

LEIDEN HUMANITIES Campus & Boutique Residences

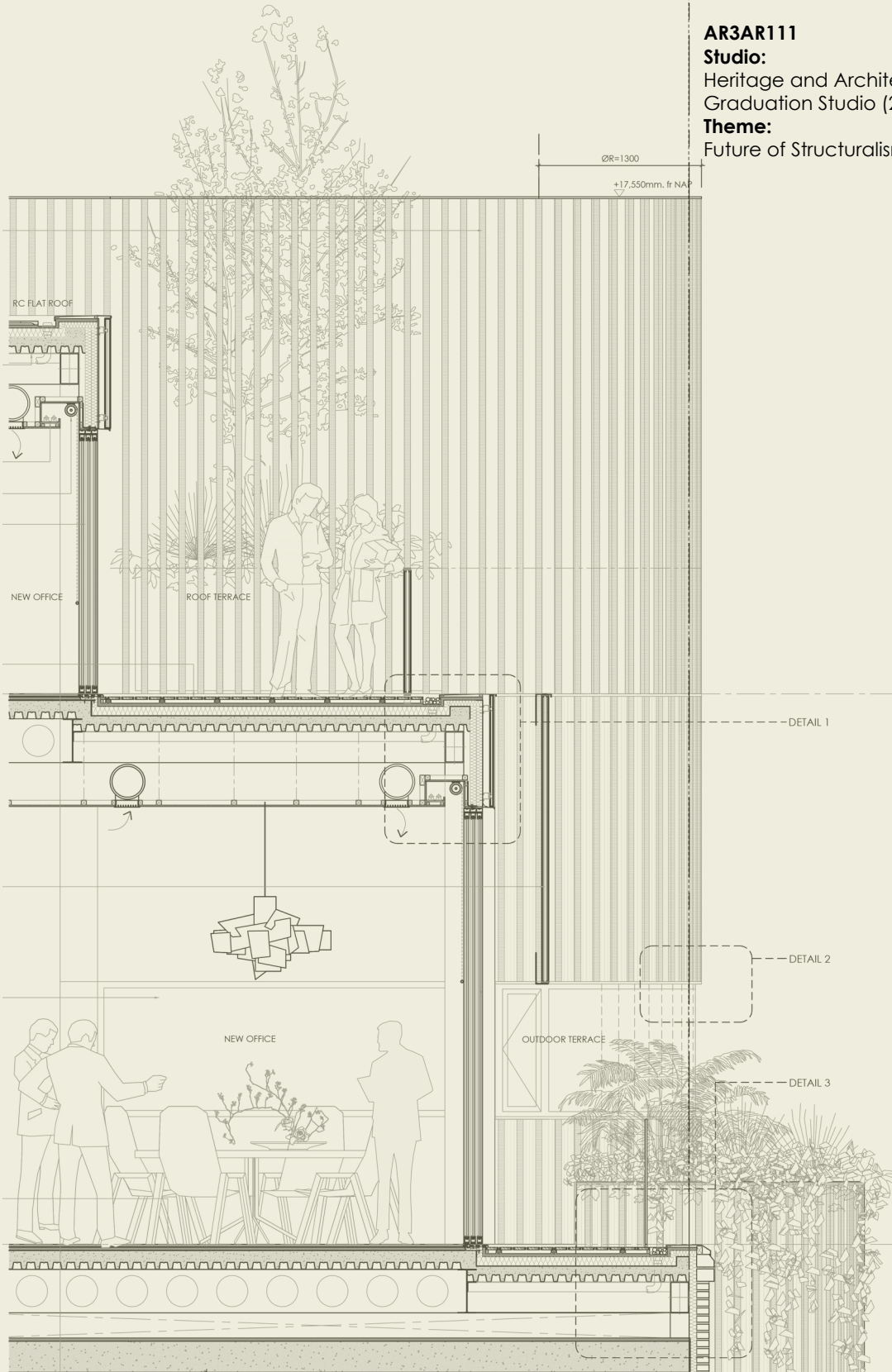
AR3AR111

Studio:

Heritage and Architecture
Graduation Studio (201718 Q1)

Theme:

Future of Structuralism



Graduation Report

Heritage and Architecture,
Faculty of Architecture and the Built environment,
Delft University of Technology
(May 2018)

Studio: AR3AR111 Heritage and Architecture
Graduation Studio (2017/18)

Theme: Future of Structuralism

Location: Faculty of Humanities,
Leiden University, Leiden,
the Netherlands

Project Title: **72 | 50** Beyond the Boundaries
The Proposed Addition and
Alteration of the Humanities Faculty
Buildings (Cluster1)

CONTENTS

Recommendations

Experiments & Interpretations

1. Introduction

1.1. Project background

- General introduction
- Research methodology
- Timeframe
- The scope of the study

1.2 Heritage architectural Approach and Positions

- Discussion on Approaches and Positions
- Reflection

2. Research Summary and Reflection on Structuralism architectures

2.1. Universal design languages

- Repetition languages
- Way-finding issue
- Precedent studies

2.2. Social Interaction Strategies

- Inner City Campus design
- Public plaza and internal courtyards
- Joop van Stigt's design techniques

2.3. The flexibility of a given structure

- Provision for future expansion
- Interior space division

3. OBJECTIVES & FRAMEWORKS

3.1 Redevelopment Principle

3.2. Key Objectives

- 3.2.1. Building Scale
- 3.2.2. Campus Scale
- 3.2.3. Urban Scale
- 3.2.4. Global Scale
- 3.2.5. Wider Social Aspect

3.2. Transformation Frameworks

- 3.3.1. Refurbishment of the existing design philosophies
- 3.3.2. Safeguard and Preservation of the existing building
- 3.3.3. Alterations to the existing functions
- 3.3.4. New Additions
- 3.3.5. Previous experiments
 - 3.3.5.A. Finding an appropriate location for the new additions

4. INTERVENTION STRATEGIES & DESIGN PROPOSALS

4.1. Programmatic Improvements

- 4.1.1. Architectural Design Ambitions
- 4.1.2. Program Proposals
- 4.1.3. Area Tabulation

4.2. Functional rearrangement / Re-zoning

- 4.2.1. Public zone
- 4.2.2. Private functions
- 4.2.3. Intersection area

4.3. Ground floor alterations

- 4.3.1. Urban connection at the public plaza
- 4.3.2. Activating the underutilized space/Covered courtyards
- 4.3.3. Creating identities
 - 4.3.3.A. The new entrance
 - 4.3.3.B. Sunken courtyard
 - 4.3.3.C. Raised platform
 - 4.3.3.D. The Green Library

4.4 Upper Floor Reconfiguration & the New Addition

- 4.4.1. To improve the building efficiency
- 4.4.2. To improve the quality of the interior space
- 4.4.3. To increase the quantity of existing gross floor area

4.5 Residential function requirement

- 4.5.1 The transformation of the existing interior layout
- 4.5.2 The new additions
- 4.5.3 Provision for future expansion

4.6 The reinterpretation of the original facade design language

- 4.6.1. Analysis
- 4.6.2 Design experiment
 - 4.6.2.A. Aluminum Cladding in purple powder coated
 - 4.6.2.B. Perforated brick block
 - 4.6.2.C. Terracotta Facade

5. TECHNICAL MATTERS

5.1. Structural framing

- 5.1.1. Structural intervention concept
- 5.1.2. Initial Stage / Structural dilemma
- 5.1.3. Previous experiment
- 5.1.4. Final design

5.2. Building sustainability

- 5.2.1. Passive climate control
- 5.2.2. Heating and cooling system
- 5.2.3. Energy saving provisions
- 5.2.4. Water management
- 5.2.5. Renewable Energy
- 5.2.6. Air ducting system / Insulation scheme

5.3. Fire safety

- 5.3.1. South Clusters
- 5.3.2. North Clusters

5.4 Facade and Detail design

6. REFLECTION

6.1. Studio: Future of Structuralism

6.2. Graduation Projects:

7. LITERATURE

7.1. PRACTICAL PREFERENCE

7.2. LITERATURE

Preface

Today, heritage architecture adaptive reused has now been one of the main emergent themes, in the world of the architectural profession. Since the 1960s, the heritage reuse attention has been widened. This field of architecture is not only limited to the high edge-value civic buildings such as churches, town halls or palaces anymore. It now includes more modest heritage buildings towards the legacy of the modern movement. The redevelopment of the young architectural monument has also been a new challenge of this heritage adaptive reuse approaches. At this point, Paul Meurs claimed that this young monument protections have reshaped the idea of heritage alterations and interventions. At the same time, it also illustrates how the authenticity definition has been changed in the Dutch architectural society.

One of the significant architectural and urban planning in the Dutch postwar history was Structuralism Movement, led by Team 10. These architectural design philosophies were evolved during the 50s-80s. The aesthetic life, humanity, and identity were the main driving forces of this Anti- Rationalism movement. In studio 'Future of Structuralism', two of the important structuralism architectures including Centraal Beheer, Apeldoorn, by Herman Hertzberger and Faculty of Humanities Buildings, Leiden, by Joop van Stigt.

Based on my personal interest in the relationship between the architecture and its urban contexts, I have chosen redevelopment of Leiden University's Humanities Faculty to be the main subject of my graduation project. The key aim of this study is to find appropriate architectural solutions for the future of this structuralism architecture. The result of research and design will illustrate heritage essences and significances of this Dutch architectural movement. At the same time, it will answer my own research question of **'How could the structuralism design strategies of J. van Stigt enhance the future of humanities studies at Leiden University?'**

This main question has formulated further sub-questions which range from urban level, architectural significances, technical and cultural values as the followings.

-How could this alteration benefit the Leiden urban development along the singles and waterfront parks?

Although the site is located in the Art and Culture campus of Leiden University, adjacent to the city center, there is a limited connection between these two areas. This situation is considered as a dilemma of that original design that was trying to integrate this development as one be a part of the urban fabric.

- Which of the architectural significances of this building should be retained as remnants of J. van Stigt's structuralism philosophies and the development of Dutch architectural movements?

- What should have been done to improve the existing facilities to enhance the future use of the building?

The research questions above will be addressed by series of design experiments and relevant scientific research. These study procedures would gradually lead to a set of logical approaches which influence the intervention decisions and offering guidance to all aspects of the adaptive reuse scheme. The synthesis of the collective information will be a key to the appropriate framework of structuralism architectures protection.



1. Introduction

1.1. Project background

- General introduction
- Research methodology
- Timeframe
- The scope of the study

1.2 Heritage architectural Approach and Positions

- Discussion on Approaches and Positions
- Reflection

1.1 Project background

This graduation report is a summary of the architectural analysis, design interpretation and reflections of the Dutch Structuralism Movement using the Humanities Faculty building of the Leiden University as a case study. The building was built by Architect Joop van Stigt in 1976 and the building was part of the design of the inner city university campus. In this paper, the relationship between research and design will be illustrated through both significant physical and conceptual aspects of this Dutch post-war architectural movement. By focusing on Leiden Humanity Faculty, the researches were conducted through various perspectives which range from architectural/urban design strategies, techniques, and limitations. Those studies were aimed to provide an essences transformation frameworks and intervention strategies for the future alteration of this university campus.

The methodology used in the report is to view the building from three perspectives which are commonly used by the TU Delft Heritage and Architecture department: design, building technology and cultural value. The studies consist of three main fundamentals including architectural design, cultural value, and technology aspect. The sets of scientific information help identified and highlight the significant cultural values of the original design that should be protected. At the same time, these general studies help indicate the technical constraints and challenges of these heritage buildings that need to be addressed in the future alterations and additions.

In general, text-based and graphical research methodologies had been introduced as the main research approach for my graduation project. This thesis was oriented in a qualitative direction. The study began with the setting up of a research field which, in my case, is the structuralism buildings from the 60s-80s. The selected heritage study field will be further elaborated by architectural social sciences and ethnographical research. It's aimed to sharpen an understanding of how actually people lived in both given historical and contemporary contexts. Further on, this architectural thesis will be conducted through both Etic and Emic researches. The resource, activities, and thoughts within and outside the Dutch Structuralism Movement are required to be reflected in this research.

However, I found that mentioned research approach above could not provide enough information for the preservation of structuralism architectures values. The scope of a young heritage research should not be only limited to the conservation of the tangible authenticity value of the buildings. In fact, a further elaboration on the intangible aspects analysis is very crucial for this graduation studio. Since the structuralism movement was originated by the humanity ambitions, critical assessments on the design philosophies will eventually help identify what were these architecture meant to be/used to be / should be in the future. Another additional approach was the research on the time-line of the original architects. By doing so, we will understand the development of style, influences, design methods and the relationship between each building during the structuralism movement.

To summarize, this study took place from September 2017 to June 2018.

The scope of the study includes:

1. Research and analysis of the buildings and its heritage values.
2. Transformation frameworks/ Intervention strategies
3. Architectural exploration and preliminary program proposals.
3. A final design recommendation.

Also included are the critique and reflection on the original Van Stigt's Humanities Faculty buildings and Dutch Structuralism Movement on various scales. The goals of this graduation project are to find a right balance between the cultural heritage and the future transformations. At the same time, it was also aimed to challenge preconceptions about heritage architecture adaptive reuse. By clearly identify the strengths and weaknesses of structuralism, there is a wide range of solutions for the future of this post-war heritage architectures. One of the most appropriate schemes was selected and elaborated in details as shown in the following design proposal.



Painting of the first ambition on the redevelopment of Leiden Humanity Campus - W. Taemeyachat, November 2017.

1.2 Heritage architectural Approach and Positions

In this graduation studio, students are encouraged to illustrate their own architectural positions on the adaptive reuse of a built fabric. While transforming the heritage buildings to meet the contemporary needs, this studio requires set of parallel scientific strategies that represent specific approaches and direction of a redevelopment scheme.

Focusing on this graduation project, the Leiden Humanity campus, various heritage positions, and approaches have experimented throughout the processes. The set of strategies were integrated with the design in every scales. These were ranged from the urban scale to the finest detail design. However, I would claim that the selected positions were not absolute. Similar approaches were, sometimes, interpreted differently in some particular areas. These will be illustrated in the following chapters of this graduation report.

Although there were several positions embedded in the final design of this project, there are some common ambitions among these thoughts. The transformation approach and heritage architect position in this graduation project is laid toward the merging between the existing characteristics and the new interventions. The Indonesian rice-terrace image is an illustration of my architectural ambition in this graduation project. The scenery of hand-carved cascading steps is the result of critical demand on agricultural space in a high constraint condition, original steep terrains. This UNESCO World Heritage's Cultural Landscape Site is a great integration of human needs and natural landscape.

In conclusion, I would consider this redevelopment proposal as a collaboration between the original and the new architects. In other words, this alteration scheme is not aimed to overcome nor colonize the extant built heritage of Joop van Stigt. In addition, the alterations to these 70's structuralism buildings will be done in a reversible approach. The original significant design compositions and technique will be retained and made good. At the same time, the intervention will also mark the changes in time through the appearance of old and the new designs. Lastly, this redevelopment will not only responding to the contemporary/new requirements, in fact, this proposal will be positioned as a device to enlarge the humanities field of studies in the coming future.

Reflection

During the tutoring and presentations from research stage onwards, it seems important to state an architectural position in this H&A graduation studio. The clear statement helps indicate the research and design directions in the later stages. In addition, the selected positions will also help verify the options and alternative, occurred during the development stages, if those are viable and based on the same principle.

Due to the long duration, it is difficult to explain every step made during the design process. The clear architectural approach will be another tool for external audiences to address the graduation project. It helps to identify the logical reasons behind each final decision.

However, having an absolute position or too specific approaches are also considered as a risk. Since the heritage architect is dealing with the transformation of cities and buildings, an appropriate balance between the old and the new is a fundamental design for this architectural field. For this reason, I would make a statement that each preservation and renewal of existing architecture required different approaches. In short, the architect shall not set up specific positions before having an investigation in details. Aside from that, I believe that the architectural positions should also be flexible and adjustable in the processes. Sometimes, there is a need to combine several approaches together. This integration particularly occurs in the mixed-function buildings. The Leiden Humanity Faculty is one of those buildings.

After all, the mentioned reflection above illustrated that stating a clear and relevance architectural position is crucial and useful in this graduation studio. In contrast, I would argue that the heritage architect should be open to the merging and integration between the specific approaches to optimize heritage value of the built fabric.



Tegallalang Rice Terraces, Bali, Indonesia - SUITCASE Magazine



Acropolis and the city center of Athens - www.visitgreece.gr

2. Research Summary and Reflection on Structuralism architectures

2.1. Universal design languages

- Repetition languages
- Way-finding issue
- Precedent studies

2.2. Social Interaction Strategies

- Inner City Campus design
- Public plaza and internal courtyards
- Joop van Stigt's design techniques

2.3. The flexibility of a given structure

- Provision for future expansion
- Interior space division

Research Summary and Reflection on Structuralism architectures

By using Leiden Humanity Faculty as a case study, there are two main structuralism design strategies that have a strong influence on the proposal and development of this graduation project. These include the significant appearance of a modular system, humanity based design and the flexibility of the structure. The further effects of these three particular aspects will be addressed and elaborated in the following chapters of this paper.

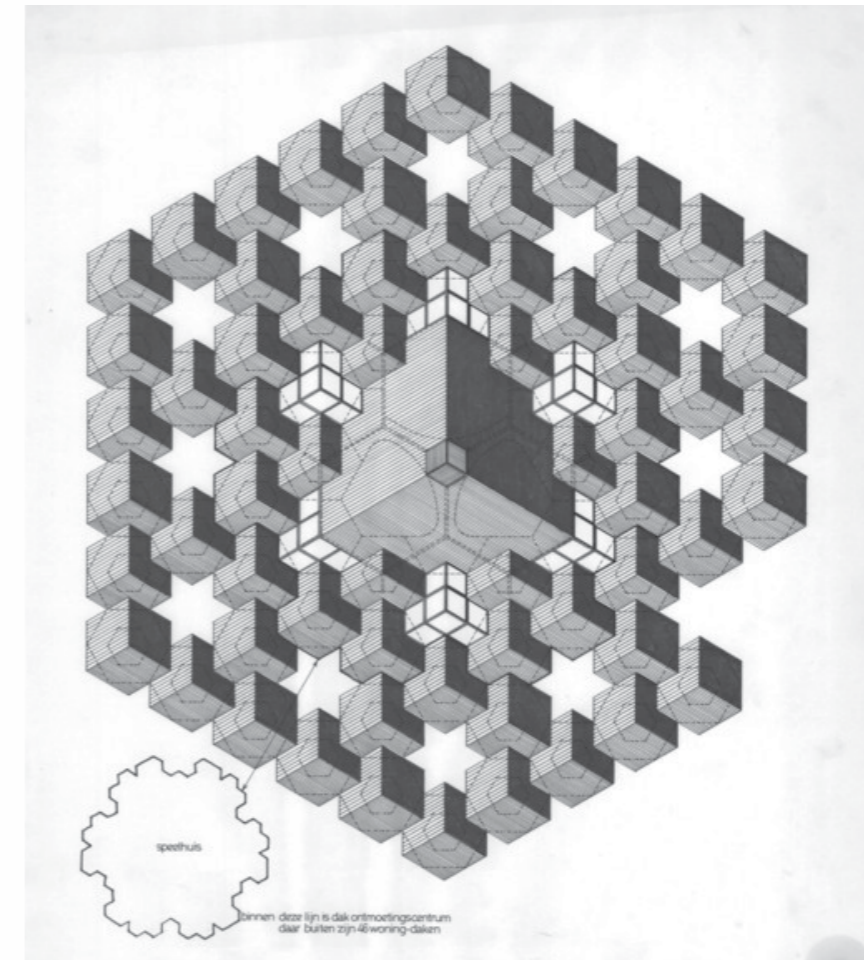
2.1 Universal design languages

In structuralism movement, we could see that majority of the structuralist architects tended to design their building which composed of several universal units. One of the significant illustrations is the design of *Centraal Beheer* by Herman Hertzberger. This repetition design language offers a harmony appearance to the complex. The typical details and dimensions helped improve workability in the construction processes.

In contrast, the clusters of universal units have caused complications in a way-finding issue. The visitors will find a difficulty in the self-orientation in the pattern language of structuralism architecture. *Leiden Humanity Faculty* is one of the examples of those confusing buildings. It is a complex of eleven universal blocks with three inner courtyards (including north and south clusters). Each of the buildings has similar façade compositions and materials palette which confuse all the new visitors.

In the new design, an improvement of this particular issue is required. Any alteration to this extant built fabric should offer a clear sense of directions to the users. This could be done in several method and technique. One alternative is to take a reference from a signage design in a complex building like an airport. Colorization, in a large car-parking space, could also be another precedent. Even during the structuralism era itself, we can see that there were some attempts to resolve this way-finding issue as well. *De Flint* by Onno Greiner is the clear illustration of those tries. He claimed that 'clear-cut circulation routing' offers a safe and secure feeling for the building's users. However, there is a limitation to apply method on the renovation projects, especially in *Leiden Humanity Faculty*.

Therefore, it is viable to look for further solutions from external sources. An urban planning could be a good reference since structuralist architects frequently realize their design as a city in a city. New York and Barcelona were widely used as the design precedents. Although these two cities seem to be composed by grid patterns, there are also some highlighted spaces in these repetition languages. The city's landmarks such as the *Sagrada Familia* and the *Empire State Tower* help people to orient themselves in the complex environments. In short, a creation of specific identities for each courtyard/universal unit could be another tool that helps improve this way-finding problem.



Piet Blom, the Speelhuis Theatre and Cube Houses, c. 1974. - www.archdaily.com.



Midtown Manhattan, East Side
New York City 1931 - <http://www.newyorkphotomania.com>

2.2 Social Interaction Strategies

This research traced back the implementation of "Social interaction Strategies" translation Faculty of Humanities by Joop van Stigt. The aesthetic life, humanity, and identity were the shares design philosophy of this Dutch architectural society during the 50s-80. Several structuralist architects looked at an architecture as a language. It's a language that represents an emotional impact and a social-cultural scope which human society expresses and reveals itself. These basic philosophies resulted in architectural design, building materials, construction techniques and social interaction space planning. The extent and degree of these 'Anti-Rationalism' core ideas had been implemented differently in each project.

In Leiden Humanity Faculty, series of free access inner courtyards are the significant illustrations of Joop van Stigt's intentions on social interactions. In the original design, he designed these large communal areas as shared spaces that allow for all the users in this complex to use and meet each other.

In addition, Van Stigt introduced several techniques which helped soften the hardness of the massive masonry clusters and encourage people to spend more time in these communal spaces. However, due to several reasons, the original social interaction spaces did not fully function as it intended to be. In the current situation, the abandoned courtyards and inner streets have major influenced on the atmosphere and appearance of the buildings.

2.3 The flexibility of a given structure

The flexibility of the buildings was widely realized in structuralism movement. The architects were trying to offer basic fundamentals for future expansion of the buildings. This flexibility usually resulted in the oversized structural elements and interior space divisions. In the original design of Leiden Humanity Faculty, Van Stigt has shown this intention through his structural design. A light-weight material, timber, was used as roof structure while having a rigid reinforced concrete system at the base. This composition offers great opportunities in the future expansions. Structural analysis, done by Leiden University, showed that these existing structural framing could carry another two additional storey on top of them.

The new design will take this advantage by making extensions on the existing towers along the rear side of the complex. This strategic location helps retain the original design appearances and composition of the main façade along Witte Singel side.

In the interior space, Van Stigt illustrated the flexibility concept through the lightweight internal partitions. The original typical layouts were composed by large central circulation halls and a role of individual office cells at the parameters. This composition gives a freedom for the future alterations to these layouts. While improving a building efficiency issue, the new interior configuration should improve the limited natural lighting condition in the central areas of each unit.

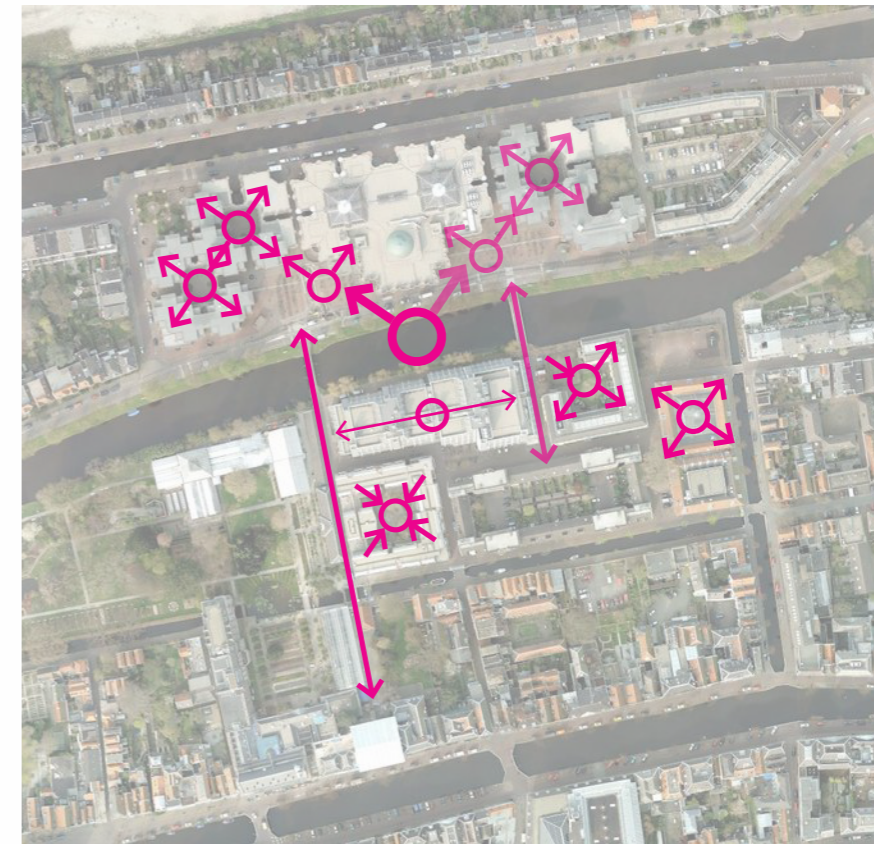


Diagram of social spaces network in Leiden Inner City Campus - W. Taemeyachat, GoogleEarth



Reinforced concrete structure of Humanities Faculty Buildings in 1981 - Cement XXXIII

3. OBJECTIVES & FRAMEWORKS

3.1 Redevelopment Principle

3.2. Key Objectives

- 3.2.1. Building Scale
- 3.2.2. Campus Scale
- 3.2.3. Urban Scale
- 3.2.4. Global Scale
- 3.2.5. Wider Social Aspect

3.2. Transformation Frameworks

- 3.3.1. Refurbishment of the existing design philosophies
- 3.3.2. Safeguard and Preservation of the existing building
- 3.3.3. Alterations to the existing functions
- 3.3.4. New Additions
- 3.3.5. Previous experiments
 - 3.3.5.A. Finding an appropriate location for the new additions
 - 3.3.5.B. Exploring new building envelope
 - 3.3.5.C. A draft summary of 'Aims and Actions'

3.1 Redevelopment Principle

" In principle, the main ambition of this redevelopment project is to bring the dried and rotten experience of Leiden Humanity Buildings back to life". The refurbishment and reinterpretation of the original structuralism design strategies will be implemented as the main position in this studies. This could be archived by assigning various minor and major intervention to the strategic locations in the complex. These alterations will set itself as the "Oasis in the desert" It aimed to transform a desolate land offering only hardship and discomfort to a lively environment. The new oasis provides relief in the middle of the heavy brick masonry atmosphere. It allows for the growth of life and activities that contribute to the future of humanity studies in these extant built heritage.

The mentioned posed problems and research questions above have been addressed by various intervention strategies and transformation frameworks. Series of architectural experiments and relevant scientific research were explored during the design development stage. The synthesis of the collective information will be a key to the appropriate framework of structuralism architectures protection. The new color palette, additional material, local construction techniques, new building envelop and the height control will be shaped by these intervention strategies. Moreover, these research methodologies also correspond with the International Restoration Charter which has been implemented on the heritage architecture research across the world.

Referring to the existing quality and pose problems, I strongly believe that the transformation frameworks and intervention strategies shall not only address the basic requirements. In fact, it should address the human perceptions, sensibility, and spirit of the place. These could be achieved by program proposal, functional arrangement, and spatial design. In addition, it's important for the new architect to implement 'new study procedure and educational activities' as another intervention strategy for this redevelopment.

In this paper, four key objectives and five significant transformation frameworks/intervention strategies have been posted as a starting point for this Leiden Humanities campus redevelopment. Beside the reactivation of Van Stigt, this refurbishment project is aimed to be a prototype for the future alteration to the other buildings in this campus.



The impression of Leiden Humanity Buildings in the current stage - Namib-Naukluff Park, Namibia - Andrey Omelyanchuk



The 'Oasis' Illustration of the Redevelopment Principle - Ubari, a Sahara Desert oasis located Libia - www.izismile.com

3.2.4. Global Scale

Besides the normal curriculum in the classrooms, the student should have more opportunities to have direct interactions with colleagues and visiting professors from the various cultural backgrounds.

The redevelopment will be a new **'gateway' to multi-cultural environments** that help strengthen **an understanding of human life, the globally "sustainable well-being of societies, and the understanding of the cognitive, historical, cultural, artistic, and social aspects of human life."**

www.universiteitleiden.nl/en/humanities

3.2.5. Wider Social Aspect

Aside to those heritage preservation ambitions, this research by design was not limited to the adaptive reuse of the structuralism architecture. The 'redevelopment of the Humanity Faculty' will not just be a young monument conservation project, but it also tries to offer (an ideal) future educational environment to Leiden University. The redevelopment of this young architectural monument has also been a new challenge for the image of Leiden University in the coming future. It was aimed to **help transform**

the text-based study procedures to contemporary approaches.

At the same time, the intervention proposals will offer new experiences to the users which differ from the current typical academic space of this old university.

At the Leiden Faculty of Humanities, they study languages, cultures, and societies worldwide. They focus on the mobility of people, language, culture, ideas, art, and institutions in a globalization world, and their interconnectivity through the ages.

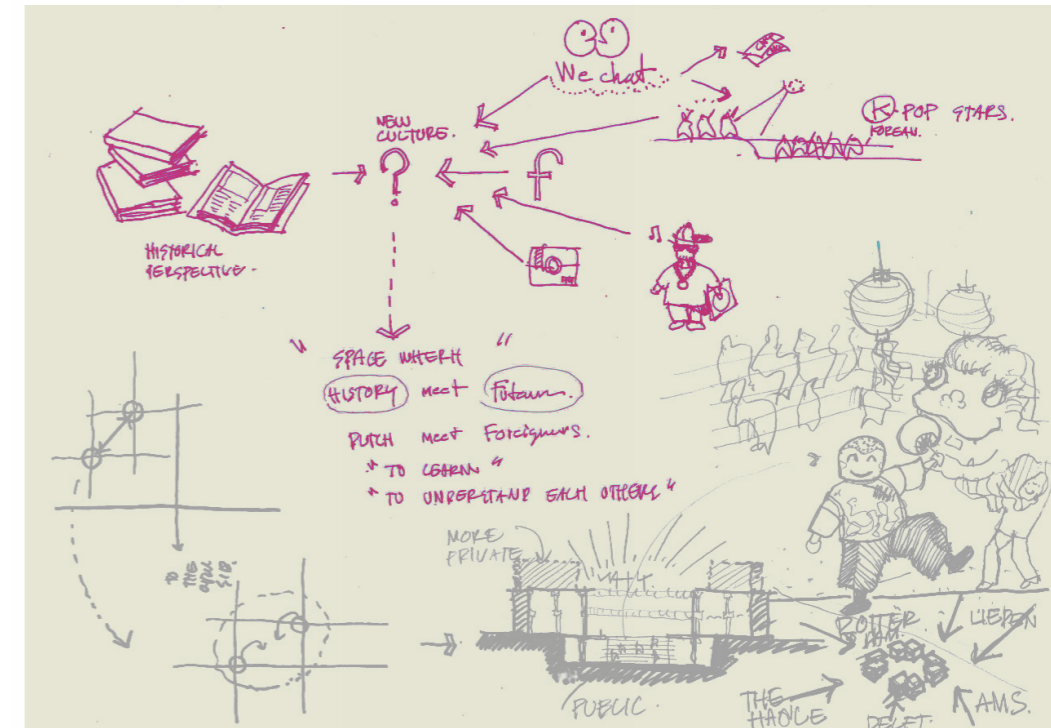
Throughout the past history, our civilizations and societies are the results of the way people live and behave. Music, film, literature and the visual arts are great reflections of the mean of life in different cultural backgrounds.

However, culture is always evolving. There are several new phenomena that affect and transform our perceptions. The interconnection among the cultural hubs and technological evolutions of the last centuries have allowed for greater exchange between cultures through the processes of globalization.

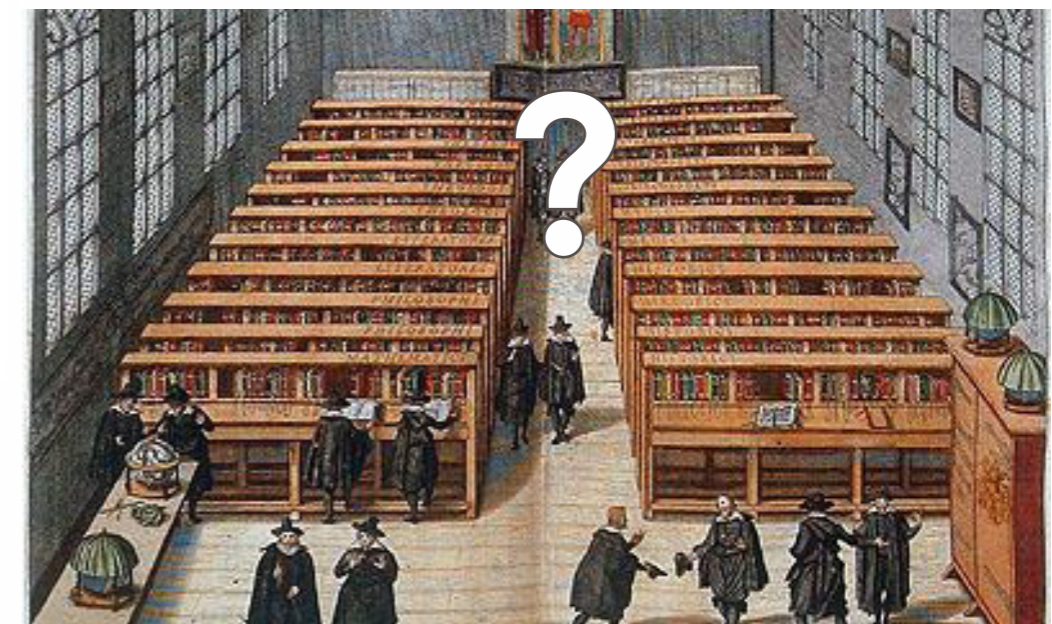
It is important for the faculty to provide new channels for the students to experience from these fast-changing society. The topics of fashion, daily life, religion, food, performance and festive event will be incorporated into the new programs. These activities and functions help widen the perspective of cultural studies for both students and the visitors.

In other words, the Leiden Humanity building will not only be a place where universities curriculum are occurred but also as a center for cultural learning. With this intervention strategy, will host invited artists or experts from different cultural background providing them with a physical framework for research, exchanging and creative experimentation. This "former private academic functions" will occasionally be opened to the public as a "LIVING MUSEUM" where students and public may interact.

In conclusion, these Leiden Humanity buildings will be better equipped to facilitate community participation and engagement. This would help foster a greater understanding and appreciation for contemporary cultural studies whilst establishing the Faculty's key role in its promotion to the public.



Sketch of 'Cultural Evolution in Globalization societies' - W. Taemeyachat, November 2017



Drawing of the former Leiden University main library - www.nassau-nederlands.nl

Culture Evolutions

The influence of cultural evolutions on daily life and community behavior.



Pinterest



www.theatlantic.com



Pop Rock Band



Electronic Music
www.dwallrock.com



New Cinemas
Bilmiyoson.com



Talks
www.ted.com

Cultural Diversity

The variety of human societies or cultures in each civilization in Globalization environment.



Believe
m.prachachat.net



Decoration
Savitatuth.com



Maatjesharing eaten "the Dutch way"
thaisa.com



Chinese Cooking
www.eater.com



African Dance
www.everfest.com



Songkran
www.songkran.travel

3.3 Transformation Frameworks

In principle, my approach seeks to be sympathetic to the historical value and spatial quality of the original Van Stigt's humanities faculty buildings whilst optimizing its allowable development potential as a venue for the future of humanity studies.

On this note, I wish to highlight three key areas in transformation/intervention zone and accompanying preliminary heritage architectural position as follows:

3.3.1. Refurbishment of the existing design philosophies

As stated in the analysis part, the existing internal courtyards were shaped by the social interaction idea. Consequently, this graduation project strives to preserve this spatial legibility of these communal space by retaining the platform of their existing enclosures and designing for adequate exposure to sunlight. In addition, these courtyards will be the venue for new academic activities and events throughout the years.

3.3.2. Safeguard and Preservation of the existing building

Given the historicity of these structures, proposals for additions and alterations are limited to restoration and minor works aimed at preserving a unique facade composition, brick/concrete appearance, and Van Stigt's roof language. This framework includes the towers adjacent to the main road, Witte Singel, side.

Regarding the building itself:

- The identity and character of the building are expressed through its textured concrete structural 'mushroom columns', extruded brick masonry and timber roofscape. Retrofitting of the building shall avoid any method that involves major disturbing and covering the original appearance in any way.

- All facades of the buildings should be cleaned and restored, removing dirt and deposit that does not damage to the original appearance of these buildings. This includes re-pointing, cleaning and replacing of some components. New ducts and other M&E fixtures should be properly concealed within the building envelope.

- Initially, the courtyard facades should be conserved as it gives the continuation of outdoor experiences to these enclosed communal space. However, refurbishment strategies may study alternatives for other arrangements for the new activities, new vertical circulation core for the better accommodation of the large academic spaces.

3.3.3. Alterations to the existing functions

This framework aimed at improving the functional performance of the existing structuralism interior layout for contemporary office use. Taking advantage from the lightweight internal partitions, this division could be altered or removed to meet the new space requirements.



Diagram of the alteration to the existing functions - W. Taemeyachat

3.3.4. New Additions

The rear buildings of this complex were constructed without the timer roof capping, these in-completed buildings serve potential sites for major interventions. While increasing overall gross floor area, the new addition will also offer the opportunity to be a new identity of this complex.

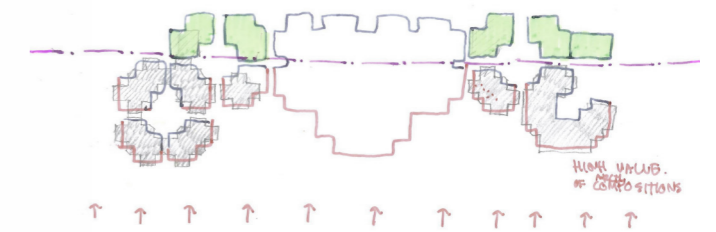
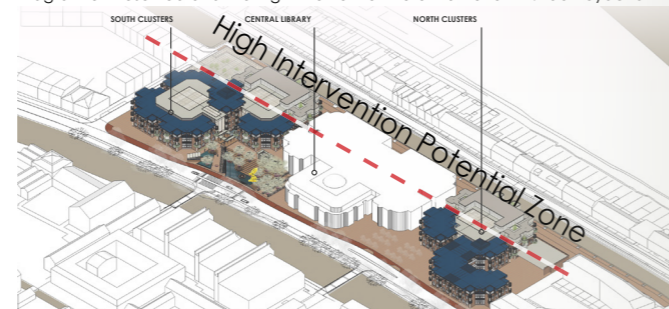


Diagram of the New Addition Zone- W. Taemeyachat

Development of Joop van Stigt's design languages from 1960s-1980s. - W. Taemeyachat

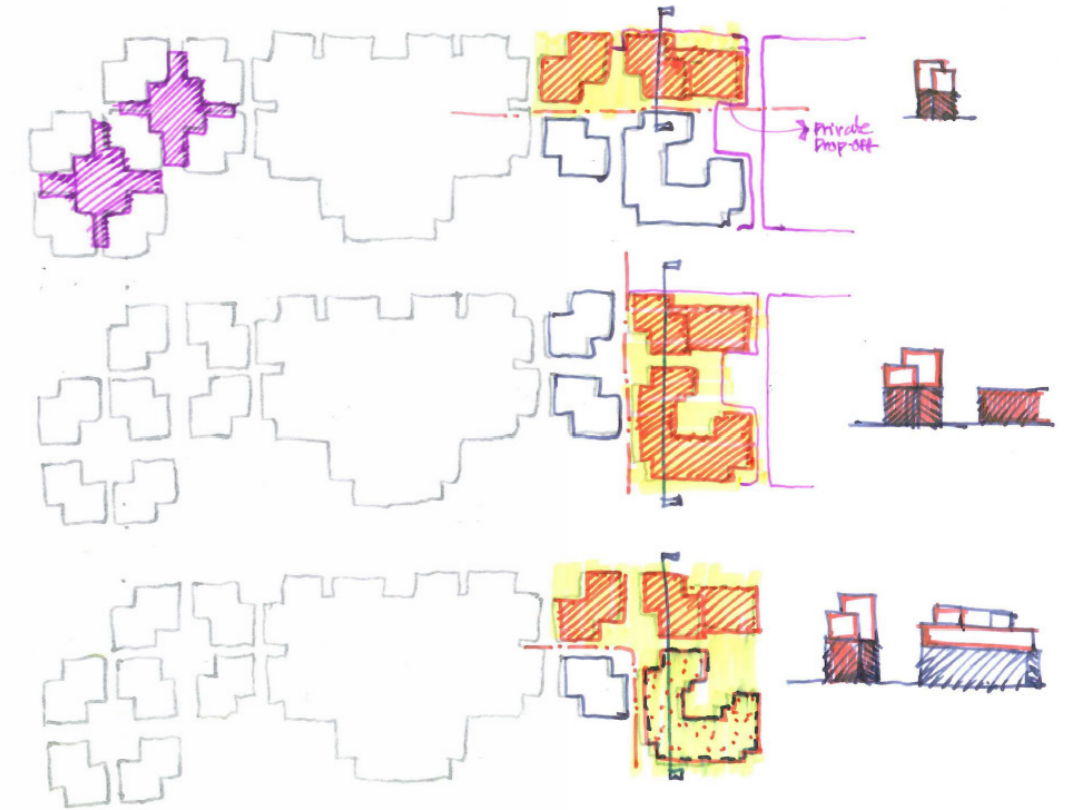
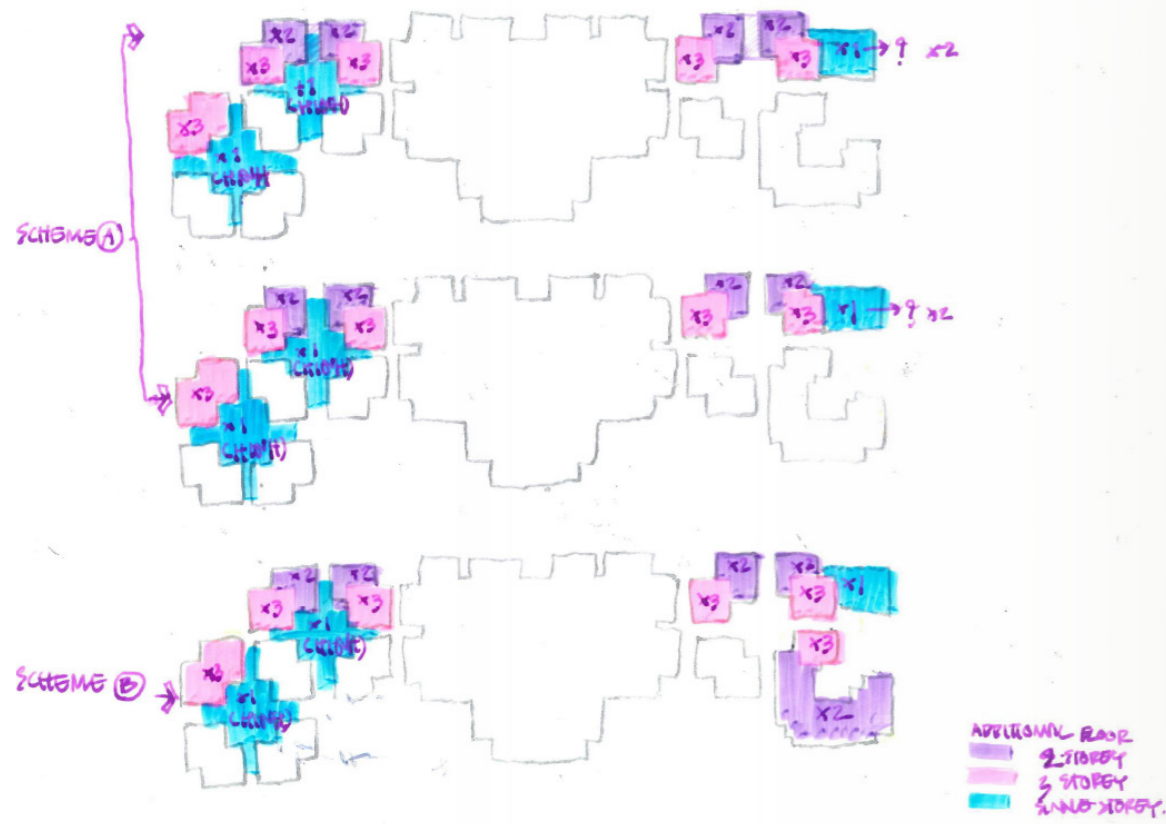


Diagram of Preserved and the High Intervention Potential Zone - W. Taemeyachat



3.3.5. Previous experiments on the Transformation Frameworks

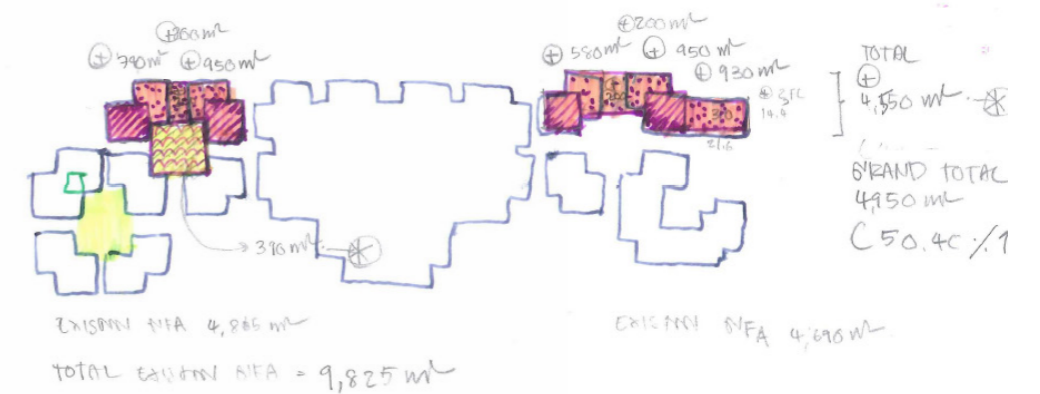
3.3.5.A. Finding an appropriate location for the new additions



ADDITIONAL FLOOR AREA SUMMARY

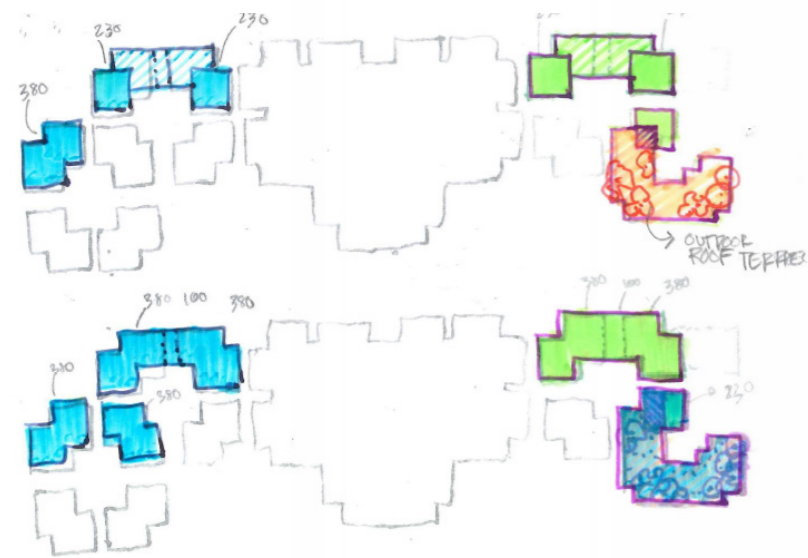
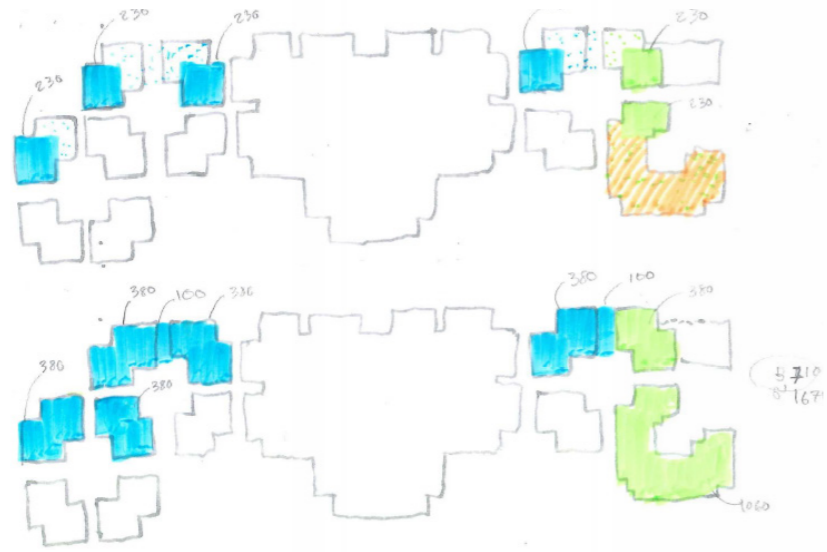
	EXISTING O.F.A. (m ²)	ADDITIONAL O.F.A. (m ²)
NORTH CLUSTER	4,690	1,890
SOUTH CLUSTER	4,865	3,080 (2,660 + 390)
TOTAL	9,825	4,970

50.30% INCREMENT



3.3.5. Previous experiments
on the Transformation Frameworks

3.3.5.B. Exploring new building envelope



RESEARCH QUESTION

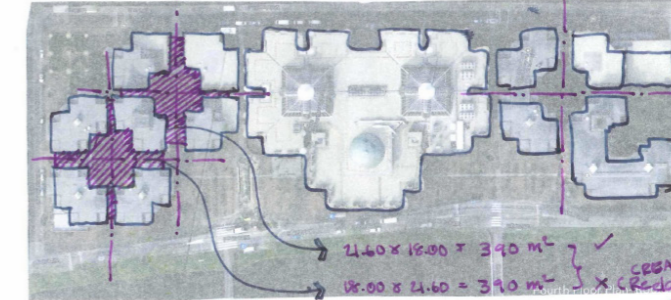
How could Job van Sligte's structuralism design strategies enhance the future of humanity studies & Leiden city of #

RESEARCH GOALS:

- "to create new life for the complex"
- "

INTERVENTIONS
- PERFORM STRATEGIES

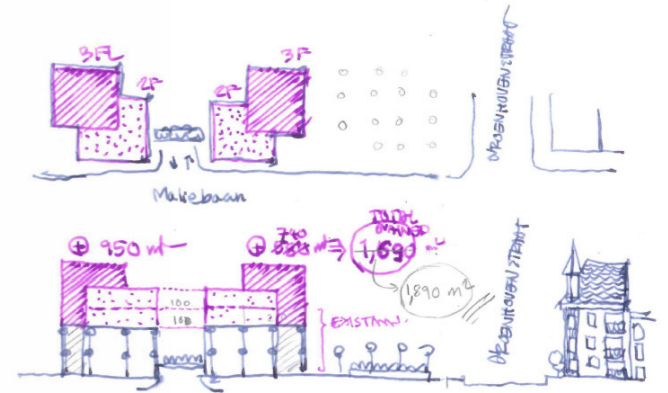
- ALTERATION TO GROUND FLOOR EXPERIENCES**
 - "CREATE MEETING PLACE FOR ALL"
 - "TO BE A CLUB HOUSE of the inner city campus"
- RELOCATION of the EDGEMANN FUNCTIONS.**
 - "TO IMPROVE THE RELATIONSHIP BTW INTERIOR & EXTERIOR SPACES"
- ADD NEW FUNCTION TO THE COMPLEX.** → A BOULVARD RESIDENCE
 - "A PLACE WHERE PPL from different cultures meet, gather and learn."



$4.60 \times 12.00 = 390 \text{ m}^2$
 $18.00 \times 21.60 = 390 \text{ m}^2$
 ∴ TOTAL ADDITIONAL FL. AREA = 390 m² (FROM CONCRETE COVERTERS)
 * CREATES VOID ON MAIN FLOOR & (Reduction in Basement Floor)

SOUTH CLUSTER MASSIVE FOOTPRINT
"SCHEME B"

CROSS SECTION



WEG A HOV IS SUCCESSFUL

3.3.5. Previous experiments on the Transformation Frameworks

3.3.5.C. A draft summary of 'Aims and Actions'

HUMANITY CAMPUS, LEIDEN UNIVERSITY

TRANSFORMATION FRAMEWORK 2017/12/12

A - HISTORICAL/CULTURAL ASPECT

To retain and reinterpret J. van Stigt's design strategies.



AIMS:

A-A. To retain the building scales in relation with the historical contexts around the site.

A-B. To retain the building composition along Witte Sigel waterfront and open plazas. (Referring to the several sketches and phonographs, these facades and the rear plaza-the mushroom garden were frequently captured in those illustrations)

A-C. To reinterpret the social interaction idea at the three courtyards.

ACTIONS:

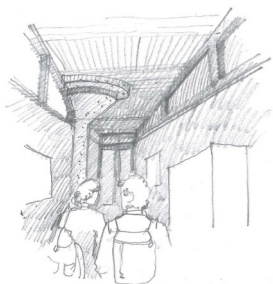
A-a. Refer to the surrounding buildings including Central Library, and street houses.

A-b. The major interventions and/or addition should be located on the rear buildings along Maliebaan Street. The existing timber structures on these blocks could be removed/replaced by the light weight structural framings with selected facade materials to approval.

A-c. Future alterations and/or new functions should enhance communal facilities where the building users meet and gather. ***These interrelation does not restricted only on the ground floor spaces.

B - CLIENT'S NEEDS

To improve indoor space qualities and building security.



AIMS:

B-A. To improve security issue of the Faculty buildings.

B-B. To improve the way finding and internal circulation routings (dark corridor in the north cluster).

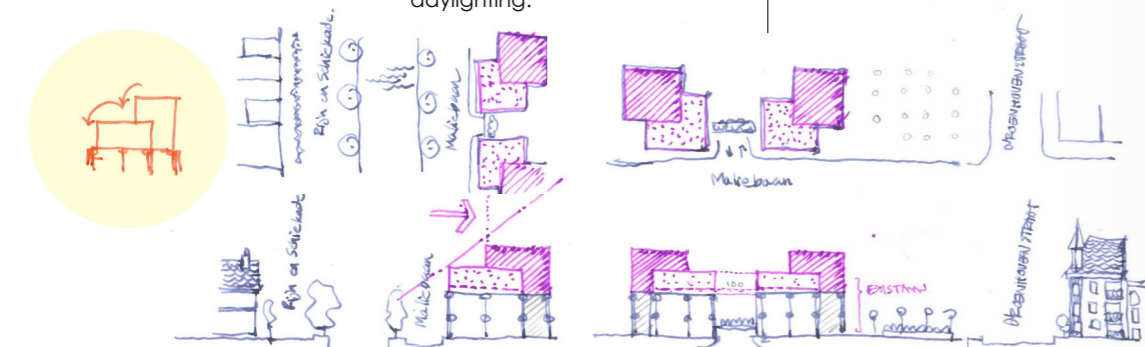
B-C. To improve interior climate control including heating system, condensation and daylighting.

ACTIONS:

B-a. Controlled central entries for the two clusters to be provided.

B-b. To rearrange the existing office layouts.
- Private rooms and communal functions to be positioned at the center.

Common spaces and open work space to be located adjacent to the facades.



C - PROGRAMMATIC

To be coresponded with the humanity studies, existing urban fabrics and future planning



AIMS:

C-A. To strengthen the future of humanity studies and to create a Club House of the inner city campus

C-B. The redevelopment scheme could be an extension of National Museum of Ethnology and Royal Museum of Antiquities (representing historical perspectives).

C-C. The redevelopment scheme could be another city's new attraction, along the Singles.

ACTIONS:

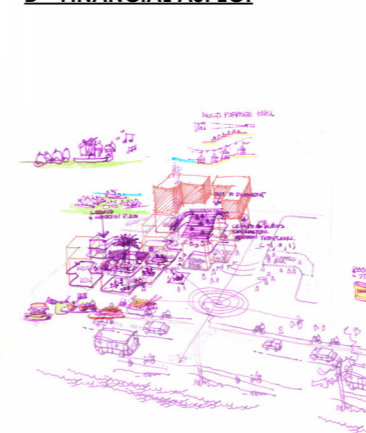
C-a. Series of new public facilities related to other dimensions of humanity studies should be provided in this intervention scheme, see the following examples.

1. Cultural Approach
 - Performance/Festive events
 - Temporary exhibition spaces
 - Food cultures: fusion restaurants ,coffee shop, bar
 - Material cultures: Sunday-market
2. Linguistic Approach
 - Music/Film study
 - New library spaces
 - Bookshop

C-b. The additional programs will be an illustration of World's contemporary and/or new culture through the lens of university students.

C-c. To provide new transportation system linking between the museums, the buildings and other attractions. These transportation should represent the image of Leiden city and Humanities Campus

D - FINANCIAL ASPECT



AIMS:

D-A. To improve the building efficiency of the existing building.

D-B. To reinforced the idea of World's contemporary and/or new culture venue.

D-C. To create a sustainable development by improving financial aspect of the buildings.

ACTIONS:

D-a. To rearrange the faculty's teaching staffs cubical offices. To reduce underutilized spaces at the private coffee corners on each floor.

D-b/c. To make a feasibility study of a 'Humanities Boutique Residences' proposal.

***The priority of this new additional is to create 'a place where people from different culture meet, gather and learn'. The proposed design should follow this key objective.

4. INTERVENTION STRATEGIES & DESIGN PROPOSALS

4.1. Programmatic Improvements

- 4.1.1. Architectural Design Ambitions
- 4.1.2. Program Proposals
- 4.1.3. Area Tabulation

4.2. Functional rearrangement / Re-zoning

- 4.2.1. Public zone
- 4.2.2. Private functions
- 4.2.3. Intersection area

4.3. Ground floor alterations

- 4.3.1. Urban connection at the public plaza
- 4.3.2. Activating the underutilized space/Covered courtyards
- 4.3.3. Creating identities
 - 4.3.3.A. The new entrance
 - 4.3.3.B. Sunken courtyard
 - 4.3.3.C. Raised platform
 - 4.3.3.D. The Green Library

4.4 Upper Floor Reconfiguration & the New Addition

- 4.4.1. To improving the building efficiency
- 4.4.2. To improve the quality of the interior space
- 4.4.3. To increase the quantity of existing gross floor area

4.5 Residential function requirement

- 4.5.1 The transformation of the existing interior layout
- 4.5.2 The new additions
- 4.5.3 Provision for future expansion

4.6 The reinterpretation of the original facade design language

- 4.6.1. Analysis
- 4.6.2 Design experiment
 - 4.6.2.A. Aluminum Cladding in purple powder coated
 - 4.6.2.B. Perforated brick block
 - 4.6.2.C. Terracotta Facade

Intervention Strategies & Design Proposals

To achieve those mentioned key objectives, this graduation project has explored series of intervention strategies as follows.

4.1. Programmatic Improvements

- 4.1.1. Architectural Design Ambitions
- 4.1.2. Program Proposals
- 4.1.3. Area Tabulation

4.2. Functional rearrangement / Re-zoning

- 4.2.1. Public zone
- 4.2.2. Private functions
- 4.2.3. Intersection area

4.3. Ground floor alterations

- 4.3.1. Urban connection at the public plaza
- 4.3.2. Activating the underutilized space/Covered courtyards
- 4.3.3. Creating identities
 - 4.3.3.A. The new entrance
 - 4.3.3.B. Sunken courtyard
 - 4.3.3.C. Raised platform
 - 4.3.3.D. The Green Library

4.4. Upper Floor Reconfiguration & the New Addition

- 4.4.1. To improving the building efficiency
- 4.4.2. To improve the quality of the interior space
- 4.4.3. To increase the quantity of existing gross floor area

4.5. Residential function requirement

- 4.5.1. The transformation of the existing interior layout
- 4.5.2. The new additions
- 4.5.3. Provision for future expansion

4.6. The reinterpretation of the original facade design language

- 4.6.1. Analysis
- 4.6.2. Design experiment
 - 4.6.2.A. Aluminum Cladding in purple powder coated
 - 4.6.2.B. Perforated brick block
 - 4.6.2.C. Terracotta Facade

4.1 Programmatic improvements

4.1.1. Architectural Design Ambitions

In addition to the architectural adaptive reuse, this redevelopment project is also aimed to be a prototype for the later development of the study procedure at Leiden University.

Throughout the four centuries, this university has mainly relied on the text-based research methodologies. Literature and written document investigations have been introduced as the preliminary devices of the study here. This method has always been a reliable information for some specific field of researches.

In contrast, this authentic methodological approach may not be fully applicable in the fast-changing society in the current situations, especially in the art and cultural studies. Besides the normal curriculum in the classrooms, the student should have more opportunities to have direct interactions with colleagues and visiting professors from the various cultural backgrounds. Taking these thoughts into consideration, the new approaches to the study procedure at Leiden University will be set as another ambition of my graduation project.

In this graduation project, I hope to transform Joop van Stigt's faculty buildings to be a great place to LIVE, WORK and PLAY.

Upon introducing these new facilities, the Leiden Humanity building will not only be a place where universities curriculum are occurred but also as a center for cultural learning. With this intervention strategy, will host invited artists or experts from different cultural background providing them with a physical framework for research, exchanging and creative experimentation. This "former private academic functions" will occasionally be opened to the public as a "LIVING MUSEUM" where students and public may interact.

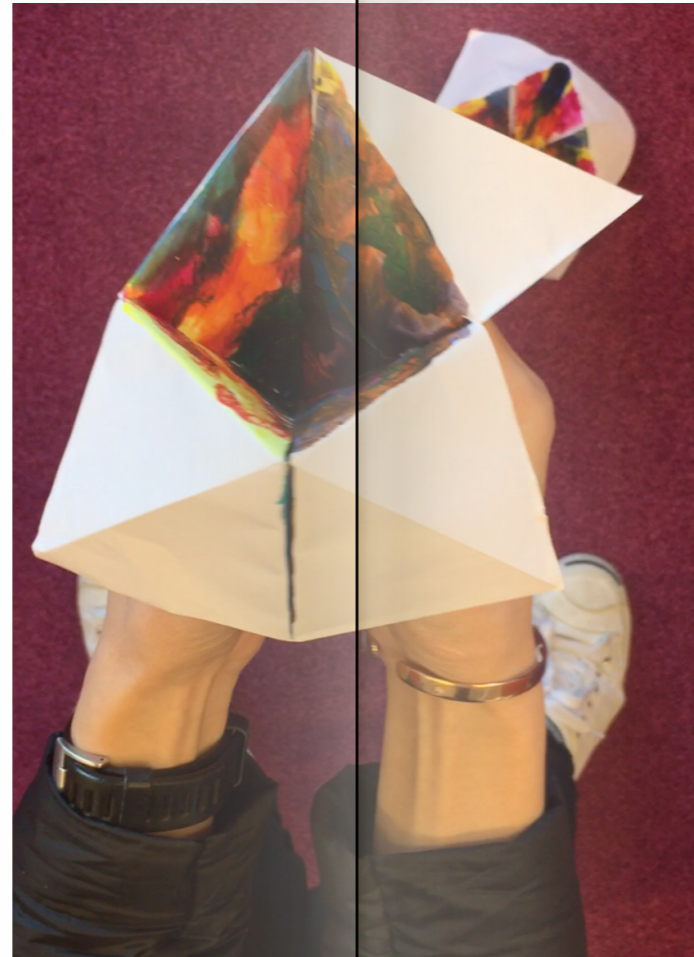
In conclusion, these Leiden Humanity buildings will be better equipped to facilitate community participation and engagement. This would help foster a greater understanding and appreciation for contemporary cultural studies whilst establishing the Faculty's key role in its promotion to the public.



A place to LIVE, WORK and PLAY.
The model represents the architectural ambition of this graduation project - W. Taemeyachat, November 2017

The new life

The model illustrates new activities and social interaction after the redevelopment -
S. Vangvasu November 2017



Intervention Strategies & Design Proposals

To achieve those mentioned key objectives, this graduation project has explored series of intervention strategies as follows.

4.1. Programmatic Improvements

- 4.1.1. Architectural Design Ambitions
- 4.1.2. Program Proposals
- 4.1.3. Area Tabulation

4.2. Functional rearrangement / Re-zoning

- 4.2.1. Public zone
- 4.2.2. Private functions
- 4.2.3. Intersection area

4.3. Ground floor alterations

- 4.3.1. Urban connection at the public plaza
- 4.3.2. Activating the underutilized space/Covered courtyards
- 4.3.3. Creating identities
 - 4.3.3.A. The new entrance
 - 4.3.3.B. Sunken courtyard
 - 4.3.3.C. Raised platform
 - 4.3.3.D. The Green Library

4.4 Upper Floor Reconfiguration & the New Addition

- 4.4.1. To improving the building efficiency
- 4.4.2. To improve the quality of the interior space
- 4.4.3. To increase the quantity of existing gross floor area

4.5 Residential function requirement

- 4.5.1 The transformation of the existing interior layout
- 4.5.2 The new additions
- 4.5.3 Provision for future expansion

4.6 The reinterpretation of the original facade design language

- 4.6.1. Analysis
- 4.6.2 Design experiment
 - 4.6.2.A. Aluminum Cladding in purple powder coated
 - 4.6.2.B. Perforated brick block
 - 4.6.2.C. Terracotta Facade

4.2 Functional rearrangement / Re-zoning

In order to improve the way-finding and experiential journey through this structuralism repetition language, it is crucial to bring clarity to the current functional organization. In line with the original facilities and requirement for new functions, the improvement can be achieved by the following methods:

4.2.1. Public Zone

Public spaces and communal facilities will be positioned at along the Witte Singel side. These include a new reception hall, exhibition hall, coffee bar, faculty canteen, restaurants, bookshop and administration facility. By means of this strategy, the front portion of the faculty buildings is transformed into a public intact zone. At the same time, this proposal helps negate the need for the new visitors to navigate in the confusing passageway.

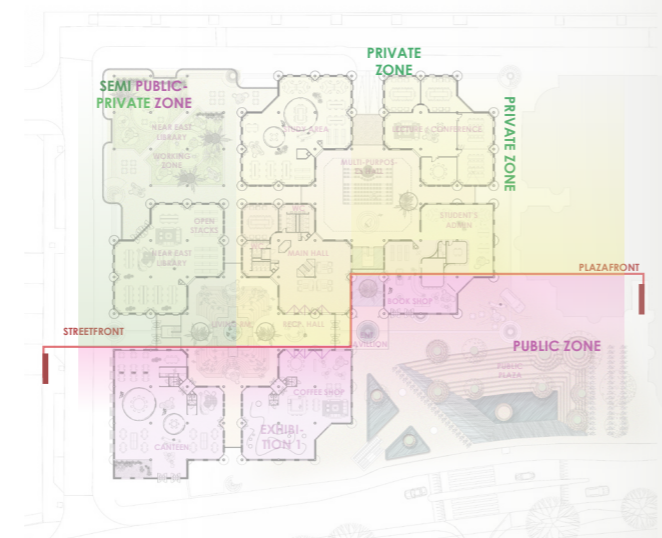
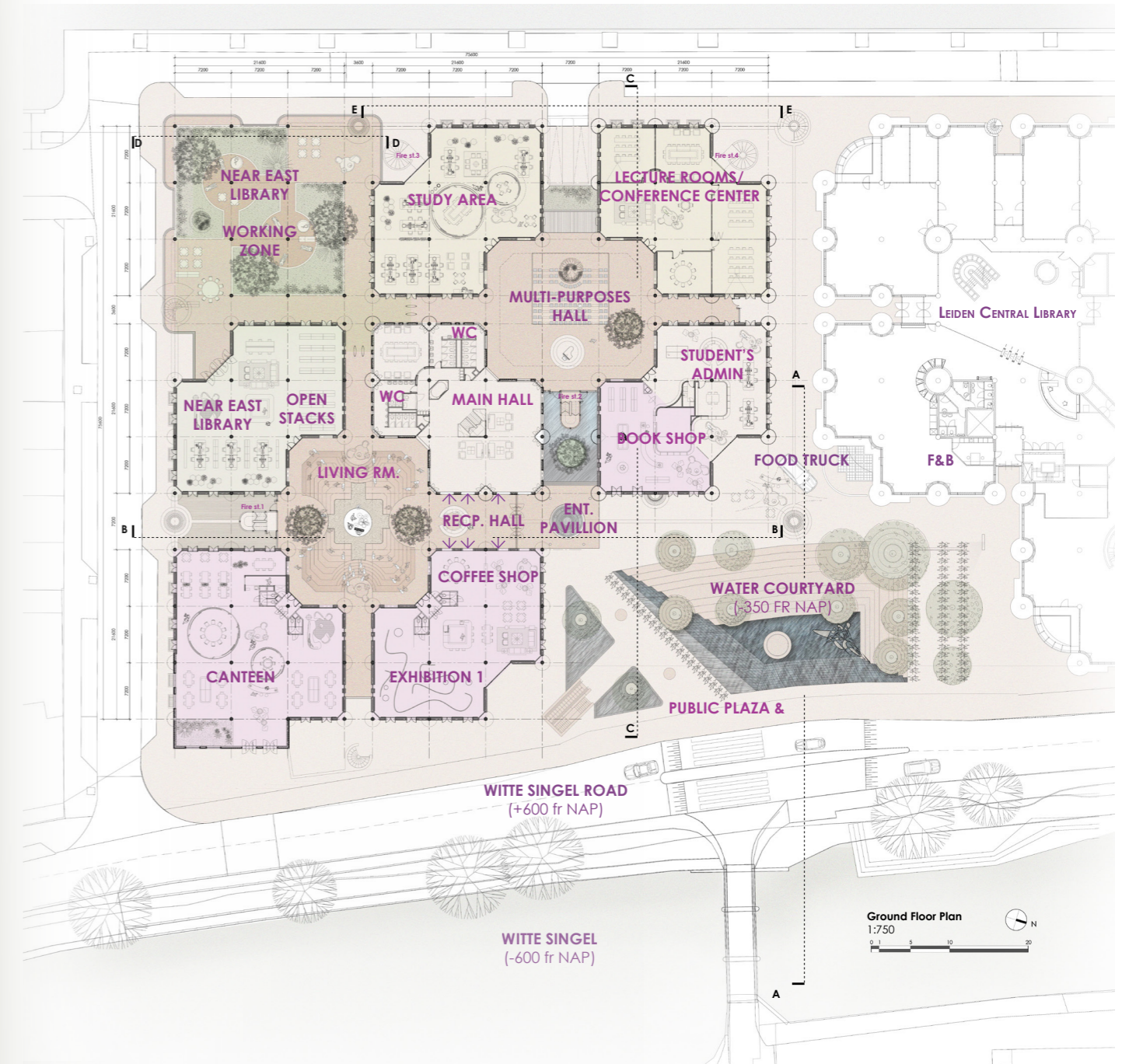
On the South Clusters, communal functions and main vertical circulation routing are housed in the middle tower. Existing elevator and timber staircase are retained while converting the original office layout to a series of medium-size conference rooms and communal toilets.

4.2.2. Private Functions

Other Private functions will be located at the rear side and the upper floors of this complex. This reduces the need for public circulation to this area and simplifies the public route through the buildings.

4.2.3. Intersection area

The Near East Library will be relocated to the 'Mushroom garden', the quietest corner of campus. This re-zoning reserves one of the most spatial spaces of the built fabric for public usage in the form of shared learning space between the internal and external users.



Zoning diagram - W. Taemeyachat, November 2017

4.3. Ground floor alterations

- 4.3.1. Urban connection at the public plaza
- 4.3.2. Activating the underutilized space/Covered courtyards
- 4.3.3. Creating identities
 - 4.3.3.A. The new entrance
 - 4.3.3.B. Sunken courtyard
 - 4.3.3.C. Raised platform
 - 4.3.3.D. The Green Library

4.3.1. Urban connection at the public plaza

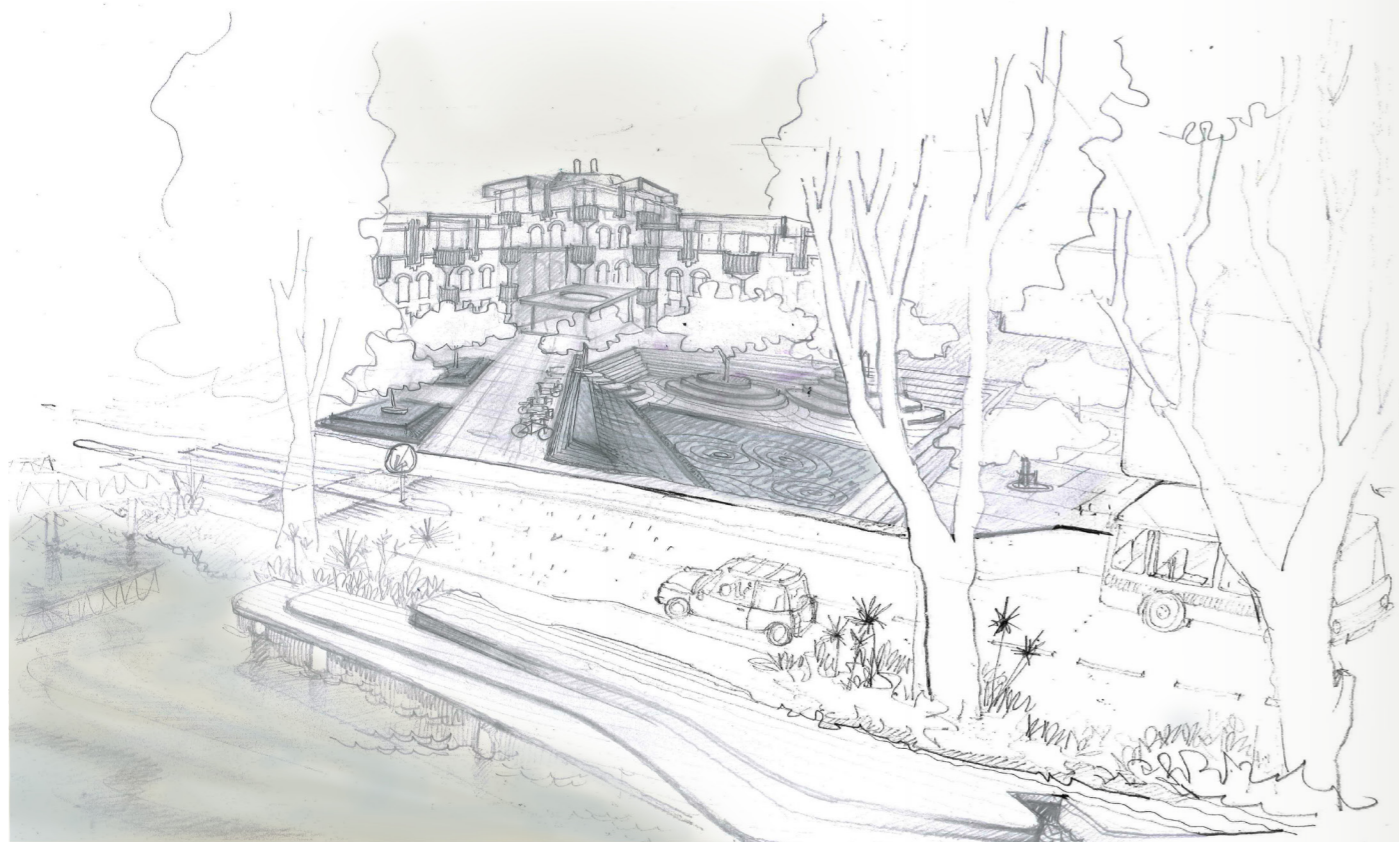
Tracing back at the original intention of the Inner city campus, the five architects aimed to reintroduce historic city fabric in the campus by integrating the network of opened plazas, internal courtyard spaces, public squares into each building.

In the public plaza, adjacent to Van Stigt's buildings, have been altered by the building users through time. The plazas are fully occupied by bicycle parking lots. Although these open spaces still function as meeting place for people, they have not reflected the function that was originally meant to be here. A gathering place under the tree sheds is now a space for a traffic where people spend a short period of time to park their vehicles then separately go travel to their destinations.

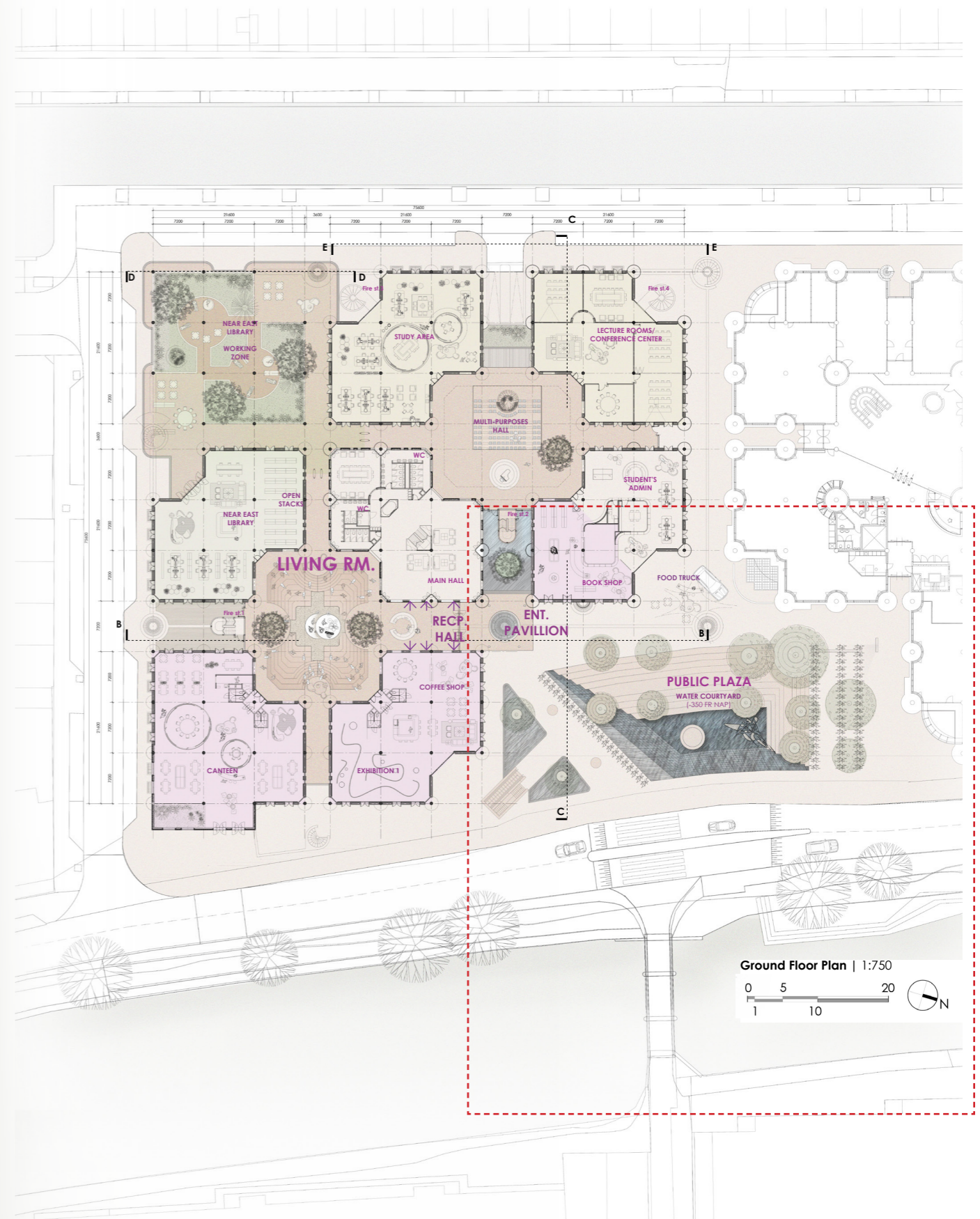
Thus, it is important to reinterpret the relationship between the building and the urban tissues. An alteration to the existing public plaza is aimed to strengthen the relationship between the water-scape and the brick masonry buildings. The new space will be a venue for large events and outdoor performances. These activities enhance a lively appearance of the humanity campus and repaint a romantic scenery on the historic waterway of Leiden city. A combination of water-scape, small boats and a pile of bicycles embrace the today's image of the Dutch city.



Sketch of PN van Eyckhof Building - Joop van Stigt, the 1970s



Sketch of Witte Singel and the refurbished public plaza looking towards PN van Eyckhof Building - W. Taemeyachet, March 2018





Existing conditions



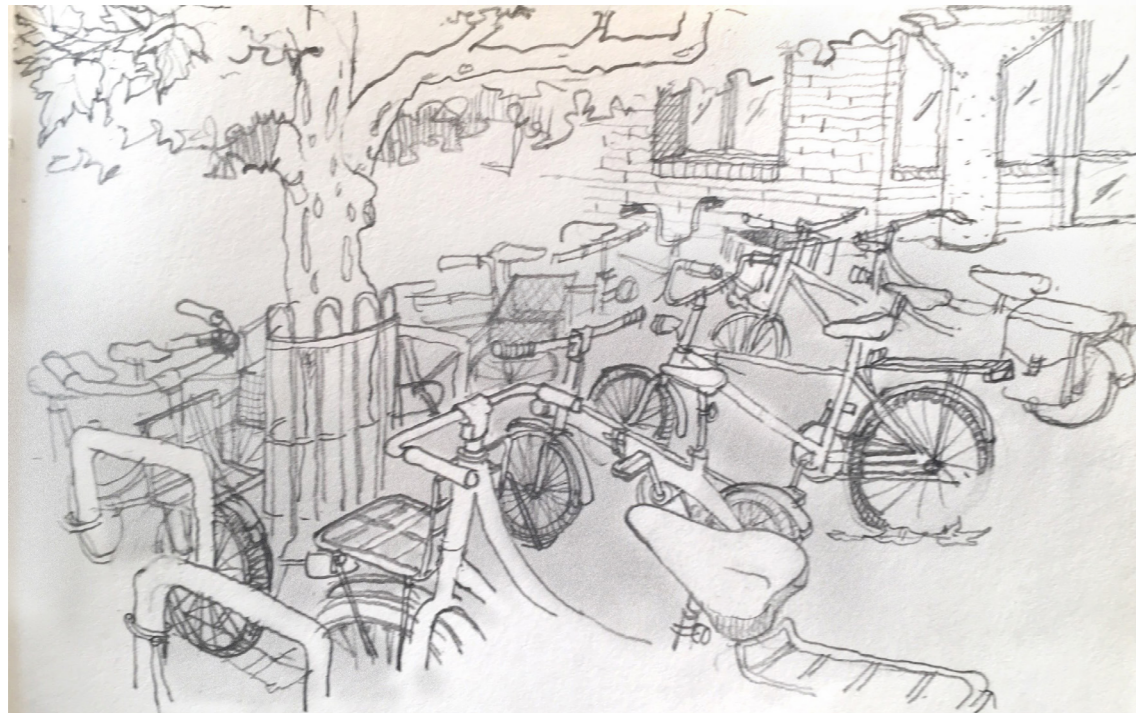
View of the main circulation routing towards new entrance pavilion- W. Taemeyachat, 2018



Existing conditions



View of the refurbished public plaza with summer activities - W. Taemeyachat, 2018



Sketch of public plaza in-front of PN van Eyckhof Building and the Central Library - W. Taemeyachat, 2017



View of the refurbished public plaza with outdoor installation arts - W. Taemeyachat, 2018



Sketch of Witte Singel looking towards PN van Eyckhof Building - W. Taemeyachat, 2017



View of the refurbished public plaza with cultural activities - W. Taemeyachat, 2018



Existing conditions



View of the refurbished public plaza towards Leiden's city center skyline - W. Taemeyachat, 2018



Existing conditions



View of the new entrance pavilion - W. Taemeyachat, 2018

4.3. Ground floor alterations

4.3.1. Urban connection at the public plaza

4.3.2. Activating the underutilized space / Covered courtyards

4.3.3. Creating identities

- 4.3.3.A. The new entrance
- 4.3.3.B. Sunken courtyard
- 4.3.3.C. Raised platform
- 4.3.3.D. The Green Library

4.3.2 Activating the underutilized space / Covered courtyards

The enclosing of the internal opened courtyards provides flexible and multi-purpose space capable of supporting cultural performance, film screenings, live music, large lectures and other practices that can't be held appropriately in an existing space.

Looking through the functional aspect, the utilizing the internal courtyards contribute to additional museum space. At the same time, it is certainly helpful in order to group together different institutions in each tower.

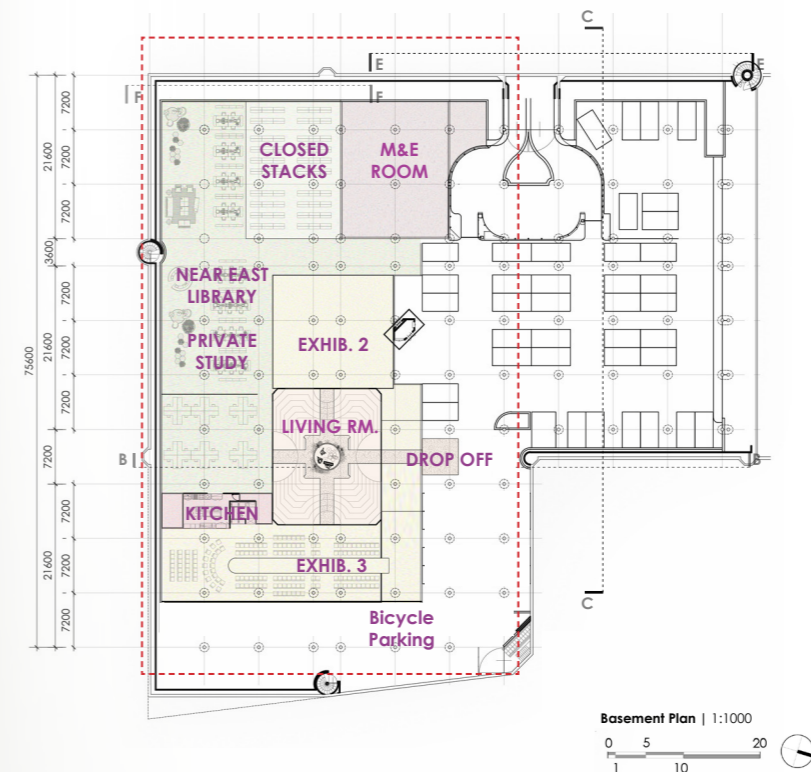
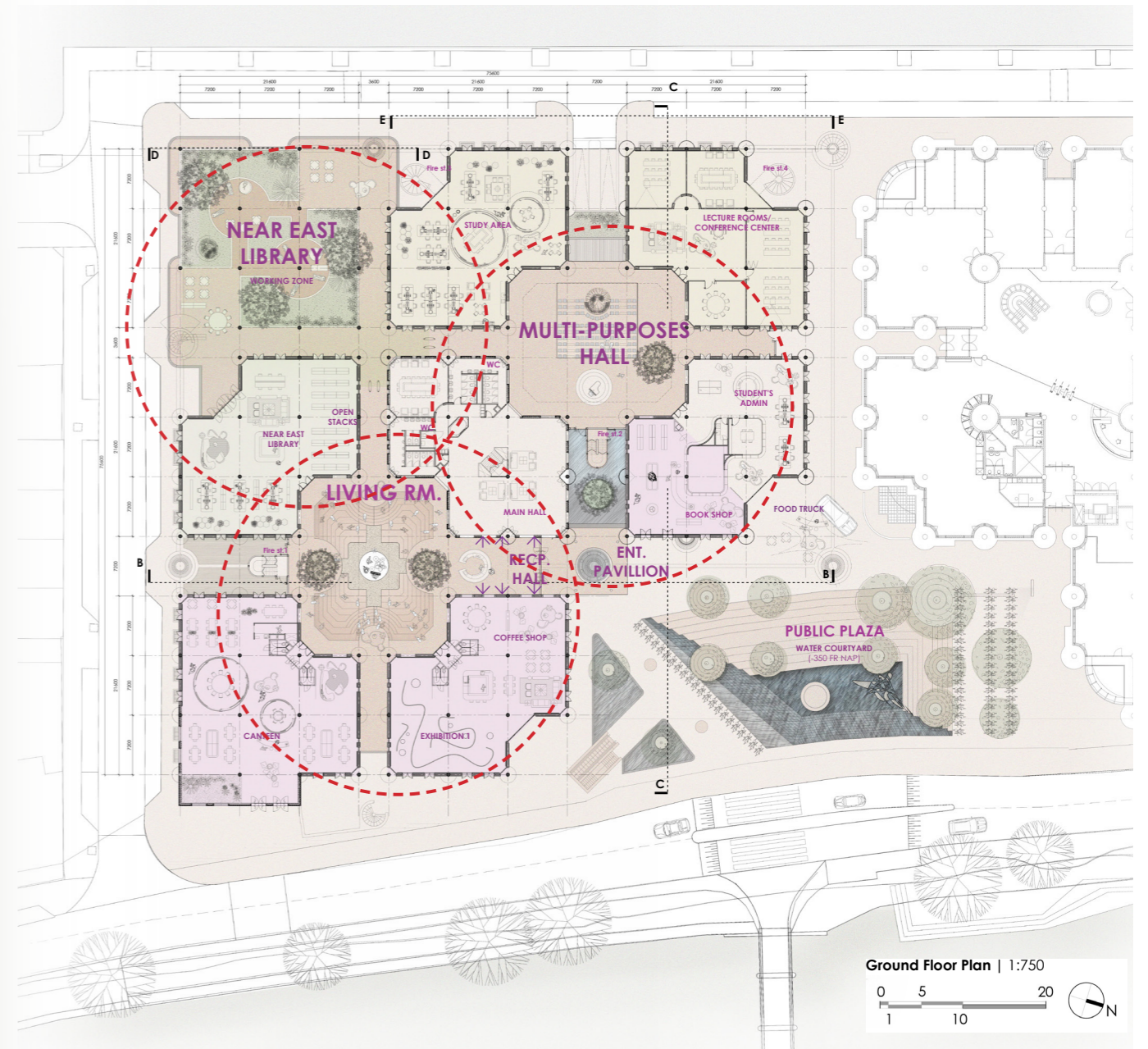
These new covered courtyards will also offer more comfortable environment for the users. At the same time, the new comfort space will also help lengthen the duration that people will spend in these space throughout the years. It can now be balanced with other strategies in which outdoor spaces enrich the range of experience within the faculty's boundaries.

In addition, by dedicating these former outdoor space for new internal functions, the new covered courtyard will also help improve the energy efficiency of these buildings. It cut down approximately 40% of the existing thermal bridges issues.

Aide to the ground floor space, the current basement floor also offers high transformation potentials. By taking advantages from the car-free culture, the basement space could be converted into functional spaces including exhibition halls, a kitchen for the canteen, closed stacks of the library and M&E space. At the same time, 400 sheltered bicycle parking lots are provided on this new basement floor.



Existing conditions



Existing conditions

4.3. Ground floor alterations

4.3.1. Urban connection at the public plaza

4.3.2. Activating the underutilized space/Covered courtyards

4.3.3. Creating identities

4.3.3.A. The new entrance

4.3.3.B. Sunken courtyard

4.3.3.C. Raised platform

4.3.3.D. The Green Library

4.3.3. Creating identities

4.3.3.A. Sunken courtyard

4.3.3.B. Raised platform

4.3.3.C. The Green Library

As mentioned in the first chapter, I believe that alteration to this extant built fabric should offer a clear sense of directions to the users. This could be done in several method and technique. One method that helps improve the way-finding and internal circulation routings are the specific identity creation. If we look for design solutions from urban fabric of New York and Barcelona, we would notice that the confusing atmosphere of the universal modules could be resolved by assigning landmarks to break the repetition pattern in the cityscape.

This landmark creation is commonly done in the extruding method. The city's landmarks such as the Sagrada Familia and the Empire State Tower help people to orient themselves in the complex environments. On the other hand, the subtraction is actually can be introduced as another technique to create a new identity for the existing buildings. This referred to the scenery of Central Park area in Manhattan.

While creating new identities on the ground floor, this alteration should also contribute to the poor atmosphere improvement as well. These new landmarks should celebrate the social interaction strategy and help enhance the new activities occurring on these ground floor spaces. In addition, the landmarks shall be a link between various levels, offering a continuation of experience from the ground floor to the upper story functions.

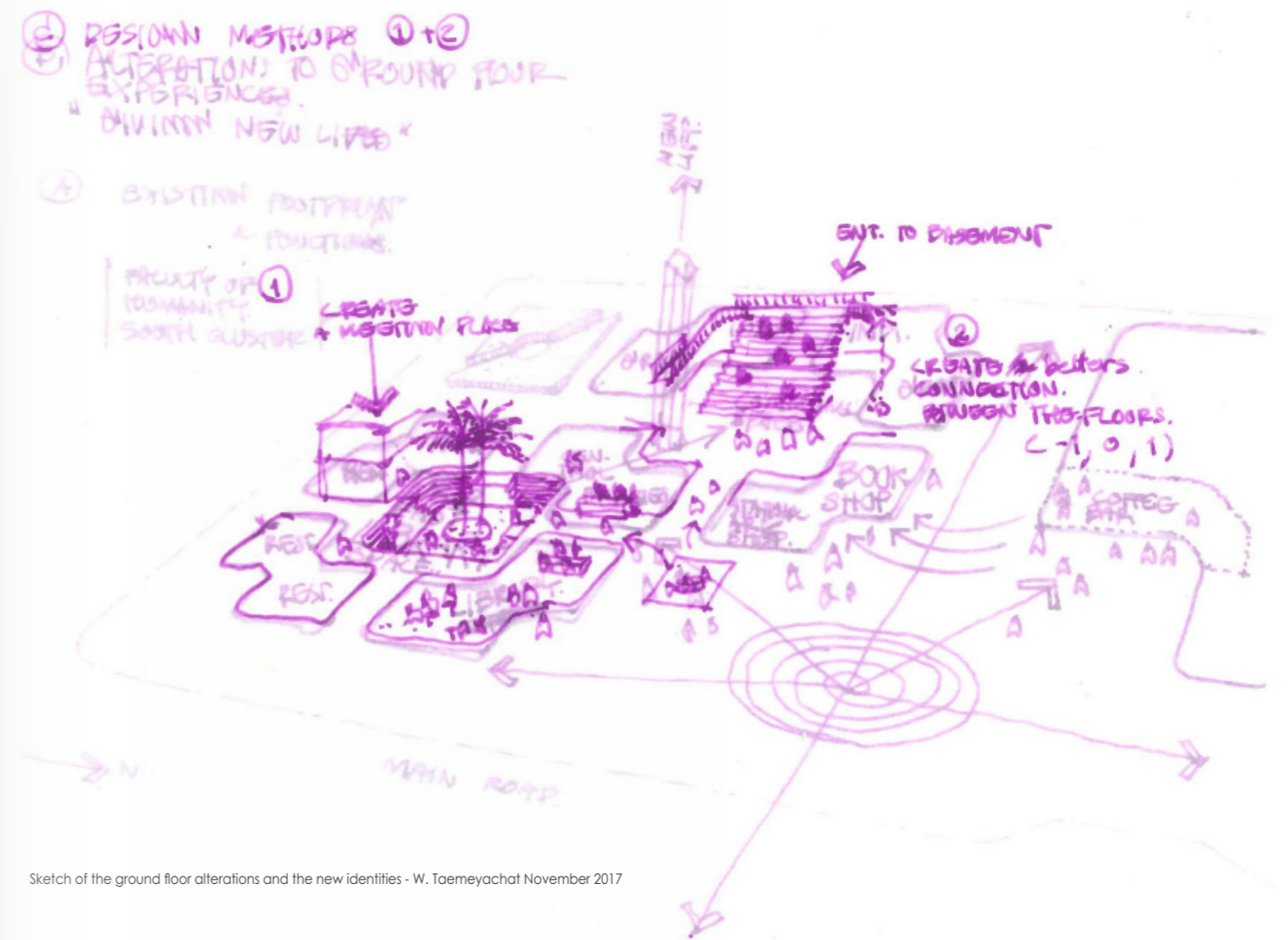
In the technical view, the new element on the ground floor should also be paved/finished by brick material which regards heavy-duty usages. The reintroducing of the original material offer continuation of outdoor environment to the users while respecting the original design ideas.



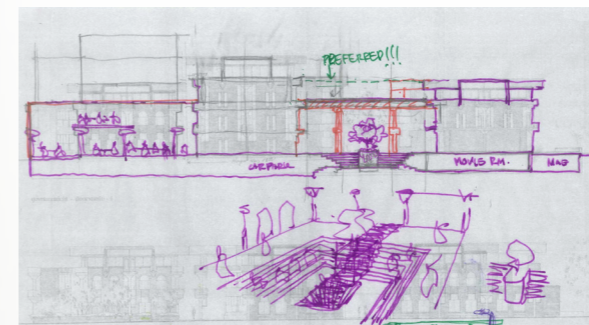
The Sagrada Familia, Barcelona - dezeen.com



The Central Park, New York - telegraph.co.uk



Sketch of the ground floor alterations and the new identities - W. Taemeyachat November 2017



4.3. Ground floor alterations

4.3.3. Creating identities

4.3.3.A. The new entrance

4.3.3.B. Sunken courtyard

4.3.3.C. Raised platform

4.3.3.D. The Green Library



Existing conditions



View of the new water feature in the entrance pavilion- W. Taemeyachat, 2018



Existing conditions



View of the reception hall - W. Taemeyachat, 2018

4.3. Ground floor alterations

4.3.3. Creating identities

4.3.3.A. The new entrance

4.3.3.B. Sunken courtyard

4.3.3.C. Raised platform

4.3.3.D. The Green Library



Existing conditions



View of the new sunken courtyard - W. Taemeyachat, 2018

4.3. Ground floor alterations

4.3.3. Creating identities

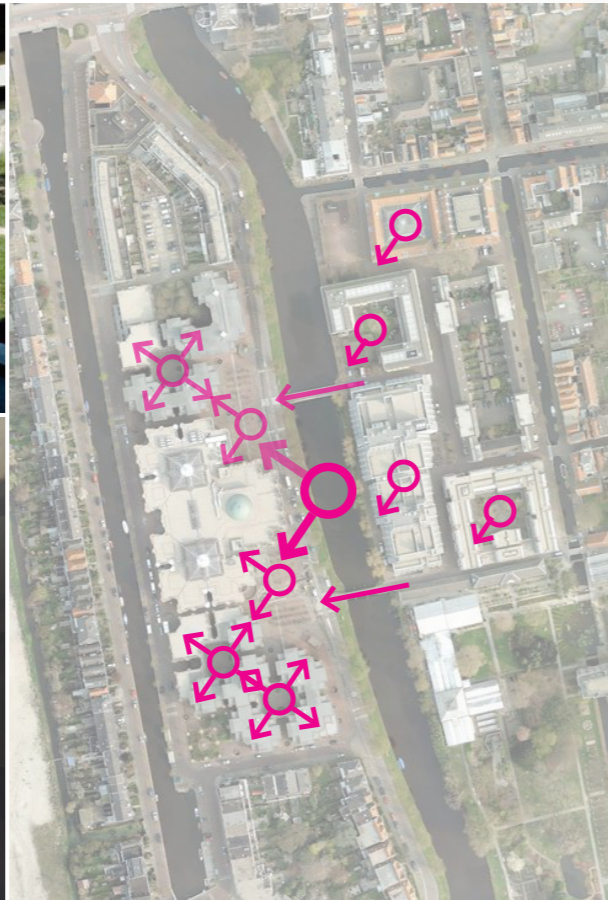
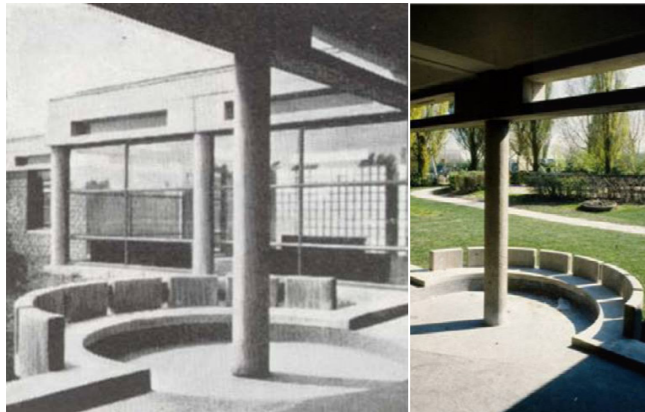
4.3.3.A. The new entrance

4.3.3.B. Sunken courtyard

4.3.3.C. Raised platform

4.3.3.D. The Green Library

THE 70'S ZITKUIL



The design proposal will be a **Club House of the inner city campus**, with series of facilities for the future humanity studies .



'The Living Room'

4.3. Ground floor alterations

4.3.3. Creating identities

4.3.3.A. The new entrance

4.3.3.B. Sunken courtyard

4.3.3.C. Raised platform

4.3.3.D. The Green Library



Cultural performances at Leiden University



' a Living Museum'

4.3. Ground floor alterations

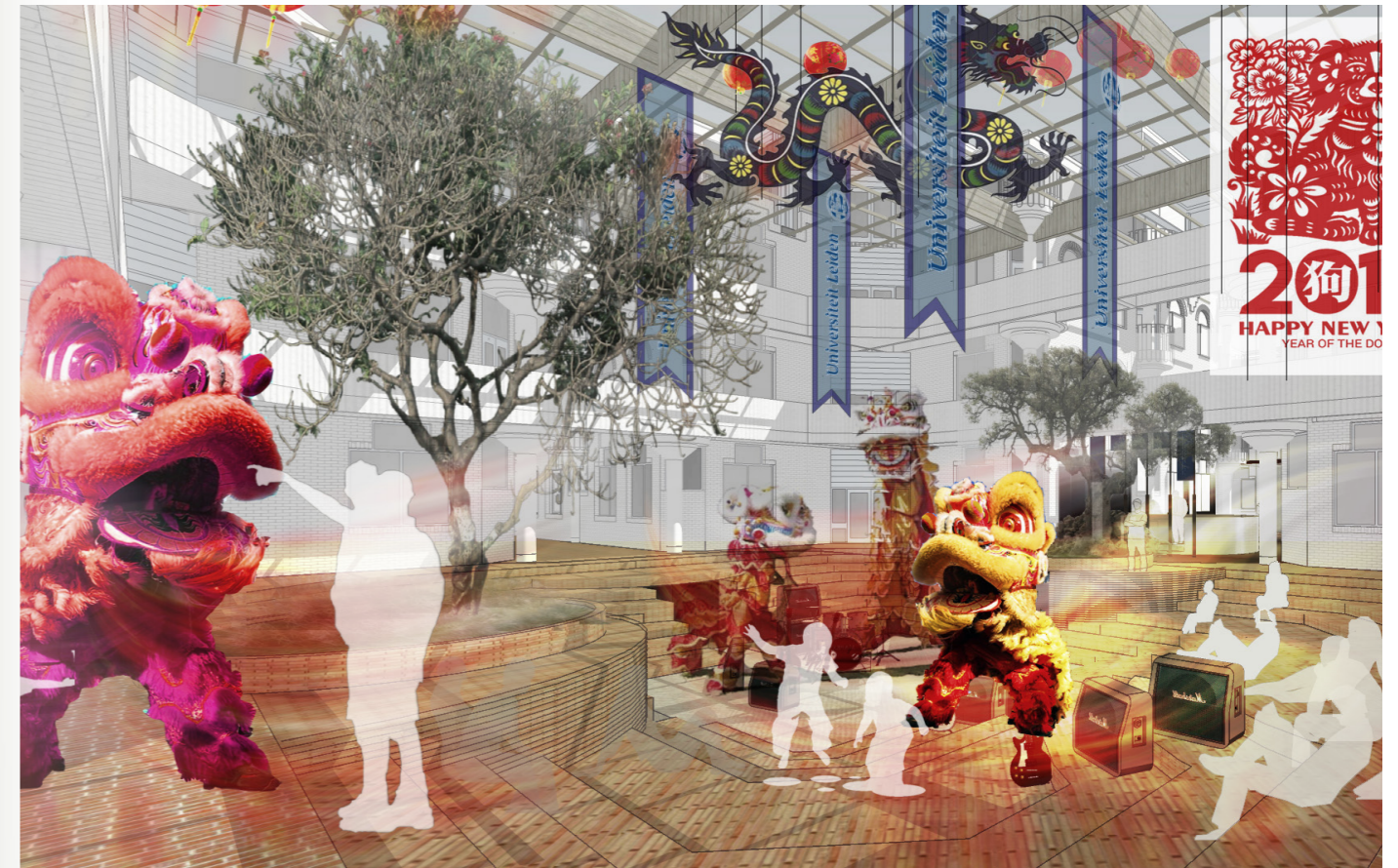
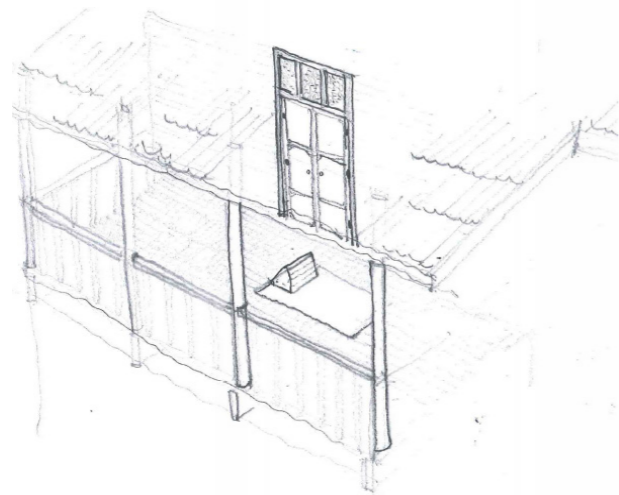
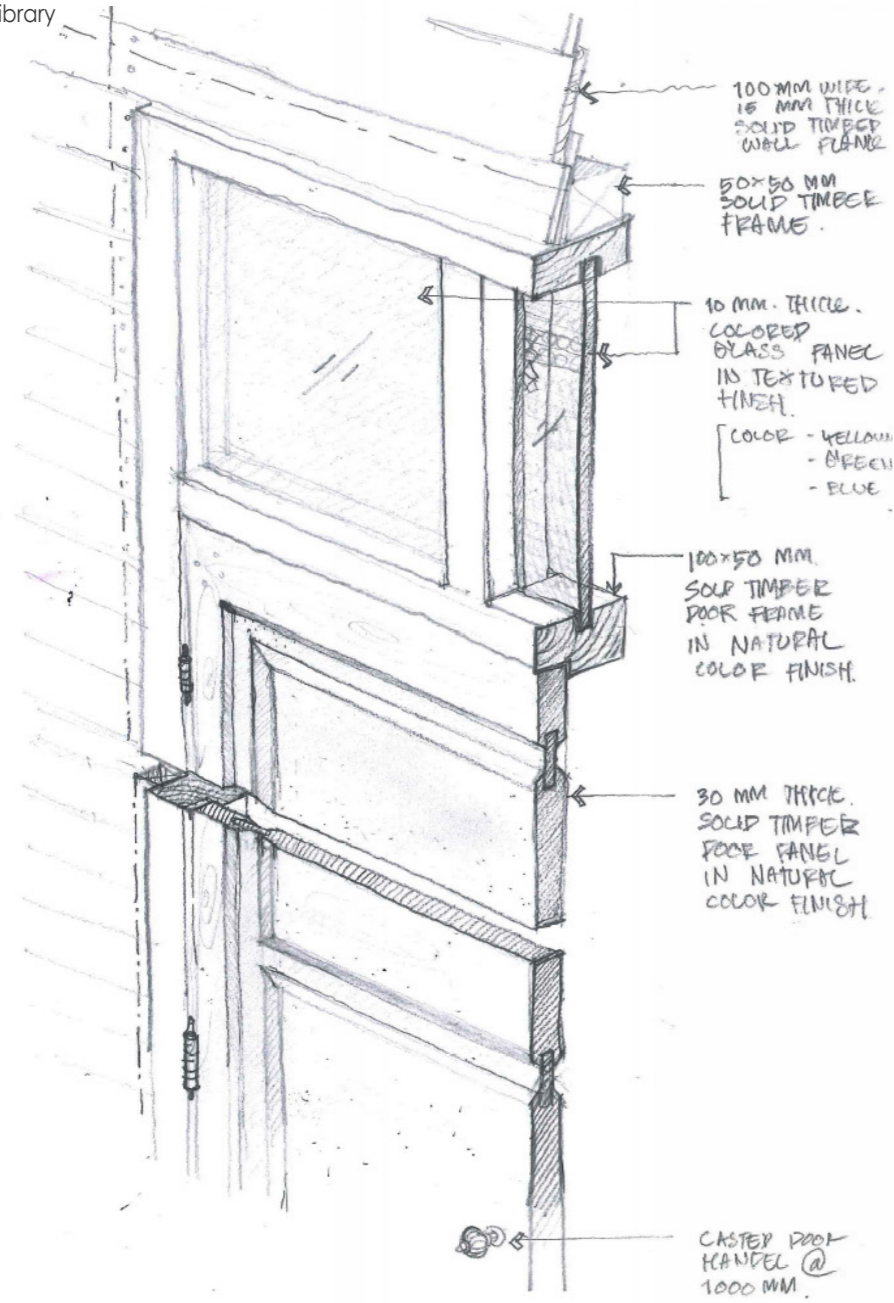
4.3.3. Creating identities

4.3.3.A. The new entrance

4.3.3.B. Sunken courtyard

4.3.3.C. Raised platform

4.3.3.D. The Green Library



' a Living Museum'

4.3. Ground floor alterations

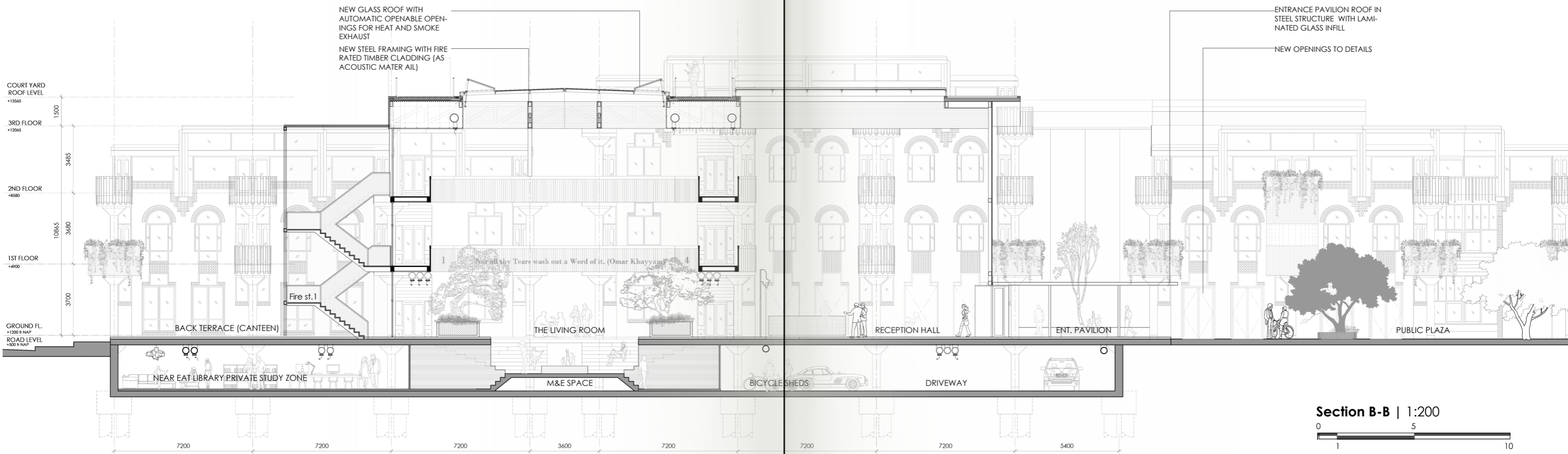
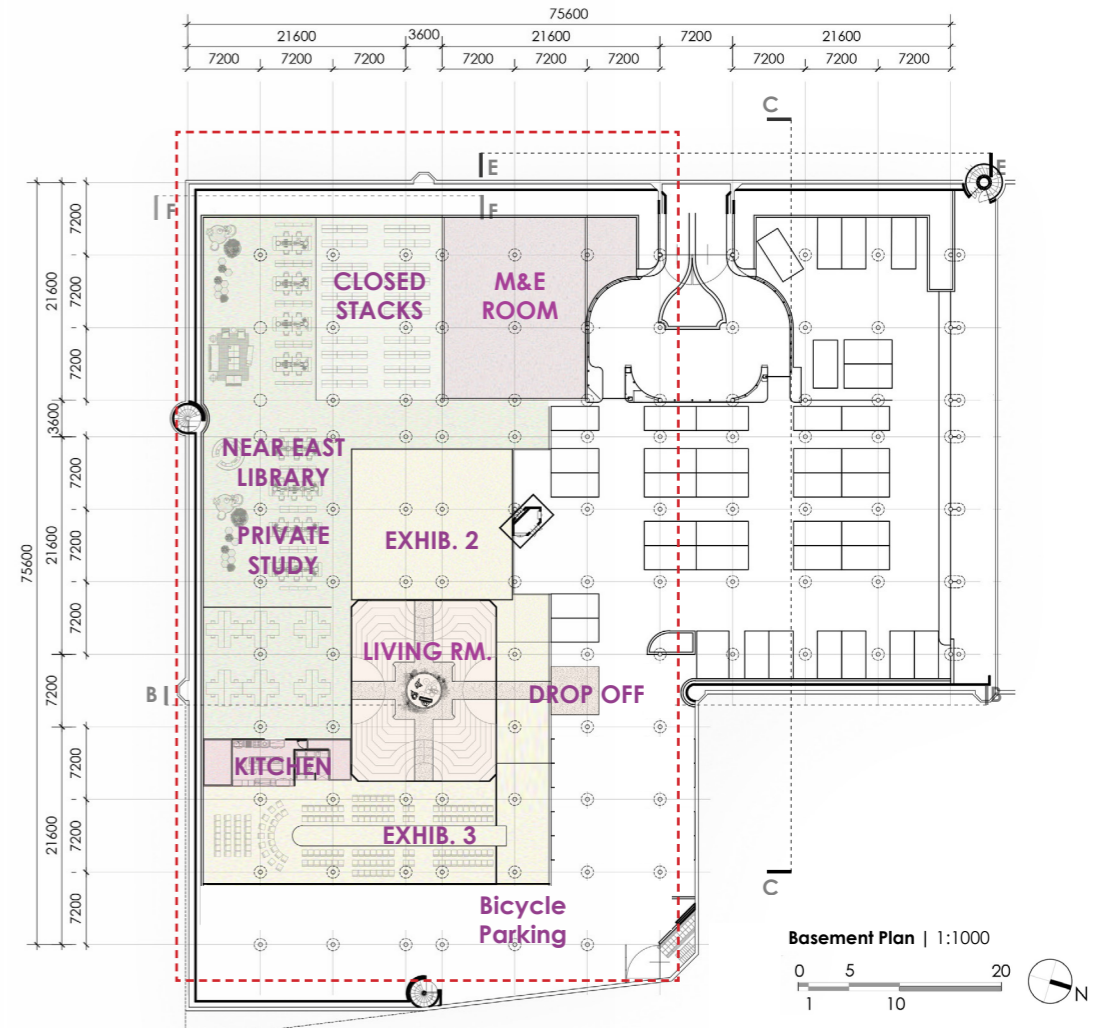
4.3.3. Creating identities

4.3.3.A. The new entrance

4.3.3.B. Sunken courtyard

4.3

4.3



4.3. Ground floor alterations

4.3.3. Creating identities

4.3.3.A. The new entrance

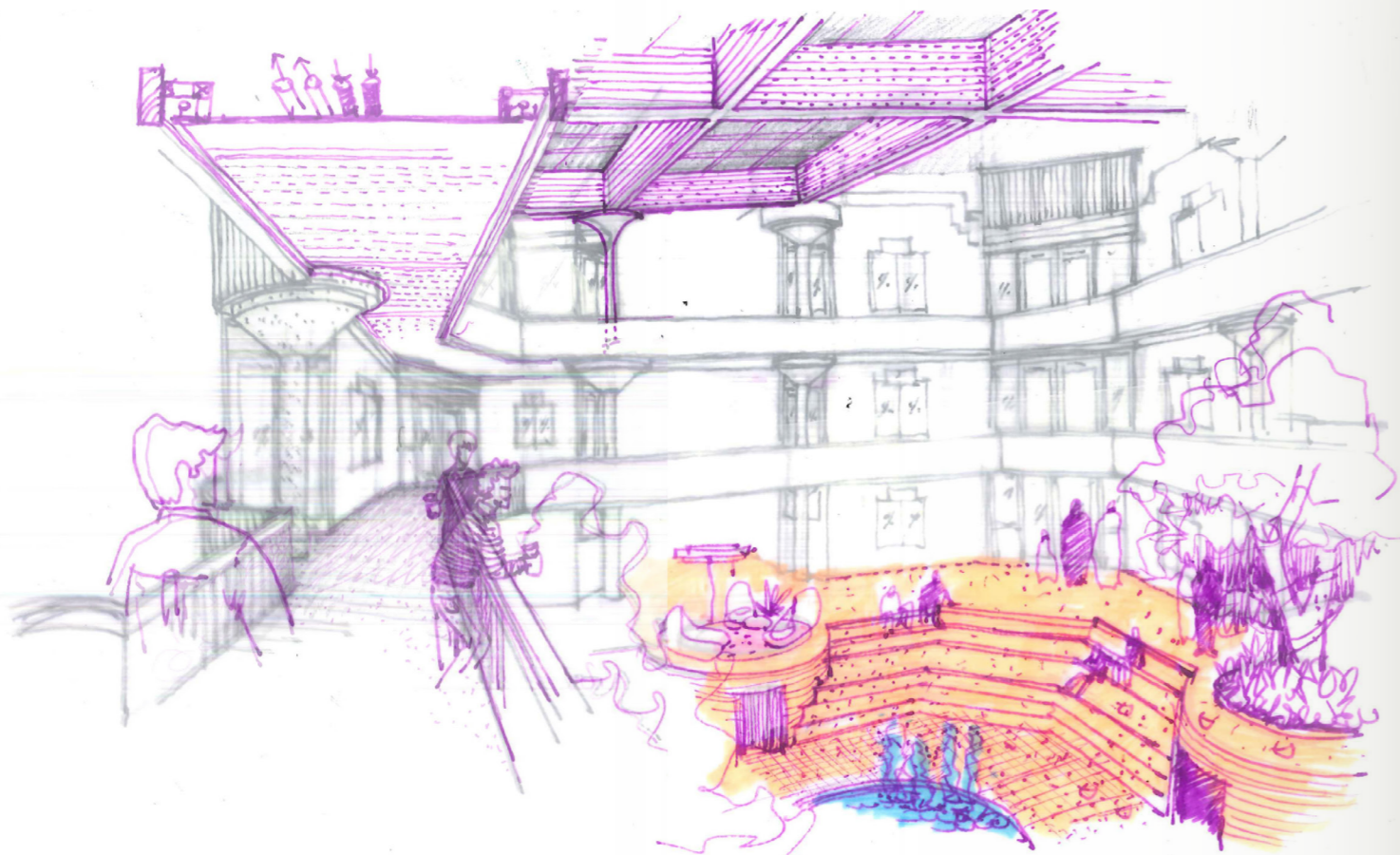
4.3.3.B. Sunken courtyard

4.3.3.C. Raised platform

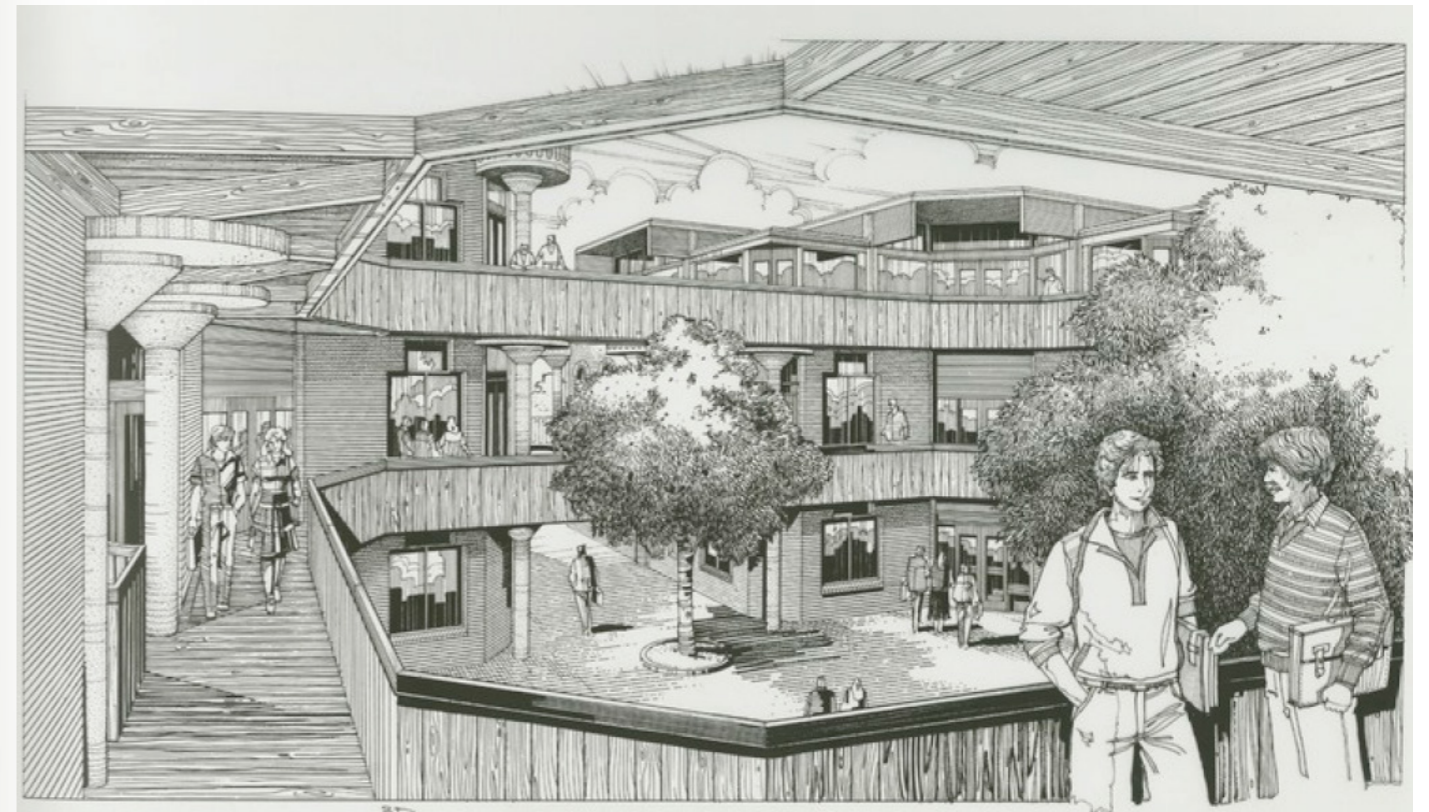
4.3.3.D. The Green Library

Design Experiment

The refurbishment of the Social Interaction Space



Sketch of the refurbished inner courtyard atmosphere - W. Taemeyachat, 2018



Sketch of the inner courtyard atmosphere - Joop van Stigt, the 1970s

4.3. Ground floor alterations

4.3.3. Creating identities

4.3.3.A. The new entrance

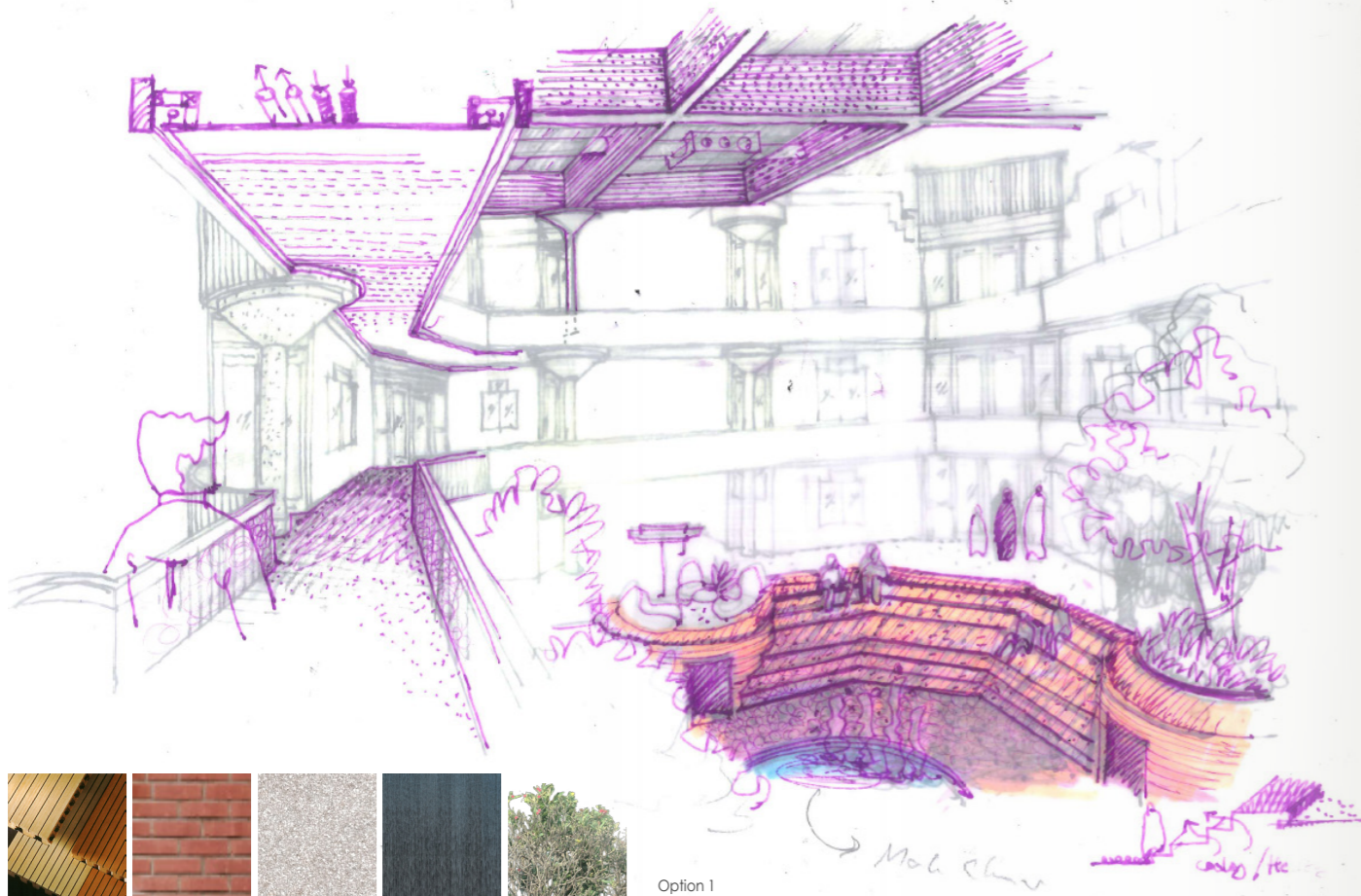
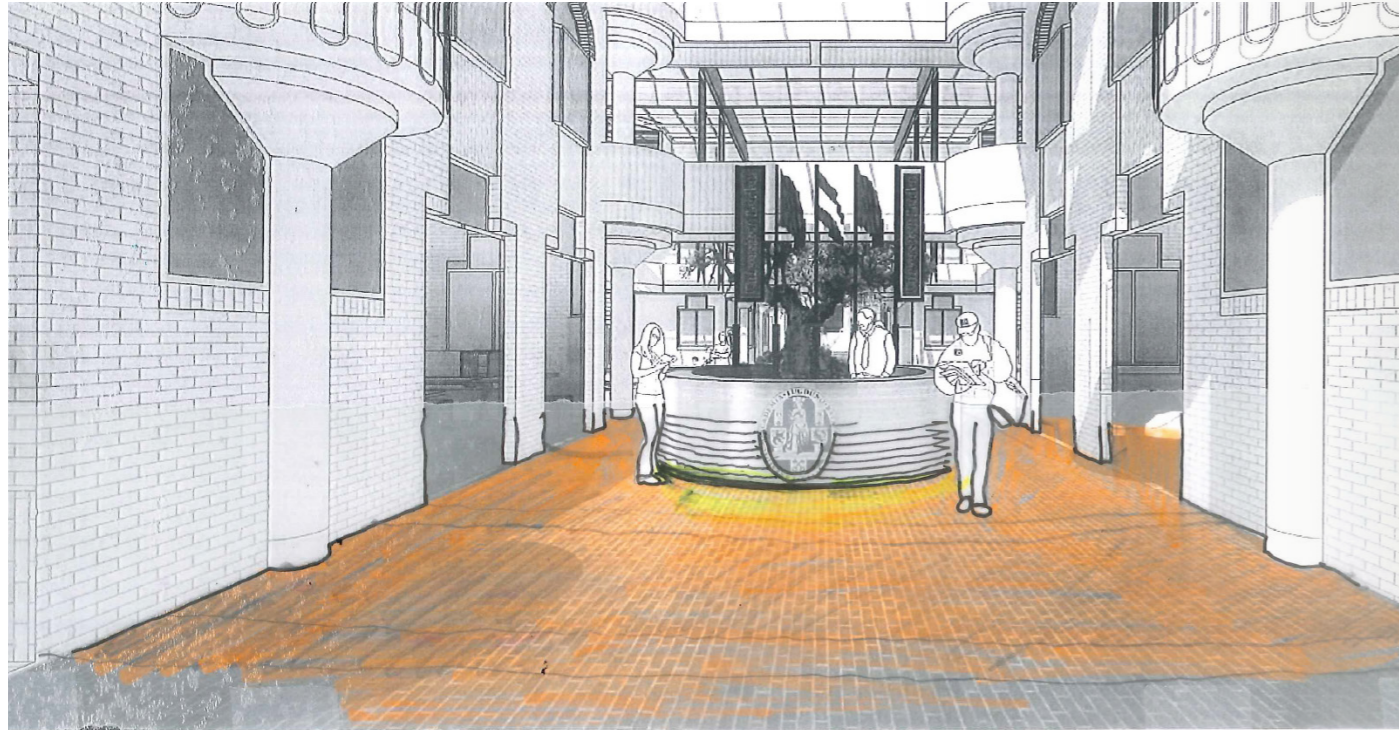
4.3.3.B. Sunken courtyard

4.3.3.C. Raised platform

4.3.3.D. The Green Library

Design Experiment

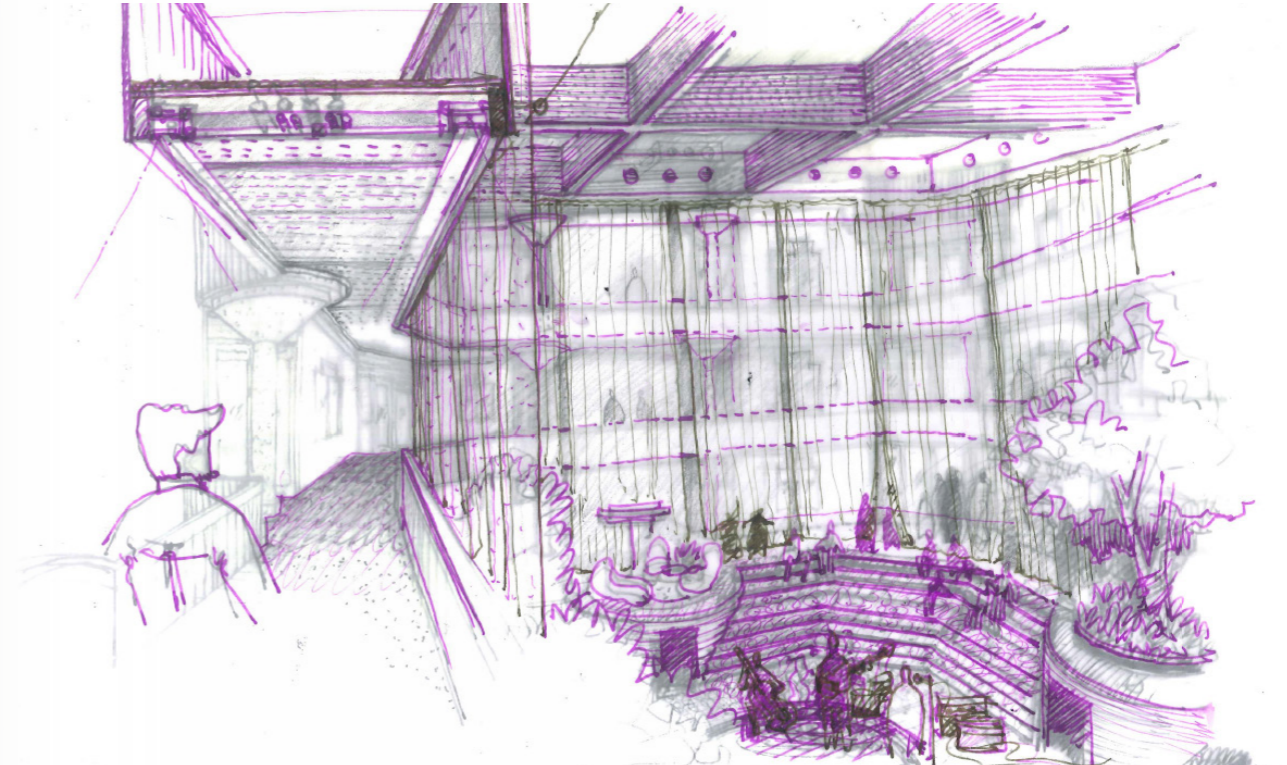
The continuation of outdoor experience through the material selections



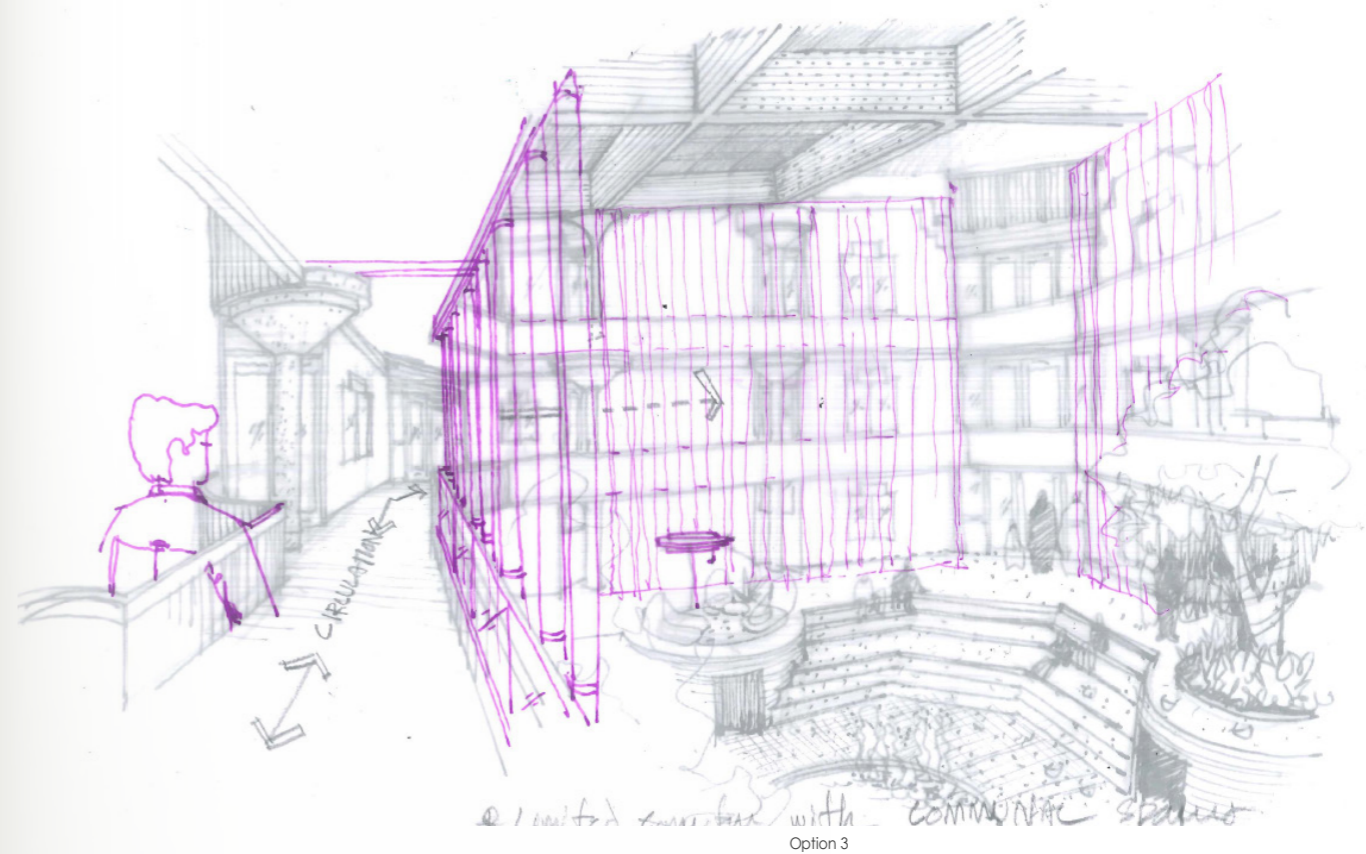
Option 1

Design Experiment

The Acoustic and noise issues



Option 2



Option 3

4.3. Ground floor alterations

4.3.3. Creating identities

4.3.3.A. The new entrance

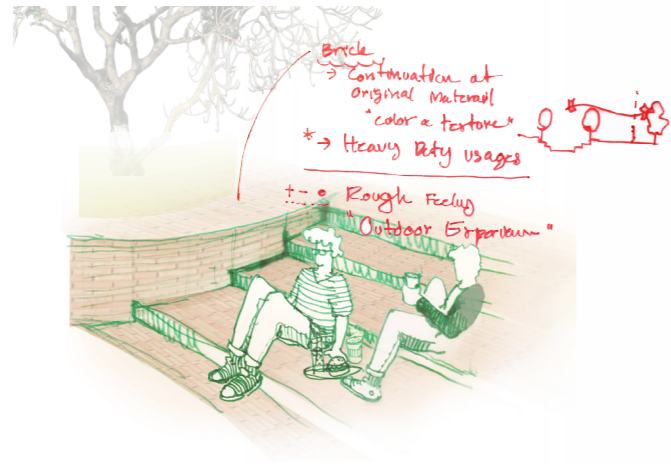
4.3.3.B. Sunken courtyard

4.3.3.C. Raised platform

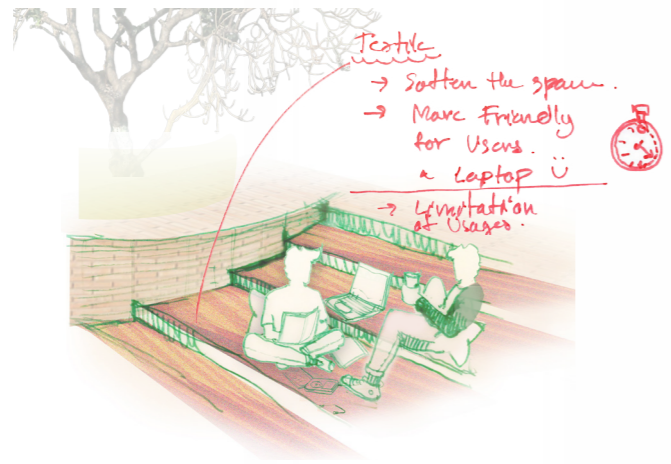
4.3.3.D. The Green Library

Design Experiment

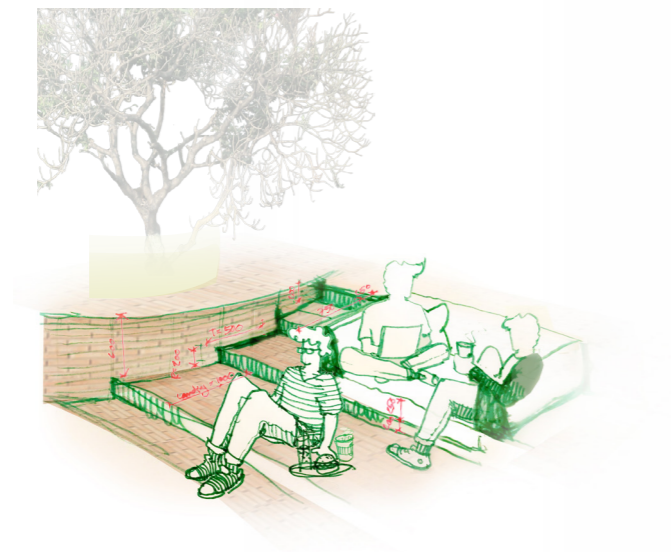
The Living Room experience



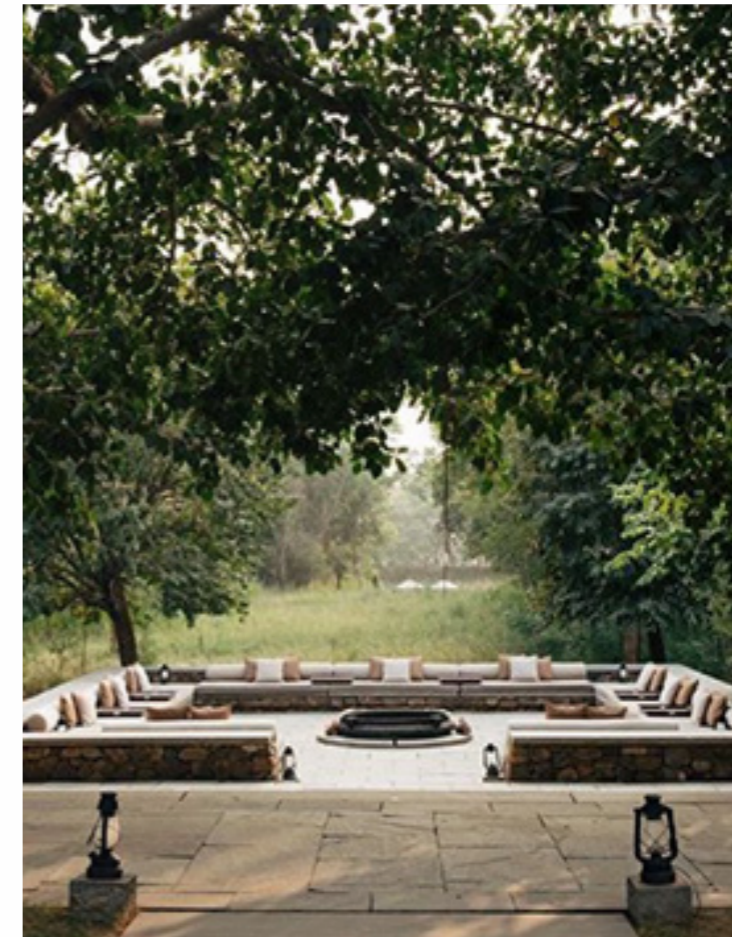
Option 1



Option 2



Option 3



Outdoor seating - Aman i Khas

4.3. Ground floor alterations

4.3.3. Creating identities

4.3.3.A. The new entrance

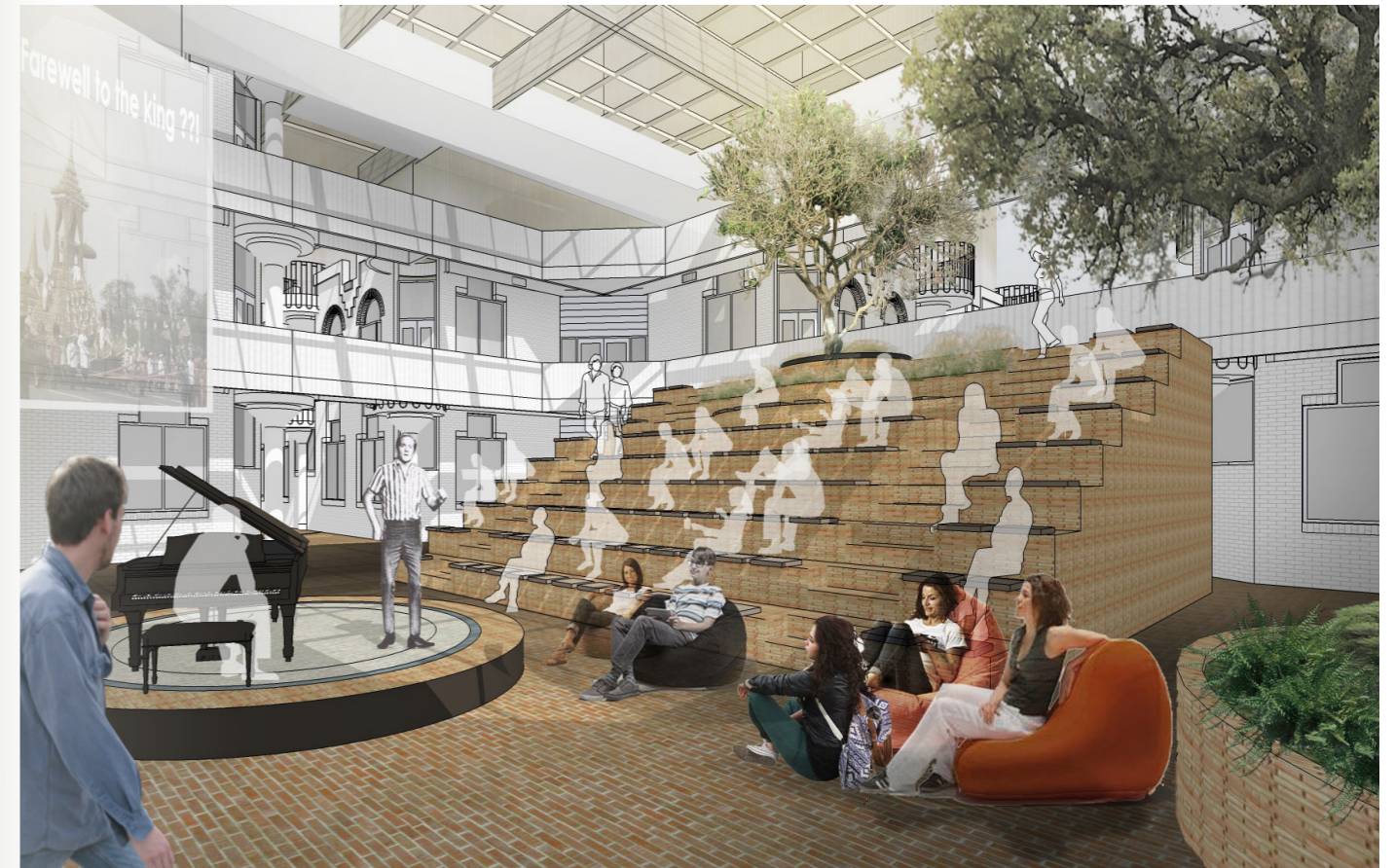
4.3.3.B. Sunken courtyard

4.3.3.C. Raised platform

4.3.3.D. The Green Library



Existing conditions



View of the new raised courtyard - W. Taemeyachat, 2018

4.3. Ground floor alterations

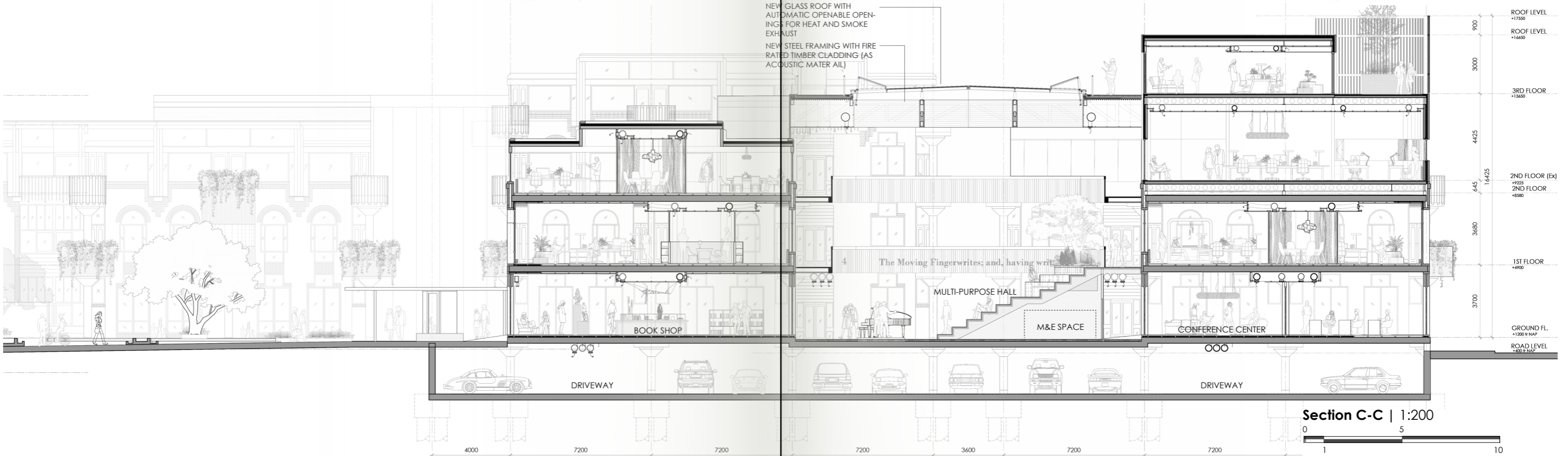
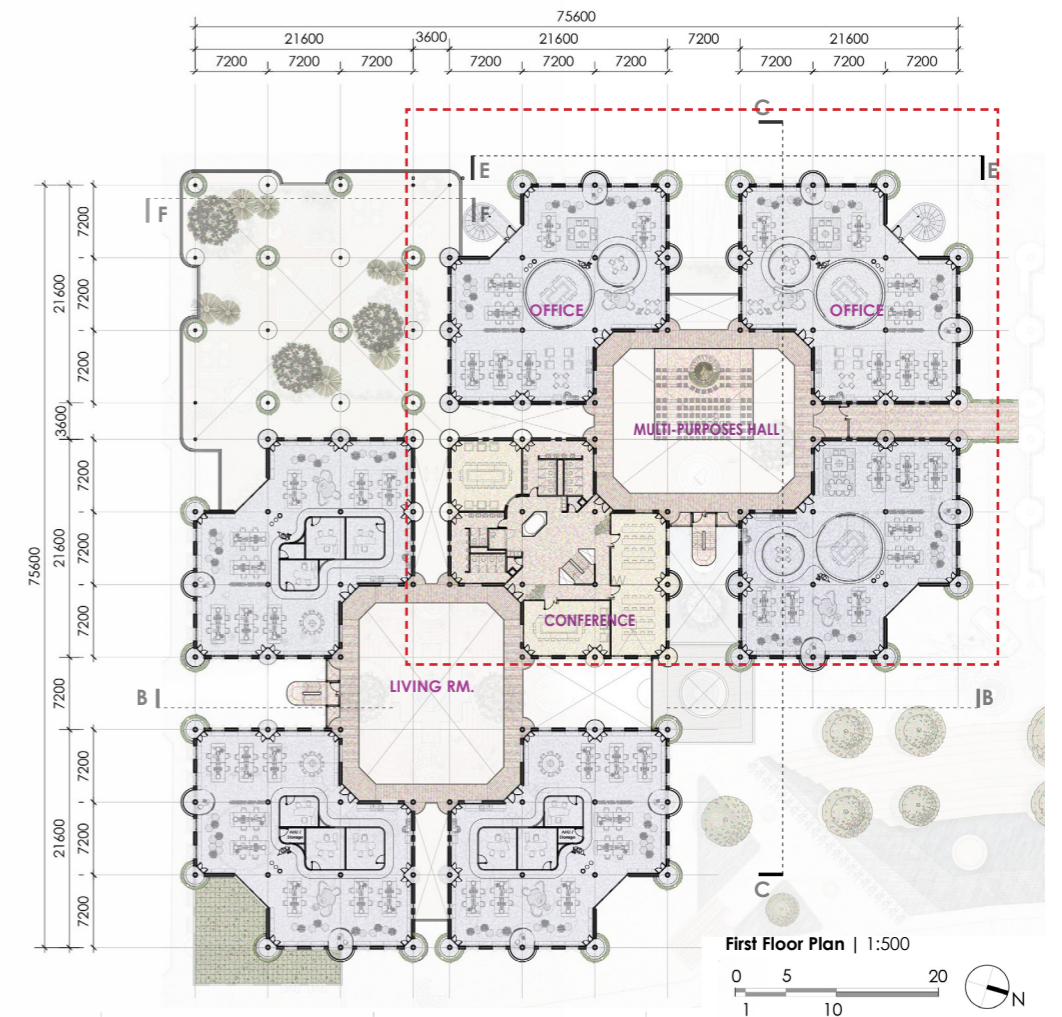
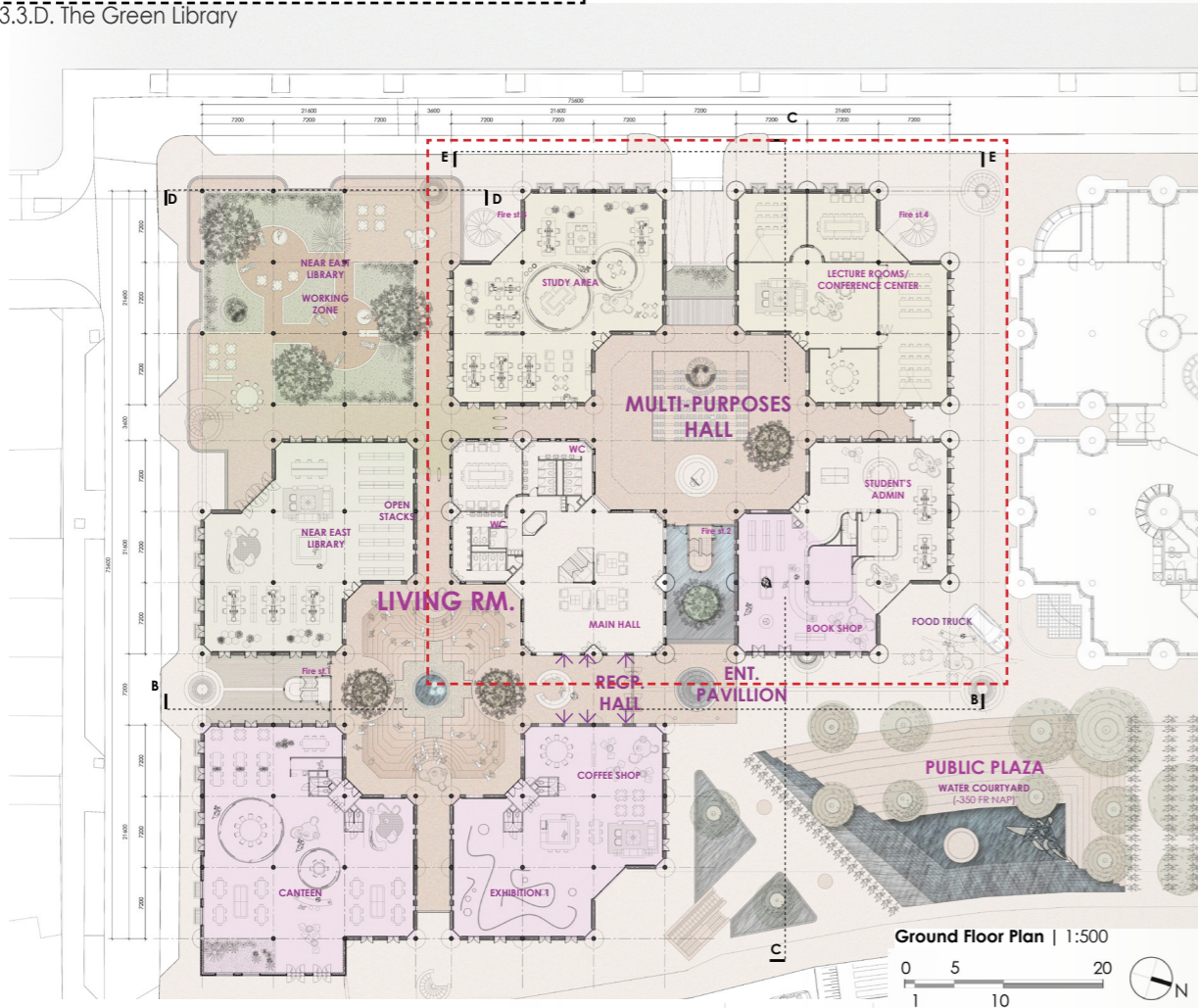
4.3.3. Creating identities

4.3.3.A. The new entrance

4.3.3.B. Sunken courtyard

4.3.3.C. Raised platform

4.3.3.D. The Green Library



4.3. Ground floor alterations

4.3.3. Creating identities

4.3.3.A. The new entrance

4.3.3.B. Sunken courtyard

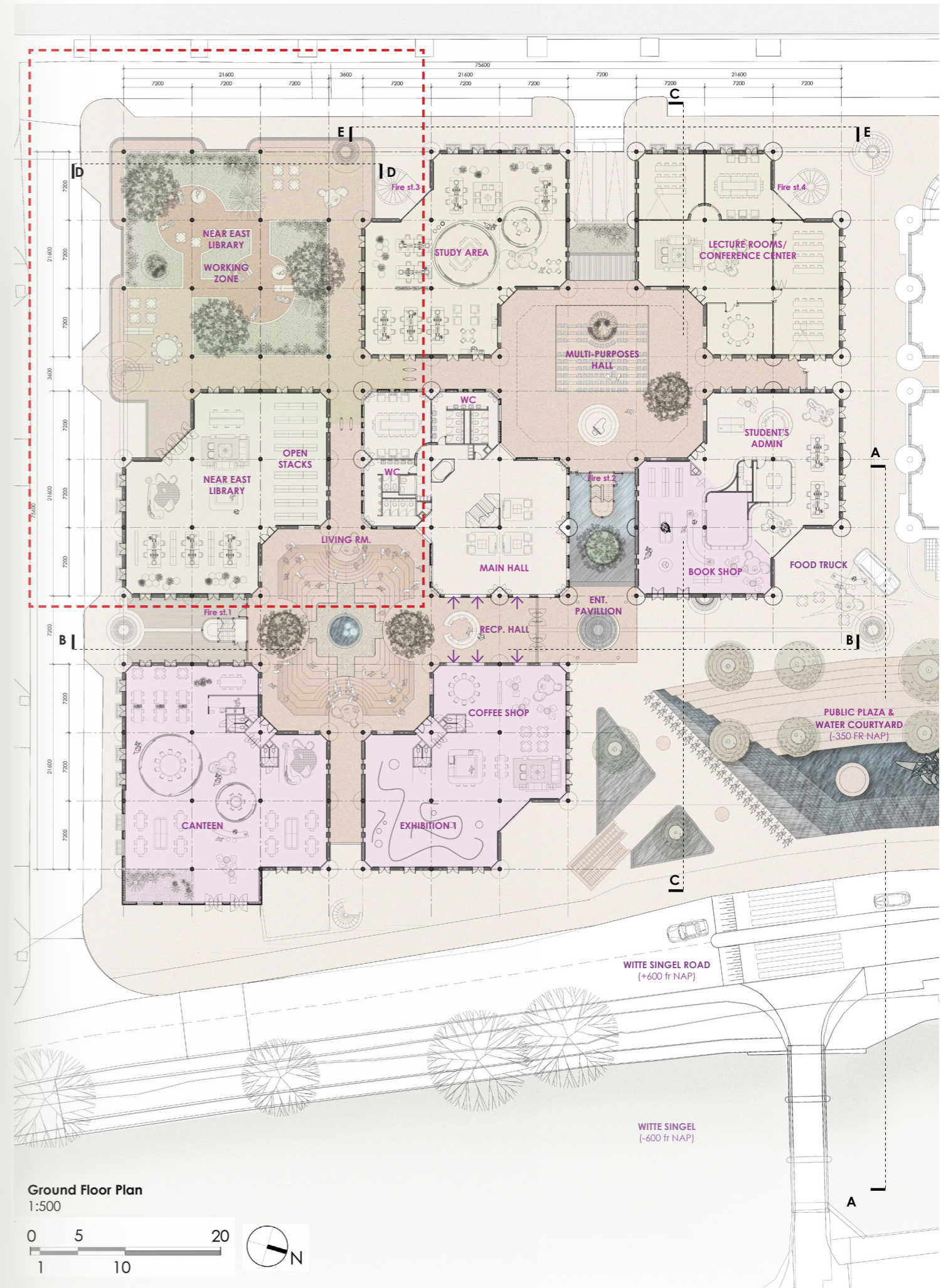
4.3.3.C. Raised platform

4.3.3.D. The Green Library

The Garden Library

Near East Library will be situated on the quietest corner of the site. This function will be shared by the internal users and external visitors.

The original 'mushroom garden' of the South Cluster will be covered by a new glass roof. The new interior space will house large library's working space. Lush trees and shrubs will be planted in this hall. The green environment will contribute to the new image of University library. This improved learning environment is a reinterpretation of the original humanity design approach.



4.3. Ground floor alterations

4.3.3. Creating identities

4.3.3.A. The new entrance

4.3.3.B. Sunken courtyard

4.3.3.C. Raised platform

4.3.3.D. The Green Library



Existing conditions



View of the new Working Zone of The Near East Library - W. Taemeyachat, 2018

4.3. Ground floor alterations

4.3.3. Creating identities

4.3.3.A. The new entrance

4.3.3.B. Sunken courtyard

4.3.3.C. Raised platform

4.3.3.D. The Green Library



Existing conditions



View of The Near East Library from Rijn en Schiekade - W. Taemeyachat, 2018

4.3. Ground floor alterations

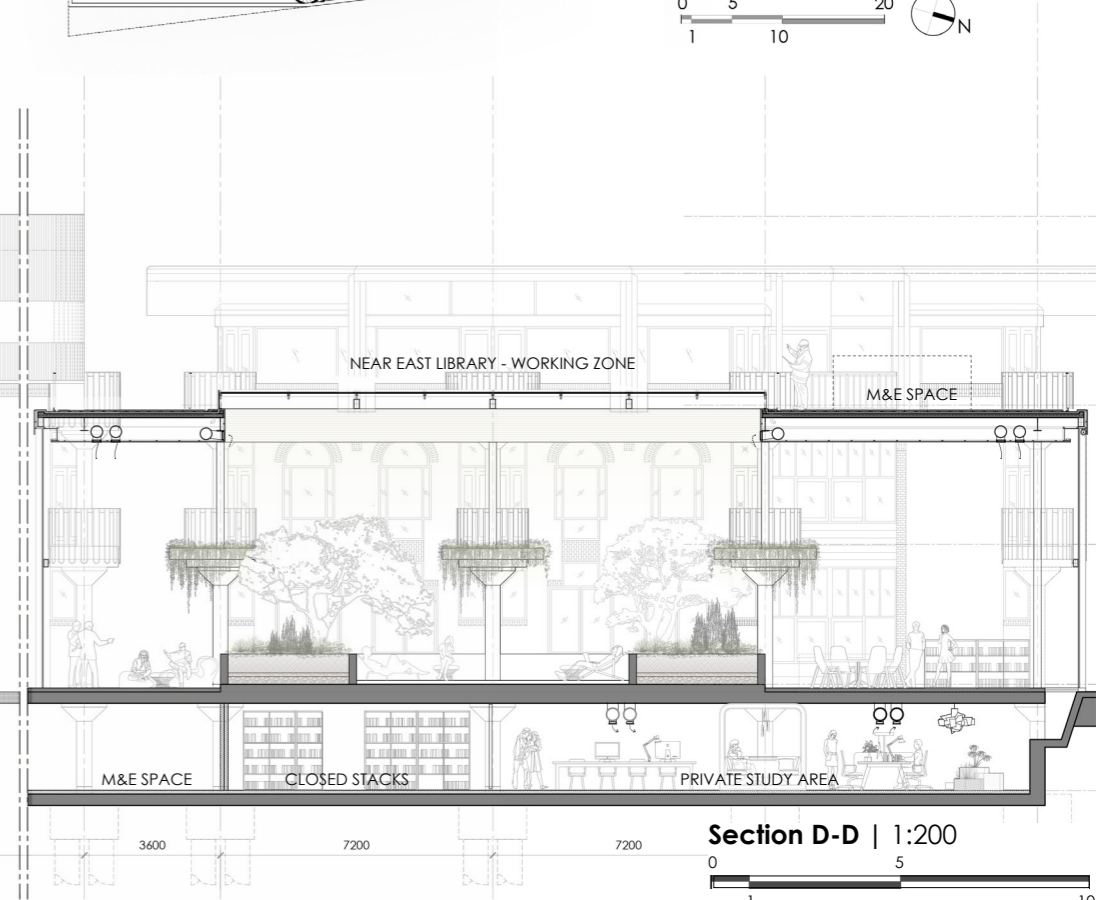
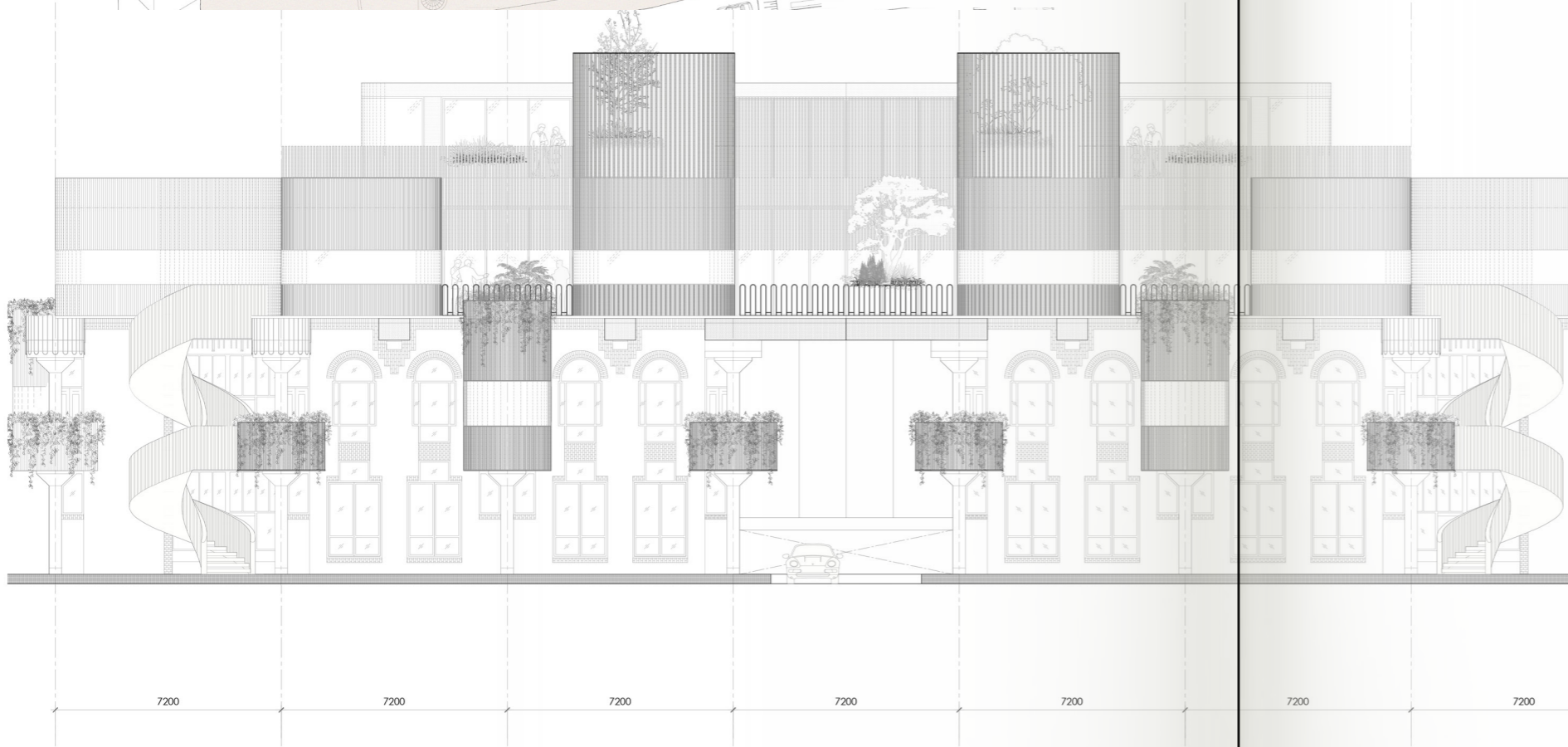
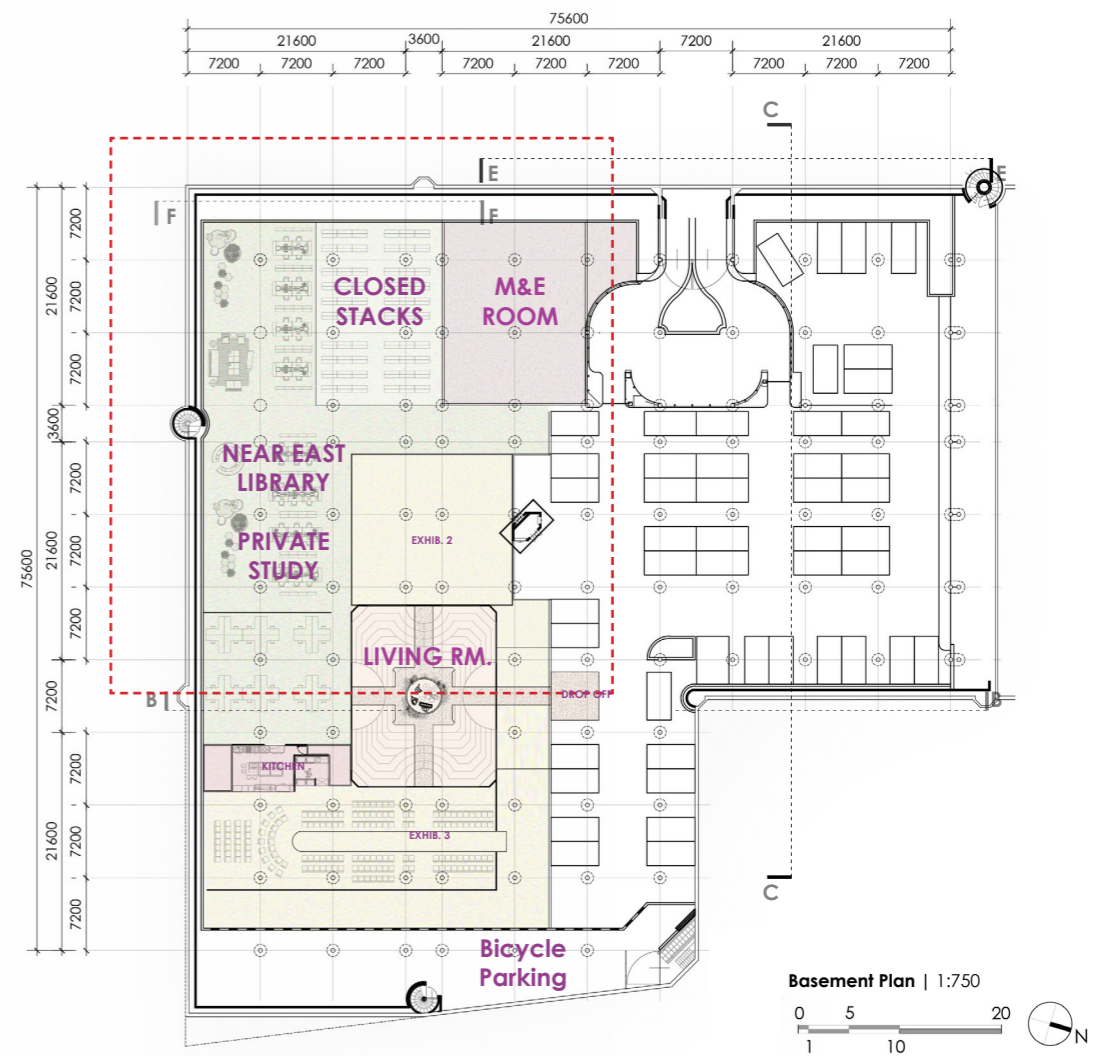
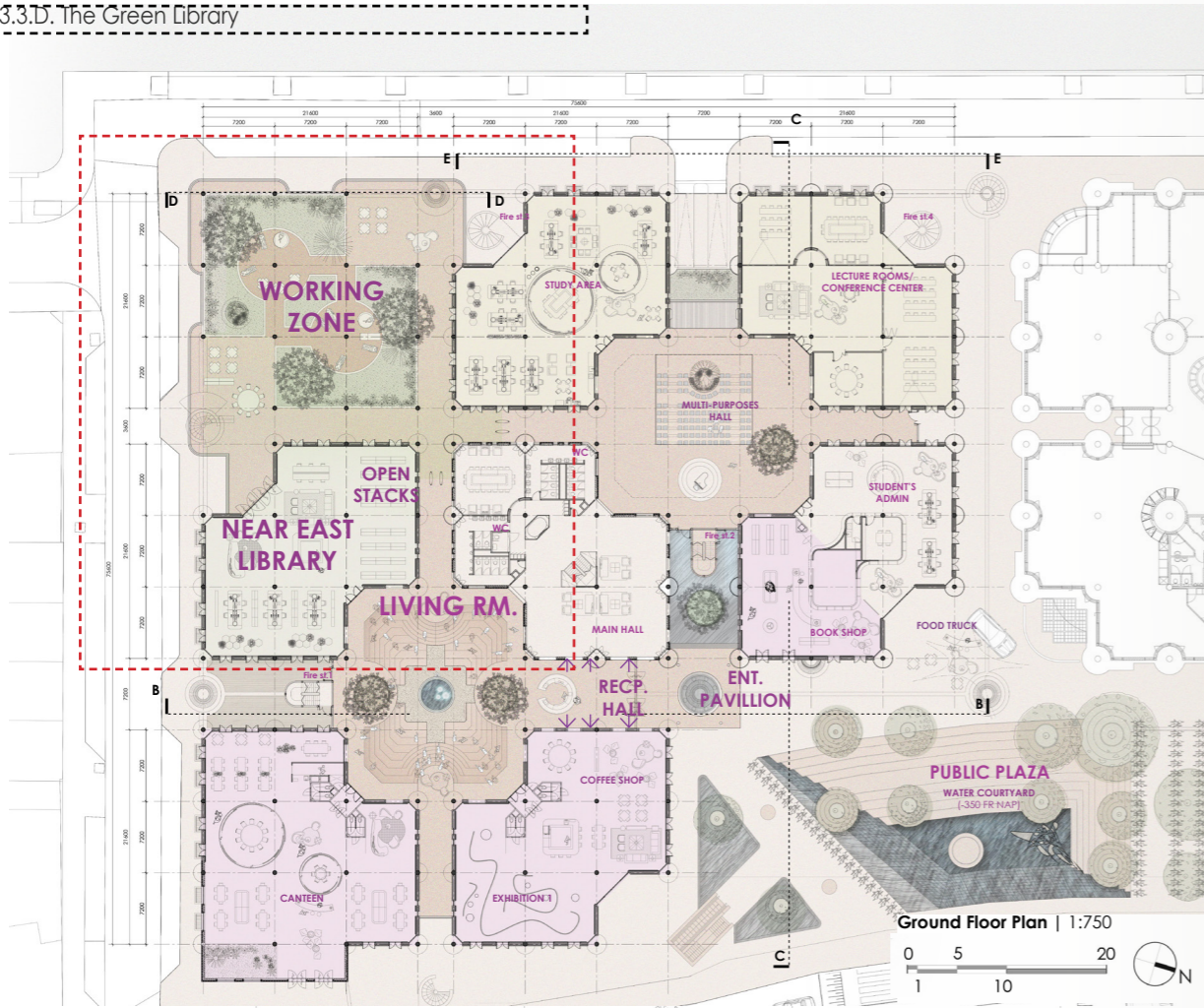
4.3.3. Creating identities

4.3.3.A. The new entrance

4.3.3.B. Sunken courtyard

4.3.3.C. Raised platform

4.3.3.D. The Green Library



Intervention Strategies & Design Proposals

To achieve those mentioned key objectives, this graduation project has explored series of intervention strategies as follows.

4.1. Programmatic Improvements

- 4.1.1. Architectural Design Ambitions
- 4.1.2. Program Proposals
- 4.1.3. Area Tabulation

4.2. Functional rearrangement / Re-zoning

- 4.2.1. Public zone
- 4.2.2. Private functions
- 4.2.3. Intersection area

4.3. Ground floor alterations

- 4.3.1. Urban connection at the public plaza
- 4.3.2. Activating the underutilized space/Covered courtyards
- 4.3.3. Creating identities
 - 4.3.3.A. The new entrance
 - 4.3.3.B. Sunken courtyard
 - 4.3.3.C. Raised platform
 - 4.3.3.D. The Green Library

4.4 Upper Floor Reconfiguration & the New Addition

- 4.4.1. To improving the building efficiency
- 4.4.2. To improve the quality of the interior space
- 4.4.3. To increase the quantity of existing gross floor area

4.5 Residential function requirement

- 4.5.1 The transformation of the existing interior layout
- 4.5.2 The new additions
- 4.5.3 Provision for future expansion

4.6 The reinterpretation of the original facade design language

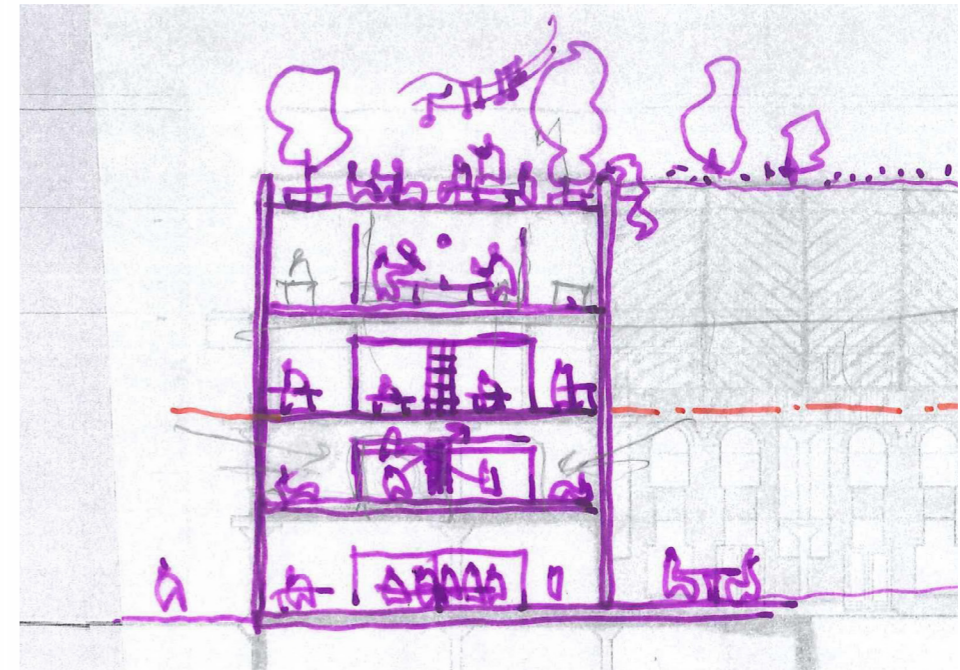
- 4.6.1. Analysis
- 4.6.2 Design experiment
 - 4.6.2.A. Aluminum Cladding in purple powder coated
 - 4.6.2.B. Perforated brick block
 - 4.6.2.C. Terracotta Facade

4.4 Upper Floor Reconfiguration

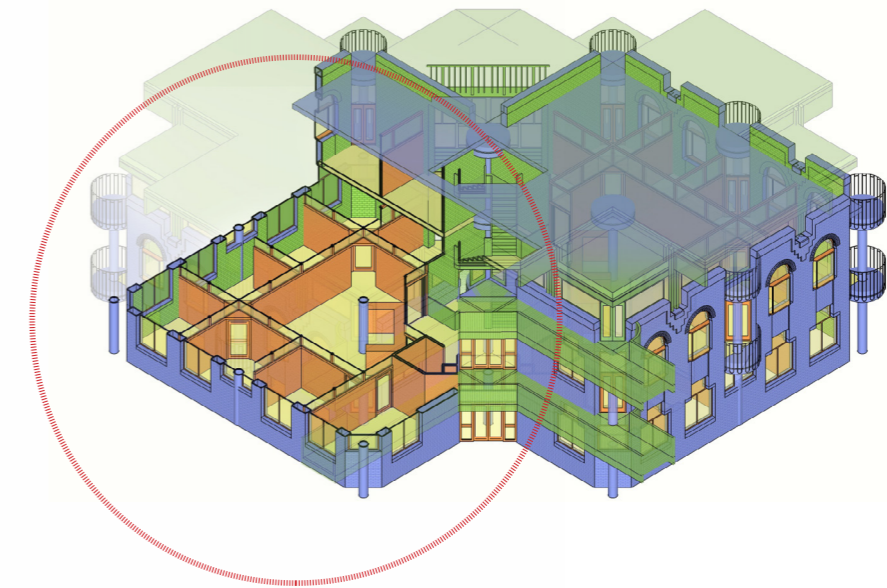
These Leiden Humanities Buildings are currently limited by its existing total floor area in each universal unit. This restricts to the contemporary learning activities and new office spaces. Existing galleries, both at North and South Clusters are difficult to expand or reconfigure without the functional rearrangement.

This limiting factor can be compensated by adding new additions and covering existing courtyards, the sizes, and dimensions of which can be designed with fewer restrictions, enlarging the range of academic spaces. Thus, introducing double and new extension, as well as more social spaces that can support performance art and film screenings would have a direct impact on the functional capability of the faculty building to host and attract a larger audience of artists and visitors.

Regarding existing functional space capacity, approximately 15,000 sqm., the refurbishment, and alteration should, therefore, have the following basic targets:



Sketch of initial design concept, "The Reverse Idea" - W. Taemeyachat, 2018



Value assessment diagram - W. Taemeyachat, 2018

Existing conditions



**4.4 Upper Floor Reconfiguration
& the New Addition**

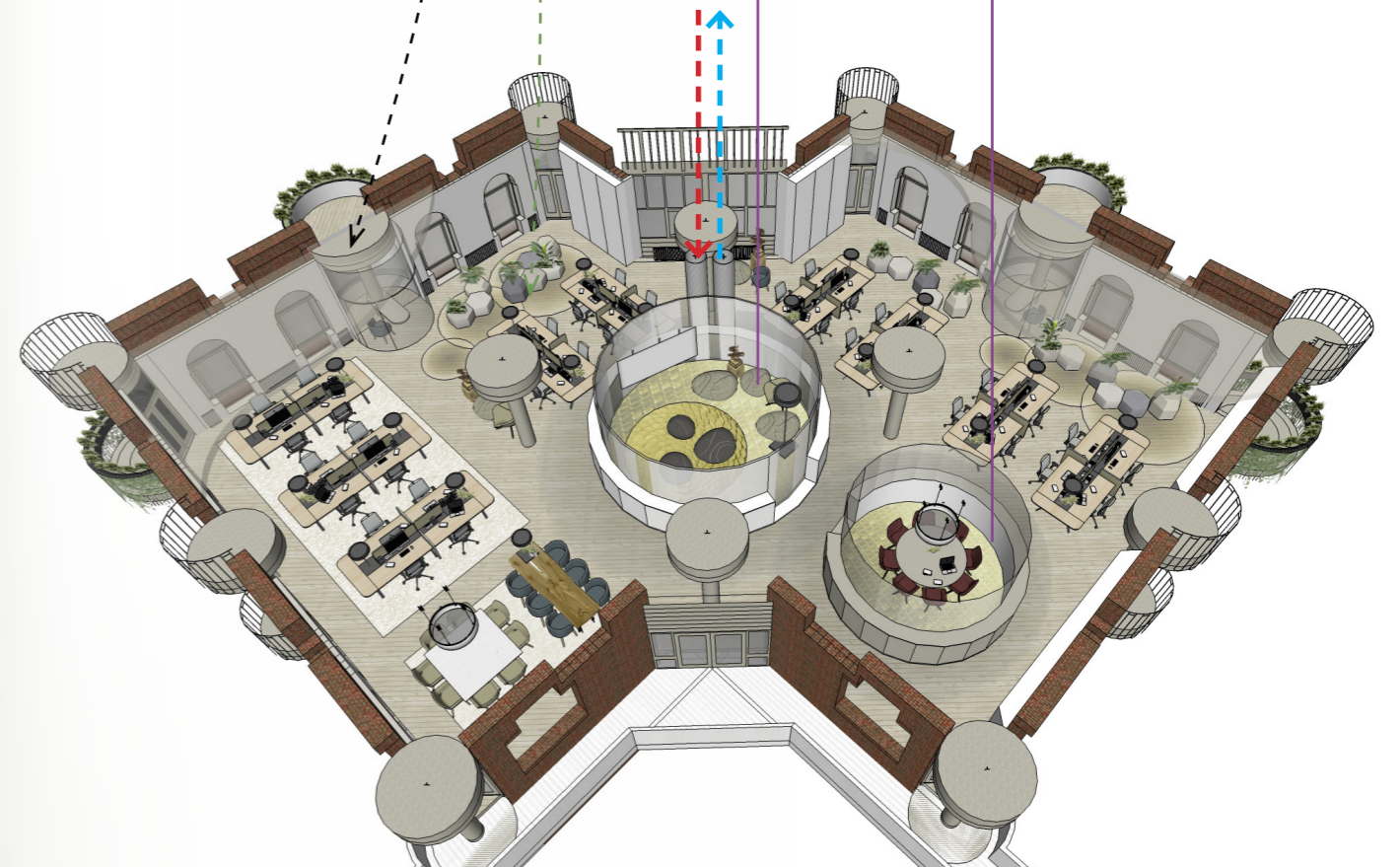
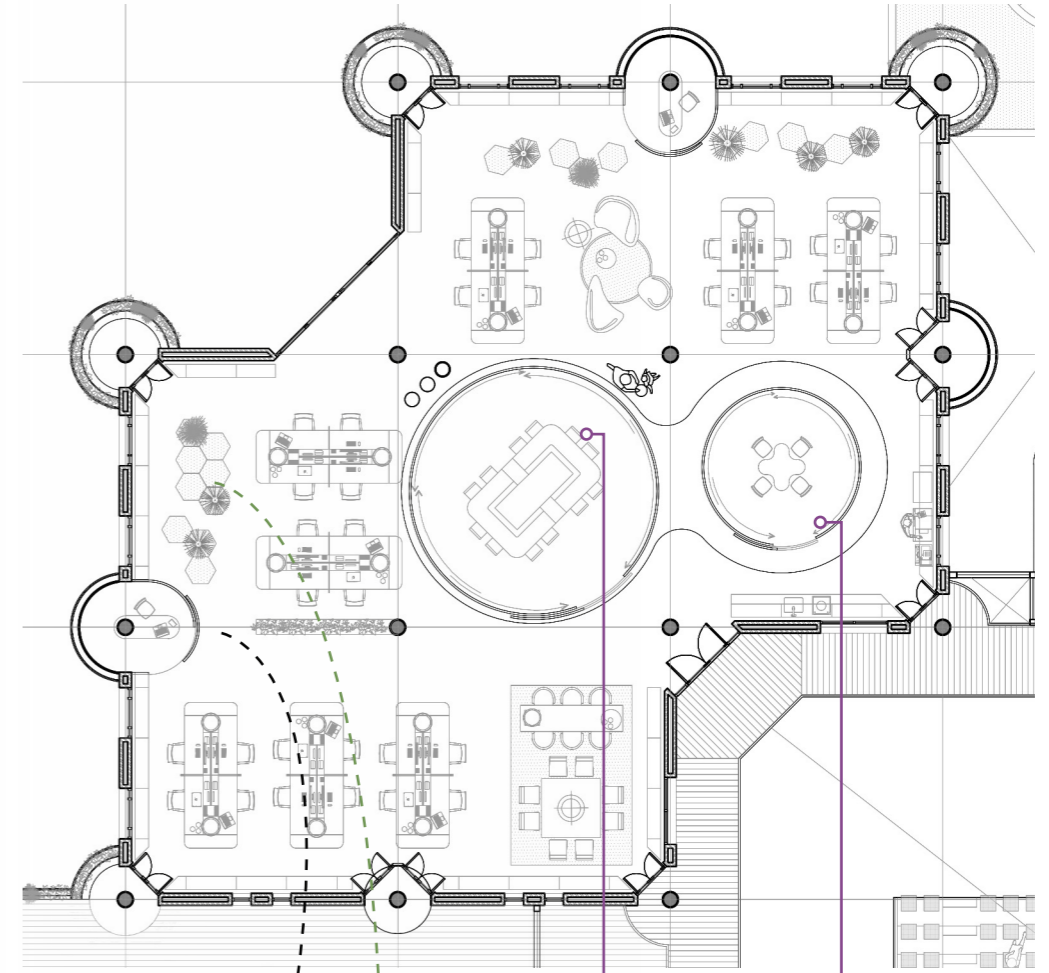
- 4.4.1. To improving the building efficiency
- 4.4.2. To improve the quality of the interior space
- 4.4.3. To increase the quantity of existing gross floor area

4.4.1. To improve the building efficiency

To improve the building efficiency and space qualities, The 'REVERSE' Method will be applied to the new interior design. The rearrangement of the existing office layouts is the key to achieve these goals.

- Private rooms and communal functions to be positioned at the center.
- Common spaces and open workspace to be located adjacent to the facades.

The new layout offers several working spaces for various us-ages. This area ranges from private office cubicles, shared desks, individual cells, and communal seating area along the building facades.



**4.4 Upper Floor Reconfiguration
& the New Addition**

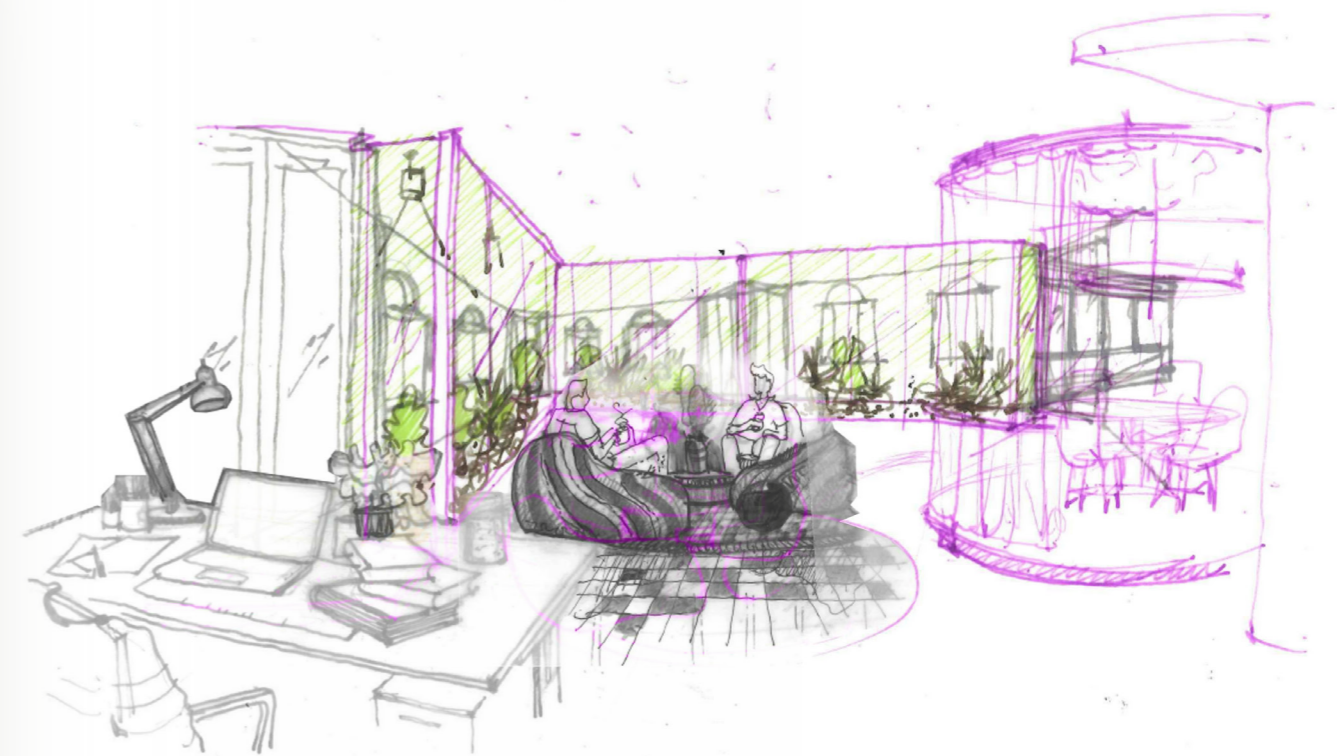
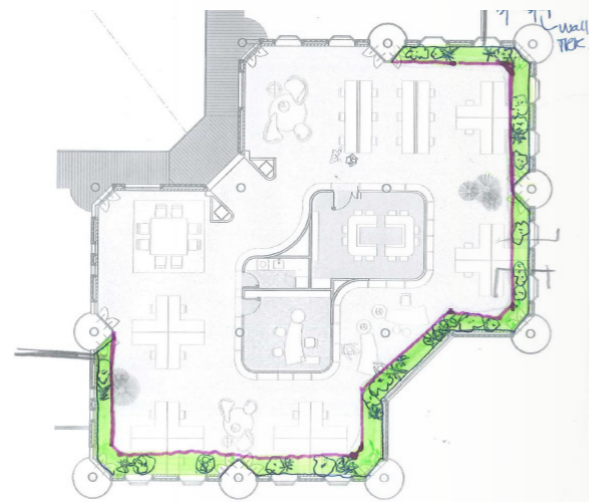
- 4.4.1. To improving the building efficiency
- 4.4.2. To improve the quality of the interior space
- 4.4.3. To increase the quantity of existing gross floor area

4.4.2. To improve the quality of the interior space

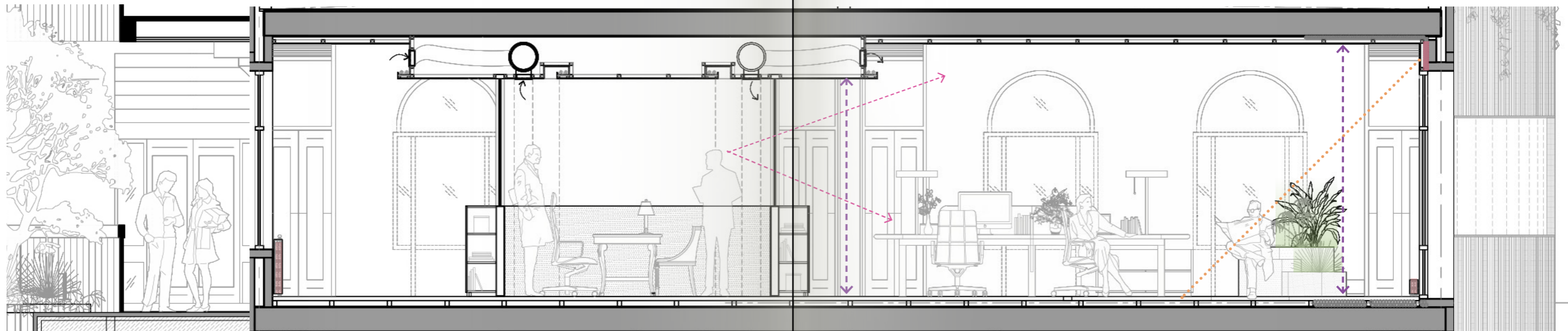
Aside to the building efficiency aspect, the new design will also help improve climate control including heating system, condensation and daylighting.

In this proposal, series of communal seating area will be situated aside to lush planters. I believe that the integration of greenery would contribute to better interior space quality. The plants can reduce the impact of stress in the intense working environment. Positive emotional and cognitive effects can be obtained from greenery adjacent to each workstation.

Aside to the greenery, the new office interior design will be upgraded with the open concept. Warm color and soft texture material will be introduced as the main finishing. This composition is aimed to provide a "homey experience for all the users".



Sketch of initial design concept, "The Integrated Greenery" - W. Taemeyachat, 2018

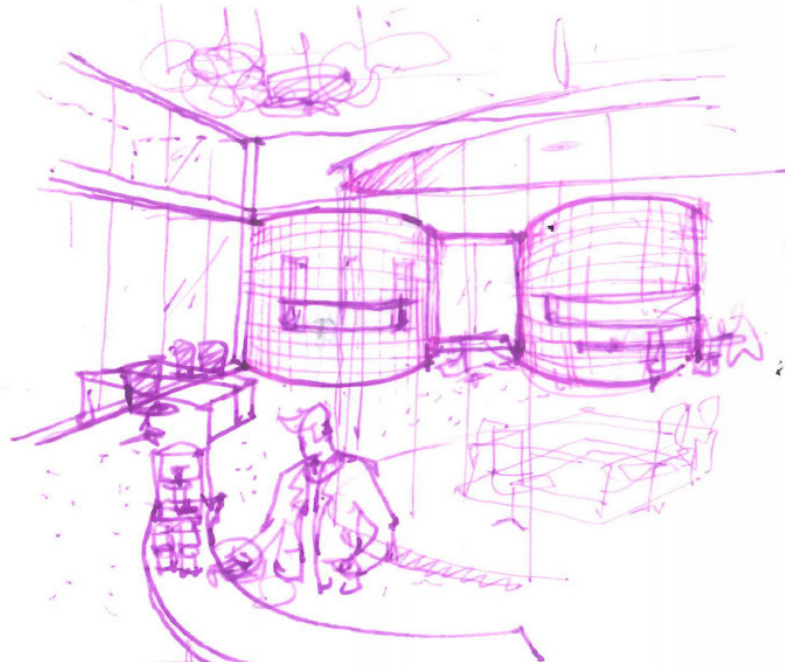


**4.4 Upper Floor Reconfiguration
& the New Addition**

4.4.1. To improve the building efficiency

4.4.2. To improve the quality of the interior space

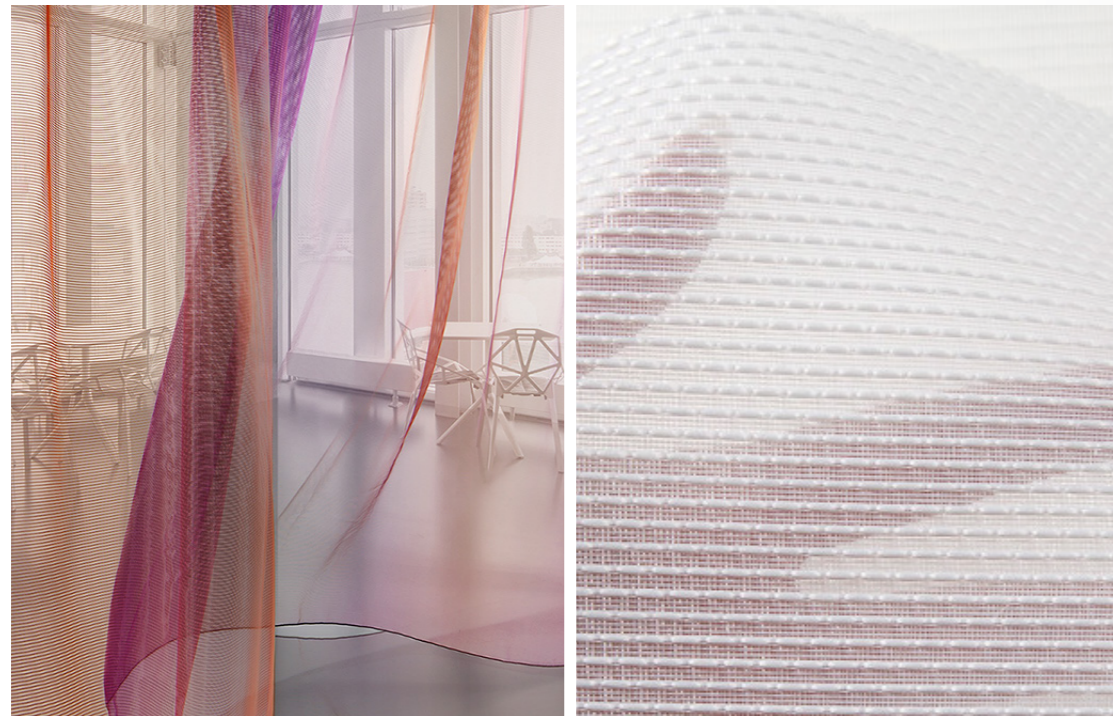
4.4.3. To increase the quantity of existing gross floor area



Sketch of the initial interior design concept - W. Taemeyachat, 2018



View of the new open plan office interior and the adjacent greenery - W. Taemeyachat, 2018



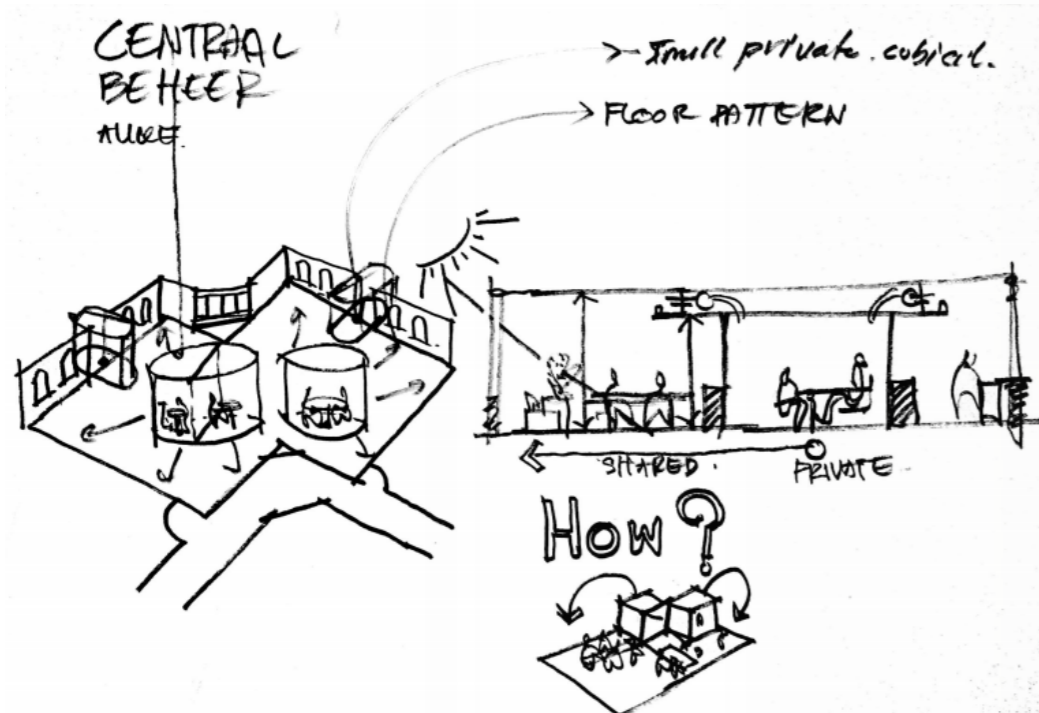
Acoustic curtains - Vescom



View of the new communal function room, in the middle of each floor plate - W. Taemeyachat, 2018

4.4 Upper Floor Reconfiguration
& the New Addition

- 4.4.1. To improve the building efficiency
- 4.4.2. To improve the quality of the interior space
- 4.4.3. To increase the quantity of existing gross floor area



Sketch of the initial interior space division - W. Taemeyachat, 2018



View of the new communal function rooms - W. Taemeyachat, 2018



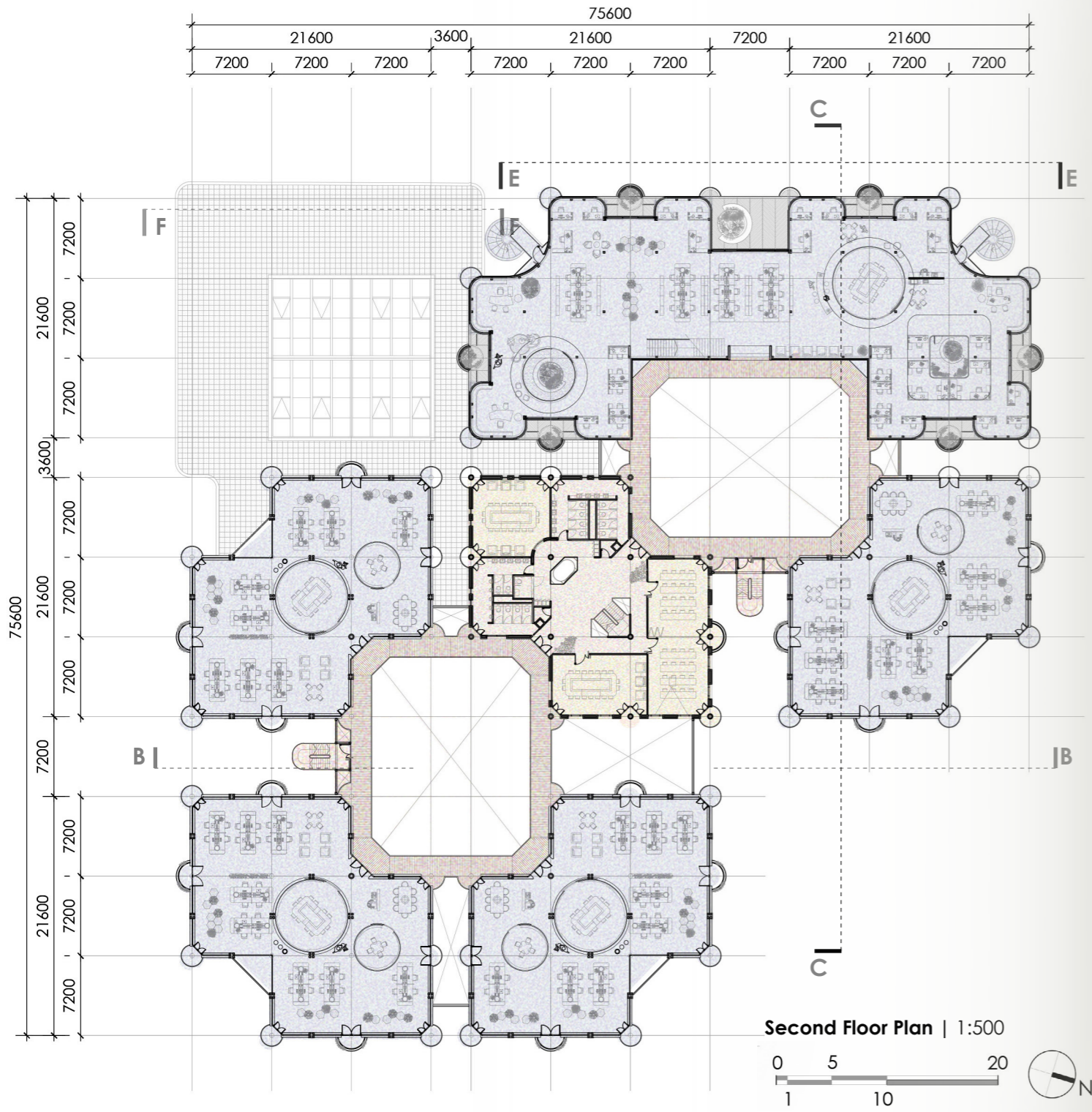
Reinforced concrete column of Leiden Central Library in 1981 - Cement XXXIII



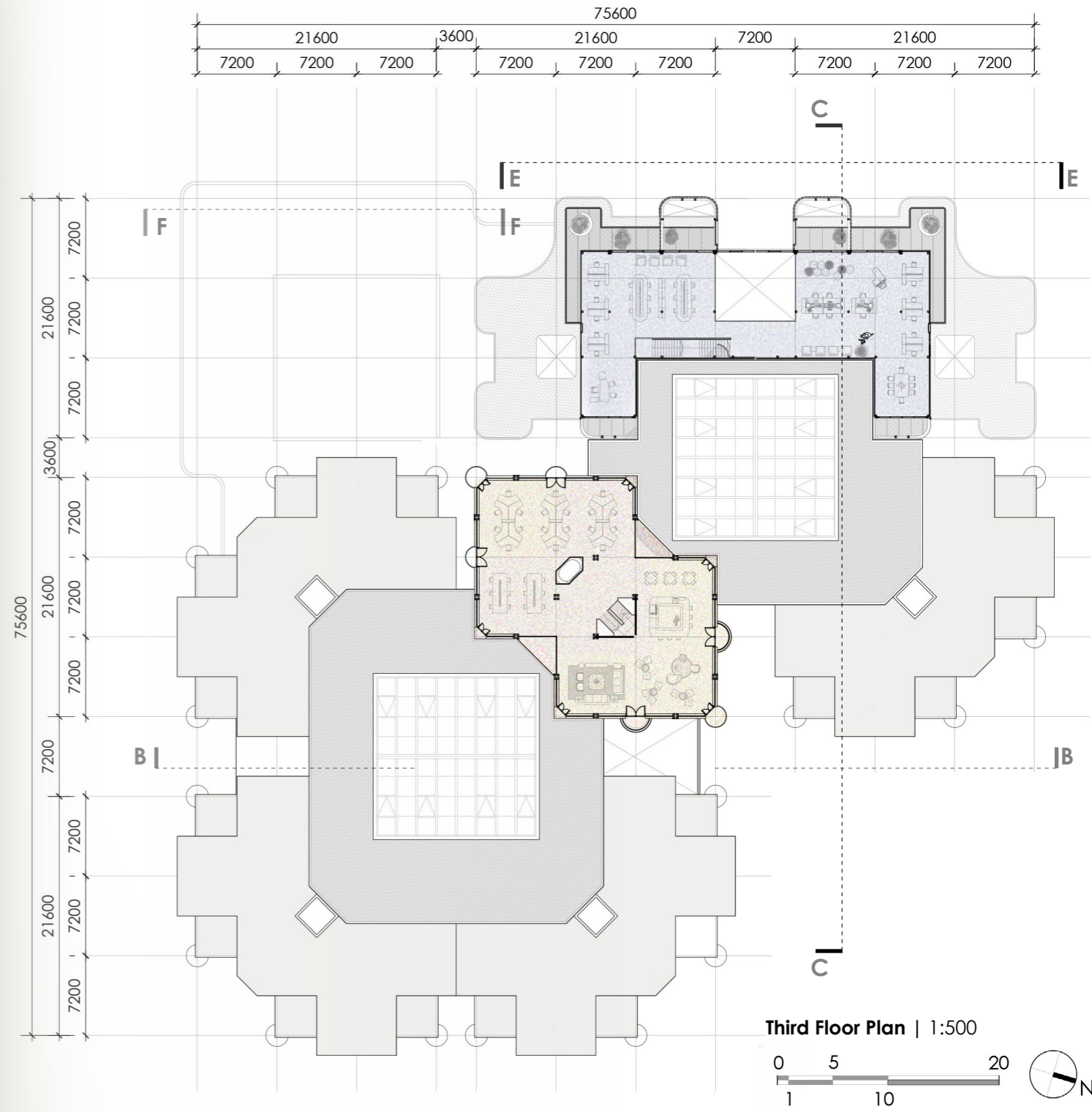
View of the new private cell - W. Taemeyachat, 2018

**4.4 Upper Floor Reconfiguration
& the New Addition**

- 4.4.1. To improving the building efficiency
- 4.4.2. To improve the quality of the interior space
- 4.4.3. To increase the quantity of existing gross floor area



Second Floor Plan | 1:500



Third Floor Plan | 1:500

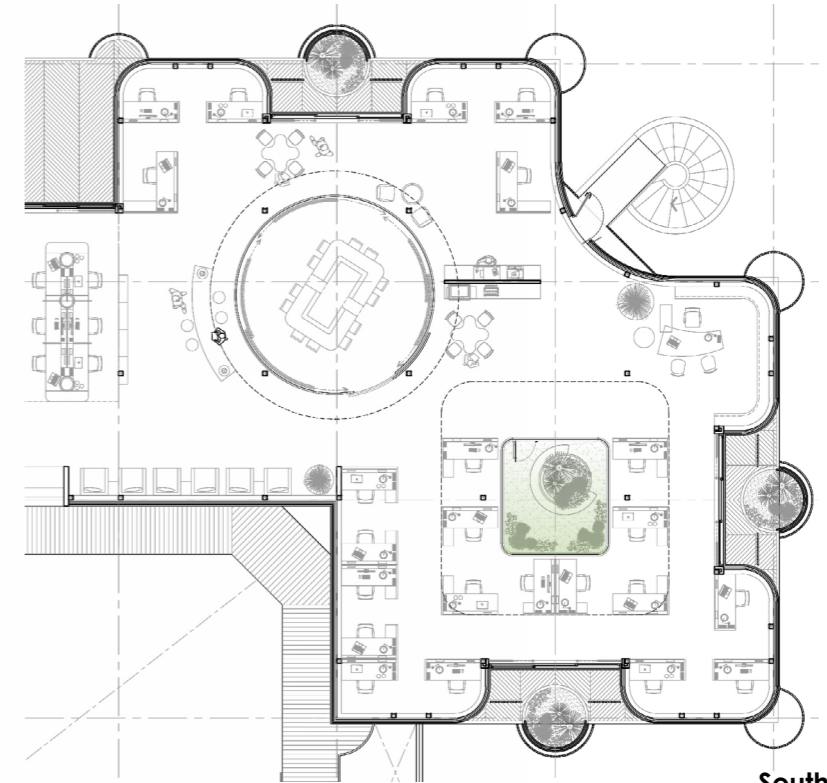
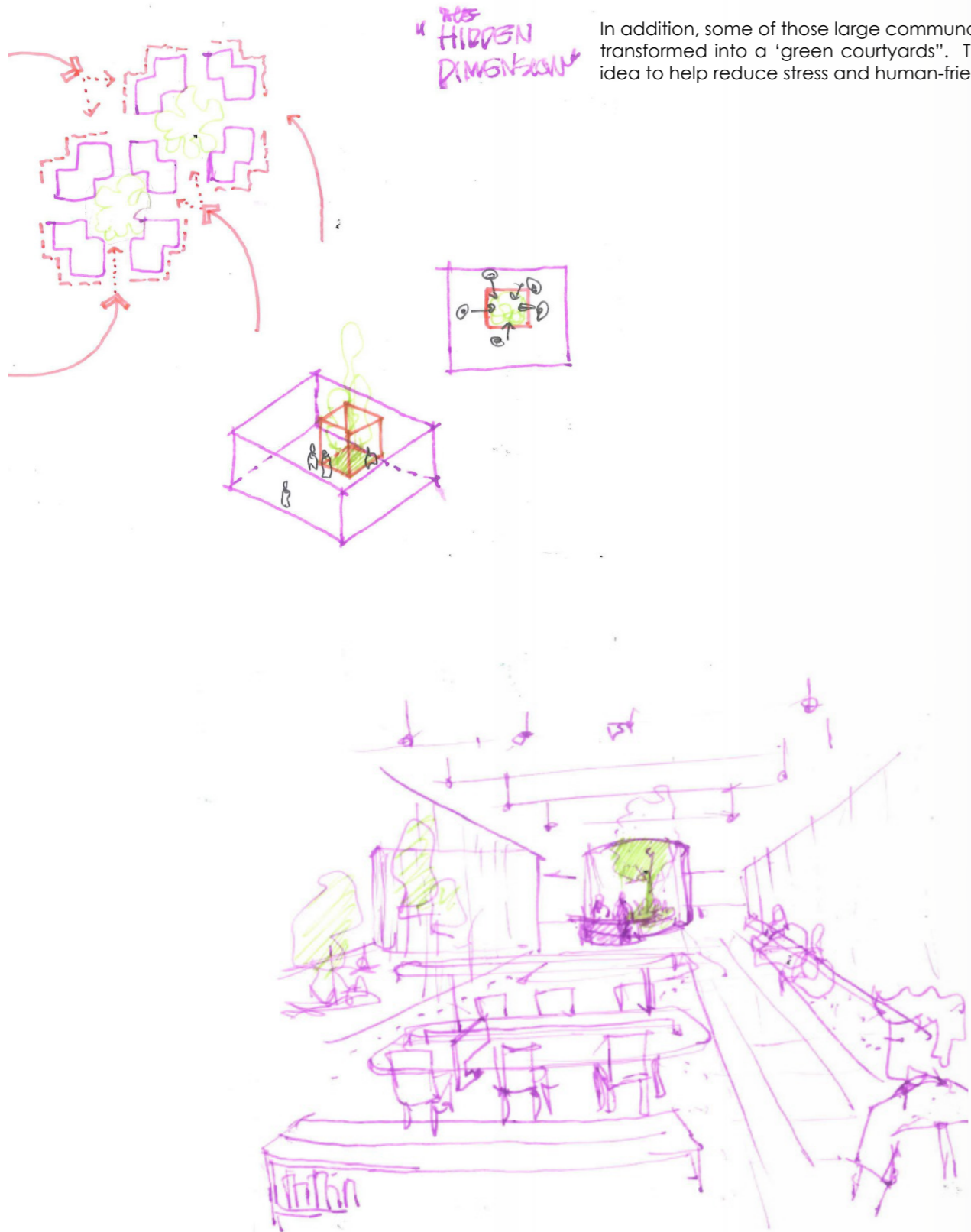
**4.4 Upper Floor Reconfiguration
& the New Addition**

- 4.4.1. To improve the building efficiency
- 4.4.2. To improve the quality of the interior space
- 4.4.3. To increase the quantity of existing gross floor area

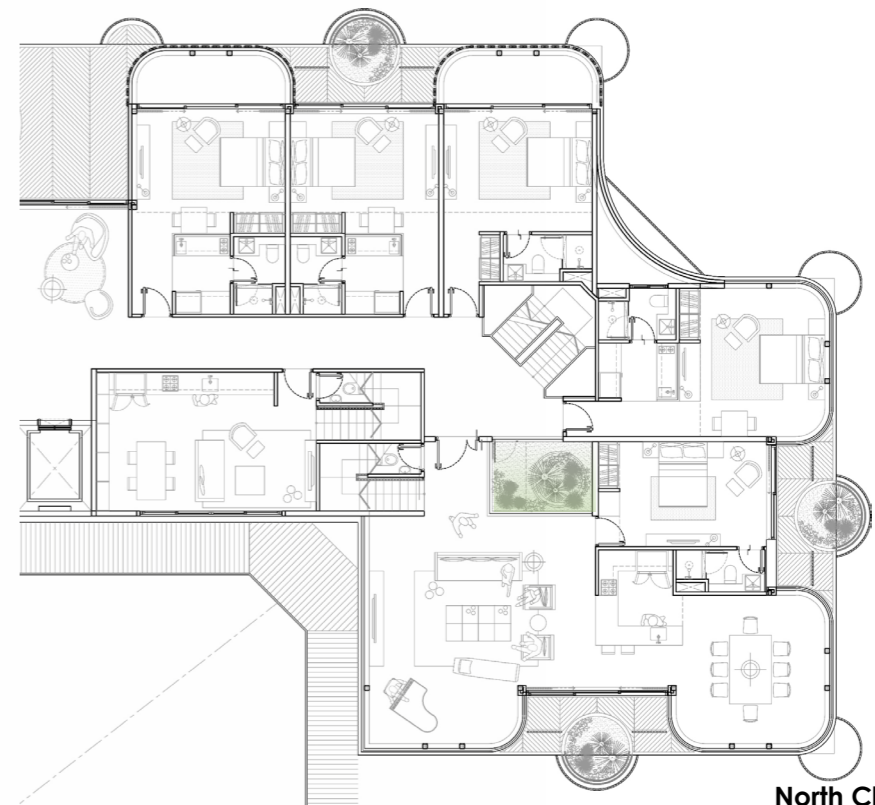
A continuation of the greenery

On the extension parts, the idea of internal greenery and the stress releaser have also been introduced as a main space design strategy. The new plan represents the reinterpretation of the original communal courtyard strategies. There will be a large communal meeting space for people working in this new addition.

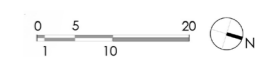
In addition, some of those large communal space will be transformed into a 'green courtyards'. This regards the idea to help reduce stress and human-friendly design.



**South Clusters
Second Floor Plan | 1:250**

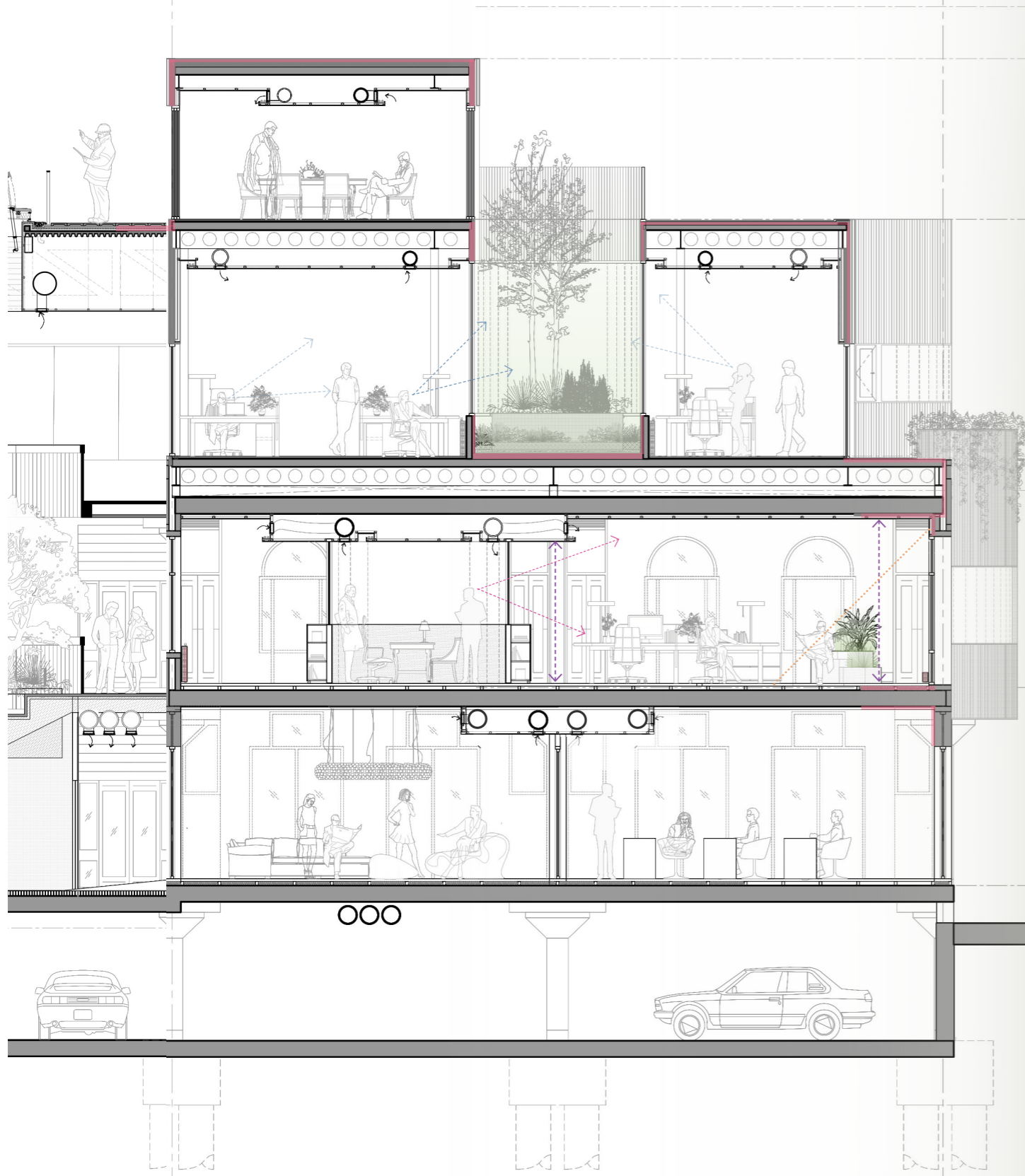


**North Clusters
Second Floor Plan | 1:250**



**4.4 Upper Floor Reconfiguration
& the New Addition**

- 4.4.1. To improving the building efficiency
- 4.4.2. To improve the quality of the interior space
- 4.4.3. To increase the quantity of existing gross floor area



Section across the new green courtyard | 1:100



Green courtyard - Wendell Burnette Architects

4.4 Upper Floor Reconfiguration & the New Addition

- 4.4.1. To improving the building efficiency
- 4.4.2. To improve the quality of the interior space
- 4.4.3. To increase the quantity of existing gross floor area

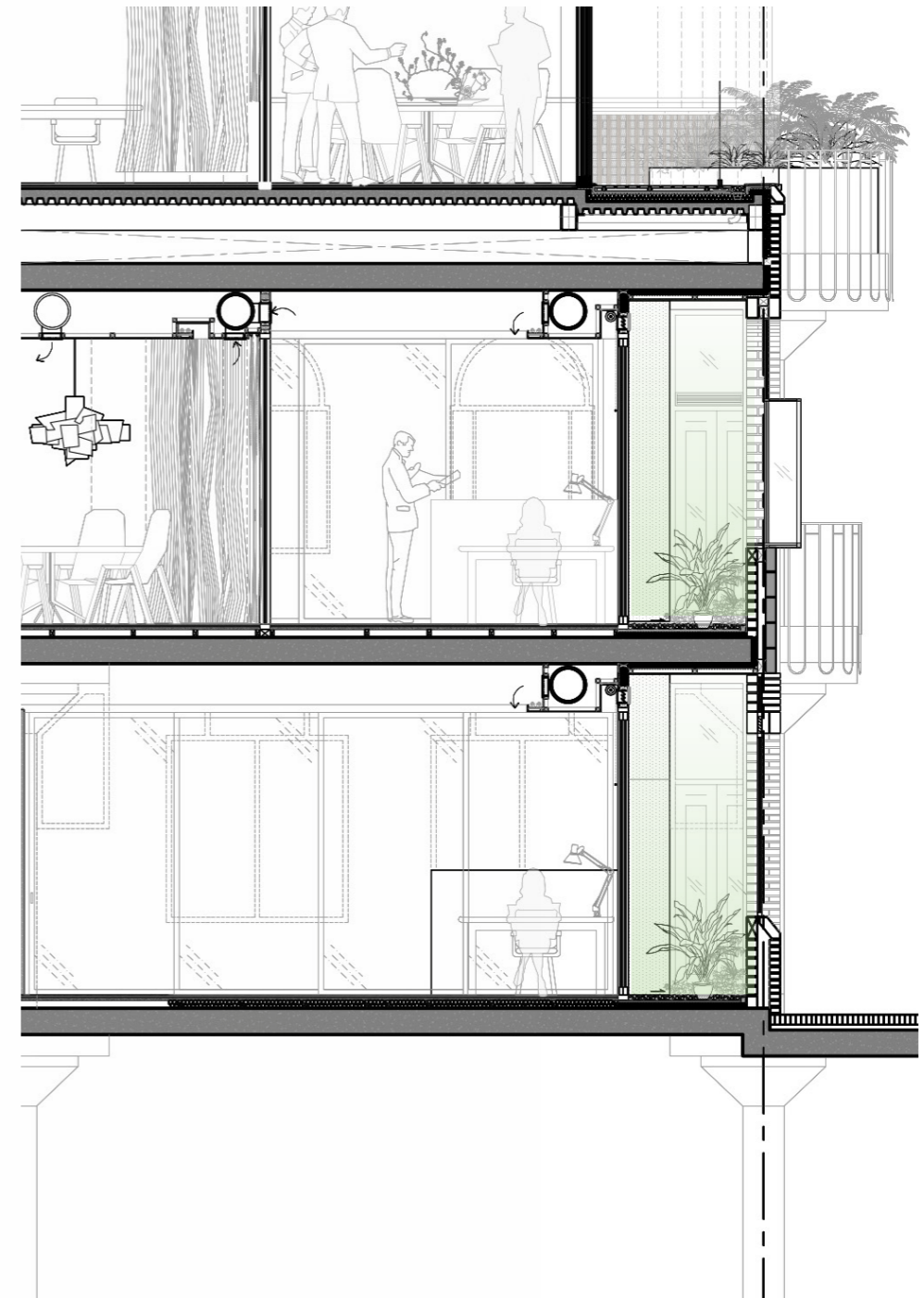
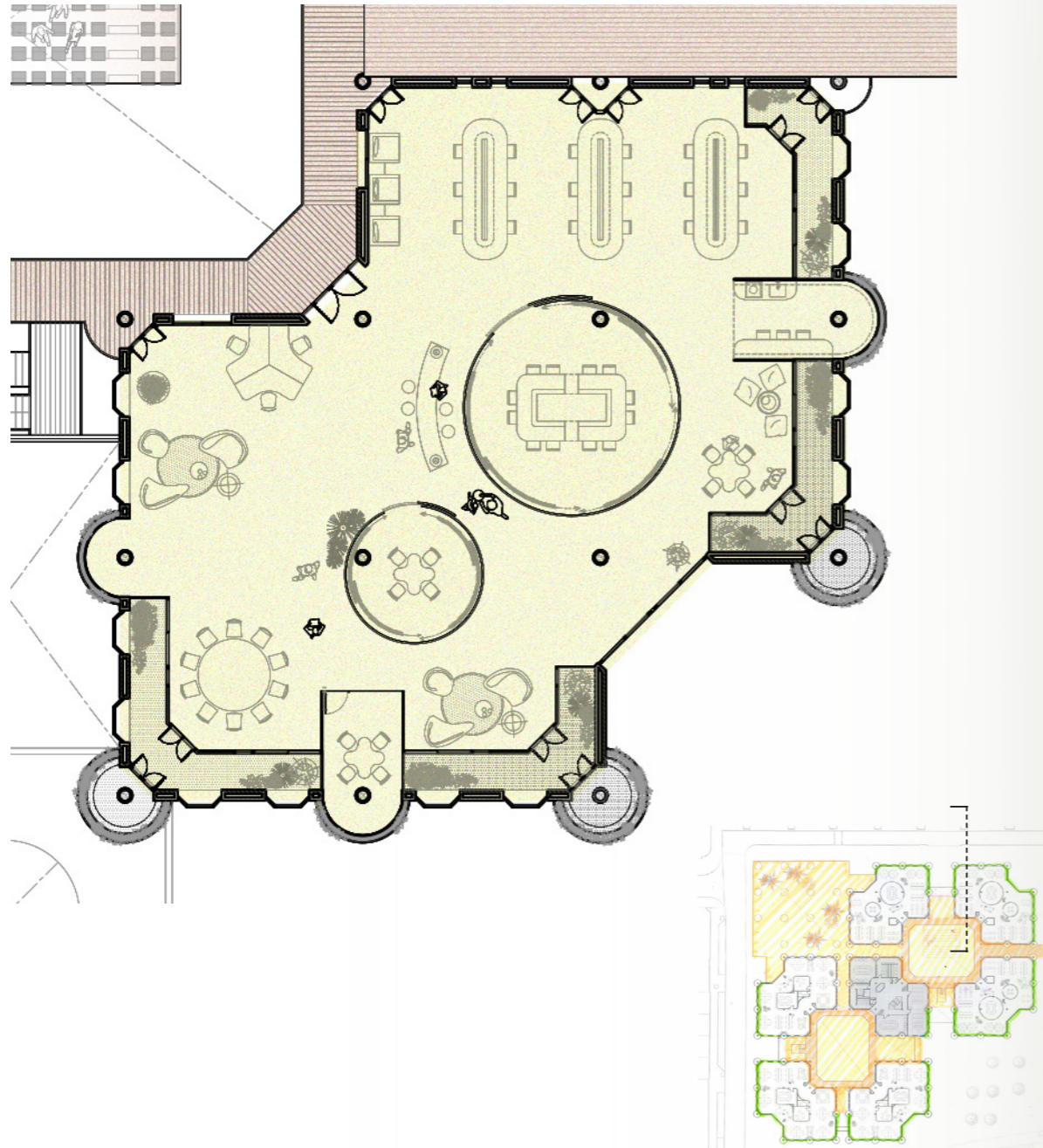
Previous Experiment

The improvement of interior space quality

Winter Garden

In the initial stage, an idea of 'winter garden' was introduced as a main method of the interior renovation. While improving the working environment, this band of double facade also function as a new insulation line that helps reduce thermal bridge issues of the existing building.

However, this proposal was given up due to the maintenance issues and the loss of gross floor area. Most importantly, this blocked green space does not fully function as a stress releaser. In another word, it only serves as a visual effect. Thus, the final scheme has a better performance in this particular aspect.



Intervention Strategies & Design Proposals

To achieve those mentioned key objectives, this graduation project has explored series of intervention strategies as follows.

4.1. Programmatic Improvements

- 4.1.1. Architectural Design Ambitions
- 4.1.2. Program Proposals
- 4.1.3. Area Tabulation

4.2. Functional rearrangement / Re-zoning

- 4.2.1. Public zone
- 4.2.2. Private functions
- 4.2.3. Intersection area

4.3. Ground floor alterations

- 4.3.1. Urban connection at the public plaza
- 4.3.2. Activating the underutilized space/Covered courtyards
- 4.3.3. Creating identities
 - 4.3.3.A. The new entrance
 - 4.3.3.B. Sunken courtyard
 - 4.3.3.C. Raised platform
 - 4.3.3.D. The Green Library

4.4 Upper Floor Reconfiguration & the New Addition

- 4.4.1. To improving the building efficiency
- 4.4.2. To improve the quality of the interior space
- 4.4.3. To increase the quantity of existing gross floor area

4.5 Residential function requirement

- 4.5.1 The transformation of the existing interior layout
- 4.5.2 The new additions
- 4.5.3 Provision for future expansion

4.6 The reinterpretation of the original facade design language

- 4.6.1. Analysis
- 4.6.2 Design experiment
 - 4.6.2.A. Aluminum Cladding in purple powder coated
 - 4.6.2.B. Perforated brick block
 - 4.6.2.C. Terracotta Facade

4.5 Residential function requirement

As mentioned in the key objectives, one of the important roles of this faculty building is to be a new 'gateway' to multi-cultural environments that help strengthen an understanding of human life, and the globally sustainable the well-being of societies.

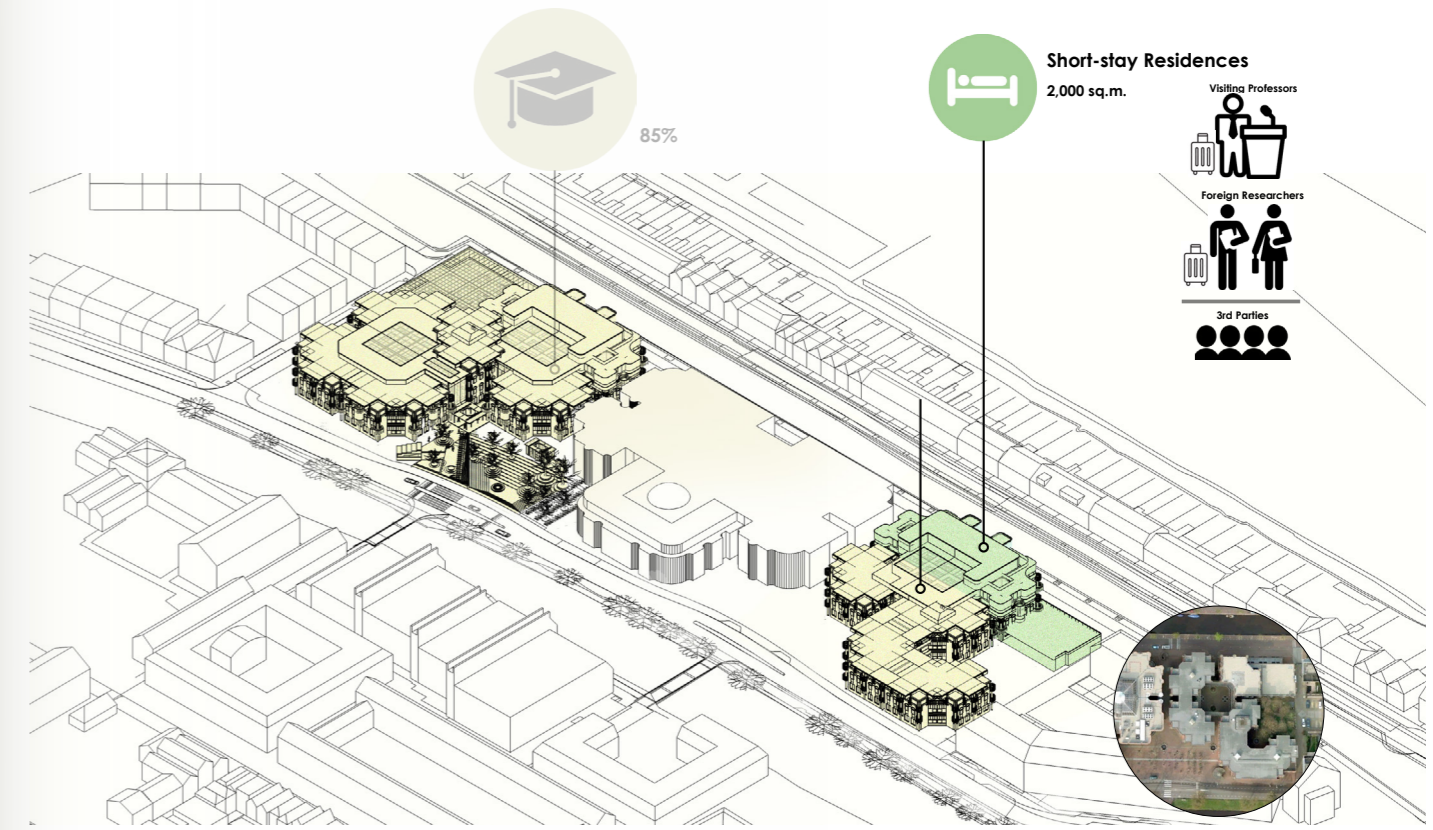
I personally believe that there should be an additional function that contributes to this ambition. In the globalization environment, the student should be able to address the universalism of human civilization, which is based on the diversity and cooperation of cultures. Since the interconnection between each human civilization is significantly increased during the past centuries, these phenomena have made a powerful source of development in historically evolved societies.

The direct interaction between foreign experts and the student is the key method to achieve this field of studies.

Those idea has been translated into 'A Boutique Residence'. This facility will be a place where people from different cultures meet, gather and learn. The apartment will be mainly provided for visiting professors, foreign researchers. The rooms are ranged from the studio type to three bedroom units. The diversity of rooms offer flexibility in term of rental aspect.

In addition, another remaining apartment will be rented out to the third-parties. This rental strategy contributes to the financial aspect of this development.

Lastly, the new residential function proposal also helps resolve the existing campus redevelopment. As one of the criteria for the university's future development is to incorporate residential functions on the Witte Singel-Doelen-complex, the university could provide this short-stay residence to meet the urban planning requirement.



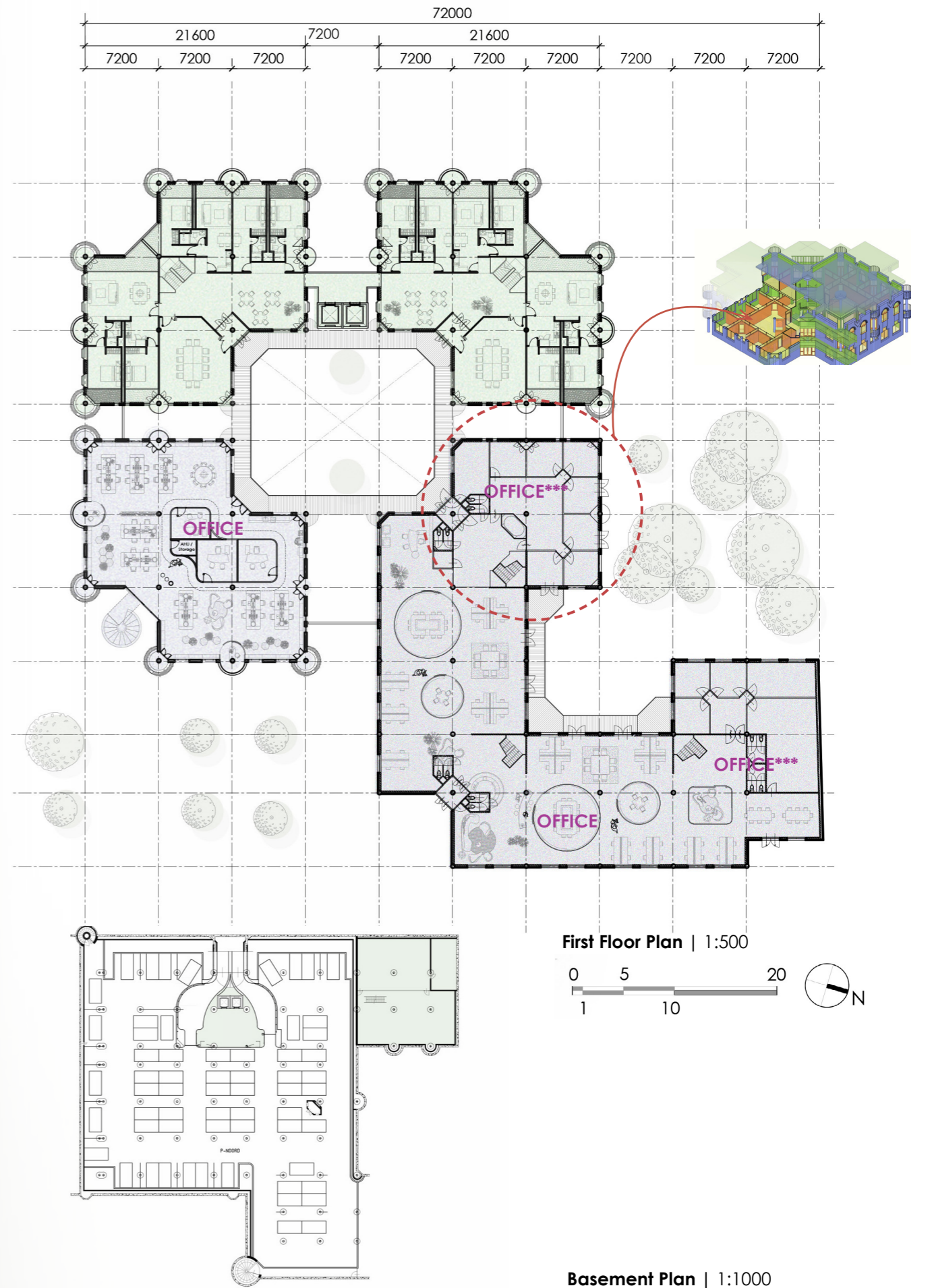
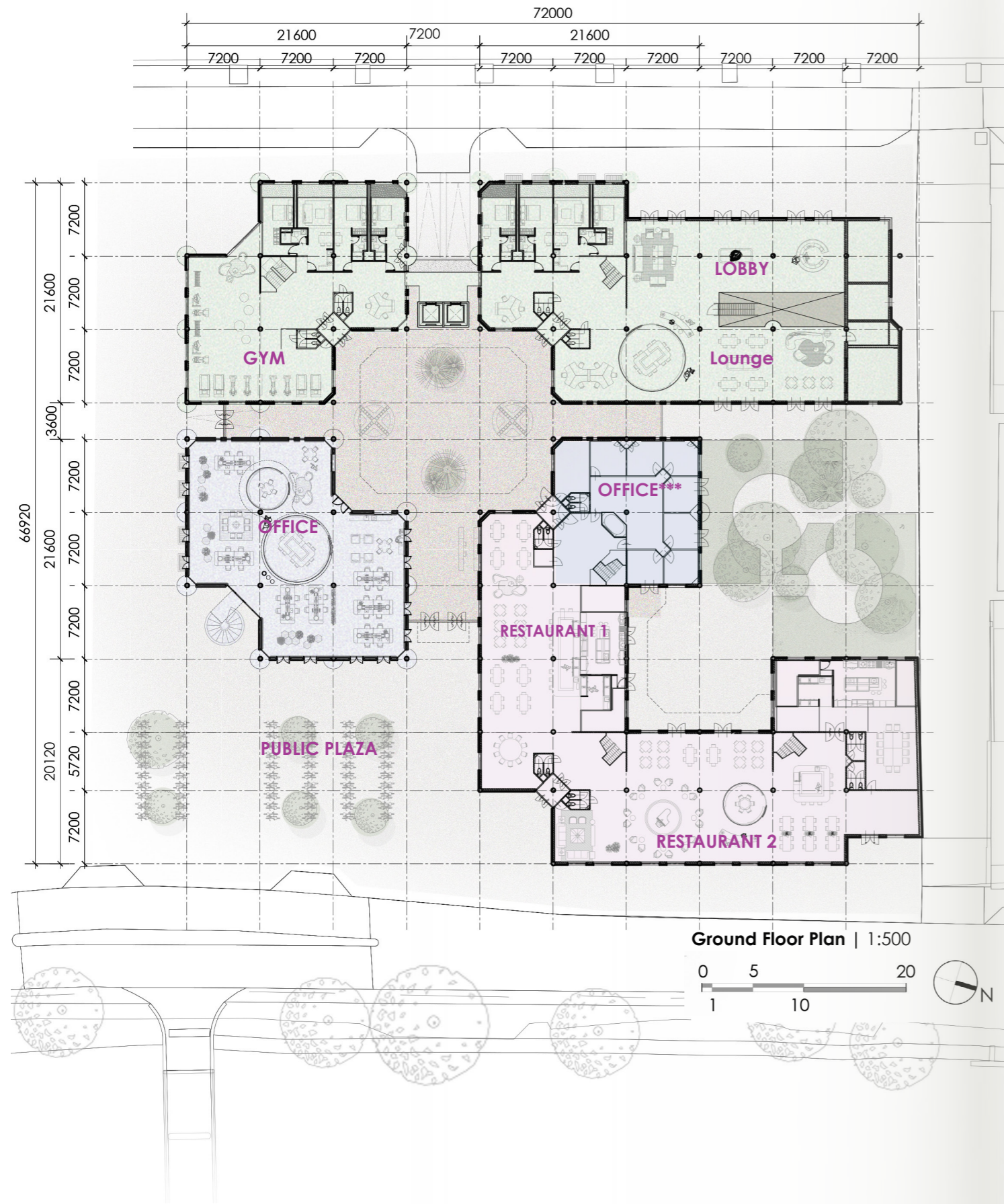
Functional Diagram

4.5 Residential function requirement

4.5.1 The transformation of the existing interior layout

4.5.2 The new additions

4.5.3 Provision for future expansion

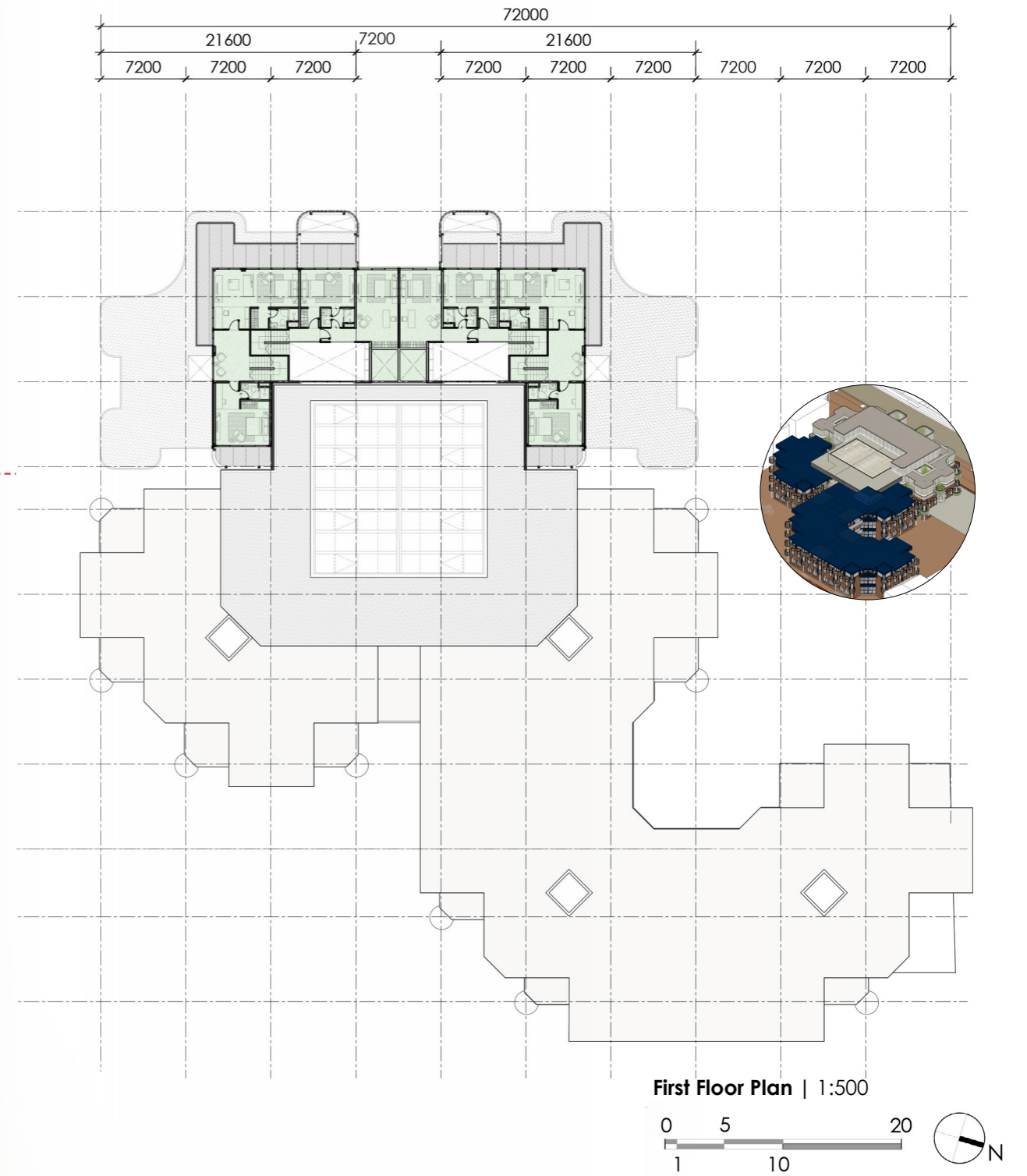
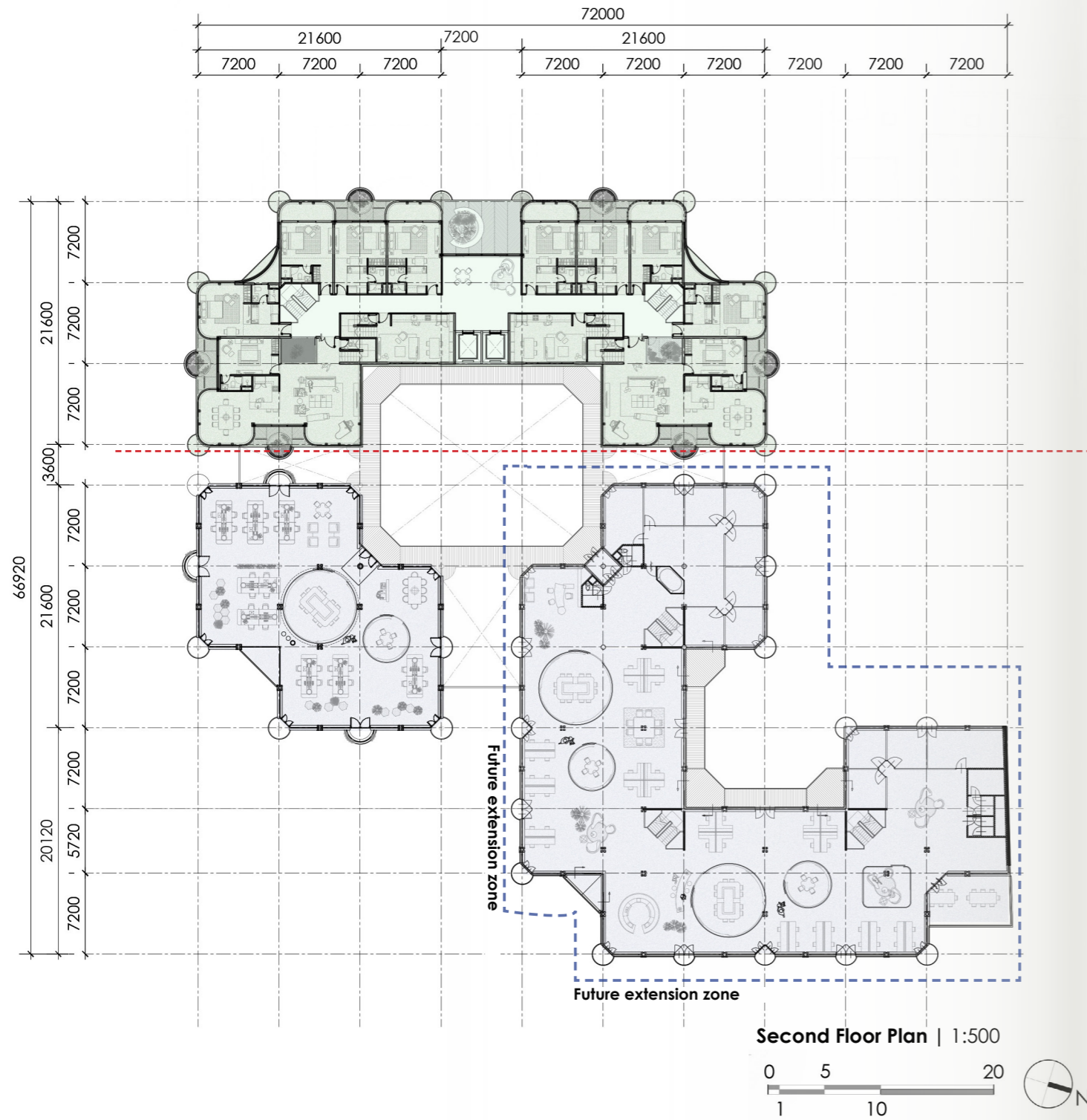


4.5 Residential function requirement

4.5.1 The transformation of the existing interior layout

4.5.2 The new additions

4.5.3 Provision for future expansion



4.5 Residential function requirement

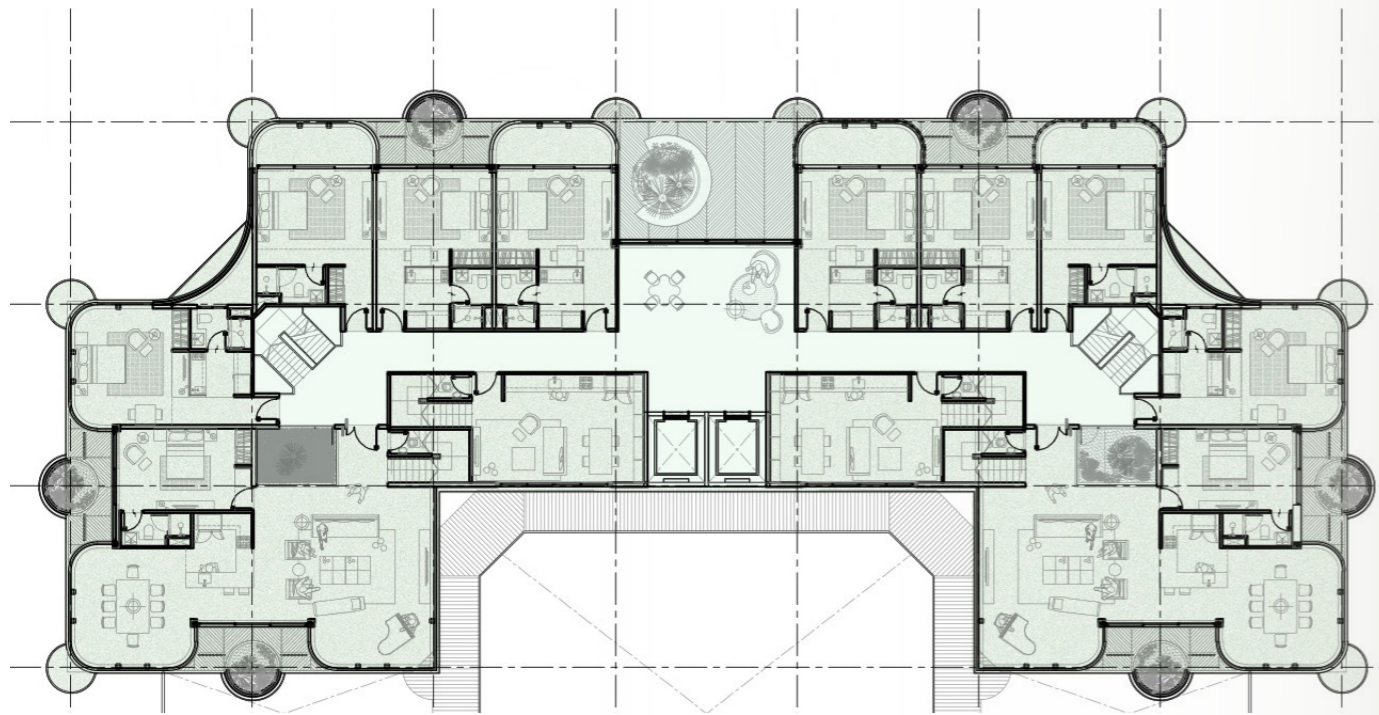
4.5.1 The transformation of the existing interior layout

4.5.2 The new additions

4.5.3 Provision for future expansion

P4's room arrangement

May 2018

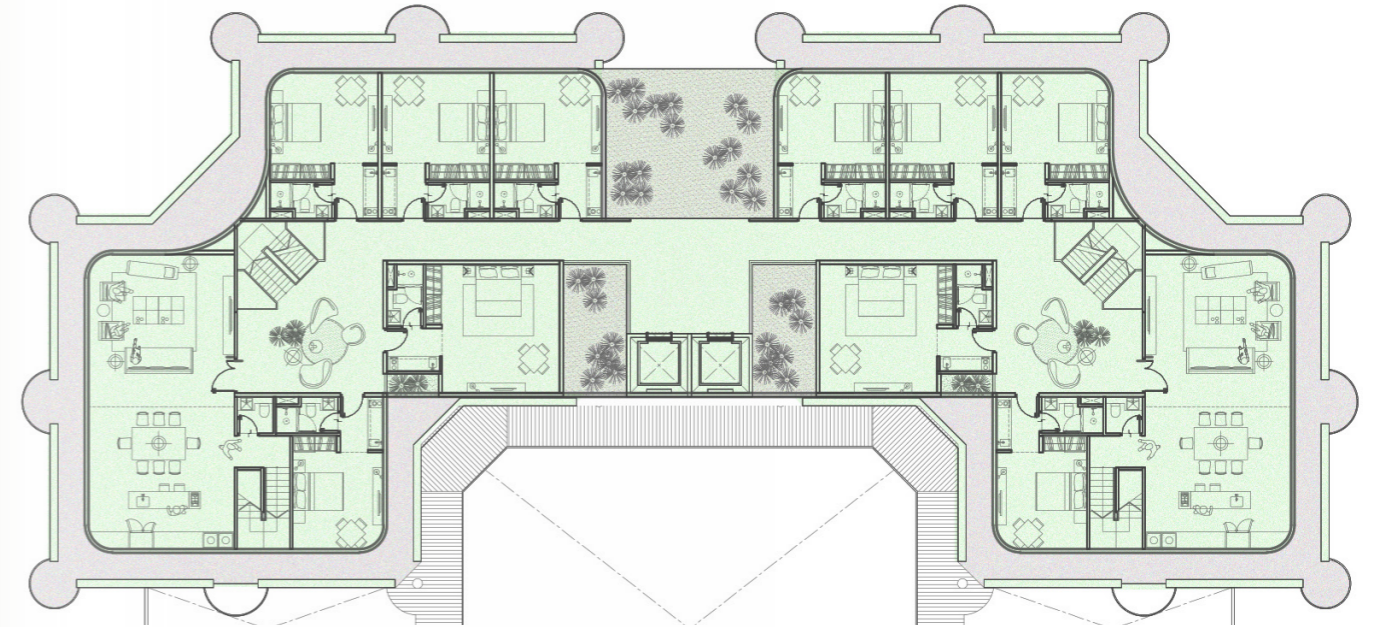


Second Floor Plan | 1:500

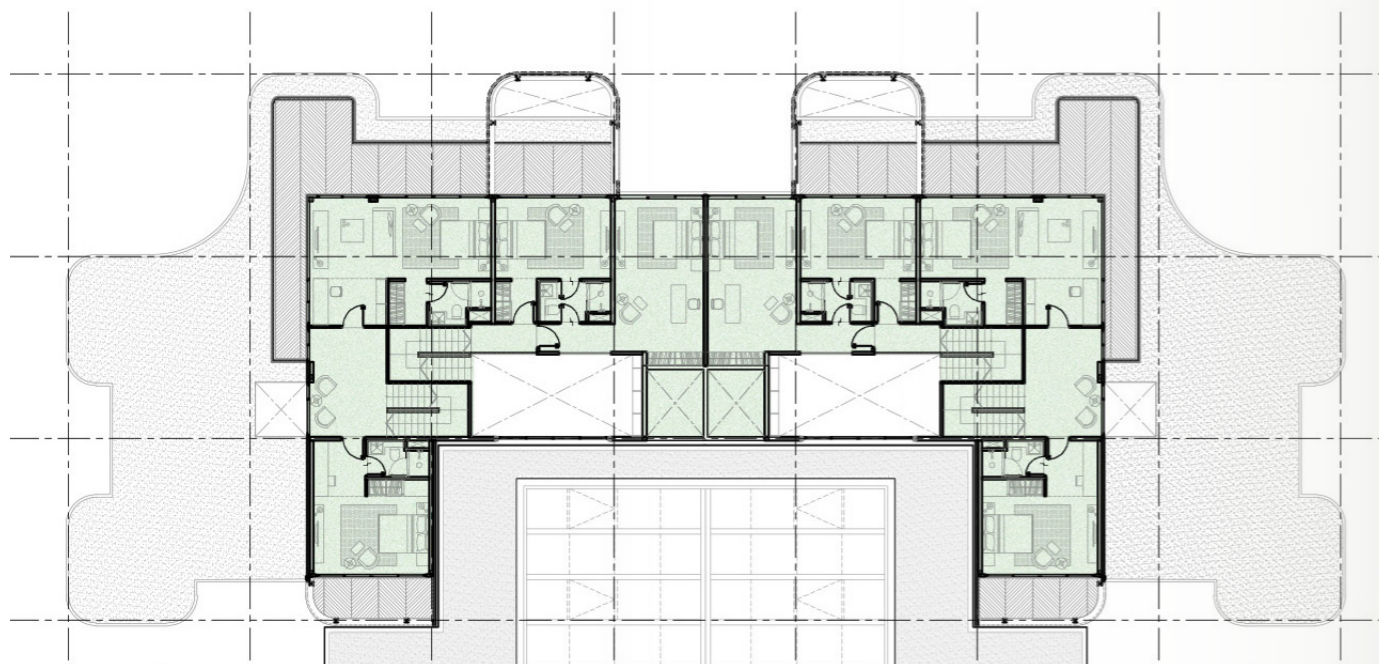


P2's room arrangement

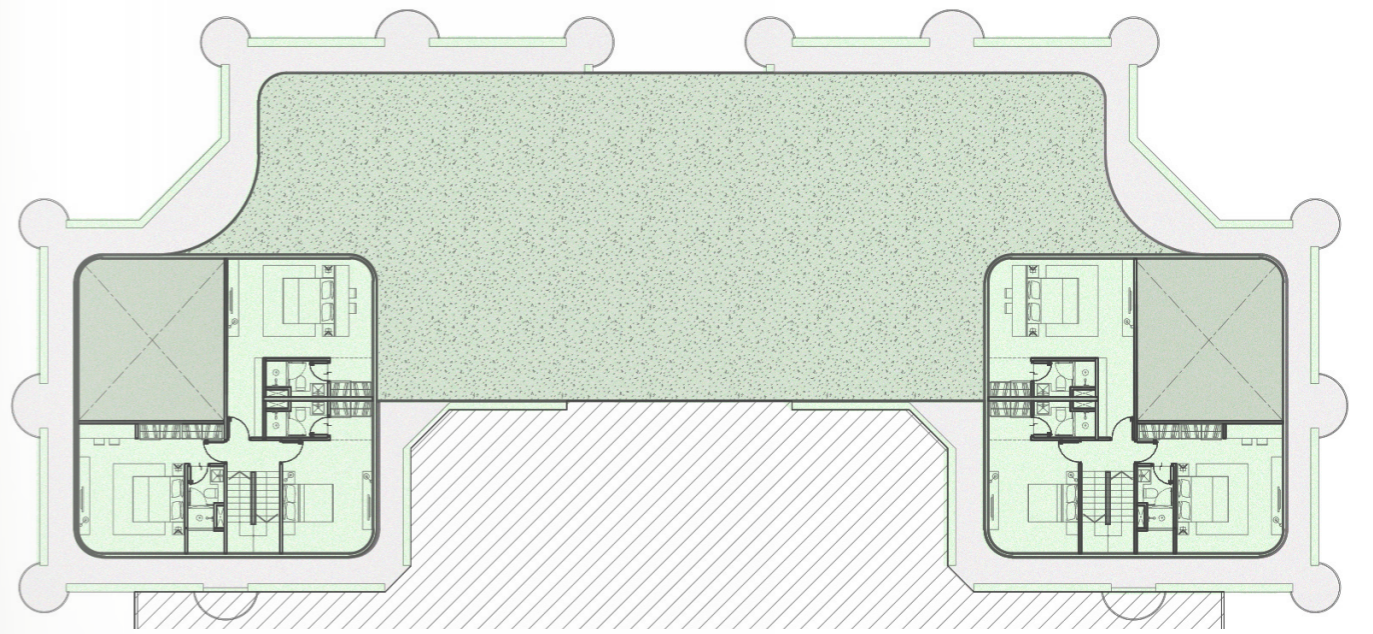
January 2018



Second Floor Plan | 1:500



Third Floor Plan | 1:500



Third Floor Plan | 1:500

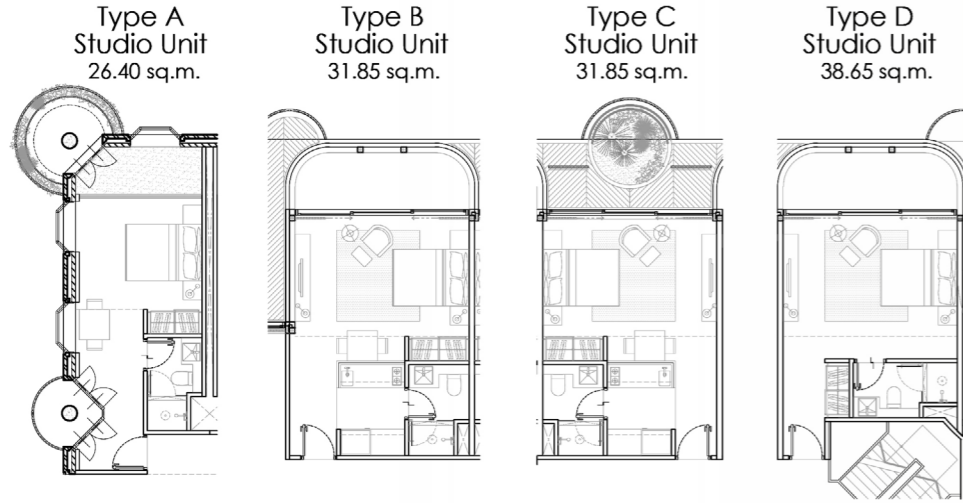


4.5 Residential function requirement

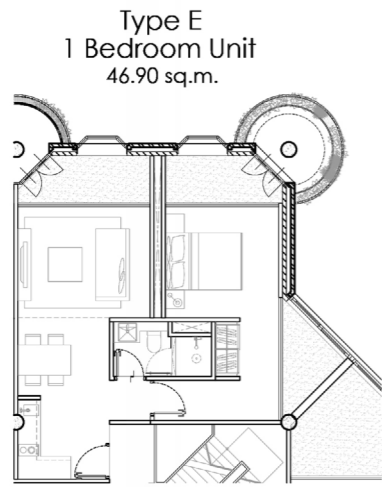
4.5.1 The transformation of the existing interior layout

4.5.2 The new additions

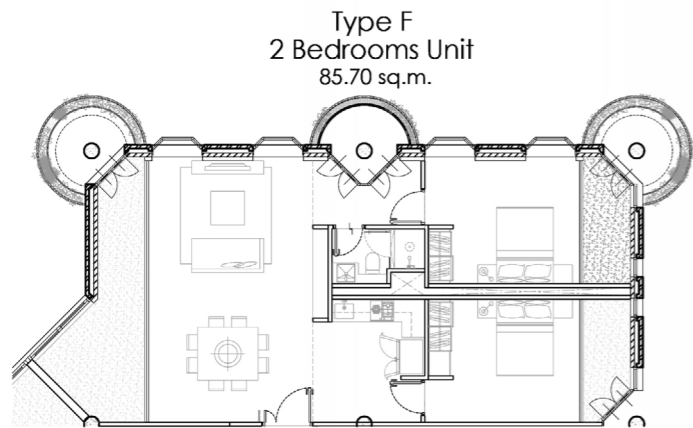
4.5.3 Provision for future expansion



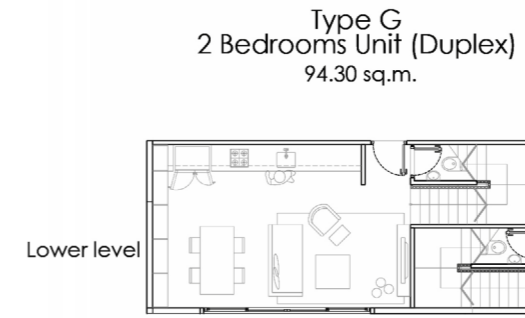
Studio 25-38 sqm | 16 units



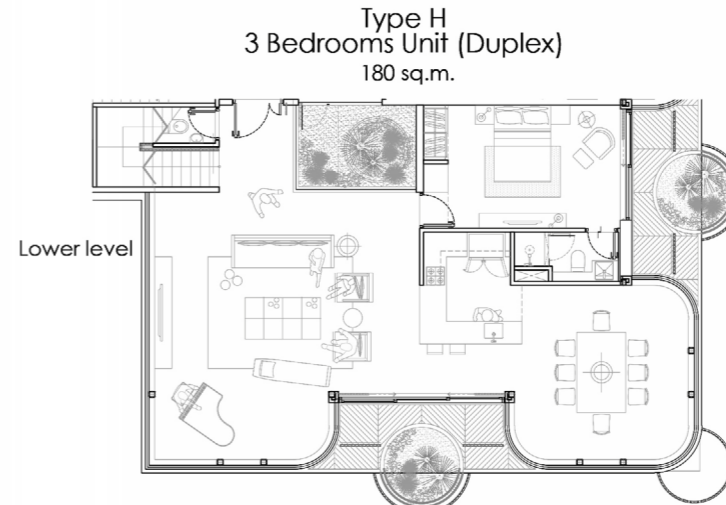
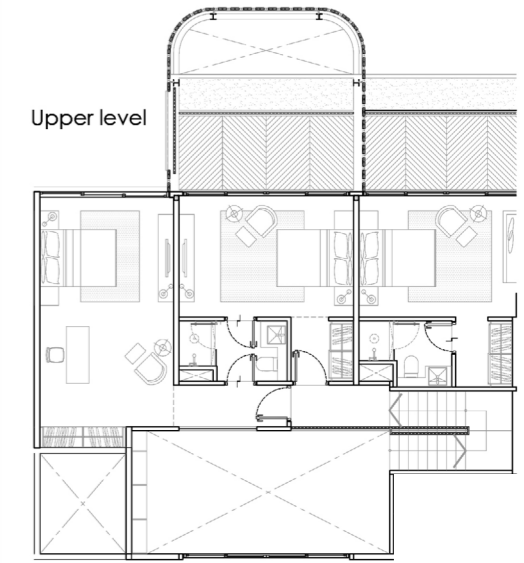
1 bedroom 38-45 sqm | 4 units



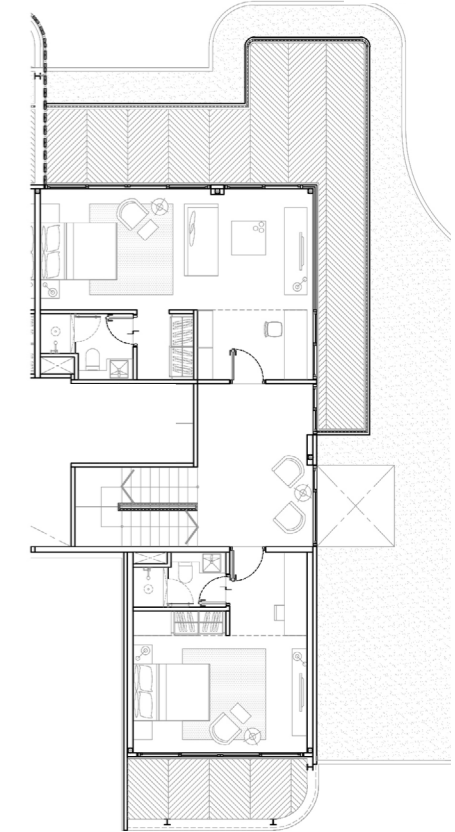
2 bedrooms 90 sqm | 4 units



2 bedrooms (duplex) 94 sqm | 2 units



3 bedrooms (duplex) 198 sqm | 2 units



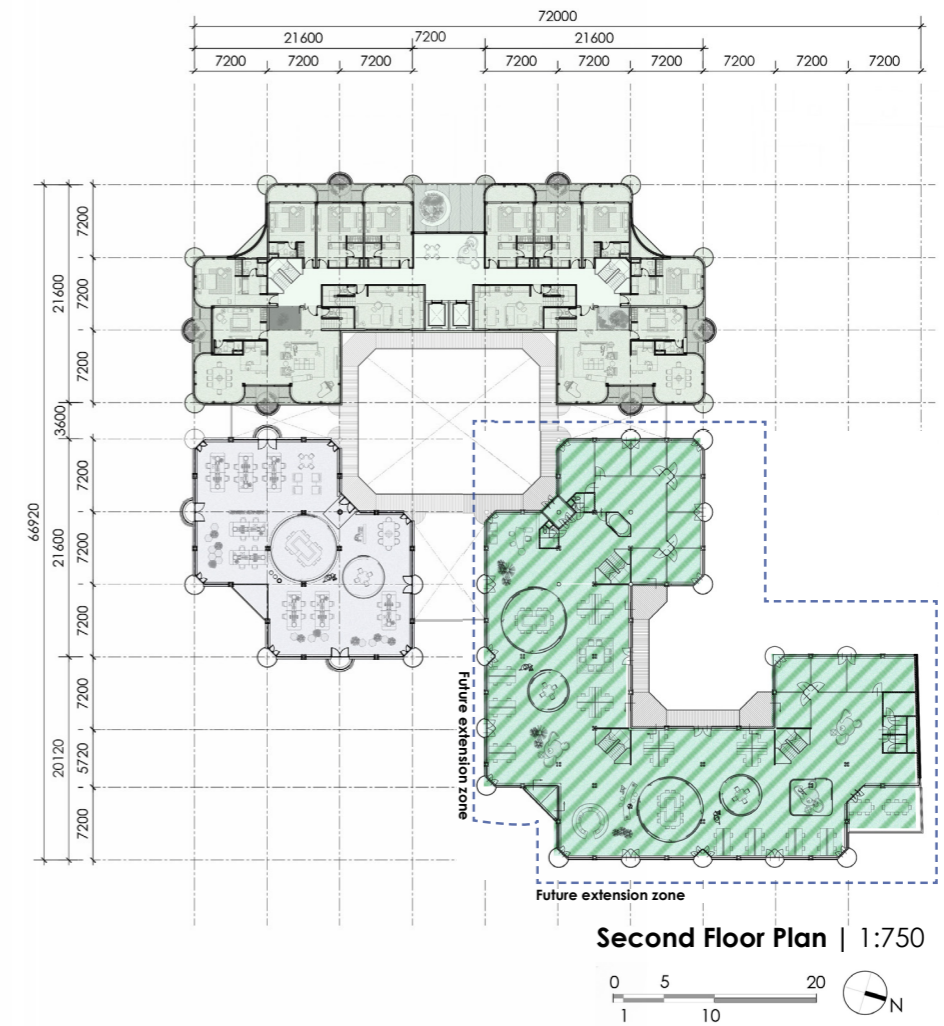
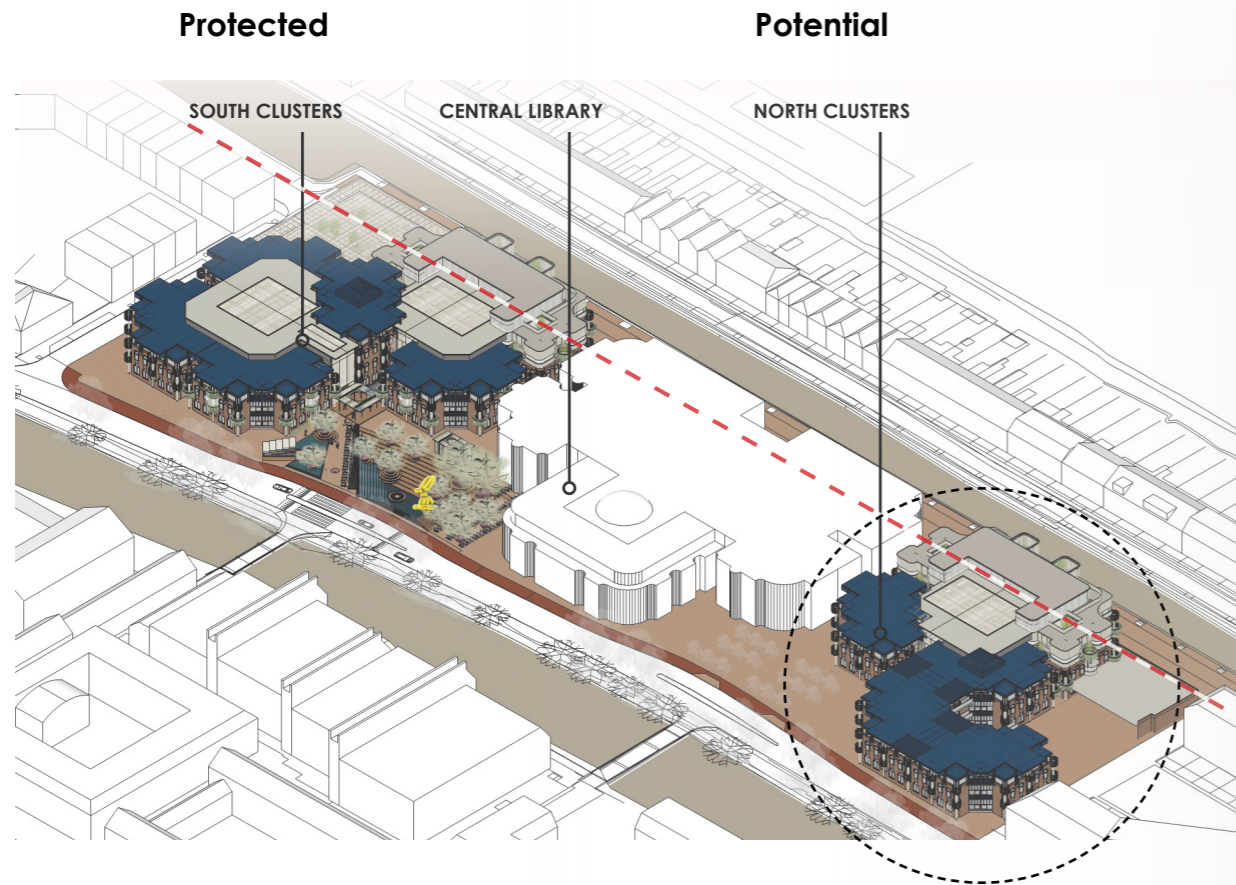
Residences 26 Units			2000 sqm
Studio	25-38 sqm	16 units	
1 bedroom	38-45 sqm	4 units	
2 bedrooms	90 sqm	4 units	
2 bedrooms (duplex)	94 sqm	2 units	
3 bedrooms (duplex)	198 sqm	2 units	

4.5 Residential function requirement

4.5.1 The transformation of the existing interior layout

4.5.2 The new additions

4.5.3 Provision for future expansion



Existing conditions



View of the North Clusters, "Second Phase" - W. Taemeyachat, 2018

Intervention Strategies & Design Proposals

To achieve those mentioned key objectives, this graduation project has explored series of intervention strategies as follows.

4.1. Programmatic Improvements

- 4.1.1. Architectural Design Ambitions
- 4.1.2. Program Proposals
- 4.1.3. Area Tabulation

4.2. Functional rearrangement / Re-zoning

- 4.2.1. Public zone
- 4.2.2. Private functions
- 4.2.3. Intersection area

4.3. Ground floor alterations

- 4.3.1. Urban connection at the public plaza
- 4.3.2. Activating the underutilized space/Covered courtyards
- 4.3.3. Creating identities
 - 4.3.3.A. The new entrance
 - 4.3.3.B. Sunken courtyard
 - 4.3.3.C. Raised platform
 - 4.3.3.D. The Green Library

4.4 Upper Floor Reconfiguration & the New Addition

- 4.4.1. To improving the building efficiency
- 4.4.2. To improve the quality of the interior space
- 4.4.3. To increase the quantity of existing gross floor area

4.5 Residential function requirement

- 4.5.1 The transformation of the existing interior layout
- 4.5.2 The new additions
- 4.5.3 Provision for future expansion

4.6 The reinterpretation of the original facade design language

- 4.6.1. Analysis
- 4.6.2 Design experiment
 - 4.6.2.A. Aluminum Cladding in purple powder coated
 - 4.6.2.B. Perforated brick block
 - 4.6.2.C. Terracotta Facade

4.6 The reinterpretation of the original facade design language

In the Leiden Humanity Building, there are several building materials been integrated into the facade design. The materials selection strategies were influenced by the urban contexts, structural performances, construction techniques and the architect's design philosophies. The compositions and appearance of these two structuralism buildings are formed by significant materials as the followings.

1. Washed Concrete structure - Mushroom Columns
2. Extruded Fired clay brick - External masonry walls
3. Blue painted timber: External structure, columns, and roof decorations
4. Solid wood in natural finished: Link bridge

Besides the materiality, Van Stigt had also shown his design intention through the detailing and tectonics of the external facades.

The left image illustrates a breaking up of the facade width to smaller dimensions by exposing the concrete columns in the middle of the masonry walls.

In addition, Van Stigt also used tectonic of the external facade as another like to the historic looks. The cascading lines and arches above window openings. This analysis claims that these design elements are the reflection of the urban contexts. Van Stigt tried to introduce some connection between his buildings and the heritage appearances of Leiden city center. The sign of the mention elements could also be seen from the adjacent 19th-century street houses.

Therefore, it is important to take heritage value of the original facade design as a starting point of the new extension appearance.

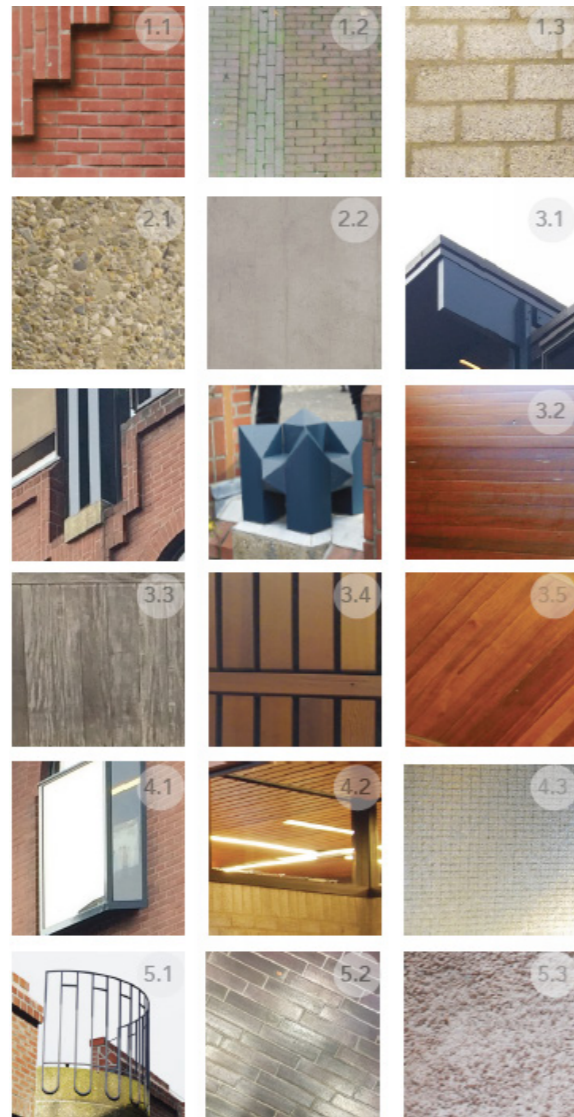


View of the the new addition - W. Taemeyachat, 2018

**4.6 The reinterpretation
of the original facade design language**

- 4.6.1. Analysis
- 4.6.2 Design experiment
 - 4.6.2.A. Aluminum Cladding in purple powder coated
 - 4.6.2.B. Perforated brick block
 - 4.6.2.C. Terracotta Facade

Existing Material Palette



Existing Facade Composition



**4.6 The reinterpretation
of the original facade design language**

4.6.1. Analysis

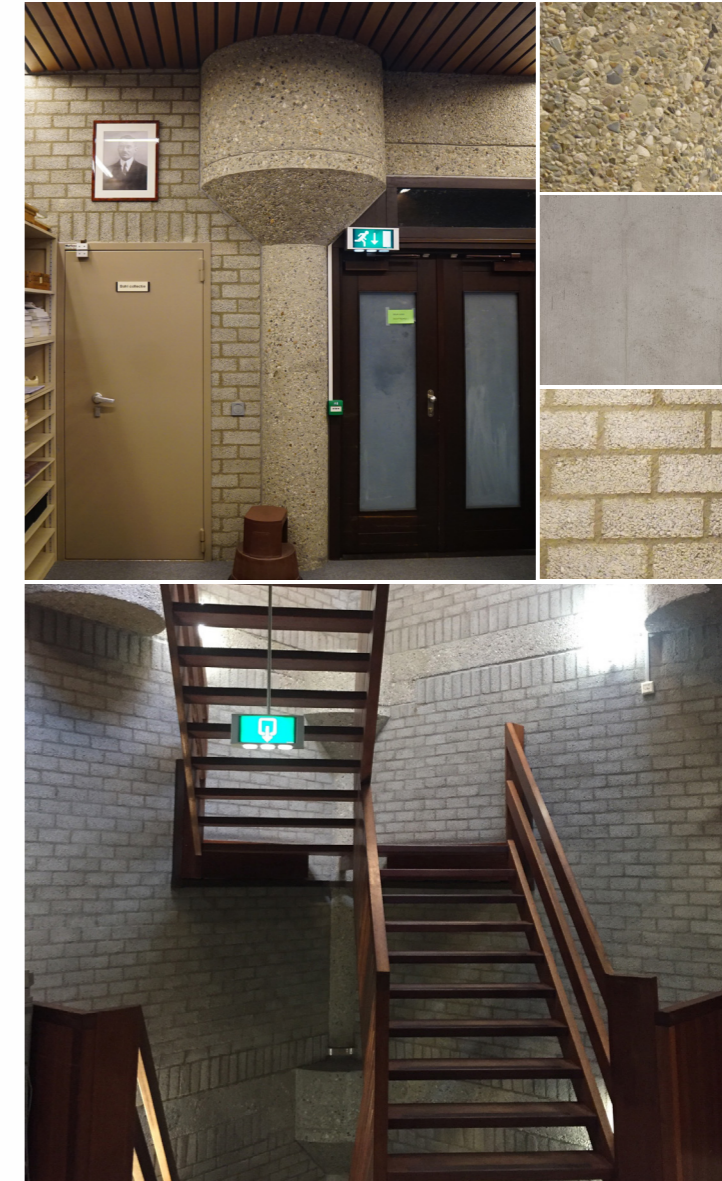
4.6.2 Design experiment

- 4.6.2.A. Aluminum Cladding in purple powder coated
- 4.6.2.B. Perforated brick block
- 4.6.2.C. Terracotta Facade

Existing facade design in relation with the Urban Context



Existing internal facade composition



**4.6 The reinterpretation
of the original facade design language**

4.6.1. Analysis

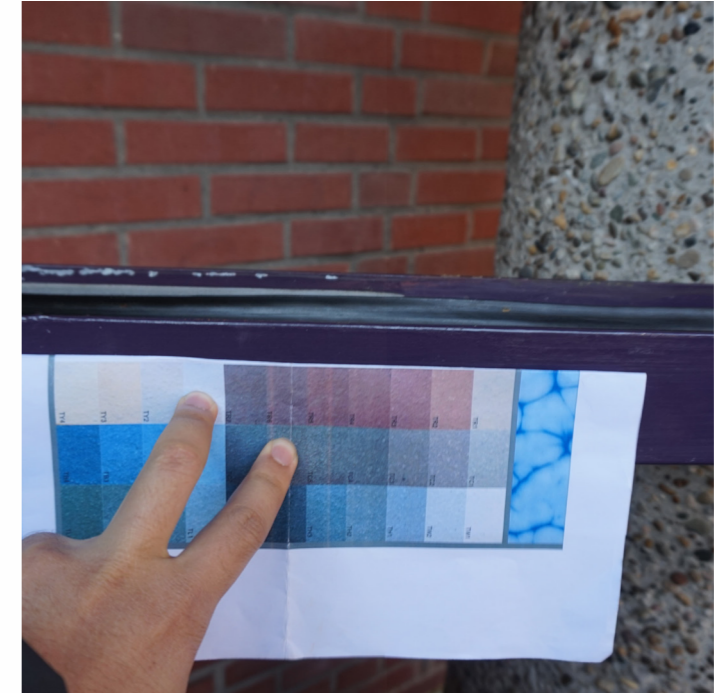
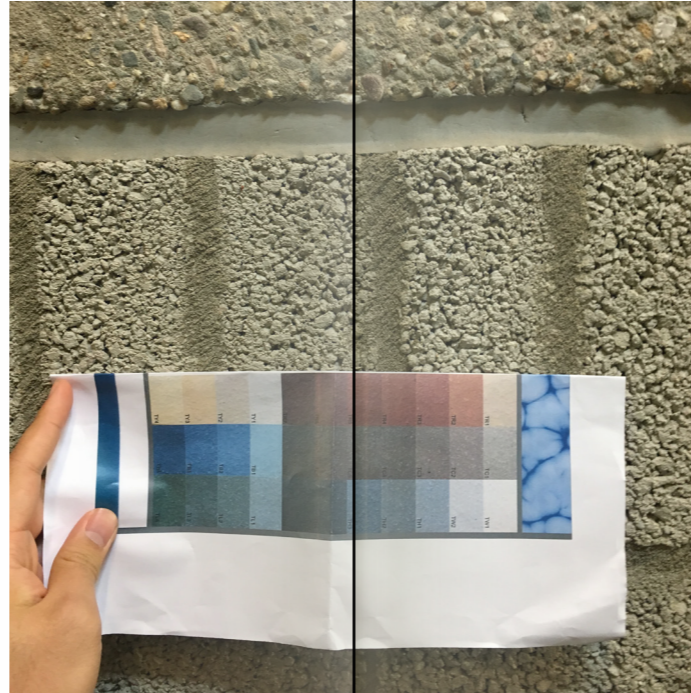
4.6.2 Design experiment

4.6.2.A. Aluminum Cladding in purple powder coated

4.6.2.B. Perforated brick block

4.6.2.C. Terracotta Facade

Original material dimension and colors



4.6 The reinterpretation of the original facade design language

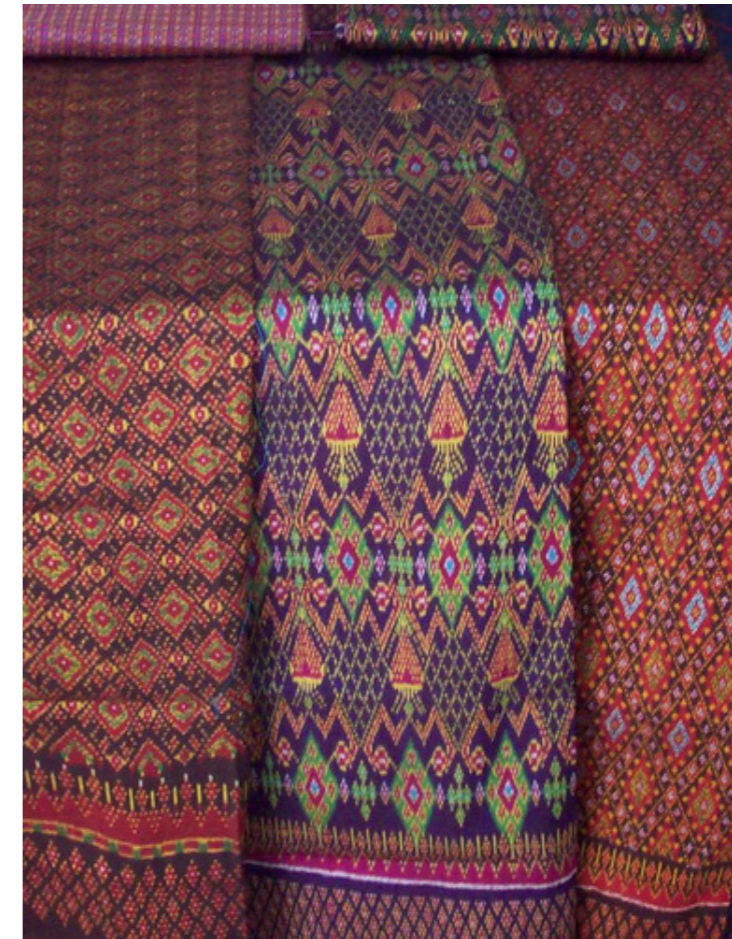
4.6.2 Design experiment

4.6.2.A. Aluminum Cladding in purple powder coated

January 2018

4.6.2.B. Perforated brick block

4.6.2.C. Terracotta Facade



4.6 The reinterpretation of the original facade design language

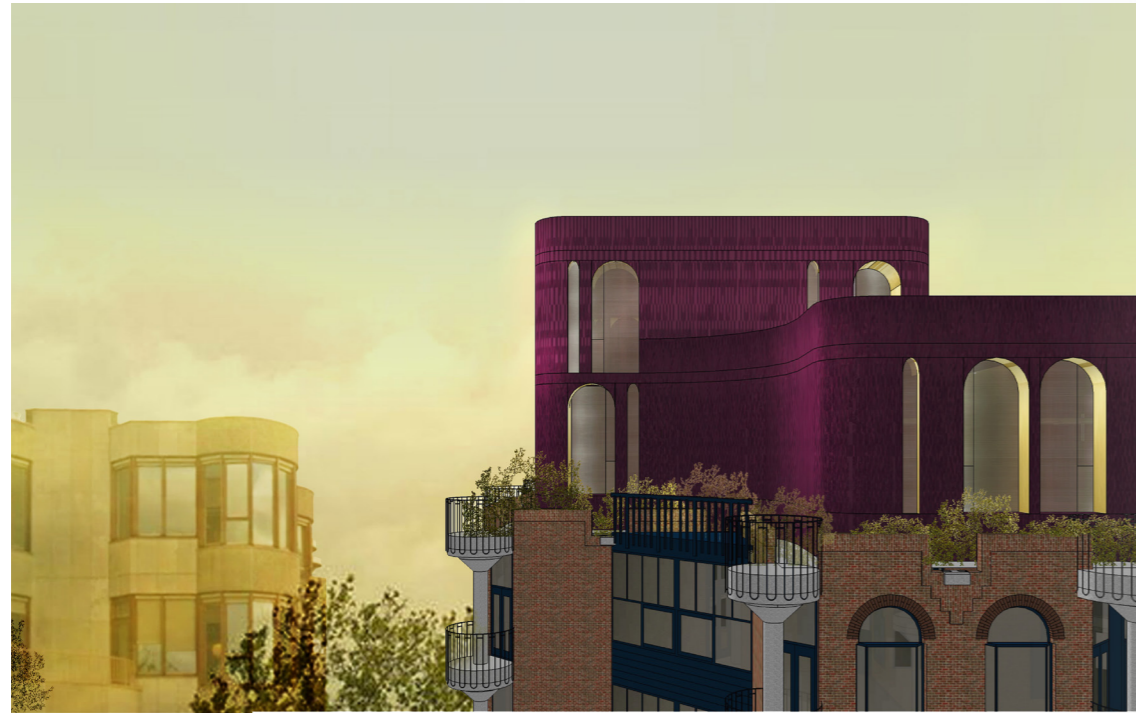
4.6.2 Design experiment

4.6.2.A. Aluminum Cladding in purple powder coated

January 2018

4.6.2.B. Perforated brick block

4.6.2.C. Terracotta Facade



4.6 The reinterpretation of the original facade design language

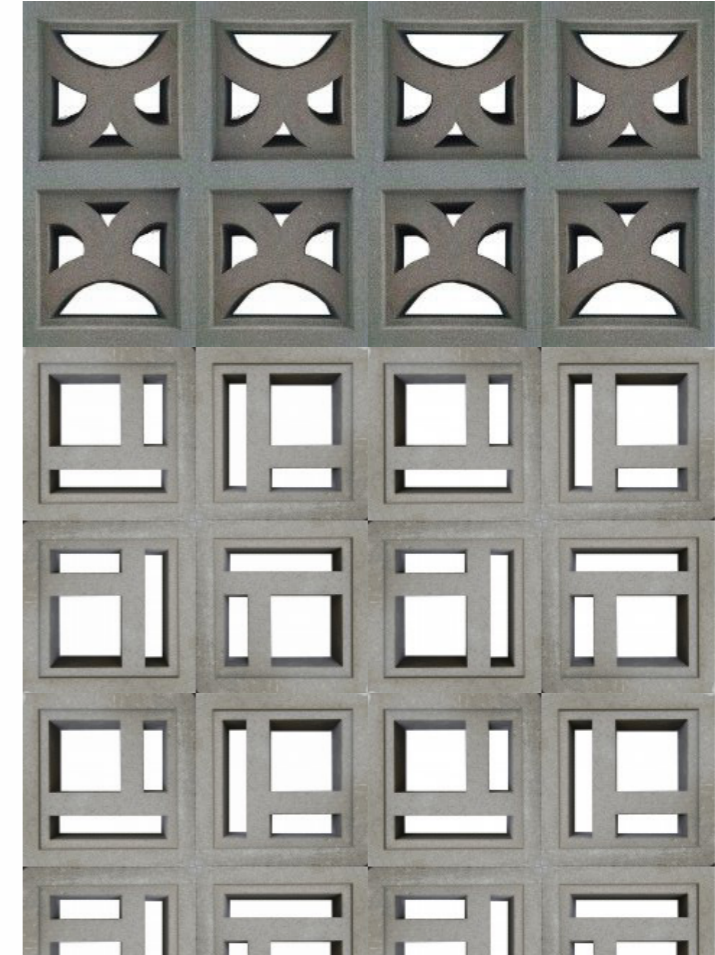
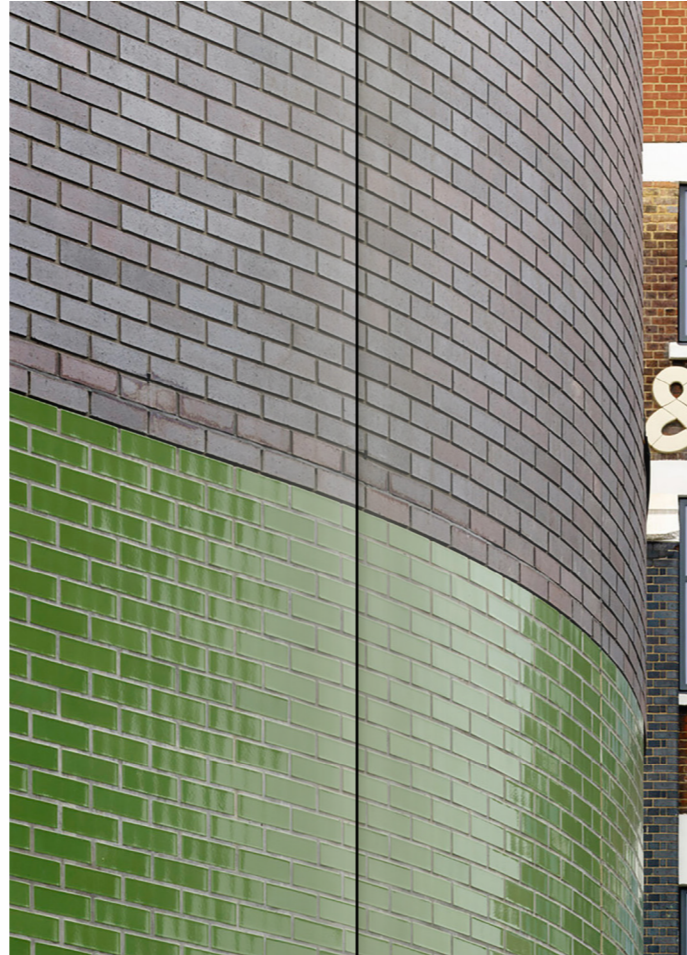
4.6.2 Design experiment

4.6.2.A. Aluminum Cladding in purple powder coated

4.6.2.B. Perforated brick block

February - March 2018

4.6.2.C. Terracotta Facade



4.6 The reinterpretation of the original facade design language

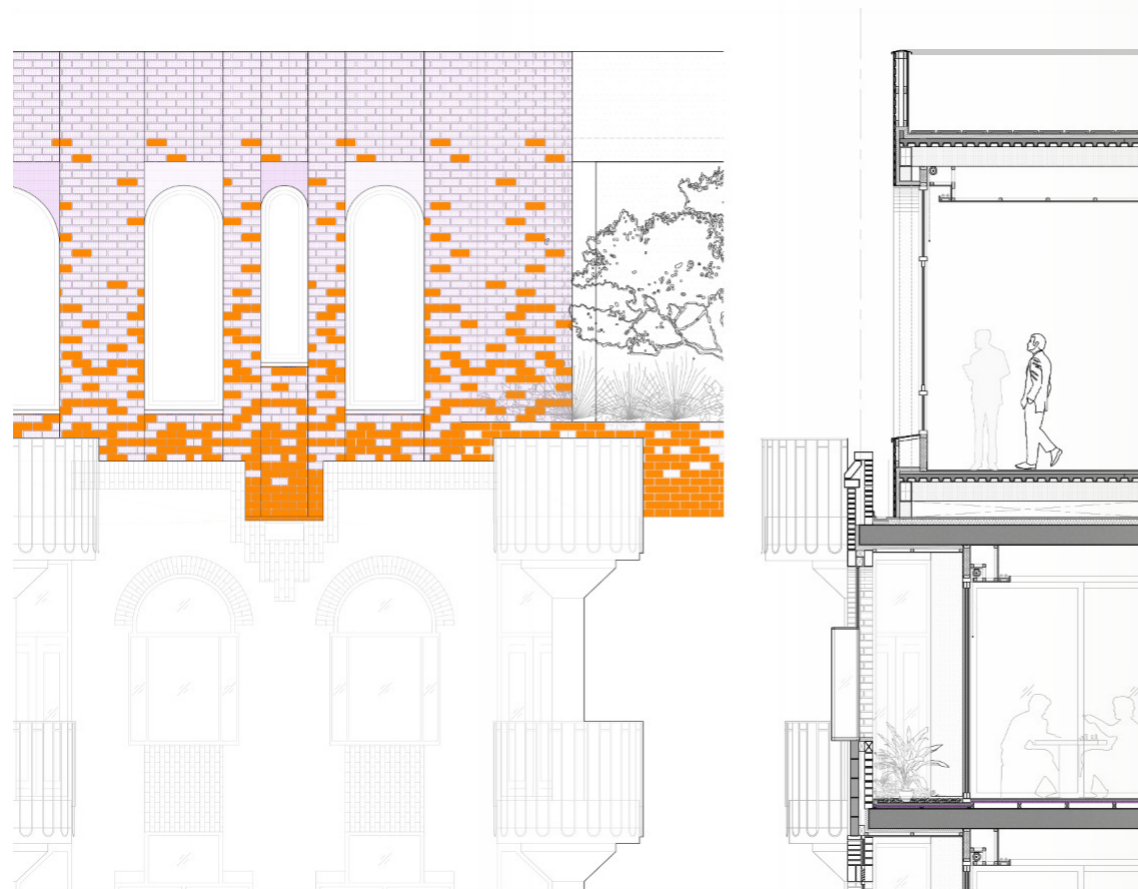
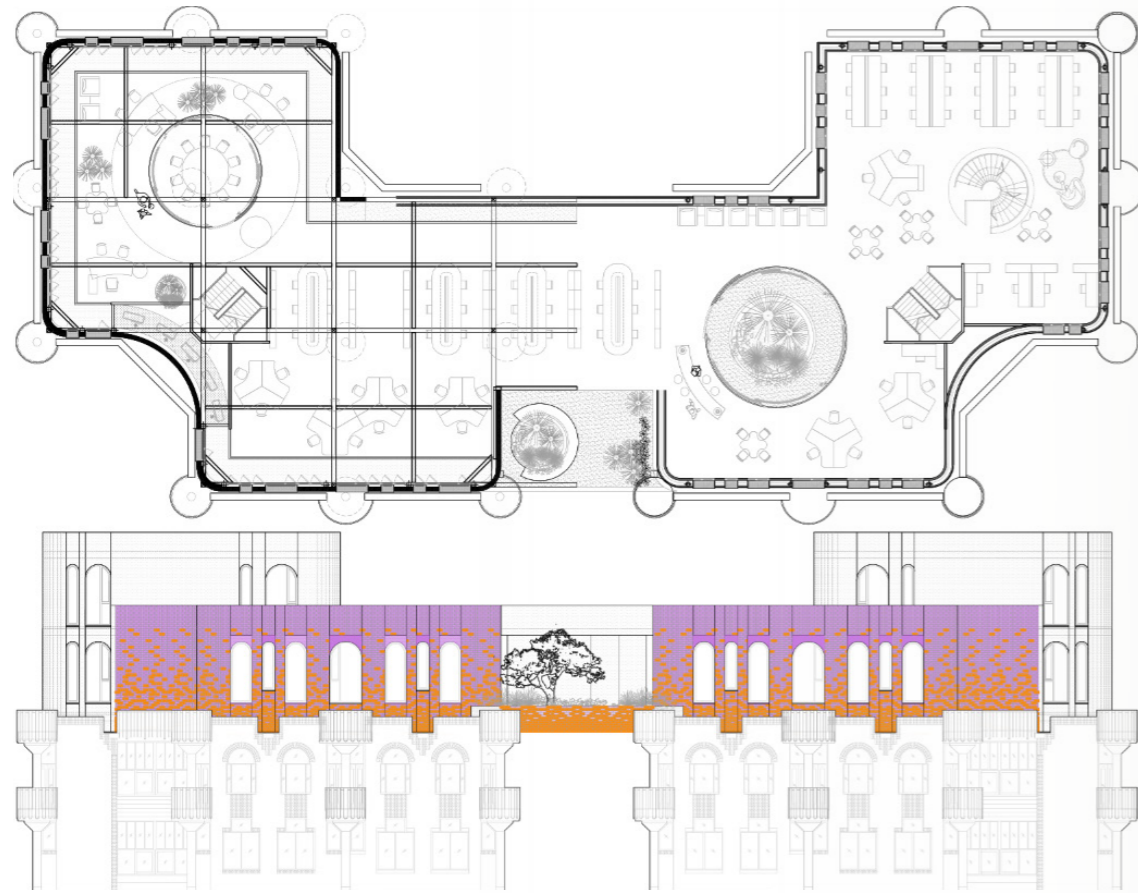
4.6.2 Design experiment

4.6.2.A. Aluminum Cladding in purple powder coated

4.6.2.B. Perforated brick block

February - March 2018

4.6.2.C. Terracotta Facade



4.6 The reinterpretation of the original facade design language

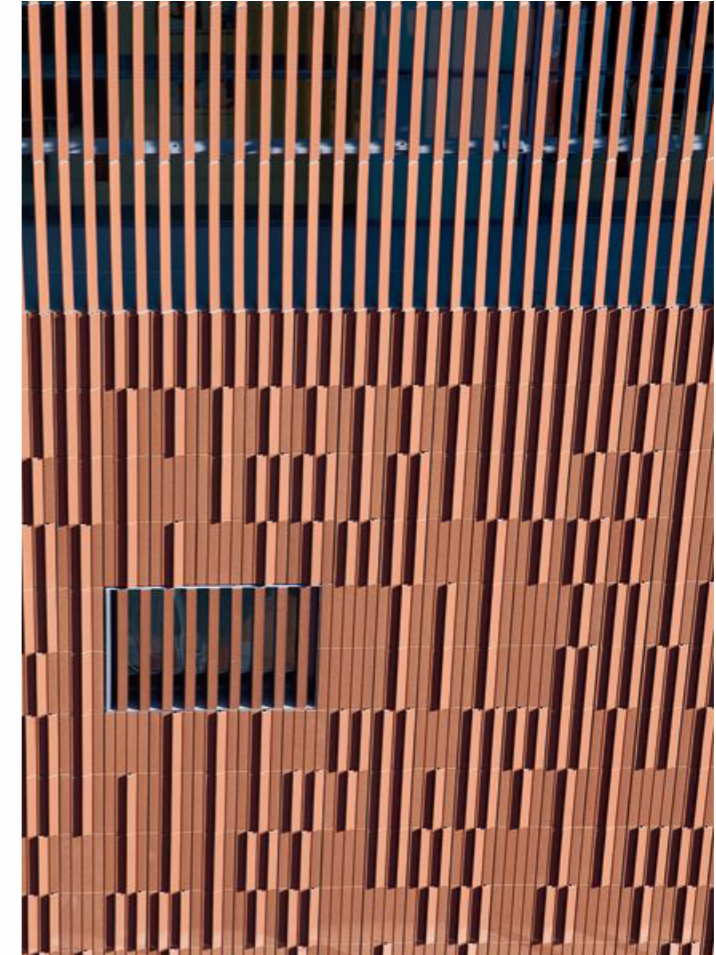
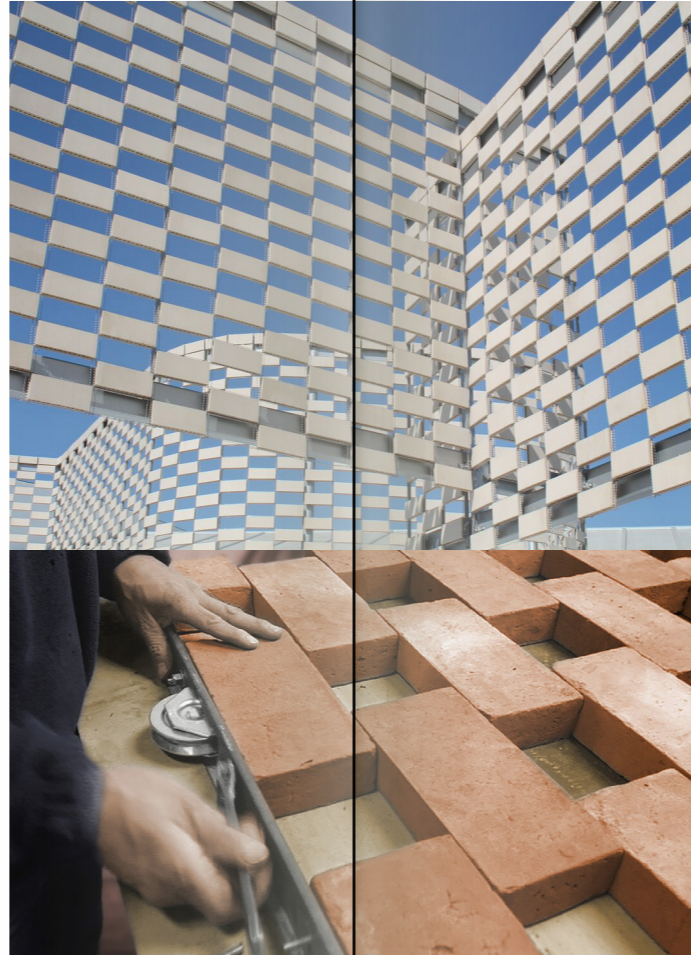
4.6.2 Design experiment

4.6.2.A. Aluminum Cladding in purple powder coated

4.6.2.B. Perforated brick block

4.6.2.C. Terracotta Facade

April - June 2018



4.6 The reinterpretation of the original facade design language

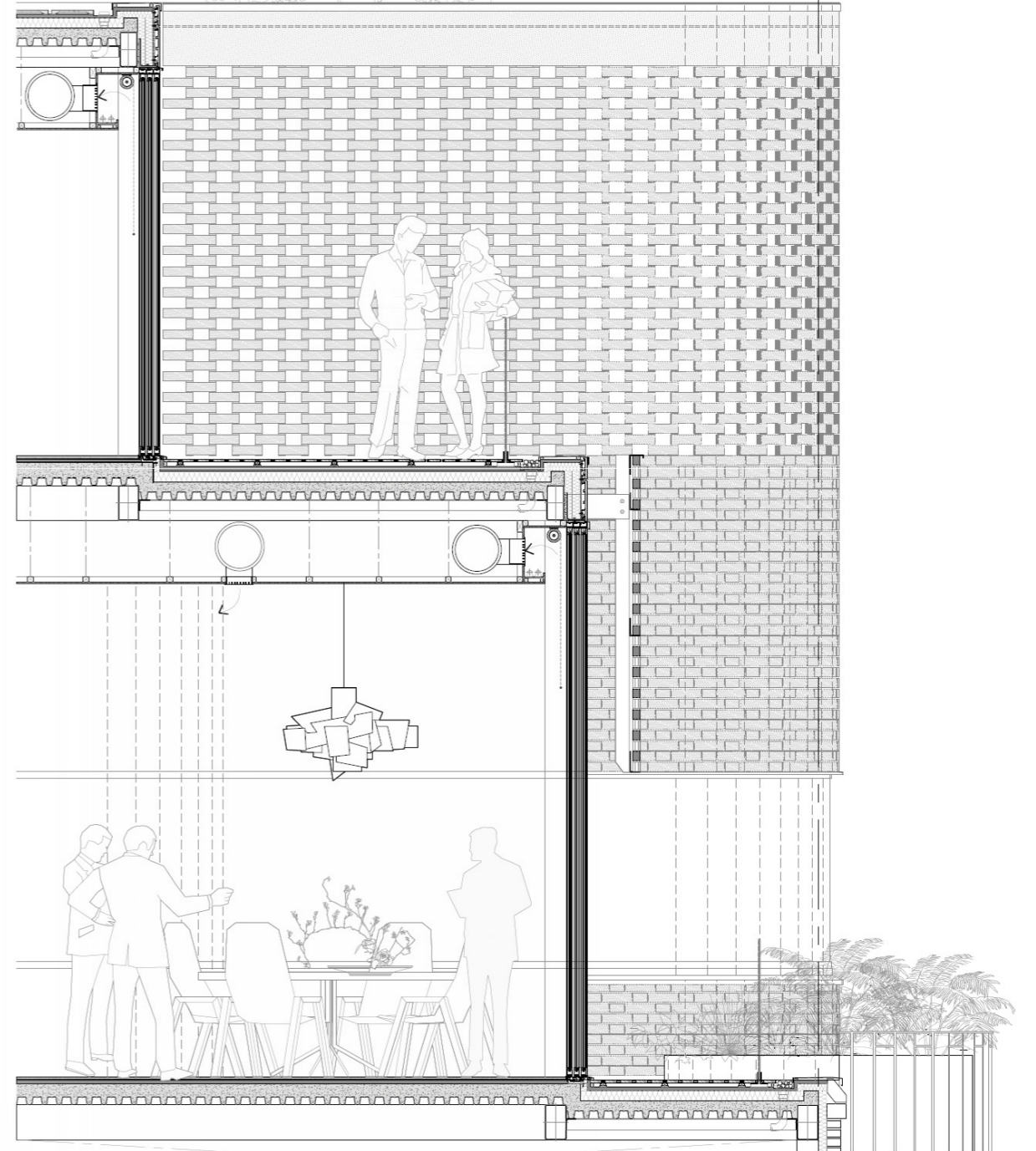
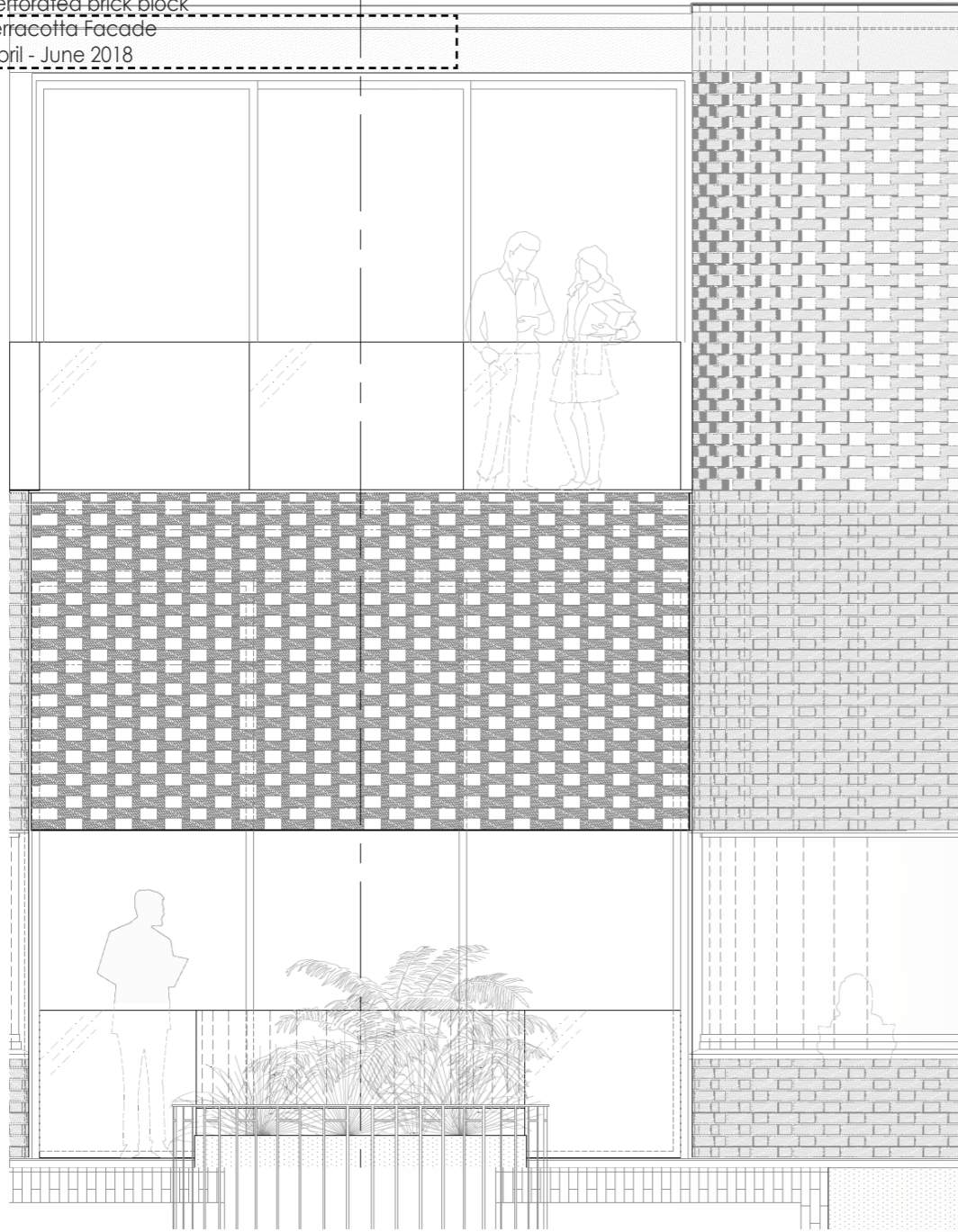
4.6.2 Design experiment

4.6.2.A. Aluminum Cladding in purple powder coated

4.6.2.B. Perforated brick block

4.6.2.C. Terracotta Facade

April - June 2018



4.6 The reinterpretation of the original facade design language

4.6.2 Design experiment

4.6.2.A. Aluminum Cladding in purple powder coated

4.6.2.B. Perforated brick block

4.6.2.C. Terracotta Facade

April - June 2018

FINAL DESIGN



4.6 The reinterpretation of the original facade design language

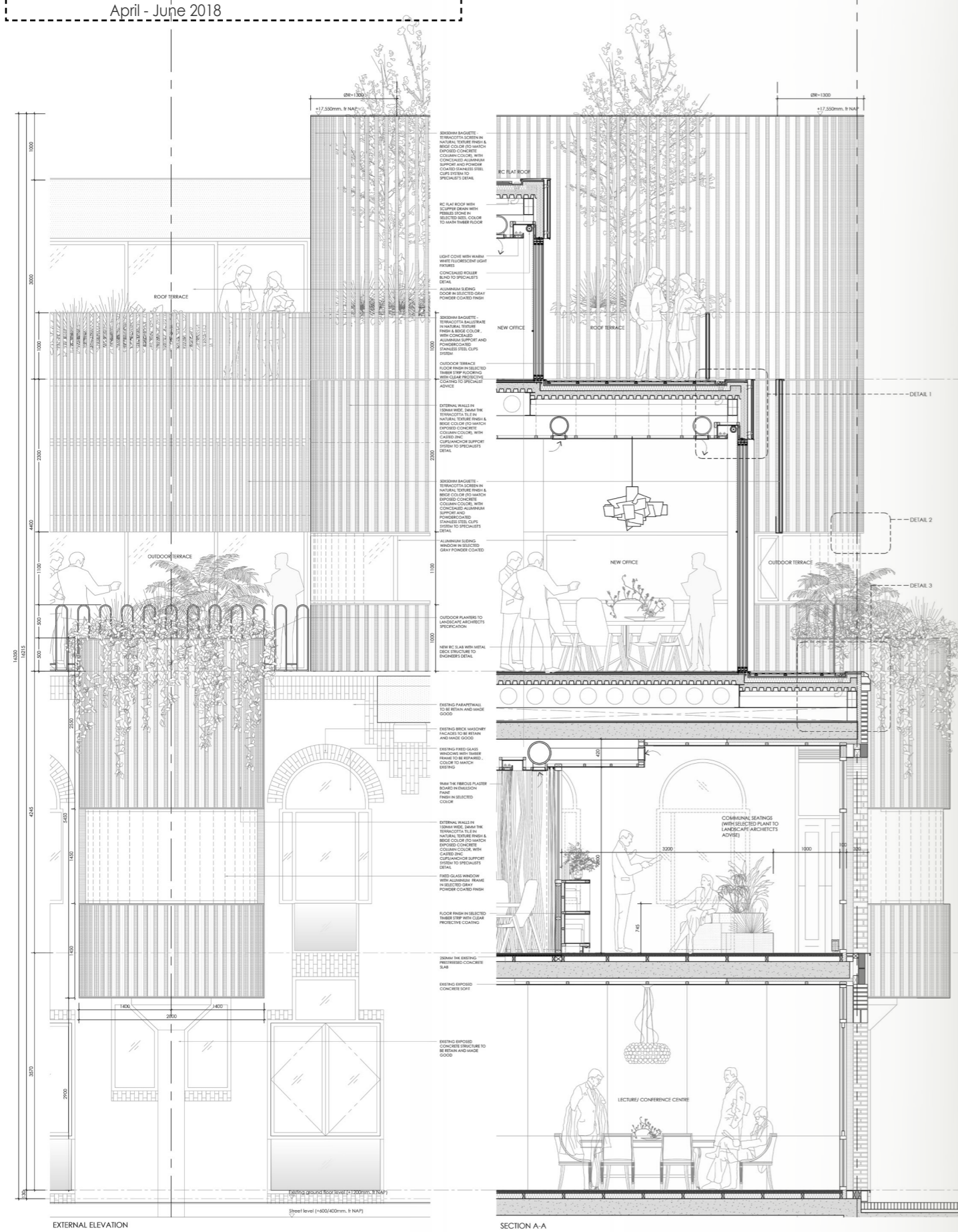
4.6.2 Design experiment

4.6.2.A. Aluminum Cladding in purple powder coated

4.6.2.B. Perforated brick block

4.6.2.C. Terracotta Facade

April - June 2018





5. TECHNICAL MATTERS

5.1. Structural framing

- 5.1.1. Structural intervention concept
- 5.1.2. Initial Stage / Structural dilemma
- 5.1.3. Previous experiment
- 5.1.4. Final design

5.2. Building sustainability

- 5.2.1. Passive climate control
- 5.2.2. Heating and cooling system
- 5.2.3. Energy saving provisions
- 5.2.4. Water management
- 5.2.5. Renewable Energy
- 5.2.6. Air ducting system / Insulation scheme

5.3. Fire safety

- 5.3.1. South Clusters
- 5.3.2. North Clusters

5.4 Facade and Detail design

- 5.4.1. New Extension Facade
- 5.4.2. Existing facade degradation

5.1. Structural framing

5.1.1. Structural intervention concept

5.1.2. Initial Stage / Structural dilemma

5.1.3. Previous experiment

5.1.4. Final design

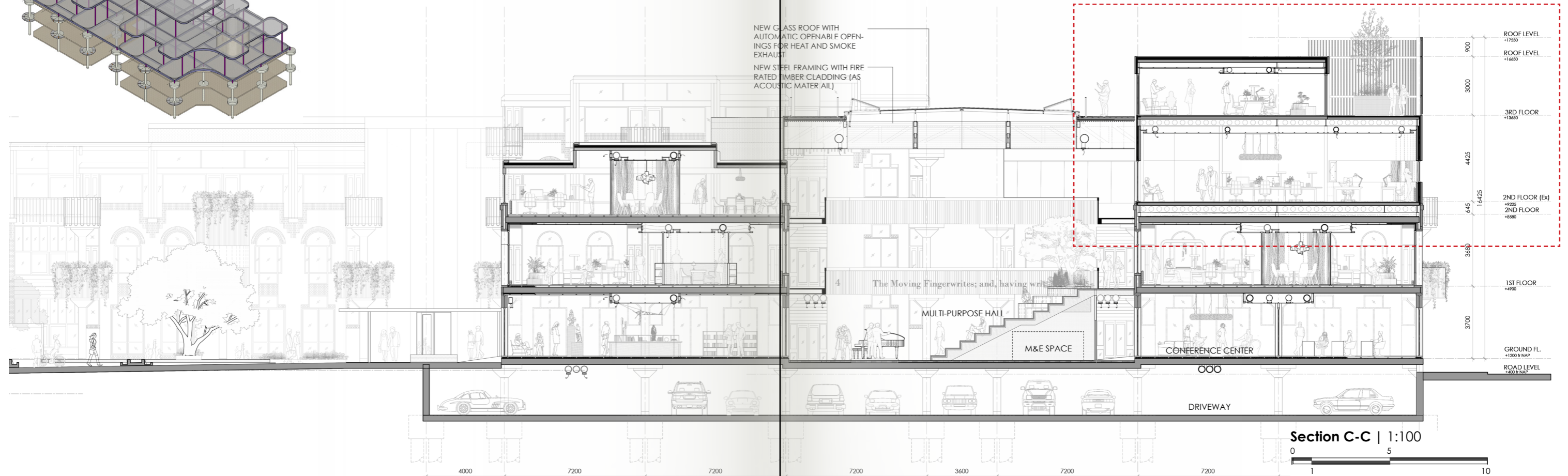
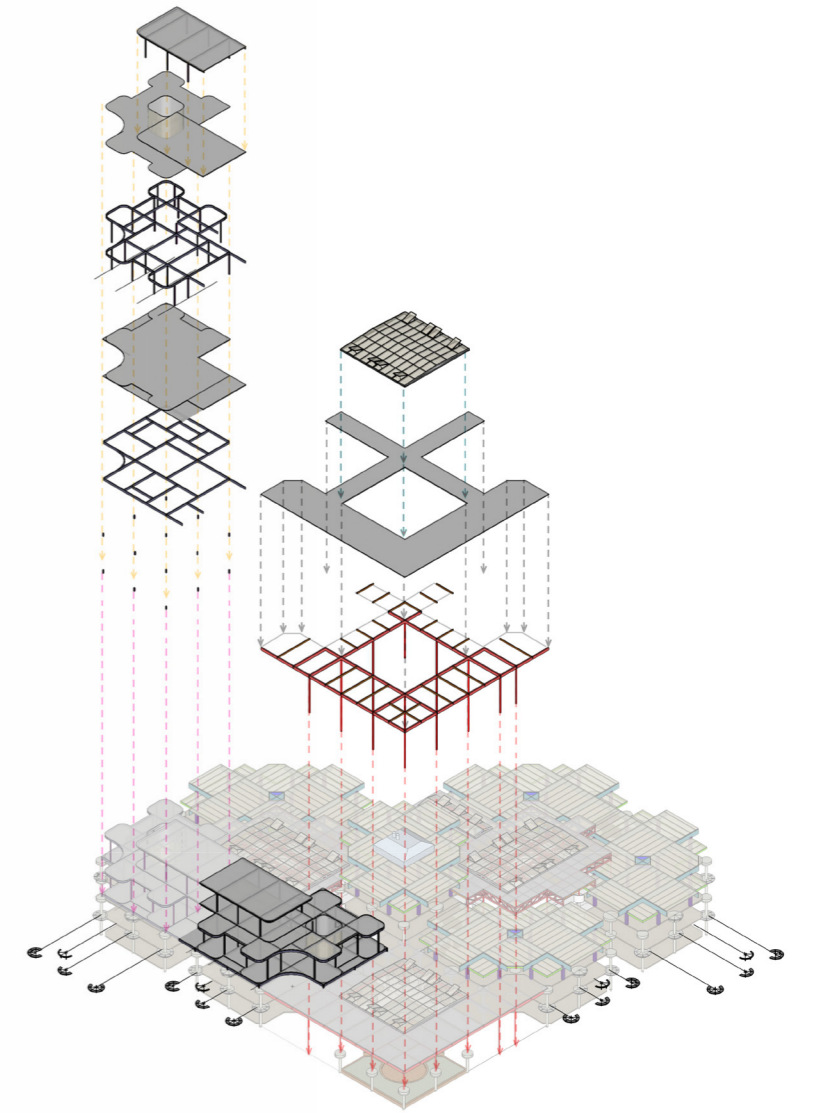
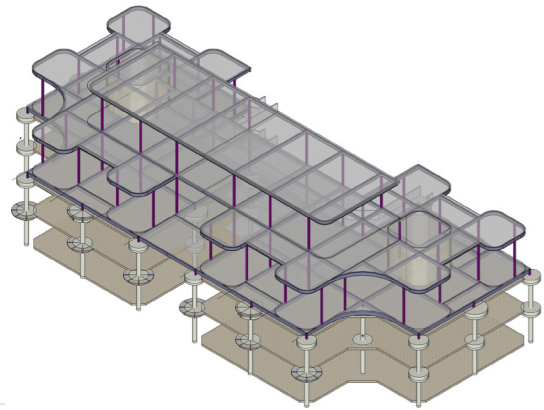
5.1 STRUCTURE

5.1.1. Structural intervention concept

In principle, the new extension of this development will be constructed in the light-weight structural framing. The integration of metal deck and reinforced concrete permits a reduction in required member size, hence leading to material savings in concrete and steel, which eventually translate to cost savings.

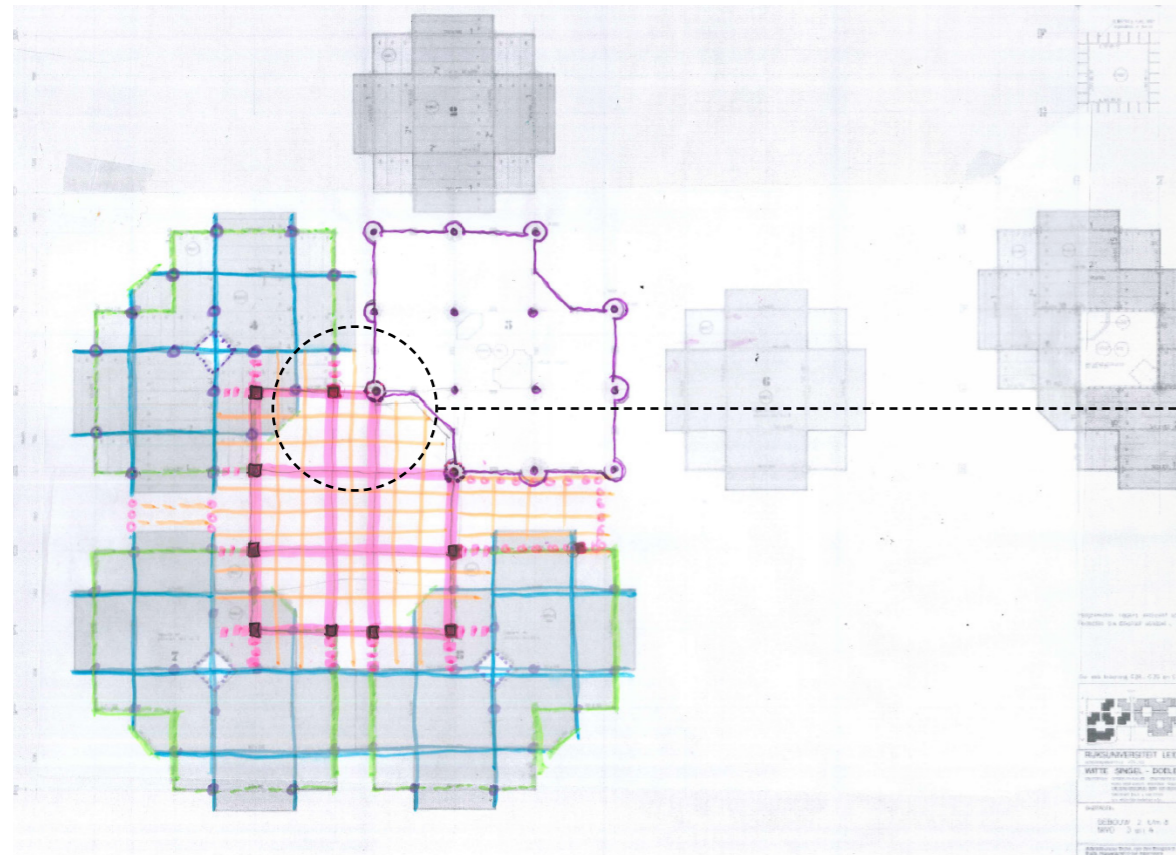
In addition, the reduction of materials and structural member sizes contribute to a reduction in building self-weight, enabling smaller vertical load resisting members such as columns, piles and give a higher flexibility for M&E ducting.

The series of main I-beams are located at the bottom of the new extension, linking between the sixteen stumps that resting right on top of each existing concrete column locations. The five new cores are carefully located to avoid the major structural intervention to the original brick masonry facades.

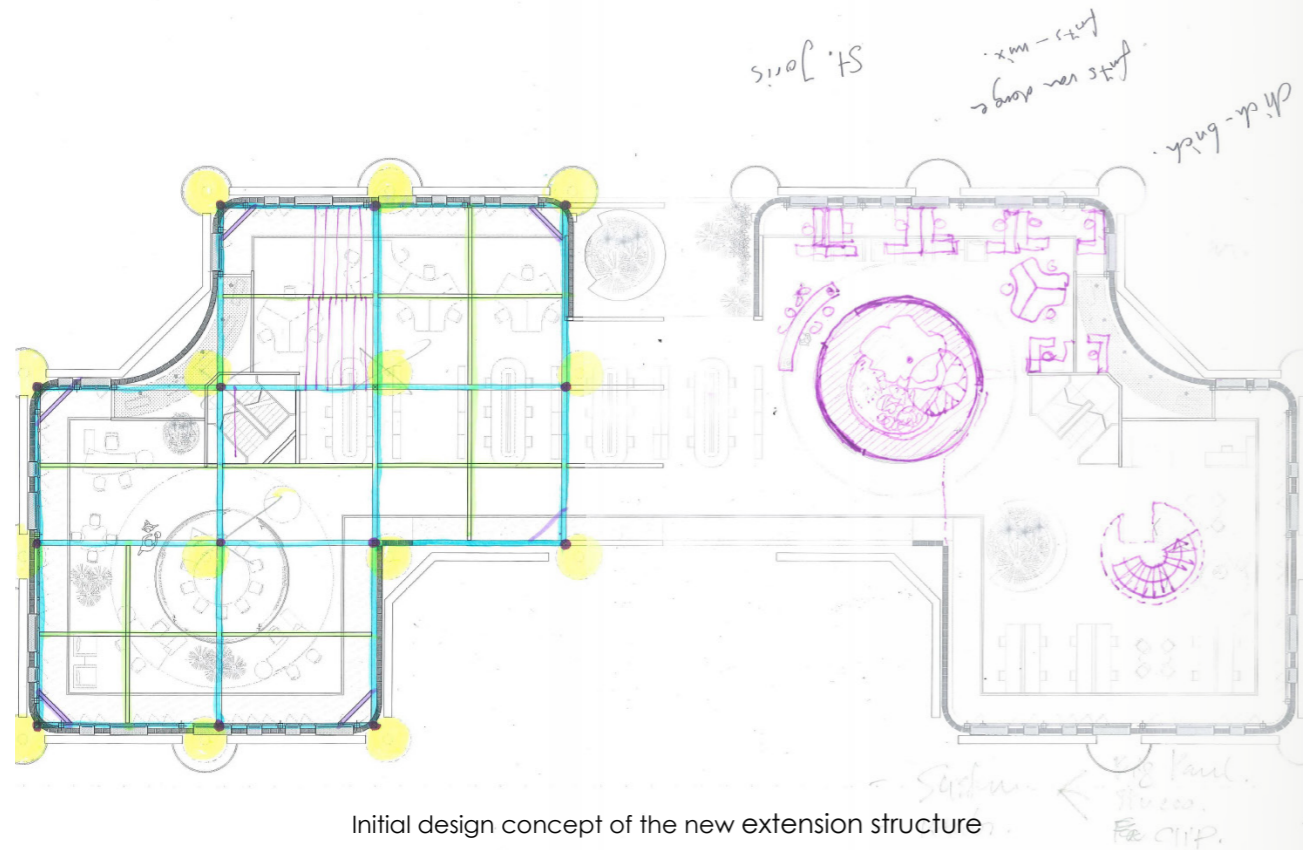


5.1. Structural framing

- 5.1.1. Structural intervention concept
- 5.1.2. Initial Stage / Structural dilemma
- 5.1.3. Previous experiment
- 5.1.4. Final design



Initial design concept of the new courtyard roof structure



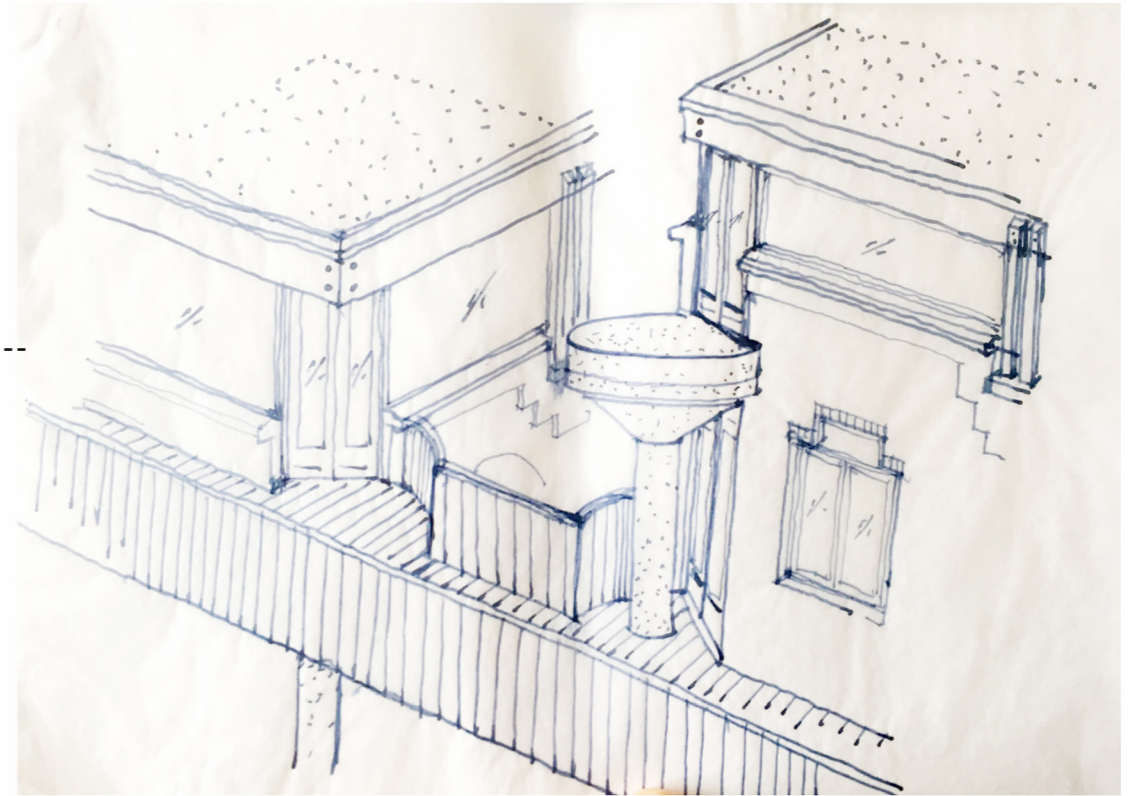
Initial design concept of the new extension structure

5.1. Structural framing

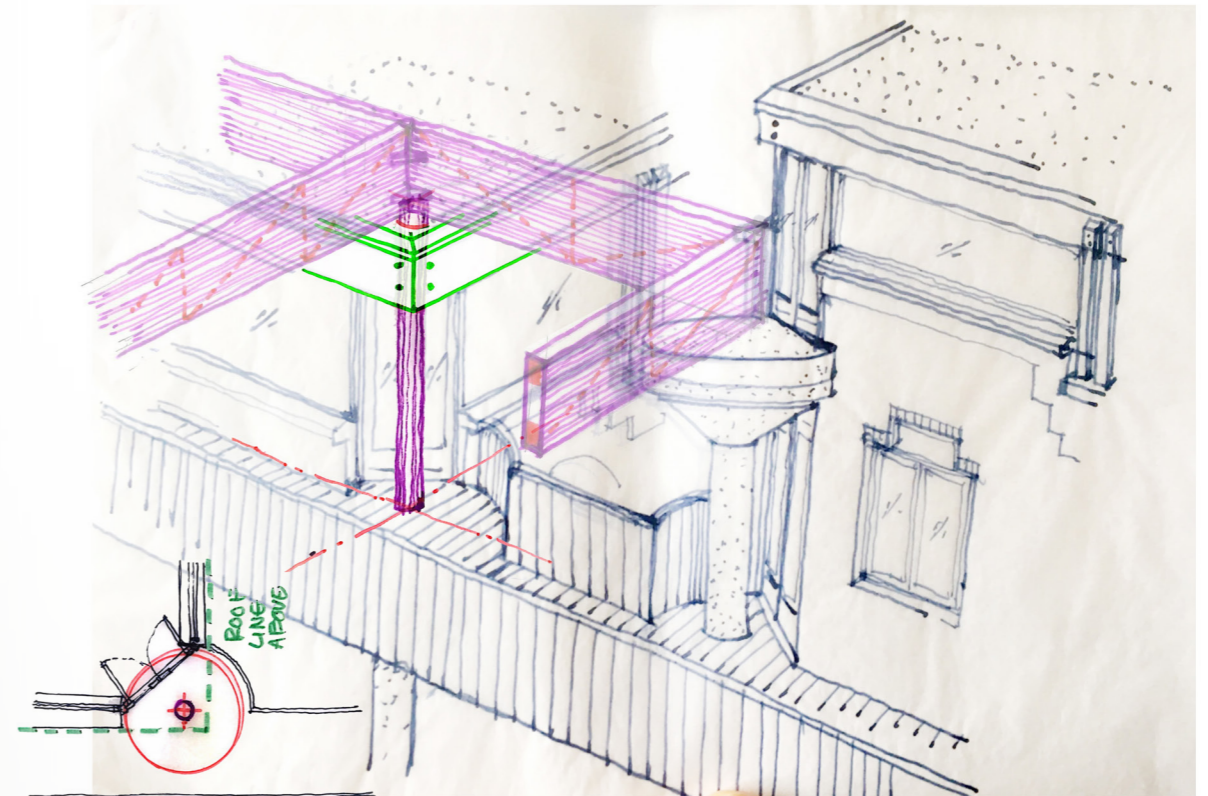
- 5.1.1. Structural intervention concept
- 5.1.2. Initial Stage / Structural dilemma
- 5.1.3. Previous experiment
- 5.1.4. Final design

Structural dilemma:

Connection between the existing structures and the new courtyard roof



The clashing of the original timber roof and the new steel column



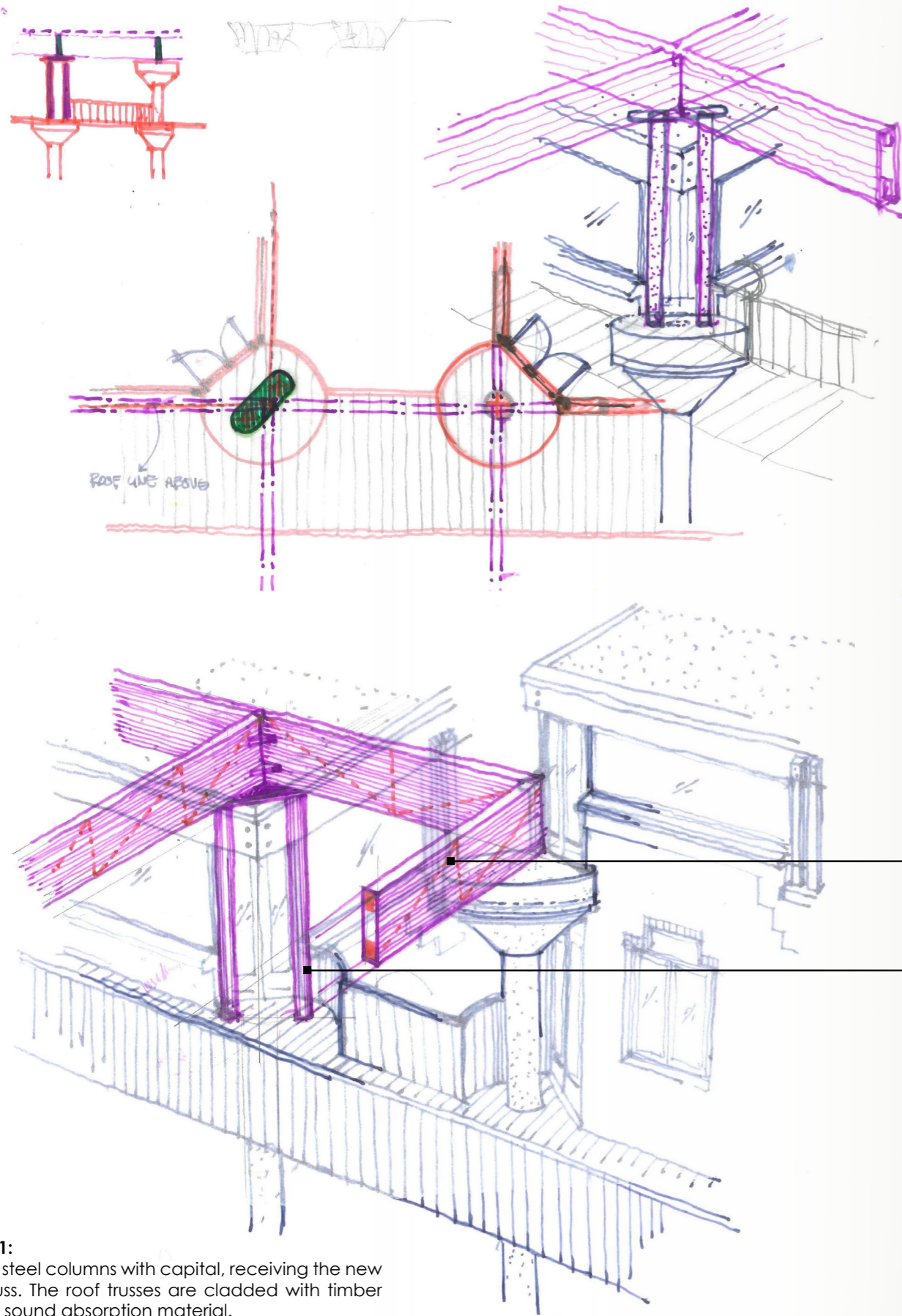
5.1. Structural framing

5.1.1. Structural intervention concept

5.1.2. Initial Stage / Structural dilemma

5.1.3. Previous experiment

5.1.4. Final design

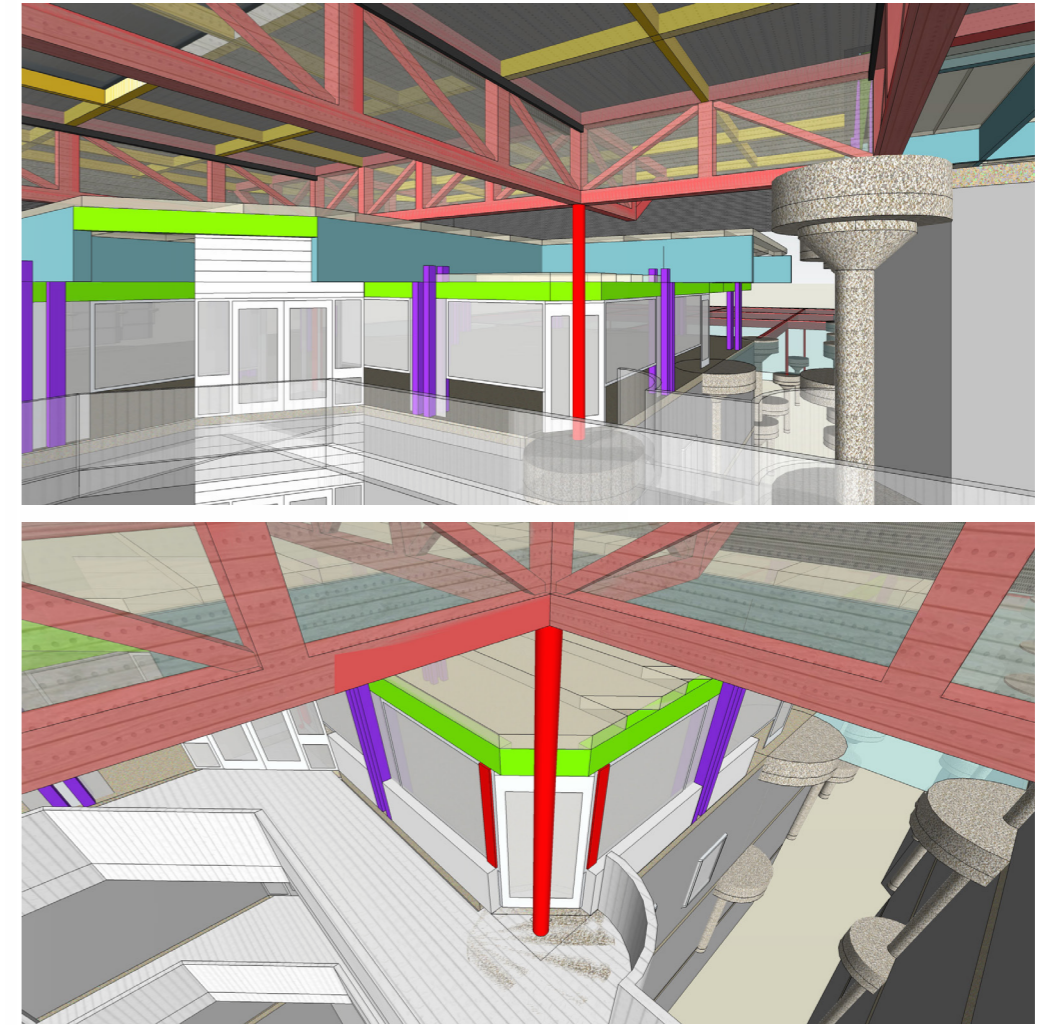


Option 1:

Double steel columns with capital, receiving the new steel truss. The roof trusses are cladded with timber strips as sound absorption material.

Option 2:

Regarding the structural performance, the new Single 200mm dia. steel column is sitting at the center of the existents reinforced concrete column. There is a need to make some minor alteration to the existing timber roof profile to allow for this intervention.



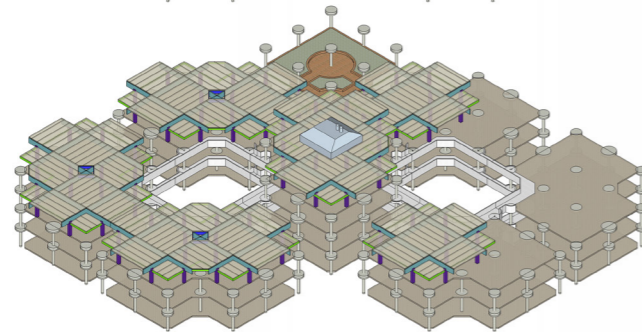
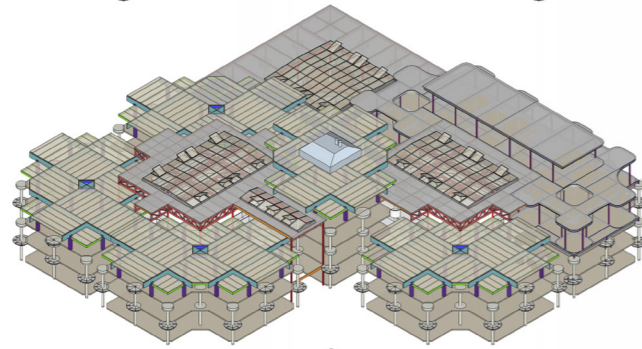
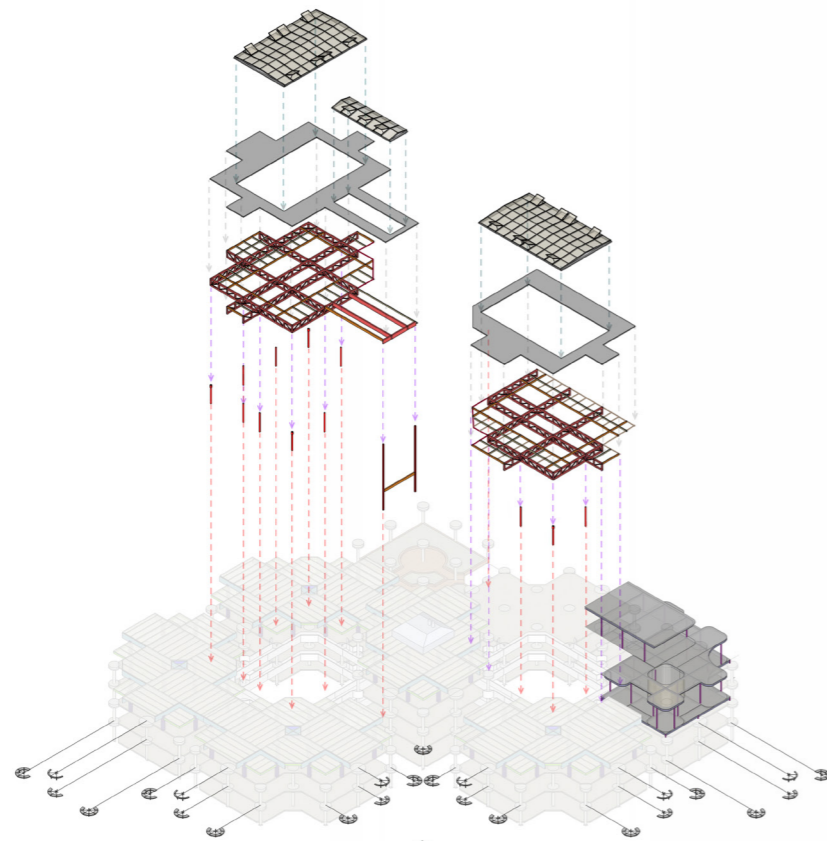
5.1. Structural framing

5.1.1. Structural intervention concept

5.1.2. Initial Stage / Structural dilemma

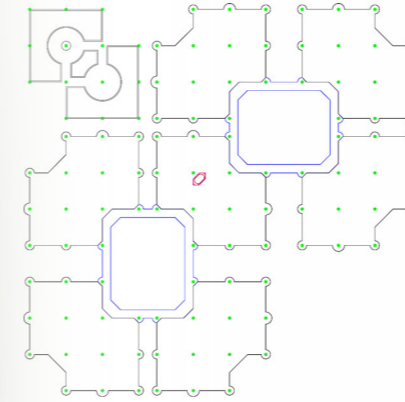
5.1.3. Previous experiment

5.1.4. Final design

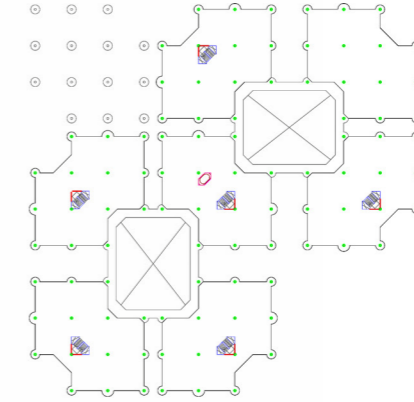


Explode Diagram

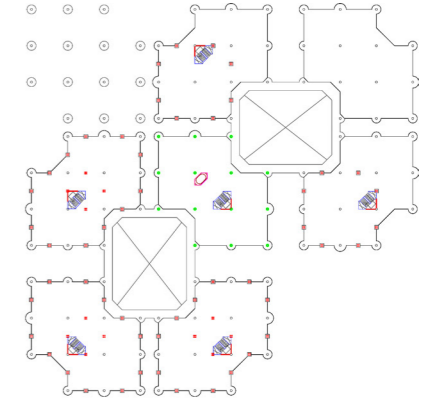
Existing Structural Framing



Ground Fl.

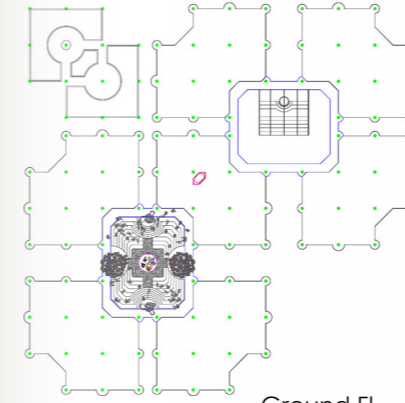


1st Fl.

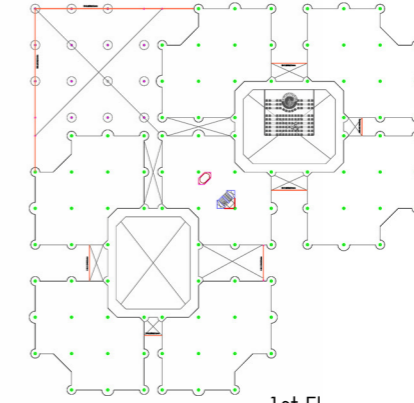


2nd Fl.

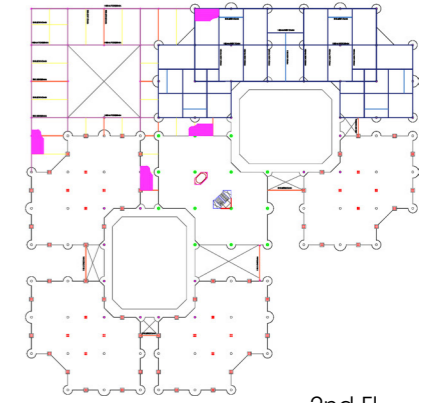
Proposed Intervention Structural Diagram



Ground Fl.

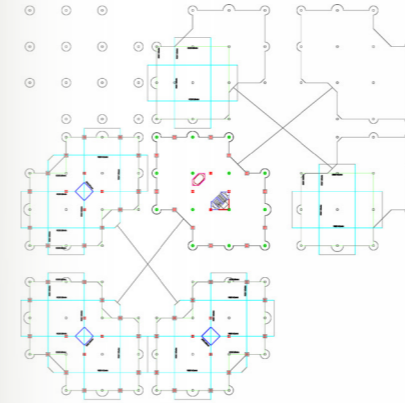


1st Fl.

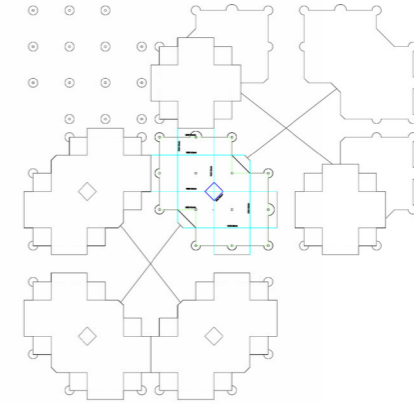


2nd Fl.

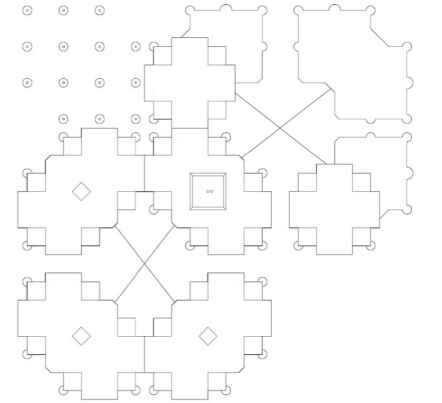
Existing Structural Framing



3rd Fl.



4th Fl.

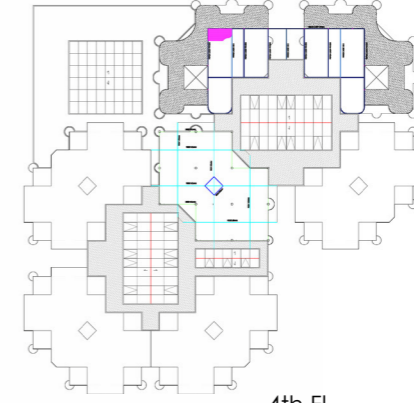


Roof plan

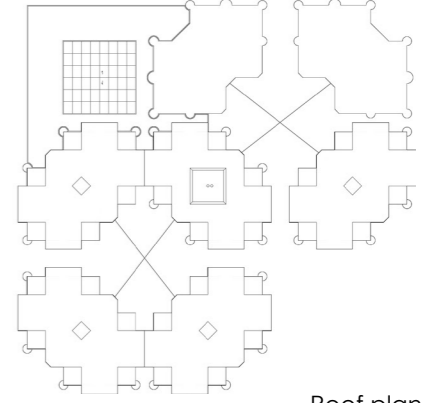
Proposed Intervention Structural Diagram



3rd Fl.



4th Fl.



Roof plan

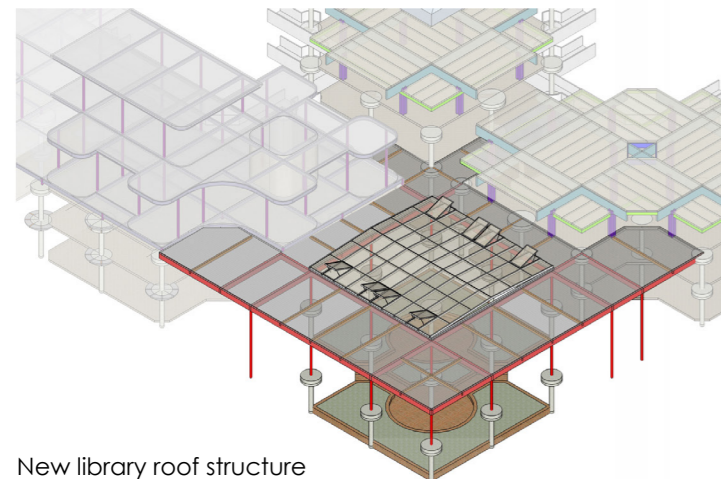
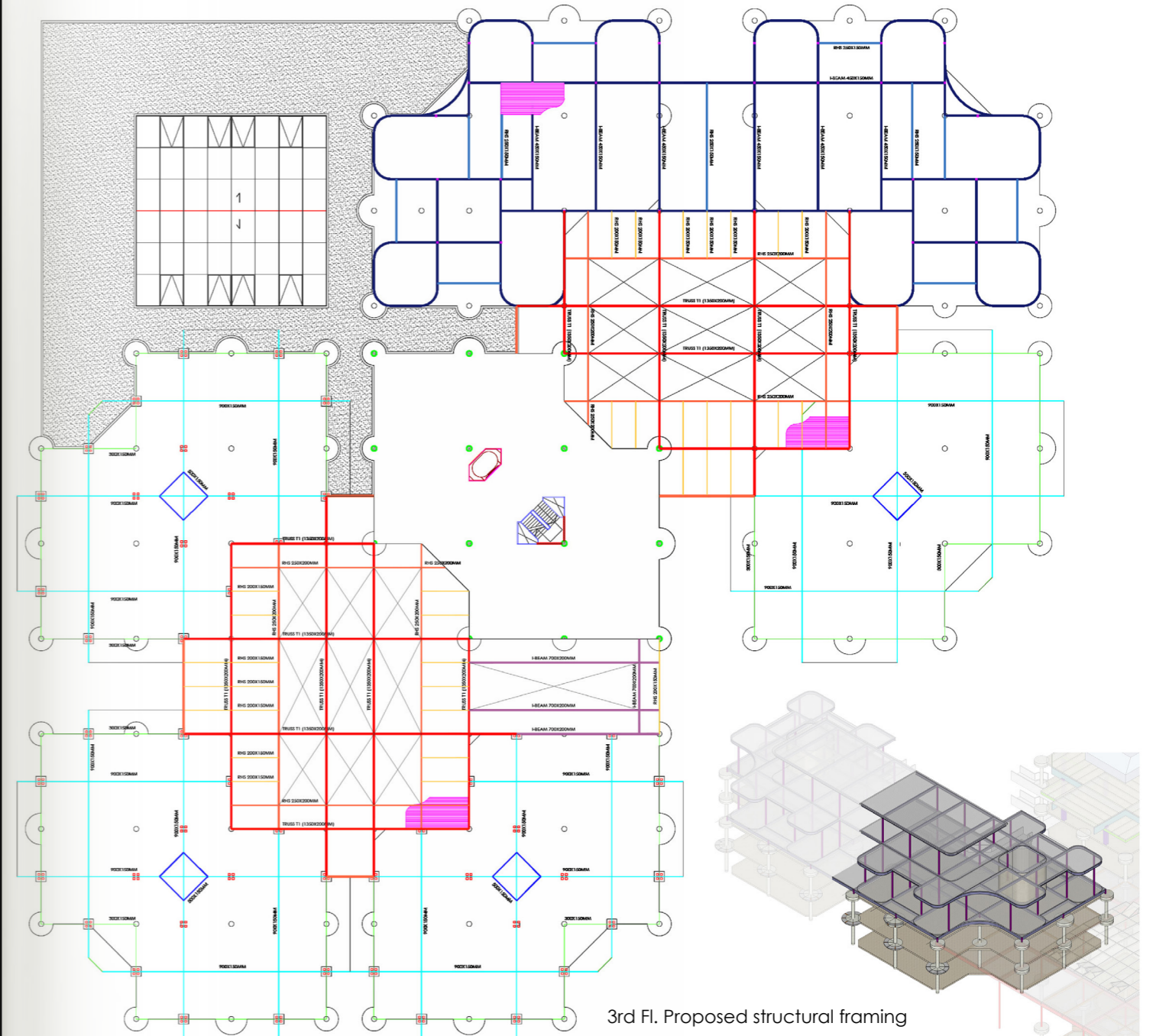
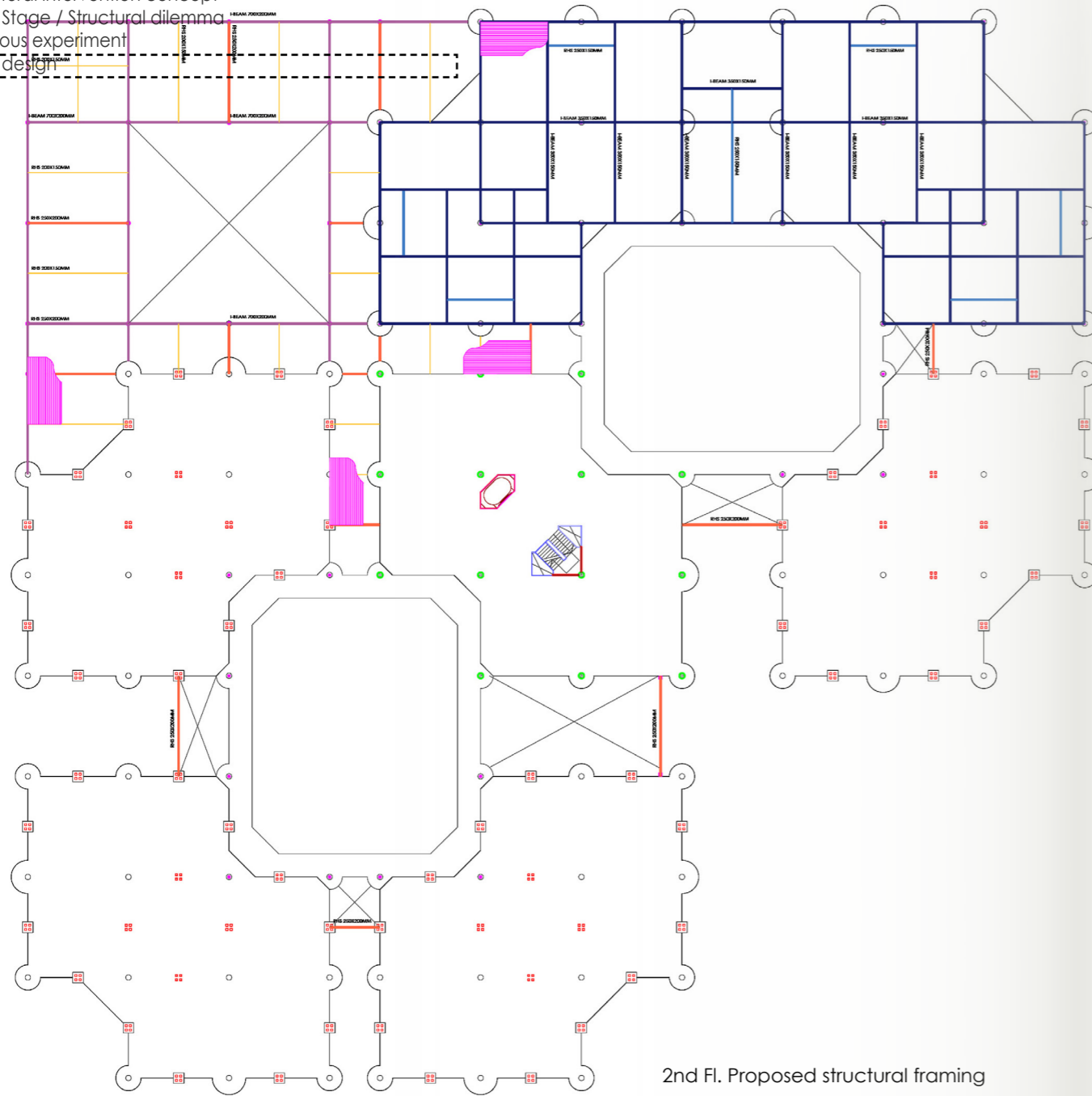
5.1. Structural framing

5.1.1. Structural intervention concept

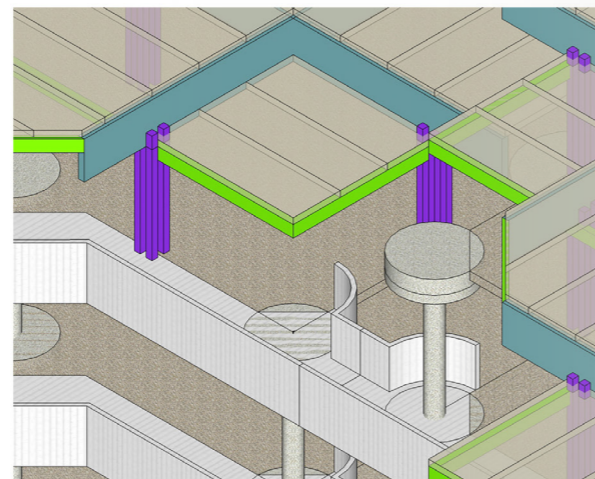
5.1.2. Initial Stage / Structural dilemma

5.1.3. Previous experiment

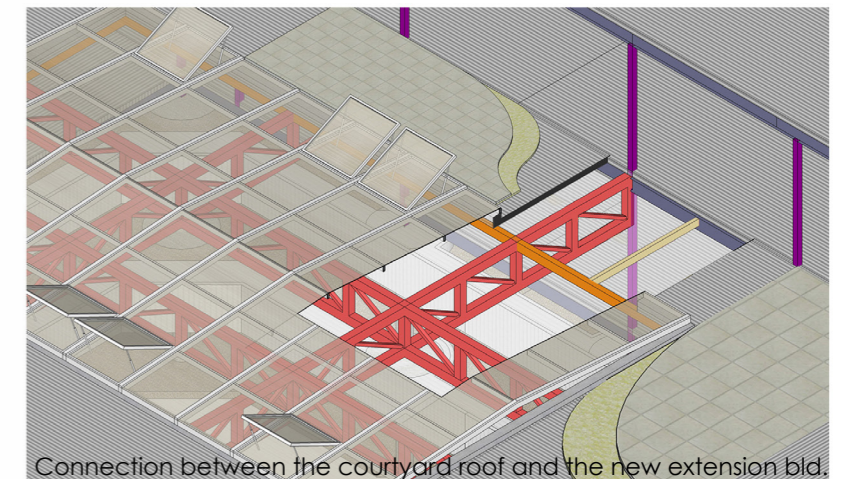
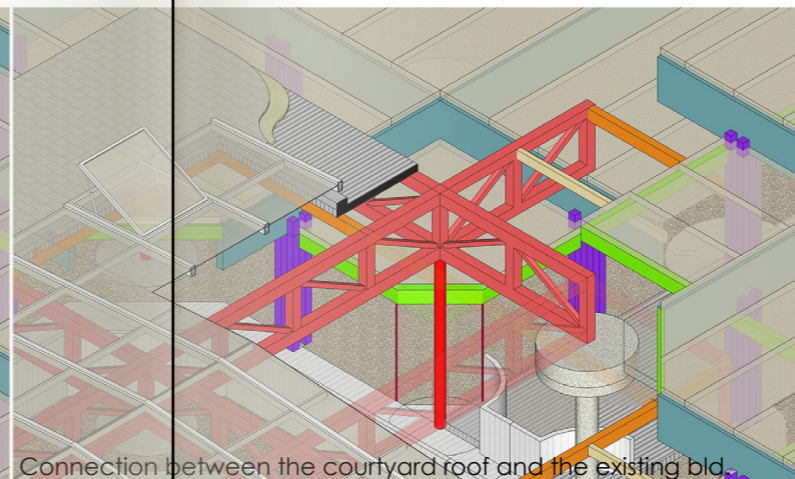
5.1.4. Final design



New library roof structure



Connection between the courtyard roof and the existing bld.



Connection between the courtyard roof and the new extension bld.

5.2 Building Sustainability

5.2.1. Climate Control

The building is designed to promote passive architecture. A large open atrium and courtyard that punctuates the building plates generate a cooling effect that allows hot air to escape through the opening on the roof level and induces natural breezes flowing through the building during summer while keeping the indoor temperature warm and heat the air up via the sunlight through the glass roof.

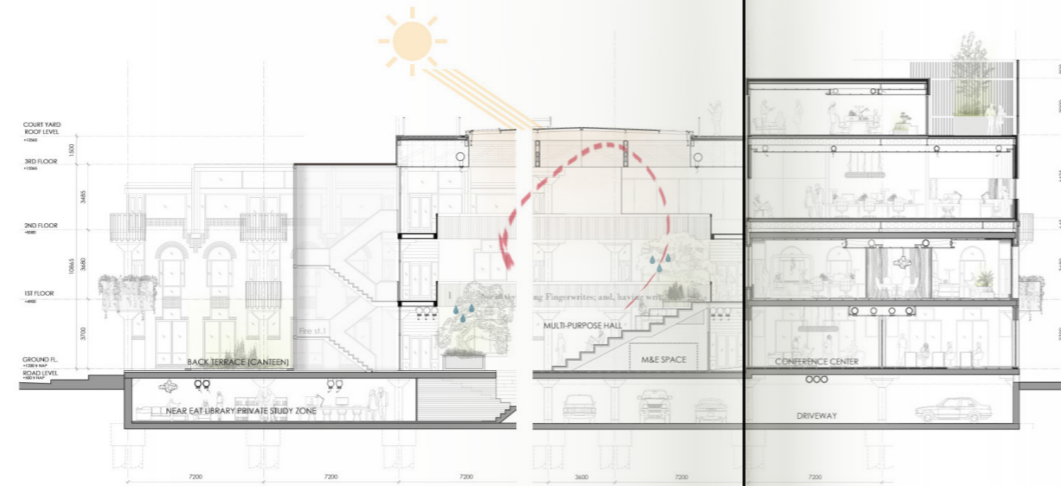
5.2.2 Heating and Cooling System

With the air-conditioning system designed to achieve a consistent operative temperature between 20°C to 25 °C and a Relative Humidity of less than 70%, consistent indoor conditions for building occupants' thermal comfort can be assured.

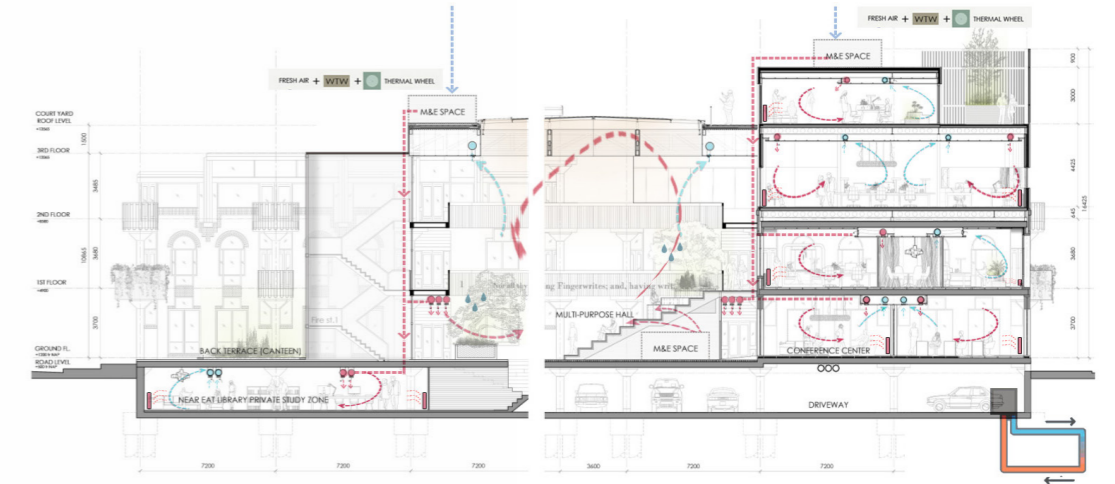
5.2.3. Energy Saving Provisions

Provisions of a central cooling and heating system are proposed to serve the communal areas and the enclosed courtyards for a high level of efficiency configuration. Independent controller systems are provided for various functions including office spaces, restaurants, conference center, lecture rooms and the residences.

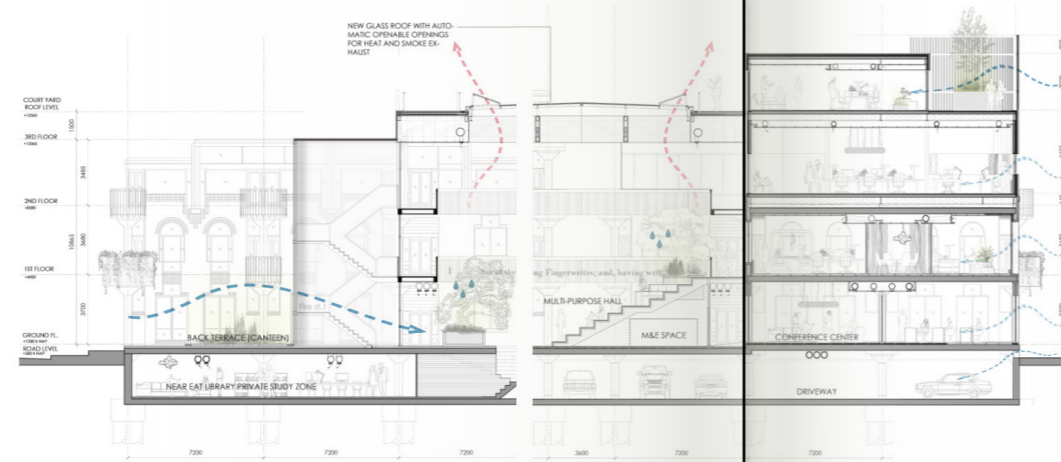
The integration of the mentioned passive design and the provision of Geothermal energy, heat pump and WTW system help to increase the efficiency of the self-sustain building. These pre-heating and cooling systems are located on the basement floor and the M&E space on the above the new courtyard roofs.



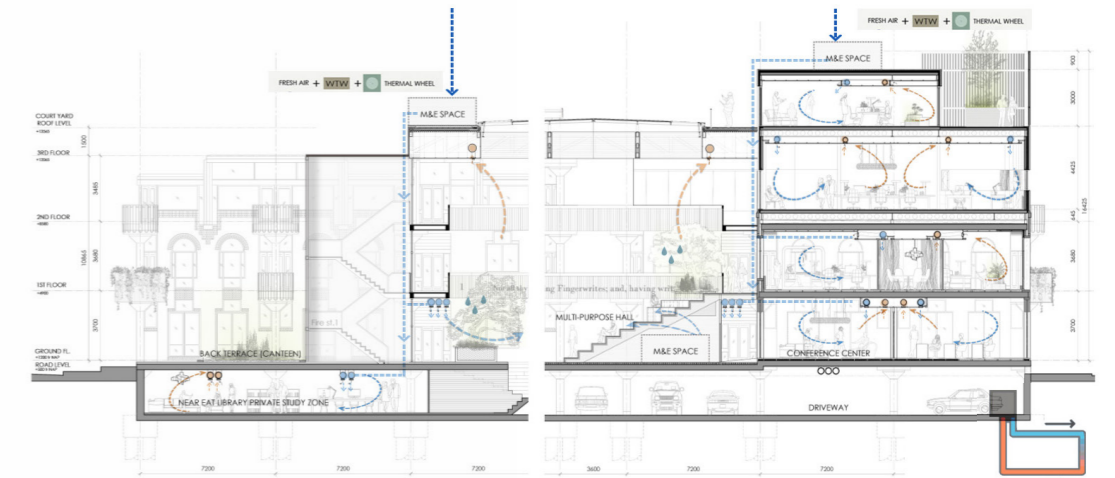
Winter Situation
Passive system



Winter Situation
Active system



Summer Situation
Passive system



Summer Situation
Active system



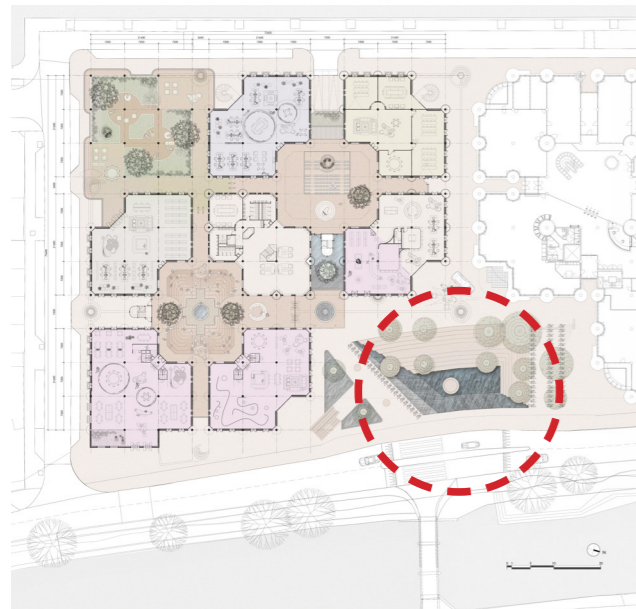
Building Insulation Diagram

5.2.4. Water Management

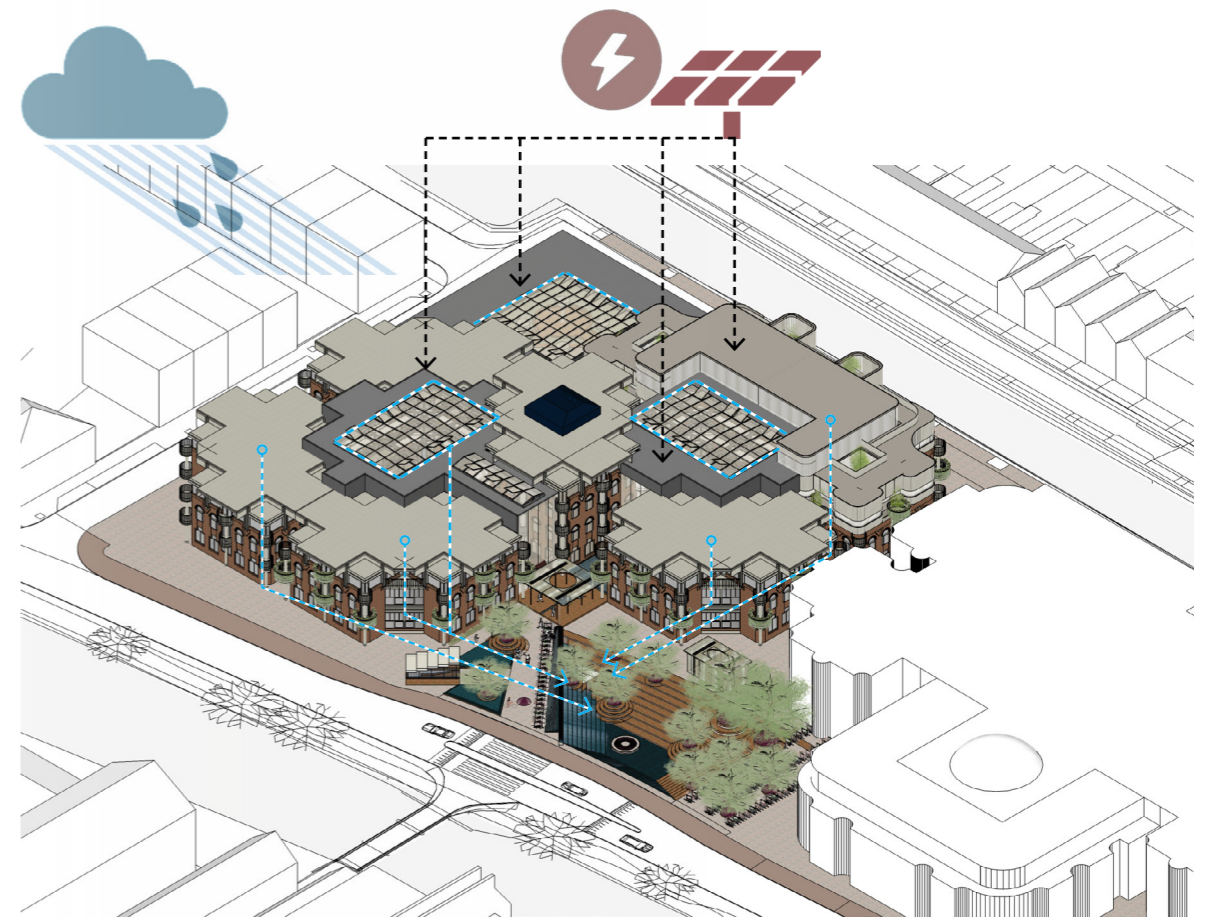
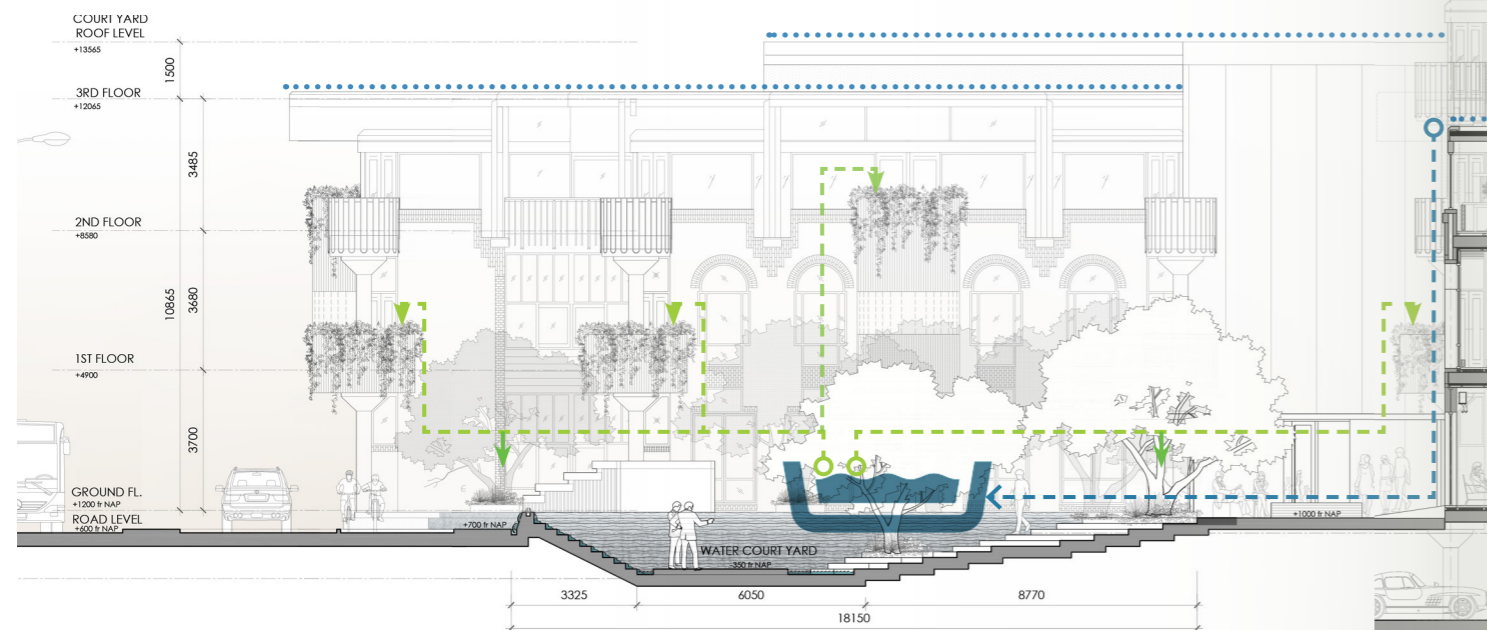
To lower the consumption of water resources as much as possible. The use of automatic irrigation system equipped with rain sensors using 100% non-potable water, they reduce the consumption of water for irrigation. Rainwater harvesting, a collection of AHU condensate are also proposed to make up water for the cooling-heating system, toilet flushing. The proposed self-cleaning façade system also improves the water efficiency of the development.

5.2.5. Renewable Energy

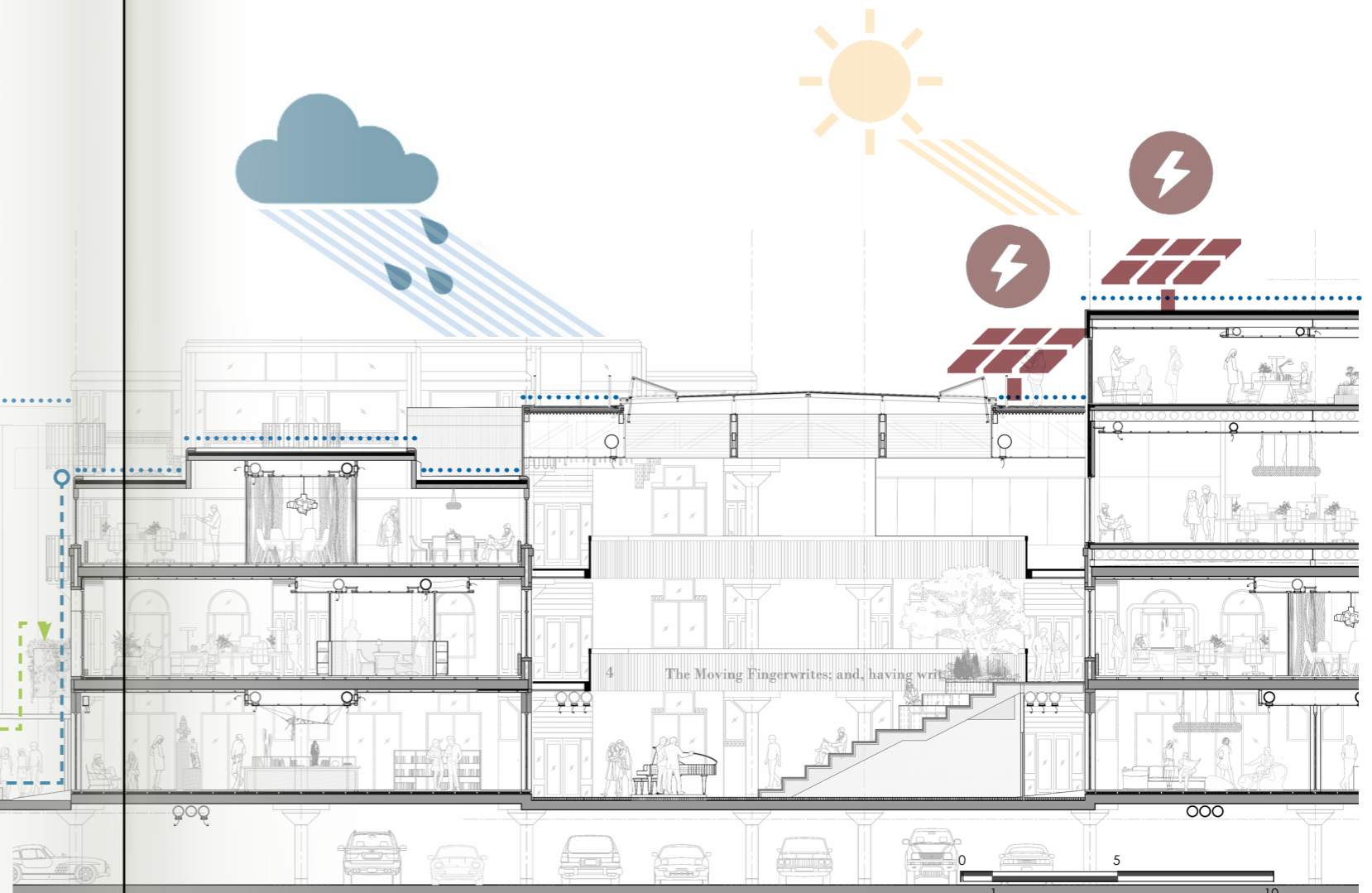
Solar panel installation of 50kWp on the courtyard roof provides an alternative renewable energy source for this faculty facilities.



Key Section | 1:200



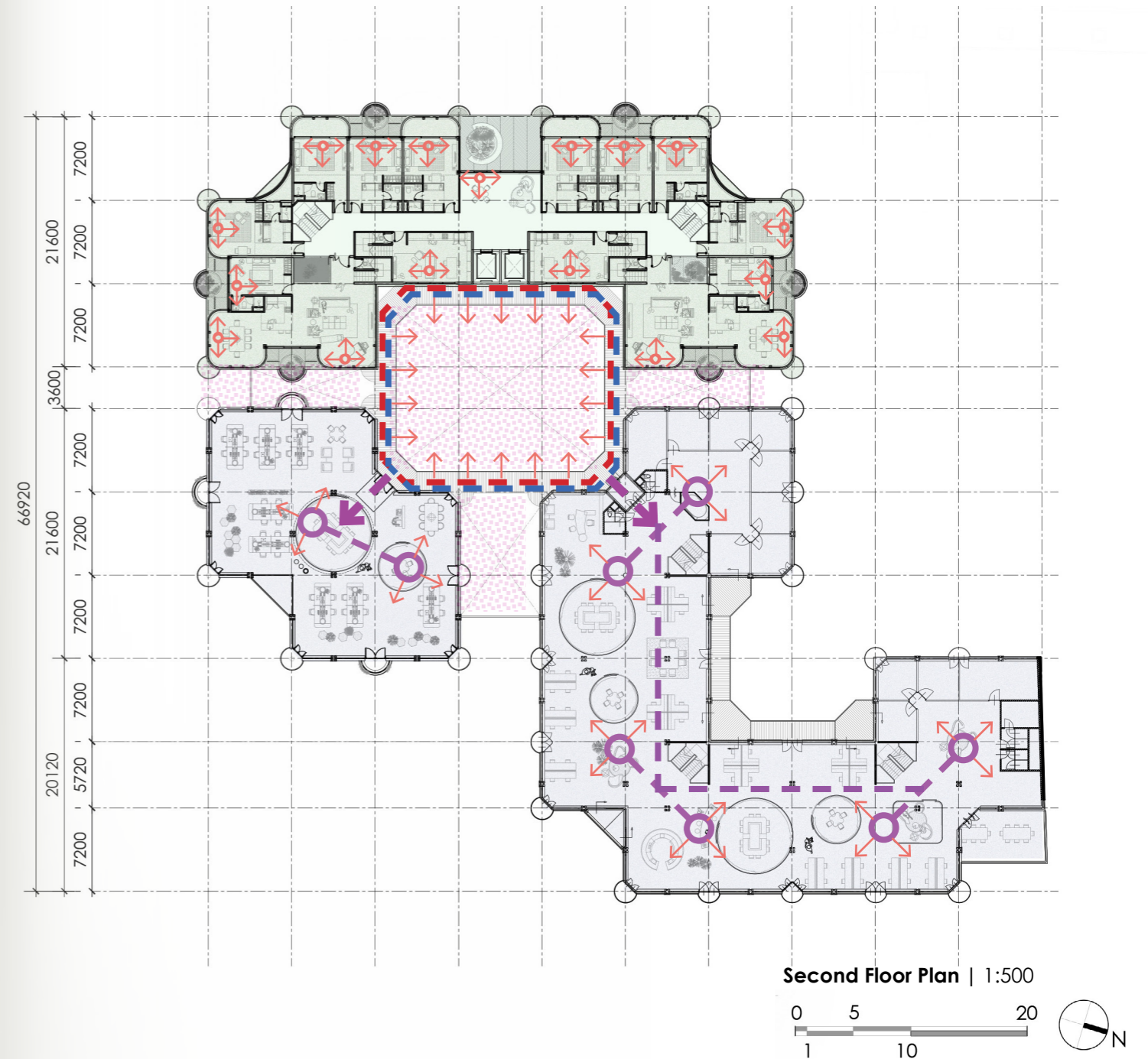
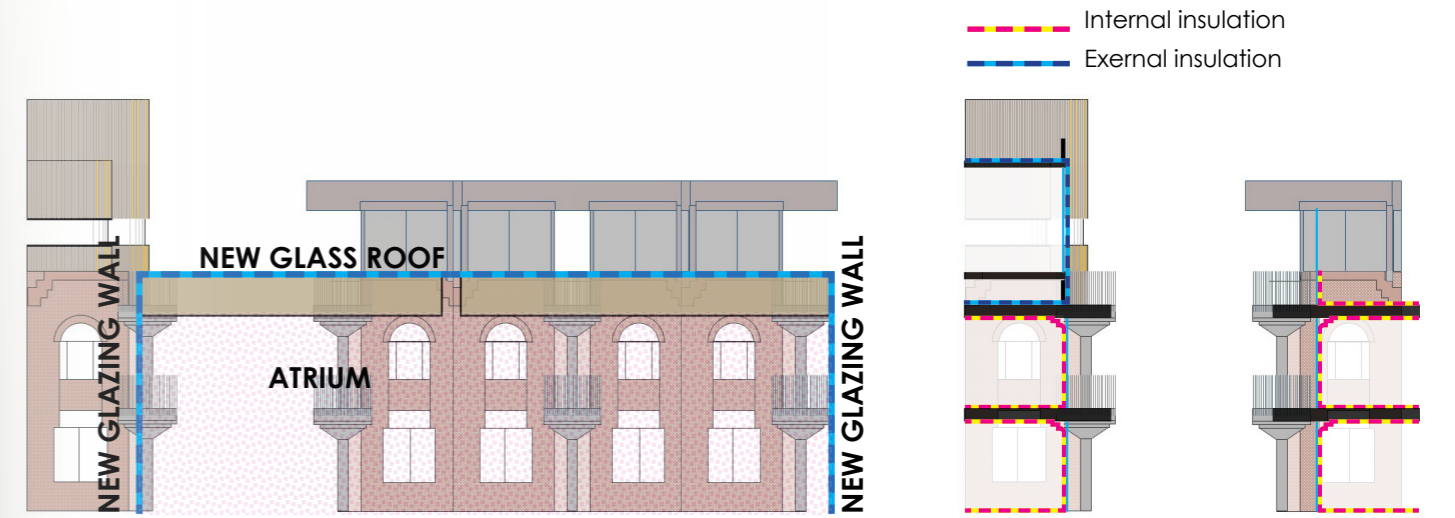
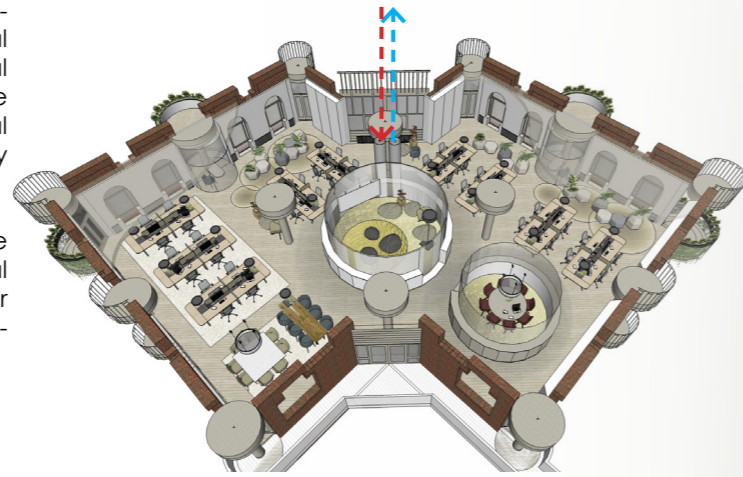
Rainwater Harvesting & PV Panel location Diagram



5.2.6. Air ducting system / Insulation scheme

The new air ducting routing is positioned at the original stairwell. The removal of the existing internal staircases offers an opportunity for the new vertical shafts. Aside to the air system, the radiator will be positioned along the openings (facing the external sides). This hybrid system helps improve the energy efficient during winter situation.

For insulation scheme, the existing buildings will be insulated from inside. This helps retain the original appearance of the external facades. On the other hand, the new extension will be insulated from outside.

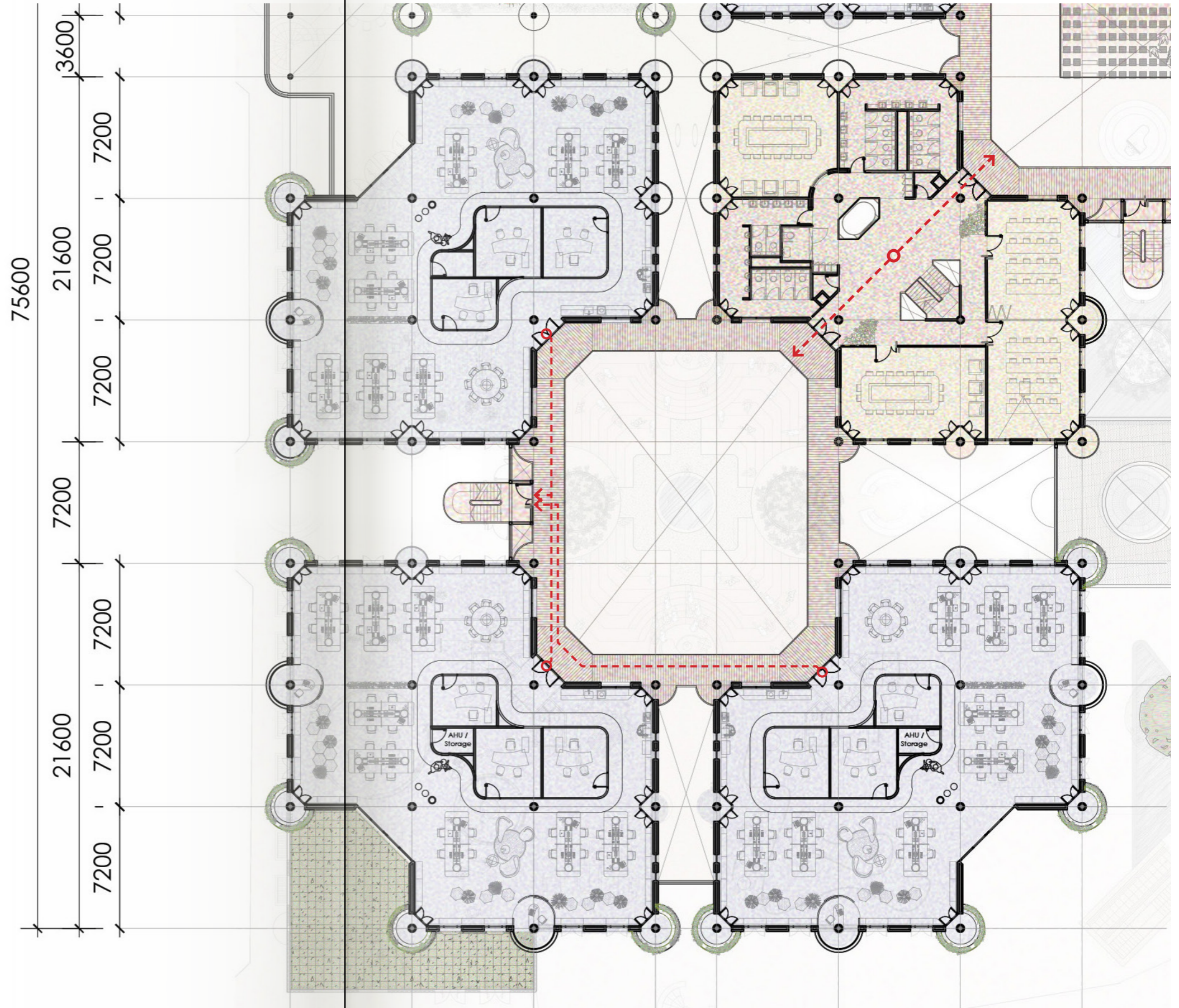
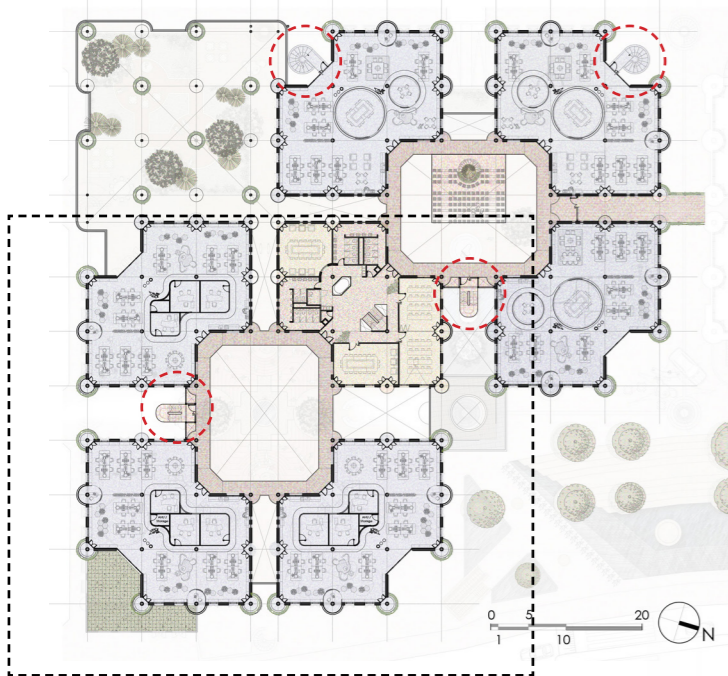


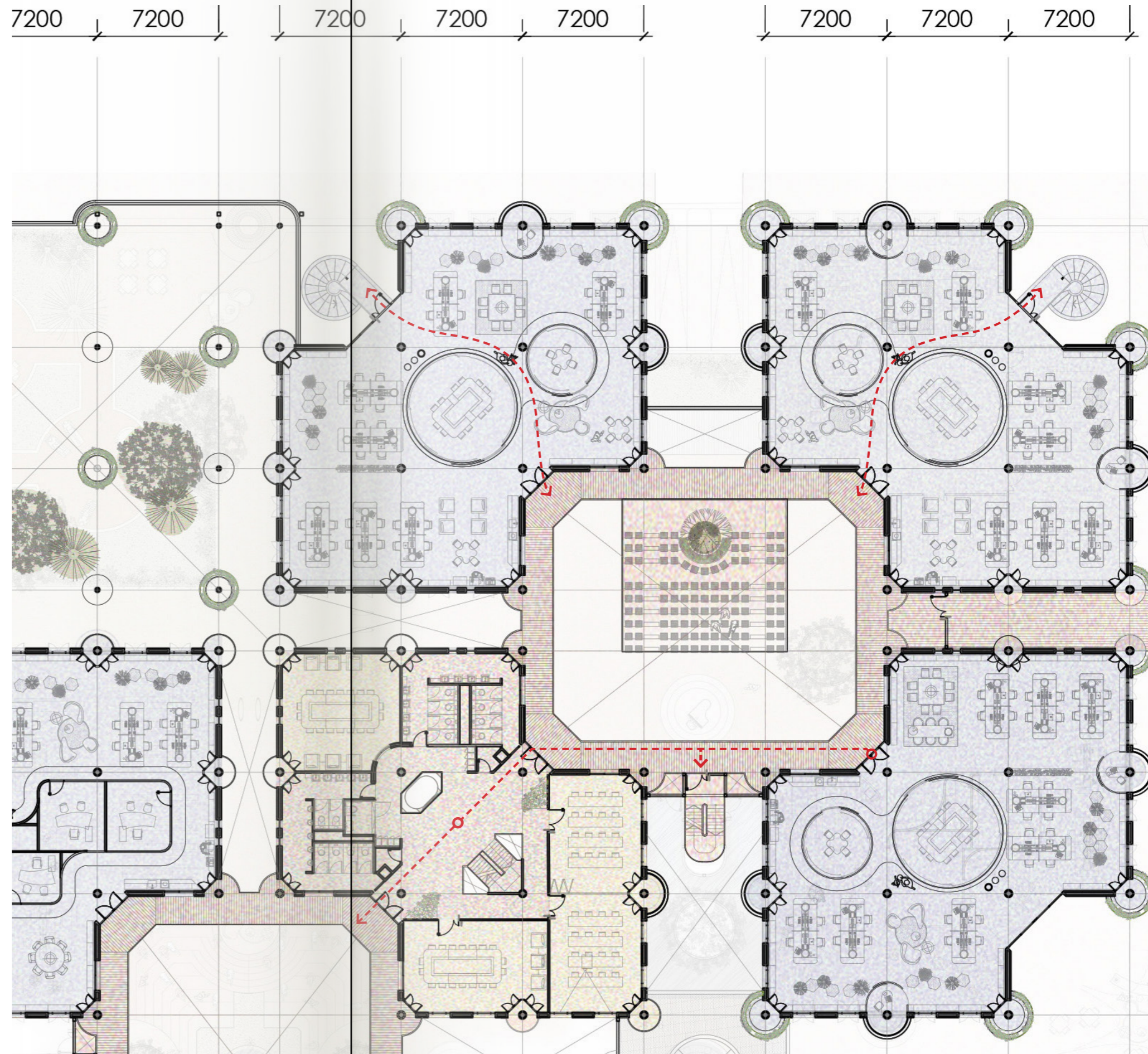
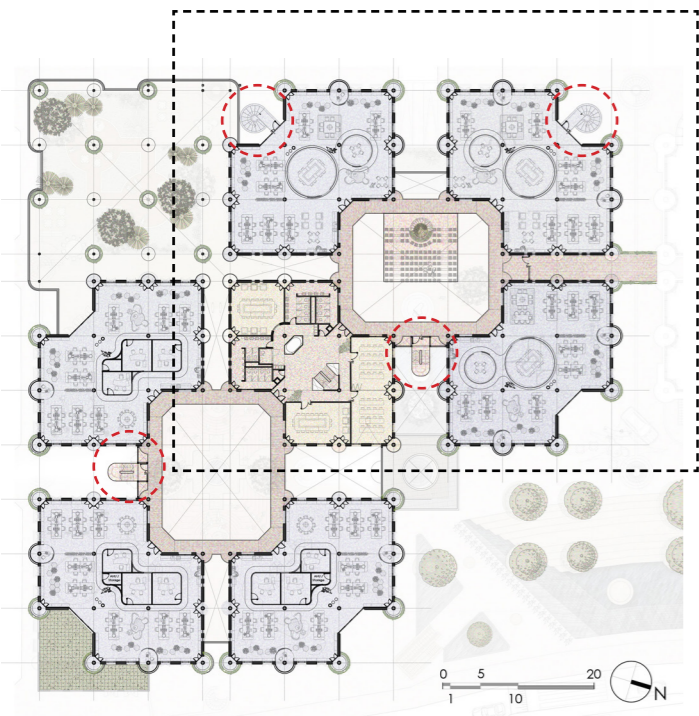
5.3 Fire Safety

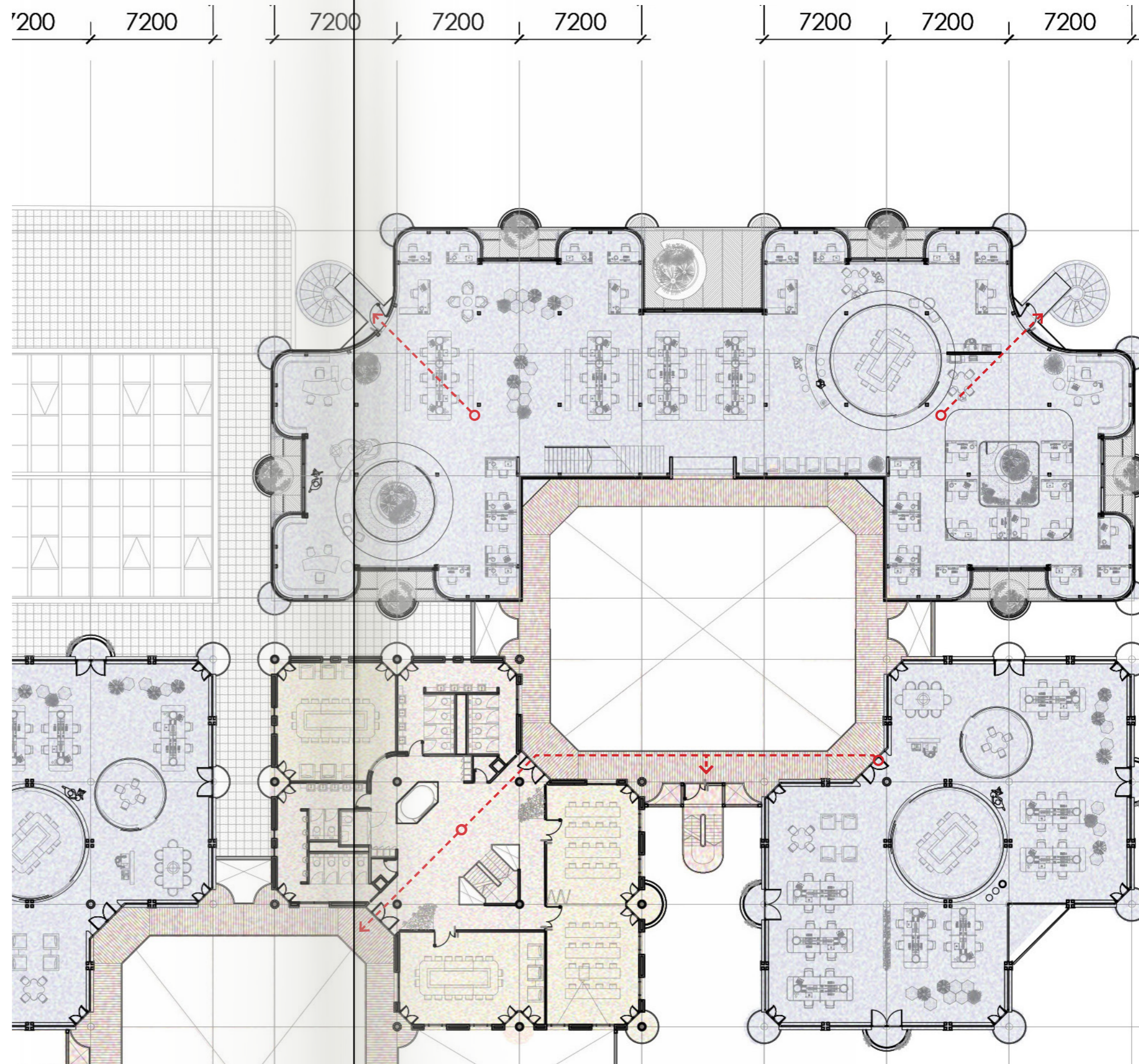
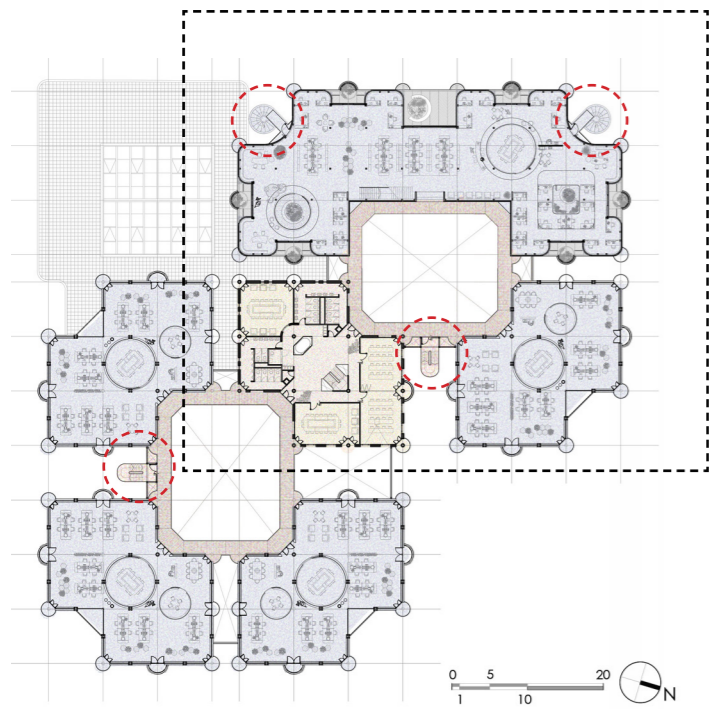
The new academic building planning is based on the regulation requirements, each compartment area is below the maximum 1,000 m² and separated by fire-rated materials.

Four new locations of fire escape staircase are introduced connecting from the ground floor to the top floors. All escape routing are within 30m travel distance from the fire-safe zone.

Fire sprinkler system could be integrated with smoke detector system to provide a localized fire protection (if necessary). Exhaust fans will be provided for smoke ventilation in central atrium space.







5.4 Facade & Details Design

5.4.1 New Extension Facade :

The connection between the existing building and the new extension.

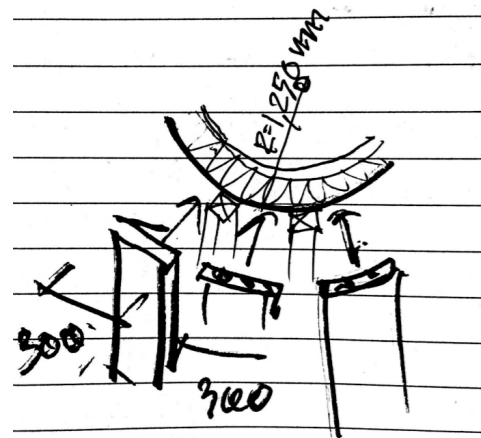
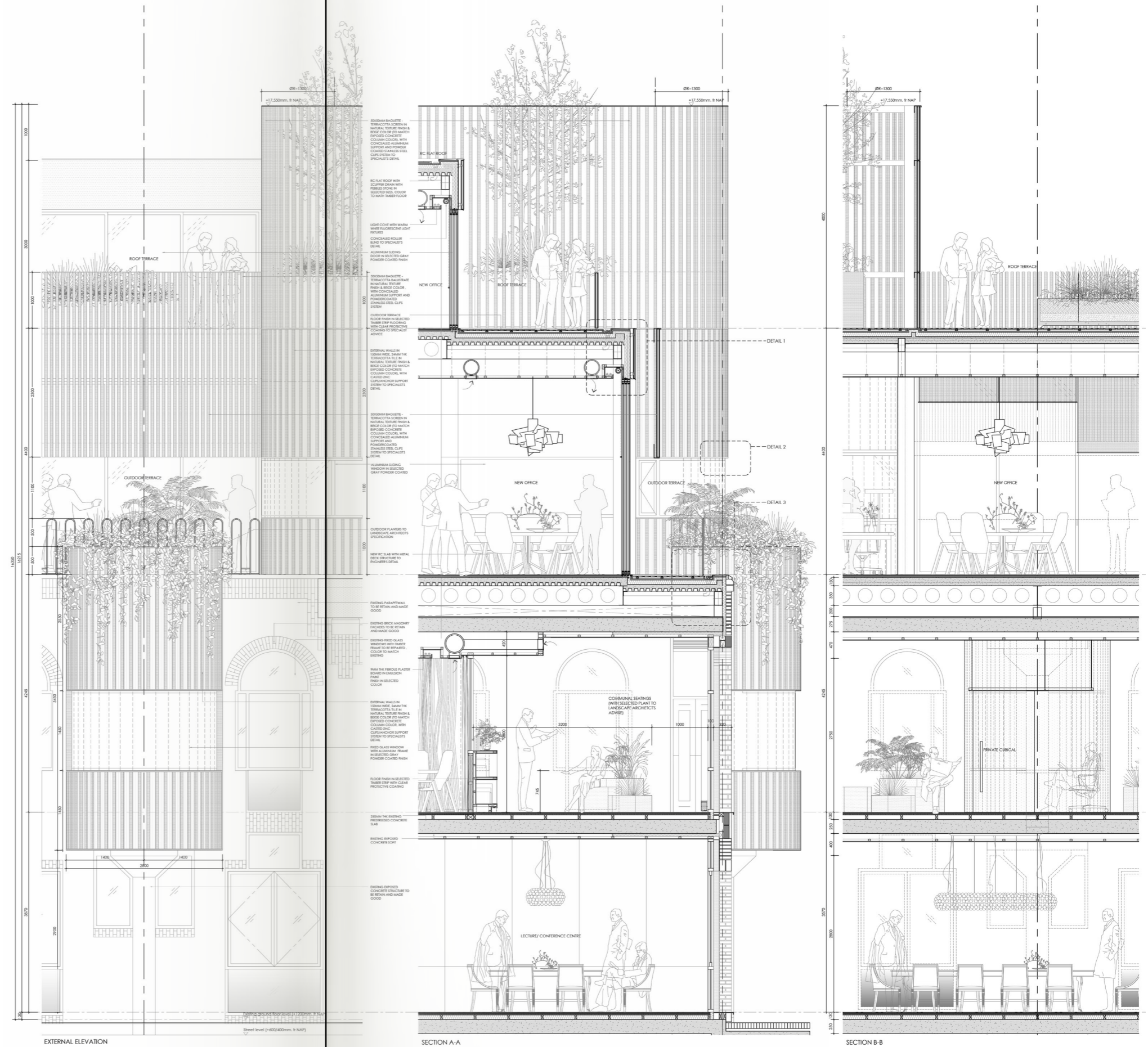
- The facade of the additional massing is clad by a system of ceramic materials that are durable, self-cleaning and easy to build. The solid surfaces are made up of 150mm wide terracotta panels on the outside, and backed with drywall internally, with insulating materials in between. This keeps the heat/cold absorption and thermal transfer to the minimum.

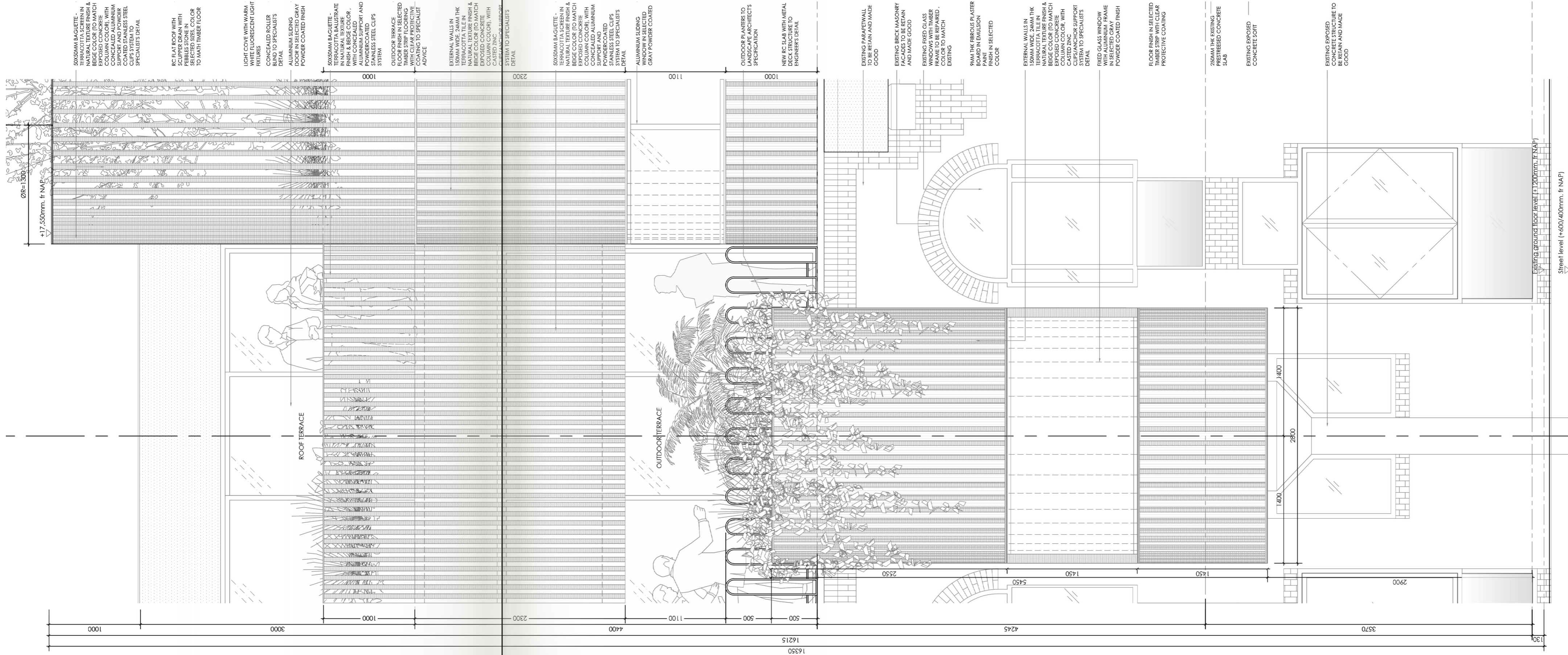
-The air gap between the external facade and the drywall help to reduce the heat transfer in the summertime.

- The water piping system will be integrated with the facade design to allow water preheating concept to reduce the energy uses in the boiling processes.

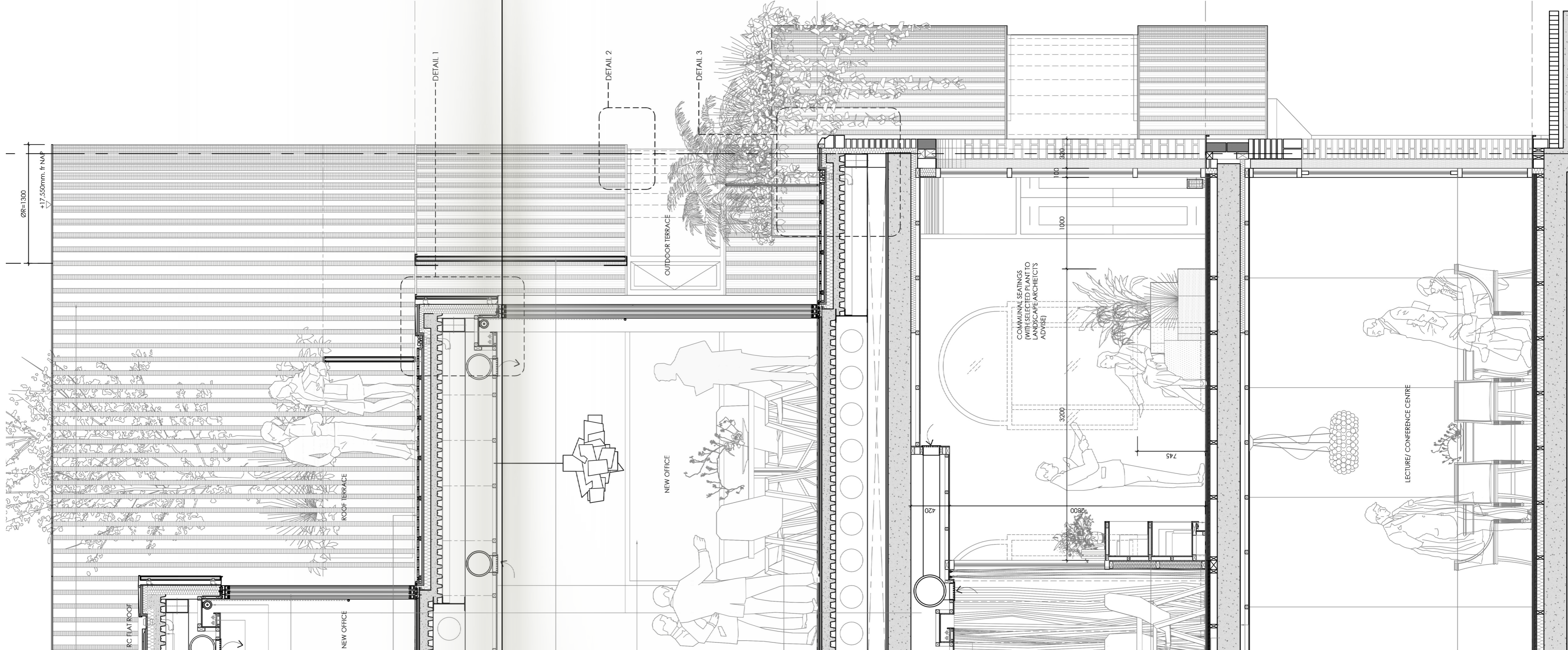
- At some location, there will be terracotta sun-screen incorporated in the facade composition. These screens perform as the main design features for both architectural appearance and the technical aspects.

-The concealed roller blinds and curtains are integrated at the large opening locations. These indoor blinds help to reduce the strong daylight and the heat transfers during the summertime, this method of passive design also functions as a privacy screen for the apartment rooms during the daytime as well.





External Elevation | 1:30



ØR=1300
+17,550mm. fr. N.A.

50x50MM BAGUETTE - TERRACOTTA SCREEN IN NATURAL TEXTURE FINISH & BEIGE COLOR (TO MATCH COLUMN COLOR). WITH CONCEALED ALUMINIUM SUPPORT AND POWDER COATED STAINLESS STEEL CLIPS SYSTEM TO SPECIALISTS DETAIL

RC FLAT ROOF WITH SCUPPER DRAIN WITH PEBBLES STONE IN SELECTED SIZE. COLOR TO MATCH TIMBER FLOOR

LIGHT COVE WITH WARM WHITE FLUORESCENT LIGHT FIXTURES
CONCEALED ROLLER SLIP TO SPECIALISTS DETAIL

ALUMINIUM SLIDING DOOR IN SELECTED GRAY POWDER COATED FINISH

50x50MM BAGUETTE - TERRACOTTA BAGUETTE IN NATURAL TEXTURE FINISH & BEIGE COLOR, WITH ALUMINIUM SUPPORT AND POWDERCOATED STAINLESS STEEL CLIPS SYSTEM

OUTDOOR TERRACE FLOOR FINISH IN SELECTED TIMBER STRIP FLOORING WITH CONCEALED CLIP SYSTEM TO SPECIALIST ADVISE

EXTERNAL WALLS IN 150MM ØR - 24MM THK TERRACOTTA TILE IN NATURAL TEXTURE FINISH & BEIGE COLOR (TO MATCH EXPOSED CONCRETE COLUMN COLOR). WITH CONCEALED ALUMINIUM SUPPORT AND POWDERCOATED STAINLESS STEEL CLIPS SYSTEM TO SPECIALISTS DETAIL

60x60MM BAGUETTE - TERRACOTTA SCREEN IN NATURAL TEXTURE FINISH & BEIGE COLOR (TO MATCH EXPOSED CONCRETE COLUMN COLOR). WITH CONCEALED ALUMINIUM SUPPORT AND POWDERCOATED STAINLESS STEEL CLIPS SYSTEM TO SPECIALISTS DETAIL

*ALUMINIUM SLIDING WINDOW IN SELECTED GRAY POWDER COATED

NEW RC SLAB WITH METAL DECKING TO BE RETAIN AND MADE GOOD

EXISTING BRICK MASONRY FACADES TO BE RETAIN AND MADE GOOD

EXISTING FIXED GLASS WINDOWS WITH TIMBER FRAME TO BE REPAIRED, COLOR TO MATCH EXISTING

9MM THK FIBROUS PLASTER BOARDED IN EMULSION PAINT FINISH IN SELECTED COLOR

EXTERNAL WALLS IN 150MM WIDE 24MM THK TERRACOTTA TILE IN NATURAL TEXTURE FINISH & BEIGE COLOR (TO MATCH EXPOSED CONCRETE COLUMN COLOR). WITH CASTED ZINC ANCHOR SUPPORT SYSTEM TO SPECIALISTS DETAIL

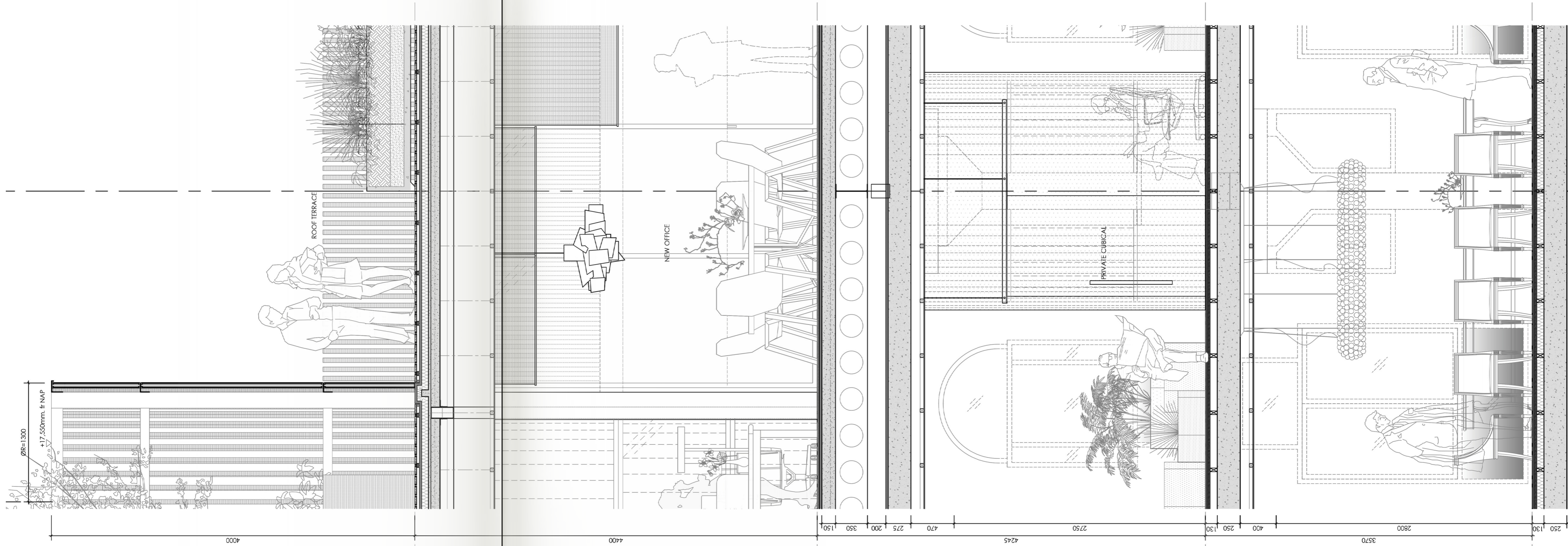
FIXED GLASS WINDOW WITH ALUMINIUM FRAME IN SELECTED GRAY POWDER COATED FINISH

FLOOR FINISH IN SELECTED TIMBER STRIP WITH CLEAR PROTECTIVE COATING

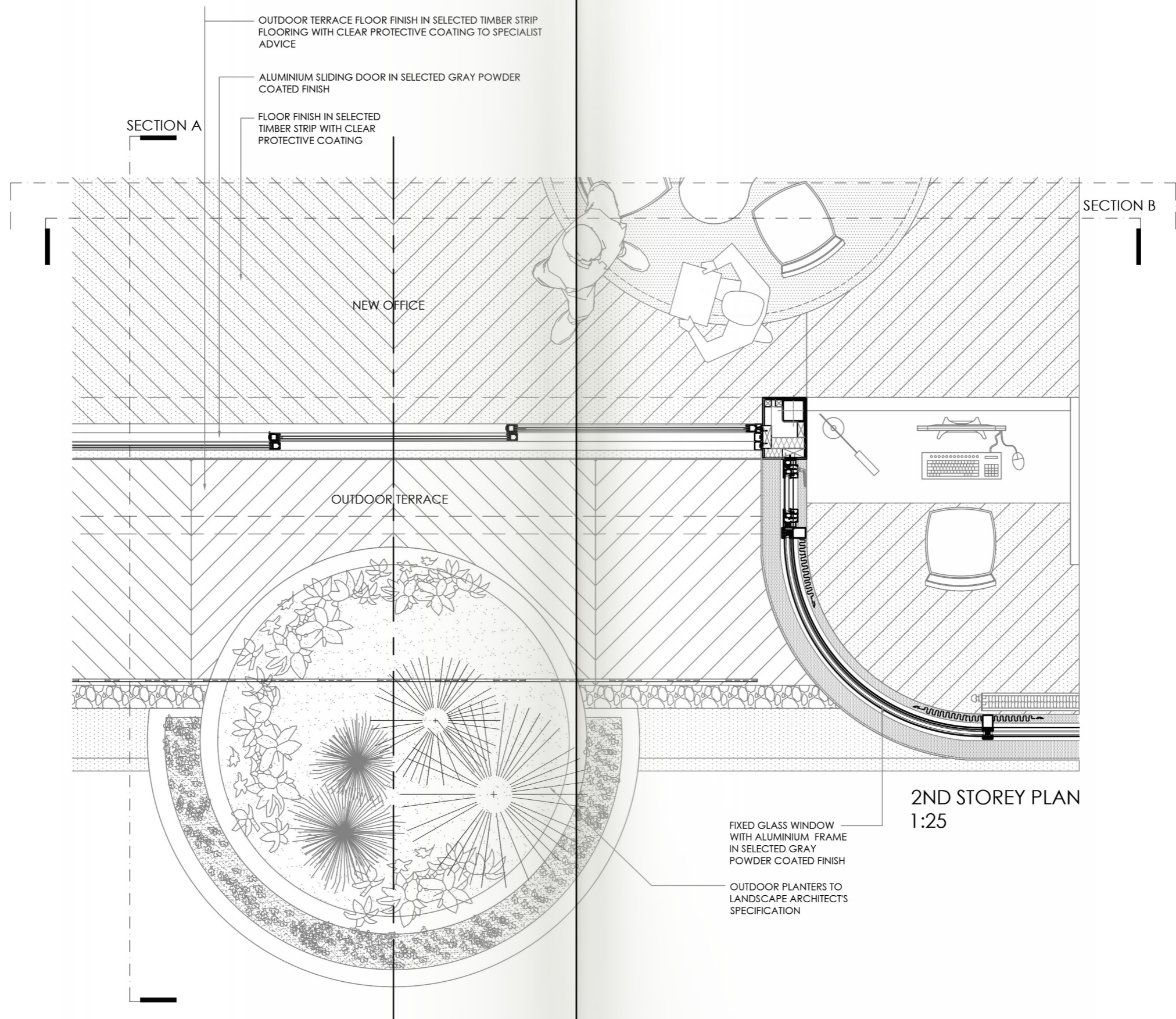
250MM THK EXISTING PRESTRESSED CONCRETE SLAB

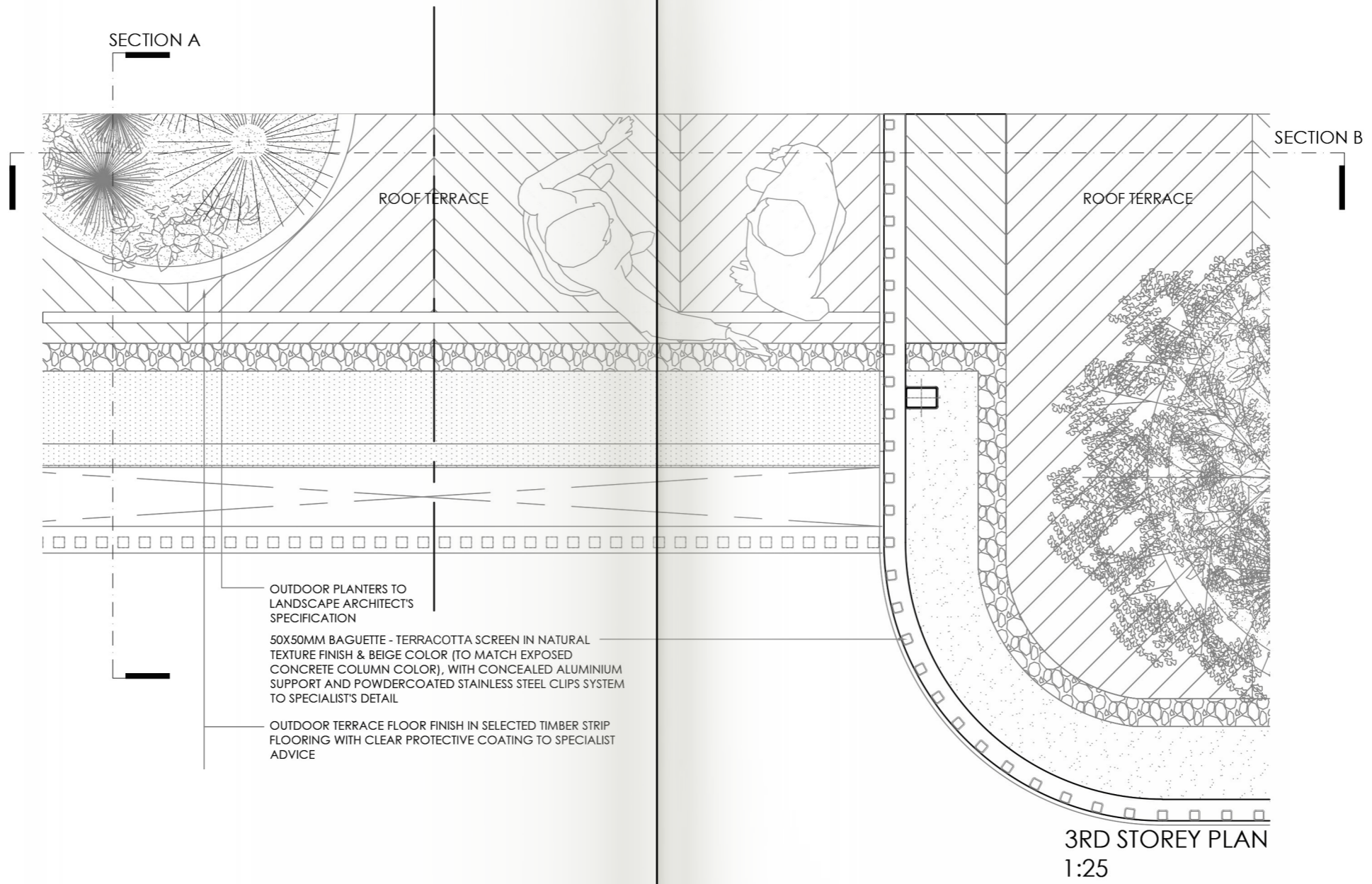
EXISTING EXPOSED CONCRETE SOFT

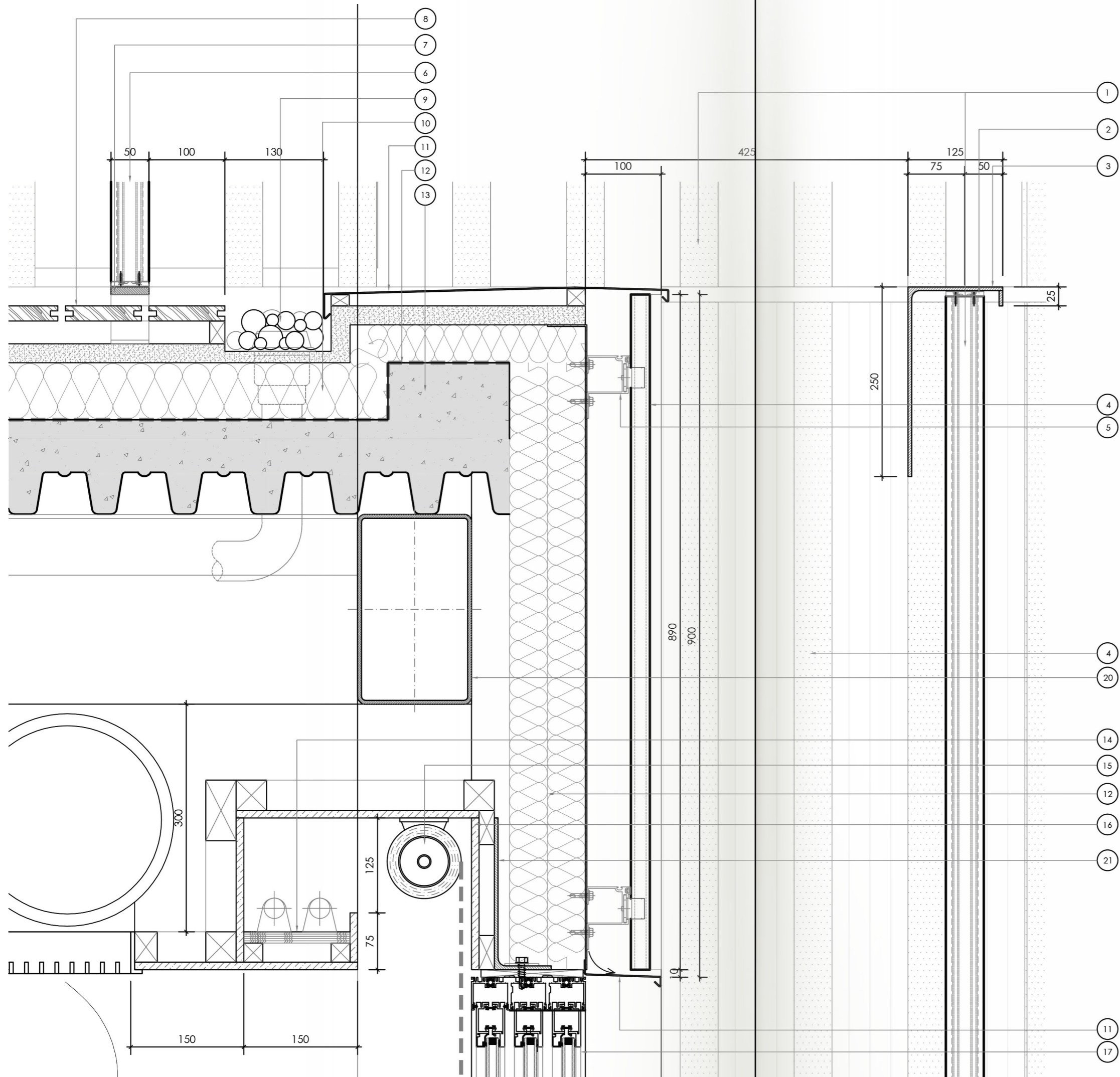
EXISTING EXPOSED CONCRETE STRUCTURE TO BE RETAIN AND MADE GOOD



Section B-B | 1:30

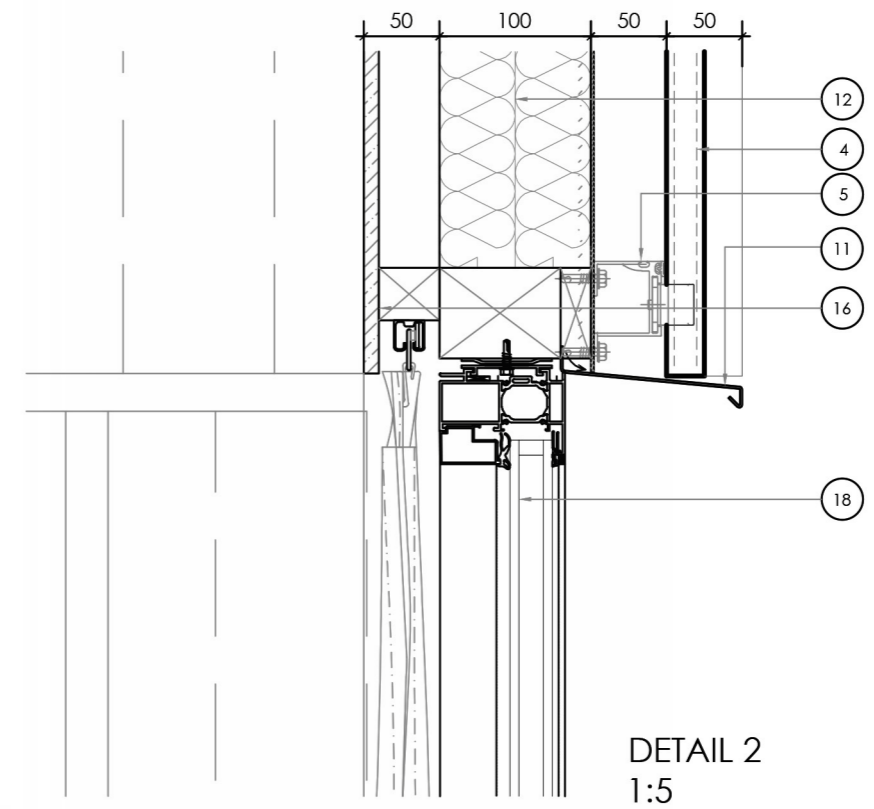
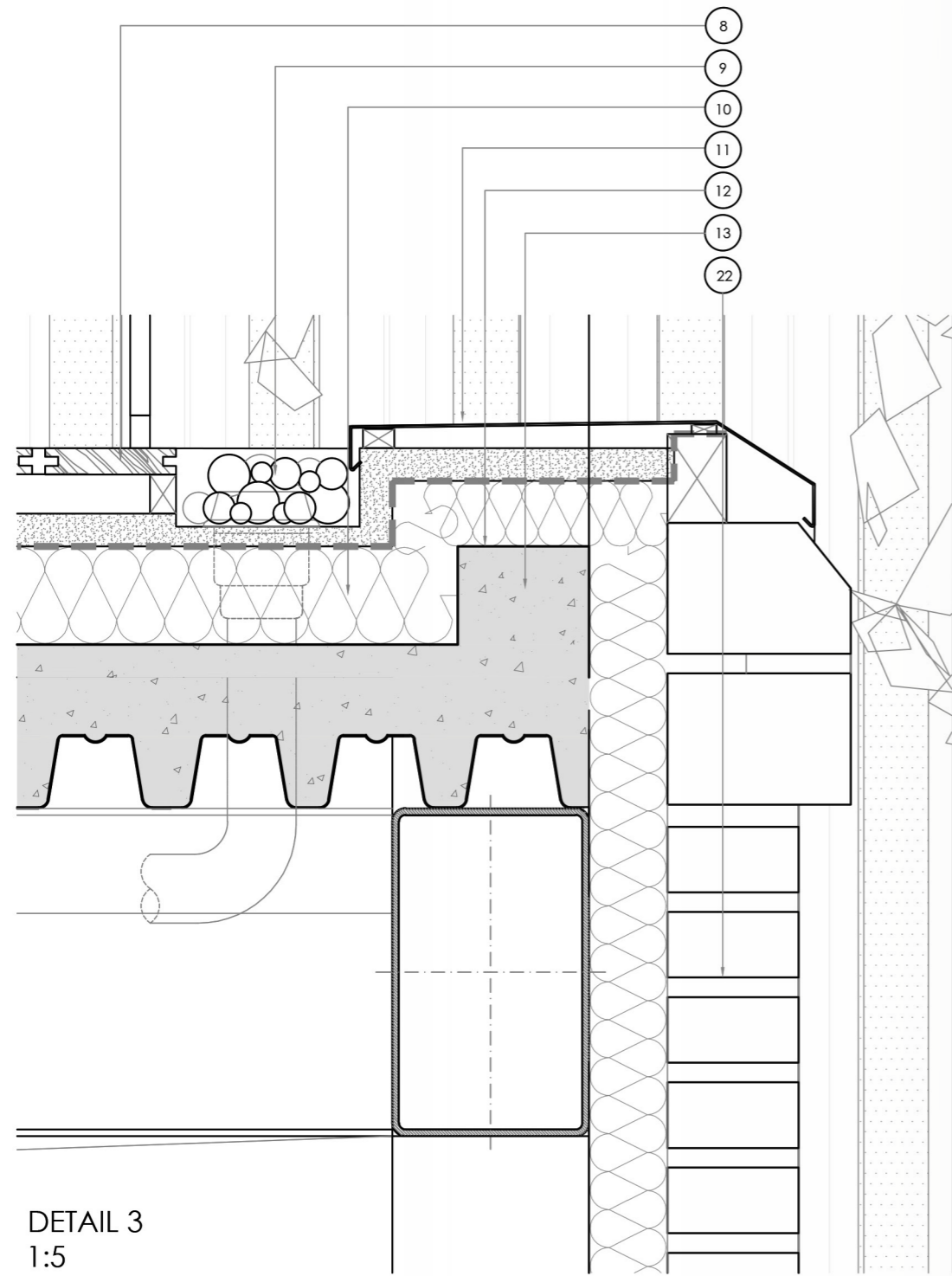






ANNOTATIONS

- 1 50X50MM BAGUETTE - TERRACOTTA SCREEN IN NATURAL TEXTURE FINISH & BEIGE/LIGHT GREY COLOR (TO MATCH EXPOSED CONCRETE COLUMN COLOR)
- 2 CONCEALED ALUMINIUM SUPPORT AND BEIGE/LIGHT GREY COLORPOWDER COATED STAINLESS STEEL CLIPS SYSTEM TO SPECIALIST'S DETAIL
- 3 250X125X5MM THK. L-ANGLE M/S BEAM AS SCREEN FRAMING (TO STRUCTURAL ENGR'S SPECIFICATION) IN SELECTED BEIGE/LIGHT GREY COLOR SPRAY PAINTED TO MATCH TERRACOTTA SCREEN
- 4 EXTERNAL WALLS IN 150MM WIDE, 24MM THK TERRACOTTA TILE IN NATURAL TEXTURE FINISH & BEIGE/LIGHT GREY COLOR (TO MATCH EXPOSED CONCRETE COLUMN COLOR)
- 5 WALL CLADDING FIXING IN CASTED ZINC CLIPS/ANCHOR SUPPORT SYSTEM TO SPECIALIST'S DETAIL
- 6 50X50MM BAGUETTE - TERRACOTTA BALUSTRATES IN NATURAL TEXTURE FINISH & BEIGE COLOR, WITH CONCEALED ALUMINIUM SUPPORT AND POWDERCOATED STAINLESS STEEL CLIPS SYSTEM
- 7 10MM THK. M/S FLAT PALTE AS RAILING FRAMING IN N SELECTED BEIGE/LIGHT GREY COLOR SPRAY PAINTED TO MATCH TERRACOTTA SCREEN
- 8 OUTDOOR TERRACE FLOOR FINISH IN 100MM WIDE, 20MM THK. SELECTED TIMBER STRIP FLOORING WITH CLEAR PROTECTIVE COATING TO SPECIALIST ADVICE
- 9 RC FLAT ROOF WITH SCUPPER DRAIN WITH PEBBLES STONE IN SELECTED SIZES, COLOR TO MATH TIMBER FLOOR
- 10 THERMAL INSULATION TO SPECIALIST'S SPECIFICATION
- 11 G/S FLASHING SEALED & SEALANT TO SPECIALIST'S DETAIL IN SELECTED MAT BEIGE/LIGHT GREY COLOR COATED
- 12 WATERPROOFING MEMBRANE TO ARCHITECTS APPROVAL
- 13 NEW RC SLAB WITH METAL DECK STRUCTURE TO ENGINEER'S DETAIL
- 14 LIGHT COVE WITH WARM WHITE FLUORESCENT LIGHT FIXTURES
- 15 CONCEALED ROLLER BLIND TO SPECIALIST'S DETAIL
- 16 9MM THK. FIBROUS PLASTER BOARD CEILING IN WHITE EMULSION PAINT FINISH
- 17 ALUMINIUM SLIDING DOOR IN SELECTED GRAY POWDER COATED FINISH
- 18 FIXED GLASS WINDOW WITH ALUMINIUM FRAME IN SELECTED GRAY POWDER COATED FINISH
- 19 LIGHT FILTERING CURTAIN CURTAIN TO INTERIOR DESIGNER SELECTION AND SPECIFICATIONS
- 20 250X150X5MM THK. RSH M/S BEAM TO STRUCTURAL ENGR'S DETAIL
- 21 200X100X5MM THK. L-ANGLE M/S BEAM AS WINDOW FRAMING, TO STRUCTURAL ENGR'S SPECIFICATION
- 22 EXISTING PARAPETWALL / BRICK MASONRY FACADES TO BE RETAIN AND MADE GOOD



5.4.2 Existing facade degradation :

Structural Damages

Referring to the visual inspection on 26th September 2017, there was no sign of any critical damages such as large crack, deformation, corrosion, nor settlement to the load-bearing structure of these two buildings. The reinforced concrete structural framing is generally in a good stage.

There was the presence of hair-cracks on a concrete surface. These series of small damages may influence by the shrinkage of the concrete component during drying processes. Further observation and investigation on the development of these cracks needed to be done to ensure the performance of these structures in the future.

Damages On Building Materials

The focus of this section is on damages to building materials of the external facade of P.N. van Eyckhof and Matthias de Vrieshof Buildings. There is some presence of degradation on washed concrete columns, brick masonry, and solid timber railings. These three main building material damages have a major influence on the overall appearance of these faculty buildings.



1. Black deposit on building façades

Reason of selection:

The black deposit on concrete and brick masonry surface appear significantly on the external facade of P.N. van Eyckhof Building, similar damages occur generally in other parts of this cluster. Similarly, the materials blackening also appear on the external facade of Matthias de Vrieshof Buildings. The damages are particularly severe at the upper parts of the brick masonry walls and the edges on concrete structure and balconies.

Relationship with rest of building:

The damages are particularly severe at the upper parts of the brick masonry walls and the edges on concrete structure and balconies.

Hypothesis:

Dark patches of powdery deposit on building facade are caused by the dead algae. Algae can develop in the presence of high moisture content area with limited sunlight.

This help indicates that these damages correspond to the source of moisture from rainwater, and construction detailing in the Shaded area of these two buildings.



2. White deposit on building façades

Reason of selection:

This type of damage occurs only on the brick masonry part. The White patches appear generally on the external facade of these buildings.

Relationship with rest of building:

The damages are mostly seen in the upper parts of the masonry walls, which exposed to sunlight.

Hypothesis:

The location and orientation of the damages indicate that lime contained material and rainwater were the main source of this building degradation.

The series of white powder on masonry wall are gypsum deposit. A result of the chemical transformation of acid and lime component in pointing mortar.



3. Push-out of pointing mortar

Reason of selection:

This type of damage occurs on the brick masonry joint, pointing mortar, part. The lost of this material may lead to the water leakage of the building.

Relationship with rest of building:

The damages are mostly seen in the upper parts of the masonry walls.

Hypothesis:

The symptoms of this damages may be due to frost action in a number of steps, possibly combined with other mechanisms. The damages are located on the high area which exposed to strong wind and high amounts of rainfall year-round. Temperature also drops to the freezing point quickly in winter evenings, allowing for frost to develop within the material.



4. Black deposit on building façades

Reason of selection:

This type of damage occurs only on the brick masonry part. The dark (black/green) patches appear generally on the lower part of these building. This may cause by the limited sunlight which influences the drying behavior of the walls.

Relationship with rest of building:

The damages are mostly seen at the window sills and the connections between two masonry walls.

Hypothesis:

The location and orientation of the damages indicate that these degradations were the mainly caused by the algae and biological growth.

The series of dark powder on masonry wall die algae. Warm vapor/steam washing is recommended to be cleaning method.

6. REFLECTION

6.1. Studio: Future of Structuralism

**6.2. Graduation Projects:
Leiden Humanity Campus**

6.1 Studio: Future of Structuralism

The argumentation of choice of the studio:

As mentioned in the introduction part that heritage architecture adaptive reused has currently become one of the main emergent themes, in the world of the architectural profession. In addition, this field of architecture now includes the young monuments from the modern movement.

The conservation and reuse of 50yearsold built heritage have become a new challenge for the restoration architects. In TU-Delft's publication 'Designing from Heritage – Strategies for Conservation and Conversion, 2017', the two H&A professors discuss new methods on investigation and assessment of this industrialized built heritage. The authors claimed that there are significant differences in the research methodologies between the young monuments and other heritage architectures. The design philosophy was one of the main aspects that influence the value of that modern built heritage. Marieke Kuipers and Wessel de Jonge believed that the twentieth-century architecture and those of the modern movement were based on the creation of a better life for the public*.

Therefore, the architectural design concept investigation is considered as a critical challenge of the young monument preservations and adaptive reuse. Throughout the past two semesters, I realized that this particular issue will be further investigated and addressed in all students' graduation projects.

On one hand, all the students started the analysis on their structuralism architecture by using three main approaches including architectural design, cultural value, and technology. These three aspects were mainly bonded to Chair Heritage & Architecture (H&A) methodical line of inquiry. These methods led the students to sets of scientific information that help identified and highlight the significant cultural values of the original design that should be protected. At the same time, these general studies help indicate the technical constraints and challenges of these heritage buildings that need to be addressed in the future alterations and additions.

On the other hand, I would argue that mentioned research approach above could not provide enough information for the preservation of structuralism architectures values. The scope of a young heritage research should not be only limited to the conservation of the tangible authenticity value of the buildings. In fact, a further elaboration on the intangible aspects analysis is very crucial for this graduation studio. Since the structuralism movement was originated by the humanity ambitions, critical assessments on the design philosophies will eventually help identify what were these architecture meant to be/used to be / should be in the future. Another additional approach was the research on the timeline of the original architects. By doing so, we will understand the development of style, influences, design methods and the relationship between each building during the structuralism movement.

* Marieke Kuipers & Wessel de Jonge, Designing from heritage: Strategies for conservation and conversion (Delft: TU Delft - Heritage & Architecture, 2017), 17.

In this graduation studio, the students were encouraged to conduct their studies through both theoretical and practical approaches. The student could make proposed an idealistic scheme or the ones formulated by reality criteria. I, personally, find that this freedom help develops student's project to the higher levels. The variety of design proposals, from the fellow students, will influence one another during the design development. The 'redevelopment of the Humanity Faculty' will not just be a young monument conservation project, but it also tries to offer (an ideal) future educational environment for Leiden University.

Aside from those, there is an additional approach that helps complete the goals of this graduation studio, I believe that an investigation on structuralism architecture must contain both historical and contemporary perspectives. When dealing with the future structuralism architecture, it is important to study some relevance precedents both within and outside the field of Structuralism. In the case of Leiden Humanity Faculty, there should be a research on how the future educational space/facilities should be. These Emic studies were not the only response to program or problem solving, it also suggests how academic building could contribute to the study procedure in the coming future. Small details like an interior space division, whether the open plans layout or individual cubical, will certainly affect the working environment and interaction between people in these buildings.

Throughout the past eight months, there are several design/research methods have been experimented with in my graduation project. I find that working only in the 2dimension drawings were not sufficient for this complex project. There are a lot of hidden corners that needed to be taken into account. I claim that digital 3d modeling is appropriate tools to assess the structuralism architecture. Additional to that, a few rounds of site visits are also very helpful. In these complicated buildings, we could not gather all the useful information in one-time site inspection.

In conclusion, all the mentioned research approaches above have challenged preconceptions about heritage architecture adaptive reuse. There are various solutions for the future transformation of this post-war heritage architectures. Of course, the high-value tangible aspect of these building should definitely be preserved as a remanence of the original designs. However, if we base on the original intentions of the structuralism architects, the redevelopment of structuralism architectures may not result in usual conservation approaches as we have seen in the pre-war monuments.

After all, I strongly believe that the studies on the young monuments adaptive reuse would diffidently wider social, professional and scientific framework. In the global scale, to me, these young architectural movements were spread across the world and embedded in the international cultures. There are numbers of abandoned post-war buildings that represent the new phases of the world's civilizations that worthwhile to preserve it heritage values for the next generations. I believe that the solid transformation strategies of a young monument provided in this course will be a great device and awareness that I could apply to the globalized adaptive reused environment in my future careers.

6.2 Graduation Projects: Leiden Humanity Campus

In the redevelopment of Leiden Humanity campus, there are numbers of issues and dilemmas occurred during the research and design stages. These were range from the urban planning issues, technical complications, and future development of the site.

During the design stage, I have encountered with the conflictions between the original design concept and the actually built conditions. Van Stigt claimed that the basic structure of his buildings was designed for the easy future expansions. He provided an extra strength in the structural system and also introduces removable framing as a roof structure. However, I would argue that these basic structures were only suitable for the vertical extensions. The shape of Van Stigt's 'mushroom column' seems to be a great challenge for any new intervention around it. It's difficult to make a termination between this original structures and the new elements. Another dilemma occurred in the roof level, the original roof cantilevers create several limitations for the new structure over the inner courtyards.

Another dilemma is related to the provision for social interaction space. In the original design, Van stigt made the inner courtyards as large communal spaces for the north and south clusters. These inner courtyards are connected to the network of the public spaces of the Witte Singel-Doelencomplex. There is the presence of the system of central social space in the interior design of each universal unit. Although that space was shaped by a good ambition, it has also created a few consequences in term of usages, building efficiency and interior space qualities. These issues will be the main challenges for the future alteration of this young monument.

Looking through the physical alteration/upgrade perspectives, I personally believe that the new design should help improve these particular issues. Any alteration to this extant built fabric should offer a clear sense of directions to the users. At the same time, the intervention shall also improve the poor ground floor experiences in the current situation.

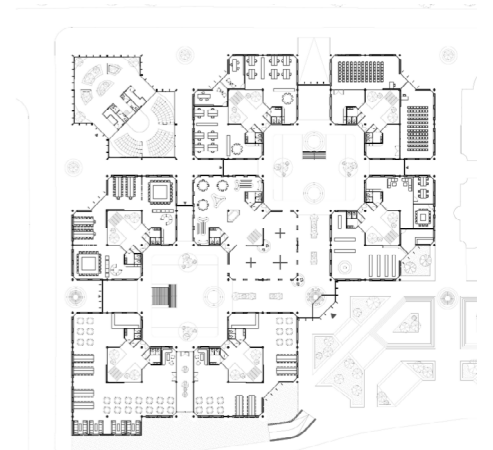
In addition, if we look at these structuralism buildings through the lens of theoretical approach, it is important to restore the original "Social interaction Strategies" in the courtyard areas.

After exploring the various options throughout that past eight months, I noticed that significant different intern of building appearances between mine and Yiannos Mexis's design. The only two MSc4 students, dealing with Leiden project, stand on different architectural positions in this adaptive reuse development.

In contrast, I realized a strong relationship interm of scientific frameworks between mine and my colleague's proposals. In fact, we more and less have a similar strategy on the planning level. This resulted in the functional arrangement and the zoning of these buildings. We both give priority to the Witte Singel side. We tried to improve the connection between the faculty building to the other facilities of this Inner City Campus.

This similarity illustrates that there should be some common logic for the adaptive reuse of Leiden faculty buildings. These transformation frameworks and intervention strategies are proven and could be implemented as a set of design fundamentals and recommendation for the restoration architects dealing with this university buildings additions and alterations. I hope that our studies of Joop van Stigt's faculty buildings would contribute to academic building redevelopments in the future.

Ground Floor Plan
- Y. Mexis



Ground Floor Plan
- W. Taemeyachat



View of the South Clusters
- Y. Mexis



View of the South Clusters
- W. Taemeyachat



7. LITERATURE

7.1. Practical preference

7.2. Literature

7.1 Practical preference

As stated in the preface, there will be some precedent studies on the theme structuralism and young monuments adaptive reuse. The research will be started with the analysis of similar redevelopment of other structuralism and post-war heritage buildings such as an alteration to Aldo van Eyck's orphanage in Amsterdam, and the restoration of the Zonnestraat Sanatorium in Hilversum. These are two significant example of Dutch young monument redevelopments which represented various approaches that could be adapted or avoided in this graduation projects. One of the useful aspects of this heritage reused is new space arrangement, acoustic issues, and thermal bridges. These problems have been resolved/reduced by series of technical design including the new proposed material, furniture selections, and light fitting designs.

However, I believe that different perspective of spatial design should be integrated into the precedent studies. For instance, the development of 'Rolex Learning Center by SANAA' will be a very useful project that houses another typology of learning spaces. These spaces are not subdivided by a partition into small spaces like the current situation in the Humanities Faculty Buildings. A series of internal terrains are used as a tool that helps define each space in this building.

7.2 Literature

Aside from the precedent studies, the following literature and heritage adaptive reused theories will be consulted in this graduation project. These documents are raged from general research methodologies, cultural values, heritage assessments, and technologies.

1. Hielkje Zijlstra, Analysing buildings from context to detail in time: ABCD research method, (Amsterdam: los Press, 2009)
2. Marieke Kuipers & Wessel de Jonge, Designing from heritage: Strategies for conservation and conversion (Delft: TU Delft - Heritage & Architecture, 2017)
3. Marta de la Torre, Assessing the Values of Cultural Heritage, (Los Angeles, CA: The J. Paul Getty Trust 2002)
4. Rafael Moneo, On Typology, Oppositions 13, (Cambridge, Massachusetts: The MIT Press, 1978)
5. Ray Lucas, Research Methods for Architecture (London: Laurence King Publishing, 2016)
6. Rob van Hees, Silvia Naldini, and Job Roos, Durable past-sustainable future, (Delft: TU Delft - Heritage & Architecture, 2014)
7. Steenhuis, M. (2014). Joop van Stigt, architect: Werken vanuit een flexibele structuur 1960-1985. Amsterdam: Stichting Dogon Onderwijs.
8. Heuvel, W. J. (1992). Structuralism in Dutch architecture. Rotterdam: Uitg. 010.
9. Hertzberger, H., Brinkman, E., & Kirkpatrick, J. (2015). Architecture and structuralism: The ordering of space. Rotterdam: Nai010 Publishers.

