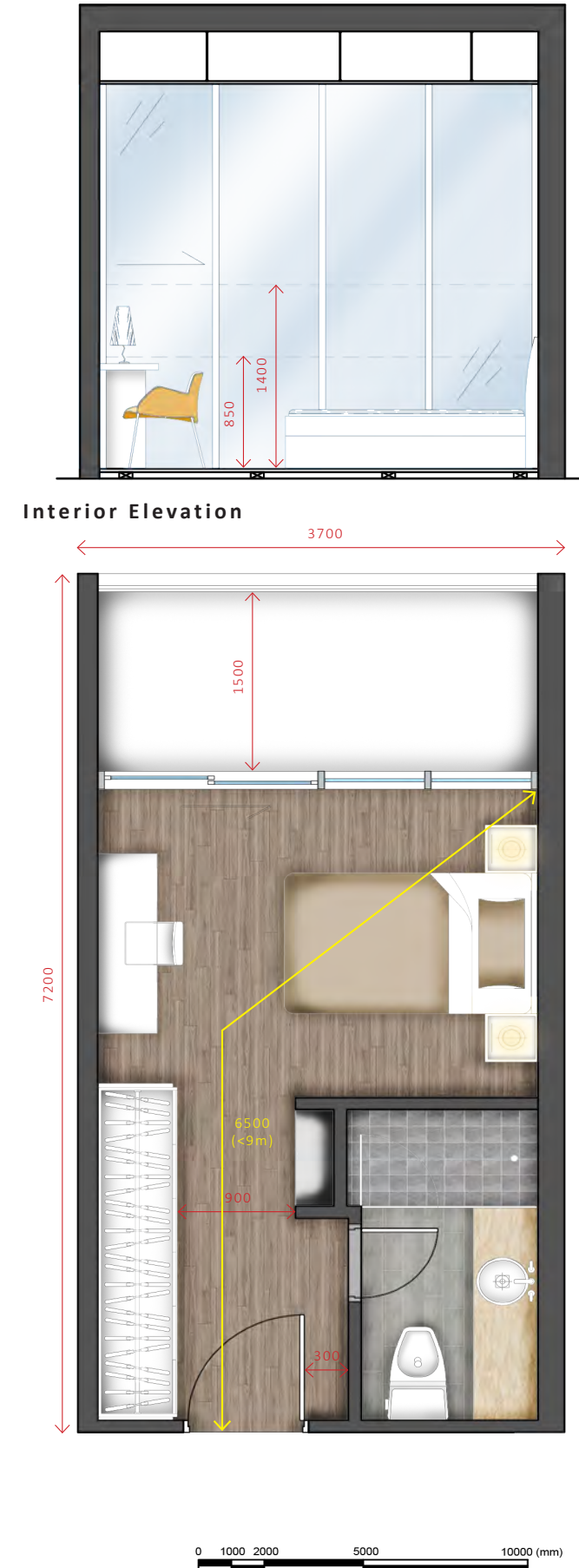
Area of Bedroom, Living Dinngin Area: **29 sqm.**
 Area of Walk-in Closet: **4.2 sqm.**
 Area of Bathroom: **4.9 sqm.**



Single Living Unit - Shared Kitchen Dinning Spaces

Total No. of unit: 9

Area of Bedroom: **13.6 sqm.**
 Area of Bathroom: **3.6 sqm.**



Drawing Package

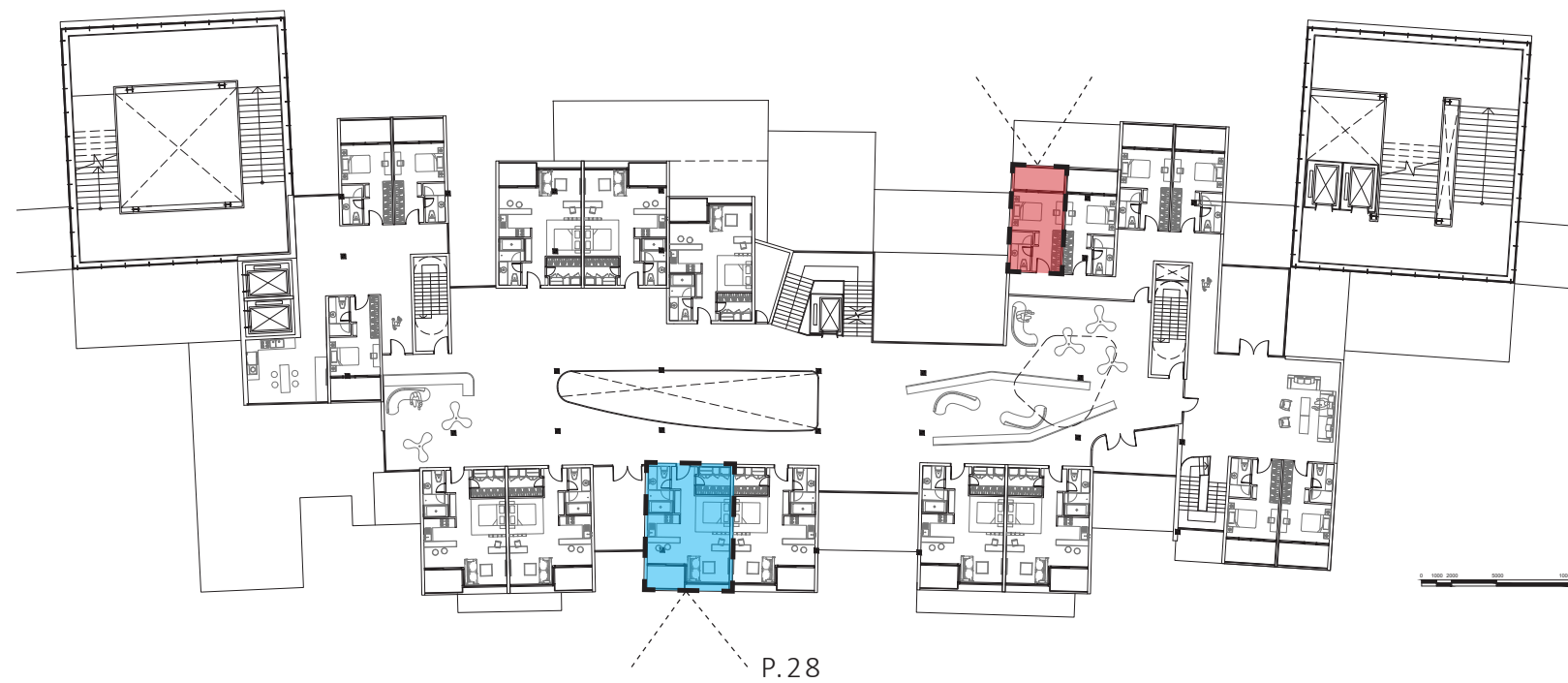
Living Unit - Perspective and View



Single Living Unit - Studio Apartment
View to the South
(Tempelhof Park)

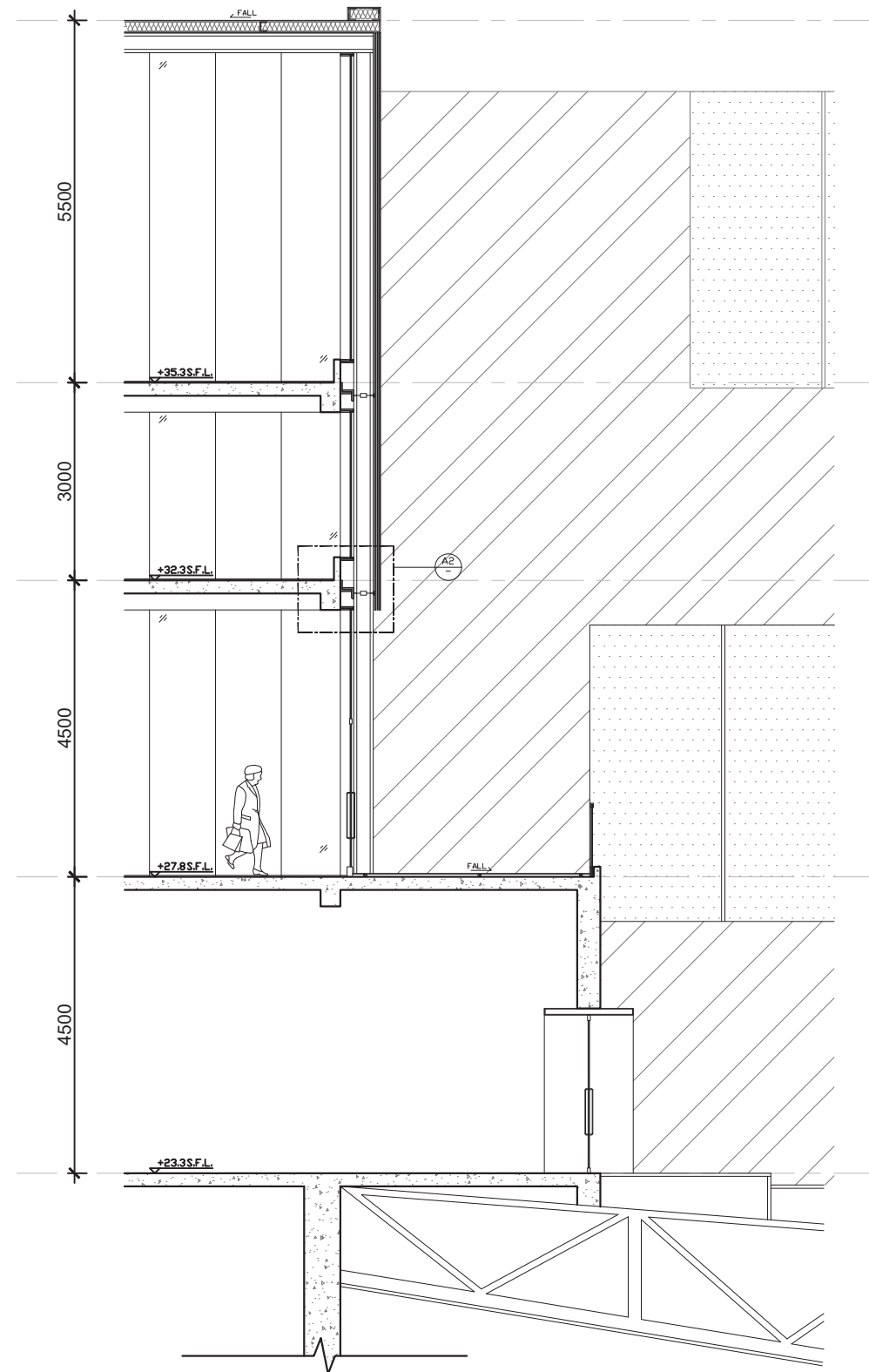


Single Living Unit - Shared Kitchen Dining Spaces
View to the North
(City view)

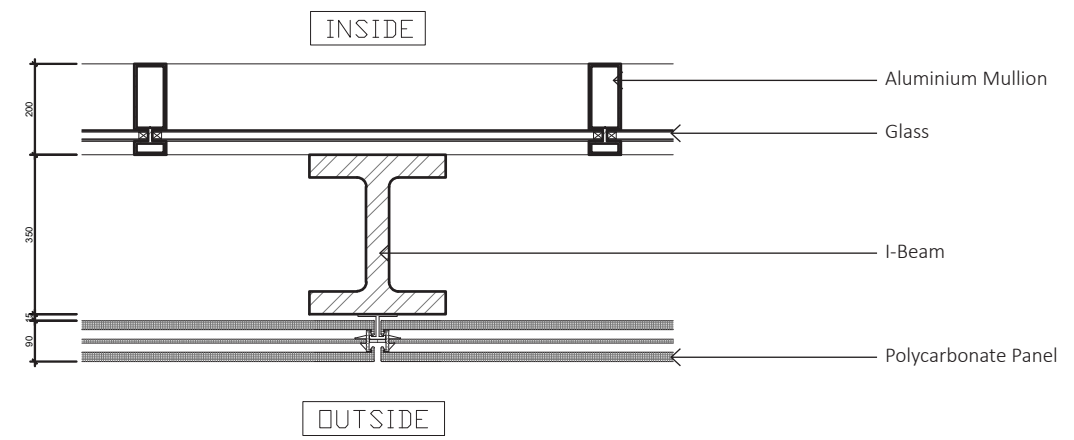


Construction Package

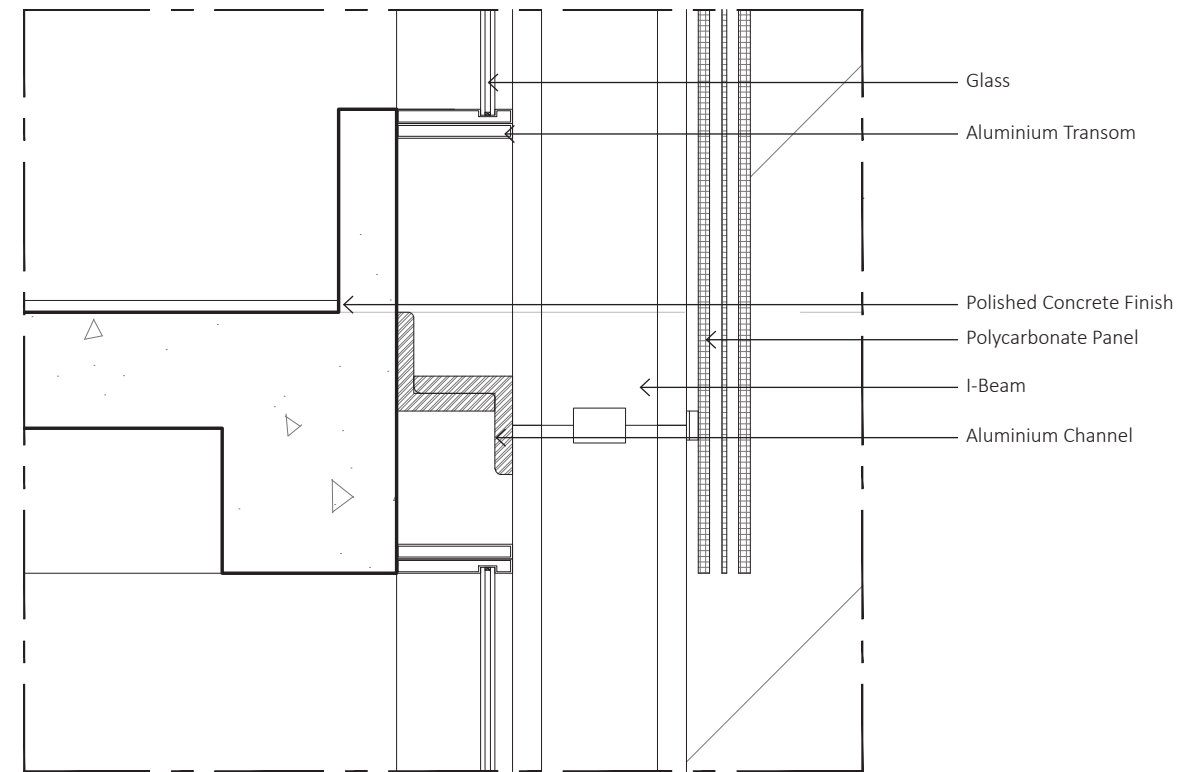
Detail Package of Facade at Main Core



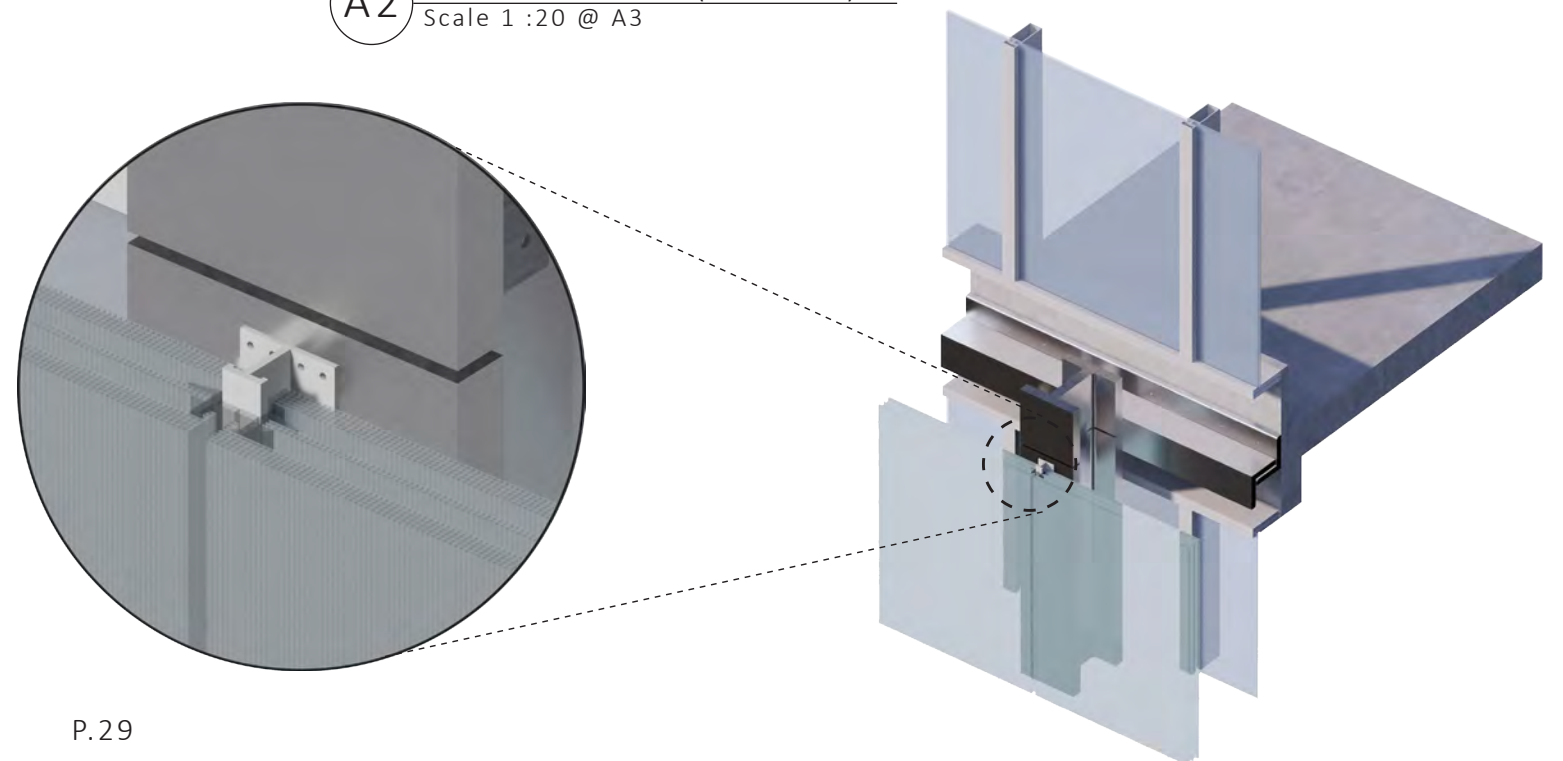
A Wall Section At Core
Scale 1 :100 @ A3



A1 Detail At Core (Plan)
Scale 1 :20 @ A3

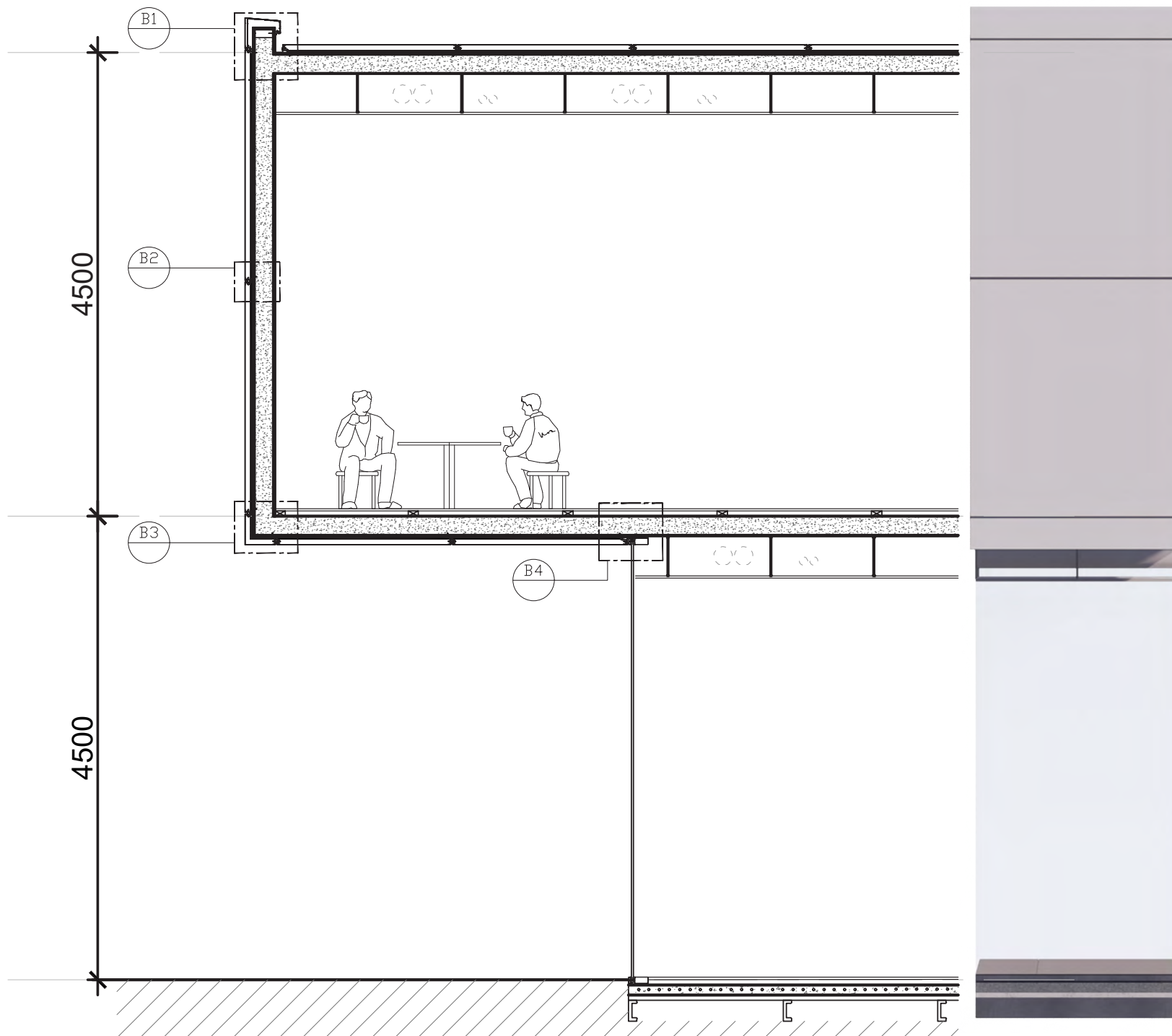


A2 Detail At Core (Section)
Scale 1 :20 @ A3

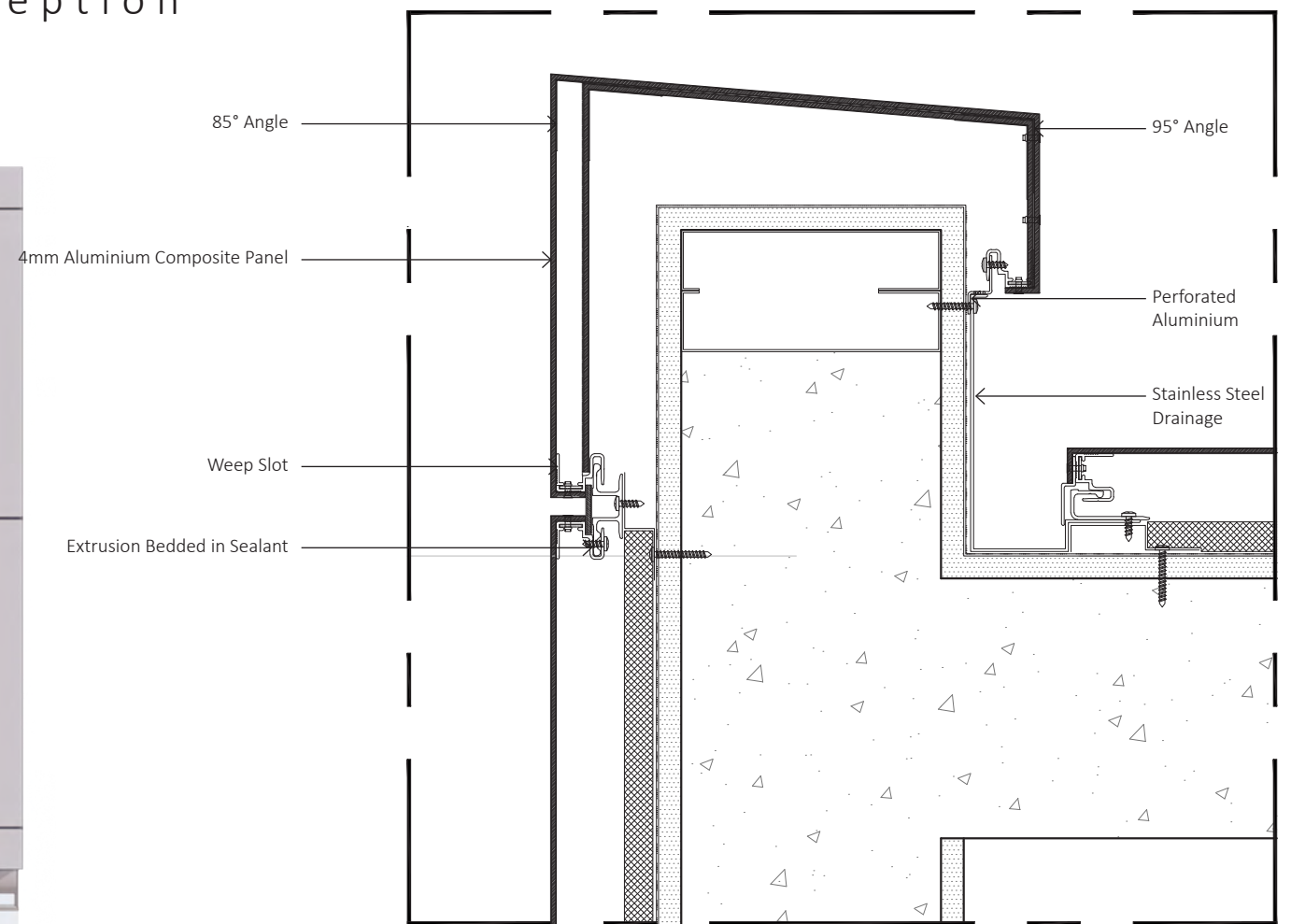


Construction Package

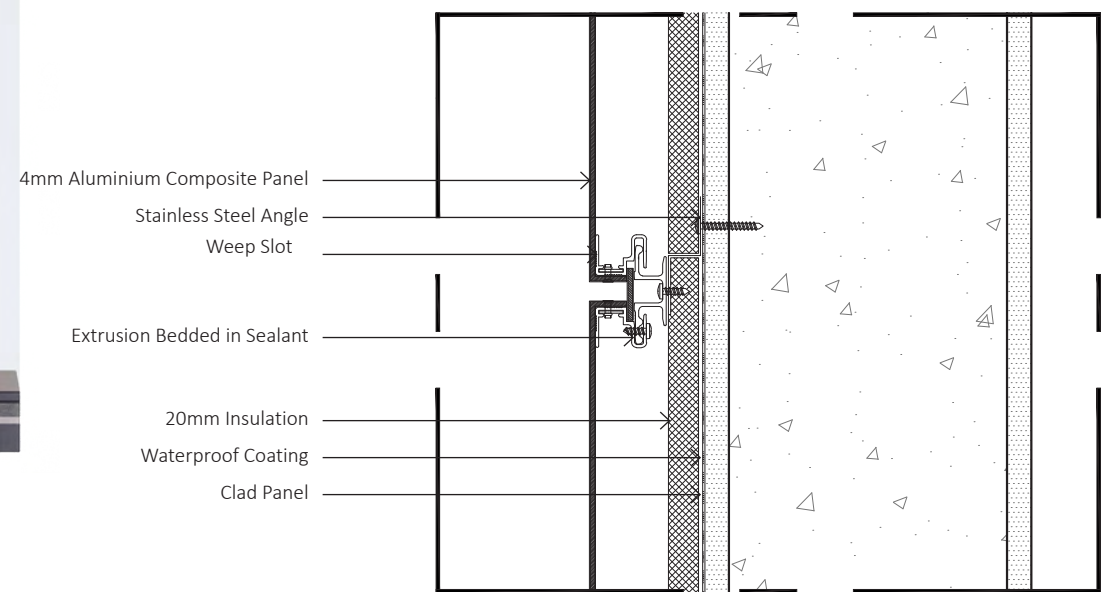
Detail Package of Facade at Restaurant and Reception



B Wall Section At Restaurant and Reception
Scale 1 :100 @ A3



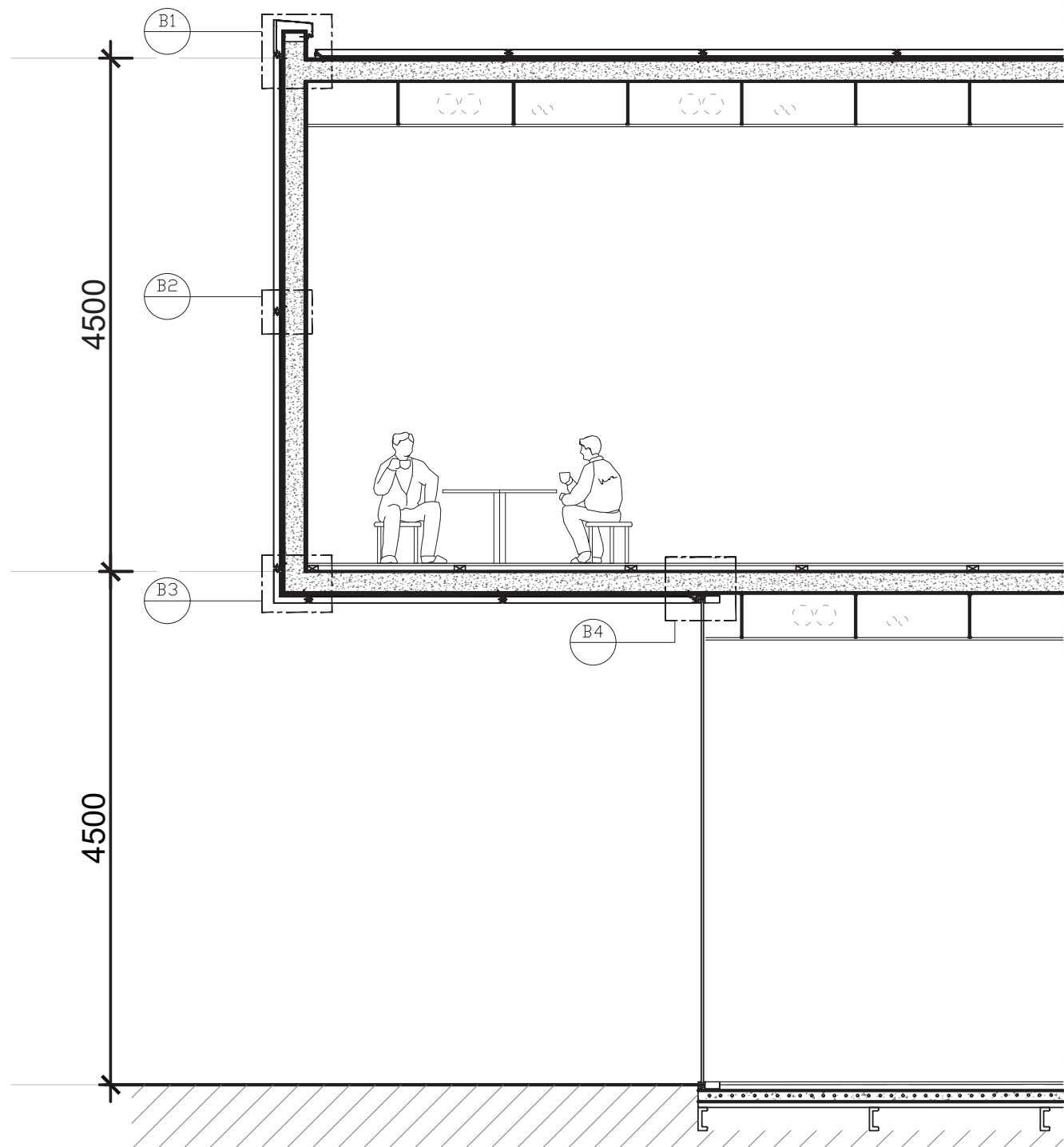
B1 Detail of Composite Panel and Drainage
Scale 1 :5 @ A3



B2 Detail of Composite Panel
Scale 1 :5 @ A3

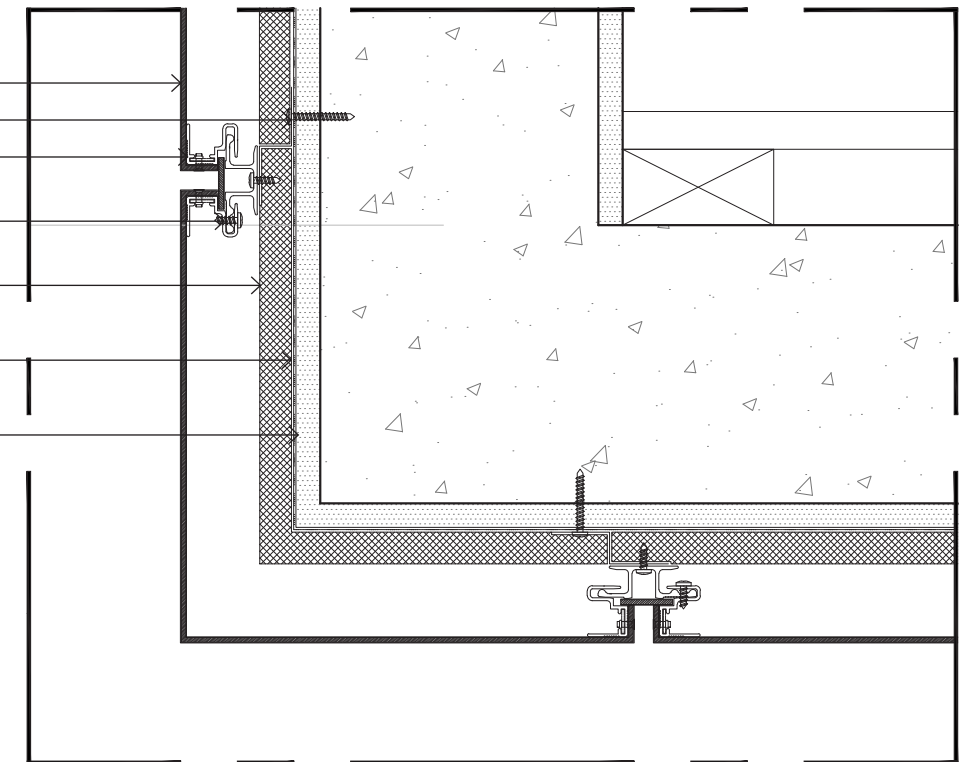
Construction Package

Detail Package of Facade at Restaurant and Reception



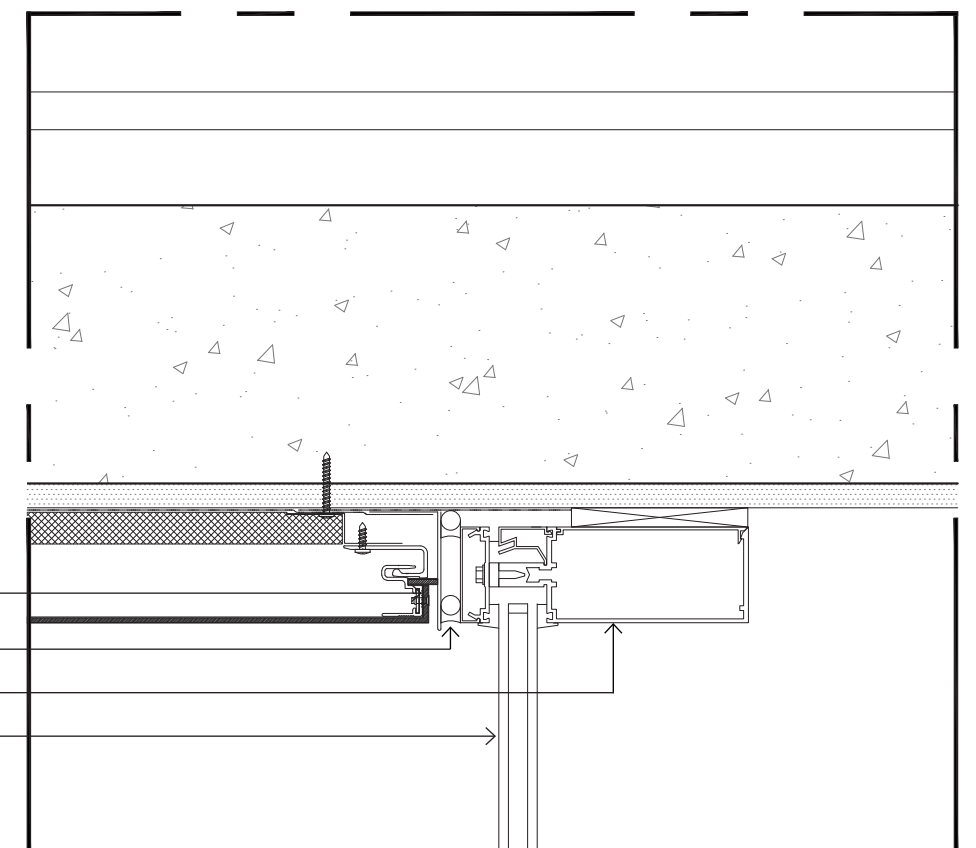
B Wall Section At Restaurant and Reception
Scale 1 :100 @ A3

4mm Aluminium Composite Panel
Stainless Steel Angle
Weep Slot
Extrusion Bedded in Sealant
20mm Insulation
Waterproof Coating
Clad Panel



B3 Detail of Composite Panel
Scale 1 :5 @ A3

Extrusion Bedded in Sealant
Sealant
Aluminium Transom
20mm Grey Tined Low-E Tempered Glass



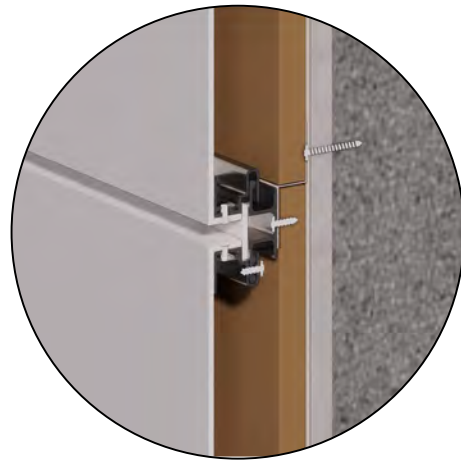
B4 Detail of Composite Panel & Glass Wall
Scale 1 :5 @ A3

Construction Package

Detail Package of Facade at Restaurant and Reception



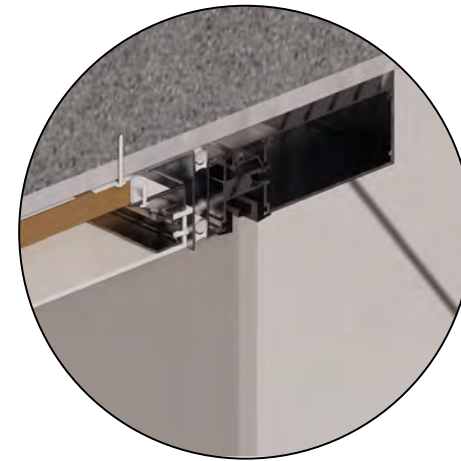
Detail B1



Detail B2



Detail B3



Detail B4



Wall Section

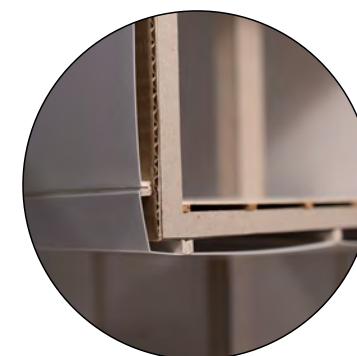
Light and Shadow Testing



Light and Shadow without perforated Panel

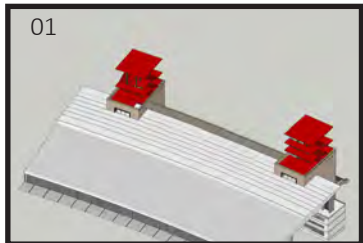


Light and Shadow with perforated Panel

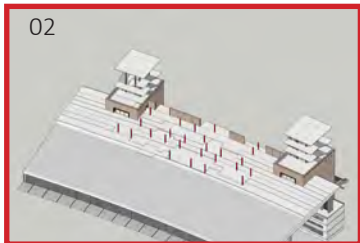


Construction Package

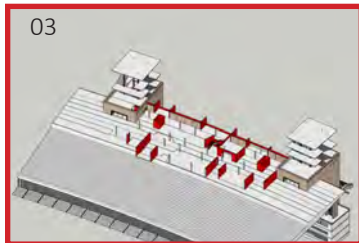
Construction Process & Sequence



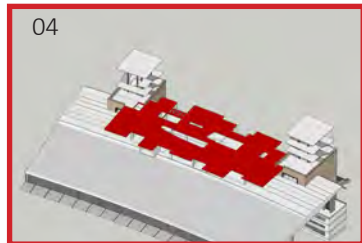
01
Slab and Column Construction
at Core



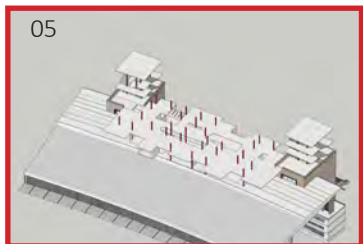
02
Column construction
at G/F



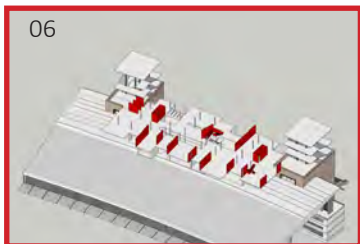
03
Load bearing wall construction
at G/F



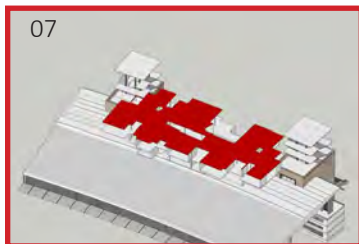
04
Floor slab construction
at 1/F



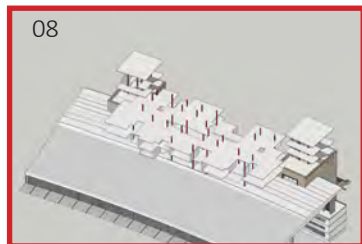
05
Column construction
at 1/f



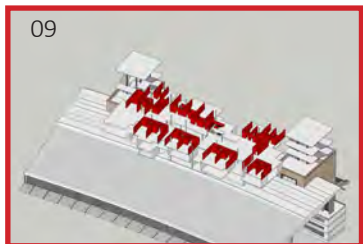
06
Load bearing wall construction
at 1/F



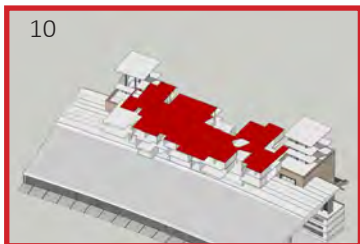
07
Floor slab construction
at 2/F



08
Column construction
at 2/F



09
Load bearing wall construction
at 2/f



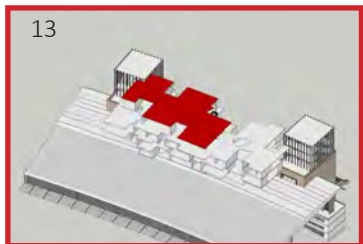
10
Floor slab construction
at 3/F



11
Column construction
at 3/F



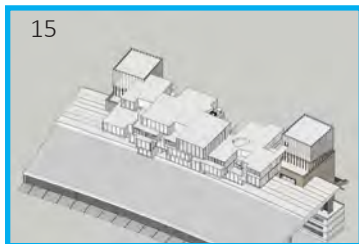
12
Load bearing wall construction
at 3/F



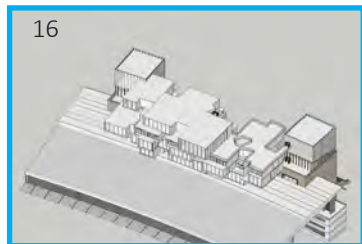
13
Roof construction
at 3/f



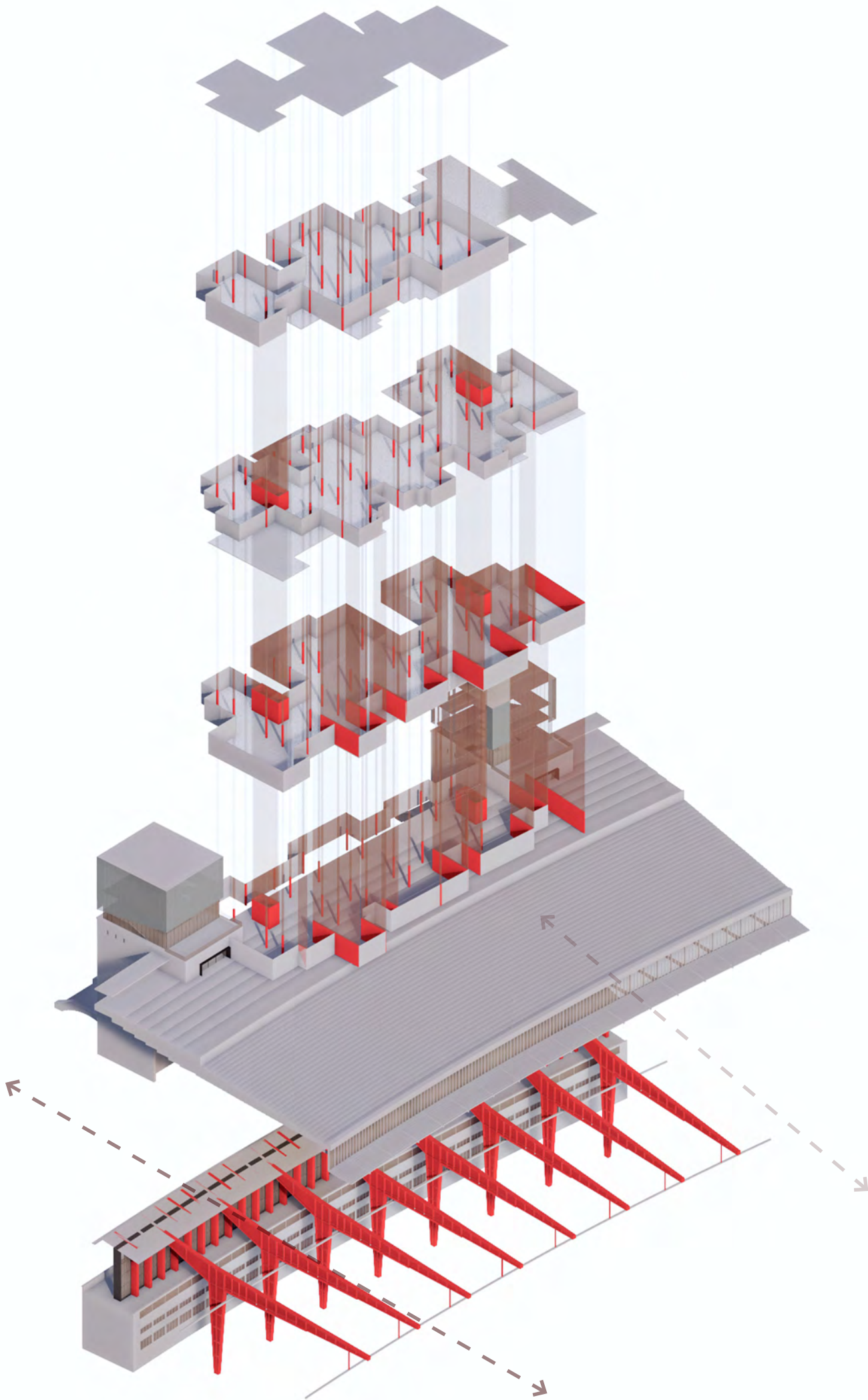
14
Interior wall construction



15
Facade construction



16
Glass balustrade construction





RIBA
Plan of
Work
2013

RIBA



The Plan of Work Organises the progress of designing, constructing, maintaining and operating building projects into a number of key work stages. The content of stages may vary or overlap to suit specific project requirements. The RIBA Plan of Work 2013 should be used solely as guidance for the preparation of detailed professional services contracts and building contracts.

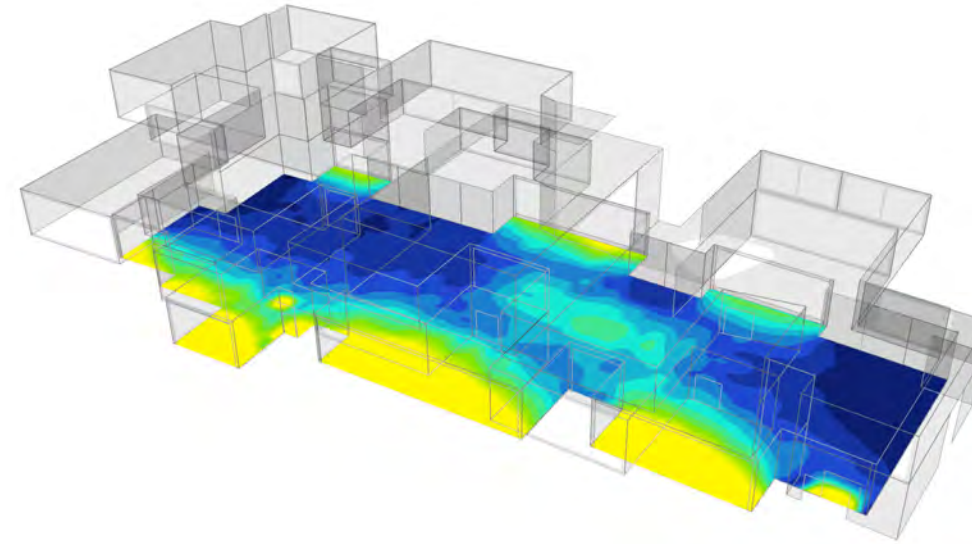
	0	1	2	3	4	5	6	7
	Strategic Definition	Preparation and Brief	Concept Design	Developed Design	Technical Design	Construction	Handover and Close Out	In Use
Tasks								
Core Objectives	Identify client's Business Case and Strategic Brief and other core project requirements.	Develop Project Objectives including Quality Objectives, Sustainability Aspirations, Project Budget, other parameters or constraints and develop Initial Project Brief. Undertake Feasibility Studies and review of Site Information.	Prepare Concept Design including outline proposals for structural design, building services systems, outline specifications and preliminary Cost Information along with relevant Project Strategies in accordance with Design Programme. Agree alterations to brief and issue Final Project Brief.	Prepare Developed Design including coordinated and updated proposals for structural design, building services systems, outline specifications, Cost Information and Project Strategies in accordance with Design Programme.	Prepare Technical Design in accordance with Design Responsibility Matrix and Project Strategies to include all architectural, structural and building services information, specialist subcontractor design and specifications, in accordance with Design Programme.	Offsite manufacturing and onsite Construction in accordance with Construction Programme and resolution of Design Queries from site as they arise.	Handover of building and conclusion of Building Contract.	Undertake In Use services in accordance with Schedule of Services.
Procurement	Initial considerations for assembling the project team.	Prepare Project Roles Table and Contractual Tree and continue assembling the project team.	The procurement strategy does not fundamentally alter the progression of the design or the level of detail prepared at a given stage. However, Information Exchanges will vary depending on the selected procurement route and Building Contract. A bespoke RIBA Plan of Work 2013 will set out the specific tendering and procurement activities that will occur at each stage in relation to the chosen procurement route.			Administration of Building Contract, including regular site inspections and review of progress.	Conclude administration of Building Contract.	
Programme	Establish Project Programme.	Review Project Programme.	Review Project Programme.	The procurement route may dictate the Project Programme and may result in certain stages overlapping or being undertaken concurrently. A bespoke RIBA Plan of Work 2013 will clarify the stage overlaps. The Project Programme will set out the specific stage dates and detailed programme durations.				
(Town) Planning	Pre-application discussions.	Pre-application discussions.	Planning applications are typically made using the Stage 3 output. A bespoke RIBA Plan of Work 2013 will identify when the planning application is to be made.					
Key	Establish the project team and assess core programme requirements. Identify a business strategy through discussions with the client.	Review site information, assessing key parameters and constraints. Undertake feasibility studies and develop initial project brief. Continue to assemble project team.	Preparation of concept design in conjunction with relevant structural design and building services outline proposals. Agree and issue Final Project Brief.	Coordinated developed design including updated structural and building services proposals. Provision of cost information and project strategies.	Preparation of technical design package providing detailed construction information. To include all architectural, structural and services information alongside subcontractor specifications.	Realisation of building construction on site including off-site manufacturing and on-site construction in accordance with the agreed construction programme.	Conclusion of the building contract and handover of the building to the client.	Review of project performance including post-occupancy evaluation.
UK Government Information Exchanges	Not required.	Required.	Required.	Required.	Not required.	Not required.	Required.	As required.

Environmental Analysis

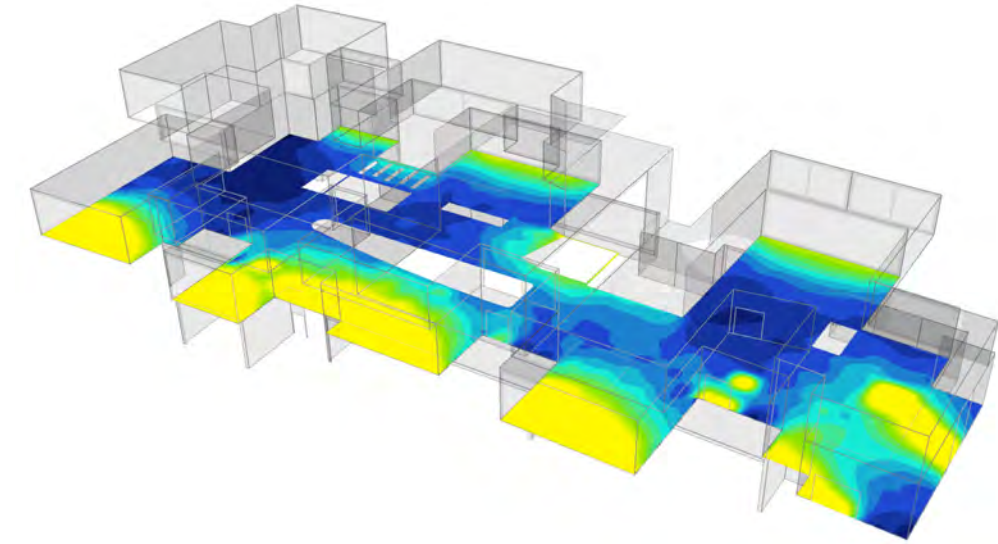
Light Strategy Analysis

Total Floor Area

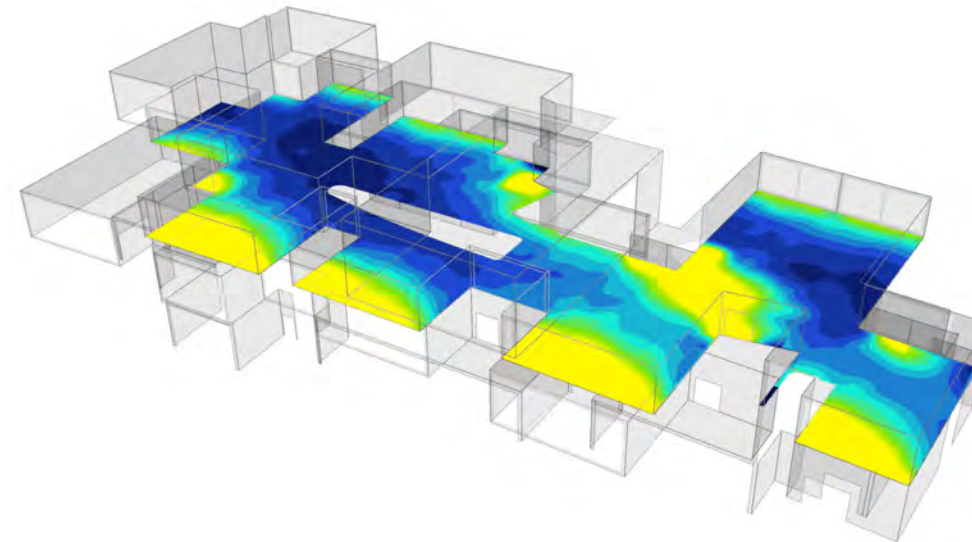
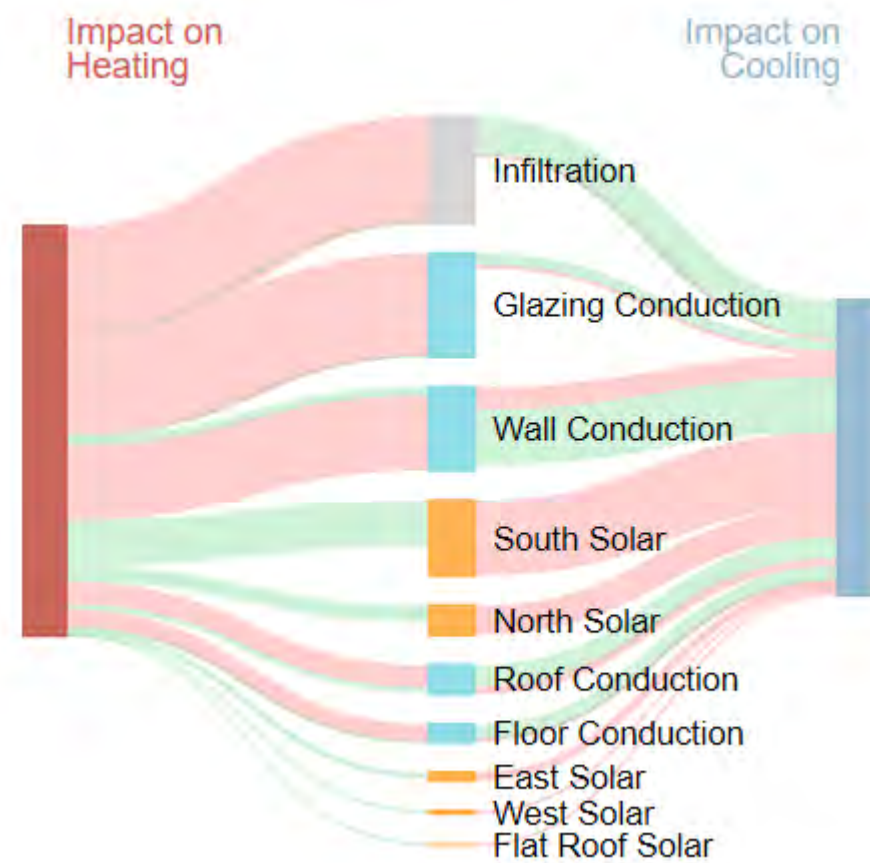
5,697 m²



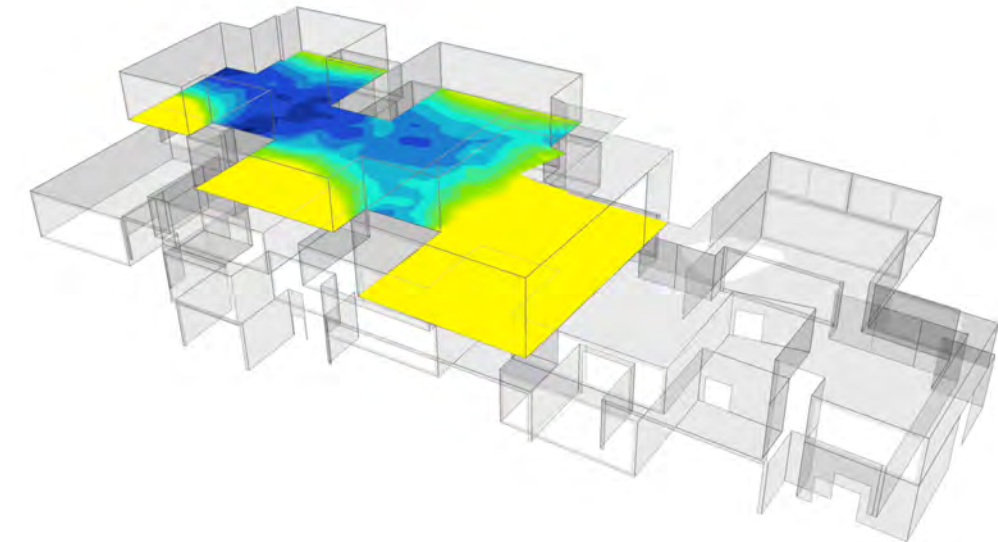
G/F



1/F



2/F



3/F

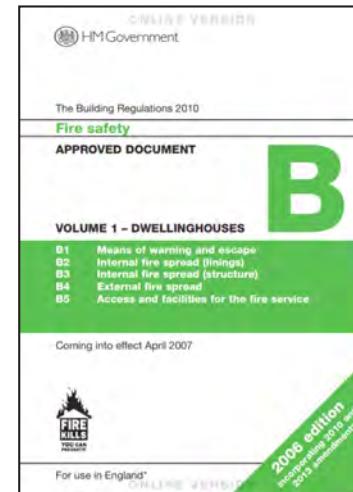


References and Bibliography

Articles



London Housung Design Guide



UK Building Regulation

Books



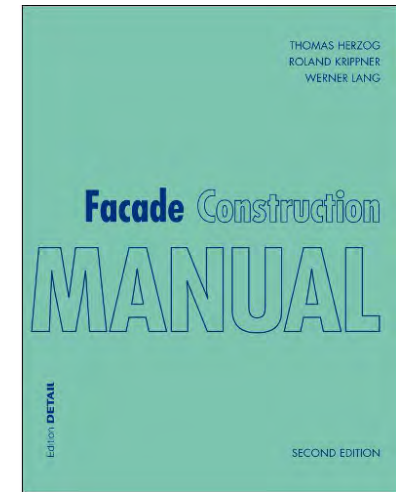
Neufert Architect's Data,
Ernst Neufert, 1936



Living Closer - The Many Faces
of Co-housing
, Olivier Treger, 2018



Floor Systems Guide,
Arcelor Mittal, 2009



Facade Construction Manual,
Thomas Herzog, 2017

Case Studies



RIBA Plan of Work 2013 Overview



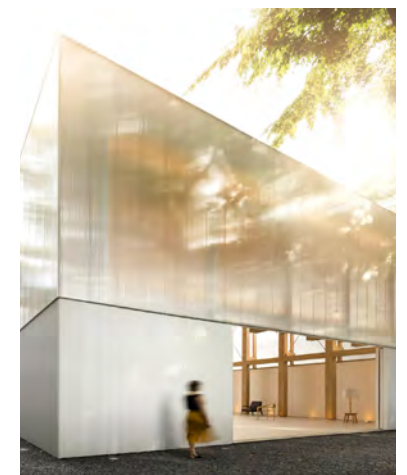
New York Museum,
New York, SANAA



"Perforated Facade Panel",
ULMA Architect Solutions



"Nest We Grow",
Kengo Kuma & Associate



"Pavilion for Micasa Campus",
Studio MK27

Online Sources

<http://ecmsinc.weebly.com/ec-200-dry-joint-system.html#>

<http://www.adept.dk/project/new-aarch>

<http://transform.oza-berlin.de/index.php/project/thf-hangar-rooftop/>

https://www.stadtentwicklung.berlin.de/aktuell/wettbewerbe/ergebnisse/2018/geschichtsgalerie/preis_1.shtml