储立人

chǔ lìrén interiors <u>b</u>uildings <u>c</u>ities <u>s</u> 25 <u>msc</u> 4 <u>p</u>alace <u>archiving architecture</u> project journal



tudelft faculty of architecture and the built environment graduation studio 2024~2025 interiors buildings cities msc3,4 palace: archiving architecture project journal

part 4

liren chu

\daniel

(bridge)
whole other thing beyond it
beginning of a park
the end of stretch could be simply more like a bridge
it could be outside and become a piece of landscape
at a certain point drop
at the end it becomes a piece of park
and a piece of cultural complex

(depot)

weird to walk along 100 meters to get to this point go through a little bridge to get into this building. why what happens at that moment?

(implicit thing) a sort of mirror of the profile of blue hall here there is a sort of space that i can make a choice

you should not only draw the bridge



fig. 4.1.1 sketch, daniel

fig. 4.1.2 1:200 model to discuss on

\susanne

a stretch and one cube make one important space in the middle of the bridge where you can put a reception for users to be a specticular experience whats the serious event

the facade of the cube shifts more to the top so that the lower floor can make alliances with the stretch

be aware that there are factors that you haven't taken into holistic imagination

in the model into the context and finding the reasons to add the sort of complexity of maybe making more of a moment in the sequence here, maybe more of a moment when you're in the middle of the highway, I imagine that one is spectacular, and making a moment where it ends and emerges into the nature. And then maybe also he feels a lot of limitation to that because it needs to stay a cube

you can slowly unpack it, let it continue

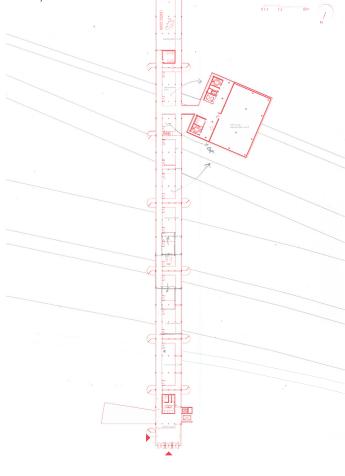


fig. 4.1.3 plan to discuss on

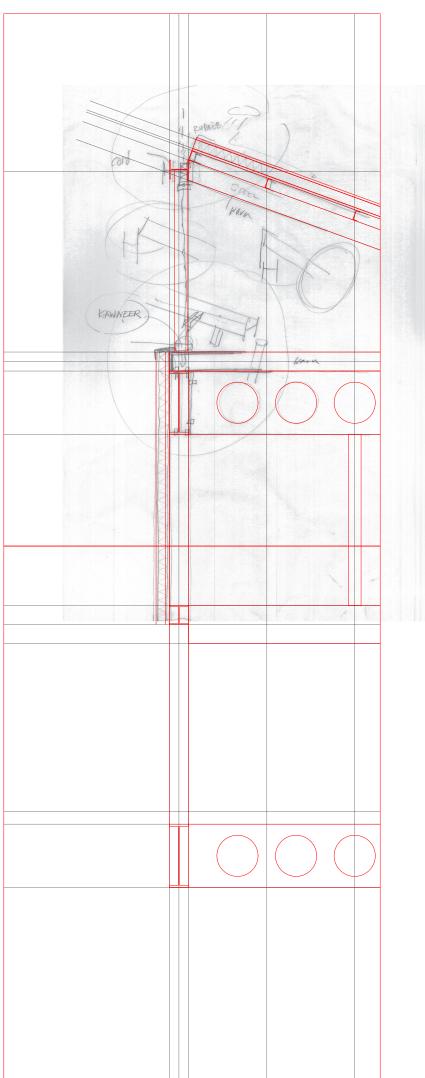


fig. 4.1.4 detail sketch

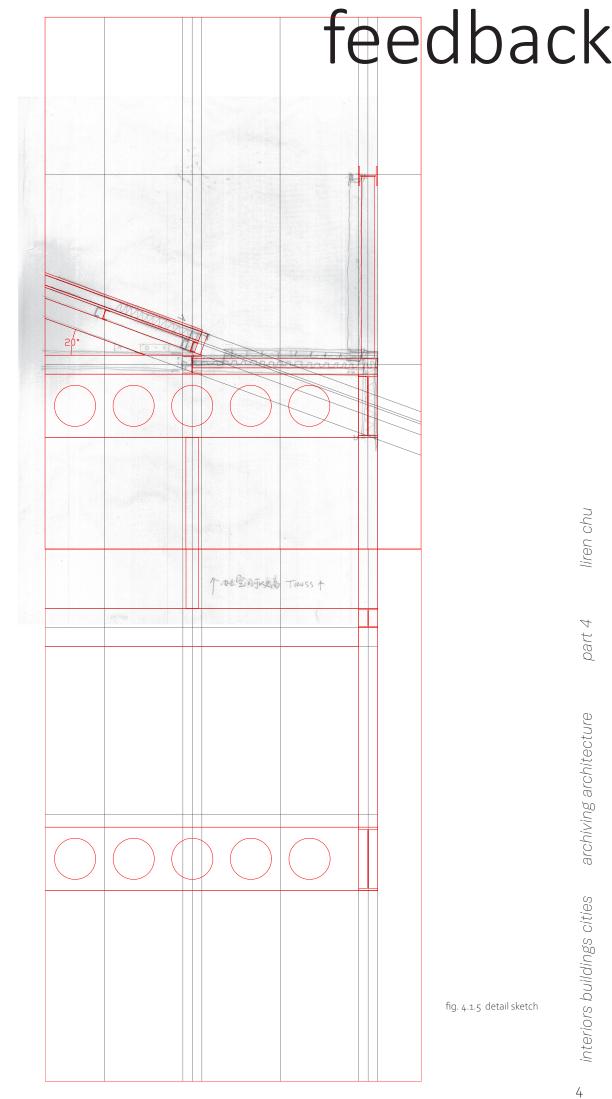


fig. 4.1.5 detail sketch

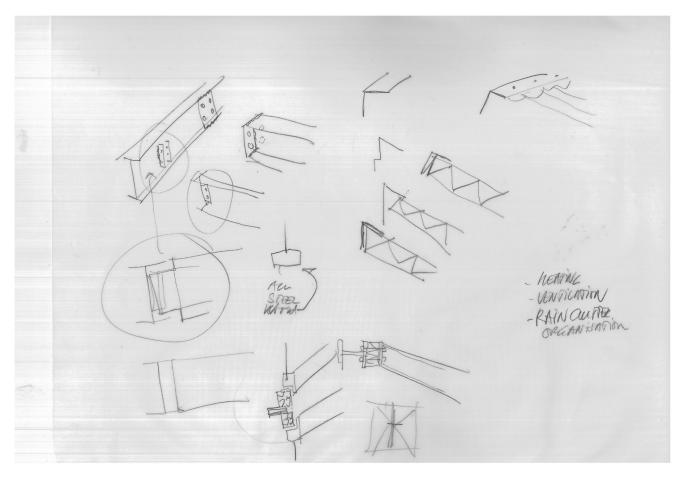


fig. 4.1.6 sketch, mattijs

\mattijs

difference aluminium & steel aluminium:cheeper lighter steel: better an aluminium double door if its a steel one its stronger but there will be problem if you use aluminium

get a detail from a manufacturer

which are the fundamental detail draw the ventilation in section

think about how the connection of the beams

 (p_4)

1:5 detail x2

1:20 detail x1

1:20 elevation x1

1:100 climate diagram x1

how to dissolve the long and monotonous spatial experience inherent in linear architecture?

insert moments, creating places at important nodes. on the bridge, not only can linear activities be held evenly across the space, but it also allows for the possibility of events reaching their peak at the center of the space.

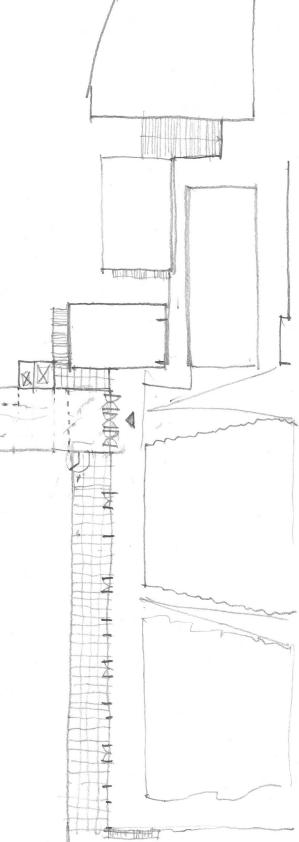
the entrance to the bridge is a foyer. passing through the foyer, one enters a fullheight space at each truss along the bridge's cross-sectional direction. this full-height space also serves as the location where ventilation 机多如何不伸定 ducts extend downwards. the ventilation ducts PESTAVIPANT stop just after emerging from the floor slab, and below them forms a distinctive ventilation opening. it acts as a spatial dividing element, helping users measure the scale of the bridge with their gaze. PUBLIC RESTRUM HOW TO RESPOND TO NATURE WHATS THE WEW ? POTAPO DOOR ? HOW TO END?

10th proposal

如何消解线性建筑自带的冗长枯燥的空间体验?

置入 moment,在重要节点制造场所。在桥梁上不仅可以可以举办在空间上均匀的线性的活动,也让活动在空间中心有生发高潮的可能。

桥的入口进门是一个门厅,穿过门厅会在每一个沿桥体截面方向的桁架处走入一个通高空间,这个通高空间同时又是通风管道向下延伸的位置。通风管道在刚刚从楼板探出头的位置停止,然后在其下方形成一个标志性的通风口。它作为空间划分的元素帮助使用者用视线丈量桥梁的尺度。



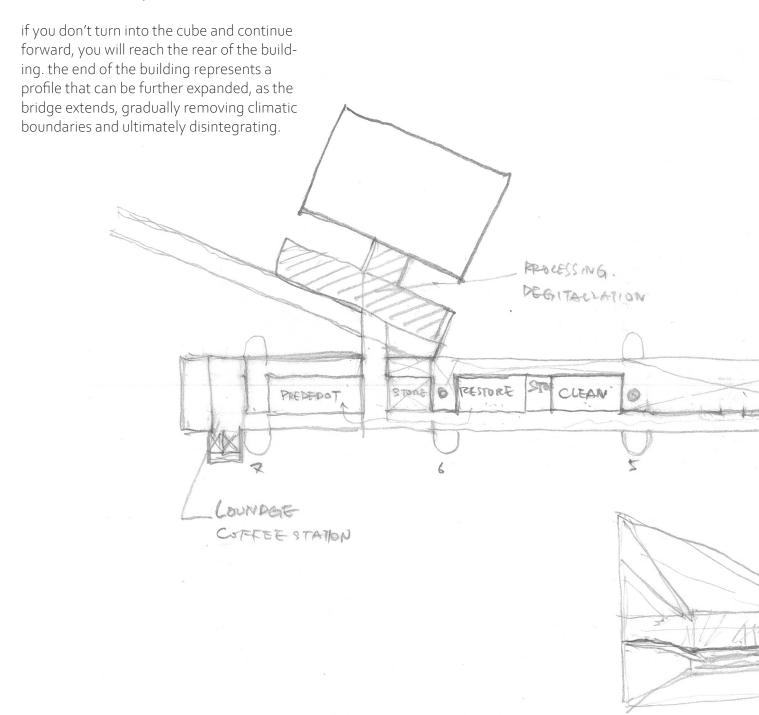
2

WHY THE SPACE IS OF THE SAME WIDTH?

fig. 4.2.1 plan sketch, liren

as you move forward along this series of elements, you encounter a full-height space that is 30 meters long and 8 meters wide. this is the main hall of the bridge, where all the climactic events occur.

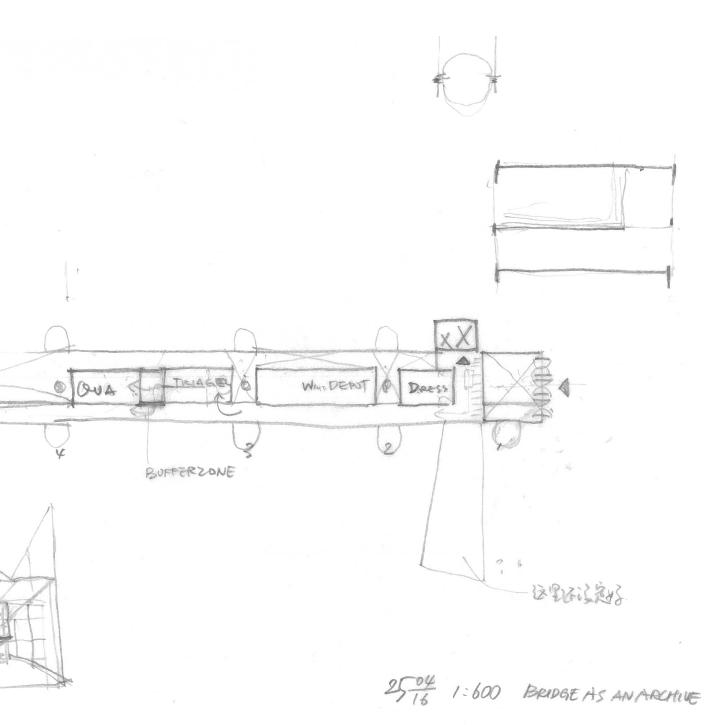
clearly, the floor plan of this complex consists of a cube and a rectangular shape. continuing forward, you reach a space where the cube and the rectangular form are placed together. from here, turning into the cube leads to service spaces, including restrooms and a restaurant, as well as a view depot beside them.



沿着这一系列的元素向前寻找会遇到一个长达 30 迷宽 8 米的通高空间,这是桥梁的主厅,所有的高 潮事件在这里发生。

显然,这个建筑群的平面由一个正方体和一个长条形构成。接着向前走会来到一个正方体和长条状的并置场所。从这里转入正方体来到服务空间,洗手间和餐厅以及在其一旁的 view depot。

如果不拐入正方体向前走便会来到建筑的尾部。 建筑的结尾是可以被继续加建的剖面状态,桥梁在 延伸的同时逐渐被去除气候边界并且最终解体。



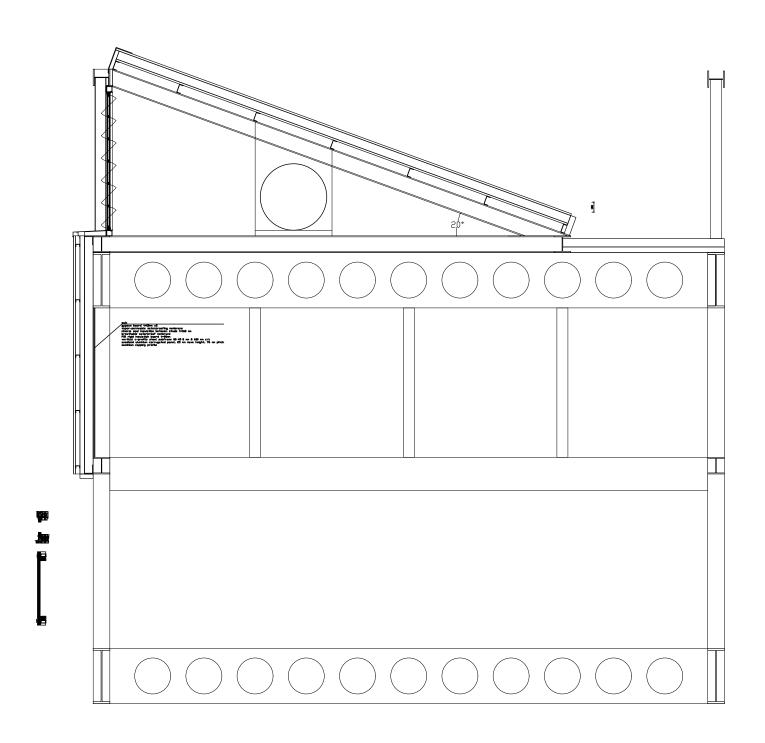


fig. 4.2.3 section, liren

档案处理空间侧墙封闭作隔音处理。在同一面墙体上侧用高窗引入光线,间隔安装自动玻璃百叶以便 应对不时被动通风的需求。

檩条上方放置波浪钢板以使底面呈现波浪纹理与夹 层楼板底面设计语言一致。

主结构在气候边界内部被裸露诚实展现以达到建构的美感,外部被包裹以避免冷桥出现。

双层玻璃幕墙,内部磨砂玻璃移门,外部固定玻璃 幕墙

疑问:

应该从哪里把空气抽出去? 构造平面如何处理? the side walls of the archive processing space are enclosed with soundproofing treatment. on the same wall, high windows are installed at the top to bring in light, with automatic glass blinds installed intermittently to accommodate passive ventilation needs.

corrugated steel panels are placed above the purlins to create a wavy texture on the underside, consistent with the design language of the underside of the intermediate floor slab. the main structure is exposed honestly within the climate boundary to achieve the aesthetic of construction, while being wrapped externally to prevent thermal bridging.

double-glazed curtain wall, with internal frosted glass sliding doors and external fixed glass curtain wall.

questions:

where should the air be extracted from? how should the construction plan be handled?

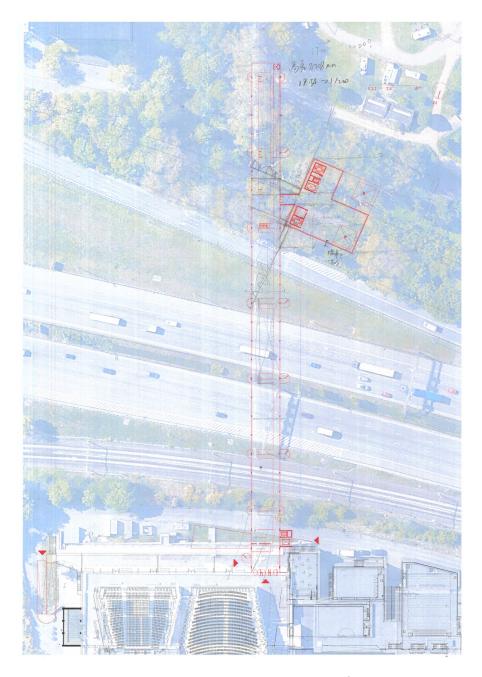


fig. 4.2.4 plan on satelite, liren

排气管道从哪里走为何呢?

: 从南侧树林和北侧校园进气,在高速上方排出 或许可以考虑从花园进气

\sam

where does the exhaust duct run and why? : it brings in air from the southern woods and the northern campus, and exhausts it above the highway. perhaps it could draw air from the garden instead.

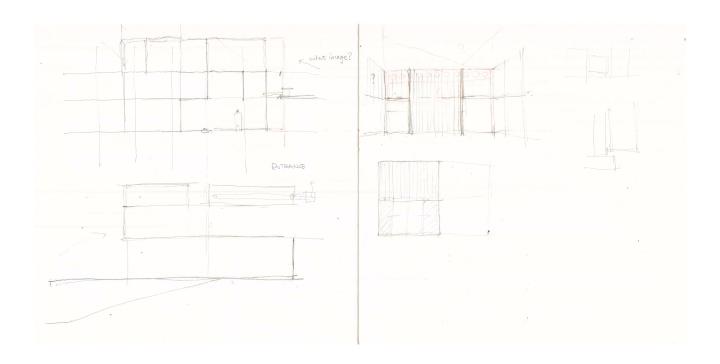


fig. $4.2.5\,$ sketch on how to end the bridge, liren

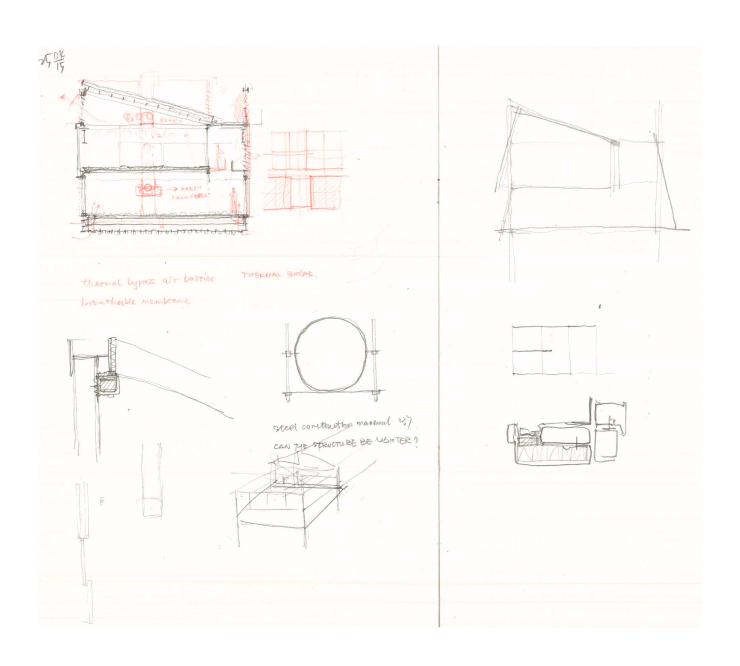
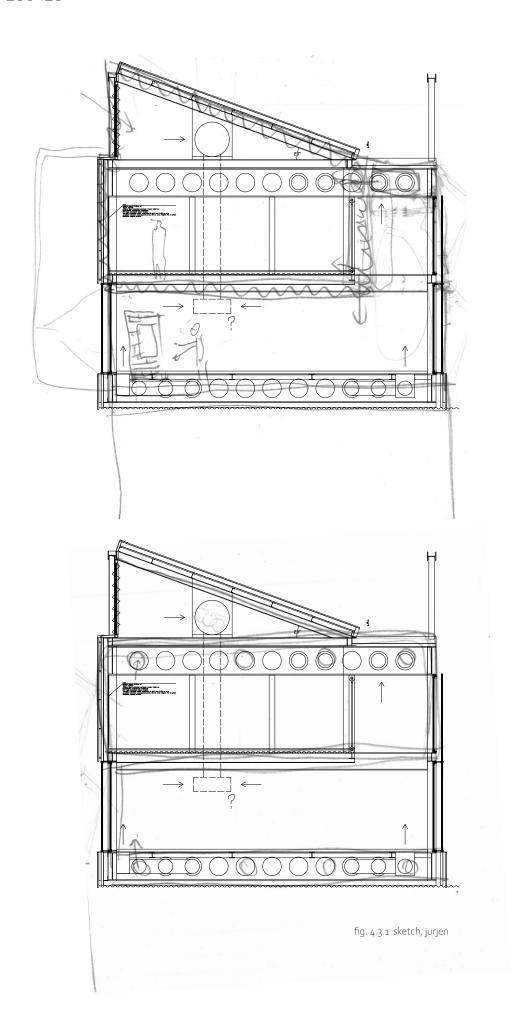


fig. 4.2.6 sketch on section detail, liren



大型的通风管道可能会影响光照的进入,我觉得它 应该是 modest 的。

在 1st floor 这个桥的室内空间它更像是街道,可能 不完全 climatize,可能通风但是不控制温度

屋顶没有通风管道之后可以在某些地方断开

街道里摆放的可以是一些不怕气候变化的展品大比 例模型等

电梯井内置到桥梁里,放在外部影响整体美感

\jurjen

large ventilation ducts might block incoming light — i think they should be modest.

the indoor space on the 1st floor bridge feels more like a street, possibly not fully climatized — maybe ventilated but without temperature control.

without ventilation ducts on the roof, it could be opened up in certain places.

the street could host exhibits that are weather-resistant, like large-scale models.

the elevator shaft should be built into the bridge; placing it outside would affect the overall aesthetics.

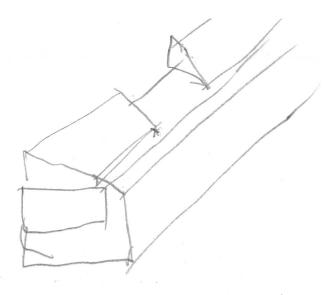


fig. 4.3.2 sketch, jurjen

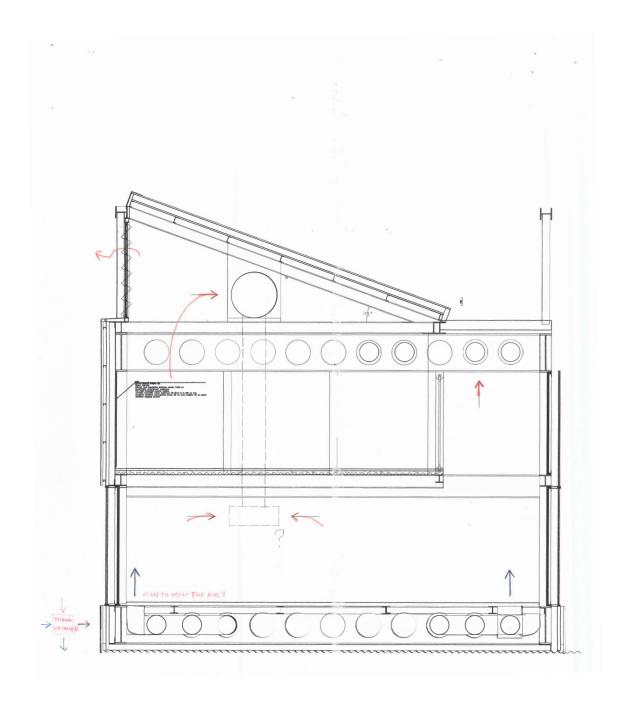


fig. 4.3.3 sketch on ventilation, liren

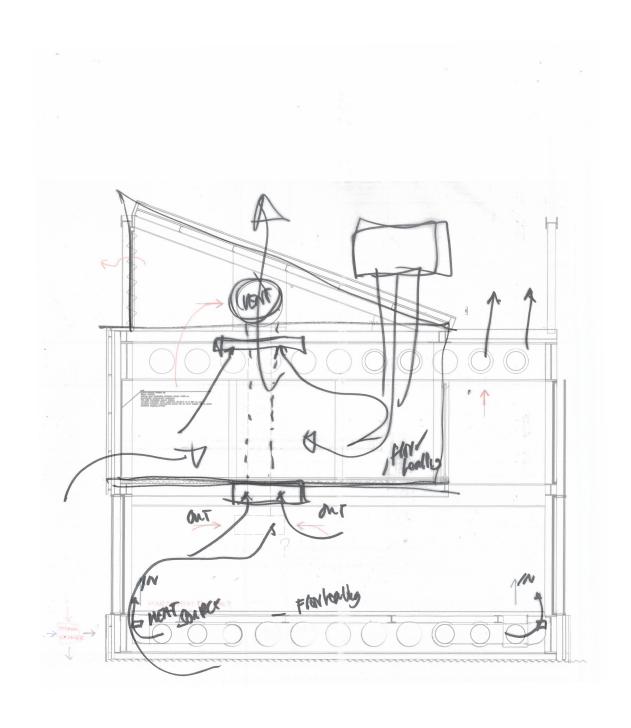


fig. 4.3.4 sketch on ventilation, matthijs

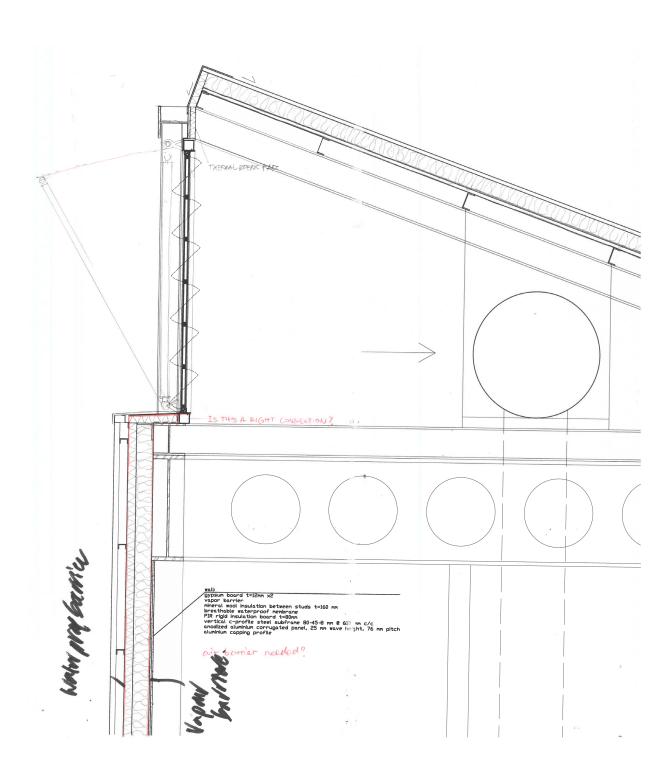
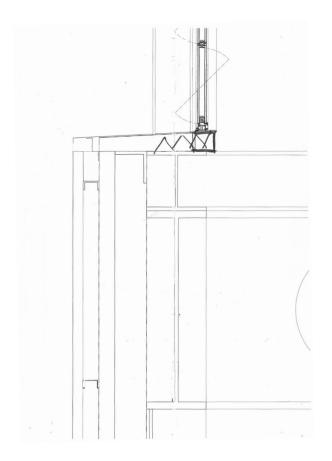


fig. 4.3.5 sketch on detail, matthijs



\matthijs

insulation in the profiles change the composite floor deck profile two barriers(water&vapor) would be enough

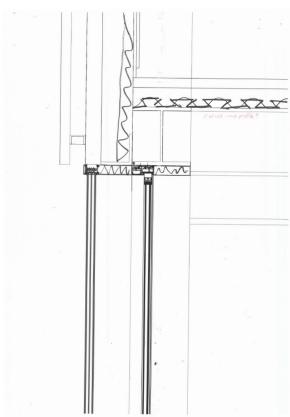


fig. 4.3.6 sketch on detail, matthijs

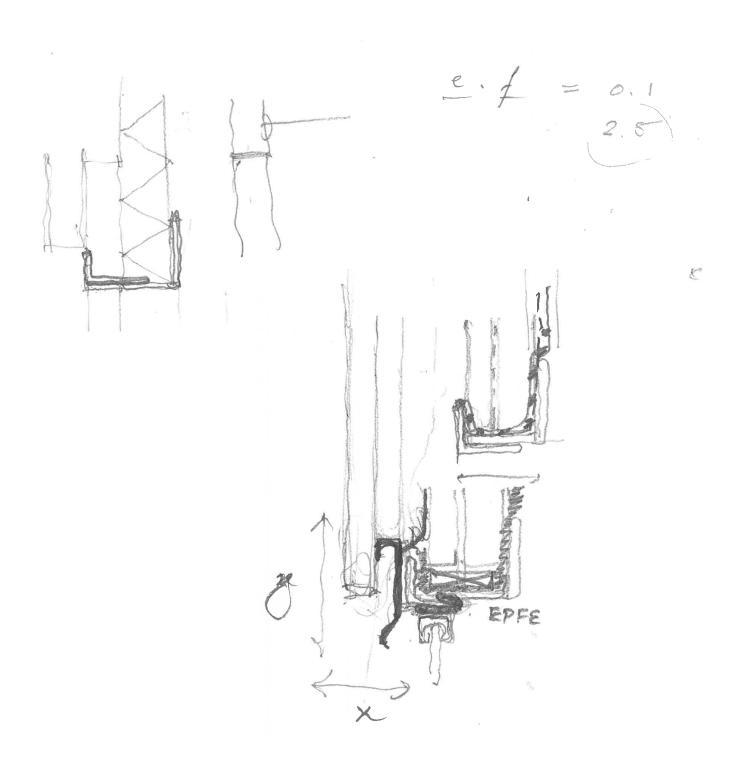


fig. 4.3.7 sketch about a flashing, pranav

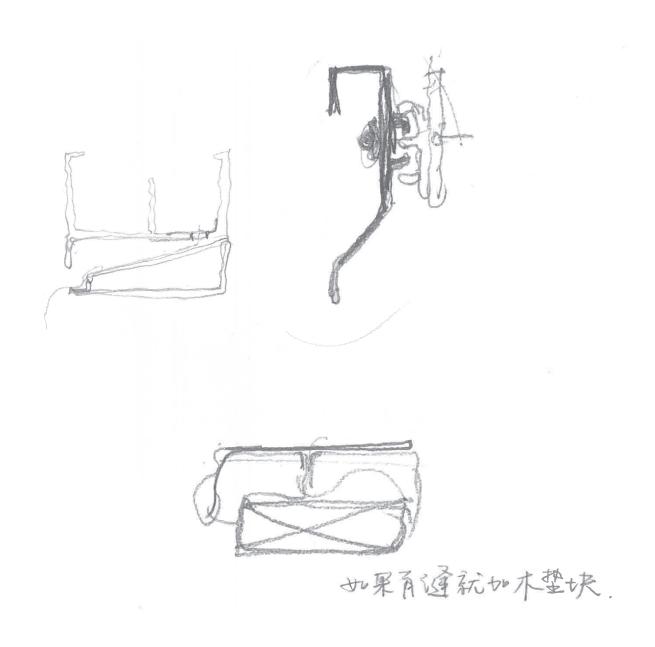


fig. 4.3.8 sketch about a flashing, pranav

12th proposal

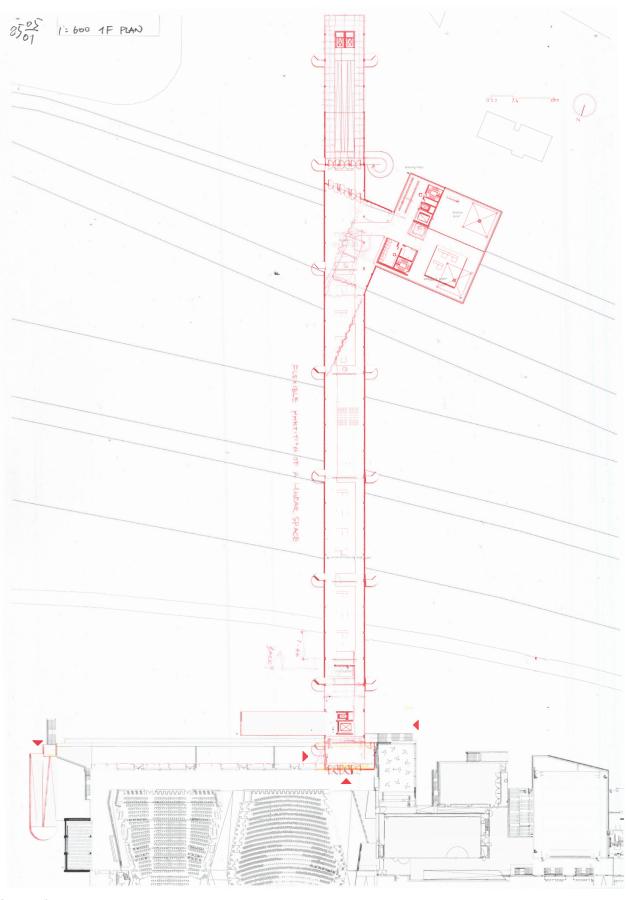


fig. 4.4.1 1f plan

\susanne

things are.

you have your model.
what i would still like to see is the aesthetics.
now we understand it as an infrastructure.
you can walk through.
it brings you to the other side.
it's open.
it's closed.
it's translucent.
it's a device.
now, where are the switches?
where's the electricity?
where's the lamp?
where are the things that make that game
work?
it would be nice to have one drawing—space
drawing—where you understand what these

now you have to construct the narrative.
you dock in like in an airport, and you go to the other side.
you relate to the building.
you provide something that is needed.
it's readable.
it's logical.
it has a place.
that has to be shown.
what do you see when you come out?
where are you?
these are the things to show.

you can look at early norman foster sections. you can use a model.
you can use a photograph.
you can draw on the photo.
where is the sliding door?
where is the lamp?
where is the beamer?
where is the chair?
show the game you propose.
you can use procreate.
it's super fast.

you can put 6 to 9 ags on the wall. no need to print everything big. that's for the presentation. where does it start? where does it end? this is what makes it a bridge. otherwise it looks like a capsule.

you have these two fragments of the facade.
one is solid, one is translucent.
that you can draw.
you can make a section perspective.
or an axonometric.
how does it look from inside?
use the logic of making to derive the details.
what's the panel size?
how does it connect?
is there a lamp?
is it waterproof?
is there a joint?
is the opening covered?
try to give function to the protruding parts.
not only decoration.

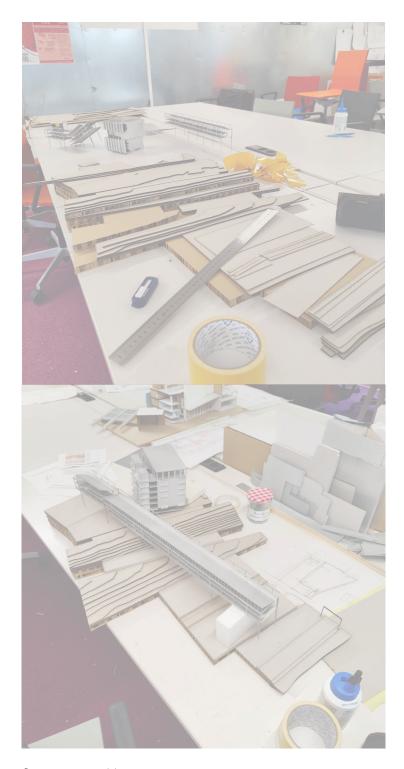


fig. 4.4.2 1:200 model on terrain in progress

\ 结构与叙述建议

你已经有模型了,但还需要展示完整的美学。我理解你的项目是一个基础设施,它带人穿越高速公路,具有开放、封闭、半透明的特性——可以理解为一种装置。

所以请思考细节:开关在哪里?电源从哪里来?灯具的位置?这些元素在整体"游戏"中的位置。

建议做一张空间性的图纸,表达这些元素的作用与美学。

\ 叙事构建与表达方式

现在是构建项目叙事的时候:像机场登机 桥一样对接,通向另一边,与现有建筑产 生关系,提供所需功能。它是可读的、逻 辑清晰的,每个元素都有自己的位置。

展示你"出来以后看到什么",在哪儿? 你要让人理解这件作品的存在与周围环境 的关系。

\ 图像表达建议

你可以参考 Norman Foster 早期的剖透视图。模型也可以帮助表达。也可以用模型照片叠加图纸表达。

显示设备:滑门、灯、投影仪、椅子.....展示这些东西在你设定的场景中的位置。

你可以考虑用 iPad 或 Procreate 在照片上 绘图,速度快而且表达直观。

\ 现场布置与展示方式建议

对于 P4 展示,可以将多个 A3 图纸拼接贴在墙上展示(比如 6-9 张),不必一次性大幅打印。

项目的起点和终点要画出来——这是桥梁 的本质。否则它看起来像是个太空舱。

\ 构造与细节建议

你提到的两个立面碎片——一个是实的,一个是半透明的。可以绘制,也可以做剖透视或等轴测图展示其内部空间。

尽量通过"制造的逻辑"来推演立面细节, 比如板块拼接、混凝土预制块的尺寸、接缝、 是否有灯光、是否防水、是否遮挡开口等。

如果有突出部分,可以赋予它们技术或功 能意义,而不只是装饰。

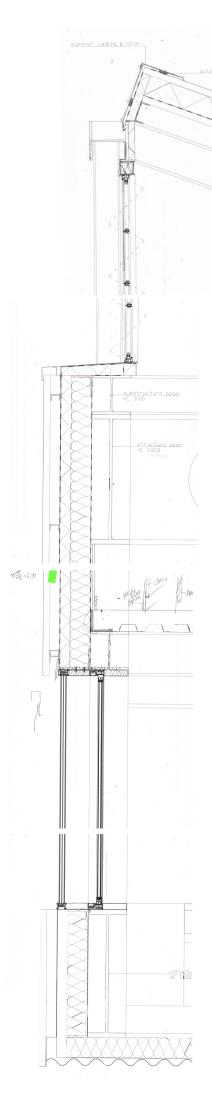


fig. 4.4.3 sketch on detail, matthijs

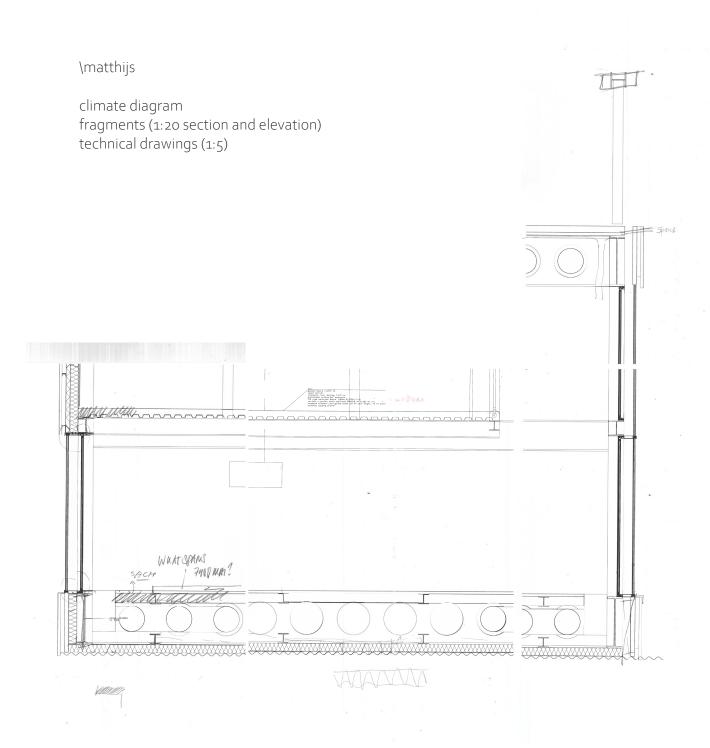
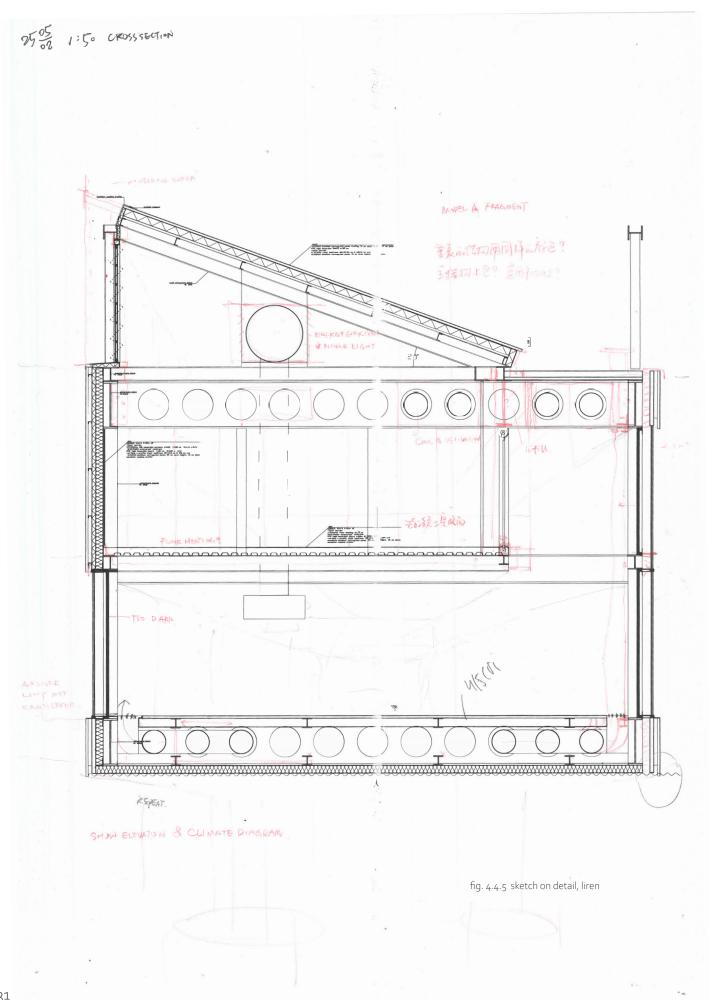


fig. 4.4.4 sketch on detail, matthijs



reflection

\ 结构

本设计使用 300x1000 腹板穿孔的蜂窝梁以及相同尺寸的普通工字钢梁作为主结构元件,与次级尺寸的工字钢元件组合形成一个空间桁架结构。整个主结构有两层高。

屋面结构为一层高,其脱离于主结构单独存在。从 建构语言上它们是两个物件。屋面结构和穿孔蜂窝 梁的连接处作孔洞填充用于加强该处梁的抗剪能 力。

夹层与主结构桁架的水平等分线对齐·由拉杆与次 梁承受荷载。

\ 气候

整个钢结构几乎均从外部包裹以避免冷桥出现。

屋面采用硬质 pir 保温材以抵抗风雨雪荷载。上方采用更加轻盈的波浪阳极氧化铝板抵御风化,下方使用压型钢板作为支撑并且裸露成为粗野的饰面。

档案空间夹层外侧气候边界为上方高窗下方实墙, 在隔绝噪音的同时让内部获得更好采光。 实墙采用波浪阳极氧化铝板作为外饰面,内部为白色石膏板让空间更为明亮。内侧气候边界为钢板窗

色石膏板让空间更为明亮。内侧气候边界为钢板窗 框玻璃界面并带有移门和短阳台作为短暂休息空间 和清洁维护平台。地面为组合楼板,混凝土完成面 直接抛光处理。

公共空间边界为双层玻璃窗,外层为透明玻璃,内层为半透明磨砂玻璃移门,可以控制每个空间的室外景观。

档案空间夹层利用斜坡屋顶空间排布排风管道,利用穿孔蜂窝梁上的孔洞排布新风管道。

公共空间利用穿孔蜂窝梁上的孔洞排布排风管道, 地面下的蜂窝梁孔洞排布新风管道。

高窗处设计百叶窗以应对紧急情况对于被动通风的 需要。

地暖和风暖结合的方式调节温度。 仅仅在档案空间夹层维持恒定的湿度。

tdl

缺少对于结构组装的图绘 缺少 climate diagram 缺少立面图,如何开窗,立面比例 缺少对于室内人工照明的设计

\structure

this design uses 300x1000 cellular beams and ordinary i-beams of the same size as primary structural components, combined with secondary-sized i-section members to form a spatial truss structure. the entire primary structure is two stories high.

the roof structure is one story high and exists independently from the primary structure. in terms of tectonic language, they are two separate objects. at the junctions between the roof and the cellular beams, hole infill is used to enhance the shear resistance of the beams.

the mezzanine aligns horizontally with the truss divisions of the primary structure and is supported by tie rods and secondary beams.

\climate

the entire steel structure is almost completely wrapped from the outside to prevent thermal bridging.

the roof uses rigid pir insulation to resist wind, rain, and snow loads. anodized corrugated aluminum panels are used above for weather resistance, while profiled steel sheets are used below as support and exposed as a brutalist finish.

the climate boundary of the archive space mezzanine is defined by a solid wall below and clerestory windows above, isolating noise while allowing better natural lighting inside. the solid wall is clad in anodized corrugated aluminum panels on the exterior, with white gypsum board on the interior to brighten the space. the inner climate boundary consists of a steel-framed window wall with sliding doors and small balconies for short breaks and maintenance access. the floor is a composite slab with a polished concrete finish.

the boundary of the public space consists of double-layer glass windows: the outer layer is clear glass, while the inner layer is a translucent frosted sliding glass door, allowing each space to control its exterior view.

the archive space mezzanine utilizes the sloped roof cavity for exhaust duct routing, and the holes in the perforated castellated beams are used for fresh air ductwork.

the public space uses the holes in the cellular beams for exhaust ducts and the holes in the floor-level cellular beams for fresh air ducts.

louver windows are installed at the clerestory for emergency passive ventilation.

temperature is regulated by a combination of underfloor heating and warm air systems.

only the archive space mezzanine maintains constant humidity.

tdl

missing diagrams of structural assembly missing climate diagram missing elevation drawings, window opening strategy, and elevation proportions missing design for indoor artificial lighting

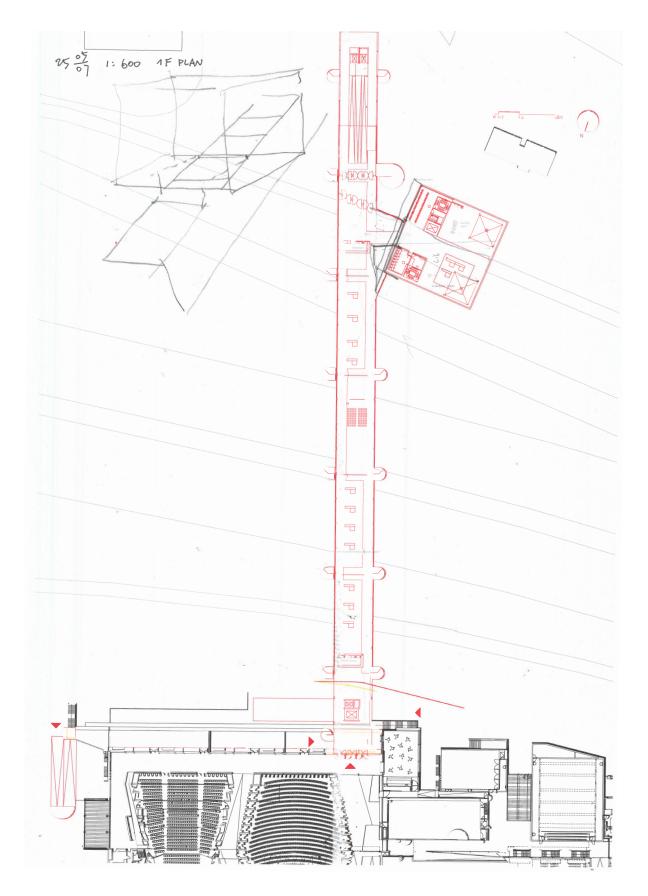


fig. 4.5.1 sketch on plan, daniel

feedback

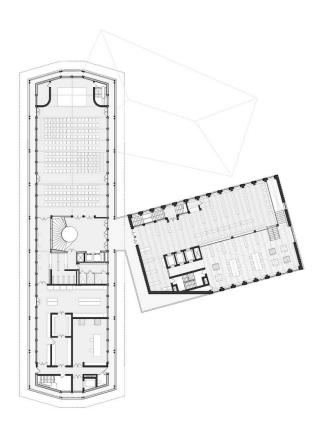


fig. 4.5.2 plan of st gallen city library, drdh

\daniel

q: the connection between the two volumes used to be a narrow corridor bridge, but this made the archive volume feel secondary and no longer appealing. however, if i use a larger connection, the two volumes lose their individual formal identities. how should i deal with this?

in our office's project we tried many times

to find the most suitable way for the two masses to connect.

when we hid the connecting space behind the facade, what we read from the main facade side was the collision of two elevations—achieving connection while still maintaining the sense of two objects.

in kgdvs's barbican exhibition, we can see that the tangential connection of geometric forms does not cause confusion between the two, but rather creates distinction.

问:这两个体块的连接曾经是一段窄廊桥,但是这种连接让档案馆体块成为次要的部分,不再讨喜。然而如果我用比较大面积的连接,又使两个体块不再拥有单独的形式语言,应该如何处理?

在我们事务所的这个方案中我们尝试了很 多次

如何让两个体量形成最合适的连接 当我们把连接空间藏在立面后面我们从 主立面一侧读取的信息是两个立面的碰 撞,既完成了连接又形成了两个物体。在 kgdvs 的 barbican exhibition 中可以看到, 几何形式的相切连接并不会让两种形式混 淆不清,而是产生了区分。



fig. 4.5.3 photo of exhibition in barbican, kgdvs

feedback

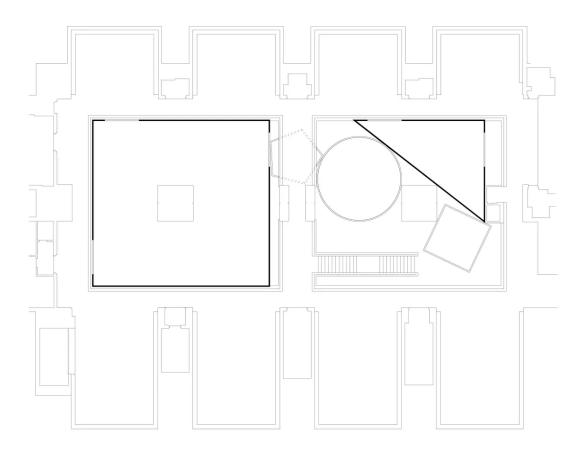


fig. 4.5.4 plan of exhibition in barbican, kgdvs

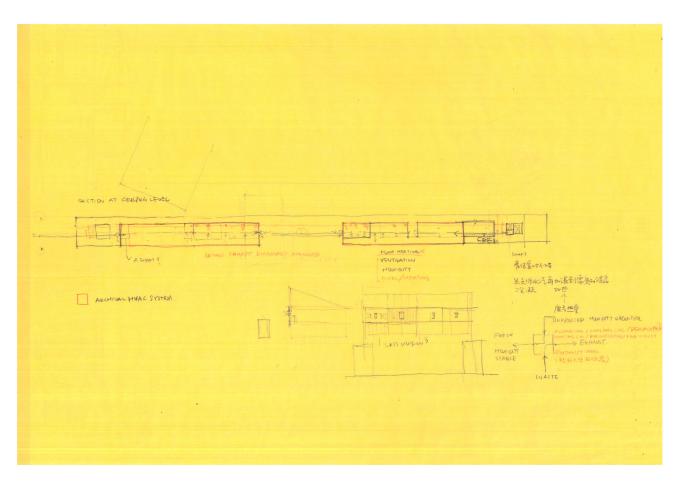


fig. 4.5.5 hvac plan, liren

hvac feedback

间:

设计的是一个桥状档案馆(bridge as an archive)全长约 180 米。是一个线性建筑,面临的问题是如何有效地从两侧吸入空气,特别是桥跨越高速公路时空气质量差,获取新鲜空气较困难。

理想状态是每个跨距 30 米设置一个设备间,贯穿全长,并且在其间设置设置很多过滤器。若整个桥体使用单个通风设备,则需要一个 30m 长的空间,可能大到接近建筑层高,但也可以分解为在桥两端各放一半跨距的长度,即 15m。蜂窝梁的空间可以用于布置通风系统。

问:是否设备间需要精确放置在通风竖井正上方,

不需要,可以靠近即可。

地暖不利于保持档案馆气候相对湿度稳定 风暖在此处更优

\annemarie

q:the project is a bridge as an archive, with a total length of approximately 180 meters. it is a linear architecture, and the main issue is how to effectively draw in air from both sides, especially since the bridge spans over a highway where the air quality is poor and it's difficult to obtain fresh air.

ideally, a mechanical room is placed every 30 meters along the span, and many filters are installed in between.

if a single ventilation unit is used for the whole bridge, it would require a 30-meter-long space, potentially as large as the building height. however, this can be divided into two 15-meter segments placed at each end of the bridge.

the space within the cellular beams can be used to lay out the ventilation system.

q: does the mechanical room need to be placed exactly above the vertical shaft?

no, it doesn't. being near is good enough.

underfloor heating is not conducive to maintaining stable relative humidity in an archive; warm air heating is more suitable in this context.

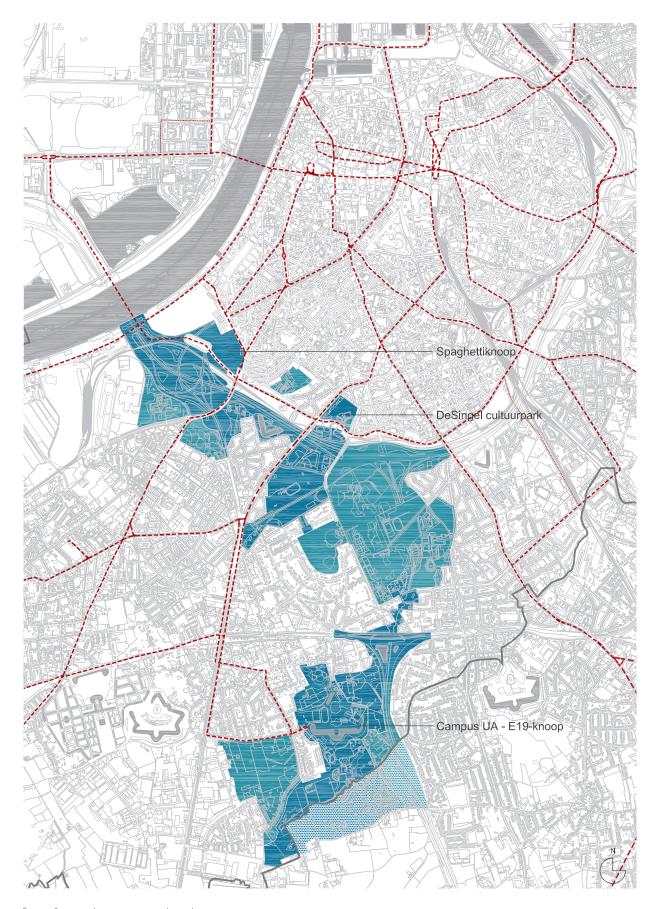


fig. 4.5.6 map 93 | programma zuiderpark source: rsa, 2005 strategic spaces, programs and projects located outside the municipal boundary are considered illustrative

research



fig. 4.5.7 strategisch ruimtelijk structuurplan antwerpen ontwerpen(s-RSA, 2006)

Zr_pB.2: de Singel cultuurpark

Doelstelling van dit project is de voortzetting van de continuïteit van het aanwezige systeem van parken – in het bijzonder voor de

geïsoleerde fragmenten nabij het cultureel centrum de Singel – en het versterken van de onderlinge relaties tussen de verschillende objecten en aanwezige functies.

Op deze manier kan een groot park gecreëerd worden waarbij de verschillende ruimten met elkaar verbonden worden door een aantal voetgangersverbindingen en fietswegen. De continuïteit van deze verbinding wordt verzekerd door twee nieuwe bruggen die de snelweg(Ring)-spoorweg en de A12 kruisen.

Een belangrijk gegeven voor de realisatie van dit project is het verwijderen van een aantal infrastructuurbarrières, waaronder de reorganisatie van de toegangen tot de stedelijke snelweg, zoals de verwijdering van de toegangen vanaf de Le Grellelaan.

Het karakter van dit park wordt vooral bepaald door de aanwezigheid van veel belangrijke voorzieningen, zowel indoor als outdoor, voor sport en voor culturele activiteiten. Ze zijn aangeduid als potentieel cluster. In het project moet nauwkeurig de toegankelijkheid en de nodige ruimte voor elke activiteit, waaronder parkeren, overwogen worden. De bereikbaarheid met openbaar vervoer blijft een prioriteit. Een specifieke kwestie is de mogelijke uitbreiding van de Expo.

Met dit alles in het achterhoofd, stelt het ruimtelijk structuurplan voor de huidige camping te verplaatsen en deze ruimte te behouden als gedeeltelijke uitbreidings- en buitenruimte voor de Expo. De brede weg doorheen dit gebied, kan vanuit mobiliteitsoogpunt gedowngraded en hergebruikt worden als – groene – parkeerruimte. Er moet tegelijk actief ingezet worden op een optimale ontsluiting met het openbaar vervoer.

Enkel in functie van de uitbreiding en het behoud van de Expo kan een ondersteunend programma worden onderzocht, dat tegelijkertijd de fragmentatie van het park oplost. Een totaalconcept voor het ganse Cultuurpark moet uitgewerkt worden onder volgende voorwaarden: (1) voorzien in een continue en leesbare nieuwe parkstructuur tussen Singel en Wilrijkse pleinen; (2) voorzien in langzaam verkeersverbindingen in dit park, die de relatie tussen de verschillende objecten en aanwezige functies verstreken

Dit om het stedelijk karakter van dit gebied te versterken via een hogere dichtheid.

Het voorstel voor golfinfrastructuur moet geïnterpreteerd worden als een voorstel voor verder ontwerpmatig onderzoek, als katalysator dat compatibel is met de bovengenoemde doelstelling om het gebied open te houden en de doorsteekbaarheid te verwezenlijken. Het voorstel toont het potentieel van het terrein, dat door zijn afmetingen tevens een aantal holes toelaat. Maar ook een andere recreatieve invulling is mogelijk voor het vormgeven van deze parkomgeving.

De hoofddoelstelling van het ontwerp, bijvoorbeeld van een gecombineerd park met golfinfrastructuur, is om via de paden en rustplaatsen de site, die vandaag enkel vanuit de wagen kan waargenomen worden, te transformeren in een toegankelijke groenzone.

fig. 4.5.7 strategisch ruimtelijk structuurplan antwerpen ontwerpen(s-RSA, 2006), p252

zr_pb.2: de singel culture park rup vogelzang antwerp(pj3 p12) continues to develop the design based on the defined scope of this cultural park

The objective of this project is to continue the continuity of the existing park system—particularly for the isolated fragments near the de Singel cultural center—and to strengthen the interconnections between the various objects and existing functions.

In this way, a large park can be created where different spaces are linked together by a number of pedestrian pathways and bicycle routes. The continuity of these connections will be ensured by two new bridges crossing the highway (Ring), the railway, and the A12.

A crucial aspect of realizing this project is the removal of several infrastructure barriers, including the reorganization of access points to the urban highway, such as the removal of the entryways from Le Grellelaan.

The character of this park is mainly defined by the presence of several significant facilities, both indoor and outdoor, for sports and cultural activities. These are identified as potential clusters. The project must carefully consider accessibility and the necessary space for each activity, including parking. Accessibility via public transport remains a priority. A specific issue is the possible expansion of the Expo.

With all this in mind, the spatial structure plan proposes relocating the current campsite and preserving this space as a partial expansion and outdoor area for the Expo.

The main road through this area can be downgraded and repurposed as a green parking area from a mobility perspective. At the same time, an active effort must be made to optimize public transport connections.

Only in the context of the expansion and preservation of the Expo can a supporting program be considered, which simultaneously addresses the fragmentation of the park. A comprehensive concept for the entire Culture Park must be developed under the following conditions:

- 1. Establish a continuous and legible new park structure between de Singel and Wilrijkse Pleinen.
- 2. Provide slow-traffic connections within this park to strengthen relationships between various objects and functions while linking to regional connections.
- 3. Reorganize the sports fields.
- 4. Enable the expansion of the Expo.
- 5. Provide an underground parking facility that can function as a peripheral parking area at the prime location and along the Groene Singel.
- 6. Supporting functions are permissible only if they enhance the park's legibility.
- 7. The Expo building may accommodate complementary retail and hospitality functions, but a shopping center is excluded.

Other minor interventions include removing the northern fence (Markgravelei) to improve park access and visibility, as well as restoring small green areas in the southern section (the entrance to Nachtegalenpark and the frontage along Jan van Rijswijcklaan).

A new square connecting de Singel with the swimming pool can be created in line with the Groene Singel program.



本项目的目标是延续现有公园体系的连续性——特别是文化中心 de singel 附近的孤立绿地片段,并加强各个设施及现有功能之间的相互联系。

通过这一规划,可以打造一个大型公园,将不同空间通过多条步行道和自行车道相连。这些通道的连续性将通过两座新建桥梁得以保障,它们将跨越高速公路(环路)、铁路及 a12 公路。

项目实施的关键在于消除部分基础设施障碍,包括重新规划城市快速路的出入口,例如取消 le grellelaan 路段的高速公路入口。

公园的特征主要由多项重要设施决定,这些设施涵盖室内与室外的体育和文化活动,并被视为潜在的功能集群。在项目设计中,需要精准考虑每项活动的可达性及所需空间,包括停车设施。公共交通的便捷性仍是优先事项。此外,还需关注 expo(展览中心)可能的扩建问题。

在此背景下,空间结构规划建议迁移现有露营地,并将该区域保留为 expo 的部分扩展及户外空间。

从交通角度来看,贯穿该区域的主要道路可以降级,并重新利用为绿色停车场。同时,应积极优化公共交通的通达性。

仅在 expo 扩建及保留的前提下,可研究配套功能开发方案,以同时解决公园碎片化的问题。整个文化公园的总体规划应满足以下条件:

- 1. 形成 de singel 与 wilrijkse pleinen 之间连贯且清晰的公园结构;
- 2. 在公园内提供慢行交通通道,以加强各功能区之间的联系,并与区域级通道接轨;
- 3. 重新规划体育场地布局;
- 4. 保障 expo 的扩建可能性;
- 5. 规划地下停车设施,使其成为核心区及 groene singel (绿色环道) 沿线的外围停车场;
- 6. 允许一定的配套功能,但前提是有助于提升公园的整体可读性;
- 7. 允许在 expo 建筑内设置辅助性商铺及餐饮功能,但不允许建设购物中心。

此外,还计划进行一些小型改造,包括拆除北侧(markgravelei)的围墙,以改善公园的可达性和可见性,并修复南部部分绿地(如通往 nachtegalenpark 的入口及 jan van rijswijcklaan 路段的前沿区域)。

最后,可依据 groene singel 规划,在 de singel 与游泳馆之间新建一个广场,以加强场地之间的联系。

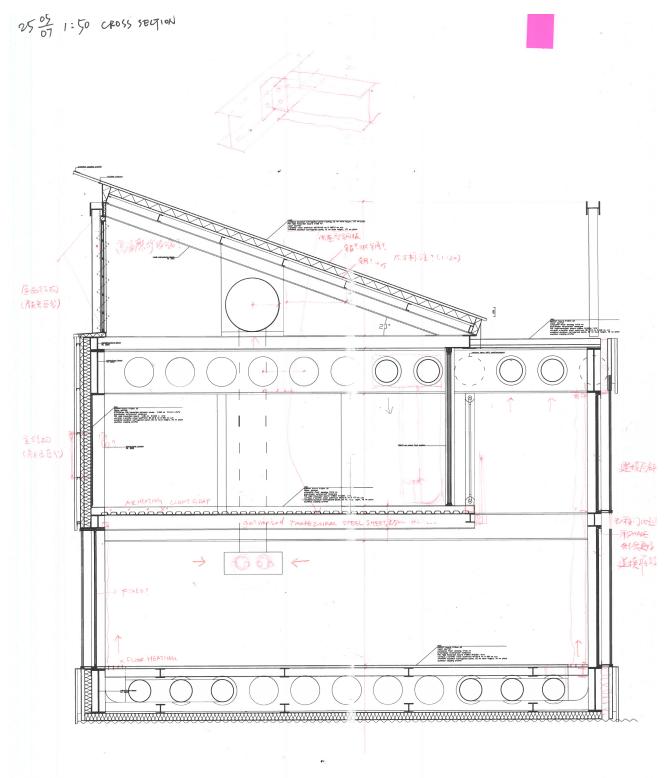


fig. 4.5.8 cross section detail with sketch

pre p4 feedback

应提供项目的背景信息,包括安特卫普的 城市环境

注意尺度和图纸方位的把控

合理分配时间,展示开始时提供内容概览,可以使用思维导图或类似方式,引导观众理解整场展示

把小图放大,沟通清晰简洁

借助模型和其他同学的参考案例,以增强 展示效果

\sam

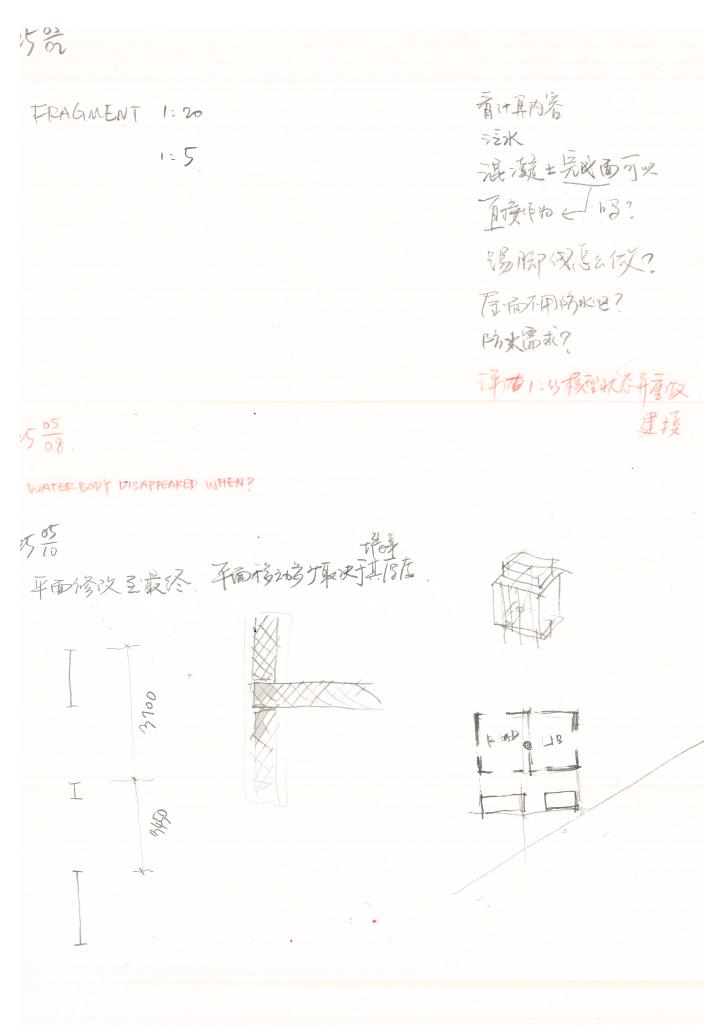
project background information should be provided, including the urban context of antwerp.

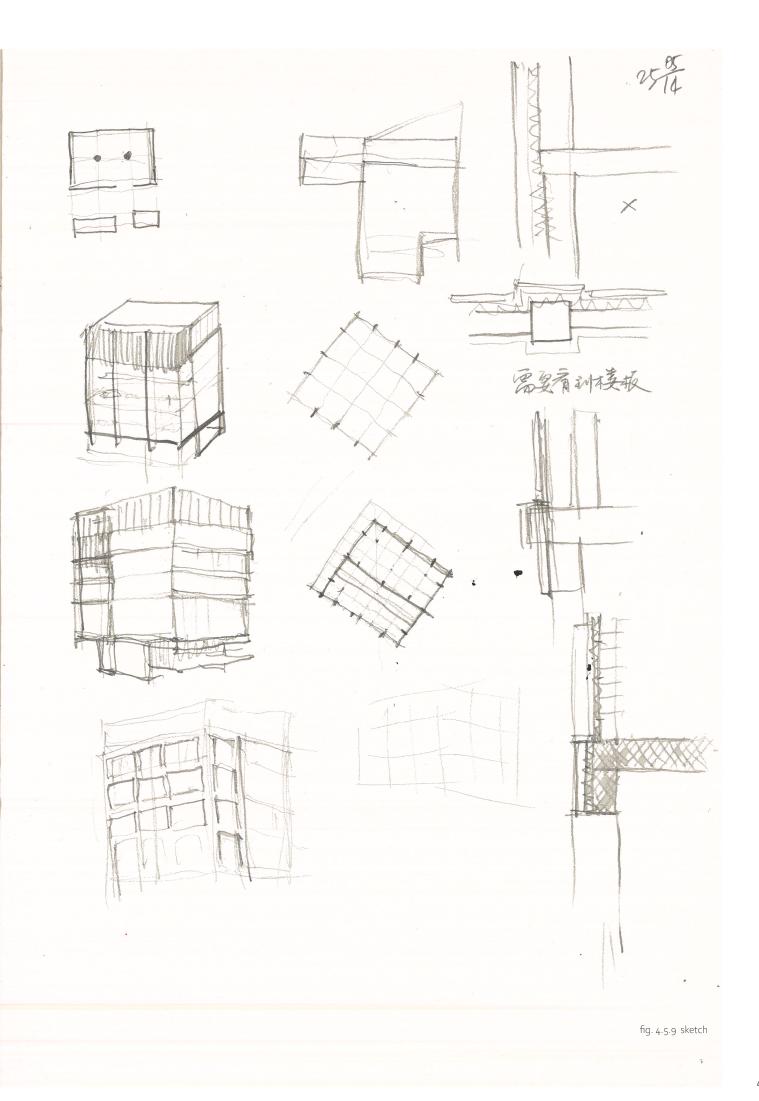
pay attention to scale and the orientation of drawings.

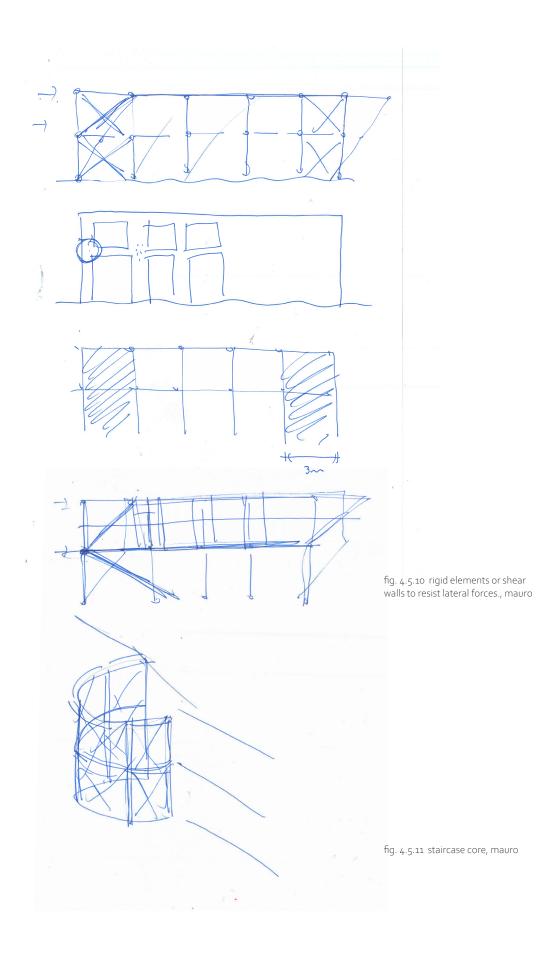
manage time effectively; at the beginning of the presentation, provide an overview of the content—using a mind map or similar approach to guide the audience through the presentation.

enlarge small images to ensure clear and concise communication.

use models and reference projects from other students to enhance the presentation.







structure feedback

\ mauro

\structural issues identified

the current structure consists of hinged (non-rigid) joints, which leads to insufficient lateral stability and potential for horizontal sway. there is a lack of rigid elements or shear walls to resist lateral forces.

\stability strategies

one solution is to add shear walls or bracing at both ends of the bridge (around 3 meters wide each), which is efficient and allows for a lighter structural expression.

another option is to increase the dimensions of beams and columns to gain stiffness, though this sacrifices the desired slenderness and material efficiency.

a hybrid approach is also possible: using ramps for lower-level stability and stair cores for upper-level stability.

\role of ramps and staircases

the ramp, built with a steel frame and grounded on both ends, can serve as a stabilizing element for the lower level.

enclosed stair cores, clad in steel panels and equipped with diagonal bracing, can provide stiffness and lateral support for the upper levels.

combining these two systems can address the overall stability of the structure.

\layout recommendations

each staircase core should be paired with two columns and diagonal bracing on both sides. the stair cores must be structurally integrated with intermediate floor slabs and the main structural frame.

ramps and braces should be positioned near each other to form effective force paths.

\presentation suggestion

use clear diagrams to explain which structural element contributes to which part of the building's

diagrams should distinguish between shear walls, stair-supported upper stability, and ramp-supported lower stability.

this will help communicate your structural strategy effectively during reviews.

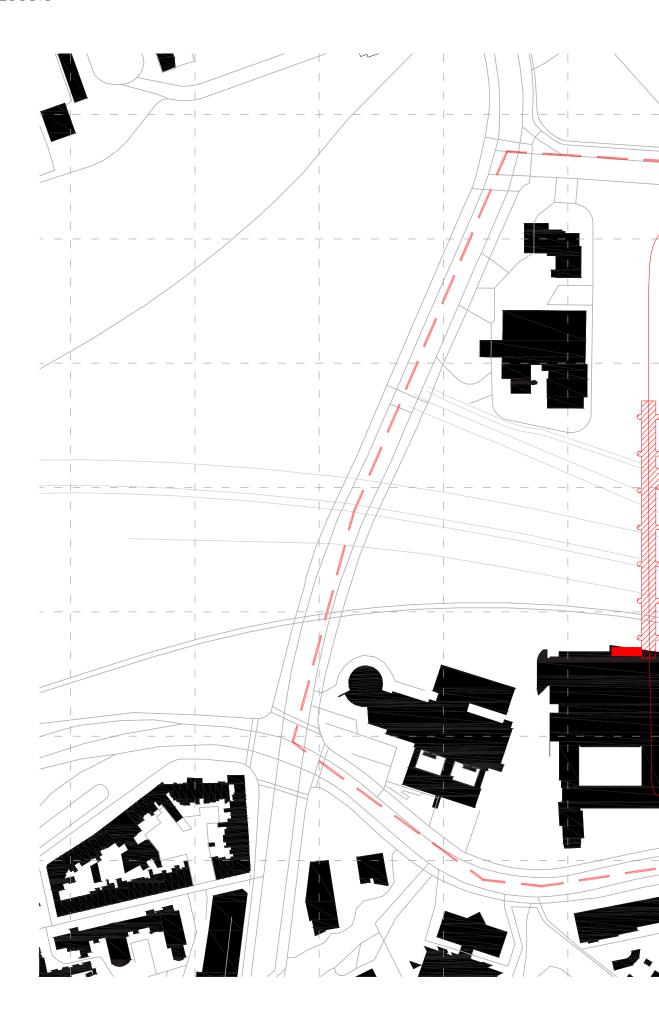
\on using millipede

millipede can assist with optimizing beam and column sizes.

however, it is not suited to analyze overall lateral stability of the structure.

you should first develop a clear conceptu-

al structure manually, then use millipede for dimension tuning.



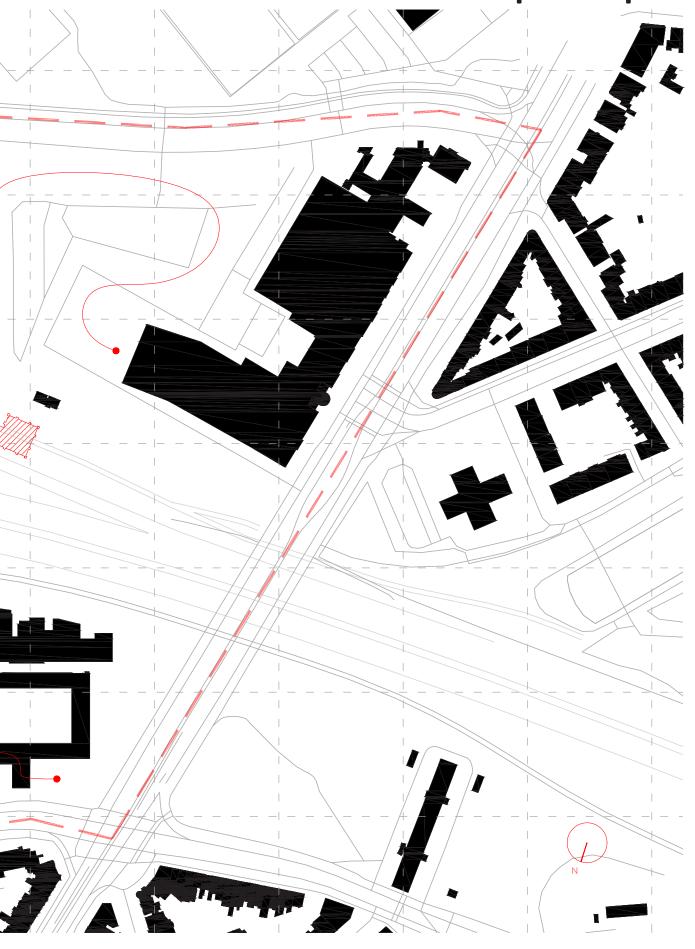


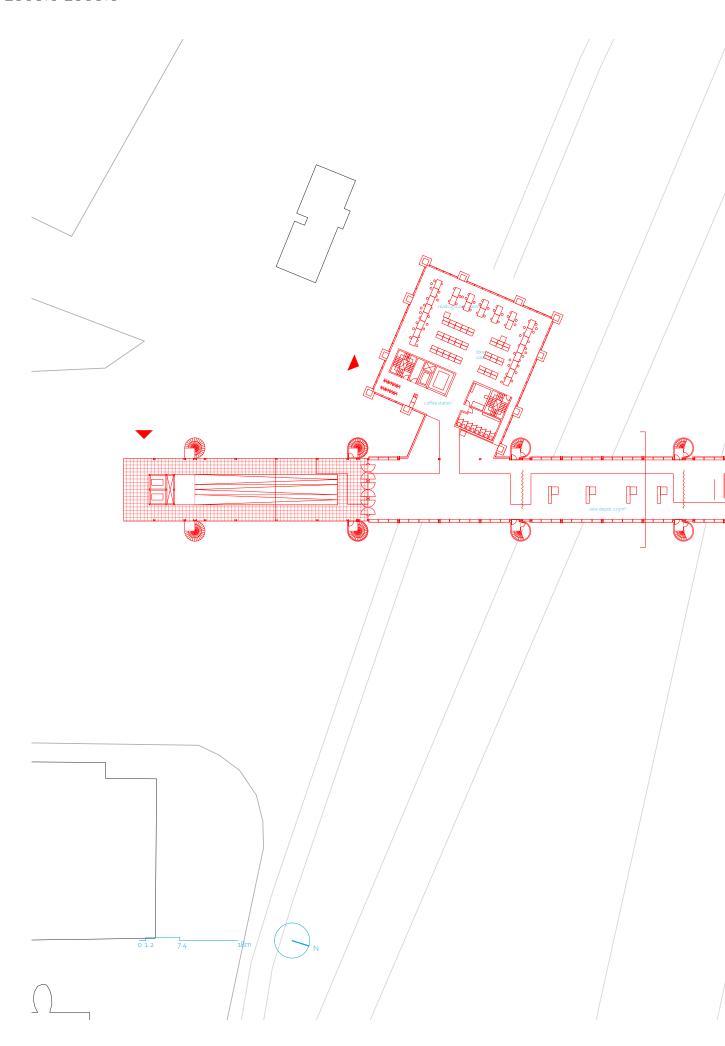
fig. 4.6.1 master plan



fig. 4.6.2 site model 1:200



fig. 4.6.3 site model 1:200



interiors buildings cities

liren chu

part 4

archiving architecture

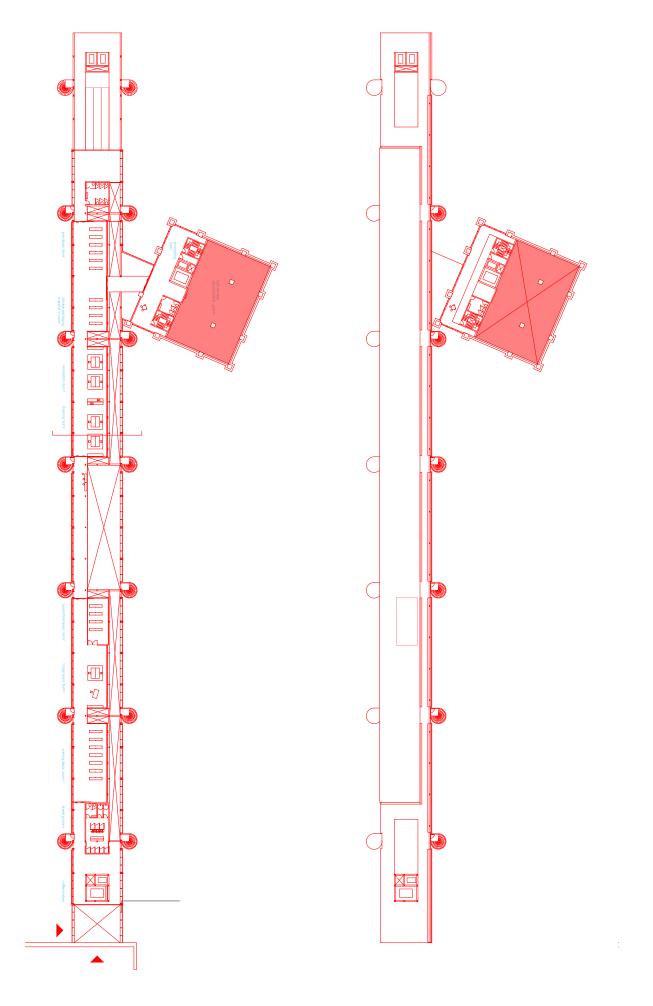
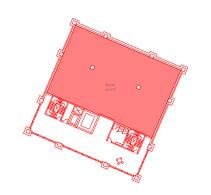
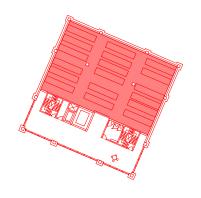


fig. 4.6.5 2f, 3f plan





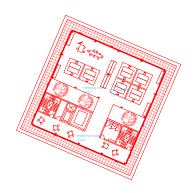






fig. 4.6.6 4f, 5f, 7fplan





fig. 4.6.7 rendering centre hall on bridge



fig. 4.6.8 rendering mezzanine terrace



fig. 4.6.9 rendering archival material processing space

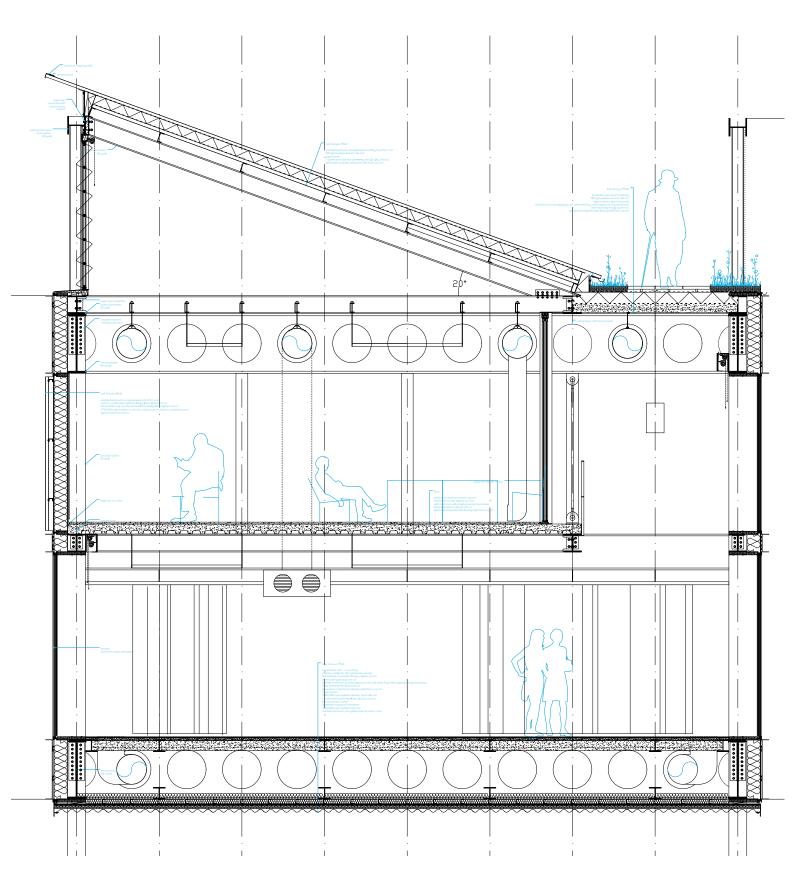


fig. 4.6.10 cross section detail



fig. 4.6.11 fragment model 1:33

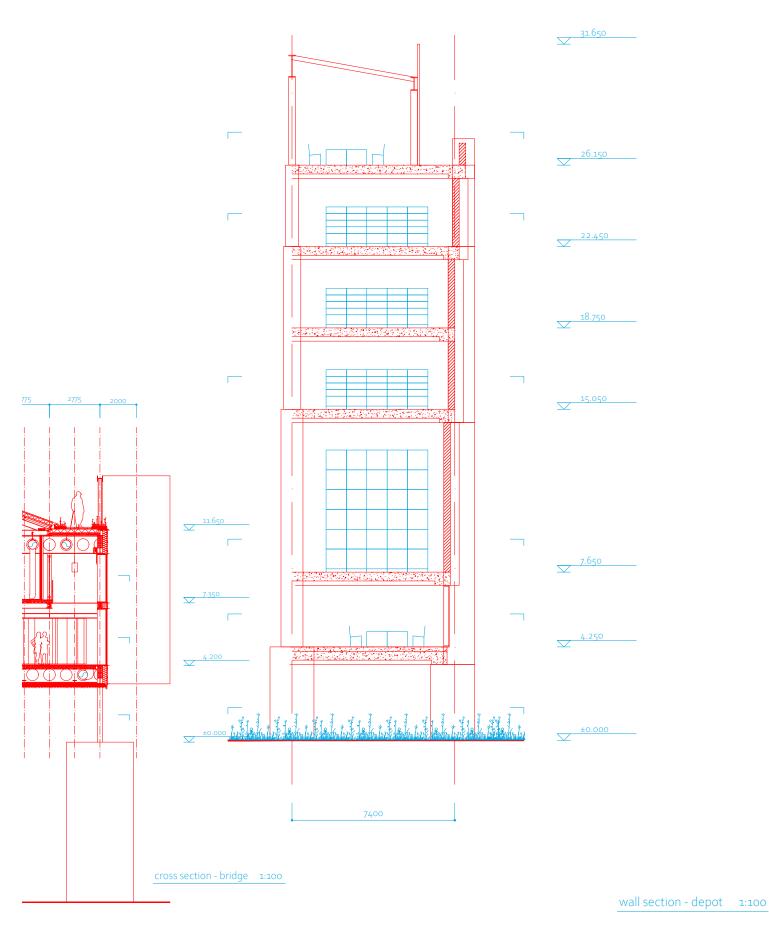


fig. 4.6.12 sections, height aligned

fig. 4.6.13 steel structure connection



fig. 4.6.14 ceiling under mezzanine

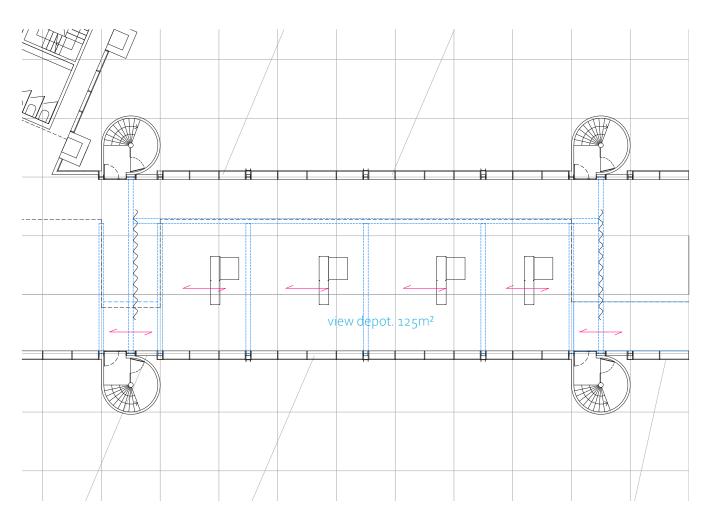


fig. 4.6.15 structure diagram 1f

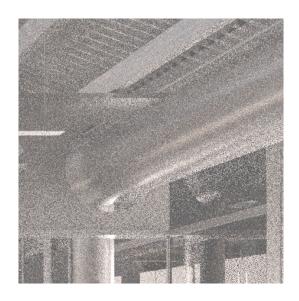


fig. 4.6.16 ceiling under roof

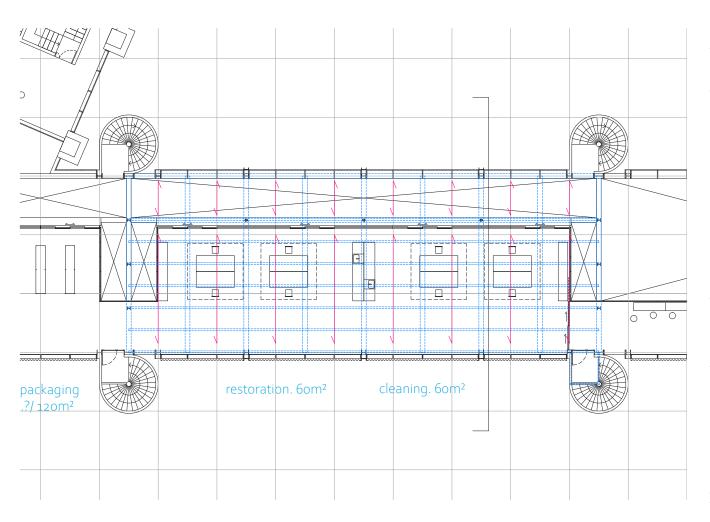


fig. 4.6.17 structure diagram 2f



fig. 4.6.18 elevation

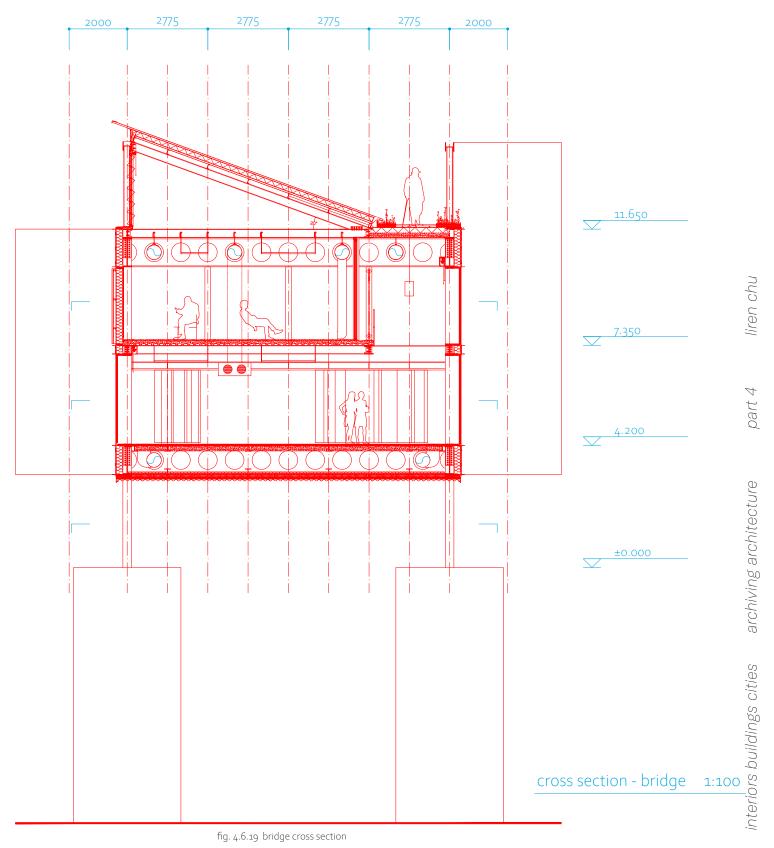




fig. 4.6.20 model 1:33, general view



fig. 4.6.21 model 1:33, facade mezzanine half

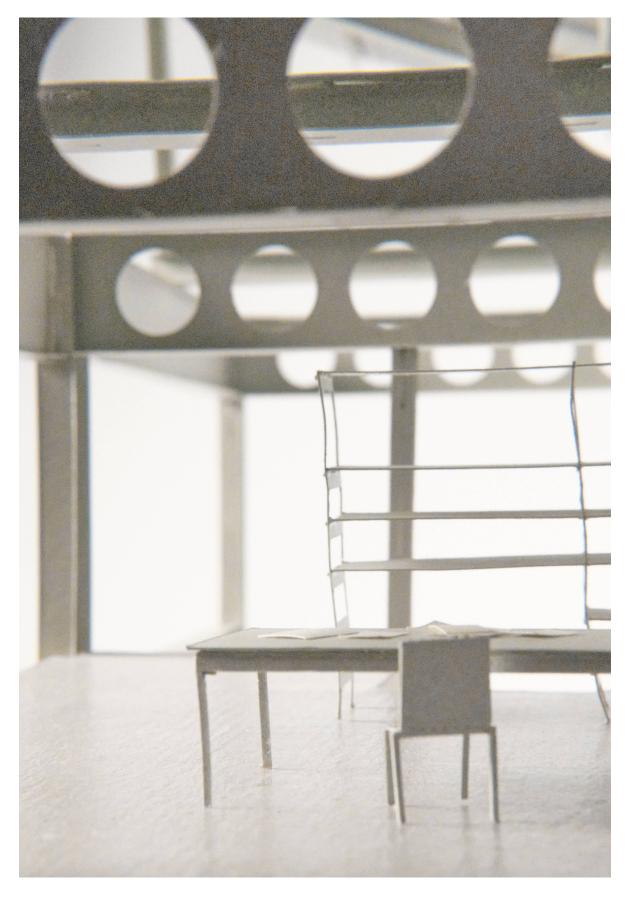


fig. 4.6.22 model 1:33, archival material processing space



fig. 4.6.23 model 1:33, public space double height corridor





fig. 4.6.24 model 1:33, public space double height centre hall



fig. 4.6.25 model 1:200



fig. 4.6.26 model 1:200, connection bridge & depot



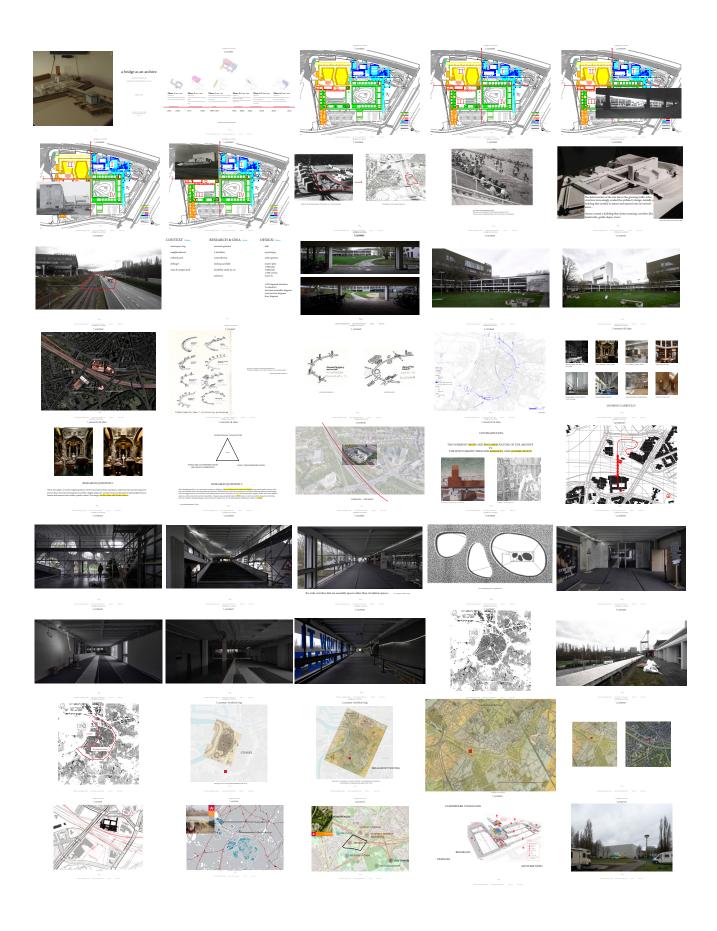
fig. 4.6.27 model 1:200, view from highway

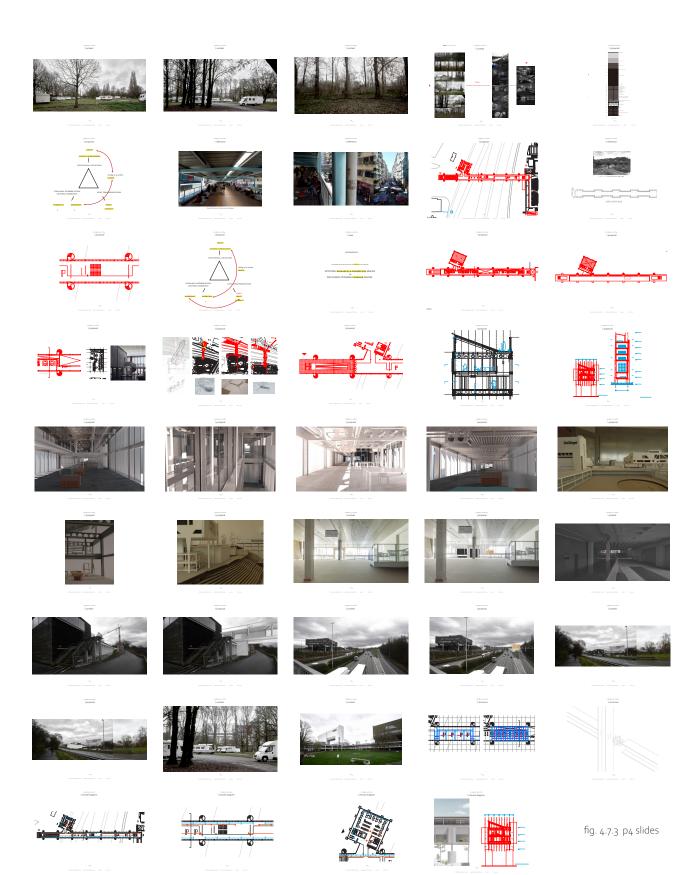


fig. 4.7.1 model 1:33, general view



fig. 4.7.2 model 1:33, structure failure





大家好,我的名字是立人。我在设计一个 a bridge as an archive。

首先让我们看一下我将会在30min内讲述的内容,

我会从语境出发,接着讲研究和思考,最后讲设计细节。

我会从大到小地入手语境,讲述课内和课外做的调研,有现成的资料和自身的观察,设计的角度从形式语言的矛盾点入手再到具体的建筑技术。

slides 的顺序是我设计思考的顺序,所以有些地方会重复颠倒。

语境

我们在安特卫普南部的 ringroad 边的 deSingel 艺术中心,做一个建筑 archive。在讲述我的项目之前,我需要补充强调一些场地信息。

众所周知,deSingel 的名字来源于 the ring,即它所在的这个交通环线。ring 的形象,在安特卫普的历史中扮演着重要的角色。

这是安特卫普的城市肌理,从这张图我们可以看到两条很明显的圈。二者在它成为交通流线或者城市景观 之前都是 fortification。

第一条圈是 citadel,建于 1567 年由西班牙人为了控制居民起义,19 世纪拆除成为 zuid 街区。

第二条圈是 brialmontvesting,用于保卫城市。它就是现在 R1 经过的区域,ringroad 是沿着这个肌理建造的。

这两个 ring 在城市社会的需要下建立,功能随需求改变,被揉碎附着生长,虽然防御工事早已不在,其倒下躯体留下的印记难以磨灭,其音在今日依旧回响。

我们可以看到在场地周围,Brialmont的一些水体被保留,大量面积成为了 ringroad。

现在让我们进入 deSingel 的历史。

自 1958 年 deSingel 开始设计以来,经历了大致四个阶段的加建和改造。

我还做了一个更详细的 diagram,可以看出不同阶段的演化。

其中 Leon Stynen 的部分几乎按照他本人的最初意愿完成了:

第三第四象限两个低矮的底层架空的围廊,

第三象限靠近山体的一个较高体量,

以及第二象限的一个塔和两个剧场。

与此同时,周边场地也经历了很大的变化。

右图是 1962 年第一阶段开始施工前设计团队得到的周边场地信息。

右图是《Zie Magazine》1969年第一阶段完成时描绘的景象。

可以看到 ringroad 两侧一些典型的地标。

对比可见,一个可以游泳的池塘和树林消失了,取而代之的是向北移动的、重新设计的 ringroad。 deSingel 的生存空间遭到压迫。

这是那个消失的池塘、曾经可能承载了丰富的城市活动。

众所周知·deSingel 最初的设计特点是在自然中穿行的走廊和架空底层,被山丘与水体环绕,不存在高密度城市的问题。

但交通基础设施的发展不断侵蚀着设计者的初衷。

如今的 deSingel 仍保持内向的布局,仅能从庭院中隐约望见远方的城市地标。

说到地标,来看一下周边情况,可以看到大型建筑类型在 ringroad 附近很受欢迎。

Neutelings Riedijk 总结的 ring 结构设计逻辑中,有两个我特别感兴趣的:

左侧是 monumental intersection,正是 Leon Stynen 在 deSingel 采用的策略——在高速边建塔楼,用桥连通两侧;

右侧是 edges of connection,强调道路两侧的事物之间可以建立延续关系。



hello everyone, my name is liren. i am designing a bridge as an archive.

first, let me give you an overview of what i will be covering in the next 30 minutes.

i'll begin by introducing the context, followed by my research and reflections, and finally, i'll delve into the design details.

starting from a broader scale, i will present the contextual background through both in-class and independent investigations — including existing sources as well as my own observations.

from there, i will shift to the design approach, beginning with the tensions in for-

mal language, and narrowing down to specific architectural techniques.

the order of the slides reflects my design thinking process, so some things will repeat or appear out of conventional order.

context/

we are designing an architecture archive next to desingel, along the ringroad in the south of antwerp. before introducing my design, i need to emphasize some additional site information.

as we all know, the name desingel comes from the word "ring", referring to the road it sits next to. the ring plays an important role in the urban history of antwerp.

this is a diagram of the urban fabric of antwerp, and we can see two distinct circular layers. before becoming transport routes or green buffers, both were fortifications.

the first circle is the citadel, built in 1567 by the spanish to control uprisings. it was demolished in the 19th century and became the zuid neighborhood.

the second one is the brialmontvesting, used to defend the city. the current r1 ringroad is built along this trace./

these two rings were built according to social needs and transformed over time. though the fortifications are long gone, their traces still mark the city, and their echoes still resonate today.

around our site, some water bodies from the brialmont period remain, while large portions were replaced by the ringroad.

now let's look into the history of desingel.

since 1958, desingel has gone through roughly four phases of addition and renovation.

i made a detailed diagram showing the evolution of each phase.

leon stynen's original masterplan was largely respected:

two low-rise arcades in the third and fourth quadrants,

a tall volume near the slope in the third quadrant,

and a tower with two theaters in the second quadrant.

meanwhile, the surroundings changed dramatically.

the left image shows the site condition from 1962 before the first phase started construction.

the right one is from 1969, from zie magazine, showing the scene after phase one.

you can see recognizable landmarks along both sides of the ringroad.

compared to the earlier image, a swimmable pond and forest disappeared, replaced by a redesigned ringroad shifted to the north.

the living space of desingel was severely compressed.

here is the pond that disappeared—it might have once supported vibrant urban life.

it is well known that the original design of desingel was defined by corridors moving through nature, elevated ground floors, surrounded by hills and water, far from urban density.

however, the evolution of transport infrastructure eroded the designers' vision.

today desingel still has an inward-facing layout, only offering distant views to urban landmarks from within the court-yards.

speaking of landmarks, let's zoom out a bit: large buildings are commonly found near the ringroad.

in neutelings-riedijk's summary of spatial types along the ring, i found two types particularly relevant:

这让我想到,连接 deSingel 与 ringroad 另一侧,也许可以帮助它摆脱被交通隔绝的困境。

这是整条 ringroad 上跨越的桥梁,密集分布于车本位的城市中。

现在我们来讨论 archive。我们 studio 研究了八种不同的 archive 类型。

我研究的是 Sir John Soane's Museum。作为一个私人收藏馆,它非常独特,每一件藏品都有固定的位置与背后的叙事。

这引发了我的第一个研究问题:

当主体不是材料的生产者,而是其再现者时,除了长期保存的需求,这种行为是否更像一种高度主观的策展?

这种关系可以在公共档案馆中发生吗? 更直白地说·visitor可以是 curator 吗?

研究后我得出 archive 的三要素: 有意图的收集、学术解读或公共展示、长期保存。 但如何权衡这三者呢?还是根本不去平衡它们?

archive 的封闭性和场地所需的开放性之间存在冲突,正是我设计的出发点。

我提出一个复杂形状的 bridge,连接南北地块,跨越压迫 deSingel 的 ringroad。

当我们说 deSingel 需要"连接"和"开放"时,我们说的到底是什么? 我们如何进入 deSingel ?来看这个 1:100 模型,它的剖切方式正是我的设计概念。公众从入口下进入,走楼梯穿越中轴线,最终抵达 blue hall 与 red hall。

如果这段路径只是狭窄走廊,会很不适; Stynen 将其变为宽阔可集会的走廊,可欣赏庭院。 Stephane Beel 注意到这条轴线,立面上投影着玻璃门,强调路径与连接。

穿过 Beel 的门就到达 red hall 与 blue hall 入口,爬上坡左拐进入走廊,最终到达阳台。那么如何面对 ringroad ?

正如我们看到的 structural principle 一样, VAI 的研究也提到应连接 ringroad 南北地块。 S-RSA plan 2006 年首次提出 deSingel culture park 的概念。 2021 年 RUP Vogelzang 中再次提出该概念,构想以 expo 为中心的文化基础设施辐射。

Expo 的东侧质量不高,Camper Park 是临时房车停车场,环境不佳,需要设计介入。

从 urban gesture 来看,我认为最有效的介入是: 延长 deSingel 的中轴线,连接 deSingel 后部与 expo 东侧,在场地中央建立强有力的联系点。

在空间功能上,depot 占据一半以上,archive 处理占 1/4,剩下的是公共空间。

如果我们将这个三角关系扩展,桥梁的线性特征与 archive 的流程线性契合,展览空间等则可以延续 Stynen 让走廊变为集会空间的理念,使公共空间具备更多活动可能。

on the left, monumental intersections, like what leon stynen did: a tower next to the highway, with a bridge connecting both sides;

on the right, edges of connection, which suggests continuity across the road.

this inspired me to think: maybe connecting desingel to the other side of the ringroad could help it escape isolation.

this is a map of all the bridges across the ring—most are utilitarian in nature, in a car-dominated city.

now let's talk about the archive. in our studio, we studied eight different archive types.

i studied sir john soane's museum. as a private collection, it's highly curated. every object has a fixed place and a specific narrative behind it.

that led me to my first research question:

if the subject is not a producer of materials, but a re-presenter, isn't it more like a highly subjective curatorial act, in addition to long-term preservation?

can such a relationship happen in a public archive?

more directly: can a visitor also be a curator?

from my study, i concluded that an archive consists of three elements:

intentional collection

interpretation or public exhibition

long-term preservation

but how do we balance these three? or should we refuse to balance them at all?

there is a conflict between the secluded nature of archives and the openness this site calls for. this is my starting point.

i propose a bridge with a complex form, connecting the north and south of the site and spanning across the ringroad that oppresses desingel.

but when we say desingel needs to be "connected" and "opened," what do we really mean?

how do we enter desingel? let's look at this 1:100 model. its cut shows the core idea of my design: the public enters from below, climbs the stairs through the central axis, and arrives at the blue hall and red hall.

if this path were just a narrow corridor, it would feel uncomfortable. stynen turned it into a spacious gathering route with views of the courtyard.

stephane beel recognized this axis and projected it in the façade with glass doors, emphasizing path and connection.

passing beel's door, we reach the entry of the blue and red halls. turning left up the slope, we eventually reach the balcony. but what about the ringroad?

as we saw in the structural diagram, research from the vai also suggested connecting both sides of the ringroad. in 2006, the s-rsa plan first proposed the idea of a desingel culture park.

in 2021, the rup vogelzang plan mentioned it again, imagining cultural infrastructure radiating from the expo site.

the east side of the expo lacks quality. the camper park is temporary and underdeveloped. it needs design intervention.

from an urban gesture point of view, i believe the most effective move is:

to extend the central axis of desingel, connecting its rear side with the expo's east side, and establish a strong point of connection across the center of the site.

in terms of program, the depot takes up more than half the space, the archive process takes one-fourth, and the remaining is public space.

if we stretch this triangular relationship, the linearity of the bridge matches the workflow of the archive, while the public space can evolve from stynen's vision of turning corridors into gathering places—with rich potential for activities.

wk **4.7** 250517-250523

\ questions and observations sam:

presentation

very well intro mentioning the times of the presentation. along the way, the presentation becomes too loose. there is a beginning, a middle (looking at the printed drawing) but not really an end image. no open ending but what happens on the other side of the bridge? let the bridge lead the presentation. zoom in on the archive.

maybe you might want to try to speak a bit more from memory at the p5 presentation, using small printed cards with keywords.

beautifully crafted presentation slides, well done!

24 neutelings riedijk did not discover but observe and draw.

28 mention also the last name of margaux

30 captions under the pictures are too small

36 mention the date underneath the picture so viewers know this is the current state

42 s-rsa = spatial structure plan

44 diagram of expo does not really matter, if you don't engage with the information, the photos on the following slides are much more useful.

50 turn the bar 90 degrees so that the text can be bigger

51 too abstract for me, it needs more explanation than you give now

65 line weights are not well balanced and you should clearly state that you move on to another building.

72 photography could be much lighter

\ research

very complete historical overview, both of the city, its former ramparts, the ringway and de singel.

would you say that the interventions of mjvha in de singel are phase 4.4?:)

history of the ringway

29 i would only read the yellow research question, not the whole text

q how does your design relate to the pond and the forest that used to be located where now the

feedback

traffic road lies?

would you like to say something about the small cigarette butt addition to de singel in the wezenberg plan - stynen model?

q bridge in hongkong: very different setting, context. how do you imagine to bring the occupation to antwerp or how would this be effected?

g triage, cleaning and preserving are happening on the mezzanine floor. what does this mean for boxes and trucks, how do you get things up? is there a direct connection with the archive block?

the mezzanine is like a breakout room from the archive then?

q 62 i'm interested in why you placed the bridge in a straight line, eventually, where your first proposal was to continue the slope between the two concert halls. q i see that in the 1:20 section you place trees between the highways

g round staircases not clear what they are for. relation to the round pilotis?

\ questions matthijs:

you use floor heating but no heating above?

how does the triangular space under the roof work?

what are your ideas about the materiality of the outside?

bring back the image of leon stynen model with diving platform at the end of axis

\ questions laura:

very intriguing starting point of your presentation. how can this history be vehiculated in the site?

returning to nature

what would the traces of water become at a larger scale?

how can we remember them?

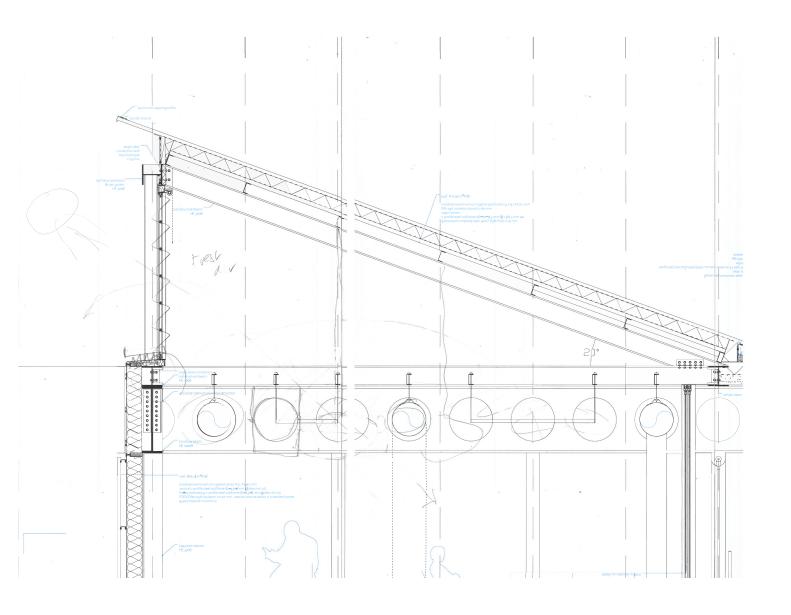
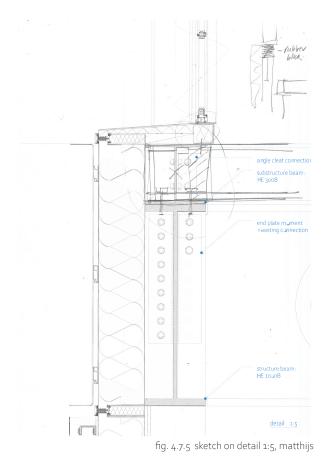


fig. 4.7.4 sketch on detail 1:20, matthijs

feedback



\matthijs

reduce the density of suspended c-channels to allow more light to enter.

replace unnecessary i-beams with timber or other alternative profiles.

add a thermal break at the vertical connection of the 200x200 roof i-beams.

add an installation method to the façade and indicate it with dashed lines.

减少悬挂用 C 型钢的密度, 从而让光线可以进入 把不必要的工字钢变为木材或者其他型材 屋顶 200x200 工字钢竖向连接处加入 thermal 给立面加上安装方法,虚线展示一下

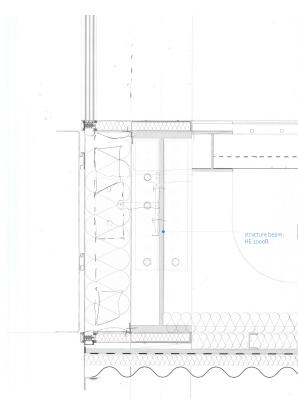


fig. 4.7.6 sketch on detail 1:5, matthijs

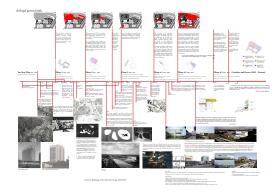
储

chủ lìrén interiors buildings cities s 25

msc 4 palace archiving architecture reflection

1. relation between graduation project, master track, and MSc programme

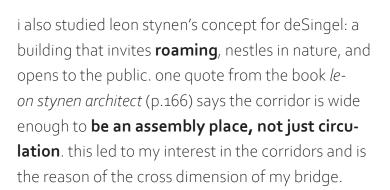
my graduation topic is a bridge as an archive. it is based on the site selection decisions made according to the studio theme. it is closely related to my design strategy, aligns with the values of the ibc studio, and also fits the integrated consideration of theory and practice in the msc aubs program.



deSingel timeline

2. research—design relation

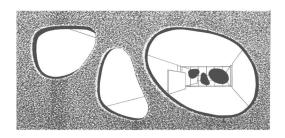
at the beginning of our research group work, my focus was on the building of deSingel. this complex was constructed gradually over 60+ years. my initial study focused on its design and extension **timeline**, complemented by relevant contextual events. for example, the 1973 economic crisis indirectly led to the public opening of the music academy's performance hall, paving the way for deSingel as an art institution, with contemporary architecture exhibitions and the arrival of vai.



in 1989, stephane beel designed a series of doors that echoed the "potato openings" and emphasized the central axis. people enter under the canopy, walk upstairs through the axis, and reach the most public blue and red halls. this became my entry point: if the architecture archive is to become part of this system while occupying a significant position, the central axis would be a good location. i also referred to previous studies by vai on the feasibility



central corridor of deSingel

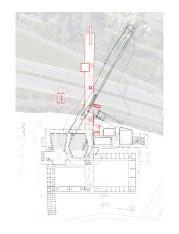


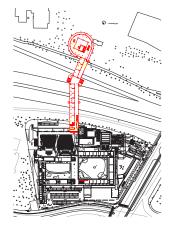
door assembly designed by stephane beel

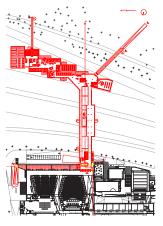


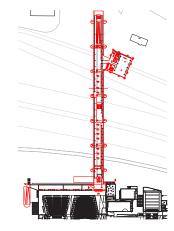
ringland project

of an archive around deSingel. one proposal was rejected by the beoordelingscommissie for placing volumes in front of deSingel. i agree with this decision and did not want to alter the collective memory of the facade. instead, i extended the central axis backward to form the bridge. this led to research on the ringland project, ringroad spatial types, habitable bridges, and the rup plan's definition of deSingel as a culture park—all of which confirmed my design choice.









some of the design iterations

3. assessment of your approach and methods

in my graduation plan, i listed case studies, prototype design, scenography model making, and research on similar architectural types. under the encouragement of the studio, works such as project journals and "looking carefully" were valuable. overall, these methods helped me clarify my design task, envision my design outcome, and position myself among various design options.

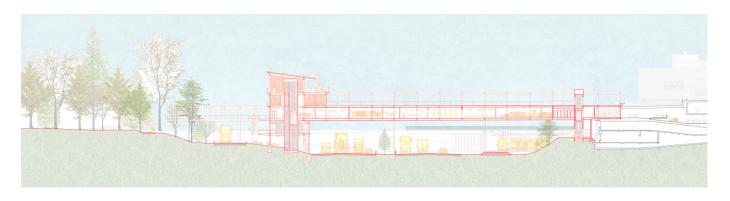
compared with peers, i went through more design iterations. although feedback loops with tutors and peers cost more time and affected shortterm completeness, they allowed me to explore more possibilities within the same time frame.

4. academic and societal value, scope and implication

wk 4.1 250404-250411

i designed a 18om-long bridge building and a compact, integrated archive volume. academically, i explored a space type that extends **public interiors into landscape and infrastructure**. it requires imagination across city and spatial detail scales.

socially, i created a visionary infrastructure. as an extension of the original spatial spine, it reconnects parcels separated by roads and opens up new axial possibilities. its translucent volume expresses **an open archiving attitude**. its position avoids altering the front of deSingel, respecting collective memory. at the same time, it confronts car-dominant infrastructures and **expresses urban spatial justice**.



section from p2

in the city of antwerp, there are several similar urban nodes along the ringroad. although my design form is deeply influenced by deSingel's architecture and module, a similar spatial type—a corridor

that is more than a passage, a street that creates urban experience—can be applied elsewhere.

6. reflection questions to self

why does the design remain mechanical even at such a large scale? what kind of experience does a 18om passage really bring? how does the interior create a high-quality urban experience?

