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interiors buildings cities

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msc 3 palace

archiving architecture

project journal



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graduation studio 2024~2025
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msc3,4 palace: archiving architecture
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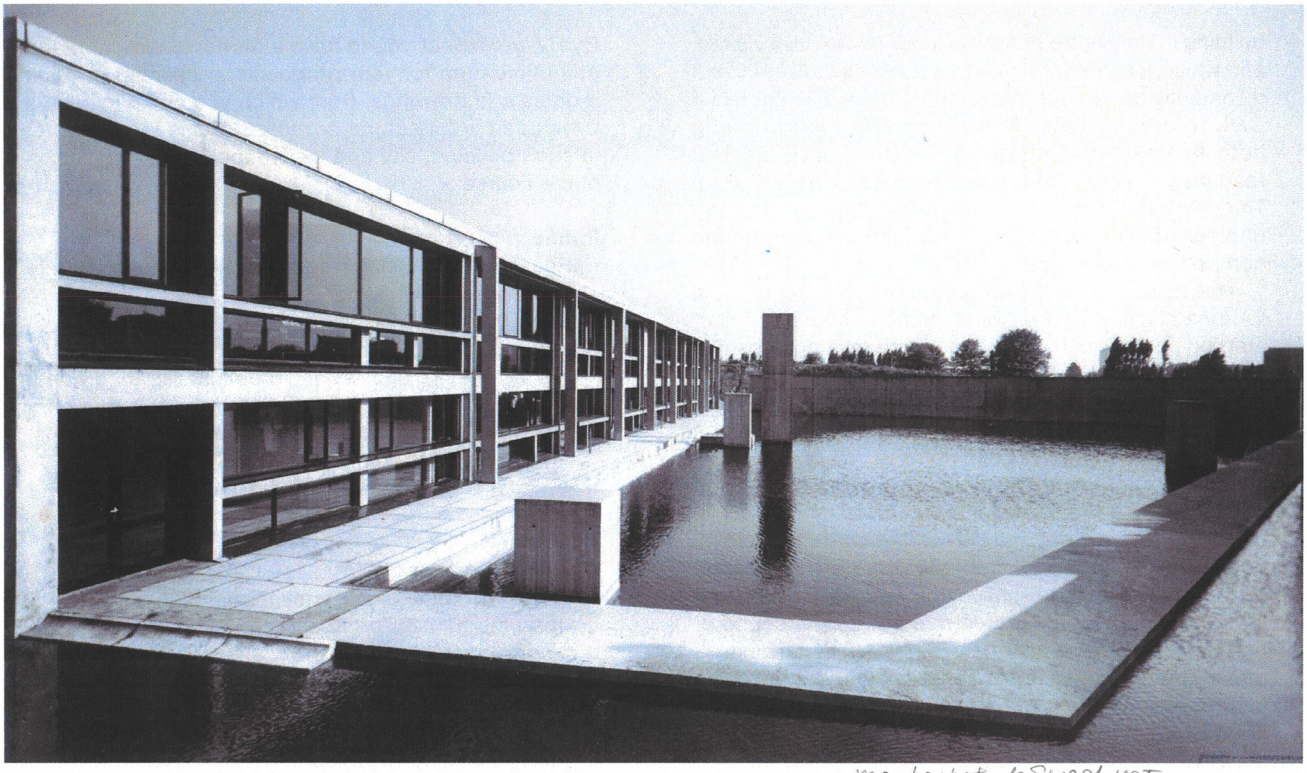
part 2

liren chu

Archiving Architecture

2024-25 MSc3 AR3AI100
Brief 03



Undated image of deSingel, Library Royal Conservatory Antwerp

Developing an Archive

VAi

The Flanders Architecture Institute (VAi) represents architecture as a subject and a discipline in Dutch-speaking Belgium. It seeks to provide a meeting place for everyone who wishes to make, share and experience architecture, through its engagement with exhibitions, lectures, debates, events and publications. The VAi offers an important critical framework, through which to consider contemporary Flemish architecture, producing a biennial yearbook and curating the Belgian Pavilion at the Venice Architecture Biennale.

Since 2018, this active participation with contemporary architecture has been extended through its appropriation of the Flanders Architectural Archive. This collection, originally built up by the Province of Antwerp but now addressing Flanders as a whole, holds more than 180 private architect archives, including those of Léon Stynen, Bob Van Reeth - AWG, Christian Kieckens, Bataille-Ibens and many others.

The relation between the archive and the VAi's other activities is a developing one. It will be the task of this project to consider what might be the role of the extensive historical material and technically defined conditions of the archive, as an integral component of the wider public mission of the organisation.

De Singel

The VAi is currently based at De Singel, a modernist cultural campus on the Southern periphery of Antwerp's historical centre. In 1958, the Ministry of Public Works commissioned architect Léon Stynen to design the first phase of this ambitious complex, a new Conservatoire as an extension to the Antwerpsche Vlaamsche Muziekschool. It featured a pavilion shaped like an open figure of eight with rooms overlooking two inner courtyards. In 1979, work began on the construction of phase two, becoming the expanded deSingel Cultural Centre and including a series of performance space for music and theatre as well as a television broadcasting centre. In 1987 the building was extended again, based on a design by Stynen and his assistant Paul De Meyer, with additional space for the Conservatoire and a small public foyer. In 1995, Stephane Beel was tasked with drawing up a masterplan for the reorganisation and extension of DE SINGEL and the Conservatoire, finally leading in 2010 to the opening of a major extension to the complex, part of which houses the office and exhibition hall of the VAi.

A New Home

With the addition of the archive, the institute has now outgrown this space. The archive is housed in a separate

Archiving Architecture

building in the centre of Antwerp, which we have visited, and which is not fit for purpose. In 2021 the VAi launched a competition, through the Flanders Bouwmeester Open Call, to create a new home for itself, incorporating both its more public activities and the archive, within a redundant church, Saint Hubertus, in Berchem, Antwerp. This competition was finally abandoned due to cost and unclear political motives, even after a winner for the competition was chosen.

This history is the starting point for our project. The VAi needs a new home. We propose to take a different starting point, which is to build on the relationships and potential synergies that already exist between the VAi and De Singel, as a means by which to engage both institutions but also as a catalyst to rethink the condition and environment of the building itself. While De Singel is an important venue for the arts, its relationship with both the city and its public is an ambivalent one. The complex has a distant and introverted character and its public spaces often feel under utilised. Core uses, such as the television studios, have been abandoned and the complex as a whole feels in need of a new sense of purpose and engagement. The Beel extension ultimately does little to amend these senses, indeed it could be said to exacerbate it, with its large, empty circulation spaces and its ambiguous relation to the ground and the city.

Over the remainder of the course each of you will develop a project to define a new, unified home for the VAi, incorporating the needs of the archive, alongside its other public and administrative roles. The starting point will be the competition brief written in 2021. This adds other possibilities for public and community engagement to the organisation's core activities. However that brief is for a standalone building. Working in response to the existing complex of De Singel, and perhaps the VAi's existing spaces there, you may feel you need to critique, adapt and develop the brief to engage with the situation as you find it and the possibilities it offers. This may engage, to one extent or another, the larger condition of De Singel and the other organisations that occupy it, or might focus on the VAi as a defined entity within or in response to it. This breadth of starting point also offers a significant degree of flexibility in your approach. You may choose to extend De Singel, create a new structure that relates to it in some way, or perhaps work entirely within its existing body. An ambition might be to redefine its relationship with the city and its surroundings, while understanding its own identity and typology and enjoying its modernist sensibility.

To Begin

As a beginning, we would like you to explore, document and represent De Singel, as a developing body and as a situated one, describing the relationships between it and its context historically and now, with an understanding of potential future developments. In the next weeks we will ask you to refine your own brief for the project and to test the scale and possibilities of your interventions.

By P2 we expect you to have a strategic direction and an outline form for your proposals, presented through models and drawings, from which you can establish a developed architectural proposal across the scales of interior, building, city and landscape by the conclusion of the course

Public

- Reception and counter: 100m2 (incl. separate sanitary facilities and seating)
- Exhibition space/multifunctional space: 200m2
- Reading room: 200 m2 (cf. current reading room 96m², is too small) (keep reading room and library divided, small separate group study room)
- Library: 200 m2 (books and visitors' workstations) (keep reading room and library divided)

Total: 700m²

Additional

- Staff workspace 300m²
- Large workplace for archive employees is 12.5 m² assume 10 = 125 proposal: 300m² (+/- 30 employees including interns, temporary employees, etc.)
- Large workstations with archives 3.5 mx 3.5
- Standard office spaces
- Focus spots
- 1 large meeting room 80m²
- 1 small meeting room 30m²
- Kitchen, bathroom, dressing room 150m²

Total: 560m²

Archive

- Storage Packaging material: 120m2 (near archive, depot, office)
- Loading and unloading space: 150m2
- Waiting depot (=emergency depot): 100 m2 (storage of non-exclusive archives, bulk pallets)
- Triage space correct - contaminated material: 60m2
- Quarantine (storage of contaminated material): 120 m2
- Cleaning space (processing contaminated material): 60 m2
- Pre-depot (storage of own material): 60 m2
- Processing (processing of own material): 60m2
- Digitization space (own material): 60 m2 (new)
- Restoration studio (own material): 60 m2
- Depot storage: 2,500 m2 (Currently 1,500m, growth in recent years 470m in 5-7 years > per 5y 400m > 10y > 20y with expensive storage systems)
- Taking into account climate class for paper
- Climate class photos separate space; 100 m2
- Bulk storage
- Storage in racks and planning cabinets
- View depots: toc (in the underground term, 125m is visually attractive, desire to collect more 3D objects) > this could be a 'regular depot box' with a transparent wall in front
- Server space 10m (not on functional schedule)

Total: +/- 4000m²

Interiors
Buildings
Cities

Palace

nai visit

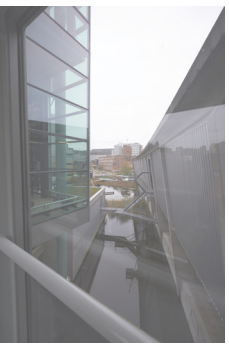


fig. 2.1.1 gap between library and archive, liren



fig. 2.1.2 movable shelving system, liren



fig. 2.1.3 processing room, liren



fig. 2.1.3 pre-depot, liren



fig. 2.1.5 quarantine room, liren

fig. 2.1.4 movable cabinet of large-piece drawings , liren

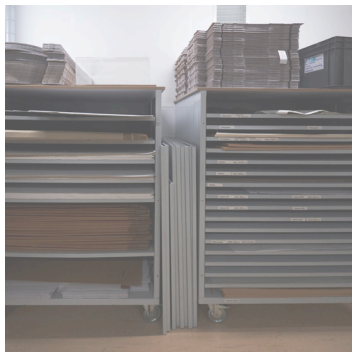


fig. 2.1.6 view depot, liren



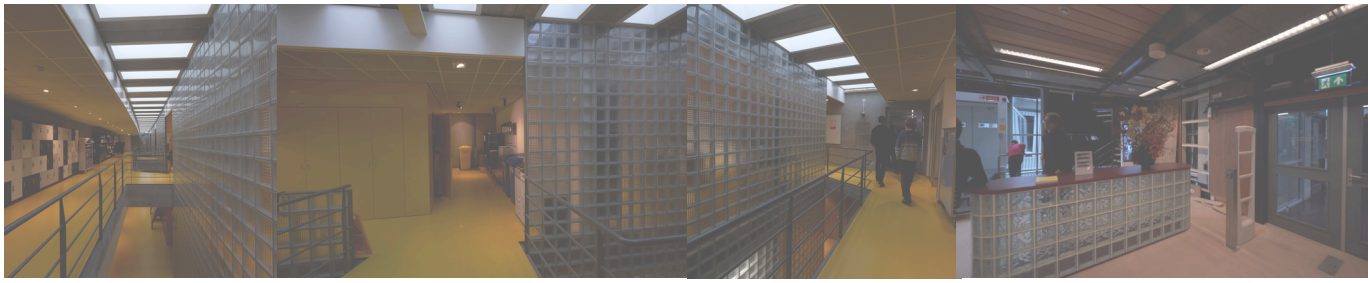


fig. 2.1.7 entrance towards study room, archive wing 'banana', liren

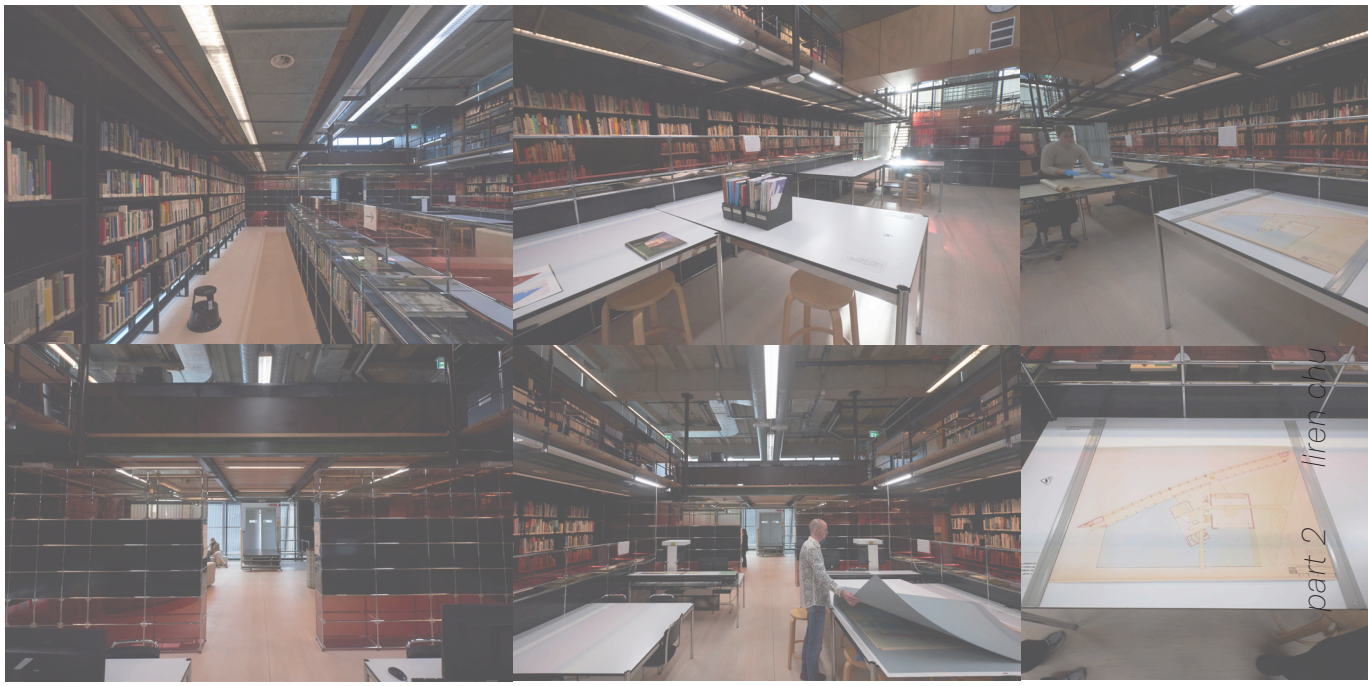
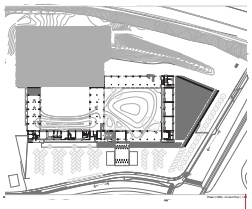
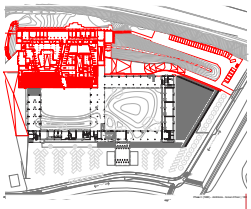
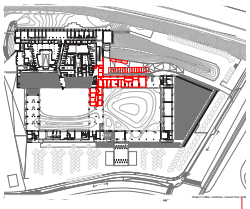
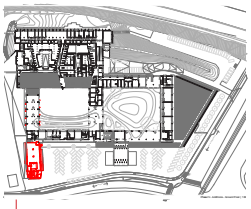


fig. 2.1.8 library and working space, liren



fig. 2.1.9 storage of packing material, liren

deSingel gerneral info

The first phase entailed the construction of a low-rise building organized around two inner courtyards, with the classrooms and auditoria raised on pilotis and the officespaces underneath, partly sunk in theground.[2]

Work resumed in 1973, after Andries Kinsbergen , the governor of the province of Antwerp, proposed to also house BRT 2 Omroep Antwerpen in the complex.[10]

In a second phase, the complex was completed with the addition of a high-rise building that housed the concert and theatre halls [theBlue Hall and Red Hall, respectively], studios for the state-sponsored radio station, and a library on the top floor of the tower above the halls.[2]

More office space were subsequently realized by Stynen and De Meyer underneath the classrooms in the southern wing of the low-rise building [2]

In a third phase, the complex was further expanded in a third phase including extraclassrooms, individual studios, a smalltheatre hall [the Black Hall and a dining room].[2]





Ten-Year Plan 1957 - 1966

drastically changed the urban landscape of Antwerp

Phase 1 1963 - 1967

architect: Stynen

institution: Royal Flanders Music Conservatoire

function: classroom, auditoria, courtyard, office

Phase 2 1973 - 1980

architect: Stynen

institution: Royal Flanders Music Conservatoire & Radio 2

function: concert and theatre hall, library, radio station

Phase 3 1985 - 1987

architect: Stynen, executed under the supervision of De Meyer

institution: Royal Flanders Music Conservatoire & Cultural Ce

function: classroom, individual studio, theatre hall

1957 1958 1960 1962 1963 1965 1966 1968 1969 1970 1973 1980 1982 1983 1984 1985 1987 1989 1990 1991

1952-±1962
waterbody disappeared

first phase design

building application approved

Flor Peeters was then director of the conservatory, the Ministry of Public Works commissioned architect Léon Stynen to design a grand complex.

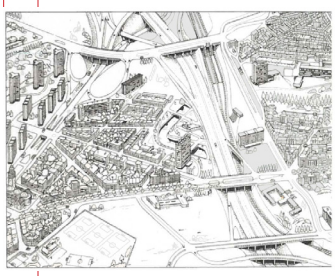
The outdoor swimming pool at Wezenberg was opened in 1957. A few years later, it would disappear to make way for the construction of the Ring road.



Stynen's original design for the Conservatoire was part of his larger master plan for the Wezenberg and its surroundings, which, in the late 1950s, still existed as a green and hillyland-scape. [2]

E3
construction started.
The most severe disruption to the master plan by Stynen occurred when it was decided to shift the planned route of the E3 highway to the immediate vicinity of the building.

master plan for the Wezenberg



1973-±1984
Economic crisis
Start: 1973 (The oil crisis erupted, and economic issues began to surface).
End: Around 1984 (Economic reforms took effect, and key indicators started to recover).

1982
the foundation of 'vzw deSingel' - a non-prof organization'[3]

1983
vzw deSingel started to present its own artistic program of theatre, dance, and music. [5]
Since it was never conceived in terms of its curent use and the associated infrastruclure requirements, some problems began to arise right from the start, necesitating fundamental extensions and a variety of adaptations.

international exhibitions of contemporary architecture were added to the range of activities. [5]

1990-1991
exhibition on
oeuvre [curat
Geert Bekaer
Ronny De M

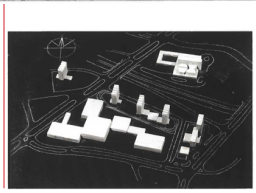
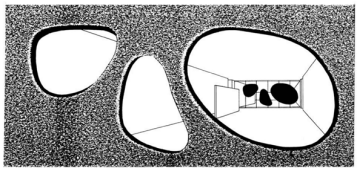
Later, Beel wa
missioned to
number of m
rooms andcla
used by the C
vatoire. [2]

1980
The rooms orginally intended as rehearsal and publc lecture halls for the conservatory began to be rented out for cutural and commercial events. [5]

On 4 November 1980, the deSingel Cultural Centre was officially opened in the presence of King Baudouin and Queen Fabiola, boasting halls in which conservatoire students, future musicians and actors could gain stage experience and see professionals at work. [9]

1989
Stephane Beel com
sioned to design a
ensemble [2]




In 1962, Leon Stynen made an aerated master plan for the Wezenberg. Only the Conservatorium (08), the BP tower, and the Crest Hotel were executed. In 1970, he participated in a competition announced by the City of Antwerp for the construction of a trade center on the open space behind the Conservatorium (09). He designed a cluster of smaller halls around a connection of inner courtyards. The design was never executed.

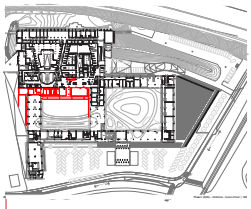
L. Stynen, Royal Conservatory, 1962
L. Stynen, competition for Antwerp Trade Center, never executed, 1970

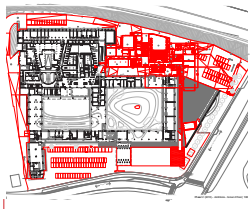

BP building(1960)



former Esso Motor Hotel(1969)


phase 3
11, p46





The 4.1 phase of the expansion and adaptation works took place in the patio behind the stage tower, addressing the limited stage depth in the theater and providing expanded dressing rooms for artists. It also introduced daylight into the artist foyer and created access to inner gardens.

A redesign of loading and unloading areas facilitated easier access to the music hall stage. The inner garden was reconfigured with a new glass bridge completing the octagonal corridor pattern and enhancing accessibility. Terraces and green areas were designed for aesthetic and functional purposes.

A new low-rise structure housed essential functions, including offices for the Flemish Architecture Institute. Above this, an independent horizontal high-rise served as a landmark visible from the ring road, housing conservatory spaces. Between these structures, a transparent section hosted public functions like a multimedia reading room and café-restaurant.

This design featured dynamic public circulation routes and large windows connecting the interior with the urban landscape. The spaces encouraged interaction between performers, students, and the audience.

'to give Stynen's building a partner able to engage in dialogue with the original monumental building as an equal'

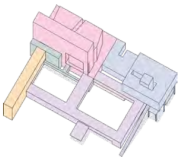
\ Beel

Adjustments to the Red Hall focused on integrating the stage and its fore-stage area, raising its roof for improved functionality.

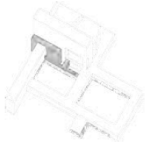
Accessibility improvements included a sloped director's corridor and upgrades to existing stairwells. The auditorium preserved its characteristic red color through seat and carpet renovations.

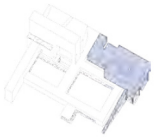
This phase addresses corridors, foyers, and optional Block C renovations. Each foyer was redesigned for specific purposes: the Red Foyer as a youth culture space and the Blue Foyer for reflection and debate.

Sustainability was emphasized in all updates.









Phase 4.1 1996 - 2000

architect: Beel

institution: Royal Flanders Music Conservatoire & Cultural Centre deSingel

function: theater stage, dressing room, artist foyer, corridor, terrace

Phase 4.2 2004 - 2010

architect: Beel

institution: Royal Flanders Music Conservatoire, Cultural Centre deSingel & VAi

function: office, conservatory space, reading room, café-restaurant

Phase 4.3 2016 - 2021

architect: Beel

institution: Royal Flanders Music Conservatoire, Cultural Centre deSingel

function: stage, corridor, auditorium

Corridors and Foyers (2021 - Present)

1995 1996

architect Stéphane Beel was tasked with conducting a comprehensive study of the needs and possibilities of the building and realizing its expansion.

2000

2001
VAi on site [2]

2002 2004

architect Caroline Voet was invited to design a number of interior interventions in the original building, ranging from custom-made tables and furniture arrangements to a new backstage reception desk, the redesign of a group dressing room and the refurbishing of the royal lodge into a meeting room. [2]

2010

2016

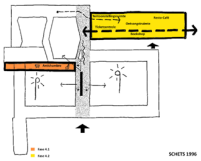
Voet and herpartner Leen De Brabandere were com-missioned to design a new box office [2]

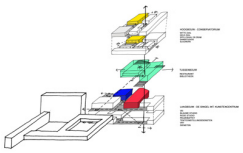
2021 2024

...authenticity is not necessarily found in the material presence of a building nor in its straightforward adaptation within contemporary construction, but perhaps rather in an engaged and respectful practice that seeks to contribute rather than imitate...

\Sofie de Caigny, Epilogue [2]







Today the building is located on the edge of a dense urban fabric that absorbs the city limits amongst numerous medium- and high-rise volumes in an area that is visible and readily accessible from the freeway. As a theater and music venue, it is too far from the old city centree to be incorporated into the broader urban social and cultural fabric.

\el125,p110





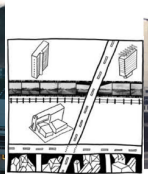


The Design and Conceptual Approach

There is an aspect that was alluded to briefly in connection with the VanNelle factory in the presentation of the 'Container', but which now becomeseven more important, namely that a building exists during both day and night.That is,of course,especially the case for an arts center like deSingel.

Beel initially designed the extension to complement the towers Stynen had built around deSingel. The concept, housed in a neutral shell, featured a breathtaking vertical landscape, resembling an interior fjord. However, for several reasons, including concerns about acoustics, this idea was never realized. Instead, the final project, though entirely different, is even richer and more encompassing. Beel refers to it as a "horizontal tower." The vertical interior effect has been transformed into a horizontal format, creating an openness that integrates the old and new in a dynamic and enhanced way. The extension is not just an addition but a revelation of the existing building, which now acknowledges and interacts with its surroundings. The contrast between the old and new buildings highlights the richness of Stynen's original design, making it more visible and appreciated.











\leon stynen
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2.Dubois, M., Lhoas, P., & Vincent, L. (2023). Leon Stynen Architect. Snoeck Publishers.

\staphane beel
3.https://beelarchitecten.com/nl/projecten/desingel
4.Stephane Beel, Architect,by Geert J. Bekaert (Author), Mil De Kooning (Author), et al (Author)
5.EL CROQUIS. (2016). N. 125 Stéphane Beel 1992-2005. El Croquis.
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\deSingel
9.https://desingel.be/en/info/about-in-and-around-the-building
10. https://www.kunstsite.be/
11. deSingel International Arts Campus_a conservation study

fig. 2.1.10 timeline of deSingel, liren (development plan by max)

site model

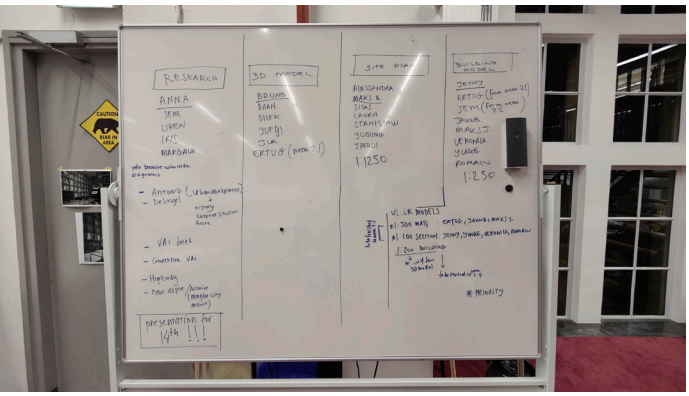
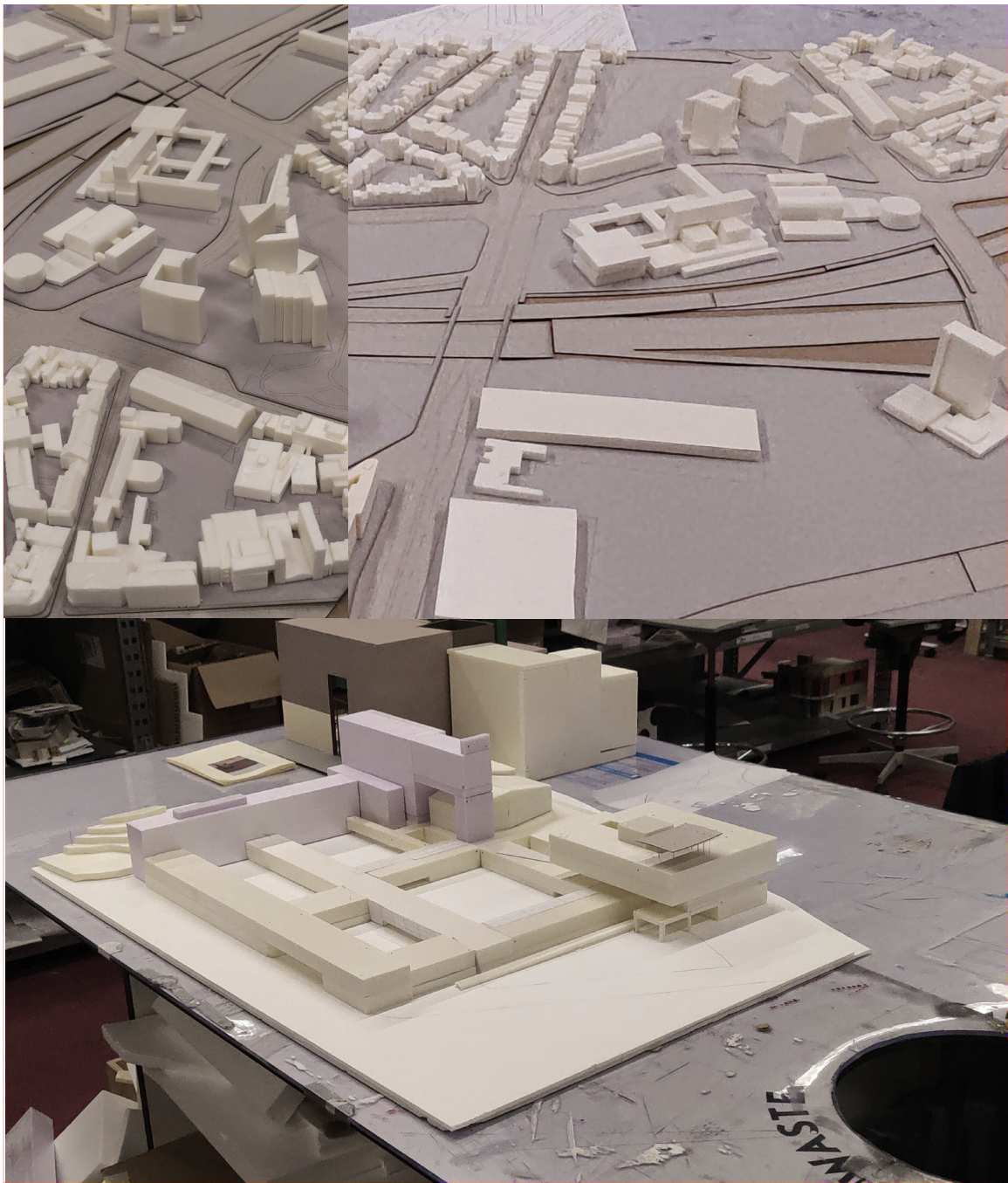


fig. 2.2.1 basic work division

fig. 2.2.2 deSingel site model, liren



1st proposal



fig. 2.2.3 proposal 4th tower, liren

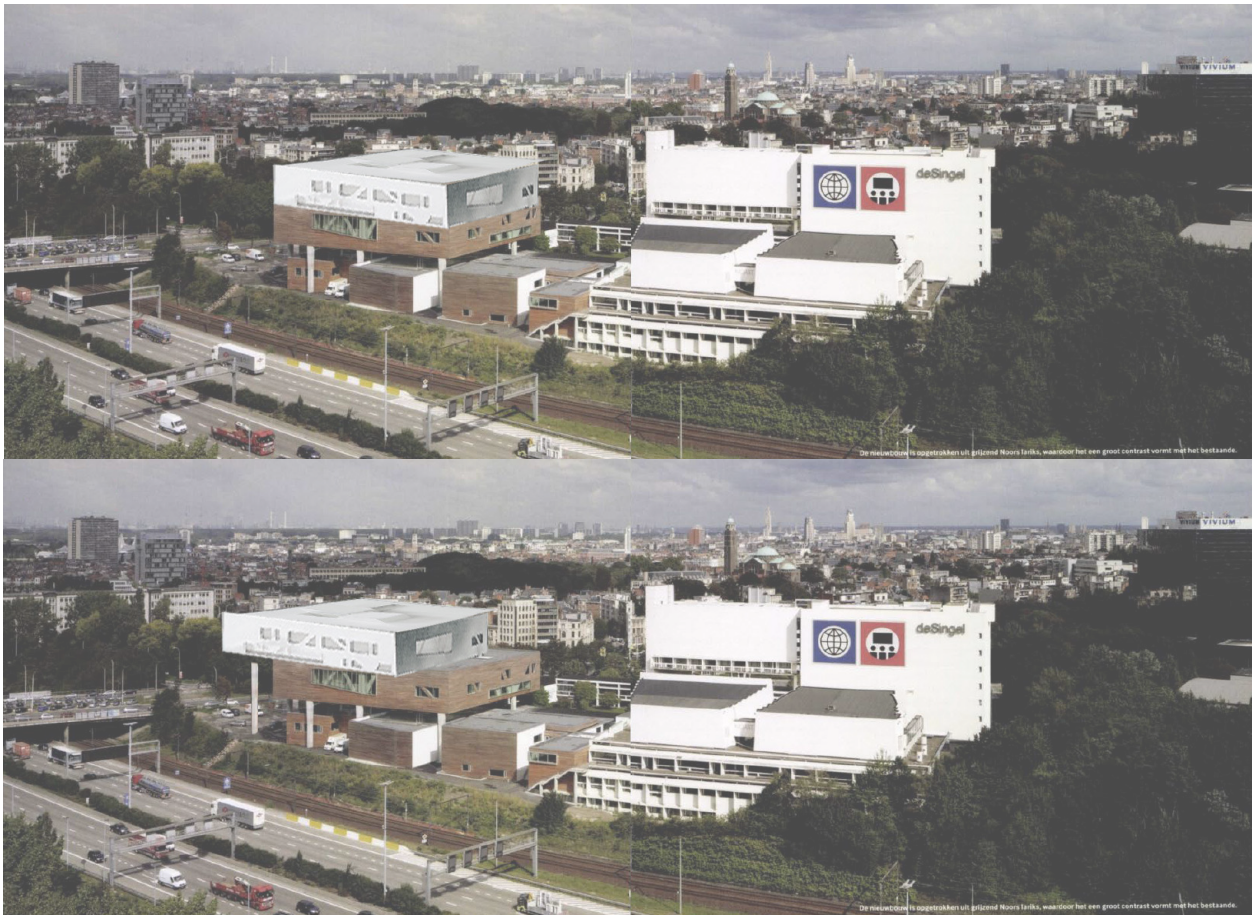


fig. 2.2.4 proposal 4th tower, liren

1st proposal

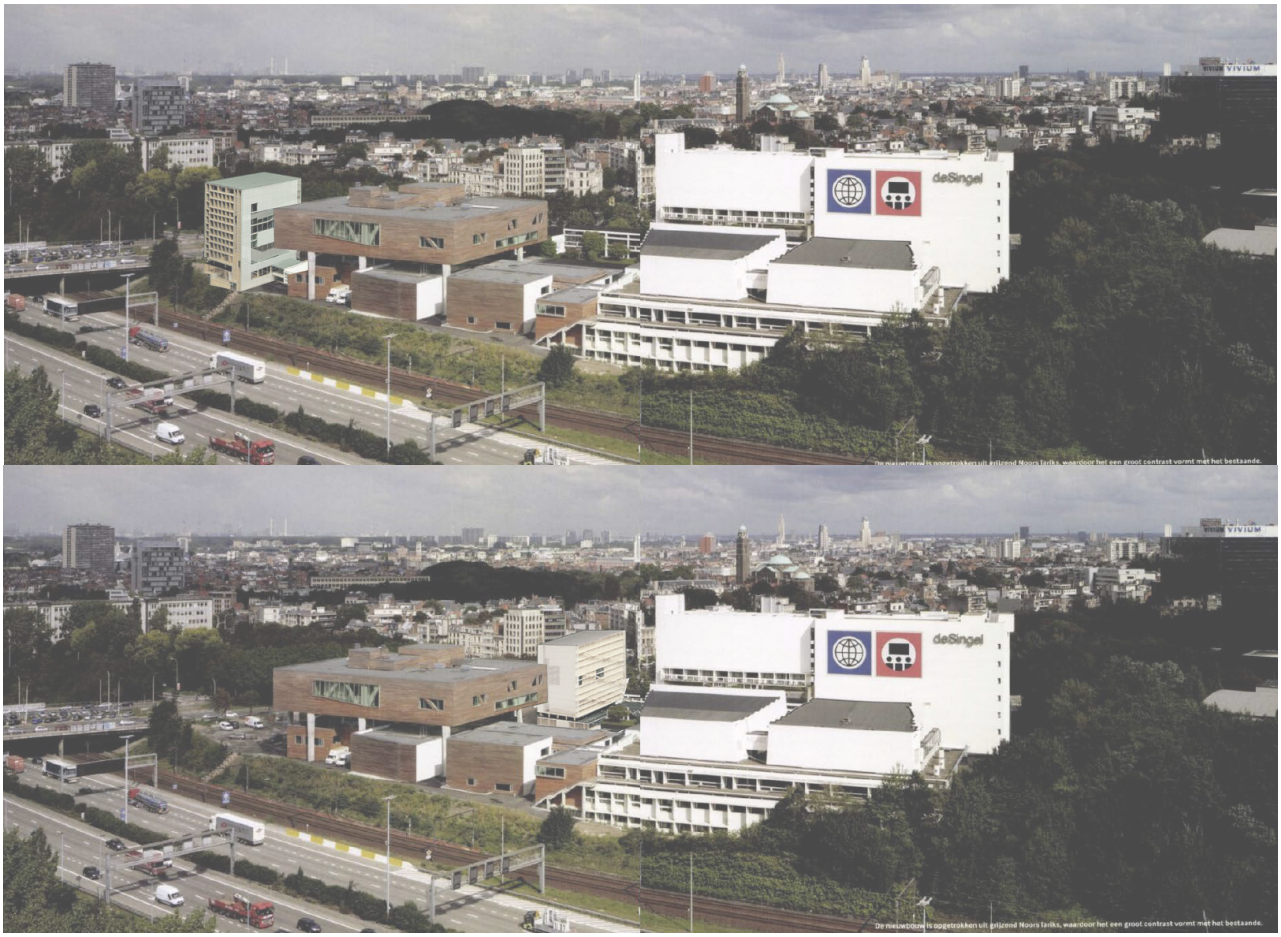


fig. 2.2.5 proposal 4th tower, liren

personal statement

my initial question regarding the sir john soane's museum is whether it is equipped with a modern, scientifically controlled climate system. during our research, we did not find any clues regarding this. however, how does it manage to keep the artworks in good condition? or, does every type of archive necessarily require a modern scientific system? what conditions are needed for preserving different types of materials? how can these conditions become a starting point or core focus of design?

the major difference between sir john soane's museum and other archives lies in the fact that it is not a homogeneous space. every object has its unique placement and spatial existence, allowing the narrative of this architect to be preserved more completely. is this method achievable in a contemporary context? if space is difficult to preserve, can it be retained through virtual reality? this approach adds many dimensions to the index of an object. how many dimensions does an object in an archive actually need? what is the basis for their spatial organization?

when designing archives, we constantly encounter a challenge—how to balance preservation and display. preservation implies closure, shelving, and exclusion, thus achieving temporal robustness. this robustness is also an essential goal of archives: collecting objects deemed important, arranging them in a certain order, and making them a carrier of memory or a clue for interpretation. display, on the other hand, implies openness, where materials must be made public. even if there are barriers to access and retrieval, efforts should be made to lower them. frequent usage naturally leads to wear and tear, which contradicts the goals of archiving. however, whether through damage or preservation in isolation, the act of collecting and exhibiting in archives is eternal.

the subject is not the producer of materials but their reproducer. aside from the need for long-term preservation, its meaning seems to resemble a highly subjective curation. thus, i propose that the archive embodies three essential attributes, each indispensable: intentional collection, long-term preservation, and scholarly interpretation or public exhibition. given these criteria, how might we, as architects, engage with the archive? what spatial relationship should these three elements maintain?

in the sir john soane's museum, soane continually adjusted the placement and spatial arrangement of his objects, creating a dynamic system that showcased his architectural experimentation and innovation. holding dual roles as both architect and archivist, soane curated his collection and carefully juxtaposed objects to weave their stories together. this intentional arrangement allowed each piece to transcend its individual identity, creating dialogues that transformed the archive into a cohesive whole.

i argue that contemporary archives should cultivate similar capacities. spaces within the archive should allow the public, professionals, and archivists to reimagine and redefine the relationships among the collection in more creative ways. while the public nature of modern archives differs significantly from the private origins of sir john soane's museum in terms of spatial upkeep, the spatial narrative of an archive need not remain fixed; it can evolve over time as a collective story shaped by broader societal engagement.

the architectural space and soft configurations of the archive should therefore possess a degree of malleability, with transparency guiding this evolving process. specific spatial design considerations emerge from this flexibility: for instance, researchers' work—or the evolving state of ongoing research—should be visible; the positioning of objects might not be fixed, but should remain accessible through a system that allows for easy tracking and retrieval, even for objects in dynamic locations.

feedback

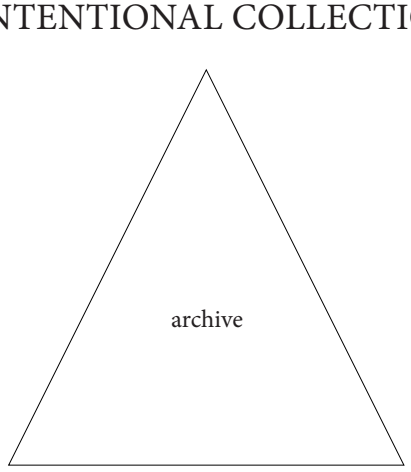
however, given the need for materials' long-term preservation, the archive's scientific systems are indispensable, often placing strict limitations on spatial flexibility and object arrangement. such constraints challenge the archive's adaptability, underscoring the need for a built environment that balances spatial narrative dynamism with consistent climate stability.

p1 final proposal

\Drawing Room in Sir John Soane's Museum
natural light
\abundance of detailed elements
\feel open, reducing the division
\proportions
\three essential attributes of an archive: intentional collection, long-term preservation, and scholarly interpretation or public exhibition

\sereh

In your personal statement, you propose to use the Sir John Soane's museum as template for the contemporary architectural archive. As you yourself point out, there are quite a few differences between this house museum and a contemporary architecture archive. It might take a further investigation to decide which aspects from Soane might be useful or productive to translate into a contemporary archive. Are there perhaps other house-museums that you might investigate to expand your analyses? One aspect that could be relevant is the role of the curator. As Soane's museum was very much one man's project, what might that, in a contemporary archive, mean for the role of the curators or researchers? Might there be a way within the organization and design of the archive to center their roles and perspectives on the collection? And how does this line of investigation tie into the question that you start your statement with, on the climate system of an archive?



1. mission of the vai
the flemish architecture institute (vai) manages a rich collection of architectural archives from flanders and brussels. this collection is owned by the flemish community. it continues to grow and includes models, plans, drawings, photographs, publications, prototypes, catalogs, and digital audiovisual materials. the vai manages and makes this collection accessible to the public, both professionals and enthusiasts.
in addition, the vai engages in public outreach to advocate for well-designed environments and stimulate discussions about them. to achieve this, the institute organizes debates, lectures, exhibitions, and events. architecture in flanders and brussels has recently flourished, drawing significant international attention. consequently, the international position of the vai within the sector has also gained importance.

2. problem statement
currently, the vai operates from two locations: a depot in the center of antwerp and offices on the desingel arts campus. employees constantly commute between the two, which undermines the efficiency and quality of work. the vai has a 10-year use agreement (2018–2027) with the province of antwerp, the owner of the current building.
the existing depot is too small and unsuitable for its purpose. an architecture collection has very specific requirements, including large-format plans and models, fragile materials like paper and photographs, and more.

valuable items cannot be properly preserved in the current depot, which risks them being damaged or lost.

the working conditions for staff are also far from ideal, with dark spaces, cramped workplaces, and other challenges.

therefore, there is an urgent need for a new collection building that enables the vai to maintain and further develop its activities while reflecting the current status of architecture in flanders and brussels.

\ 乌托邦的构建
宣言
自然物与历史
组织

\ 形式逻辑
意象与类比物
城市姿态
主结构
空间原型

\ 生产生活

manifesto

nature and history
organization
formal logic

imagery and analogs
urban posture
primary structure
spatial prototypes

production and life

making archival evidence transparent allows the interpretation of history to rest in the hands of everyone. a transparent archive stands in contradiction to the light-sensitive needs of archival materials.

the site was originally a hilly landscape, but over 60 years of development, it gradually lost its natural characteristics and the intended design of a leisurely stroll through nature. instead, nature was confined within its courtyards. the hillside on the eastern side of desingel became a dividing element between it and the olympic swimming center wezenberg. changes to the southern ring road's alignment after the preliminary design pulled the relationship between the site and nature further apart, forcing it to directly face a busy traffic route. the current road location still overlaps with the 19th-century defensive water features and the vegetation alongside them.

key stakeholders: desingel, the royal flanders music conservatoire, and radio 2.

the architectural form can either continue the language of the two original architects or break away to express a new site identity. however, merely serving as a functional extension is insufficient.

the central dilemma of the design lies in the conflict between the form dictated by archival functionality and the urban posture expected of the new building on the site. an archive requires a juxtaposition of inviting research spaces and enclosed, durable storage spaces.

fig. 2.3.1 aerial view, liren



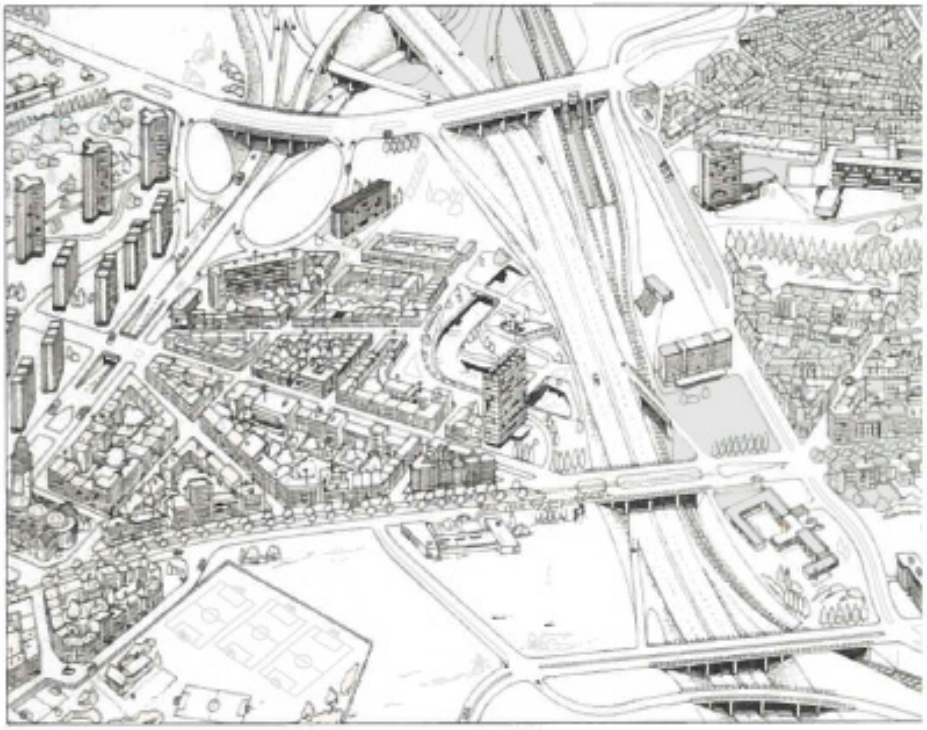


fig. 2.3.2 third dimension, zie magazine, 1969.

the building of the city services on desguinlei, the offices of the water company, the provincial institute for food companies, the former children's hospital, and the royal conservatory give the ring landscape a third dimension

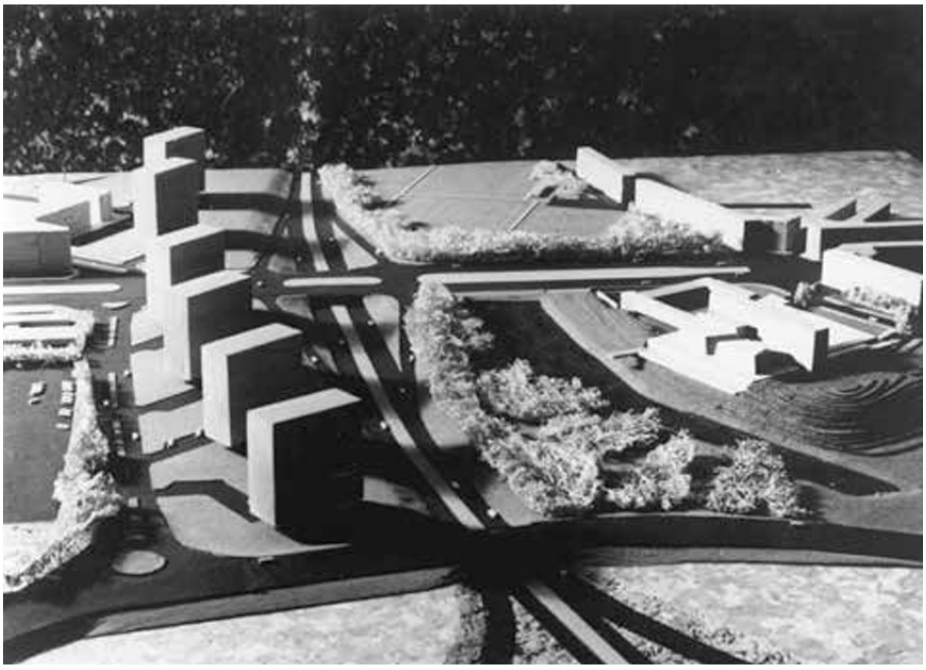


fig. 2.3.3 model for the development plan of wezenberg, circa 1962



fig. 2.3.4 deSingel from the bridge jan van rijswijklaan



fig. 2.3.5 swimming pool

the open-air swimming pool at wezenberg was opened in 1957.
a few years later, it disappeared due to the construction of the ring road.

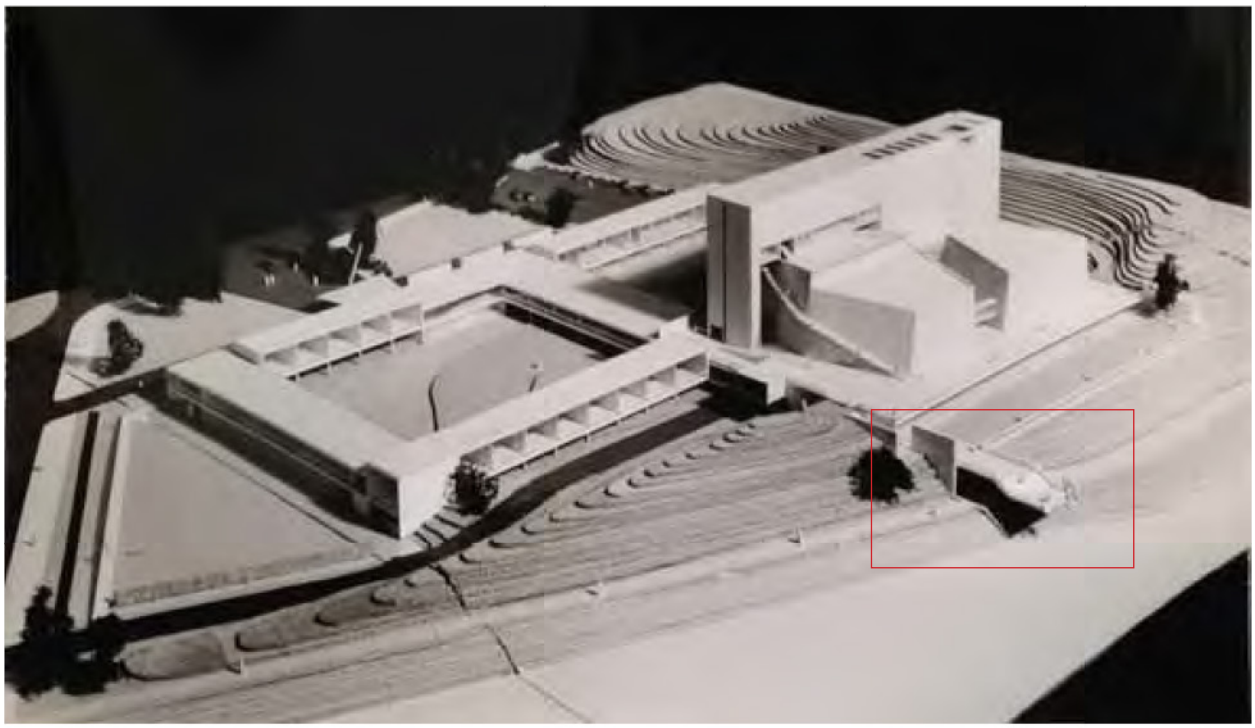


fig. 2.3.6 model, first design 1959 (antwerp:apa).

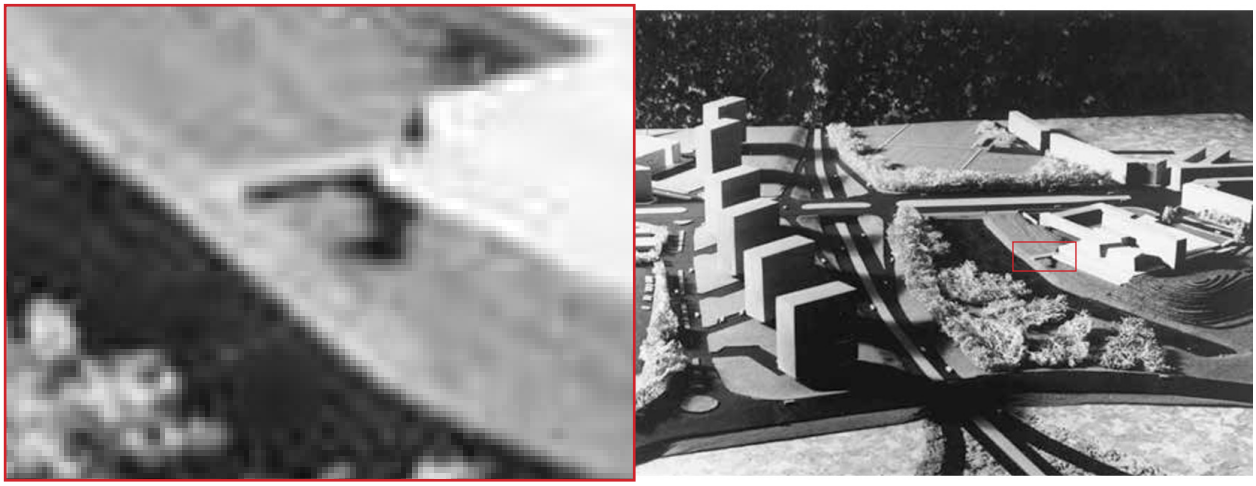


fig. 2.3.7 spring board from model for the development plan of wezenberg, circa 1962



fig. 2.3.8 view from groundfloor of deSingel centre block towards gardens on both sides, liren



fig. 2.3.9 view from gardens with landmarks afar, liren



bridging...

fig. 2.3.10 camperpark, liren

2nd proposal



fig. 2.3.11 centre axis deSingel, liren



fig. 2.3.12 main entrance deSingel, liren

2nd proposal

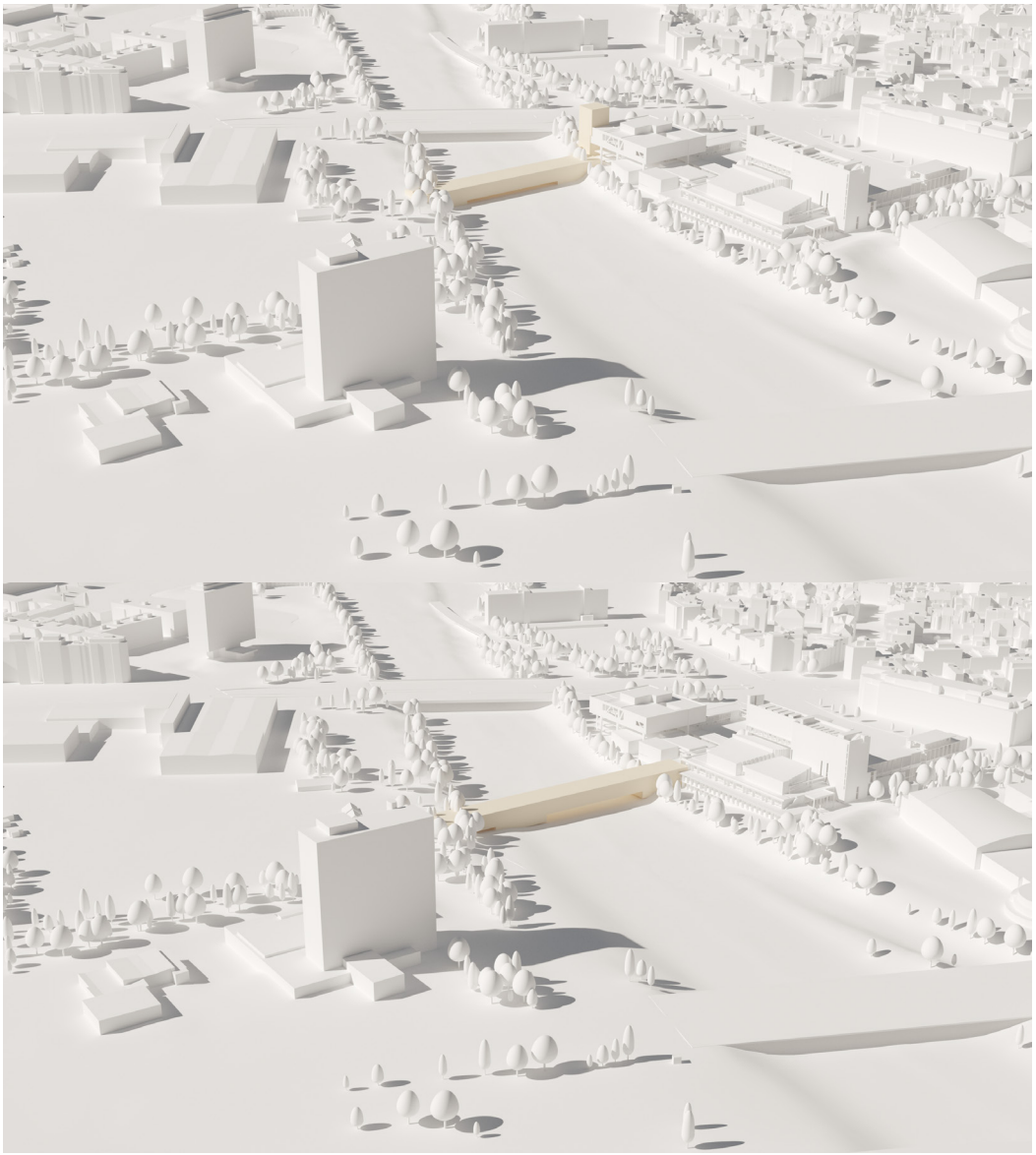
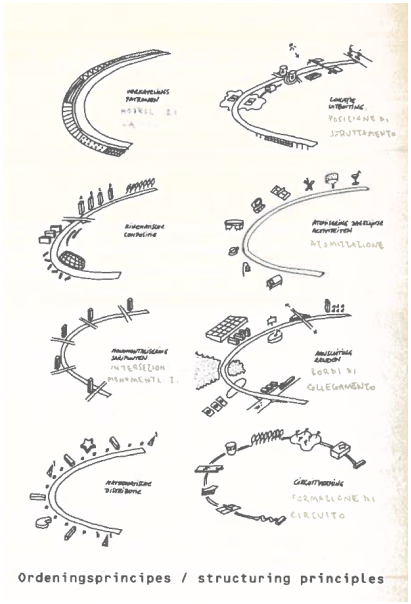


fig. 2.3.13 trials on location of bridge (volume)

fig. 2.3.14 structuring principles, neutelings riedijk architecten

based on an analysis of the ring mechanism and
its physical hallmarks we can infer a number of structuring principles.



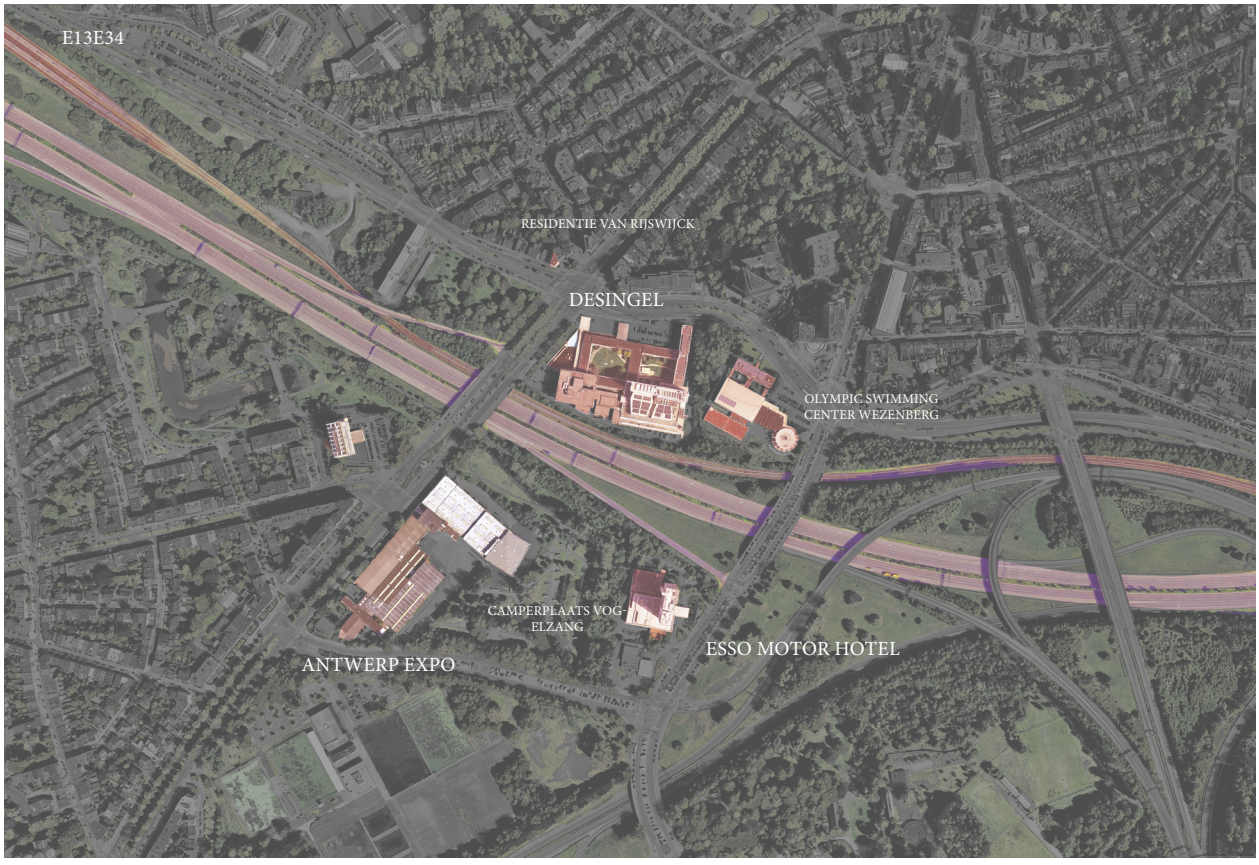


fig. 2.3.15 location of landmarks

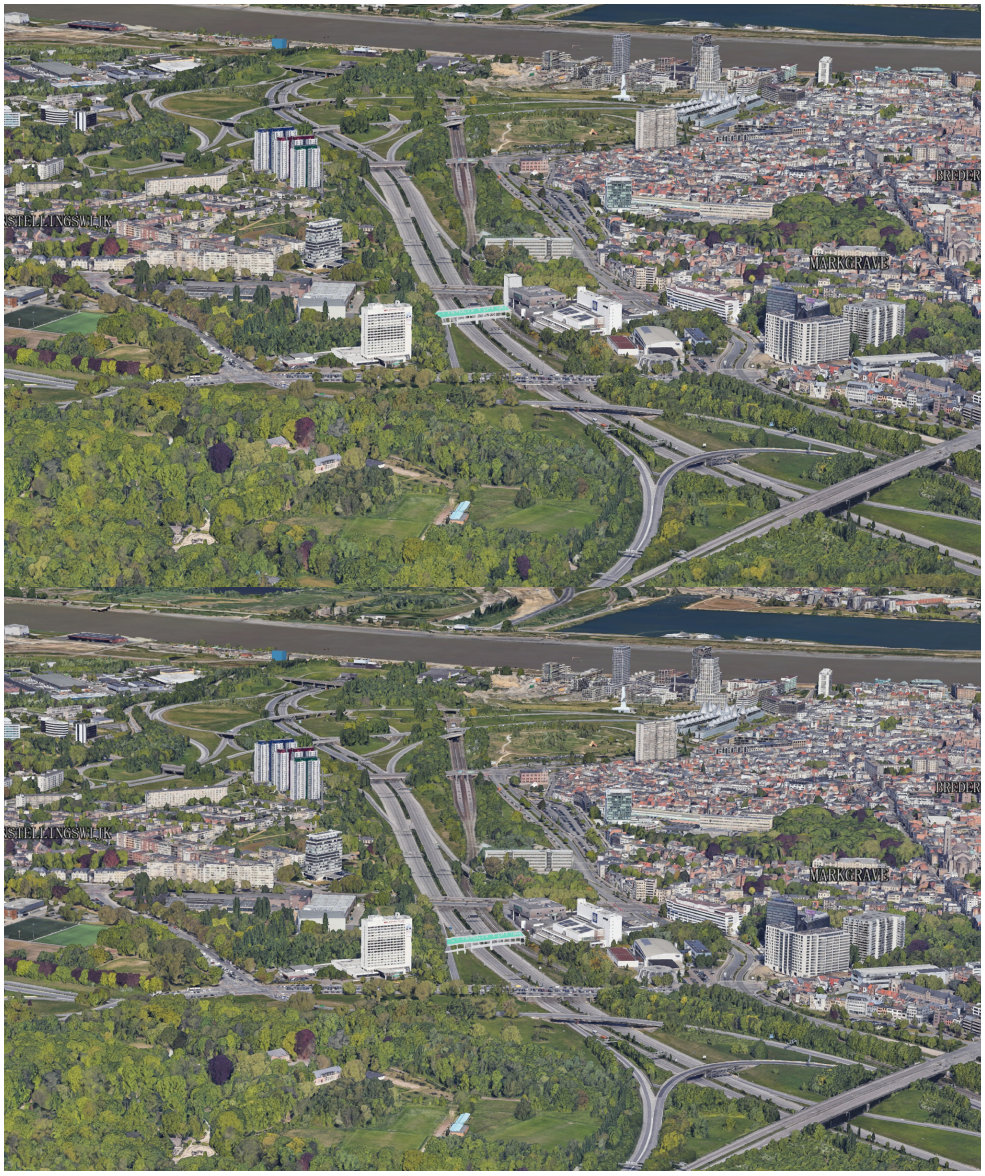


fig. 2.3.16 trials on location of bridge (texture)

2nd proposal



fig. 2.3.17 trials on location of bridge (final)

mass model

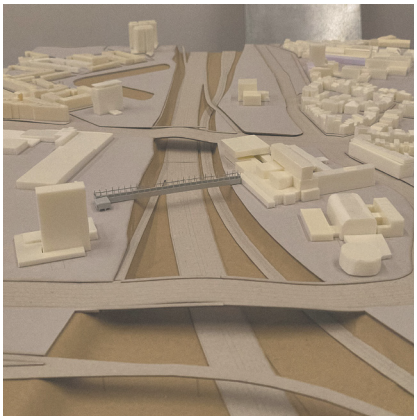
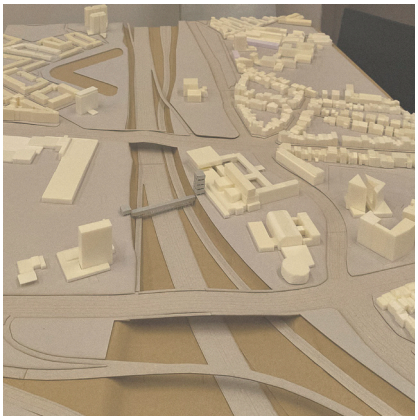
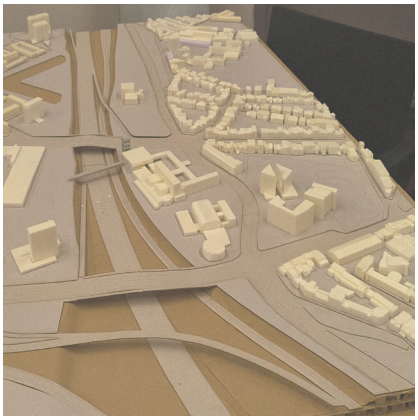
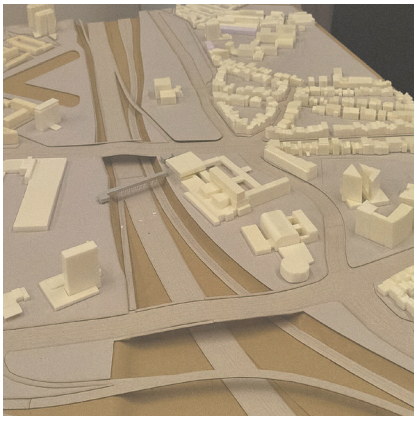
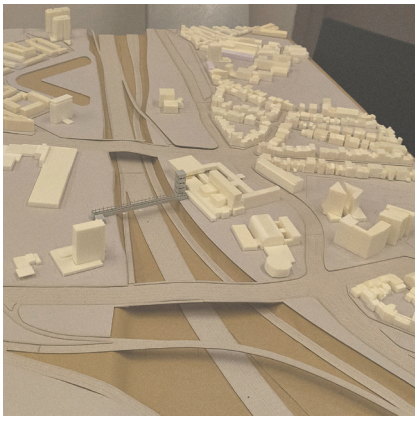
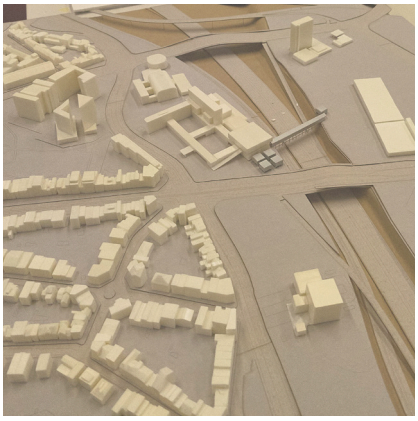







fig. 2.3.19 trials on location of bridge (model)

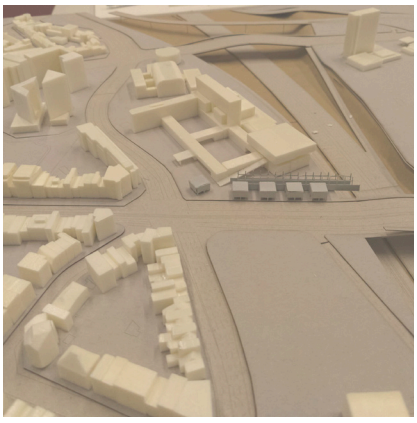
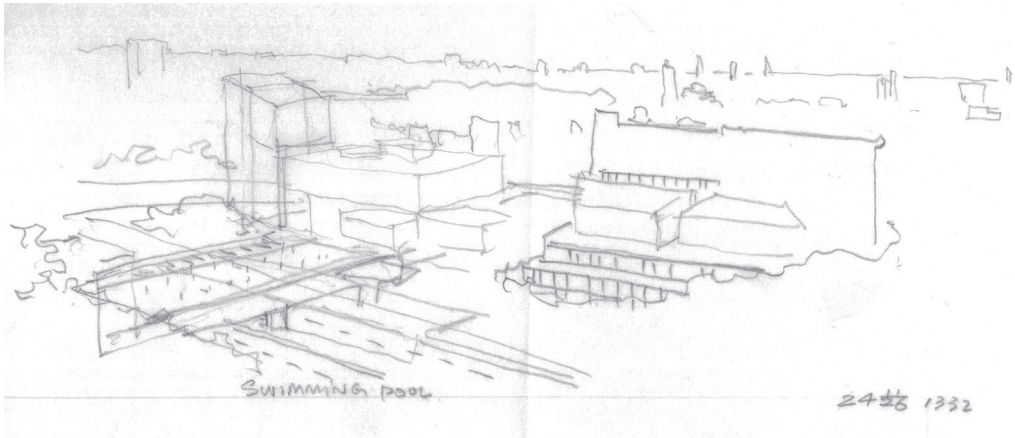


fig. 2.3.18 trials on location of bridge (sketch)



feedback

\sam
whats relation with in-
side the building
slope from vai or slope
near blue hall
better reverse the
open: glaz or openair
what happens in the end
why not base on the ex-
isting bridge?
why not densify the bridge?
whats the height of
the bridge block
realistic test your thought
ring land
powto vecchio
palladio bassano di grappa
about tower not build-
ing just for building
good for storage, but not
for other functions
how to deal with the length
juxtaposition plans
onto the site
difficult but possible
expensive oosterail
project 20years
price doubled
easier as a truss?
what is the relation to the
rest of the building
important section
better to go and take a look
whats happening on the site

wind and rain bridge



图 1－2－10　云南云龙县通京桥

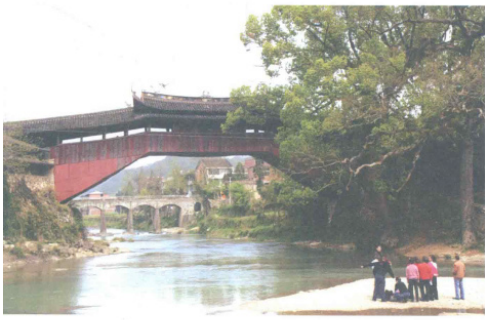


图 1－2－8　浙江泰顺县泗溪镇北涧桥



图 1－2－7　福建寿宁县坑底乡杨梅州桥



图 1－4－4　浙江庆元举水乡步蟾桥





图 1－4－6　福建建瓯吉阳镇步月桥伸臂梁



fig. 2.4.1 wind and rain bridges

habitable bridges



图 3－2－11　三江林溪乡程阳桥永济桥（摄影：周巍）

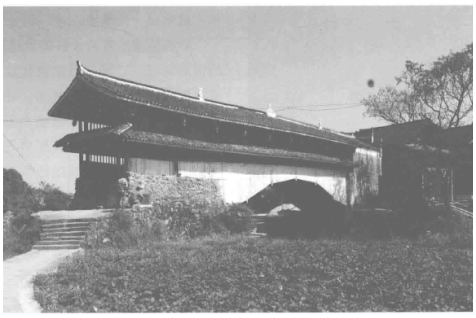
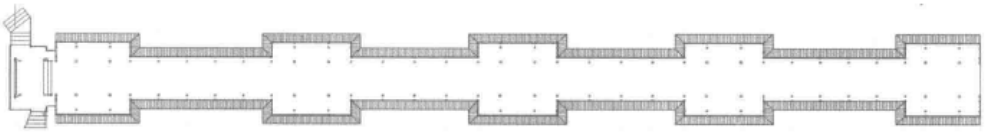


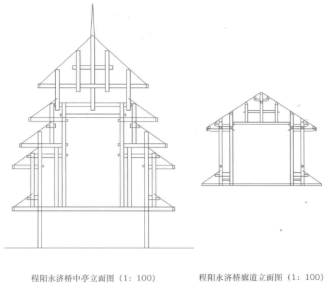
图 6-1-1　普济桥



程阳永济桥平面图



程阳永济桥



程阳永济桥中亭立面图（1：100）　程阳永济桥廊道立面图（1：100）

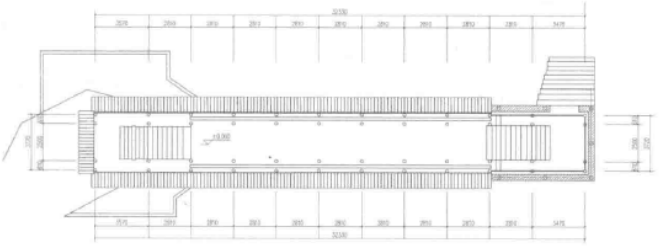


图 6-1-4　普济桥平面图（绘图：周巍）

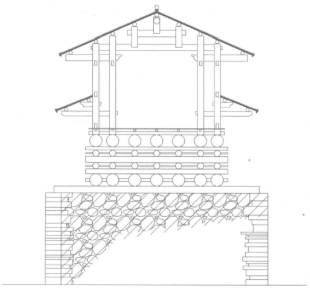


图 6-1-6　普济桥剖面图（绘图：周巍）

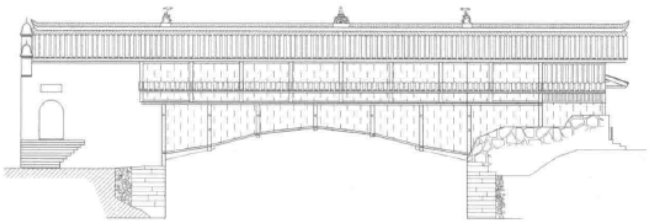


图 6-1-5　普济桥北立面图（绘图：周巍）

fig. 2.4.2 wind and rain bridges



fig. 2.4.3 mong kok pedestrian footbridge system in hongkong, liren

habitable bridges



fig. 2.4.4 mong kok pedestrian footbridge system in hongkong, liren

ponte vecchio

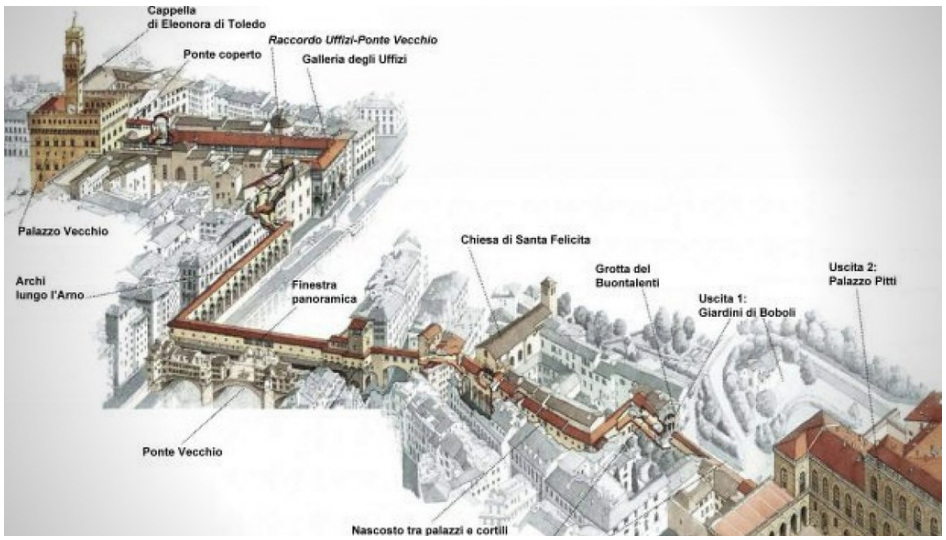


fig. 2.4.5 ponte vecchio



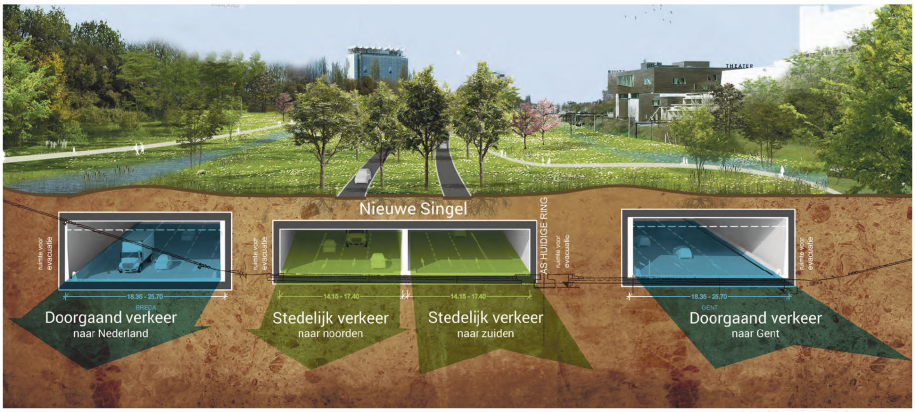
fig. 2.4.6 ponte vecchio

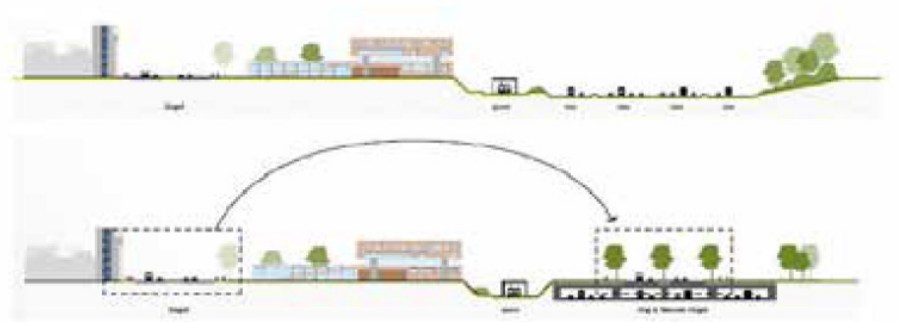
habitable bridges



fig. 2.4.7 ponte vecchio







Figuur 2-15 Dwarsprofiel Ring en Singel bij concept SRW/DRW (boven) en UBR (onder)

Indien de Vlaamse regering als derde Scheldekruising kiest voor de Oosterweelverbinding, impliceert dit een aansluiting van dit tracé op de R1 t.h.v. Groenendaallaan en Lobroekdok/Schijnpoort. Deze aansluiting is niet compatibel met het SRW/DRW- of UBR-concept op de R1 ten noorden van knooppunt Antwerpen-Oost, als alternatief voor de A102. Deze concepten blijven wel valabel op het deel van de R1 tussen Antwerpen-Oost en Antwerpen-Zuid, als alternatief voor de R11bis.

BOUWEN BINNEN BESTAANDE BRUGGEN

De twee binnenste Ringland-tunnels, bestemd voor stedelijk verkeer, passen perfect tussen de pijlers van de bestaande bruggen op het wegvak richting Nederland. De buitenste tunnel richting Gent komt op het andere wegvak en past op zijn beurt eveneens binnen het profiel van de huidige Ring. De bestaande bruggen moeten dus niet worden afgebroken, wat heel wat verkeershinder voorkomt én een hoop kosten bespaart.
De vierde tunnel, die als eerste wordt aangelegd, krijgt zijn plaats net naast de Ring in de buitenste berm. Dat vergt alleen een verlenging van de bruggen, maar technisch is dat geen probleem. Tijdens de bouw van die tunnel kan het verkeer op de Ring gewoon blijven rijden. Zodra de tunnel klaar is, levert hij extra capaciteit. In de volgende fase kan het verkeer er dan al gebruik van maken, zodat er ook dan geen hinder ontstaat.

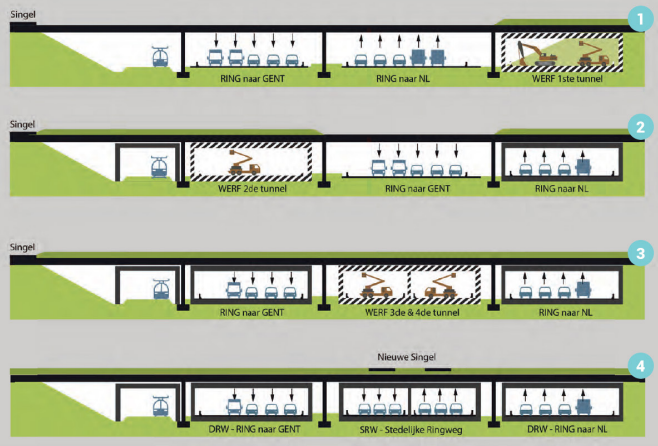


fig. 2.4.8 ringland project in antwerp

linear architecture

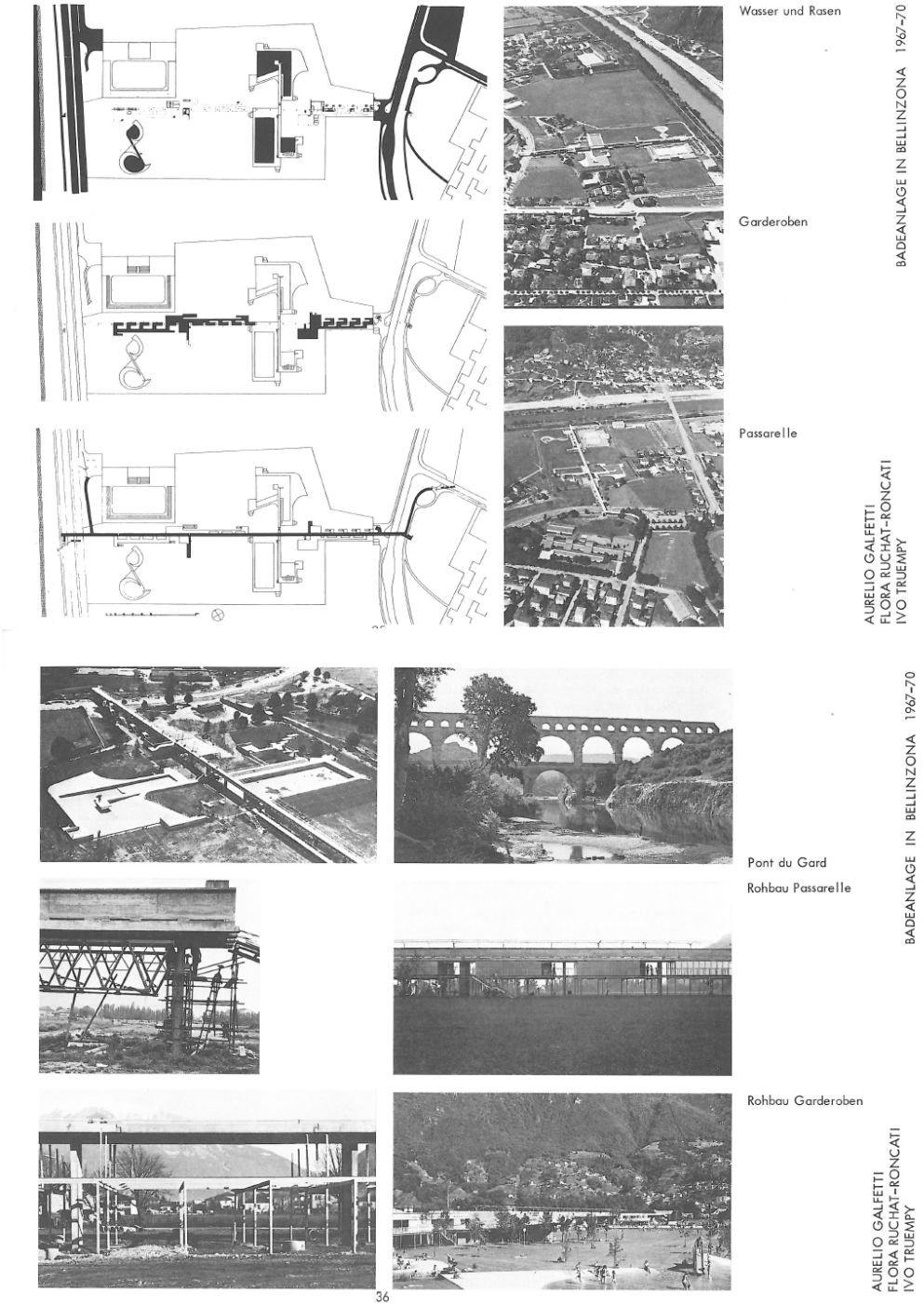
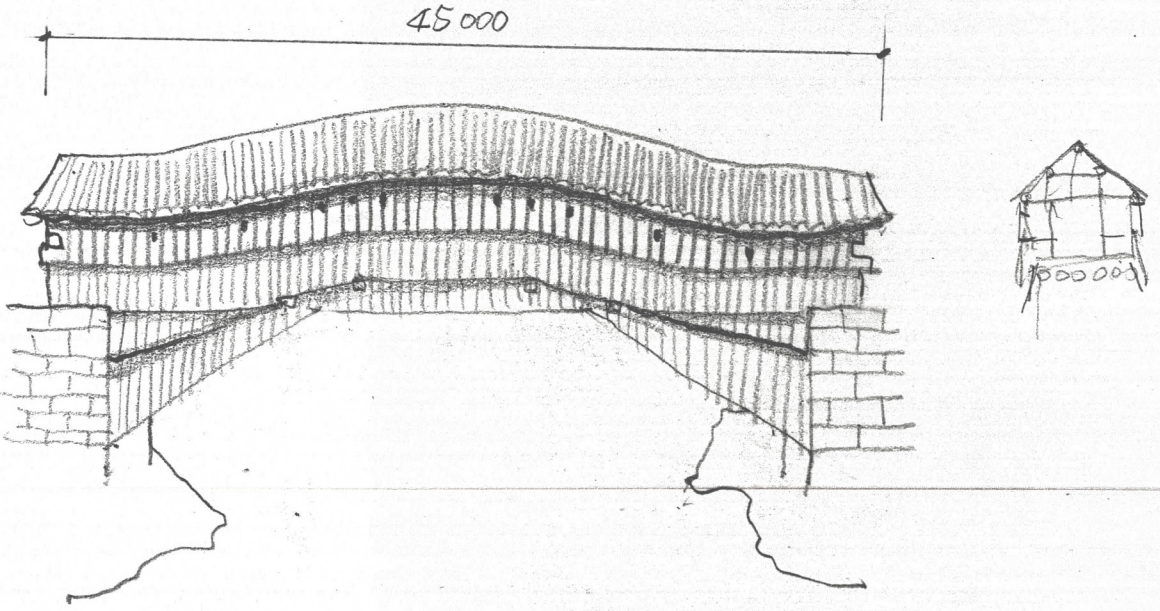


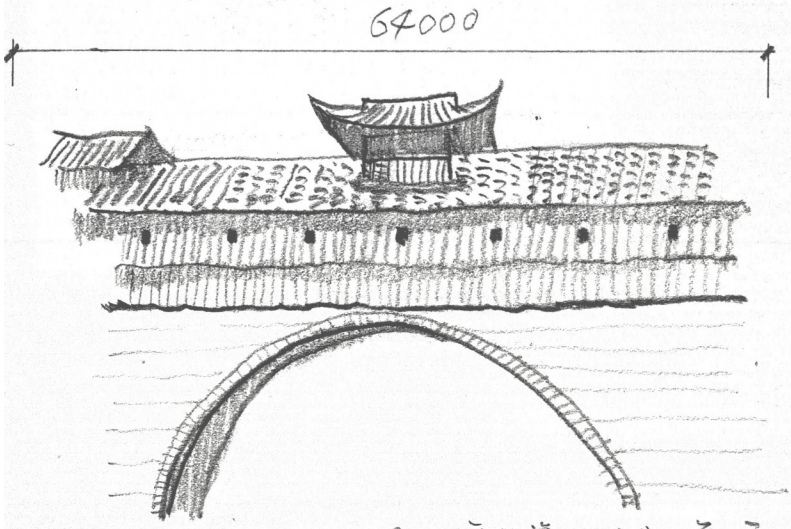
fig. 2.4.9 bellinzona bathhouse, aurelio galfetti

24 12/04 意象：桥.大坝；参考图；设计分析图；平面图.

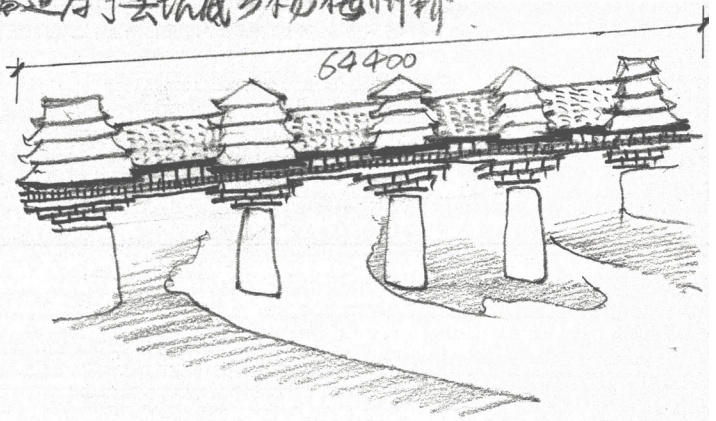
HABITABLE BRIDGES



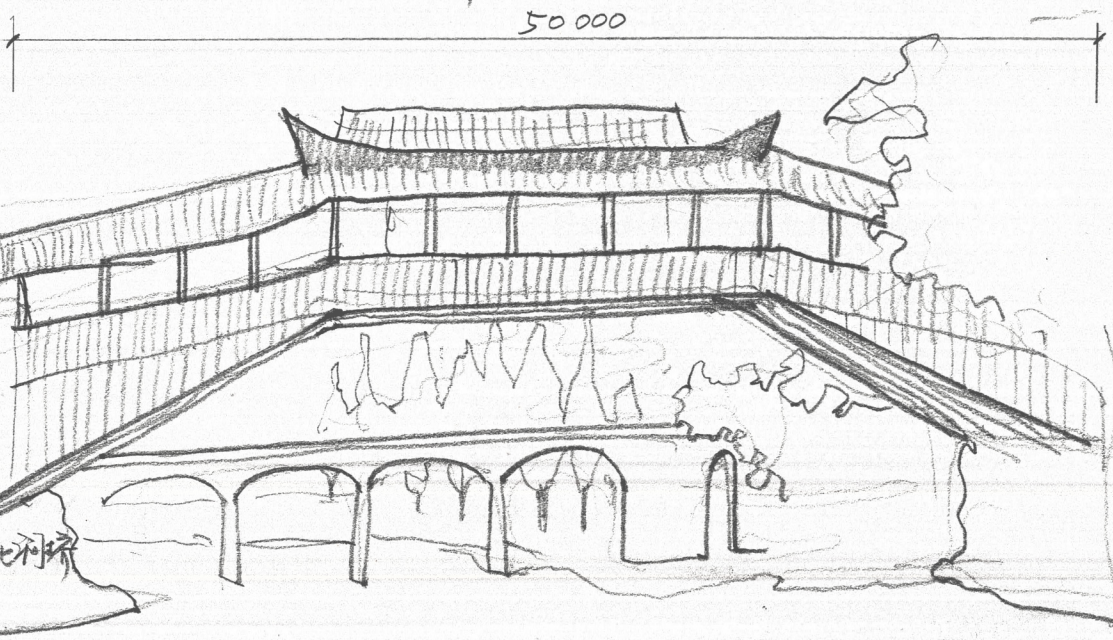
福建寿宁县坑底乡杨梅洲桥



浙江庆元举水乡步蟾桥



三江侗族岩寨乡程阳永济桥



浙江泰顺县三魁溪北利桥

sketch draft

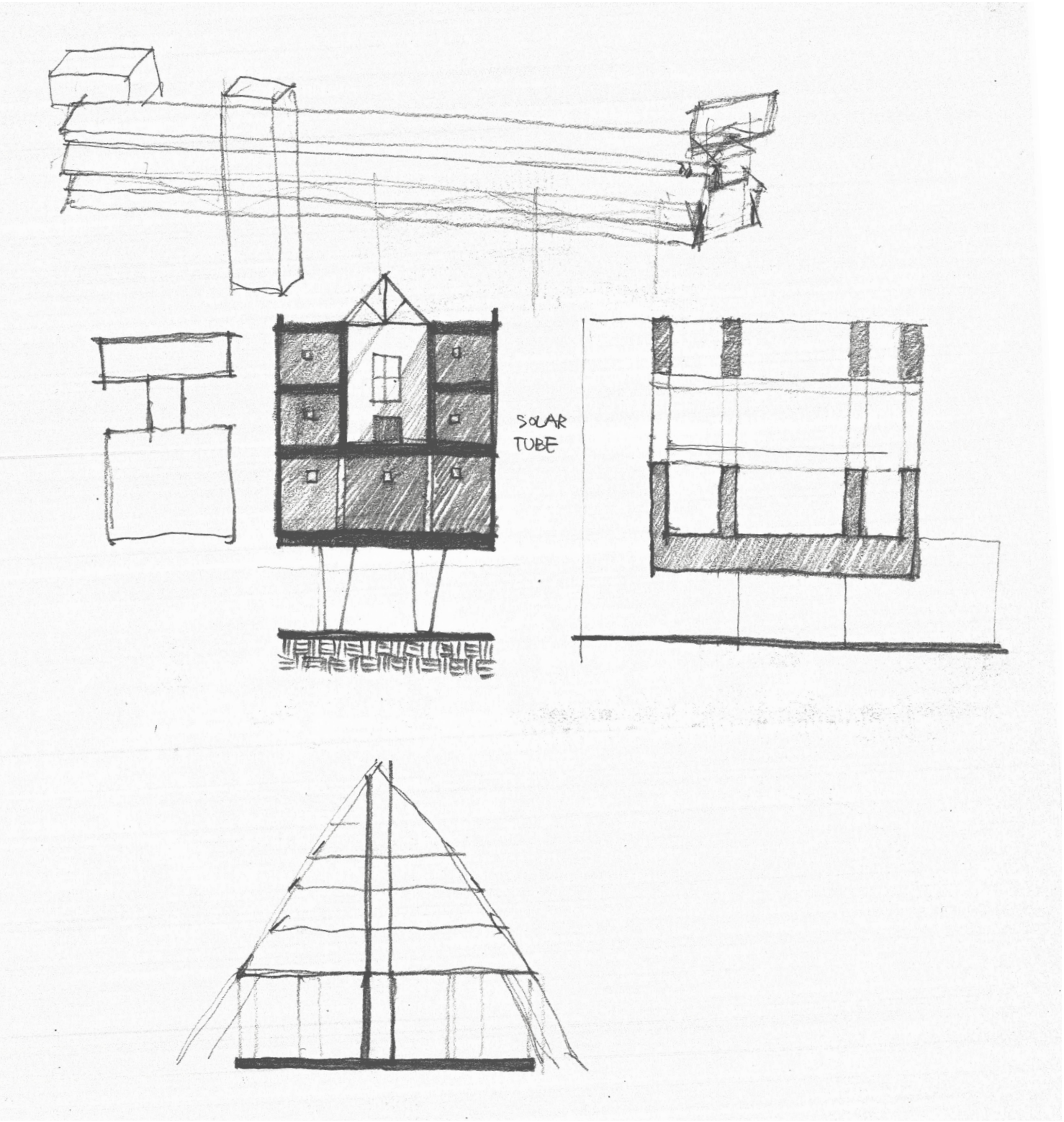


fig. 2.4.10 sketch

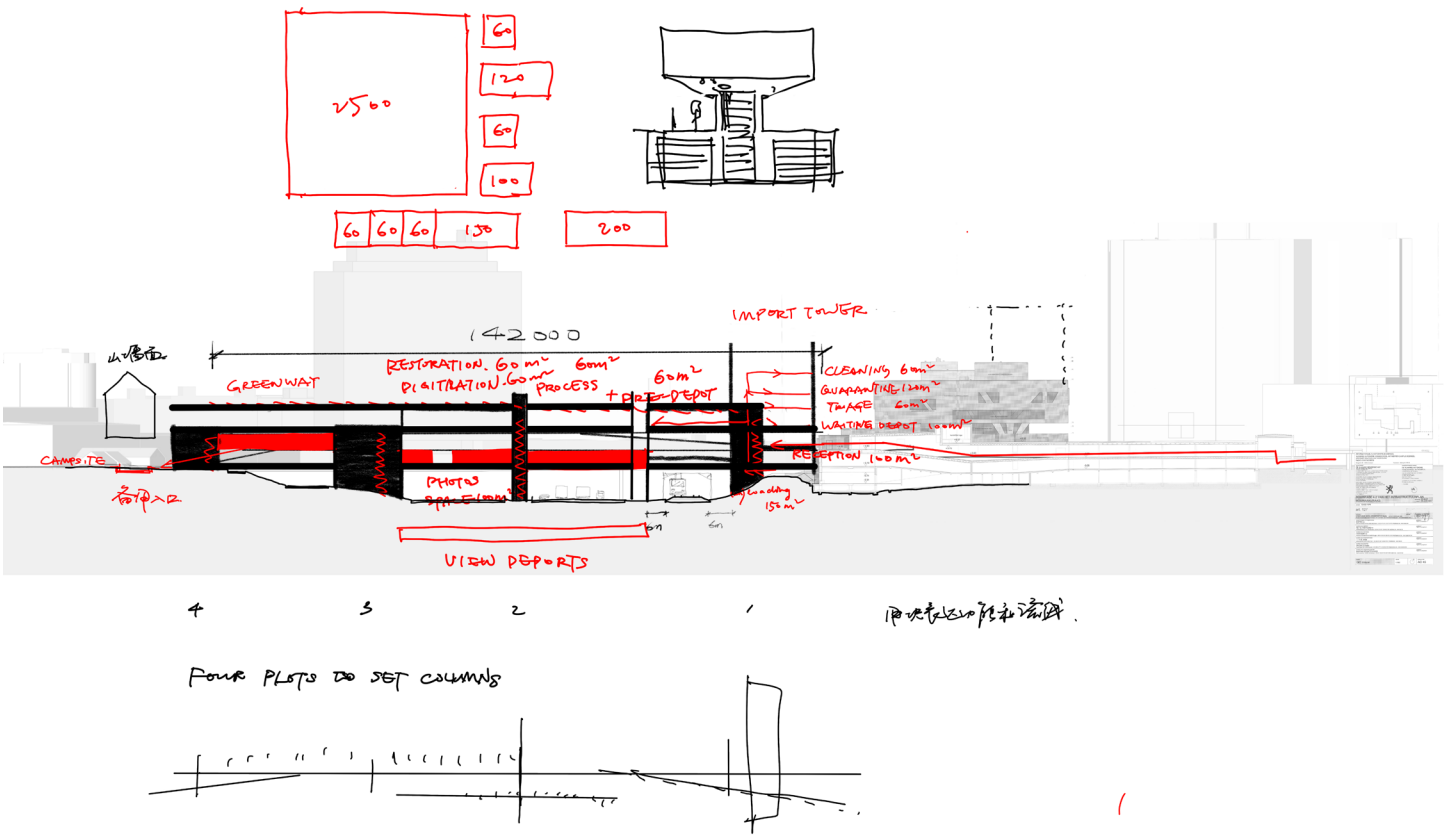


fig. 2.4.11 sketch

3rd proposal

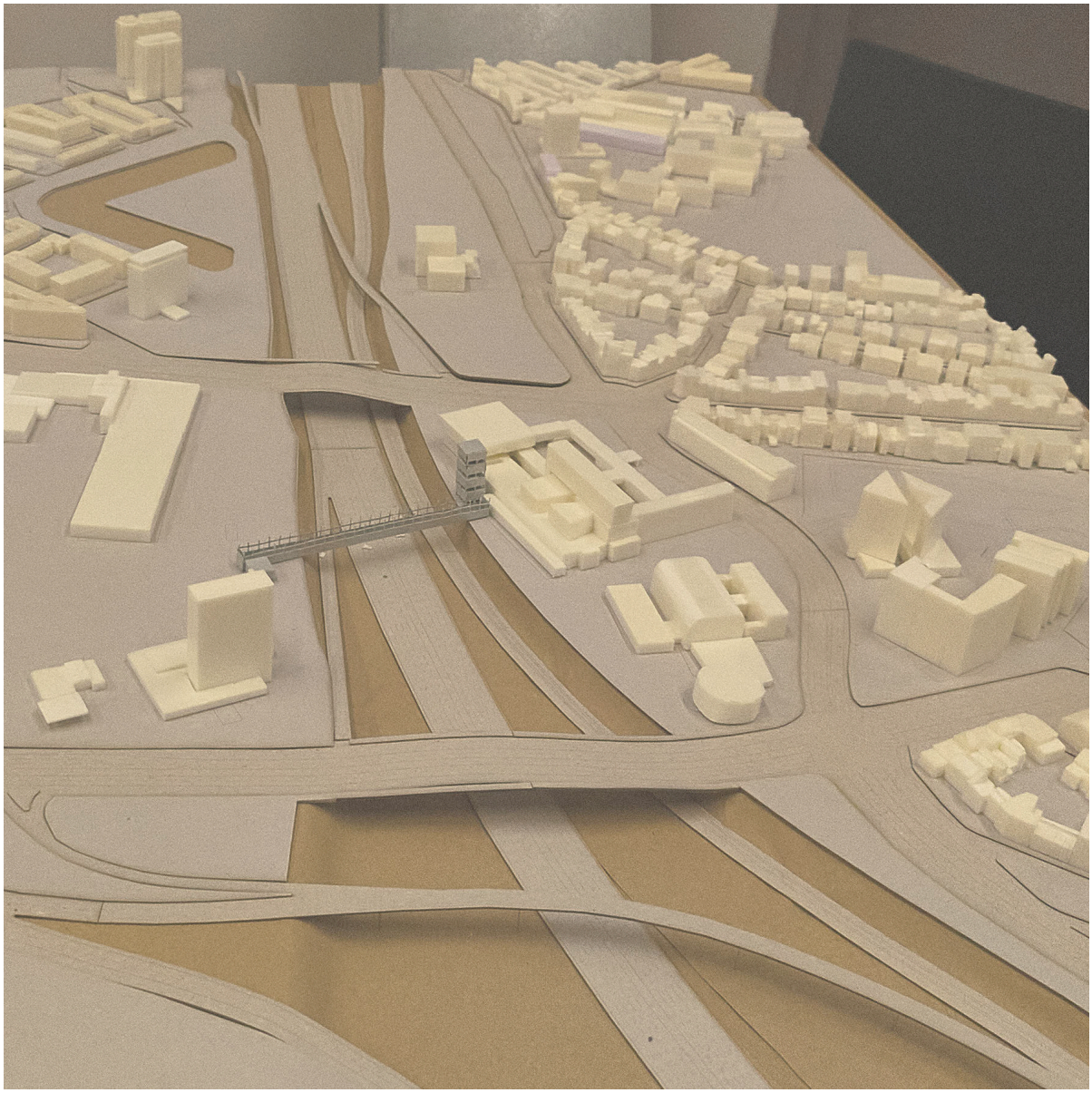


fig. 2.4.12 site model

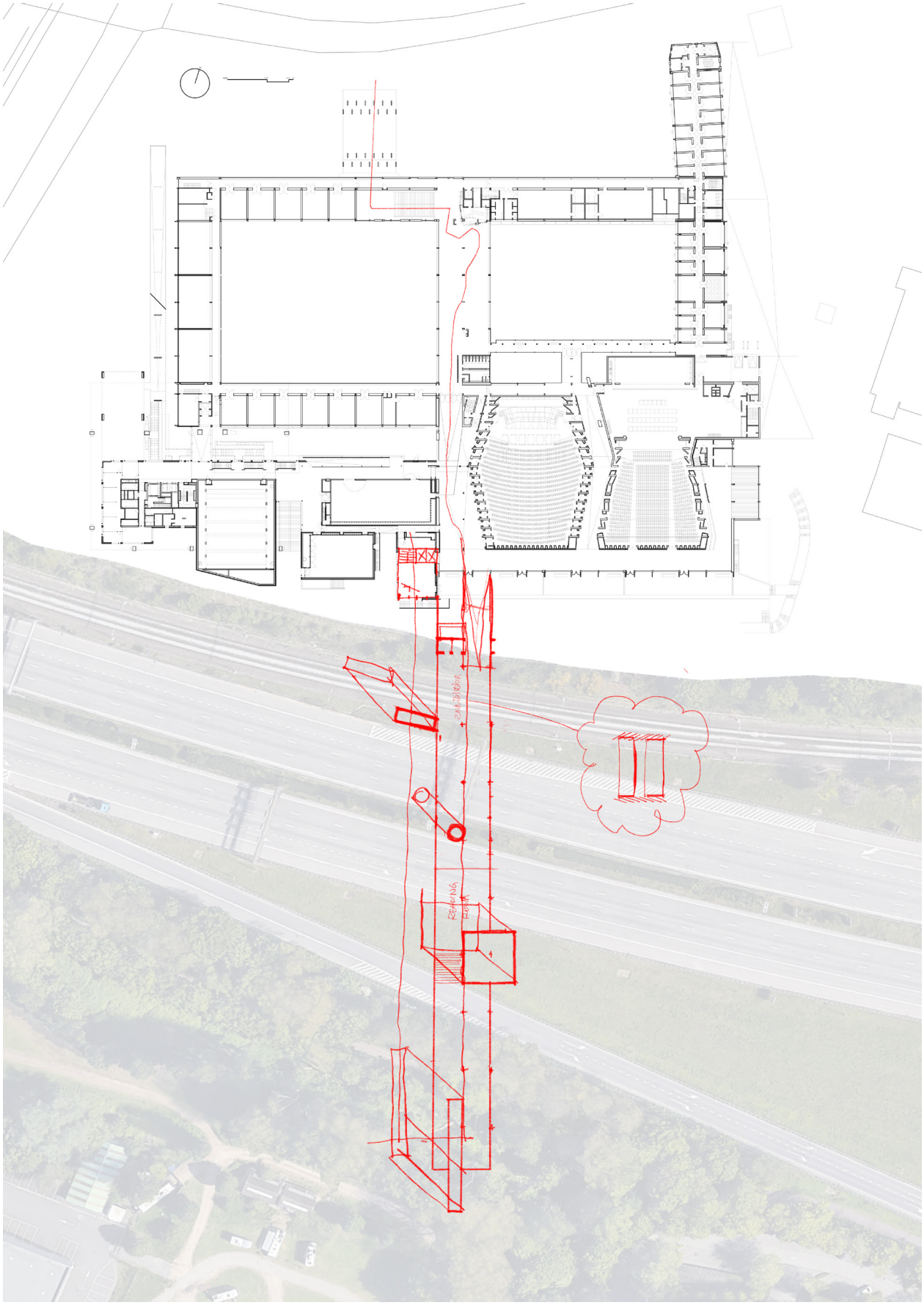


fig. 2.4.13 plan axo sketch

3rd proposal

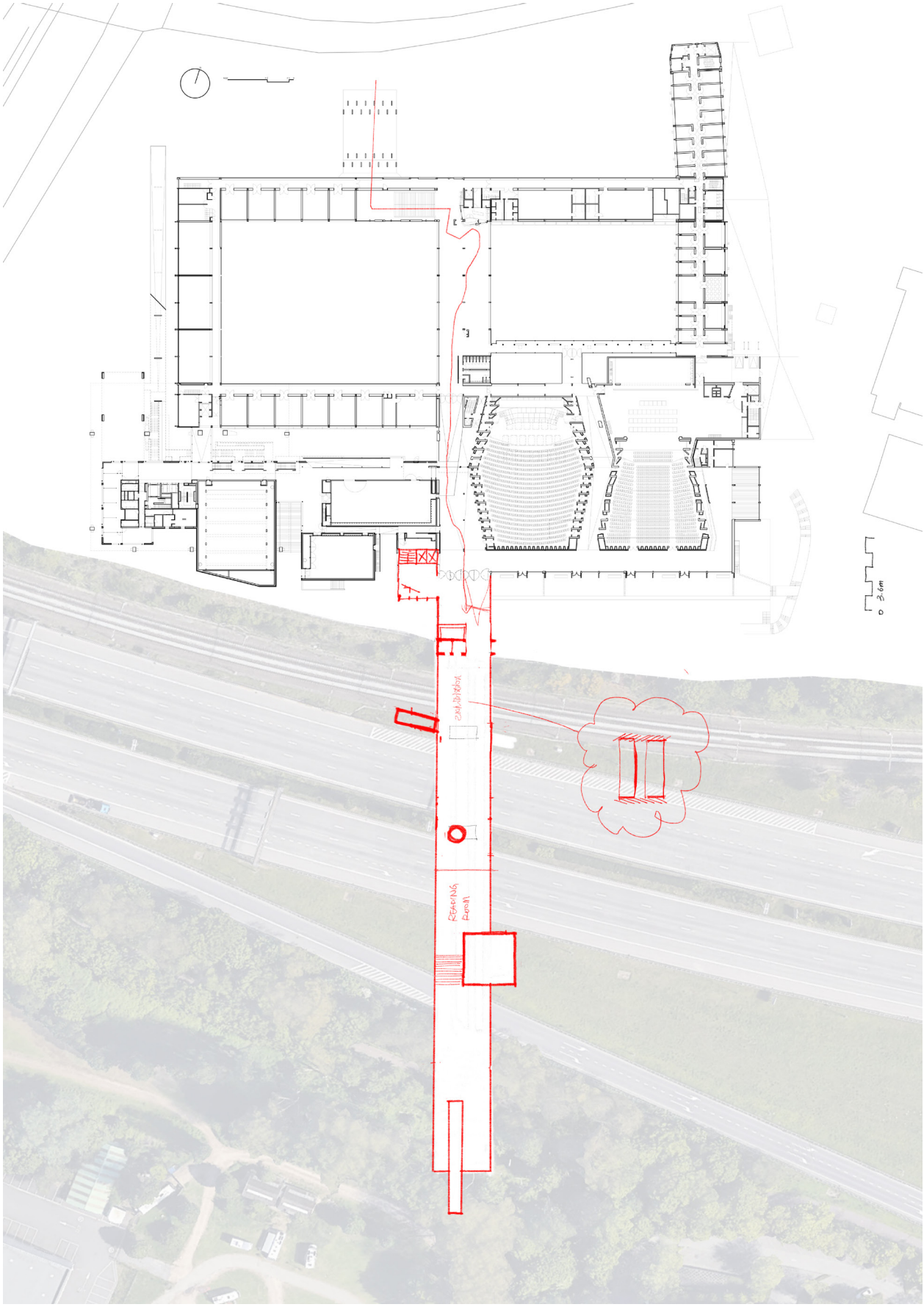


fig. 2.4.14 plan sketch

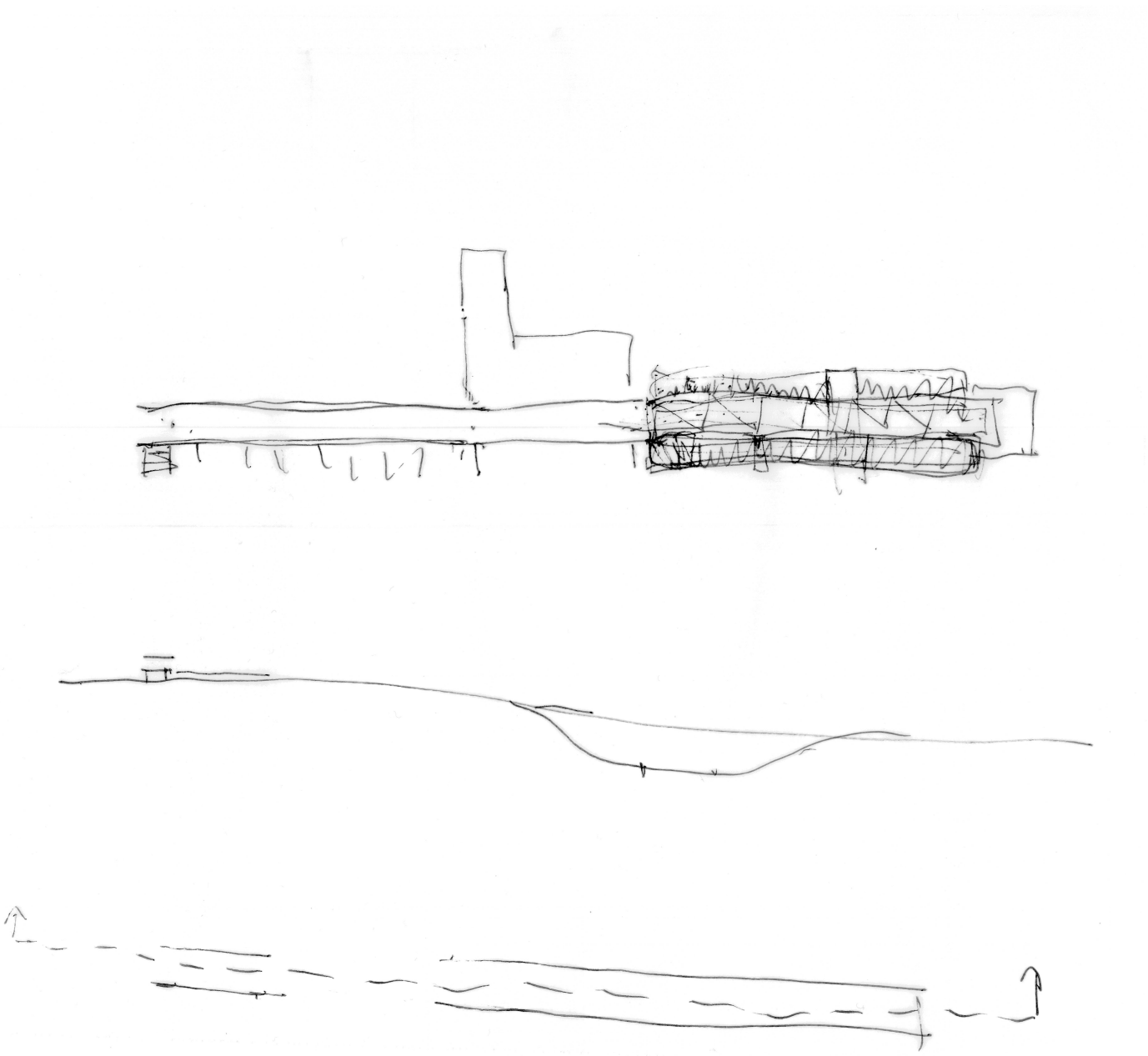


fig. 2.4.15 longitudinal section sketch, jurjen

feedback

\ jurjen
clever idea to continue what
is in deSingel to the bridge
tower maybe not necessary,
maybe need it for visibility,
indicate sth
test out in the model
dont worry too much
about the support
how do you imagine
the connection
loading and unloading
movement of the visitors
extension of the walk-
ing bridge of deSingel
intriging
dont stay too long with the
floor plan but do the section
move to the physical model

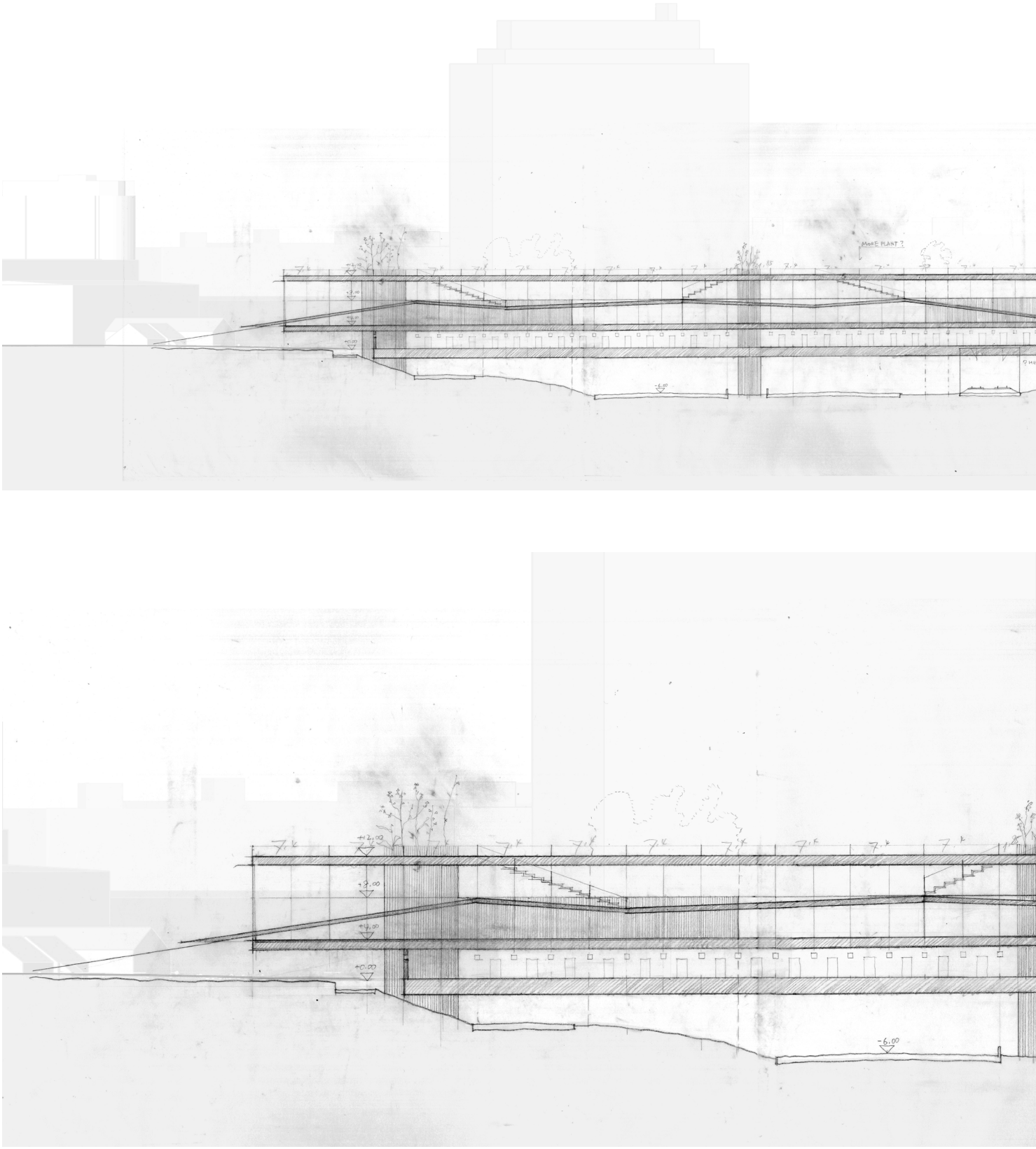
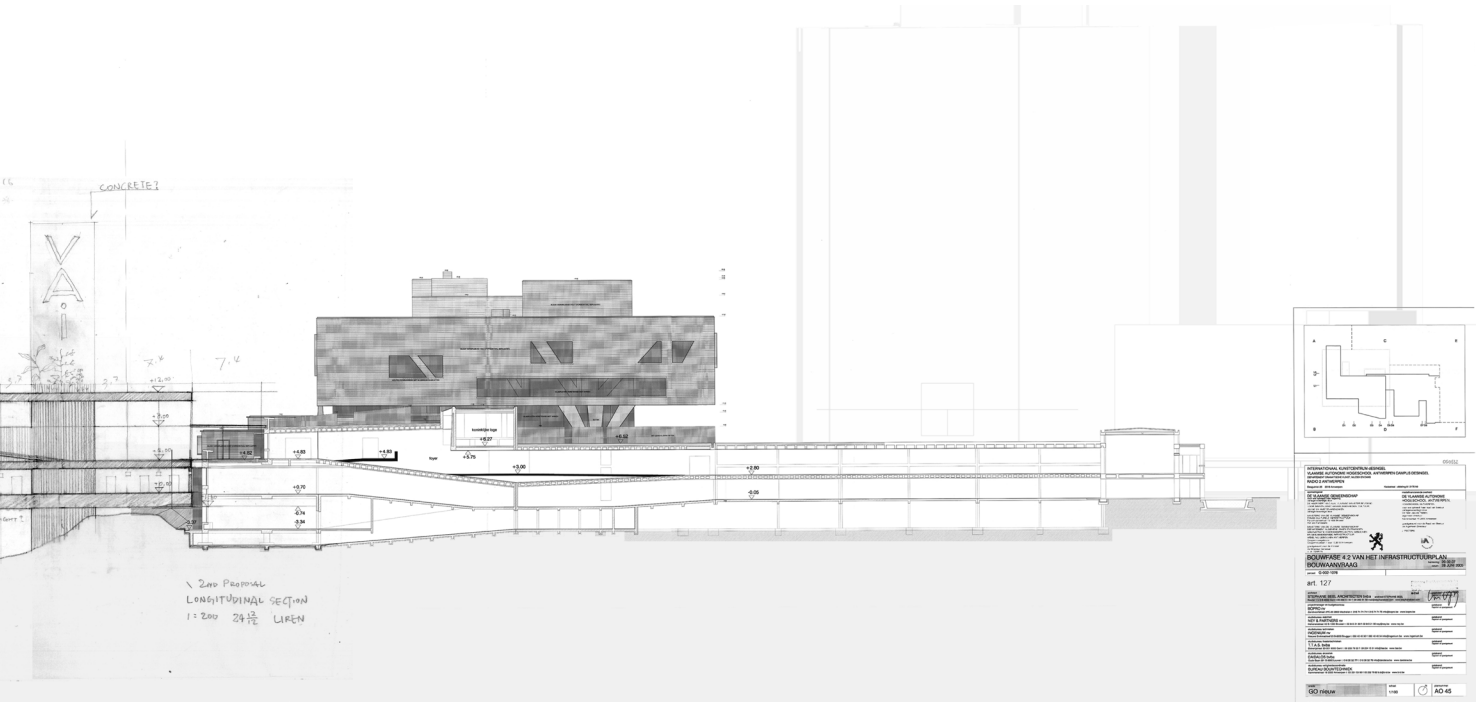
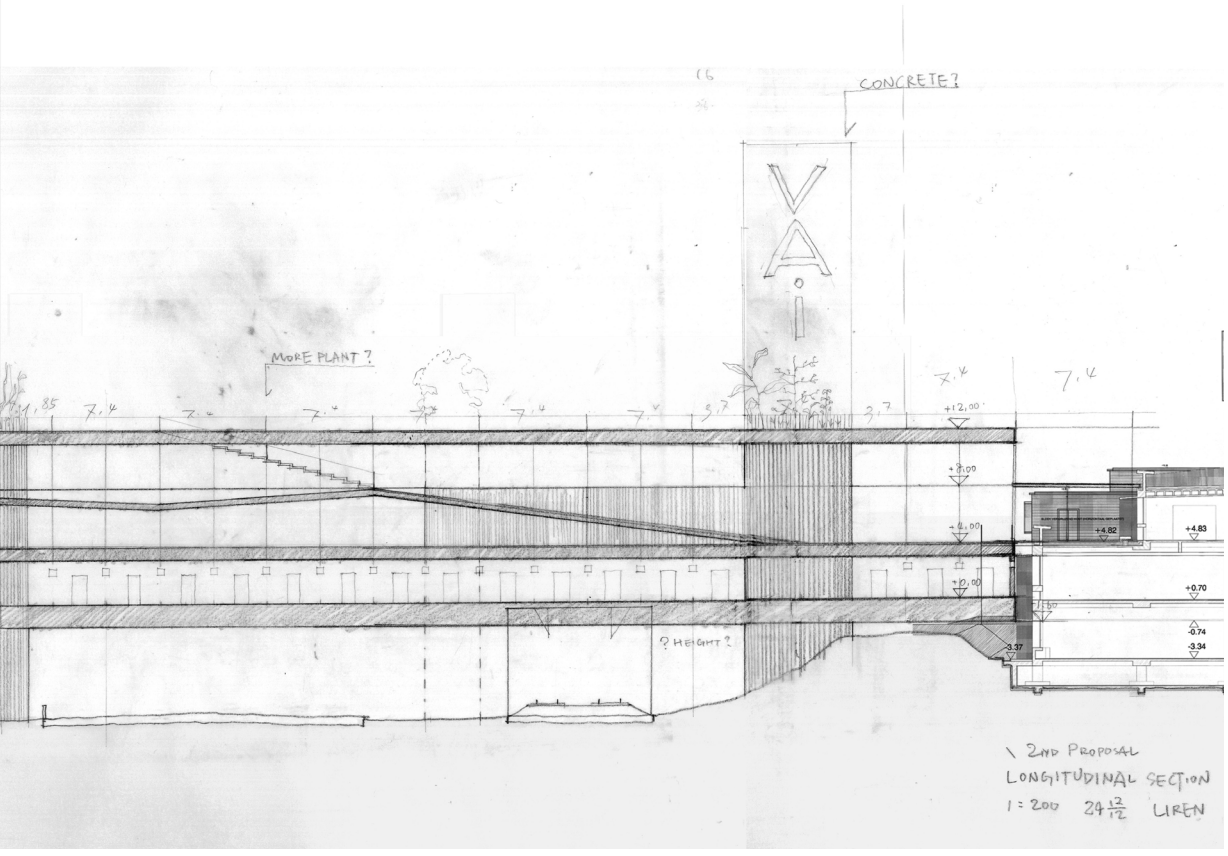


fig. 2.5.1 longitudinal section sketch, liren

3rd proposal





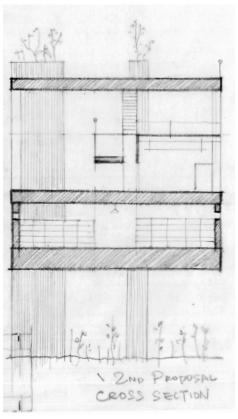


fig. 2.5.2 cross section sketch, liren

24 12/09

数据统计：$R_2 - E_{34}$

LANE WIDTH 3.5m → 3.75 m (IF BUSY)

SHOULDER WIDTH 2.5 - 3m → 3.75 (FROM MAP)

CENTRAL MEDIAN 3-5m

LAMP 3.5m → 3.5m. (FROM MAP)

deSingel NUMBER OF LANES 3

RAMP 1

SHOULDER 1

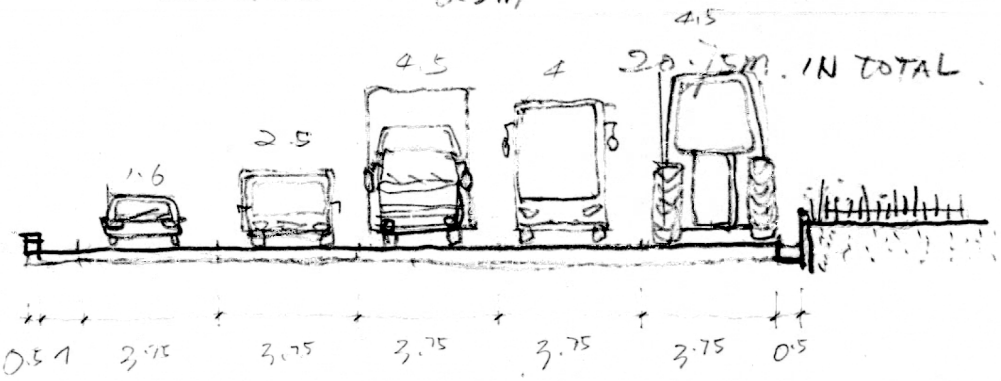
3.75 × 2.5 = 18.75

5 × 3.75 = 18.75

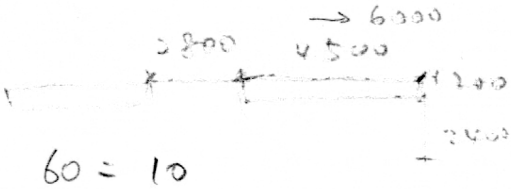
GUARD RAIL 0.5m

OFFSET 1m.

DRAINAGE 0.5m



24 12/11



2500 : 14.8 × 168.9

60 = 10

10 = 1.7

	WIDTH		
470 :	6	78.3	80
400 =		66.6	70
300 =		50.0	50
200 =		33.3	35
150 =		25.0	25
130 =		21.7	25
125 =		20.8	20
120 =		20.0	20
110 =		18.3	20
100 =		16.7	20

fig. 2.5.3 ring road dimension statistics, liren

3rd proposal

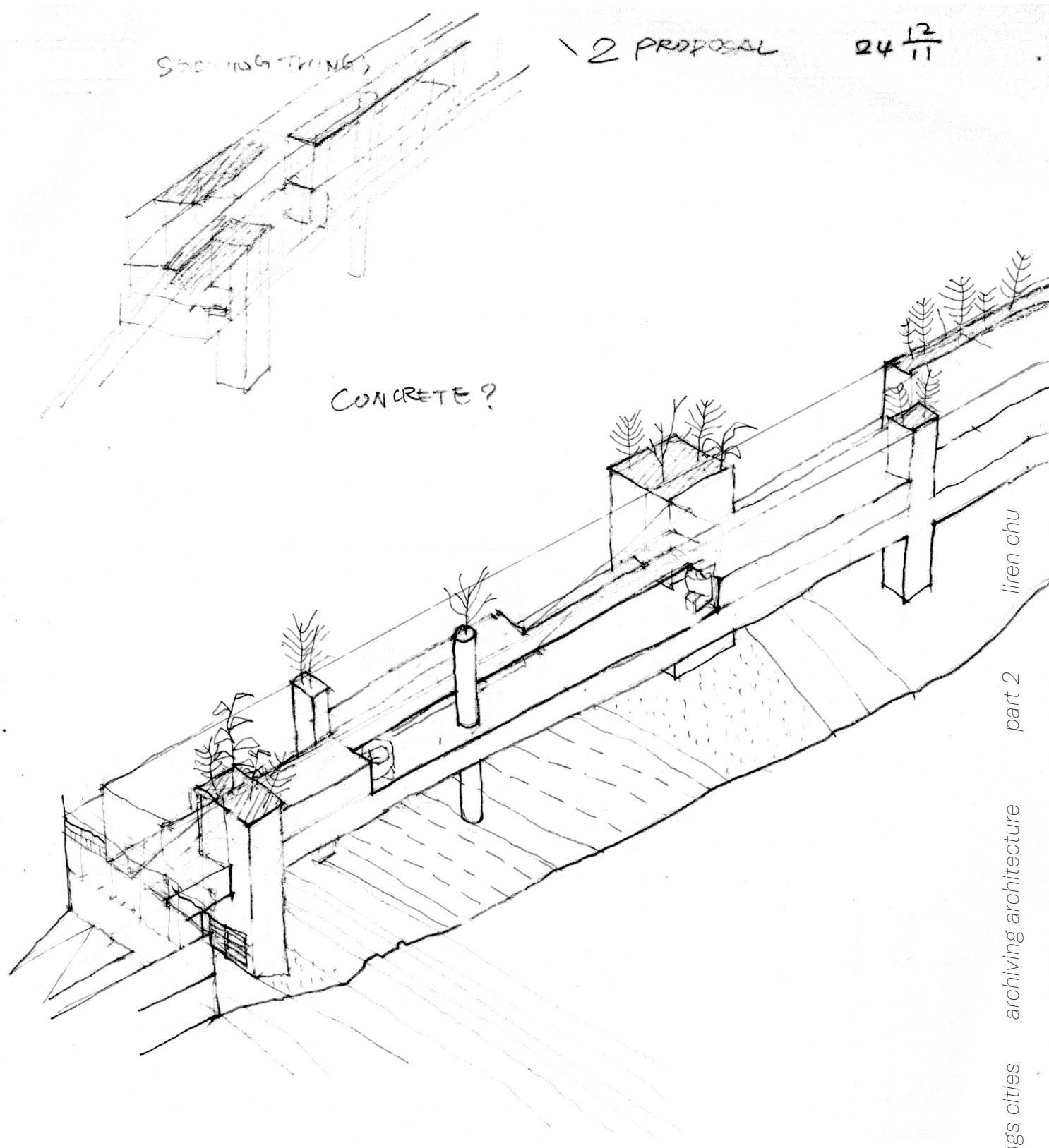


fig. 2.5.4 axonometric sketch, liren

\ 设计的结构和材料选择

重量问题：建议重新考虑使用混凝土作为主要材料，因为档案馆的重量（尤其是纸质档案）对桥梁的跨度和结构造成了很大压力。提出探索其他结构形式，比如使用桁架系统，结合楼层高度，将结构和功能融合起来。
材料替代方案：鼓励思考轻质结构的可能性，比如预张拉钢材的使用。提到通过结构调整，比如轻微弯曲设计，可以解决重量问题。

\ 空间组织和功能布局

长廊设计：对项目的总长度（约 250 米）提出疑问，建议测试长距离对用户体验的影响。指出需要通过设计来避免单调感，比如加入视线上的中断、不同的房间或功能性空间（如阅览室或办公室）。
公共空间与功能结合：讨论了将长廊设计为完全的公共空间或引入其他功能（如工作空间）的可能性，强调要权衡空间的功能性与使用体验。

\ 项目整体性与连接性

连接桥与周边的关系：建议明确桥的功能，思考它是否真正连接两端，或可以考虑缩短桥的长度。
参考案例：建议研究 Philippe Samy 的桥梁设计案例，尤其是与功能空间结合的桥梁，来理解桥梁的尺度和功能分配。

\ 进一步的思考和优化

整体视角：强调在关注细节的同时，需要定期从整体视角重新审视设计，确保尺度和各部分的和谐性。
功能布局的优化：建议将较重的功能空间安排在可以直接支撑的地面位置，而不是完全依赖桥梁结构。

feedback

\ structure and material choices

weight issue: the use of concrete as the primary material was questioned due to the weight of the archives, especially paper-based ones, which pose challenges for the long spans of the bridge. it was suggested to explore alternative structural systems, such as trusses, which could integrate the floor height and functionality.
alternative materials: encouragement to consider lightweight construction materials and techniques, such as pre-tensioned steel, where slight initial curvature could help counteract the load over time.

\ spatial organization and functional layout

long corridor design: concerns were raised about the 250-meter-long corridor potentially being monotonous for users. testing the user experience was suggested, with ideas to add interruptions in the form of varied rooms or functional spaces, like reading rooms or offices.
integration of public and functional spaces: the possibility of mixing public areas with other functions, such as workspaces, was discussed to balance functionality and user experience within the long corridor.

\ project cohesion and connectivity

bridge connectivity: clarification is needed on whether the bridge truly connects both ends or if its length could be reduced. exploring its role and the user flow is crucial.
reference case: philippe samy's bridge designs, which combine functional spaces and structural solutions, were suggested as a useful reference for understanding scale and functional distribution.

\ further reflection and optimization

overall perspective: while focusing on details, it's important to periodically zoom out and reassess the project from a holistic perspective to ensure harmony in scale and functionality.
function placement: it was recommended to place heavier functions, like the archives, on the ground where they can be better supported, rather than relying solely on the bridge structure.

function

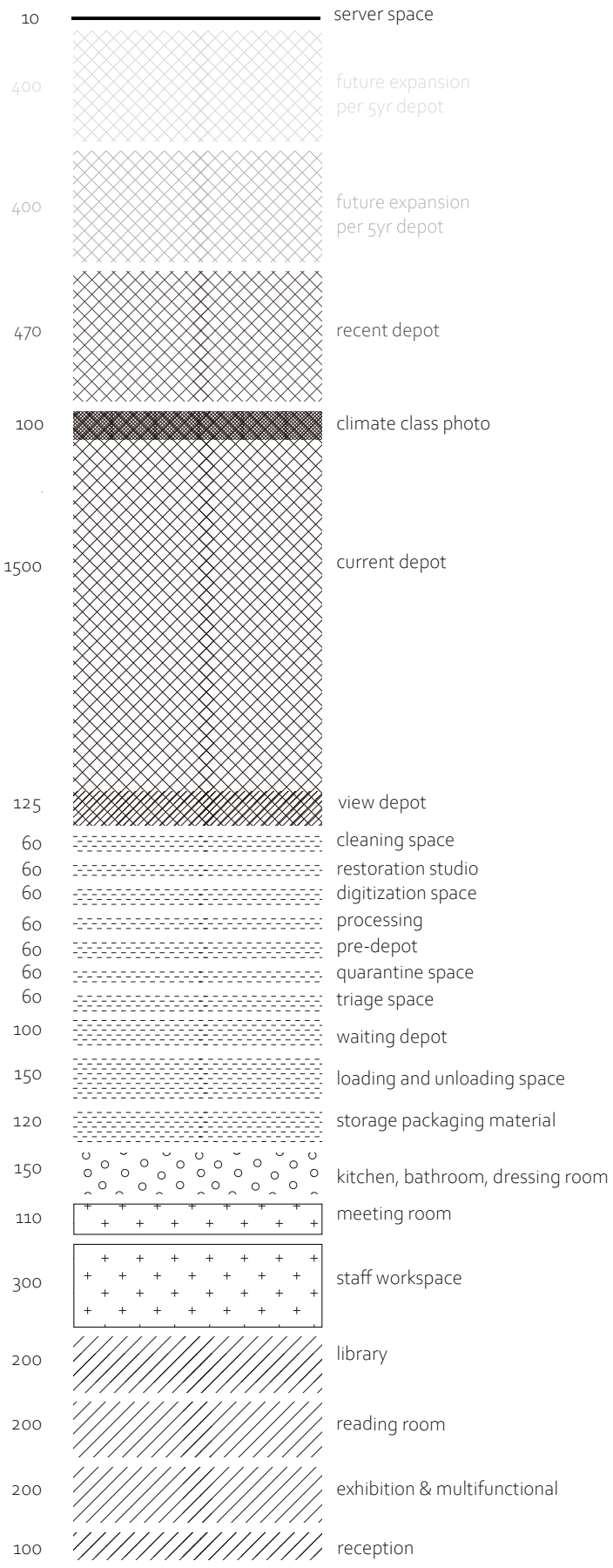


fig. 2.6.1 function, liren

historical layers

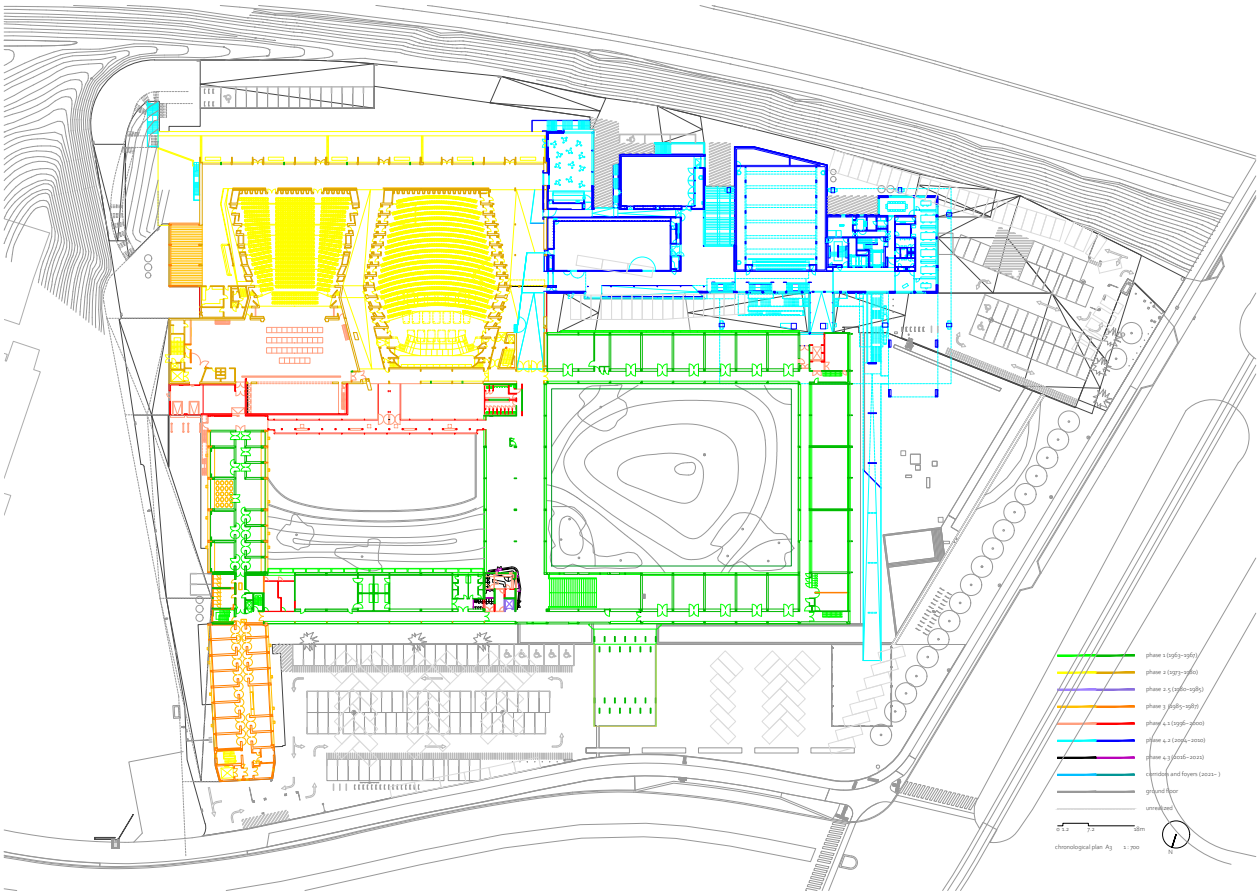


fig. 2.6.2 historical layers, liren

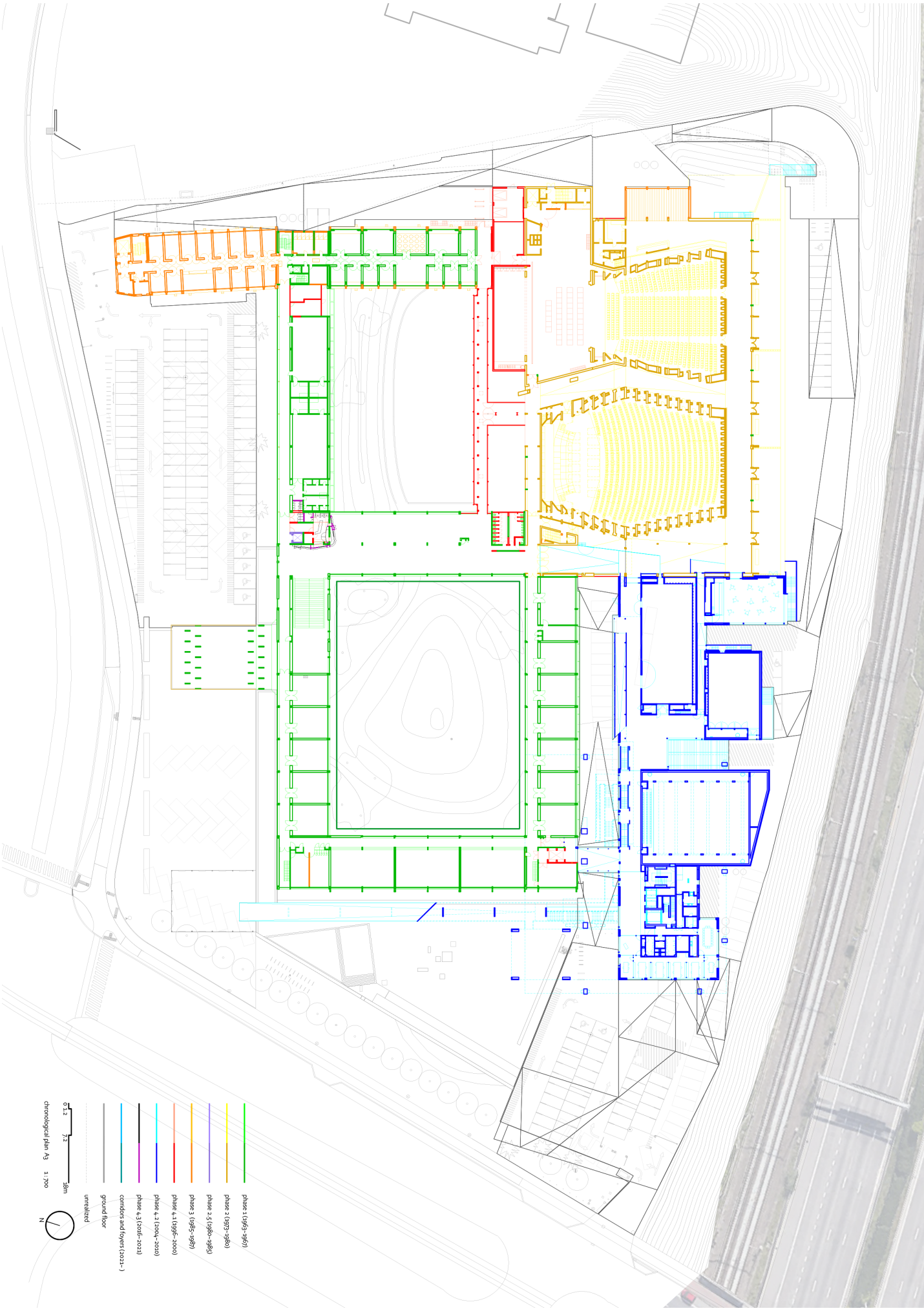
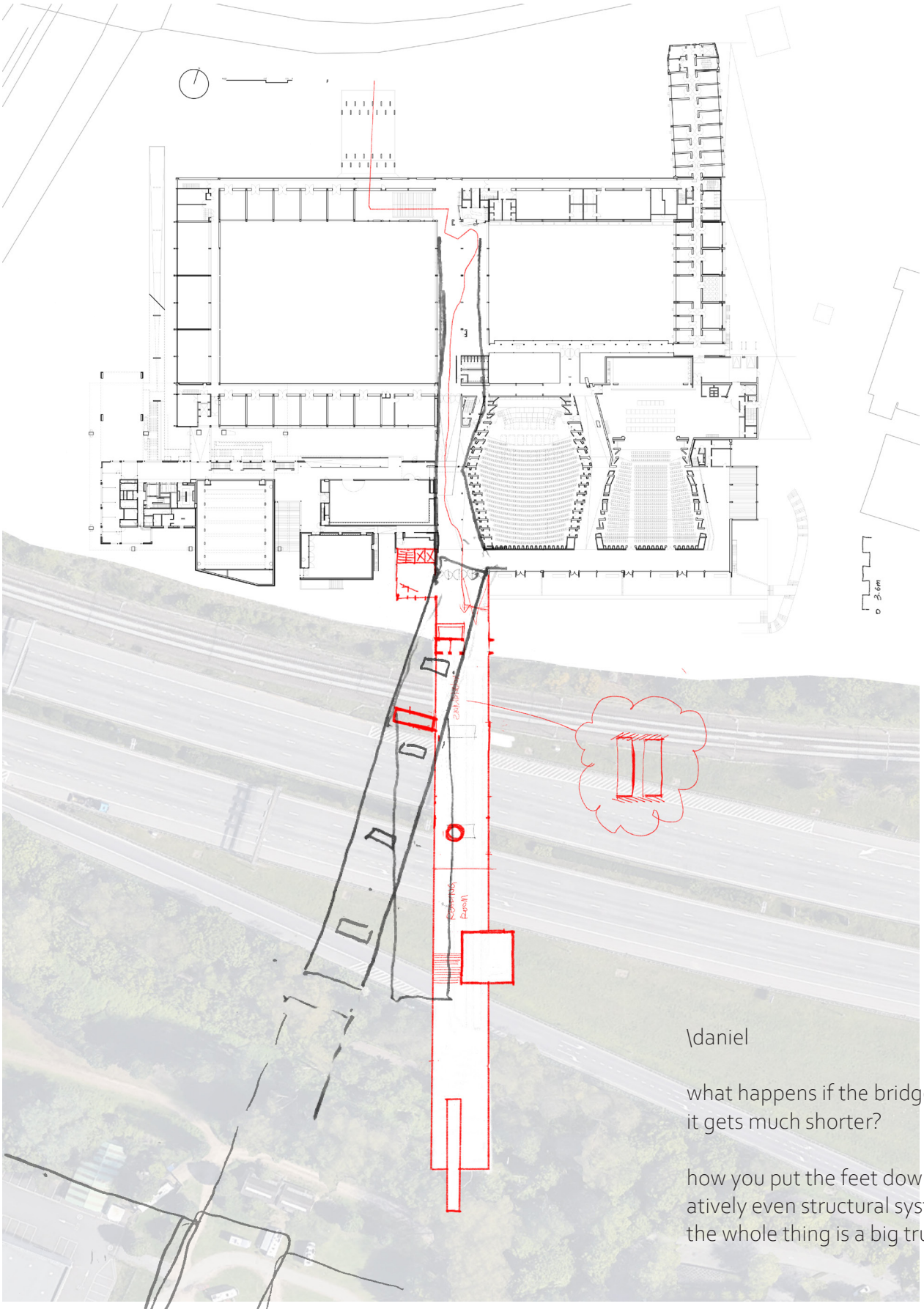

chronological plan A3 1: 700
0 12 24 36m
N
unrealized
ground floor
corridors and foyers (2021-)
phase 4.3 (2015- 2021)
phase 4.2 (2004- 2010)
phase 4.1 (1996- 2000)
phase 3 (1985- 1987)
phase 2.5 (1980- 1985)
phase 2 (1973- 1980)
phase 1 (1963- 1967)



fig. 2.6.3 historical layers with satelite map, liren



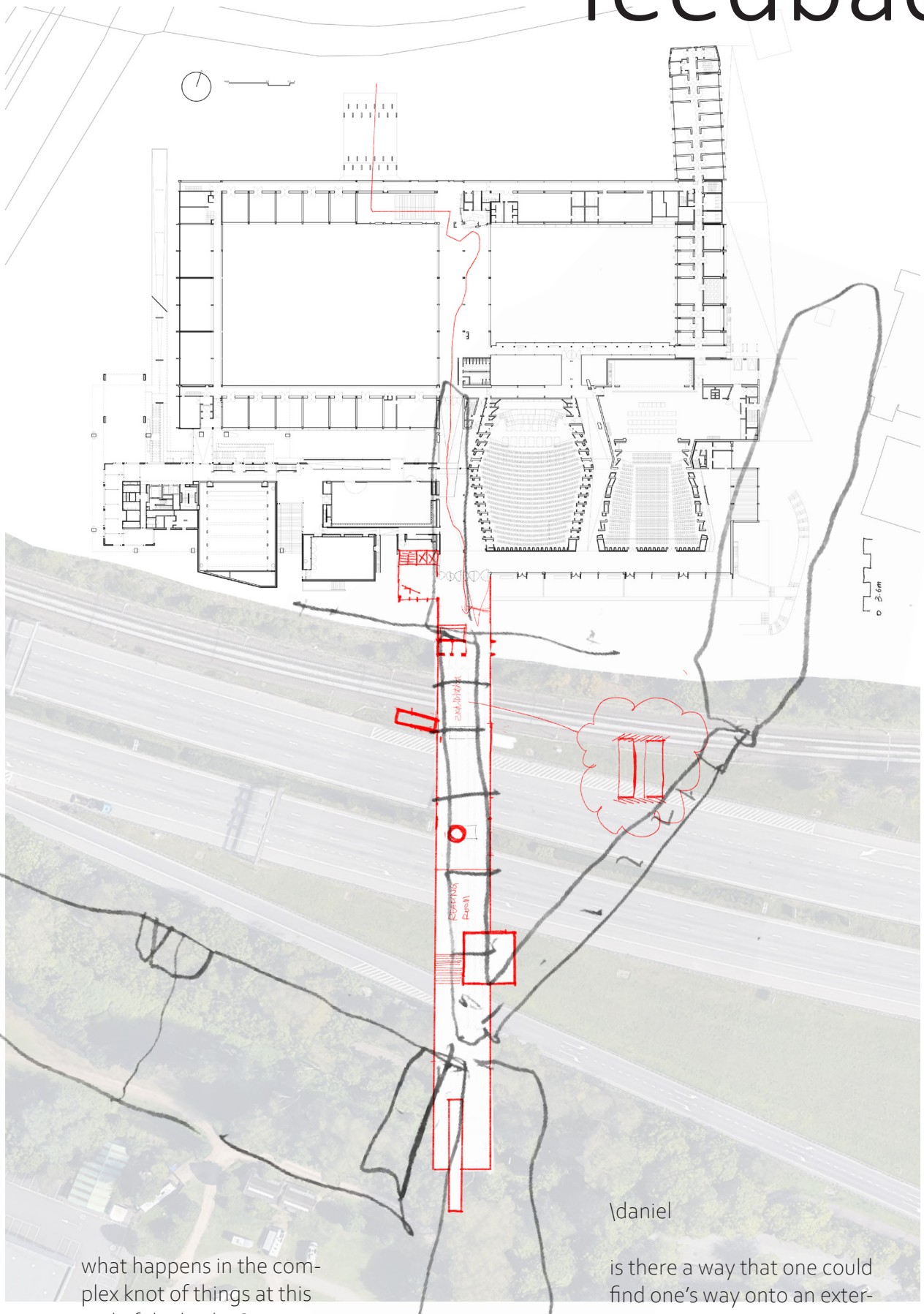
\daniel

what happens if the bridge bents somewhe
it gets much shorter?

how you put the feet down to get a rel-
atively even structural system?
the whole thing is a big truss or it can be sin

fig. 2.6.4 sketch , daniel

feedback



what happens in the complex knot of things at this end of the bridge?

\daniel

is there a way that one could find one's way onto an external moment of the bridge? could I cycle through desingel?

fig. 2.6.5 sketch , daniel

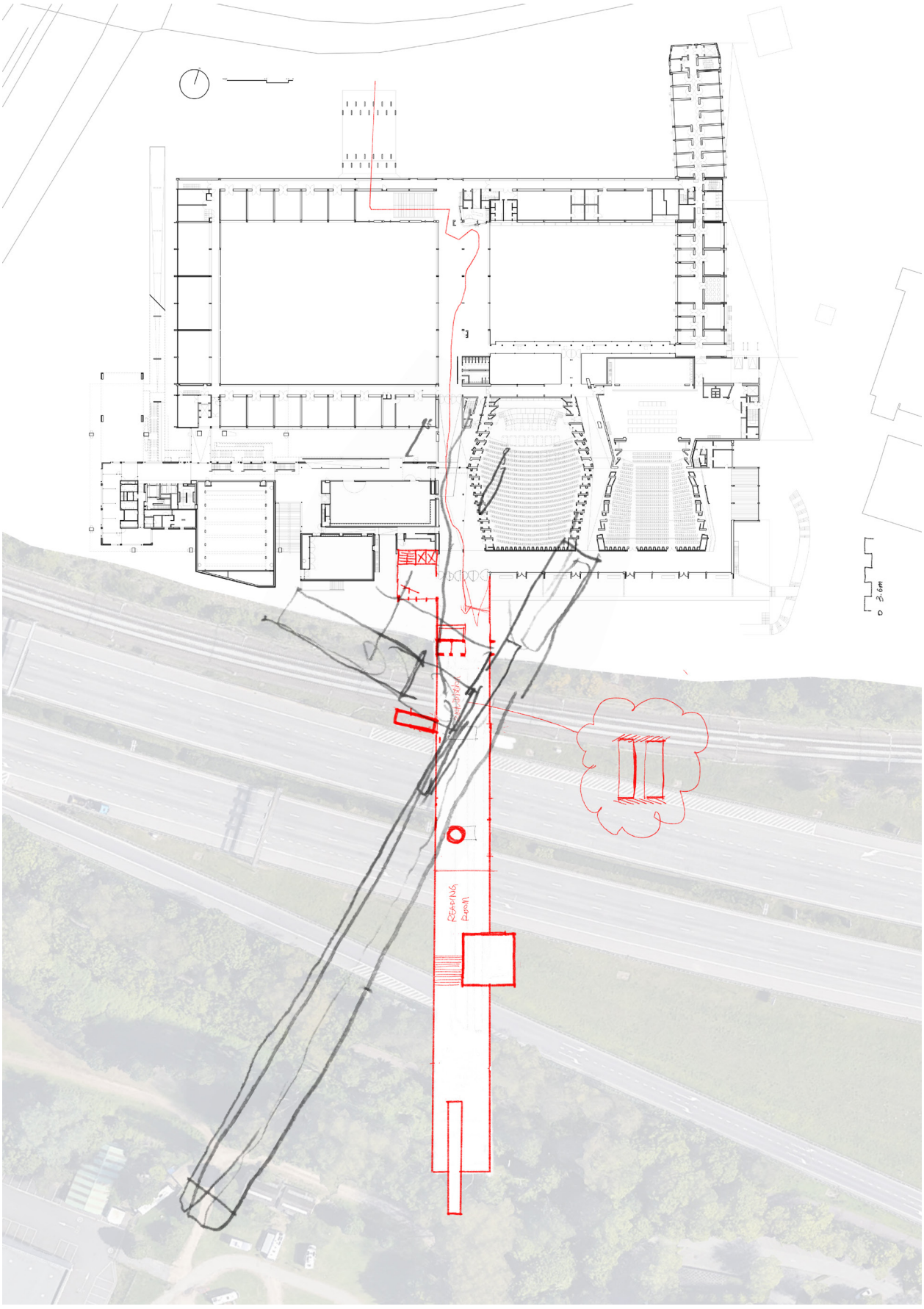


fig. 2.6.6 sketch , daniel

feedback

\daniel

structure: steel to deal with tension, concrete partialy

build geometric connection by mirroring the oblique shape of wall of blue hall, so that my building is the third kink

interesting question when designing a building like a bridge: how does one escape from it?

archive is 14.4mx155.4m, per floor area is 2237.76m2, the idea is a long thin archive building.

the slope is incredibly steep illegal
archive on the top

what does it do to the motor way?
how does it speak to the people driving underneath it?
who is going to cross it?
who can use it, and when can they use it, and what can they use it for?

it seems to me, is potentially direct you to the point where the back of that building is.

to learn the plan of the expo building, how can they connect?
you basically arrive at the back corner of this building
this is a potential expansion site you know and it might expand in whatever way and
they probably don't know yet
so the exhibition centre could also have a door here
there might be two bridges, one green bridge one interior bridge

you could almost imagine saying my project is twofold. it's somehow bad. but in a way, starts to really question what the nature of that entry is like and when this might be open and but i guess what it does mean is that desingel can almost be approached from the other side

i don't believe that you would carry on walking straight and you get to the end
making probably a slope that you could actually deal with

it's just a kind of way to move and then the vai sits above it like all of these other pieces of institutions sit above this sort of infrastructure

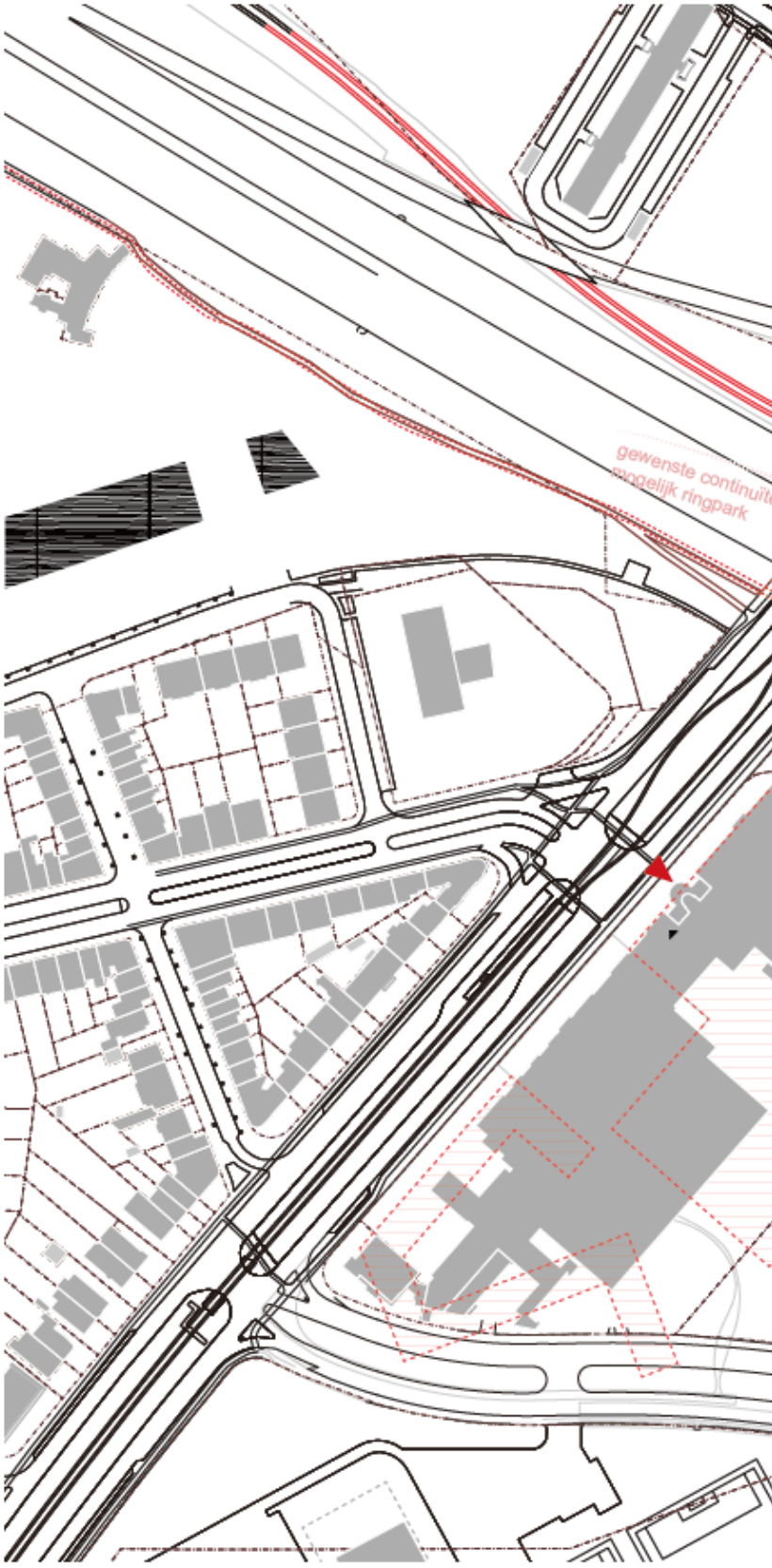
it's quite a radical project.

as a bridge, and i think it would be useful for you to think about quite early what its image is. especially something that's closed. it's basically a closed box.
so what is it? as i pass underneath it, what do i see?
mock up model looks like a beam, but a bridge is different

there are often often bridges like glazed bridges that connect the two
high sides and you walk through those bridges and you sort of look at the cars. it was meant to be glamorous. but actually, it's quite grim walking across the motorway.
what's the experience of this? and that seems to me a pretty critical question.

i think you should know about this i think you should
know what other bridges are being built
you should probably have the whole ring draw the whole ring
what your project delivers for the city?
what is the result of adding this enormous?
armature onto the back of this building?
can i walk through without ever going inside?
is there a way that you can sort of use this
to build a network of movement which
can sort of piggyback off your project?

fig. 2.7.1 spatial conditions for new projects in the search area, vai



creation of the cultural campus:
the unification of the sites of desingel, de wezenberg, and antwerp expo into a large cluster for arts, culture, and events.

covering, or at least creating soft crossings, for the ring road:
aiming to either cover the ring road or provide gentle crossing solutions to improve connectivity and reduce fragmentation.

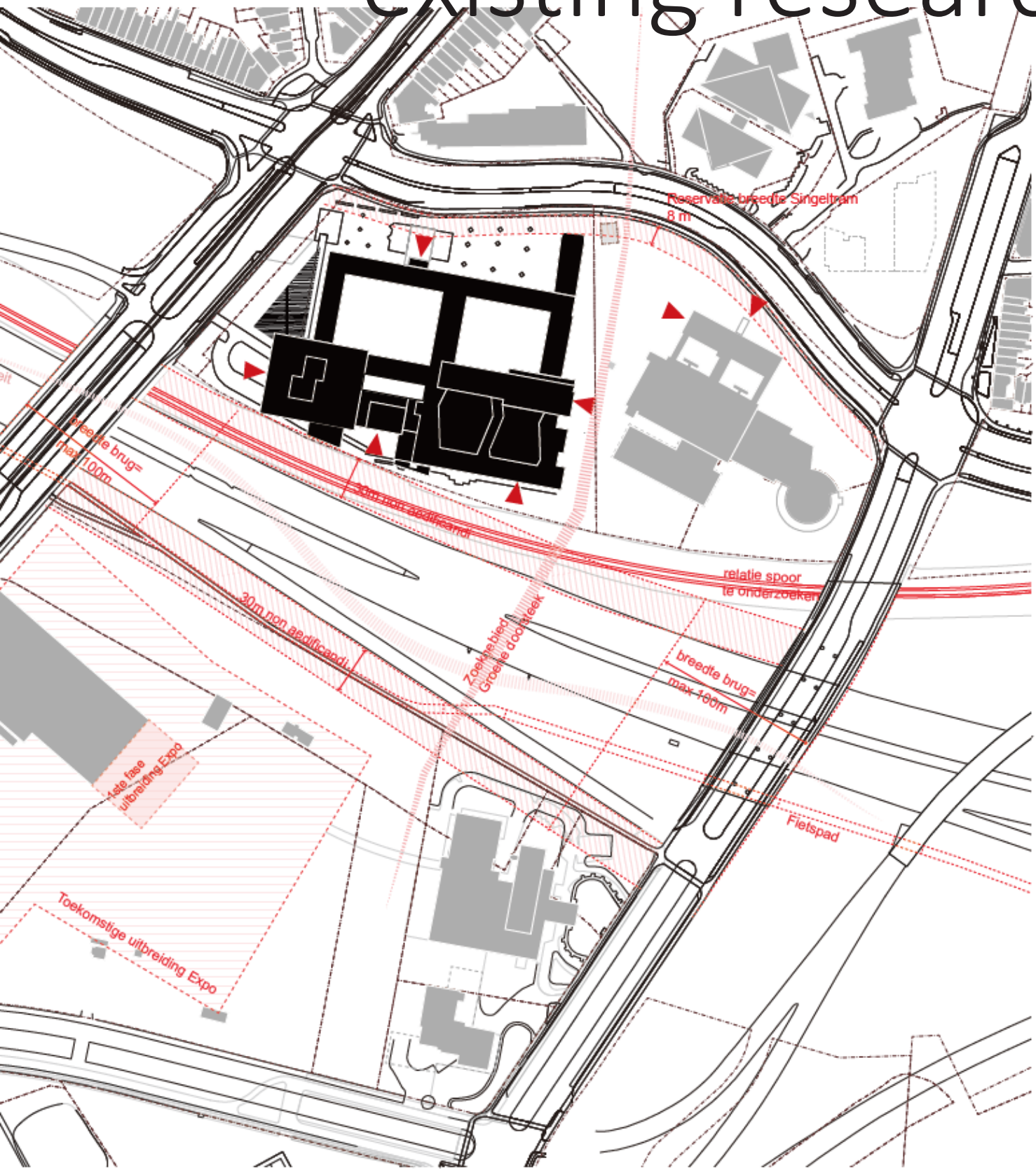
creation of the green singel:
establishing a “green singel,” where the desingel campus is envisioned as a ‘boulder’ embedded in greenery.

de fysieke nabijheid van desingel is daarom een essentiële voorwaarde voor een nieuwe vestiging van het vai.

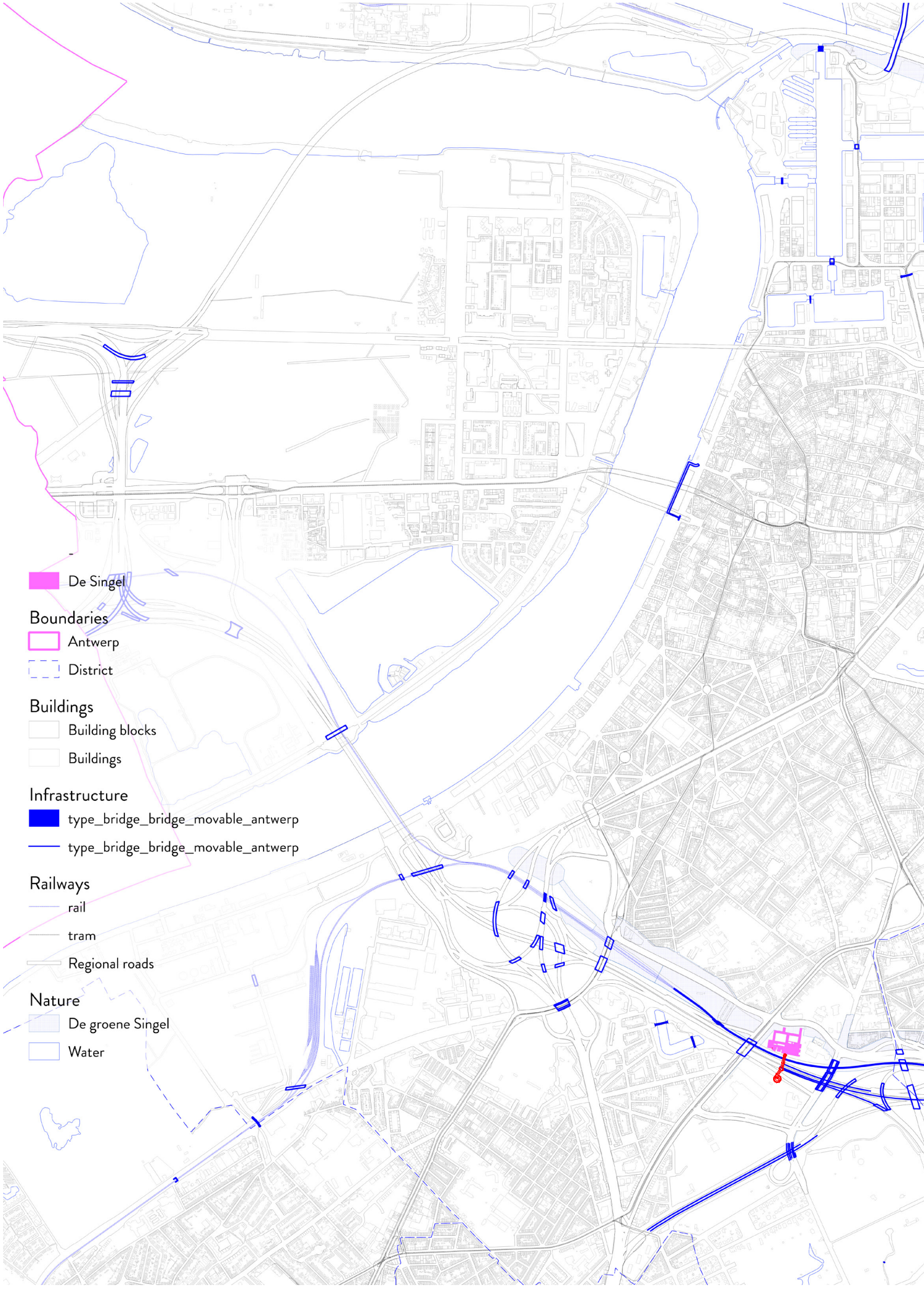
the physical proximity of desingel is therefore an essential condition for a new establishment of vai. moreover, its presence strengthens the cultural campus as a whole.

由图可知，安特卫普博览会有着向东北扩展的勃勃雄心。desingel向南发展正好可以使两片艺术园区合二为一。然而当下通过东西两座现成桥体的连接并不足够，两个园区仅仅是外部连接的邻居关系，机动车道又增强了这种连接的边缘属性。因此我认为此处需要一个强有力的有机连接两个场地的城市结构。

existing research



From the illustration, it is evident that Antwerp Expo harbors ambitious plans to expand northeastward. The southward development of deSingel aligns perfectly to unify the two cultural campuses into one. However, the current connection via the two existing east-west bridges is insufficient; the two campuses remain merely adjacent neighbors connected externally, with motorways further reinforcing this peripheral relationship. Therefore, I believe that a strong and organic urban structure is needed here to effectively link the two sites.


De Singel
Boundaries
Antwerp
District
Buildings
Building blocks
Buildings
Infrastructure
type_bridge_bridge_movable_antwerp
type_bridge_bridge_movable_antwerp
Railways
rail
tram
Regional roads
Nature
De groene Singel
Water

bridges along the ring

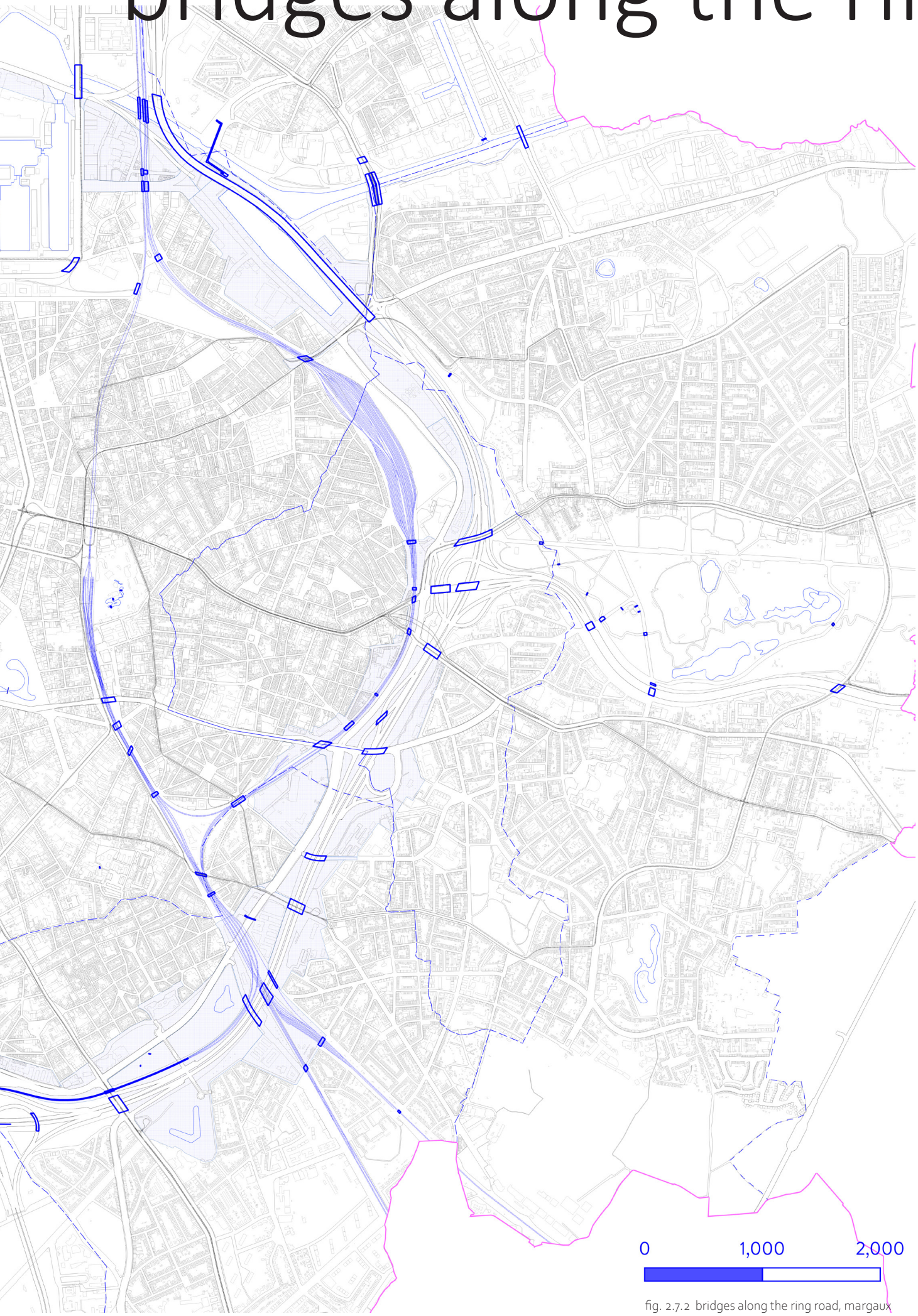


fig. 2.7.2 bridges along the ring road, margaux

Wk 2.7 *241220-250109*



























4th proposal

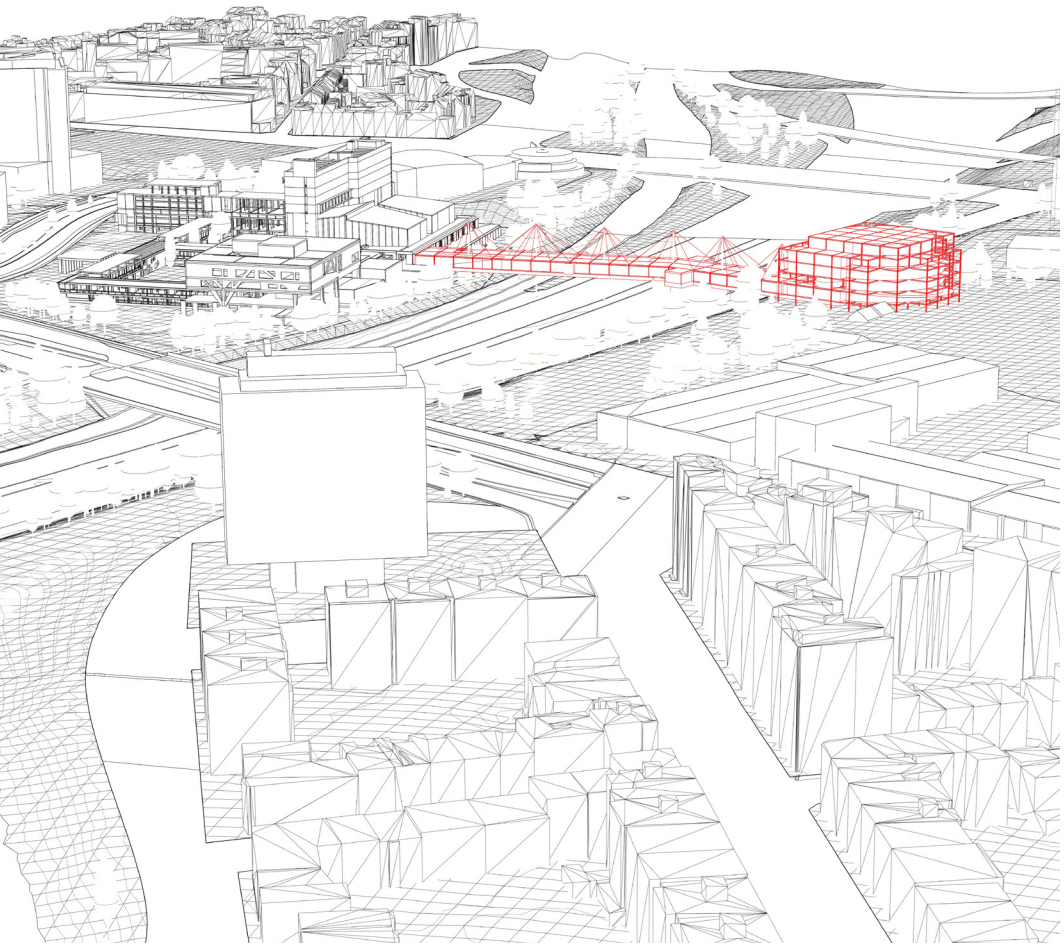


fig. 2.7.4 axonometic of the bridge and bridgehead as entension of desingel from the back of bp building, liren

‘ bridgehead ‘

As previously mentioned, the singular function of the project contradicts the urban posture urgently needed by the site. Therefore, the design cannot rely solely on discussions about the archive itself but must instead strive to find as much consensus as possible between the concept of the archive and the language of the city. Given deSingel’s status as a cultural heritage site, any additions on the west and north sides require particular caution.

In the feasibility study for the VAi project site, a proposal to occupy the northern parking lot was rejected by the aesthetics committee because such an alteration would compromise the visibility and legibility of deSingel.

On the other hand, the eastern hillside and the southern road present opportunities for design. Earlier drafts primarily explored design attempts to span the southern road, with the bridge serving as an extension of the central axis being the most appropriate and compelling solution.

’ 桥头堡 ‘

正如之前所述，该项目的单一功能与场地迫切需要的城市姿态相悖，因而不能仅仅以 archive 自身的讨论完成这一设计，而是尽可能地寻找 archive 理念和城市语汇的共识。因 desingel 有着文化遗产的身份，在西侧与北侧的加建需要格外谨慎。在 vai 的项目场地可能性调研中，占据北停车场的一个提案被美学委员会否决，原因是这种改动会破坏 desingel 的可见性和易读性。东侧的山体和南侧的道路反倒成为设计的机会。前几稿主要是在对于跨越南侧的道路做设计尝试，桥梁作为中轴线的延伸最为妥当有力。

fig. 2.7.3 current conditions on both sides of ring road in the art campus, liren

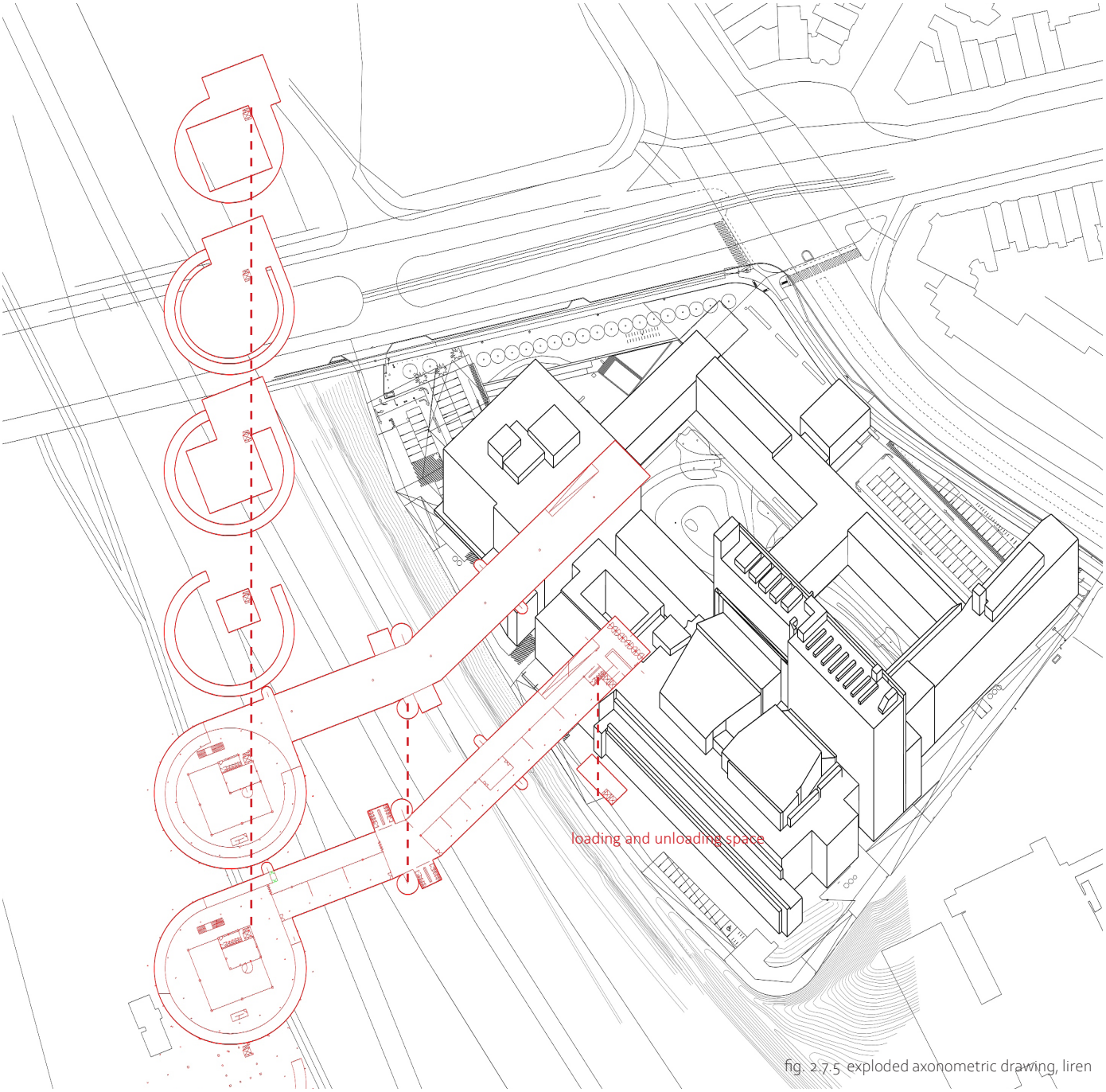
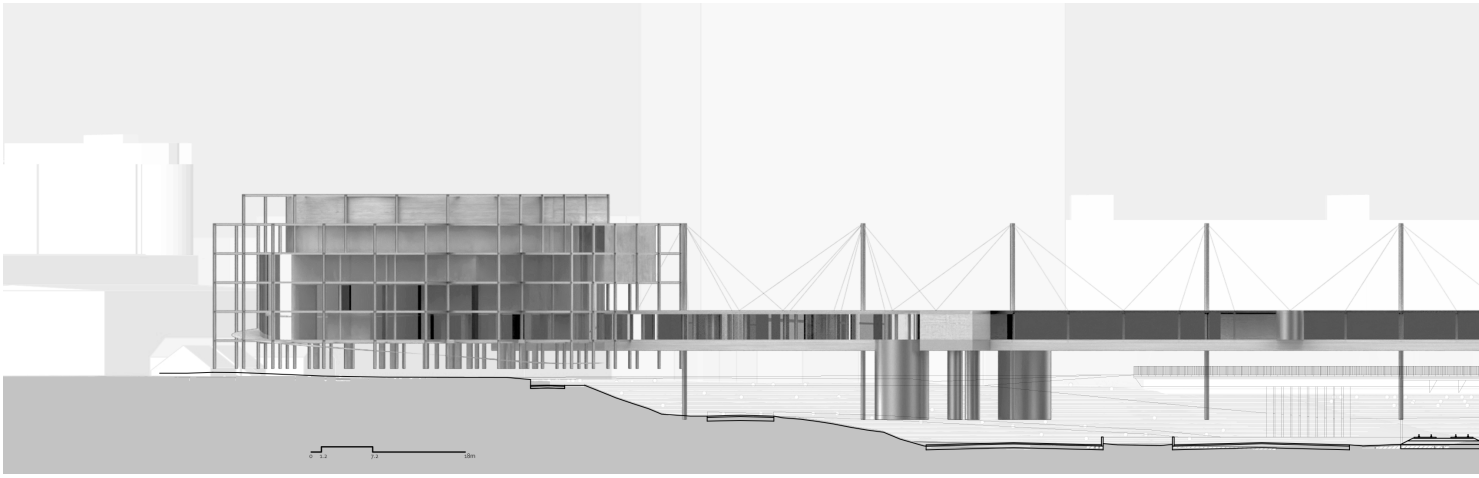


fig. 2.7.5 exploded axonometric drawing, liren



4th proposal



scooter spotted on level of roaming corridor

fig. 2.7.6 interior view of center axis, block c, liren

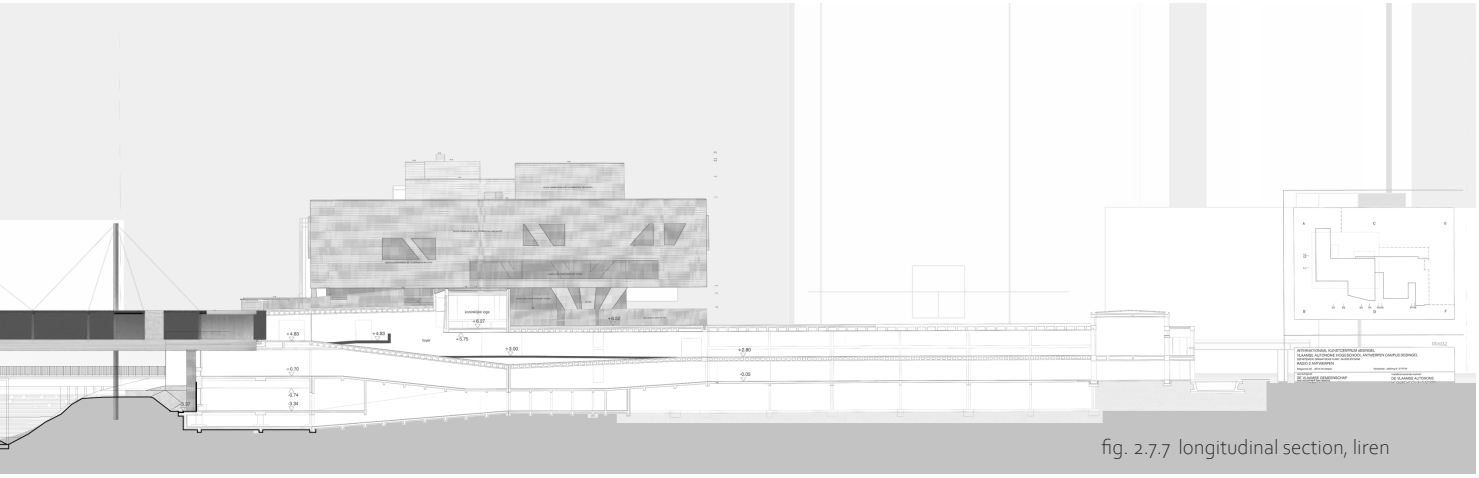
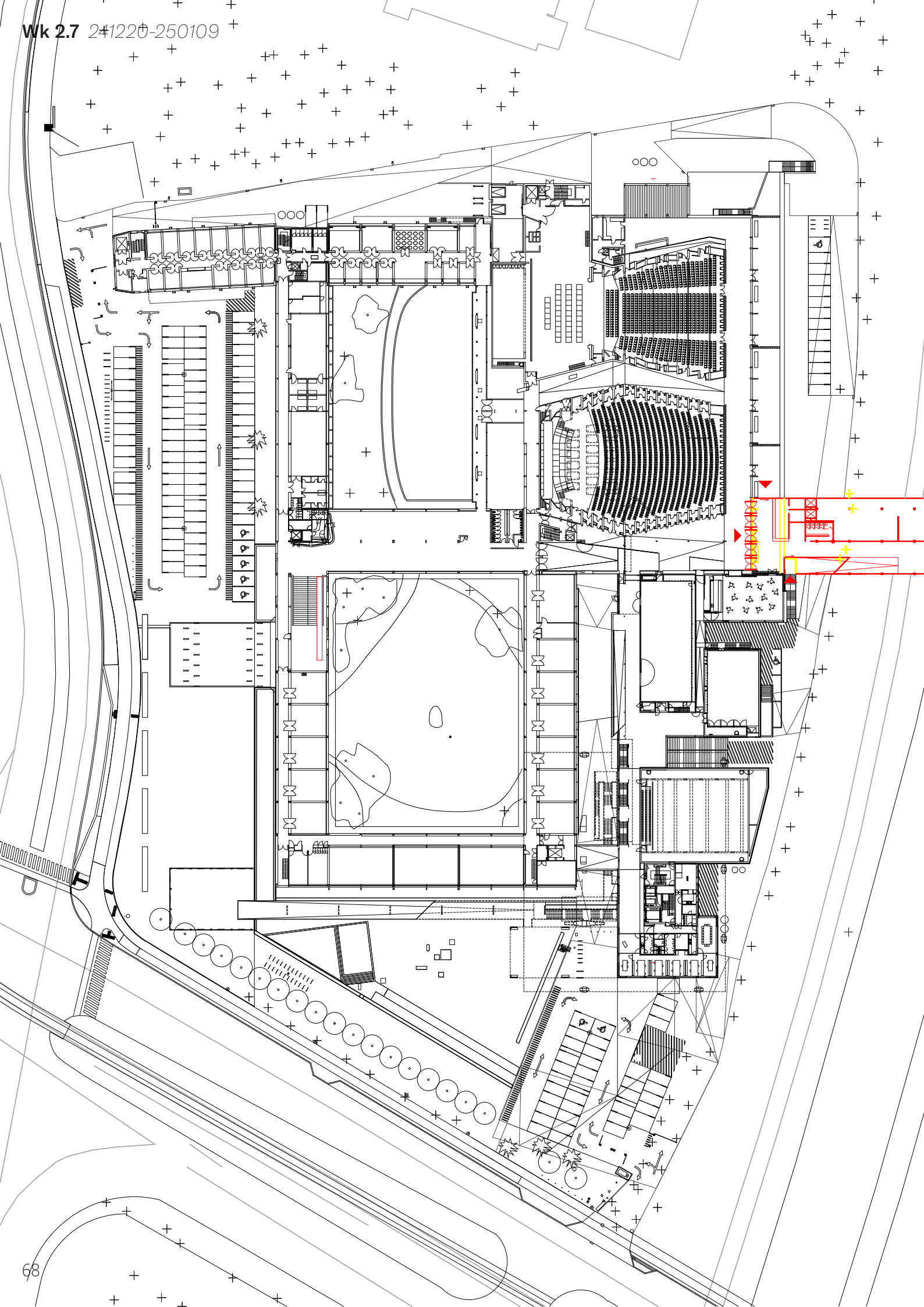


fig. 2.7.7 longitudinal section, liren



4th proposal

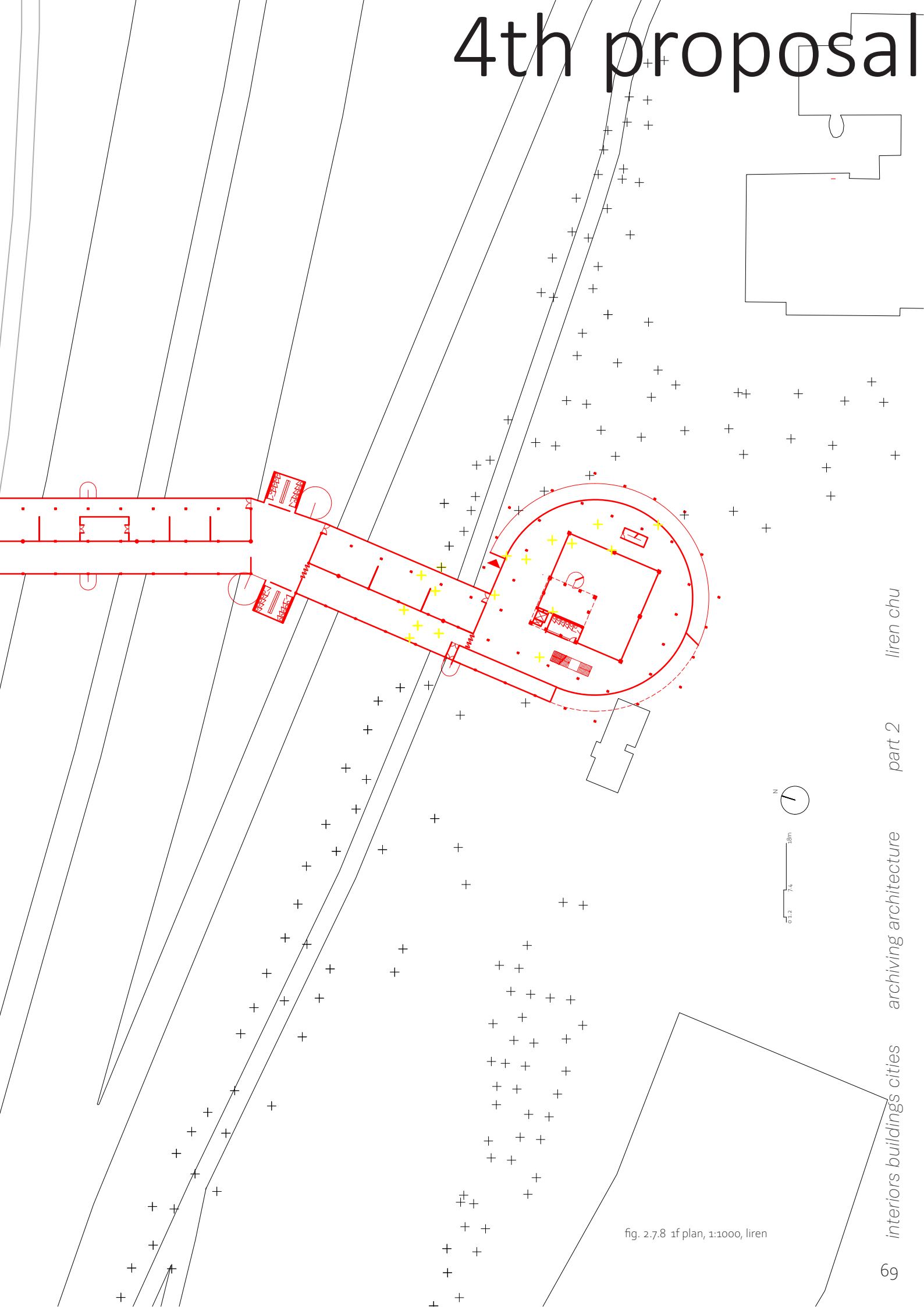
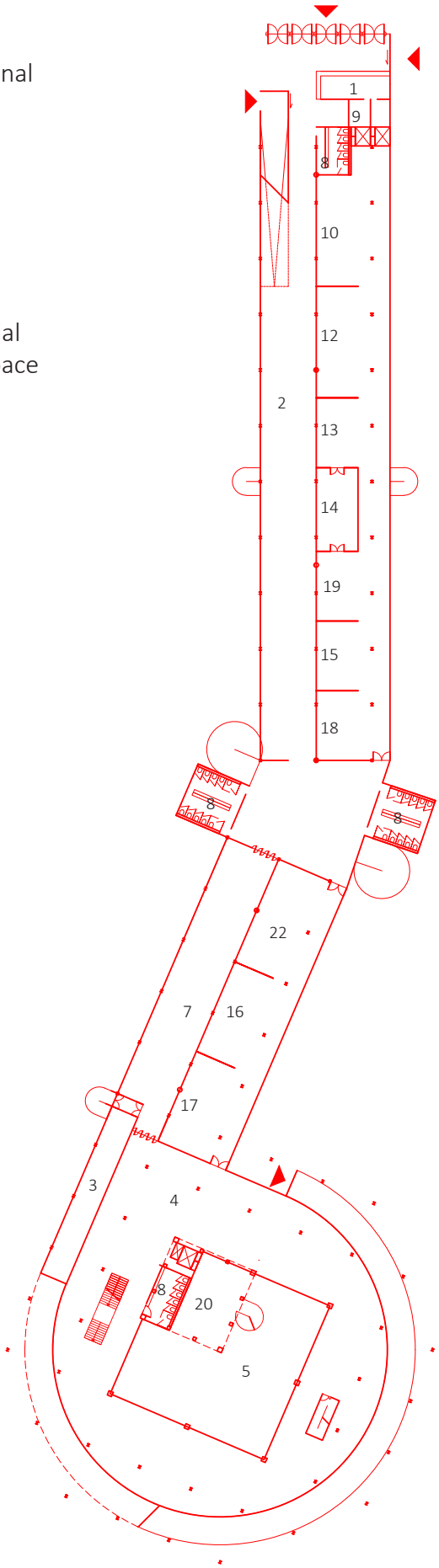


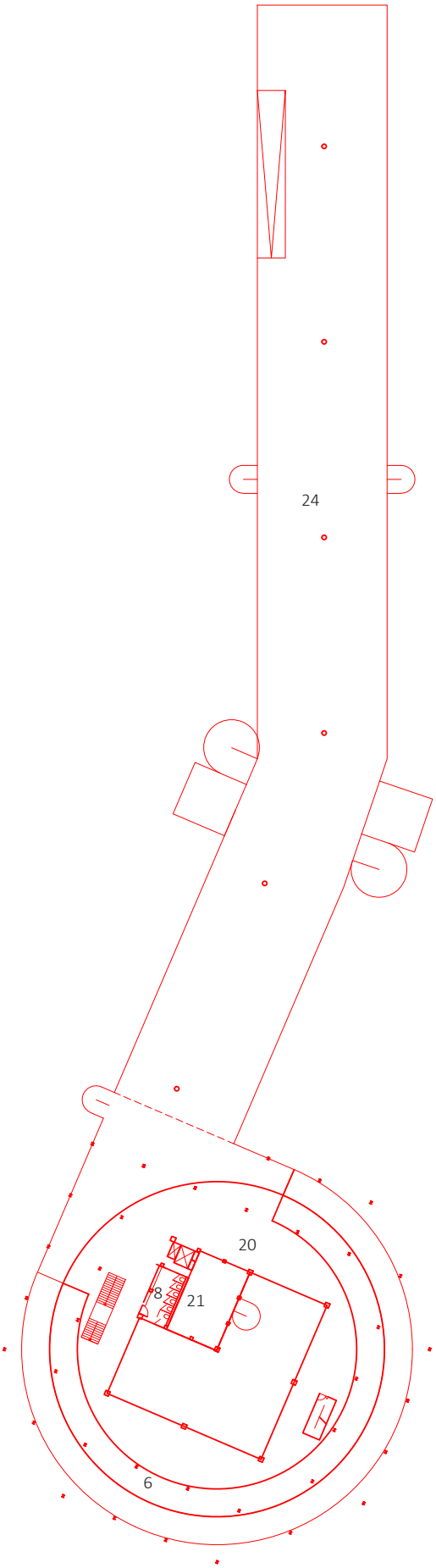
fig. 2.7.8 1f plan, 1:1000, liren

1. reception
2. exhibition & multifunctional
3. reading room
4. library
5. staff workspace
6. meeting room
7. kitchen, cafe
8. bathroom
9. dressing room
10. storage packaging material
11. loading and unloading space
12. waiting depot
13. triage space
14. quarantine space
15. pre-depot
16. processing
17. digitization space
18. restoration studio
19. cleaning space
20. depot
21. climate class photo
22. view depot
23. server space
24. roof terrace



1f plan





2f plan

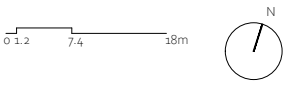
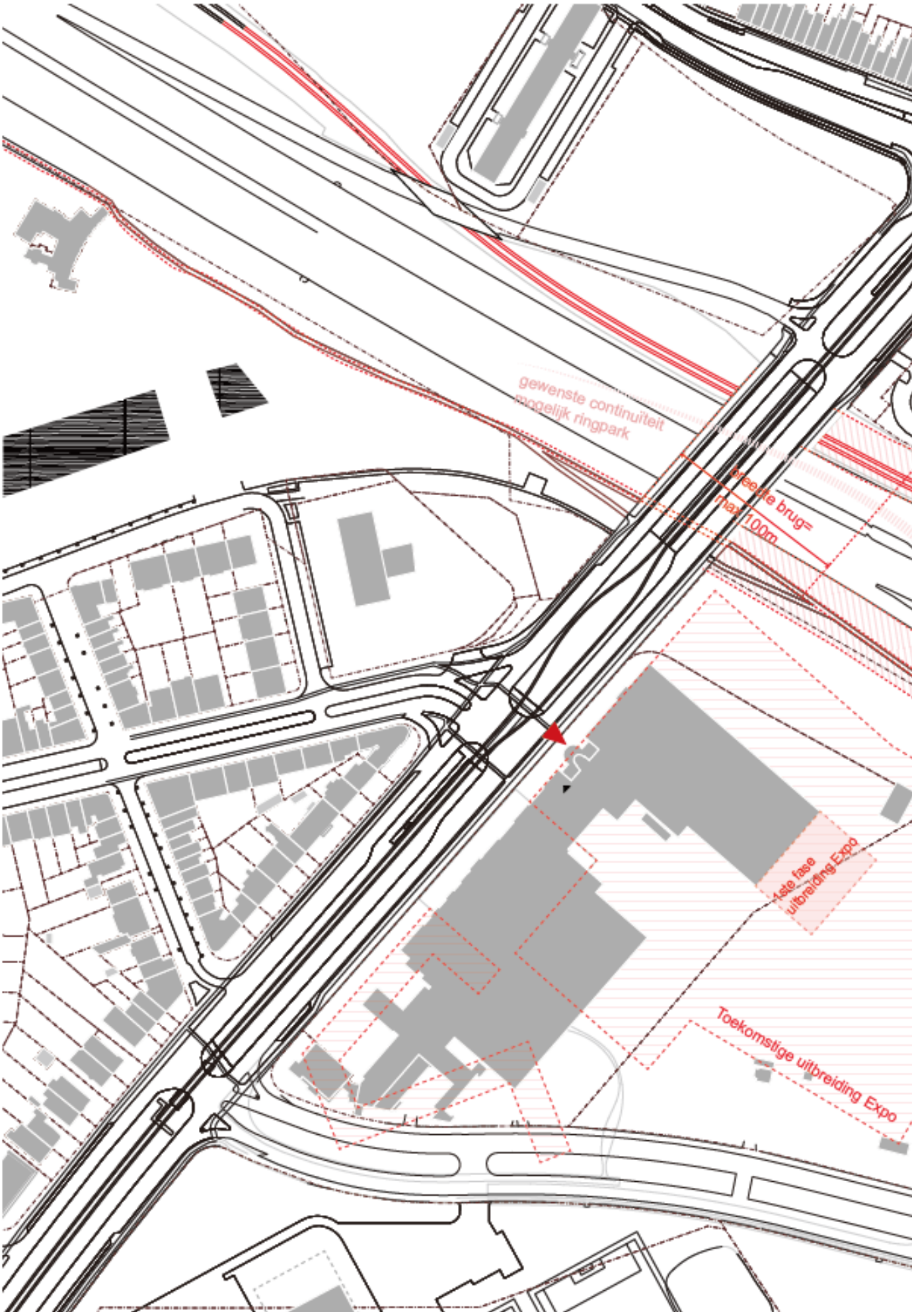


fig. 2.7.9 drawings, 1:600, liren


gewenste continuiteit
mogelijk ringpark
breedte brug=
max 100m
1ste fase
uitbreiding Expo
Toekomstige uitbreiding Expo

4th proposal

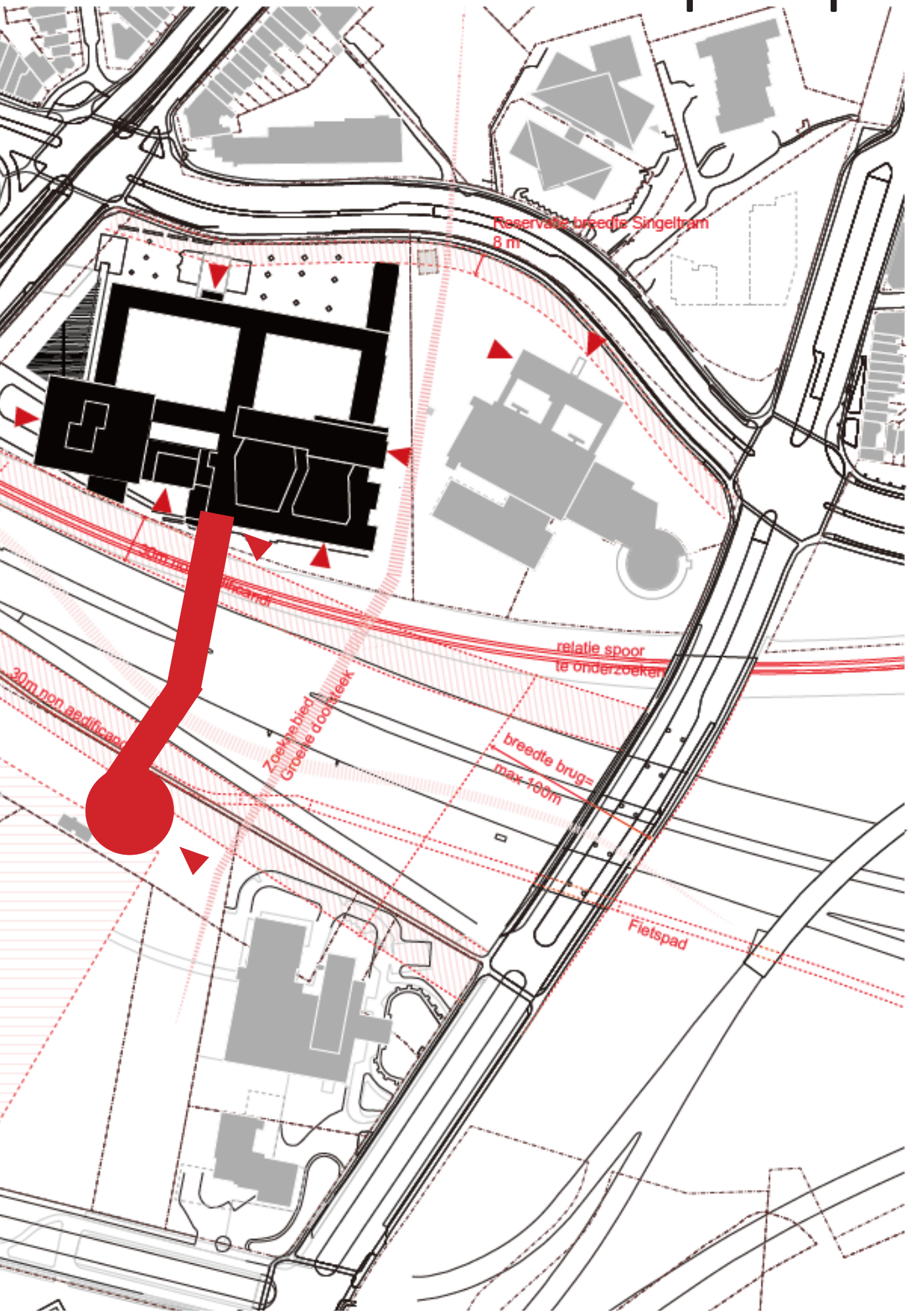


fig. 2.7.10 posibility info + design, vai, liren

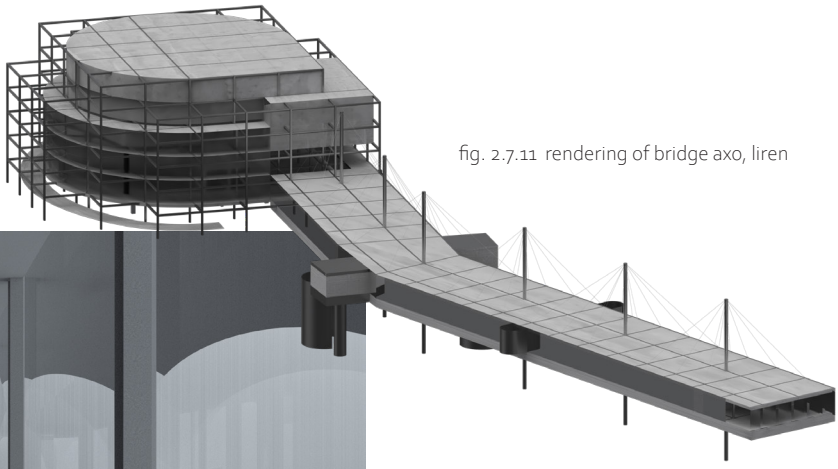
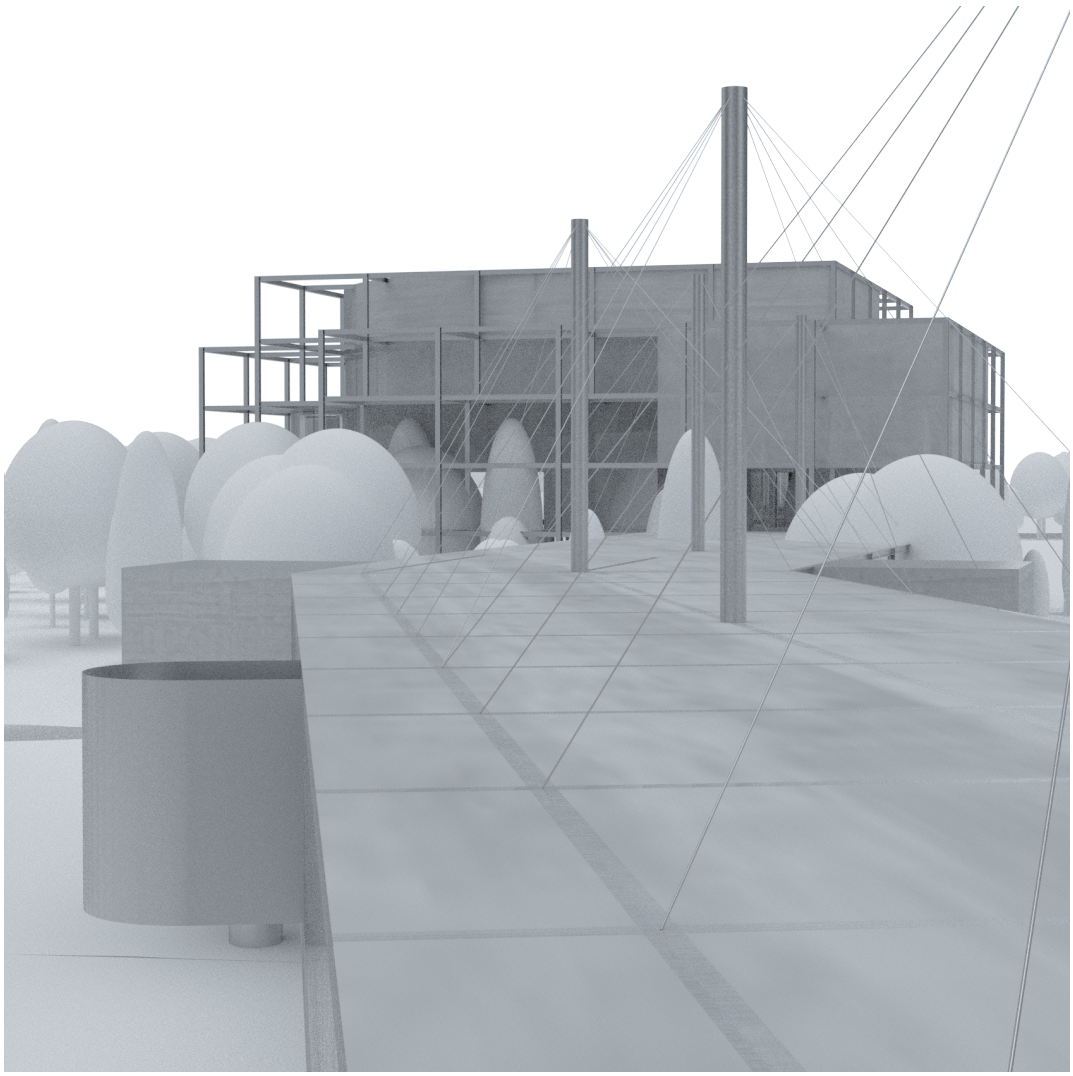


fig. 2.7.11 rendering of bridge axo, liren



fig. 2.7.12 rendering of bridge inside, liren

fig. 2.7.13 rendering on the bridge terrace, liren



4th proposal

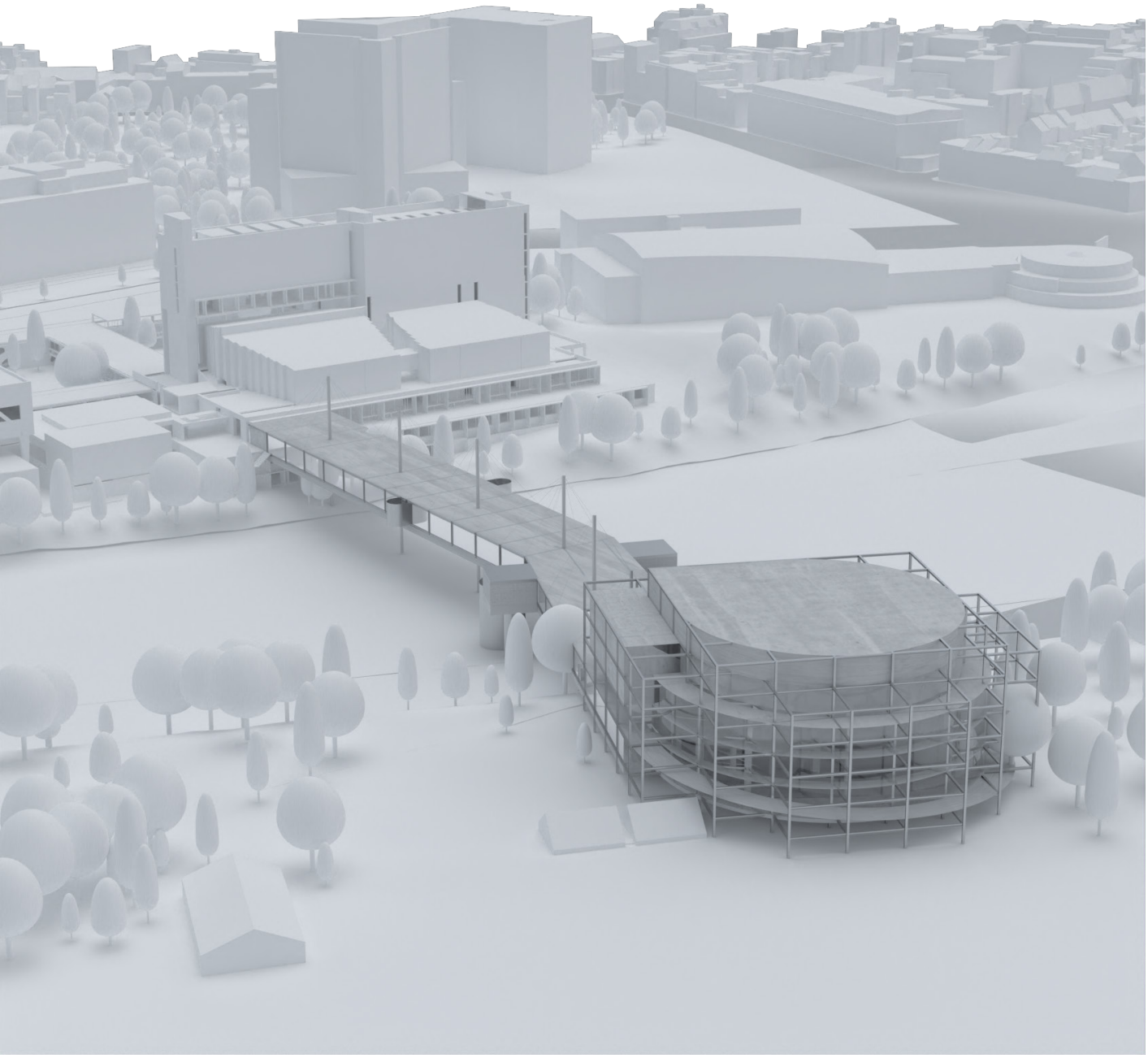


fig. 2.7.12 rendering aerial view, liren

打印所有图纸.

照片还是很暗.

桥的加减时间线

贴角胶带.

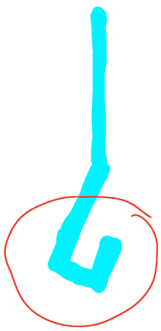
少几张从其他角度拍摄的图. 可以予绘在照片

公路.

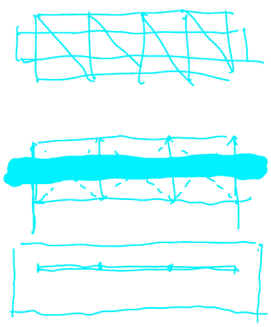
还书!!!

给东西!!!

如何开局?



在序列的最后放什么?



SCRIPT:

空硬

archive. 天生的封闭节奏和场地连接的属性.

deSingel 在 landscape 中等行的原有特征, 以及这种特征丢失的历史 (图纸)

(R 的本移, 使自然特征丢失)

bridge. corridor. cross (break the boundary)

suspension cable system.

posibility to expand.

桥梁的特征: 长. 线性叙事. $\overset{\text{契合}}{=}$ archive 的加工流程.

feedback

the bridge is interesting, but the bridge head is not clear. what is its relation to the park in which it lands or the expo? how to enter the building from the other side?

could the bridge end be a new entrance connected to the expo by rethinking the geometry?

can the bridge be also a landscape bridge with scooters and bikes? this seems unlikely. perhaps there need to remain two bridges or you need to work in section.

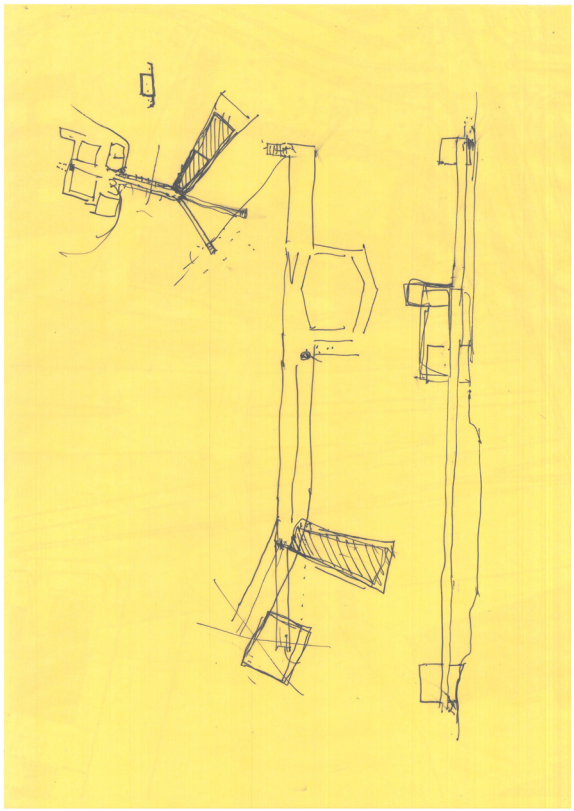


fig. 2.7.13 sketch, jurjen

需要以体块形式表达桥梁南端的连接设想。考虑激活桥梁两端的策略。

the connection concept at the southern end of the bridge needs to be expressed in volumetric form. consider strategies to activate both ends of the bridge.

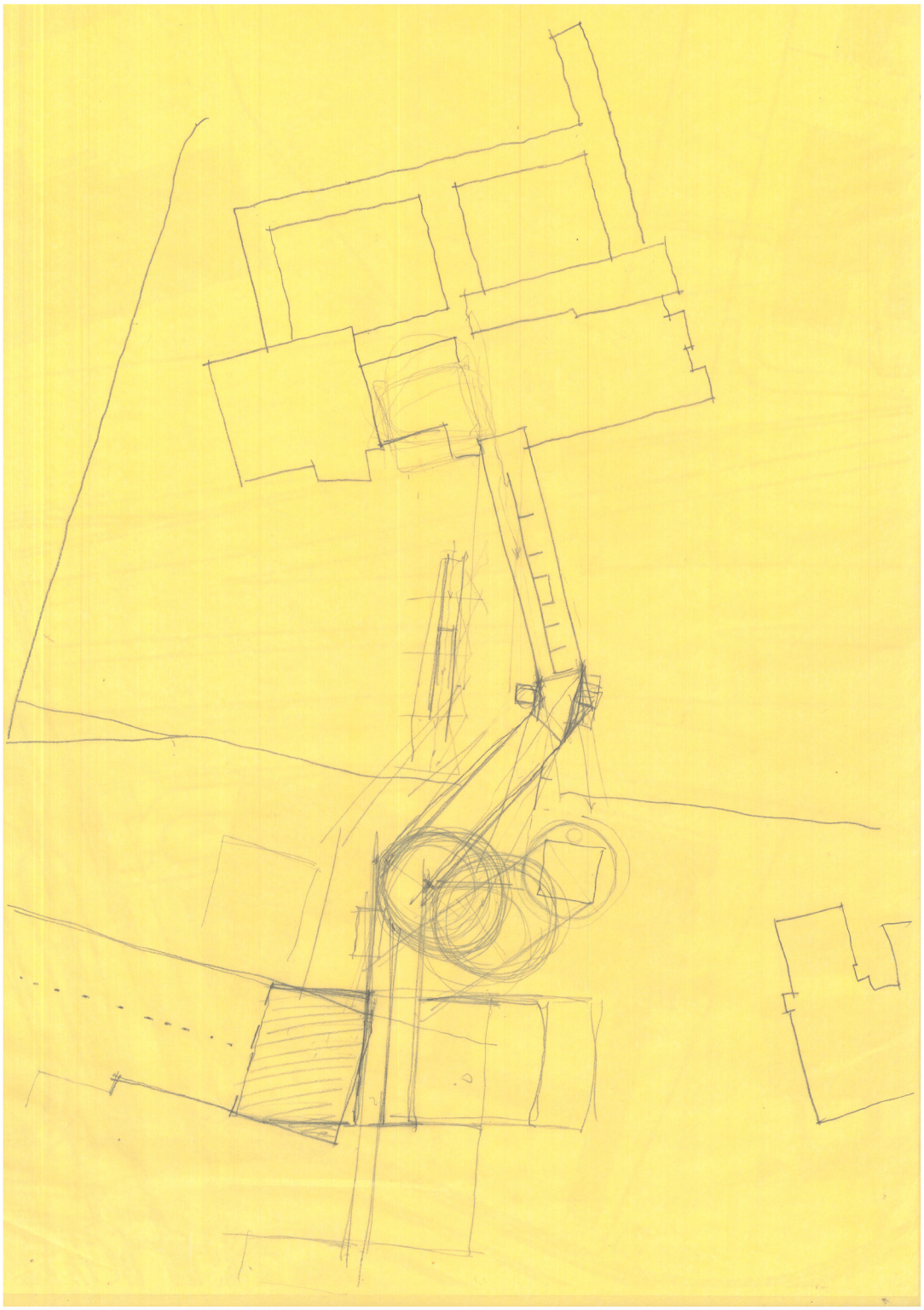


fig. 2.8.1 feasibility trial sketch, liren

plan draft

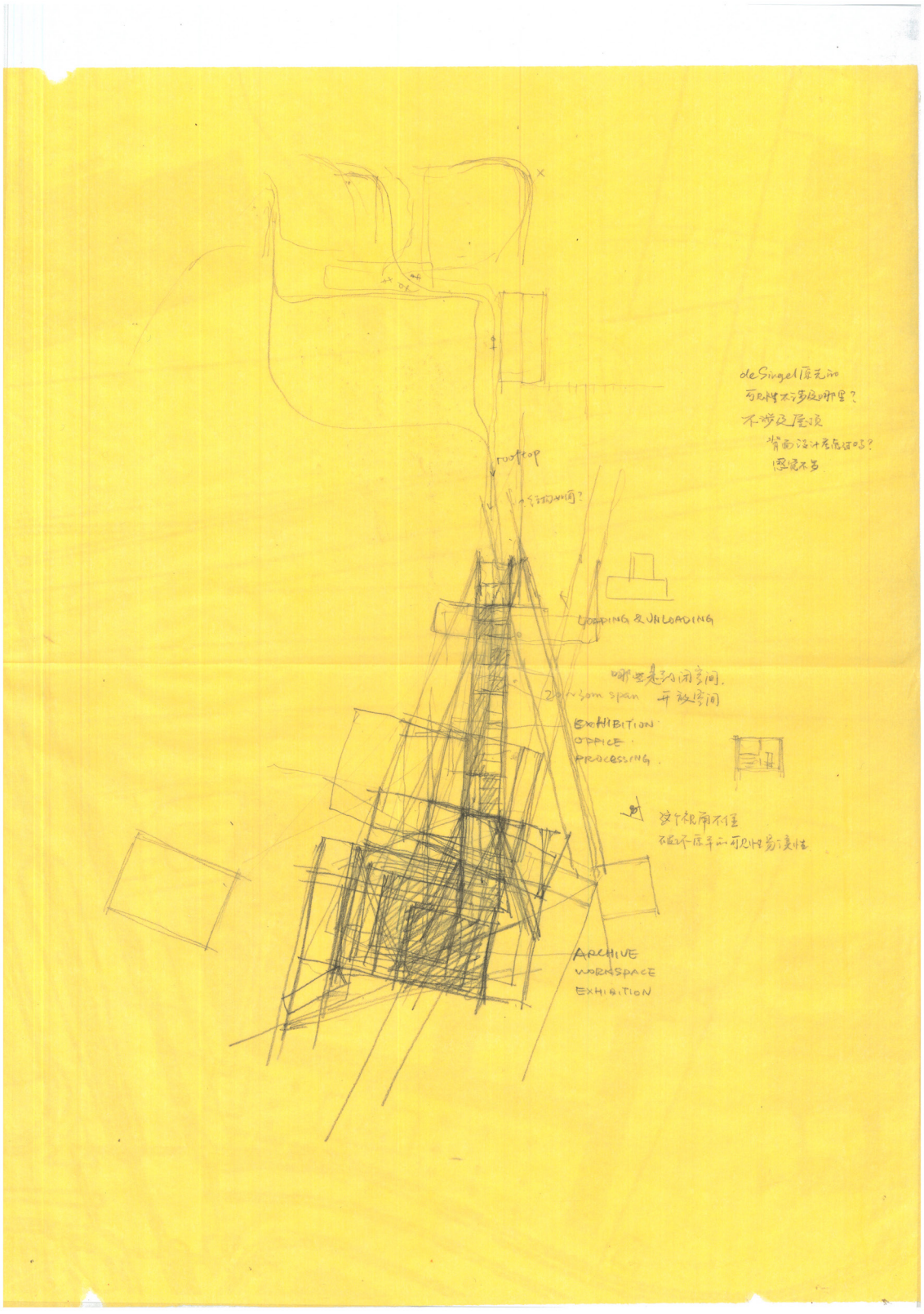


fig. 2.8.2 feasibility trial sketch, liren

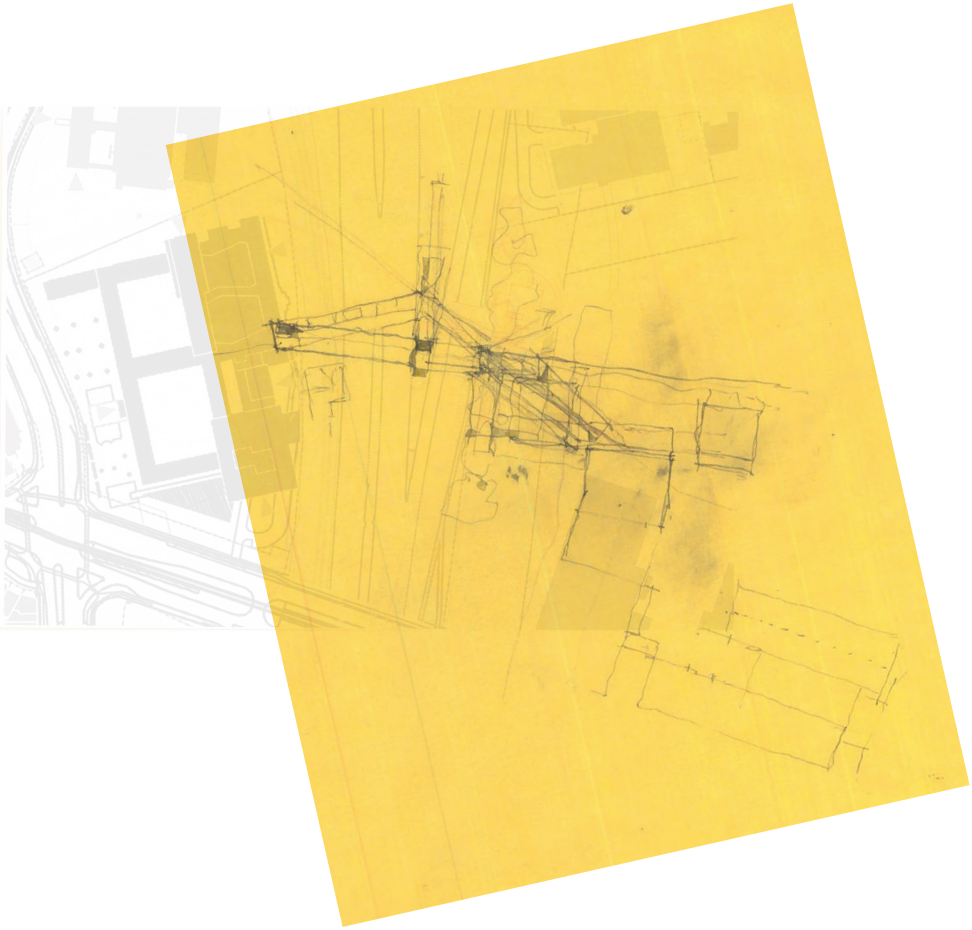


fig. 2.8.3 feasibility trial sketch, liren

plan draft

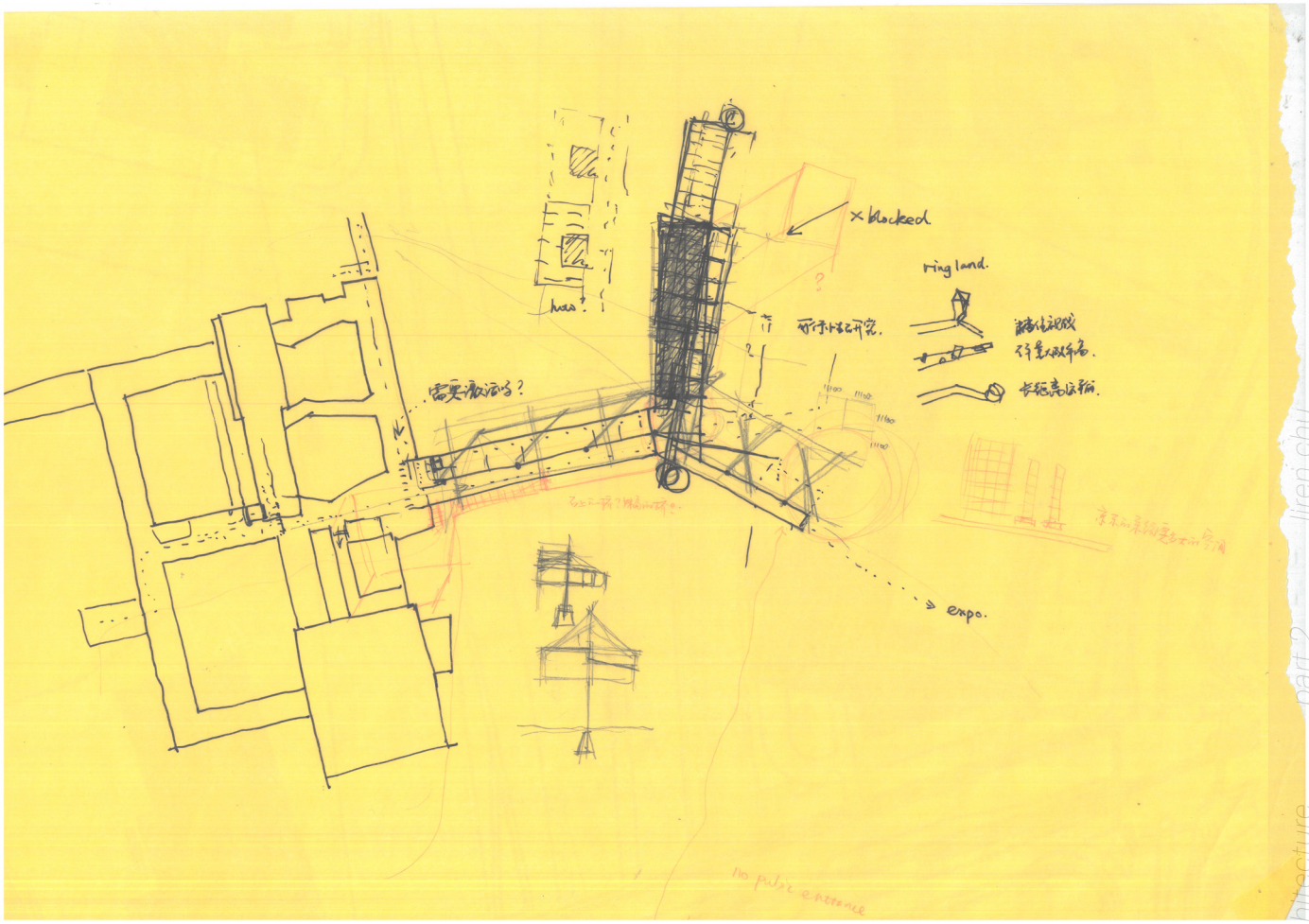


fig. 2.8.4 feasibility trial sketch, liren

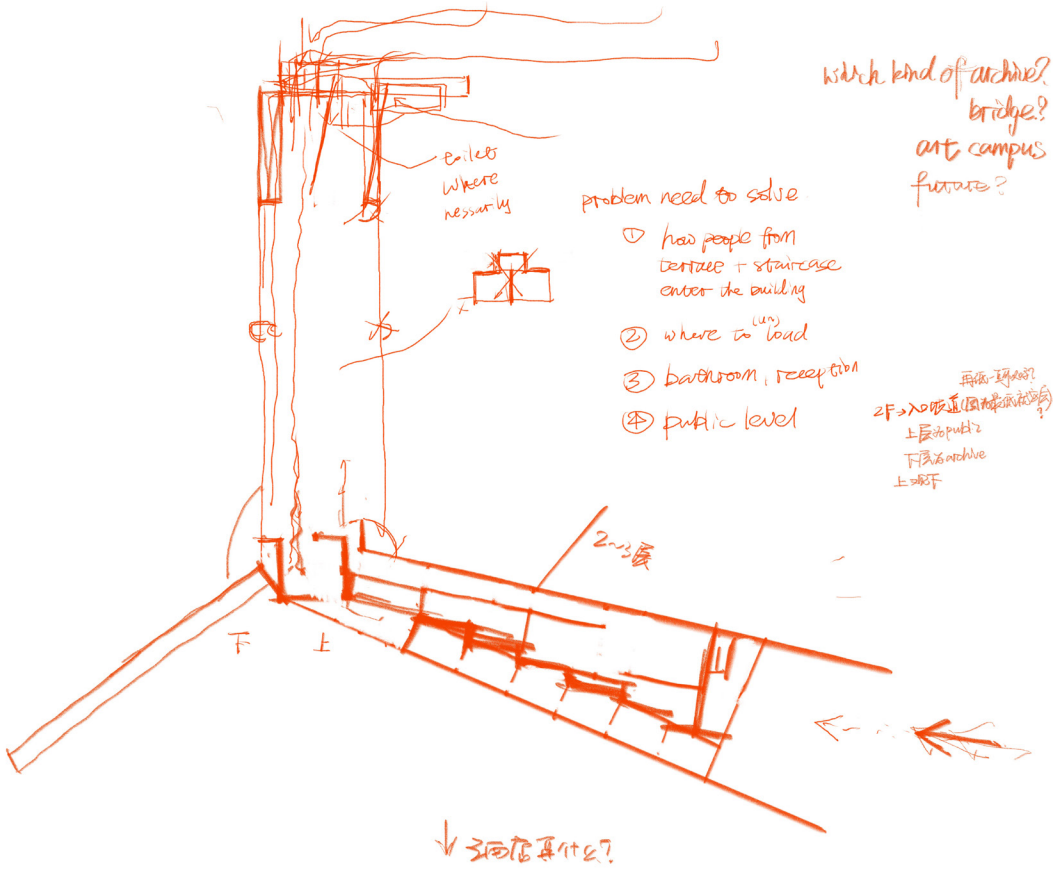


fig. 2.8.5 1f plan sketch, liren

plan draft

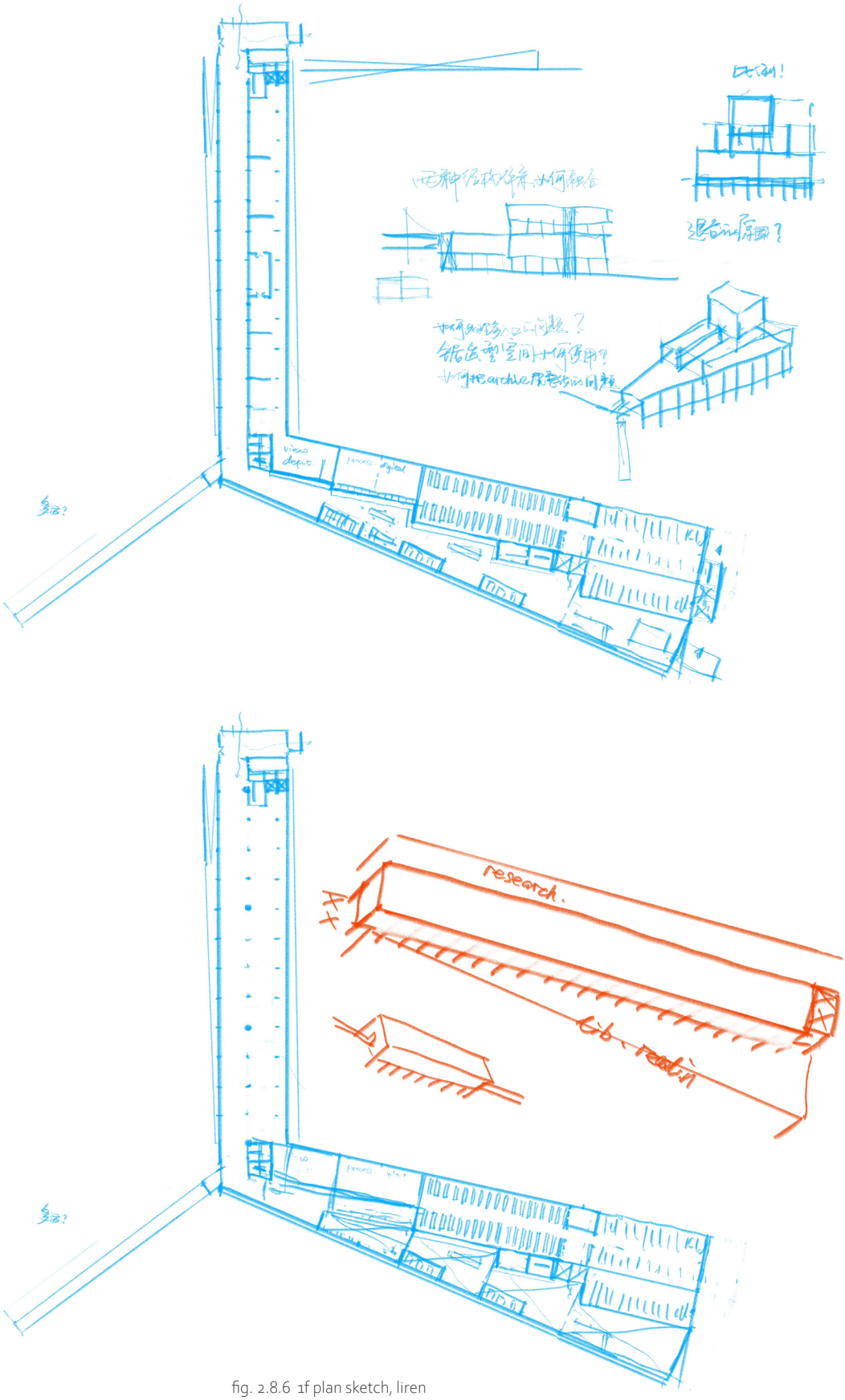


fig. 2.8.6 1f plan sketch, liren

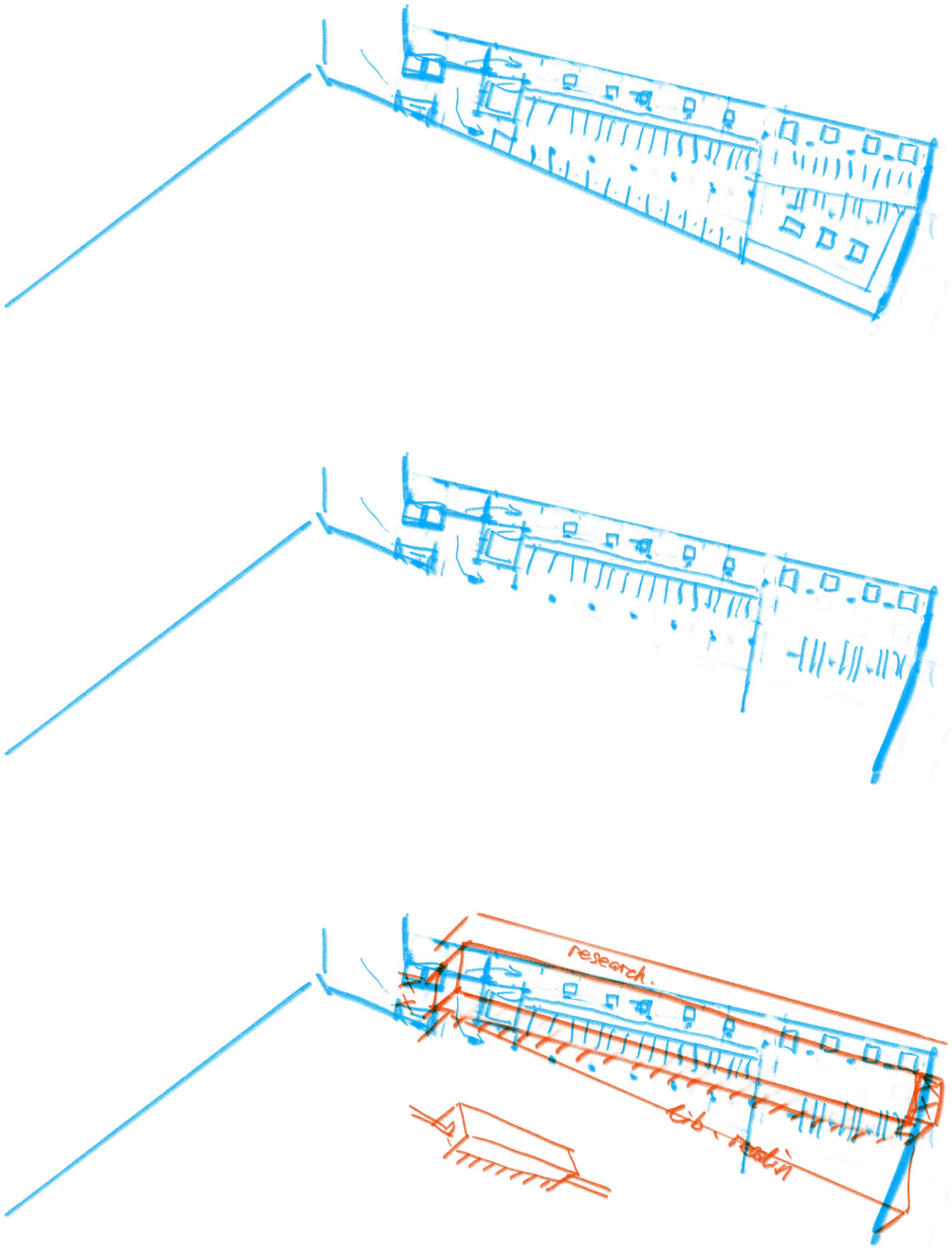


fig. 2.8.7 1f plan sketch, liren

plan draft

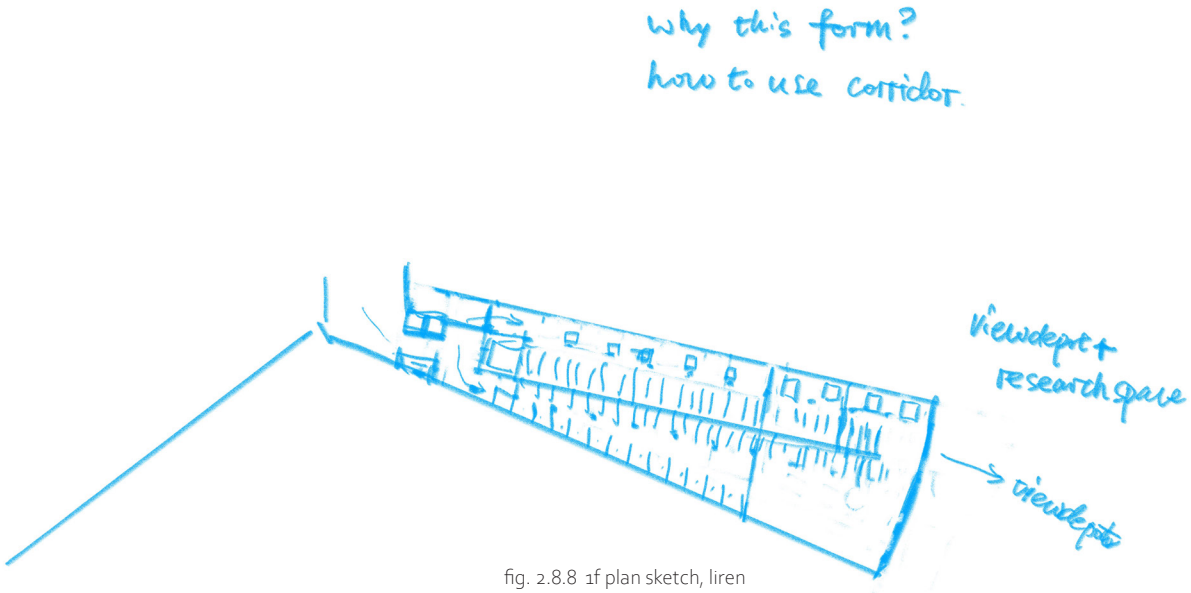


fig. 2.8.8 1f plan sketch, liren

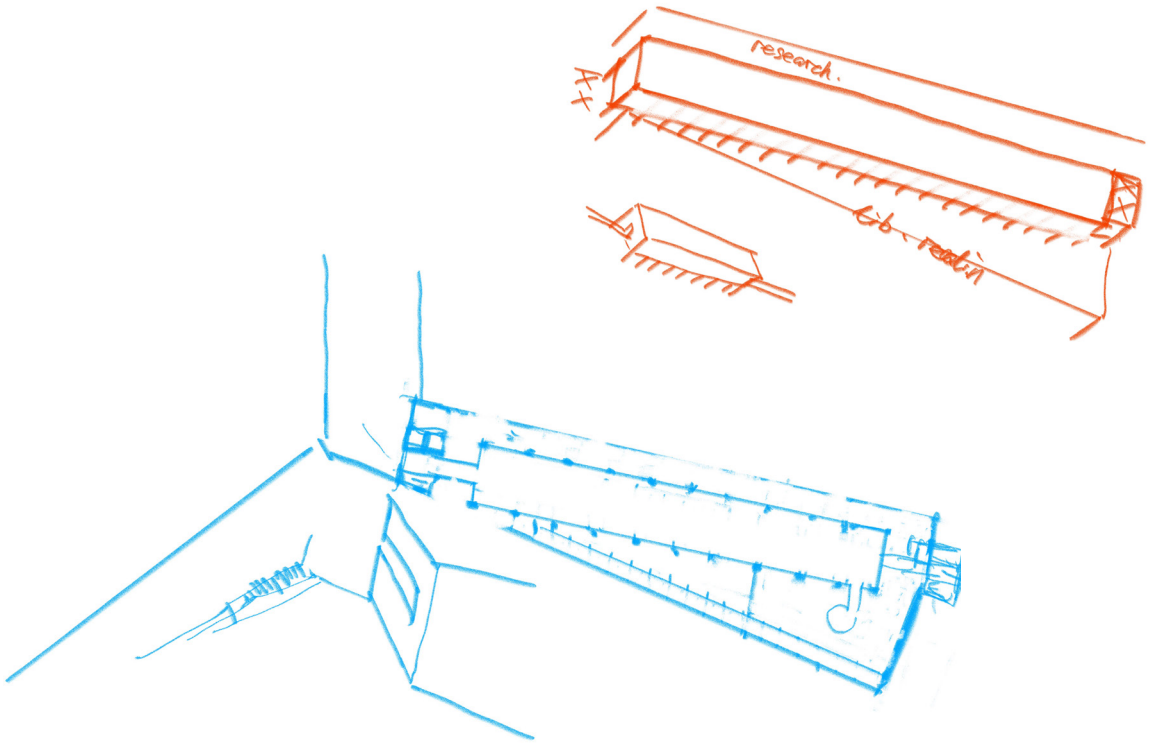


fig. 2.8.9 2f plan sketch, liren

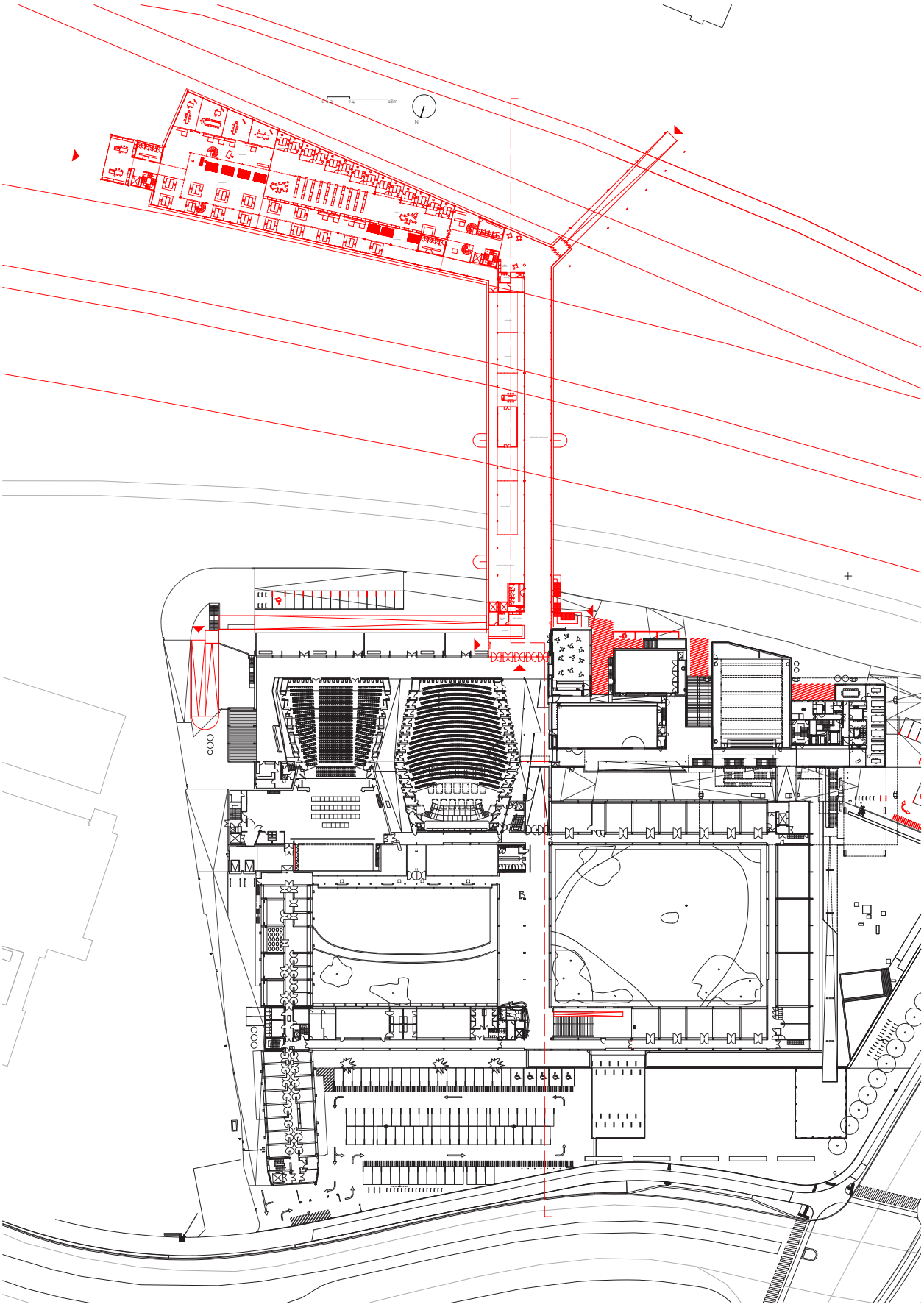


fig. 2.9.1 1f plan, liren

5th proposal

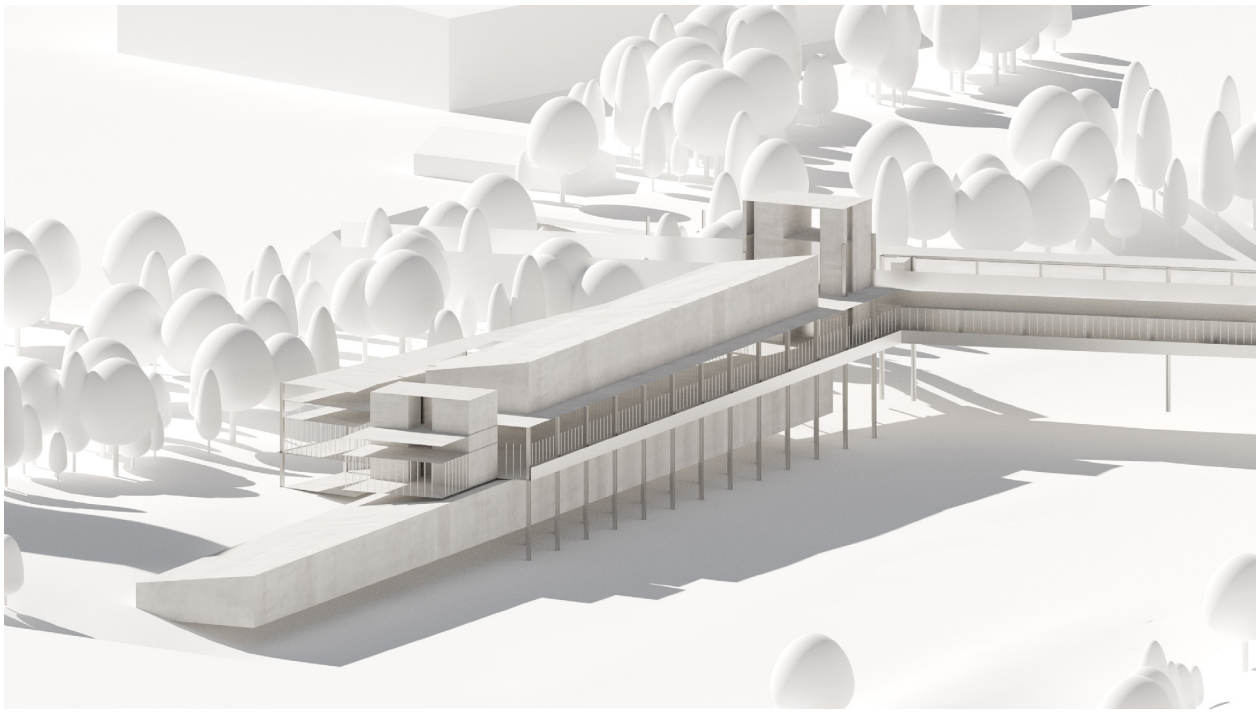


fig. 2.9.2 aerial view rendering, liren

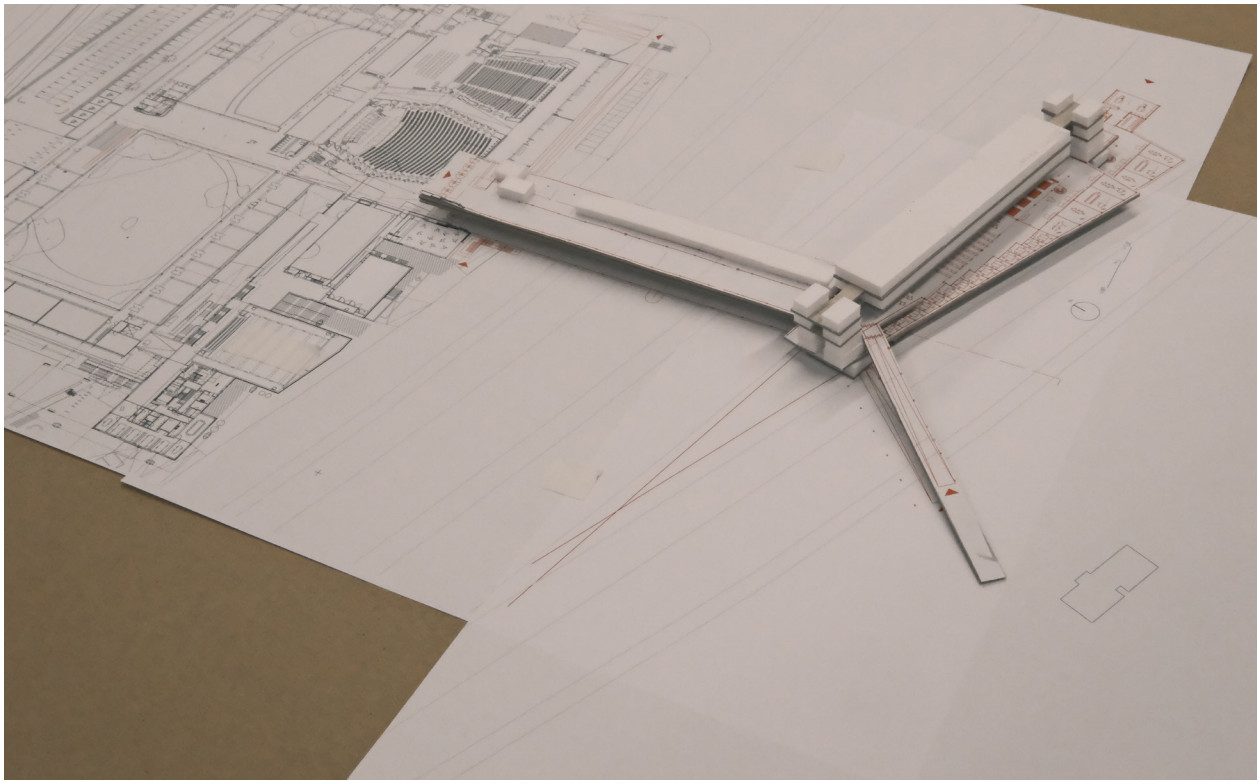


fig. 2.9.3 aerial view model, liren

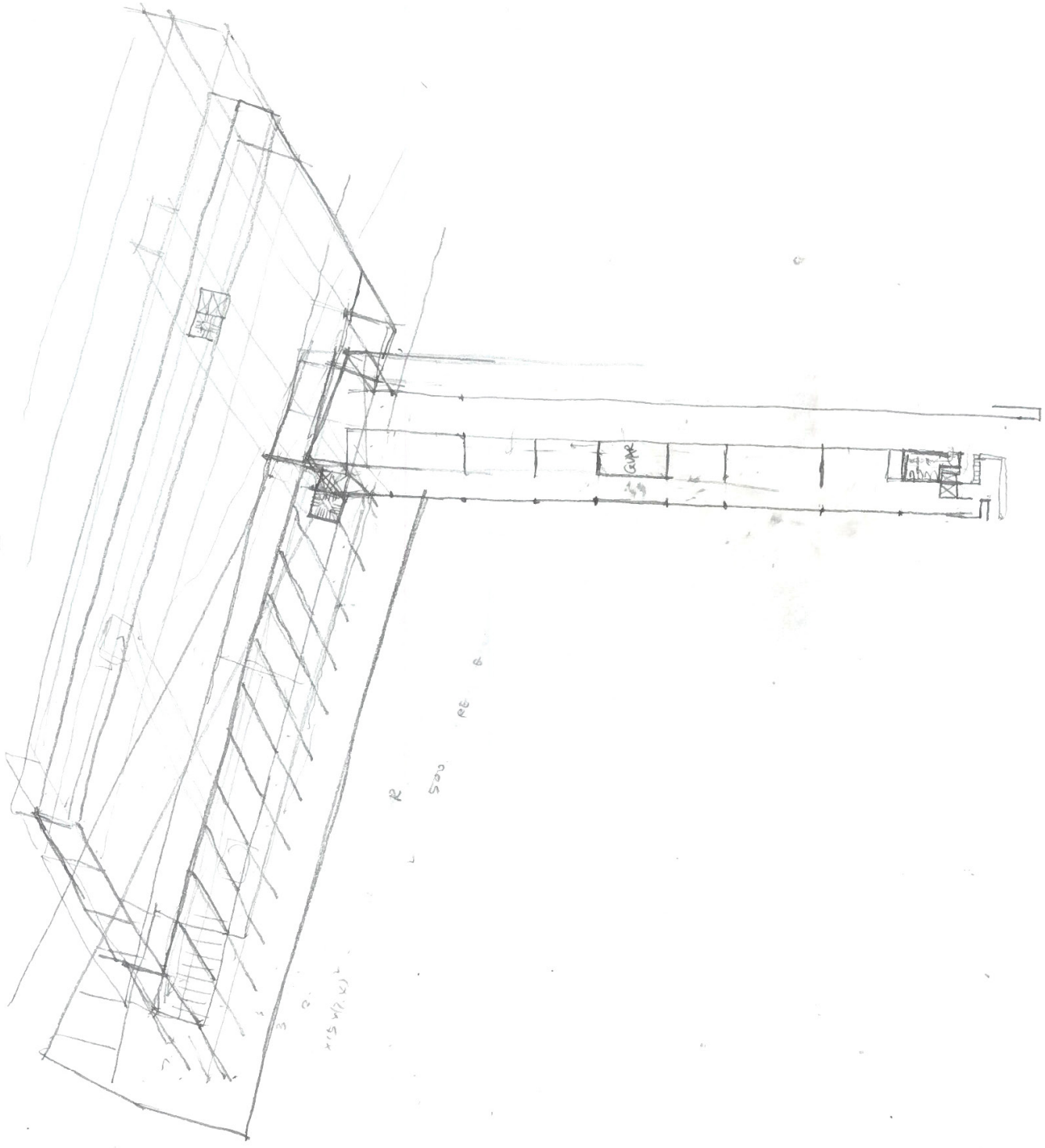


fig. 2.9.4 feasibility trial sketch, liren

plan draft

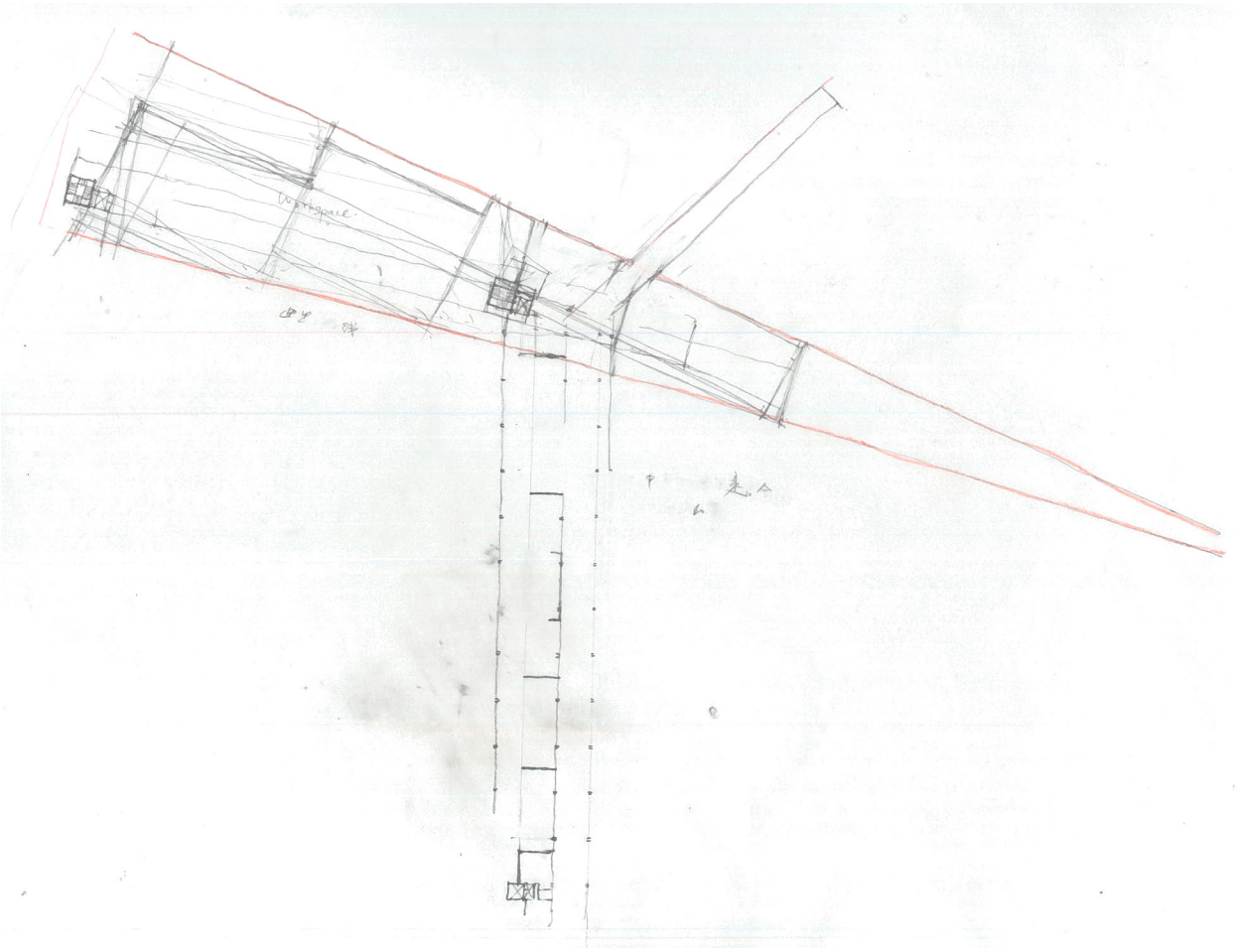
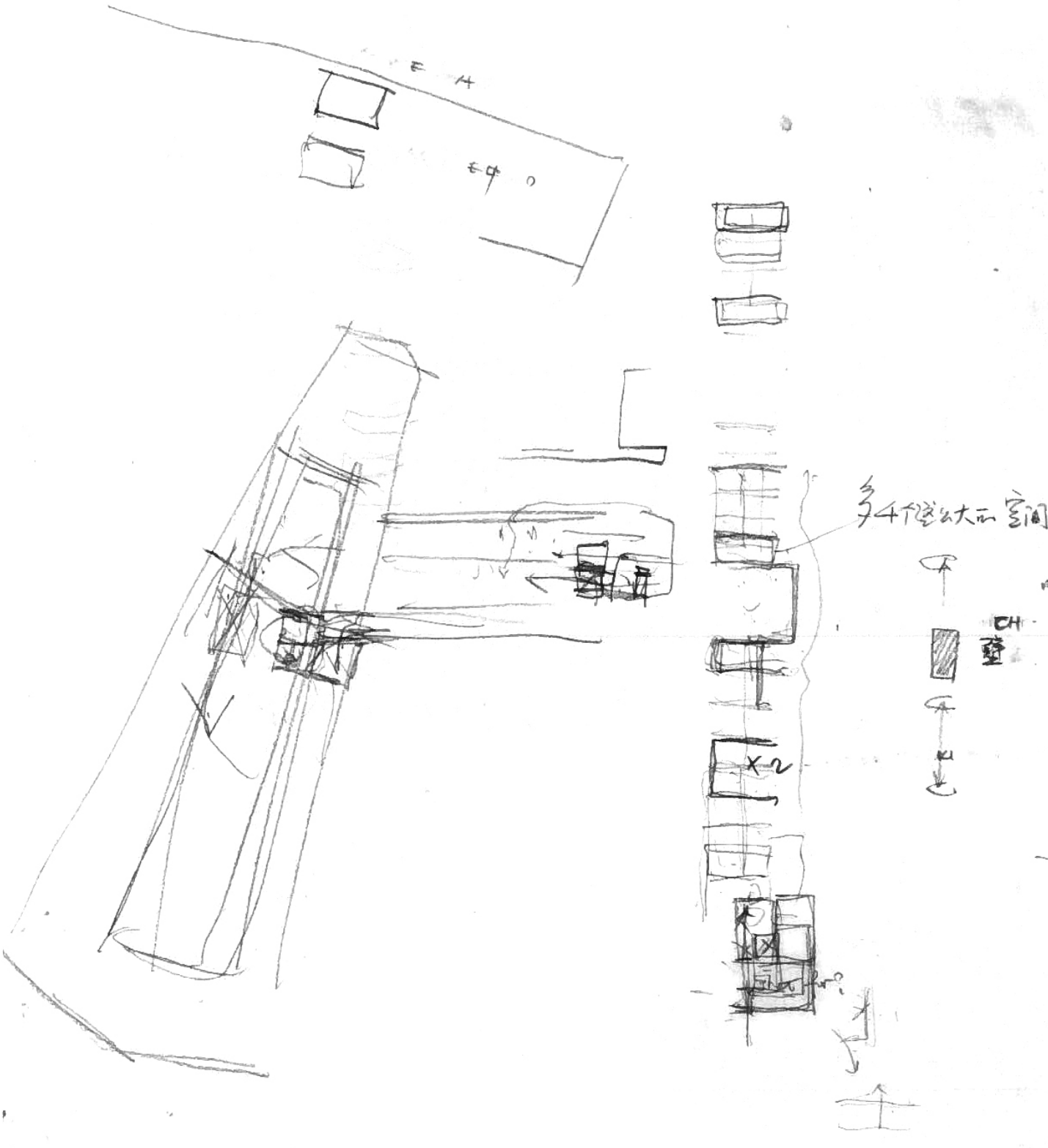


fig. 2.9.5 feasibility trial sketch, liren


多4个怪么大的空间
CH
壁
X2

plan draft

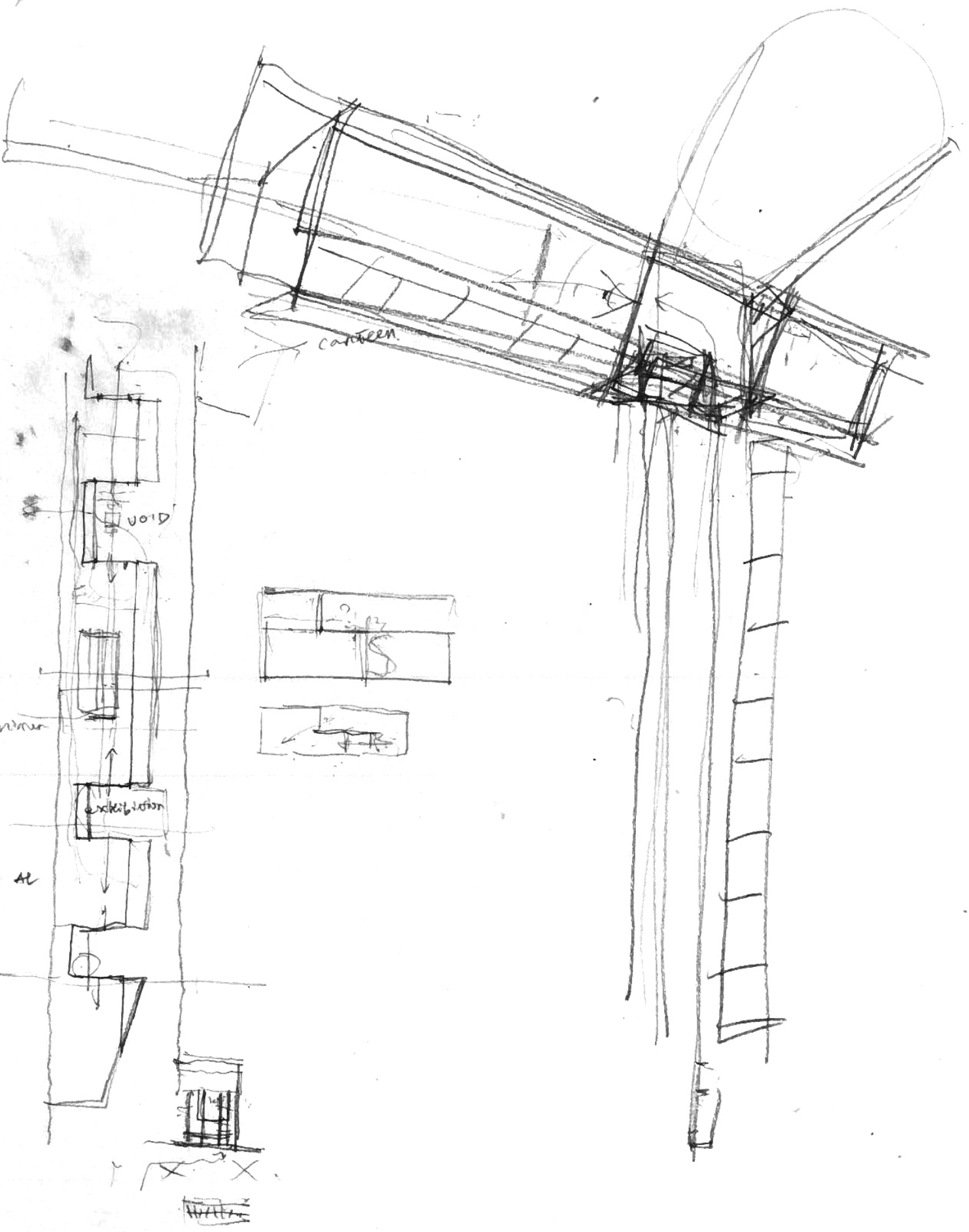


fig. 2.9.6 feasibility trial sketch, liren

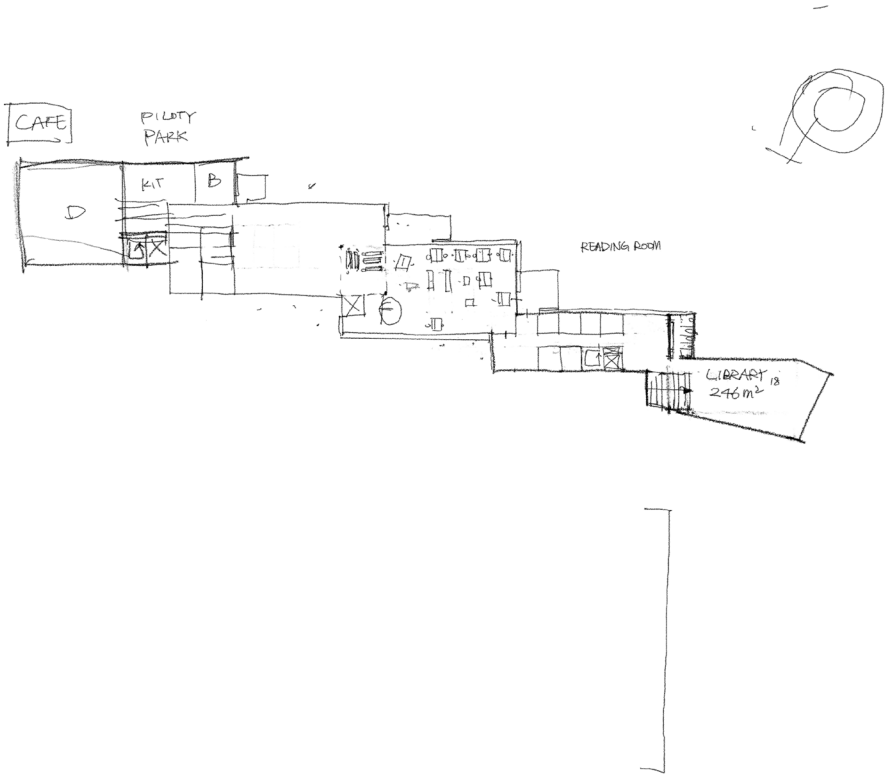


fig. 2.10.1 2f plan sketch, liren

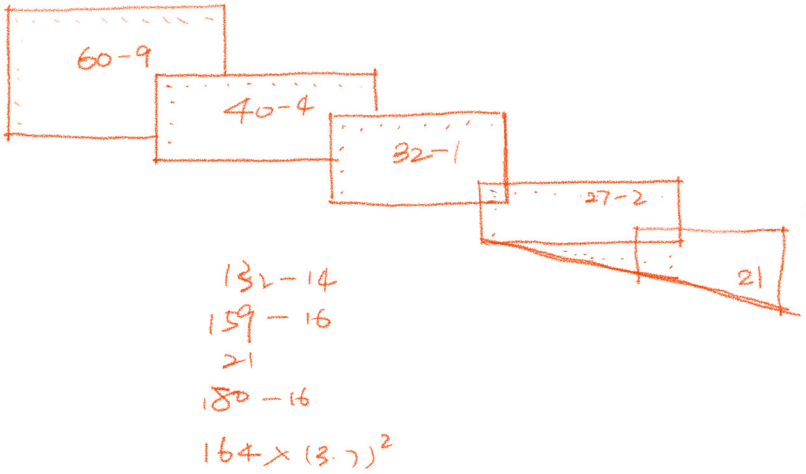


fig. 2.10.2 gf plan sketch, liren

plan draft

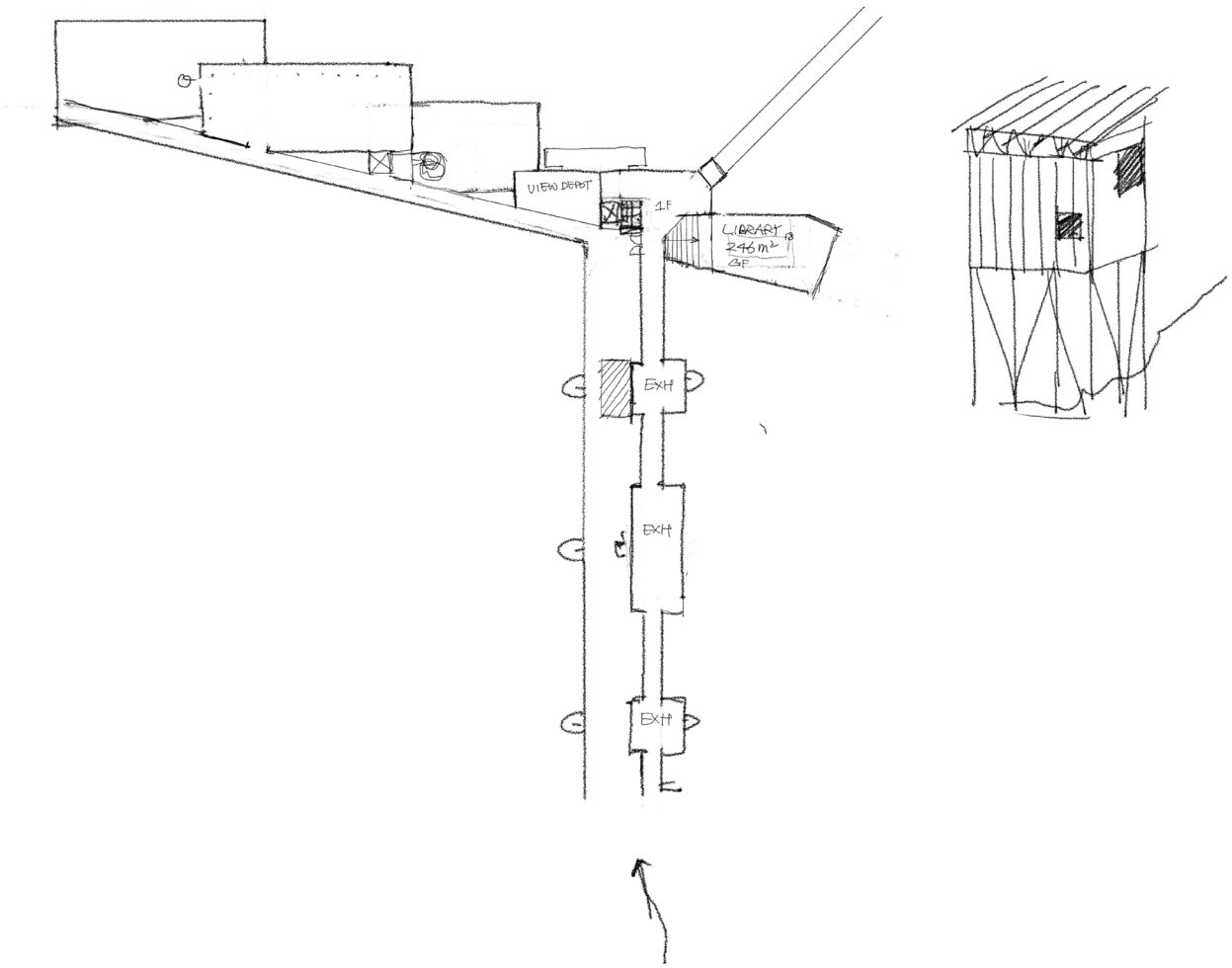


fig. 2.10.3 1f plan sketch, liren

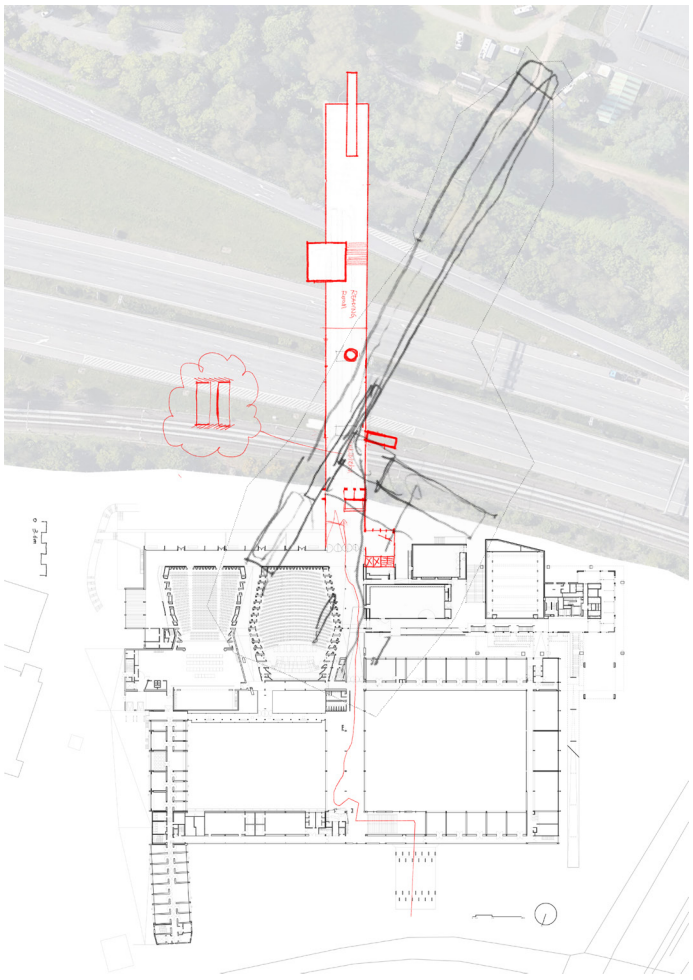


fig. 2.6.6 sketch , liren, daniel

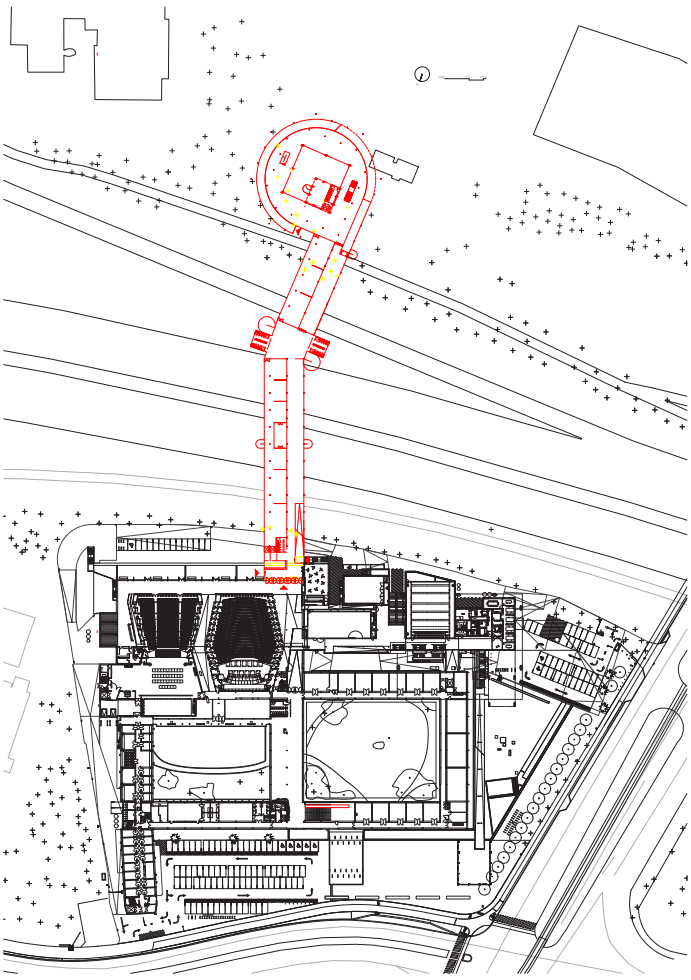


fig. 2.7.8 1f plan, liren

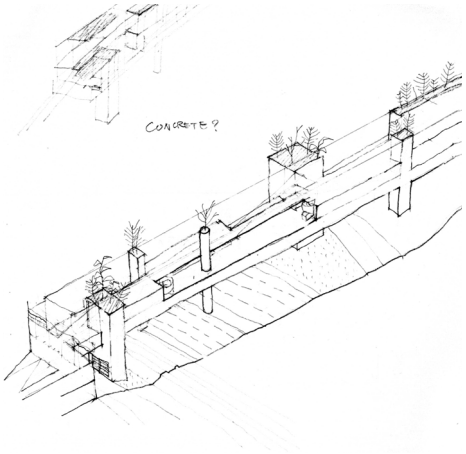


fig. 2.5.4 axonometric sketch, liren

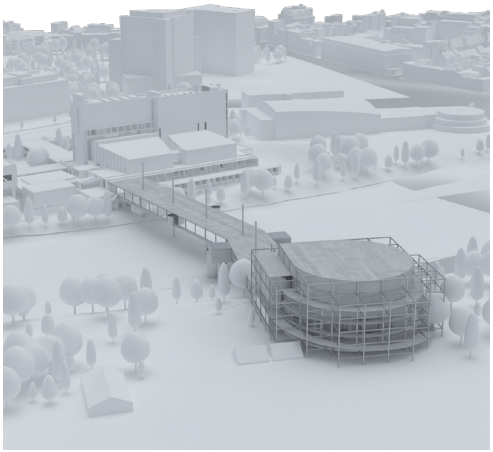


fig. 2.7.12 rendering aerial view, liren

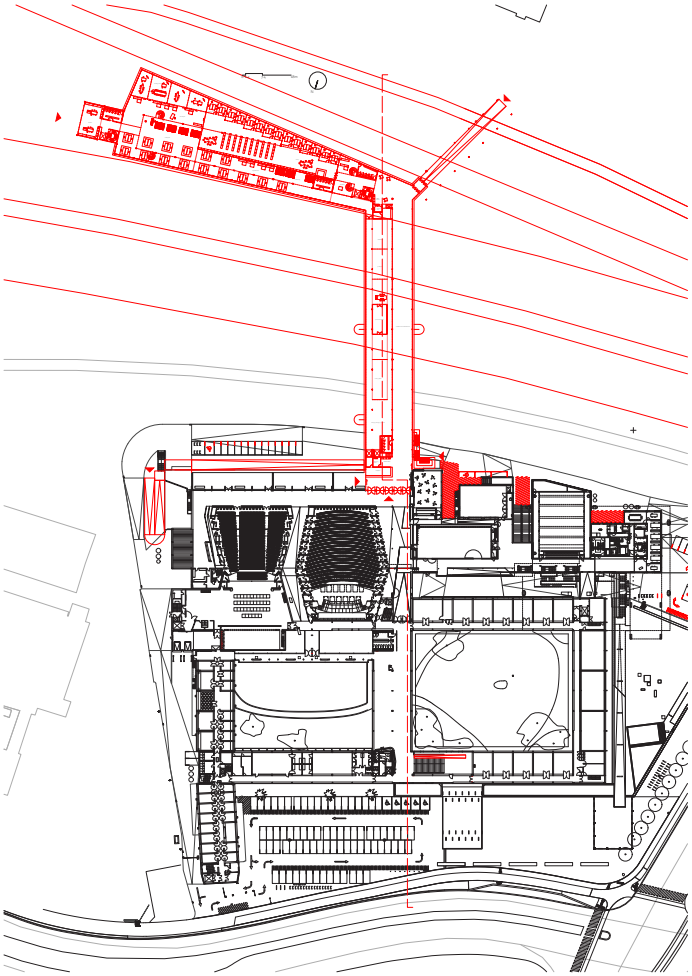


fig. 2.9.1 1f plan, liren

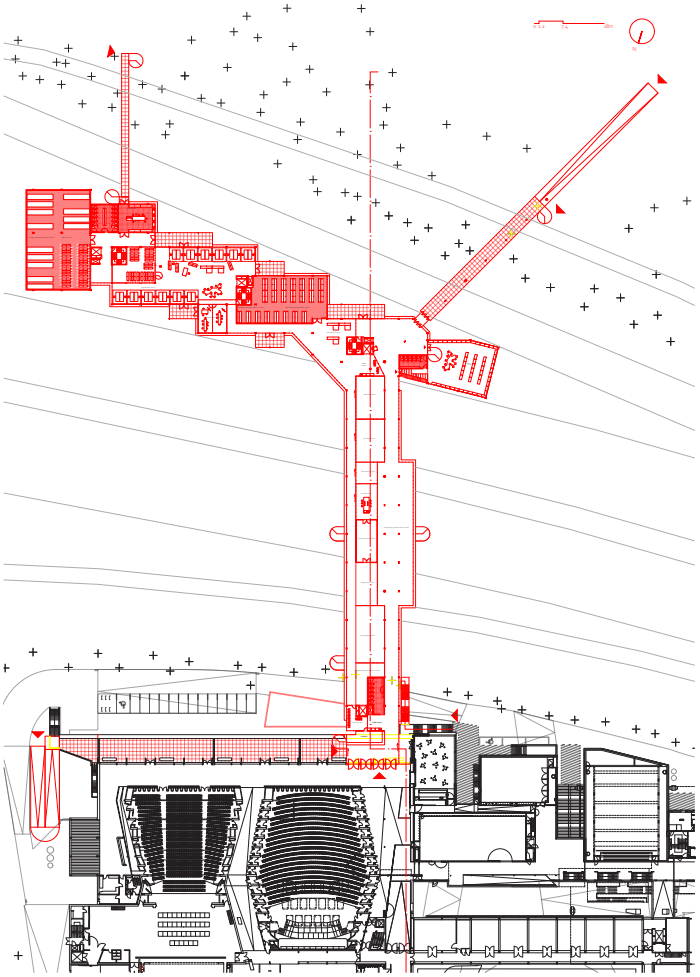


fig. 2.10.4 1f plan, liren

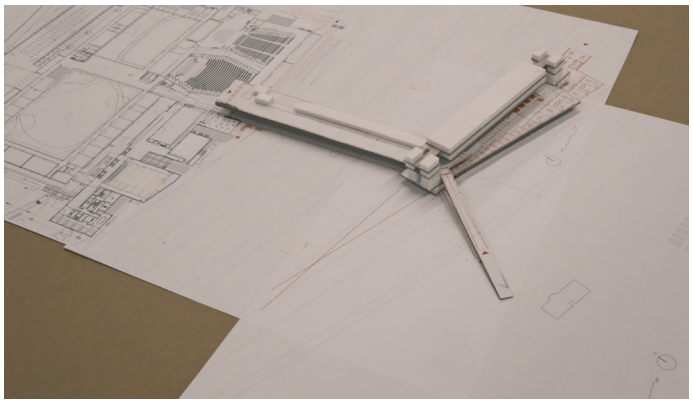


fig. 2.9.3 aerial view model, liren

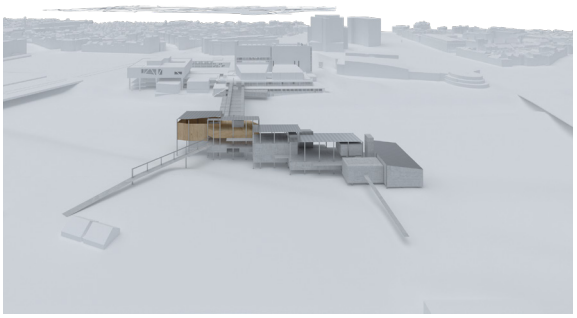


fig. 2.10.5 rendering, liren

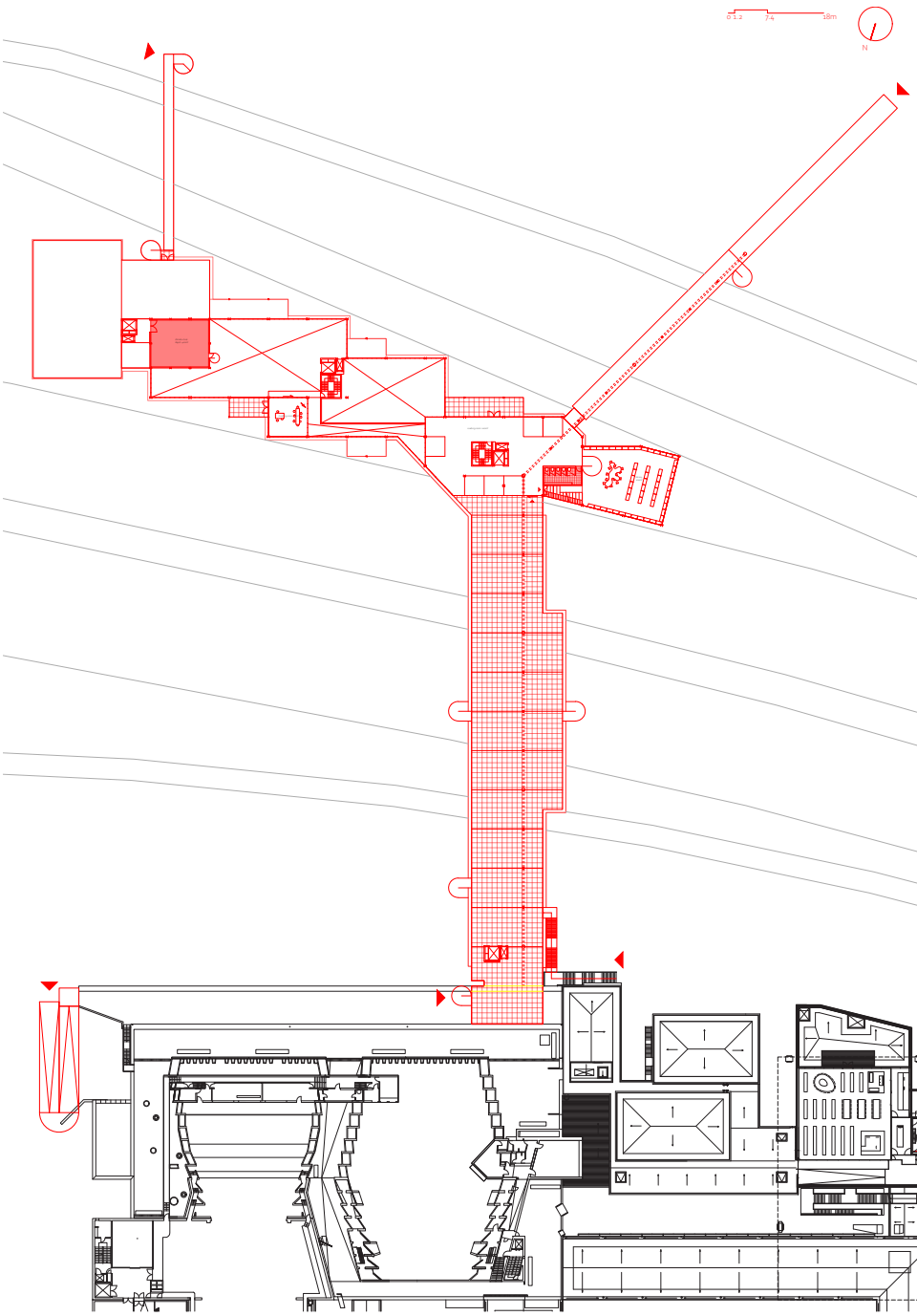


fig. 2.10.5 2f plan, liren

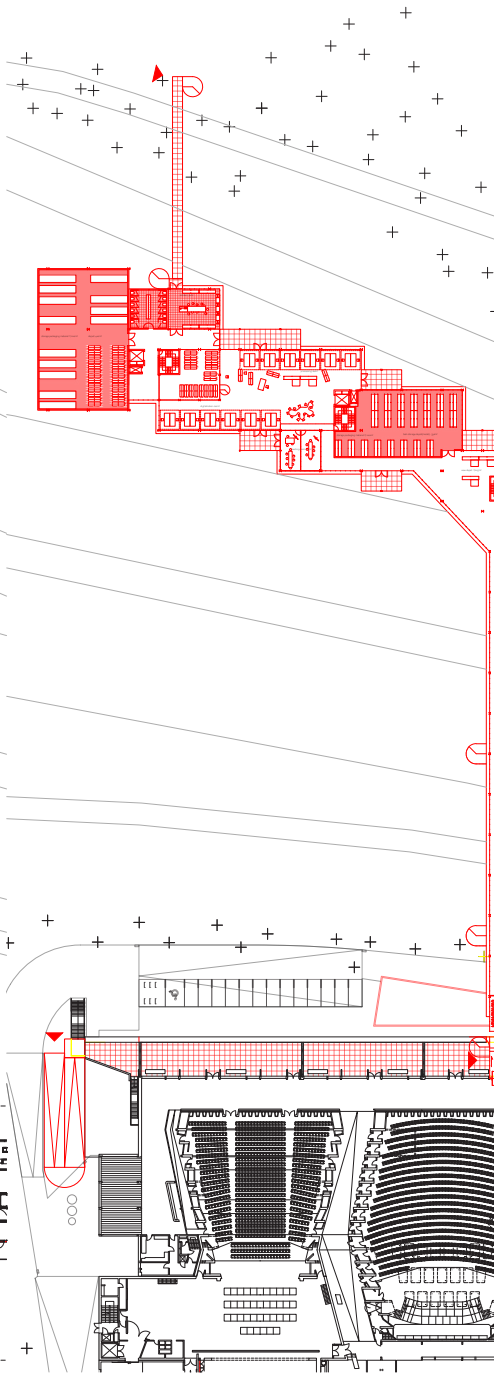


fig. 2.10.4 1f plan, liren

6th proposal

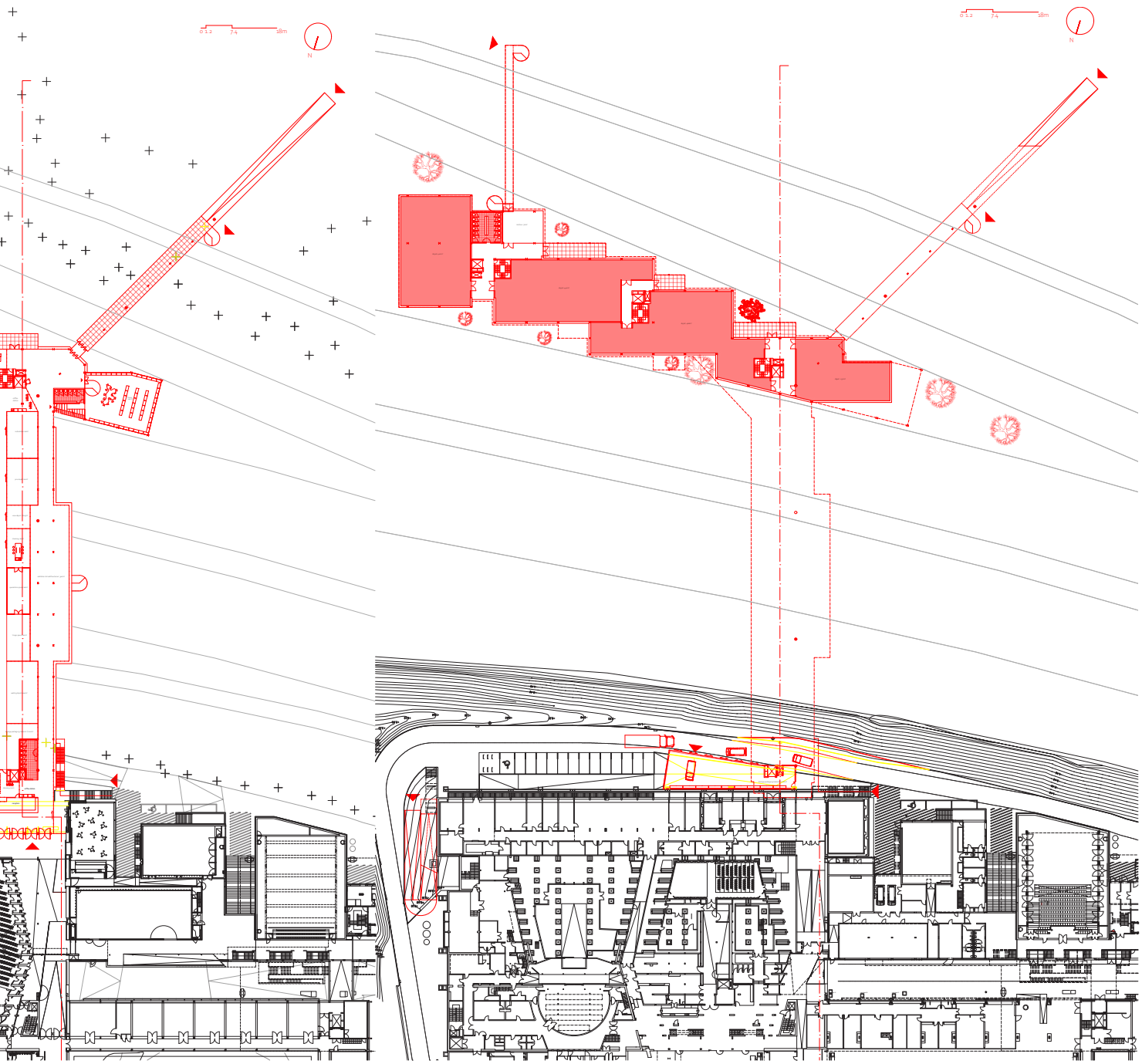


fig. 2.10.6 gf plan, liren

6th proposal



fig. 2.10.7 master plan, liren



fig. 2.10.7 view of antwerp expo from camperpark, liren



fig. 2.10.7 map antwerp expo, antwerpexpo



fig. 2.10.8 view of corridor on the west of blue hall, google earth

6th proposal



fig. 2.10.9 view of corridor on the west of blue hall with design, liren



fig. 2.10.10 view of south facade from logistics corridor, liren

6th proposal



fig. 2.10.11 view of south facade from logistics corridor with design, liren



fig. 2.10.12 view of ringroad from bridge jan van rijswijklaan, liren

6th proposal



fig. 2.10.13 view of ringroad from bridge jan van rijswijklaan wiith design, liren



fig. 2.10.14 view of ringroad from entrance of bike road on southeast side of the site, liren

6th proposal



fig. 2.10.14 view of ringroad from entrance of bike road on southeast side of the site with design, liren



fig. 2.10.15 view of corridor on the west of blue hall from afar, liren

6th proposal



fig. 2.10.16 view of deSingel from afar in camperpark, liren

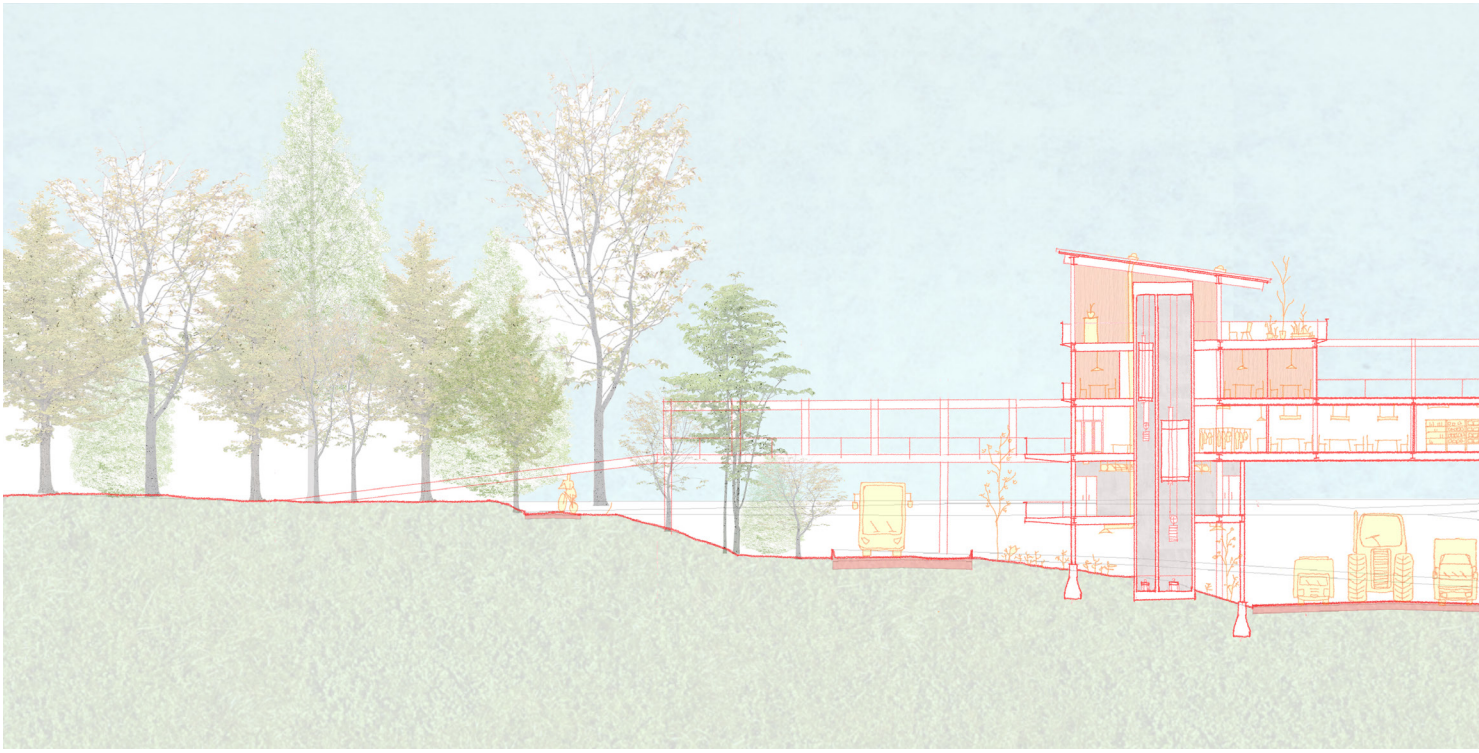
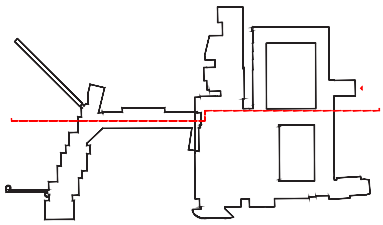
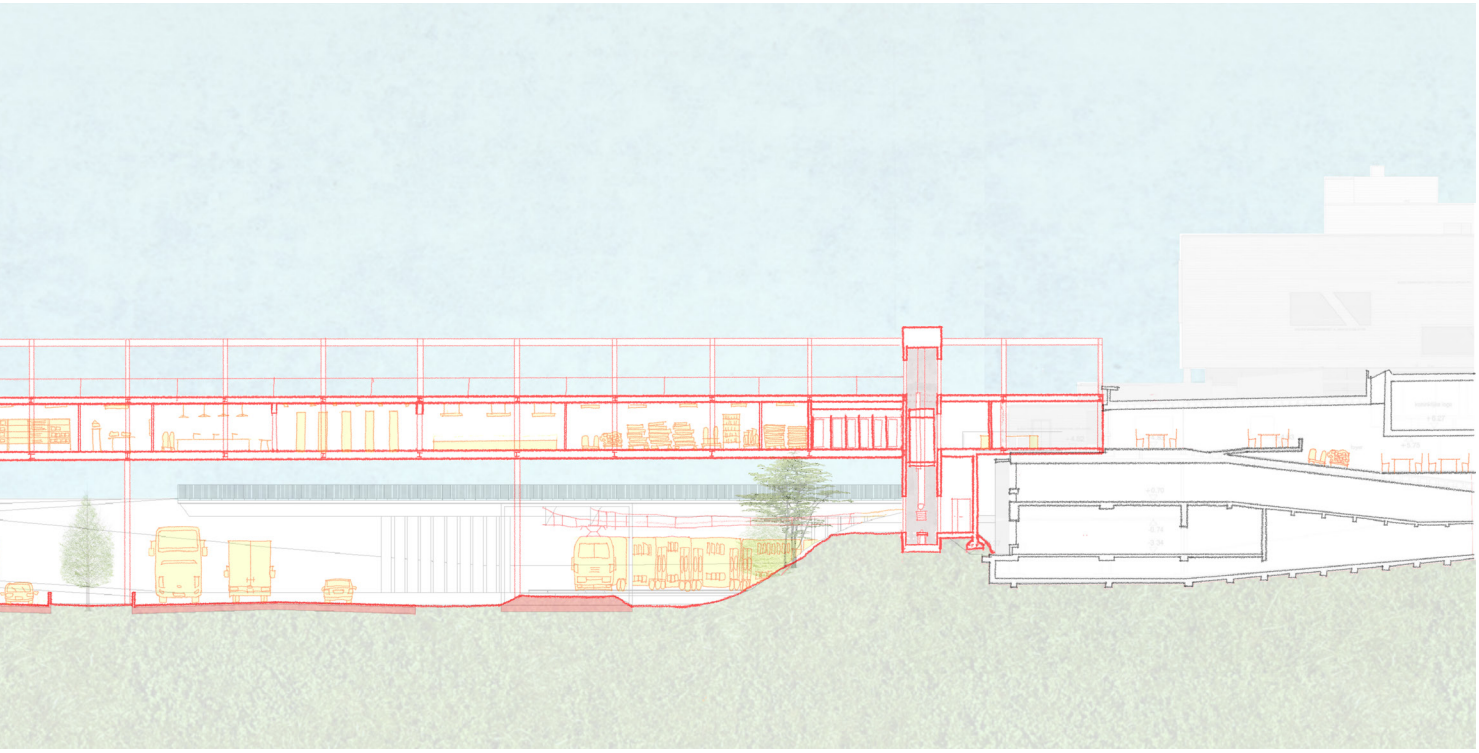


fig. 2.10.17 longitudinal section, liren



6th proposal



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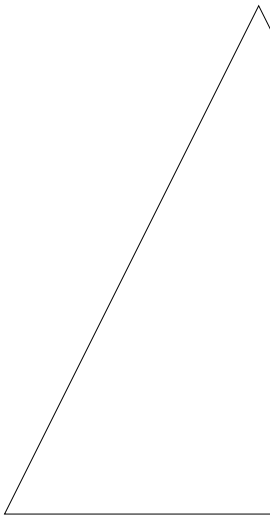


SCHOLARLY INTERPRETATION
OR PUBLIC EXHIBITION

WORKSPACE

EXHIBITION

?

?

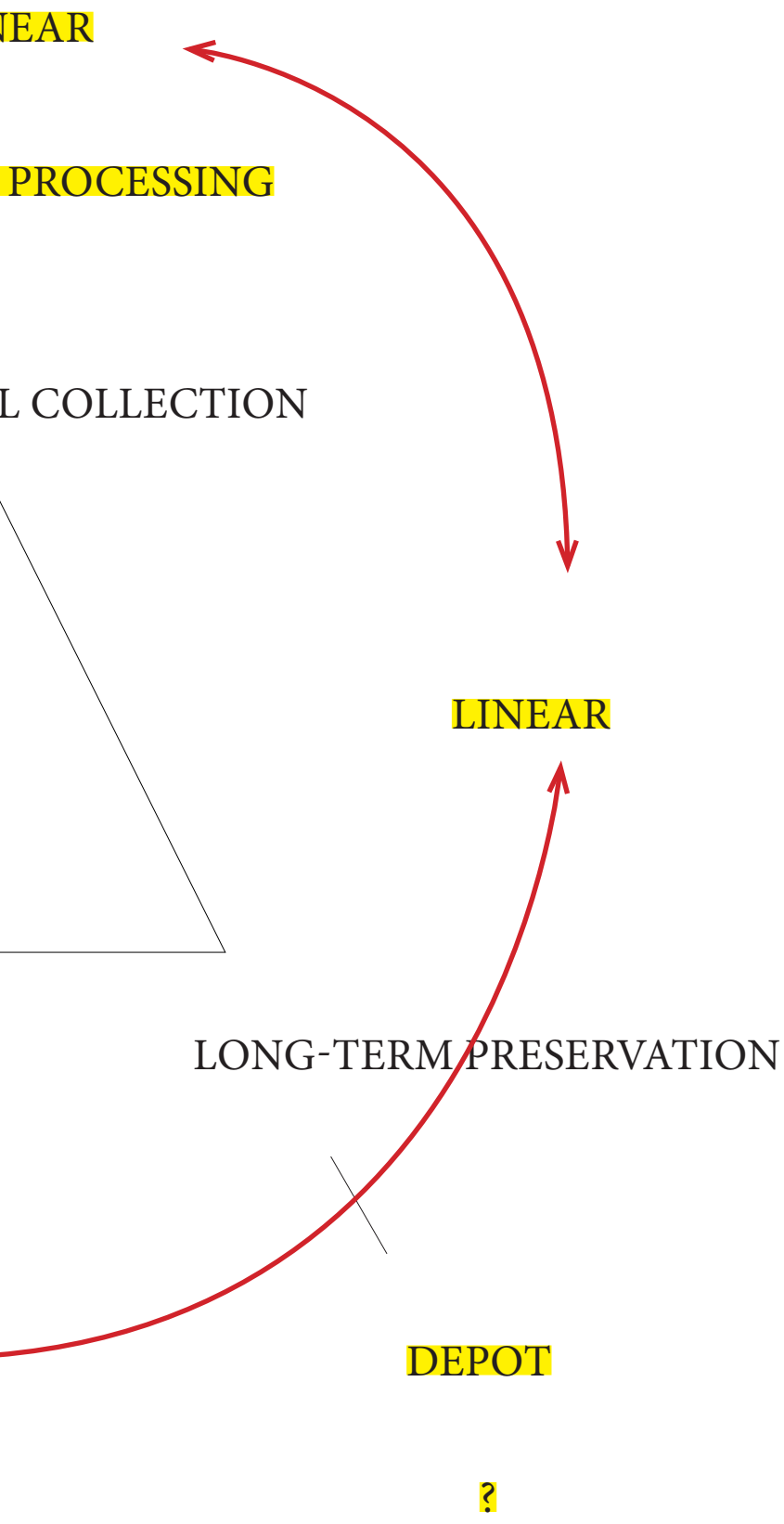
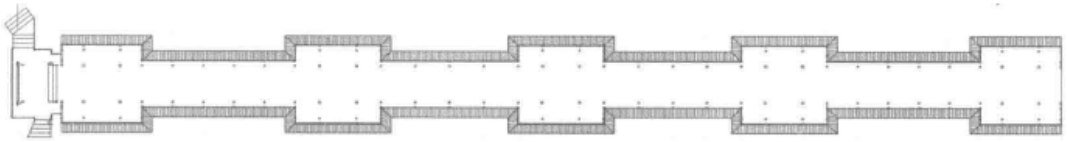

NEAR
PROCESSING
L COLLECTION
LINEAR
LONG-TERM PRESERVATION
DEPOT
?



图 3－2－11　三江林溪乡程阳桥永济桥（摄影：周巍）



程阳永济桥平面图

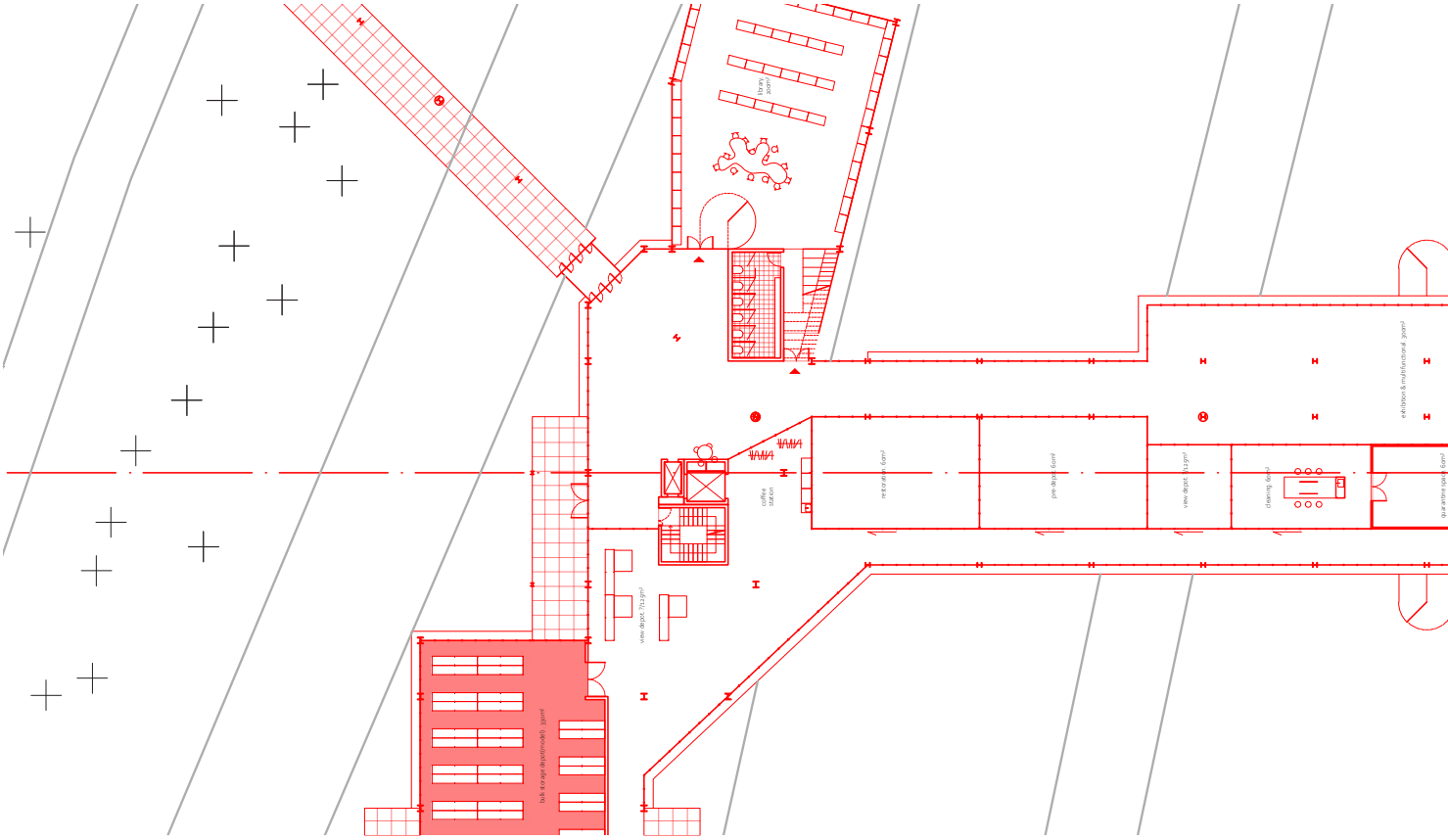
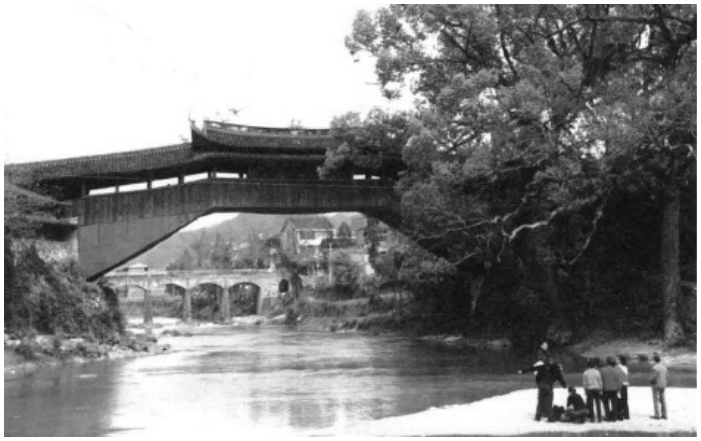
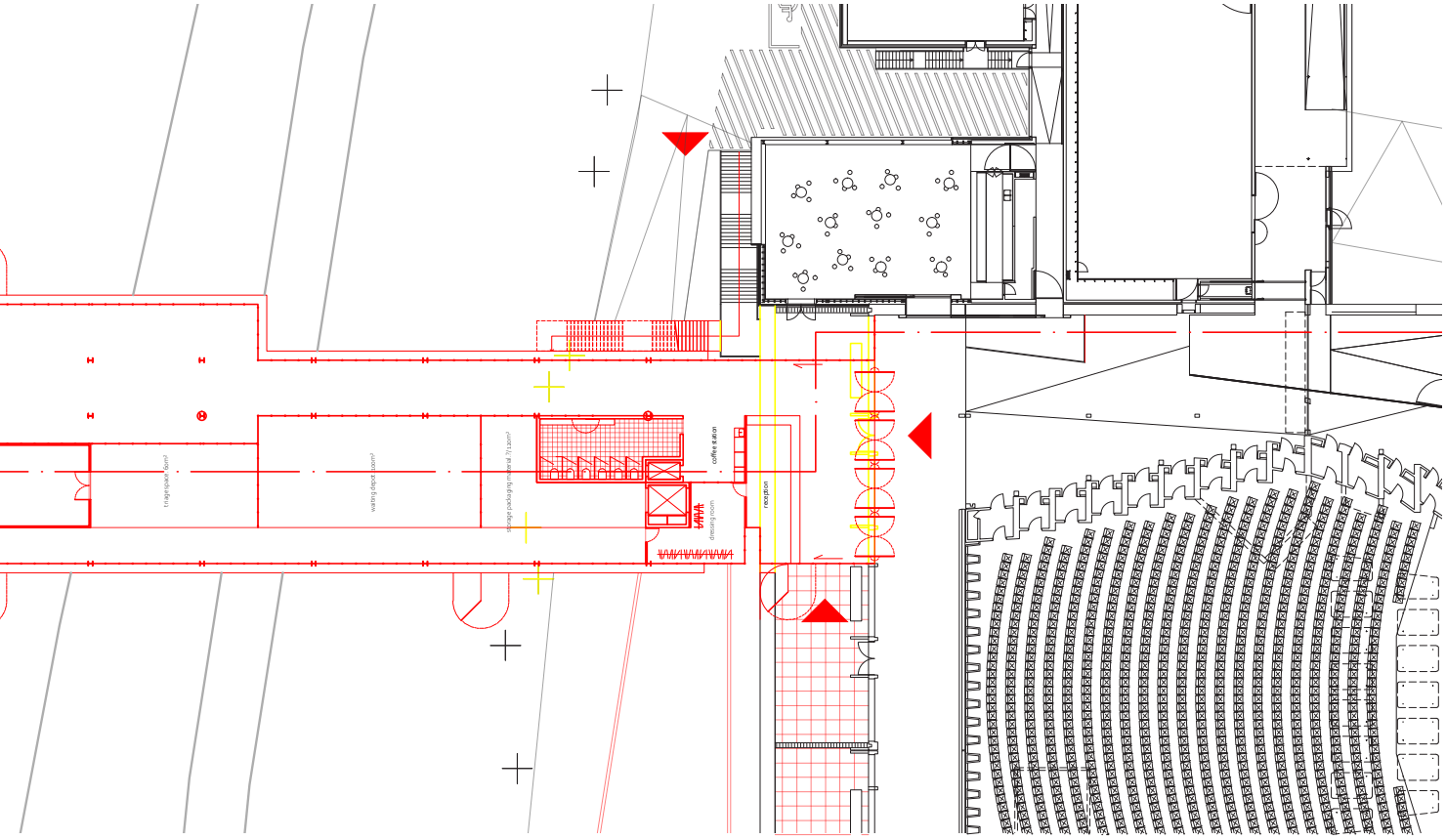
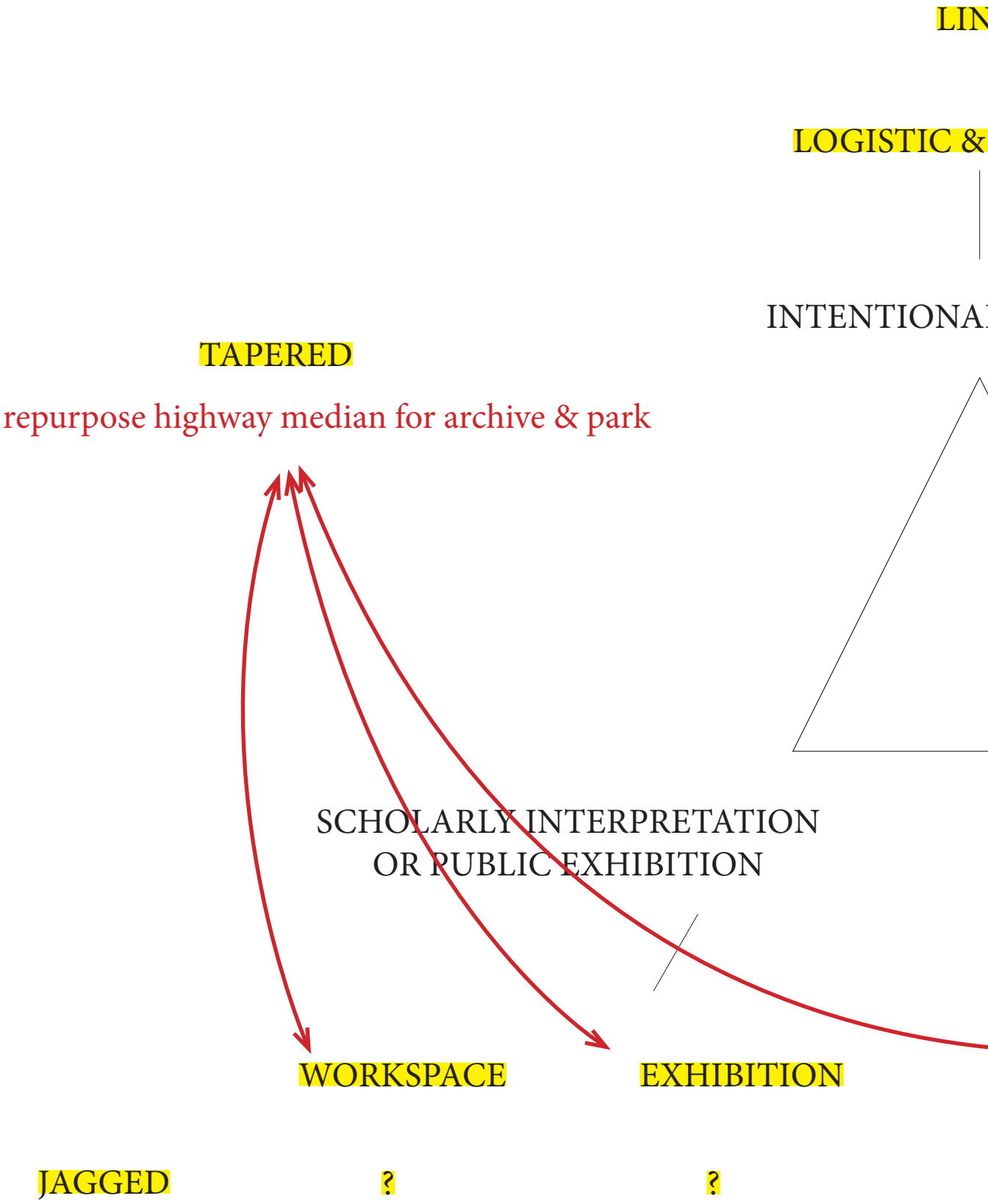


fig. 2.10.18 first floor plan pocket space on bridge, liren

6th proposal



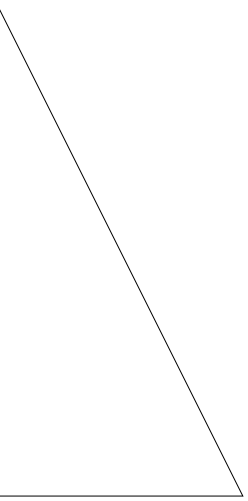



LIN
LOGISTIC &
INTENTIONA
TAPERED
repurpose highway median for archive & park
SCHOLARLY INTERPRETATION
OR PUBLIC EXHIBITION
WORKSPACE
EXHIBITION
JAGGED
?
?

NEAR

PROCESSING

L COLLECTION



LINEAR

LONG-TERM PRESERVATION



2500m²

DEPOT

?

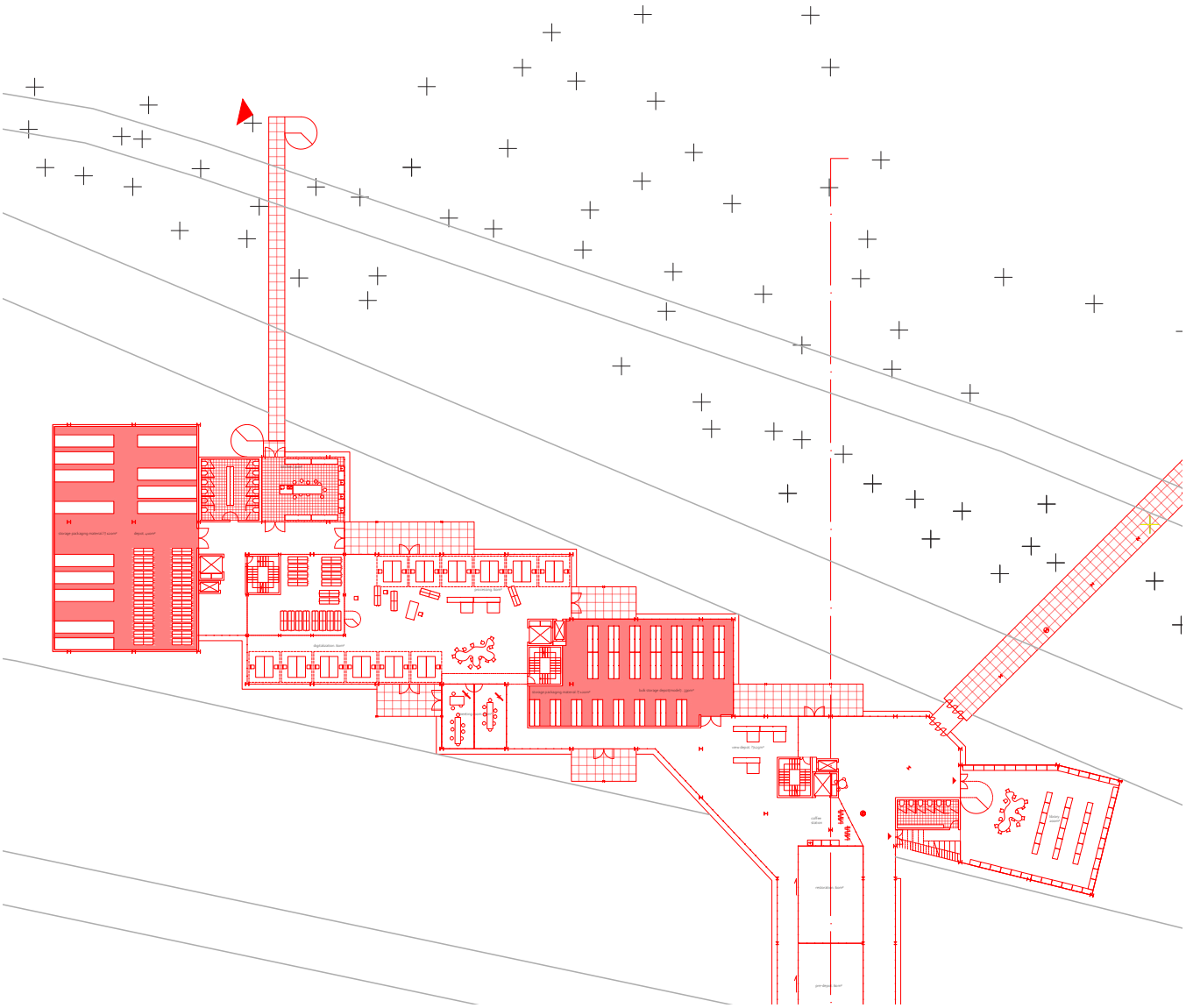


fig. 2.10.19 function layout in corner joint rectangle space, liren

6th proposal

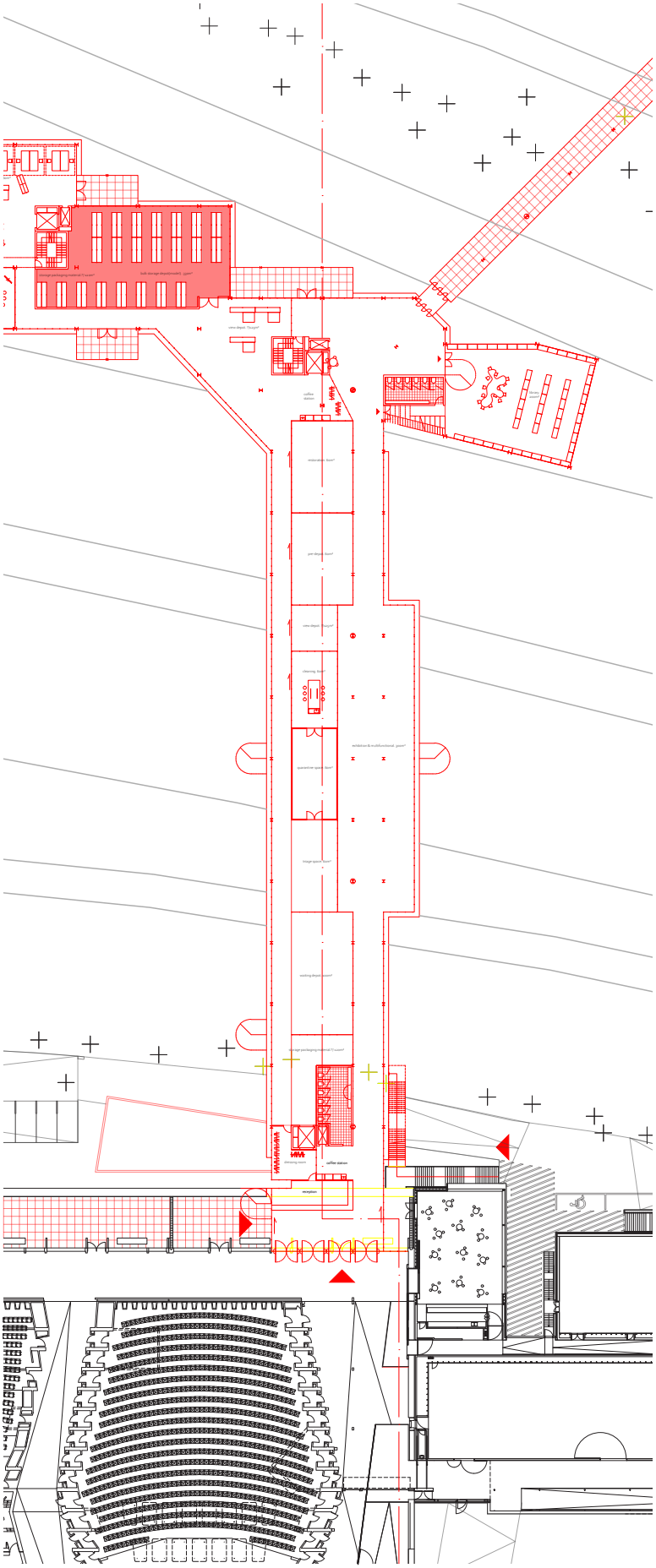


fig. 2.10.20 function layout in linear space, liren

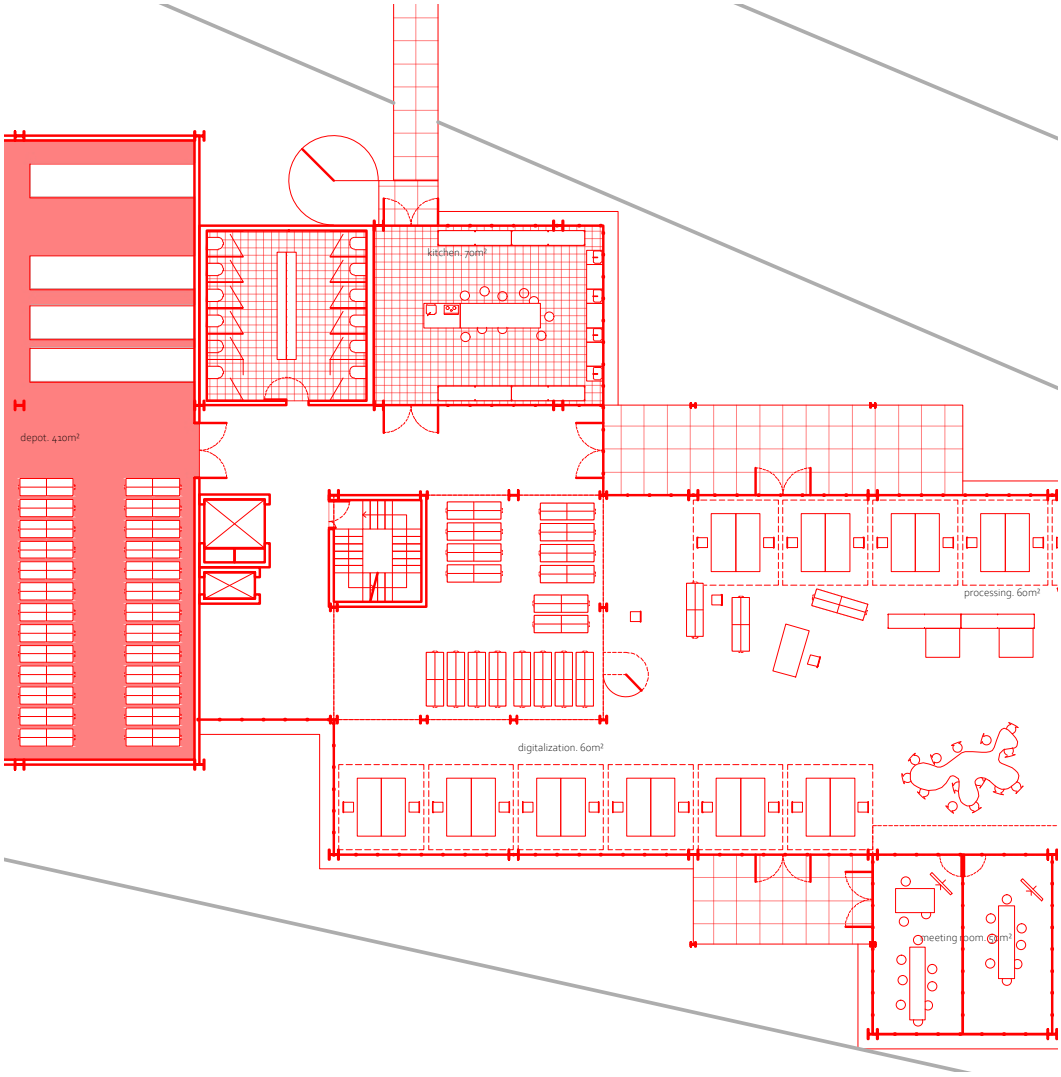


fig. 2.10.21 1f plan of scenography space, liren

6th proposal

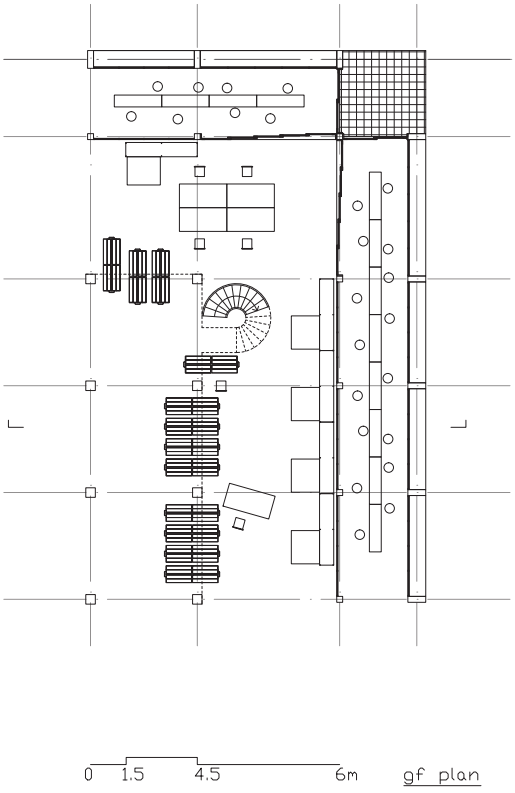




fig. 2.10.22 scenography proposed in part 1, liren

LIN

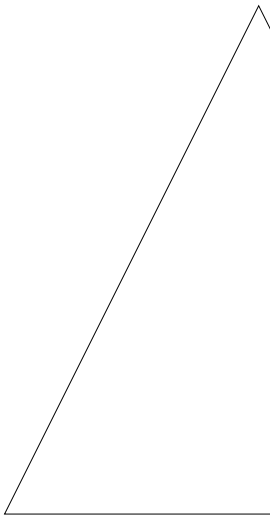
LOGISTIC &

NOISY

INTENTIONA

IRRAGULAR

repurpose highway median for archive & garden.



SCHOLARLY INTERPRETATION
OR PUBLIC EXHIBITION

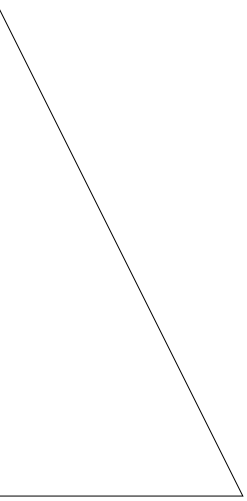
WORKSPACE EXHIBITION

? ?

NEAR

PROCESSING

L COLLECTION



LINEAR

LONG-TERM PRESERVATION



DEPOT

?

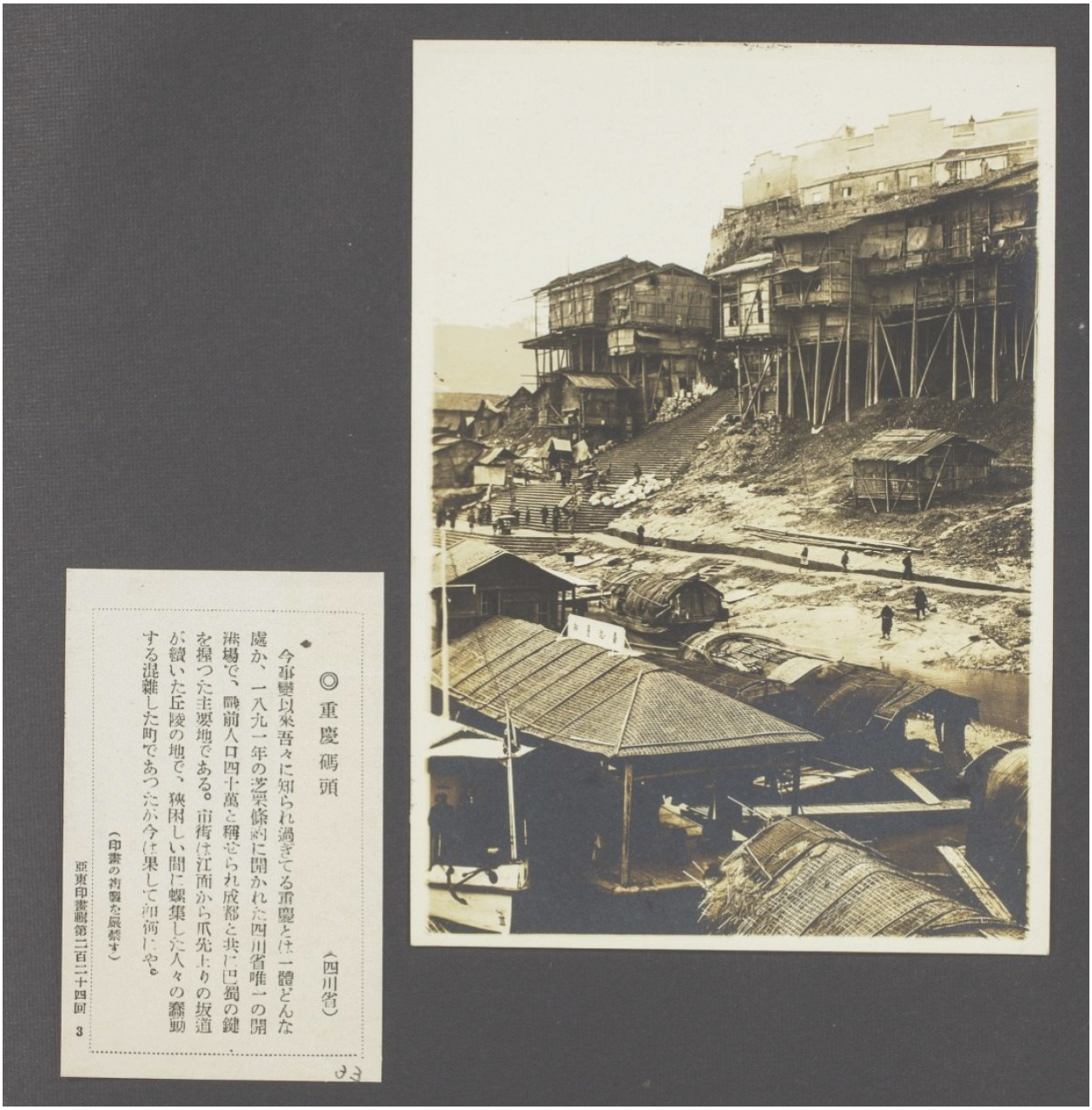


fig. 2.10.23 wharf , chongqing, china, ca 1924~1944, 亚东印画辑

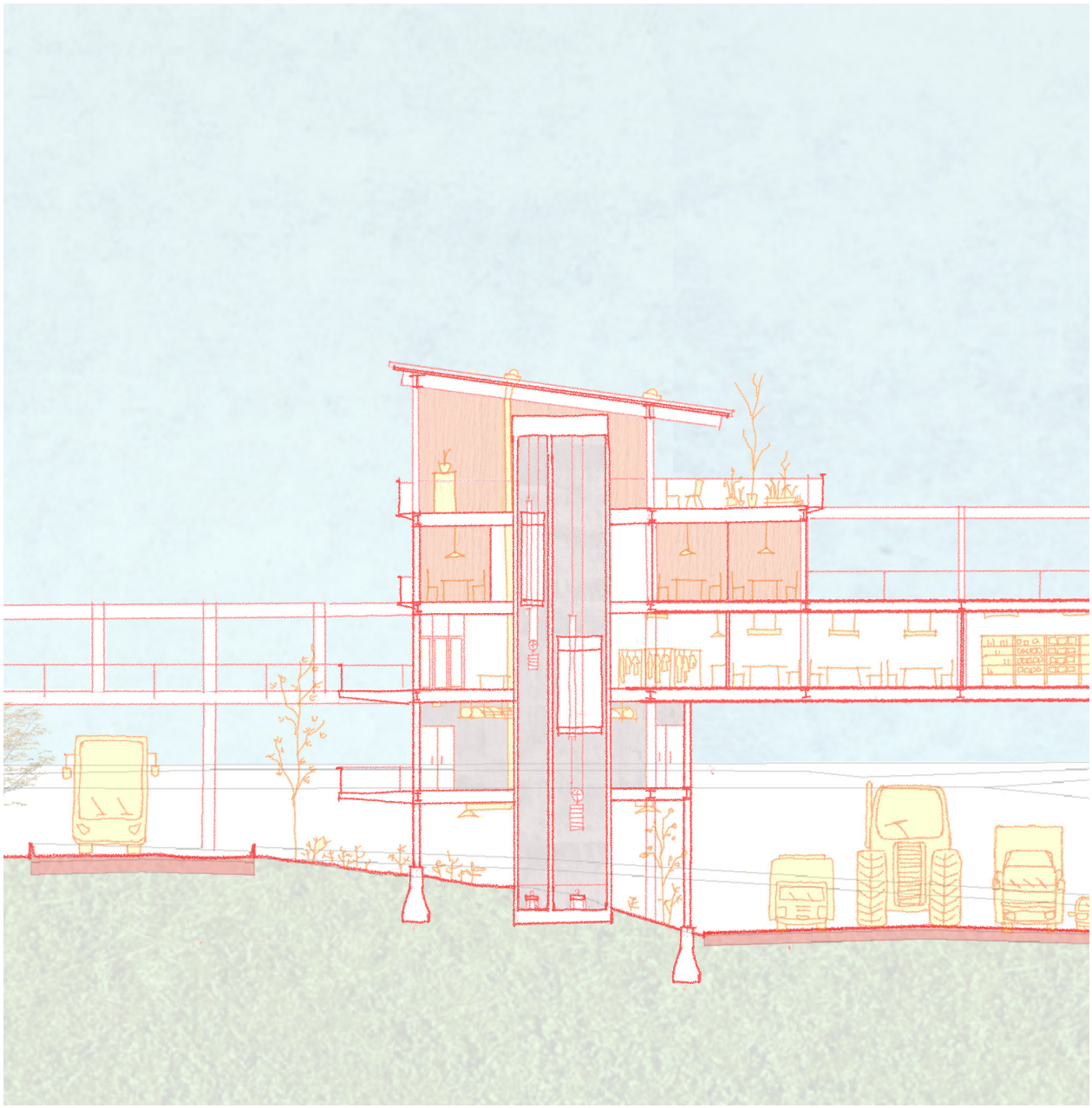
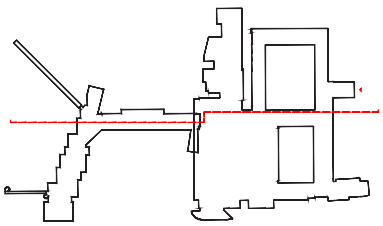


fig. 2.10.22 longitudinal section(fragment), liren



structure

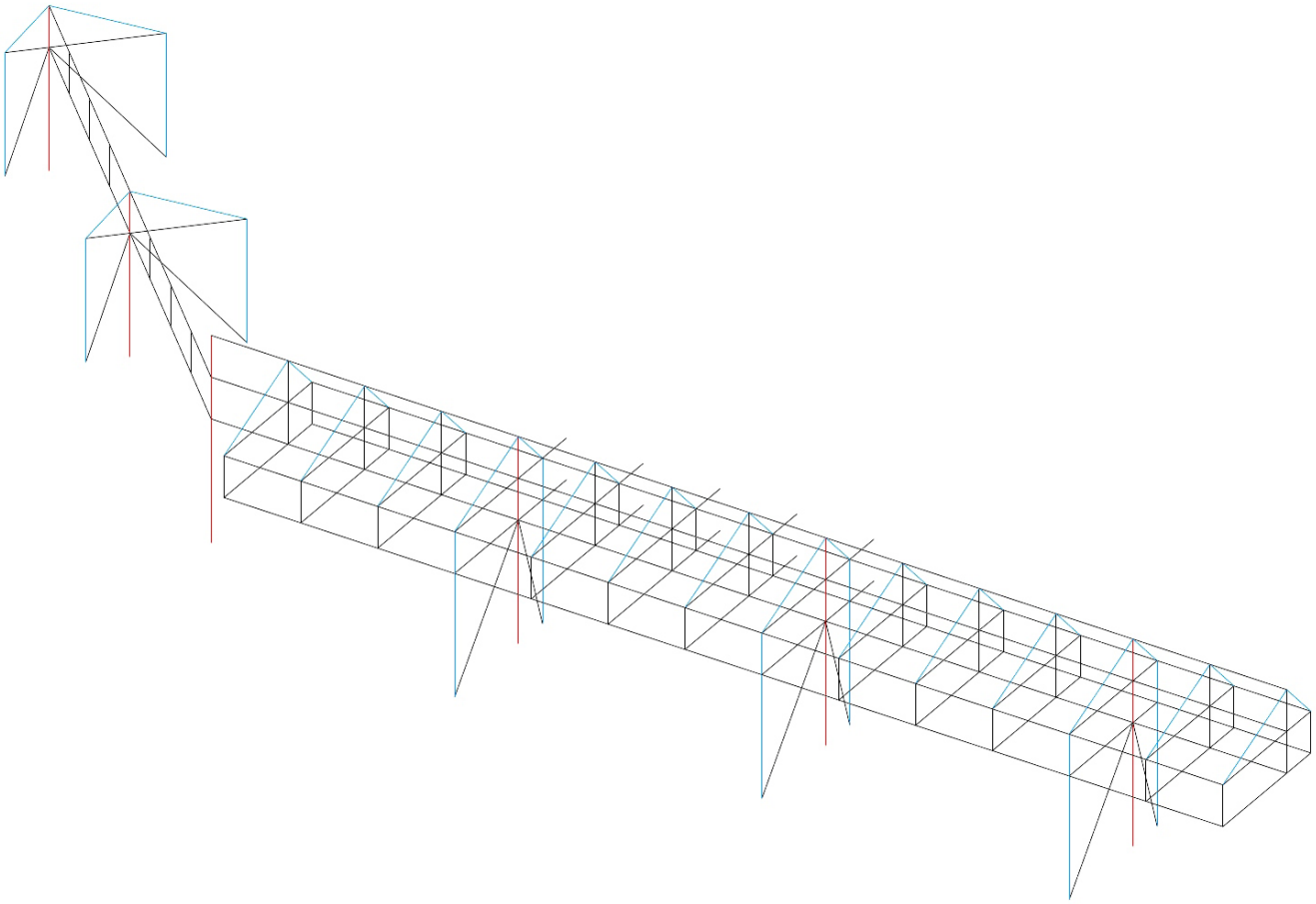


fig. 2.10.23 structure diagram, liren

feedback

问题：
讲一下该建筑作为 archive 是如何运作的？该建筑体现了 archive 的什么建筑文化？和你之前的研究有什么联系？
如何思考材料的使用问题？
这种 zigzag 的形式的原因是什么？ 500 平的 archive 体量以及不规则的用地选择平面化布局是为什么？为何不考虑纵向的排布？不遮挡望向 deSingel 的视线。
能理解使用来自自身文化背景的案例，是否有考虑独属于安特卫普文化的记忆？
neutelings riedijk 是荷兰人
补充人视角的图片，考虑从这个角度可以看到远处什么样子的景致。
你设计的建筑预期使用年限是多久？

评论：
把该项目做成生态走廊是否可行，从公园到山丘跨过 ringroad 再到对岸的露营地再去往更远的自然？在 landscape 的角度能否做到连接左右两侧？从小尺度来说的地面连接很难，但是可以考虑空中的部分。

out of box 的一个想法，比较大胆，同时也会遇到很多问题。
在高速绿化带上建造是比较困难的，它非但有噪音和空间的限制，还有交通事故疏散安全区等考量，当然这个有讨论空间，并且有一个优势就是它的确是一个相对比较永久的，或许在这里仅仅放置 archive，然后让属于城市的部分放在桥上或者放置在 deSingel 里面

刚刚开始讲的时候对于一个没有听过你的项目的人来说还是进入得太快了，希望可以多放几张对于安特卫普城市历史发展理解的图片。
上一稿的直线形式更加有力。

q:
how does the building function as an archive? what architectural culture of archives does this building reflect? how does it relate to your previous research?
how do you approach the use of materials?
what is the reason for the zigzag form? with a 500 sqm archive and irregular land, why choose a flat layout? why not consider a vertical arrangement? (a: it should not block the view towards deSingel.)
can understand the use of examples from your own cultural background, but have you considered memories unique to antwerp's culture?
neutelings riedijk is dutch.
include images from a human perspective, considering what views might be visible from that angle.
how long is the anticipated lifespan of your architectural design?

c:
is it feasible to turn this project into an ecological corridor, connecting the park to the hill, crossing the ring road, then leading to the camping site on the other side and further into nature? from a landscape perspective, is it possible to connect the two sides? at a smaller scale, ground-level connection is difficult, but you can consider the aerial parts.

an out-of-the-box idea, quite bold, but will face many challenges.
building in a high-speed greenbelt is quite difficult; not only are there noise and spatial limitations, but also considerations for traffic accident evacuation and safety zones. of course, this is open for discussion, and one advantage is that it could be a relatively permanent structure. perhaps here, only the archive could be placed, while the parts belonging to the city could be placed on the bridge or within deSingel.

when you first started talking, for someone unfamiliar with your project, it felt like an entry too fast. it would be helpful to include more images to understand the historical development of antwerp.
the linear form from the previ-