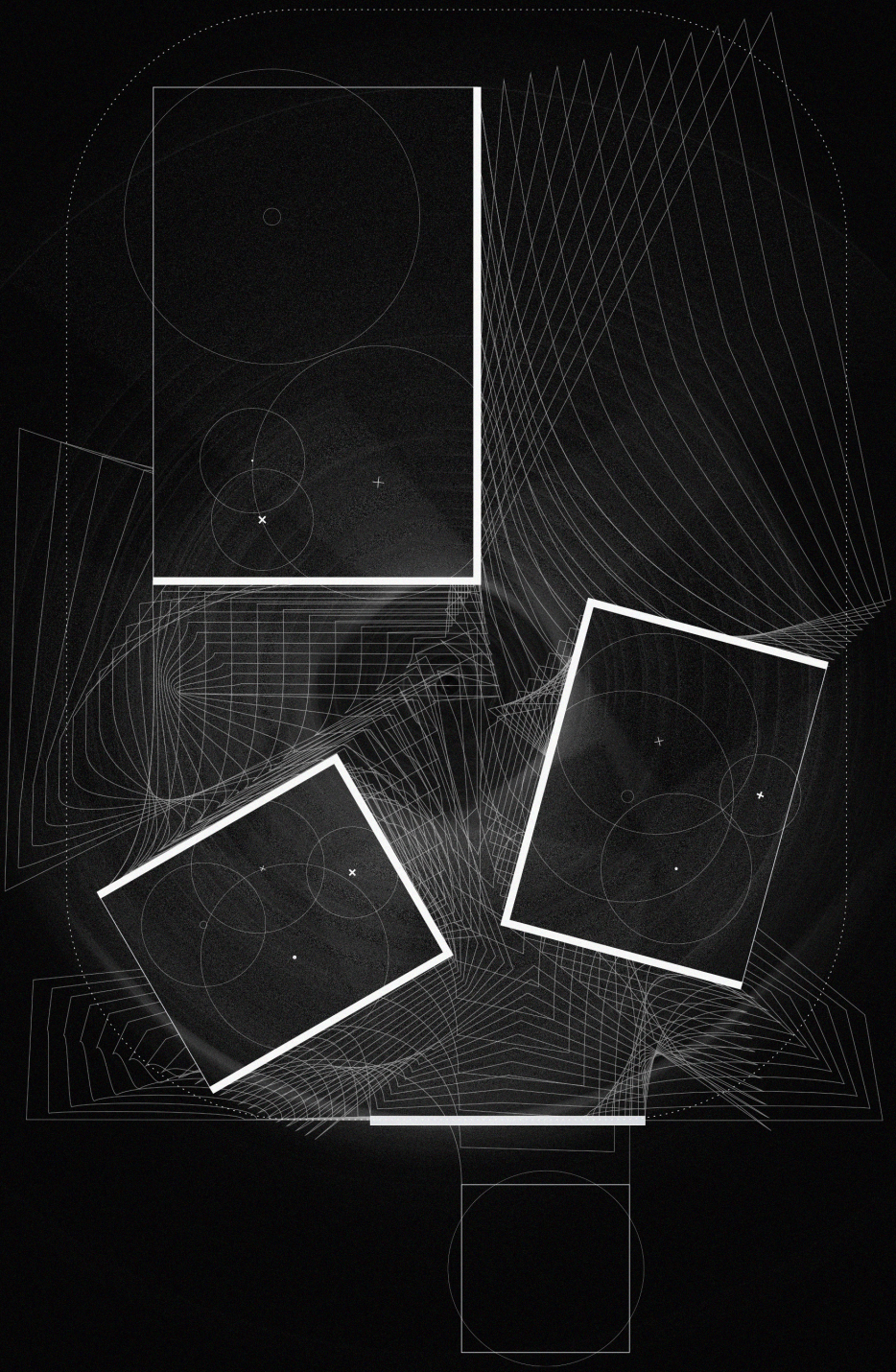
project journal // P5 19_06_25



project journal // P5

This book is a public building graduation journal documenting the process along the way, including the group work, excursion and further individual work on the project. Referenced images are either done by the author or taken from the group-work phase, in the instance of the latter this will be annotated carefully.

tutors

Henk Bultstra - design mentor
Sien van Dam - research mentor
Florian Eckardt - engineering mentor

Nathalie de Vries - chair of the studio

aksestrøm

Condensed interactive public space

A graduation studio project on how flow and permeability of the public design intervention can act as a catalyst for invigoration of the urban fabric of underprivileged neighbourhoods and promote community engagement

ABSTRACT:

Sundholm, a historically marginalized quarter within Amagerbro, faces severe social and spatial challenges, including economic disparity, societal marginalization, and a lack of connectivity with its surroundings. Once an isolated social welfare institution district, the nieghbourhood continues to struggle with its negative reputation and physical disconnection, limiting its potential for urban renewal. The project aims to transform Sundholm into a socially sustainable and dynamic urban environment by introducing a public condenser that promotes interaction and inclusivity.

A key research focus is understanding how architectural morphology and topography can shape movement patterns and social encounters. The design proposes an open, accessible public space that integrates a wellness and sports center, cultural hall, and media unit along a central axis, which functions as the primary structuring element, encouraging movement, flow, and interaction across diverse socioeconomic groups, as well as introducing the project's street presence on main boundary roads. By implementing strategic spatial porosity, effective pedestrian circulation, and diverse intensity zones, the project seeks to create an environment that naturally invites both local residents and outsiders, encouraging new social constellations.

The project also emphasizes environmental and economic sustainability. By incorporating a nature-inclusive design startegy, the public condenser will connect human and non-human actors, thereby contributing to urban biodiversity. Furthermore, passive design strategies and modular construction techniques will be explored to ensure resource-conscious material use.

Finally, this project envisions Sundholm as a vibrant and inclusive urban district, where the interplay of movement, porosity, and spatial intensity promotes a thriving public realm. By strategically designing for flow and social interaction, the public condenser will act as a catalyst for the area's revitalization, strengthening its identity while making it an attractive and safe environment for all.

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01

lecture notes

copenhagen history_01

notes from the atlas of copenhagen

BRIEF HISTORY OF THE FORMATION

- UP TO THE MIDDLE OF THE XIXTH CENTURY - CITY PROTECTIVE OF ATTACKS FROM HANSAS, SWEDES, BRITISH & PRUSSIANS.
- POST WWII PHYSICAL SECURITY → SOCIAL SECURITY → PHYSICAL ETC.

700 - 1160 NATURAL HARBOUR

- HARBOUR FACILITIES & VIKING AGE FARMHOUSES
- LOCAL SHIPBUILDING
- EXTERNAL RAIDS → TRADING CONNECTIONS
  - FARMING
  - HERRING TRADE
- GATEWAY BETWEEN WESTERN EUROPE & BALTIC SEA (HERRING)

1160 - 1417 ABSALON & MEDIEVAL

- EXPANSION OF TRADE → GROWTH OF POPULATION.
- CASTLE AS A CENTRAL POINT + CHURCH + TOWN SQUARE
- CHURCH THE LARGEST LANDOWNER
  - EVERYDAY LIFE FRAMED BY CATHOLIC LIFE
- BURGEOIS CLASS (XVTH CENT.) - CONTROLLING
- CITY WITHIN FORTIFICATIONS

1417 - 1660 ROYAL CPH.

- AFTER 1536 - END OF ROMAN CATHOLIC CHURCH INFLUENCE
- AMBITIONS TO TRANSFORM INTO POLITICAL, ECONOMIC & MILITARY COMPETITOR TO AMSTERDAM.
- 1588 - 1648 - CPH DOUBLES IN SIZE
- CHRISTIANSHAVN - TOWN OF MERCHANTS & CRAFTSMEN
  - KNIPPELSBRO BRIDGE 1620
- ART & ARCH. - SHOWS PRESTIGE
- FREDERIK III (1648-1670) - FIGHTS OFF SWEDEN → GAINS POPULARITY
  - DEAL BETWEEN MONARCHY + CLERGY + BOURGEOISIE
  - 1660 - ABSOLUTE MONARCHY
- EXPANDED FORTIFICATIONS

1660 - 1813 ABS. M., FIRES & PLAGUES

- 1670, 42,000 POPULATION - 10x AALBORG.
- 1728 - FREDERIKSSTADEN - AREA NE. - RENAISSANCE PLANNING.
- 1711 - BUBONIC PLAGUE
- 1728 & 1795 - DEVASTATING FIRES
  - RECONSTRUCTION → TRANSFORMATION & IMPROVEMENTS.
  - OPEN SQUARES
  - SINGLE FAMILY HOUSES → MULTISTORY HOUSES.
- NEUTRALITY TO CONFLICTS SUPPORTS GROWTH.
- 1807 BRITISH BOMBARDMENT, NAPOLEONIC WARS, STATE BANKRUPTCY.

1813 - 1856 CONG., CHOLERA & DEMOCRACY

- 1852 - MOVED DEMARCATION LINE - NEW SETTLEMENTS.
- FIRST RAMPART GATE PERMANENTLY OPENED - 1856
- OVERCROWDING - CHOLERA (5,000 DEAD) - 1853
  - ↓ MODEL OF HEALTHY & AFFORDABLE HOUSING (1853 - 1857)
- 1848 MARCH REVOLUTION
  - ↓ FIRST CONSTITUTION ~~1648~~ 1849

1856 - 1901 INDUSTRIALIZATION & BRIDGE QUARTER EXP.

- EARLY INDUSTRIALIZATION - GROWTH
- 1880s/90s - MOBILITY IMPROVEMENTS
- BRIDGE QUARTERS - SPECULATIVE NEIGHBOURHOODS AROUND THE URBAN CORE.
  - NØRREBRO + VESTERBRO + AMAGERBRO (WORKING CLASS)
- 1868 - REMOVING RAMPARTS
  - PART CONERTED TO RESI BLOCKS
  - BELT OF PUBLIC PARKS (H.A. FLINDT)
  - SCHOOLS, GALLERY & HOSPITAL OPENED.
- 1871 - SOCIAL DEMOCRATIC PARTY - EXPANSION OF INDUSTRIAL WORKFORCE WITH ORGANIZED CHARACTER.
- 1901 - CPH TRIPLES IN AREA WITH NEW MUNICIPAL BORDERS.

1901 - 1945 - PEOPLE'S COPENHAGEN

- SUBURBANIZATION & THE HOUSING MOVEMENT.
- 1938 - STATE TO SUPPORT SOCIAL HOUSING ASSOC.
  - ARCHITECTS PLAY A BIGGER ROLE - KAY FISKER
- WELFARE SPACES & INSTITUTIONS.
- PHYSICAL FABRIC LARGELY UNDAMAGED BY WAR
- OCCUPIED BY GERMANY (1940-45)

1943 - 1973 MODERN WELFARE

- 1950 - POPULATION PEAK 875,000 (DROP IN 1973)
- SURROUNDINGS GREW RAPIDLY, CORE STAGNATES.
- 1947 - FINGER PLAN (FINGERS RADIATING FROM THE CORE, S-TRAINS)
- LARGE SCALE AFFORDABLE DWELLINGS - PREFAB CONC. PANELS.
- 1950s/60s MOVES FROM BRIDGING QUARTERS TO SUBURBS
  - URBAN CORE LEFT VACANT

1973 - 1992 OIL CRISIS & RESTRUCTURING

- 1973 - OIL CRISIS - RECESSION
  - HIGHER TAX PAYING MOVE TO SUBURBS
  - PUBLIC - DEPENDENT STAY IN THE CENTRE
- 1970s - GEHLS HUMANISTIC APPROACHES
- 1973 - EEC join.

1992 - 2007 COMPETITIVE REG. / URBAN RENEWAL

- 2000S GROWTH - ECONOMIC ENGINE OF DENMARK
- URBAN AMENITIES - KVARTERLØFT - COURTYARD IMPROVEMENTS
  - PUBLIC SQUARES, PARKS, PLAYGROUNDS.
- 1990s HOUSE PRICES RISE.
- VULNERABLE SEGMENTS OF POPULATION PUSHED OUT OF THE CENTRE,
  - CONCENTRATED ALONG SOCIAL HOUSING AREAS.

copenhagen history_02

notes from the Dean Simpson lecture

DEANE SIMPSON 05.09.2024

1852 - LAW CHANGED - CAN BUILD OUTSIDE OF RAMPARTS
· TEMPORARY / SMALL / BURNABLE STRUCTURE
1856 - MASSIVE GROWTH DUE TO INDUSTRIALIZATION.

CHOLERA EPIDEMIC → SEWAGE SYSTEM (INSPIRED BY LONDON)
WORKER'S UNIONS

2nd PART OF THE XIXth CENTURY
- NEW PUBLIC AMENITIES
- SCHOOLS
- HOSPITALS
- TRANSPORT SYSTEMS TO CONNECT NEW NEIGHBOURHOOD

1864. - LOSS OF HOLSTEIN (1/3 of TERRITORY)
→ CURRENT DENMARK
- COLLECTIVE AGRICULTURE
- FOOD PRODUCTION COOPERATIVES
- LOSS OF LAND MARKED THE GAIN IN COOPERATIVE ACTION.

1947. - INTRODUCTION OF 'THE FINGER PLAN'
- PLANNING ACHIEVEMENT / CULTURE ICON.
- TRANSIT ORIENTED DEVELOPMENT.

NIELS ALBERTSEN - UTILITARIAN WELFARE CITY
8hrs - FINGER - SLEEP
8hrs - PALM - WORK
8hrs - IN-BETWEEN FINGERS - RECREATE

'HUSE TIL MENNESKER' MADE IN NEW ~~BLOCK~~ BLOCK LIVING.

1989. - TAXPAYERS MOVE OUT OF THE CITY, CENTRE IS ALMOST BANKRUPT.
- HOW TO MAKE CPH AS A COMPETITIVE CAPITAL
- 1992 NATIONAL PLANNING → FOCUS ON CAPITAL CITY
E.G. MEDICON VALLEY

POST-WWII WELFARE PREDICT & PROVIDE → ENTREPRENEURIAL PLANNING.
STATE FRAMED TO SUPPORT THE COMPETITIVENESS.
'DELIVERY OF WELFARE ALSO AS A COMPETITION TO ATTRACT SKILLED LABOUR'

SCALING UP.
- BECOME A LARGER 'SYSTEMS'
- IN-COLLAB W. SOUTH OF SWEDEN

DEPOPULATION OF DENMARK ON THE OUTSKIRTS.
FOCUS ON THE CAPITAL

BRANDING CPH. AS SUSTAINABILITY CENTRE
- BIG ARCH. PLAYERS
- NEIGHBOURHOOD UPLIFT PROJECTS (MUNICIPALITY)
- CYCLING
- DISTRICT HEATING
- URBAN PUBLIC SPACE QUALITY
- INVESTMENTS TO 'KEEP YOUNG GENERATIONS' IN THE CITY
- COLLECTIVE & COMMON GOOD
- PHILANTROPIC PLAYERS (E.G. REMDANIA)
- LARGE PUBLIC FUNDS.

LAND VALUE CAPTURES ; DAVID STRUTHERS !!!

NORDHAVN - 'GHETTO OF THE AFFLUENT'
LIVABILITY VS. UNAFFORDIBILITY - ATLAS.

'HOUSING AS AN ENGINEERING TOOL TO KEEP PEOPLE IN THE CITY'

2018 - LAND VALUE CAPURE MODEL VS. STRONG PUBIC LIFE FRICTION
- COLLAPSE OF PUBLIC / NON-PROFIT HOUSING = UNAFFORDABILITY
- BLACKSTONE REBELLIAN / LAW
- PARALLEL SOCIETIES ACT. - 'MIXING THE CITY' - 100% PUBLIC HOUSING
↓
40% P. HOUSING
60% DEMOLITION & PRIVATIZATION
- LYNETTEHOLM

PUBIC CONDENSER:
UPLIFING NEIGHBOURHOODS
- STRONG MUNICIPAL AUTORS
- STRONG ASSOCIATION LIFE
- COMMUNITY ENGAGEMENT
PUBLIC AMENITIES TO UPKEEP THE WELFARE
FOUNDATIONS / PHILANTROPIES PUTING MONEY IN. (LAWS OPTIMAL FOR COMPANIES TO MAKE FOUNDATIONS)

- WHICH FORCES WORK IN STAGING THE PROJECT?
- FOCUS ON VULNERABLE YOUTH.

HUMAN-CENTRIC WELFARE → MORE THAN HUMAN FOCUS OF WELFARE

designing for health

notes from the Jan Gehl lecture

JAN GEHL LECTURE 26.09.2024.

HEALTHY CITY

FOR PEOPLE:
- SHADE & MICROCLIMATE
- FOOD & DRINK
- PLACES TO MEET
- LOCAL COMMUNITY

OPPORTUNITIES TO INCREASE PUBLIC HEALTH TO EVERYDAY PLACES
E.G. 600,000 VISITORS IN A NECCO.

CLINICAL CARE 20%
PHYSICAL ENV. 10%
INDIVIDUAL BEHAVIOUR 30%
SOCIAL FACTORS 40%
/ HEALTH

ENVIRONMENTAL INTERVENTIONS:
- AIR POLLUTION
- WATER MANAGEMENT & SANITATION
- HEAT ISLAND
- WATER RETENTION

MENTAL HEALTH INTERVENTIONS:
- PUBLIC HOUSING

ACTIVE PUBLIC SPACES, QUALITY OF PLAY, MOBILITY NETWORKS
FOOD SYSTEM & DIET INTERVENTIONS - INFLUENCE/LINK ACCESS. + FOOD

SOCIAL ENV. + PHYSICAL ENV. + CULTURAL HABITS

"WE MEASURE WHAT WE CARE ABOUT" - JAN GEHL

LIFE → SPACE → BUILDINGS

MCDONALDS AS PUBLIC SPACE NEXT TO BUS STOPS IN LONDON

danish welfare

notes from the Martin Søberg lecture

SPACES OF DANISH WELFARE AND THE QUESTION OF PARTICIPATION 10.10.2024.

WELFARE:

1. IN NORDIC COUNTRIES - SOCIAL DEMOCRATIC CAPITALIST WELFARE STATE.
2. DEVELOPED AFTER WW II
3. EQUAL PROVISION OF SERVICES & AMENITIES (REGARDLESS OF INCOME / INSURANCE)
4. TAX-BASED SYSTEM (HIGH TAX LEVELS)
5. 'PREDICT & PROVIDE' - STATE ACTIVE IN RUNNING INSTITUTIONS.

SIMILAR TO THE BEVERIDGE REPORT (BRITISH WELFARE), BASED ON ISSUES: WANT, IGNORANCE, SQUALOR, IDLENESS & DISEASE.

HOW IS WELFARE DEPICTED SPATIALLY/ARCHITECTURALLY?

WELFARE STATE AROUND 1980.
- CRITIQUE OF THE CONCENTRATION OF STATE POWER
- " " SUBJUGATION OF THE INDIVIDUAL
- " " ALIENATION - NEW HOUSING SCHEMES
- SUBOPTIMAL HEGEMONY - PASSIVE CITIZENS - NANNY STATE

1990 - PRESENT
- COMPETE STATE
- NEW BALANCE BETWEEN THE STATE & THE MARKET.
- NEOLIBERALIZATION, PRIVATIZATION, PUBLIC-PRIVATE PARTNERSHIPS.
- CENTRALIZATION (MUNICIPAL / HOSPITAL E.G.) & DECENTRALIZATION OF EDUCATION.
- SOCIAL SECURITY → PHYSICAL SECURITY

- UTOPIAS & IDEOLOGY → AMBIGUITY, HYBRIDITY, SITUATEDNESS
- NEW LEVELS & TECHNOLOGIES OF CARE (E.G. PEOPLE DON'T STAY LONG AT HOSPITALS → DIFFERENT PROVISIONS.)

PLAYGROUNDS FOR CHILDREN AND THE FORMATION OF THE WELFARE CITIZEN.
RESIDENTS DEMOCRACY - PARTICIPATION AS DECISION-MAKING.

PARTICIPATION AS CONTACT → JAN GEHL → PICTURE
LIFE BETWEEN BUILDINGS pp. 21, 75.

PRESENTATION ON 'PEOPLE' NEEDS:
- TENDENCY FOR PEOPLE IN PARTICIPATION PROCESSES HAVE A CERTAIN LEVEL OF LANGUAGE, STATUS, AGENDA - IS EASILY BIASED.

site area 03

notes from the meeting w. the municipal architect

SITE AREA 03 – INTRODUCTION 26.03.2024.

SITE OWNED BY THE 'BUILDING DEPARTMENT'

INTEGRATED URBAN RENEWAL
(TECHNICIAN & ENVIRONMENT DEPARTMENT)
– 5 YEARS
– LOCALLY BASED (ON CITIZEN PARTICIPATION – ALL THE SURROUNDINGS)

MUNICIPALITY PROJECT → BUILDING PHASE → LOCAL OWNERSHIP

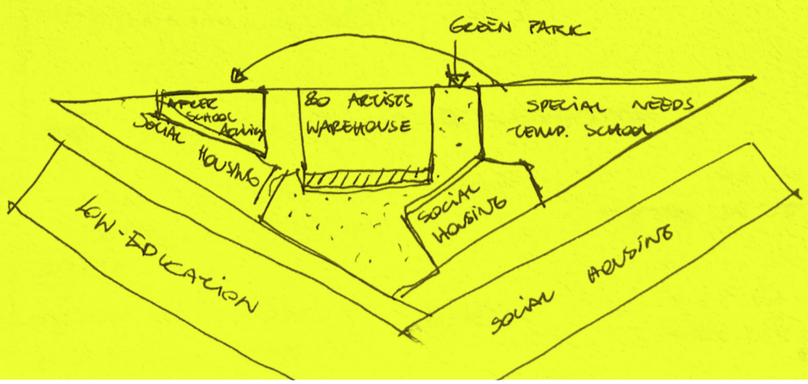
Q¹: WHO WOULD PAY FOR THE OPERATION OF THE PROJECT AFTER COMPLETION?

– 60 mln DKK BUDGET + 25 mln DKK FOR PUBLIC PARK (?) ON THE SIDE
– LOW ECONOMY / INCOME ZONES
– KVARTERPLAN – SENDS INVITATION & ASK PEOPLE TO BE A PART OF THE MEETINGS ABOUT THE NEEDS.

Q²: CAN YOU IDENTIFY SOME CRUCIAL NEEDS? – PICTURE
→ KVARTERPLANEN – FIND CHALLANGES & POTENTIAL
→ & PROJECTS PROPOSED TO THE LOCAL BOARD (REPRESENTATIVES FROM THE WHOLE AREA & DIFFERENT ORGANIZATIONS)

– 'THE NEIGHBOURHOOD HAS A NEGATIVE REPUTATION' – P1
→ CHANGE THE PERCEPTION OF THE AREA
– MAINTENANCE & ACCESSIBILITY – P2
– URBAN PLAZA
→ SAFE & ATTRACTIVE GREEN SPACE

SUNDHOLM:
– 1900s – GATED / CLOSED COMMUNITY
– SURROUNDED BY WATER
– 'WORKING CAMP'
– GO & LEARN A CERTAIN SKILL
+ CURRENTLY A PLACE FOR: – MENTALLY ILL
– ALCOHOL ABUSE
– CRIME
– STREET FIGHTS
– LOUD / DRUGS
/ ROUGH NEIGHBOURHOOD
+ JUVENILE



CURRENT ISSUES:
– NO FLOW OF PEOPLE
– NO 'EYES ON THE STREET' / NOT SAFE
– DRUG DEALING & ARSONING.

USER GROUPS:
– YOUNG
– OLD
– FAMILY
– MENTAL HEALTH PROBLEMS
– ALCOHOL ABUSE

UNDERNEATH THE SITE THERE ARE HUGE WATER TANKS

– PEOPLE ARE AFRAID OF EACH OTHER / THEIR NEIGHBOURS – THEY DON'T KNOW EACH OTHER
– THE ROAD TO THE WEST IS A HUGE BARRIER
– THINK ABOUT SOMETHING THAT E.G. CAN FIND INTERESTING IN THE SITE TO GET THEM TO COME

public condenser

notes from the lectures

ON PUBLIC CONDENSERS | STEFANO CORBO 05.09.2024.

BRIGHTSPACE - EXTENDED VERSION OF THE LECTURE (PRECEDENTS).

21st PUBLIC BUILDING:

- FUNCTION
- PEOPLE
- FORM

/ NOT ENOUGH

1. FOR WHOM IS IT?
2. WHICH ELEMENTS DEFINE IT?
3. SUSTAIN.
4. HOW DOES THE NEIGHBOURHOOD AFFECT IT.
5. WHAT MAKES IT HYBRID.

PUBLIC

- COMMUNITY
- COLLECTIVE
- COMMONS
- SHARING
- EXCHANGE
- DIVERSITY
- CATALYST
- INCLUSIVITY

CONDENSER

- PROGRAMME
- FORM
- HYBRIDITY
- MULTIPLICITY
- ASSEMBLAGE
- EXPERIENCE
- MOVEMENT
- TYPOLOGY

- WHERE STRANGERS MEET
- IT'S ALWAYS A PLACE (SQUARES, STREETS, THEATRES ETC.)
- WHAT HAPPENS IN IT & WHY? ACTIONS CAN ONLY HAPPEN THERE

↑ RICHARD SENNETT

„THE ARCHITECTURE OF PUBLIC SPACE", LABICS, 2023

SPECIFIC TYPES OF ARCHI. ONLY DESIGNED FOR THE PUBLIC

1. COMMERCE + HOUSING + FUNCTION (CONNECT SQUARES) — GALLERIA VITTORIO EMMANUELE MILAN.
2. EARLY MOSQUES (VIII - XI) - NOT ONLY RELIGIOUS FUNCTION.

↑ MIXED FUNCTION FROM THE PAST.

CONDENSER / CONGESTION

THE DOWNTOWN CLUB, STARRETT & VAN VLECK.
- MICRO CITY / NOT INVITING FROM THE OUTSIDE

THE CITY OF CAPTIVE GLOBE, 1978 — 316 CONTAINERS WITH MULTIPLICITY CITY AS A CATALOGUE

1. YOUR IDEA OF PUBLIC
2. HOW IT SERVES THE NEIGHBOURHOOD?
3. WHAT FORMAL LANGUAGE IT USES?
   - EXPRESS YOURSELF

/ MY PUBLIC BUILDING.

4. HEADQUARTERS OF MAERSK. JESPERSEN & SØN, CPH, A. JACOBSEN
5. K. KNUD LAVARDS CHURCH; LYNGBY; CARL R. FREDERIKSSEN

PUBLIC CONDENSER:

1. NEW GENERATION OF HYBRID BUILDING
   - COMBINES LEISURE & CULTURE
   - COMBINES ARTS & SPORT
   - COMBINES HEALTH & LIFESTYLE
2. FAVORS ENCOUNTERS
   BUT ALSO PROVIDES ANONYMITY VIA VARIETY.
3. MAGNET IN THE NEIGHBOURHOOD — WHAT IS SPECIAL ABOUT IT?
   - HOW DOES IT SERVE FOR EVERYDAY LIVES
4. AFFECTS PHYSICAL & MENTAL WELL-BEING.
   ↓ FIND THE NEEDS OF THE NEIGHBOURHOOD.

THE FOREIGN OR THE ALIEN — INTERACTIONS

COMMUNITAS

- RELATIONSHIP BETWEEN CITIZENS AND THE POLITICAL, SOCIAL, CULTURAL INST. & THE SPACES THEY INHABIT

COMMONS AS OVERARCHING CONDITION THAT DEFINES THE COMMUNITY
SHARED V. ALIENATED
INDIVIDUAL V. COLLECTIVE
~~SHARED~~ V.
PUBLIC V. PRIVATE
DOMESTIC V. FOREIGN

PROMOTING 'MESSY CONDITIONS' OF MULTIPLICITY AS A STRENGTH.

EXPRESS & EMBODY THE SPIRIT OF THE COMMUNITY — WHO & IT?
+ DANISH ARCHITECTURAL THINKING.

FIND CENTRES OF DENSITY → HOW SITE IS CONNECTED TO THEM

SLOW STRUGGLE BETWEEN ~~THE~~ TRADITIONAL & RENEWAL.

↓

SLOWNESS AS STRATEGY.
(RAPID, SIMULTANOUSLY, SCALE OF REDEV. IS WORRYING)

INTERNALIZATION CHALLANGES LOCAL CONSIDERATIONS.

BUILDING WITH PUBLICS / ANTONIO CANTERO 17.10.2024

PUBLICS — ACTIVE OR PASSIVE ROLE

KOOLHAAS ~~HE~~ WAS A JOURNALIST BEFORE BECOMING AN ARCHITECT.
— INTERVENING AS DATA COLLECTION.

POST-OCCUPANCY EVALUATION (POE) — BETTER LIVING SPACES CAN BE DESIGNED BY ASKING USERS ABOUT THEIR NEEDS.

- USER FEEDBACK FROM USERS ON BUILDING PERFORMANCE AFTER IT'S BEEN OCCUPIED.

ANTONIO YGONSVELO.

HYBRID FORM : STEFANO CORBO 17.10.2024

THE RADIANT CITY — ~~BY~~ MONOFUNCTIONAL ZONING
↓ MULTIPLICITY - CRITICAL REACTION.

MARINA BAY - A CITY IN THE CITY
JOSEPH FENTON, PAMPHLET ARCHITECTURE
- FABRIC HYBRIDS
- GRAFT HYBRIDS
- MONOLITH HYBRIDS.

MIXED USE VS. HYBRID (PUBLIC CONNECTIONS FORCE NEW INTERACTIONS)

ENVISION WHEN E.G. OFFICE INTERACTS WITH APARTMENTS.

HYBRIDITY VS. ACCESS

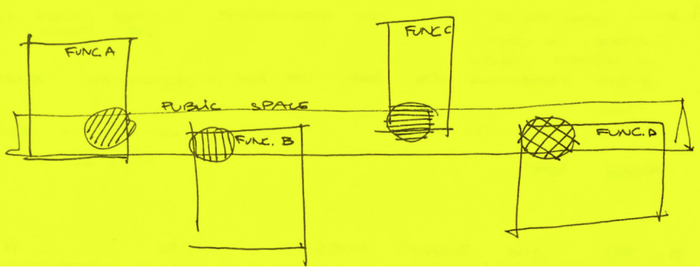
MÜLLER SIGRIST ARCHITEKTEN, LIVE-WORK, ZÜRICH 2014.
JDS ARCHITECTS, LILLE

HYBRID FORM:
- MORPHING
- BLENDING
- COLLISION
- ASSEMBLAGE

SPECIAL ARTICULATION
- INTERACTION IN MOVEMENT
- EVEN FROM 10m IT MATTERS

WEISS MANFREDI

FOA, YOKOHAMA PORT TERMINAL, 2002



MULTIPLICITY LECTURE / SANG LEE 03.10.2024

PERFORMATIVE CONCEPTS:
- HYBRIDITY
- RESILIENCE
- MULTIPLICITY
- SUSTAINABILITY
- HEALTH & WELLBEING.

→ DESIGNED TO PRODUCE TANGIBLE ACTION.

E.G. I HAVE AN IDEA (STATE) VS. I SPEND MONEY (ACTION)

1. HYBRIDITY
2. RESILIENCE
   - WITHSTAND CONDITIONS
   - ADAPTS (PREDICTS CHANGES IN CIRCUMSTANCES)
3. HEALTH & WELLBEING
   - INSIDE (APPLIANCES - AC, HEATING, BLINDS ETC.)
   - OUTSIDE (POLLUTION, SAFETY)
4. MULTIPLICITY
   - SERVES MORE THAN ONE PURPOSE
   - INTENTIONAL AMBIGUITY
   - ADAPTATION
   - OPEN - ENDED

INTENTIONAL AMBIGUITY
- REDEFINING RELATIONSHIP BETWEEN FORM, FUNCTION & MEANING.
- INVITES FOR INTERPRETATION.

5. LAYERING
   - DIFFERENT PERCEPTION FROM VARIOUS PERSPECTIVES
   - NO FIXED MEANING PER SE.
   - 'INFINITE BUILDING'

ADAPTATION VS. EVOLUTION

"FIAT ARS, PEREAT MUNDUS" ~ W. BENJAMIN 1935 "MAKE ART, DESTROY WORLD"

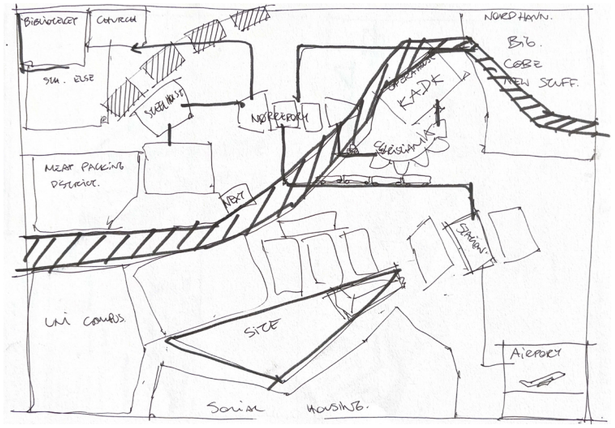
"ANAESTHETICS OF ARCHITECTURE"

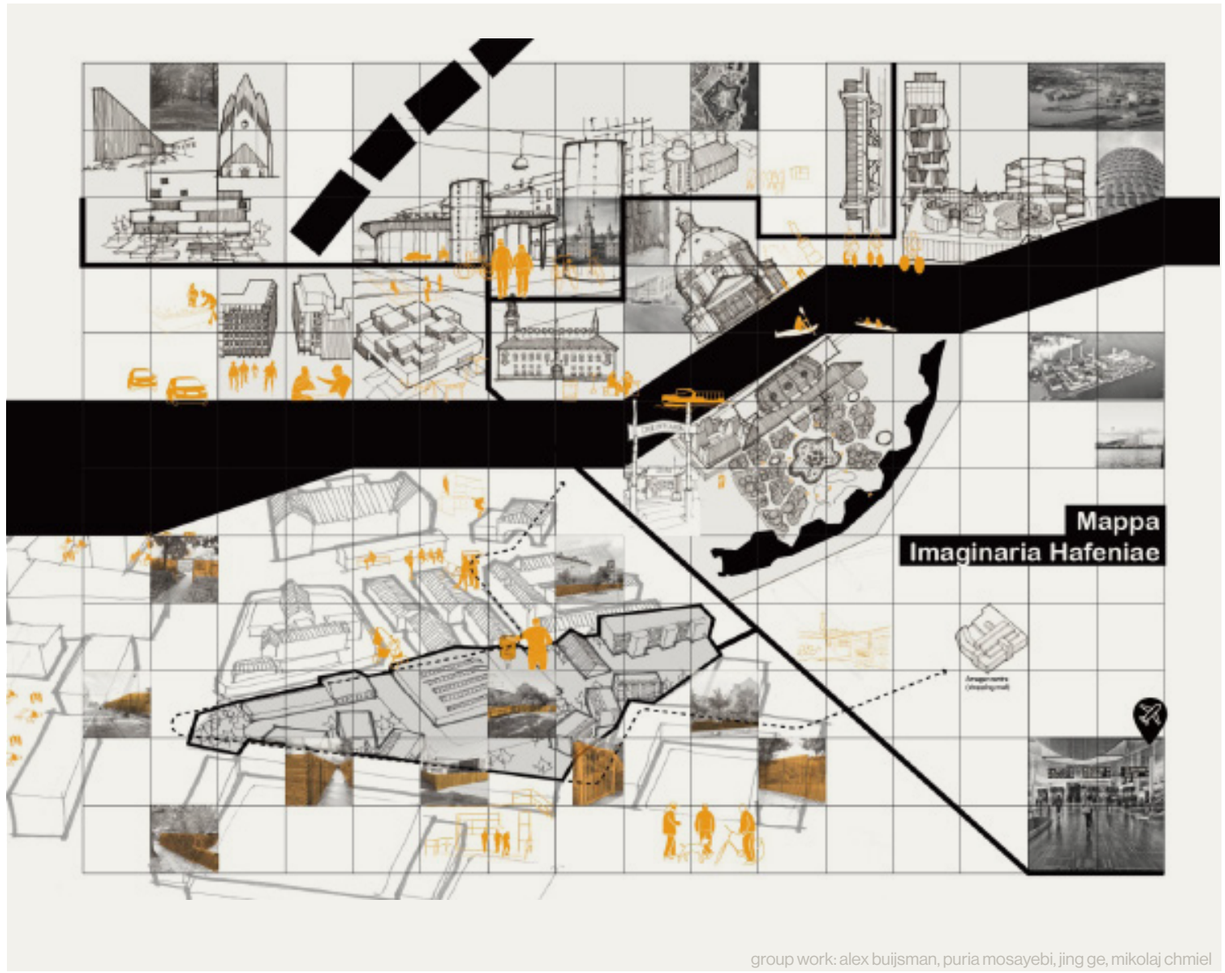
02

theory & delineation

theory & delineation_02

mappa imaginaria hafaniae





group work: alex buijsman, puria mosayebi, jing ge, mikolaj chmiel

The speculative map of Copenhagen looks at the city from three main perspectives: the architectural quality and tangibility, societal behaviour and the use of space by the public and the boundaries which result from the former and influences the latter.
Therefore, the map, which is oriented around the river geographically slicing the city to the northern and southern parts, represents certain districts such as the Indre By, Nordhavn or Amager as well as the connections between them. It subsequently highlights certain landmarks (in this instance the ones we managed to visit during the excursion) which constitute the current, limited, perception of the city, distances, connections and activities.

theory & delineation_03

spatial diagramming

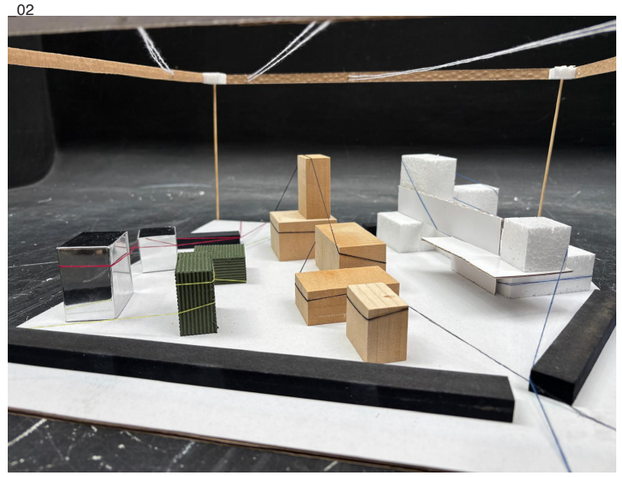


_01

group work: alex buijsman, puria mosayebi, jing ge, mikolaj chmiel

The “through line”/theme of the diagrams is the user. Four different user groups have been identified in relation to the site: families with children, artists, homeless and students. Consequently, the presented spatial diagrams depict the ways in which these groups, their spaces (blocks) and their movement (strings) can coexist within the site: as parallel activities, having dedicated spaces yet mixing in the centre or weaving across the whole space.

02



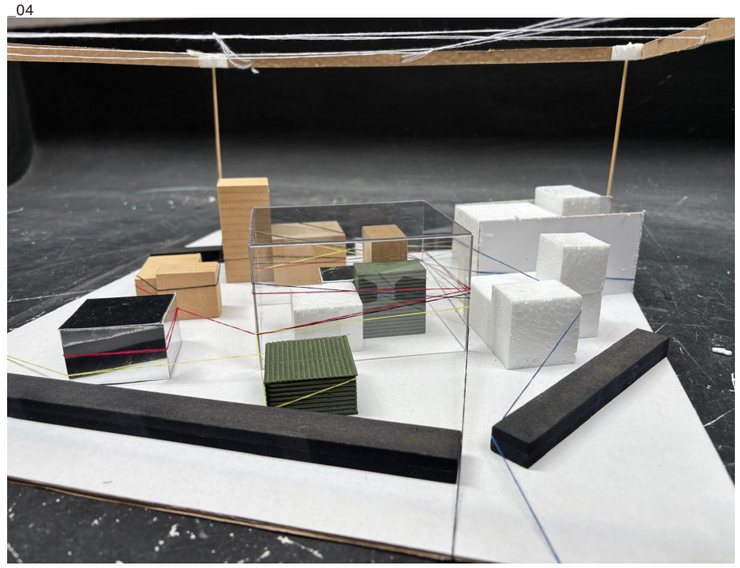
1 iteration 01_parallel existence
2 iteration 01_parallel existence
3 iteration 02_central mixing
4 iteration 02_central mixing
5 iteration 03_hybridity exposure
6 iteration 03_hybridity exposure



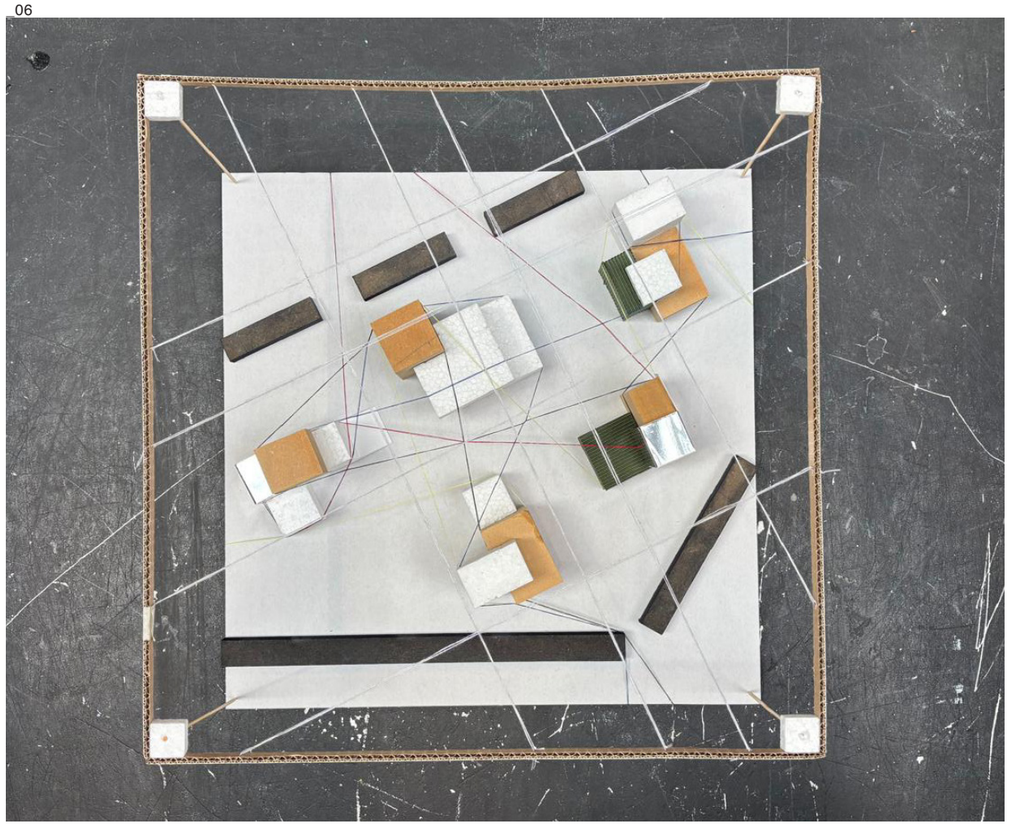
_03



_05



04



06

theory & delineation_04

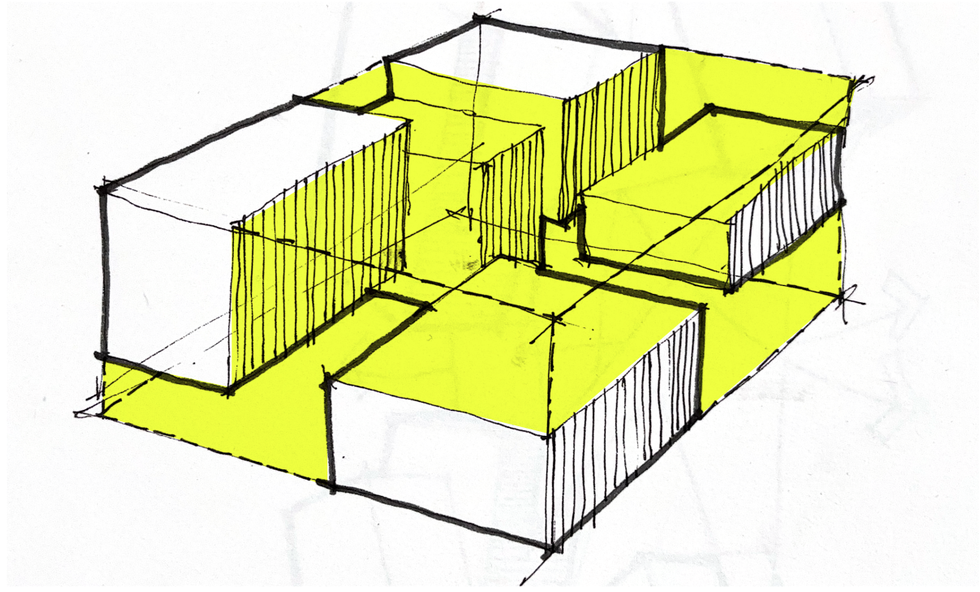
how will my building be a hybrid?

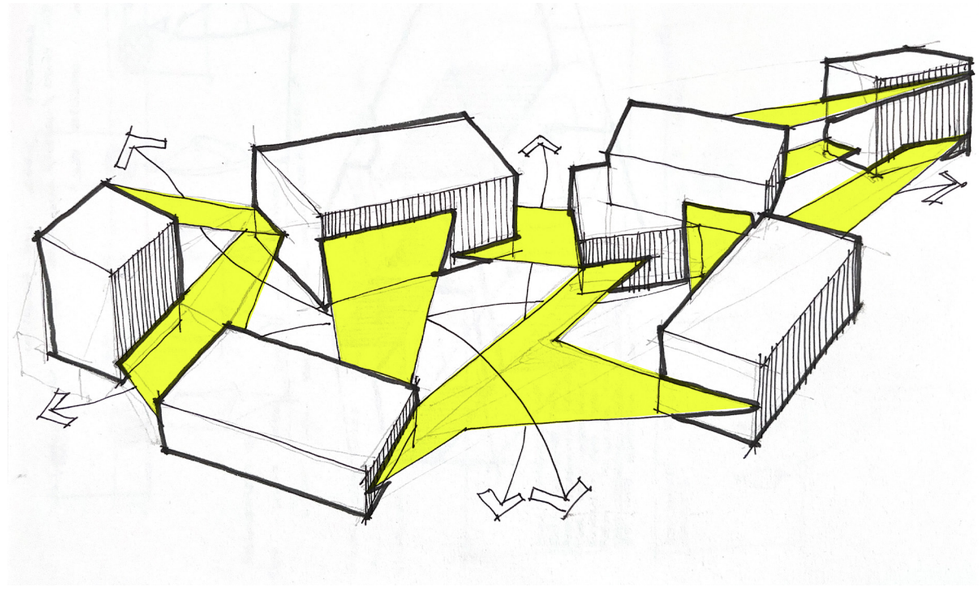
Martin Musiatowicz in the "This is Hybrid" text introduces the historical background on architectural typologies, which due to the scarcity of space inside of fortifications were naturally forced to experiment with overlap and the hybridization of the city. The developments in defence systems allowed cities to grow outside of ramparts, which has also been the case with Copenhagen, and introduced the freedom of space for individualised, from the programmatic perspective, developments. This seems rather puckish as nowadays we are revisiting the potential of the former within individual projects - as per the reference to Jacobs' and Koolhaas' statements in the text, that the heterogeneity, congestion and linking of programs can harness and invigorate otherwise lifeless landscapes.

This heterogeneity refers to the multiplicity of working, leisure and cultural functions, however, also puts immense pressure on the actual connections between individual spaces. By doing so it redirects the viewers attention to what happens in in-between spaces, rather than the spatially scattered programmatic boxes. Steven Holl in his introduction says that the "key intention for large hybrid buildings (...) is Urban porosity (...) with the aim of pedestrian oriented urban places". All of the above creates the image of a design intervention, which outside of its designated programme, be it an art workshop, sports facilities or both, in its nature, seamlessly connects between the functions but also to the wider neighbourhood and stimulates the integral flow of the area, therefore creating this permeative and consolidating extra-tissue.

In my research plan I touch on the importance of movement as a catalyst for spatial cognition and social interaction and I believe that it has its reflection in the hybrid nature of the overall space. On top of that, the aforementioned by Holl "urban porosity" is something I would like to investigate and translate to the permeability - and therefore the interplay between the inside and the outside. Subsequently, I find the idea of treating the spatial configuration of the project as a sort of exploded graft hybrid situated within the volume of the site, rather then closed off and contained within a single monolithic envelope. Contrary to the graft hybrid concept in the presentation, I imagine treating different programmatic functions with a similar design language to create the overall coherence of the project, which would sit well within the context. This would then create an array of morphed typologies with the same parent resembling some sort of a campus of functions. The connections between those morphs, though non-literally, would resemble the interpolation diagramming from the text and the whole project would then become a constellation of 'children' and their interlinks.

For a better understanding of the explanation, please have a look at the next page, where two diagrams by the author represent the contrast between a monolithic hybrid, containing the programmatic and in-between space within a clearly defined shell, and an exploded graft hybrid, highlighting the permeability of the project within the wider urban context.





03

excursion

photographs
copenhagen







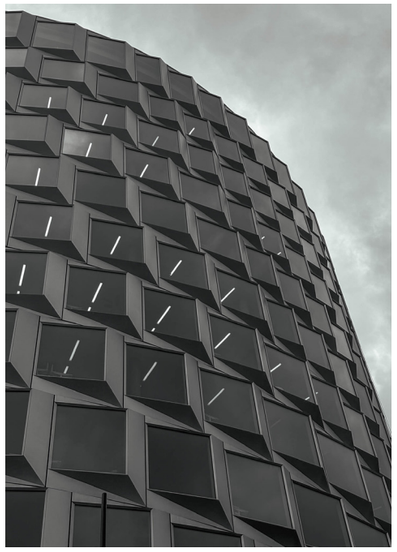

ojhusmuseet
Arsenal Museum















SANDHEDEN · SKAL
FRIGØRE
EDER

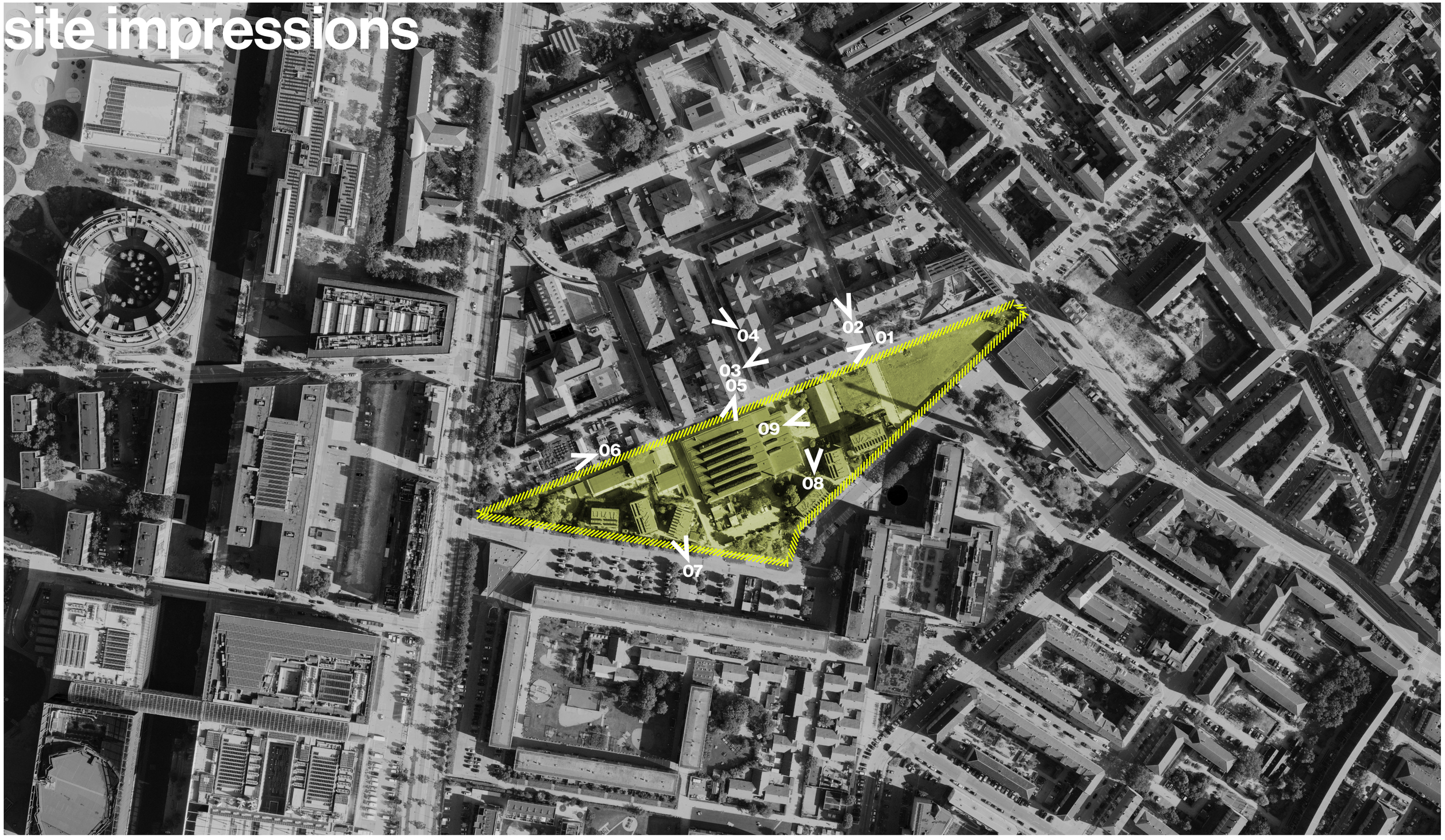







50

site impressions





_01



_02



_03

_04



_05





_06



_07



_08



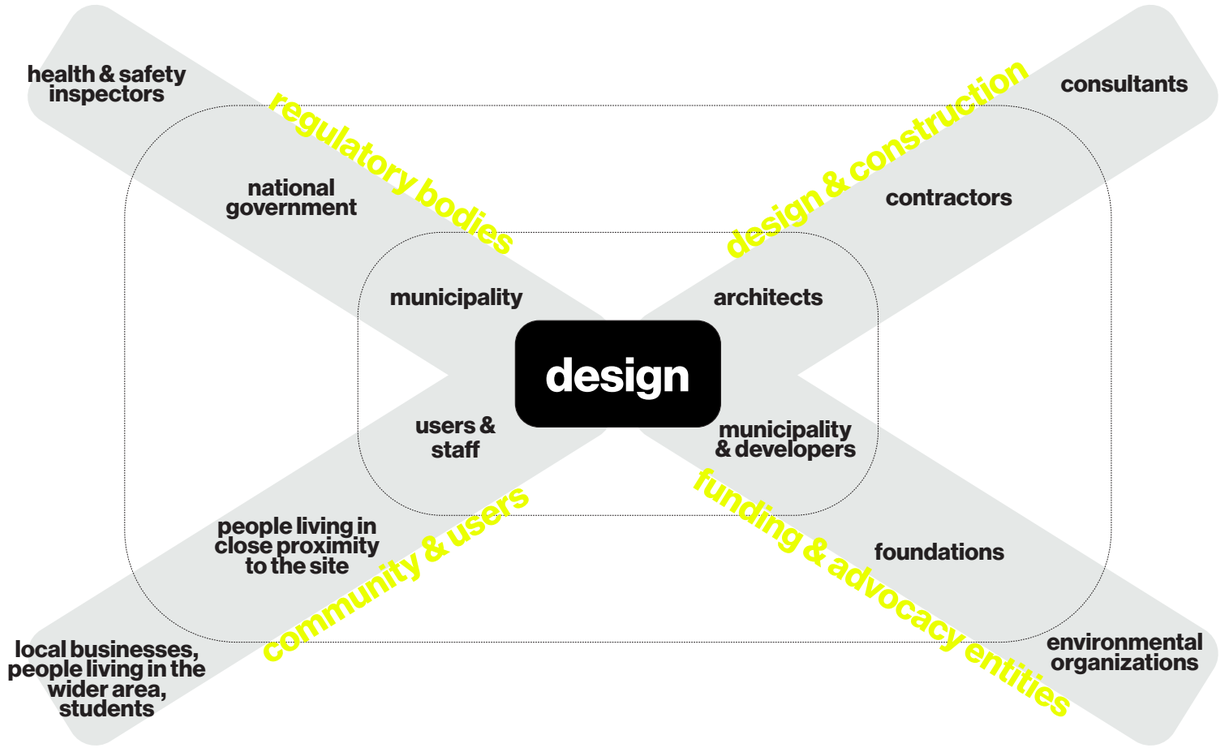
_09



04

design thinking workshop

how might we design inclusive and activating public condenser for the underserved Sundholm community and external visitors in order to improve the neighbourhood's future prospects and well-being of its residents?



interviews

“Try to include people from the wider context - e.g. the students, as they may be perceived as role models. (...) There’s a co-existence between the homeless and others based on some mutual respect”

Teacher at the nearby school

A particular challenge highlighted is the lack of a cohesive community spirit in the area, partly due to its history of being used for social housing and various institutions for vulnerable groups.

“This place is doomed. They already tried doing something with the site and it didn’t work (...) maybe some sports centre would be nice (...) kids over 18 have nowhere to go (about extracurricular activities)”

Resident of the area

“streets primarily connect north-south rather than east-west (...) limited public spaces, such as small parks and playgrounds, and how these are insufficient for fostering a sense of community.”

Teddy Rasmussen

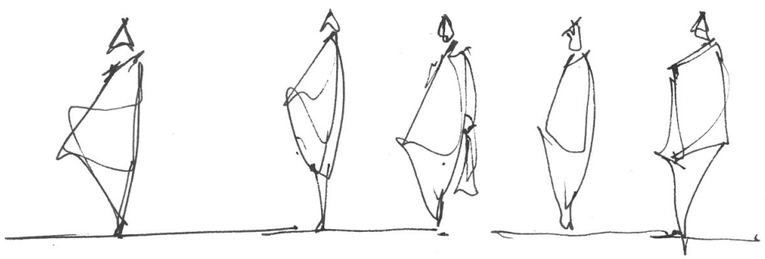
“Bad reputation, some places where you wouldn’t go. Families live there, a lot of young people who are more open minded as well.

Maybe if there was something interesting for university students they would go there”

3 male university students

“Never felt in danger around this area (...) People who live there suffer from mental health problems and addictions. (...) There’s a stigma from the politicians on people living in the ghetto which makes them even more excluded”

3 female university students





husk skævheder - remember biases
attraktiv kvarter - attractive neighbourhood
mere liv mellem husene - more life between the houses
kultur potentiale - culture potential
flere indendørs mødesteder - several indoor meeting places
unges steder - young people’s places
lev lokalt - live local
kontakt kunst - contact with art

_improving the reputation

_more open public spaces

_more interaction and social inclusion

_improved flow & permeability

_‘culture’ integration

_local, community-driven initiatives

_sports facilities

_football, handball, badminton, volleyball

NEEDS

PUBLIC CONDENSER

CHALLENGES

stigmatisation from the politicians_

social exclusion_

fear of one another_

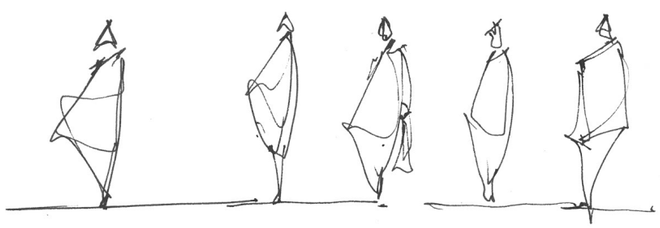
personal economic priorities_

drug & alcohol abuse_

violence_

vulnerability_

homelessness, mental issues _



05.

people research

research summary

SOCIETY

- **661.000** people, 1.1% yearly increase. 23rd in Europe
- **328.000** households, increasing
- citizenship **80%** danish, **12%** western, **8%** non western
- **49%** men, **51%** women
- average density **7254 people / km2**, increasing. 46th in Europe
- as of 2023, **44%** of Copenhageners are single—reshaping the definition of community
- Diversity at a glance: **25%** of Copenhagen's population has a multicultural background
- Copenhagen: A city where **63%** of people cycle daily—shaping public space dynamics
- **60%** of Copenhageners use public libraries—emphasizing the importance of shared civic spaces

HYGGE

intimacy, trust & authenticity > consumerism, competition & material abundance

- 'making do' remain valued despite material abundance - incompatible with excessive consumption or extravagant lifestyles
- means of social control - middle-class perceives it as essential cultural element & criticizes the upper-class for lacking it
- associated with simplicity, comfort, and a sense of warmth, frequently experienced at home but not limited to it

*"Hygge encourages interactions that are **informal, authentic, inclusive and close-knit**, creating a protective social space where people feel **safe to express themselves** without judgment. It promotes **bonding over shared experiences,** particularly in smaller, familiar settings like homes, cafes, or public parks."*

WORK

- arbejdsglæde – from "arbejde" the Danish for "work" and "glæde" from the word for "happiness" - It literally means "happiness at work"
- With an average of just 34 hours working time a week, Danish people can achieve work-life balance easily
- The Danish *Flexicurity* model based on a long tradition of dialogue between employer associations and labour unions makes Danes more open to globalisation, they feel confident that if one job disappears, another is likely to arise in its place
- flexible labor market has made Copenhagen more appealing to investors and developers, it has also fostered a model of state-entrepreneurialism. This intersects with local socio-environmental policies, creating a subtle, selective process of neoliberal control over the poor.
- In Sundholm, where public space is scarce, tensions between vulnerable groups and the middle class are heightened, reflected in the fences and walls that divide the neighborhood.

PLAY

- Copenhageners love to Exercise, Relax, and Go out
- Weekends are for flea markets, food festivals, and fresh air by the canals
- Green spaces are the city's living rooms, where people meet up and hang out.
  Copenhageners know how to turn a quiet harbor into a vibrant summer hangout.
- ''For Copenhageners, 'play' means being outside meeting friends by the harbor, at a café, or enjoying local sports. They'll party through the night, yet cherish quiet moments and time to relax.''
- **83%** of the youth exercises on a regular basis

Jing Ge
Alex Buijsman
Puria Mosayebi
Mikolaj Chmiel

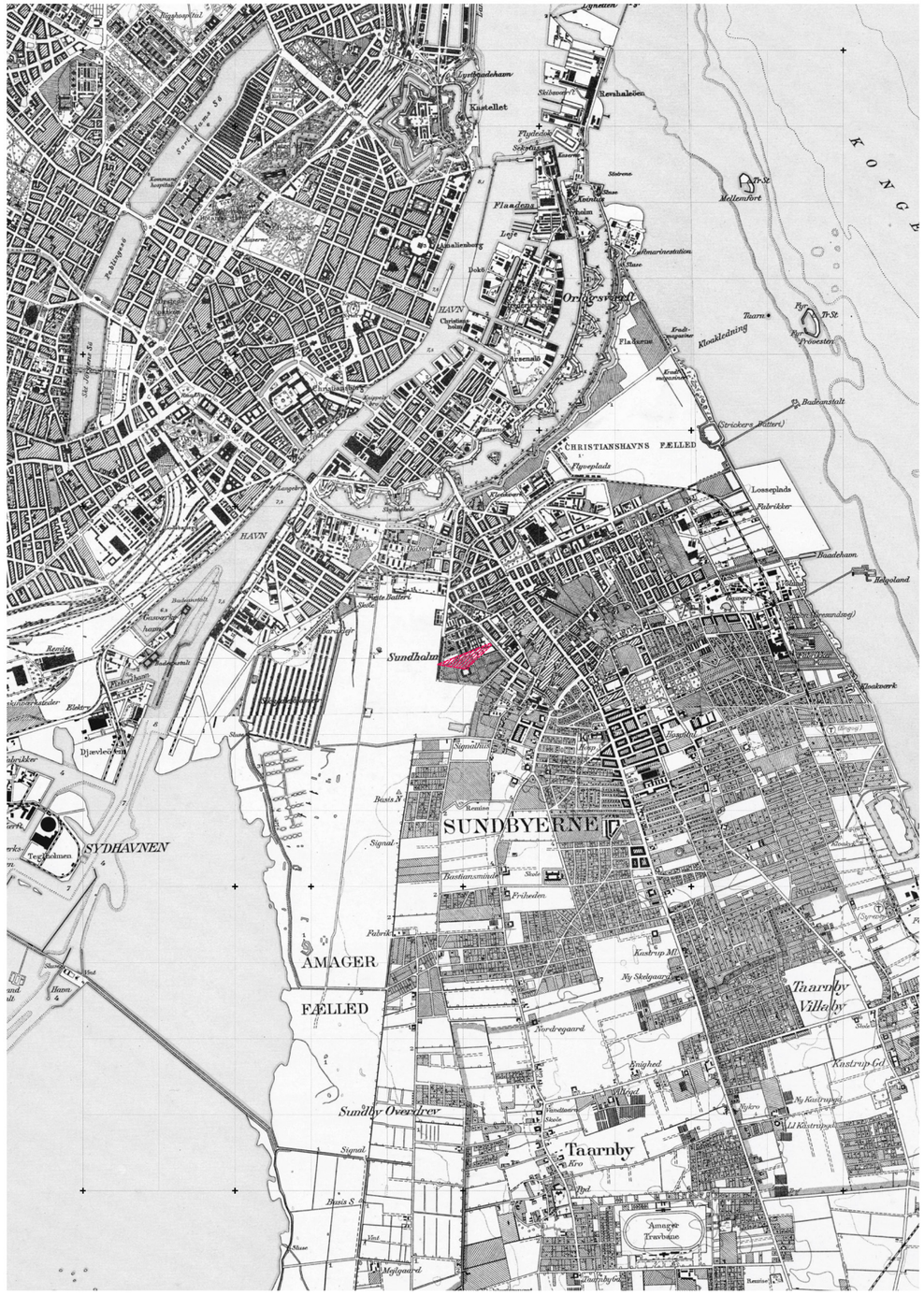


06_

site analysis

map studies

analysis of connections and programmes



historical map

A subsequent selective mapping analysis has been carried out to research and identify an array of possibilities and shortcomings. The close proximity of the city centre as well as well developed and within reach public transport and cycleways offer potential for introduction of external visitors to the site. Additionally, public greenery as well as programmed public buildings have been mapped in order to identify a potential need for the public space. This as well as analysis on users needs leads to the proposed programme of the building.





0 500 1000 1500m

aerial view

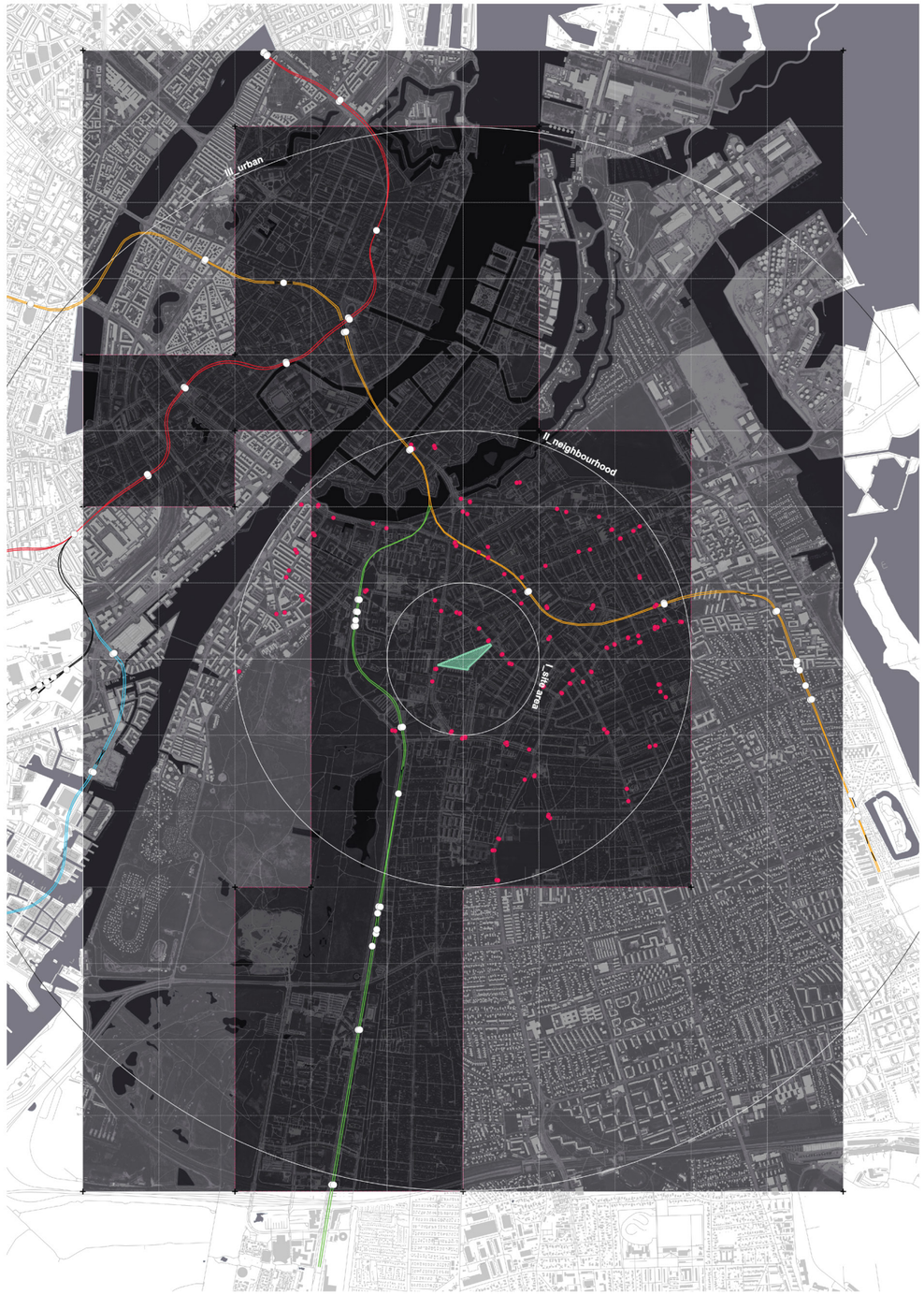
nolli map



building age map



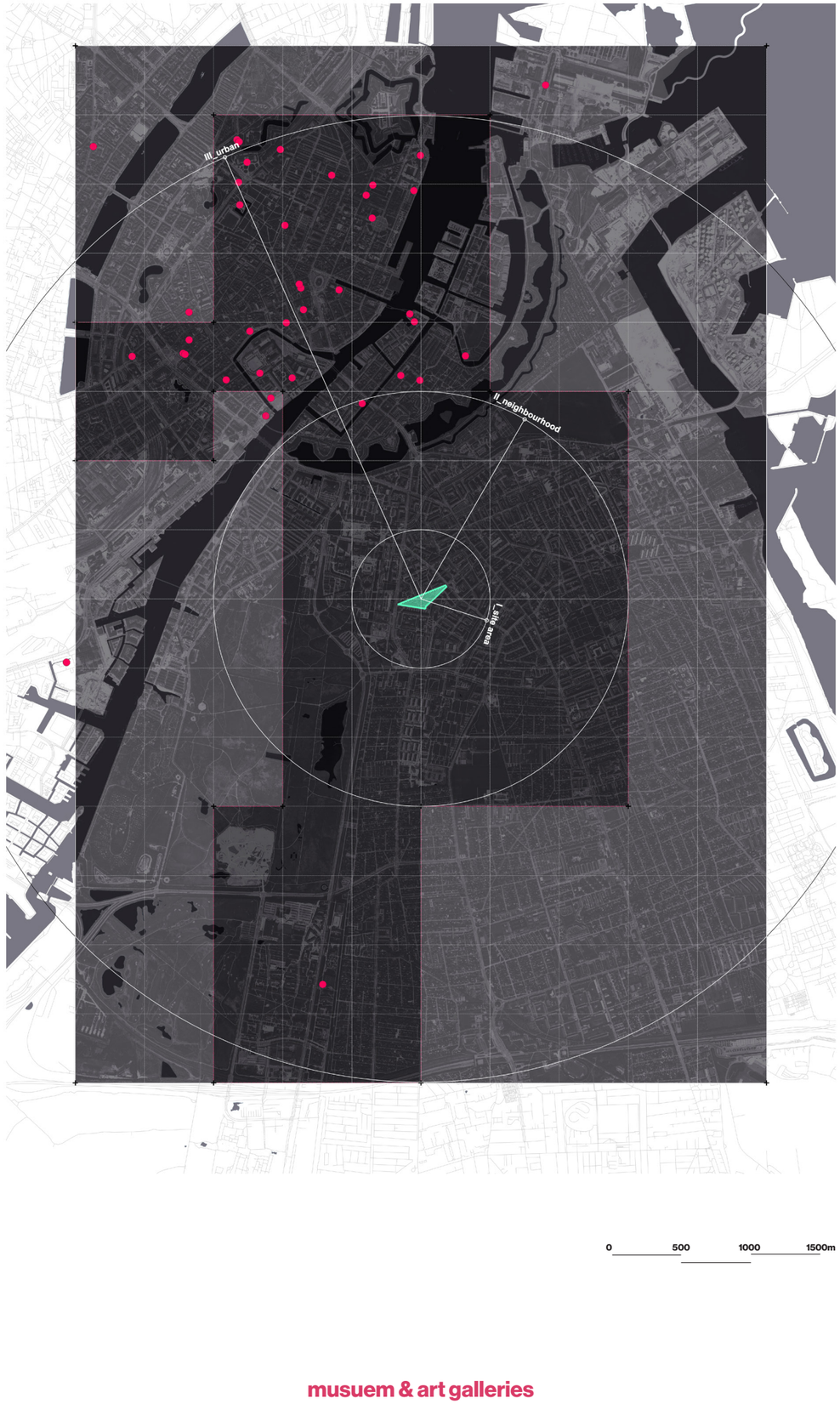




cycle connections

bus stops, metro lines

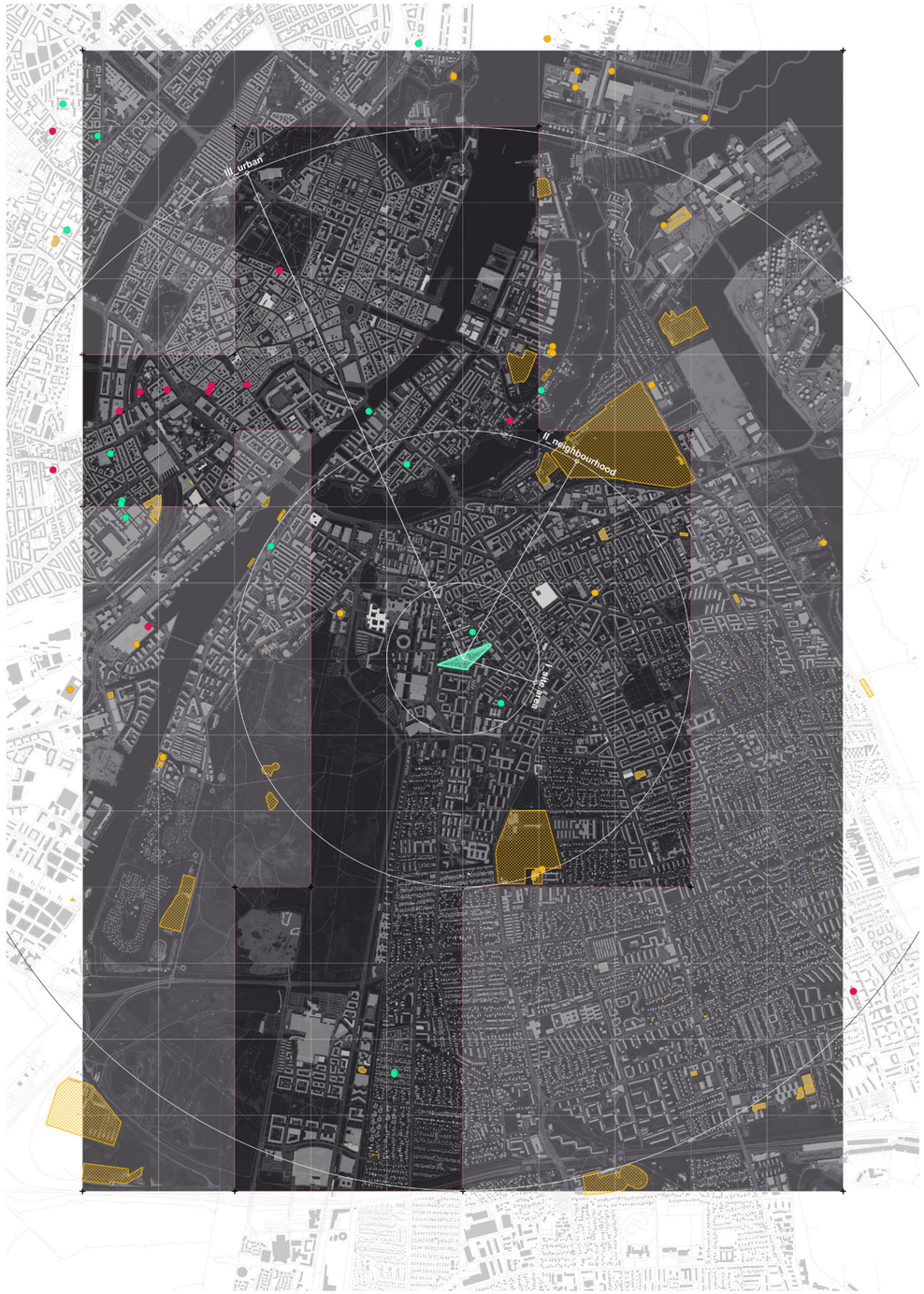




green spaces & trees

musuem & art galleries

lacking programme





sports centres & swimming pools, community centres, cinemas

playgrounds, green public spaces

playgrounds & greenery


_01

_02


_03

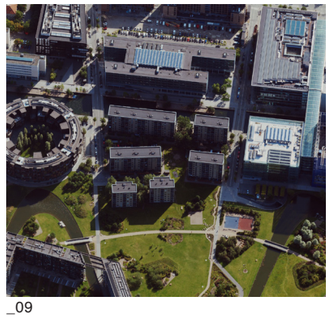
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There is an evident lack of sports facilities and cinemas in the close neighbourhood of the building which, highlighted by the needs of the residents, is a problem for this area and should be tackled with the project. Additionally, public spaces and children's playgrounds usually are located within courtyards and therefore are not accessible to the wider public posing another opportunity for the project to include such a space in the brief.

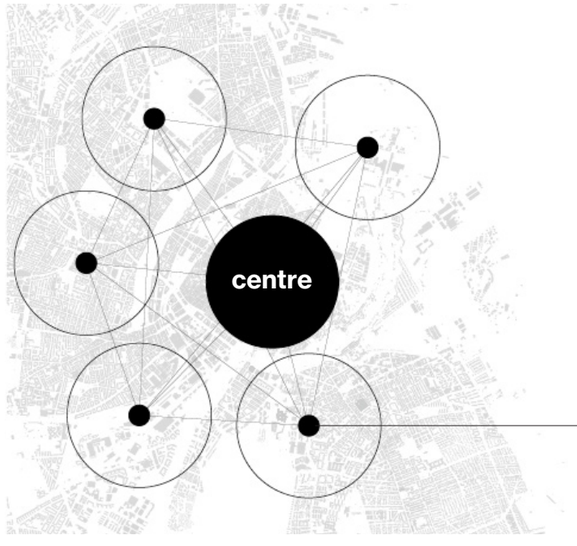
07_

defining brief

role of a public condenser

identity building tool and interaction catalyst

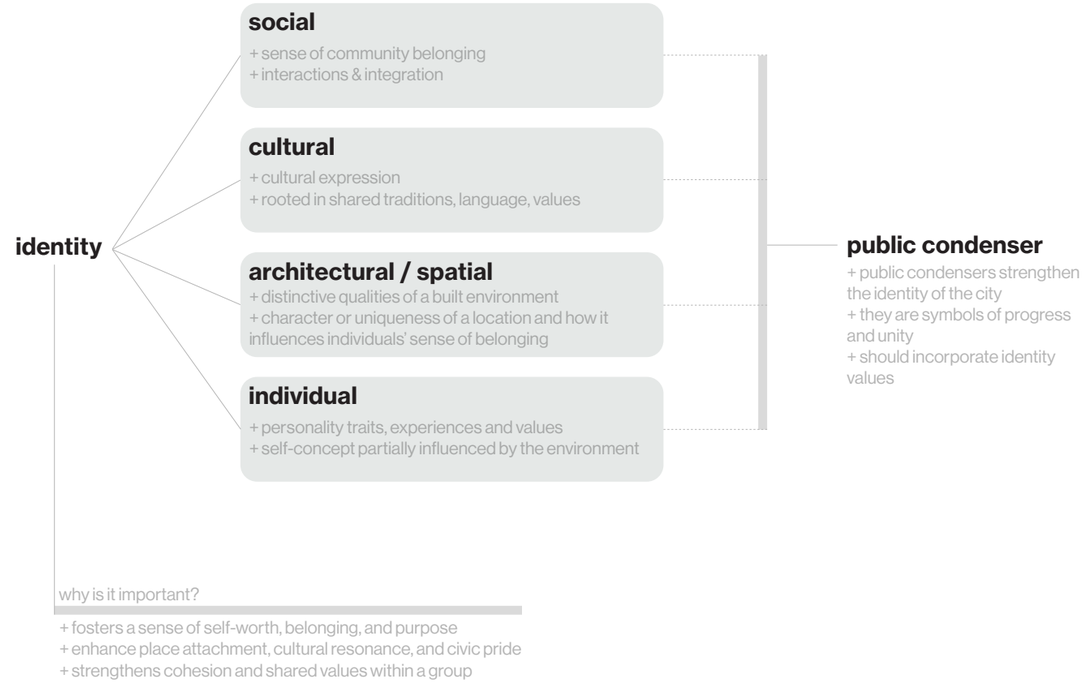




"The identity is like a mousetrap (...) The stronger identity, the more it imprisons, the more it resists expansion, interpretation, renewal, contradiction. (...) Identity centralizes; it insists on an essence, a point. Its tragedy is given in simple geometric terms. As the sphere of influence expands, the area characterized by the centre becomes larger and larger, hopelessly diluting both the strength and the authority of the core; inevitably the distance between the centre and circumference increases to the breaking point. In this perspective, the recent, belated discovery of the periphery as a zone of potential value (...) is only a disguised insistence on the priority of and dependency on the centre: without centre, no periphery. (...) Conceptually orphaned, the condition of the periphery is made worse by the fact that its mother is still alive, stealing the show, emphasizing its offspring's inadequacies. (...)"

Rem Koolhass // "The Generic City"

Public condenser as multi-functional urban hubs should enhance the social, cultural, and environmental fabric of its context, following the principles of inclusivity, sustainability and connectivity in design, therefore making them critical tools for identity creation. By implementing social condenser typology scattered across the city, we may limit the dependency on the centre by adding both value and practicality to the neighbourhood otherwise perceived as secondary. Though in most cases the importance of the city centre will not be diminished, by developing a strong identity of individual neighbourhoods we can enhance the living quality of its residents



"Well-designed neighbourhoods inspire people who live in them, whilst poorly designed cities brutalize their citizens. As Jan says: 'we shape cities, and they shape us'."

Richard Rogers // foreword for "Cities for People"

"It is equally urgent to strengthen the social function of city space as a meeting place that contributes toward the aims of social sustainability and an open and democratic society. (...) A city that invities people to walk must by definition have a reasonably cohesive structure that offers short walking distances, attractive public spaces and a variation of urban functions. These elements increase activity and the feeling of security in and around city spaces. There are more eyes along the street and a greater incentive to follow the events going on in the city (...)."

"Just as cities can invite city life, there are many examples of how the renovation of a single space or even change in furniture and details can invite people to a totally new pattern of use."

Jan Gehl // "Cities for People"

community

mapping user groups & stakeholders



young adults, parents + children

universtiy students + staff

artists + creatives

homeless + vulnerable

miscallenous + external influence

recap of needs & challenges

NEEDS

_improving the reputation

_more open public spaces

_more interaction and social inclusion

_improved flow & permeability

_‘culture’ integration

_local, community-driven initiatives

_sports facilities

_football, handball, badminton, volleyball

PUBLIC CONDENSER

CHALLENGES

stigmatisation from the politicians_

social exclusion_

fear of one another_

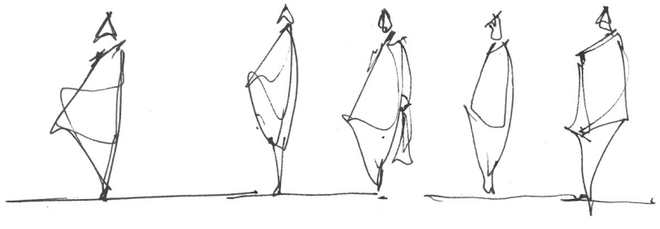
personal economic priorities_

drug & alcohol abuse_

violence_

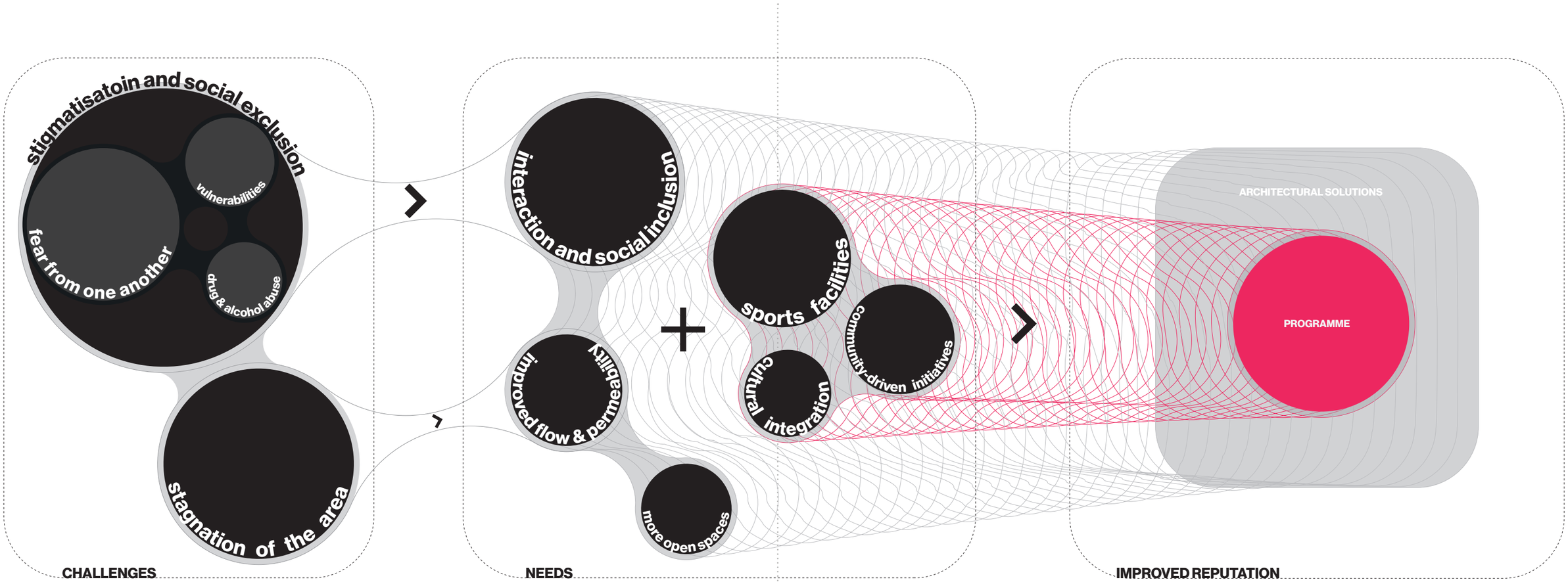
vulnerability_

homelessness, mental issues _



translating needs and challenges

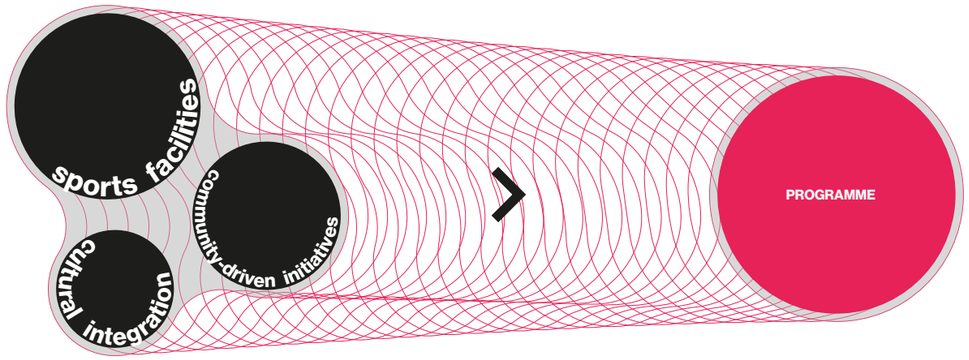
what can be derived from them?



The previously identified challenges of the area have a direct reflection in the needs imposed. The latter, however, can be split in two categories - the first one that relates to the activities needed and therefore can be addressed by the condenser's programme, and the second one, more intangible and passive in presence which should be addressed by architectural solutions and the design language. Therefore, the nature of the public condenser and its surroundings should stimulate interaction and inclusion as well as act as a catalyst for movement.

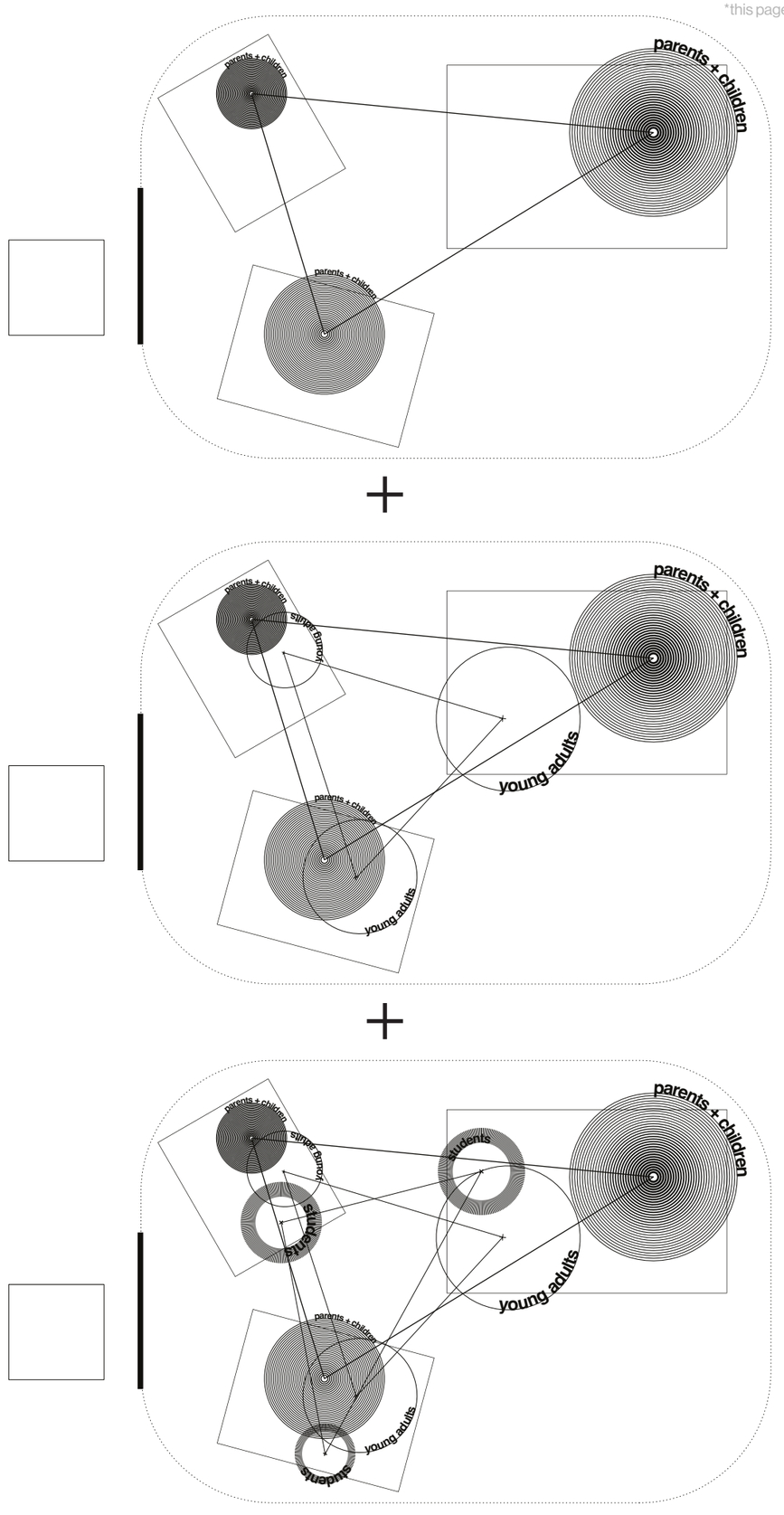
multiplicity

specific needs informing on the programme



The four main identified user groups: parents with children, young adults, university students and the artists (+ the homeless and potential external visitors), who either exist around the site or will be encouraged to use the building, are mapped based on their potential interest in the program. The in depth interaction will be looked at after P1. However, one can note that in most cases the project, as a condenser, will allow for either mixing or co-existence of different socio-economic groups - with one clear exemption being sports classes targeted at children.

*this page has been amended post-P1



multiplicity

mapping users across programme

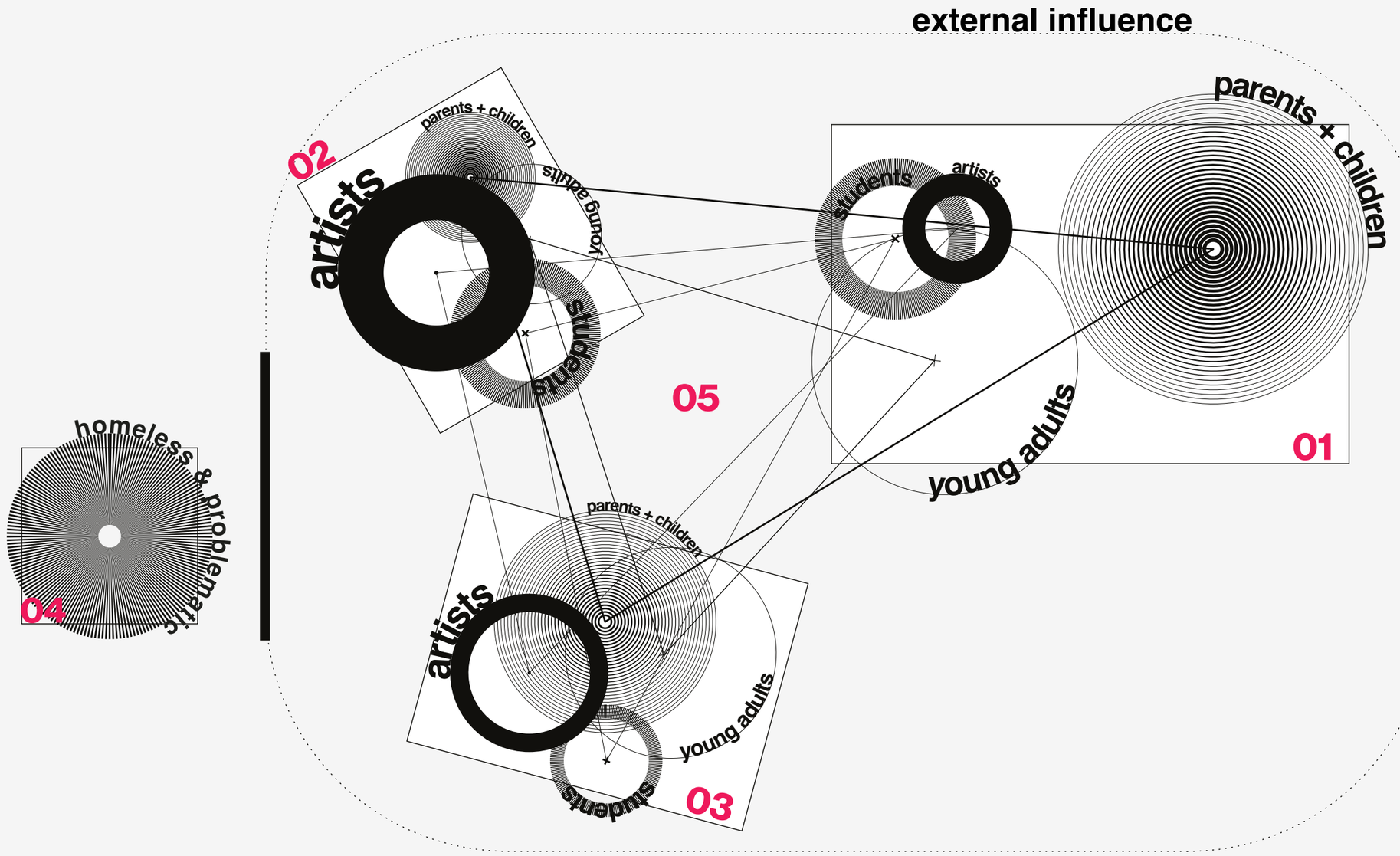
01_sports facilites
_basketball
_football
_volleyball
_badminton
_changing rooms
_pool
_sauna / bath

02_culture
_small scale exhibition hall
_artists' workshop
_arts & design classes

03_media
_study cinema
_computer library
_IT classes

04_soup kitchen
_communal canteen

05_public realm
_outdoor park
_playground
_in-between spaces
_bar / cafe
_lounge

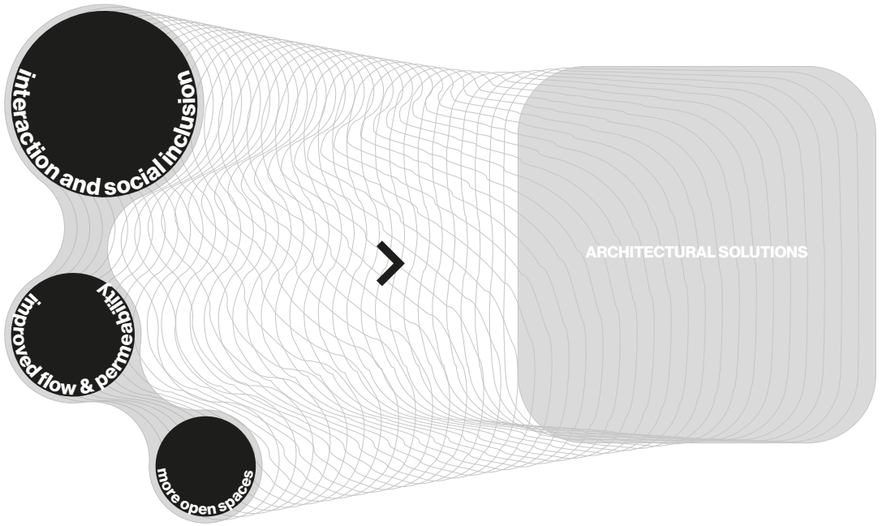


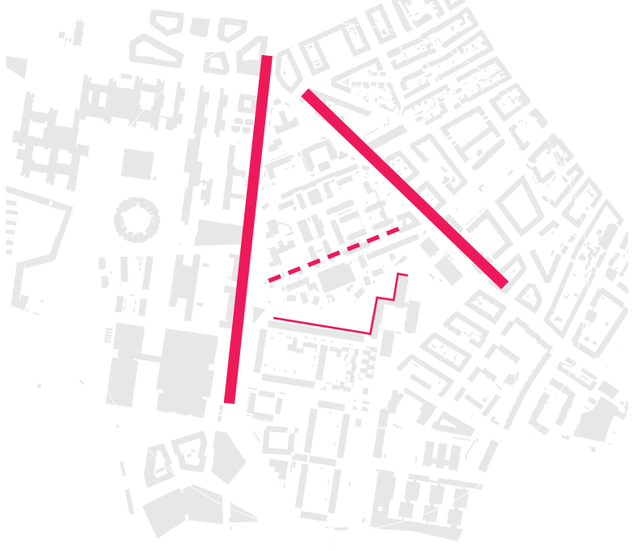
probable use of the building on a weekday



design objectives

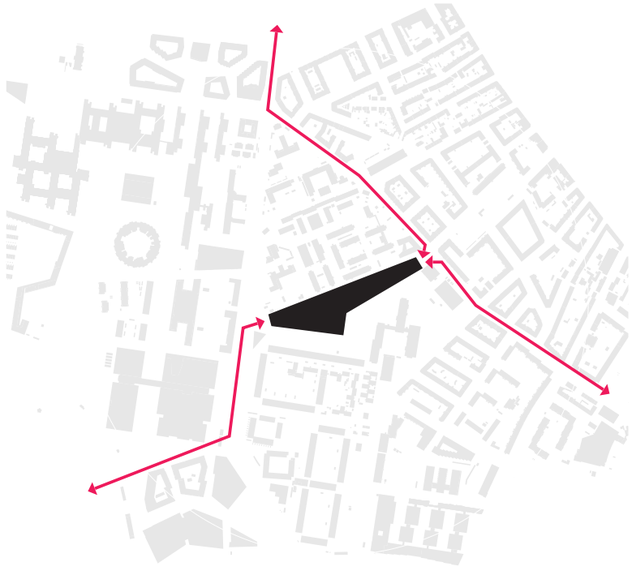
intangible needs informing design aspirations



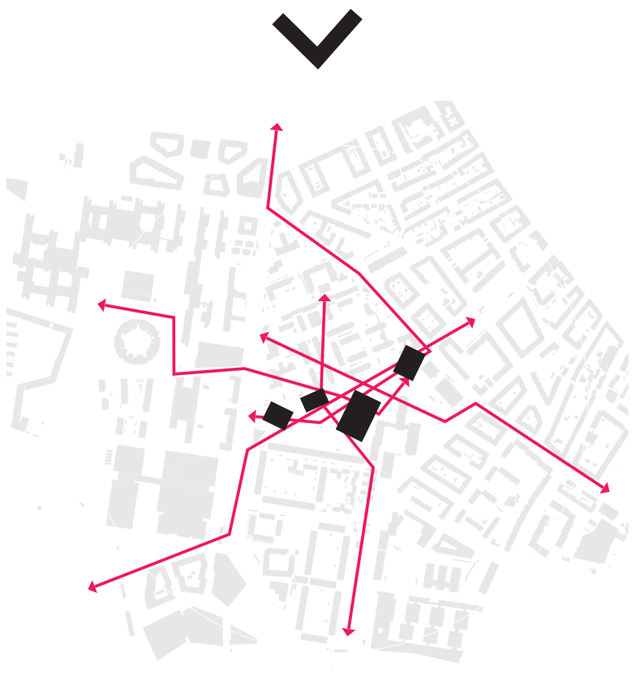


Intangible needs of the community put pressure on improving the flow and connections of the area. The stagnation of Sundholm, partially results from its' physical characteristics and orientation, which should be address by specific design solutions. To the east and west major, busy roads form a boundary which limits the number of people accessing Sundholm. To the south the site is gated by a physical boundary of a large social housing block and mental one of the Sonderbro shelters located to the north.

*this page has been amended post-P1



individual design intervention as the final destination



campus design approach both as the final destination and a pass-through infrastructure

As a result number of people crossing the area is small, which creates the feeling of danger and abandonment. Thus, the project poses an opportunity to address this issue by organising the building as a porous campus of functions rather than a single envelope. As a result the project will have a dualistic nature, acting both as a building as a destination, and by creating the needed east-west routing - a building as a 'passing-through' infrastructure.

hybridity

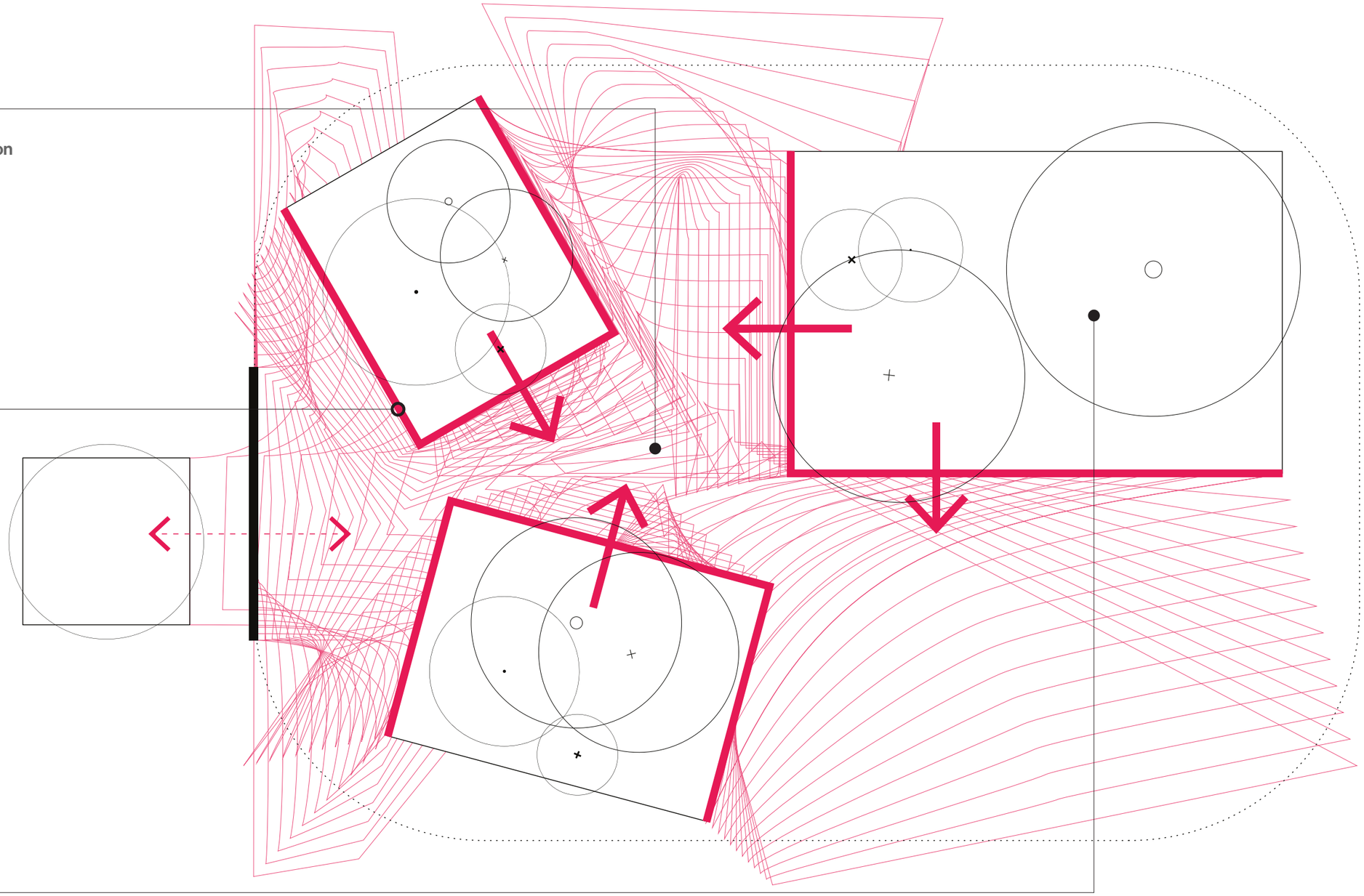
focus on permeability, flow and in-between spaces

permeable, semi-open public space

_slowing down the traffic = more lively space
_more time spent = more potential for interaction

activating and open ground level

_soft & hard edges that define space
_edges as exchange zones
_edges as staying zones



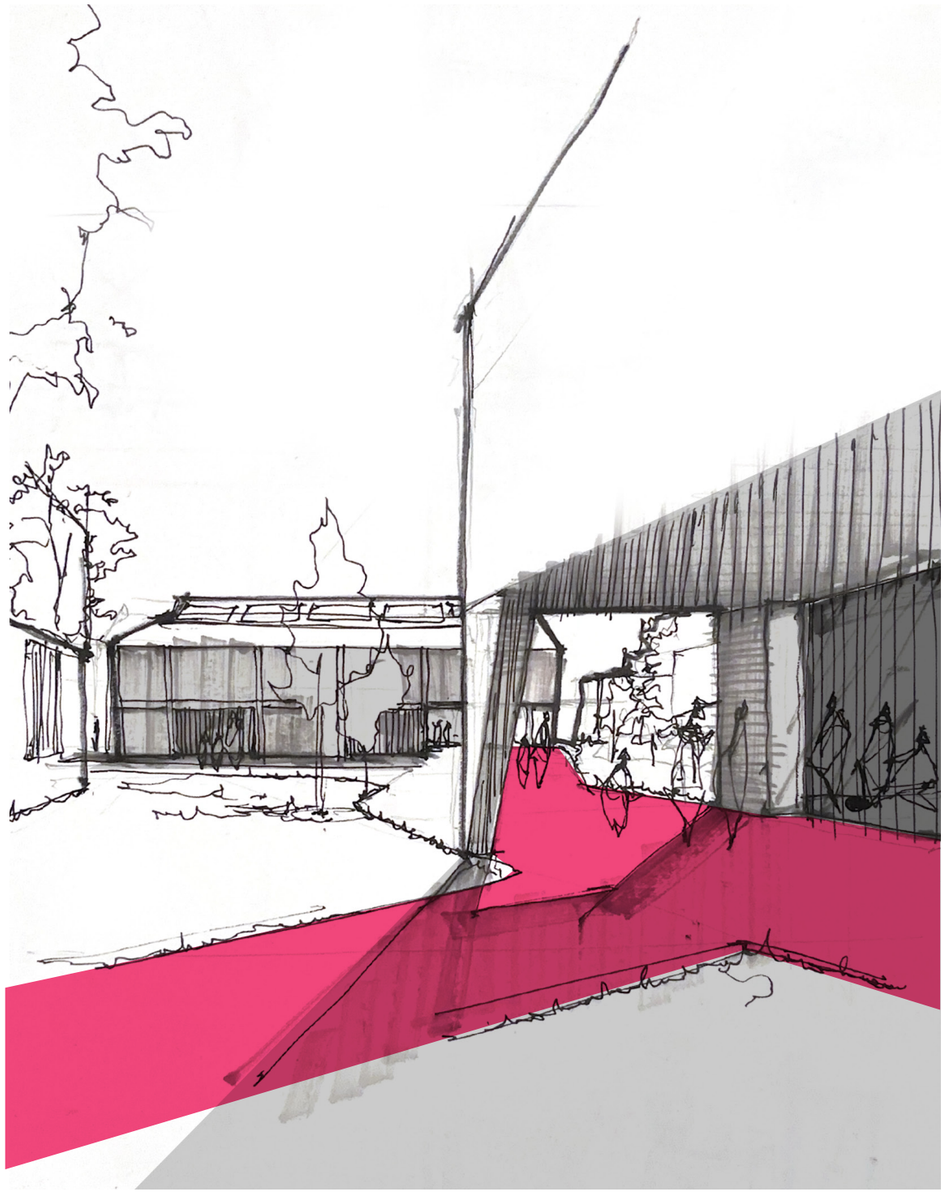
accessible roof spaces

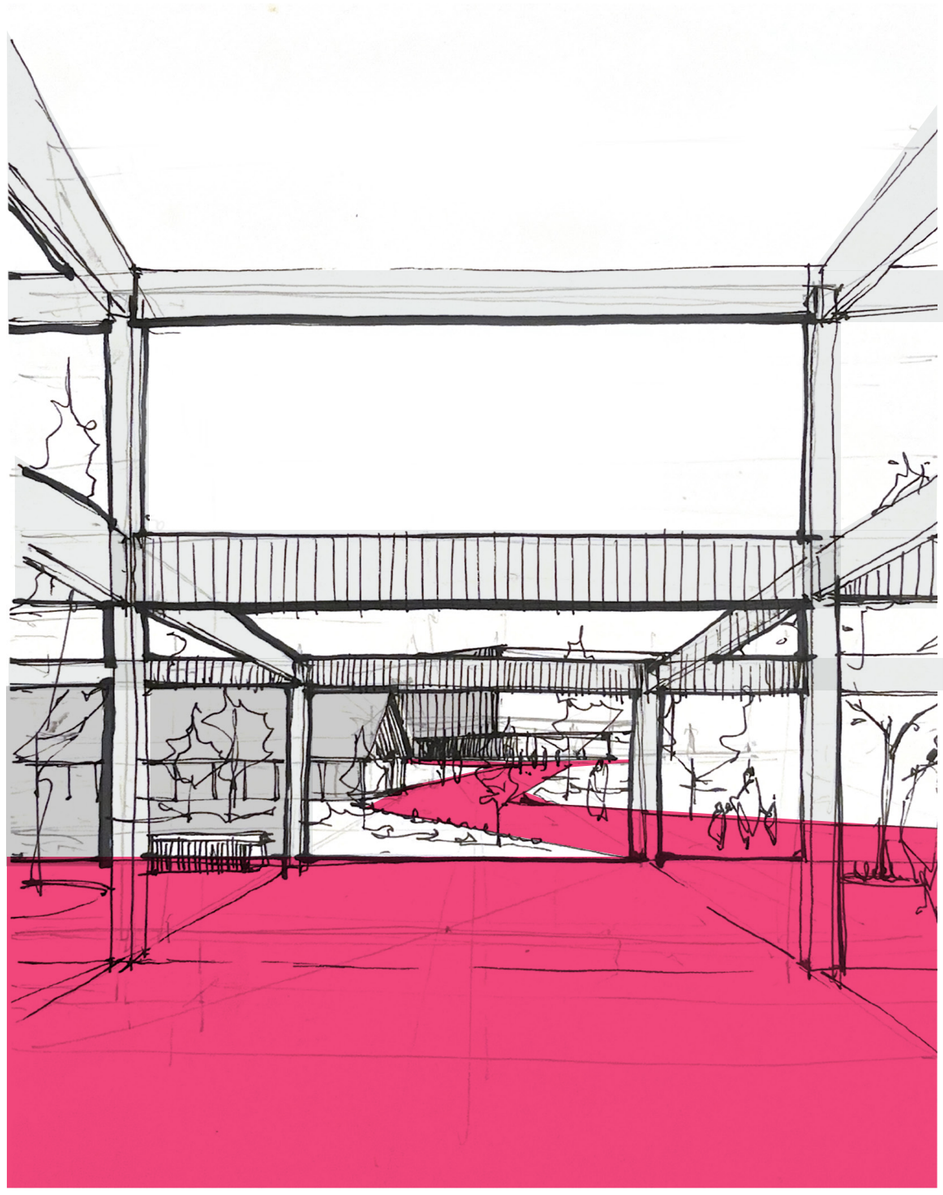
“‘Building and action interpenetrate in the courtyards, arcades and stairways... to become a theatre of new unforeseen constellations... Porosity is the inexhaustible law of the life of this city, reappearing everywhere.’ Rather than a preoccupation with solid, independent object-like forms, it is the experiential phenomena of spatial sequences with, around, and between which emotions are triggered.”

Steven Holl // “Urbanisms - Working with doubt”

By splitting the multiplicity of functions to different blocks and following the approach from the TD_04 assignment, the project should use the whole perimeter of the site (potentially expanding to the neighbouring community garden and the car park). This will create the desired permeable campus that both - stimulates the currently lacking east-west connections, - and will invigorate the immediate neighbourhood by increasing the number of ‘eyes on the street’. Therefore, the in-between space, whether open, semi-open or closed should become what defines the project.

public realm
characteristics of the in-between space





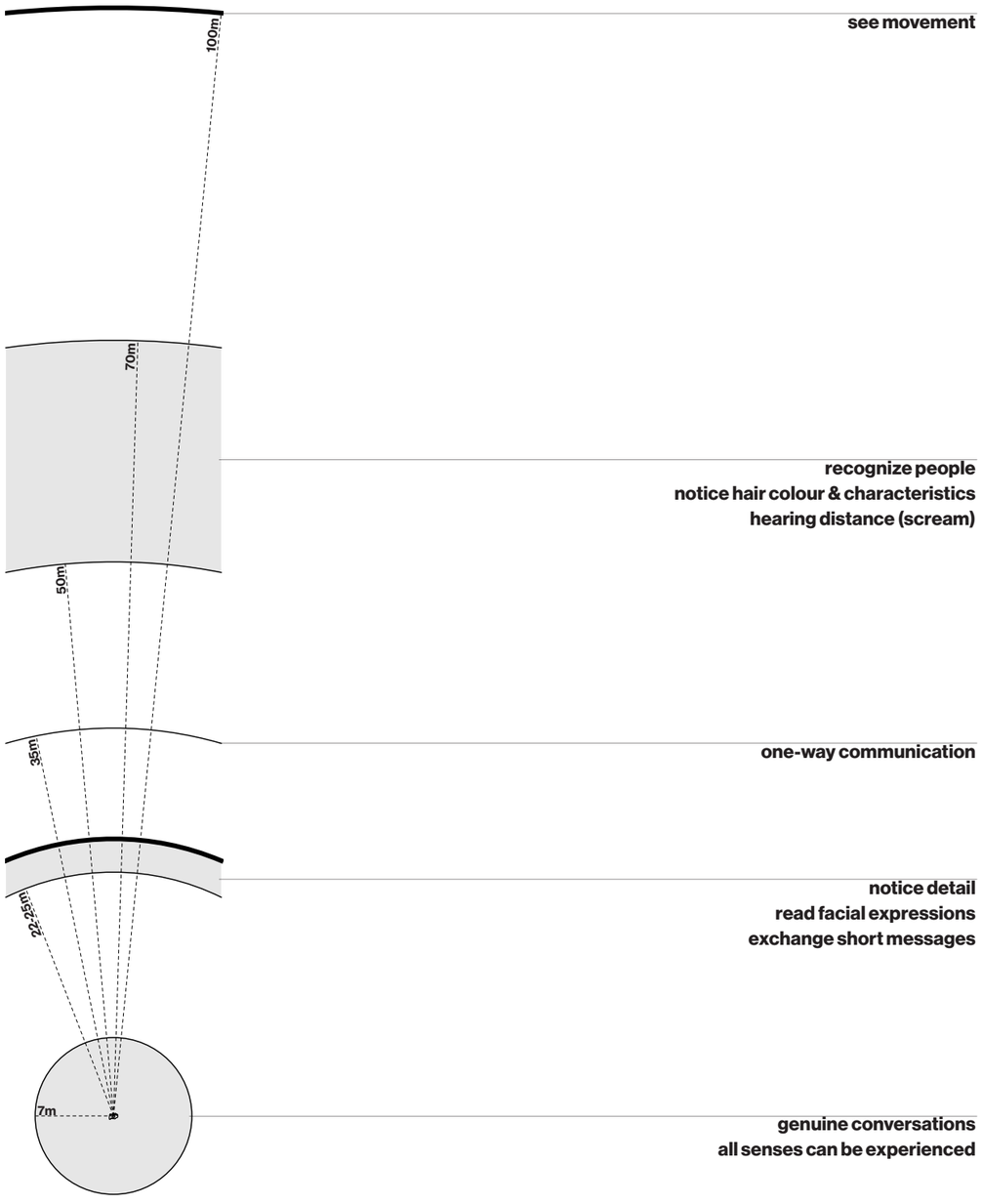
“The connection becomes even more interesting if we look at the relationships between necessary, optional and the important group of social activities. (...) Social activities include a wide spectrum of diverse activities. There are many passive see and hear contacts: watching people and what is happening. This modest, unpretentious form of contact is the most widespread social city activity anywhere (...).
There are more active contacts. People exchange greetings and talk to acquaintances they meet. There are chance meetings and small talk at market booths, on benches and wherever people wait.

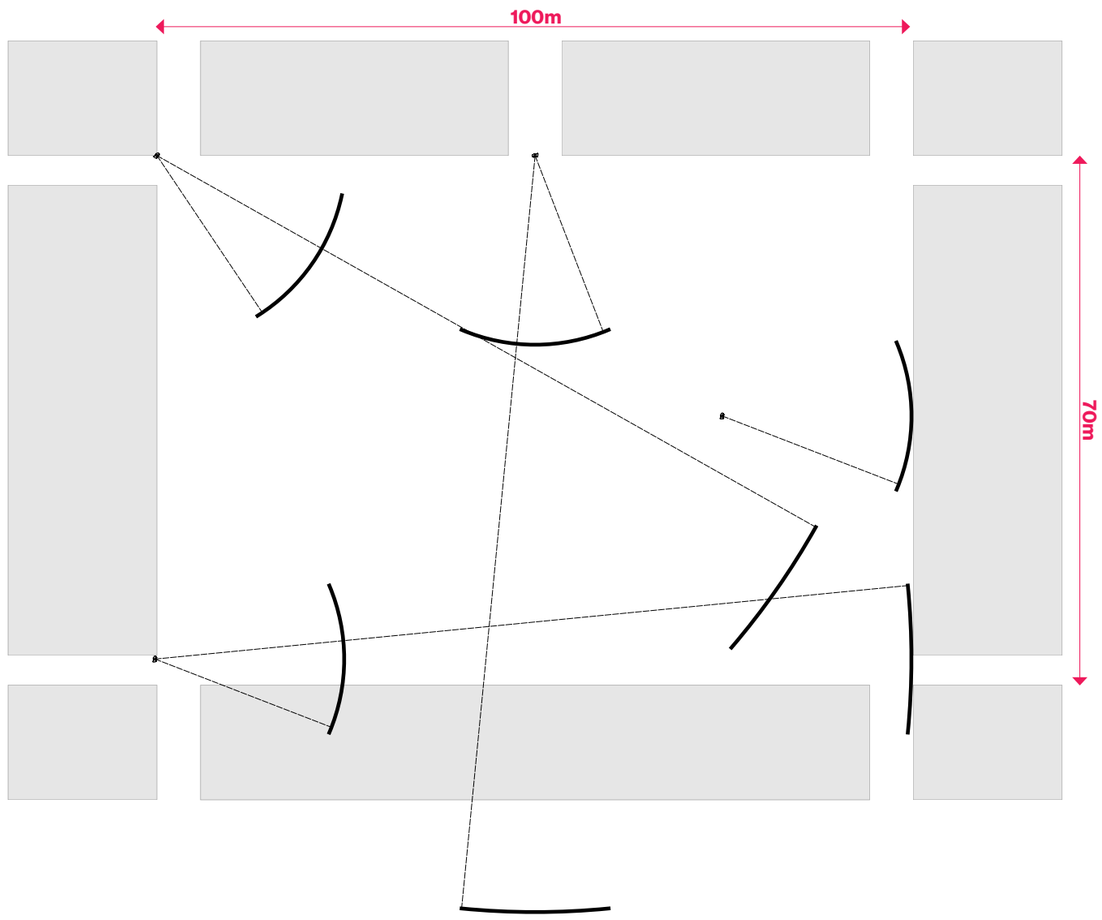
(...) More extensive contact can sometimes grow from these short greetings. Unpredictability and spontaneity are key words. Among the more extensive contacts are children’s play or the young people who ‘hang out’ and use city space as a meeting place.”

Jan Gehl // “Cities for People”

human scale

influence of dimensioning on what we notice





“Life in all its diversity unfolds before us when we are on foot. (...) But in cities there is so much more to walking than walking! There is direct contact between people and the surrounding community, fresh air, time outdoors, the free pleasures of life, experiences and information. And at its core walking is a special form of communion between people who share public space as a platform and framework”

Jan Gehl // “Cities for People”

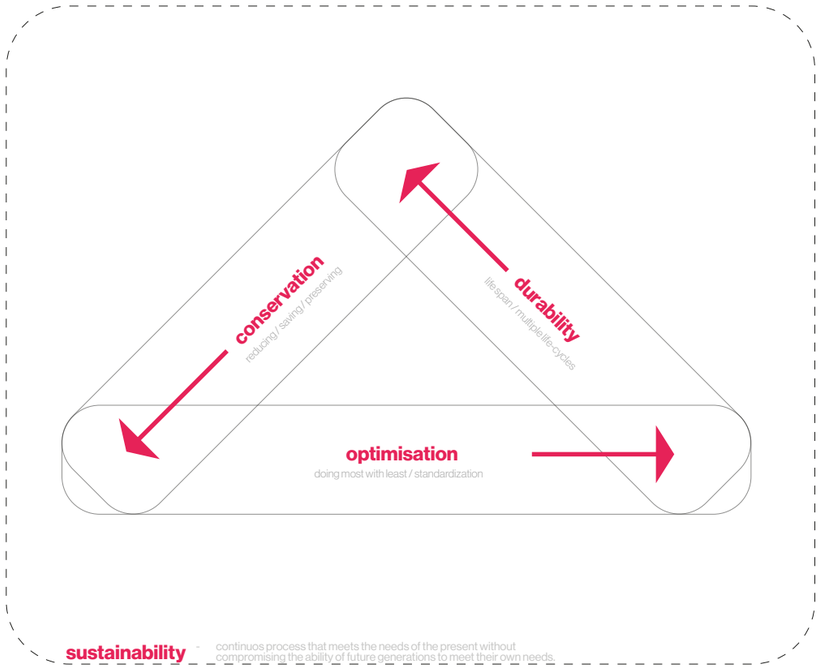
“If we look at dimensions, distances greater than 100 meters are rare and 80-90 meter lengths much more common. Width varies from plazas that are geometrically square to those that have a more common rectangular shape, and a typical measurement may be 100x70 meters. In a square of this size you can see activities everywhere. If you take a walk through the square, you can see most faces within the 25 meters that enable you to observe facial expression and detail. The dimensions of the space offer the best of two worlds: overview and detail.”

Jan Gehl // “Cities for People”

development goals

sustainable design strategies

*this page has been added post-P1



01_sustainability

+ environmental: renewable sources of energy & natural materials, water retention systems
+ social: inclusion & sense of belonging, invigorating the image of the area
+ economic: new jobs made

02_healthiness

+ positive micro-climate
+ places to meet & places to retreat
+ improved real and perceived safety
+ abundance of greenery and connection to nature
+ promotion of physical activity

03_resilience

+ designing with passive solar strategies in mind
+ standardised structural elements - improved potential of repurposing
+ designing for disassemebly - e.g. dry connections
+ rationality of spaces
+ open plan spaces - flexibility of future adaptation

04_passive & active systems

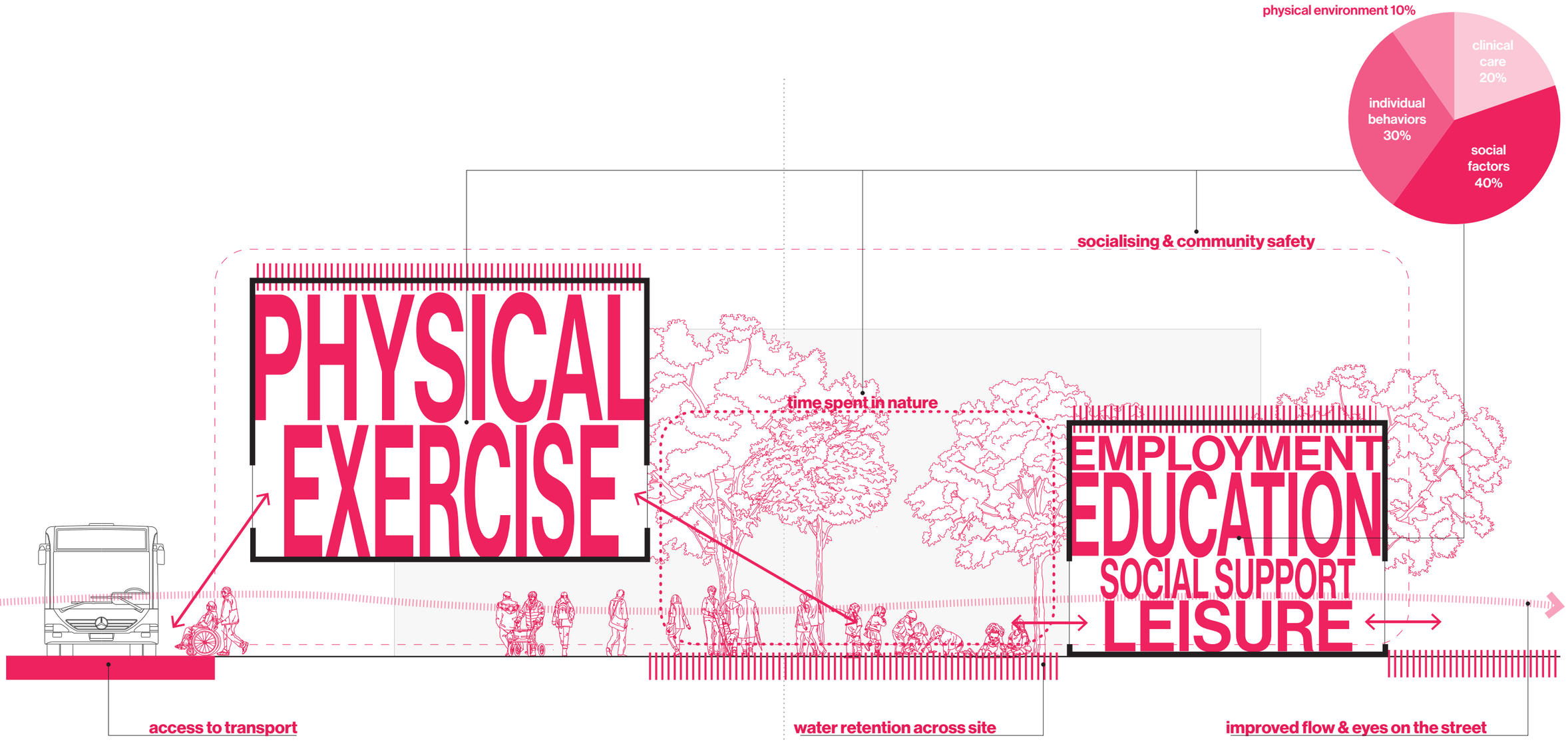
+ accessible green roofs retaining water
+ photovoltaic panels as a renewable energy source
+ piezoelectric pavements as second energy source
+ ground source heat pump for natural heating and cooling
+ mechanical ventilation with heat recovery to maximise the efficiency of GSHP and always provide fresh and filtered from the pollution air

Sustainability as the whole process of the present in a way that does not compromise the future should be omnipresent across the whole design and use of the building. Optimisation at the design stage allows for doing the most with less and shapes the lifespan, future potential of the adaptability and multiple life-cycles of the building and its materials (durability). Conservation - the use and preservation of the building is a natural resultant of its durability - depending on how the building has been initially organised with passive design solutions, adaptability and active systems, the wear & tear will occur differently.

sustainability & healthiness

*this page has been amended post-P1

influence on the neighbourhood and the health of the residents

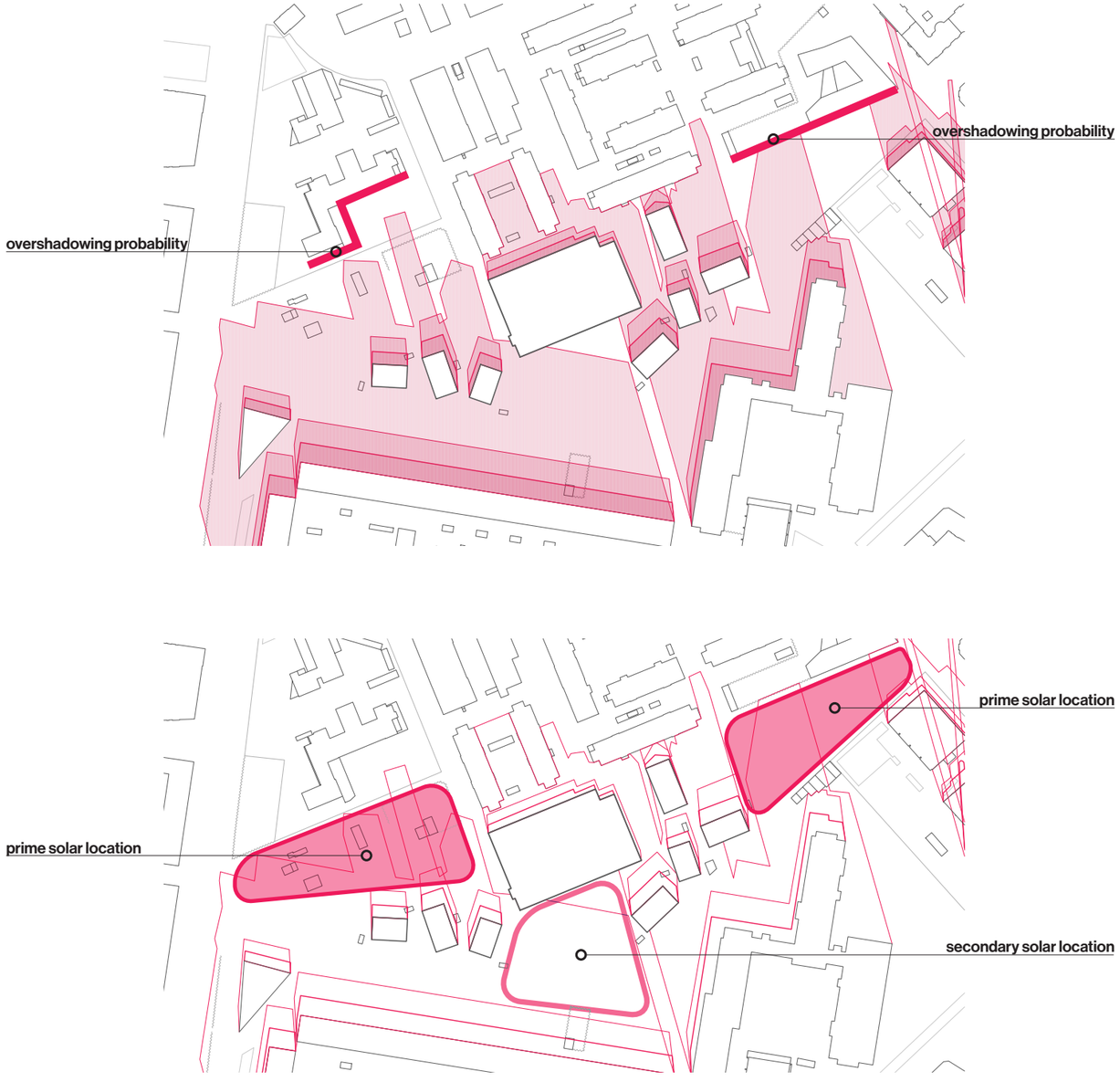


Following the lecture on designing for health by Jan Gehl Architects, only 20% of the overall "healthiness" is related to institutions (hospitals, nursing homes etc.) and the majority can be observed and targeted in everyday lives. Two main components are the social factors, that focus on the stability of employment, access to education and social support, and the individual behaviours that relate to physical exercise, time spent in nature and a sense of belonging. The project should tackle these issues both with its programme as well as with the way it is designed (e.g. extensive and porous greenery between built interventions allows for improved micro-climate and health).

*this page has been added post-P1

passive solar design

solar orientation and passive approaches

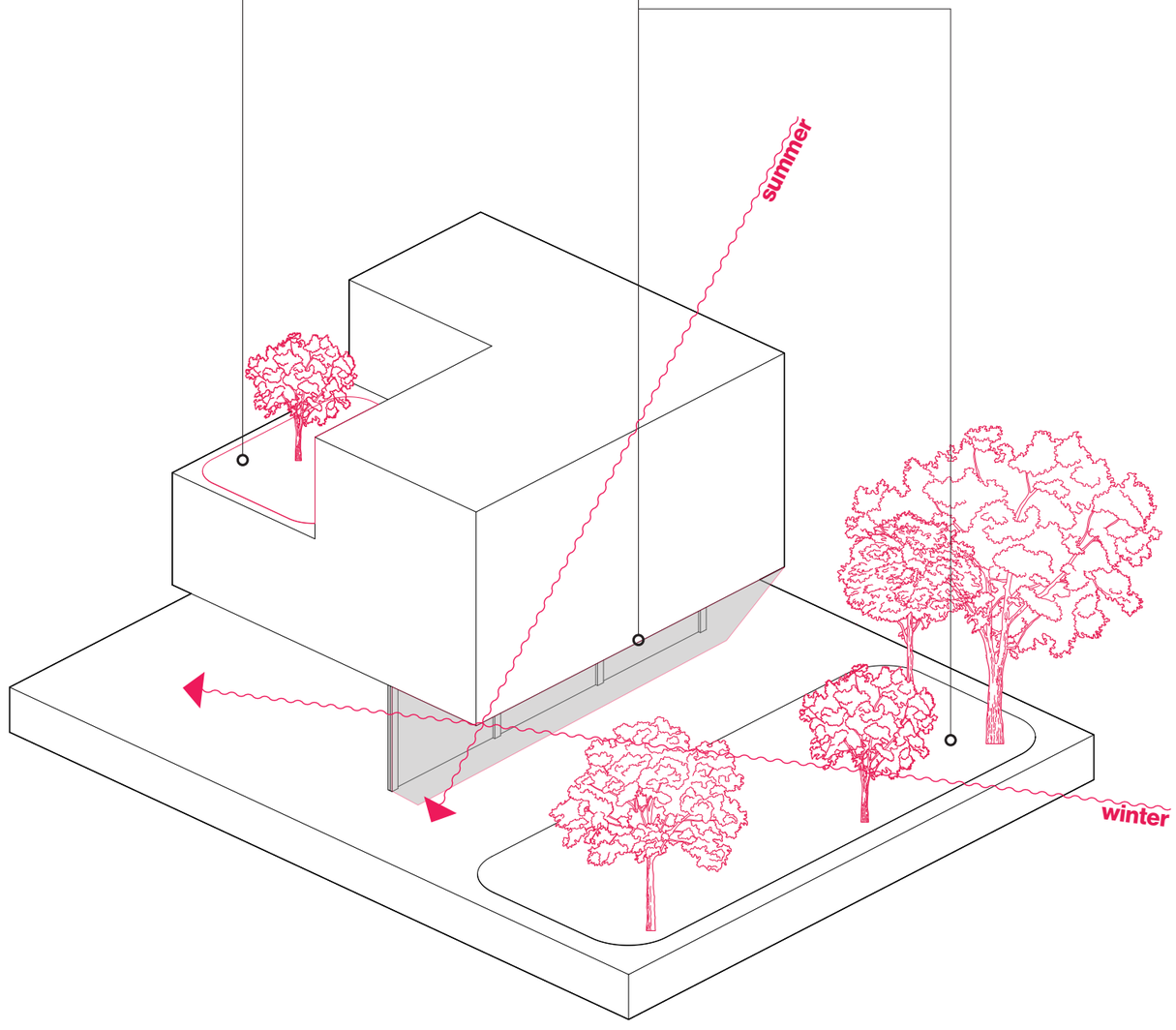


internal courtyards

providing access to daylight throughout the day

passive shading

Overhangs, louvres, and deciduous trees are used to block excessive solar heat during summer while allowing sunlight in winter.

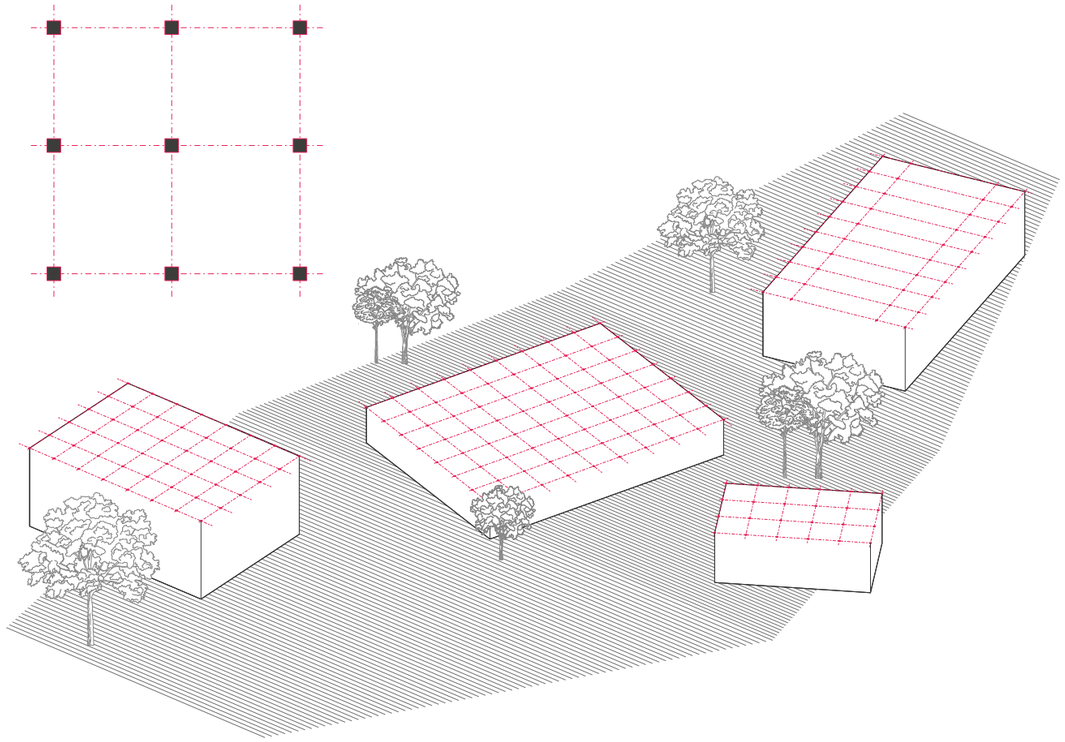


The wider site area has optimal southern exposure for the majority of the year, between vernal and autumnal equinox, however around the time of the winter solstice, the located to the south major social housing overshadows a great portion of the site. Subsequently, there is potential on the site to locate new buildings that have optimal solar gain for a good portion of the year. As a result there is a possibility of overshadowing northern-neighbouring buildings. However, due to their institutional rather than residential characteristic the approach may be a bit looser.

The sustainability agenda of the project aims to maximise the passive solar benefits. Therefore, project's massing should be oriented to have optimal solar exposure, creating open spaces in--between that have sunlight access. Consequently, growing there deciduous trees during summer will create natural and passive shading whereas in the winter the sun will penetrate through them at a lower angle and fill in the internal spaces of the design. This will be supplemented by the use of overhangs and louvres to minimise overheating during summer, similarly allowing for sunlight penetration during winter.

standardization

repetitive elements and disassembly



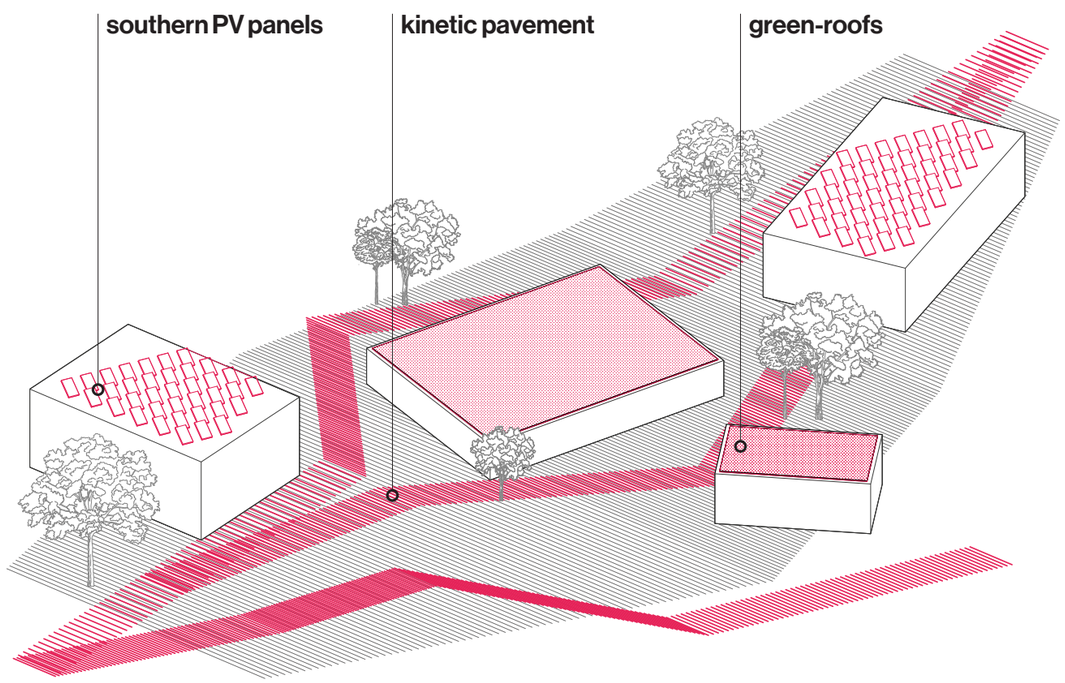
The projects resilience agenda focuses on the benefits resulting from rationality and standardisation. The aim should be to use repetitive elements (columns, beams, screws etc.) in order to create an interesting and stimulating open plan, which offers the flexibility for future change of use or disassembly. By highlighting the importance of that at the design stage the building should follow these principles, simultaneously creating a bespoke solution for current program.

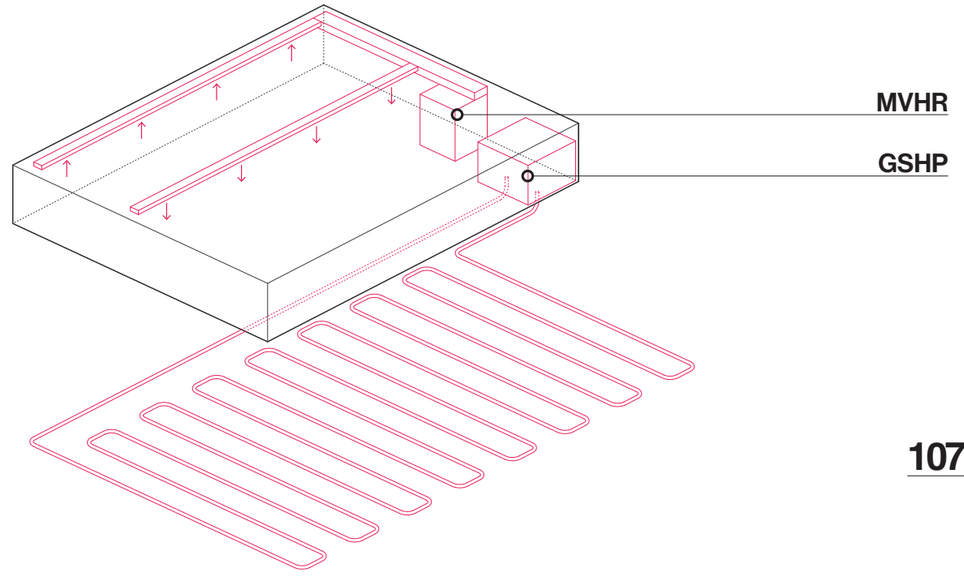
To maximise design principles environmental efficiency, the building should be equipped with an array of passive and active systems utilising renewal energy sources for electricity and heating. Therefore, a mixture of PV panels for harnessing solar energy is suggested, balanced with green roofs for water retention schemes. As the project develops a narrative around the importance of flow and movement a partial implementation of piezoelectric pavements is suggested - harnessing energy created by pedestrians to create electricity.

Lastly, for active heating and cooling systems that do not rely on fossil fuels a hybrid of Ground Source Heat Pump (GSHP) and Mechanical Ventilation with Heat Recovery (MVHR) is suggested. This hybrid system will take advantage of geothermal energy for heating and cooling of the space where MVHR will minimise the energy loss at the end of the cycle (when air is stale) at the same time adding a benefit of air filtration system - limiting external pollution within the building. The operational electricity needed will should mostly come from previously mentioned systems.

passive & active systems

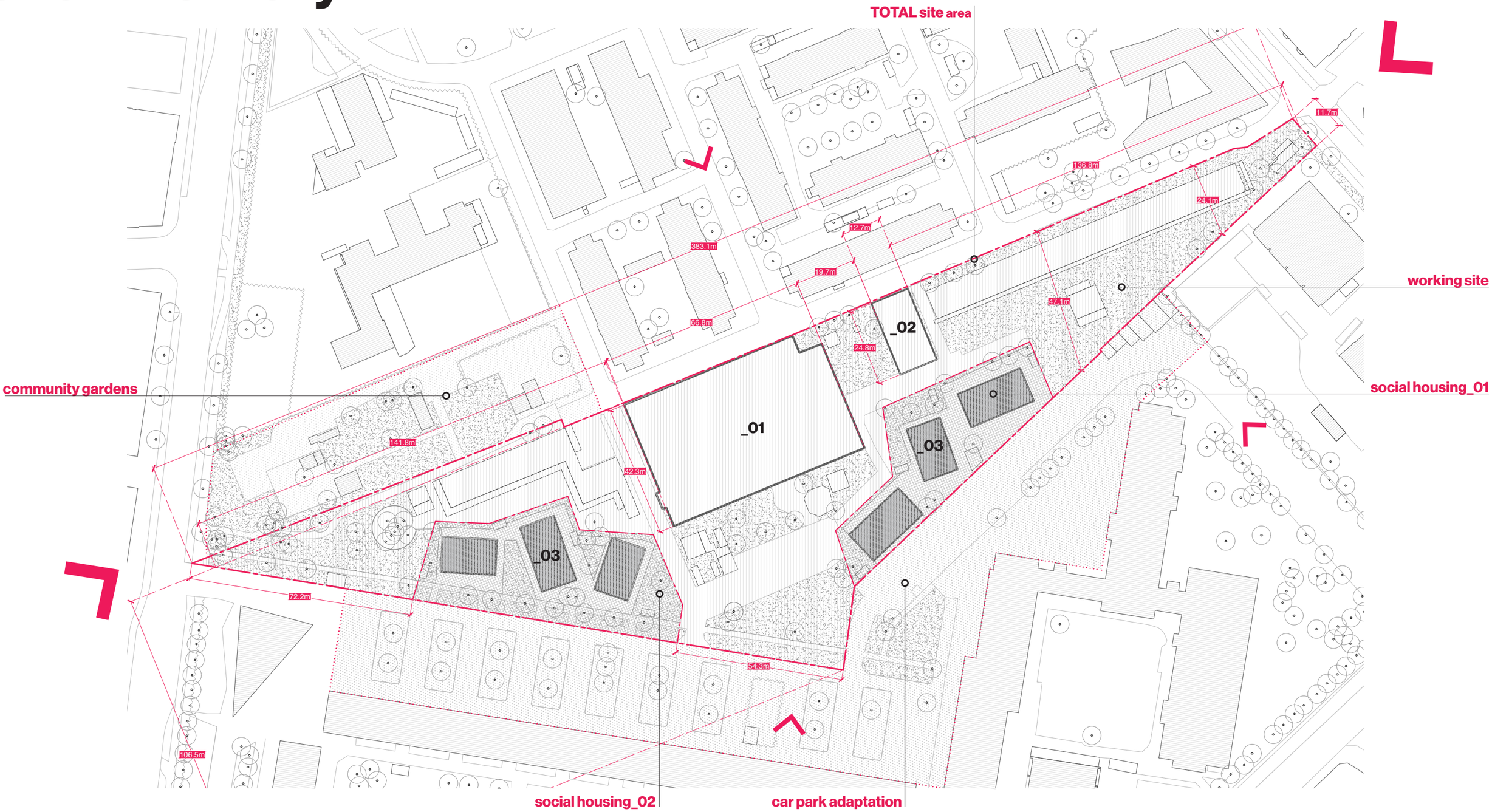
PV, piezoelectric pavement, GSHP & MVHR





*this page has been added post-P1

site inventory



The site triangle contains an array of already existing buildings. These have been identified and assessed based on their future potential. _03 represent the new social housing which will be preserved in the current state. _01 & _02 are existing buildings - a warehouse & on old barn accordingly - which will be adaptively reused to the most of their potential. Structures drawn with a dashed line are either temporary or of no significant value and will be demolished.
Additionally, both the community garden & the car park to the south will be looked at as a potential extension to the project/landscape design to maximise on the research movement potential.

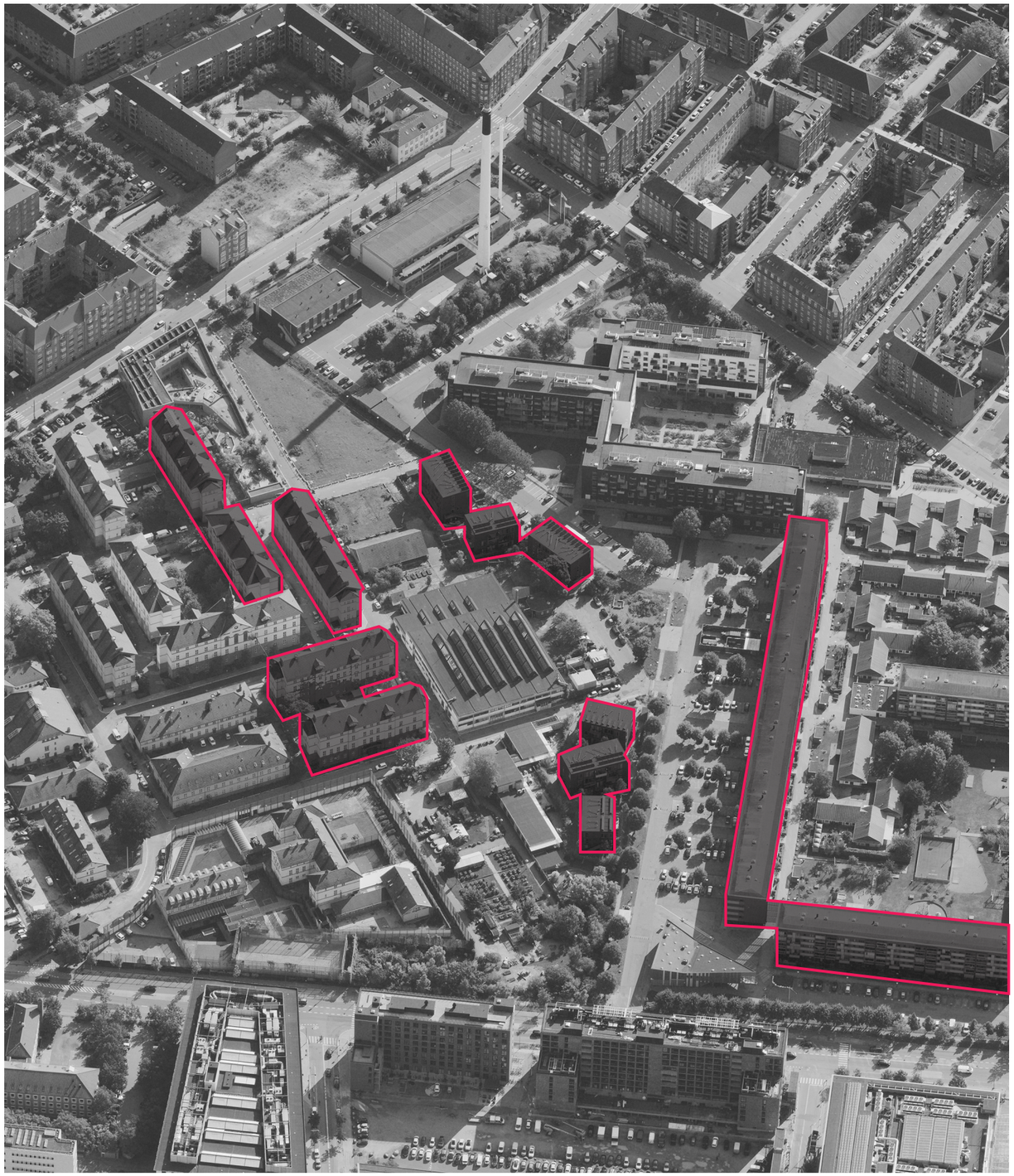
TOTAL SITE (red line)	**19800 m²**
social housing_01	**2100 m²**
social housing_02	**2580 m²**
community gardens	**4250 m²**
working area	**15120 m² (+4250 m²)**

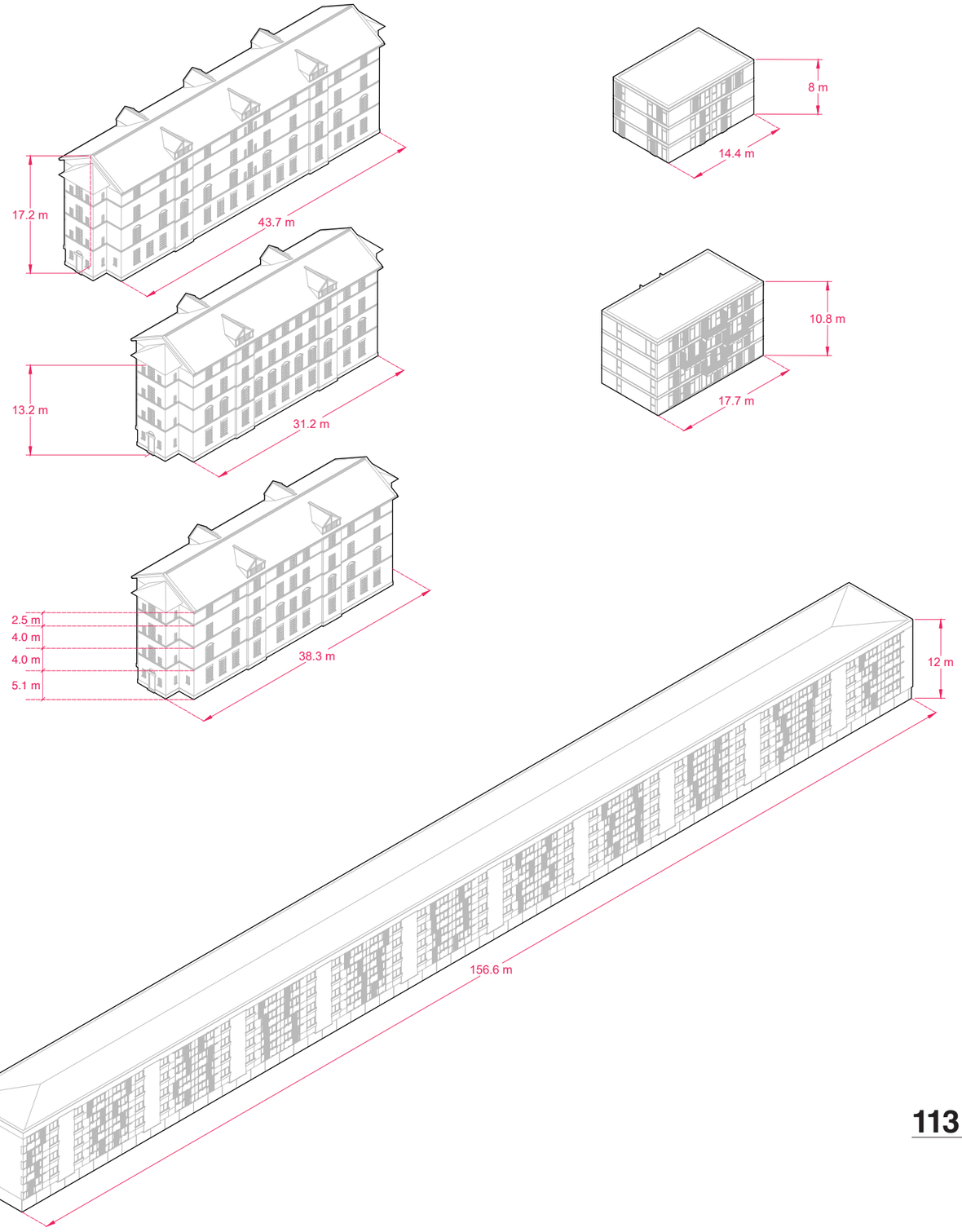


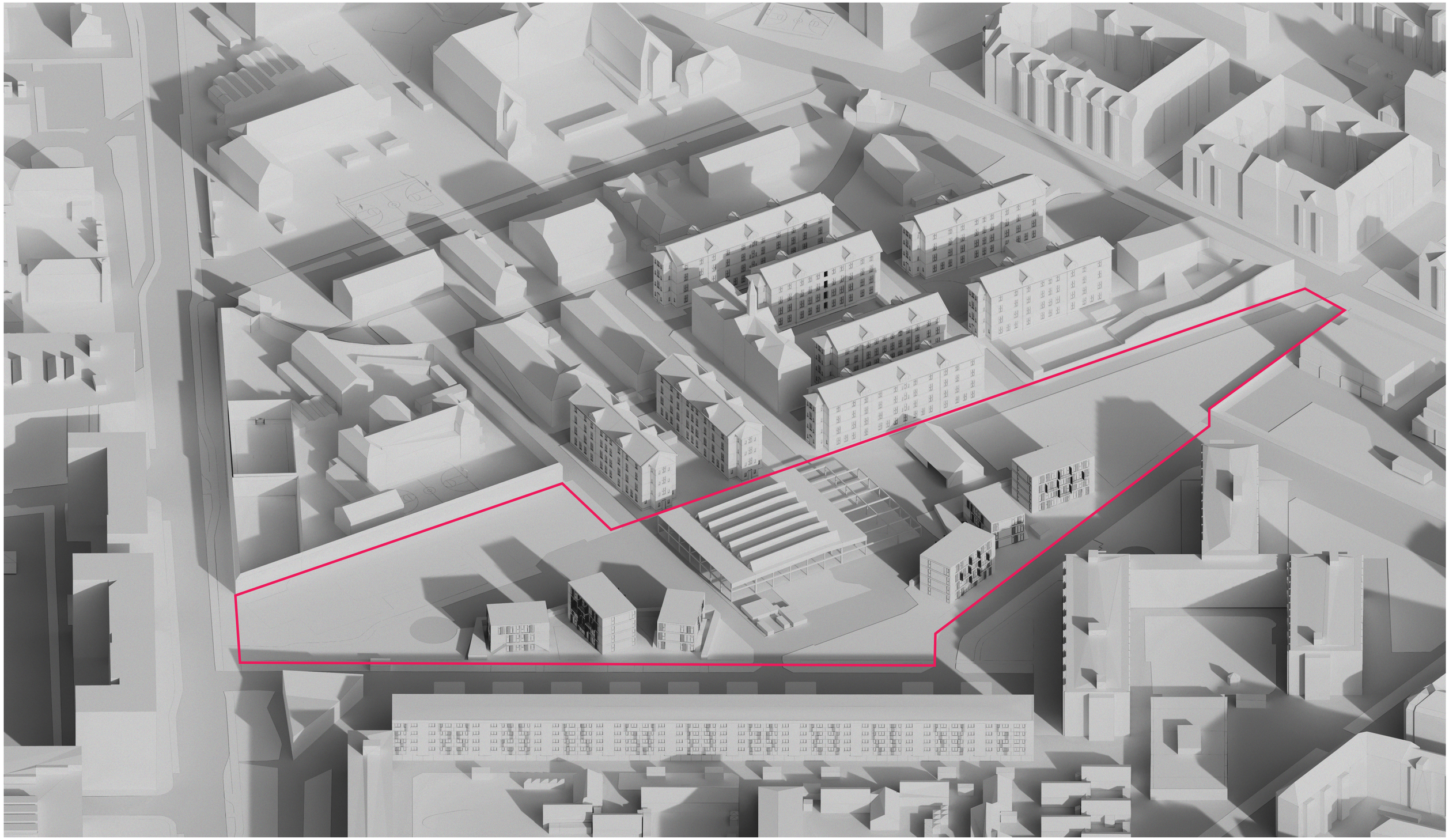
_01


_02


_03



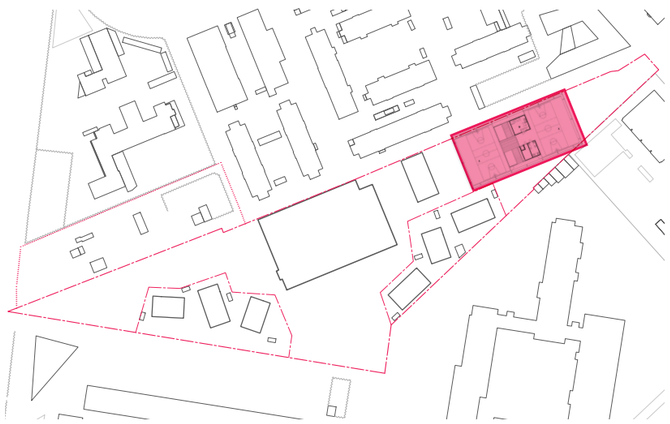

17.2 m
43.7 m
13.2 m
31.2 m
2.5 m
4.0 m
4.0 m
5.1 m
38.3 m
8 m
14.4 m
10.8 m
17.7 m
12 m
156.6 m



case studies_01

Studio Muoto // Paris Saclay // 4100m²



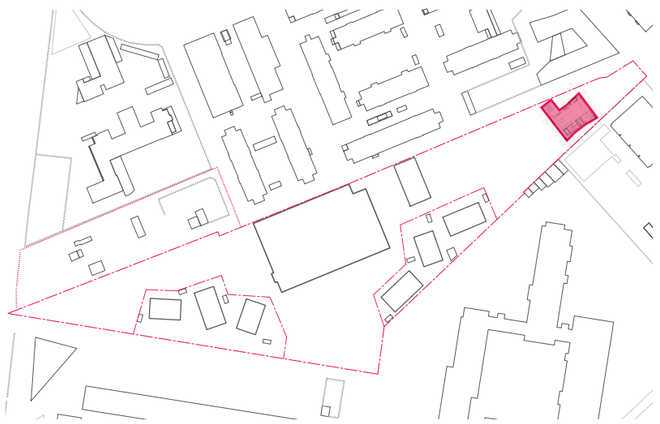


N

case studies_02

Bruther // Paris community centre // 1300m²



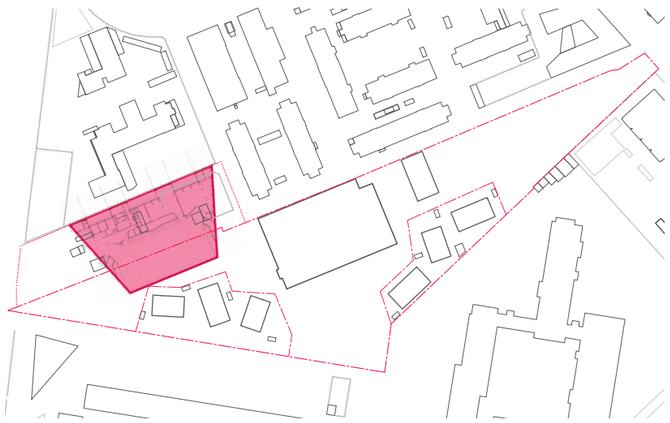


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case studies_03

Dorte Mandrup // the Crystal sports facilities // Copenhagen // 5000m^2



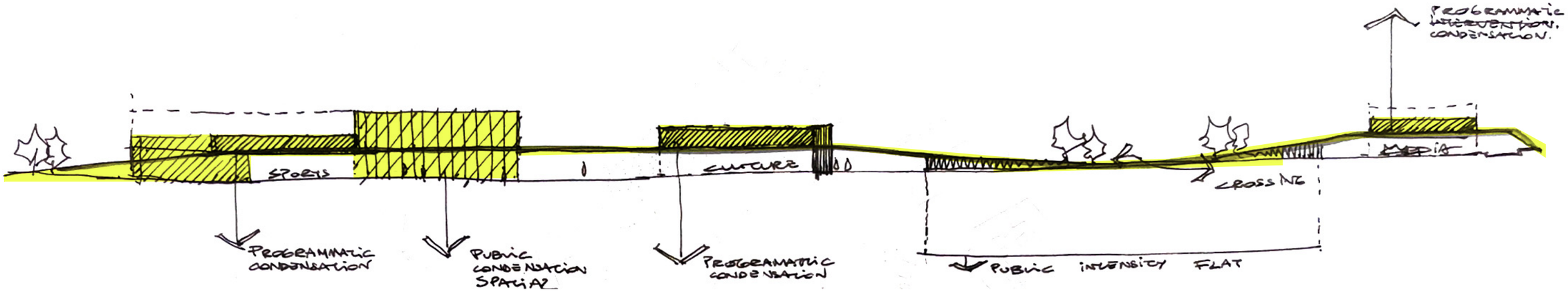


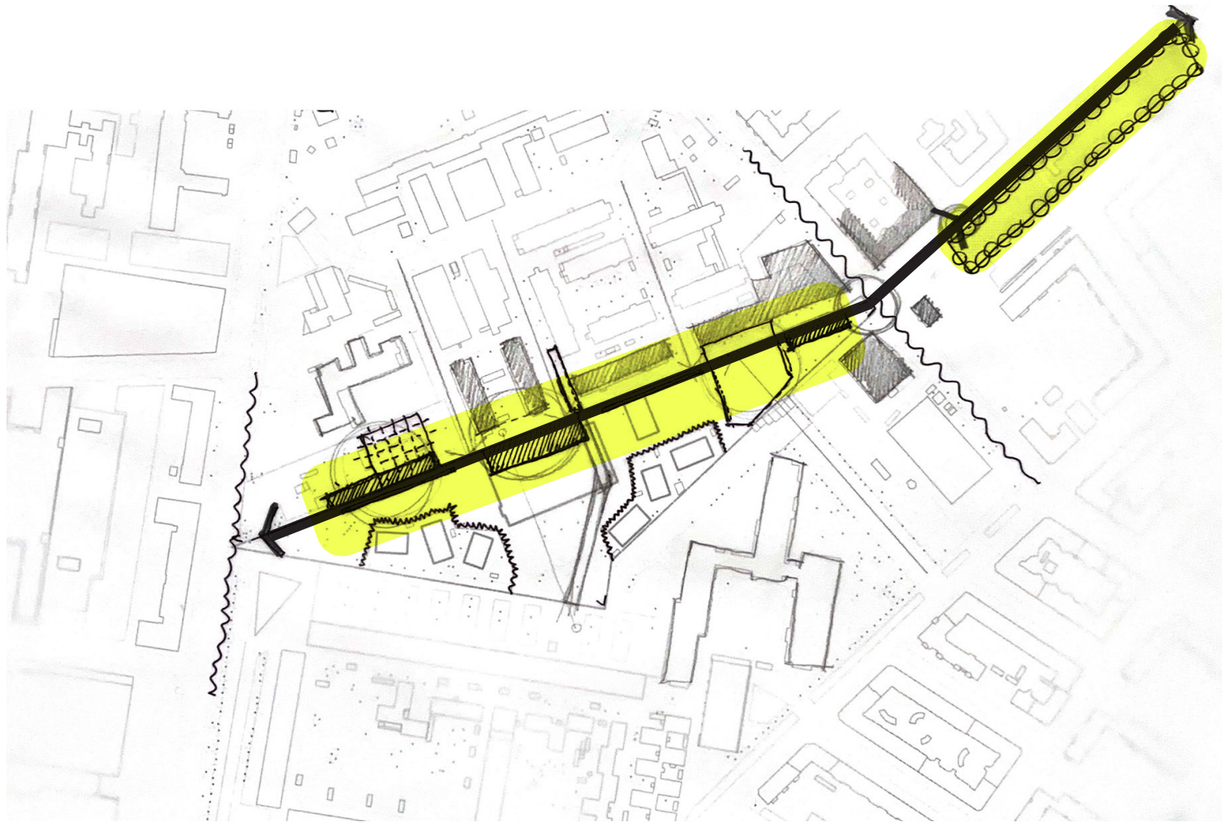
N

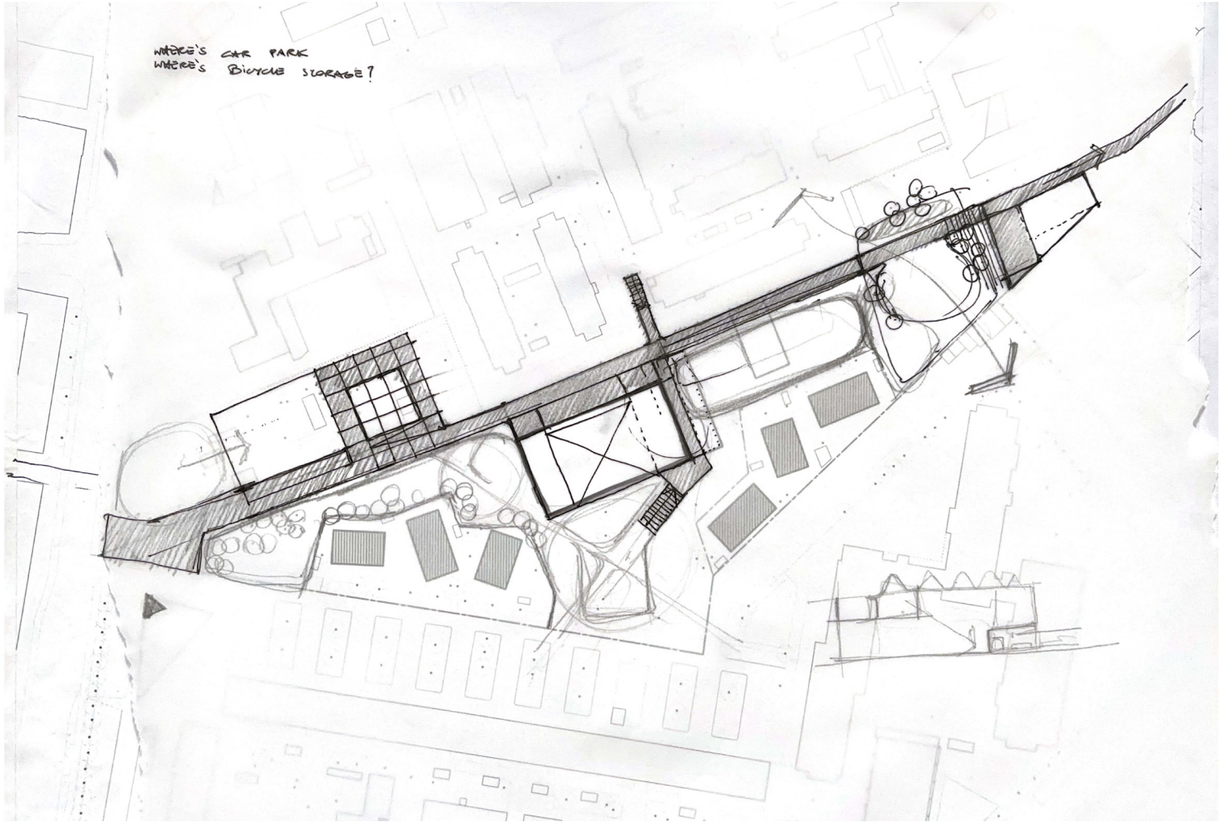
08

designing solution

public space as a condenser

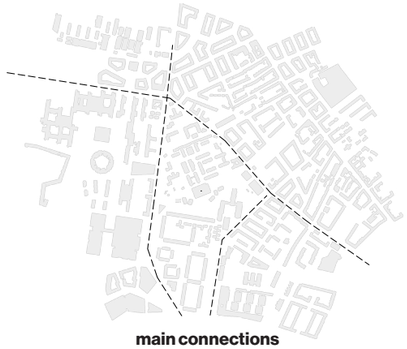




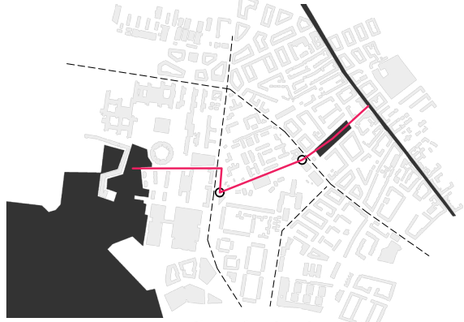


Organisation of the building along the east-west axis, allows for the introduction of strong architectural presence and a new identity as well as a clear & logical structure and hierarchy. Elevated public path cuts through the site seamlessly connecting the green square to the north-east of the plot and the western access point of the site. This axiality touches both program cubes and open/semi-open spaces in-between them, creating a hybridizing element with differnet intensities along the way.

framework



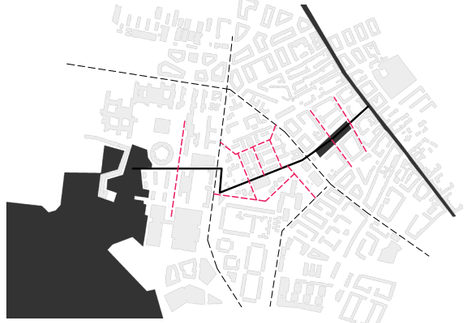
main connections



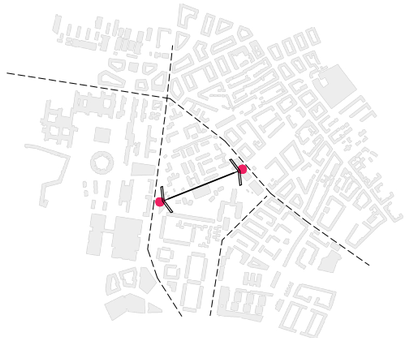
connecting infrastructure



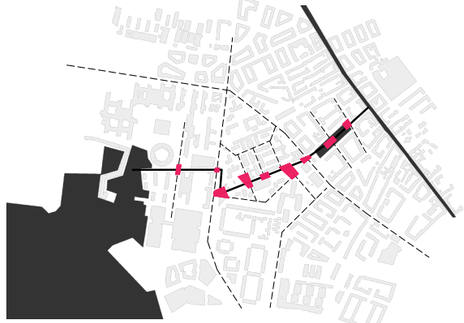
new east-west axis



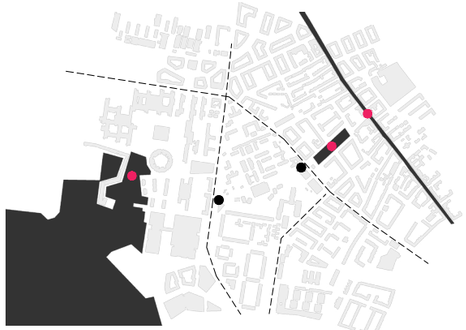
secondary street connection



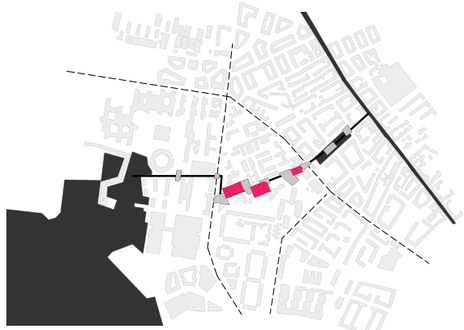
presence at the street



condensation at intersections



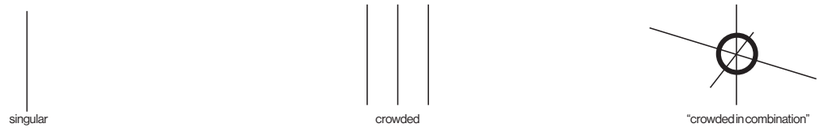
green forest/square + active street proximity

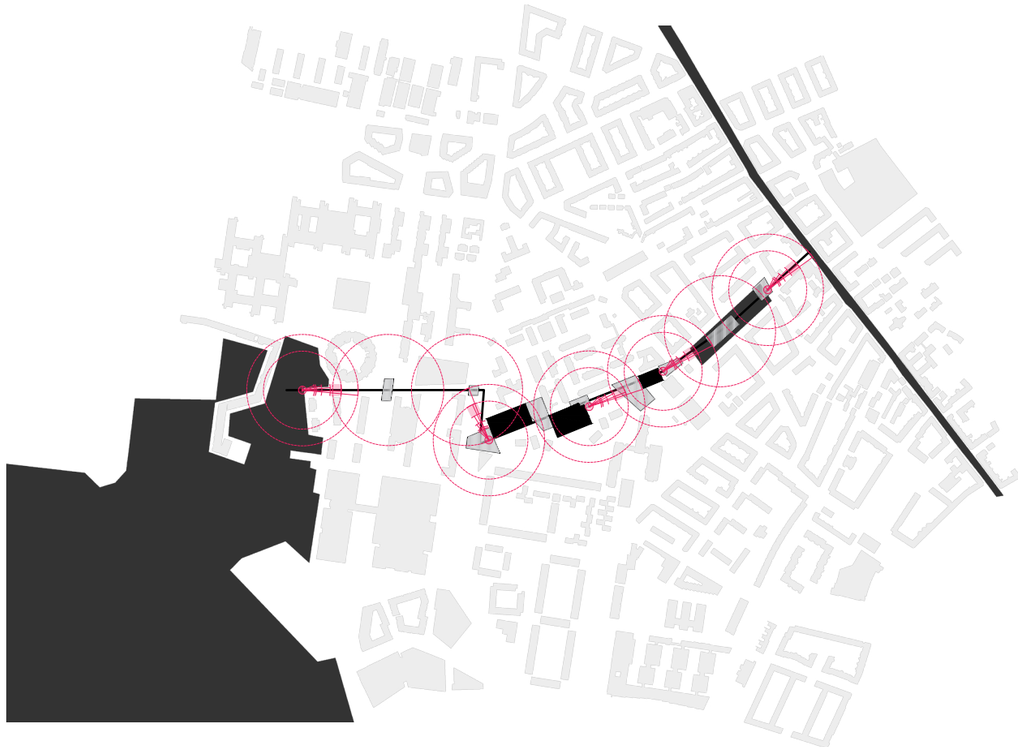


adjacent built interventions

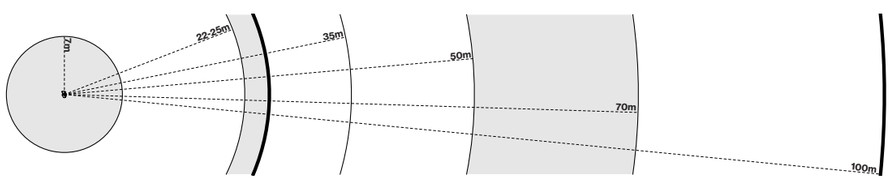
condense - *'make something more dense or concentrated'*

con - archaic form of classical latin *cum* "together, together with, in combination"
dense - from Latin densus "thick, crowded"



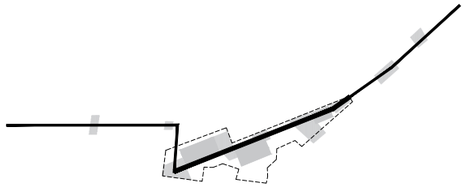


placement of activators according to the visual distance

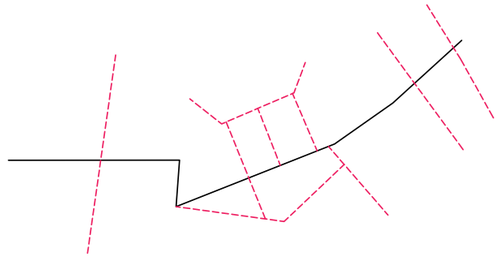


framework properties

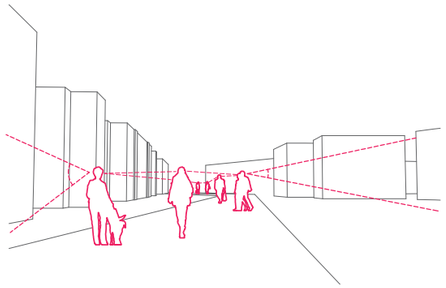
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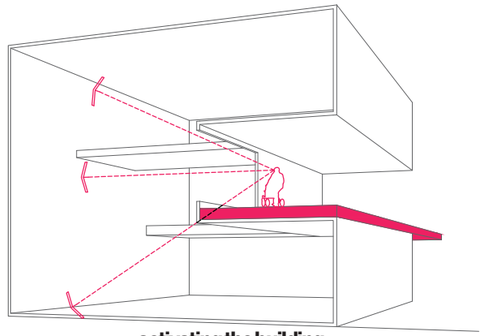
infrastructure



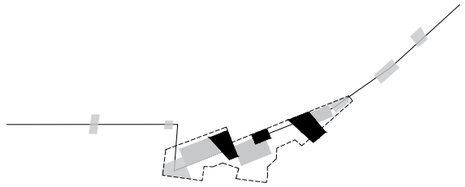
accessible



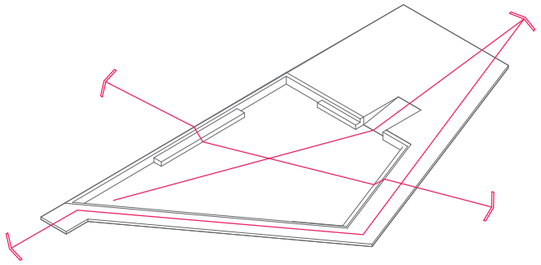
activating the context



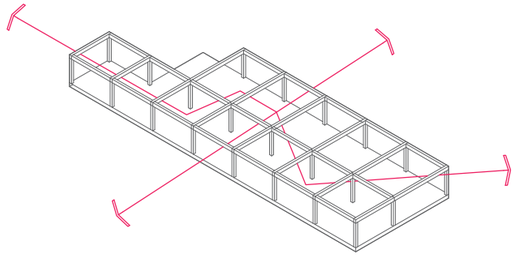
activating the building



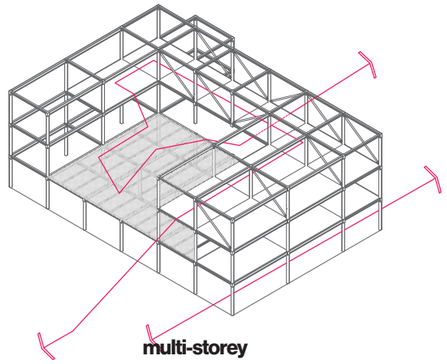
public space



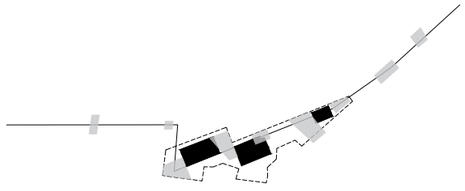
flat / below ground



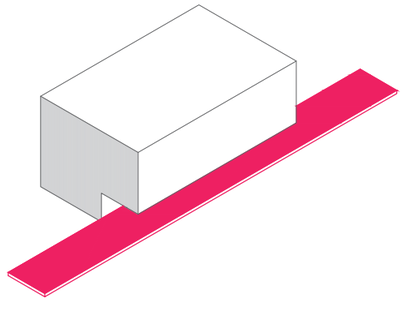
ground level



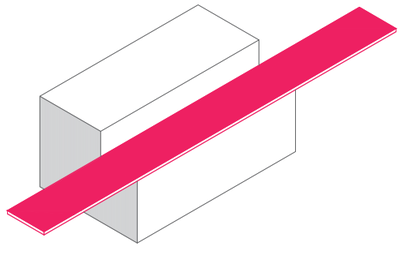
multi-storey



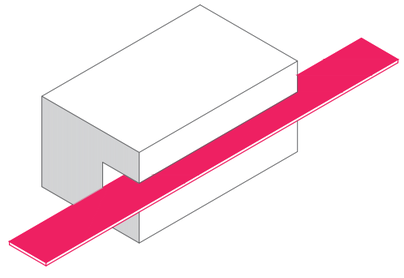
building



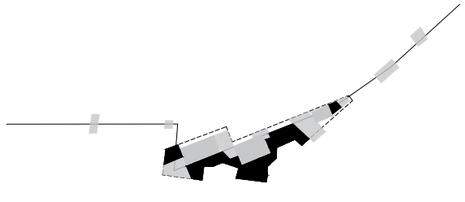
undercut connection



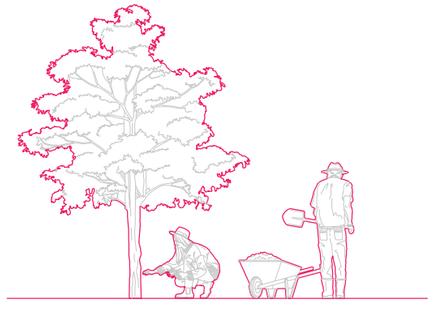
'over' cut connection



cut-through connection



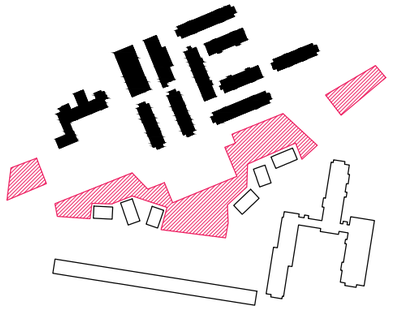
building



greenery for people



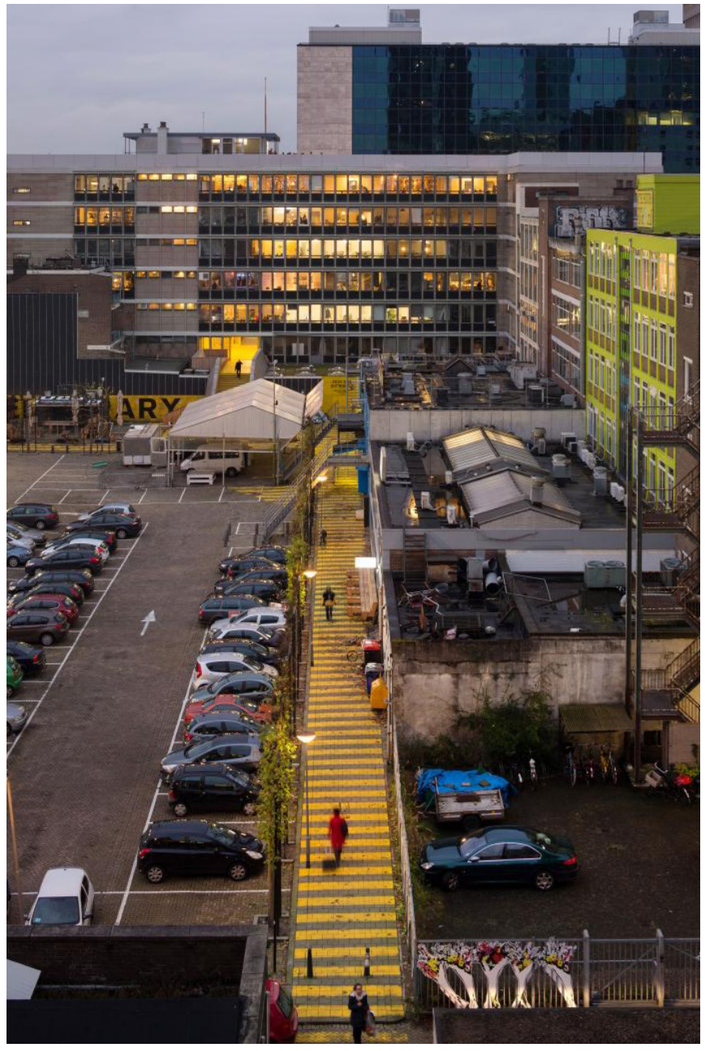
increased biodiversity

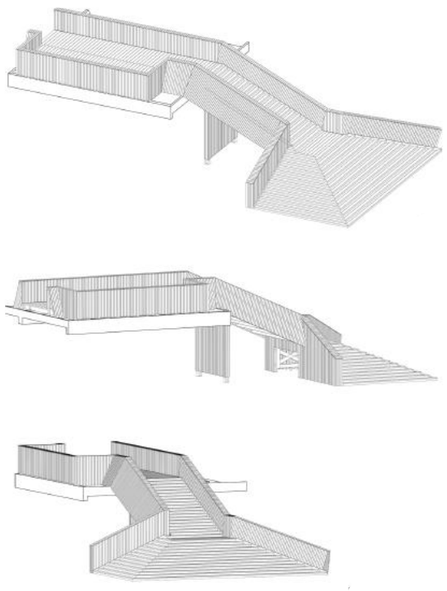


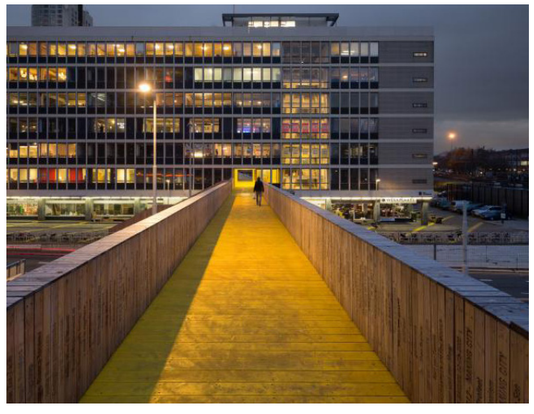
softenning the edges

case studies_connections

luchtsingel // ZUS // photos by Ossip van Duivenbode







mikolaj chmiel ||||||

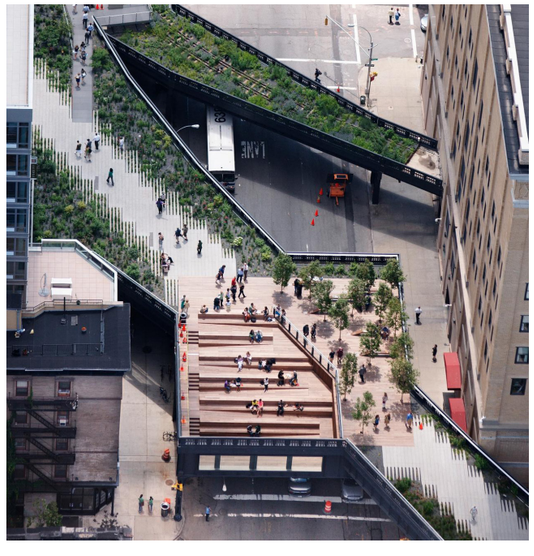
case studies_connections

the High Line // Diller Scofidio + Renfro



Photography by Iwan Baan,Timothy Schenck,Cameron Davidson,Matthew Monteith,Julien Lanoo



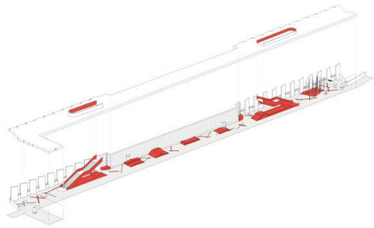




case studies_public realm



XDGA // melopee school





U / U studio, Re_place // Vltavská Underground



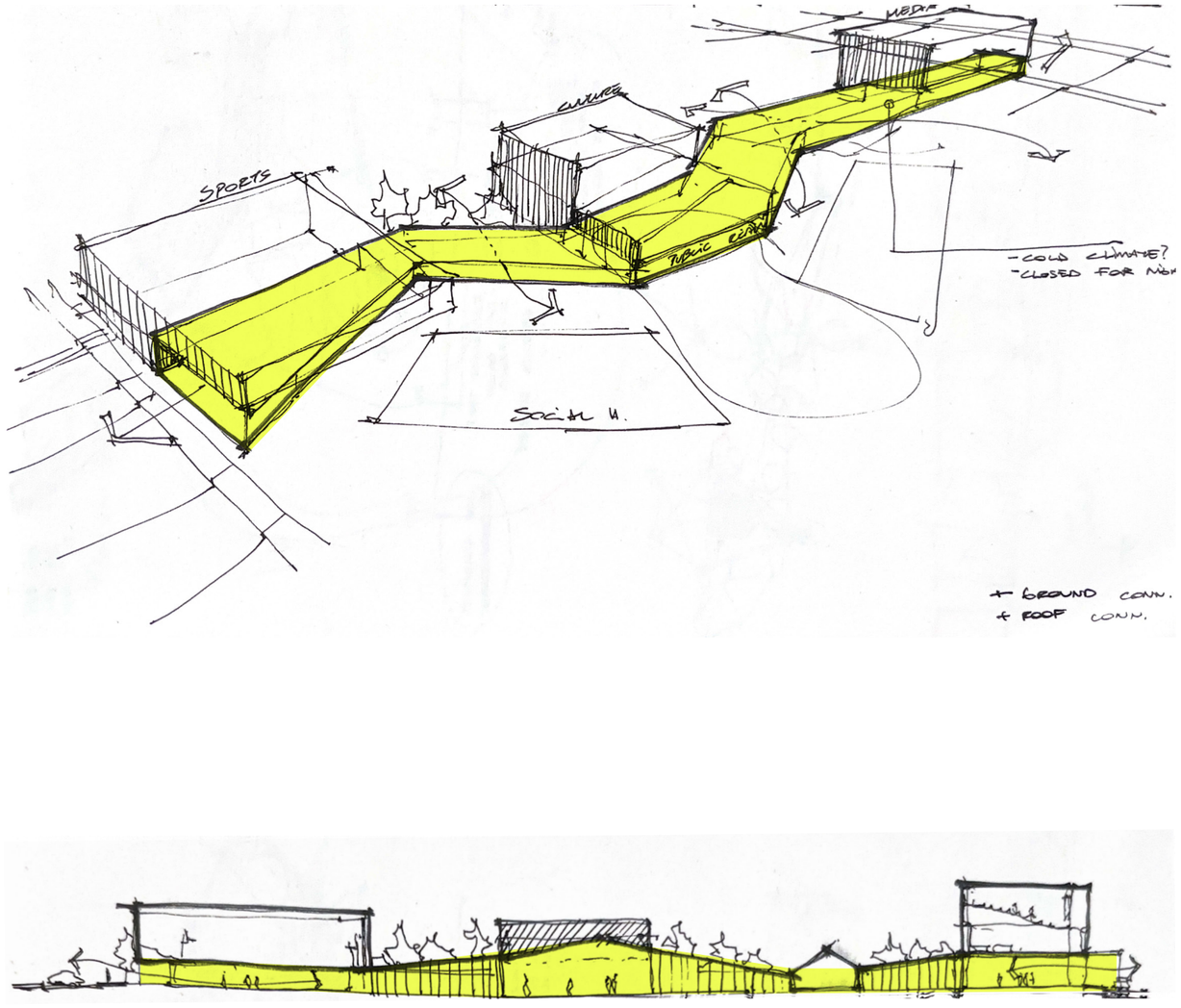
Vandriessche Architecten // Wijkpark de Porre

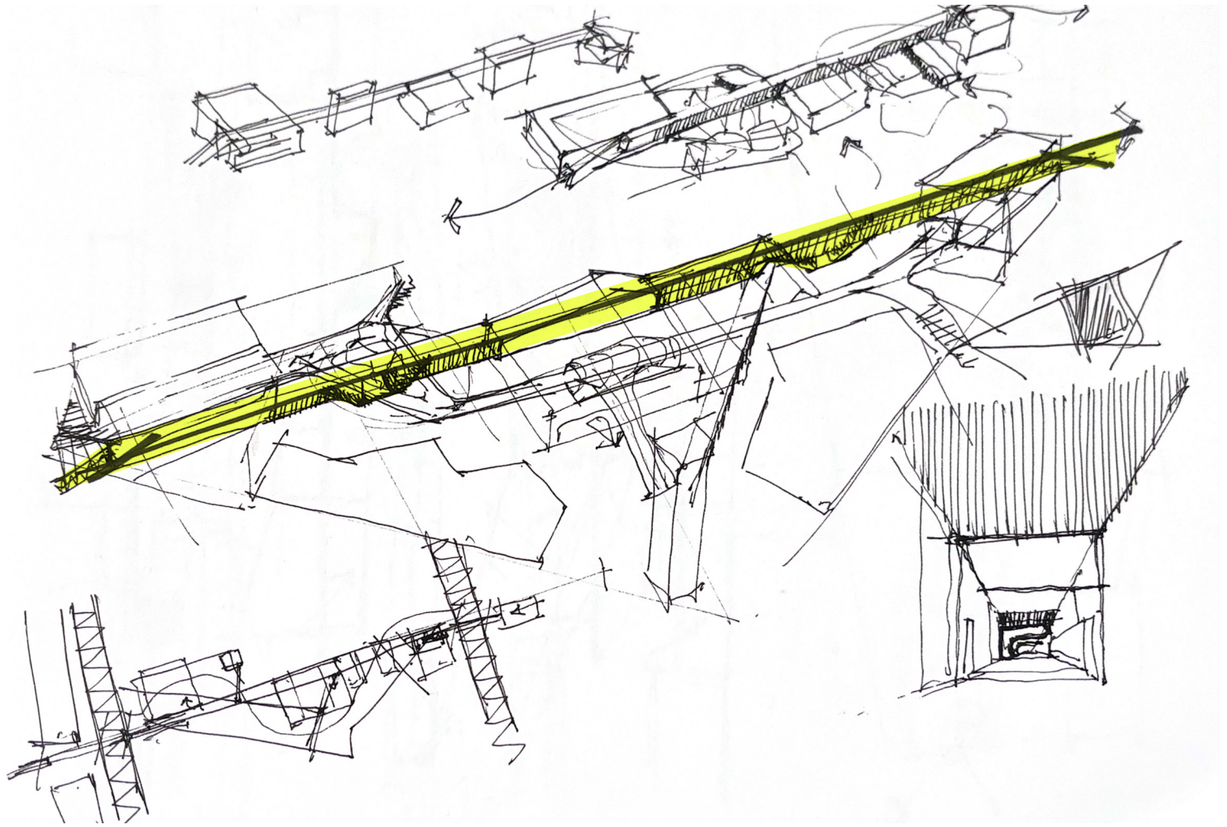
Public realm as an in-between tissue of the project should act as a public hybridizing space, uniting the scattered across the site programmatic buildings. Therefore, what is happening in this hybridized space should be ambiguous in its' nature, stimulating and inviting for interpretation and free use. This space should serve both as a connector, places to rest & reflect and as a place to play and be active. All of the above should be interrelated and constitute a one whole.

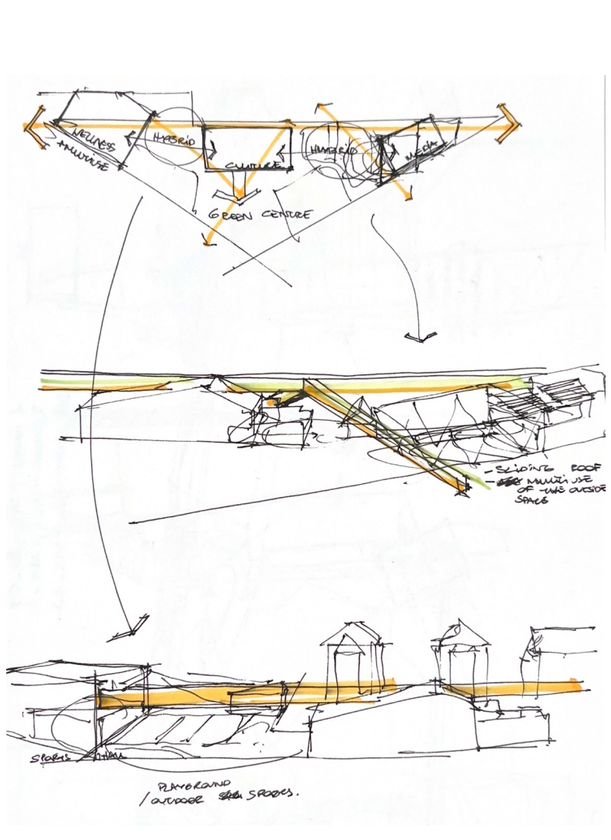


ELE Arkitektura // San Antonio school playground

exploratory sketches

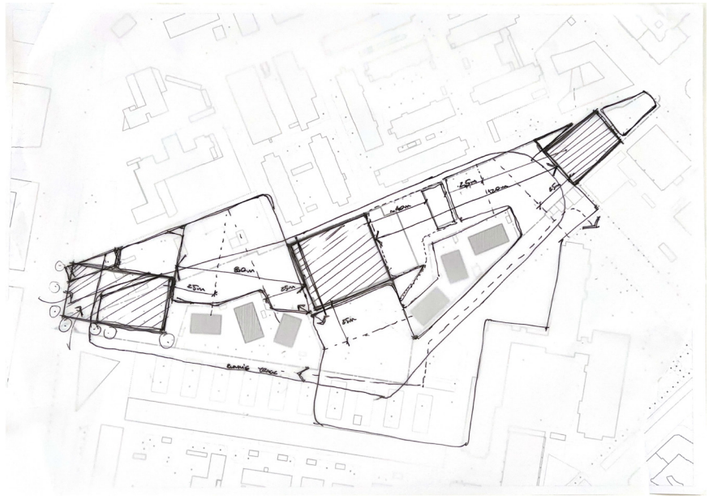


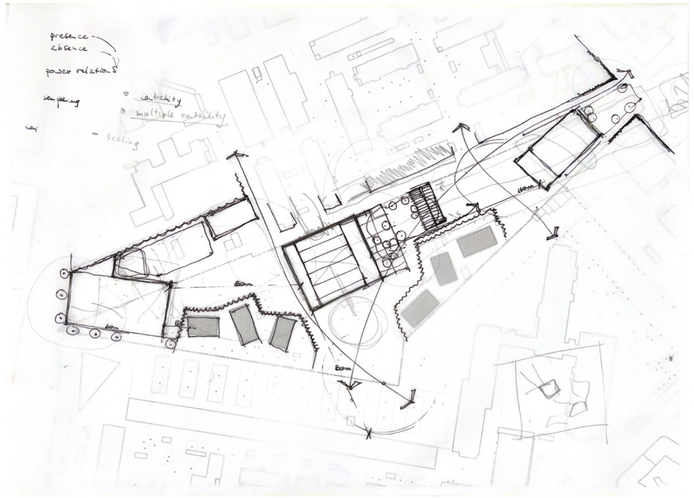


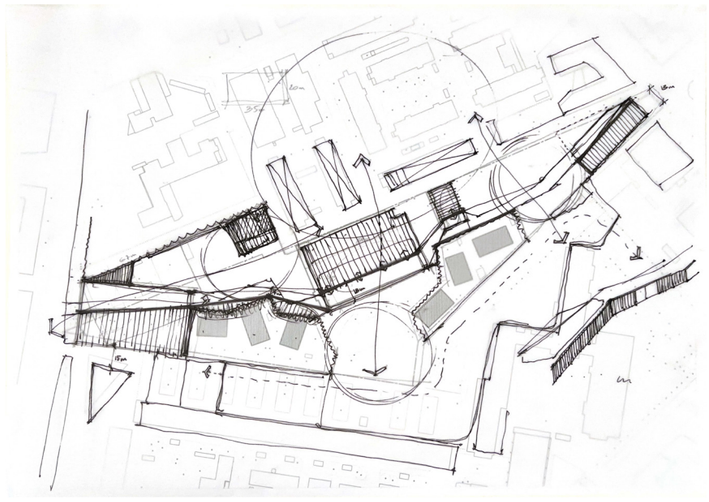


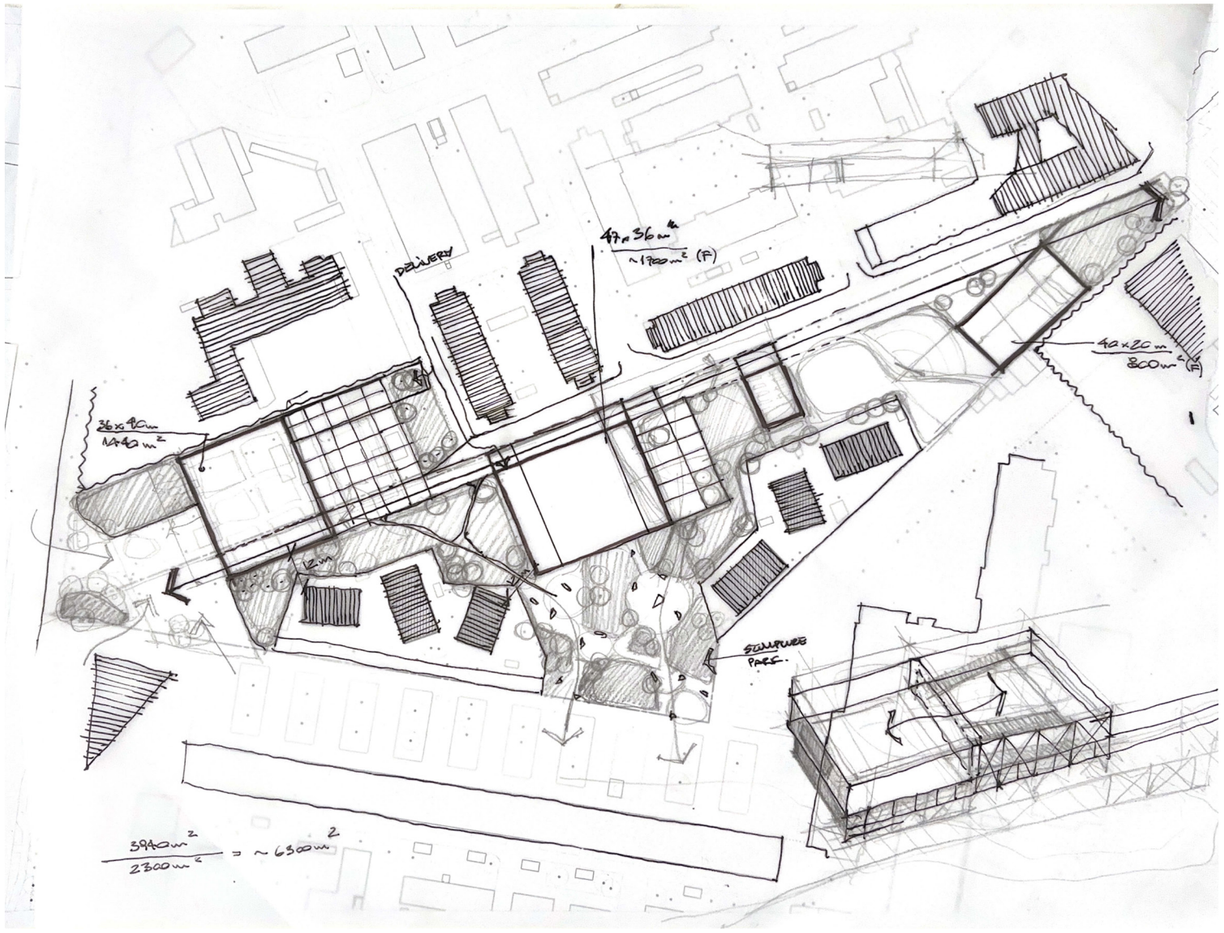
iteration_01

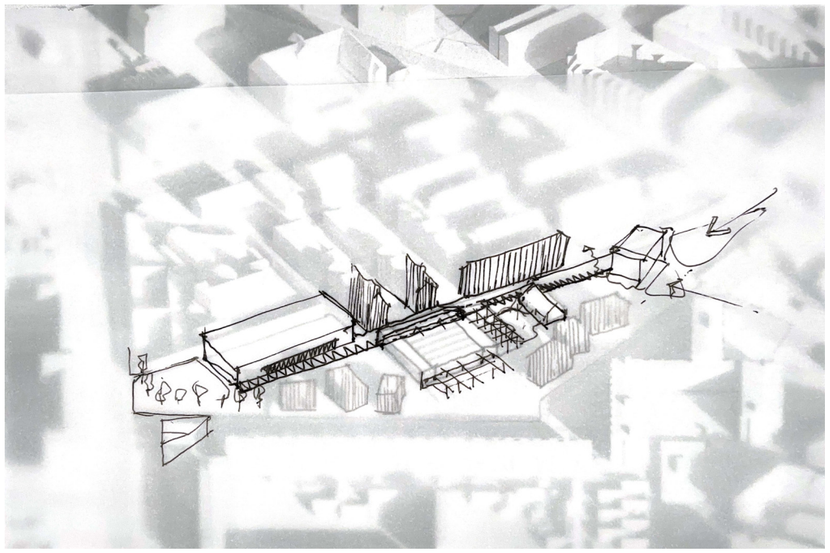
exploratory sketches_campus

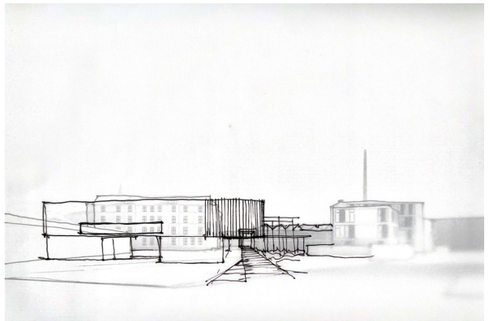


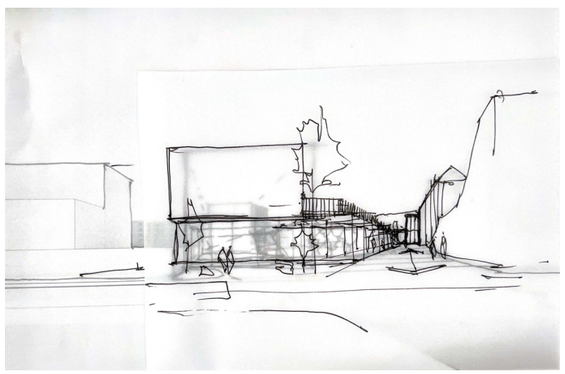


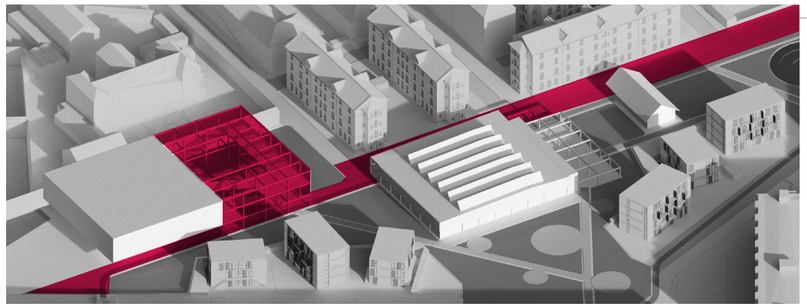


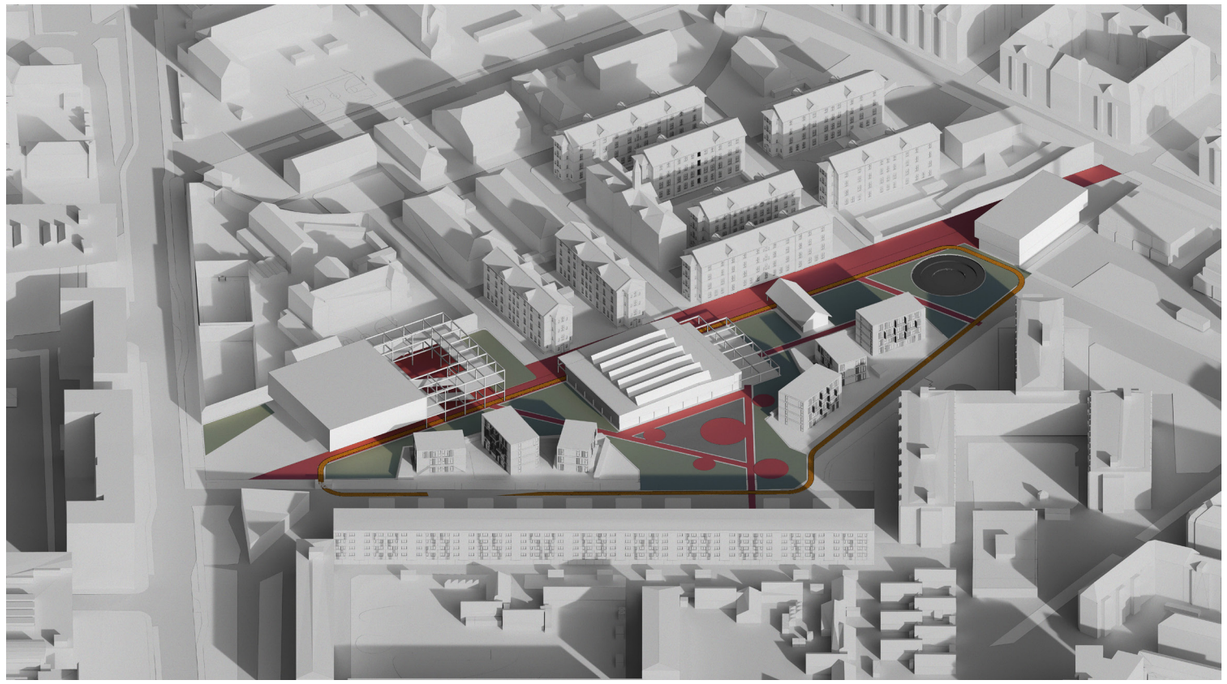




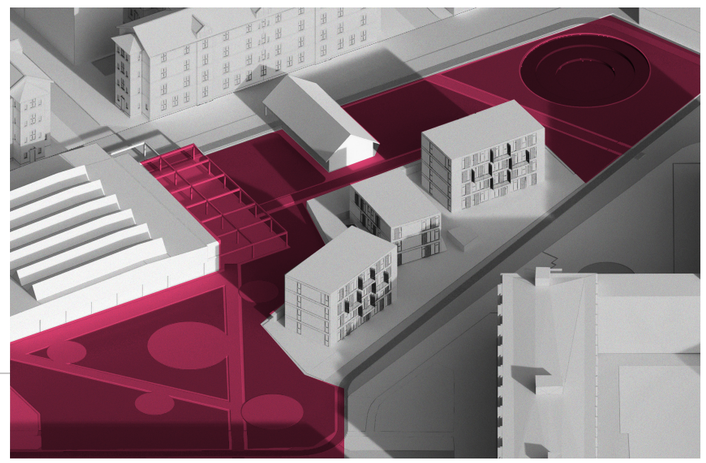






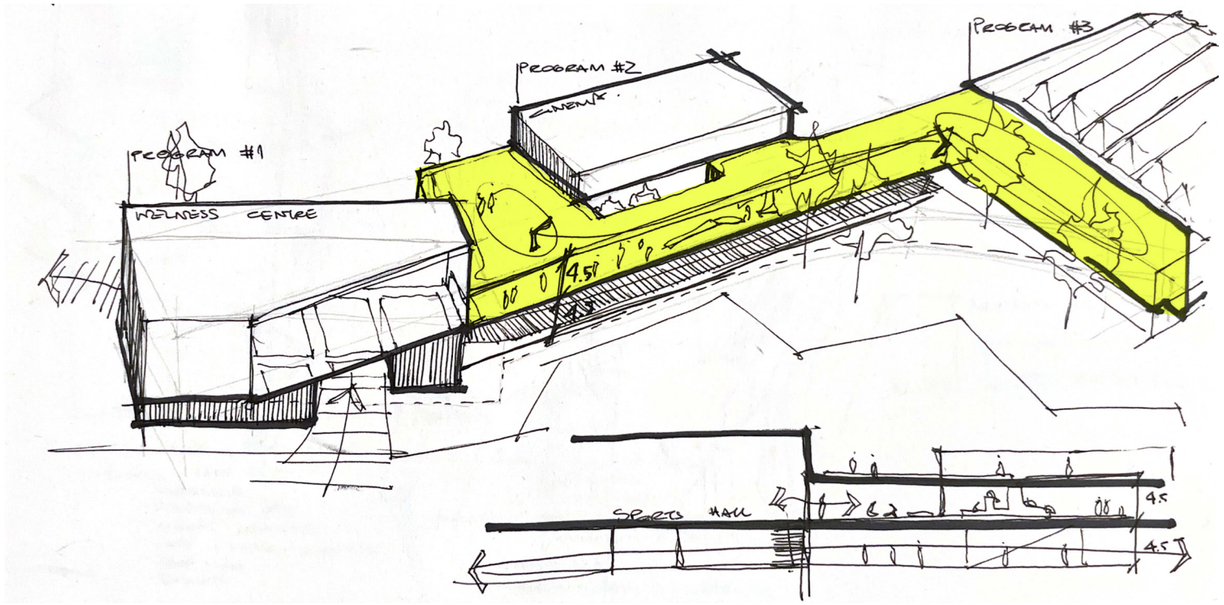


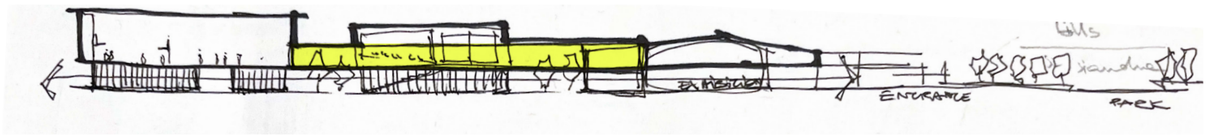
outside exhibition space & relaxing landscape

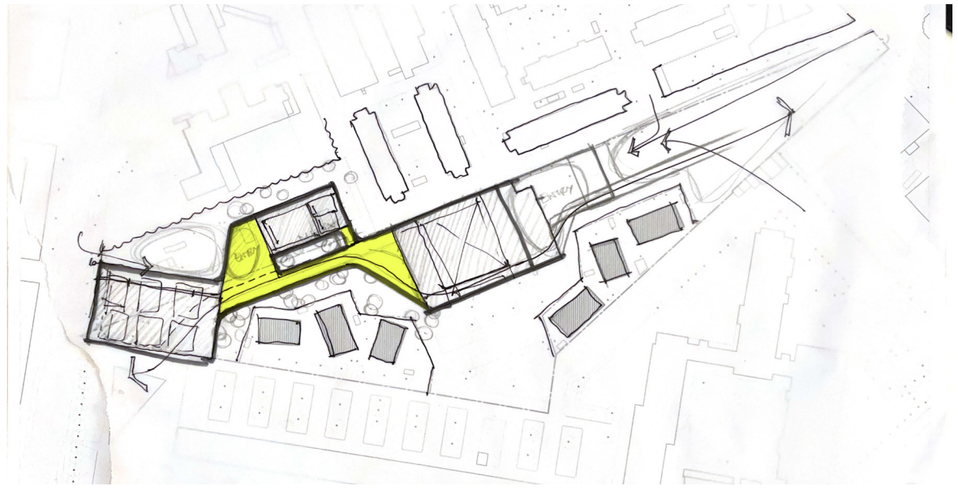


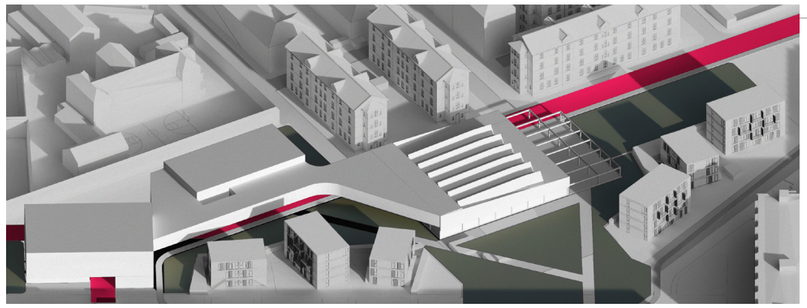
iteration_02

exploratory sketches_what if more condensed?

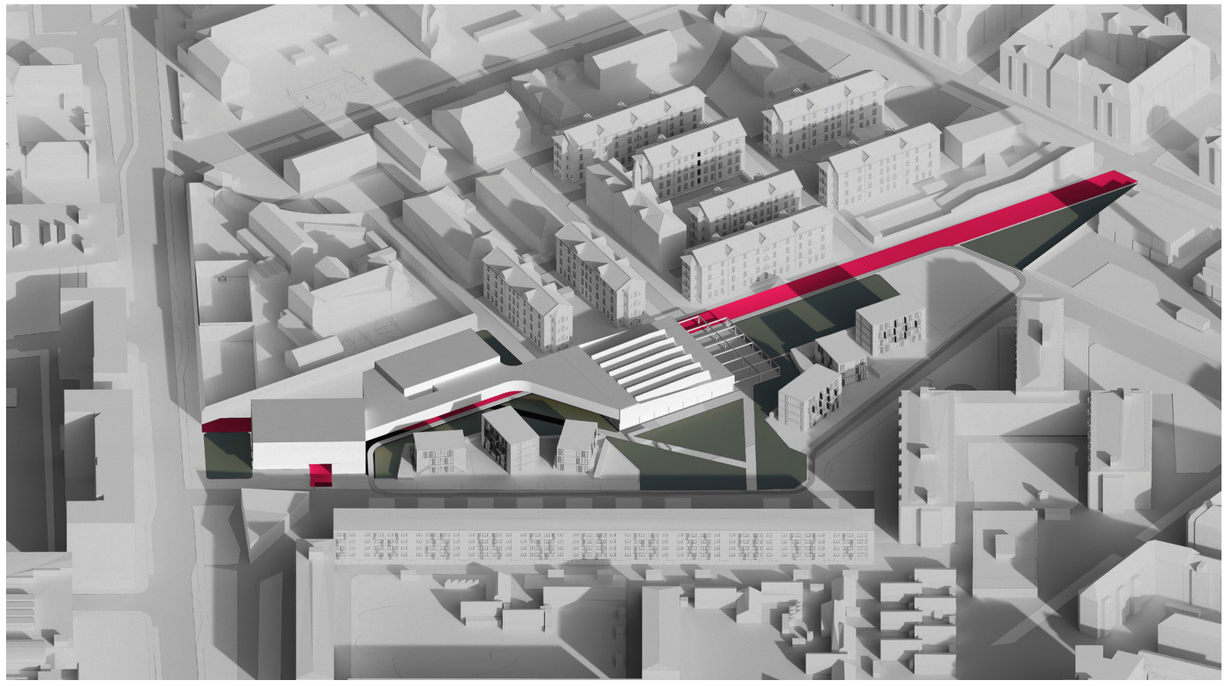








active landscape/playground

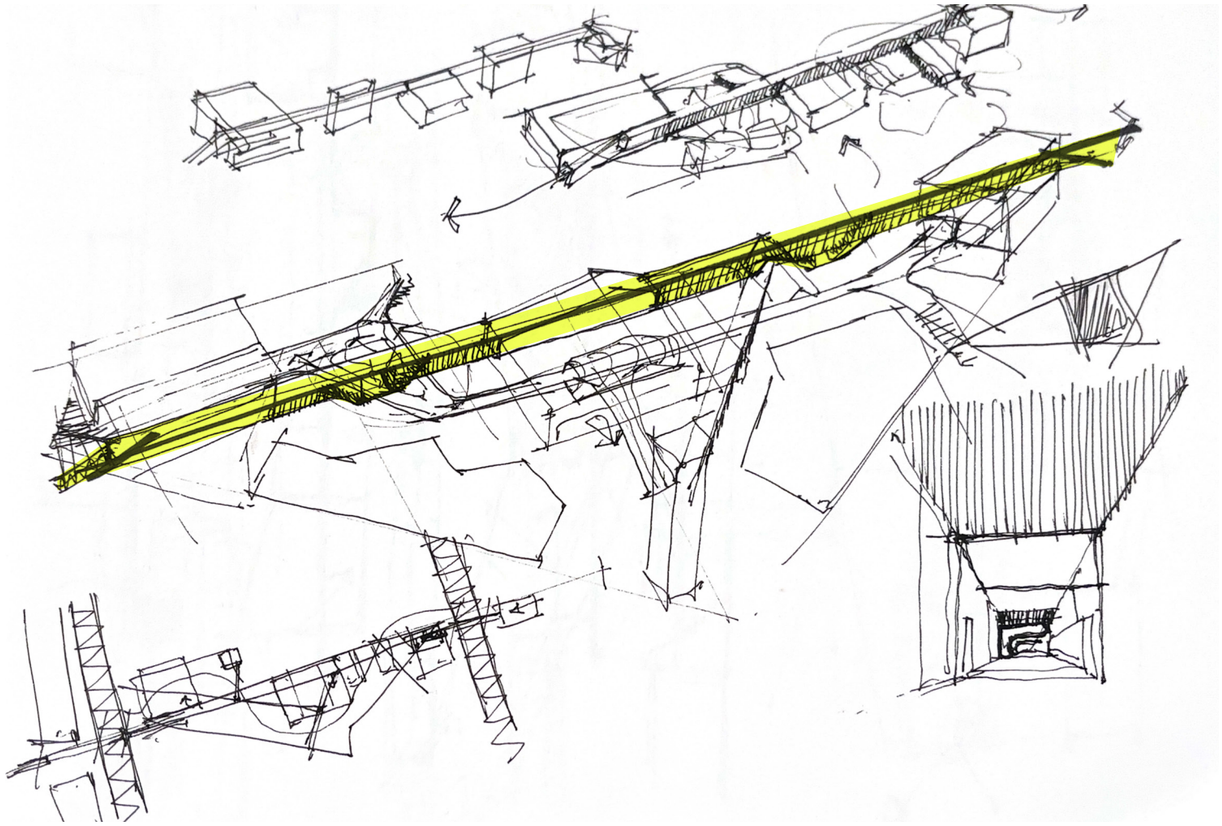


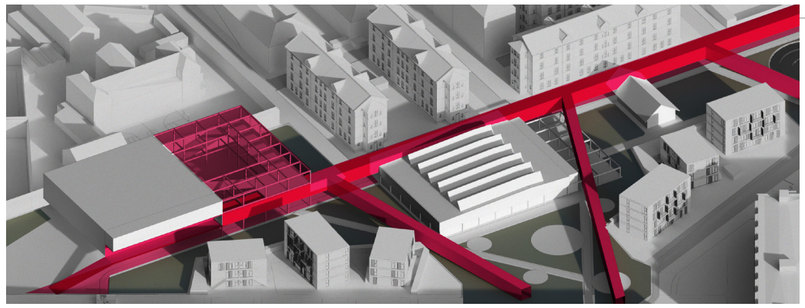


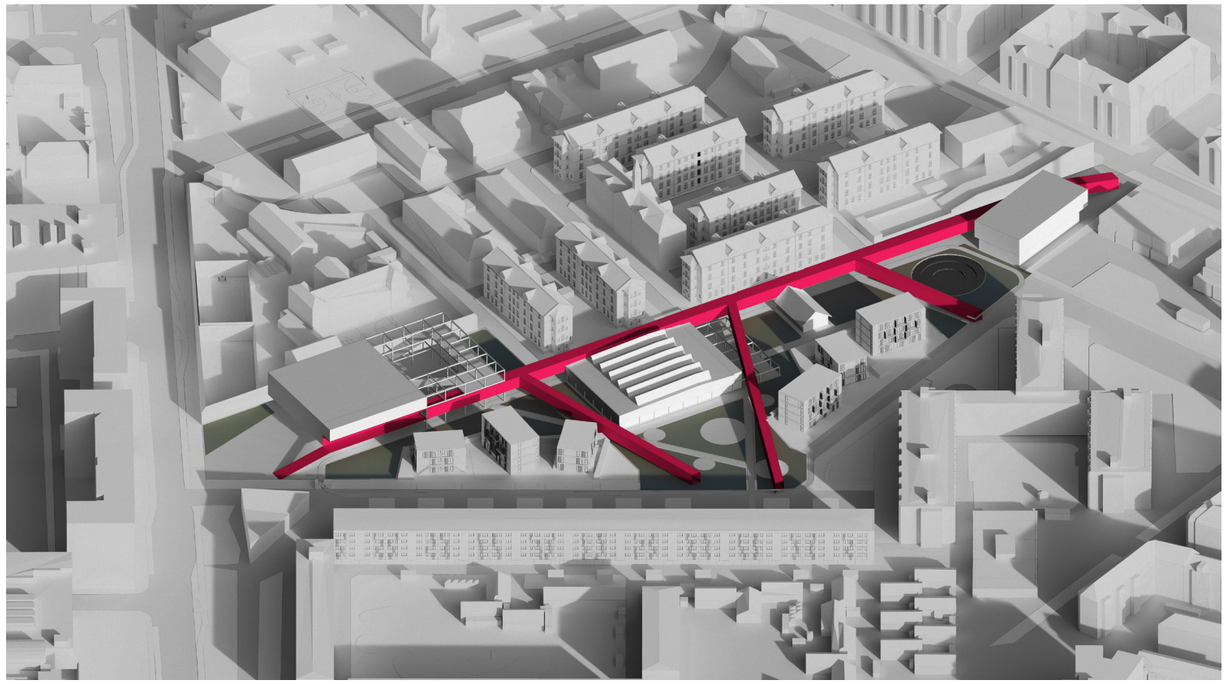
outside exhibition space & relaxing landscape

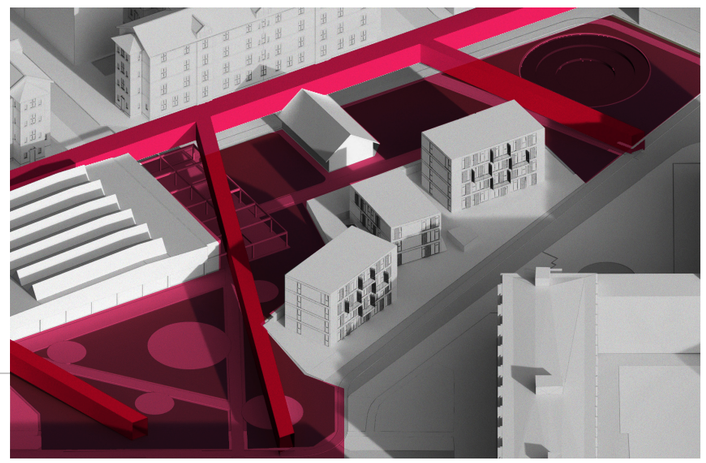
iteration_03

exploratory sketches_campus with highlighted axiality





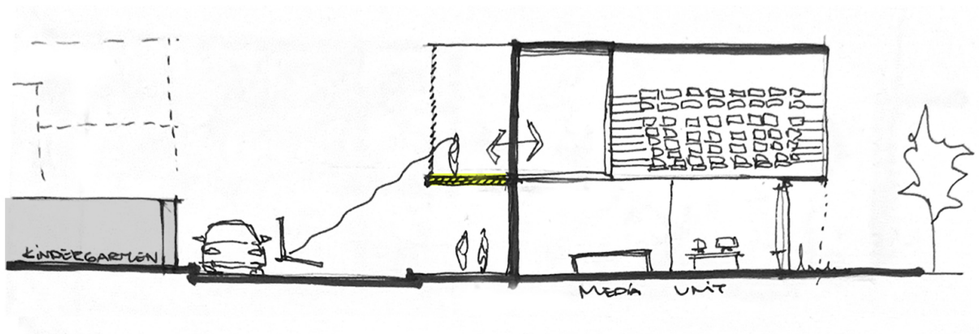


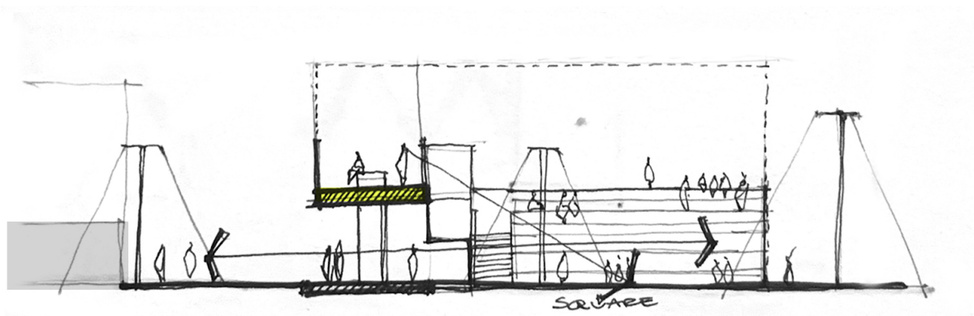


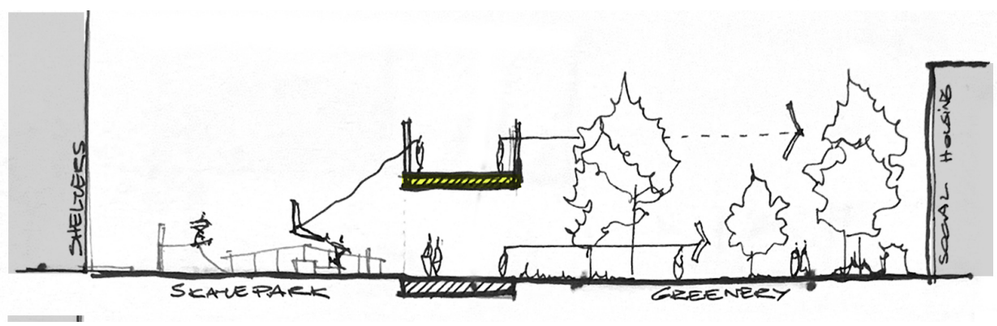
outside exhibition space & relaxing landscape

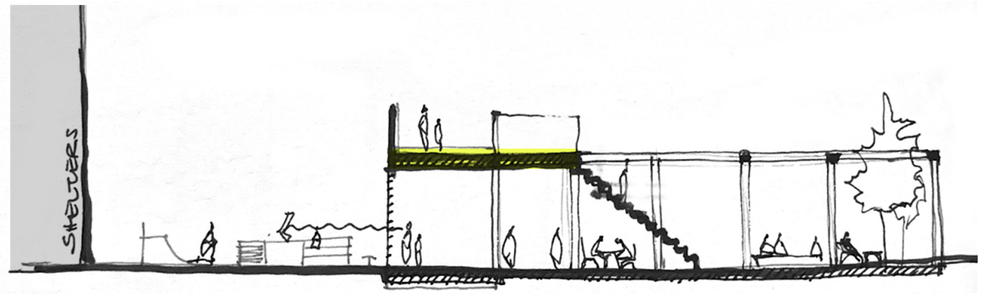
sequencing & intensities

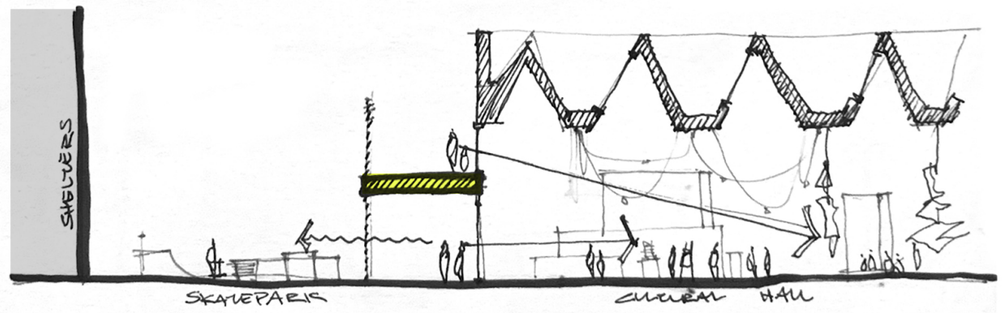
exploratory section sketches_activities along the path

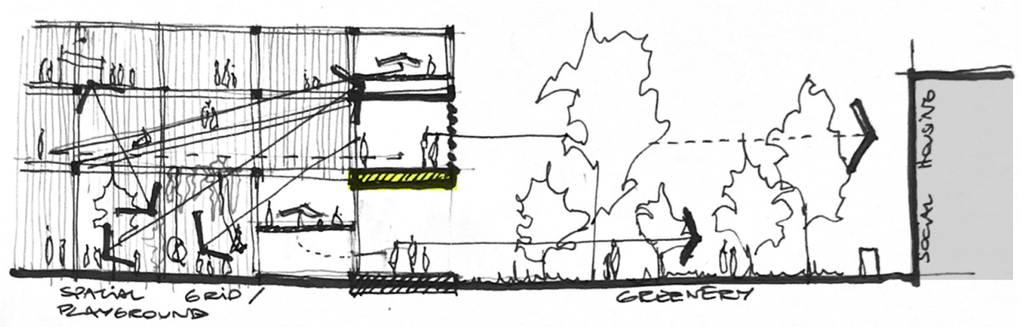


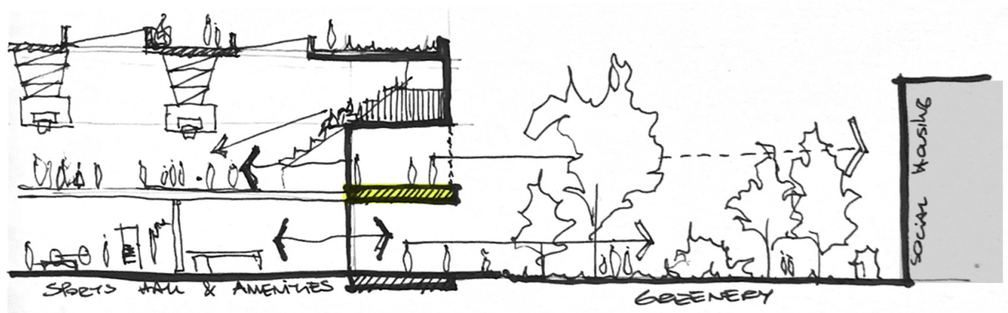








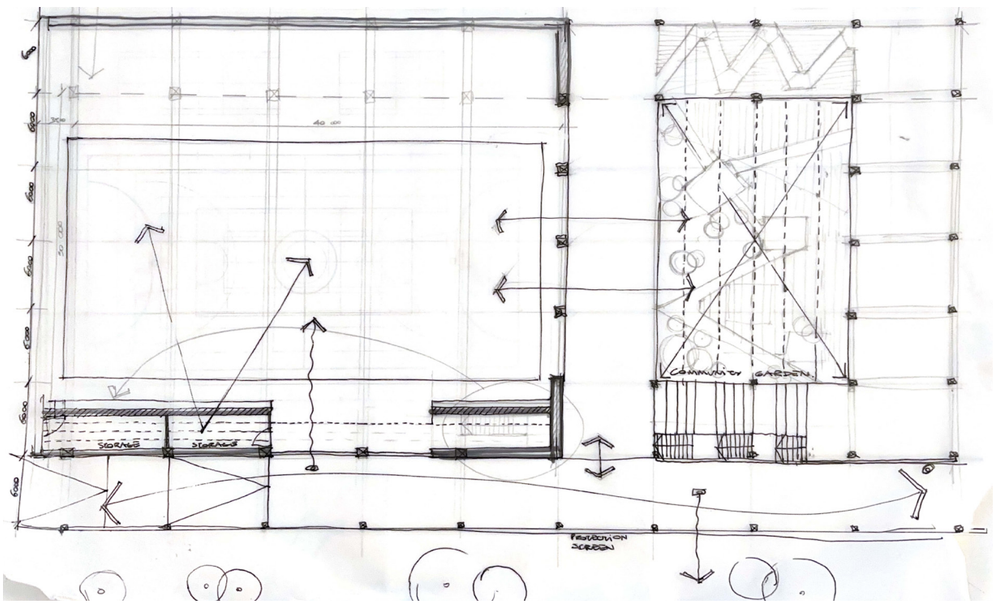




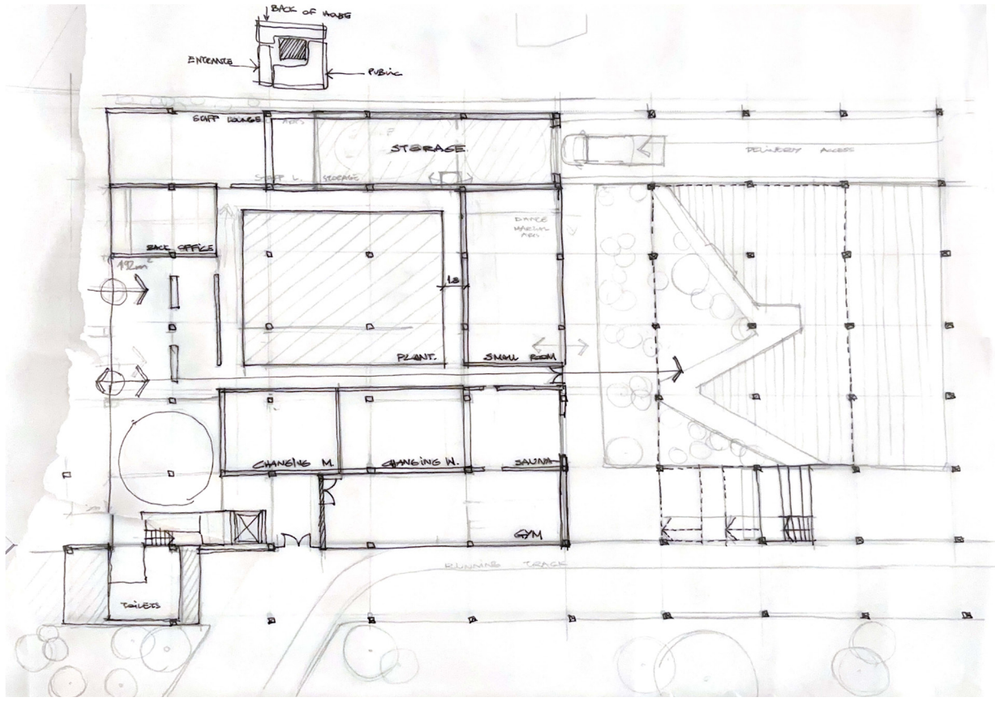
Depending on the moment in which a passerby is, the intensity, engagement and opportunities will differ. The path's role is to create a connection between the wider public purely crossing the site with the actual users of it. Therefore the path should extend in, on, under or around the program boxes and greenery in-between, amplifying the hybridization of the public space, therefore acting as a condenser itself. This thinking presents a prototype approach of what a condenser could mean in the sphere of public architecture.

program ‘boxes’

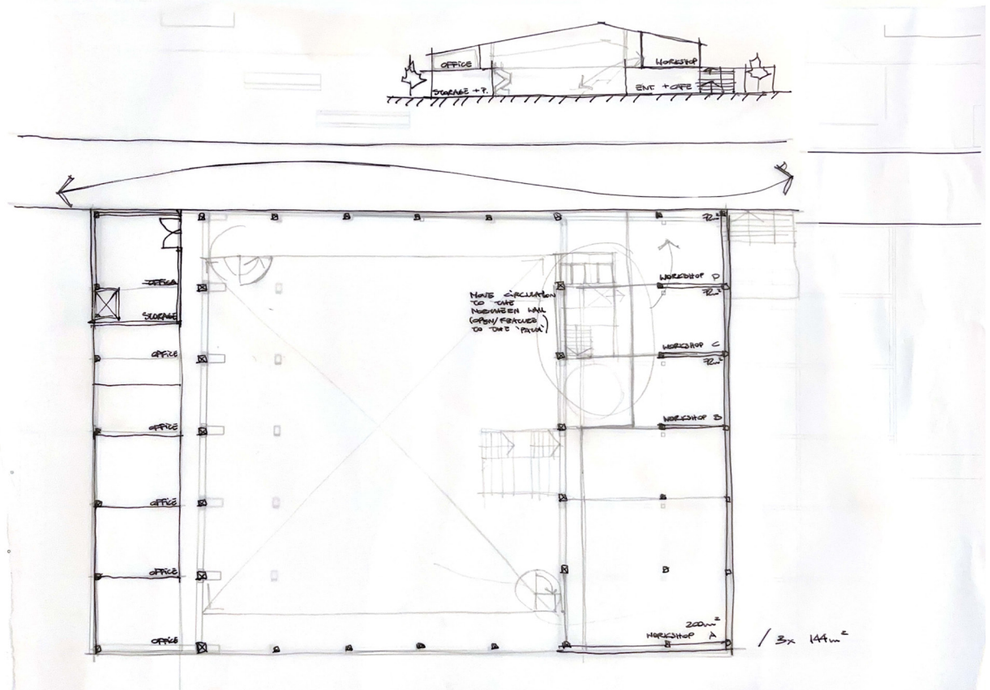
exploratory plan sketches



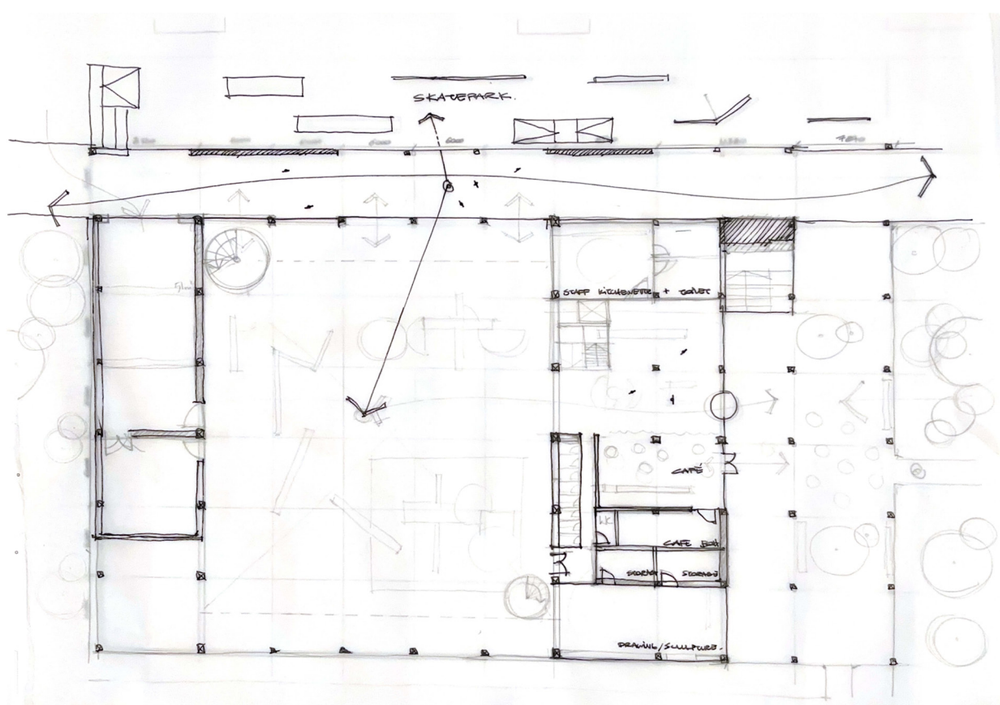
plan_01_sports hall



plan_00_sports hall



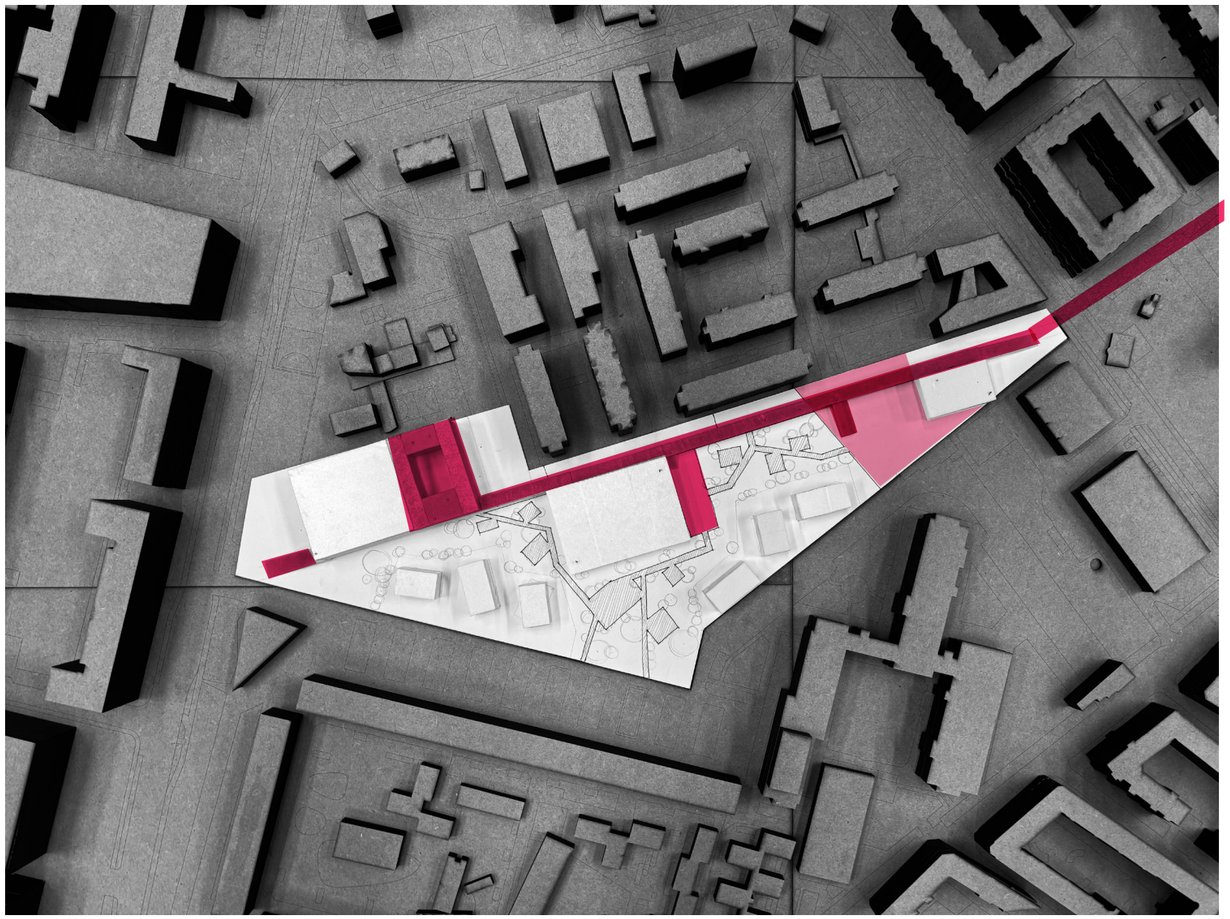
plan_01_sports hall



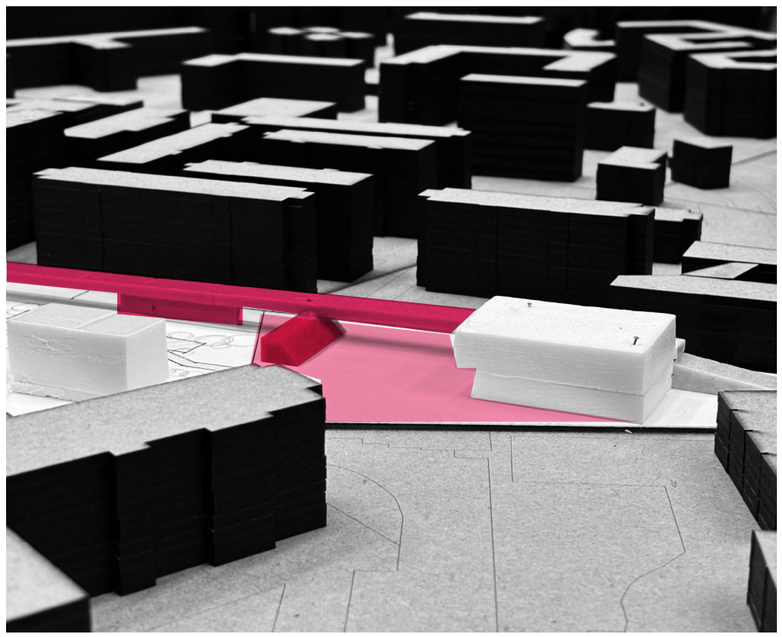
plan_00_sports hall

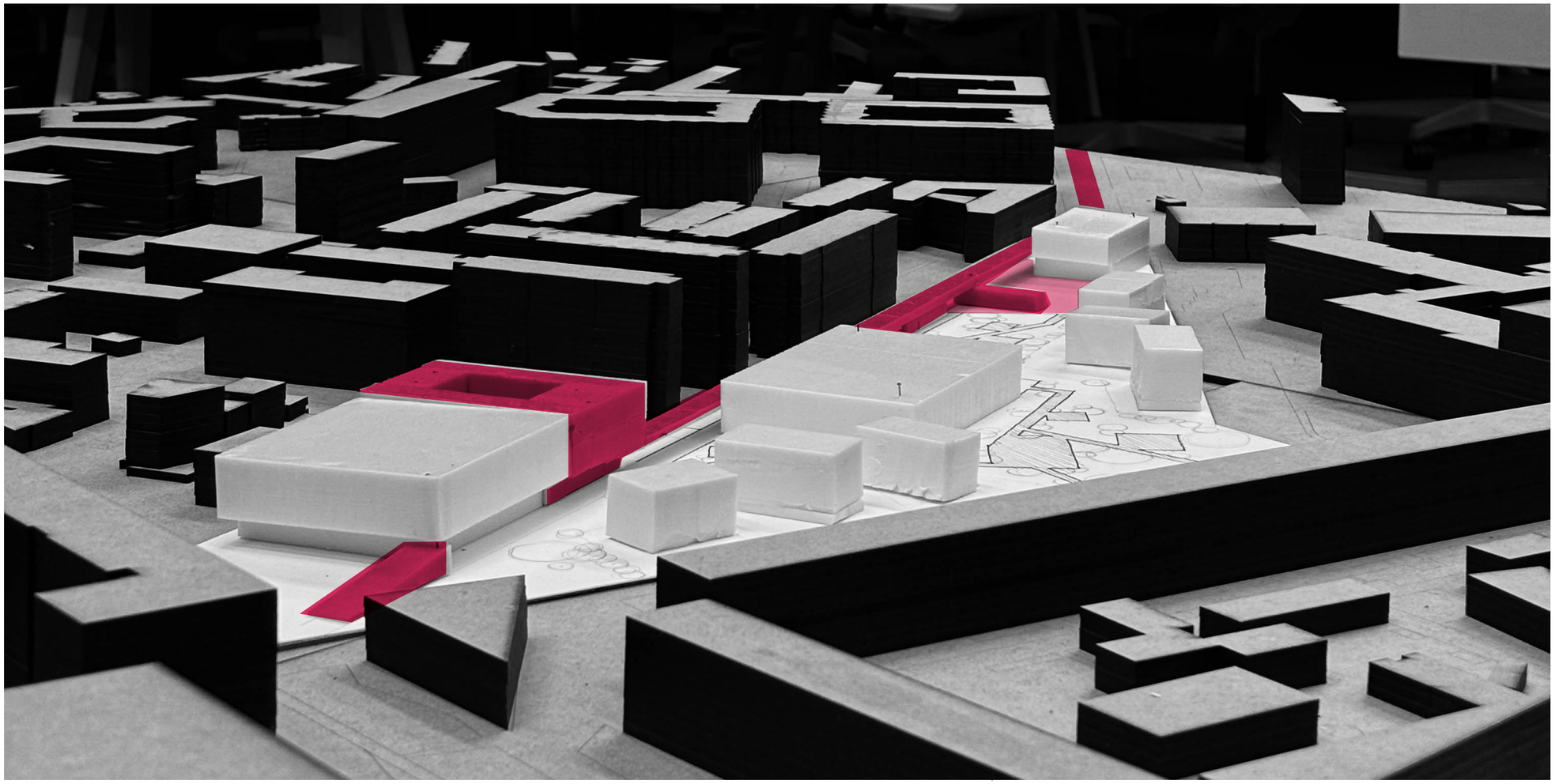
massing study_01
physical model testing

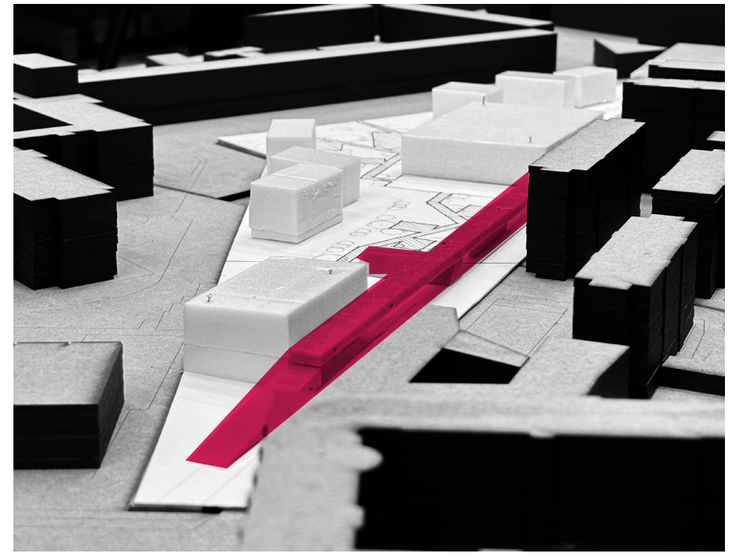


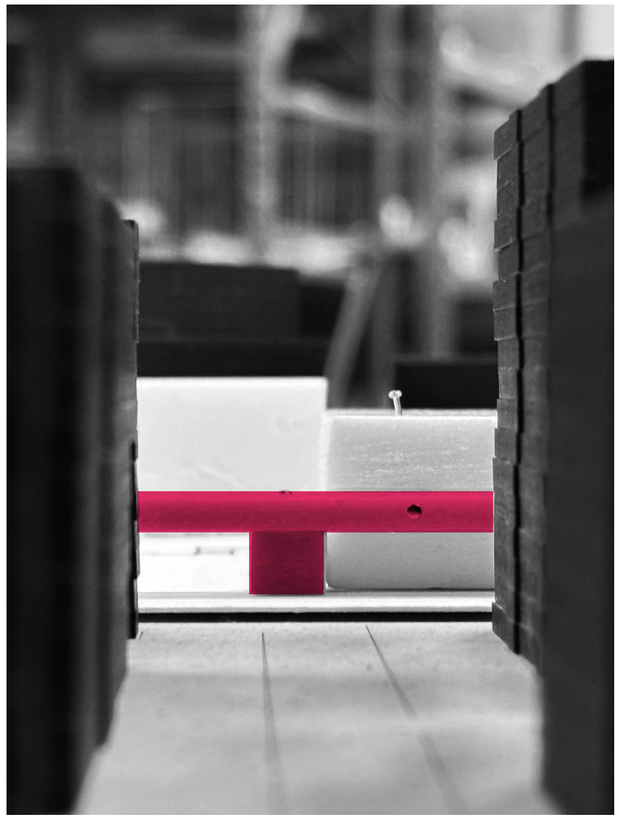






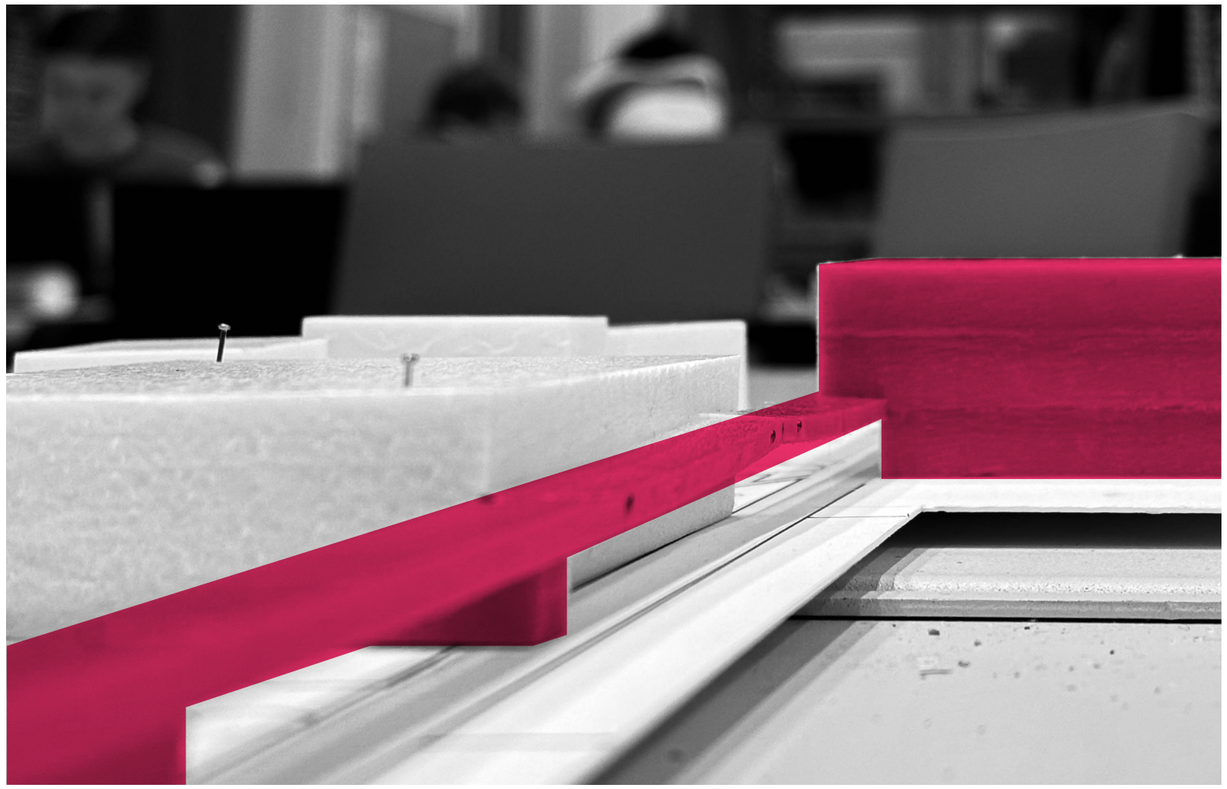
















digital model

axonometric view



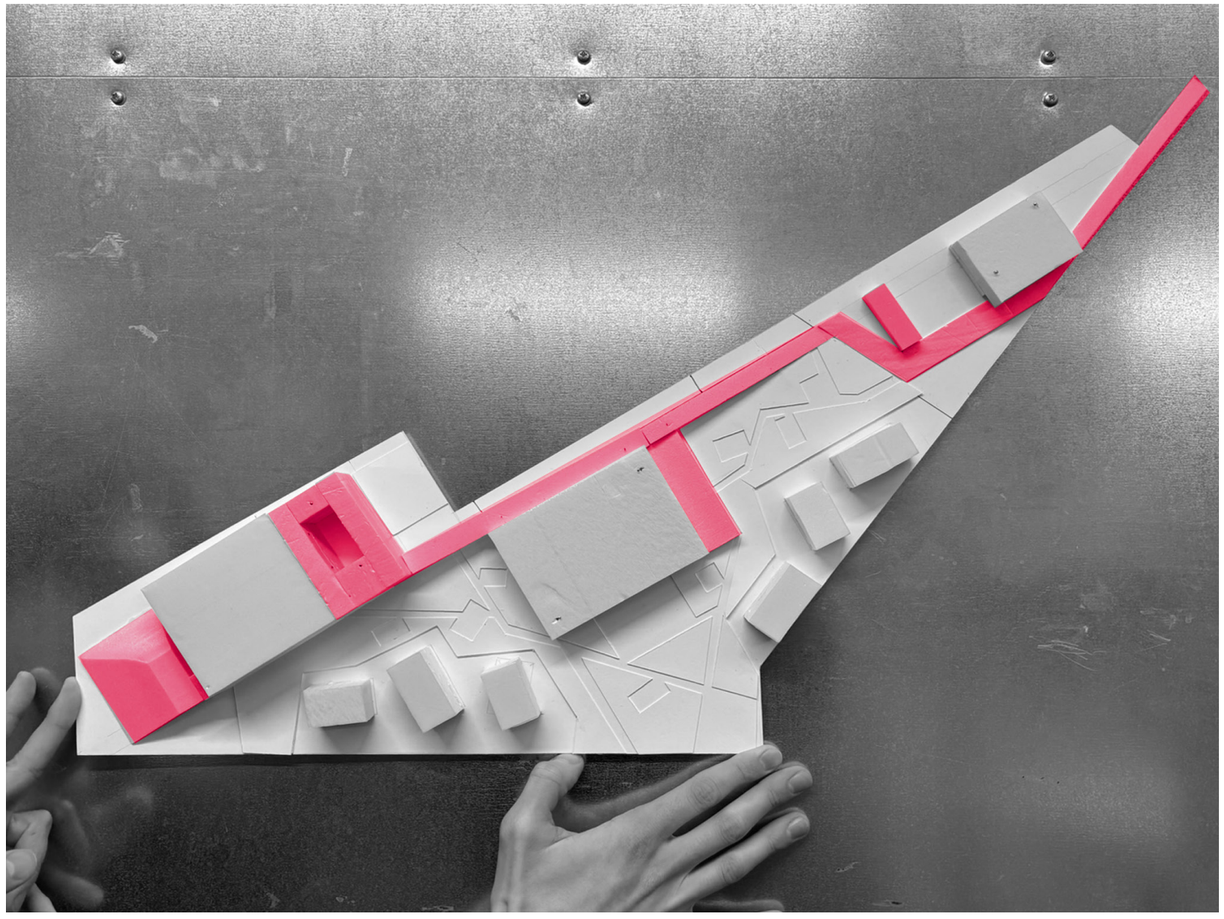


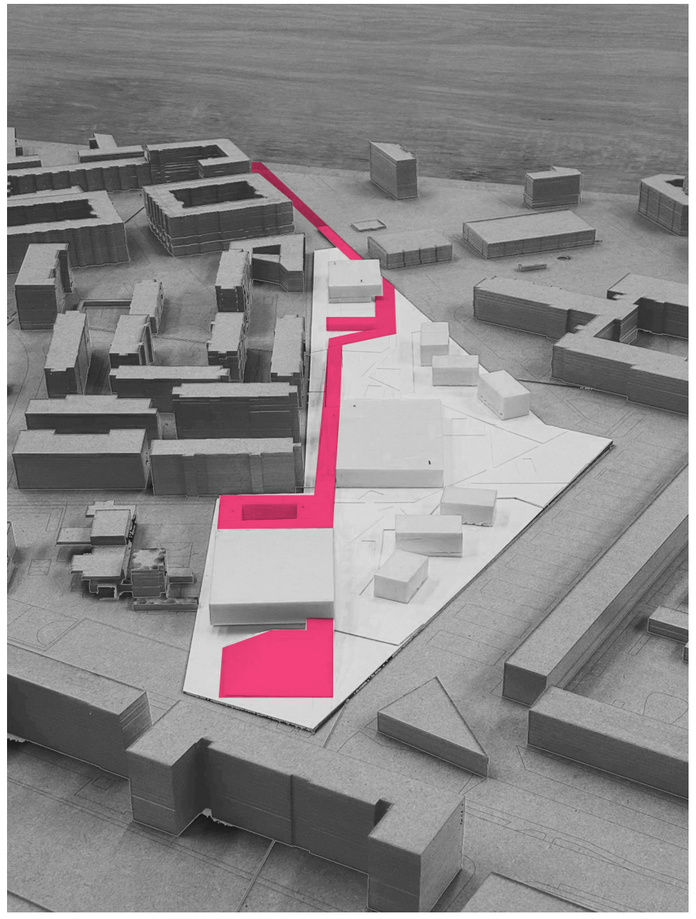




P2_proposal

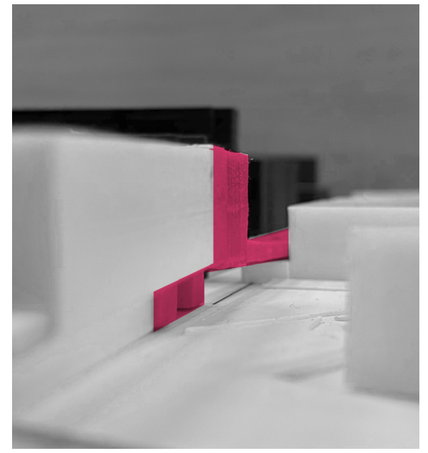
amended physical model



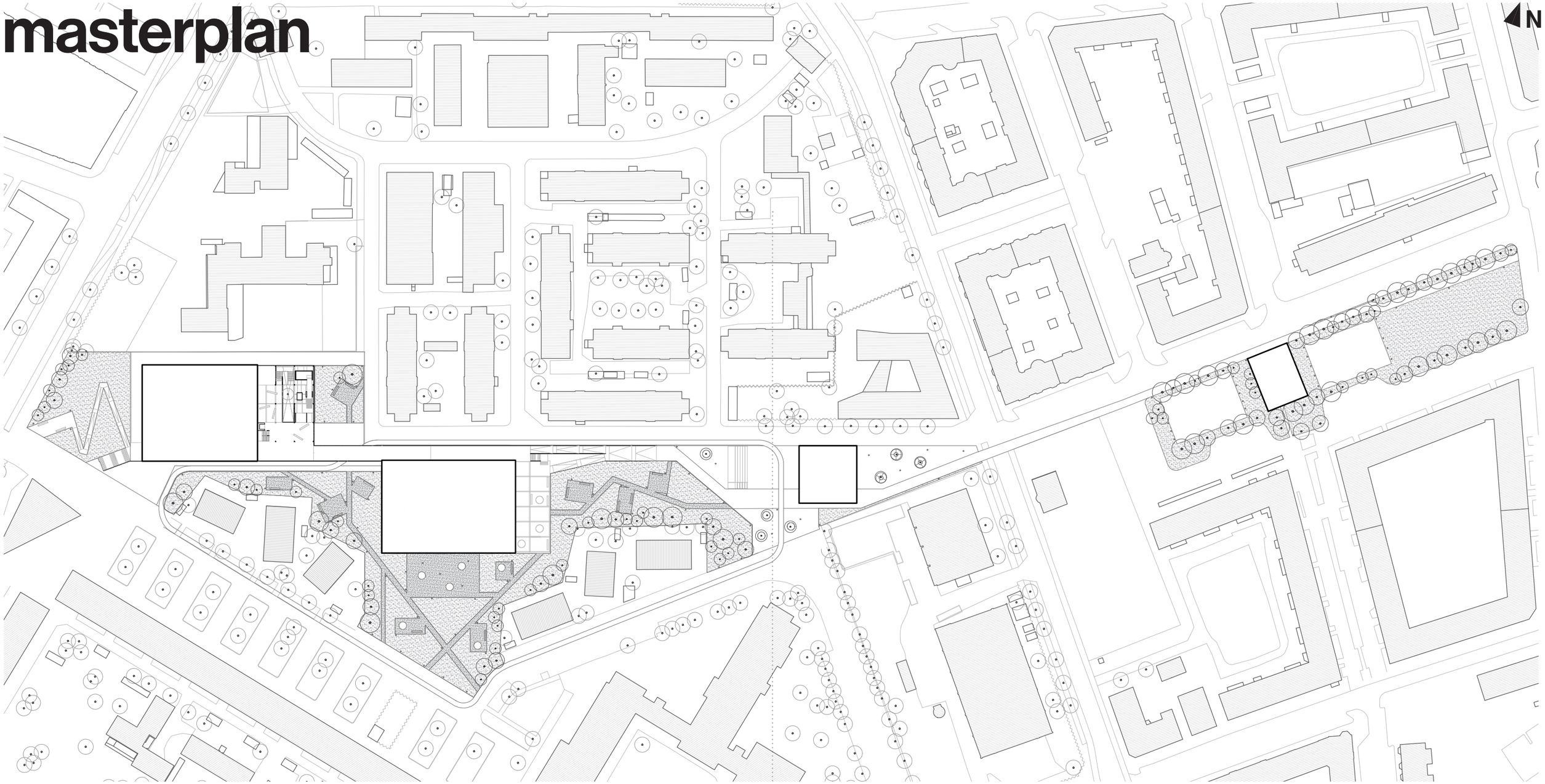




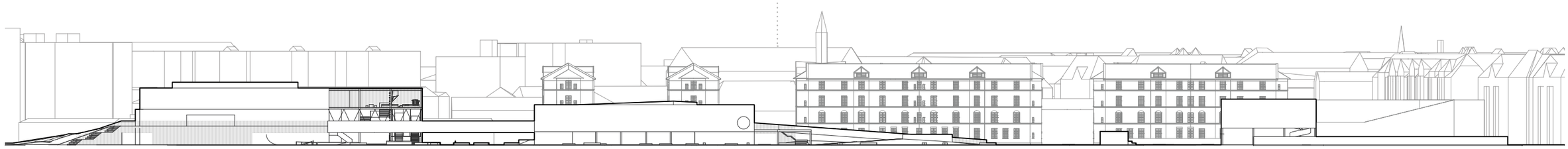




masterplan



plan_1:1500

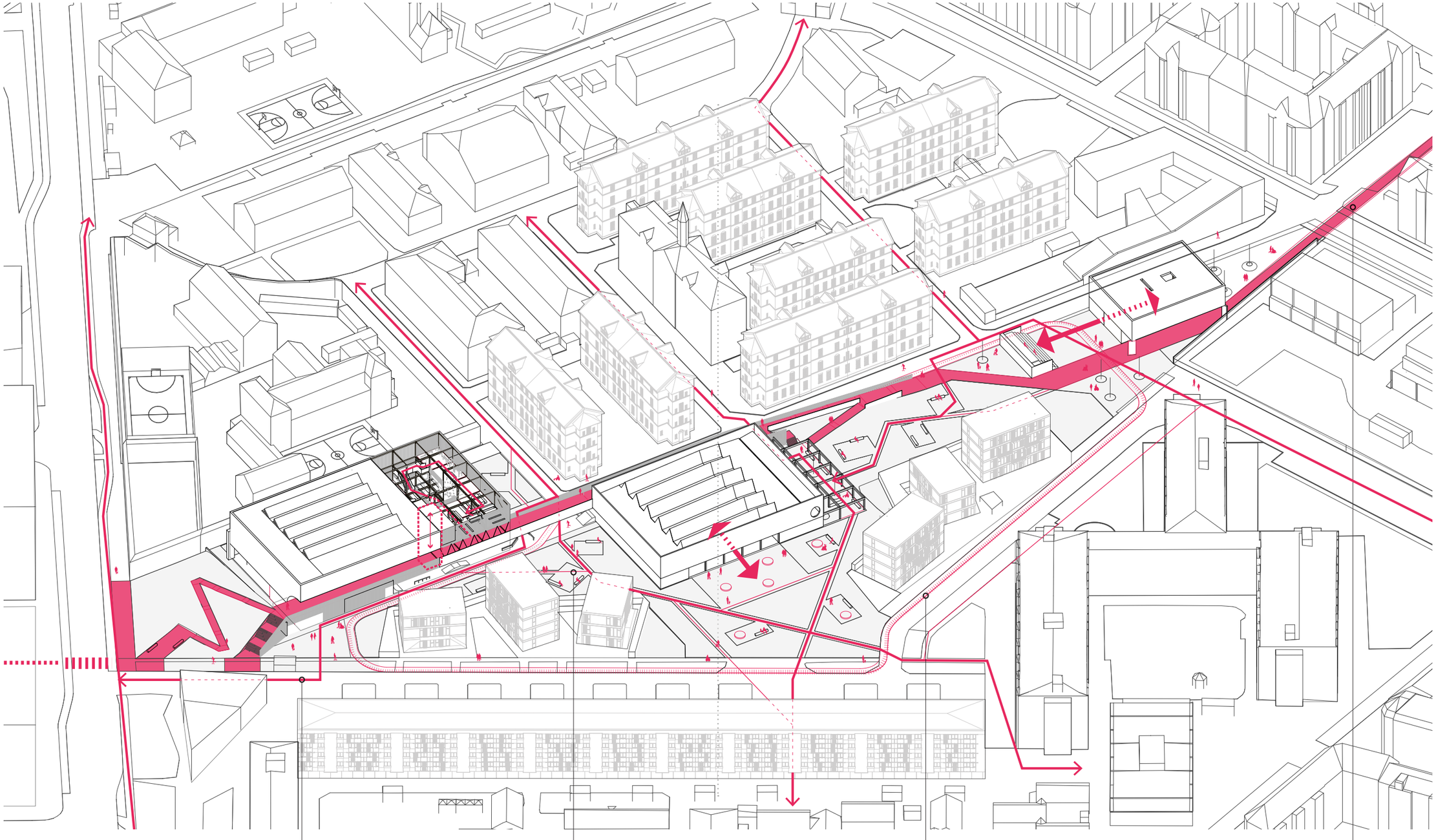


connections

N

plan_1:1500

▲ main access point
△ secondary access point



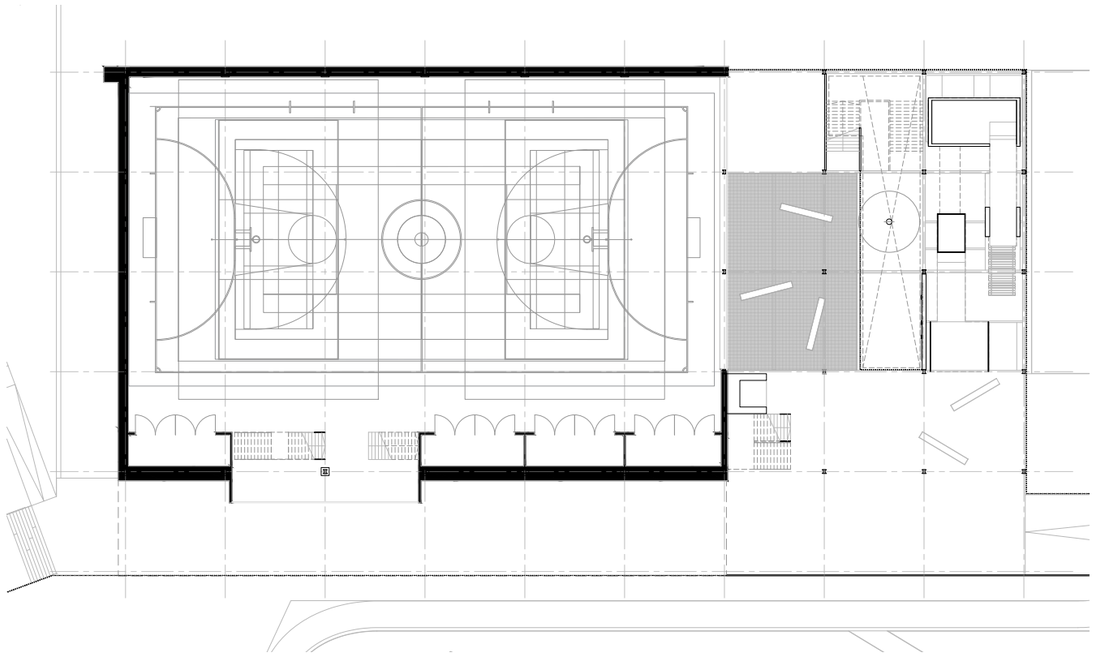
secondary public routes

green trails

running track

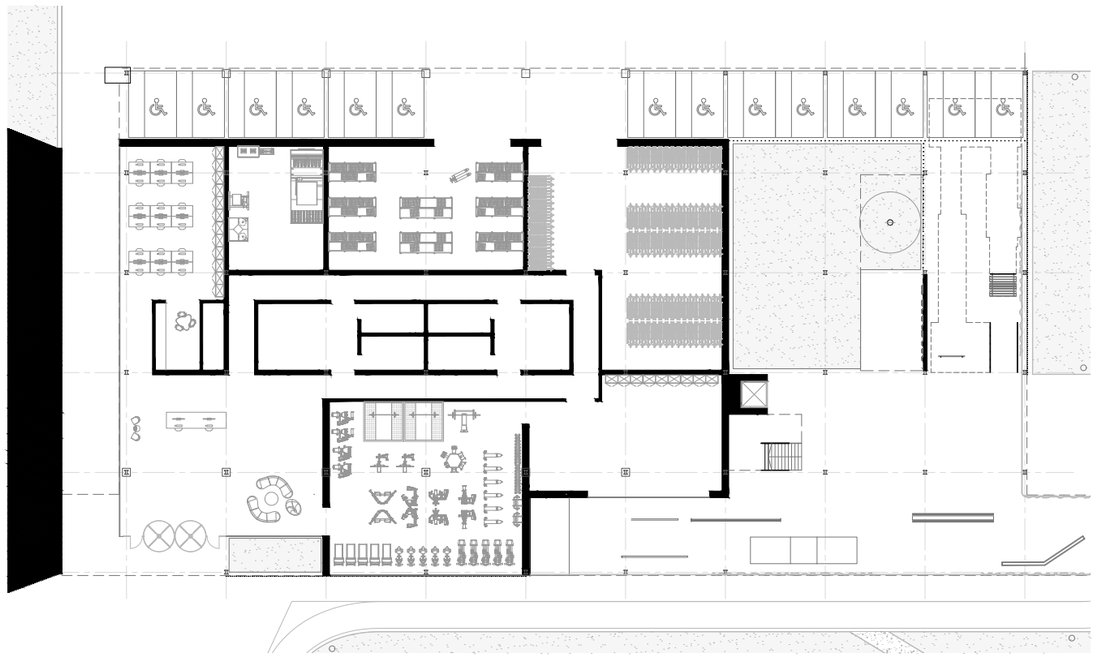
main public axis

sports & recreation hall



plan_01

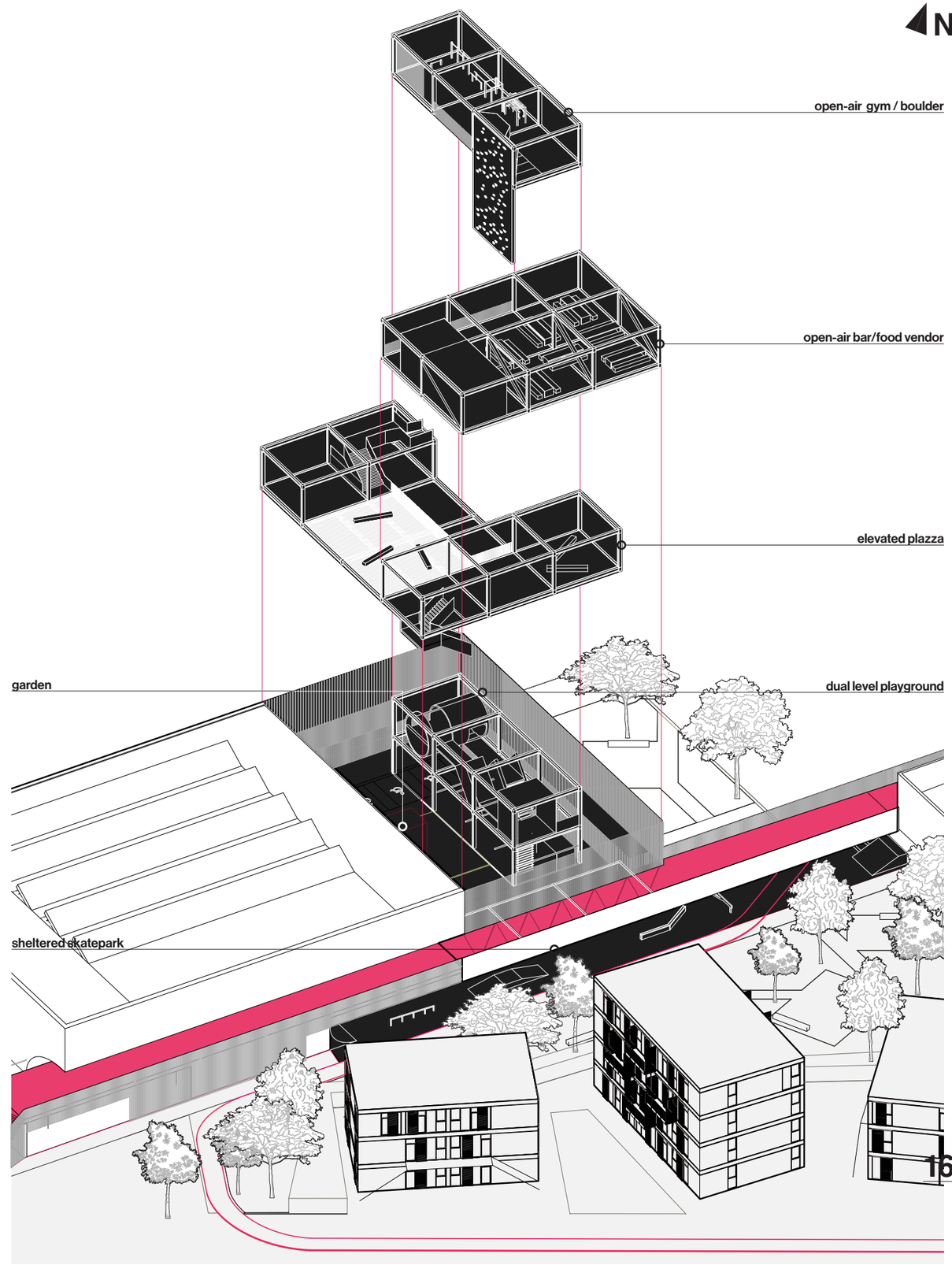
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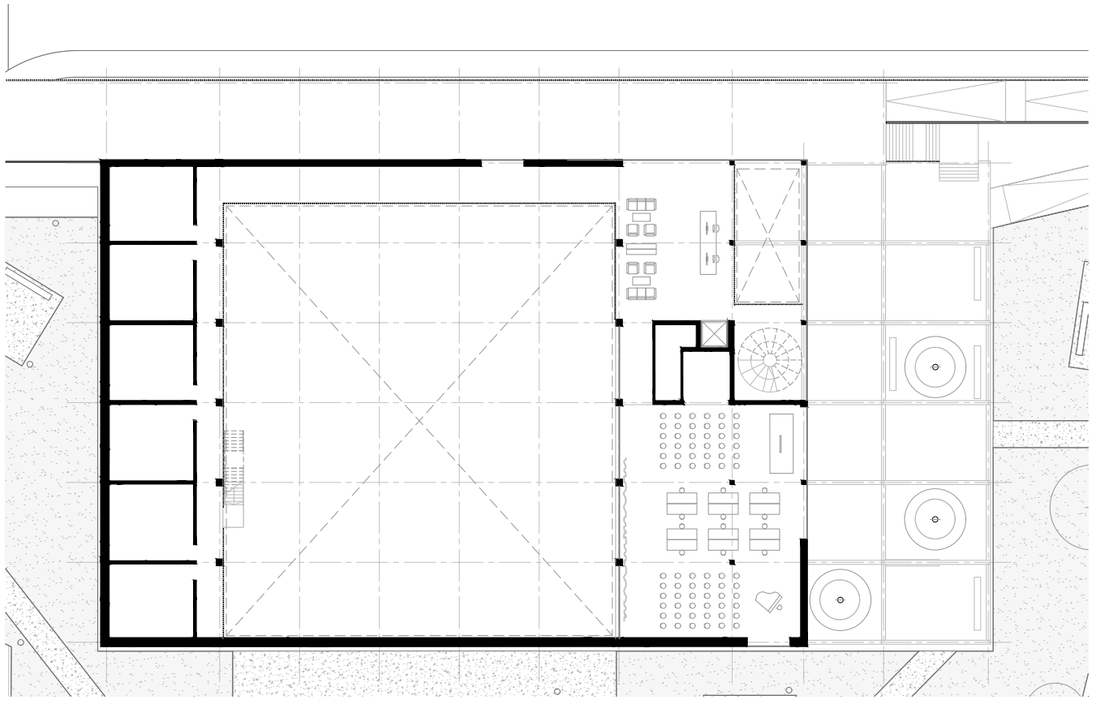
plan_00

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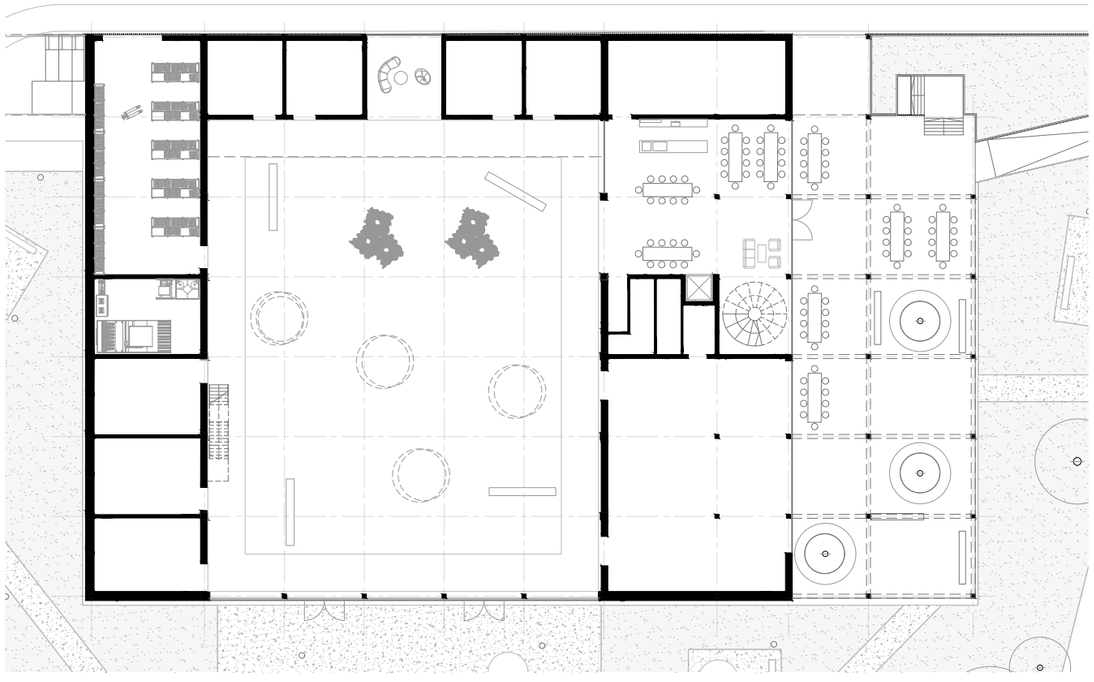


culture hall



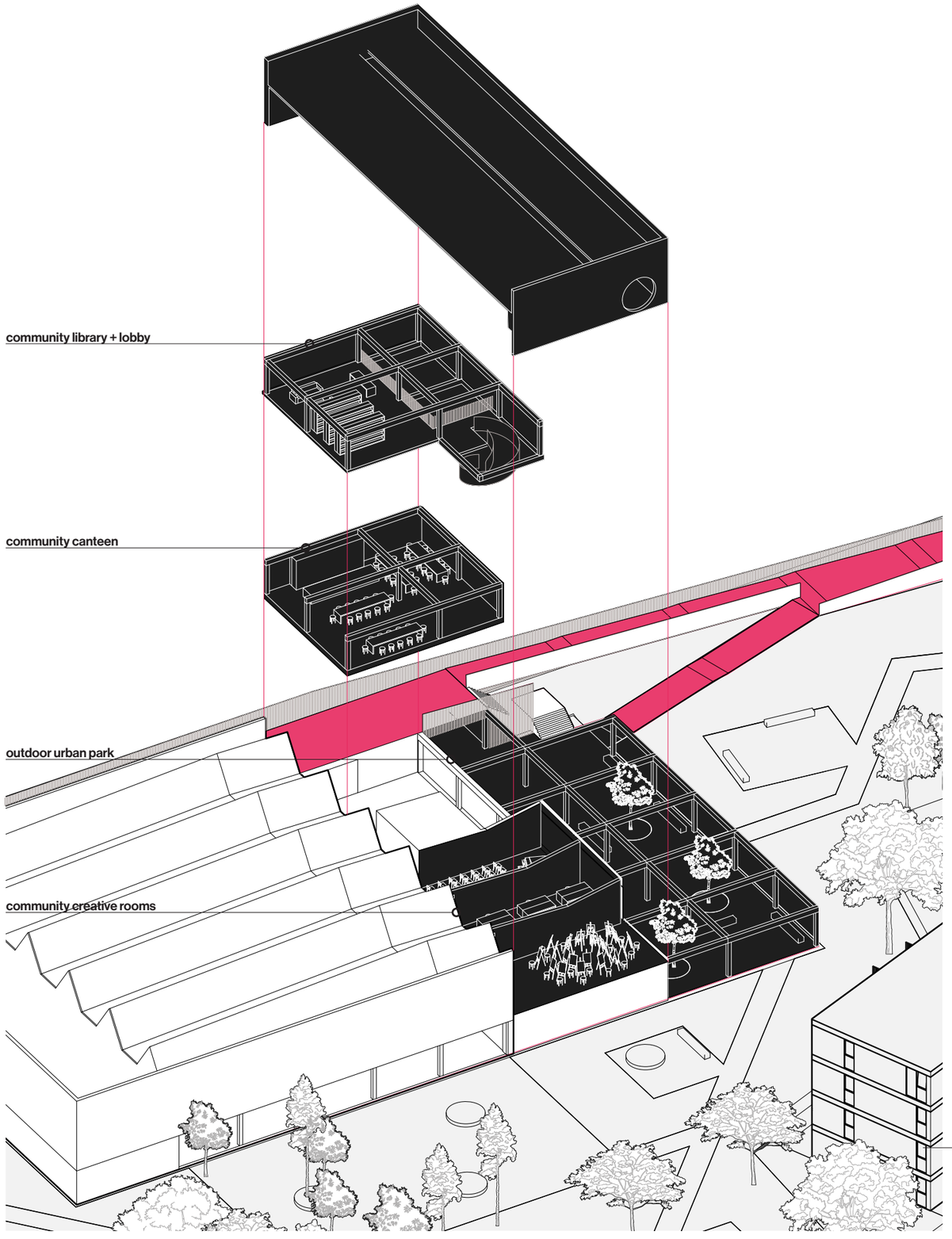
plan_01

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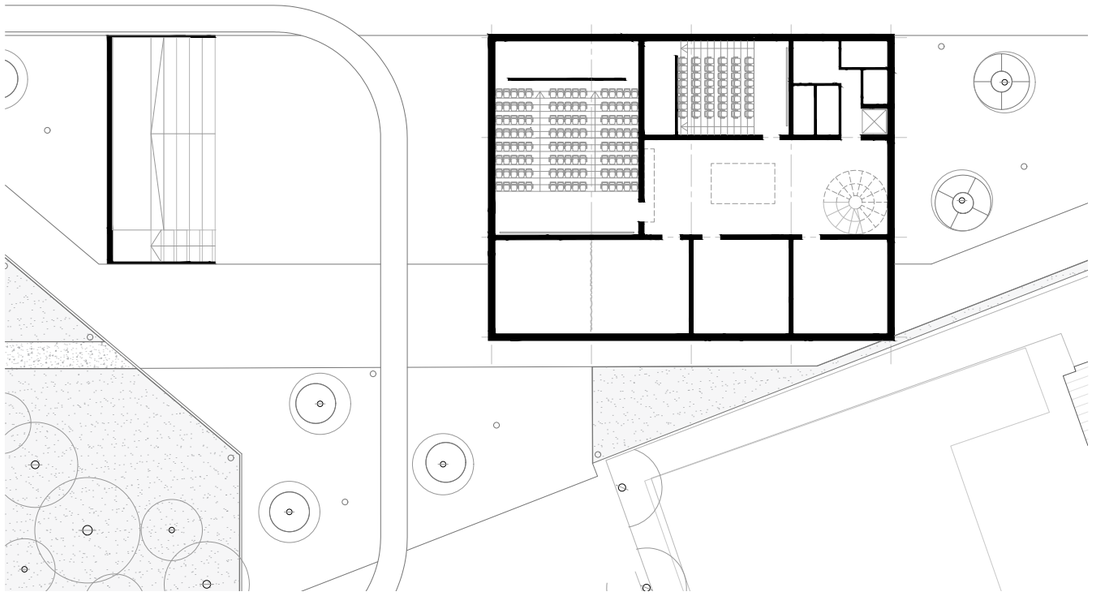
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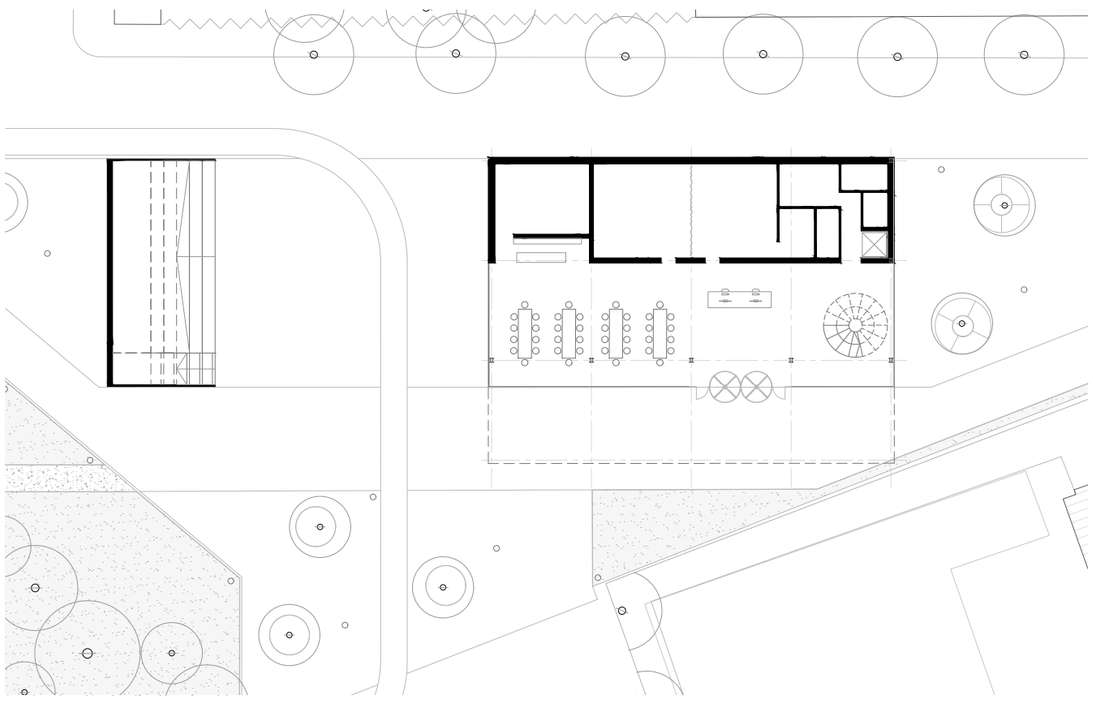
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media unit



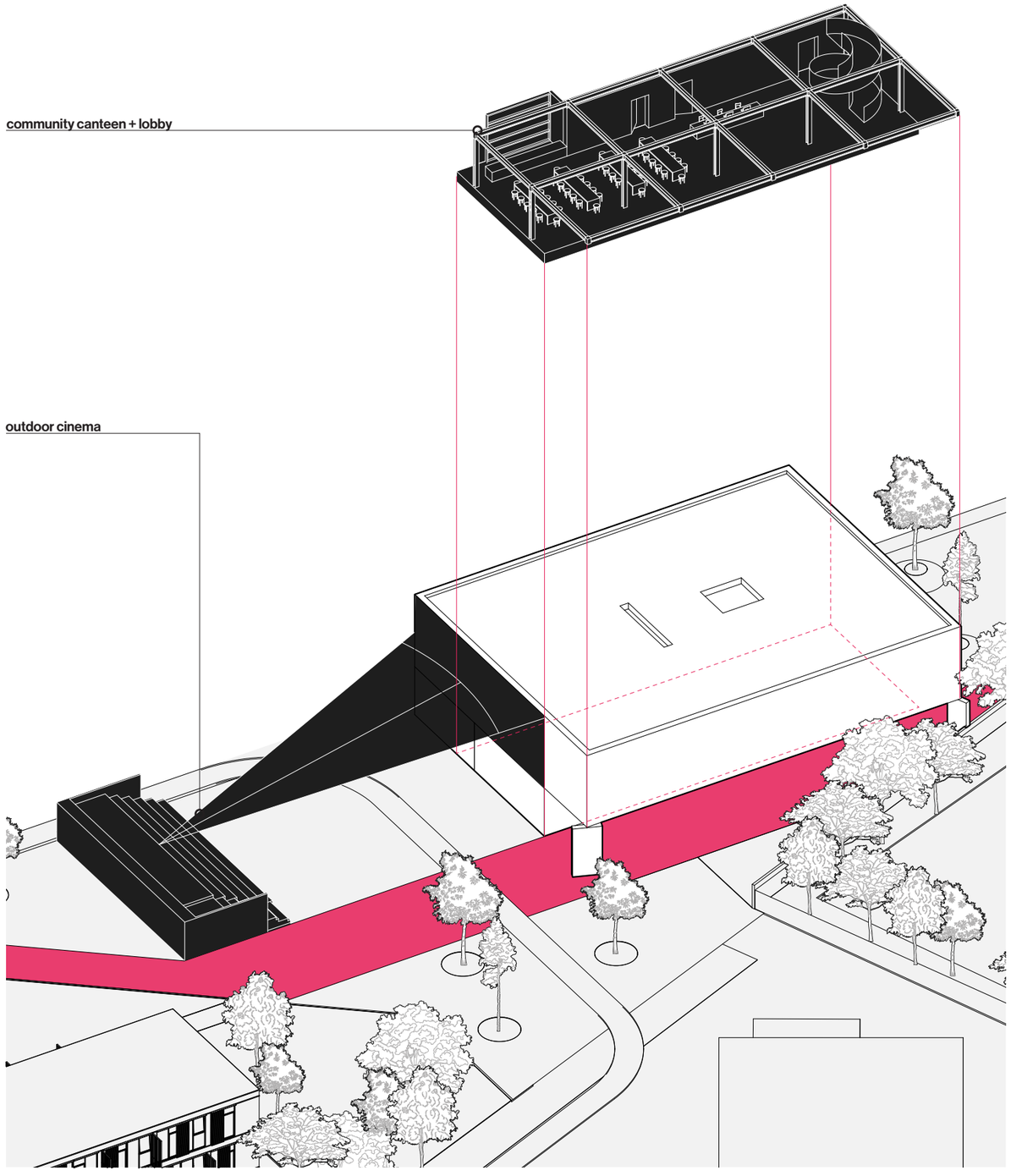
plan_01

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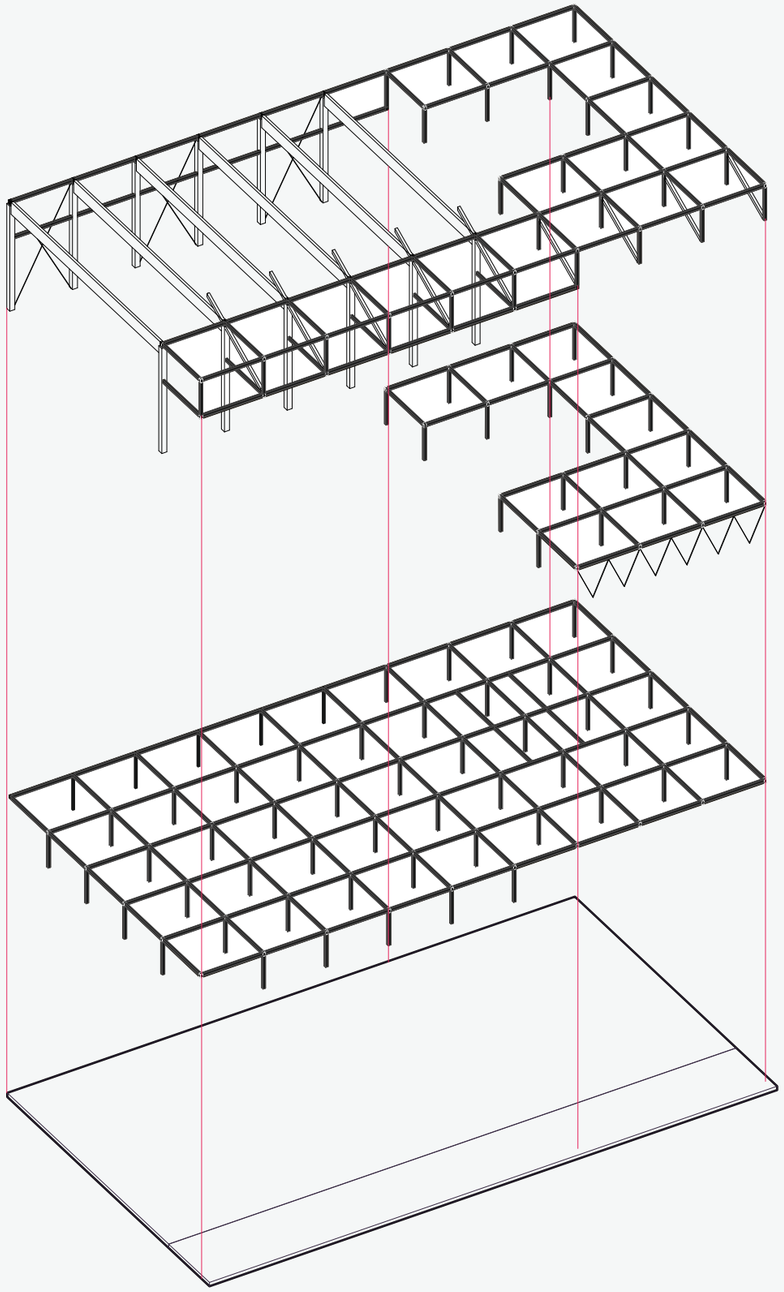


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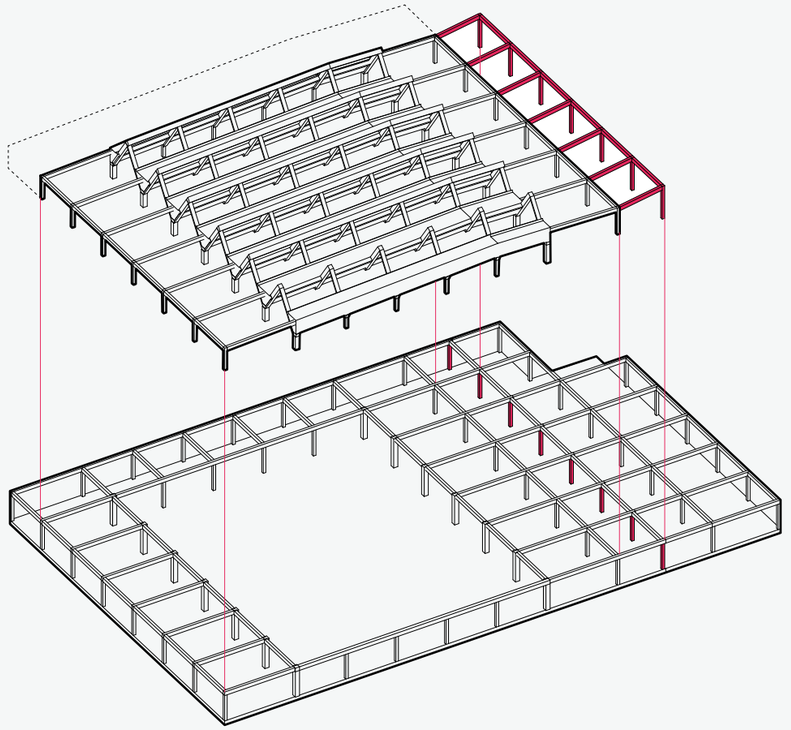


structure



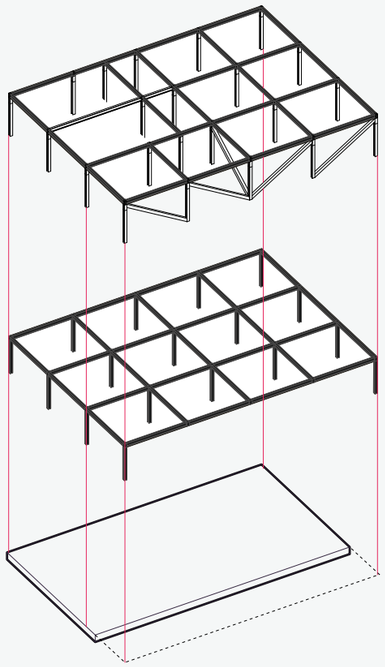
sports hall

- standardised structural element
- tailored structural element



culture hall hall

- demolished
- newly added
- existing



sports hall

- standardised structural element
- tailored structural element





Sports Hall_street elevation

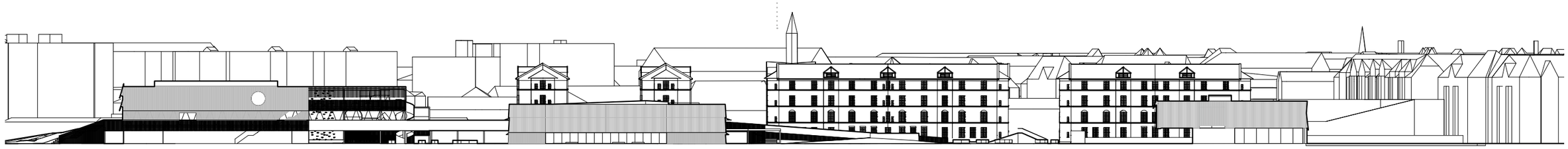




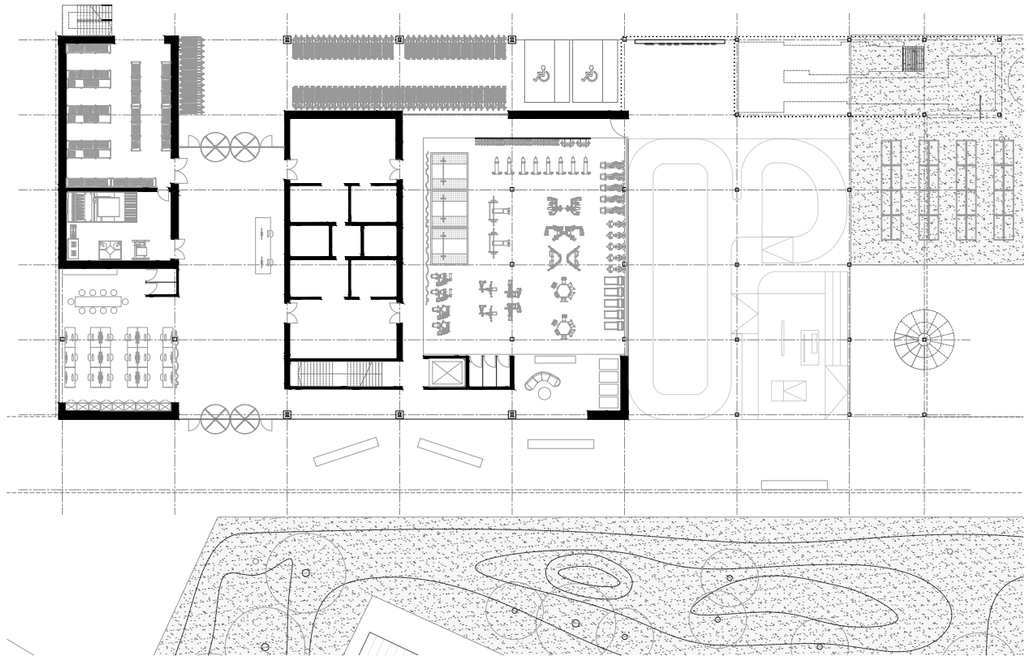
p3_masterplan

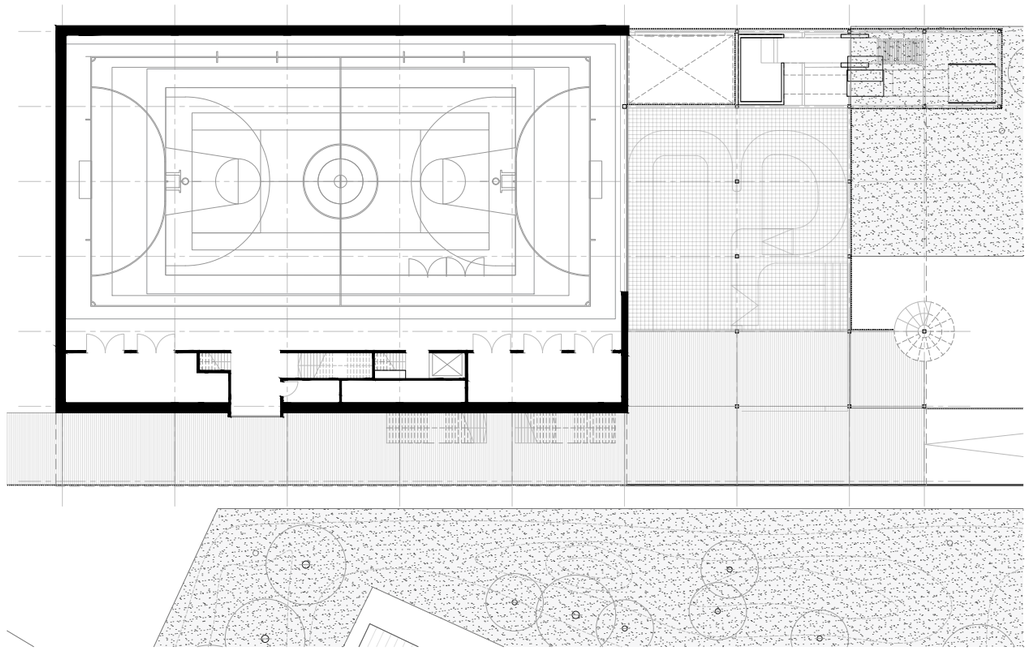
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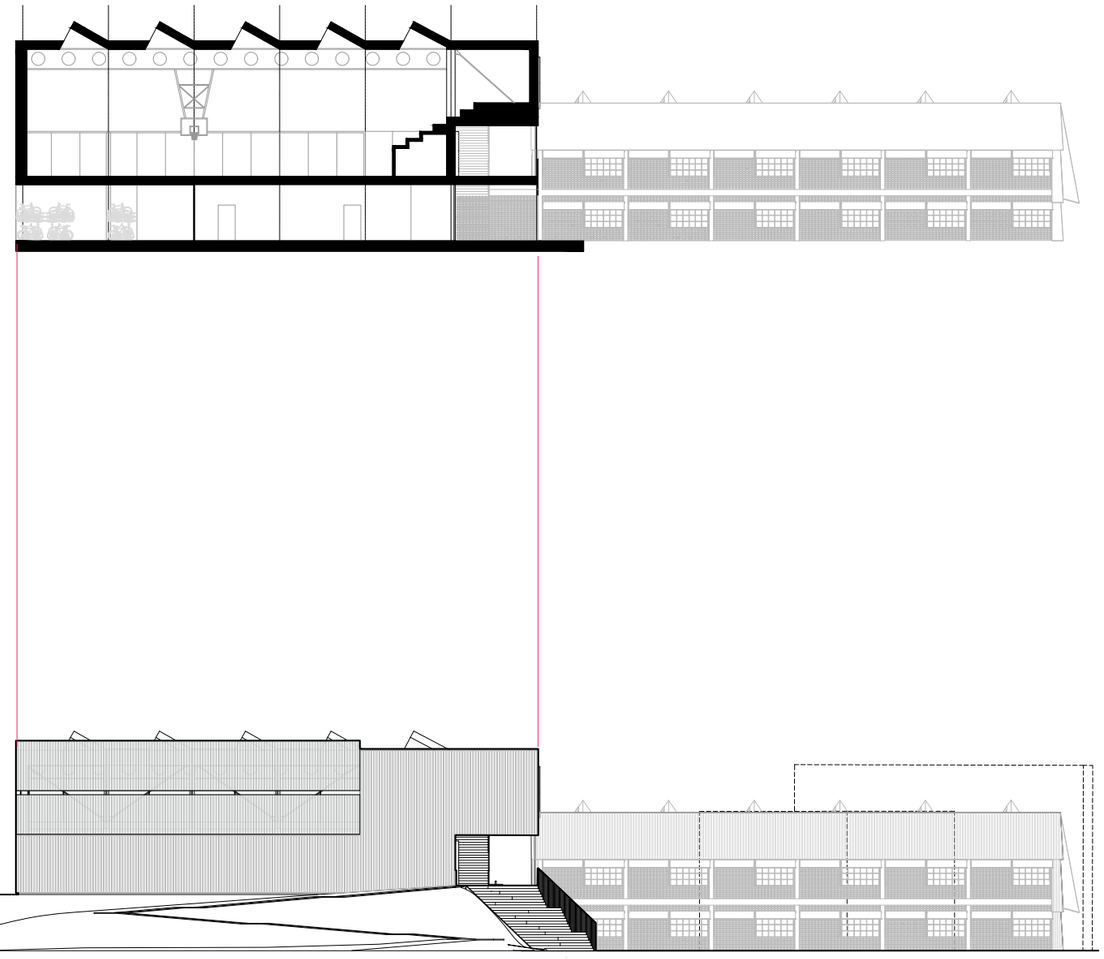
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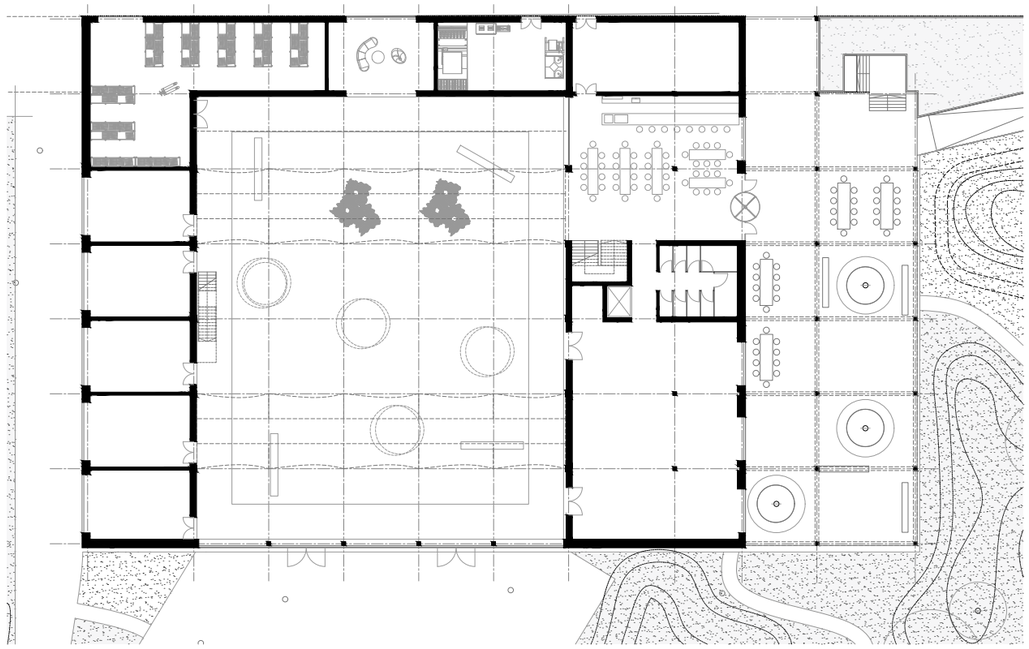
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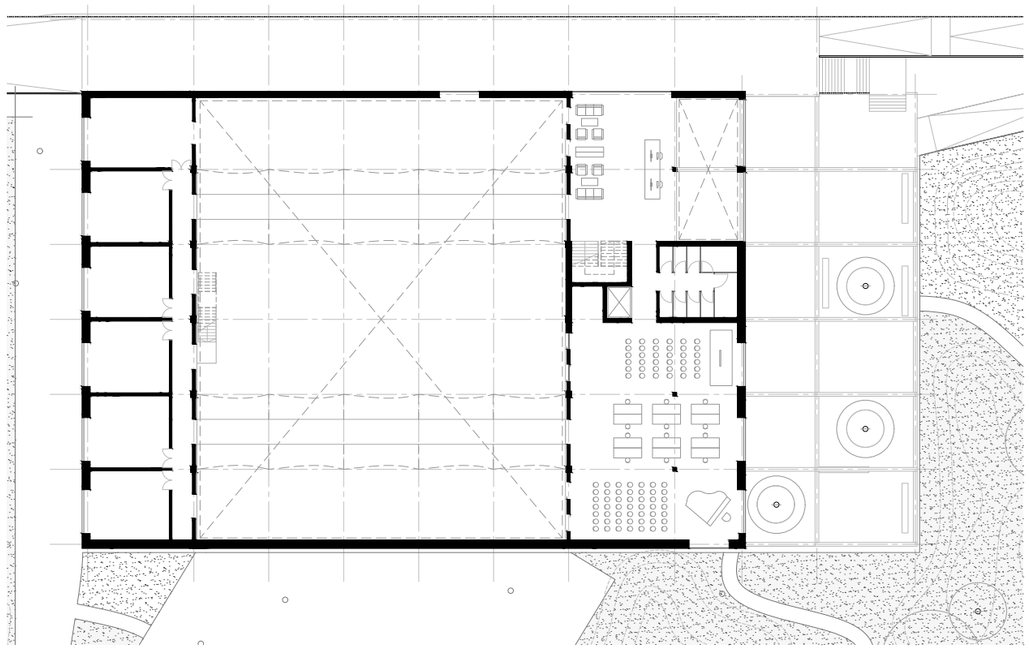


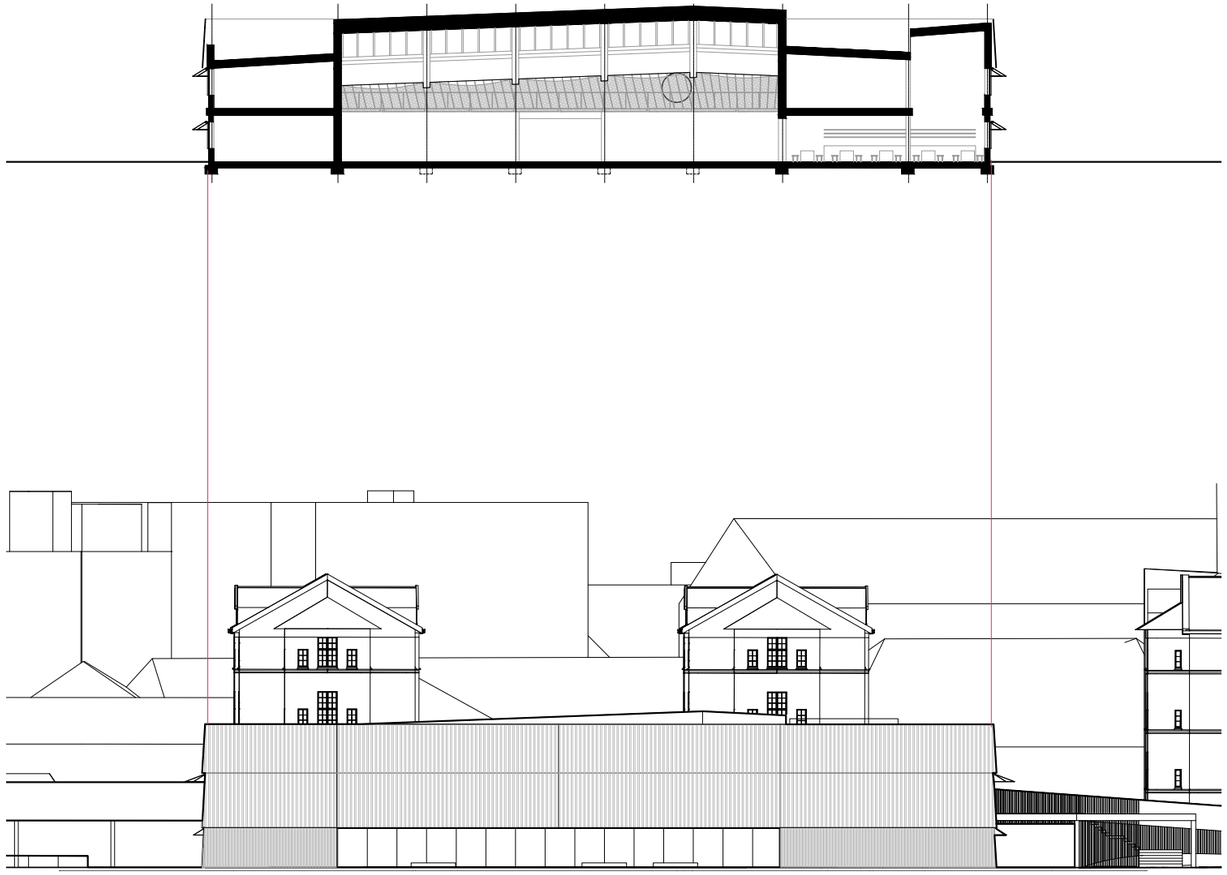




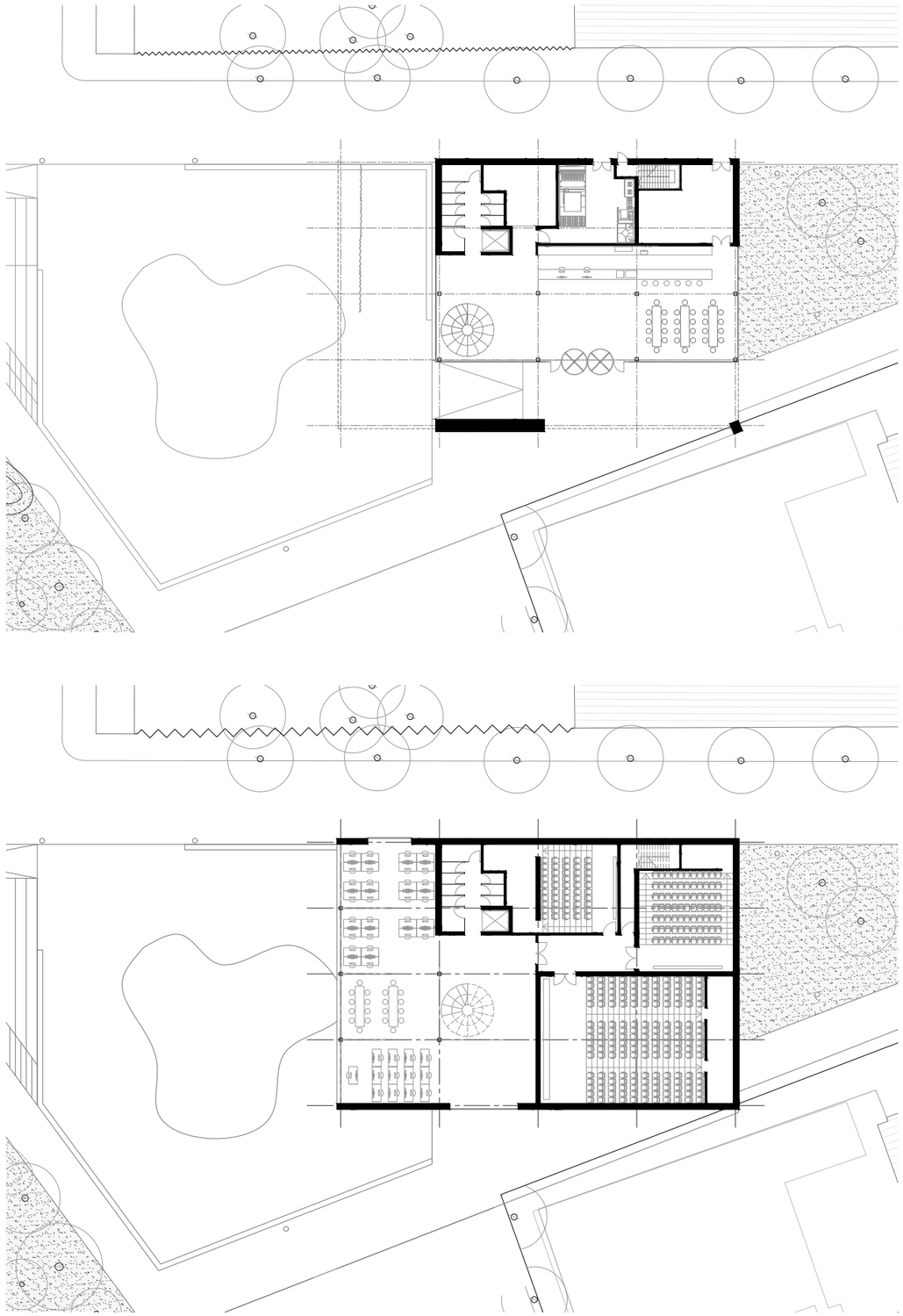
p3_culture hall

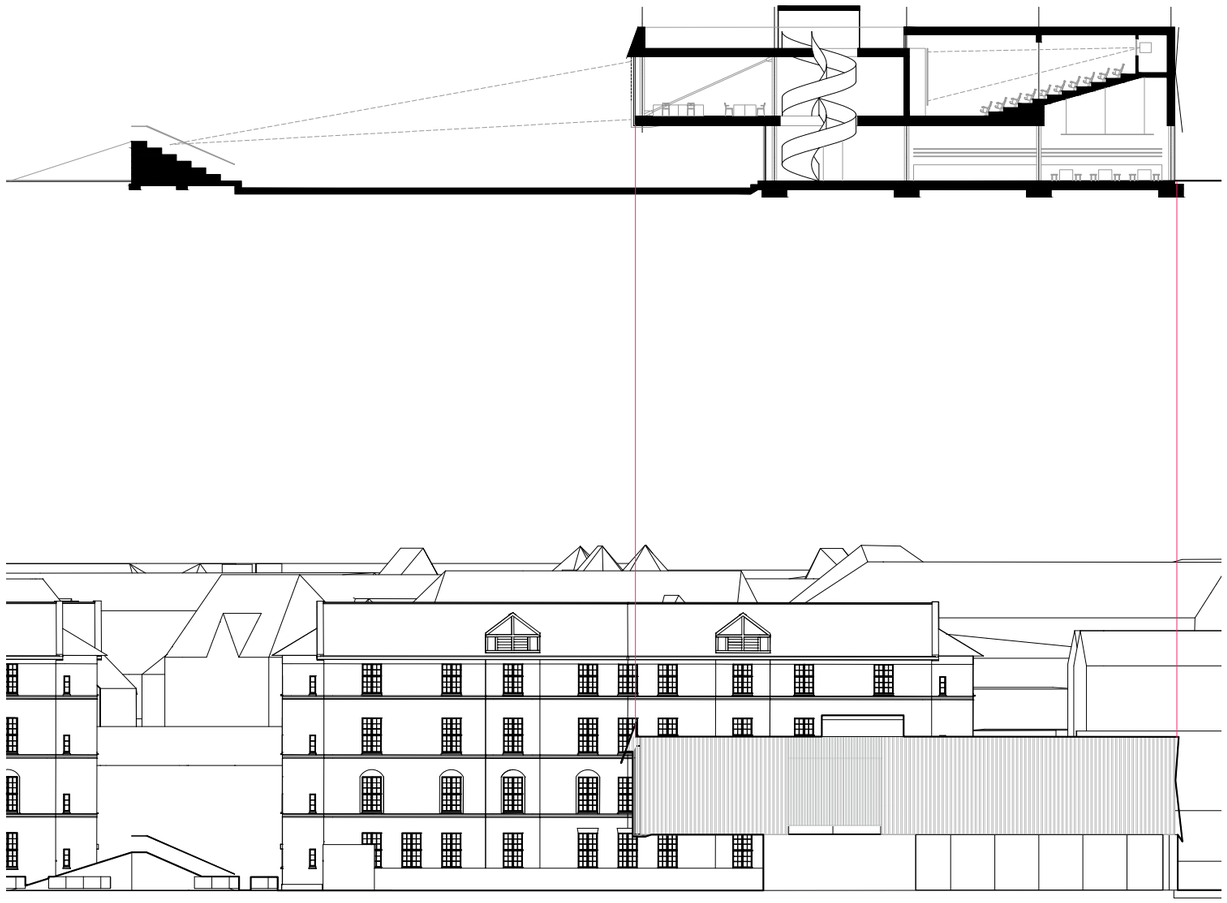




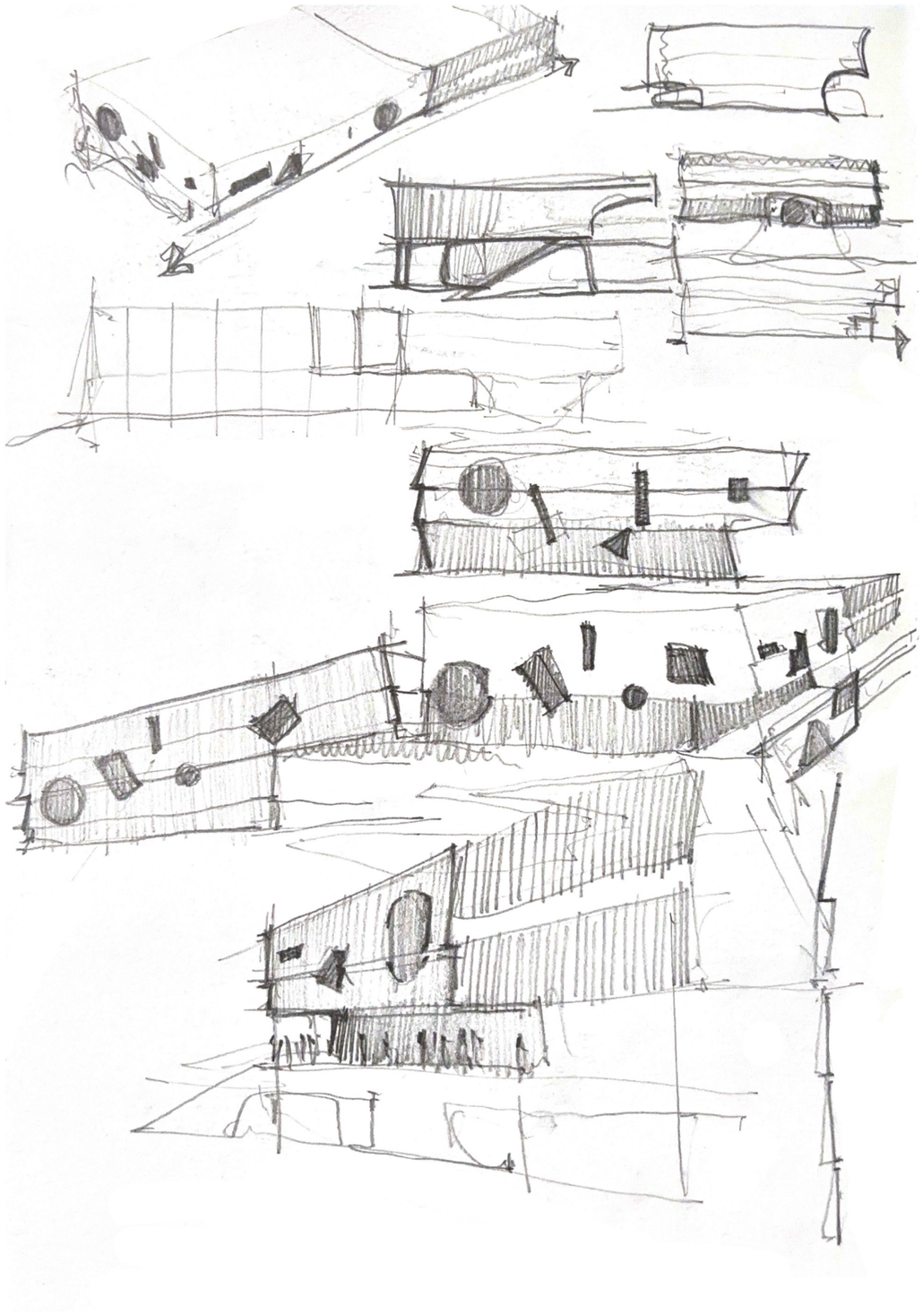


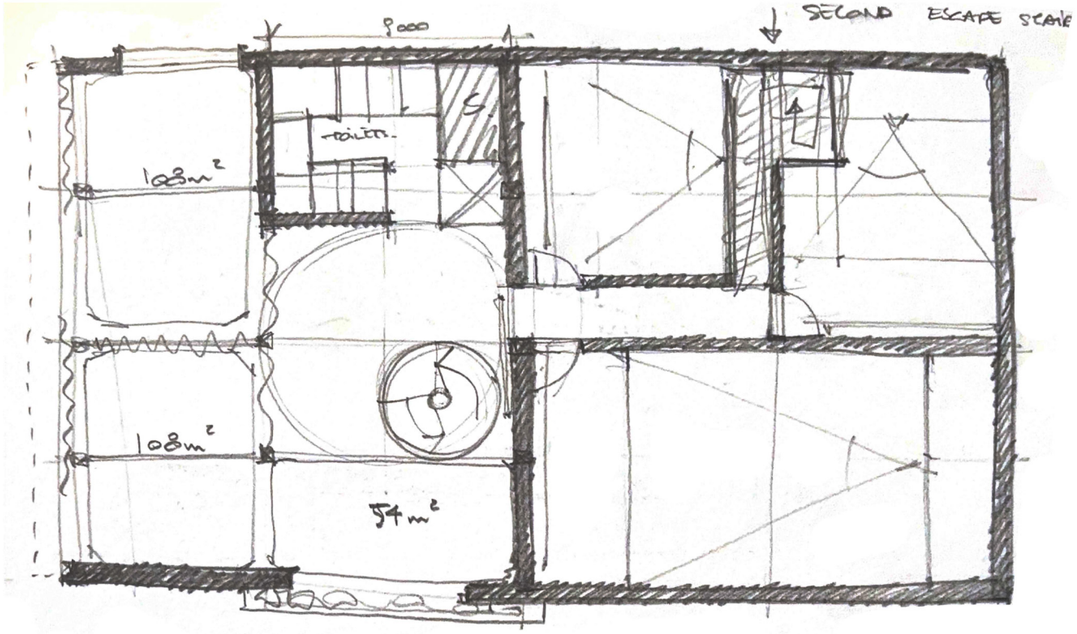
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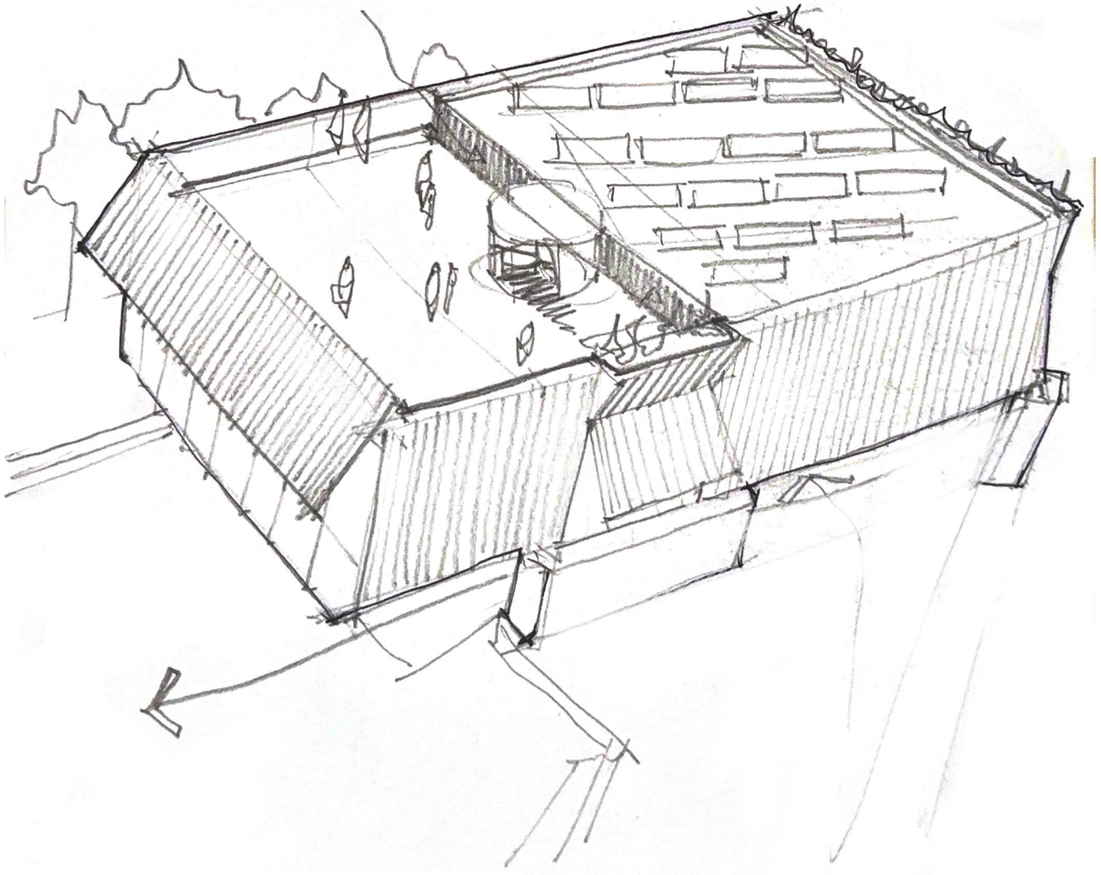




facade explorations

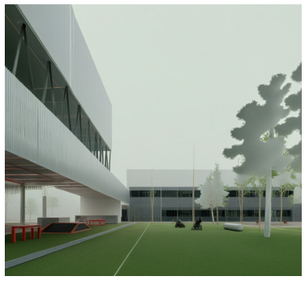






post p2_ai explorations

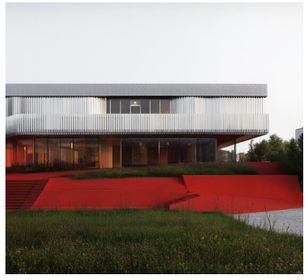
comfyUI with SDXL / FLUX 1.0 dev

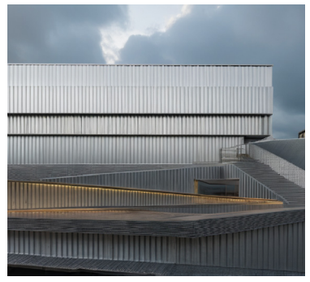






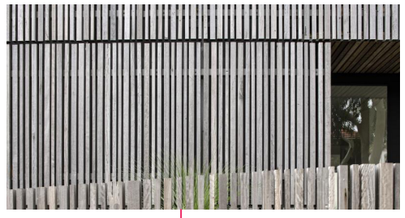







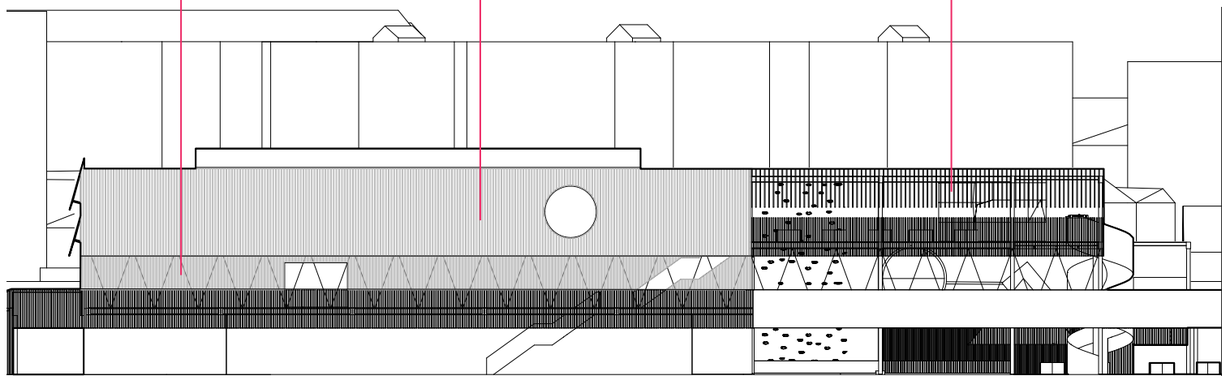


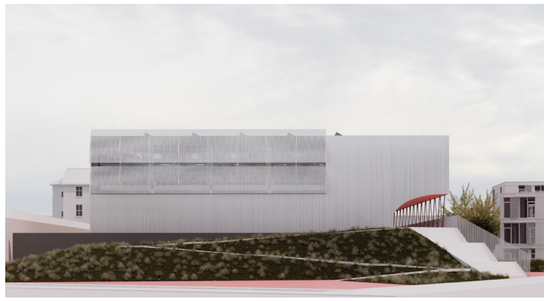


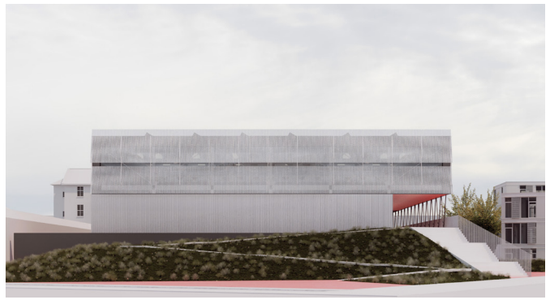



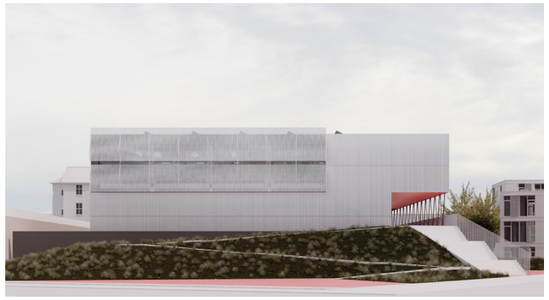




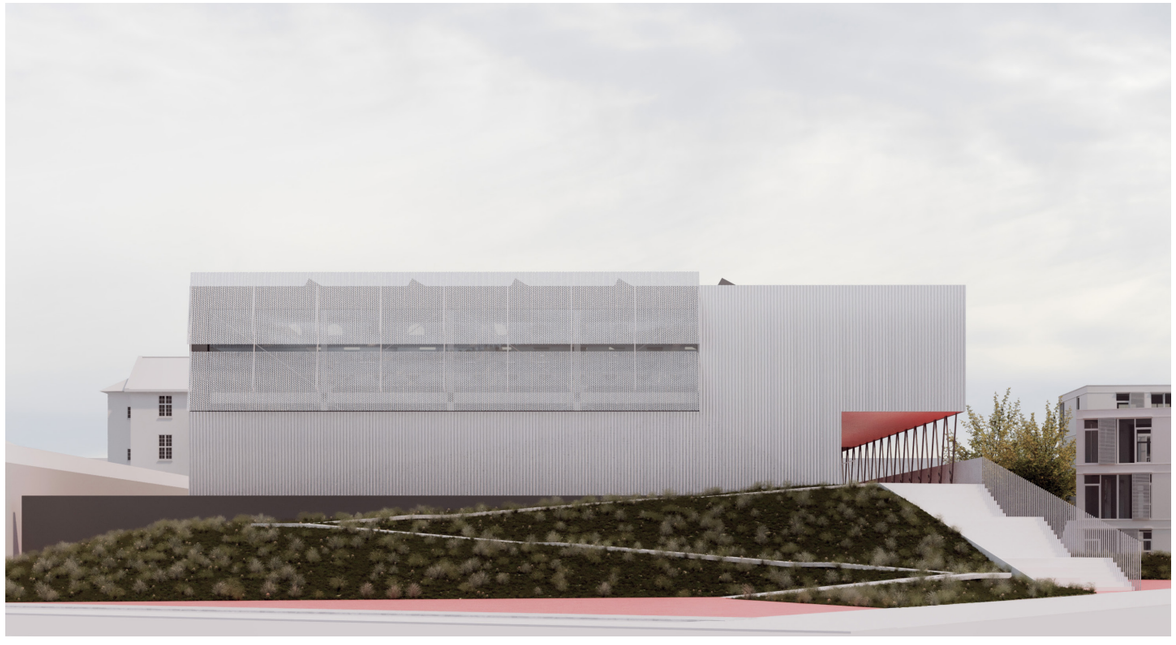








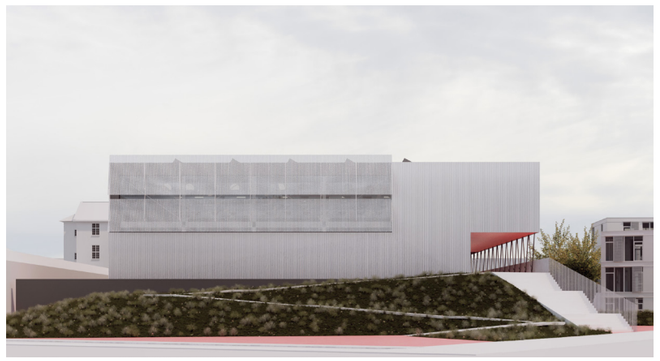






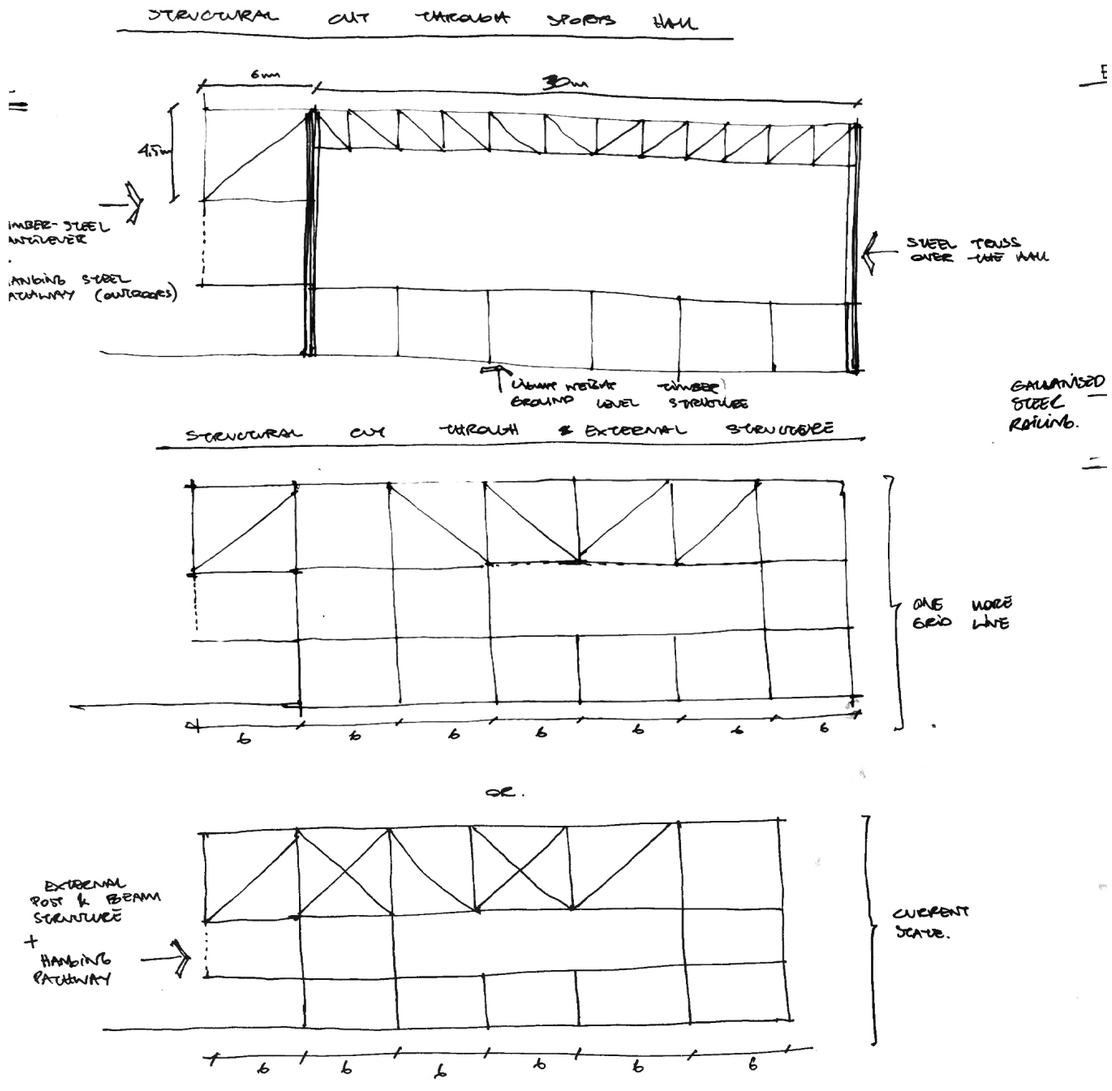


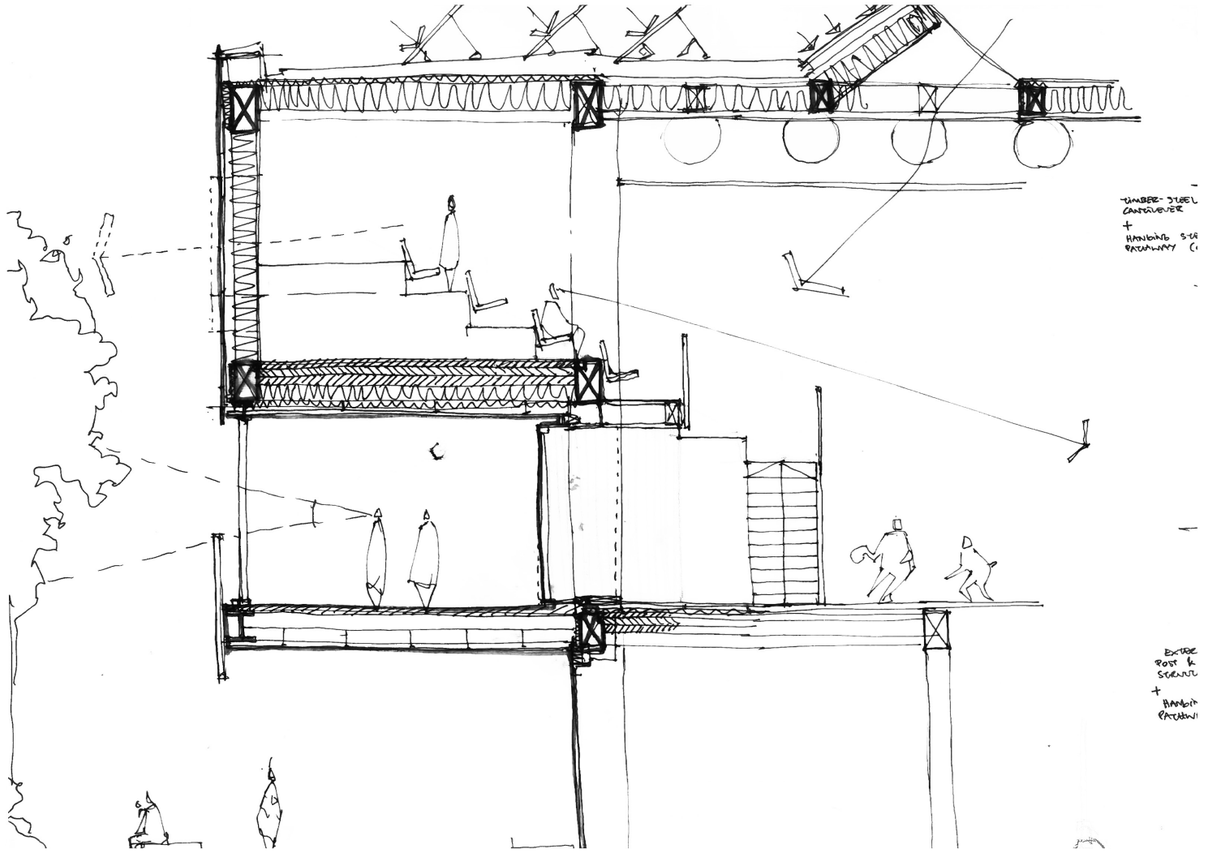


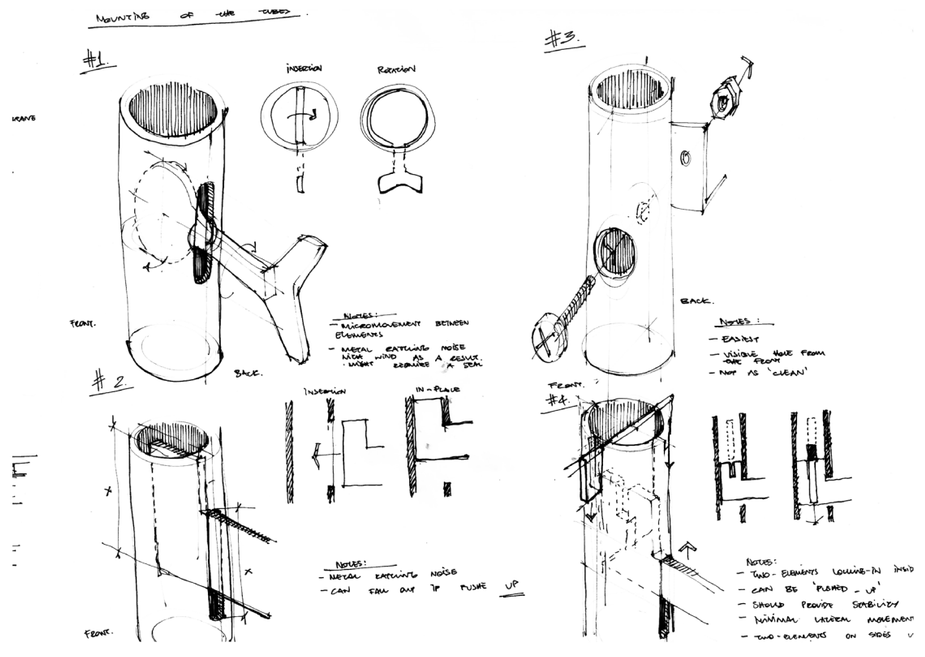


technical solutions

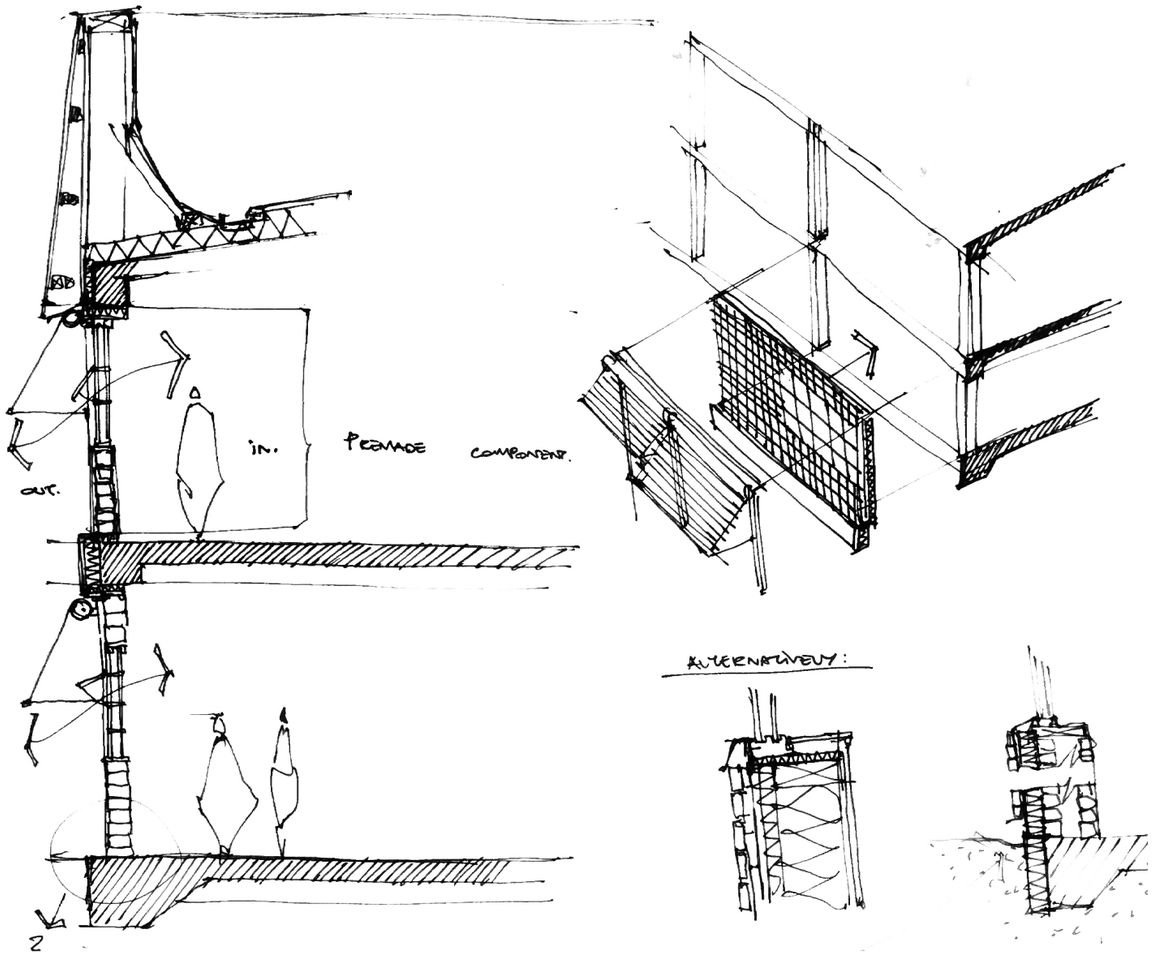
handdrawn technical explorations

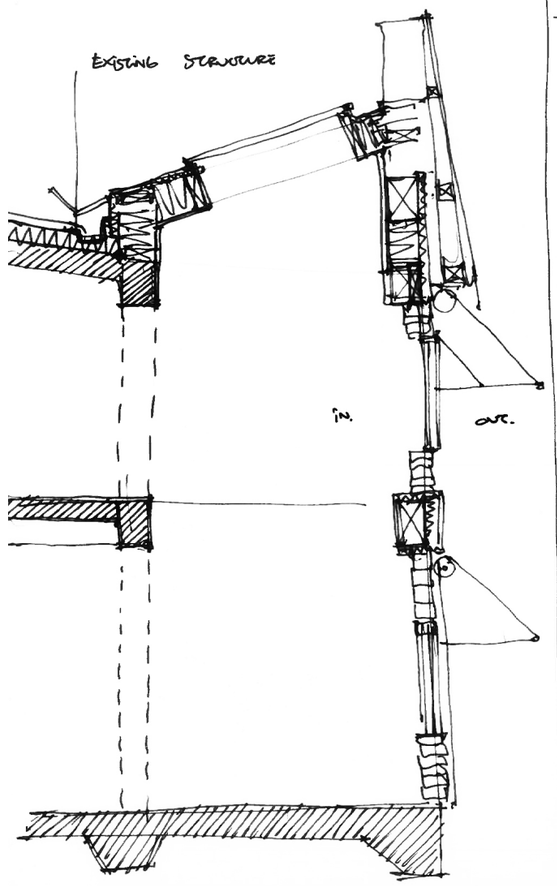


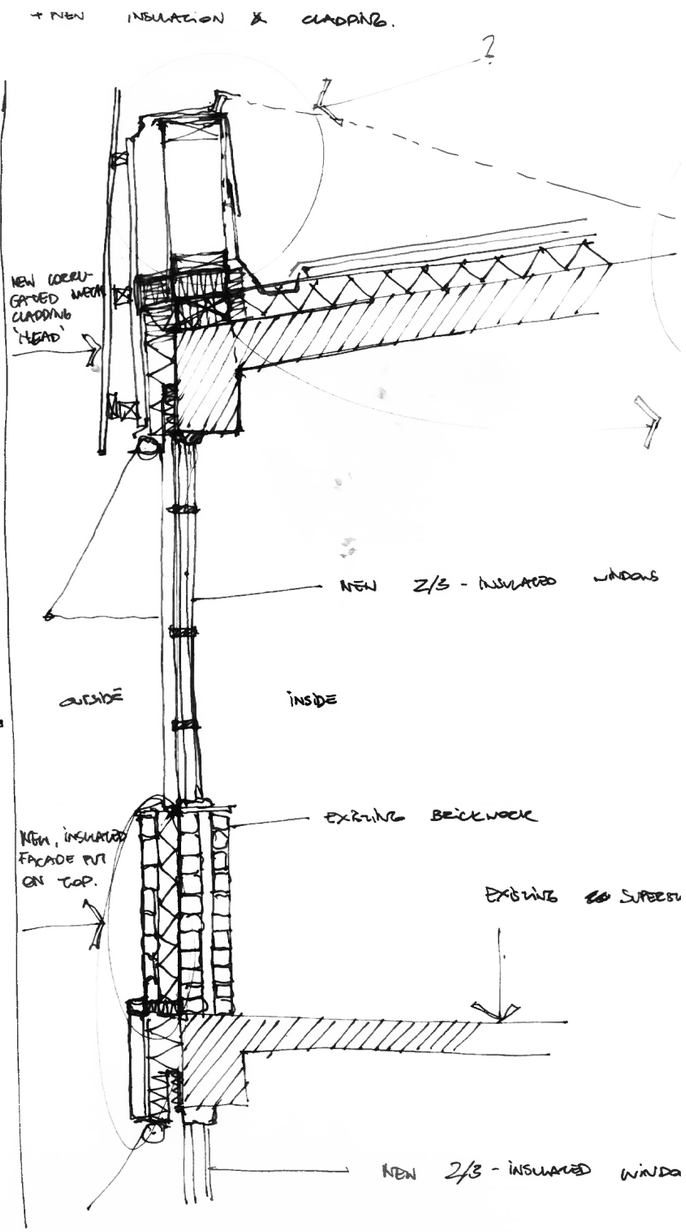


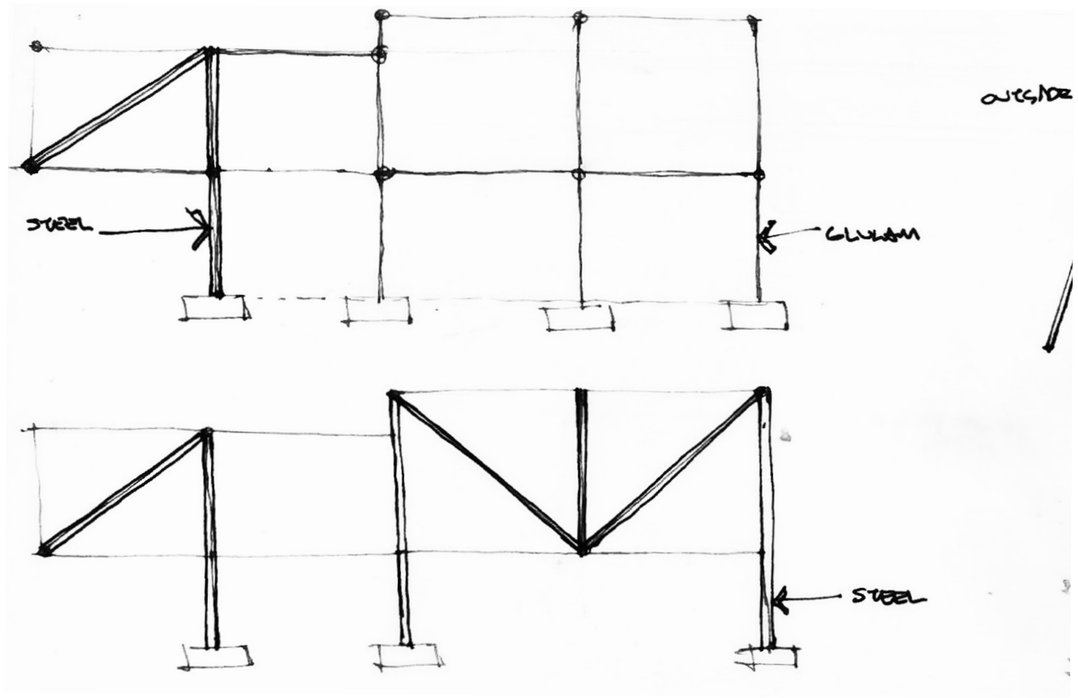


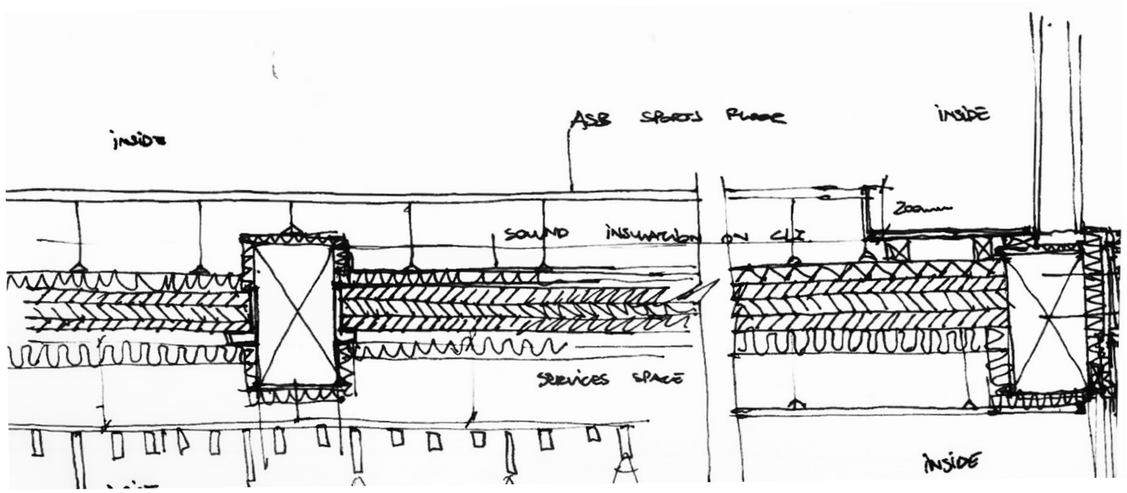
#1. NEW FACADE COMPONENTS / REUSE STRUCTURE.

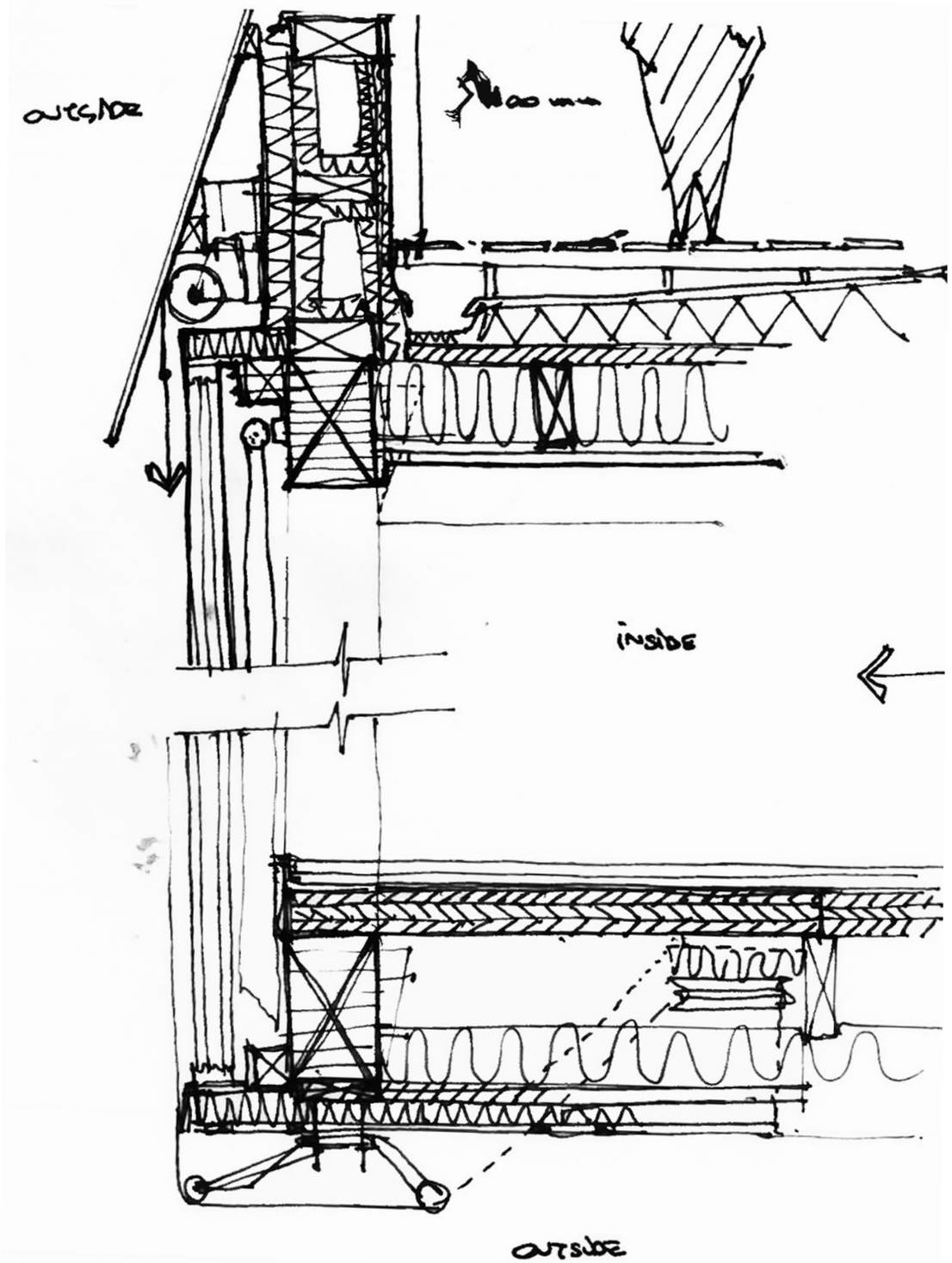







OUTSIDE
STEEL
GLULAM
STEEL


INSIDE
ASB SPORTS PLACE
INSIDE
SOUND INSULATION ON CLT
200mm
SERVICES SPACE
INSIDE


OUTSIDE
400 mm
INSIDE
OUTSIDE

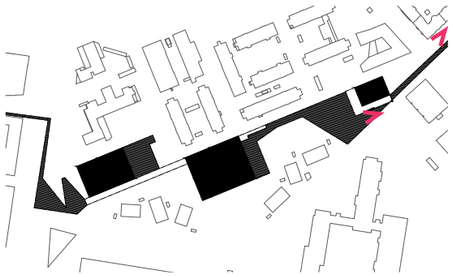
09

final proposal

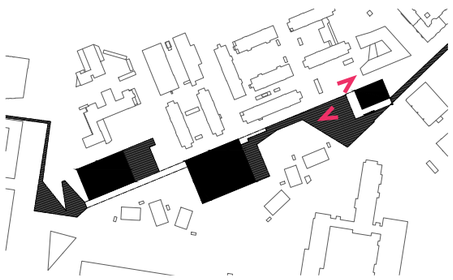
sequencing
a walkthrough the design







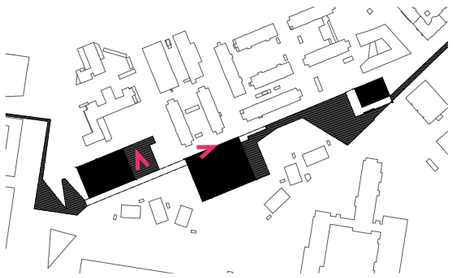






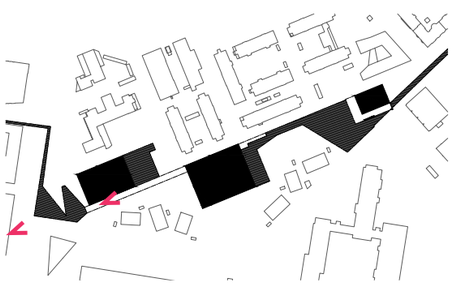


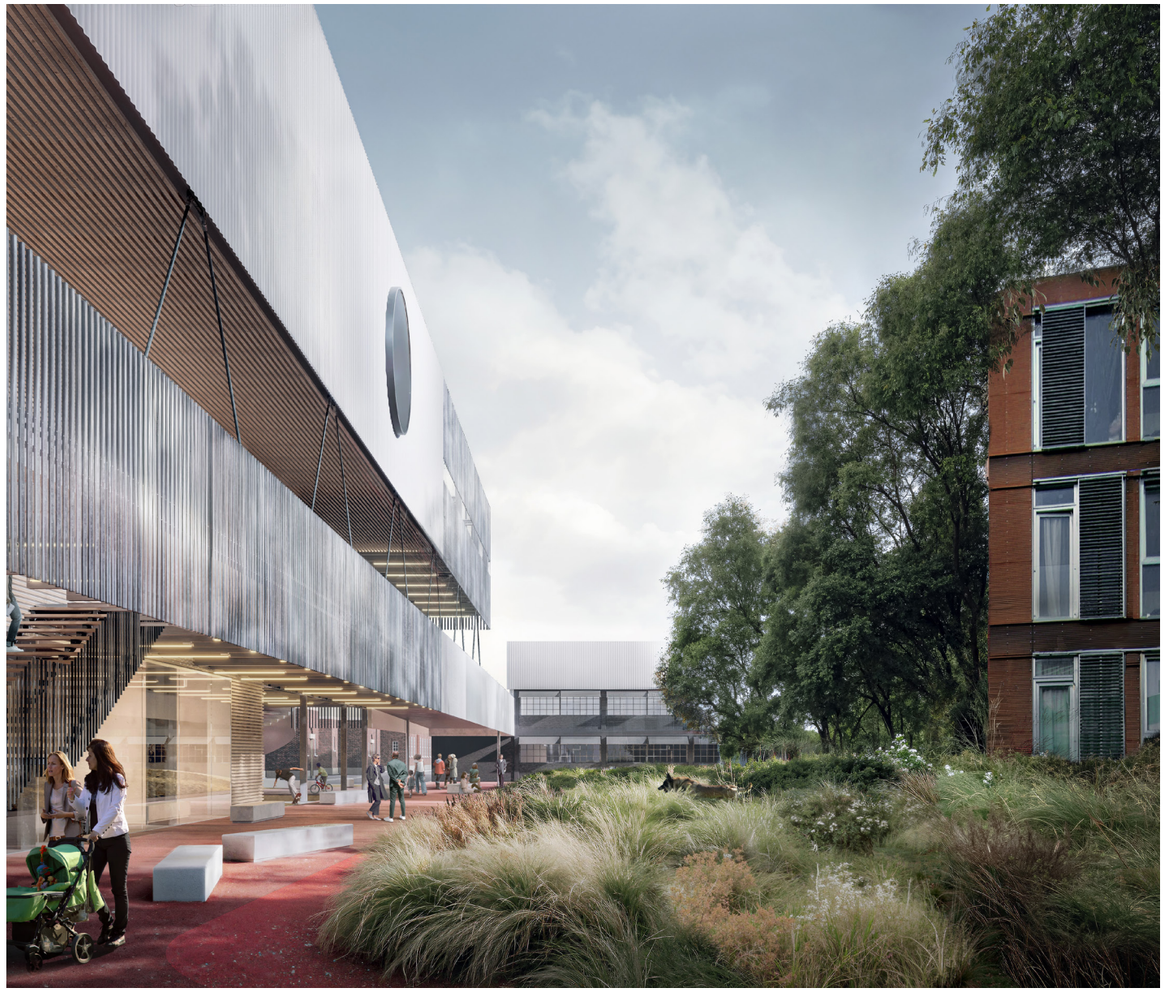




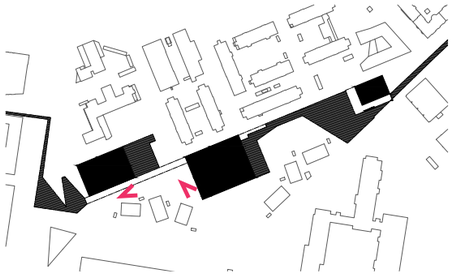




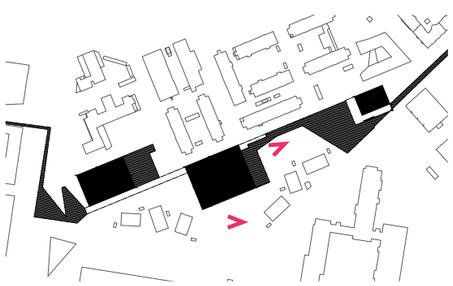






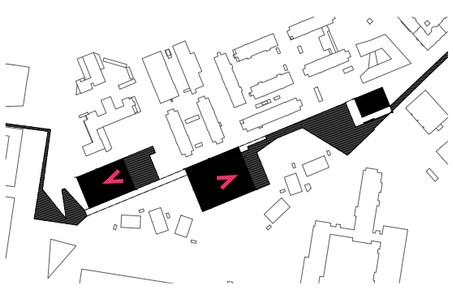














public space

what does it need

access & linkage

- physical and visual connection
- building adjacency
- path connectivity
- transportation options

comfort & image

- curiosity raising first impression
- variety of places to rest
- fully pedestrianized
- clean & safe

sociability

- place of choice for gatherings
- regularity of use
- age & ethnic variety

+

uses & activities

- passive & active recreation
- solitary & group acitvities
- daily / on weekends / special events
- non-profit / financially accessible

play

- climbing
- bouldering
- skatepark
- open-air gym
- outdoor yoga

leisure

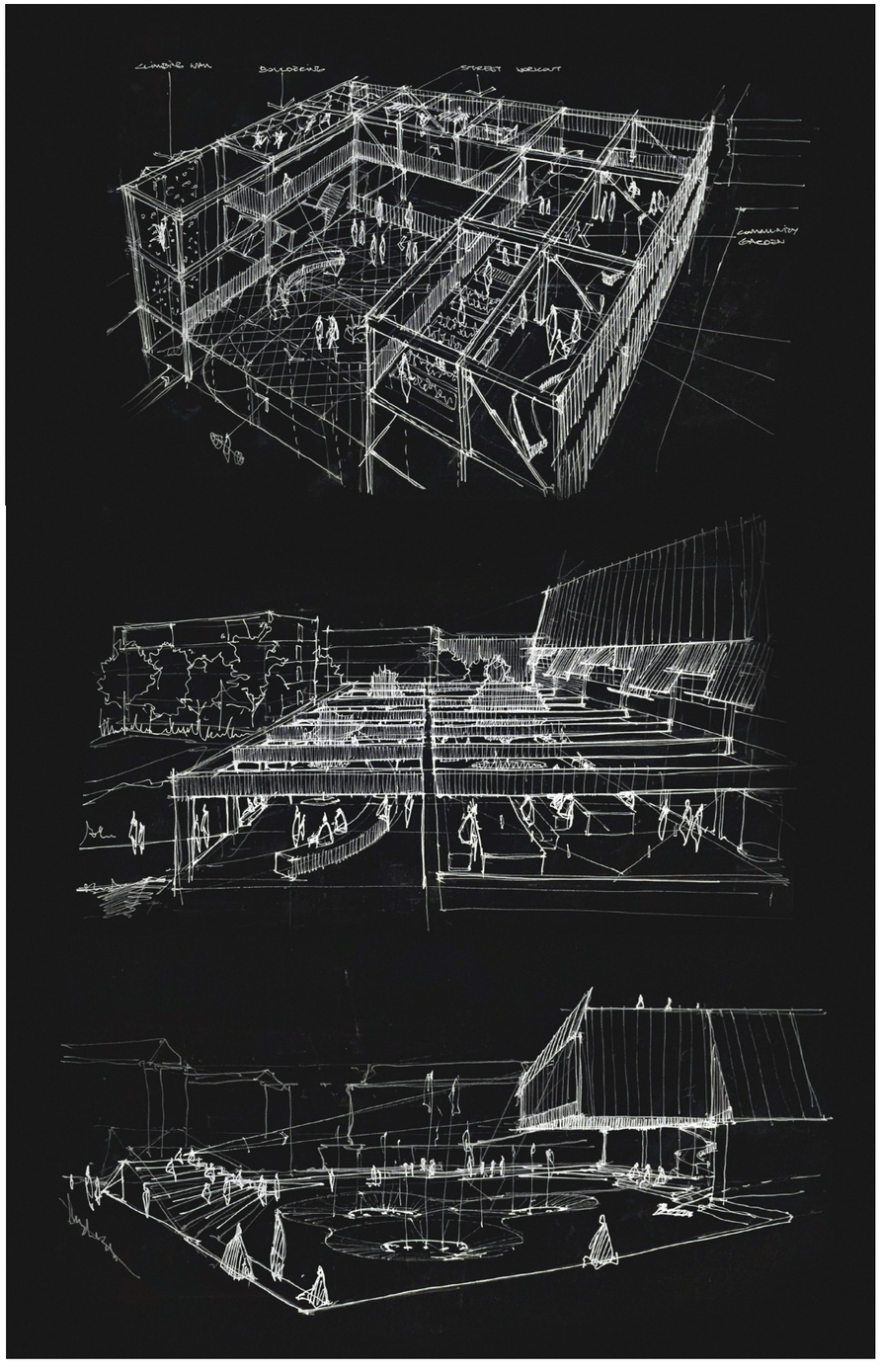
- relax & reflect
- enjoy nature
- outdoor cafe
- variety of sitting areas
- gardening

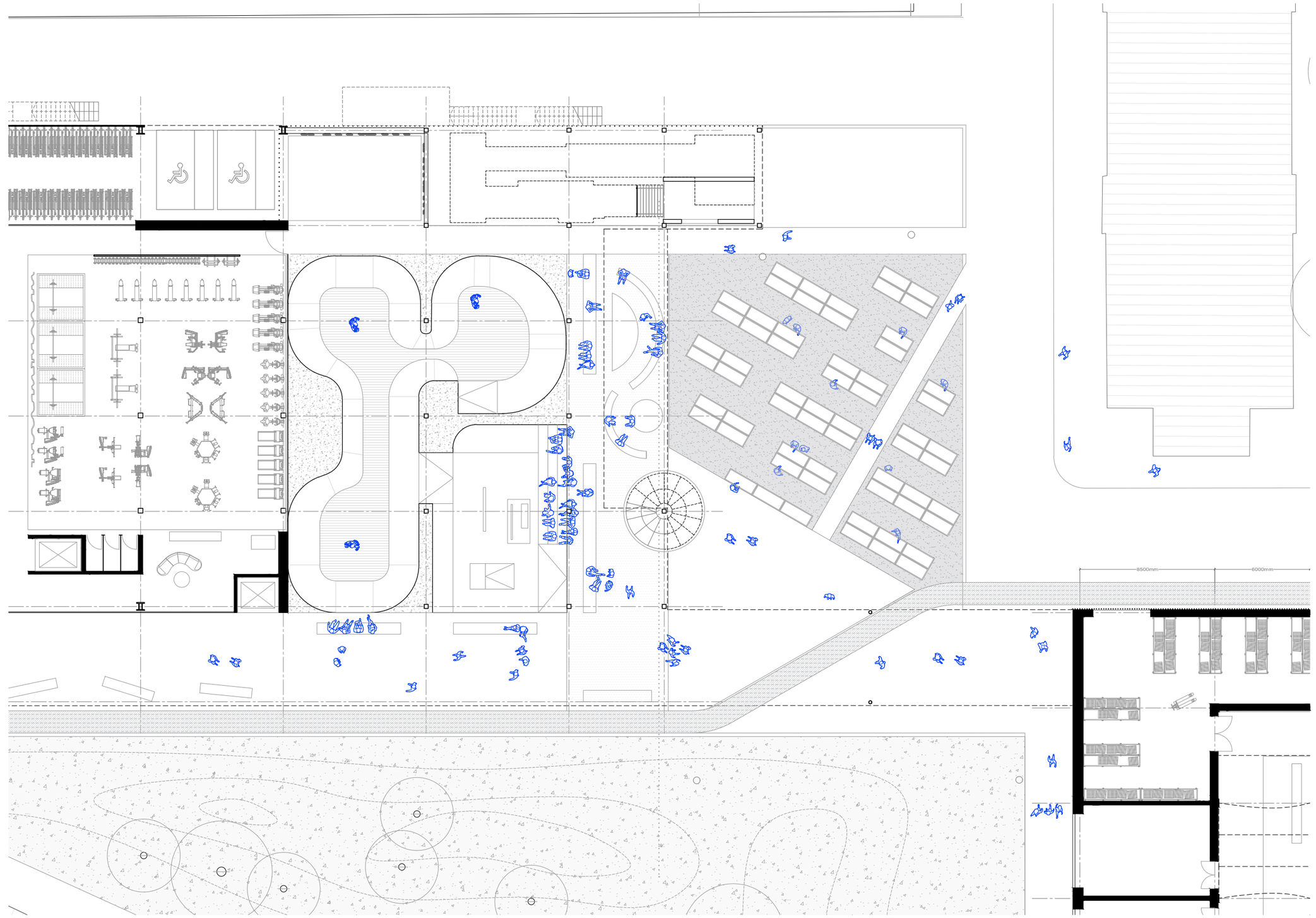
watch

- open-air movie projections
- outdoor performances
- small gigs

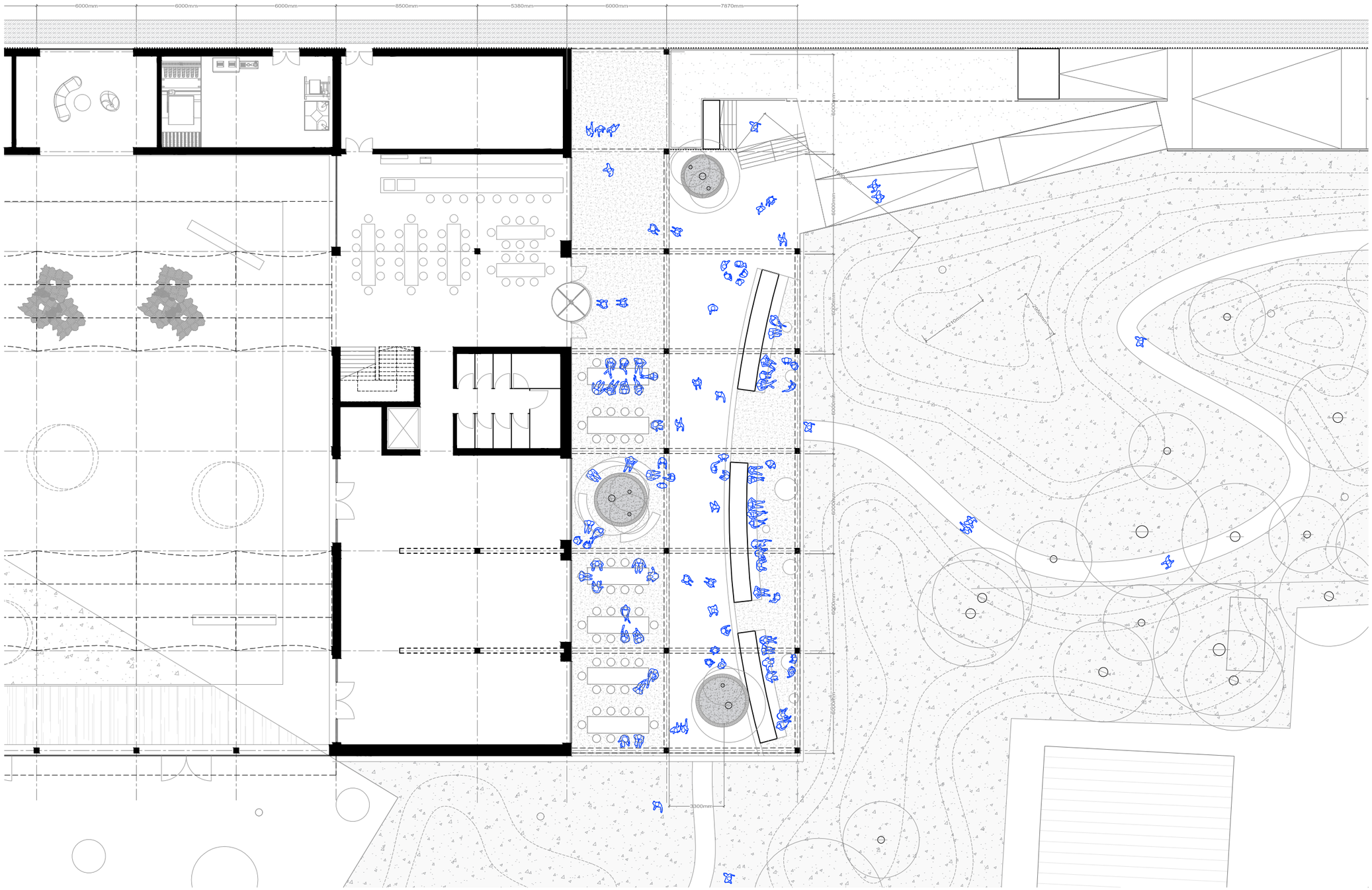
winter

- christmas market
- winter garden
- ice rink

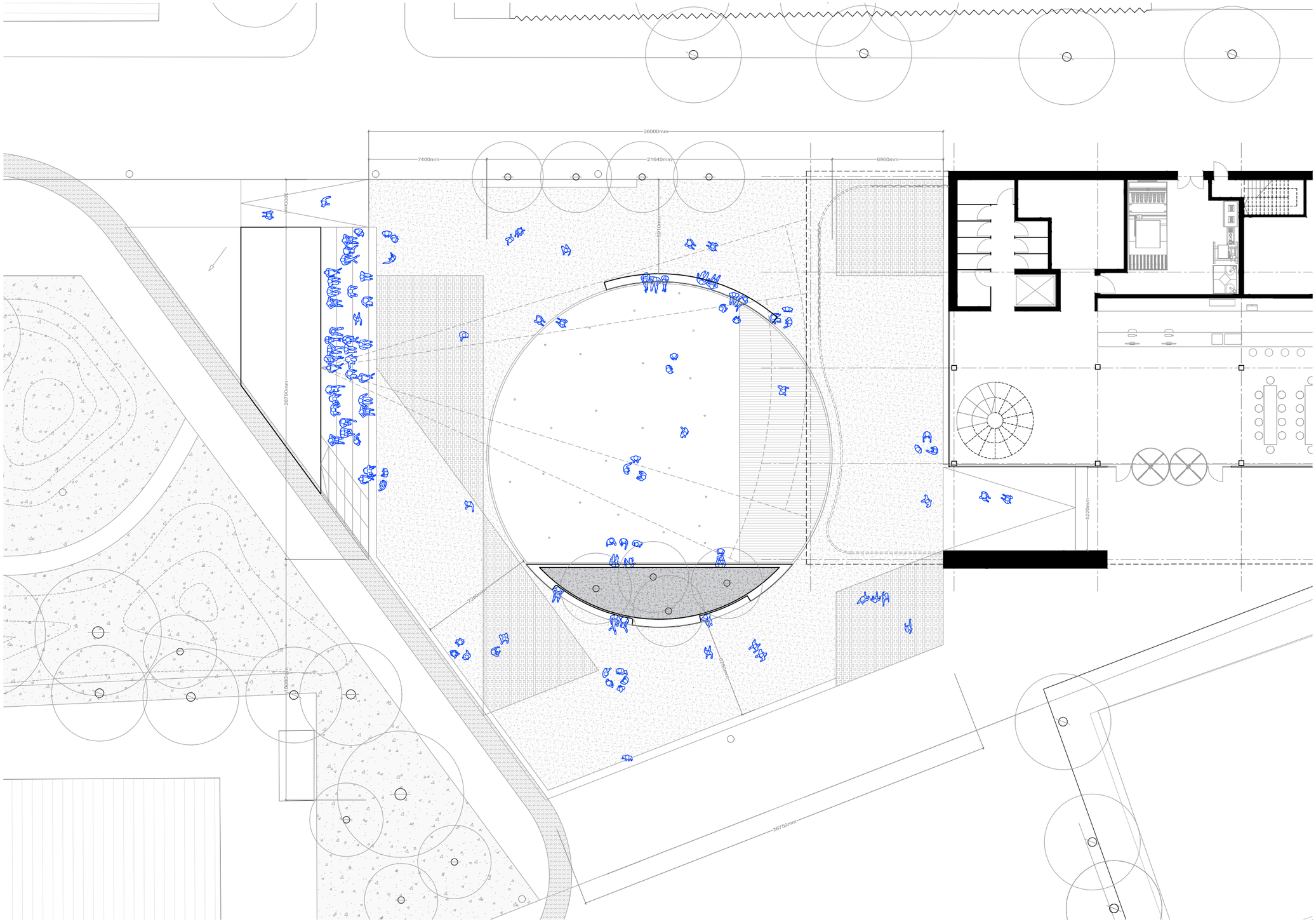




sports hall_play hub

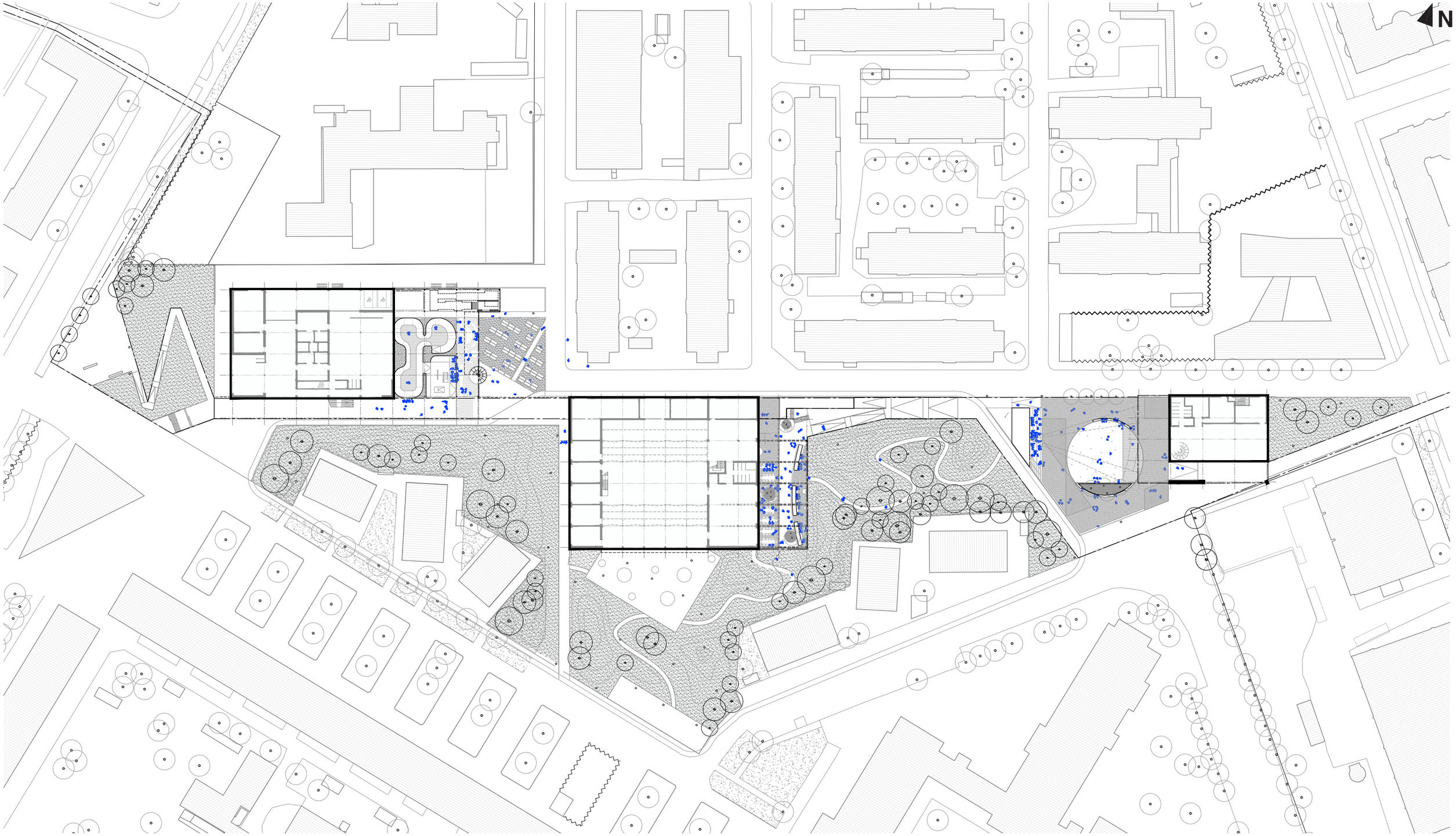


fabrikken_relax garden



N

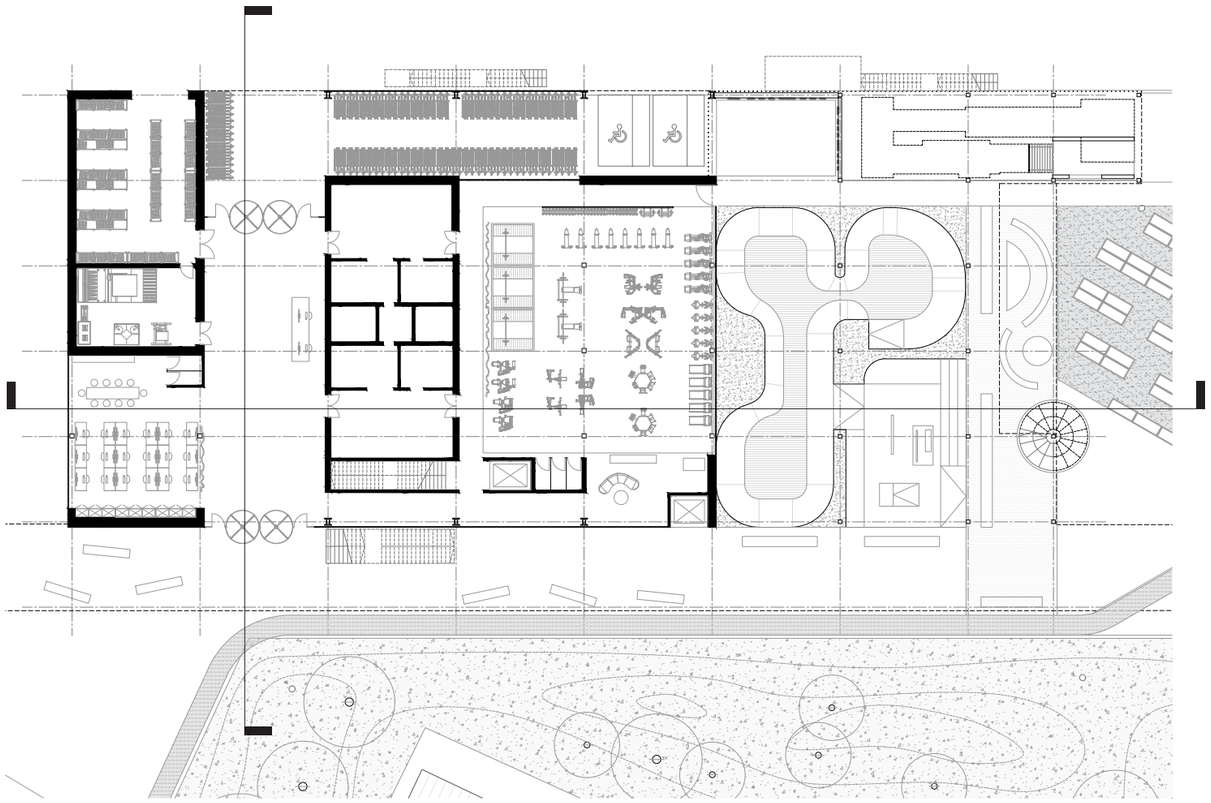
media unit_watch square



public spaces_masterplan

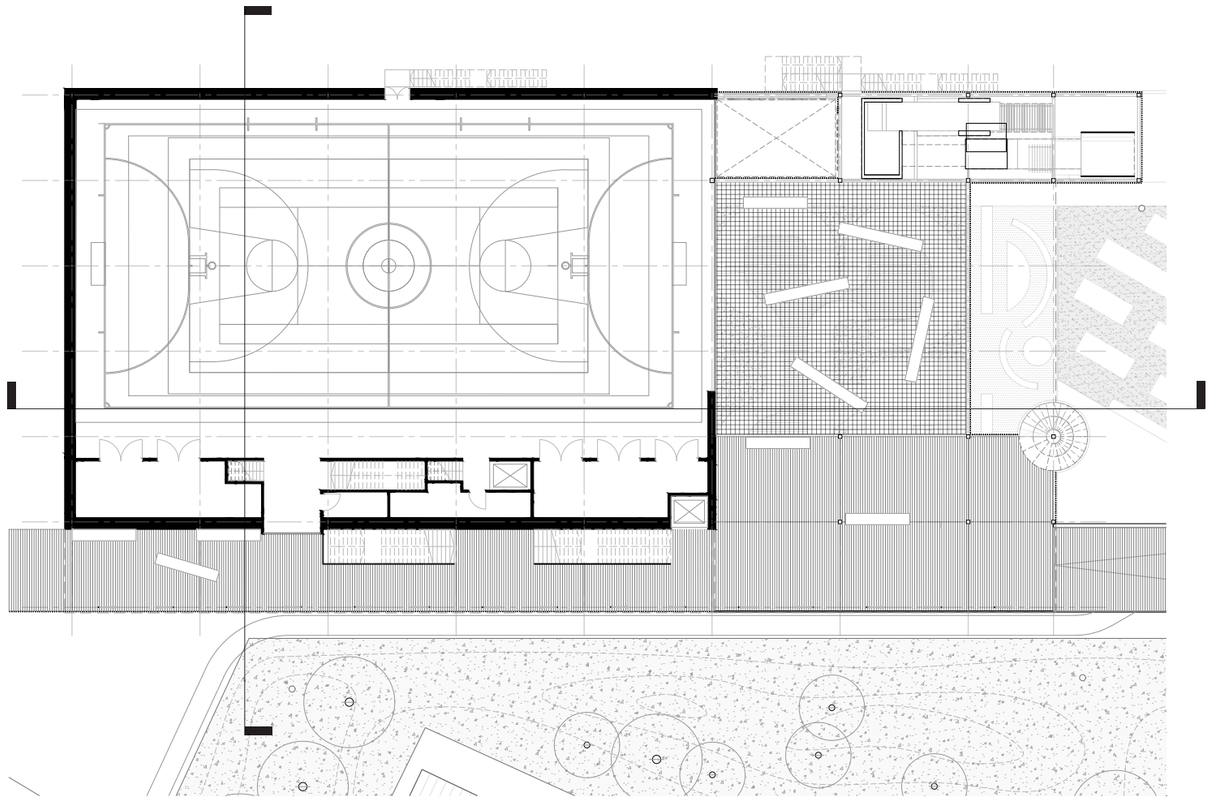
sports hall

N

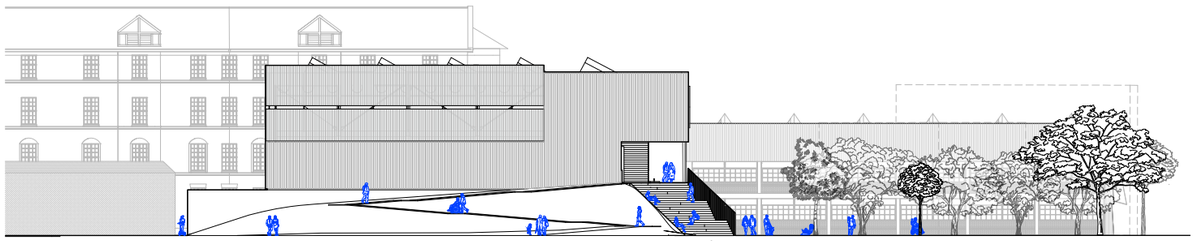


0 1 2 3 5 10 20m

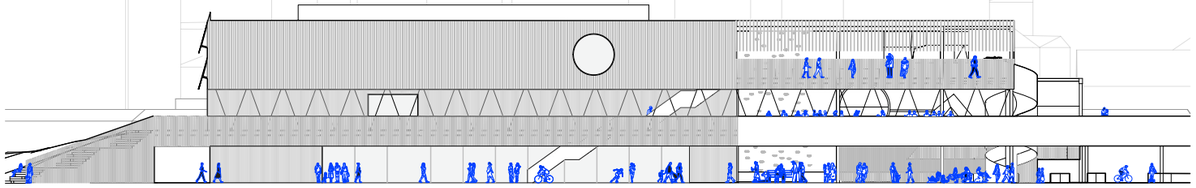
sports hall_00



sports hall_01

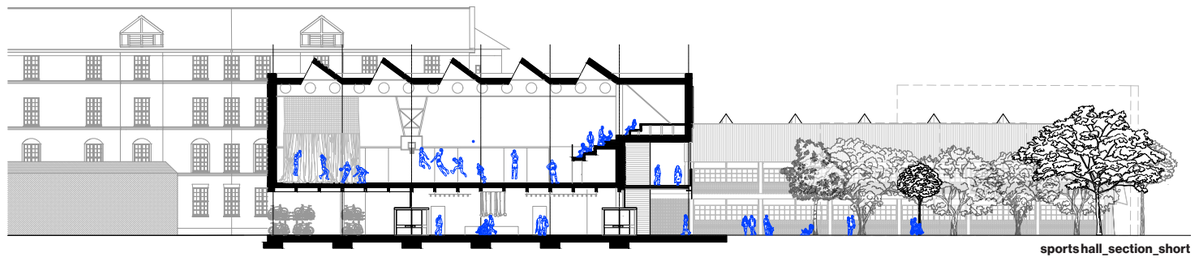


sports hall_elevation_west

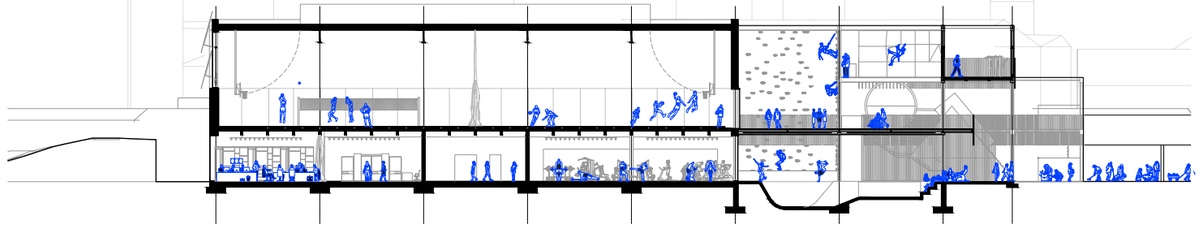


0 1 2 3 5 10 20m

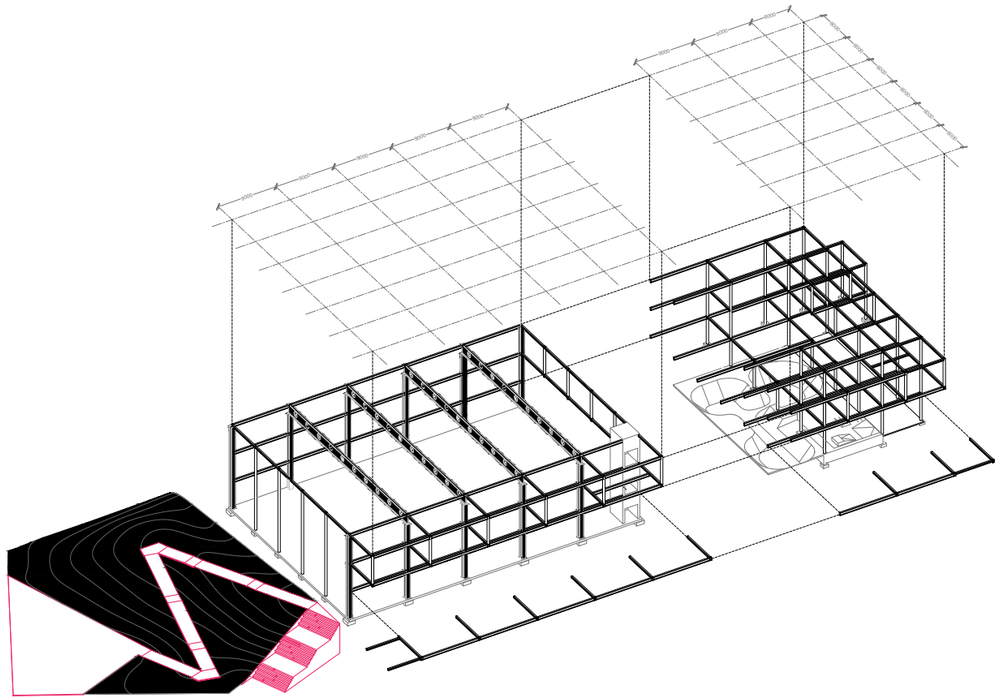
sports hall_elevation_south

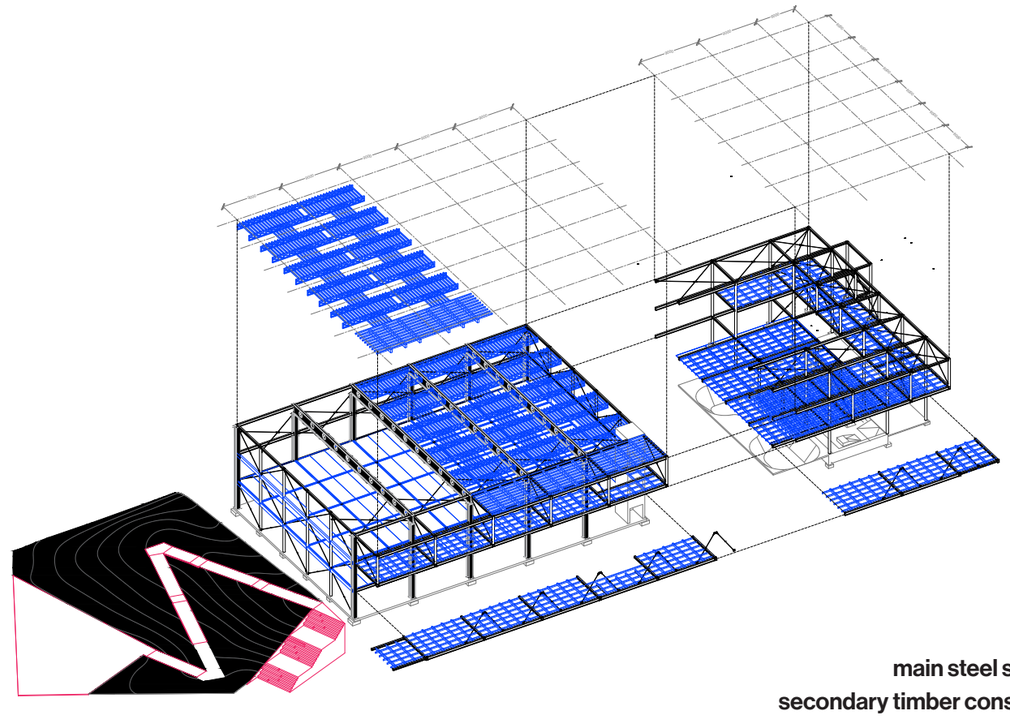


sports hall_section_short

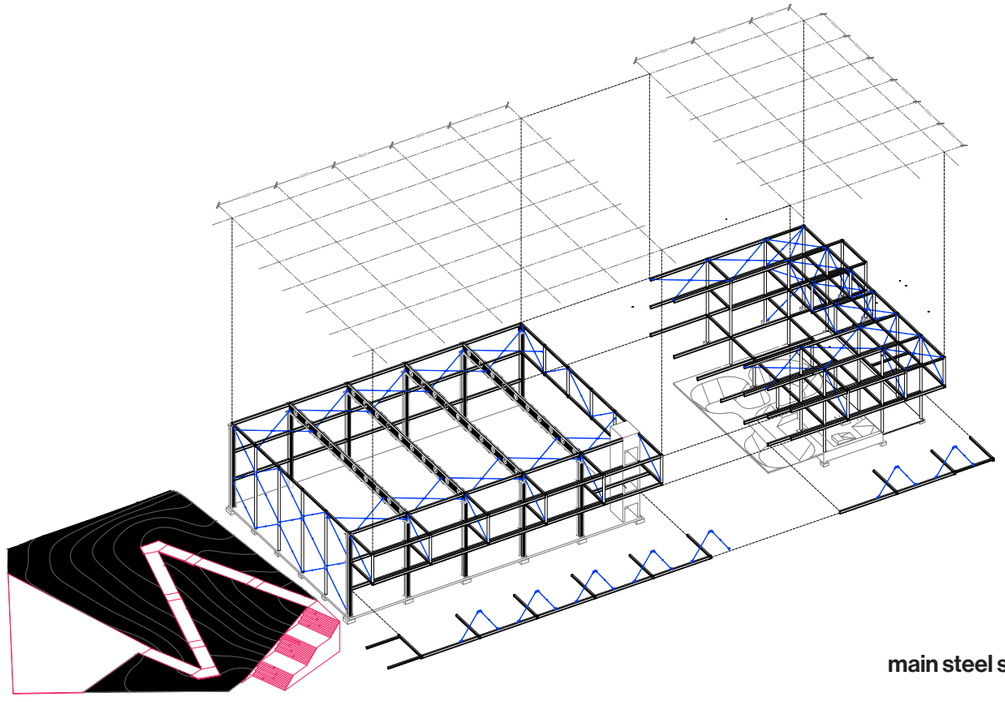


sports hall_section_long

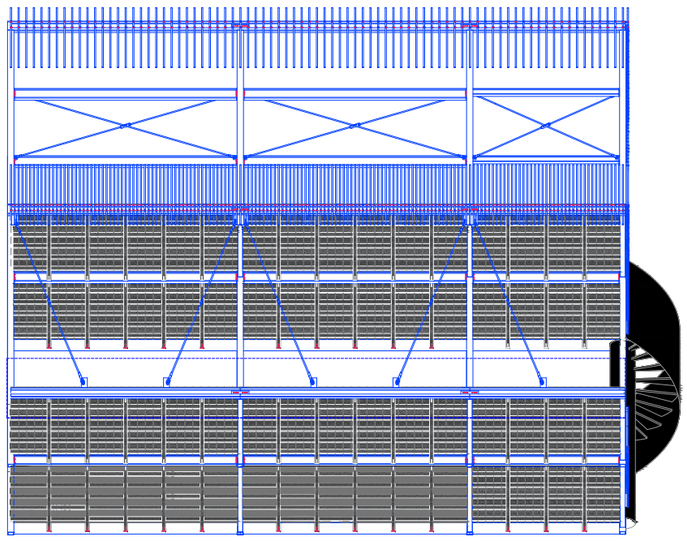


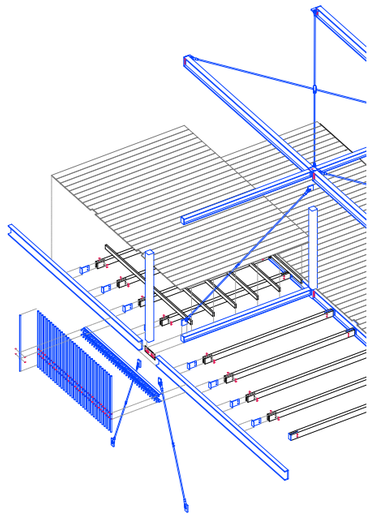


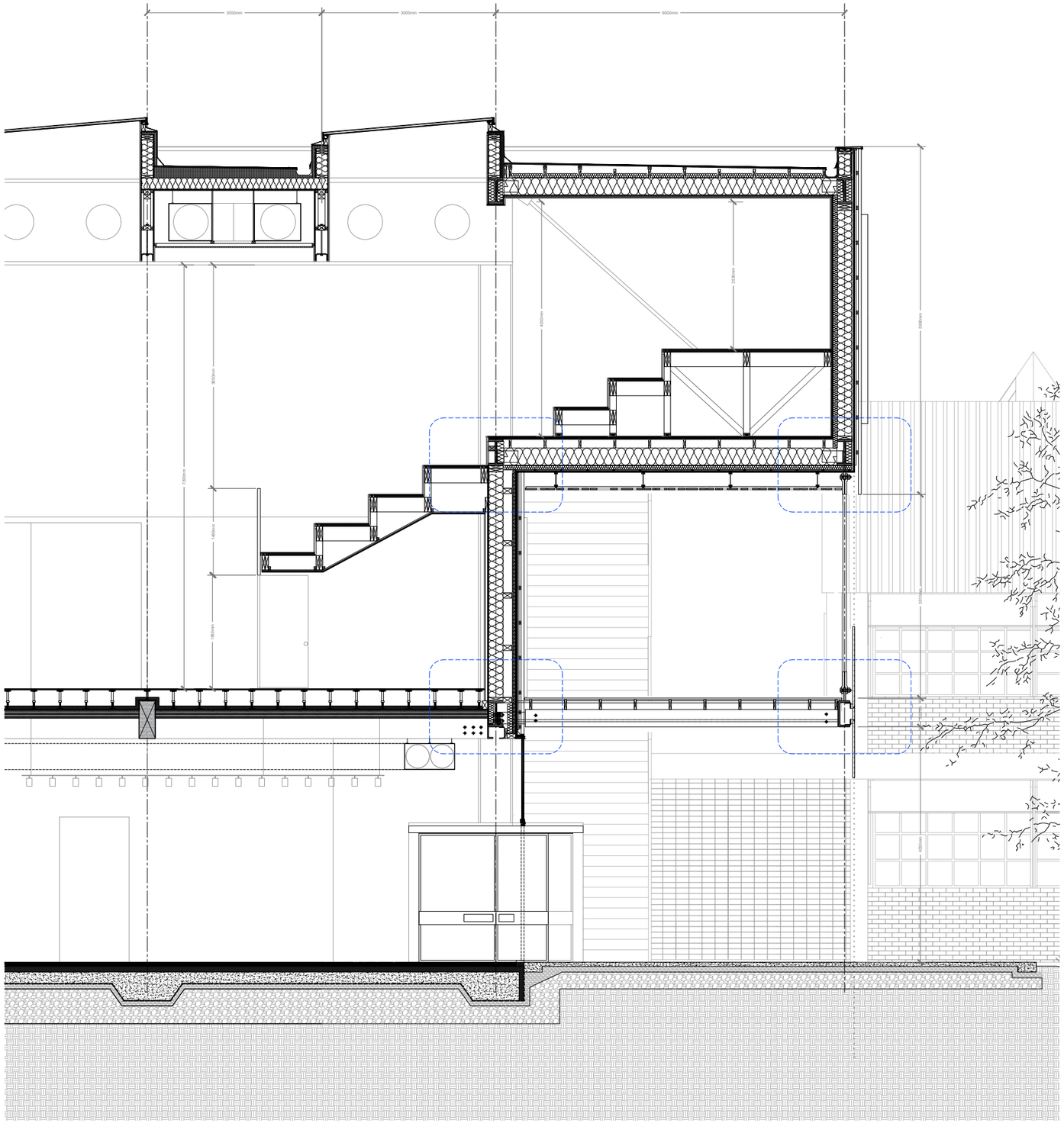
main steel structure
secondary timber construction

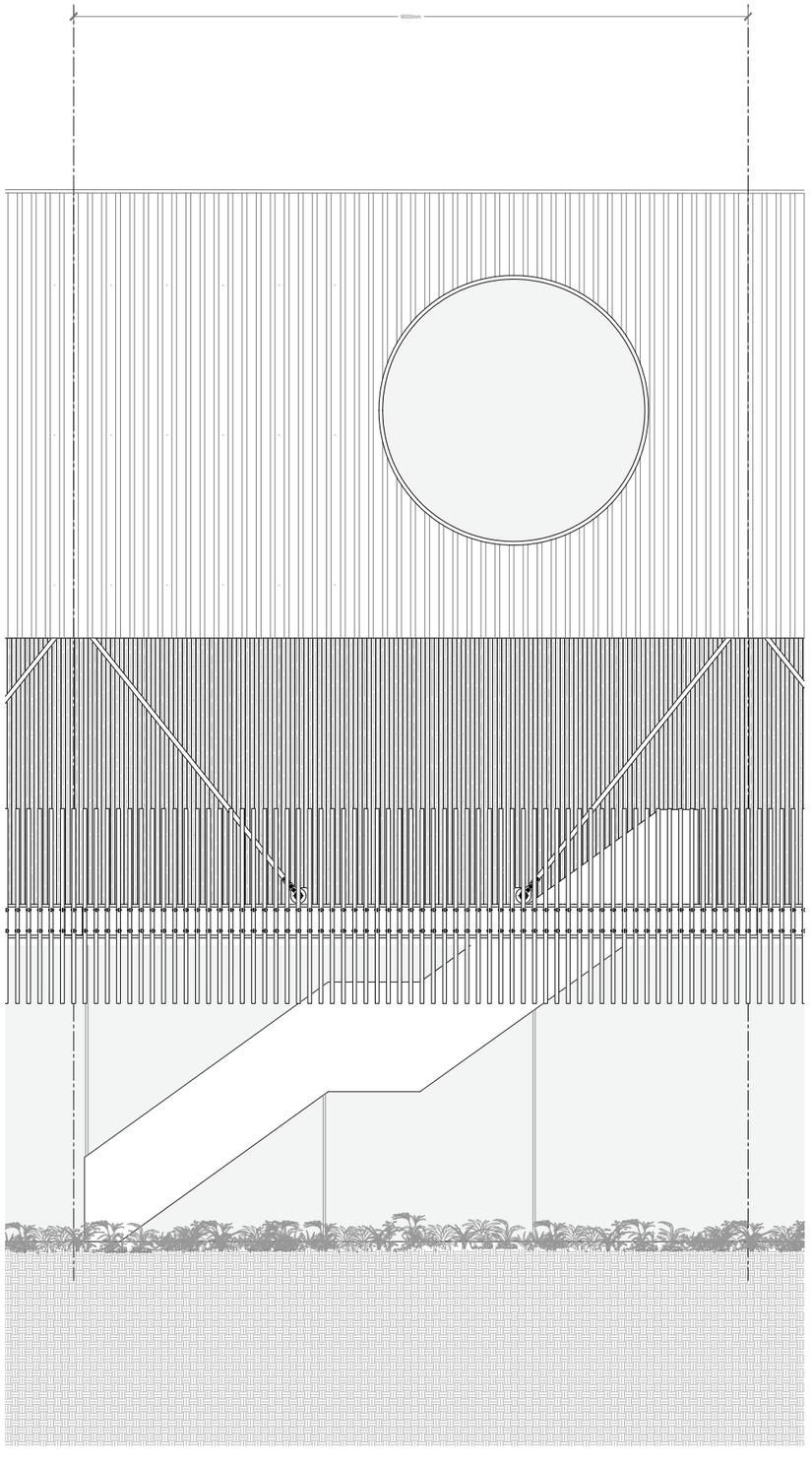


main steel structure
bracing









sports hall_fragment_1:50 / A2

01_external wall type A

corrugated metal sheet 50mm
counter battens 38x56mm at 600mm centres
battens 38x56mm
OSB board 18mm
breather membrane
air gap 30mm
hemp insulation 250 + 75mm
250x250mm steel column
vapor control membrane
gypsum board 2x16mm
internal finish

02_hybrid steel & timber floor

timber floor finish 18mm
sound insulation seal 20mm
vapor control membrane
plywood 18mm
timber joists 38x150mm at
600mm centres
hemp insulation 300 + 75 mm
steel I-beam 250mm / glulam
beam 300mm
air gap 30mm
breather membrane
OSB board 18mm
suspended (270mm) wooden
ceiling 25mm
hidden lighting fixtures

03_external wall type B

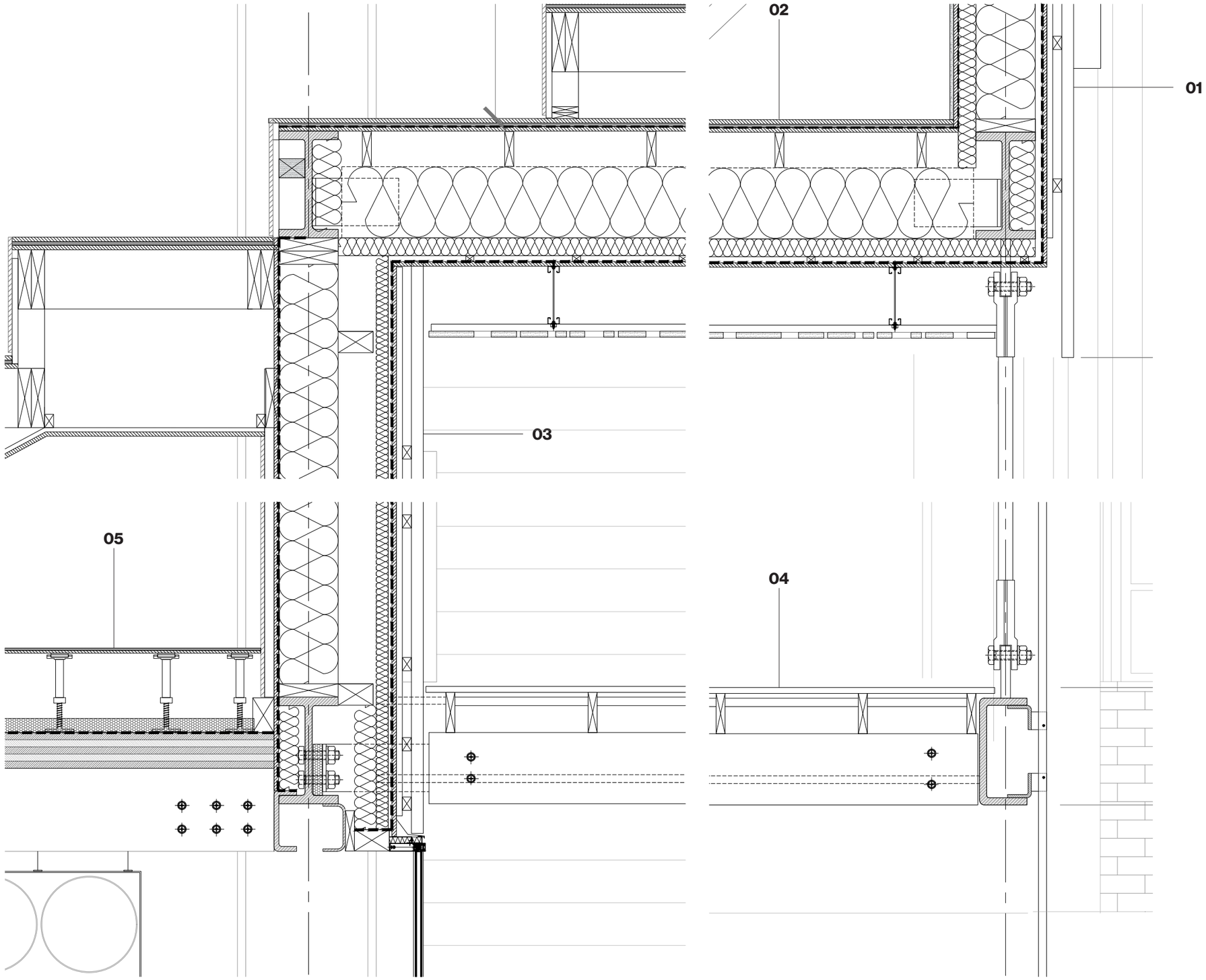
timber battens finish 50x60mm
counter battens 38x56mm at 600mm centres
battens 38x56mm
OSB board 18mm
breather membrane
air gap 30mm
hemp insulation 50mm
air gap 160mm to accommodate column
hemp insulation 250mm
500x500mm steel column
vapor control membrane
gypsum board 2x16mm
battens 38x56mm
plywood internal finish

04_steel & timber deck

composite timber deck 25mm
timber joists 38x170mm at 600mm
centres
glulam beam 300mm
/ steel I -beam 250mm

05_sports floor

ASB glass sports floor 20mm
metal substructure 15mm
raising support structure 180-330mm
sound insulation 60mm
CLT floor 150mm
Glulam beam 650 / 350mm
suspended services and lighting
fixtures 800mm



sports hall_detail_1:10 on A2

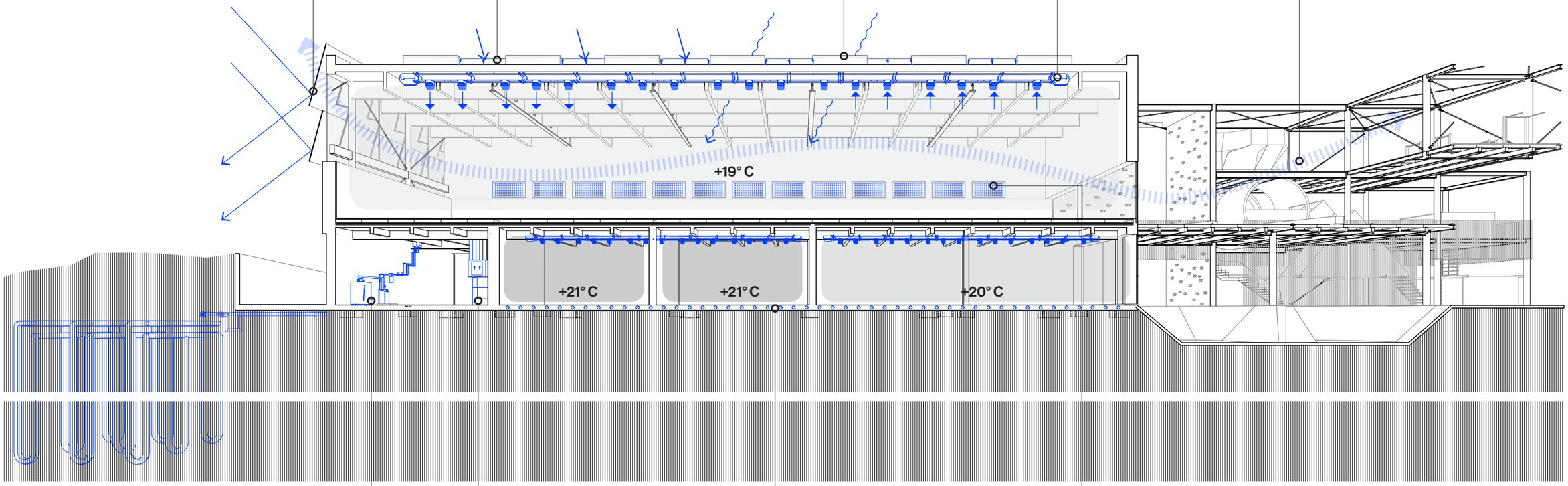
solar shade
west oriented solar shade minimises overheating

PV panels
sustainable source of energy

skylights
natural source of light across the day

air ducts
fresh air distribution / collection of stale air

natural ventilation
during sommer days, cross ventilation through partly openable glazing



GSHP
sustainable source of energy / 50-200m accessible boreholes

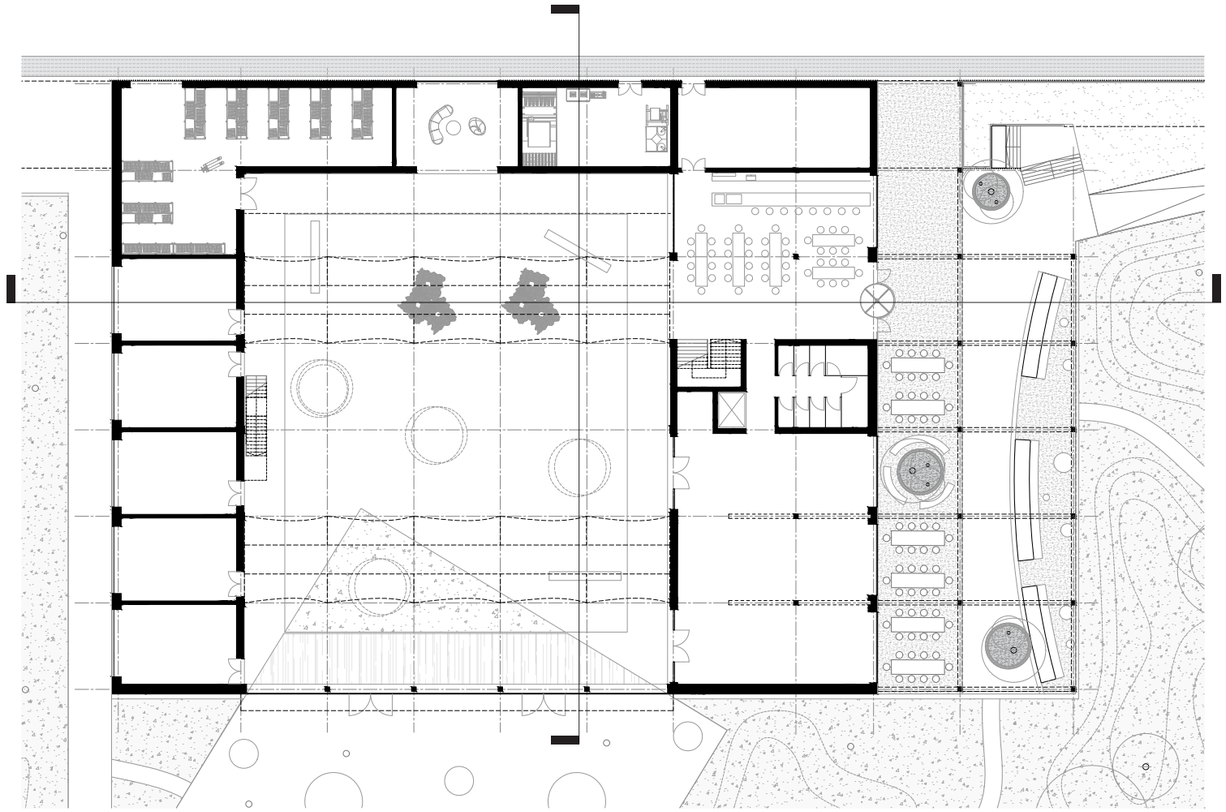
MVHR
+ pollutant free filtered air from the outside
+recuperation of already heated air - minimises heat loss

floor heating
floor heating within the ground level slab, acting as a thermal mass

floor heating within the ground level slab, acting as a thermal mass

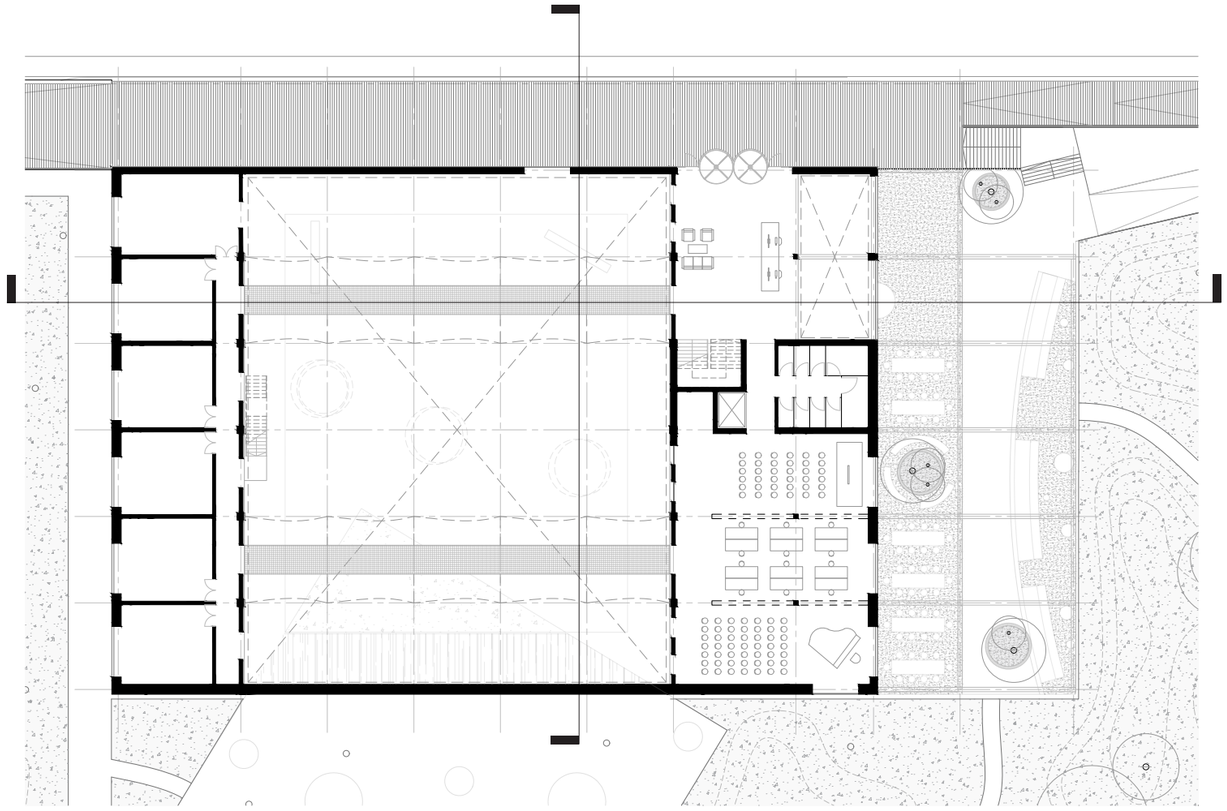
fabrikken

N

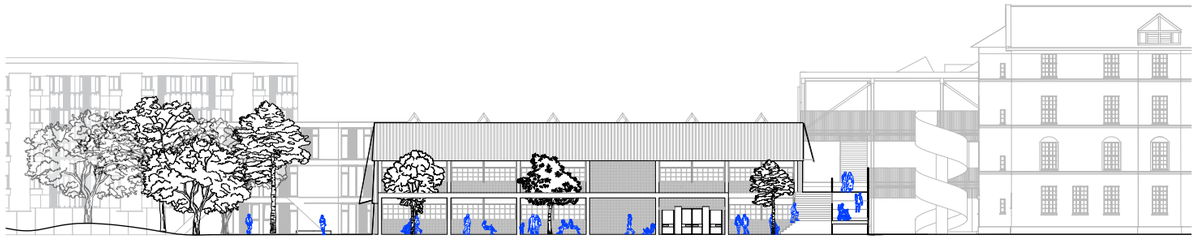


0 1 2 3 5 10 20m

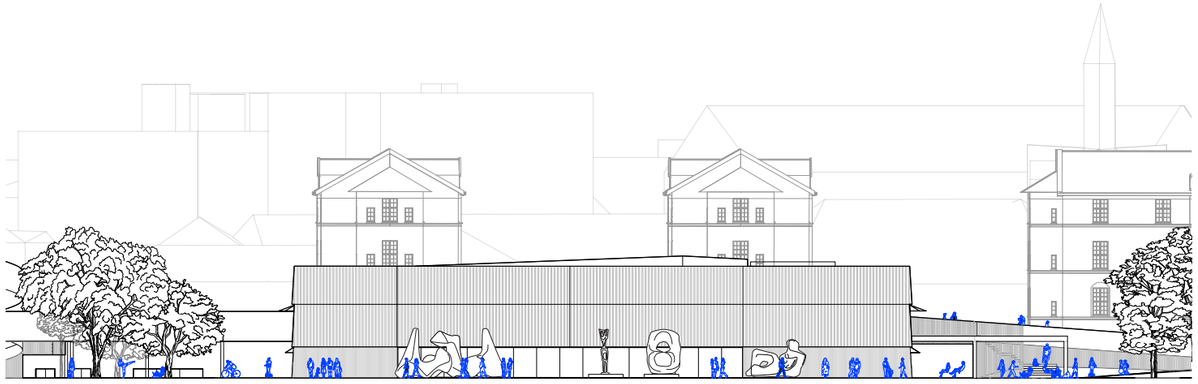
fabrikken_00



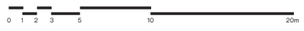
fabrikken_01

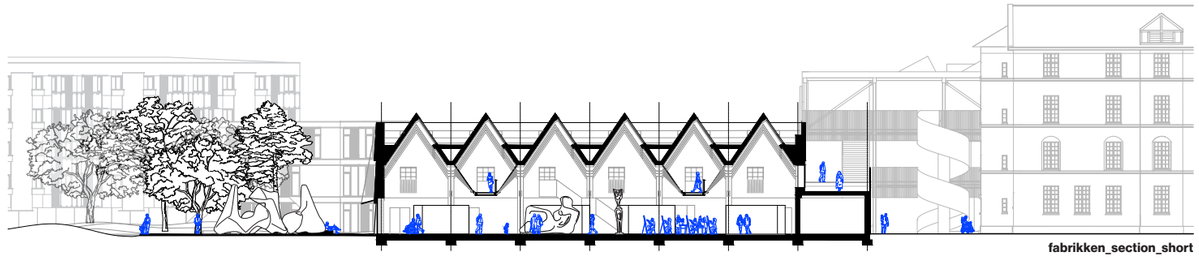


fabrikken_elevation_east

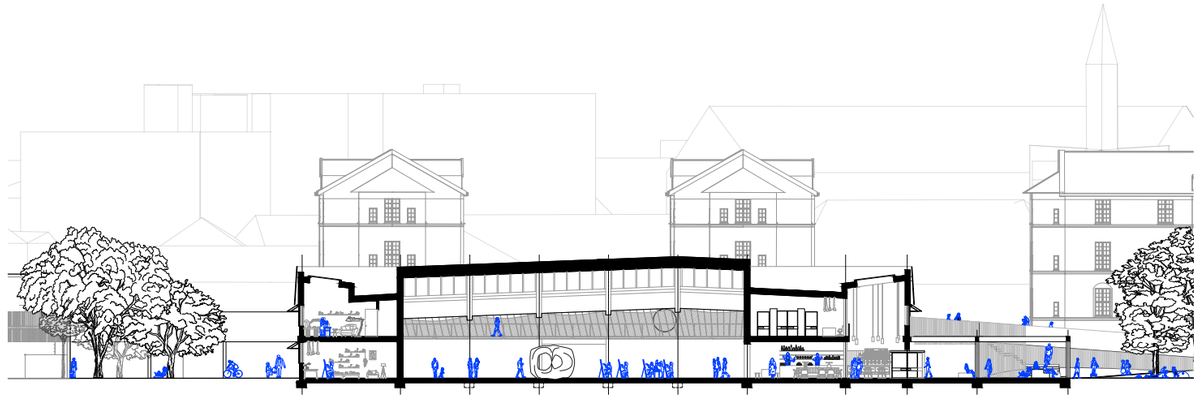


fabrikken_elevation_south

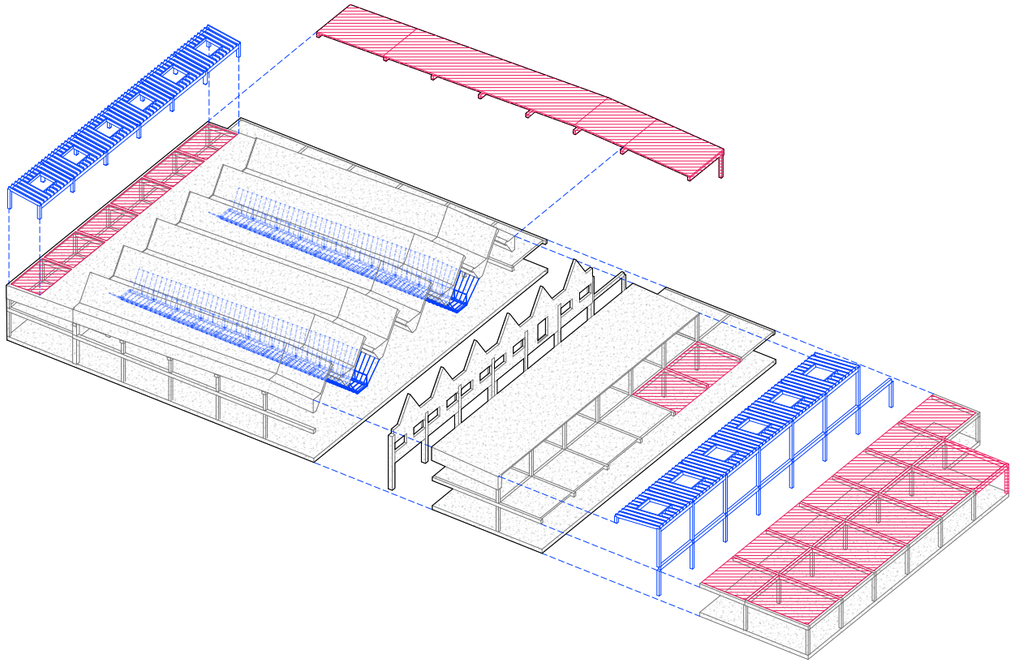




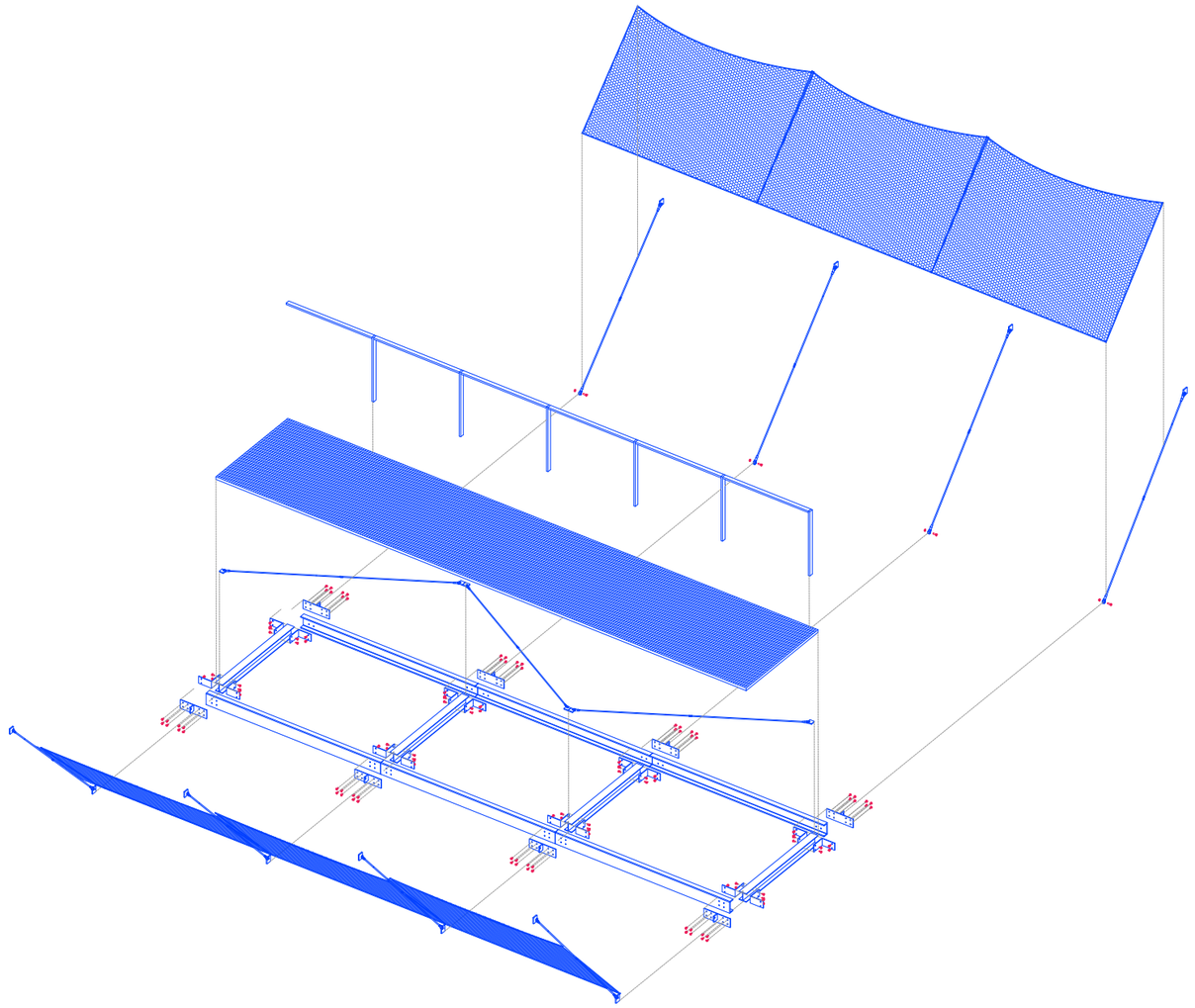
fabrikken_section_short



fabrikken_section_long



existing
demolished
new



01_external wall type A

internal finish
gypsum board 2x16mm
existing cavity brick wall 108/50/108mm
levelling battens
rigid wood fibre board 150mm
breather membrane
OSB board 16mm
battens 25x40mm
counter battens 38x52mm
sheathing layer
mesh reinforced mortar layers
ceramic facade tiles 20mm

02_external wall type B

existing concrete beam 300mm
rigid wood fibre insulation 150mm
breather membrane
OSB board 16mm
XPS insulation 120mm
cement panel 45mm

03_addition

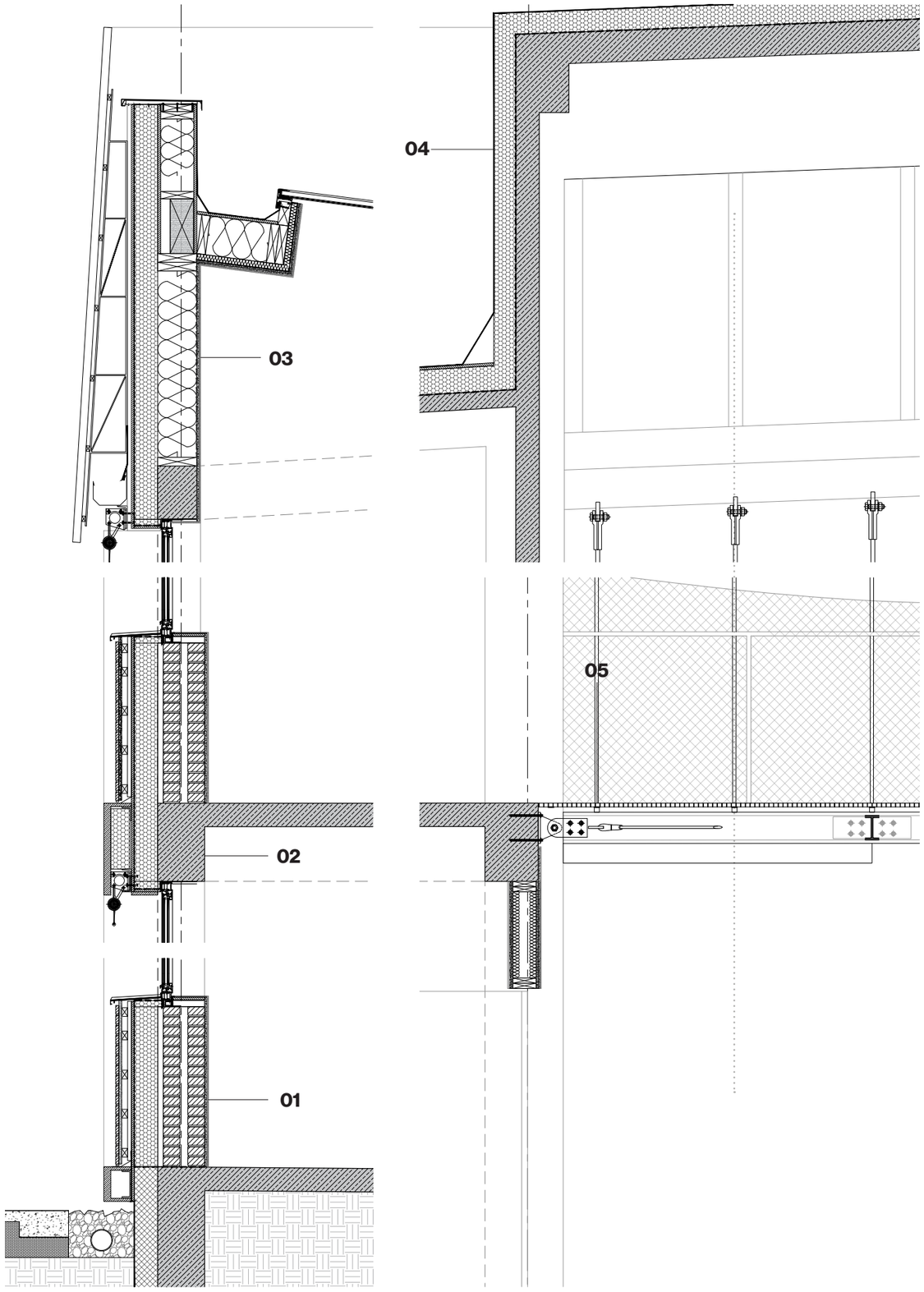
internal wall finish
gypsum board 2x16mm
vapor control membrane
hemp insulation 250mm
wood fibre insulation 150mm
breather membrane
OSB board 16mm
external render 25mm
metal substructure profile 100-320mm
counter battens 38x56mm
corrugated metal sheet 50mm

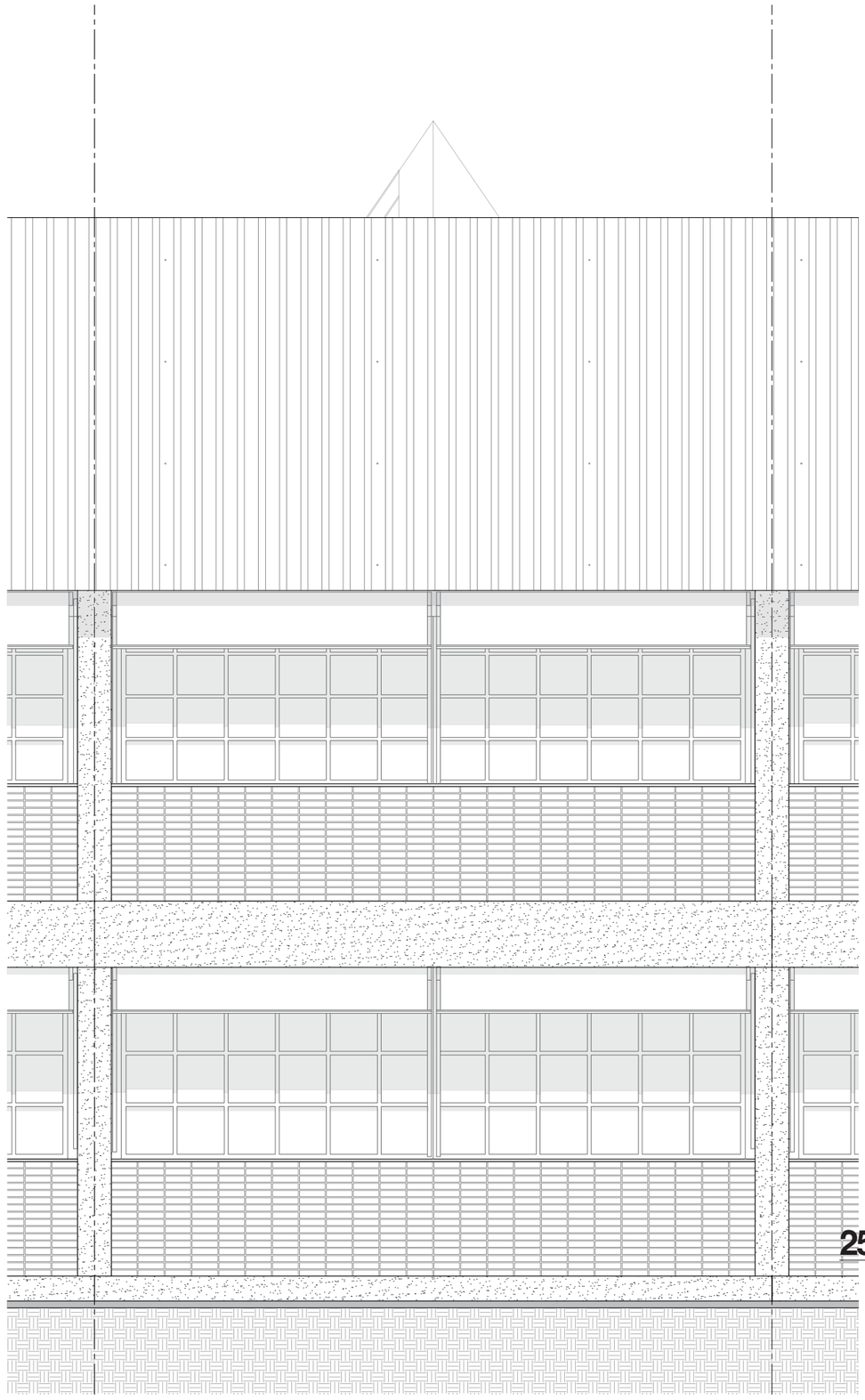
04_roof

EPDM membrane
XPS insulation 140mm
vapor control membrane
existing concrete 150mm

05_bridge

steel grid flooring 30mm
sound rubber seal 5mm
metal substructure 28x28mm at 900mm centres
C-beams 200mm / I-beams 150mm
braced





fabrikken_fragment_1:20-30 on A2

solar shade
west oriented solar shade minimises overheating

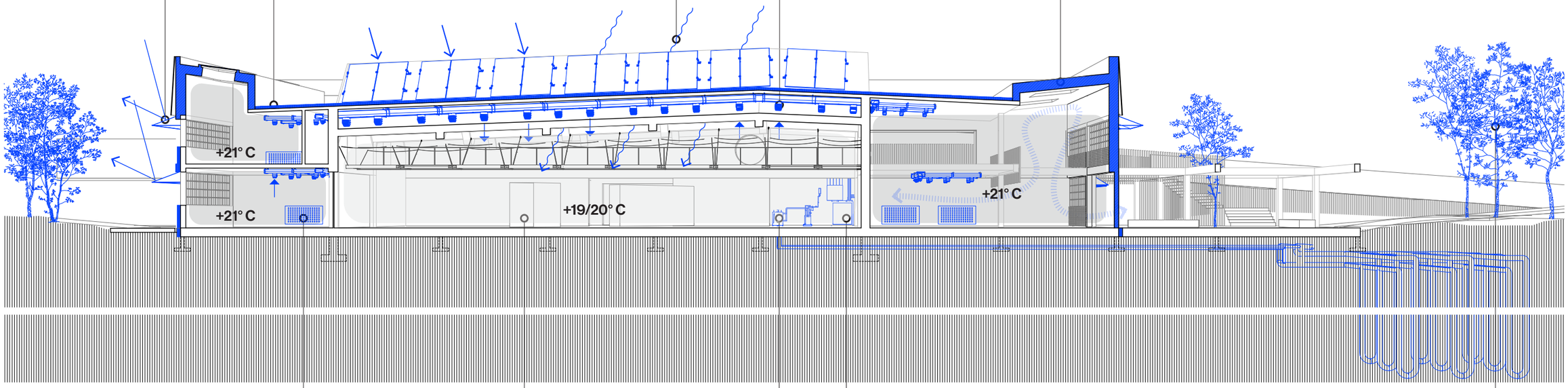
insulation
new external insulation to minimise heat loss

skylights
north oriented skylights for even access to daylight in the exhibition space

air ducts
fresh air distribution / collection of stale air

+partlyvvv integrated within the truss structure

extensions
providing extra space and skylights for even daylight access



radiators
wall mounted radiators for heating during winter

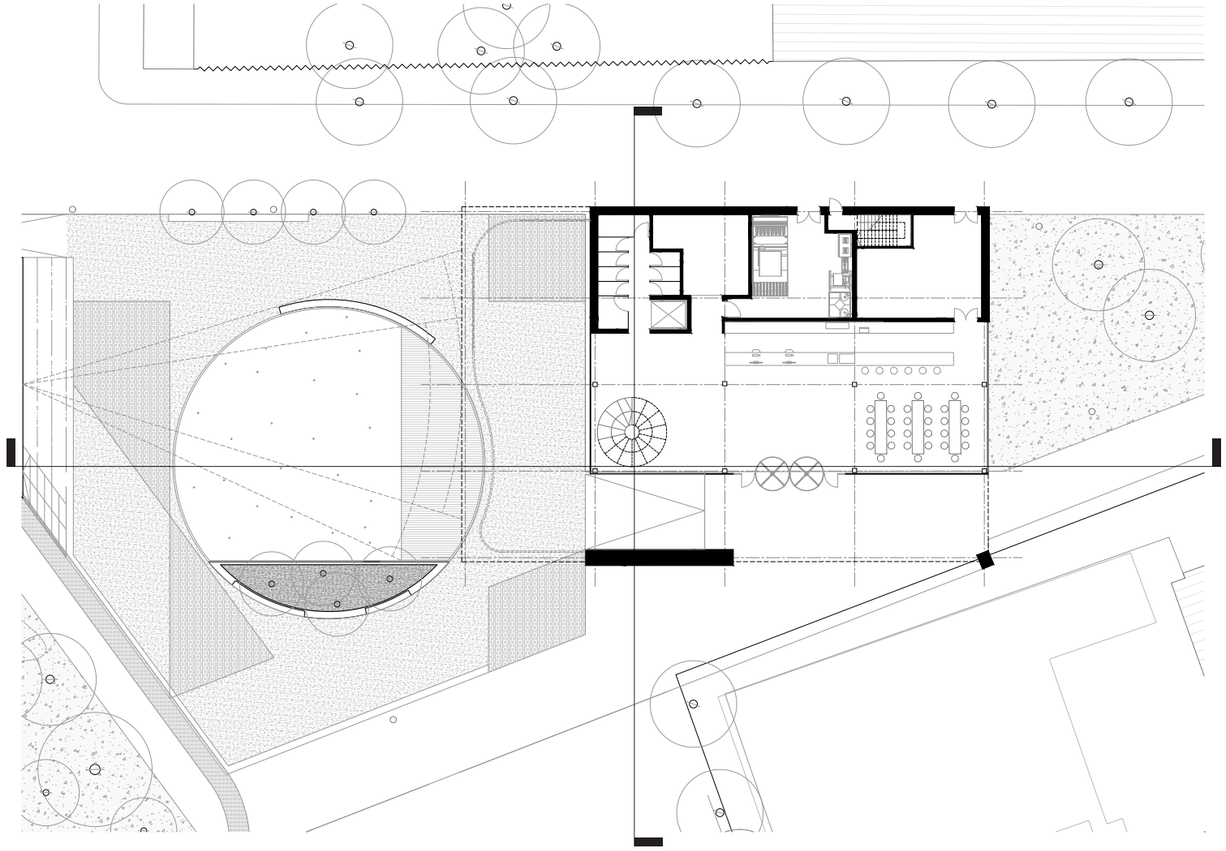
PV panels
sustainable source of energy

GSHP
sustainable source of energy / 50-200m accessible boreholes

MVHR
+ pollutant free filtered air from the outside
+recuperation of already heated air - minimises heat loss

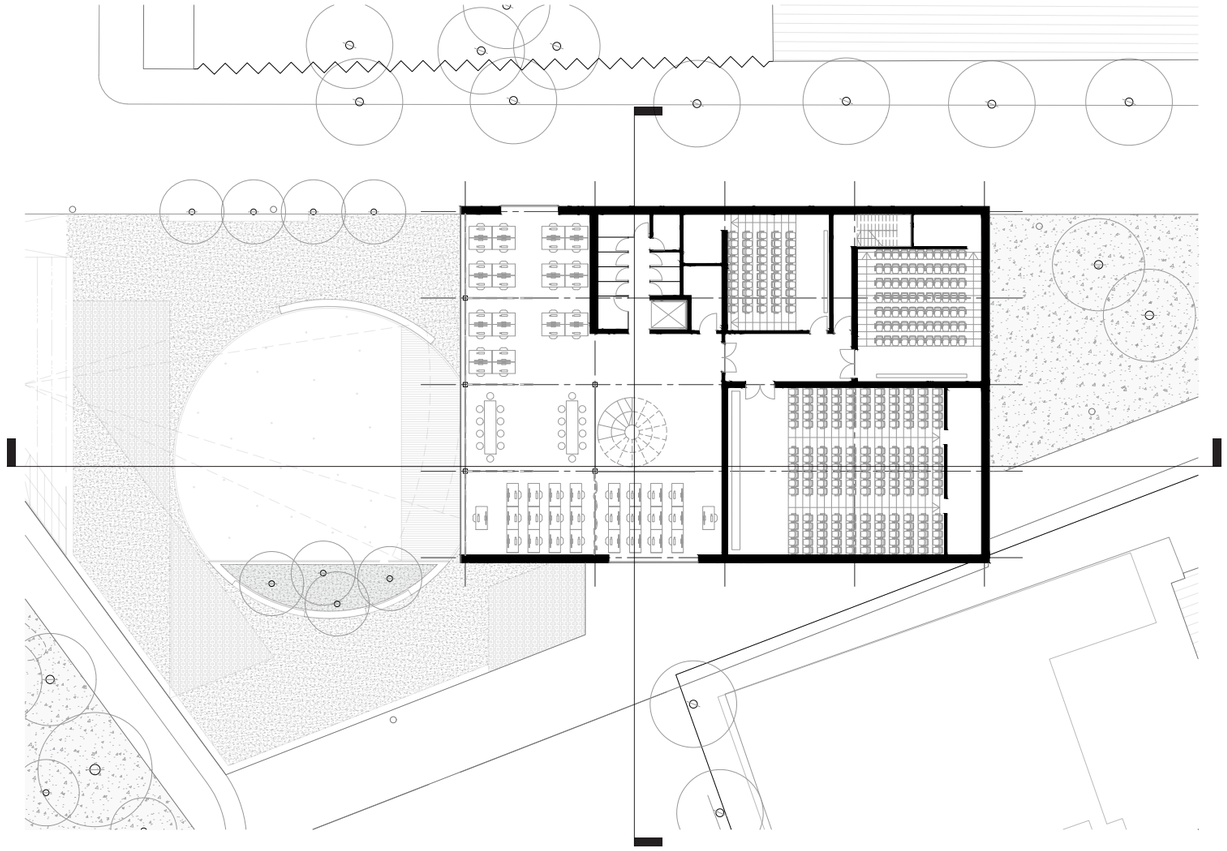
biodiversity
wild gardens with a variety of plants to improve the overall biodiversity and air quality of the area

media unit

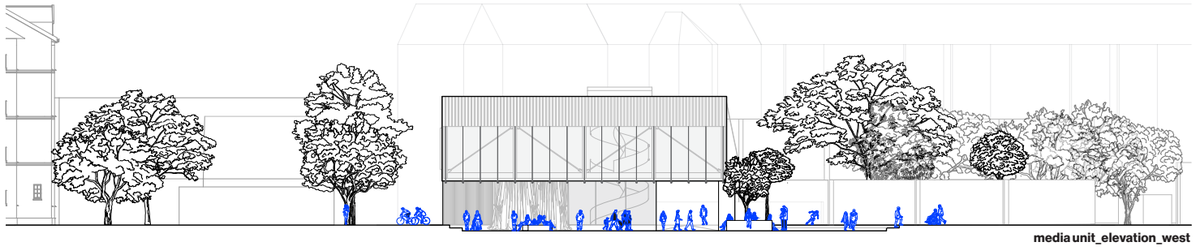


0 1 2 3 5 10 20m

media unit_00



media unit_01

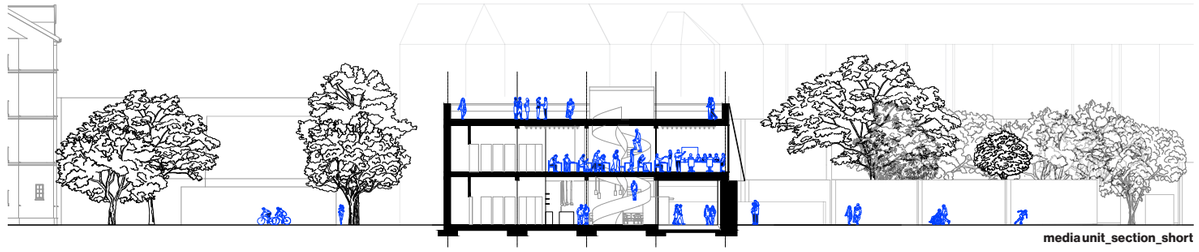


media unit_elevation_west



0 1 2 3 5 10 20m

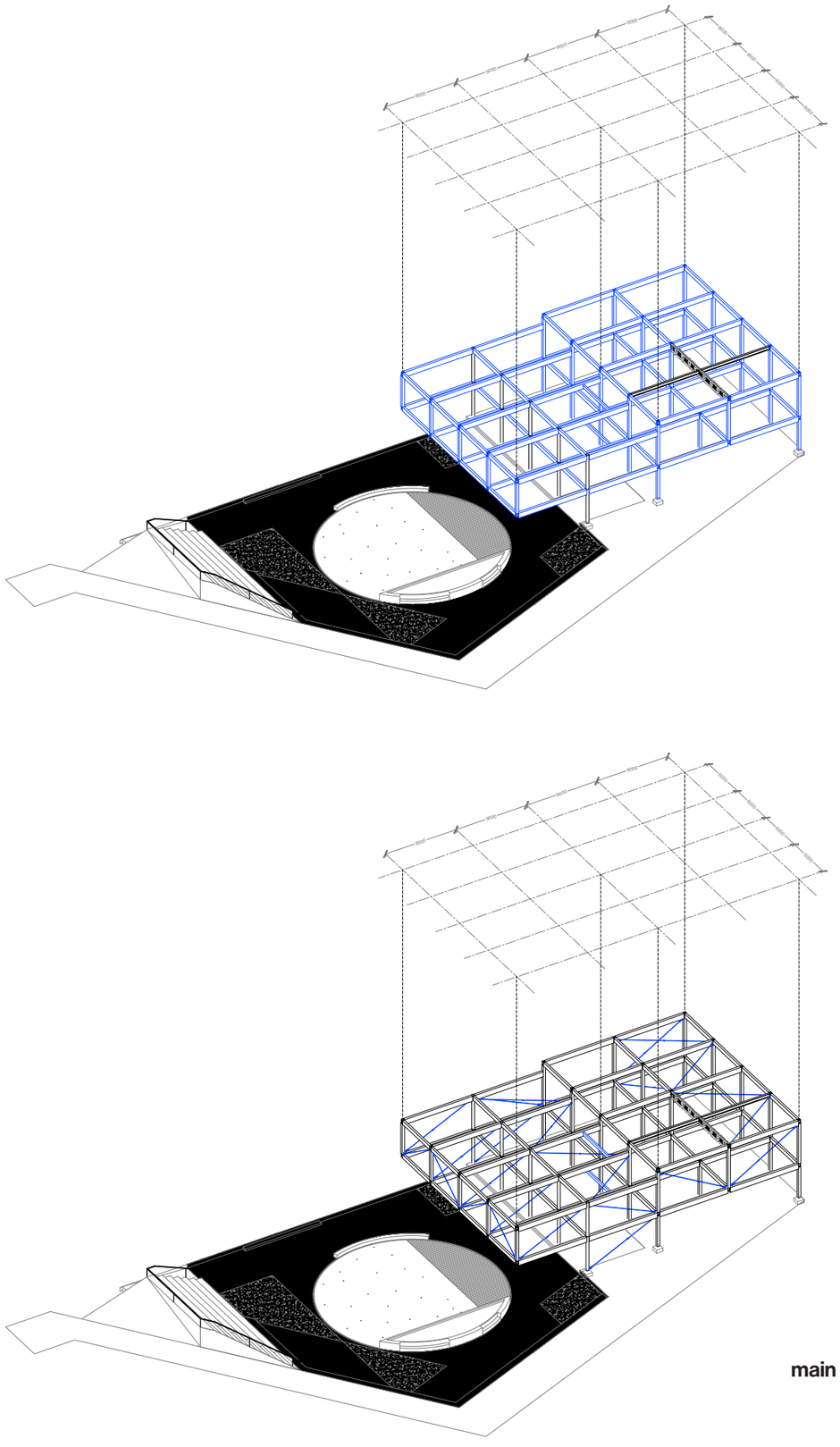
media unit_elevation_south



media unit_section_short

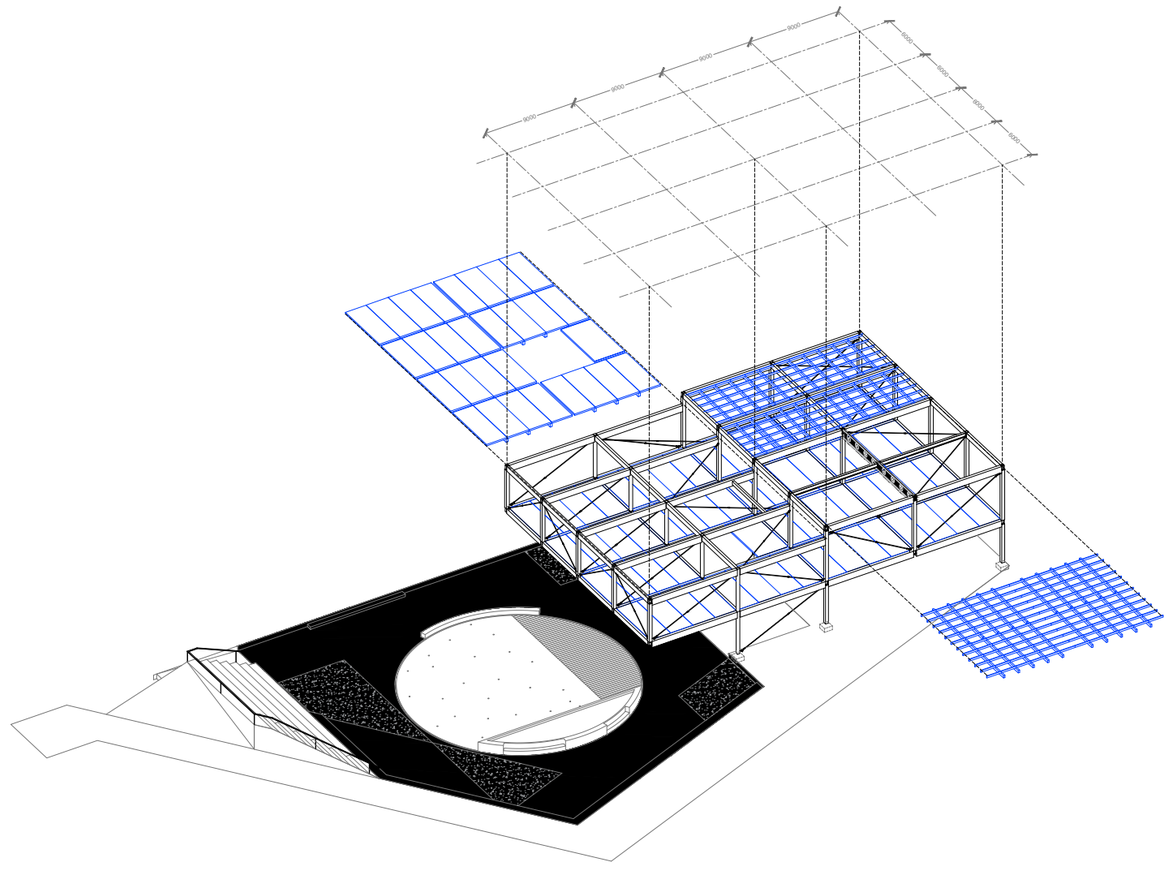


media unit_section_long



steel
timber

main structure
bracing



main structure
timber/CLT floor plates

01_floor

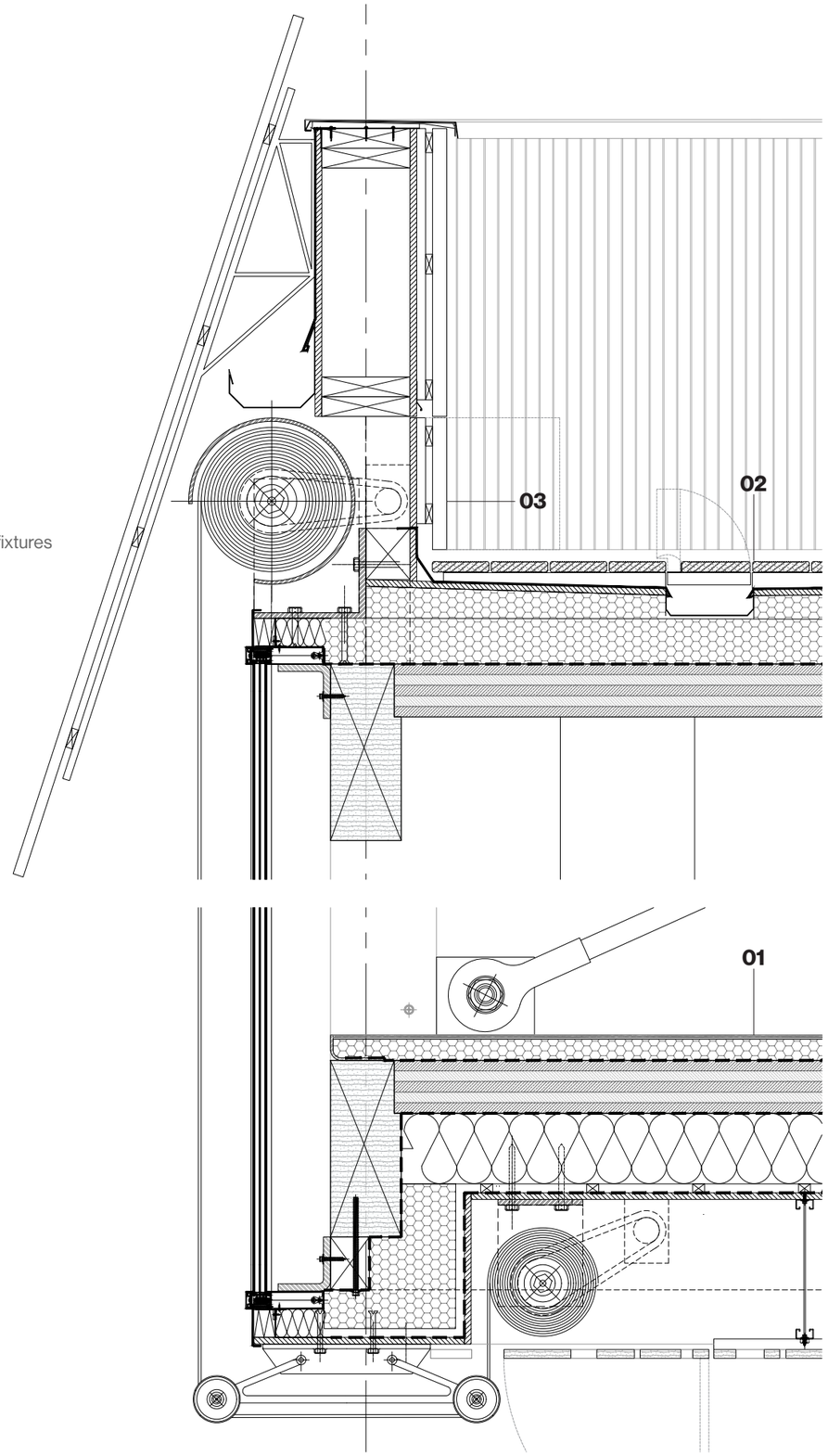
floor parquet finish 18mm
adhesive layer
sound insulation 60mm
vapor control membrane
CLT 150mm
glulam 500 / 650mm
vapor control membrane
hemp insulation 200mm
air gap 30mm
breather membrane
OSB board 18mm
suspended ceiling 420mm
timber ceiling finish 25mm with lighting fixtures

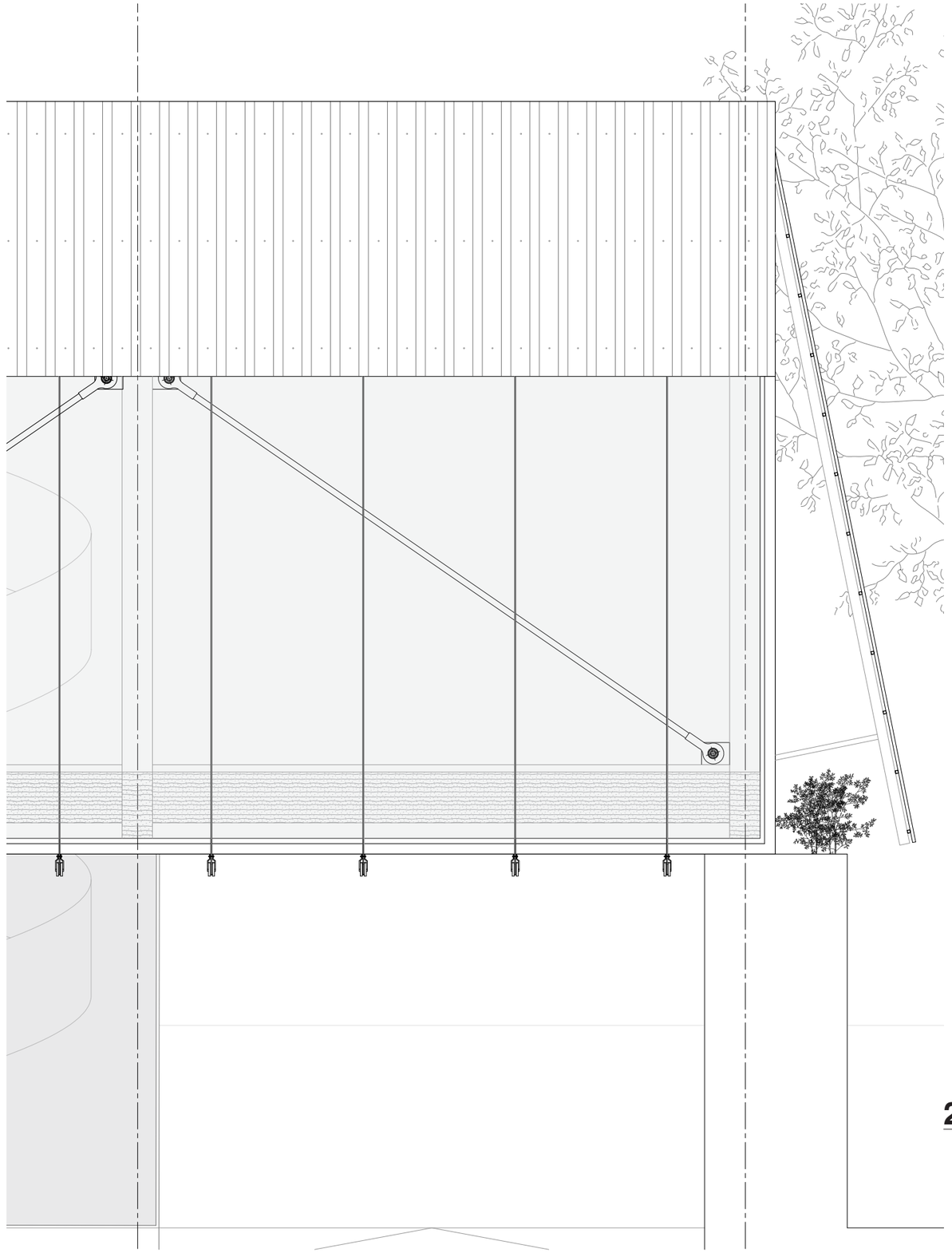
02_roof

composite timber deck 25mm
levelling battens 25-45mm
roofing membrane
OSB board 18mm
sloped rigid wood fibre insulation
60-90mm
rigid wood fibre insulation 130mm
vapor control membrane
CLT 150mm
glulam 500 / 650mm
suspended services and lighting
fixtures 800mm

03_attica wall

Timber battens cladding 40x60mm
counter battens 20x56mm
battens 25x56mm
EPDM membrane
OSB board 18mm
wooden construction
engine
rolling drum Ø 450mm
metal profile support structure
battens 20x56mm
corrugated metal sheet 50mm





media unit_fragment_1:10-30 on A2

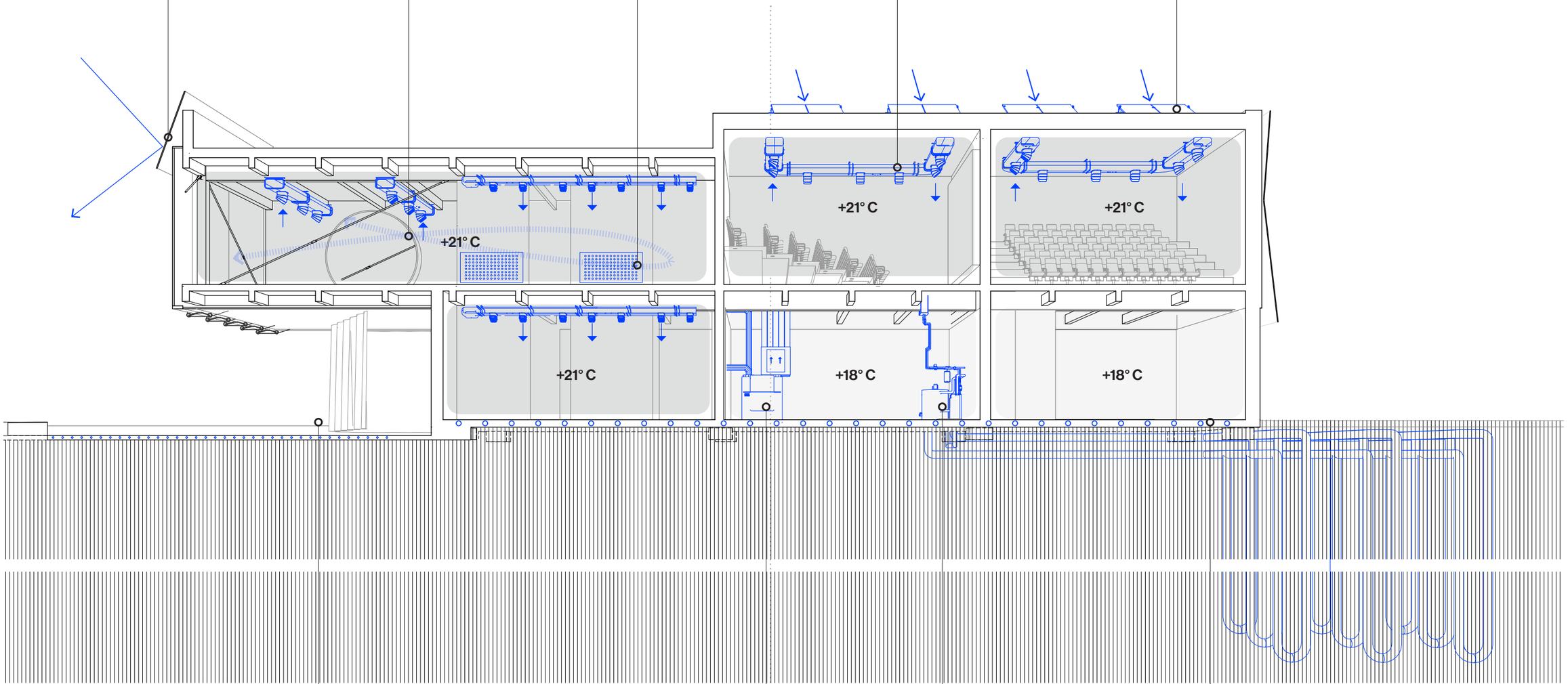
solar shade
west oriented solar shade minimises overheating

natural ventilation
during sommer days, cross ventilation through partly openable glazing

radiators
wall integrated radiators for heating during winter

air ducts
fresh air distribution / collection of stale air

PV panels
sustainable source of energy



external floor cooling
external slab cooled during winter to prevent the ice from melting on the ice rink

MVHR
+ pollutant free filtered air from the outside
+recuperation of already heated air - minimises heat loss

GSHP
sustainable source of energy / 50-200m accessible boreholes

floor heating
floor heating within the ground level slab, acting as a thermal mass



end

public building graduation studio

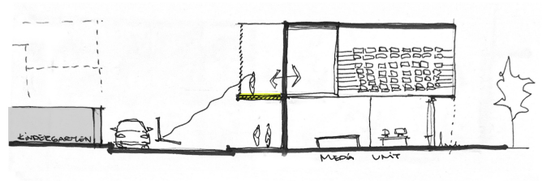
final reflection

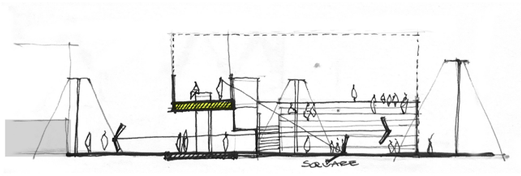
the relation between graduation project topic, your master track and master programme

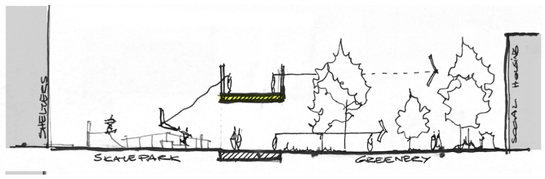
TU Delft during its two year long master programme offers a wide variety of studios that tackle different social, environmental, ethical or economic issues and grants the opportunity of delving into the field of ones interest to everyone. Similarly, during my experience at the faculty and throughout my choice of studios I managed to deepen my understanding of certain topics. This master programme has clarified that I am mostly interest in public architecture and the ways it can contribute to the individual's quality of life as well as the overall experience of the city and its neighbourhoods.

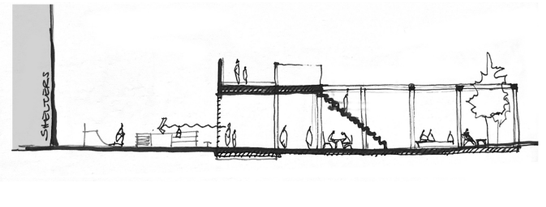
Having been interested in the public sphere of architecture I naturally chose the "Public Condenser" from the PBS as the graduation topic as it seemed to perfectly focus on my current set of interests. The studio once again offered me the possibility to question and rethink one of the most public typologies – a condenser.

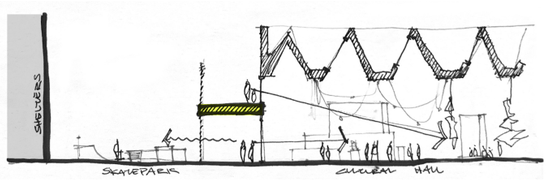
The project is set to look at an innovative way in which a public condenser, could operate in an underprivileged neighbourhood. It presents an alternative and prototype look at it, by creating an inverse of a condenser – rather than combining the multiplicity of functions under one roof, the project treats the whole site and the wider neighbourhood holistically, making the open public space be the initial hybridizing element, with the variety of program organized within it. Additionally, it researches the dichotomy of architecture both as a 'final destination' and as a 'passing-through' infrastructure, to create an array of spatial intensities.

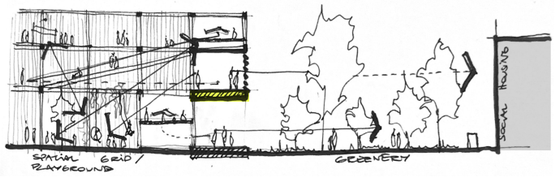


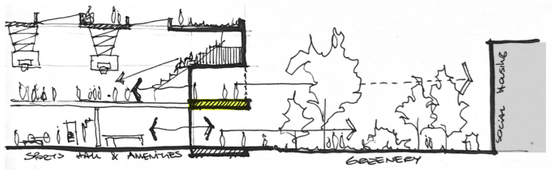






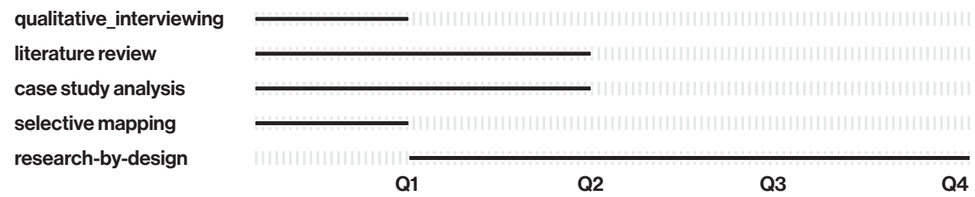


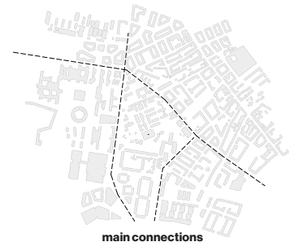


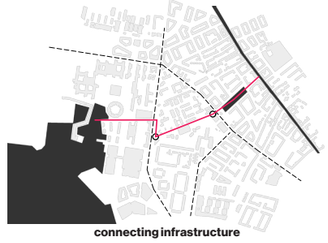


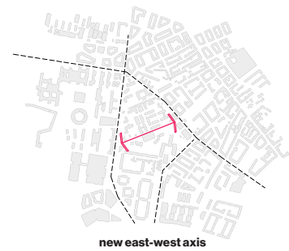
research influence on design and vice-versa

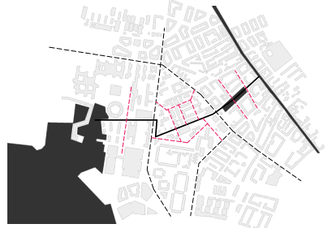
The research-by-design nature of the studio as a more hands on experience and direct application of the framework is a very rewarding process. The initial steps consisted of both the qualitative and quantitative methods, supplemented by a literature review to fully understand the potential of the site and the typology. In the development process, it has mostly been the conversations with people either living there or already working to improve the status quo, or the personal impressions that shifted my attention to the main issue of the district – its stagnation. Having found the true problem of the site, formulating the initial response was rather straightforward, yet only after that could I understand the specificity of the design answer. It has been a back-and-forth process of assessing the problem, formulating the answer and seeing that it reveals a new question or a problem. To second that with an example - the overarching theme of the project is the flow and connectivity, and as a result the project plays with the idea of connection via axiality. However, by doing so, it poses a threat of undermining the secondary, perpendicular connections to the said axis and therefore the connection between the opposite sides of the axis is at risk. To tackle that, the project started looking at what is happening at those intersections and how they can be used in the project's favour.

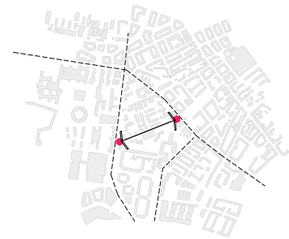


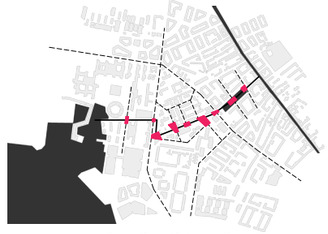

main connections


connecting infrastructure

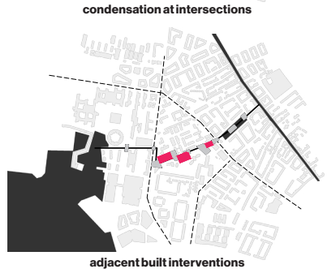

new east-west axis

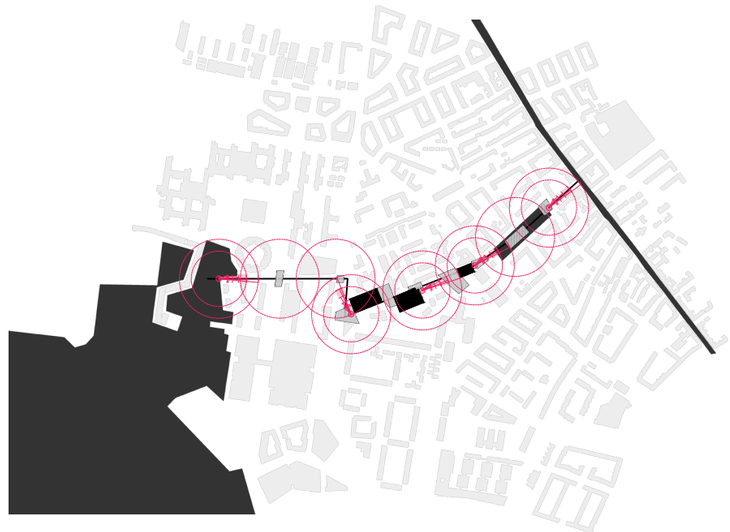

secondary street connection


presence at the street


condensation at intersections


green forest/square + active street proximity

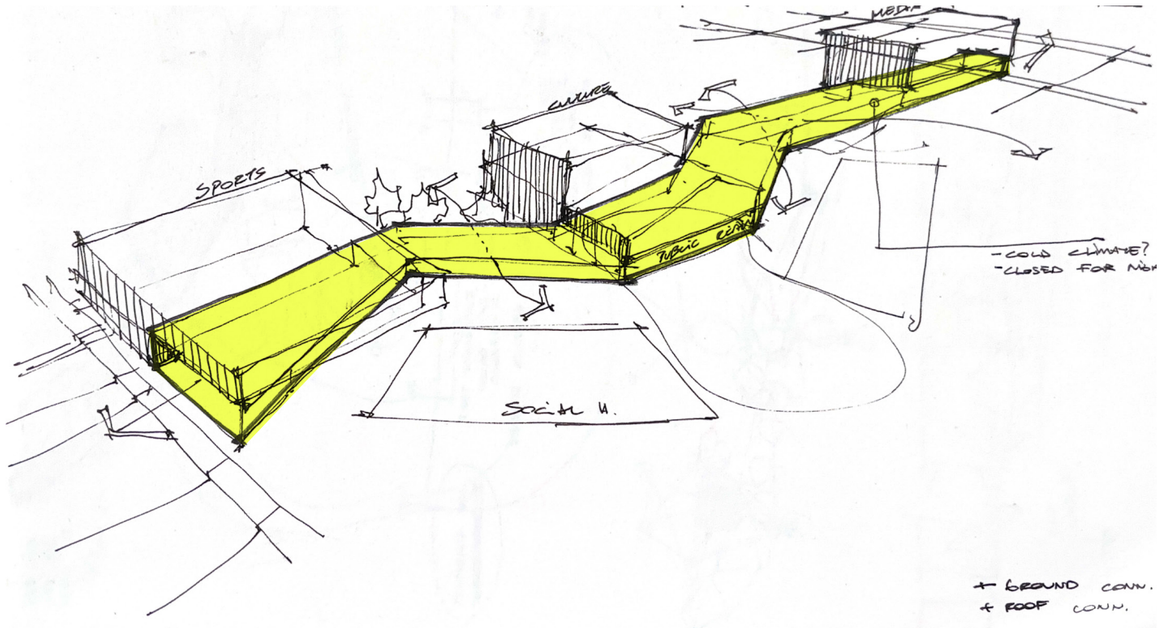

adjacent built interventions



the value of the way of workin

Referring back to the previous chapter, because the studio's approach is a Research-by-Design, it has really fit into my preferred way of working, where I feel more comfortable during the hands-on process of testing and amending, rather than carrying out an overly-extensive theoretical research. By a relatively quick start on materializing the ideas, the project managed to keep me intrigued throughout the year.

By combining both methods (like making use of both digital and hand drawing) throughout the phases, it allowed me to produce a good set of varied outputs, that convey different information – ranging from atmospheric and spatial aspirations to a lot more tangible technical details. This has also been allowed for by the typical designing process and the graduation studio organization that has followed those principles. Weekly meeting with design, theory and building technology tutors helped with further development or validation of ideas and technical solutions.





academic and societal value, scope and implication of your graduation project, including ethical aspects

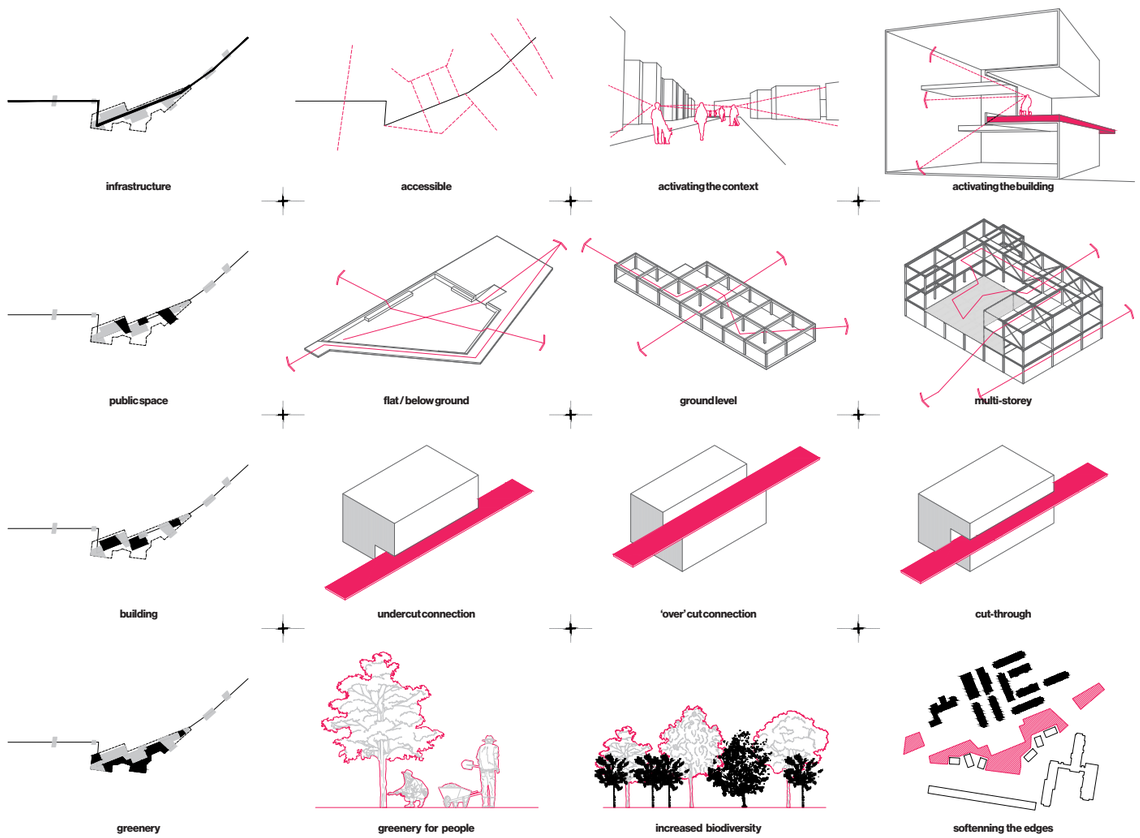
As a body of academic work this study aims to contribute to strategies for creating environments where diverse social groups feel welcome and engaged. It is especially valuable as cities worldwide undergo rapid urban renewal and seek methods for enhancing community cohesion in areas impacted by socioeconomic disparities. Furthermore, it examines the campus and axial typology in the context of public realm and the ways in which spatial sequencing can impact behaviour and experience, simultaneously informing design decisions that contribute to the resilience and urban health. It addresses not only the physical layout and aesthetics but also the experiential quality of spaces, helping to inform a future of public architecture that prioritizes inclusivity, well-being, and connectivity across urban landscapes.

Additionally, the academic nature of the project allows for a better in depth understanding of the issue and the questioning of the more typical design practice, however, as a result, the actual product can quite easily extend over the realistic budget and legislative constraints, in order to follow the framework or the statement that it is presenting.

the value of the transferability of the project

The project is set to look at an innovative way in which a public condenser, could operate in an underprivileged neighbourhood. The value of this project lies primarily in its approach to designing public space as a fluid social interface that encourages movement, interaction, and inclusion. While the spatial and social conditions of Sundholm are specific, the approach of using the flow, urban porosity and layered programming as tools for social integration is broadly applicable to other urban contexts.

The four key properties defining the project - the infrastructure, public space, building and greenery - can be adapted to other underutilized areas and neighbourhoods. The emphasis on low-threshold access, adaptable program spaces, and climate-sensitive design increases this transferability, particularly in European cities undergoing regeneration. Furthermore, the project's research-by-design approach, combining site-specific yet conceptual strategies, offers a prototype reference model for future civic projects. While architectural form will always require contextual adaptation, the underlying framework of spatial openness, programmatic diversity, and social ambition makes this project a valuable reference for similar challenges elsewhere.



plan_00_sports hall

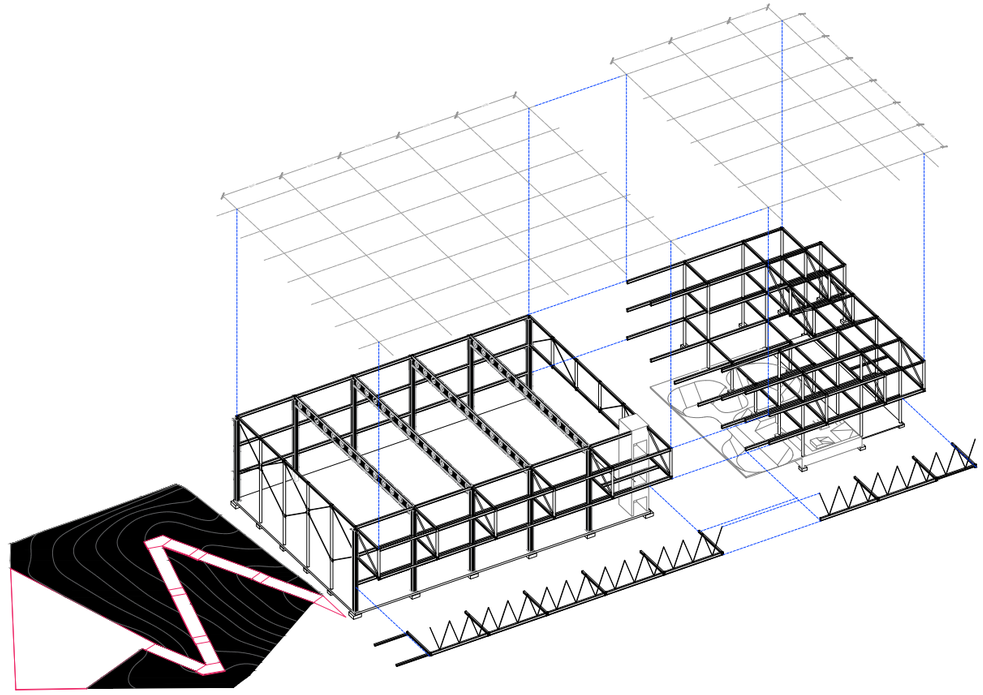
The three-step hybridization of the project

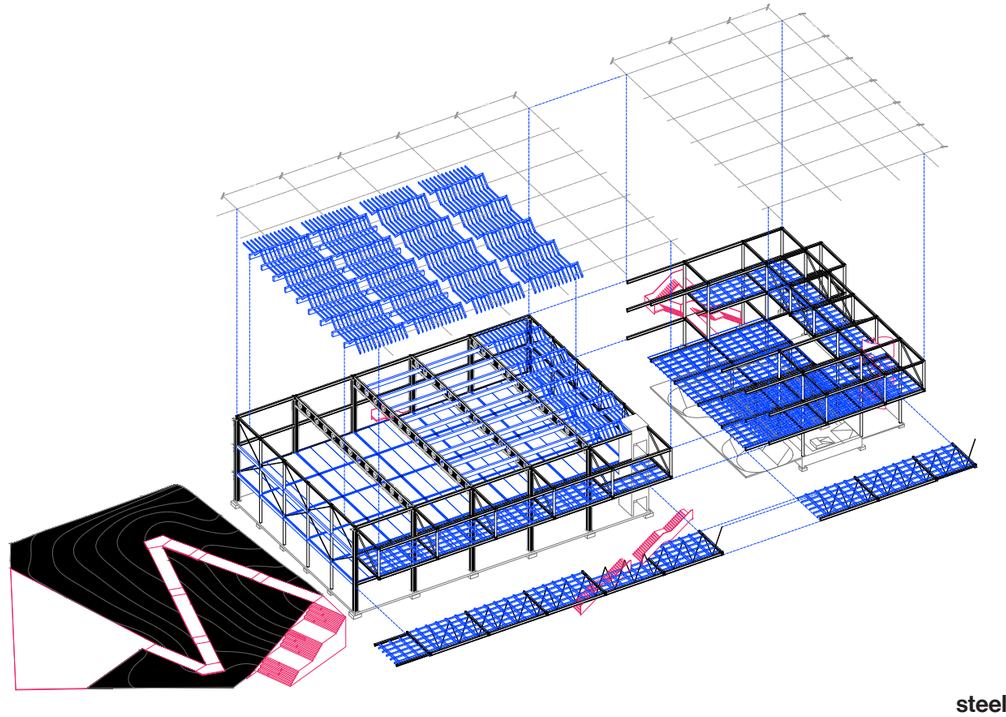
Over the course of the year the project has evolved into the direction I could not have predicted in the very beginning. By implementing the amendments due to the research-by-design, the project has ended up being very unique due to its main characteristic being inverted. By working first in the bigger, almost urban scale, the rough scope and the reach of the project has been drafted. It has resulted in an extensive and holistic proposal that stretches outwards of the predefined site itself, in order to activate the neighbourhood on different levels. By working within a defined framework and a set of properties, an equal if not bigger attention has been paid to the ”external condensers” in different forms of an accessible public space. Therefore the hybridization of activities is not only limited to the inside of the building, but rather is displayed as a gradient of activation, ranging from the infrastructure – a path connecting places, external public spaces - as “slowing-down” activators, encouraging for uncoerced interactions, up to the three built interventions that offer specific program interactions.

Sustainable design practices depending on the context

One of the principles of the studio, now even more adequate than ever – sustainability, has been present at each design stage of the project. A set of lectures and talks have been carried out in order to understand the limitations, implications and possibilities of using certain solutions over others. By going in depth on technical solutions and materiality, needed for the final delivery, I managed to reflect on sustainable design practices, that are not as straightforward and simple as they might have initially seemed. The climate within which the building is situated plays a crucial role.

Therefore the project uses a hybrid of technical and bio-based materials as both structural and decorative elements, depending on the weather exposure. Where possible, timber has been used, both structurally and as a finish, yet the majority of the project, including a spatial plaza is prone to constant Danish rain, hence the choice of durable metals. Though much more carbon intensive, they should come from recycled or reused sources when possible, and will keep their qualities over the years with minimal maintenance. Additionally following the following the dry-connection approach, they shall be easy to disassemble if needed. Wood, however, has been used as a carbon sequestering counterweight, for secondary or weather-protected structural elements, as well as for the majority of internal finishes. Once again, a hybridized approach proved to be optimal.





Graduation Plan

Master of Science Architecture, Urbanism & Building Sciences

Graduation Plan: All tracks

Submit your Graduation Plan to the Board of Examiners (Examencommissie-BK@tudelft.nl), Mentors and Delegate of the Board of Examiners one week before P2 at the latest.

The graduation plan consists of at least the following data/segments:

Personal information	
Name	**Mikolaj Tomasz Chmiel**
Student number	6070167

Studio		
Name / Theme	AR3AP100 2024-25 Public Building Graduation Studio "Public Condenser, Copenhagen"	
Main mentor	Henk Bultstra	Project Design
Second mentor	Florian Eckardt	Technical Building Design
Third mentor	Sien van Dam	Research - Theory & Delineation
Argumentation of choice of the studio	Public architecture in its nature is interesting to me because of a few factors – its scale and prominence within the urban fabric sometimes allows it to be perceived as an orientation point and helps with creating an identity of the area. Ideally, it contributes to the society by creating an activating space that improves the liveability and safety within a city. The „public condenser" theme of the studio, which implies the complexity and intertwining of the functions, is intriguing as it offers new design language possibilities and experimentation contrary to single-use architecture.	

Graduation project	
Title of the graduation project	Aksestrøm* - Condensed interactive public space
**in Danish akse - "axis" and strøm – "flow"*	
Goal	
Location:	Copenhagen, Denmark
The posed problem,	Amagerbro, located to the south of the centre has historically been a run-down working-class neighbourhood that is now slowly undergoing urban renewal processes enhancing safety and living standards. Sundholm, a deprived quarter within Amager, struggles with bad reputation related to issues such as substance abuse, homelessness, lower average income and societal exclusion contributing to a reputation as a 'dangerous ghetto' (Andersen, 2024). This perception often results in

	outsiders avoiding the neighbourhood, while locals develop an inward-oriented community mindset. Historically, Sundholm was an isolated social welfare institutions district, which current stagnation underscores the area's needs and complexities in achieving social integration. Physically, it's urban positioning between two major roads, isolates it from surrounding neighbourhoods and limits accessible east-west connections that could foster a greater pedestrian traffic and encourage social integration (Rasmussen, 2024: interview). A public condenser contributes to the creation of a healthy and inviting environment for the local community. As well as being an economic addition to the area by providing new job opportunities, the project should contribute environmentally by creating a climate positive and a nature inclusive space, linking the human and non-human actors together. However, the main project's aim is to enhance the social sustainability of the area by triggering interaction and integration between groups from different economic backgrounds.
research questions and	MAIN QUESTION: How can the design of the public condenser initiate interaction and inclusivity? SUB-QUESTIONS: How can the flow and porosity of public design act as a catalyst for invigoration of the urban fabric and promote community engagement? In which way the morphology and topography of the project can become a tool to shaping the movement paths?
design assignment in which these result.	Sønderbro should evolve into a cohesive green district defined by a strong identity and inclusive spaces that foster community and diversity. In the future, it will become a vibrant and lively neighborhood, attracting people with its energy and charm. The area will be interconnected by an efficient path system and enriched by inviting green corridors. This master thesis investigates how incorporating flow and porosity in public space design can enhance the urban fabric and create dynamic, interconnected environments. The goal of the project is a design that can facilitate movement between public and private areas and plays a key role in improving the social integration of

	various economic groups – "building and action interpenetrate (…) to become a theatre of new unforeseen constellations" (Holl, 2009: 22). Effective pathway, physically connecting the site should act as a core for a sequence of different intensities which are essential in encouraging interactions across different socioeconomic backgrounds. Such design should enhance the social sustainability by providing smooth flow between public, semi-public, and private areas which provides natural interactions among the users ultimately revitalizing the area as a dynamic and safe urban environment putting the needed eyes on the street.

Process

Method description

In order to holistically understand the needs, challenges and opportunities for the research project, an array of research methods will be implemented. Initially, a qualitative method of interviewing people from and around the site, to understand their subjective perception, needs and challenges will be conducted *(note: this has already been done during the September excursion to Copenhagen)*.
Subsequently, thorough literature research will be carried out to identify and explore existing frameworks on research subjects: movement, porosity, morphology and topography as guiding tools for designing flow. The latter method will be supplemented by an array of case-study analyses of already existing projects to understand which design choices have the positive (or negative) impact on the space, flow and interaction. Superkilen Park by a collaboration of Topotek 1 + BIG Architects + Superflex, the High Line by Diller Scofidio + Renfro, Luchtsingel by ZUS, Campus Hub in Paris-Saclay by Studio Muoto or the Paris Community Centre by Bruther are only a few examples that will be studied. Lastly, throughout the process, topics of movement and phenomenology of spatial experience will be tested in research-by-design with speculative diagramming, selective mapping, physical & digital modelmaking and visualising.

Literature and general practical references

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Rasmussen, Teddy, interview by Bas Jonker, Miguel Borst, Delft - Copenhagen, October 2, 2024.

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Reflection

1. What is the relation between your graduation (project) topic, the studio topic (if applicable), your master track (A,U,BT,LA,MBE), and your master programme (MSc AUBS)? The project looks at an innovative way in which a public condenser, a typology that is needed more and more in the current era of growing urban density, could operate in an underprivileged neighbourhood. It presents an alternative look at it, by creating an inverse of a condenser – making the open public space be the hybridizing element, with the multiplicity of program organized within it. Additionally, it researches the dichotomy of architecture as a 'final destination' and as a 'passing-through' infrastructure, to create an array of spatial intensities.

2. What is the relevance of your graduation work in the larger social, professional and scientific framework. This study contributes directly to strategies for creating environments where diverse social groups feel welcome and engaged. It is especially valuable as cities worldwide undergo rapid urban renewal and seek methods for enhancing community cohesion in areas impacted by socioeconomic disparities. Furthermore, it examines the ways in which spatial sequencing impact social behaviour and experience, informing design approaches that contribute to the resilience and urban health. It addresses not only the physical layout and aesthetics but also the experiential quality of spaces, helping to inform a future of public architecture that prioritizes inclusivity, well-being, and connectivity across urban landscapes