



Building Balance

Spatial Strategies for Research and Public Functions at the National Library 'the Koninklijke Bibliotheek'

Graduation Presentation P5

15-01-2026

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AR3AH115 Revitalising Heritage

Introduction

The (Re)Design of the Koninklijke Bibliotheek



Introduction

New Archive of KB in Den Hoorn



Introduction

19th-20th Century Libraries

Static Design



Bibliothèque Sainte-Geneviève, Paris, 1850

Quiet and orderly atmosphere, traditional, focus on books, individual

Introduction

21th Century Libraries

Dynamic Design



Oodi Central Library, 2018

More than “Books”

Introduction

Libraries transform into welcoming multifunctional social hubs



Oodi Central Library, 2004

An open and flexible design with different programs

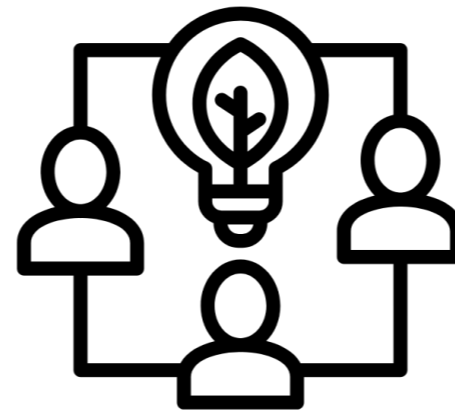
Introduction

Current Trends in National Libraries

Increasing Public & Social Functions



exhibitions, events, and
cultural activities



educational programs and
activities for young audiences



commercial activities

Introduction

The KB aims to be ‘the National library for every Dutch citizen’



Research & Heritage function

“The KB not only preserves national collections and research facilities but also offers an accessible and welcoming space for the broader public.”



Design Question

How can the future redesign of the National Library (KB) balance its research function with its public functions?

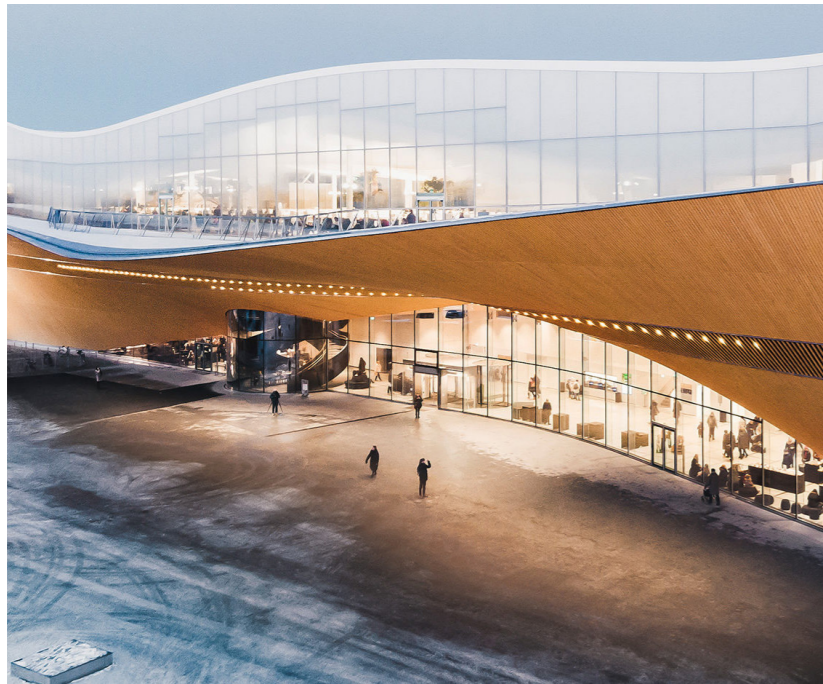


Research Question

How can spatial strategies in the building of the Koninklijke Bibliotheek contribute to creating a balance between research and public needs?

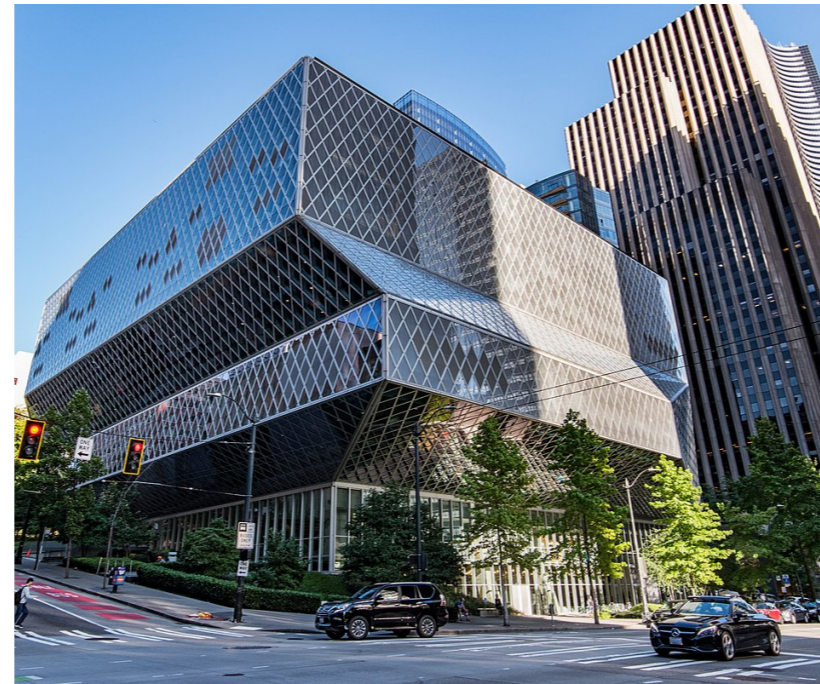
Research Methods

Case study analysis



Oodi Central Library, Helsinki

Architect: ALA Architects
Year: 2018
Area: 17.250 m²



Seattle Central Library

Architect: OMA & LMN
Year: 2004
Area: 33.700 m²



OBA, Public Library Amsterdam

Architect: Jo Coenen & Co Architecten
Year: 2007
Area: 28.500 m²

Research Methods

KB User study



KB user survey
35 respondents



20 interviewed
Library users

Research Conclusion

**Spatial design strategies for the Redesign KB to balance
Research and Public Needs**



**Urban
Strategies**

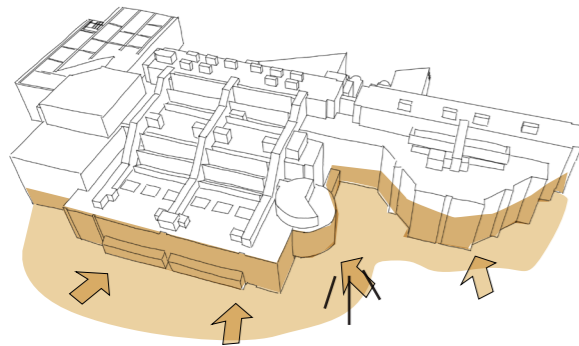
**Building
Strategies**

**Interior
Strategies**

Research Conclusion

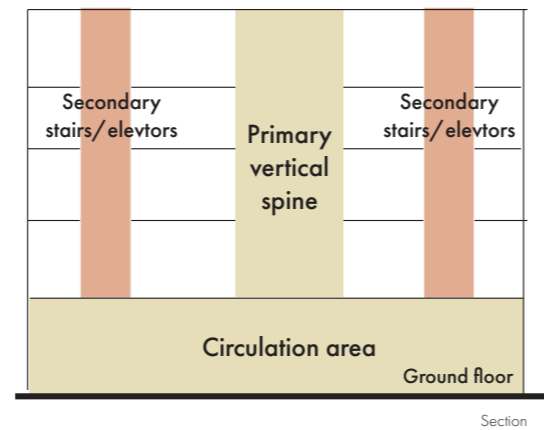
Highlights of spatial strategies

Welcoming & Accessible building



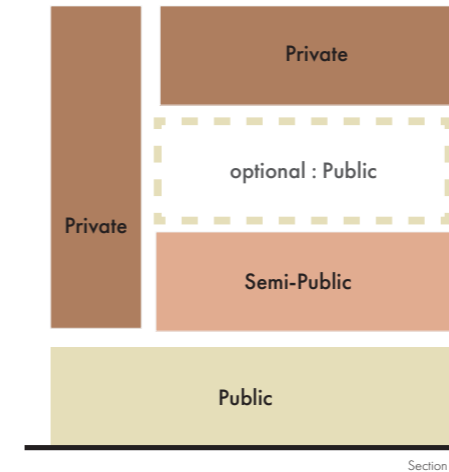
Clear Entrance, Sightlines & Inviting Plinth

Circulation & Accessibility



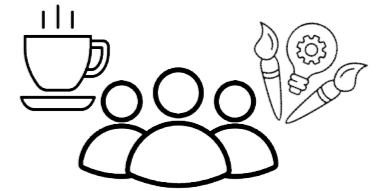
Central Circulation Area

Functional Zoning



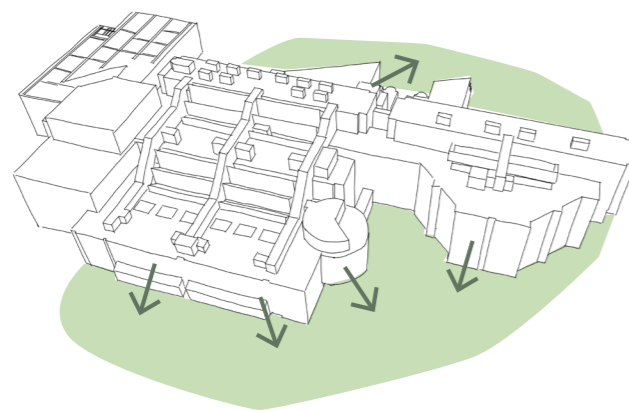
Various levels of openness

Informal spaces and Public Functions



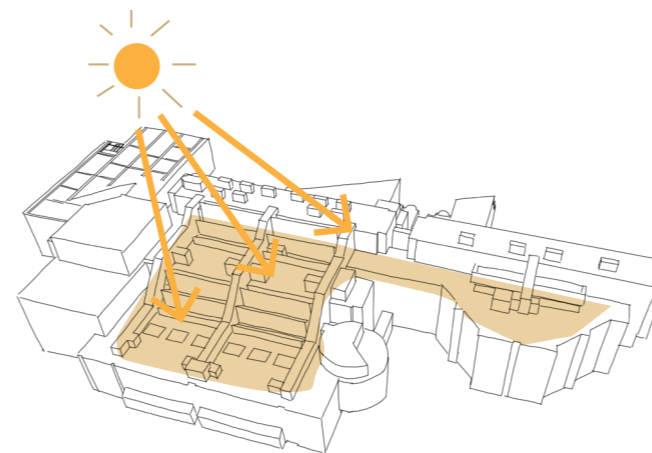
Informal & Public functions with multifunctional use

Connections with Green



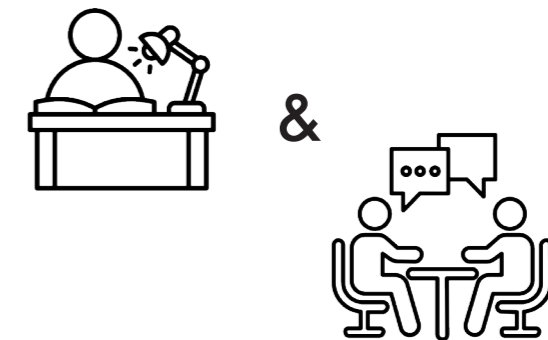
Create views & connections with indoor & outdoor green

Daylight in Building



Workspaces with enough Daylight

Varied Seating Configurations



Individual, group & informal

The background of the image is a dark, monochromatic aerial photograph of a city. It shows a dense network of streets, buildings, and some larger structures. The overall tone is dark and textured. In the center of the image, the text "Existing Situation of The KB" is written in a clean, white, sans-serif font. The text is centered both horizontally and vertically.

Existing Situation of The KB

Urban Context | Den haag

HAAGSE BOS

MALIEVELD

KOEKAMP

KB

DEN HAAG
CENTRAAL

CITY CENTRE

A12



Urban Context | The KB

BABYLON

House of Representatives

A12

KB

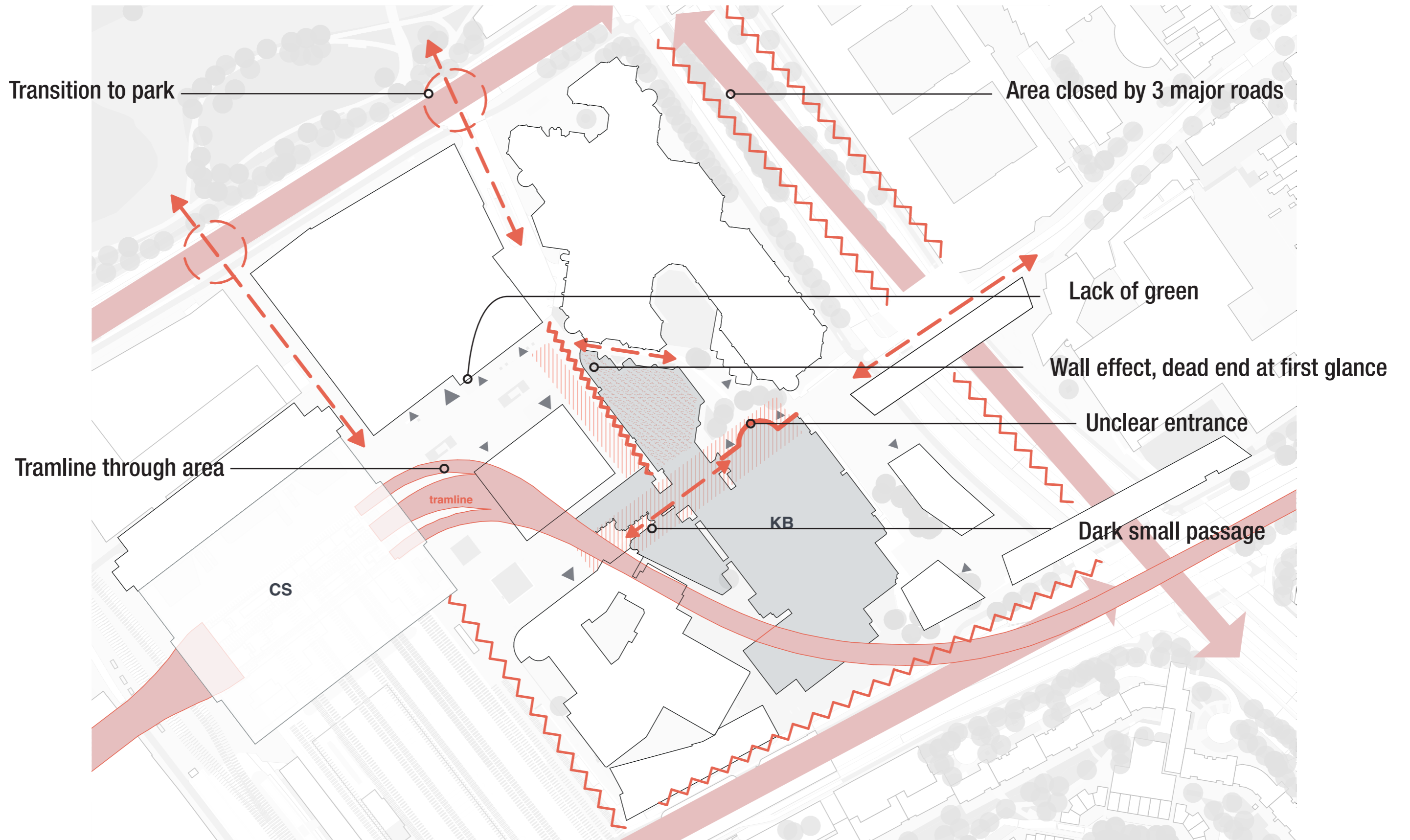
DEN HAAG CENTRAAL

NATIONAL
ARCHIVE

YEAR: 1982

Area: +/- 79.600 m² GFA

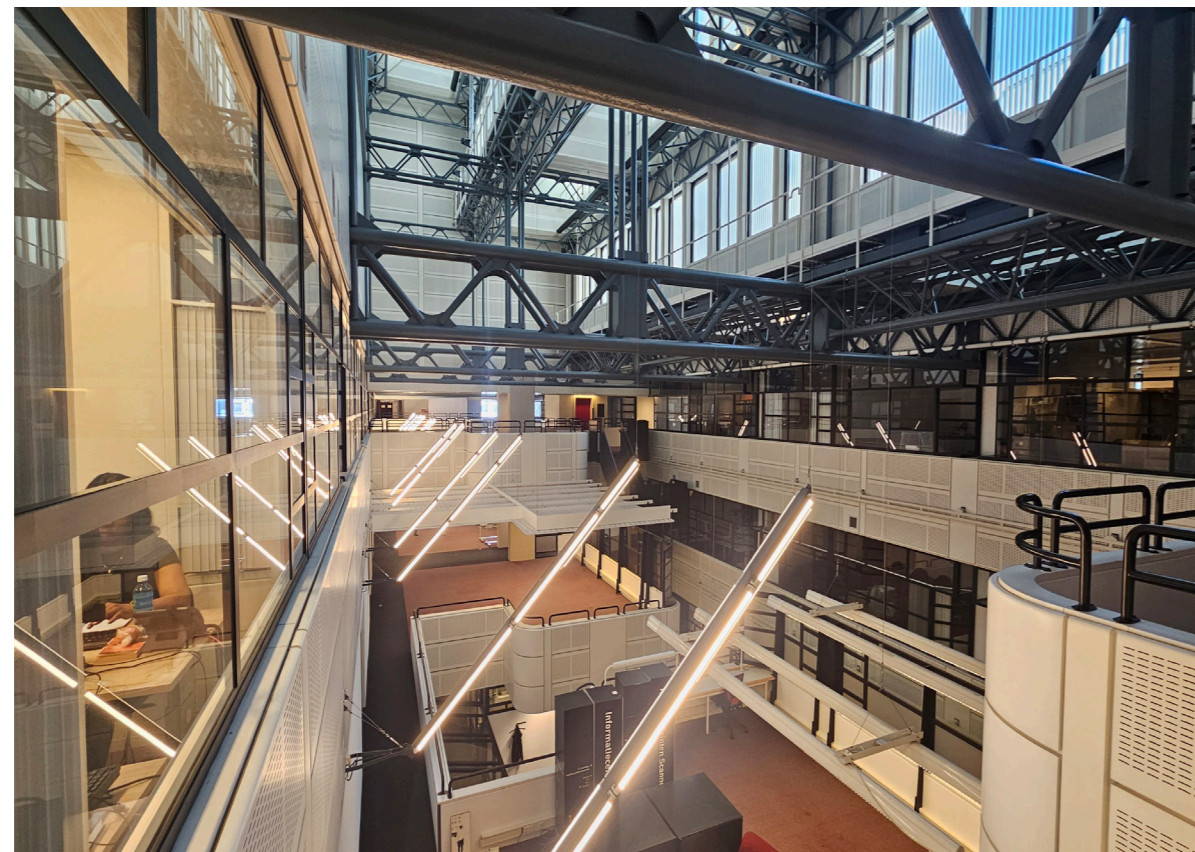
Urban Context | Weaknesses



Building of the KB

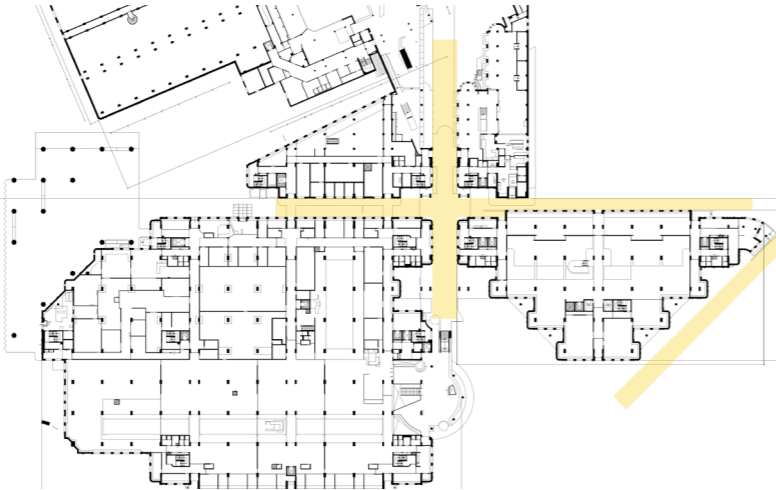


Building of the KB



Values of the KB | High Valued

Urban

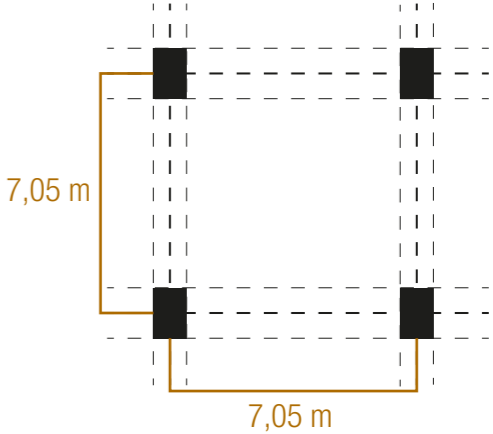


Passages through the area
Political, Historical Value & Social Value

Structure

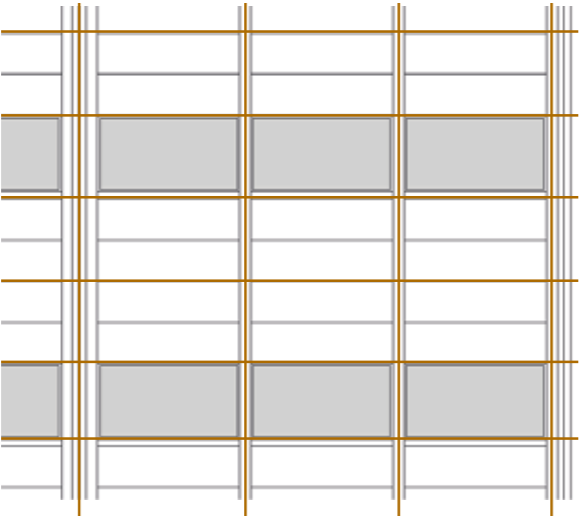


Building stepped structure
Historical & Aesthetic Value



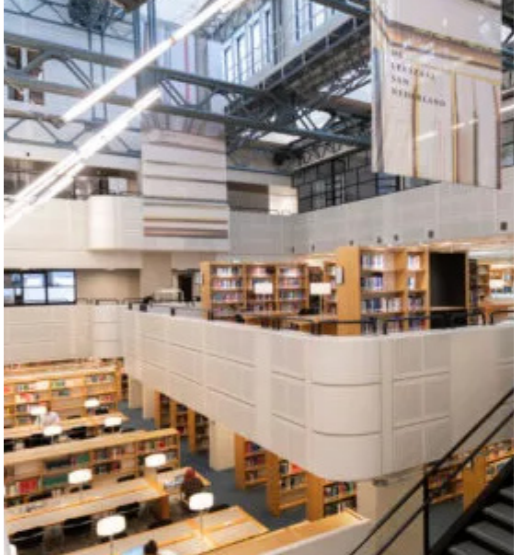
Functional Column grid system
Scientific & Economic Value

Skin



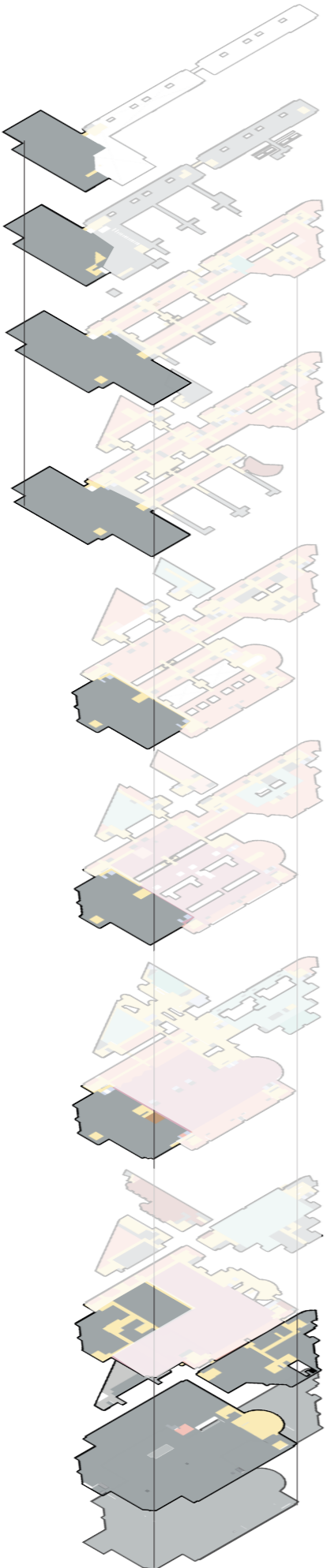
Facade Composition & Materiality
Aesthetic, Scientific & Ecological Value

Interior



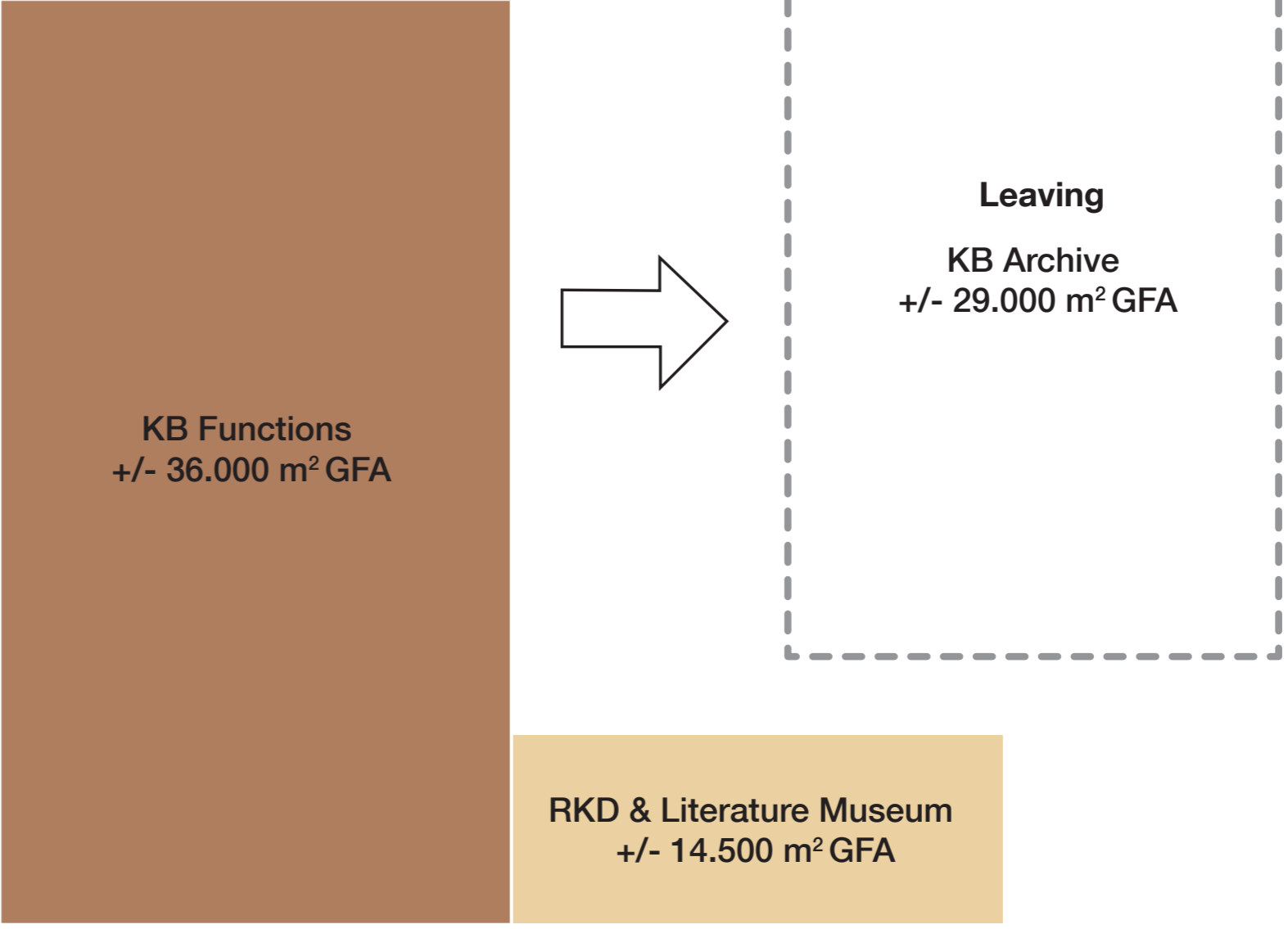
Atriums & skylights
Aesthetic Value, Ecological & Scientific Value

Programme Opportunities



Existing Archive

Archive Relocation

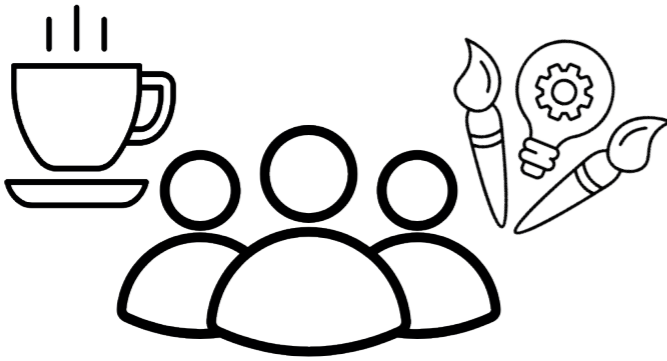


Programme Opportunities

Needs of the KB

Informal spaces and Public Functions

- Informal seating spaces
- Expositions
- Cafés
- More Studyrooms
- Workshops
- Green Spaces



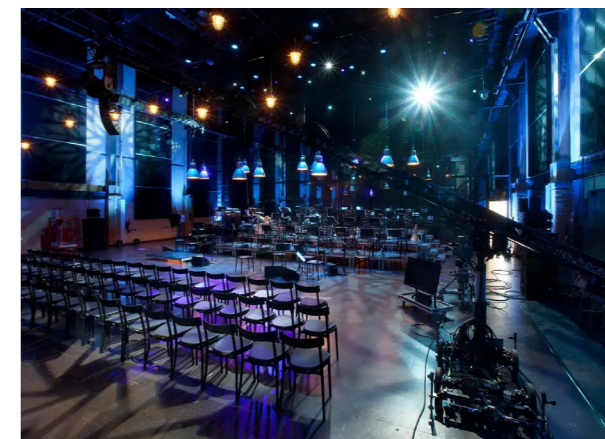
Needs of the City

Flexible Rehearsal studios, Workshop rooms and Art studios



DOK Open, Delft

Multifunctional performance halls



Culture centre Energiehuis, Dordrecht

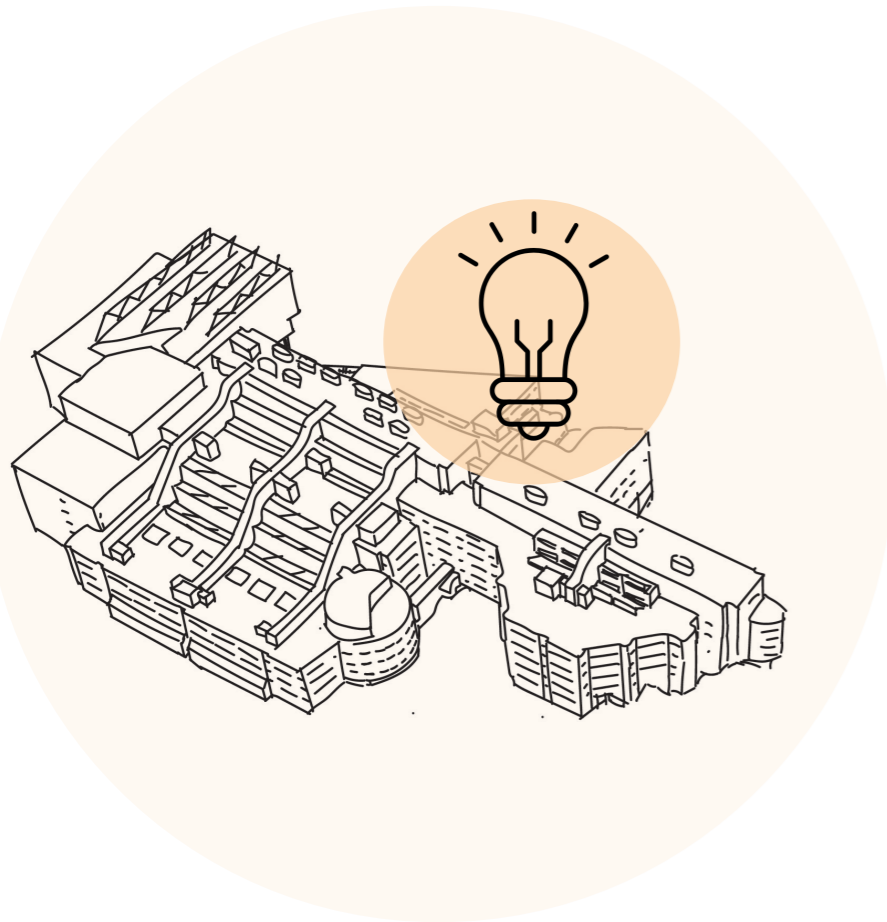
An aerial photograph of a city grid, showing a dense network of streets and buildings. The image is in grayscale and has a dark, muted tone. The text "The Design" is centered in the middle of the image in a white, bold, sans-serif font.

The Design

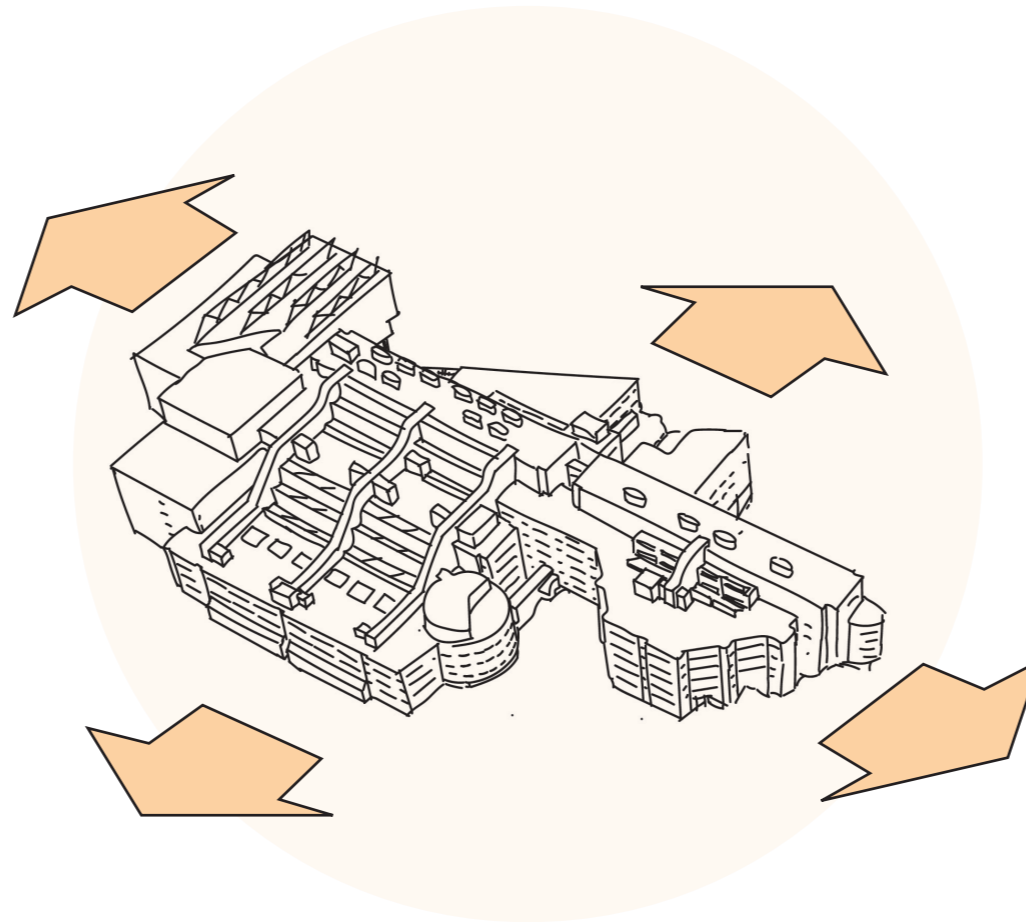
Design Vision of the KB

KB | The House of Culture

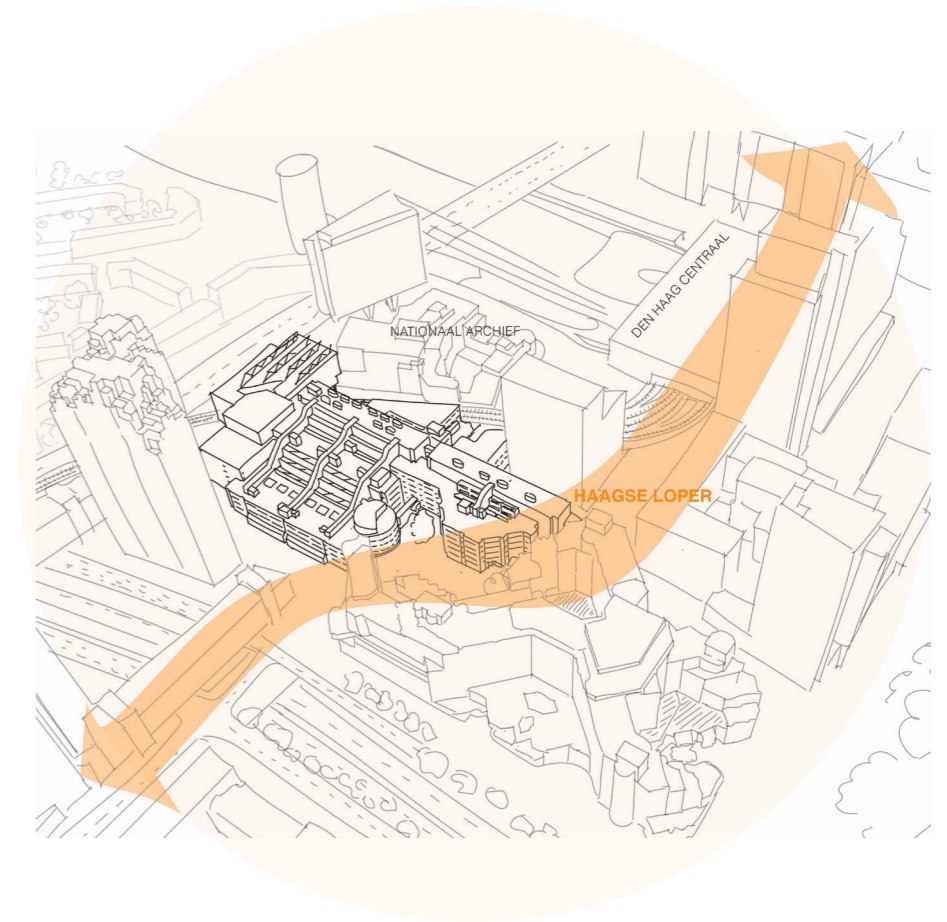
**The KB can be an inspiring
Culture & Knowledge
Institution for everyone**



**The KB creates more Social
& Ecological Connections**



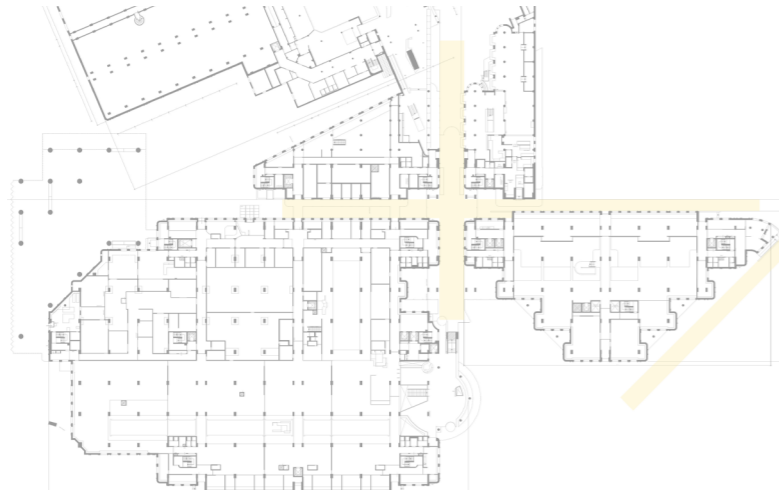
**The KB Reconnect
itself with the City**



Values of the KB | Interventions

Existing Values

Urban

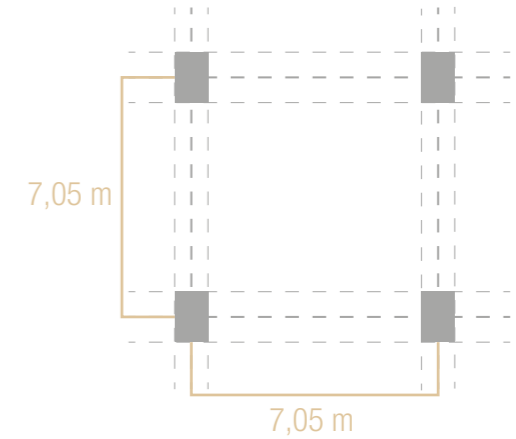


Passages through the area
Political, Historical Value & Social Value



Building stepped structure
Historical & Aesthetic Value

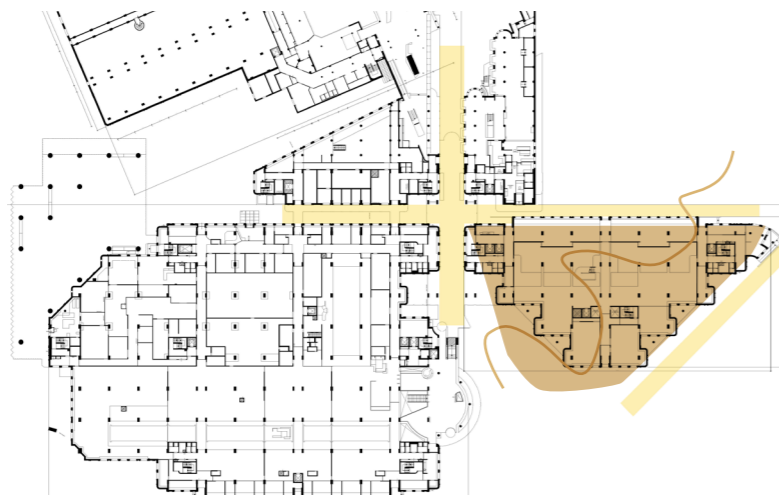
Structure



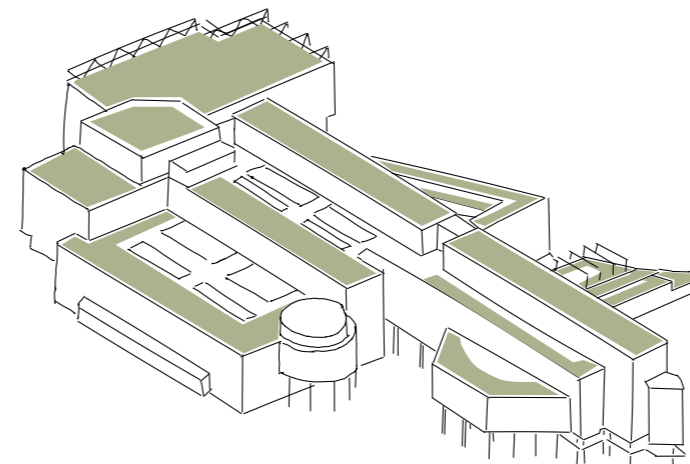
Functional Column grid system
Scientific & Economic Value

Interventions

Urban

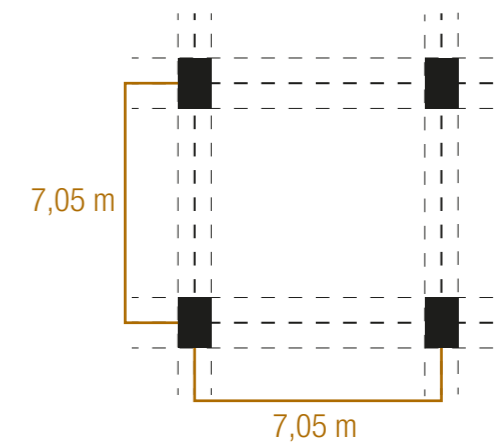


Improve Passages
& connections by removing ground floor
+ Ecological & Social Value



Use stepped structure for new
roof landscape
+ Ecological & Social Value

Structure

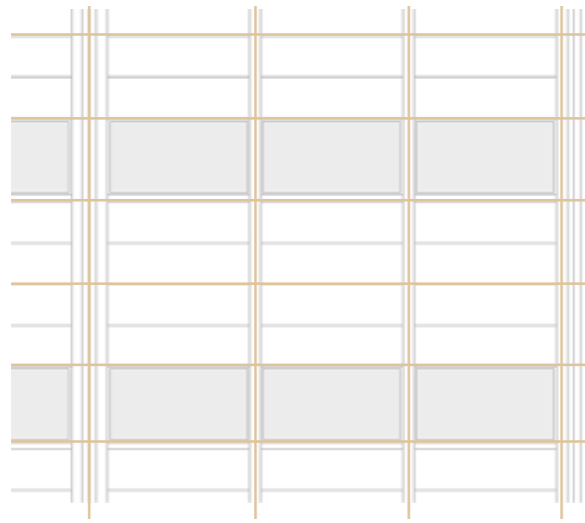


Reuse the Functional
Column grid system

Values of the KB | Interventions

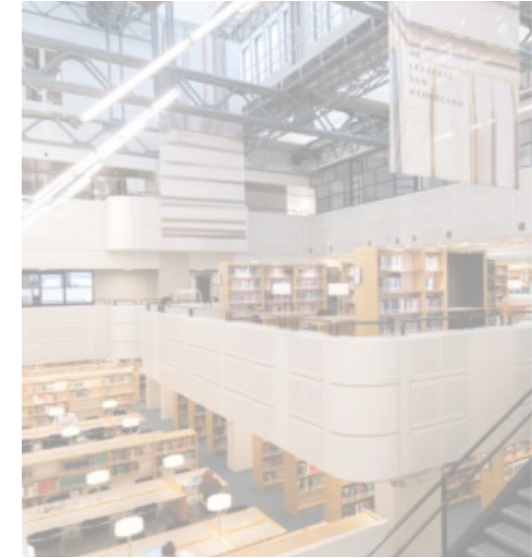
Existing Values

Skin



Facade Composition & Materiality
Aesthetic, Scientific & Ecological Value

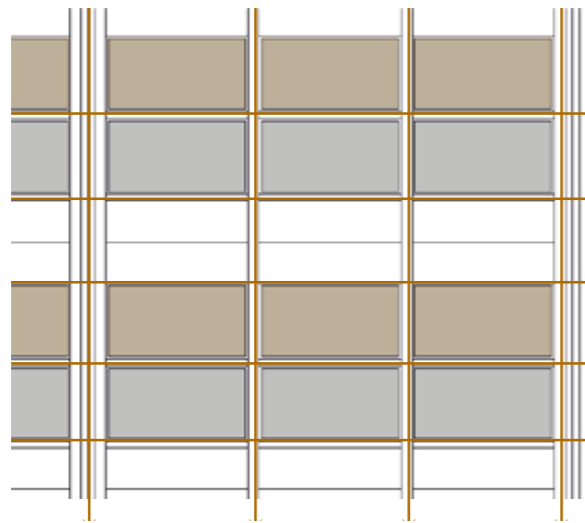
Interior



Atriums & skylights
Aesthetic Value, Ecological & Scientific Value

Interventions

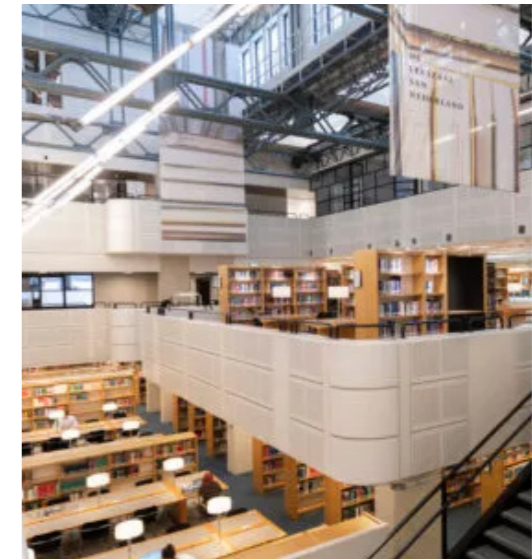
Skin



Open up facade for more daylight
respecting Facade Composition
+ Social & Ecological Value

Reuse & Remanufacture
Aluminium panels

Interior

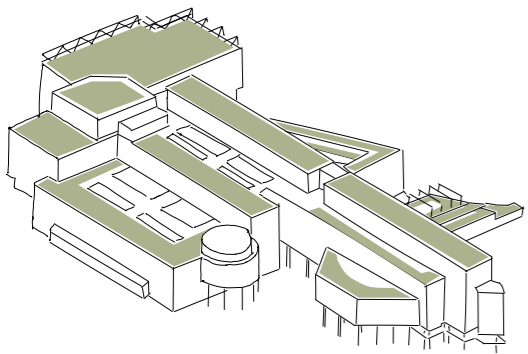


Replace Skylights for more daylight in atriums
+ Social & Ecological Value

Urban Context | Current Situation

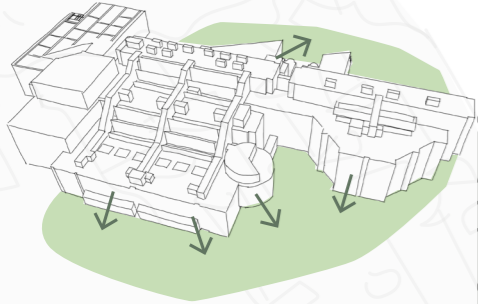


Urban Context | New Landscape

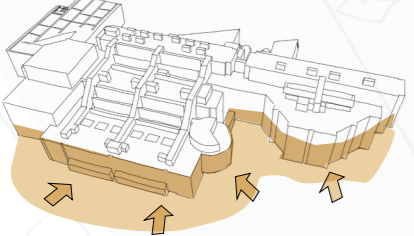


Use stepped structure for new roof landscape
+ Ecological & Social Value

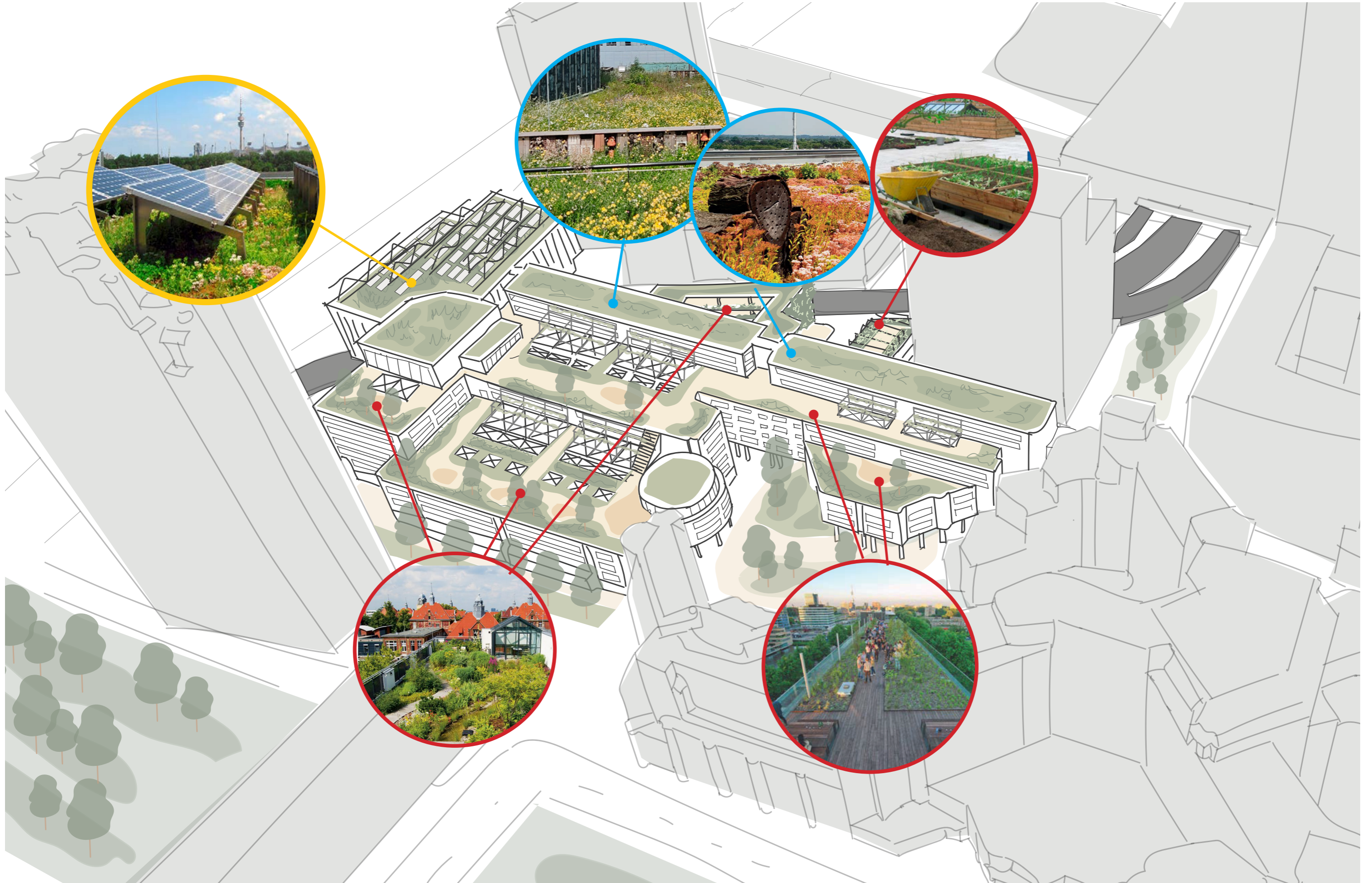
Connections with Green



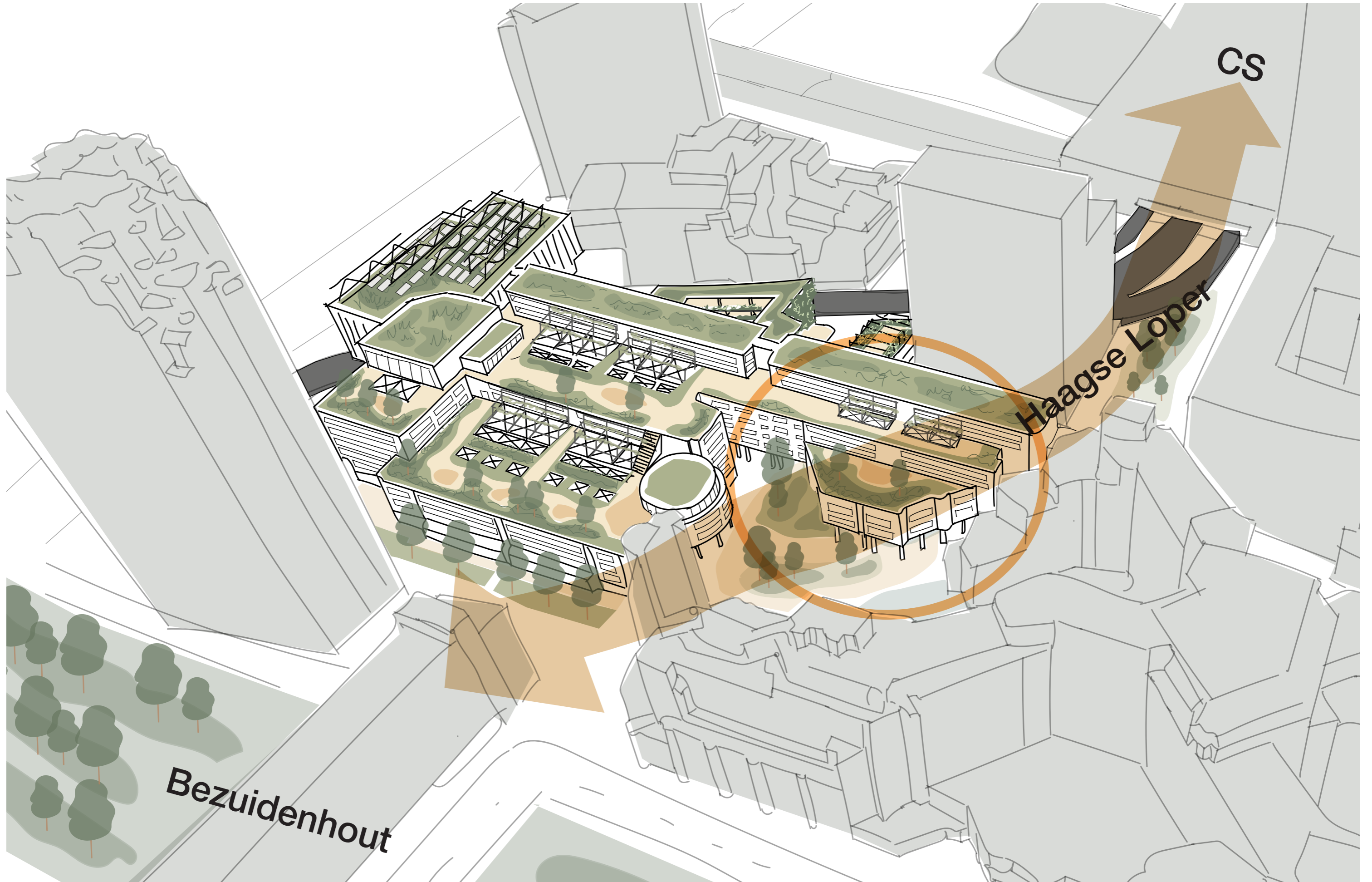
Welcoming & Accessible building



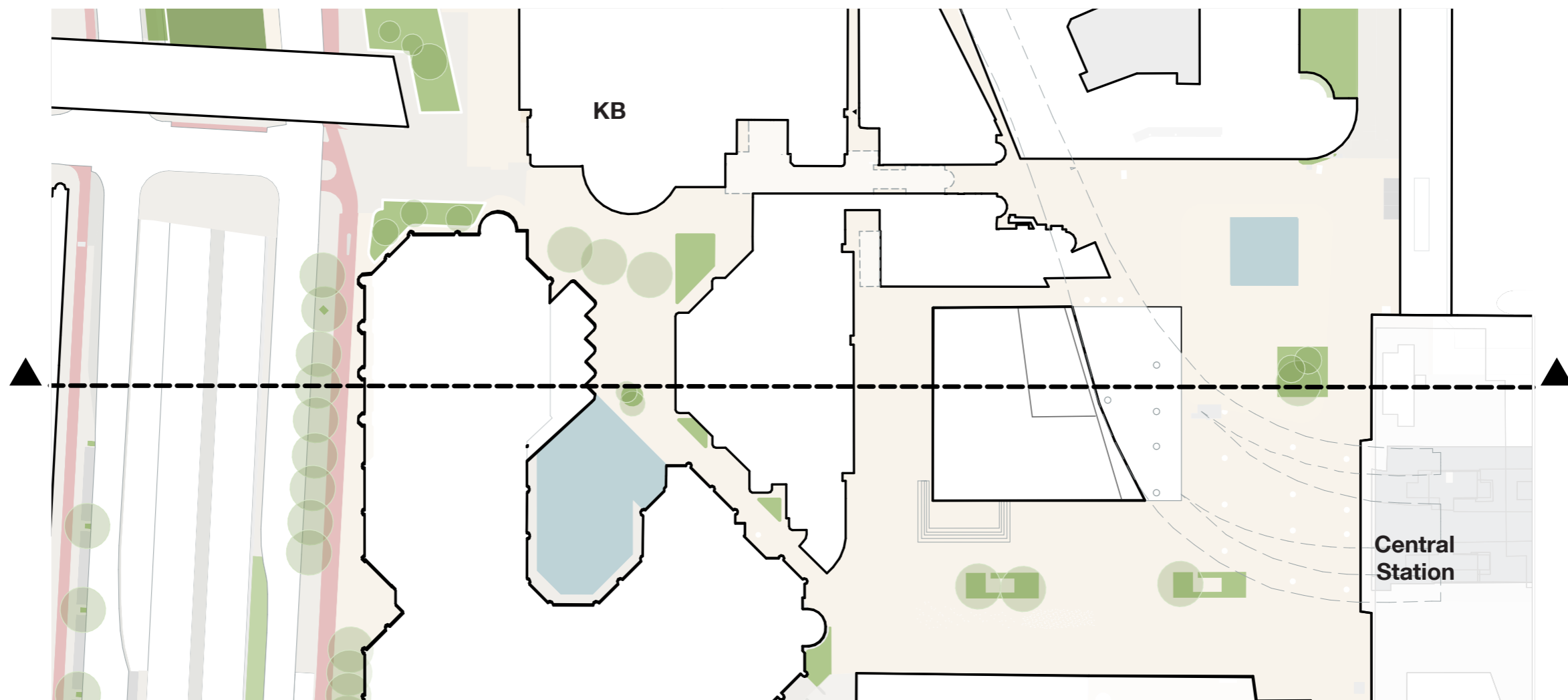
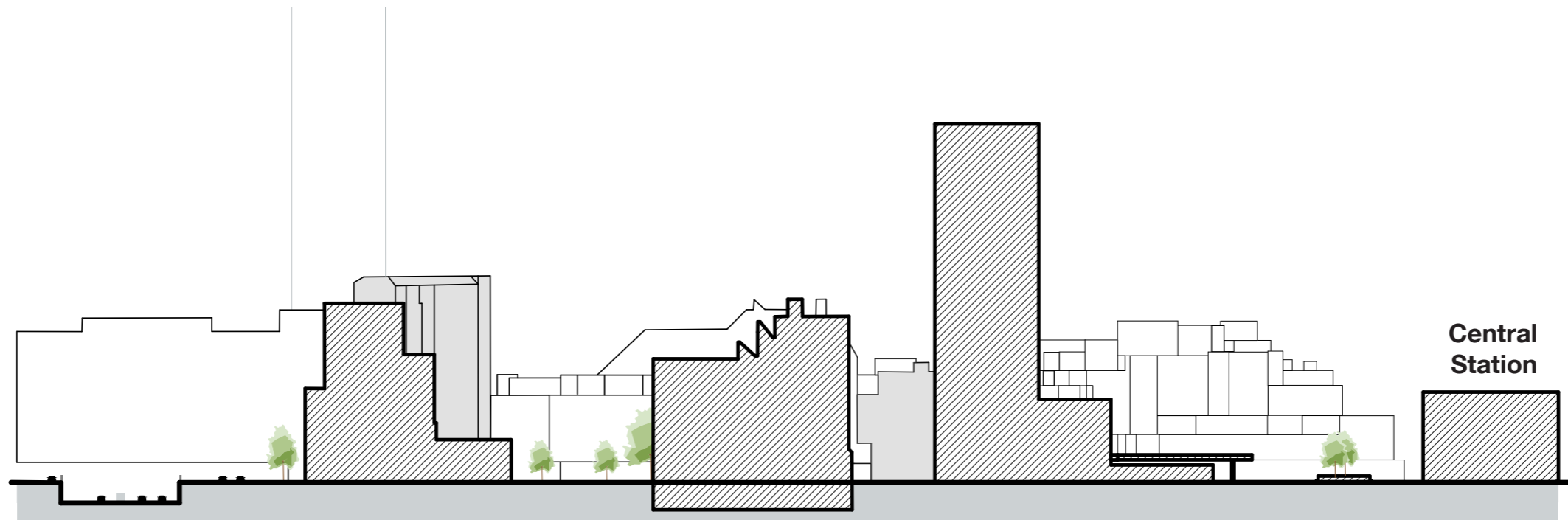
Urban Context | Green Roofs



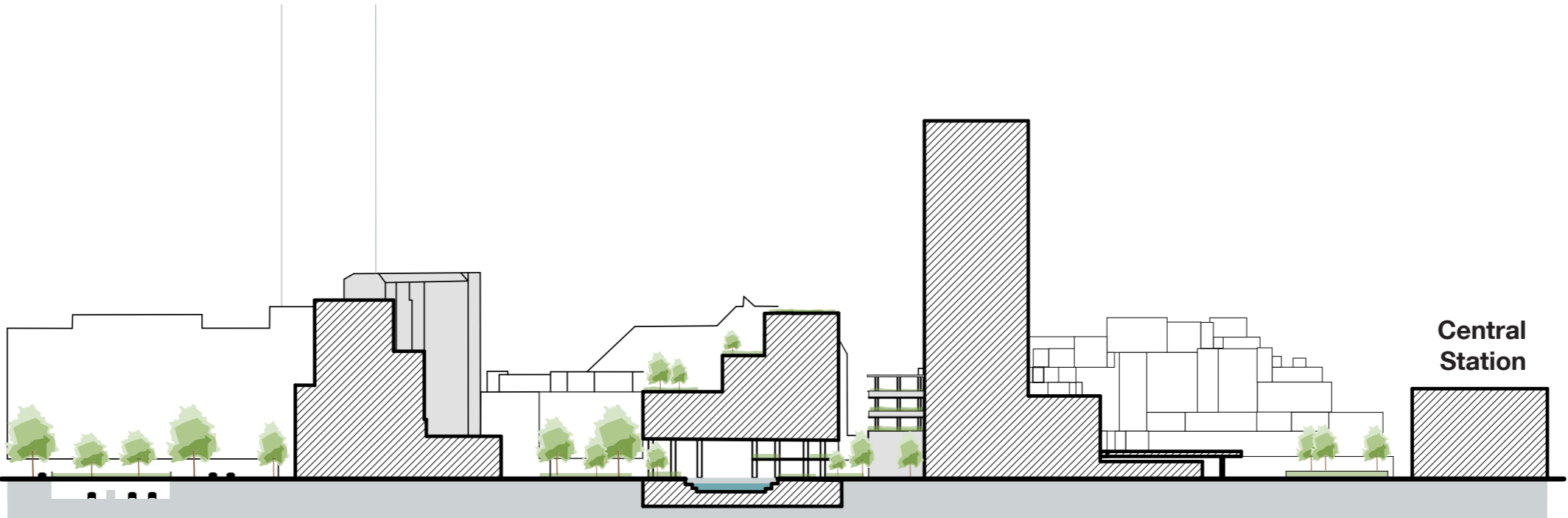
Urban Context | Social Connection



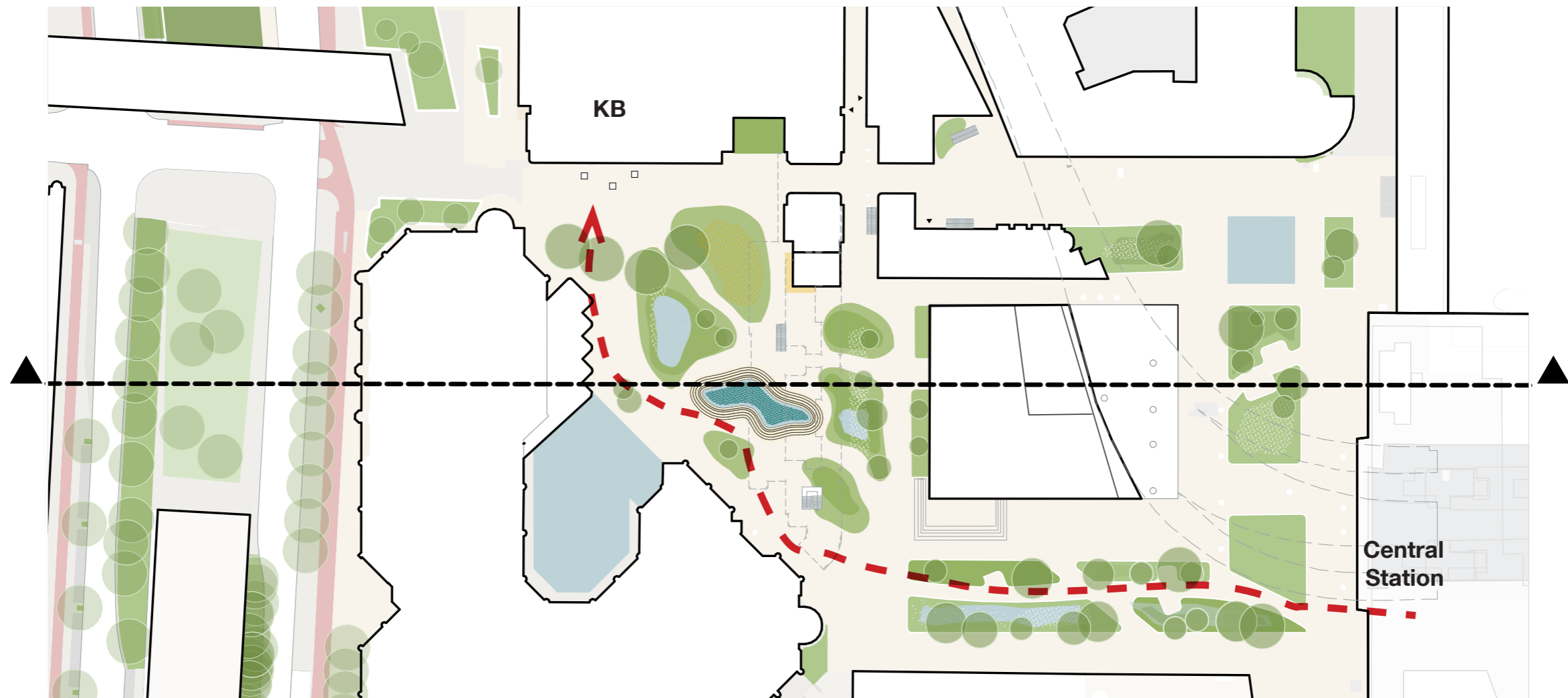
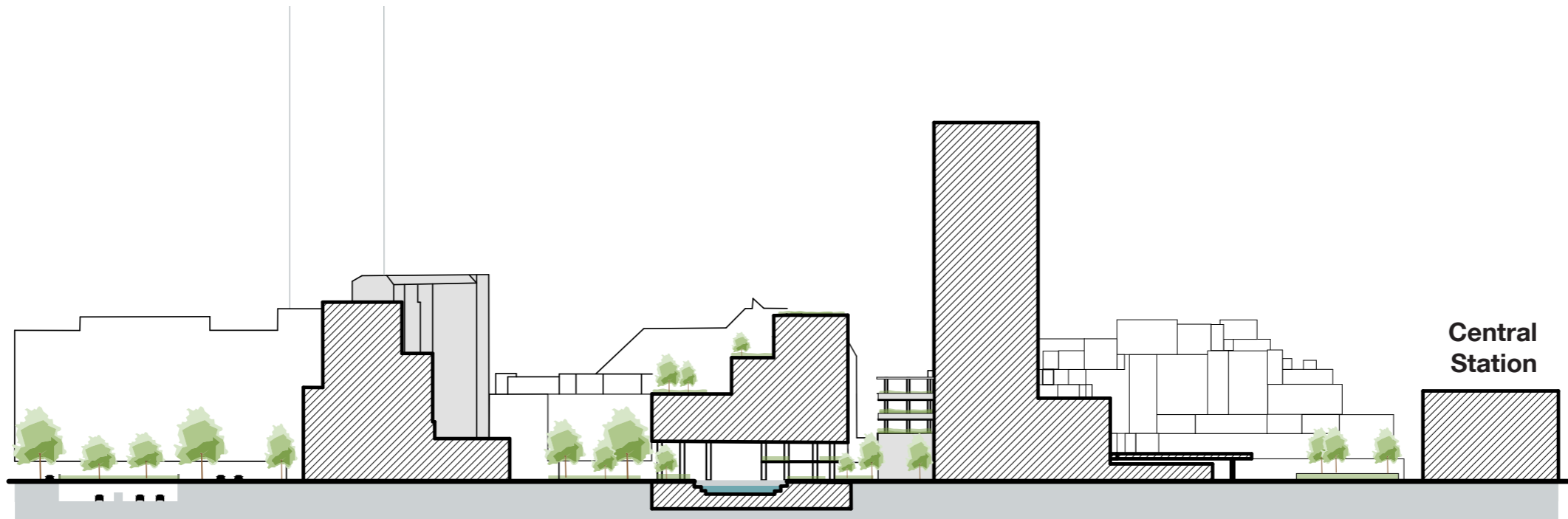
Urban Section | Social Connection



Urban Section | Social Connection



Urban Section | Social Connection



Impression | Route to KB



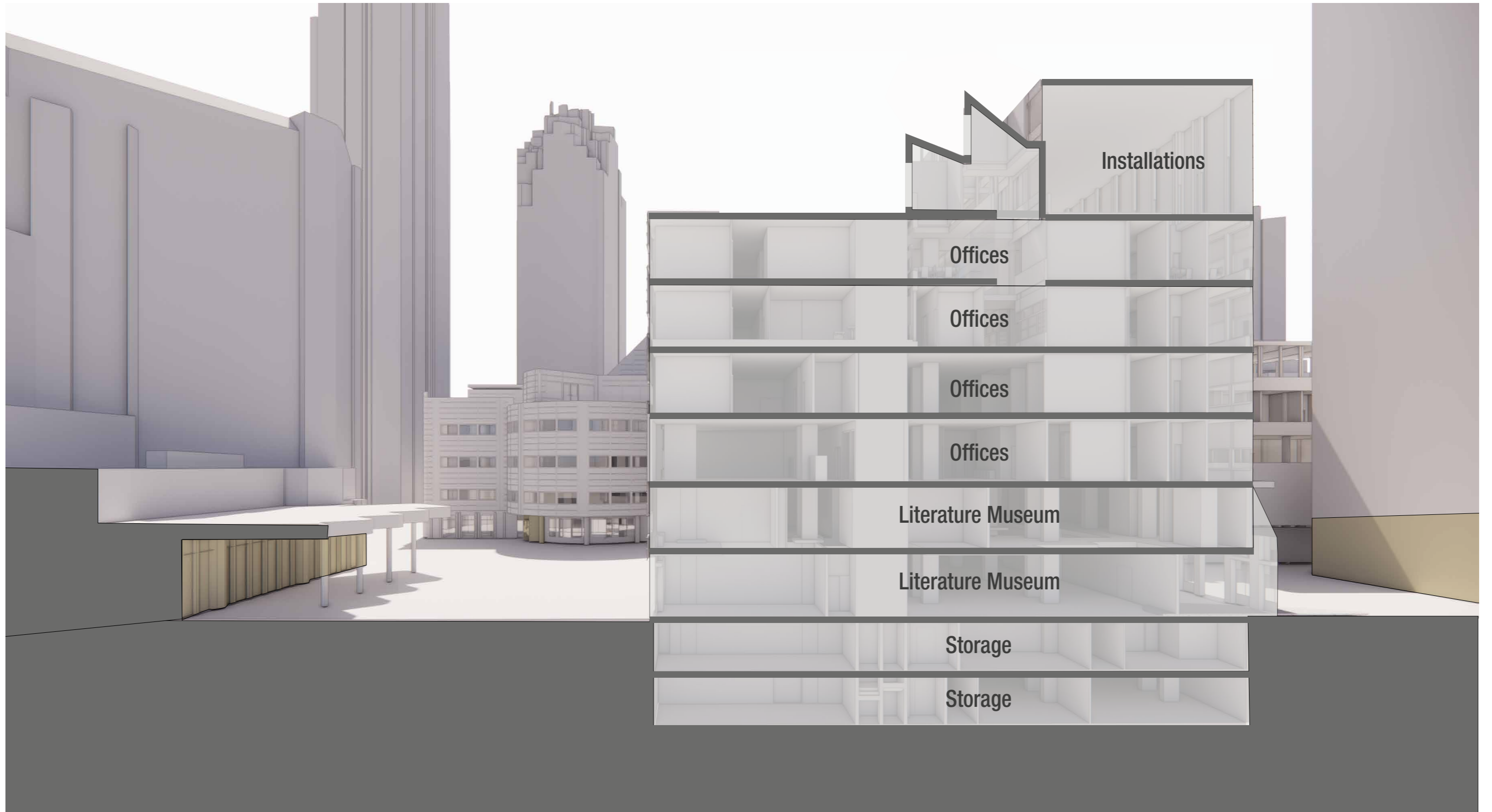
existing situation

Impression | Route to KB



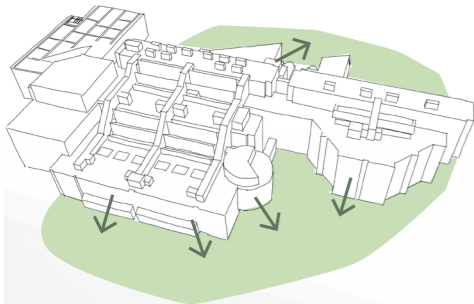
new situation

Section I Existing

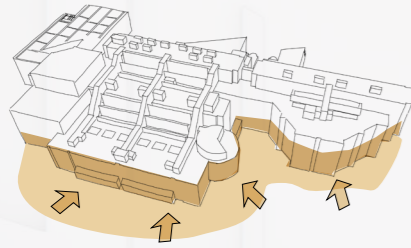


Section | Social Connection

Connections with Green



Welcoming & Accessible building



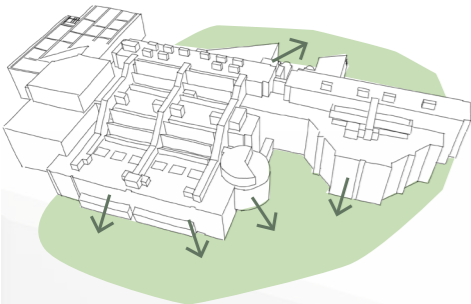
Urban | Public Square



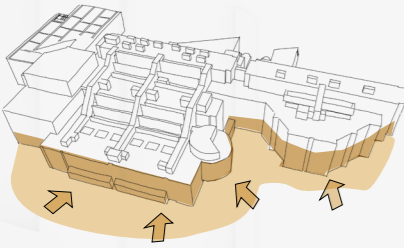
Section | Social Connection



Connections with Green



Welcoming & Accessible building



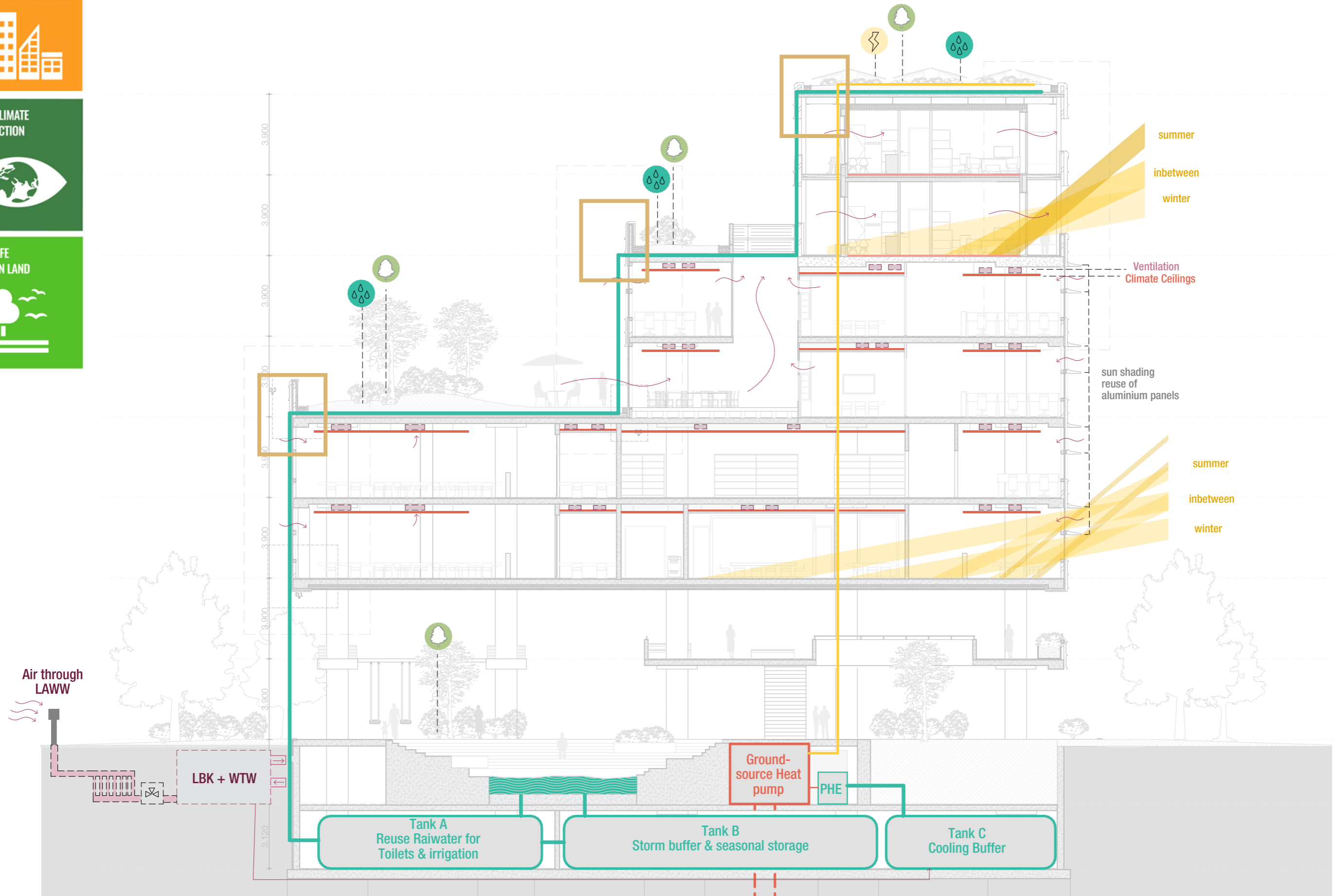
SDG

Section | Climate scheme

11 SUSTAINABLE CITIES AND COMMUNITIES

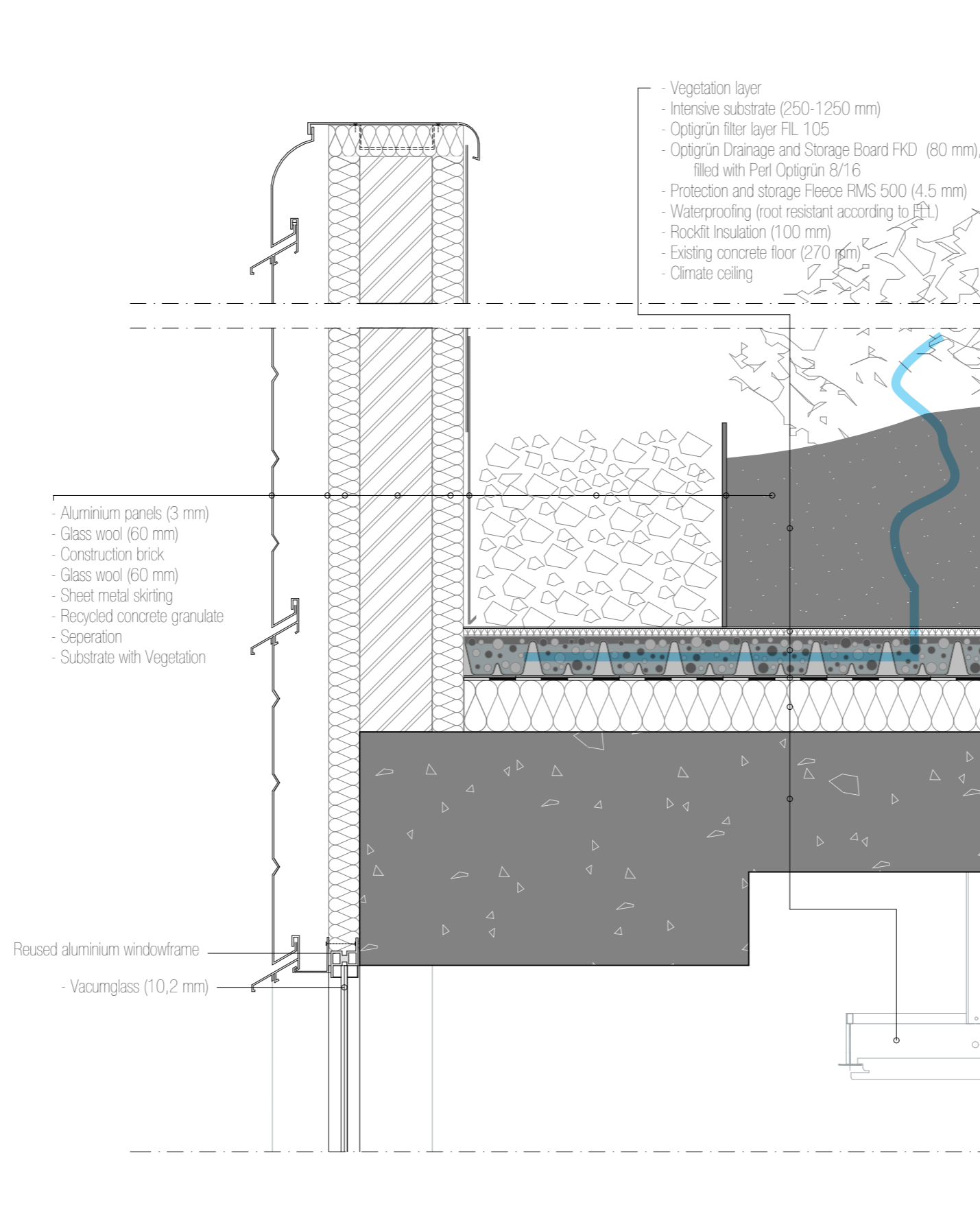
13 CLIMATE ACTION

15 LIFE ON LAND

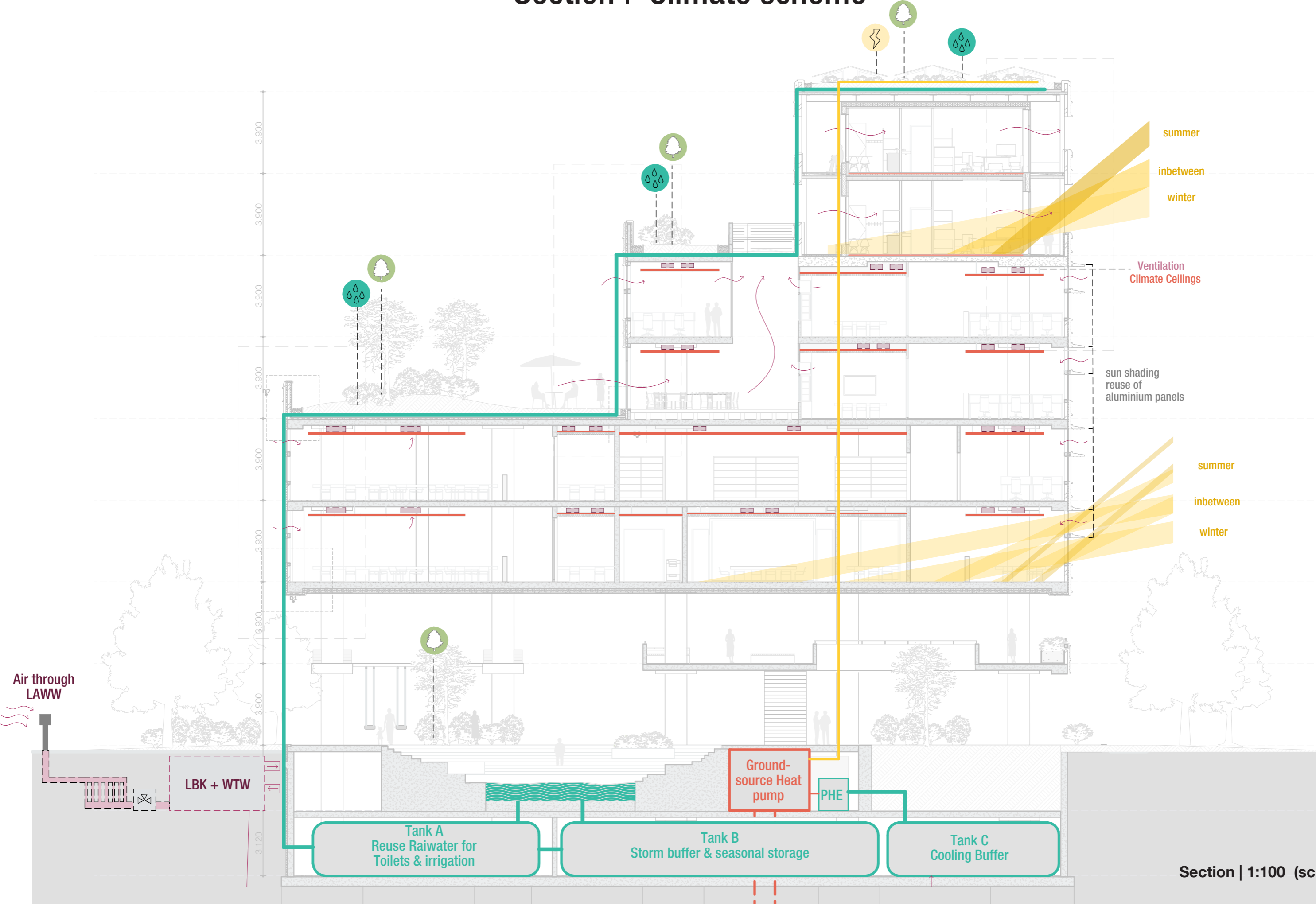


Section | 1:100 (scaled)

Section | Detail Nature Roof

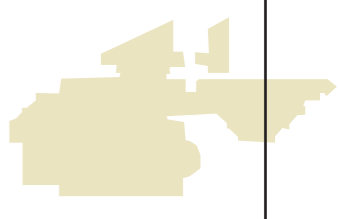


Section | Climate scheme

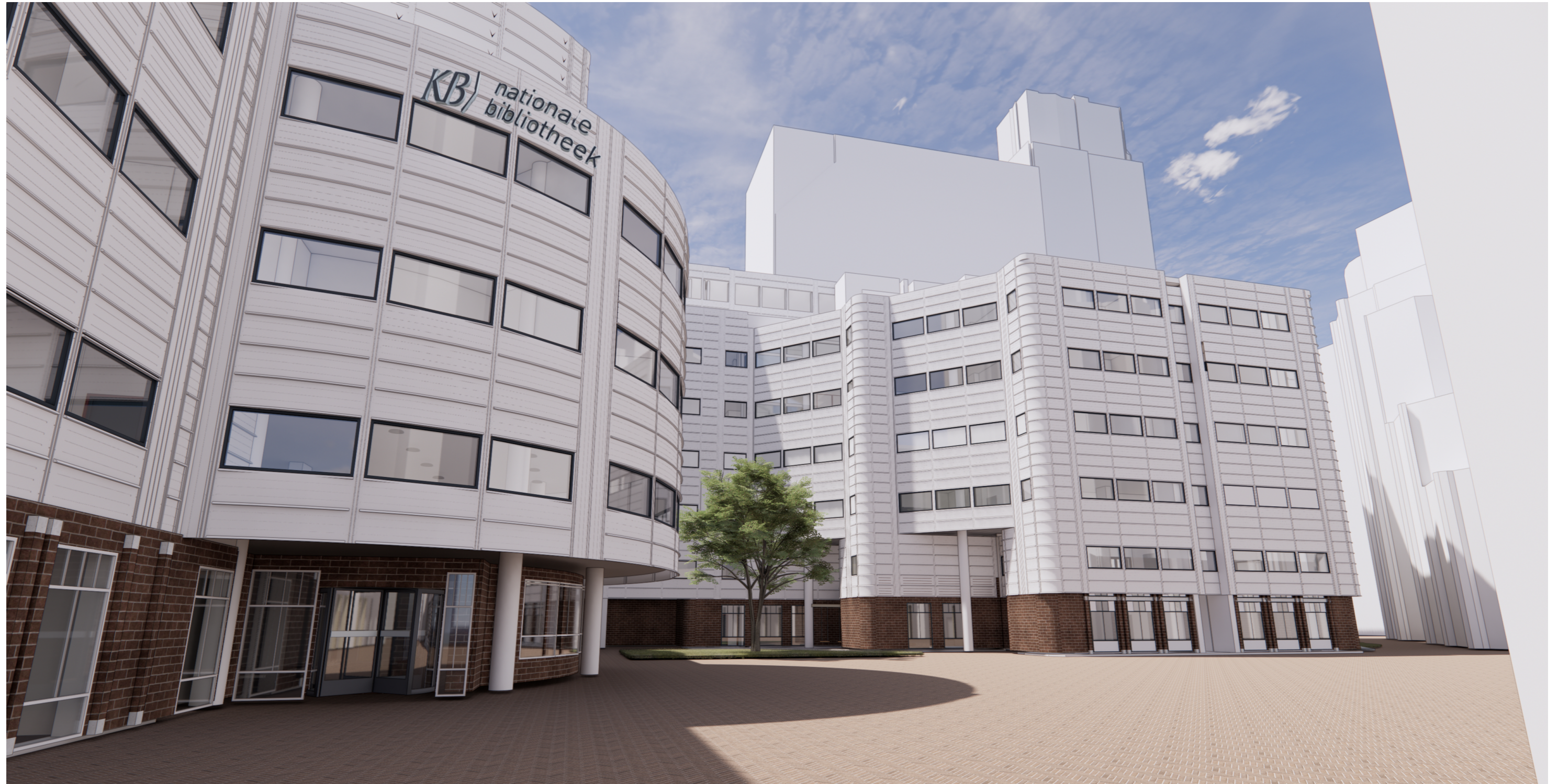


Section | 1:100 (scaled)

Section I Social Connection

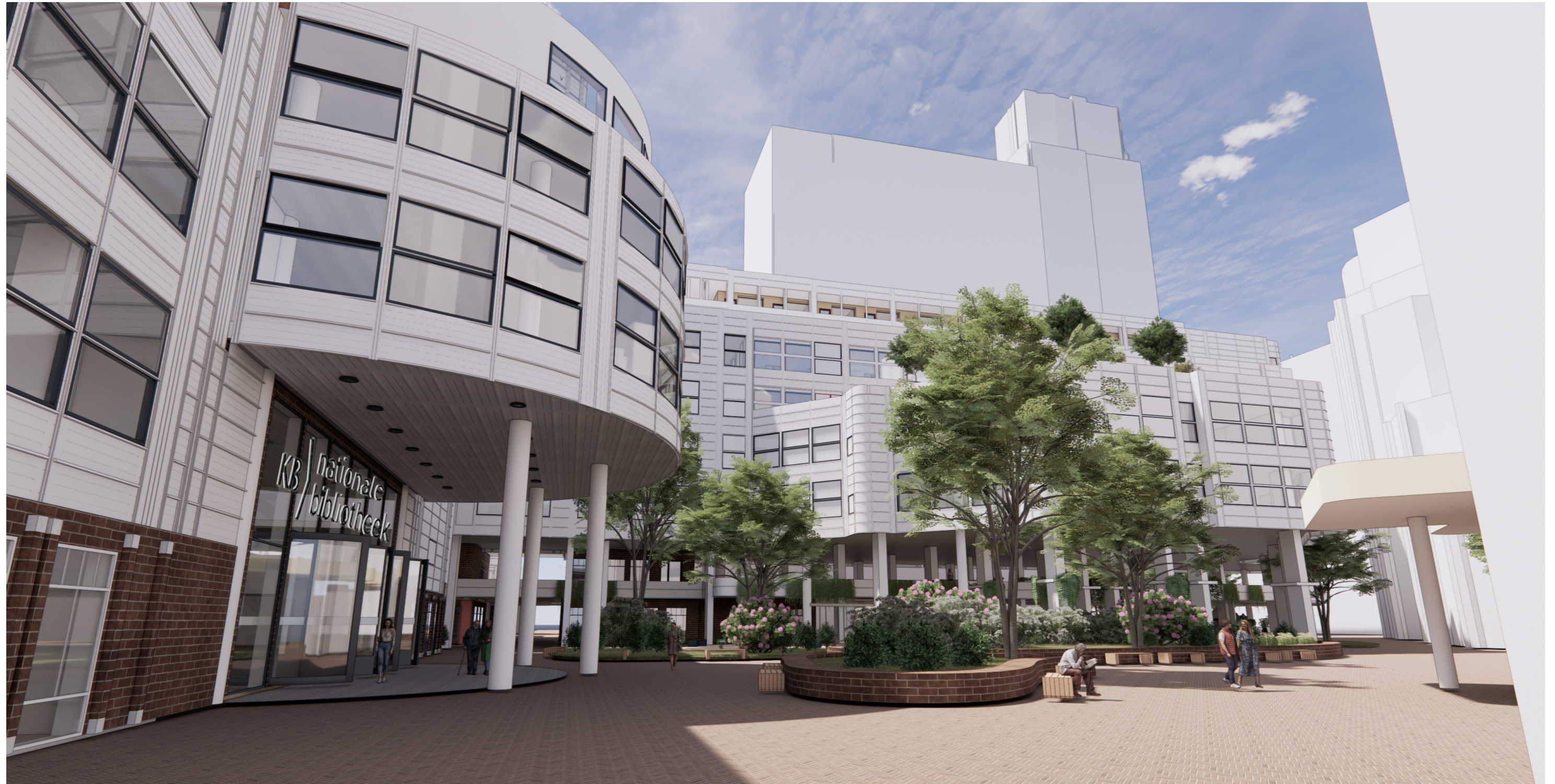


Urban | Existing Entrance



No clear entrance & sightlines

Intervention I New Entrance



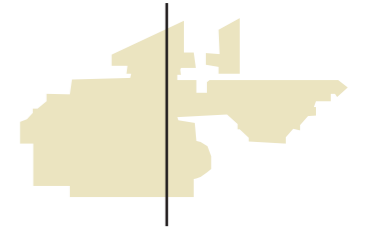
Improved sightlines and a defined entrance zone

Intervention | New Entrance

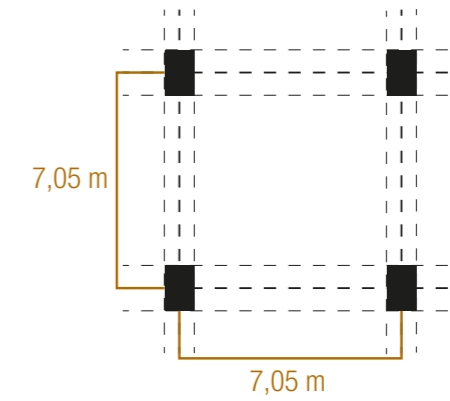
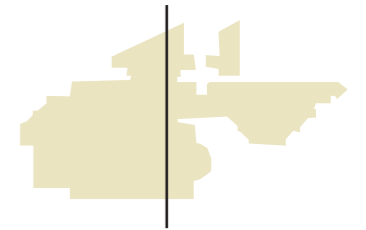


Improved sightlines and a defined entrance zone

Building Section | Existing

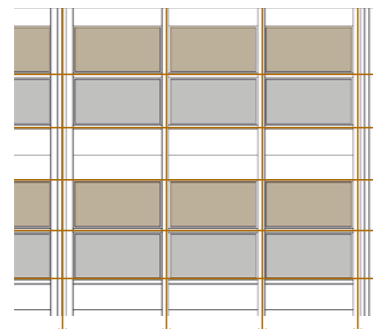


Building Section | Remove, Replace & Reuse

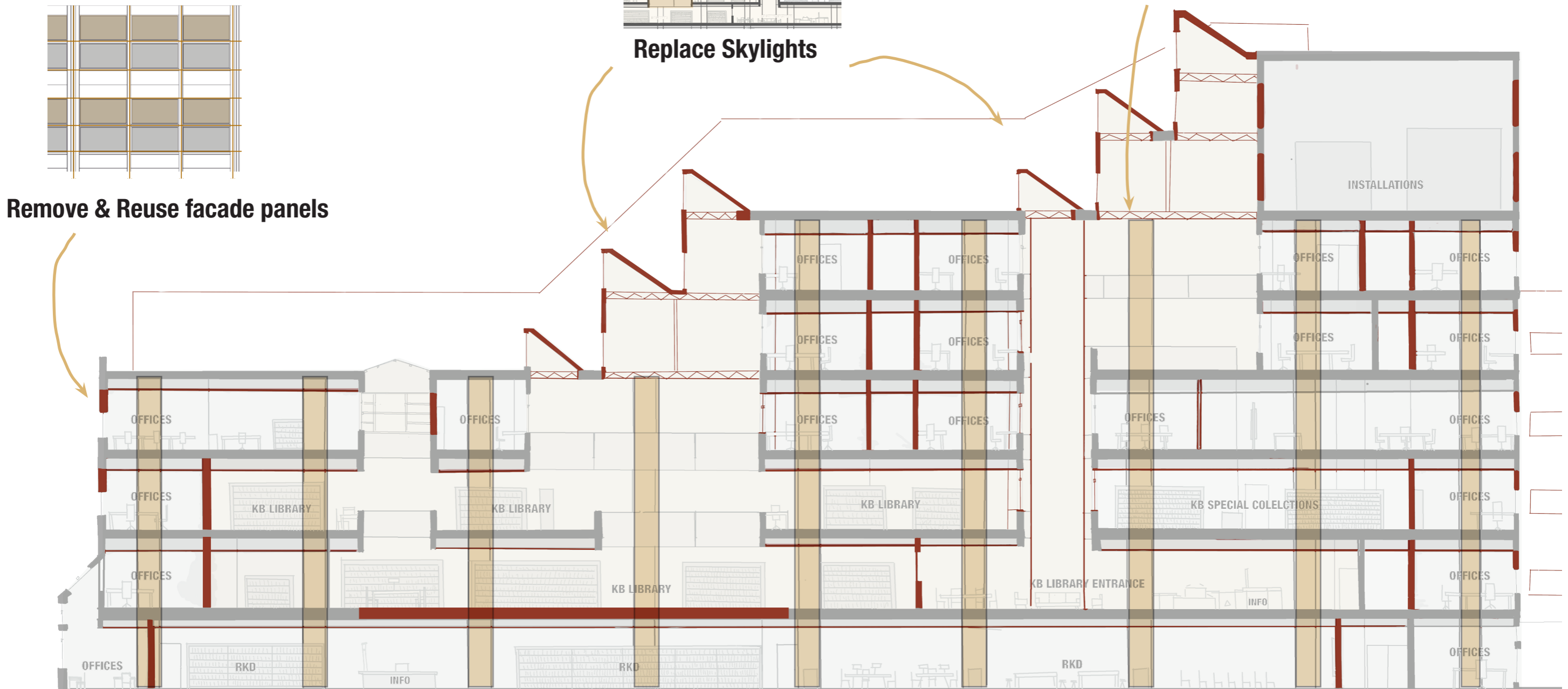


Replace Skylights

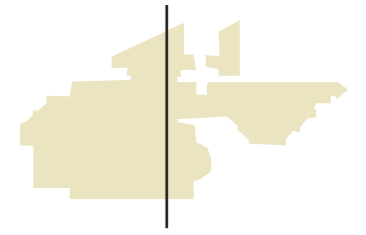
Use Existing Column structure



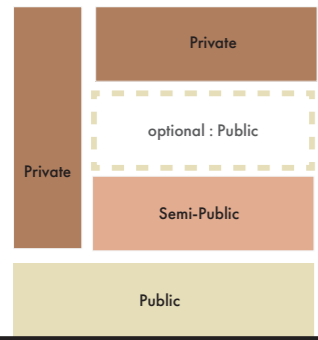
Remove & Reuse facade panels



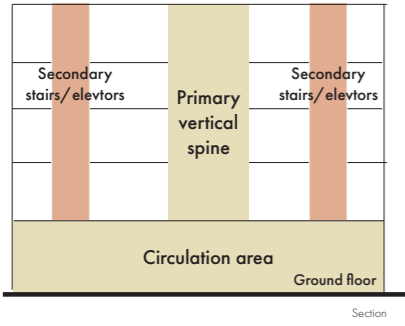
Building Section | New Situation



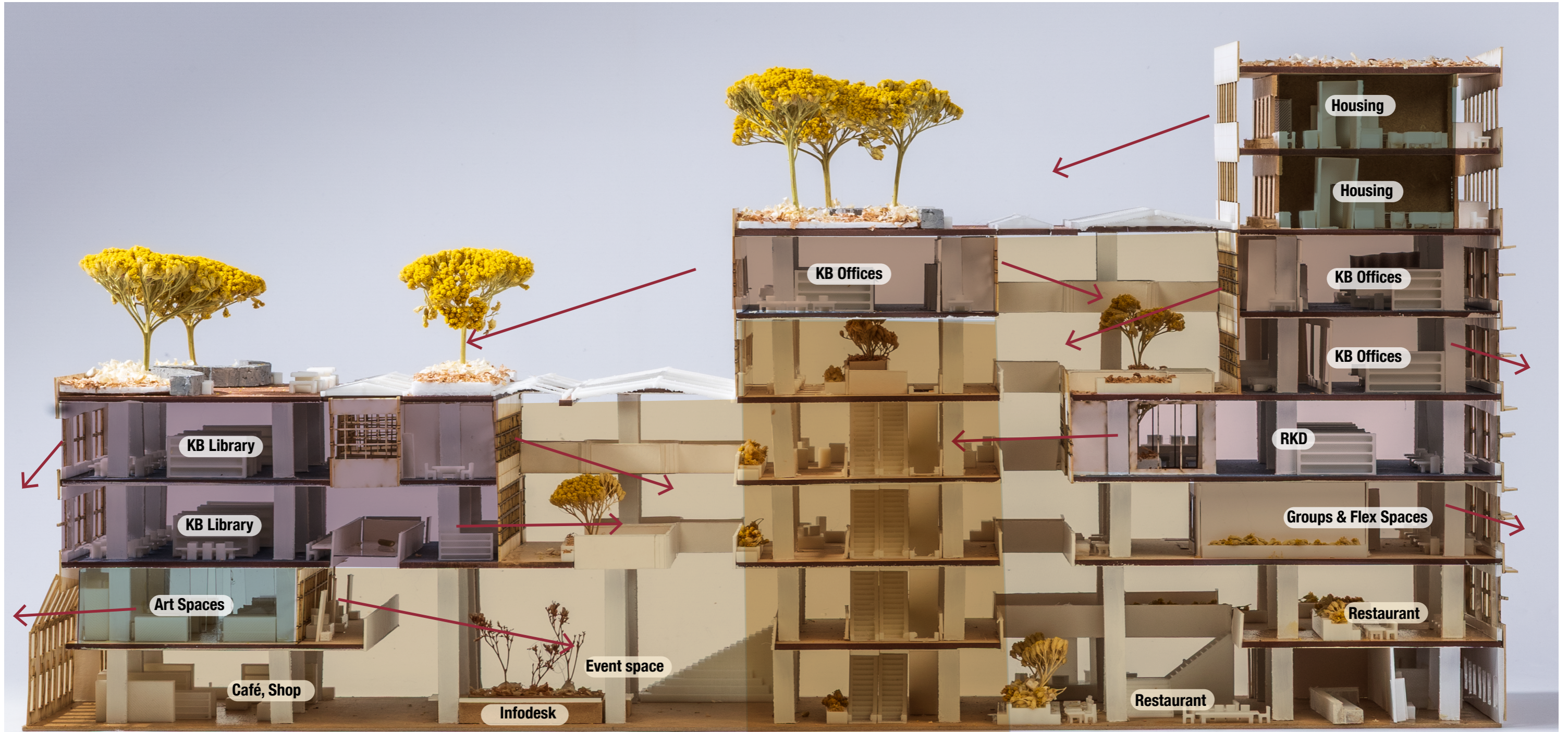
Functional Zoning



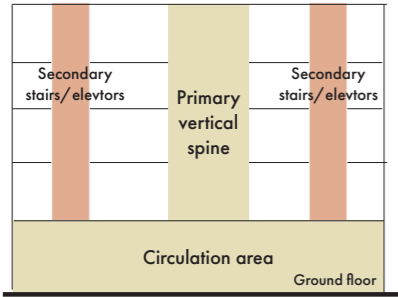
Circulation & Accessibility



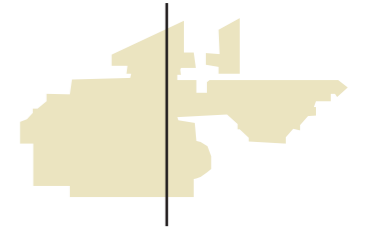
Building Section | New Situation



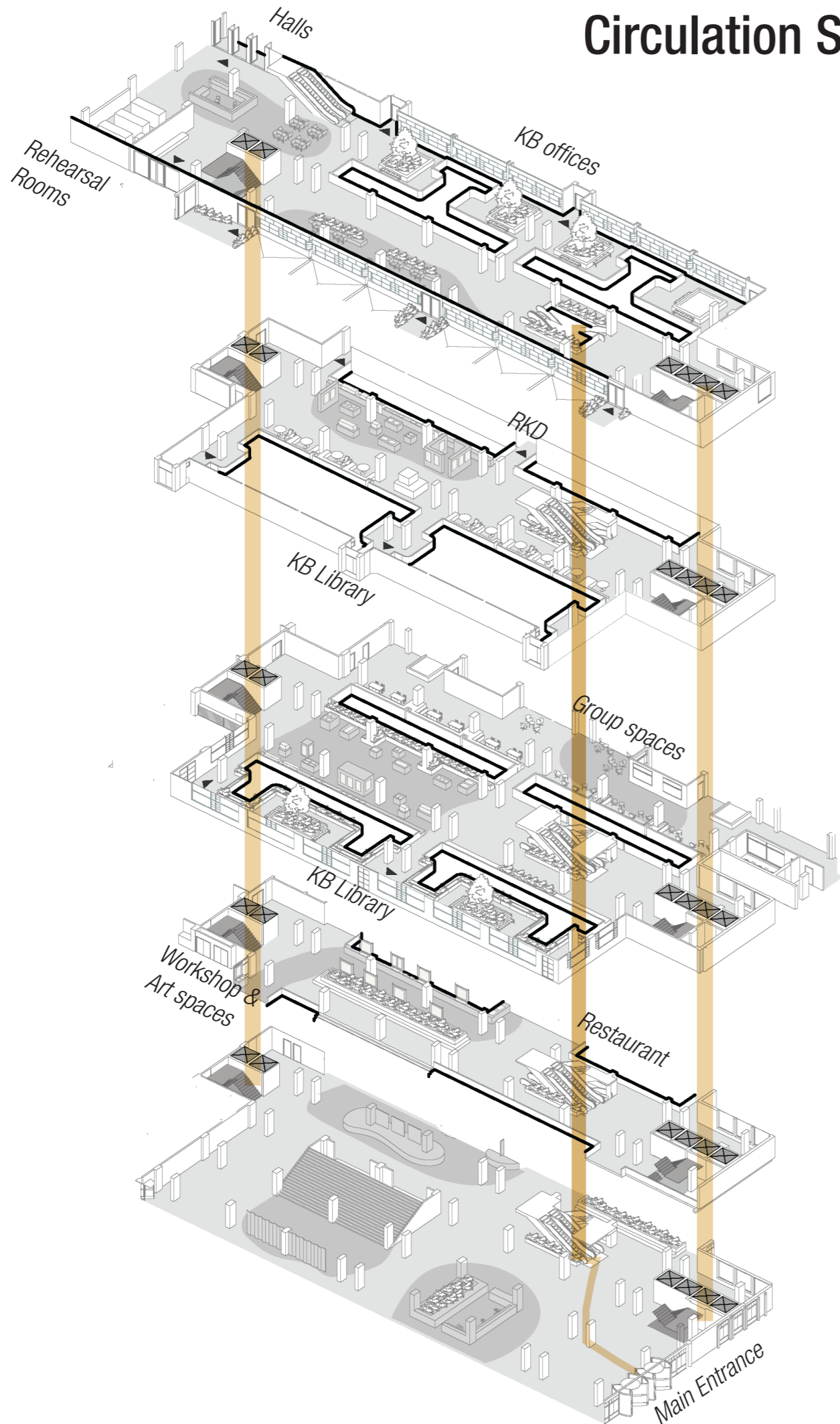
Circulation & Accessibility



Building Section | New Situation



Circulation Spine | A Place to Meet



+4 | Green Event Square

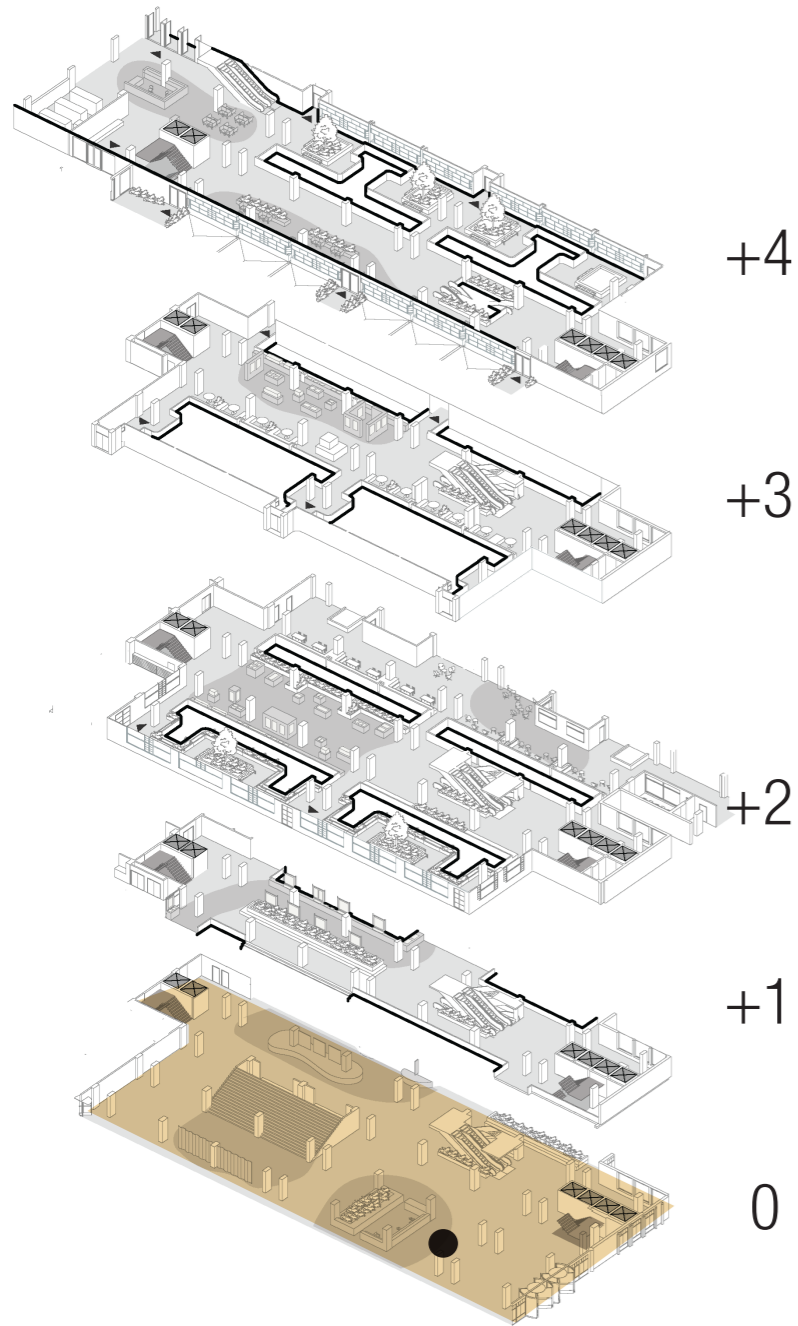
+3 | RKD Square

+2 | Knowledge Square

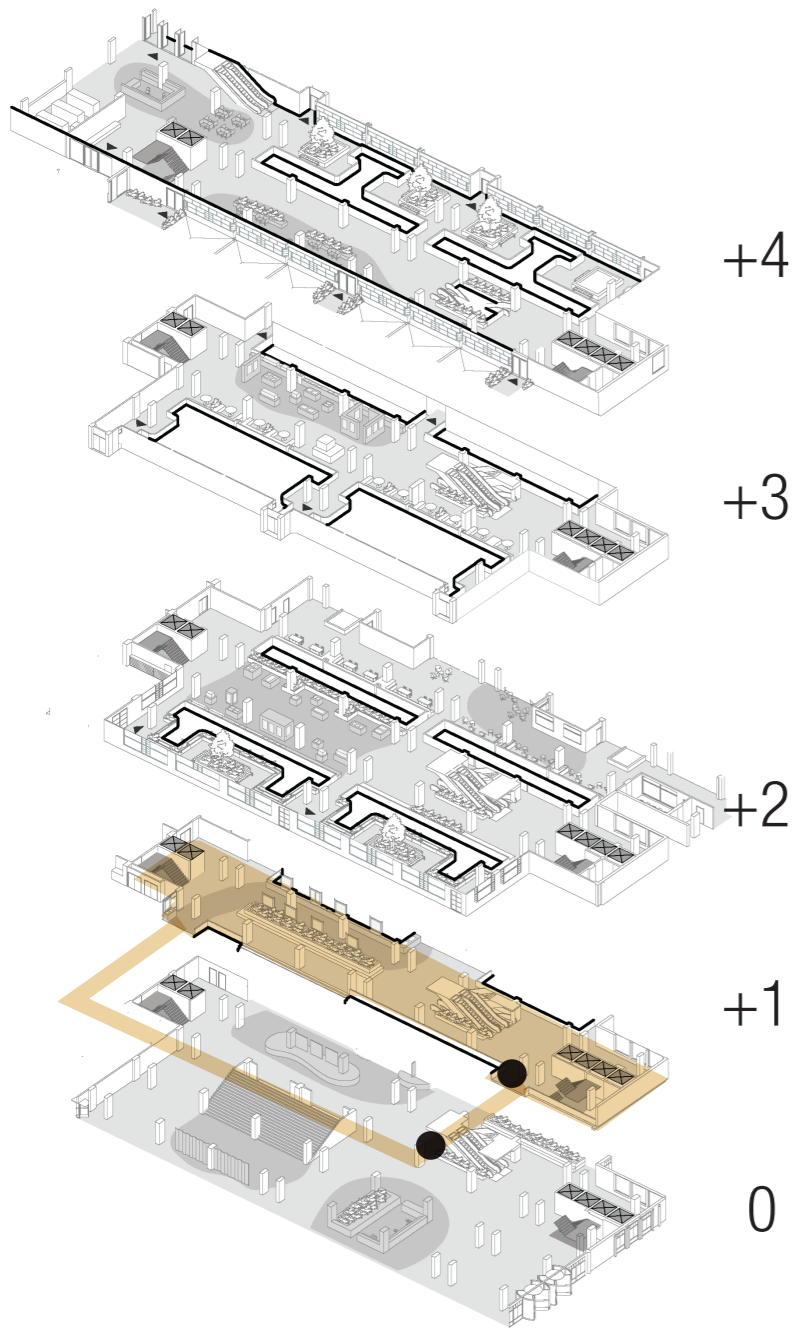
+1 | Art Square

0 | Public Square

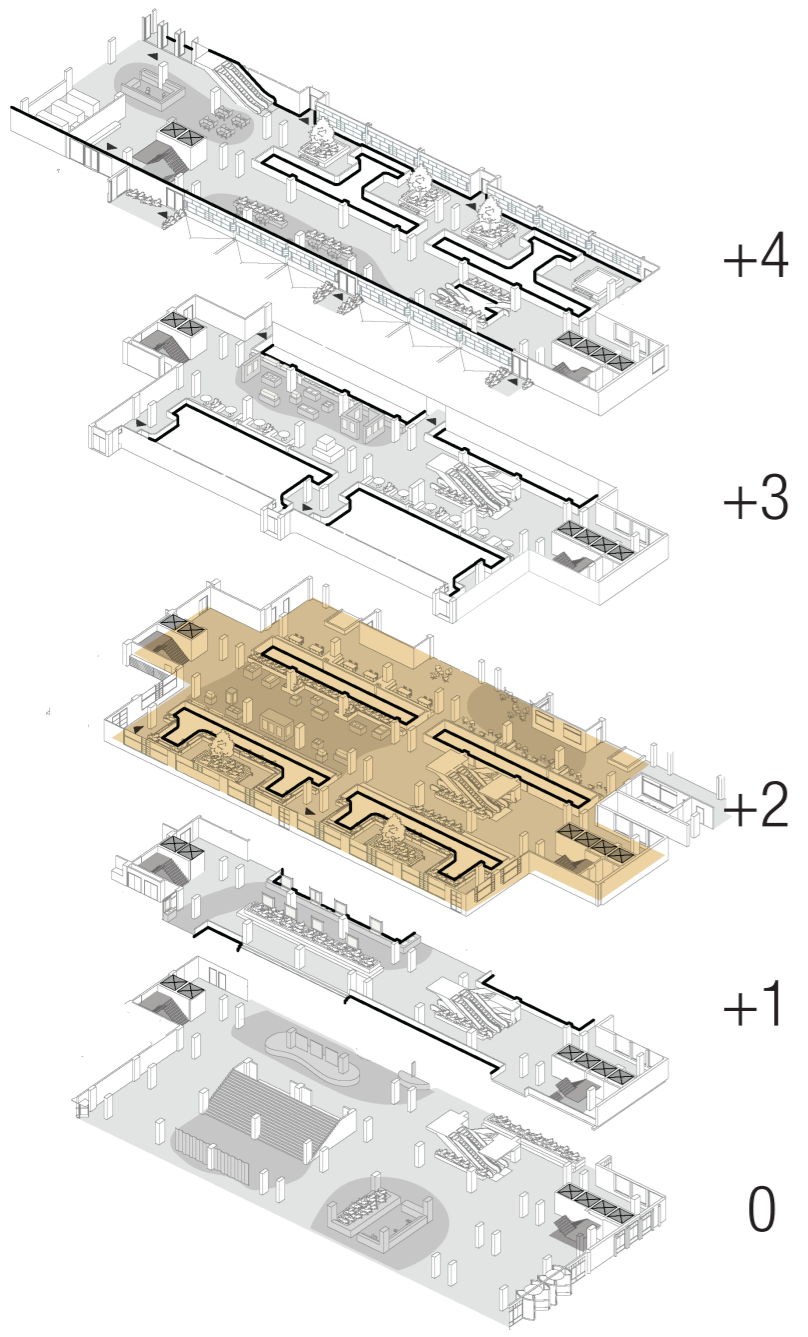
The KB | Public Square



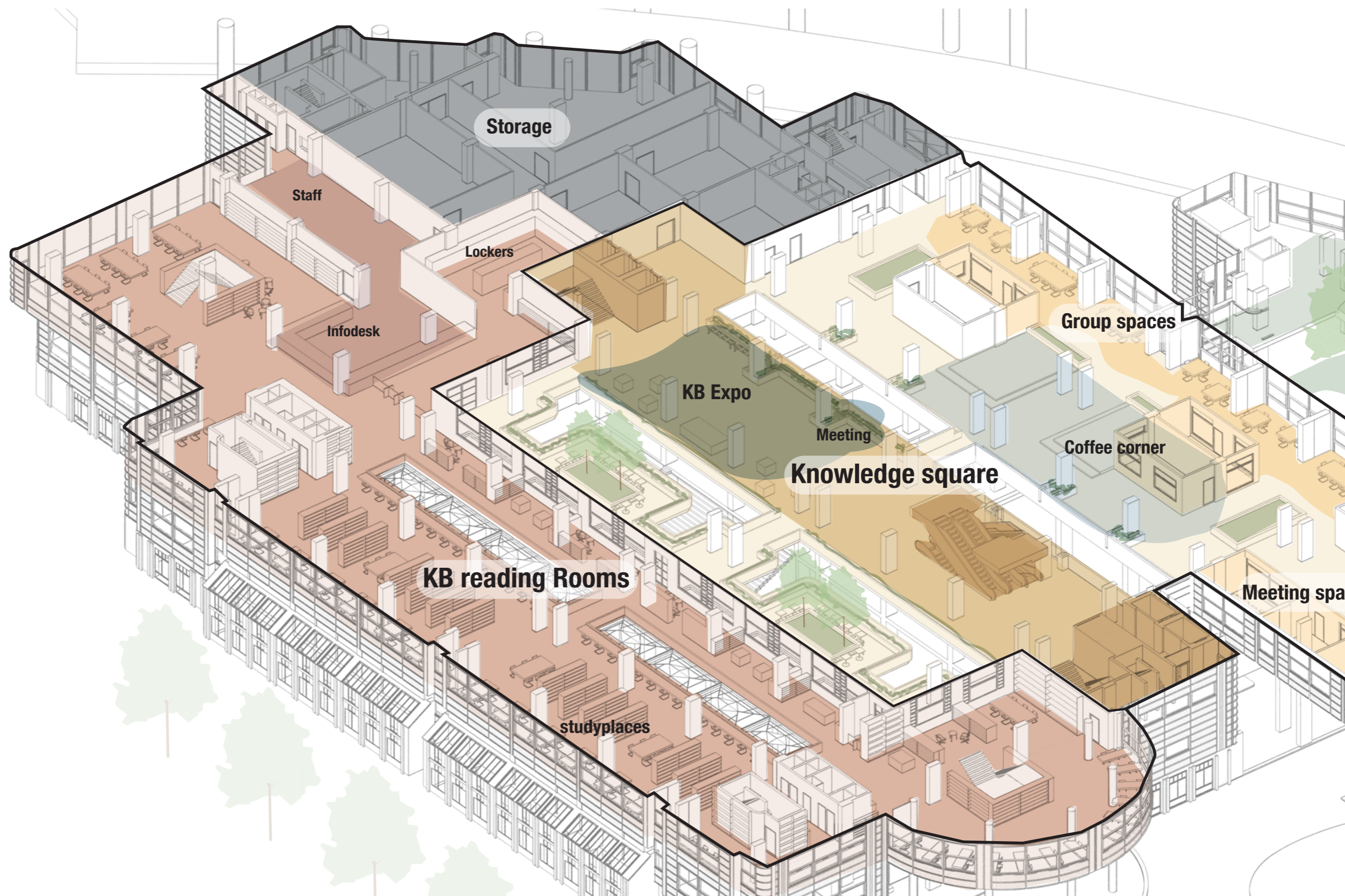
The KB | Art Square



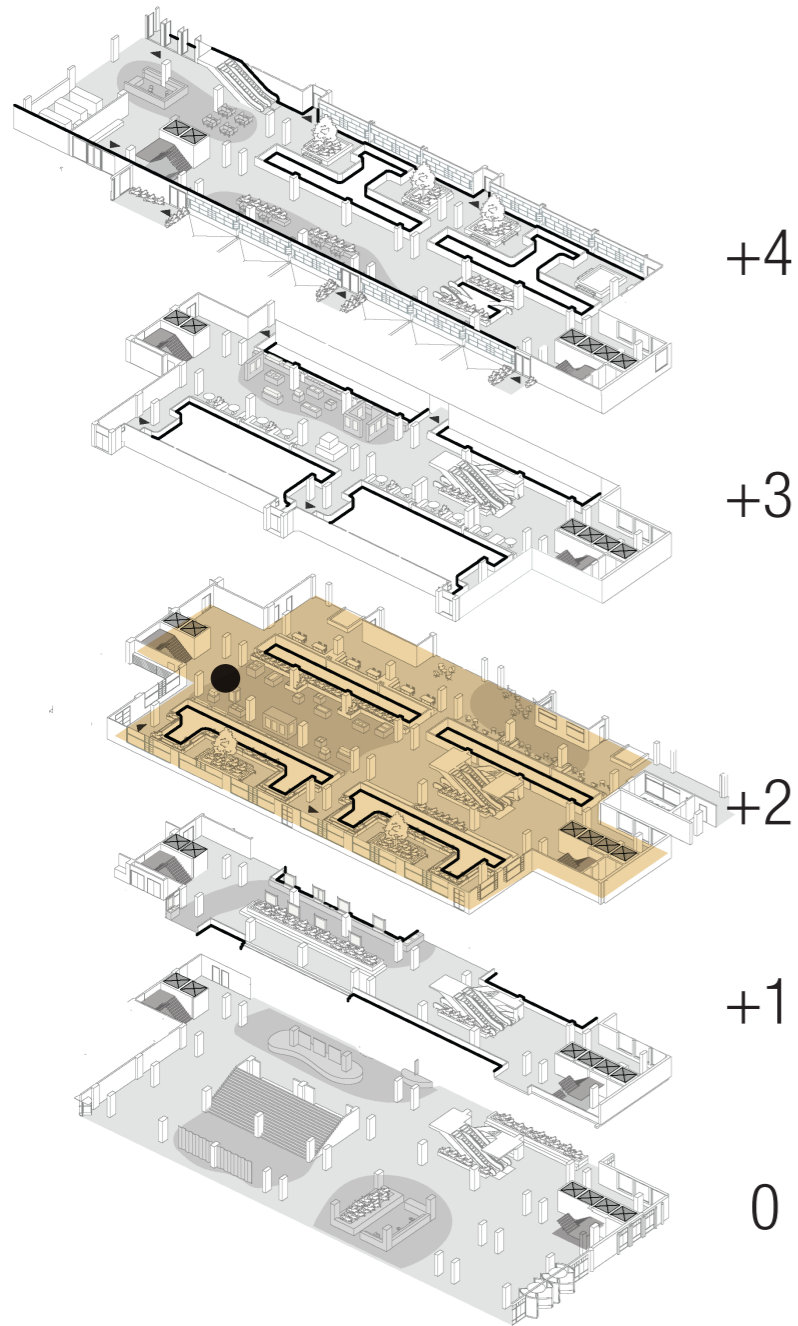
The KB | Knowledge Square



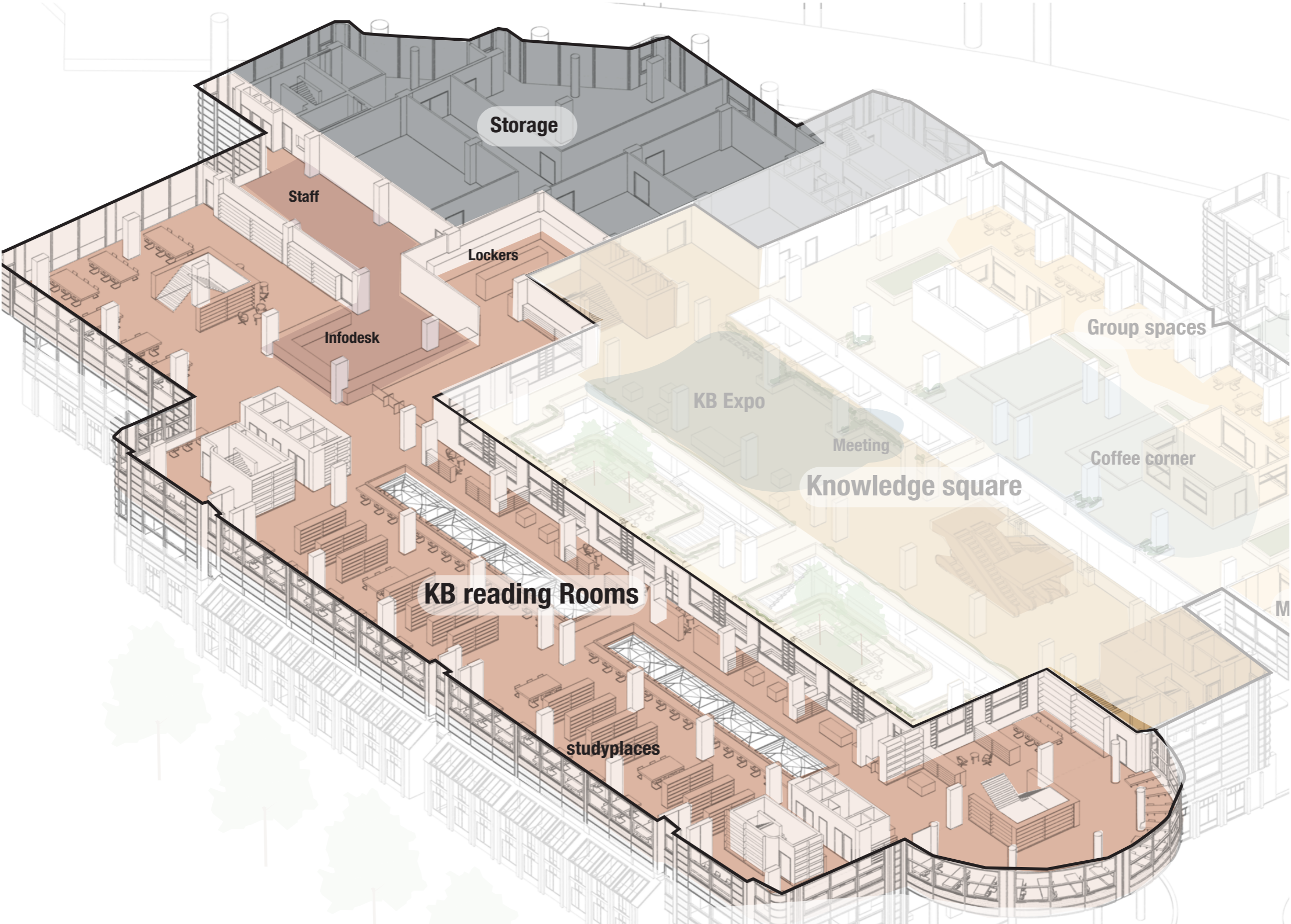
Floorplan | Knowledge Square



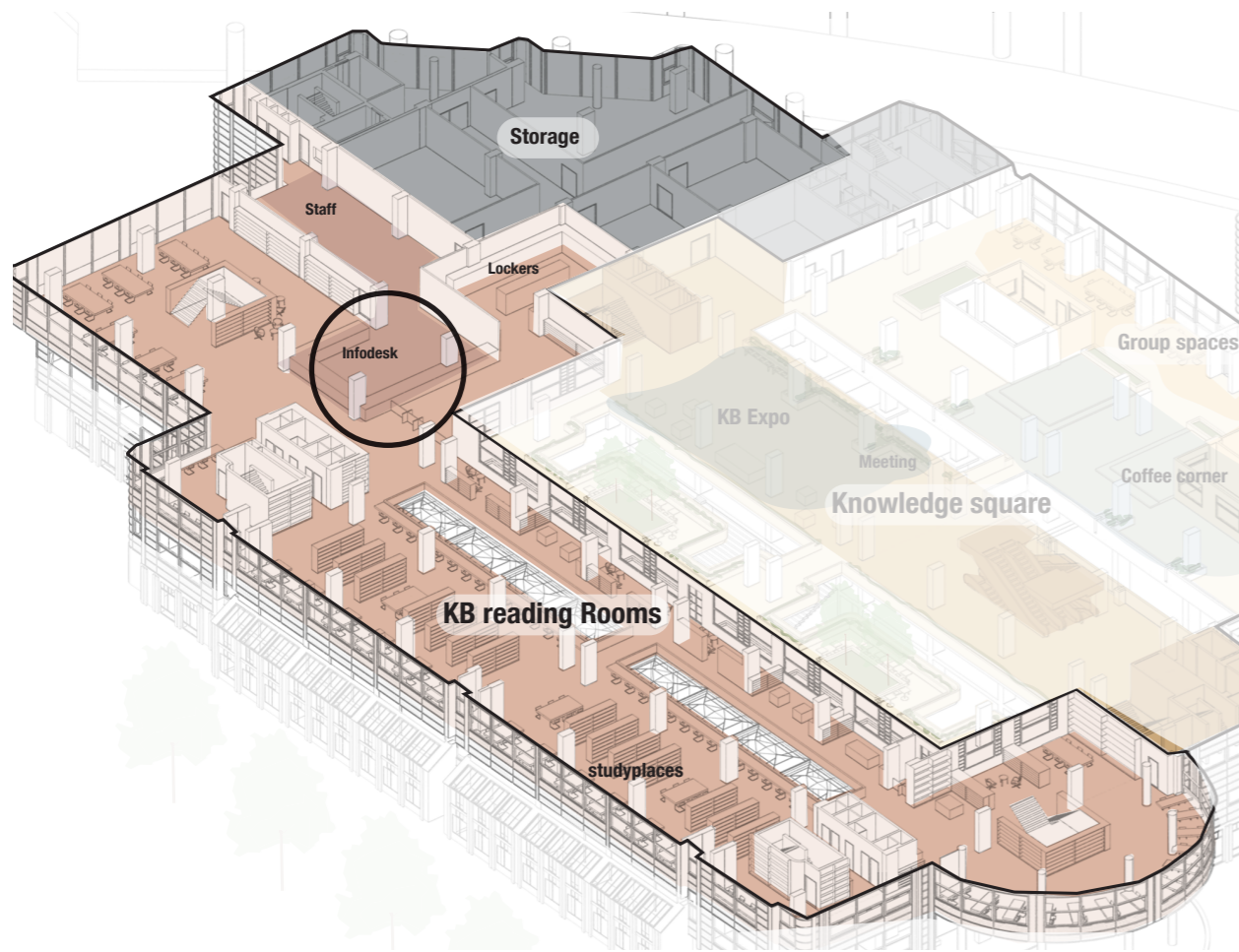
The KB | Knowledge Square Expo



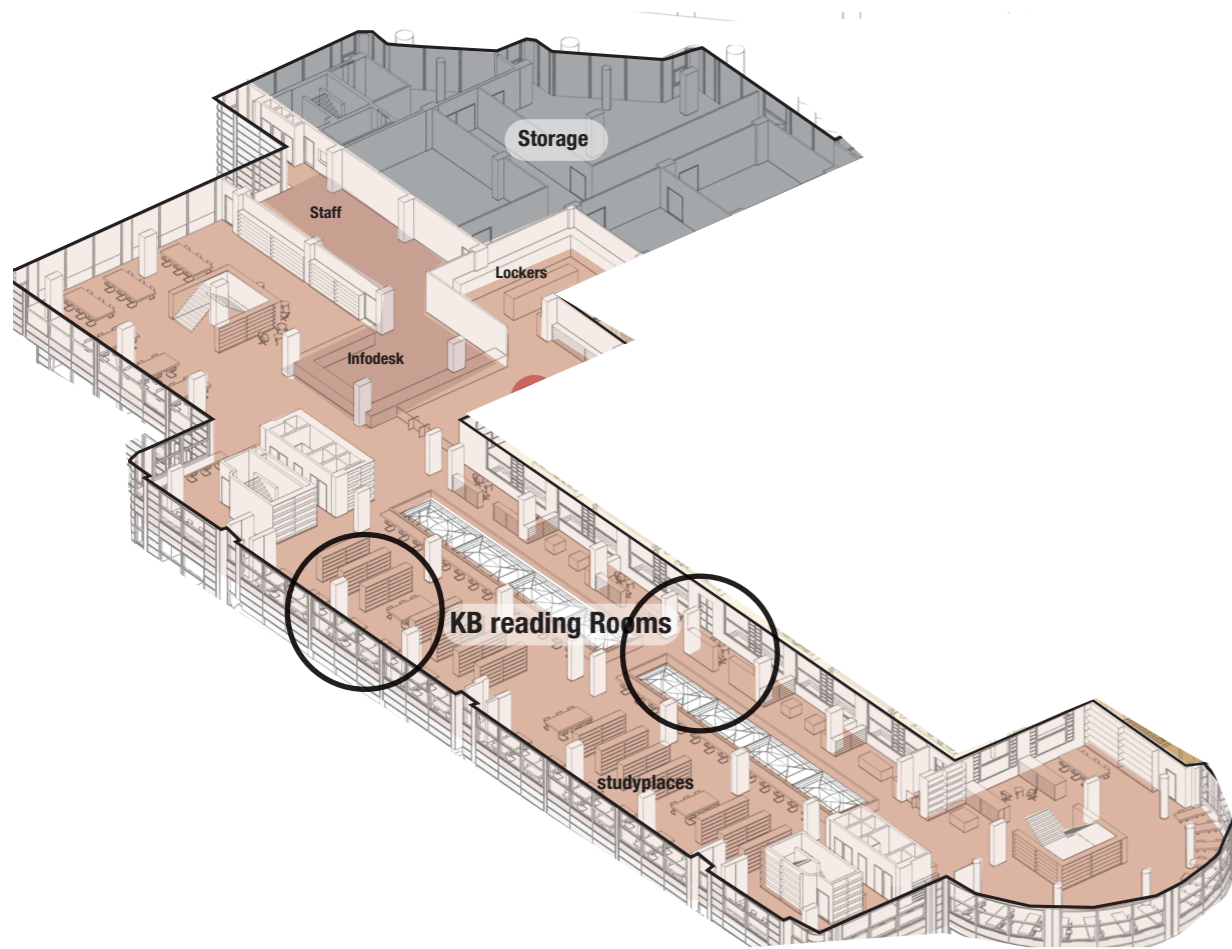
Floorplan | Knowledge Square



KB Library | Entrance



KB Library | Reading Room

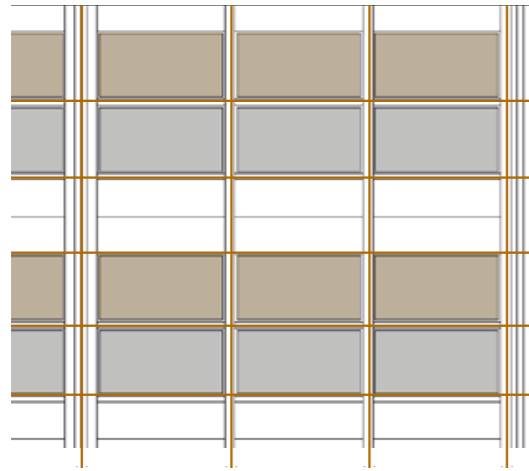


More Daylight & Different Seating configurations

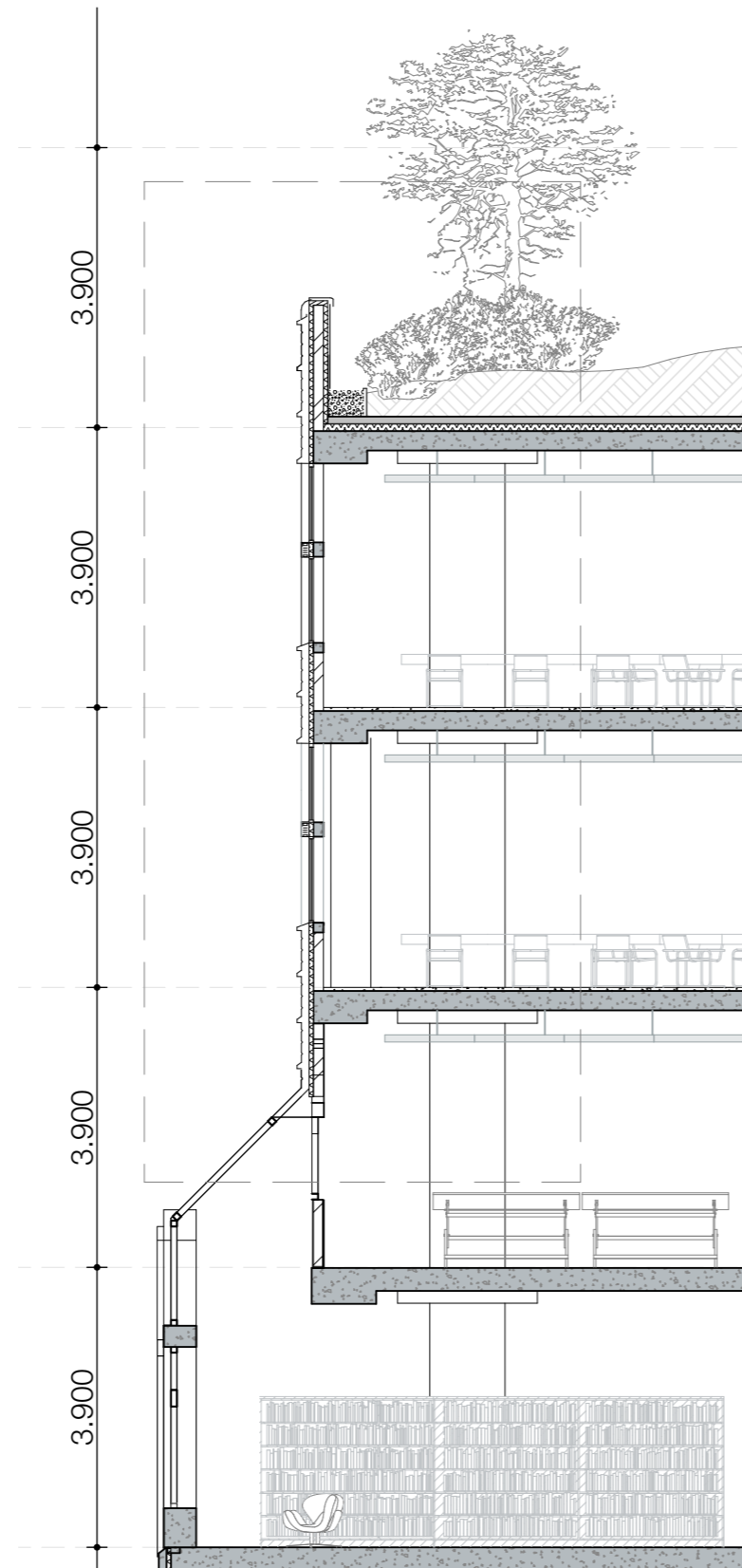


KB Library | Reading Room

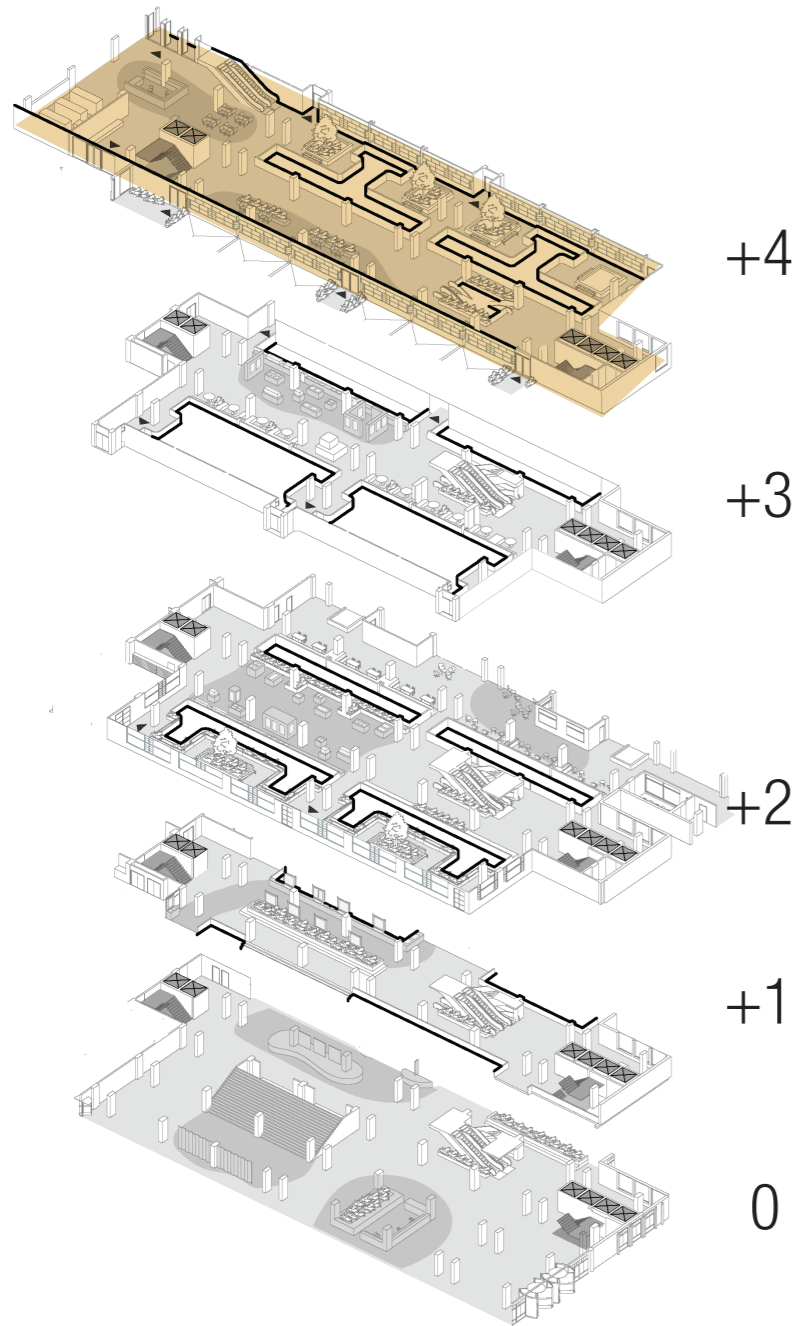
Facade Strategy



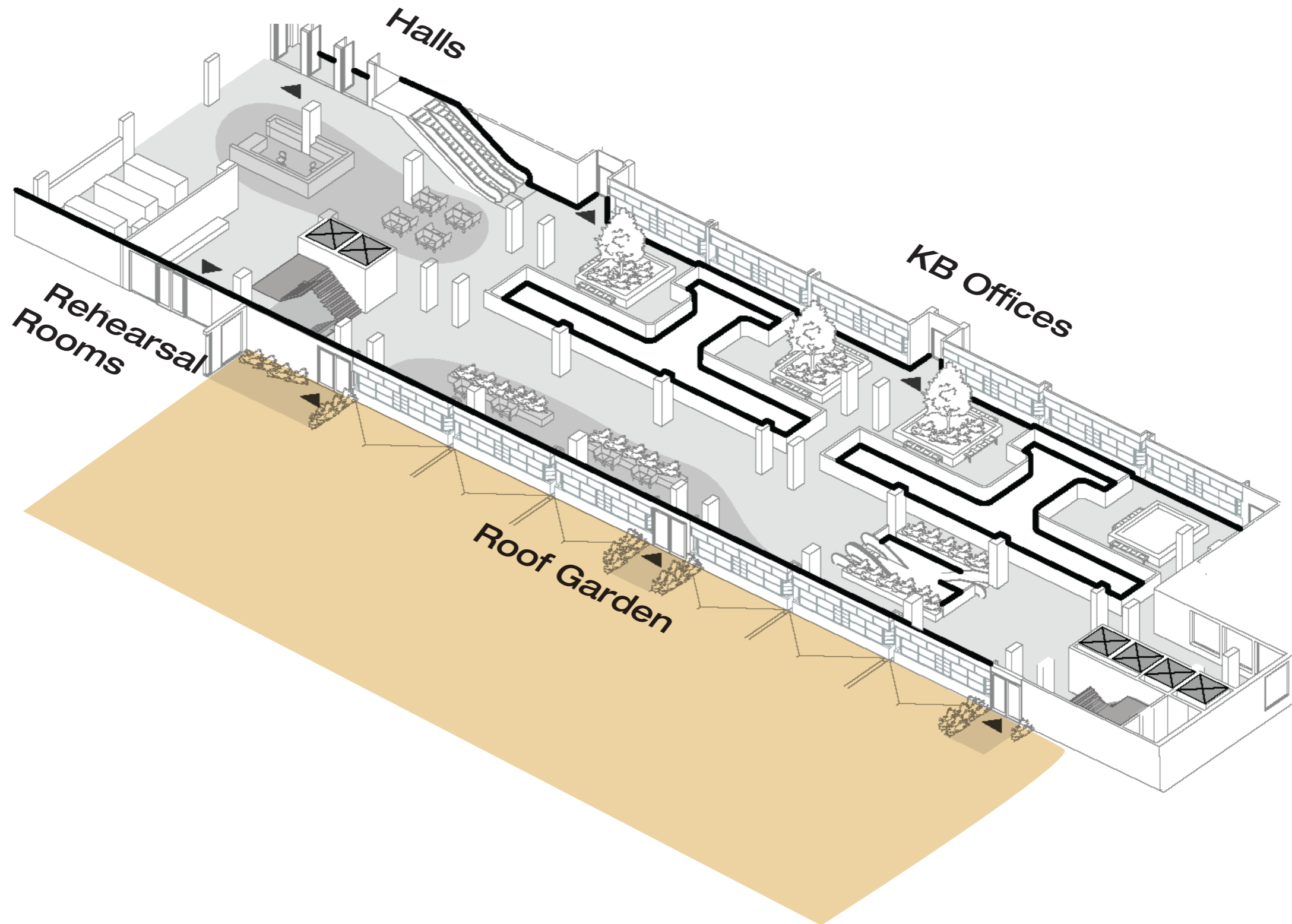
Open up facade for more daylight respecting Facade Composition



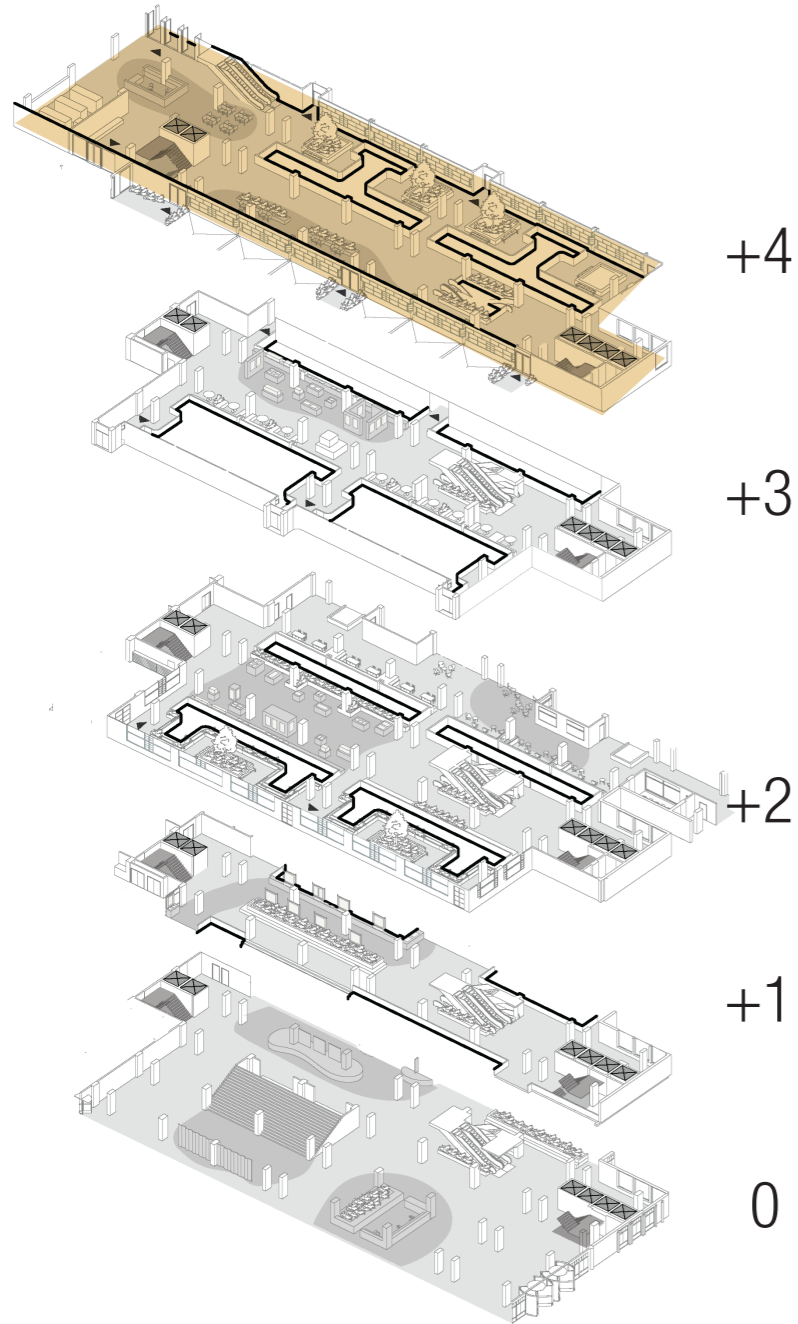
The KB | Green Event Square



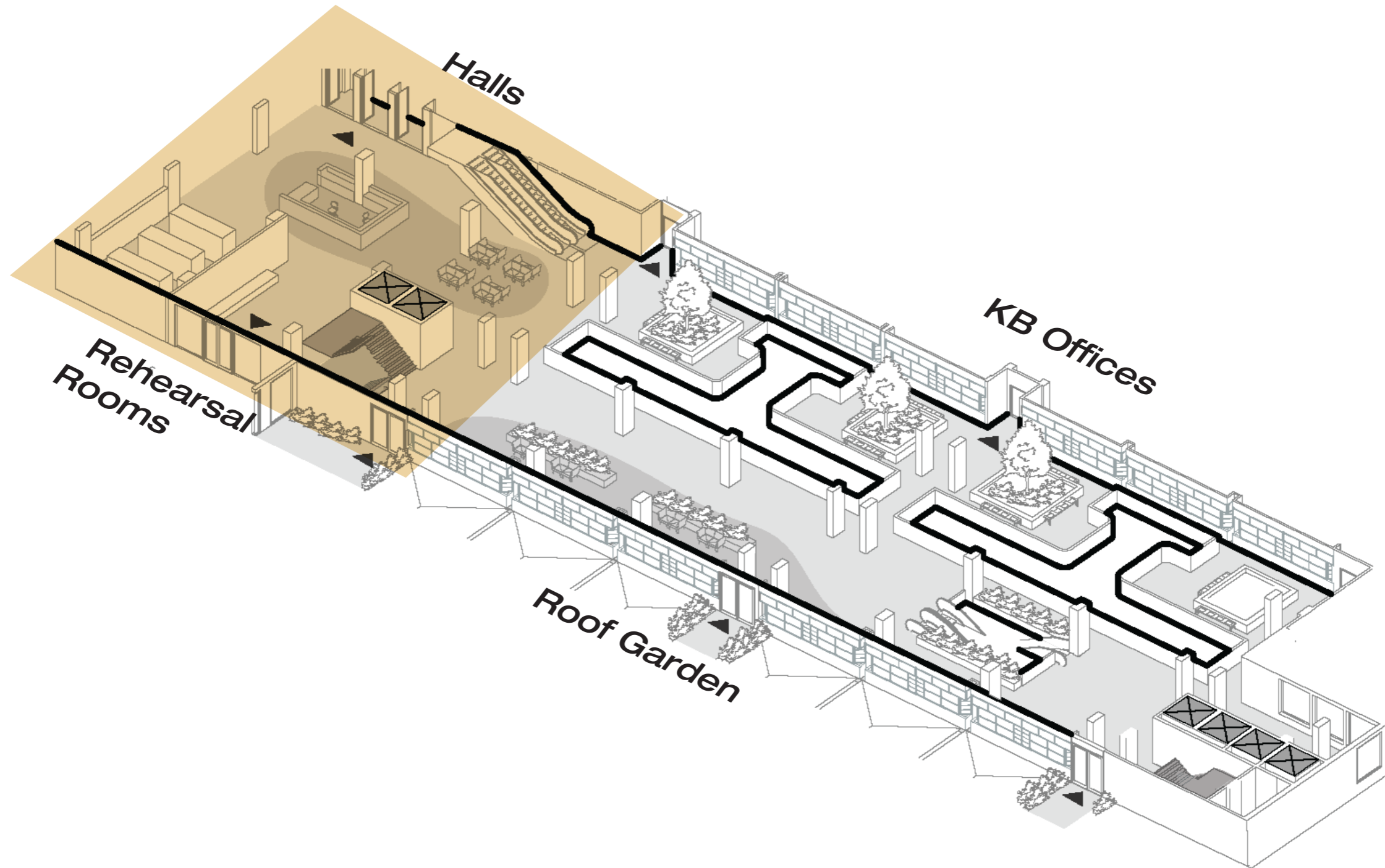
The KB | Green Event Square



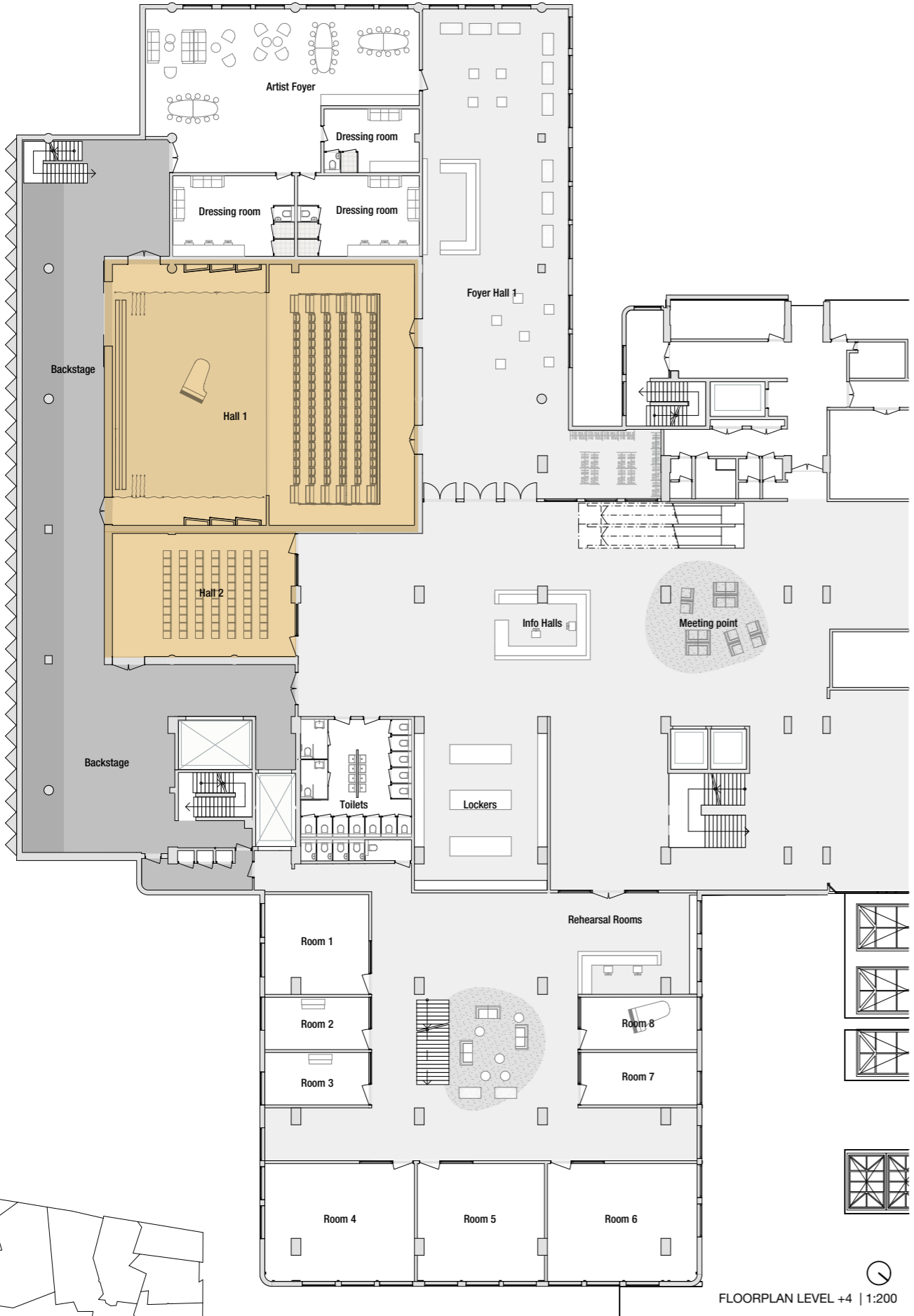
The KB | Roofgarden



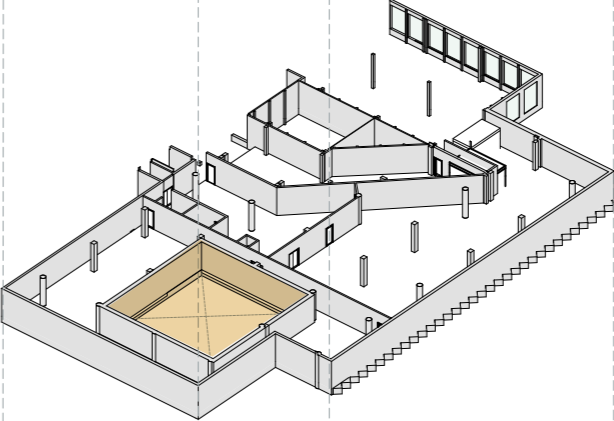
The KB | Green Event Square



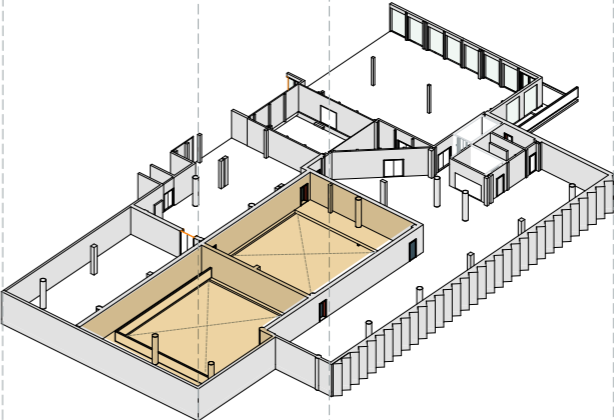
Event Square | Multifunctional Halls



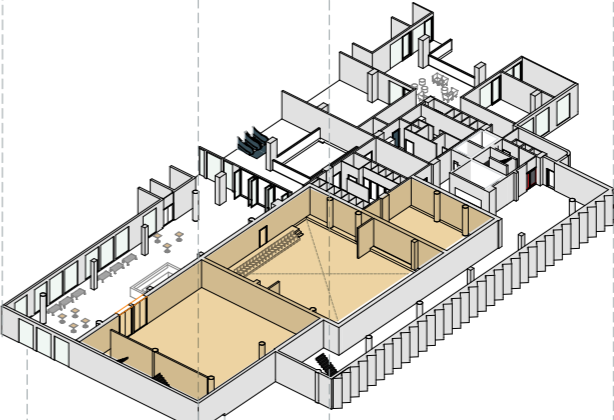
+7



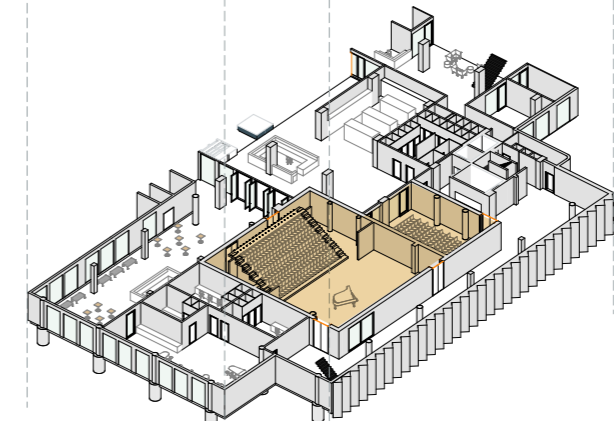
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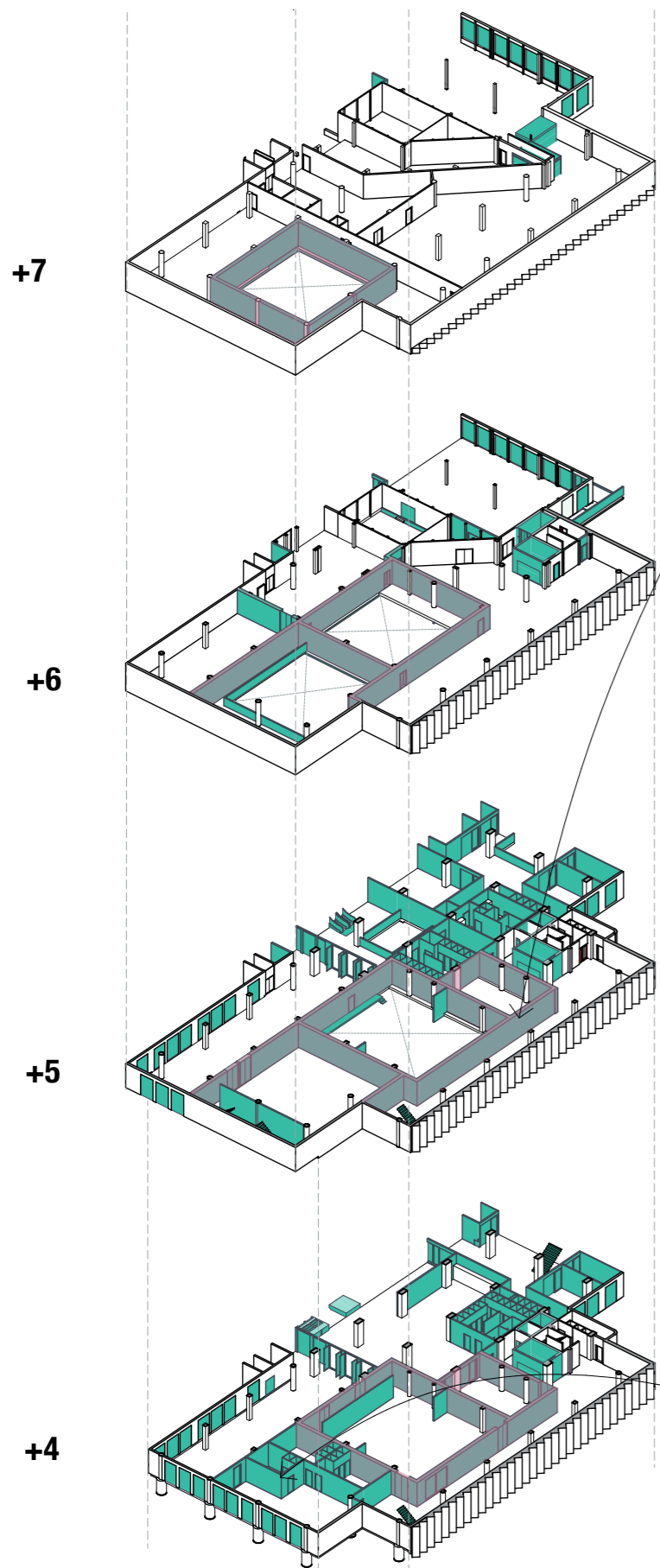
+5



+4



Construction | Multifunctional Halls



New CLT structure with acoustic layer for Halls

Acoustic + Biobased Wall for Halls:

1. Wooden slat panel with acoustic felt backing
2. Rigid wood fiberboard
3. Timber studs with wood fiber insulation
4. CLT structural wall

CLT structure for new internal walls



The Redesigned KB - The House of Culture



The Redesigned KB - The House of Culture



An aerial, grayscale photograph of a city grid, showing a dense network of streets and buildings. The image is dark and serves as a background for the text. The text "EXTRA SLIDES" is centered in a bold, white, sans-serif font.

EXTRA SLIDES

Design Vision of the KB

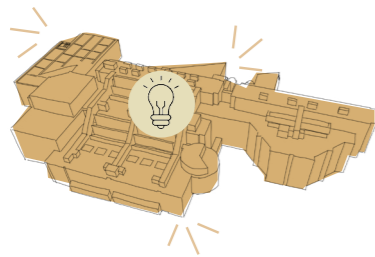
SDG Focus Areas in the Design Proposal



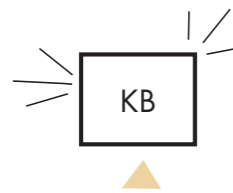
Research Conclusion | Spatial Strategies

Urban Strategies

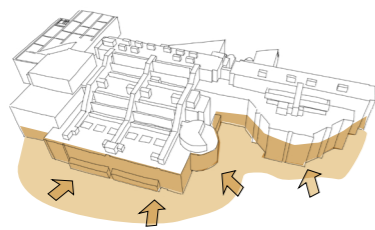
Architectural Identity



Clear Entrance & Sightlines



Welcoming & Accessible building

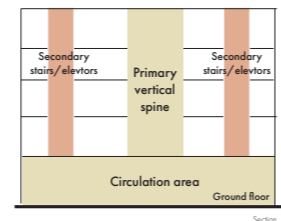


In- & Outdoor Green spaces

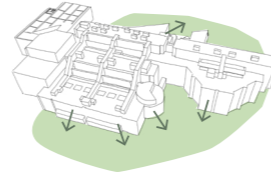


Building Strategies

Circulation & Accessibility



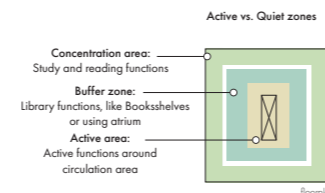
Views & connections with green spaces



Informal spaces and Public Functions



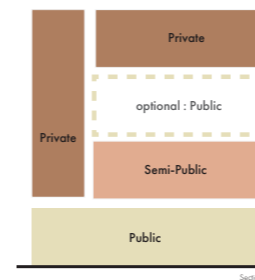
Acoustic zoning



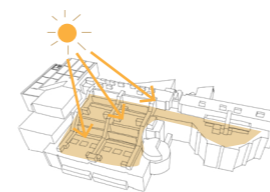
Clear separation between Formal & informal spaces



Functional Zoning



Daylight in Building



Access to Collections



Multifunctionality & flexibility



Interior Strategies

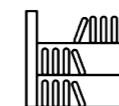
Varied Seating Configurations
individual, group & informal



Quiet Study Zones



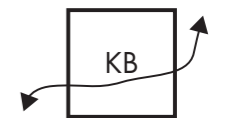
Functional & 'warm' Interior
Wood, carpet



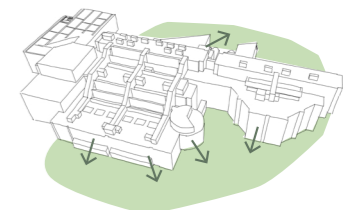
Workspaces with enough Daylight



Clear wayfinding inside Building



Views on green spaces



Programme | New Functions

“The House of Culture”

Arts & Creativity

studios, workshops, performances

Community & Education

public spaces, café, kids, study rooms

“KB - The House of Culture”

Knowledge & Heritage

libraries, archives, museums

Innovation & Social

sustainability, ecology, technical support

Knowledge & Heritage

libraries, archives, museums

- KB - Study/working zone (1.225 m²)
- KB - Collection zone (1.175 m²)
- KB - Offices & supporting (2.550 m²)
- KB - Centrally supporting (910 m²)
- KB - Specific spaces (1.225 m²)
- RKD (2.700 m²)
- Literature Museum (7.500 m²)
- Exposition-rooms (1.200 m²)

Community & Education

public spaces, café, kids, study rooms

- KB - Informal public functions (2.600 m²)
- Kids area (200 m²)
- Mixed study rooms (800 m²)
- Restaurant & Café (300 m²)
- Community green/roof garden activities

Arts & Creativity

studios, workshops, performances

- MF hall 'blackbox' (2x 300 m²)
- Club Erasmus (175 m²)
- Large rehearsal studios (6x 480 m²)
- Medium rehearsal studios (2x 80 m²)
- Small rehearsal studios (8x 200 m²)
- Foyer (250 m²)
- Dressing rooms (175 m²)
- 5x Workshop rooms (5x80 m²)
- Flexible art workspaces (400 m²)

Innovation & Social

sustainability, ecology

- Green spaces / Roof garden / vegetable garden
- Ecology Museum / garden-to-table education

Support & Secondary Functions

- Bicycle parking
- Storage / service areas
- Toilets etc.
- Technical rooms

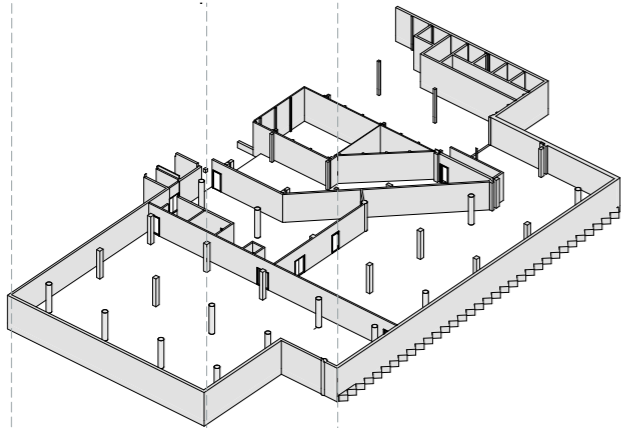
Construction | Multifunctional Halls

Existing situation

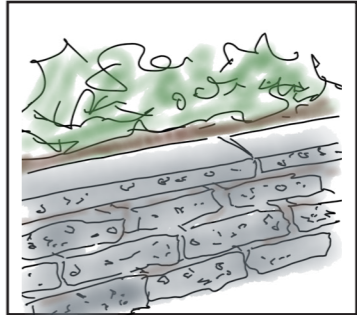
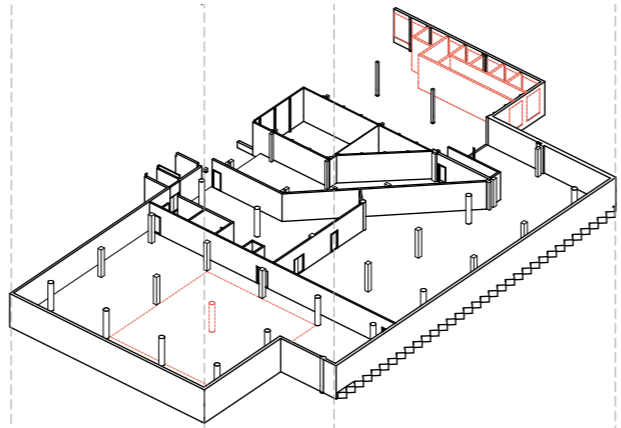
To Be Demolished

Material Reuse Options

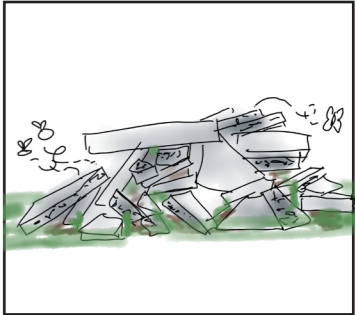
+7



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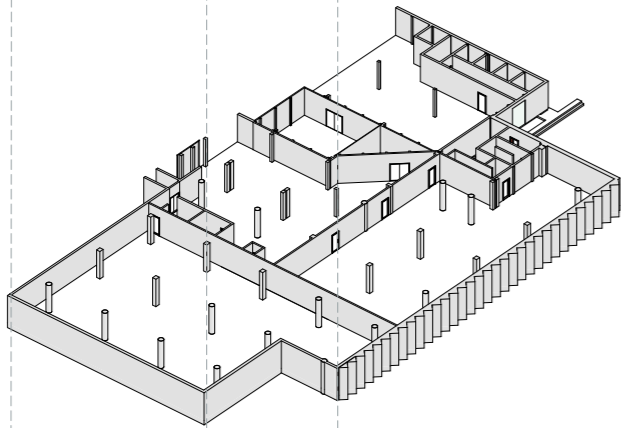


Low Retaining Walls for Landscape Design

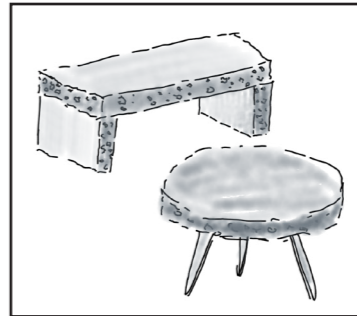
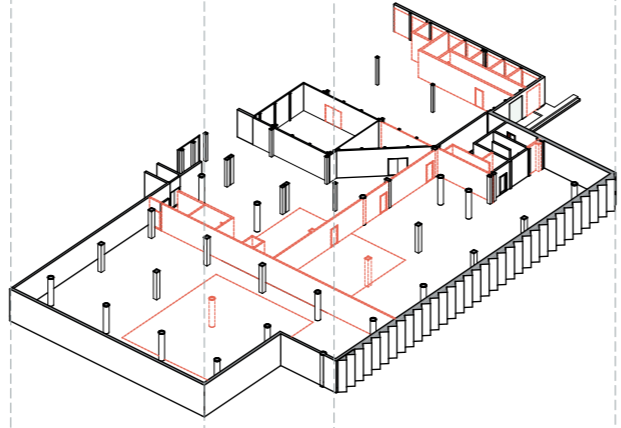


Concrete Pile Shelter for Animals on Roofs

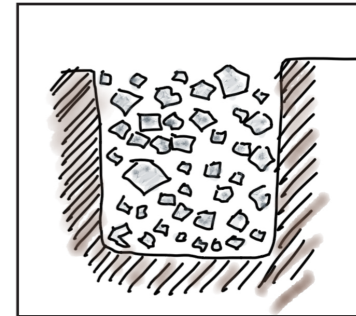
+6



+6

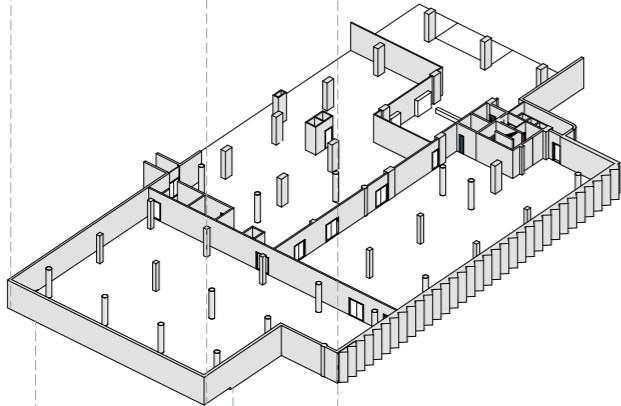


Furniture for Gardens & Roofs

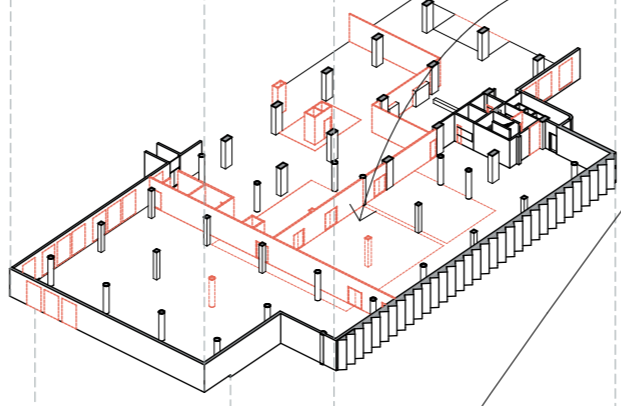


Grit Fill for Drainage

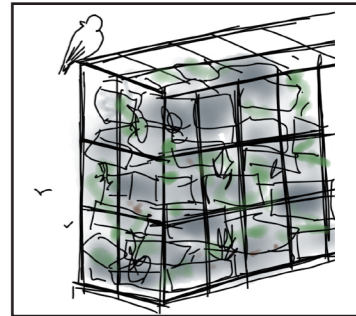
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+5

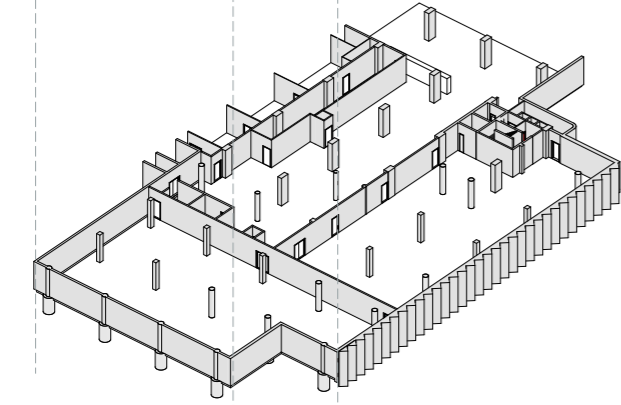


Remove parts of concrete floor and internal walls

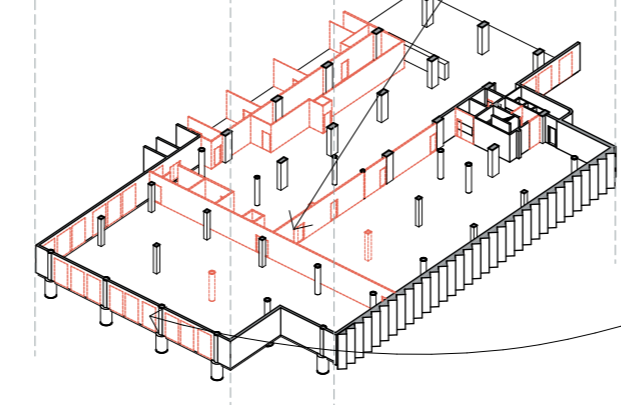


Separation Wall for Wind Protection and Animal Shelter

+4

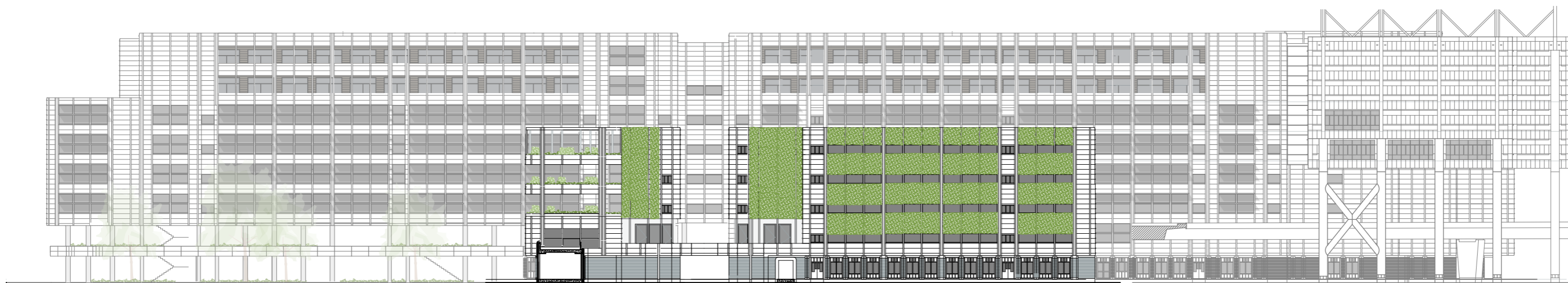


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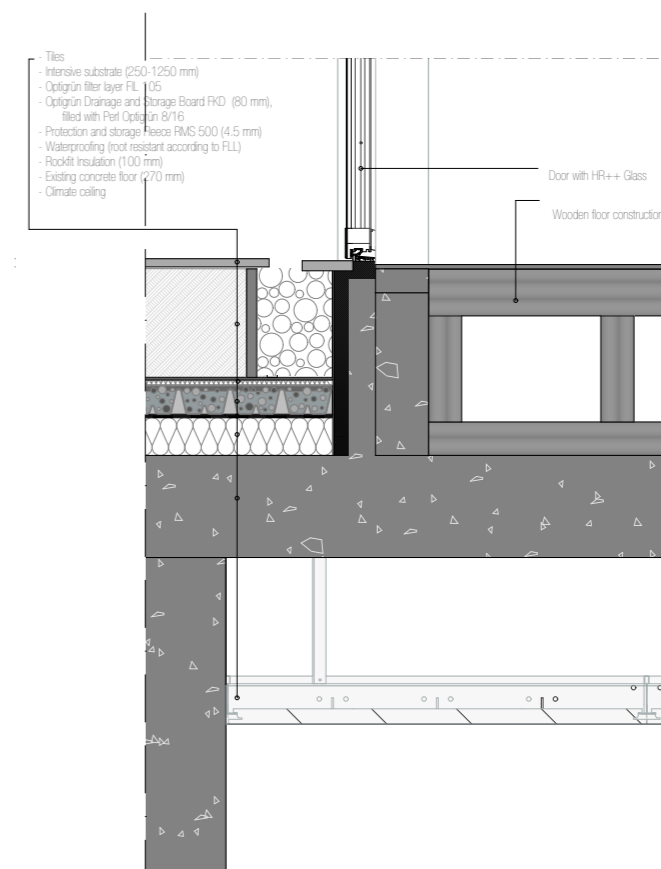
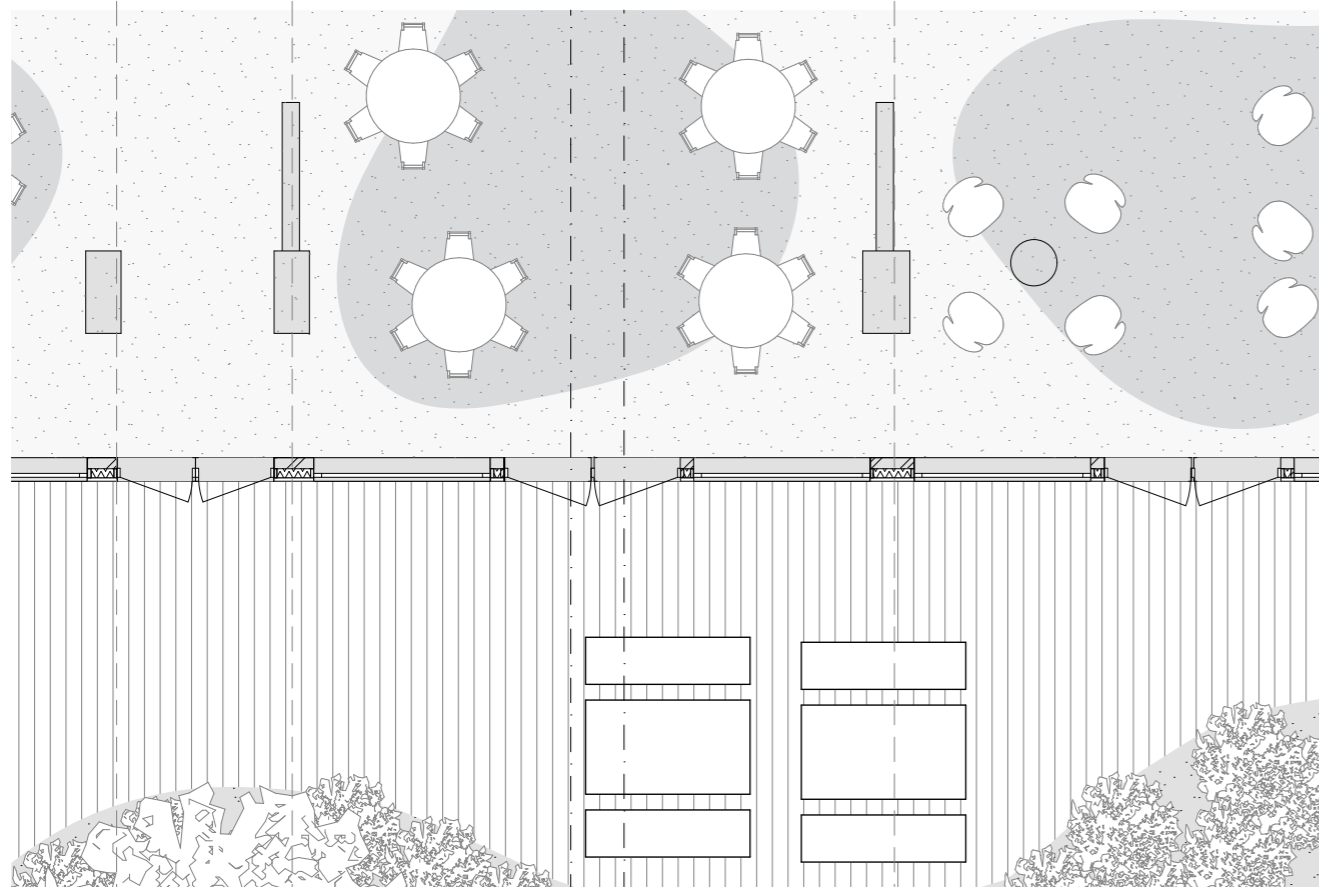
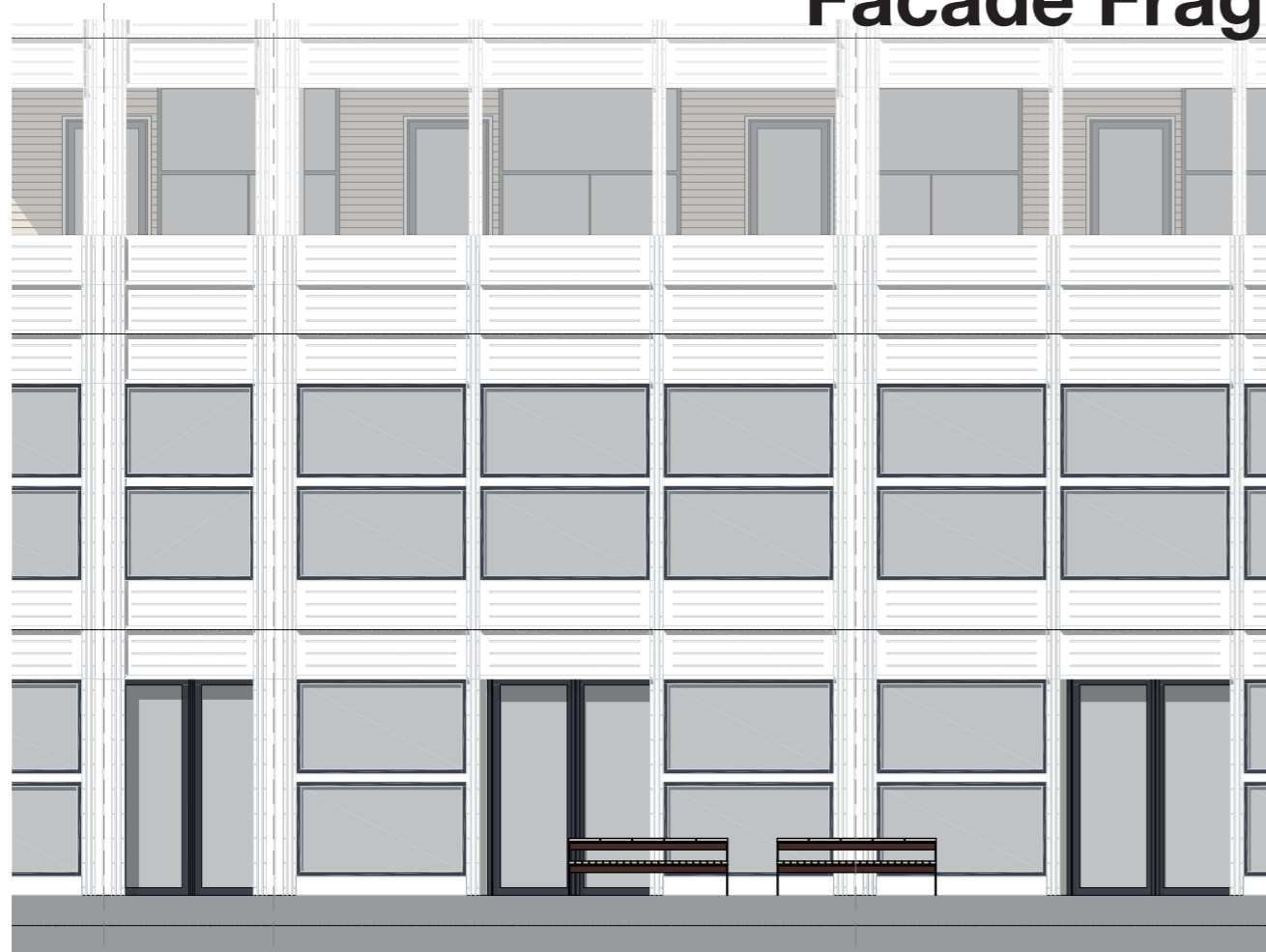


Remove parts external walls for windows in foyer

Facade | South-east

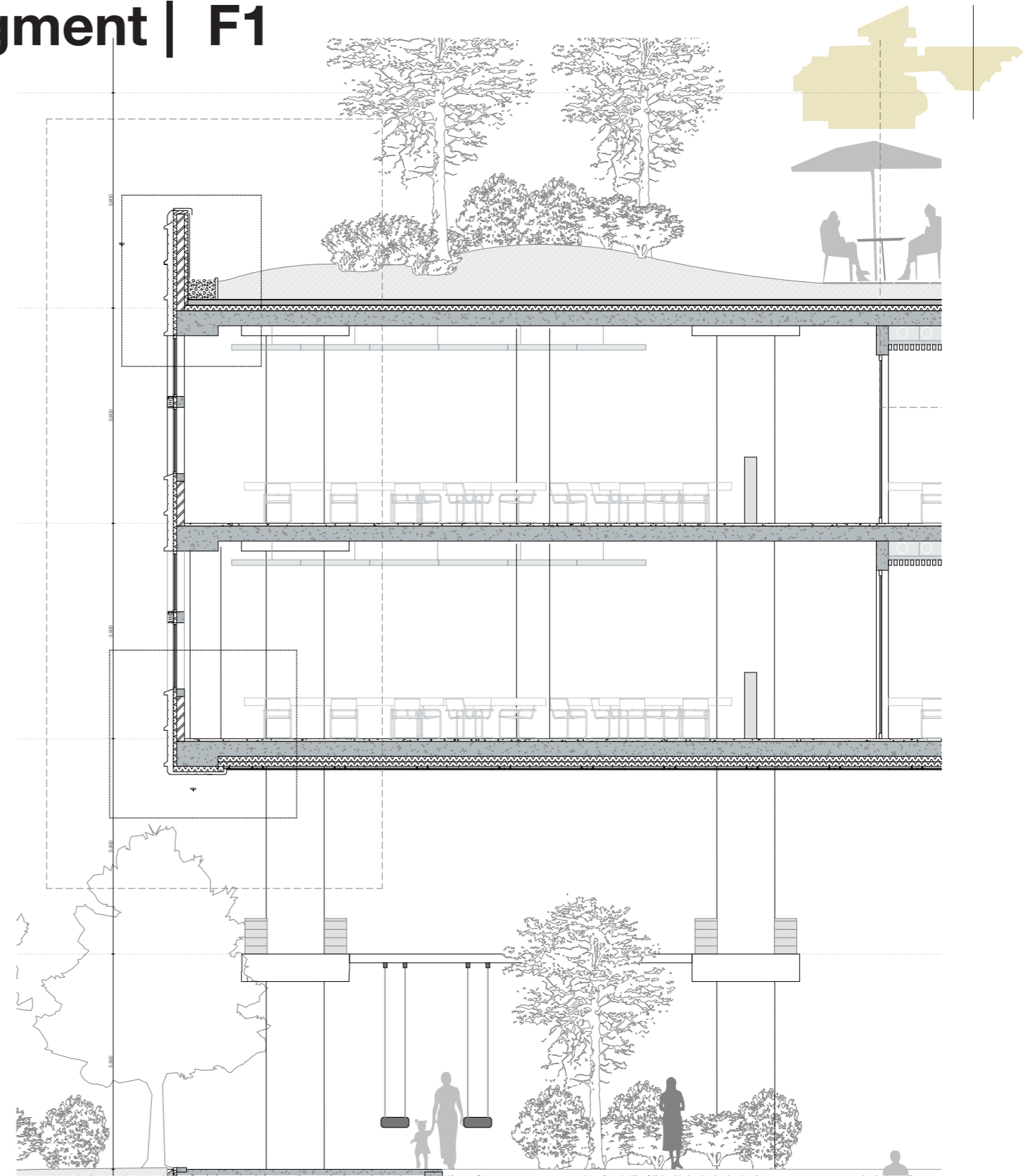
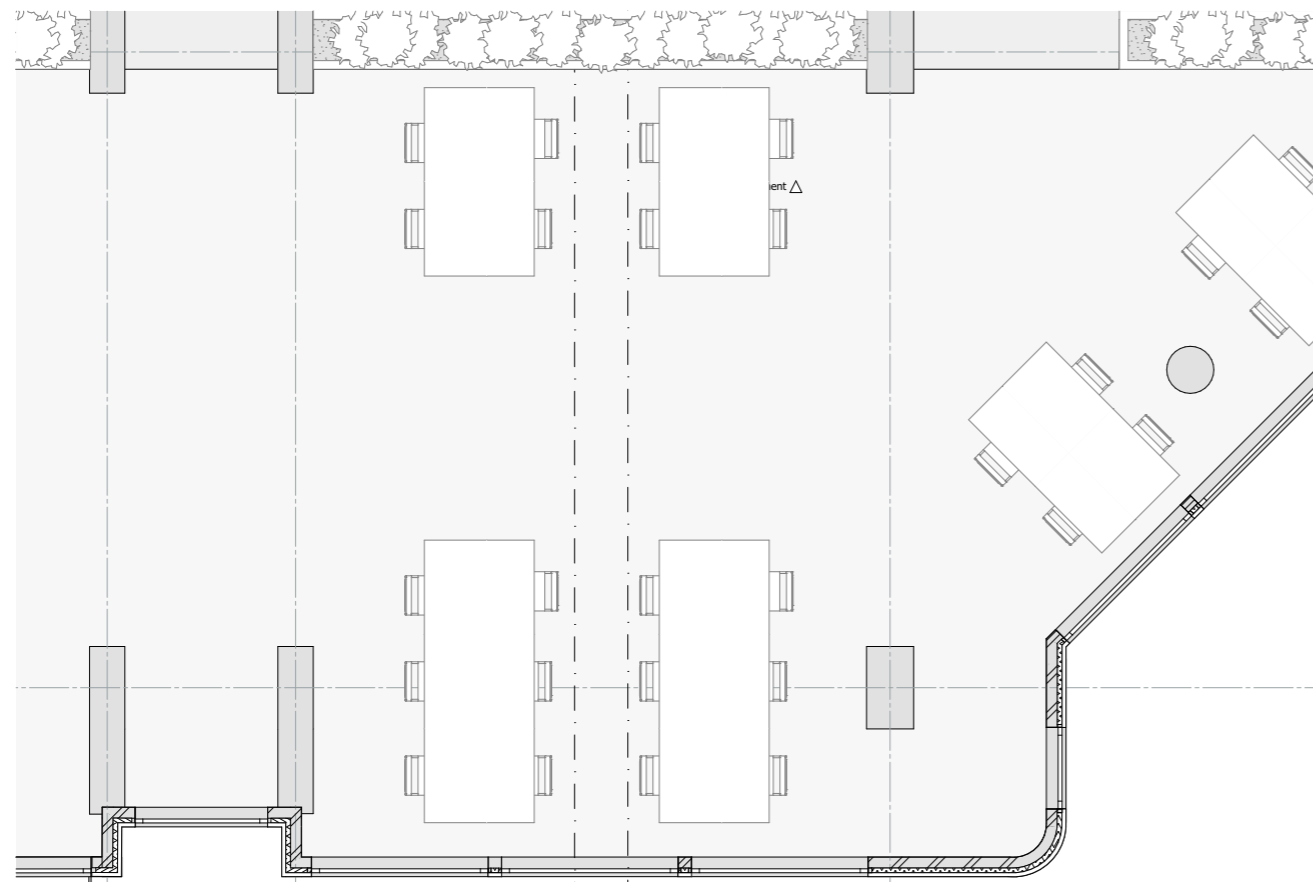


Facade Fragment | Roof Garden

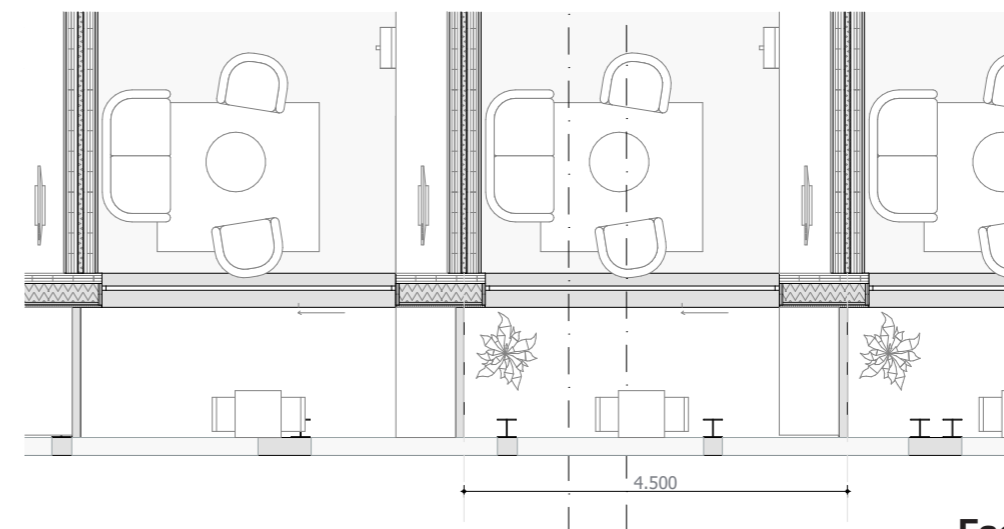
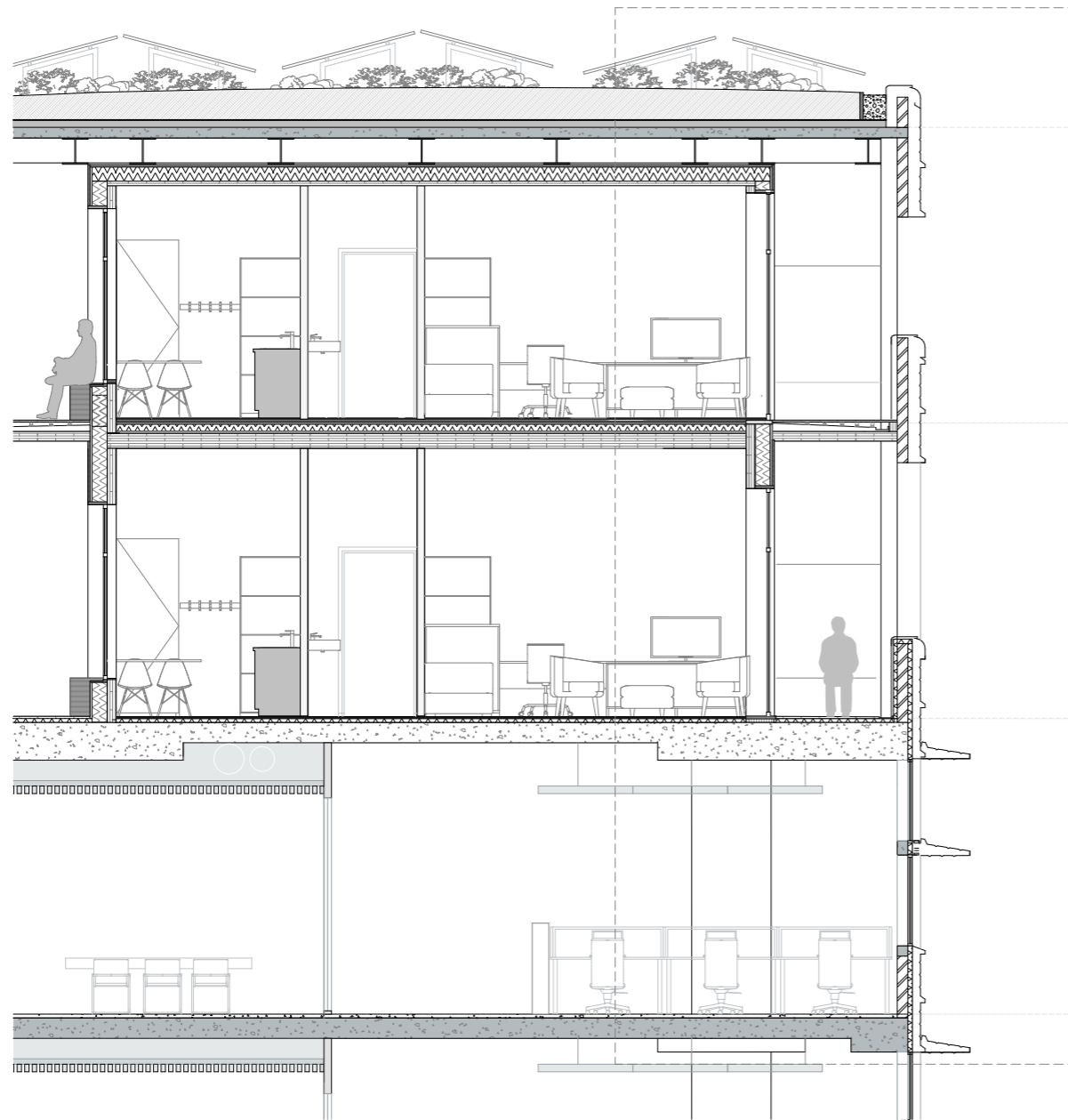
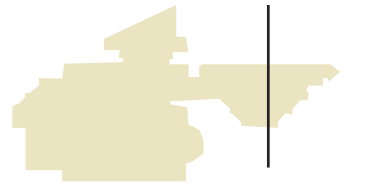


Facade Fragment & Detail | 1:20 & 1:5 (scaled)

Facade Fragment | F1

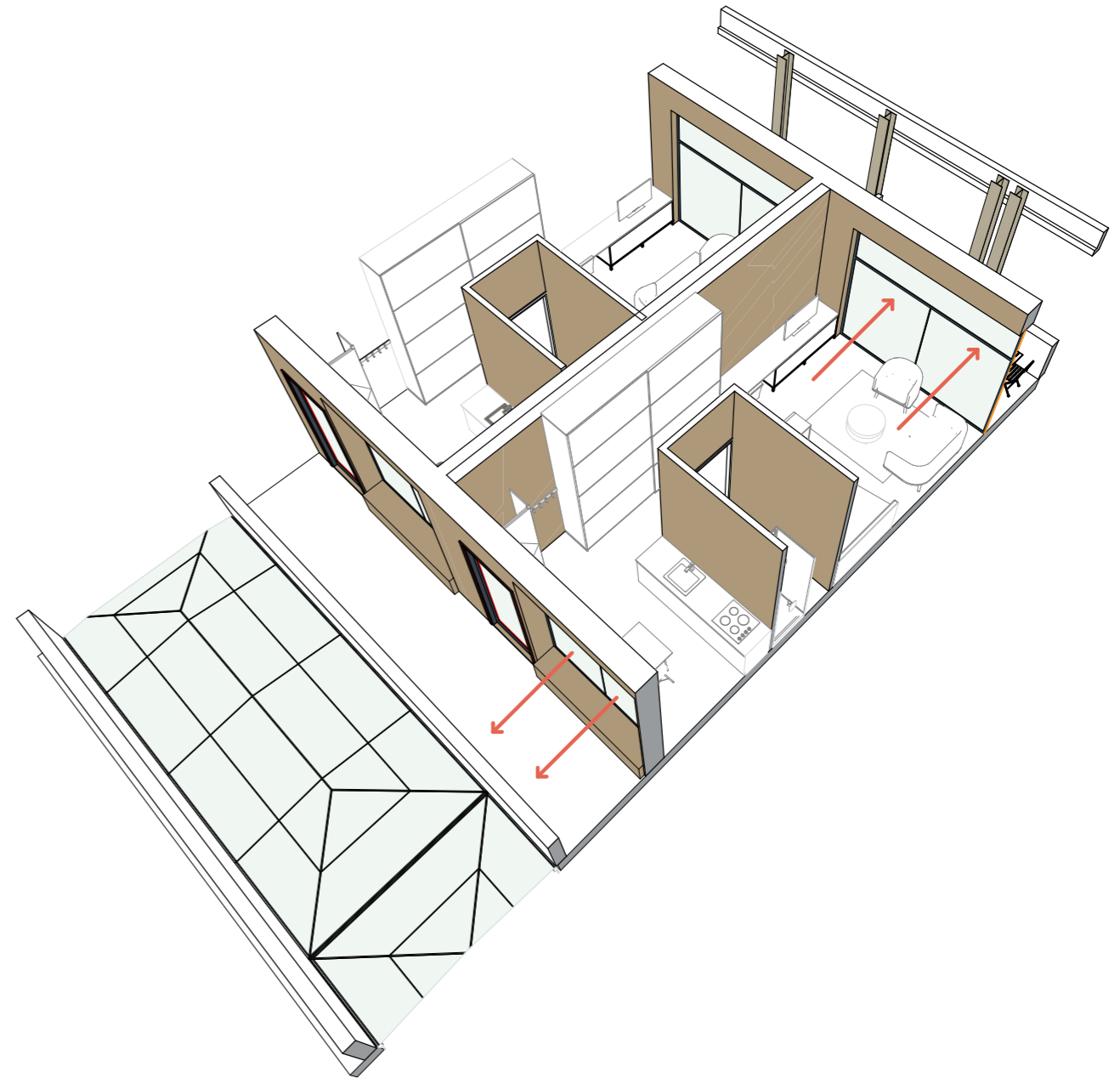
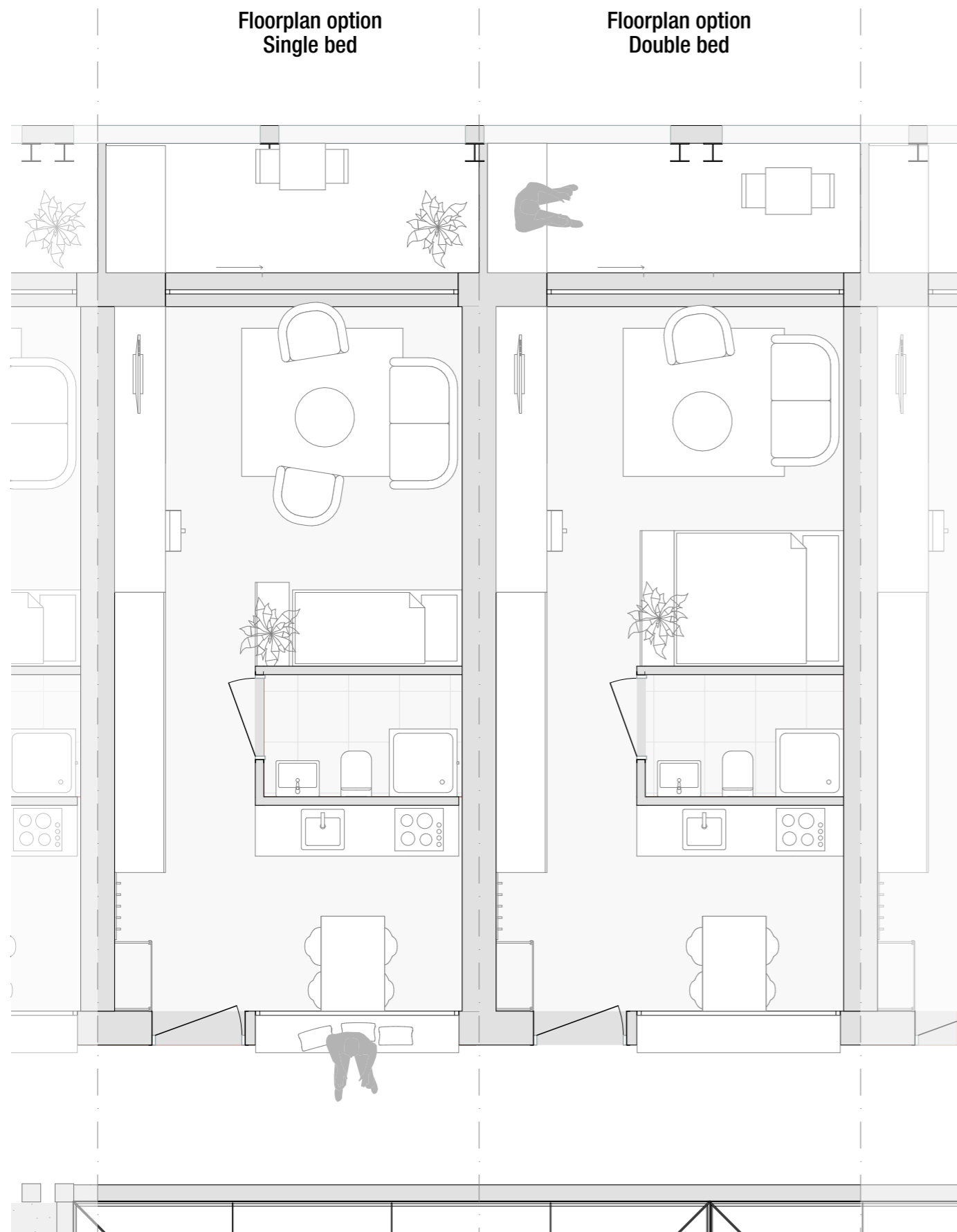


Facade Fragment | Housing

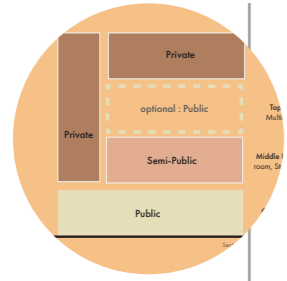
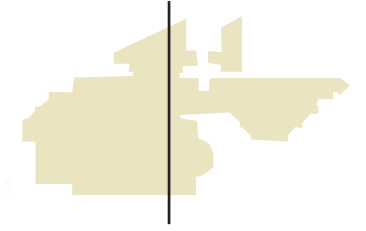


Facade Fragment | 1:20 (scaled)

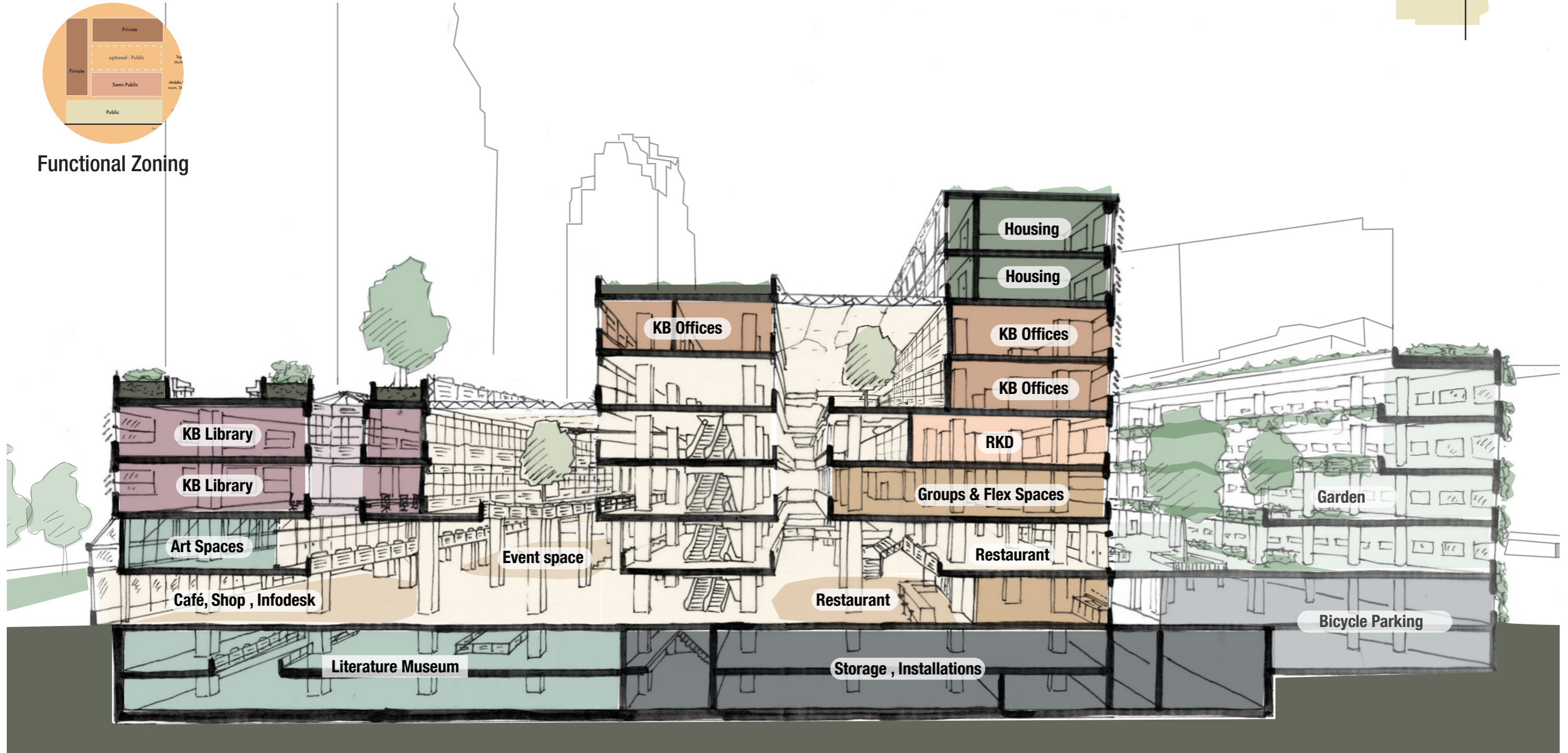
Floorplans | Housing



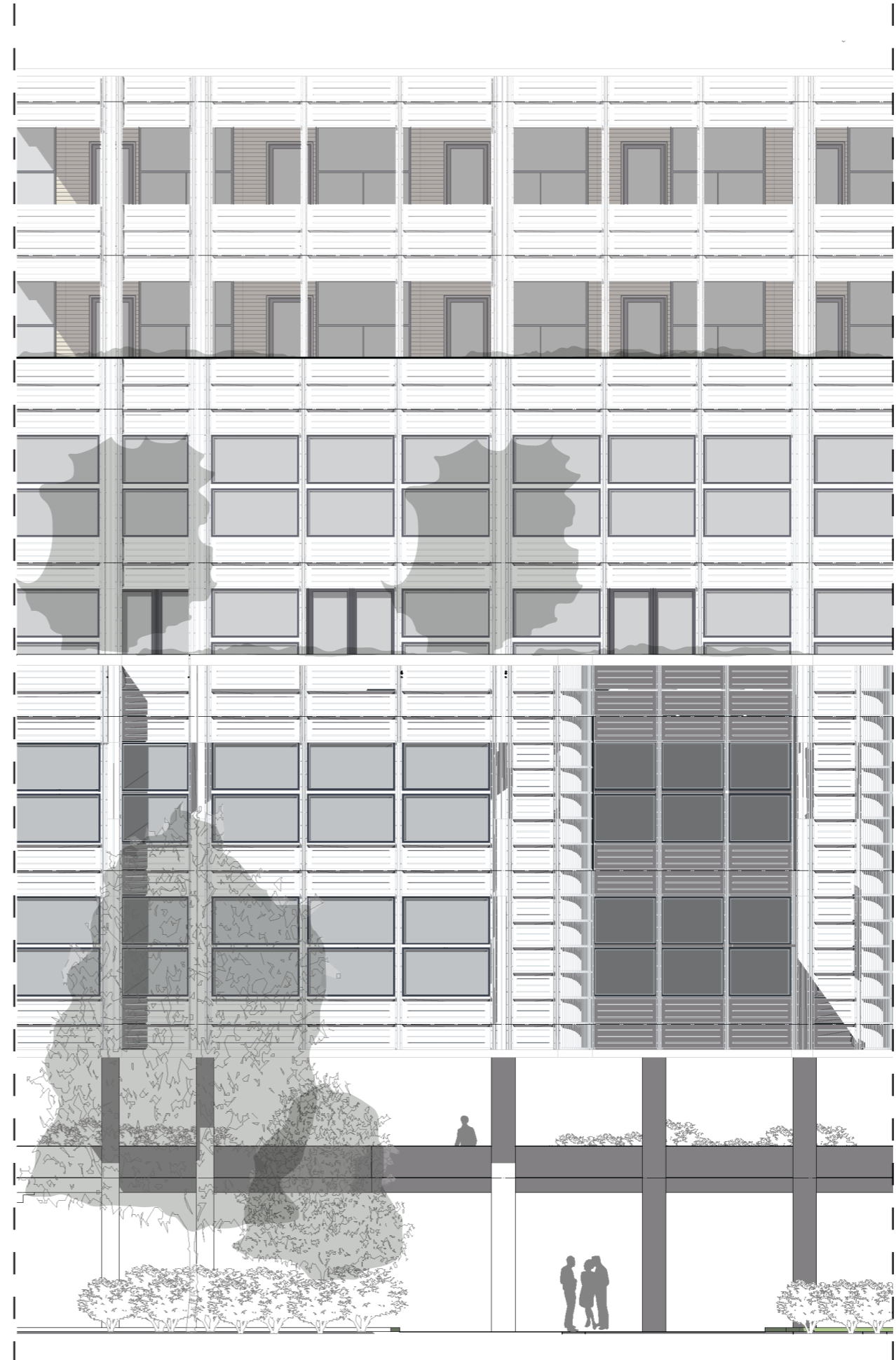
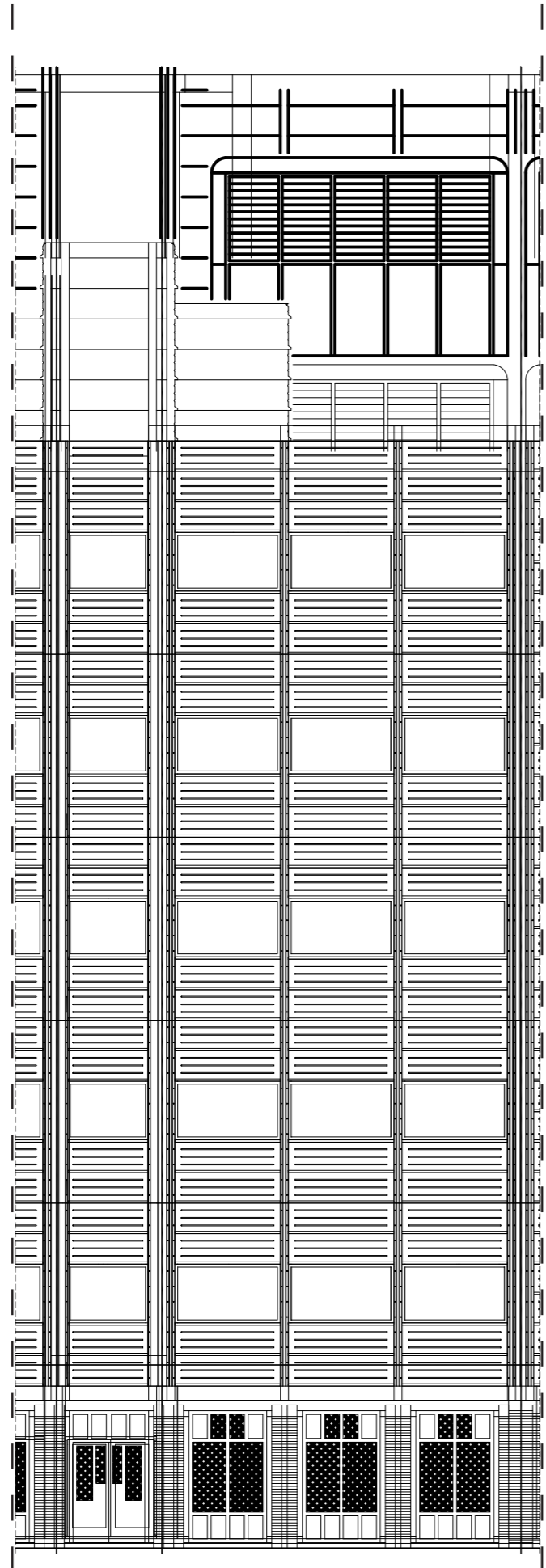
Building Section | New Situation



Functional Zoning



Facade | Existing & New

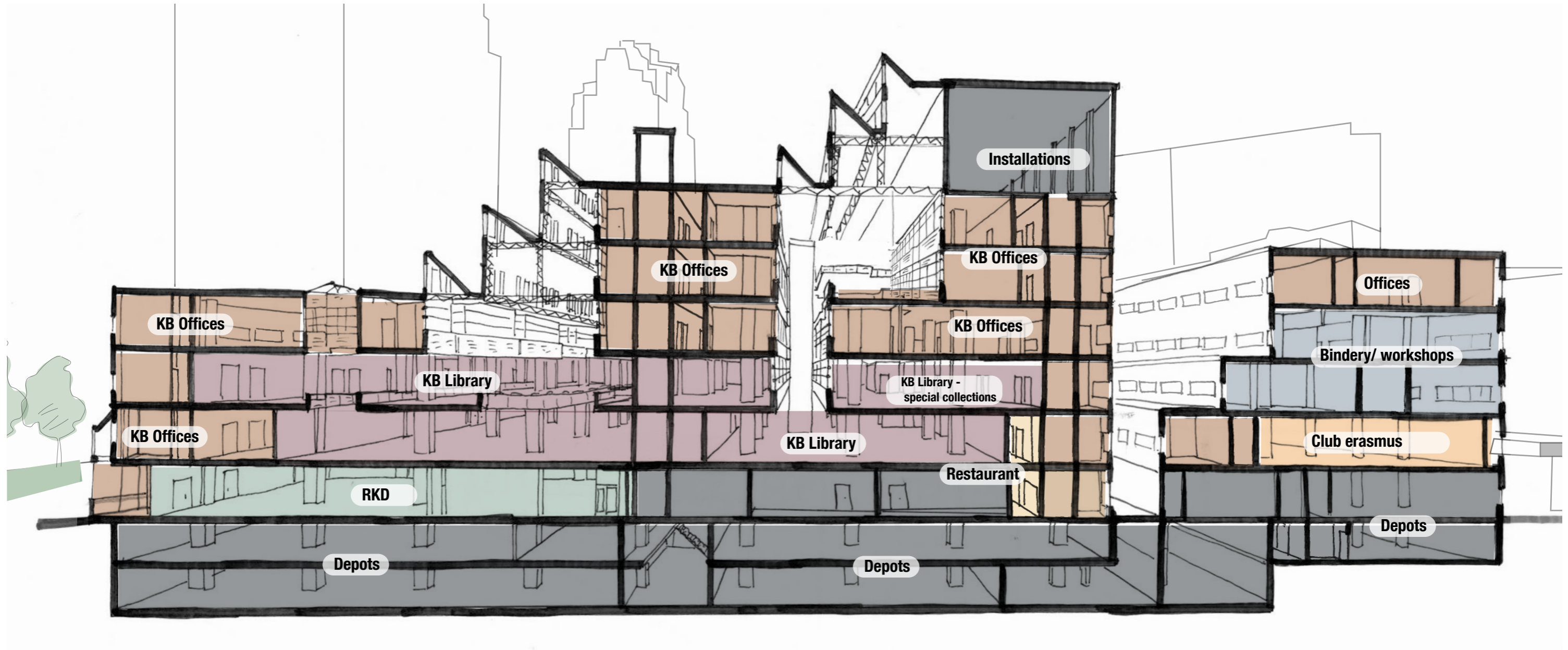


Heritage Values of the KB

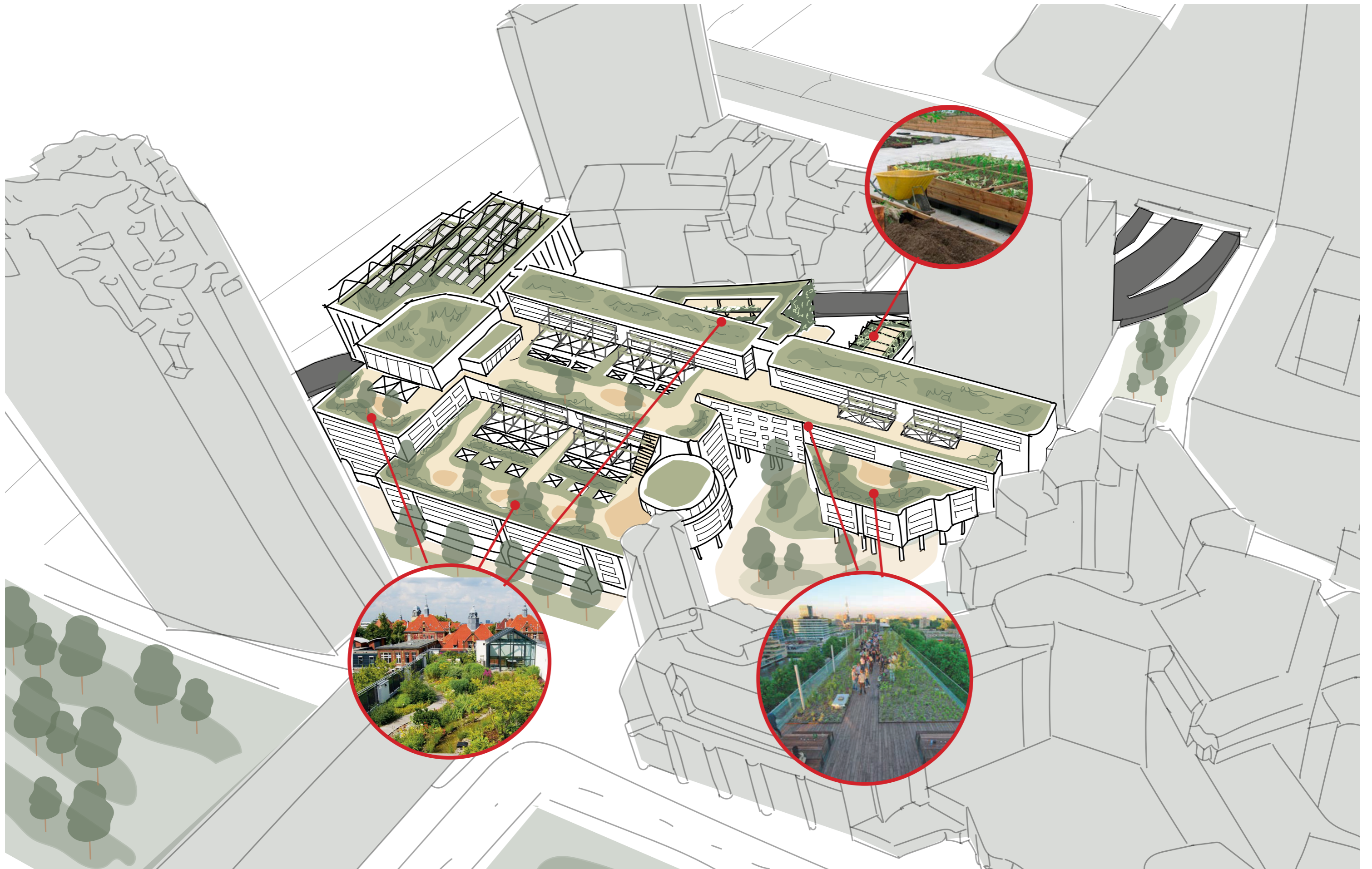
| Values | | Social | Economic | Political | Historic | Aesthetic | Scientific | Age | Ecological |
|------------|--------------------------------|--|--|--|--|---|---|--|---|
| attributes | Fixtures & Fittings | Calm interiors, Erasmus statue, and additional lighting added. | x | x | Original stairs, lighting, and lampposts. | Tables with fixed lighting, light wooden furniture. | Measurement system based on the size of bookcases. | x | Extra light fittings added due to poor daylight. |
| | Materials | x | x | x | Use of aluminum indicates new construction techniques | Light-coloured façade, neutral interior elements. | White aluminium cladding designed specifically for the KB. | x | White panels play a crucial role in reducing heat and require minimal maintenance. |
| | Structure | x | Flexible design, because the structural column grid and uniform floor load capacity. | x | x | Flexible floorplans, skylights, and voids. | Structural system of measurements in plans, façades, and interior. Uniform floor loads for flexible design. | x | Three high voids with skylights. |
| | Surface | Human-scale design expressed through relief in façade. | x | x | Development of 'raincoat' façade – a good example of construction technology. | Walls and ceilings of public spaces are white; artworks are integrated into the KB. | Façade panels correspond to the building layout. | x | Sun protection is fully integrated into façade design. |
| | Style | x | x | x | Human-scale design as a reaction to modernism, following typical scientific library design principles. | Monumental, imposing design to express national identity. | x | x | x |
| | Form | x | x | x | Stepped structure as a reaction to the construction of large anonymous office volumes of that time. | Building's sculptural stepped form | Degree of unity and clear structure & All levels have the same height. | x | Unevenly sized plots cause internal routes. |
| | Location | Next to Central Station | Two required public passages in the KB area. | Two required public passages in the KB area. | Important part of the reconstruction of Be Zuidenhout. | Views into the Ministry of Foreign Affairs' inner garden. | x | x | Not real public spaces but residual areas between buildings; busy roads prevent openable windows. |
| | Setting | Residual outdoor spaces | Housing multiple cultural institutes | x | Angled building placement; outdoor space design by OD205. | x | x | x | White façade colour chosen to match surrounding buildings. |
| | | | | | | | | | |
| | | Relation | nickname "Ice Palace" | Part of Be Zuidenhout post-war reconstruction together with the National Archives and Ministry of Foreign Affairs. | Part of Be Zuidenhout post-war reconstruction together with the National Archives and Ministry of Foreign Affairs. | x | x | Similarity between Ministry of Foreign Affairs and KB and colour connection with National Archive. | x |
| Intangible | Process | x | x | x | x | x | Part of the Be Zuidenhout reconstruction & implementation of the structural measurement system. | x | x |
| | Management | x | x | An important area for housing ministries and government institutions. | x | x | KB followed the typological development of scientific libraries. | Original entrances and connections between building parts have been changed. | x |
| | Craftmanship | x | x | x | x | Artwork in the KB, gold lettering on the depot. | Prefabricated aluminium panels assembled on site | 1950s aluminium use and new construction techniques; 1970s custom panels. | x |
| | Design | From a scientific institute to an open social institution. | Interior depends on functional layout. | x | One of the most important works in Hagoort's oeuvre. | Varying shapes of voids per floor. | New and old depots are connected on the same levels. | The original palette of neutral wall and ceiling colours has been retained. | Visual axis idea towards Koekamp; limited daylight access; non-openable windows. |
| | Use & Function | Redesign increases accessibility. | Flexible programmatic design symbolising role in the knowledge economy. | x | KB houses the most important cultural and historical collections of the Netherlands. | x | Flexible layout. | x | x |
| | | | | | | | | | |

High valued Medium valued Low valued

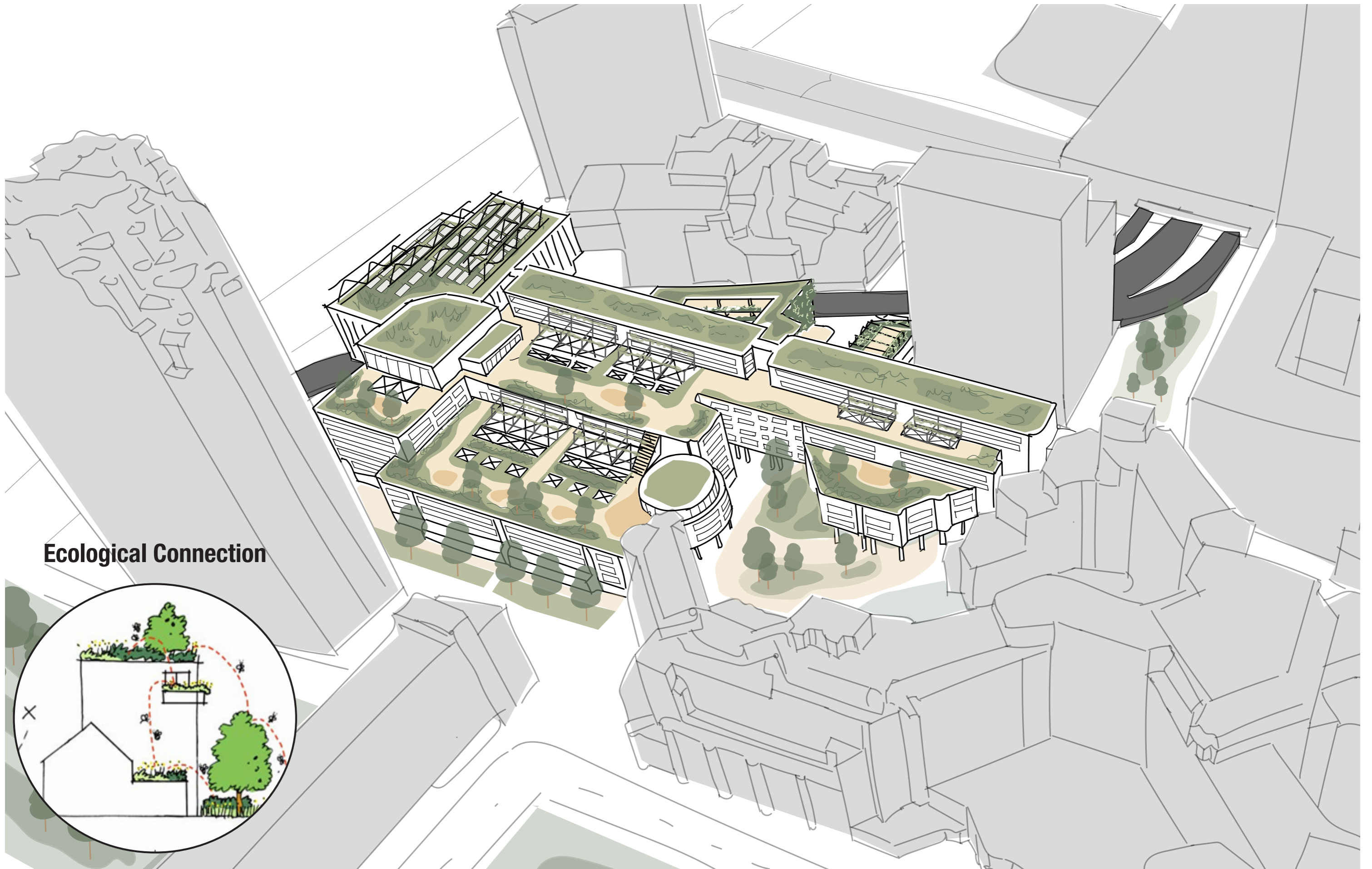
Building Section | Existing Situation



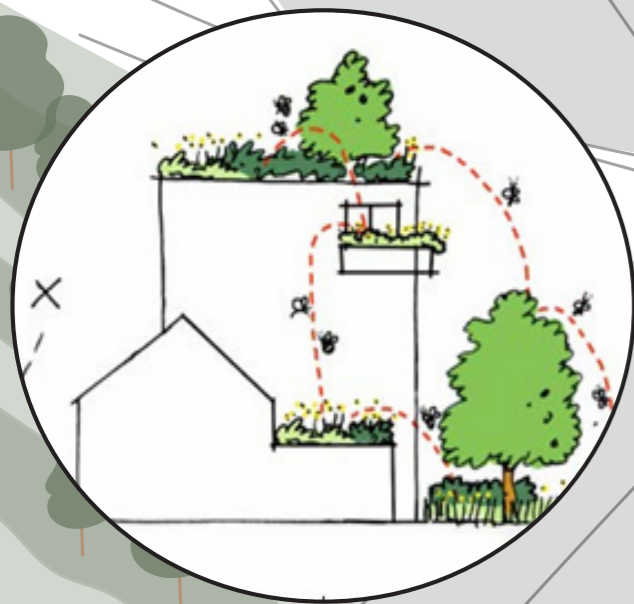
Urban Context | Public Use



Urban Context | Biodiversity



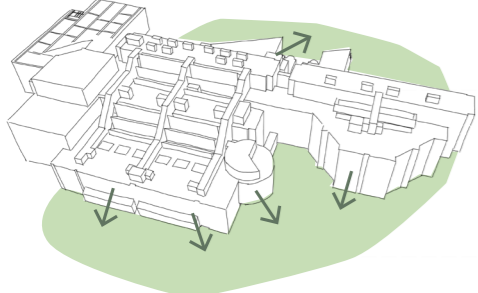
Ecological Connection



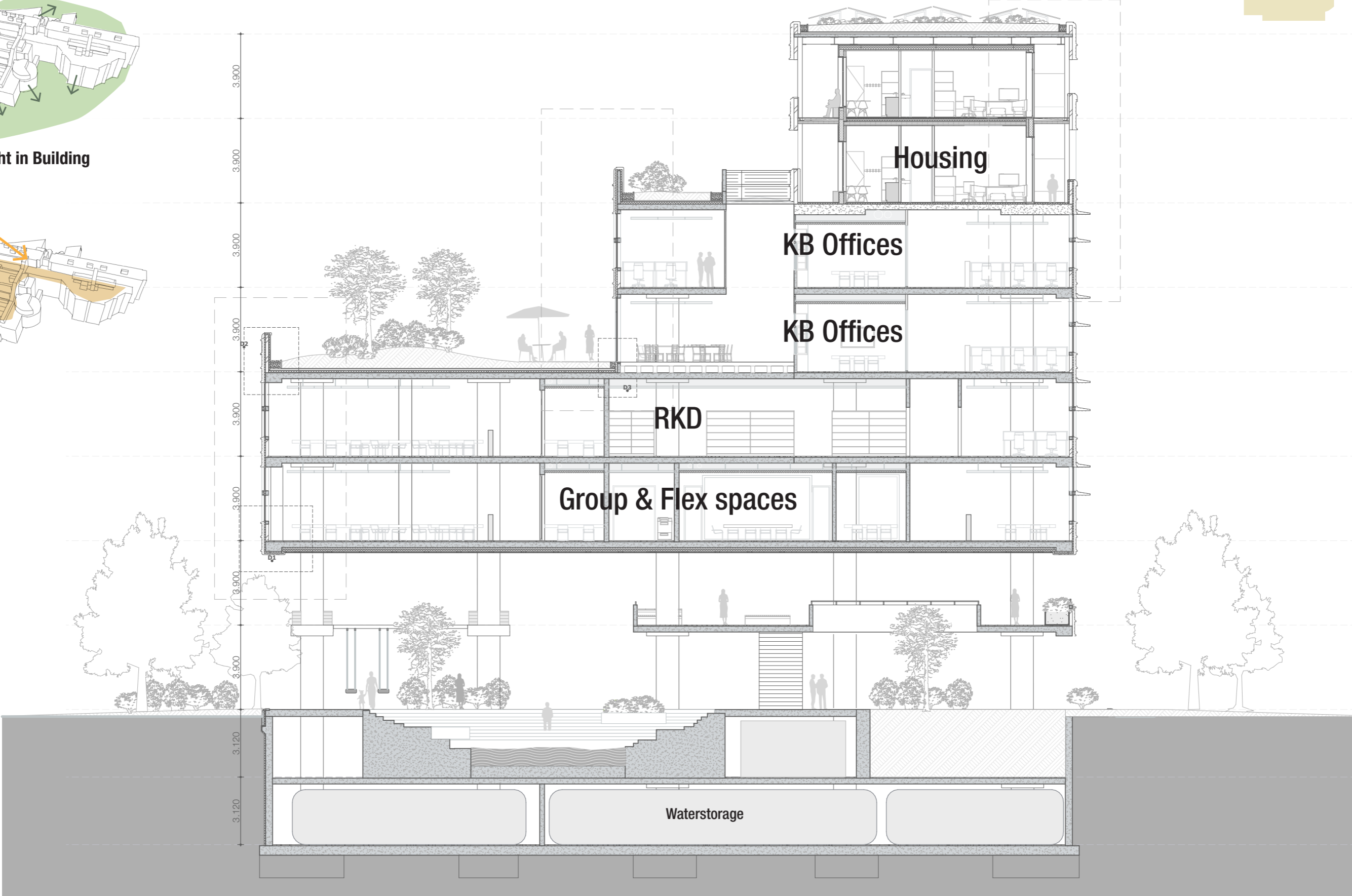
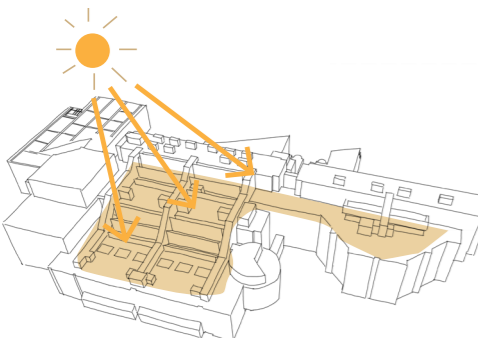
Section | New Situation



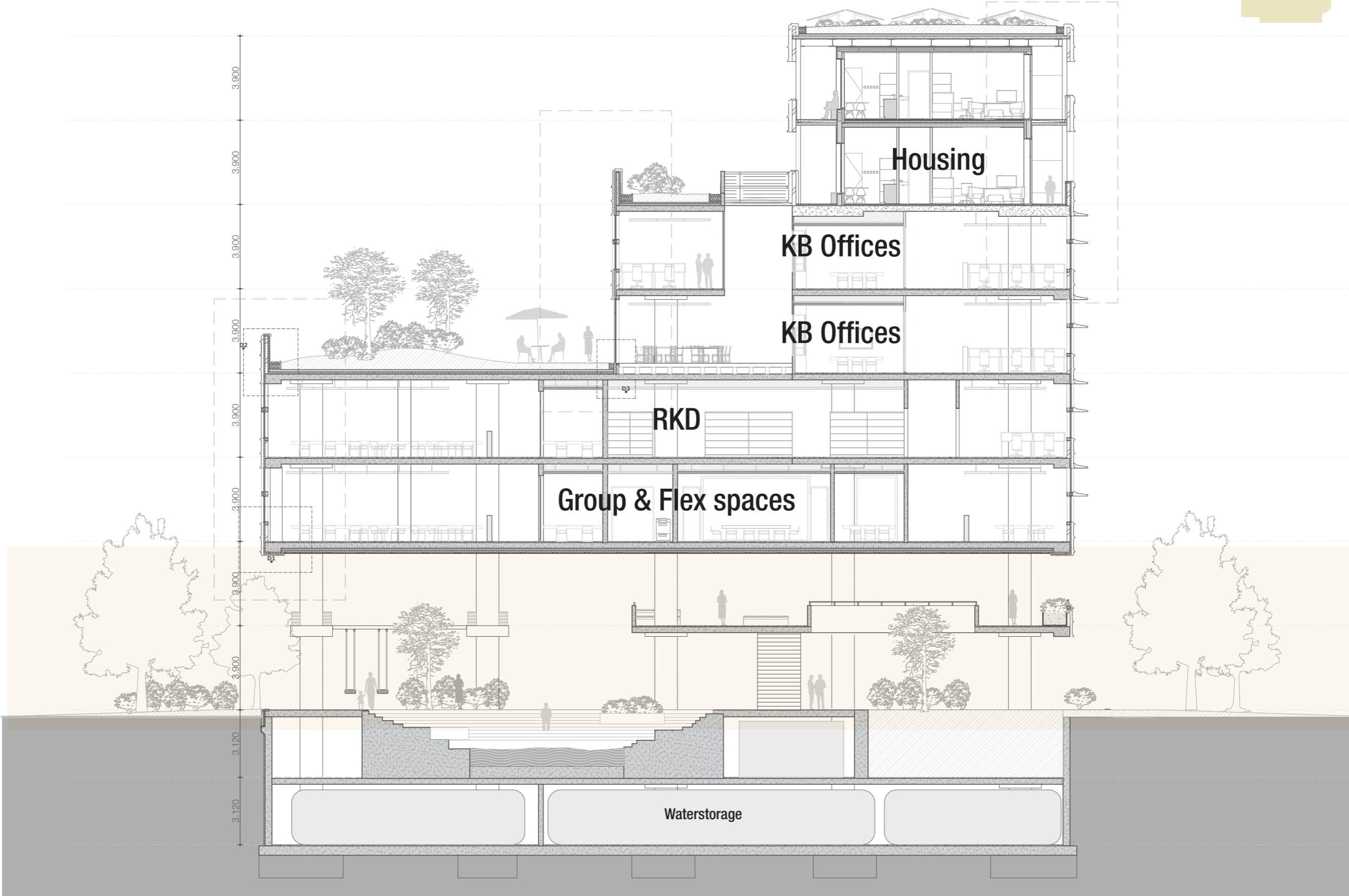
Connections with Green



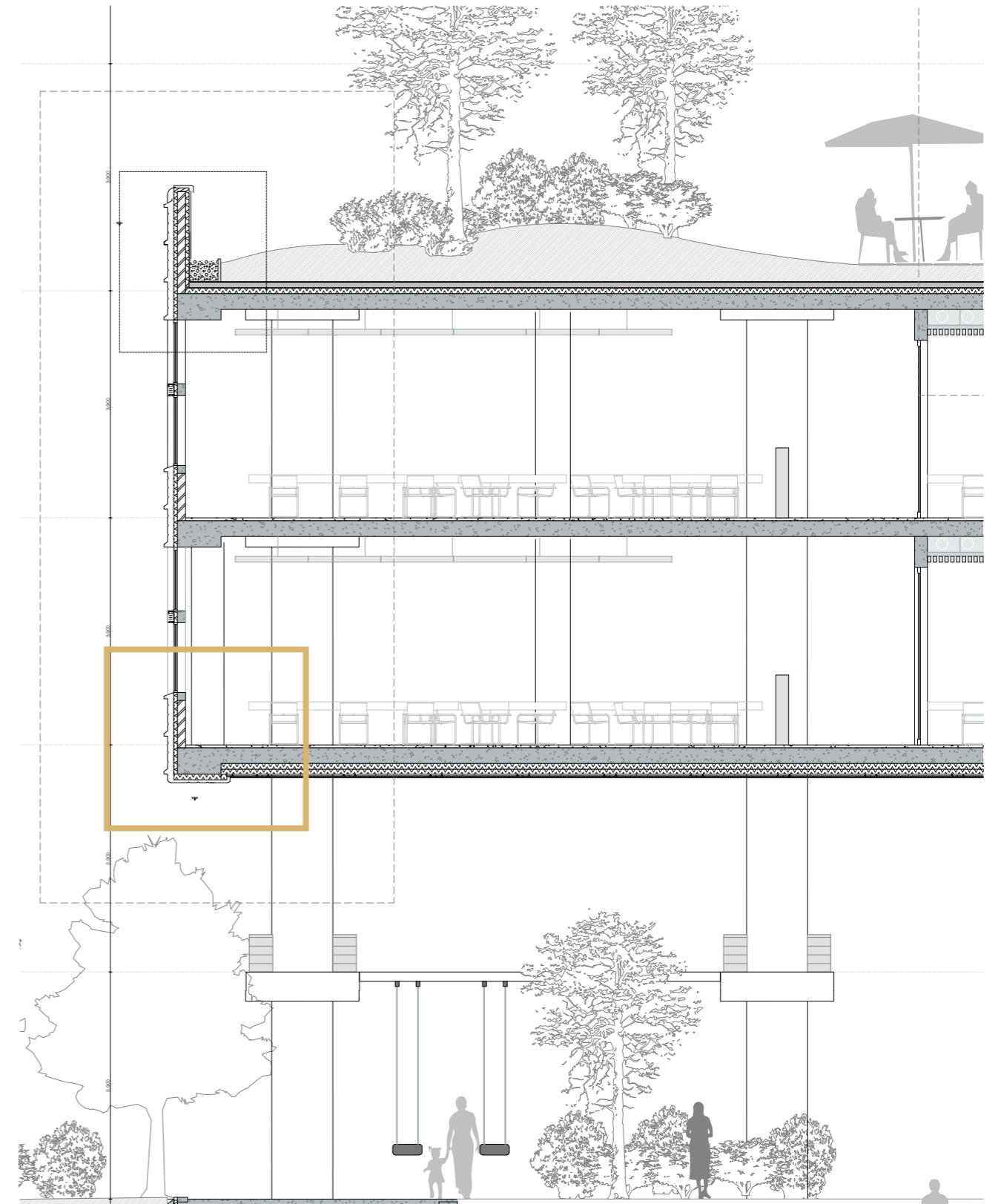
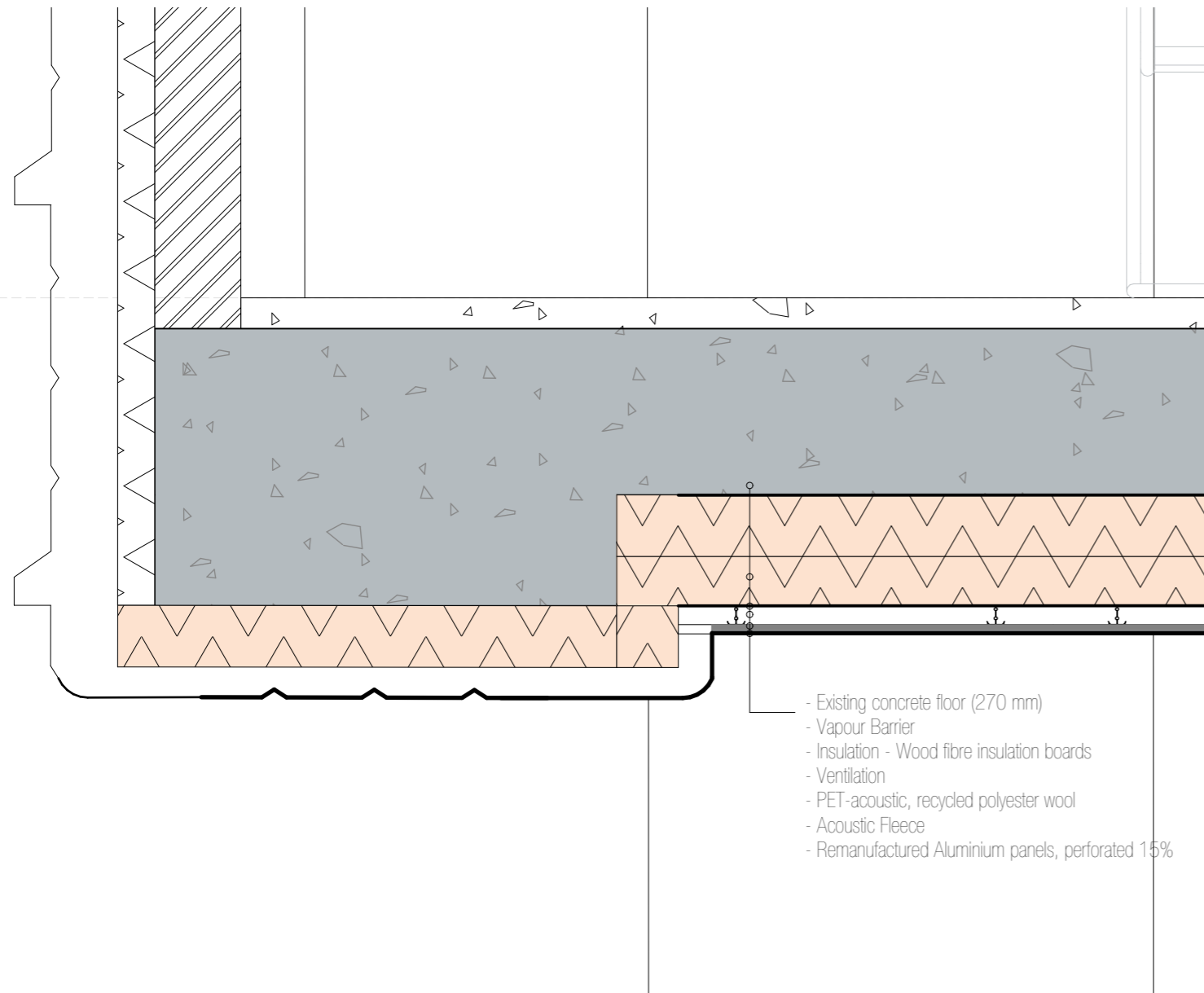
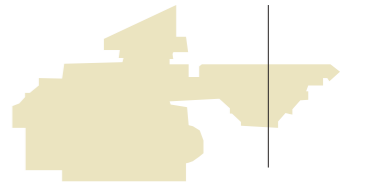
Daylight in Building



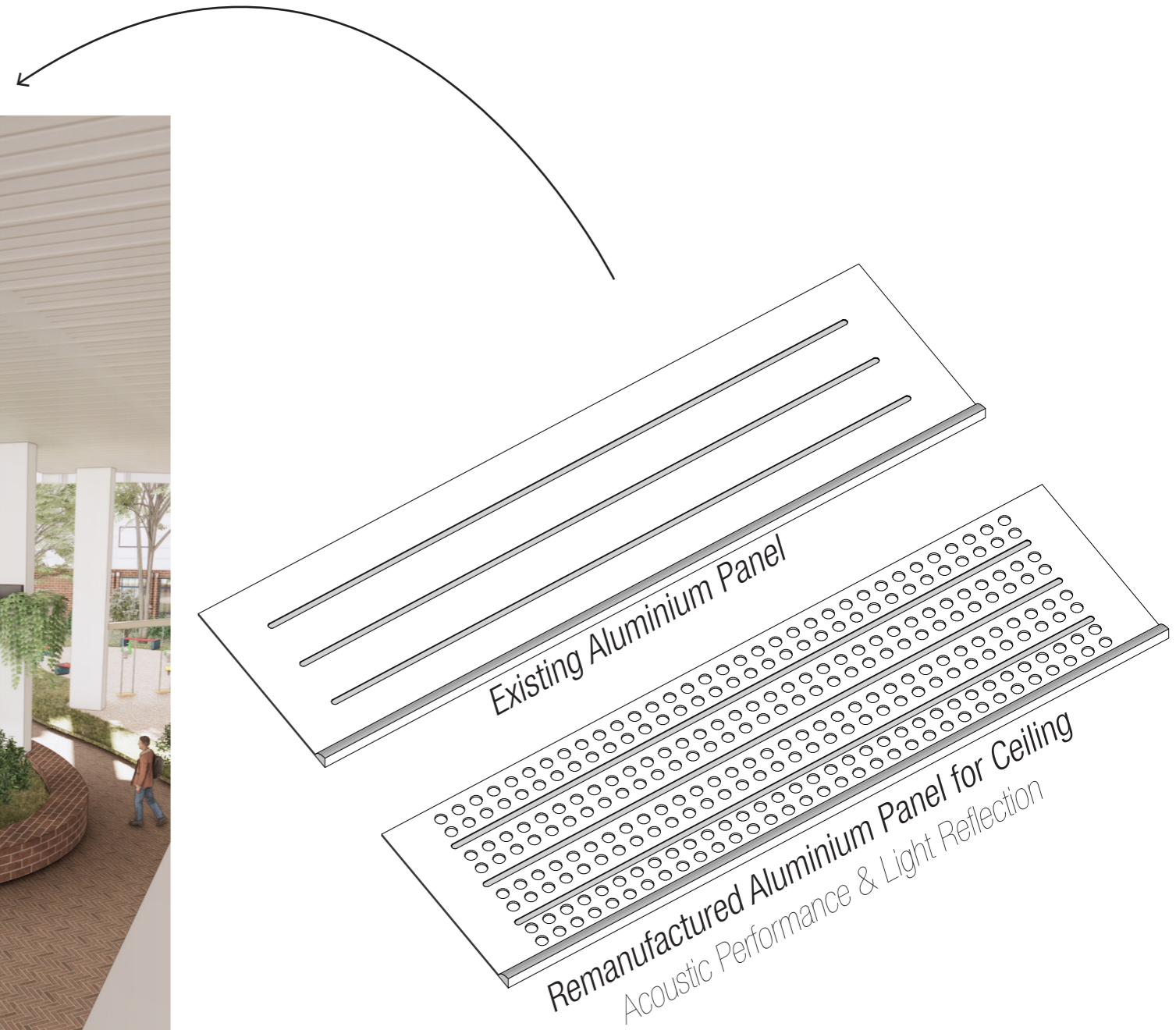
Section | Acoustics Public Square



Public Square | Ceiling Detail



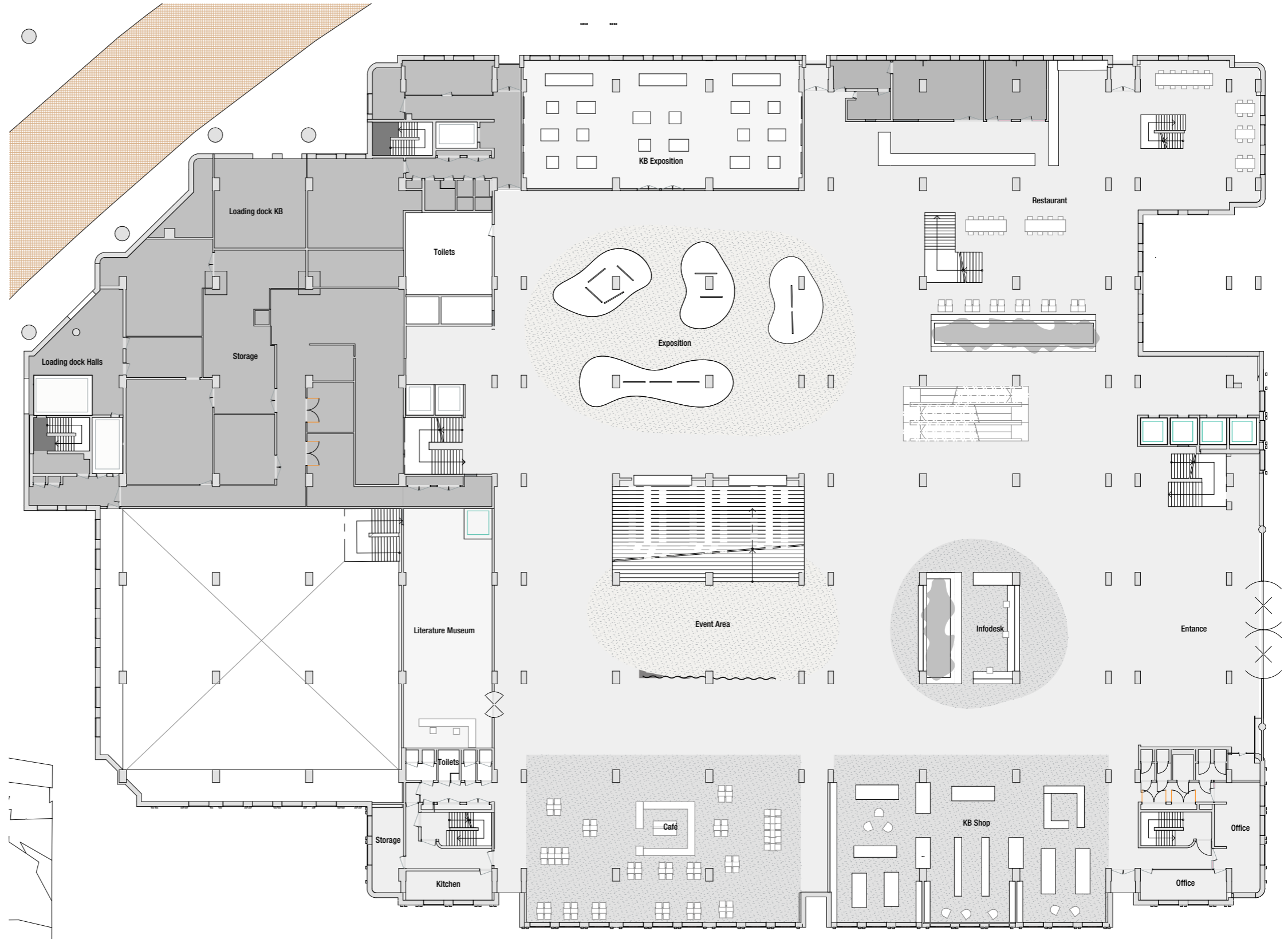
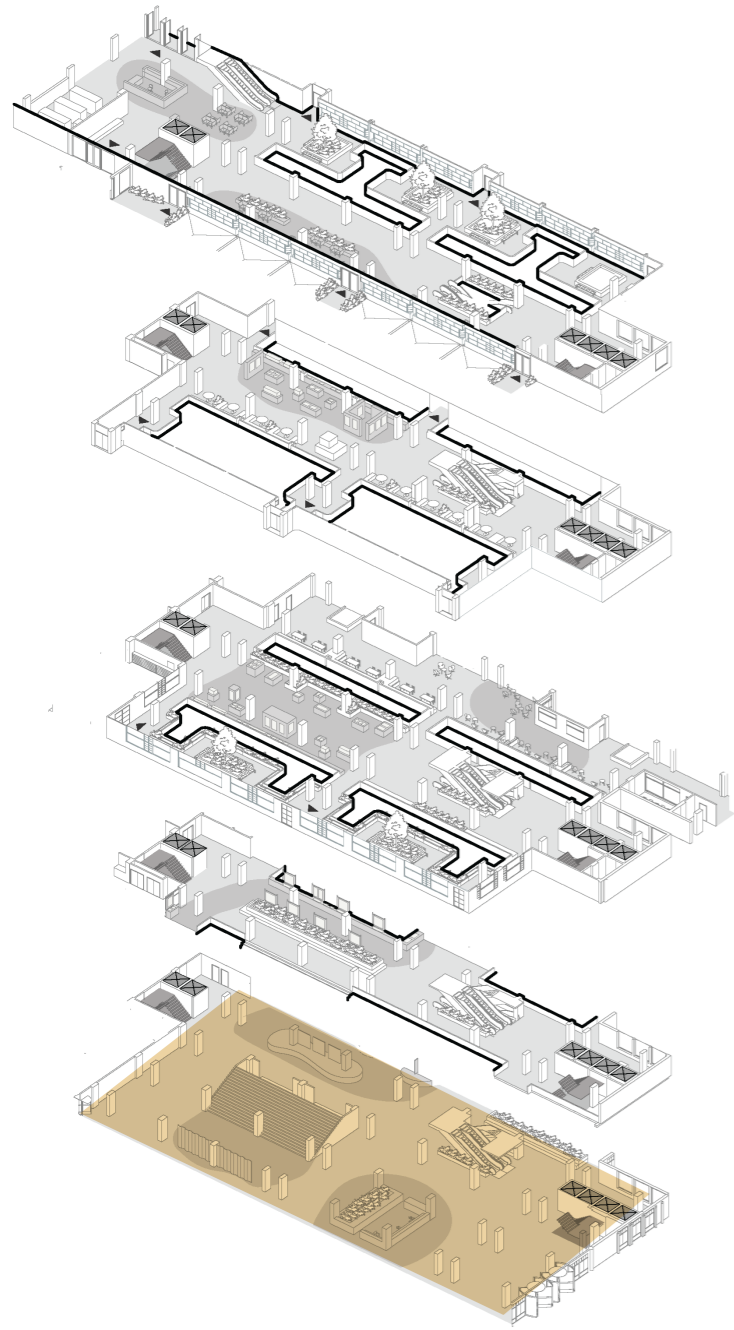
Public Square | Ceiling Detail



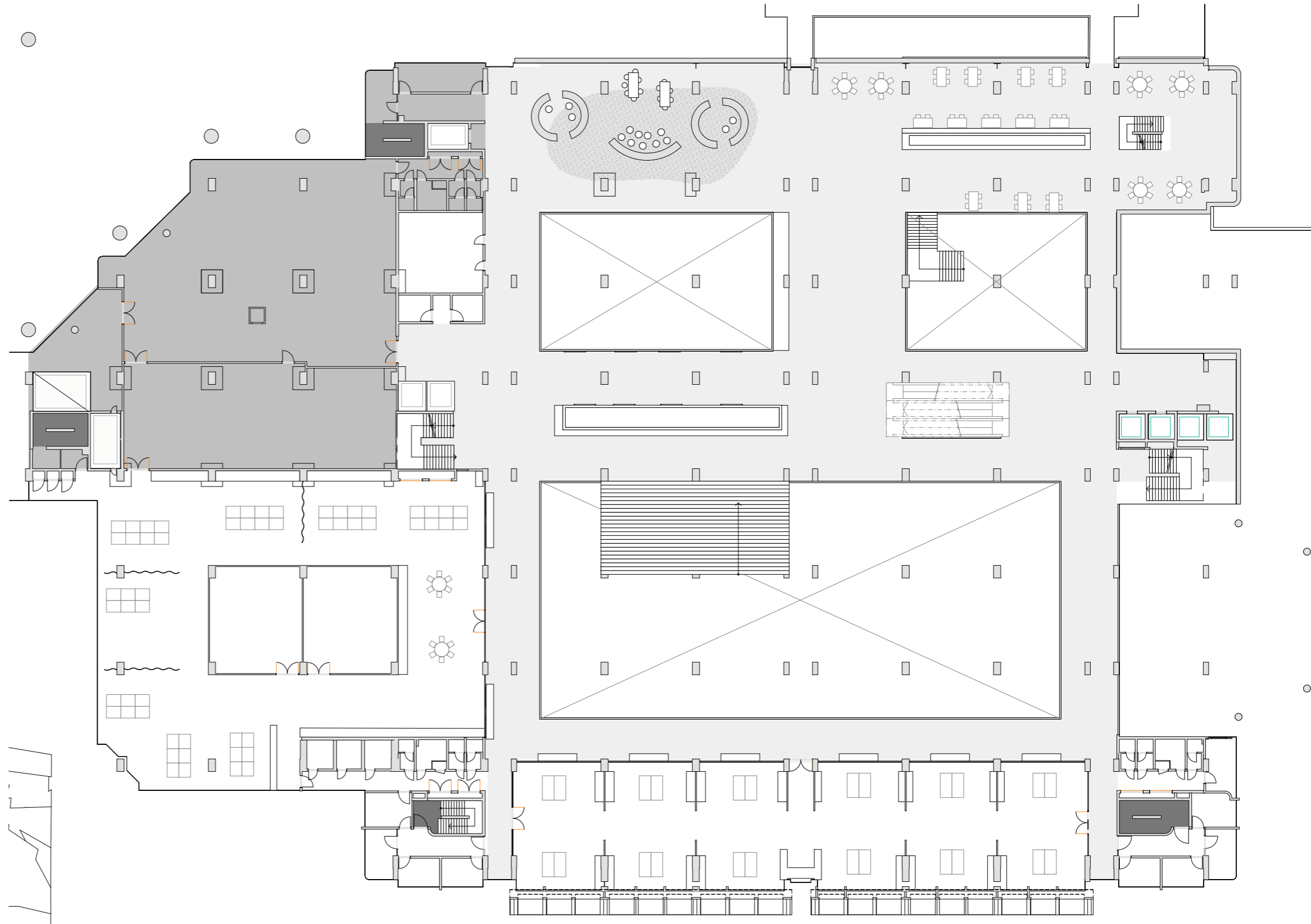
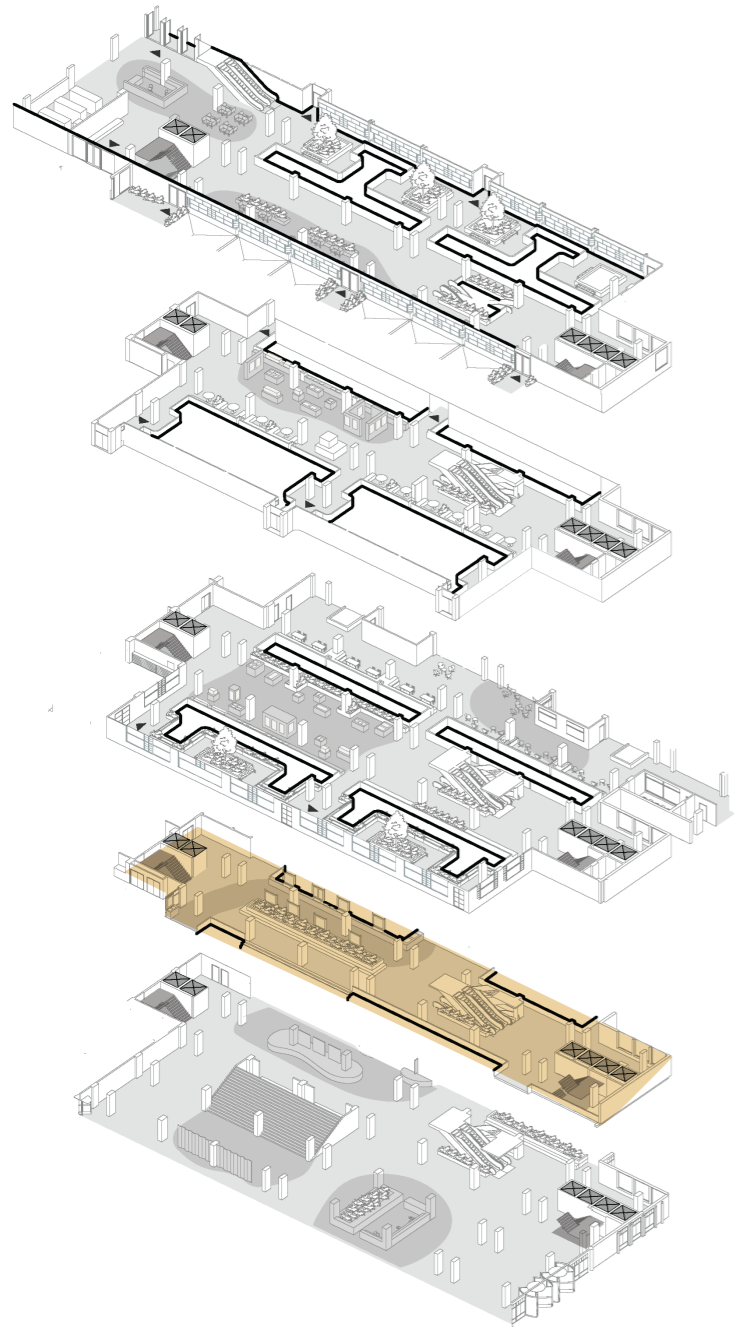
Event Square | Rehearsal rooms



Floorplan | Public Square



Floorplan | Art Square



Floorplan | +6 Club Erasmus

