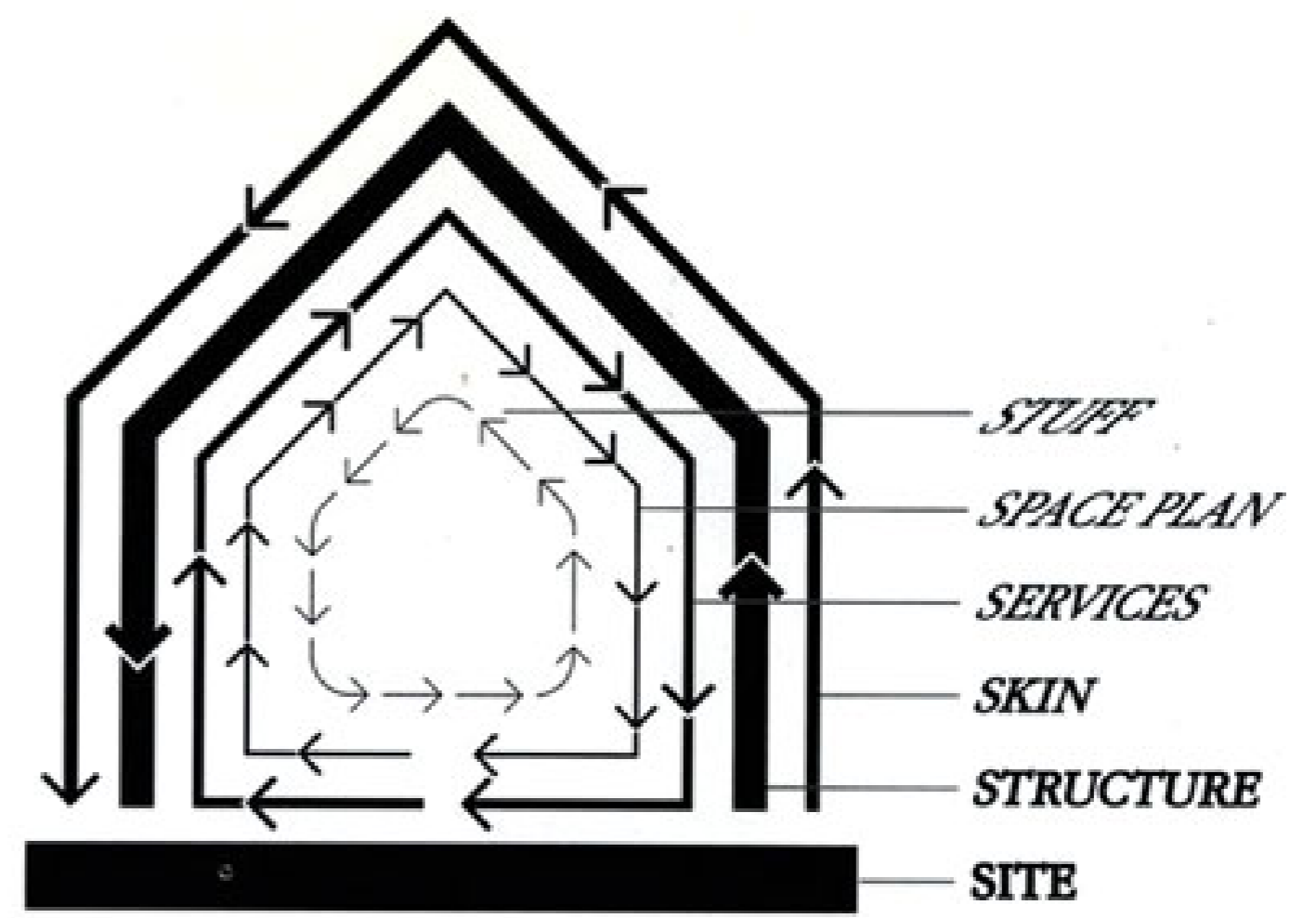# Substantiate Structuralism

Heritage and Architecture: Future of Structuralism
Give reason for preservation or transformation of

Leiden University Humanities Faculty
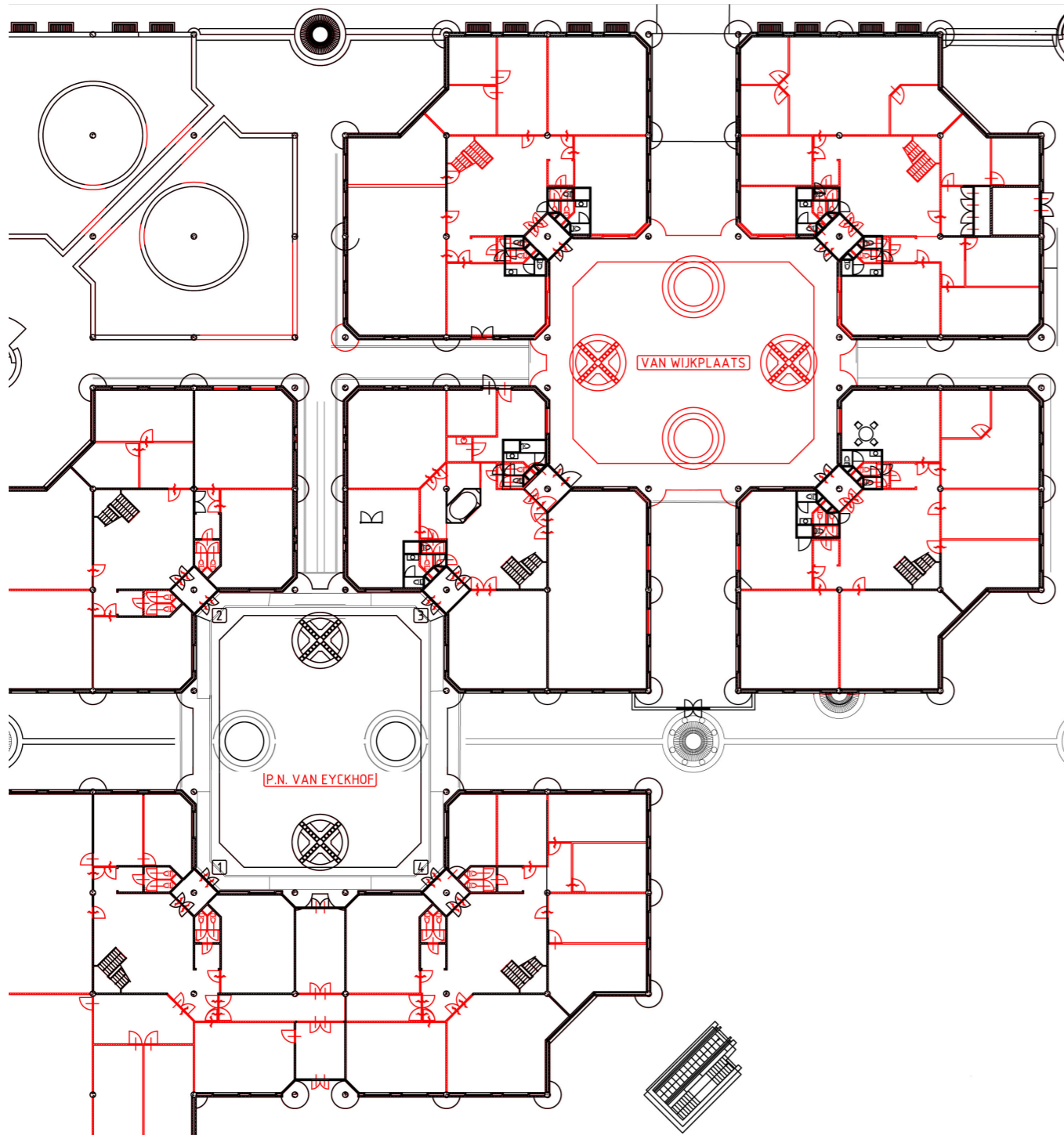
Michelle Bettman
4575938
24 January 2019



STUFF
SPACE PLAN
SERVICES
SKIN
STRUCTURE
SITE

**SHEARING LAYERS OF CHANGE. Because of the different rates of change of its components, a building is always tearing itself apart.**



Transform layer
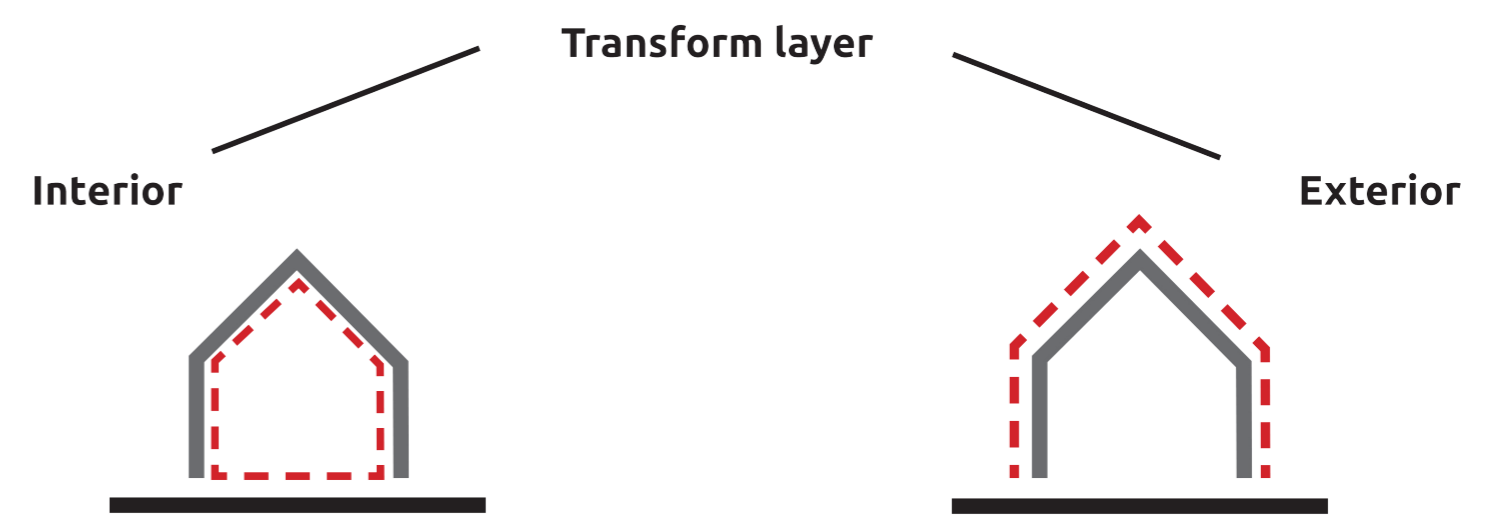
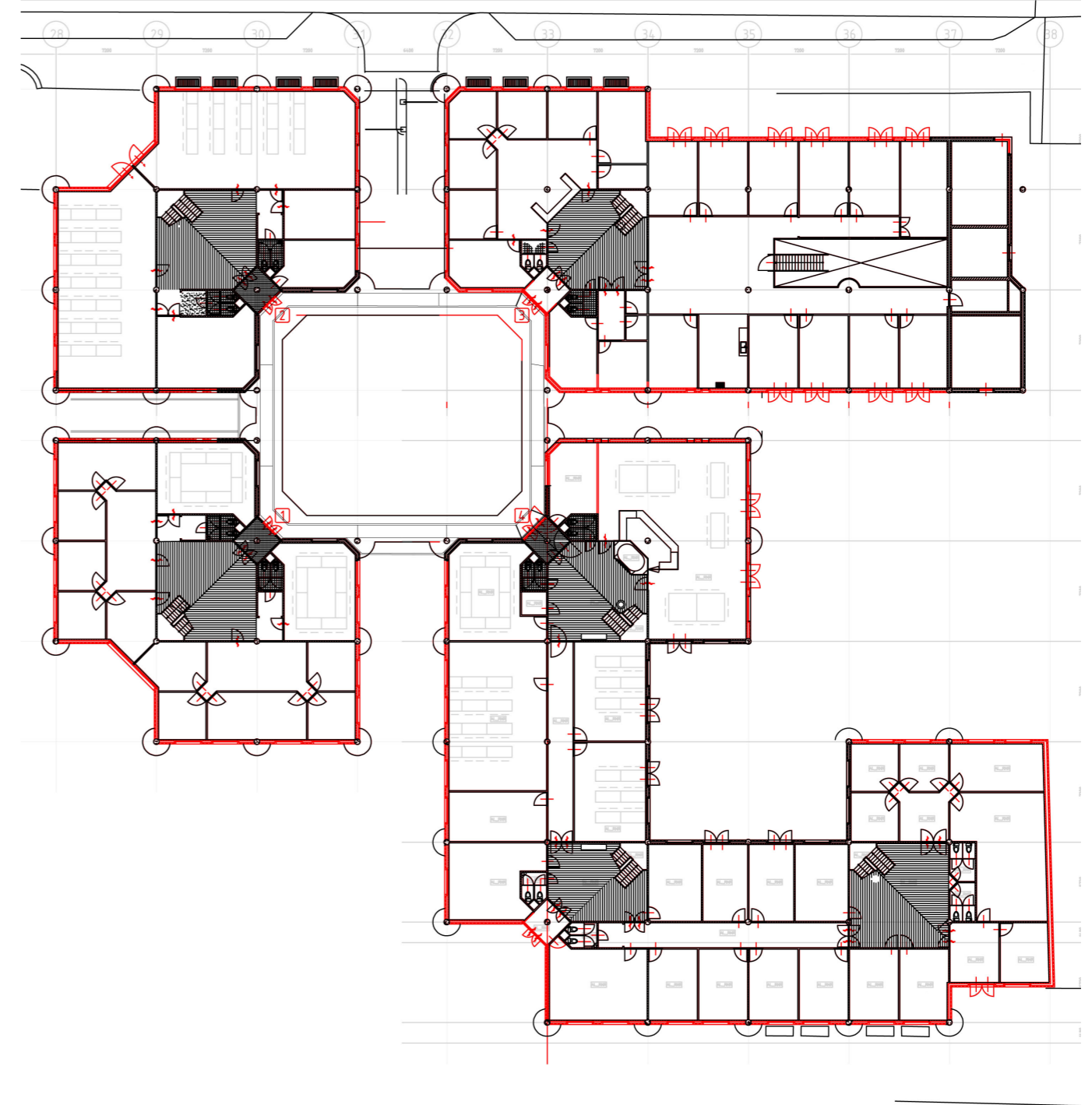Interior                                    Exterior

# Demolition
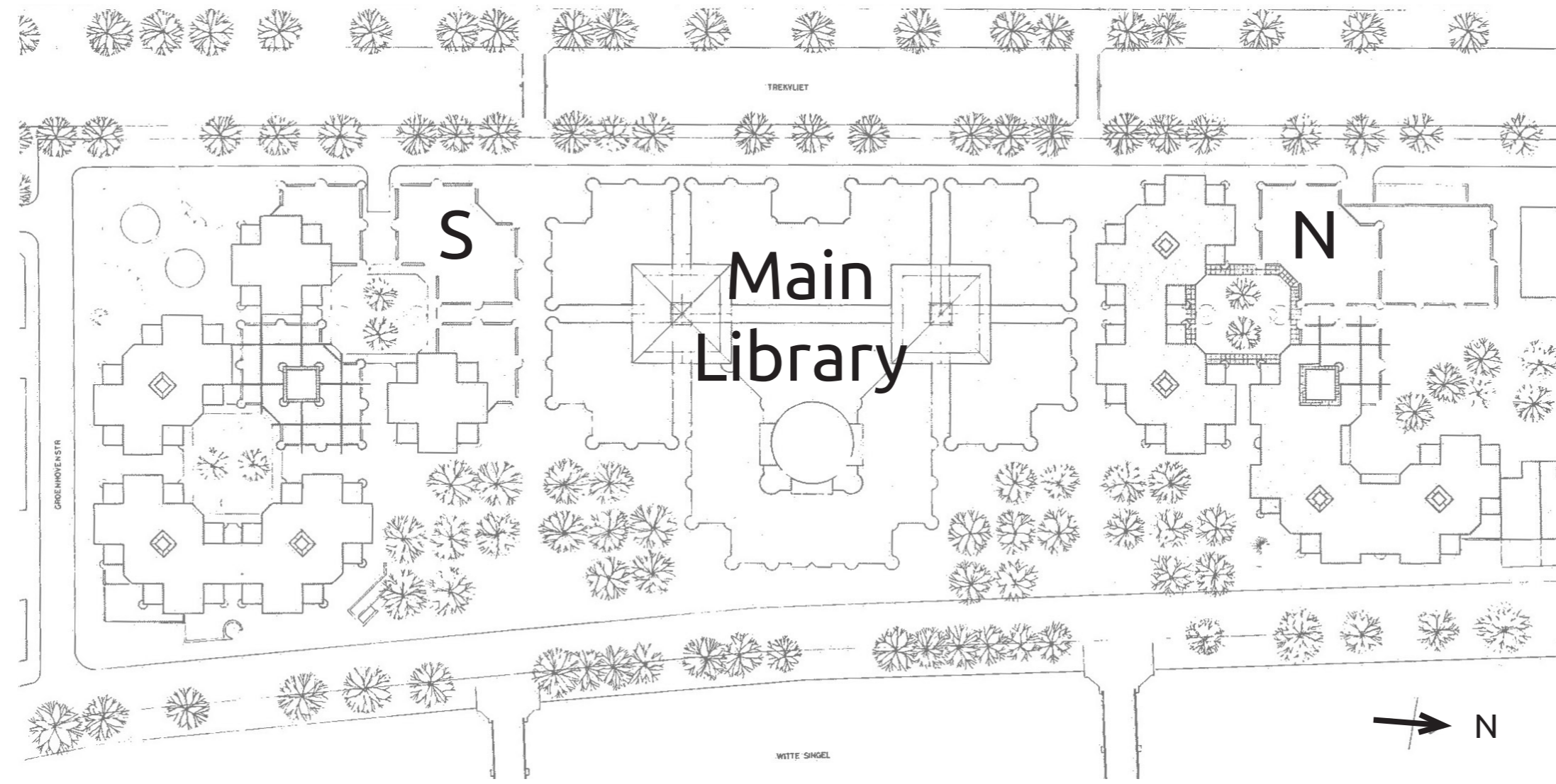
South cluster ground floor plan



- Remove interior finishes
- Cover the structure with a new surface
(Thermal bridges)

North cluster ground floor plan



- Remove existing facade
- Cover the structure with new skin
(Thermal bridges)

# Original site plan



S    Main Library    N

→ N

Origin of the Leiden University Humanities Faculty

The two clusters flanking each side of the main central library were designed by architect Joop van Stigt and were completed in 1982 together with four other faculty buildings making up the Wittesingle/ Doelenterrein inner city university campus. The open structures are well integrated into the context both in terms of the continuation of paths and consideration of building heights. The use of typological spaces like the town square, courtyard, living room and private offices are incorporated into the original design to facilitate opportunities for social interaction amongst students, lectures, researchers, visitors and inhabitants of the city of Leiden.
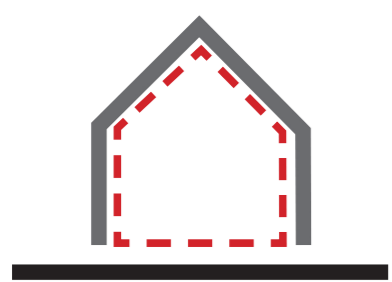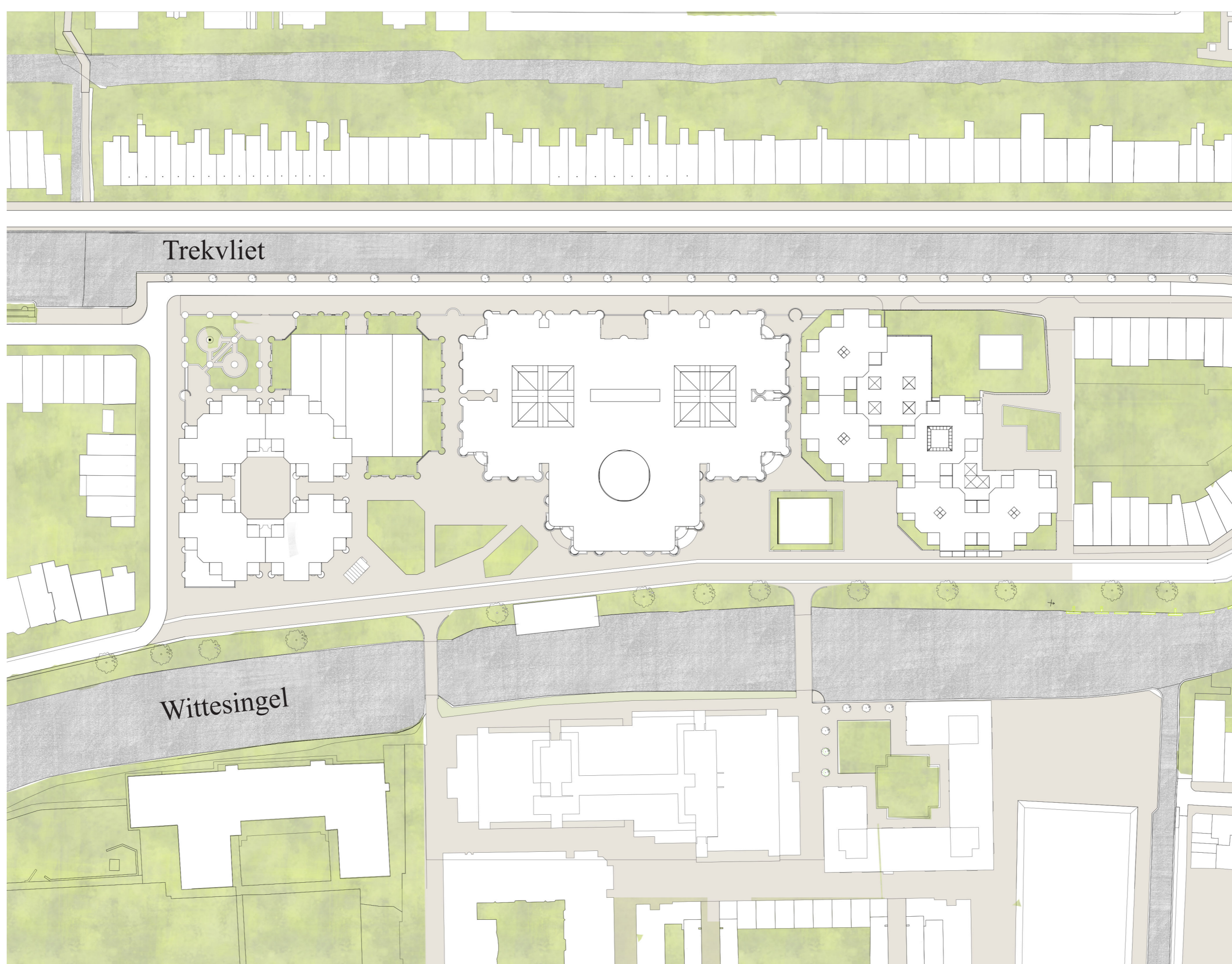
# New site plan

→ N

## South cluster
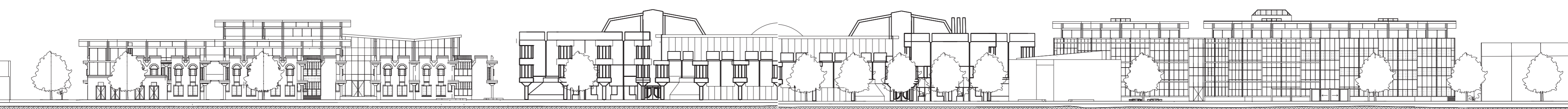
Interior

## North cluster

Exterior



Trekvliet

Wittesingel

Methodology of a dual opposite design approach
inspired by Herman Hertzberger

"Dialectics is not a method for generating predetermined outcomes but it is a
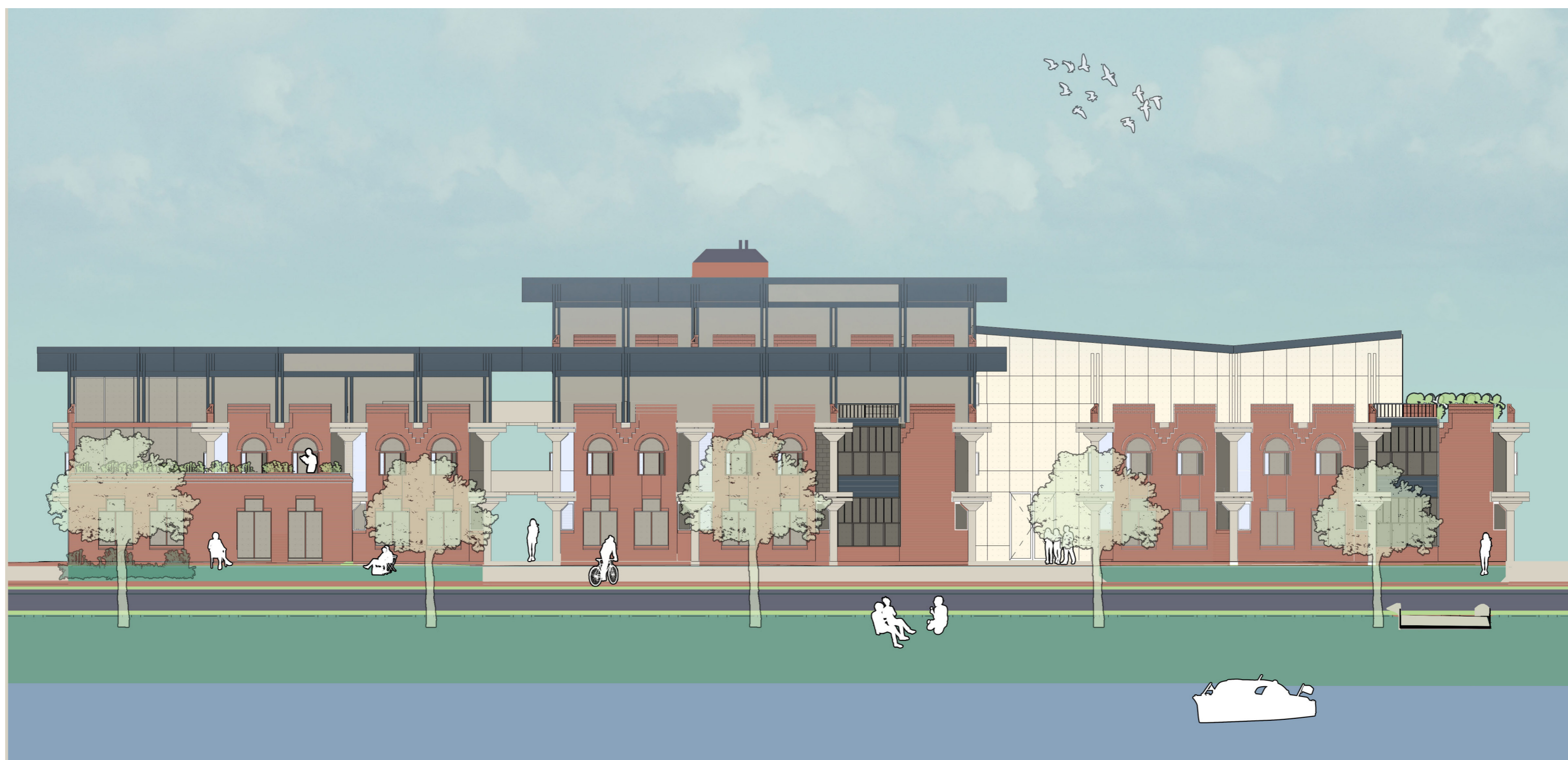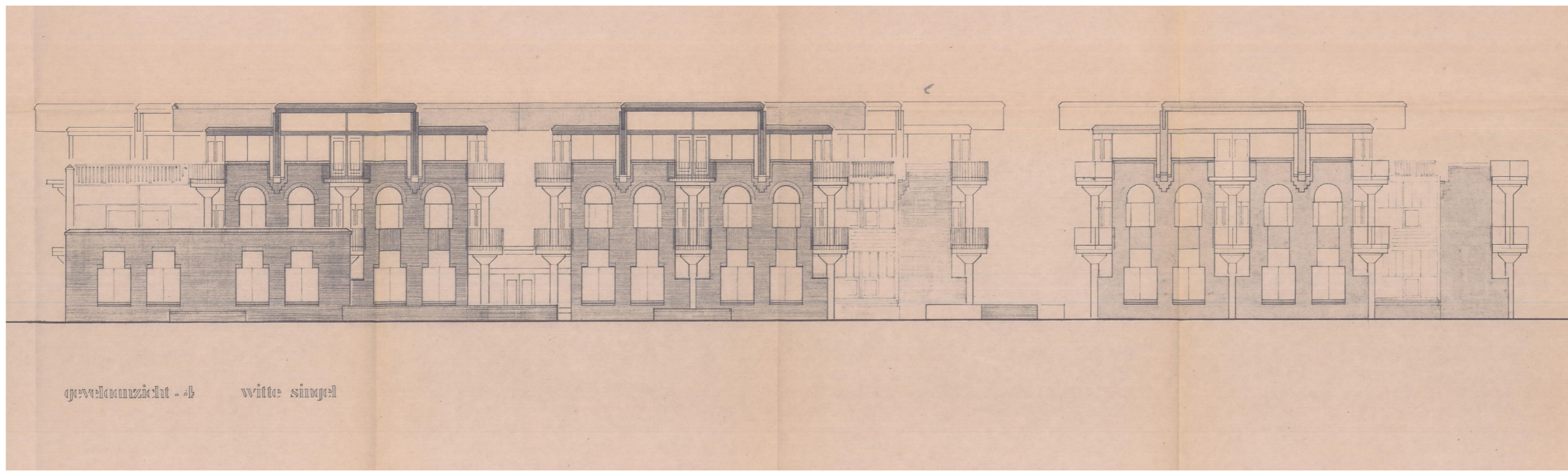method of study of social process: interrelations, development, transformation"
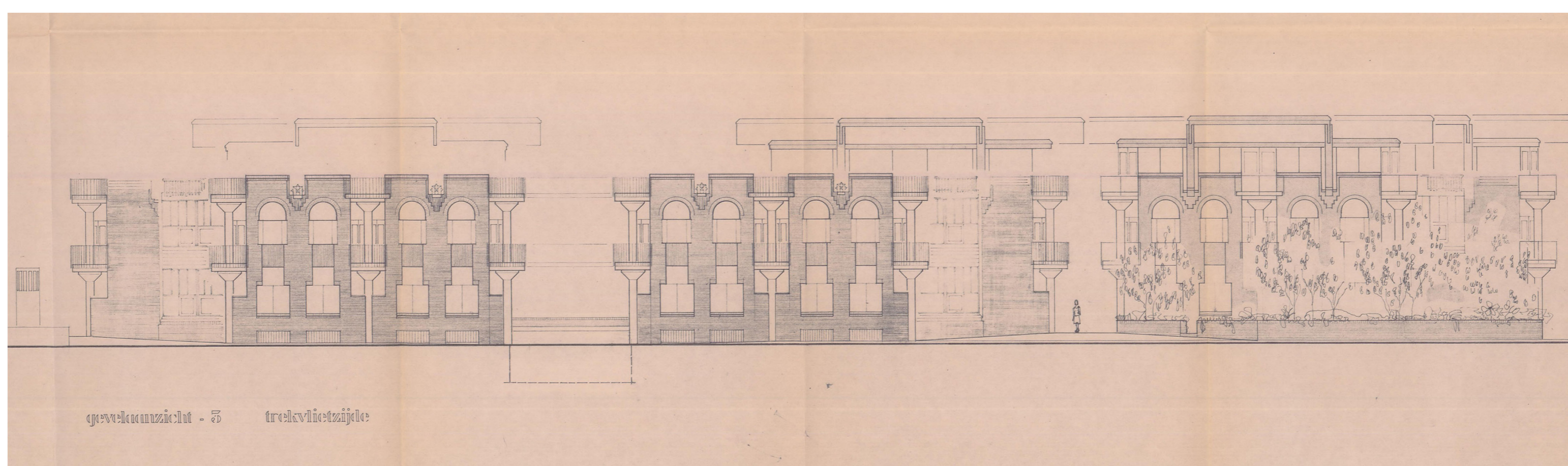


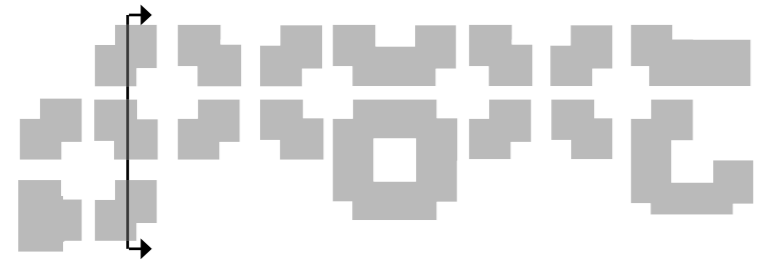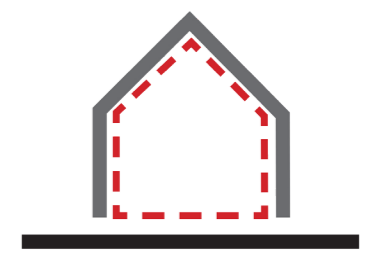East Elevation (Wittesingle) Scale 1:500

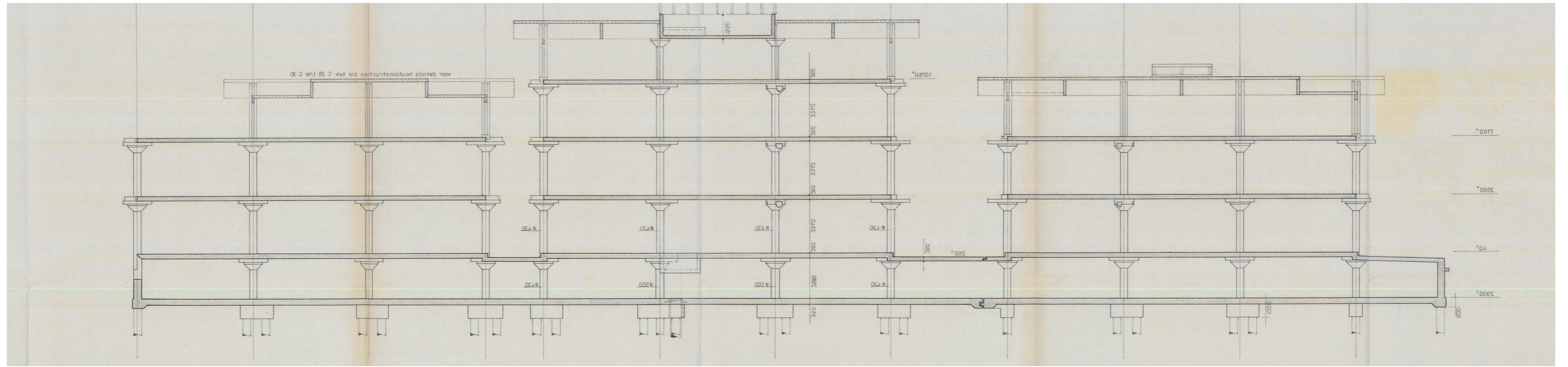# South Cluster

Wittesingel
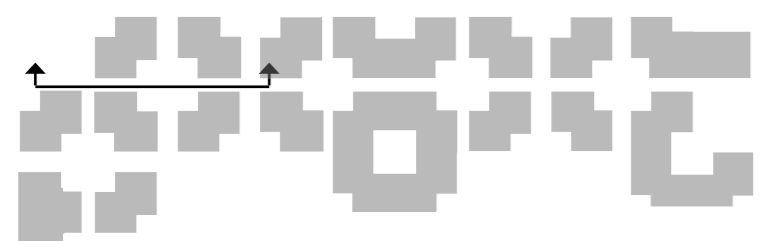East elevation  Scale 1:200



Trekvliet
West elevation Scale 1:200

# South Cluster

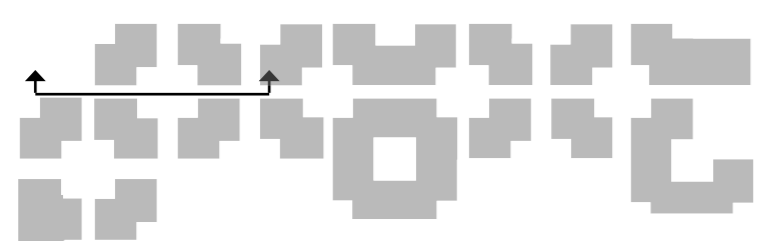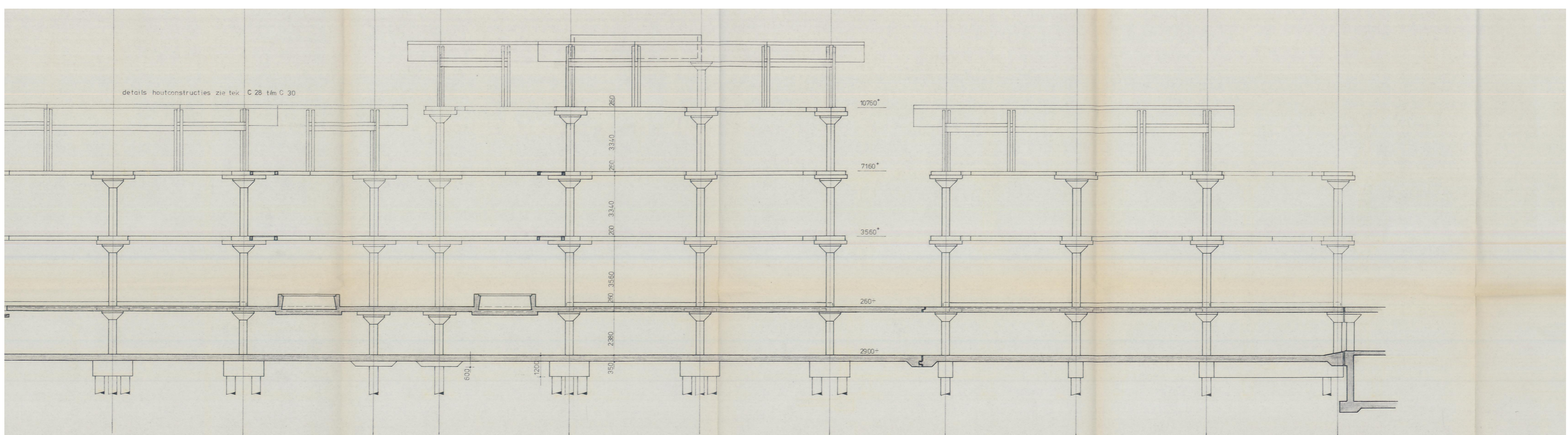## Original
### Section A -A, Scale 1:200



## New
### Section A -A, Scale 1:200



TREKVLIET

BASEMENT CAR AND BICYCLE PARKING

BASEMENT CAR AND BICYCLE PARKING

WITTESINGEL
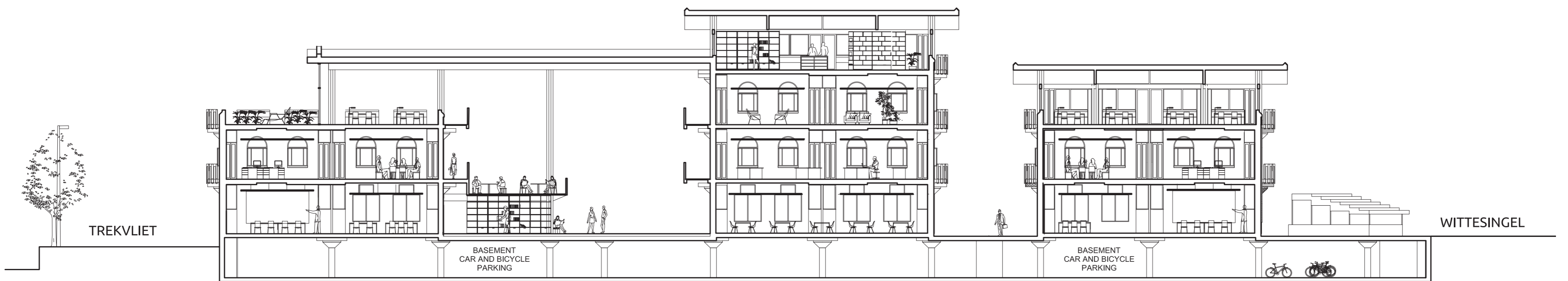
## Original
### Section B -B, Scale 1:200



## New
### Section B -B, Scale 1:200



PARK

BASEMENT CAR AND BICYCLE PARKING

ALLEYWAY

UNIVERSITY MAIN LIBRARY

# South Cluster

FRENCH LANGUAGE

SPANISH LANGUAGE

COVERED ATRIUM

PRINT ROOM

COMPUTER LABS

GERMAN LANGUAGE

GENERAL FACILITIES CENTRE

AFRICAN STUDIES

CANTEEN

KITCHEN

PREPARATION

HISTORY INSTITUTE

NEW MEDIA AND JOURNALISM

TEA/COFFEE STATION

COFFEE BREAK CLUB/ BAR MAGAZINE ROOM
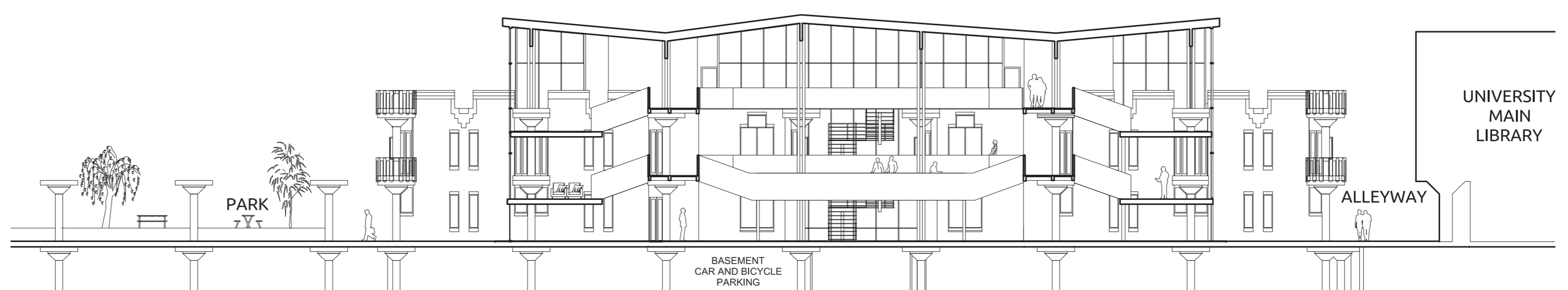
First floor plan 1:200  →  N

# South Cluster
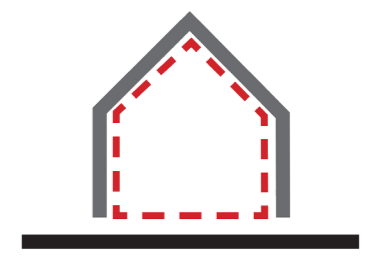
Ground floor plan 1:100

First floor plan 1:100

# South Cluster: Components

## Program



ARCHEOLOGY & HISTORY INSTITUTE
OPEN DESK WORK
LECTURER OFFICES
CLASSROOM
CAFE

LUCL: GERMAN LANGUAGE
OPEN DESK WORK
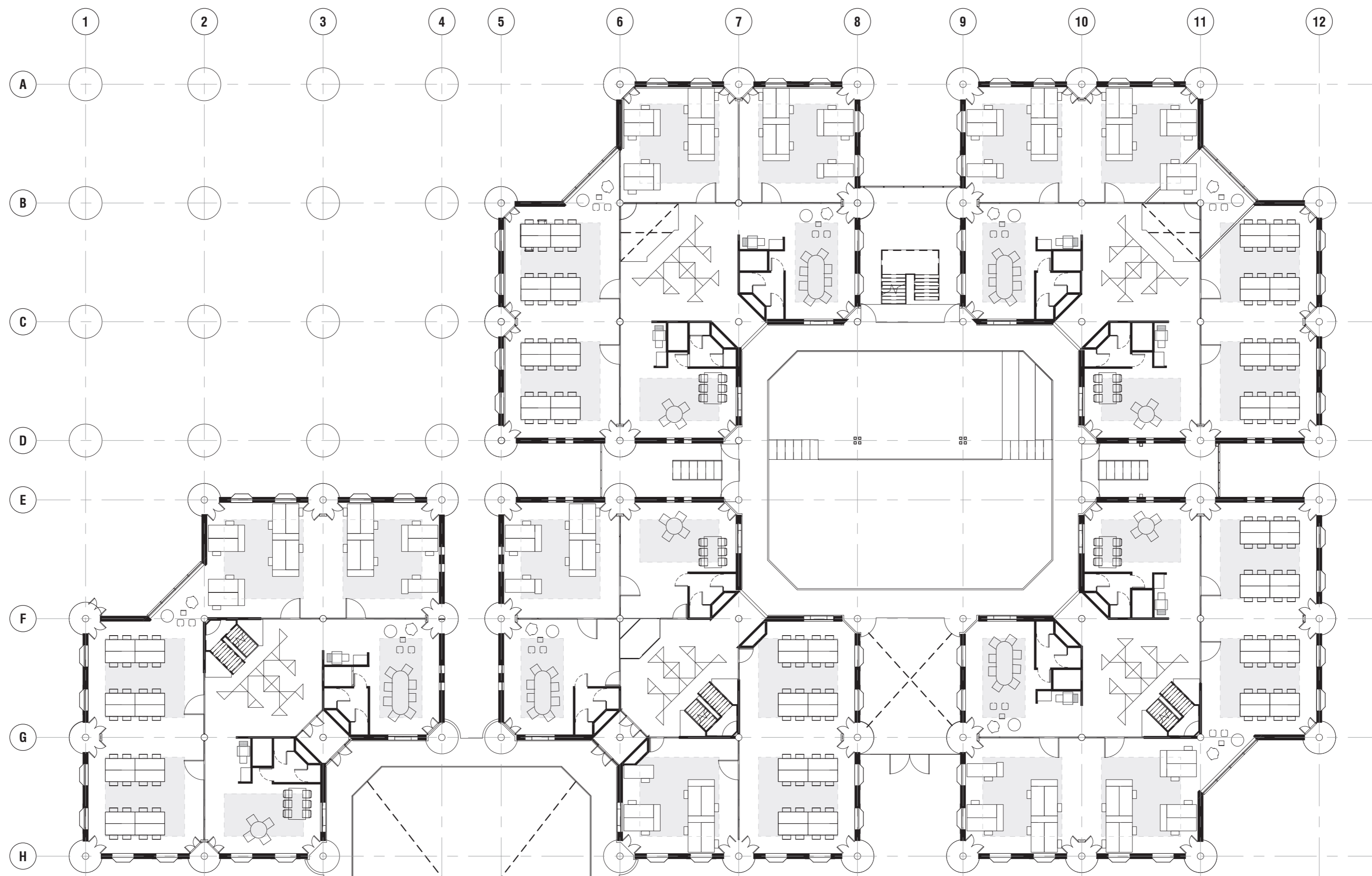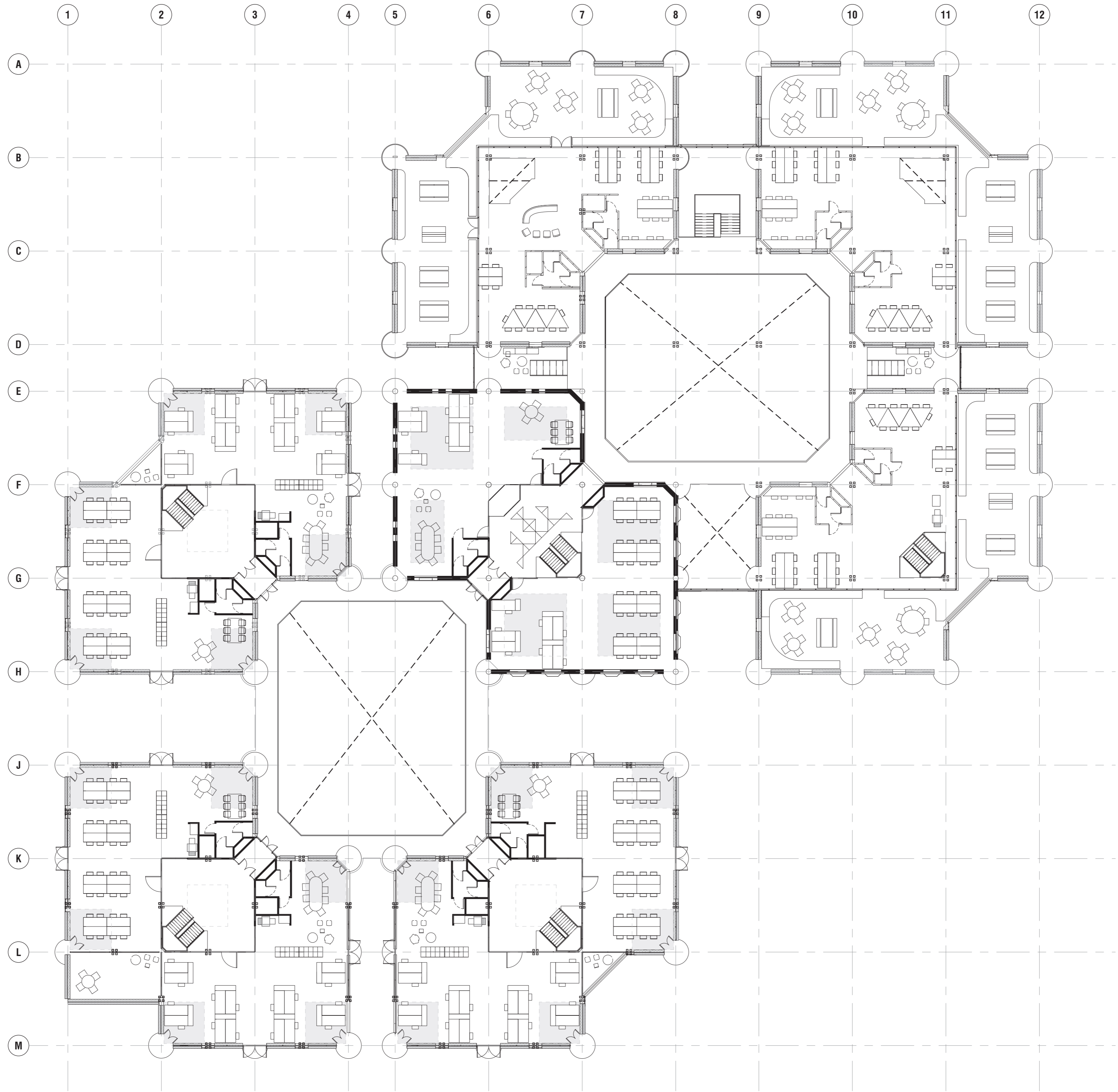LECTURER OFFICES
CLASSROOM

PRESERVED COURTYARD

NEW MEDIA & JOURNALISM
OPEN DESK WORK
MEETING ROOMS
ACADEMIC PRESS

GENERAL FACILITIES
LIBRARY
ARCHIVE VIEWING
COMPUTER LABS
CANTEEN

LUCL: FRENCH LANGUAGE
OPEN DESK WORK
ROOF TERRACE
LECTURER OFFICES
CLASSROOM

COLLECTIVE ATRIUM

AFRICAN STUDIES
OPEN DESK WORK
ROOF TERRACE
LECTURER OFFICES
CLASSROOM

LATIN AMERICAN STUDIES
OPEN DESK WORK
ROOF TERRACE
LECTURER OFFICES
CLASSROOM

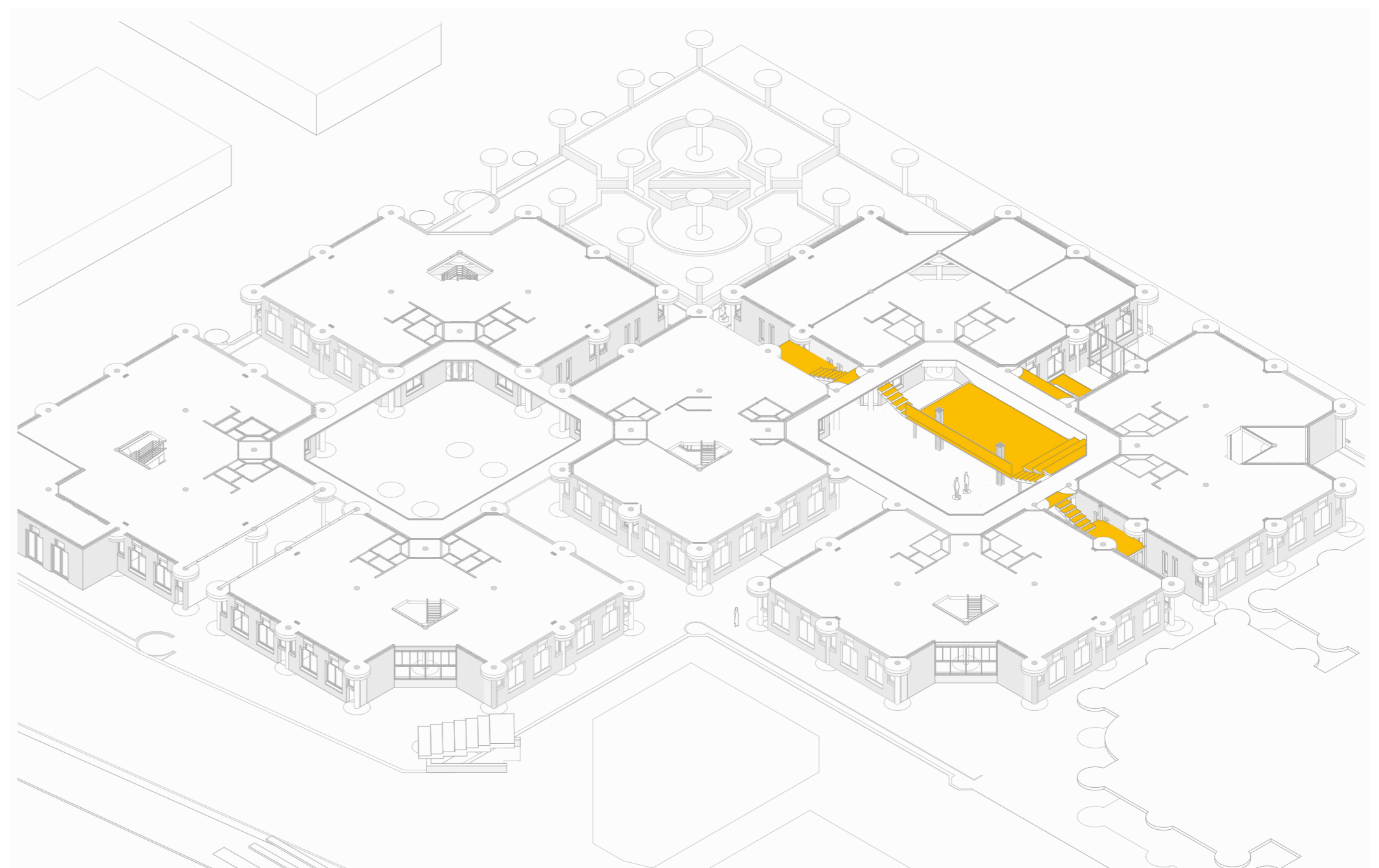## Courtyard / Atrium



PRESERVED COURTYARD

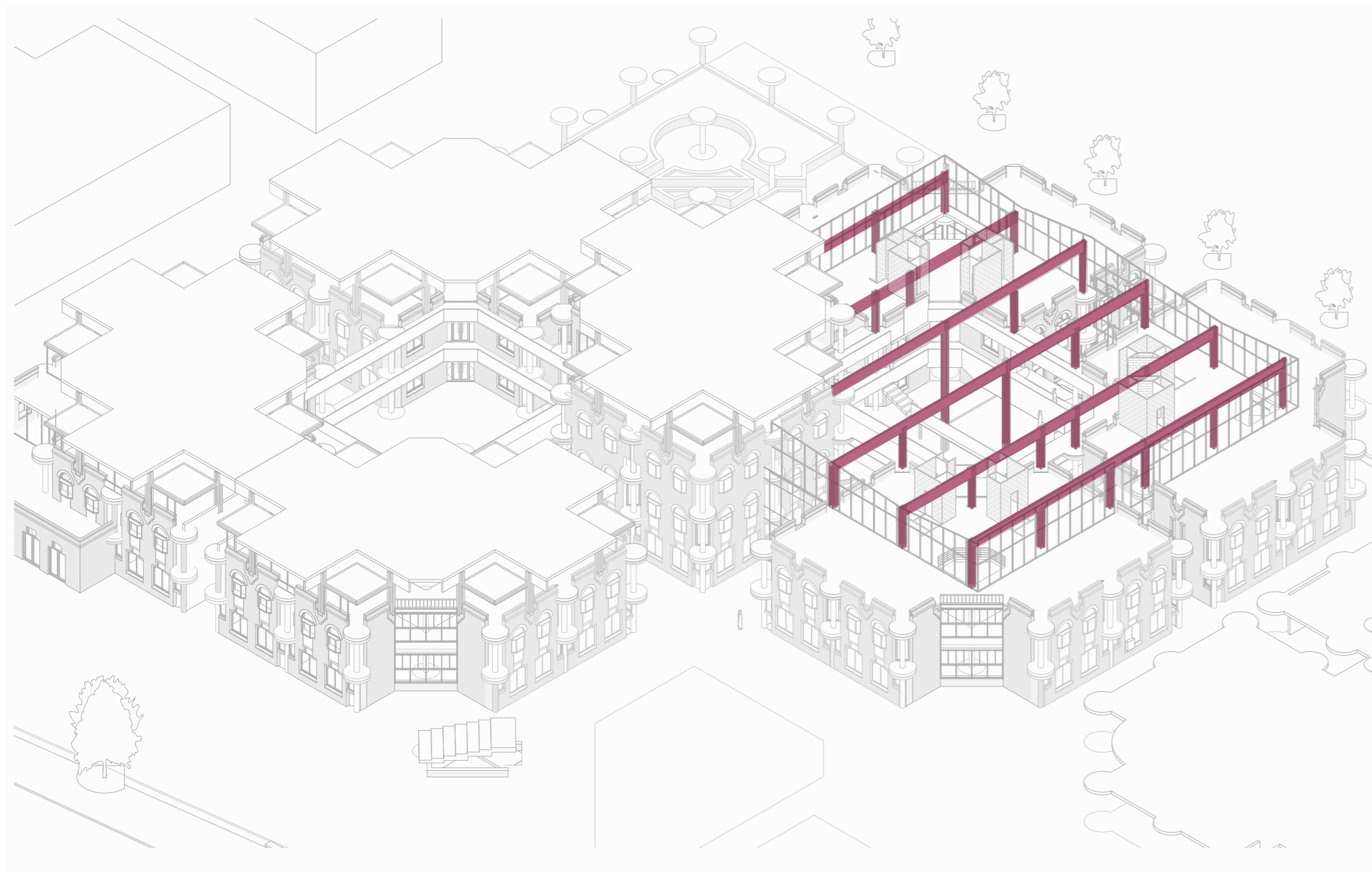TRANSFORMED ATRIUM
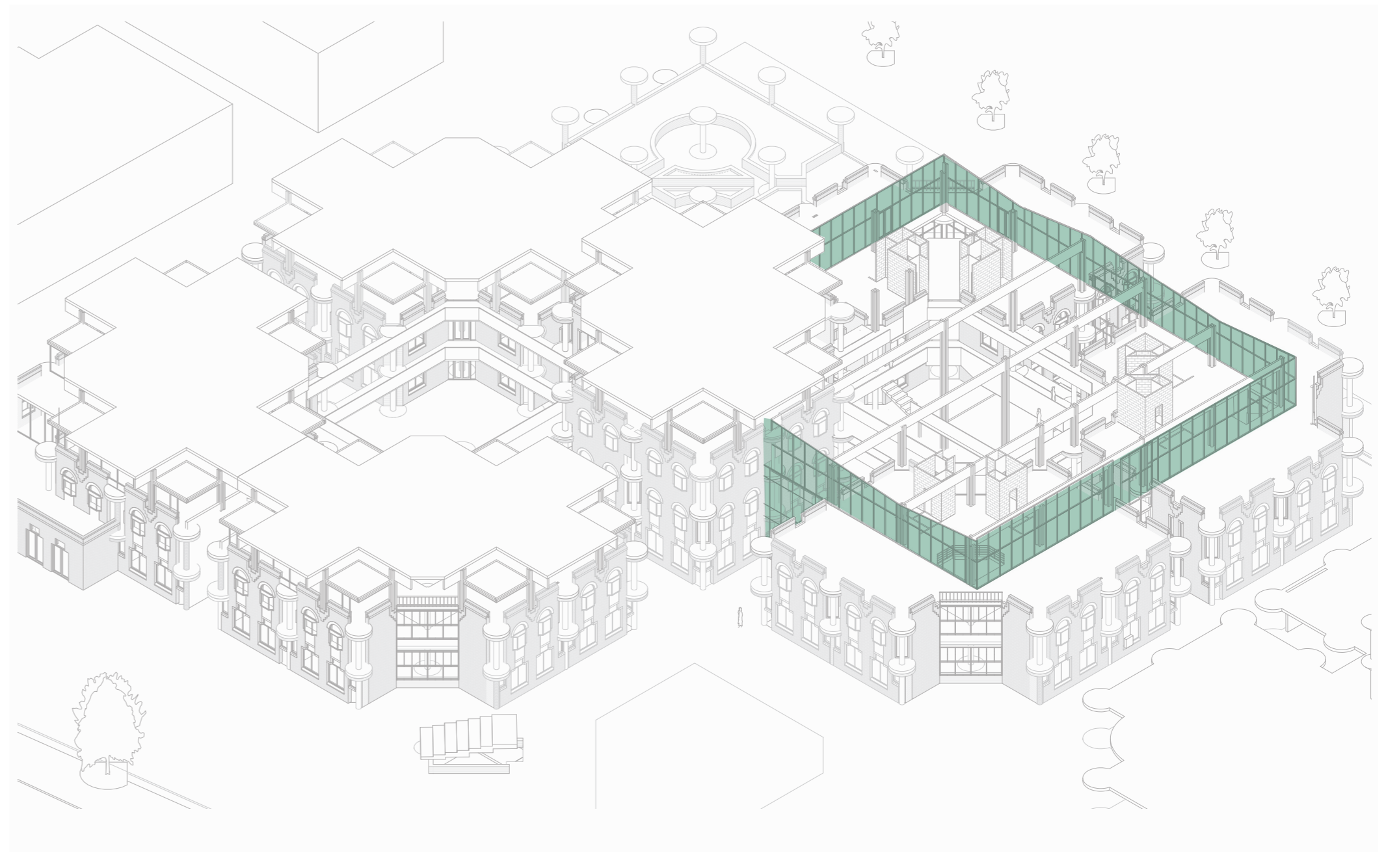
## Floors, Surfaces and WCs
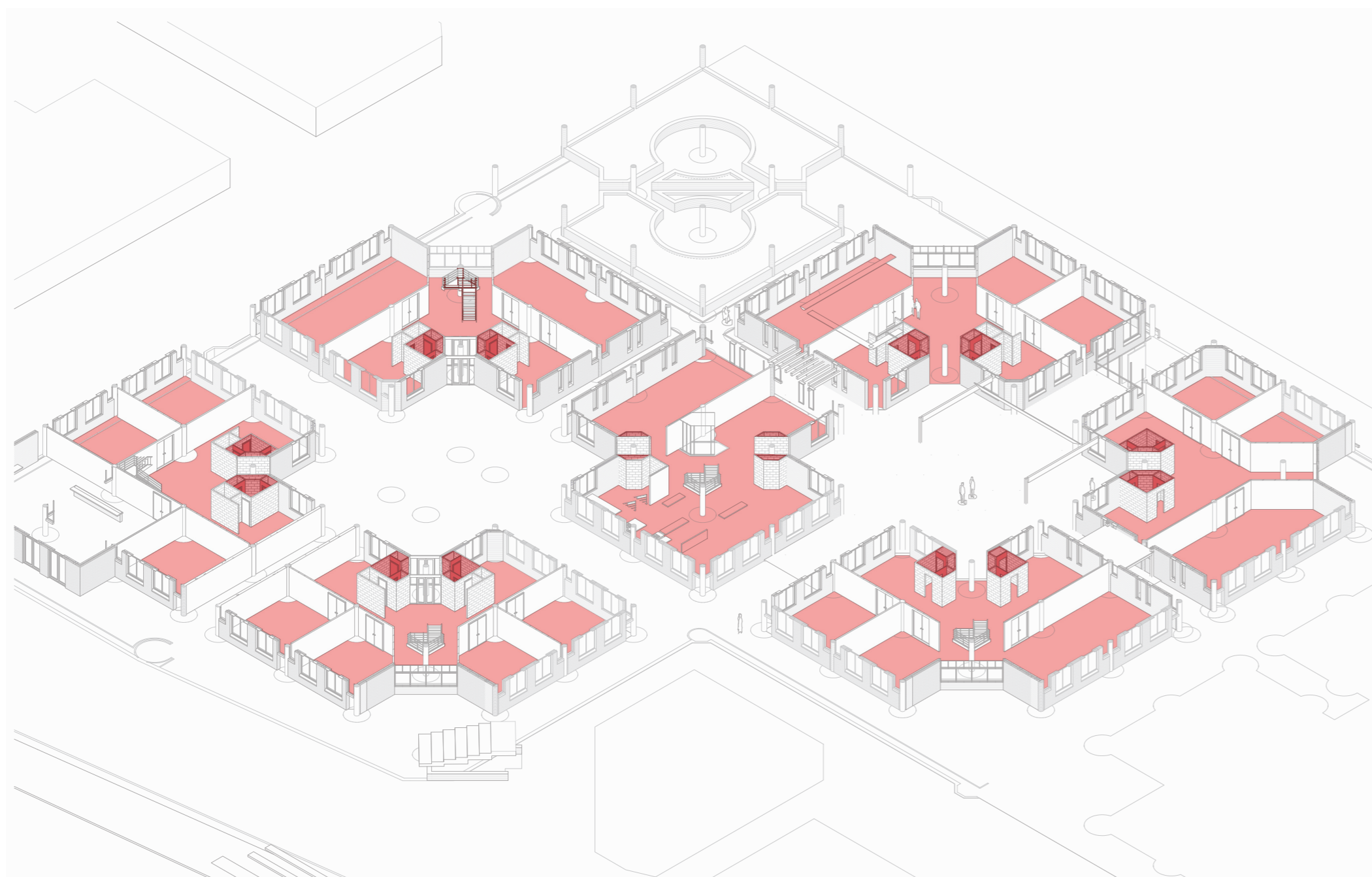


## Collective Platforms
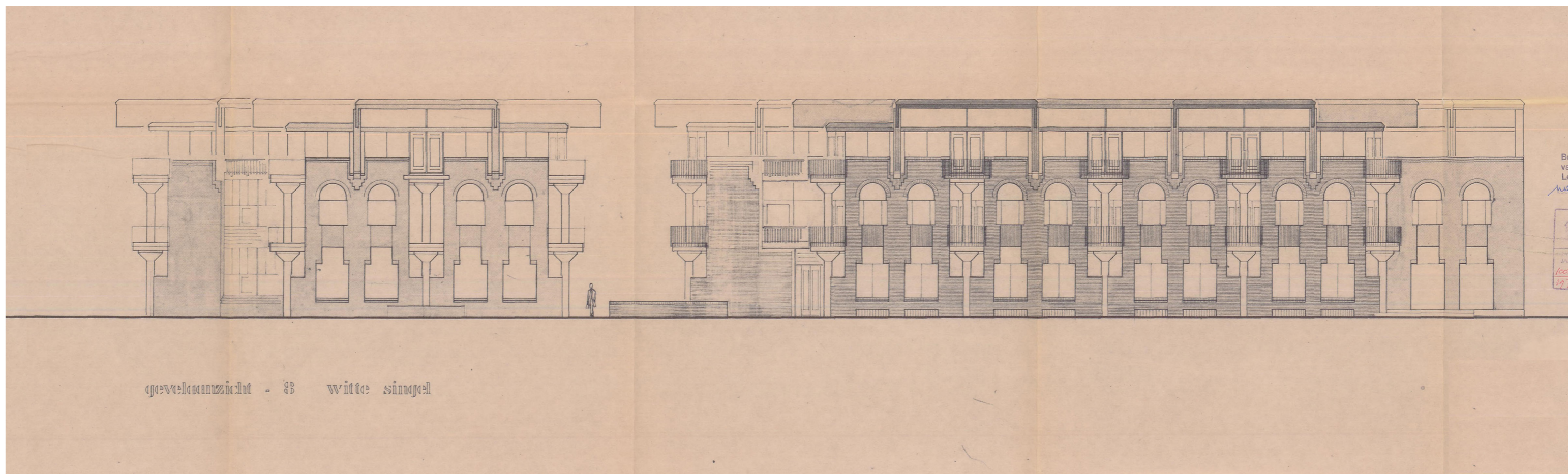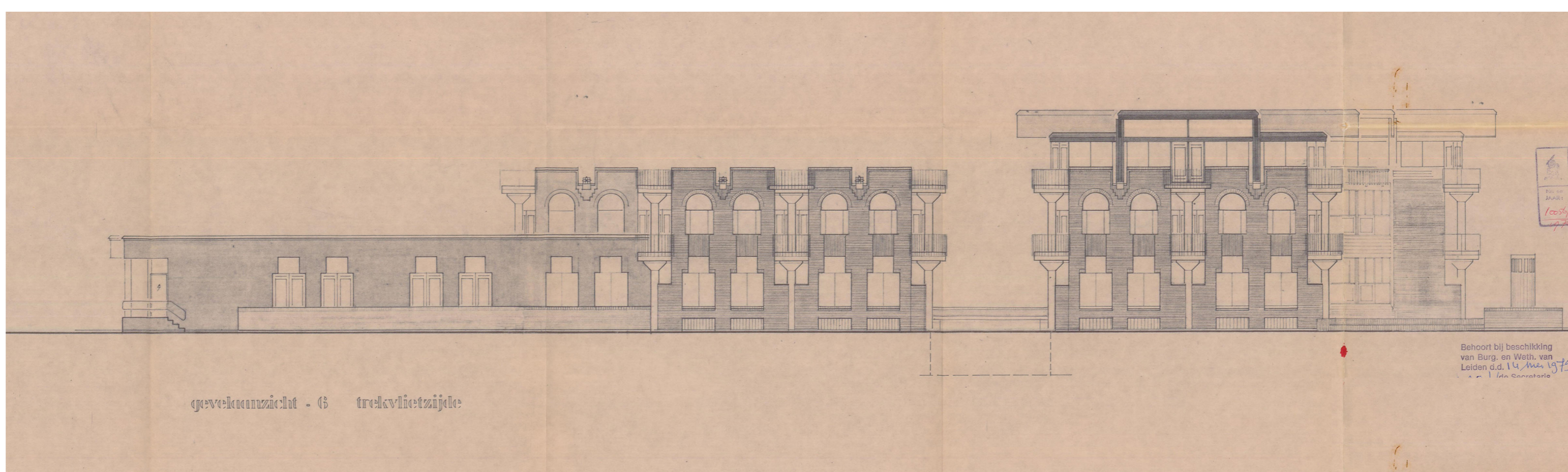


## Timber Construction
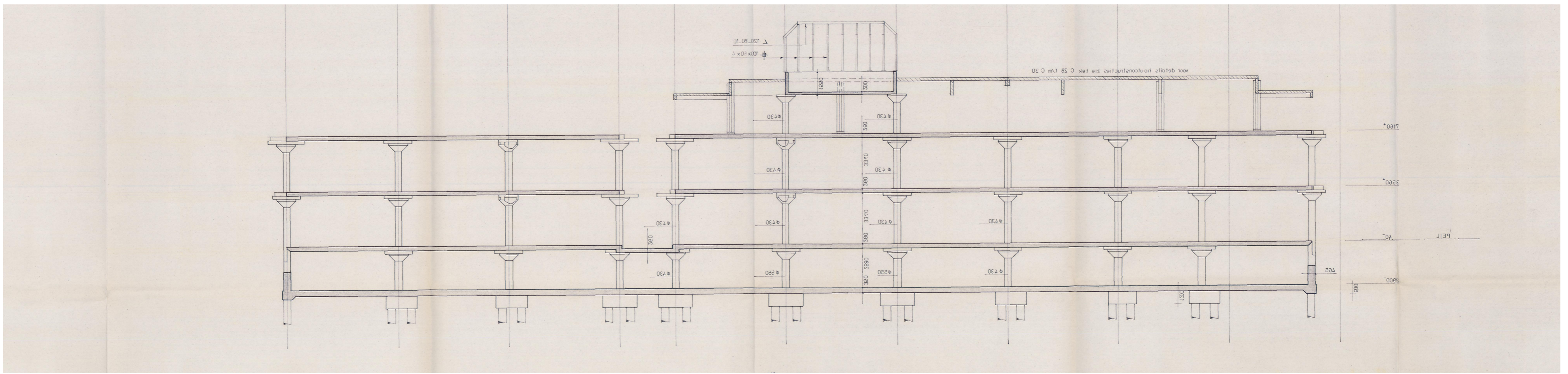


## Curtain Wall

# North Cluster

Wittesingel
East elevation  Scale 1:200



Trekvliet
West elevation Scale 1:200

# North Cluster

TREKVLIET

WITTESINGEL

UNIVERSITY
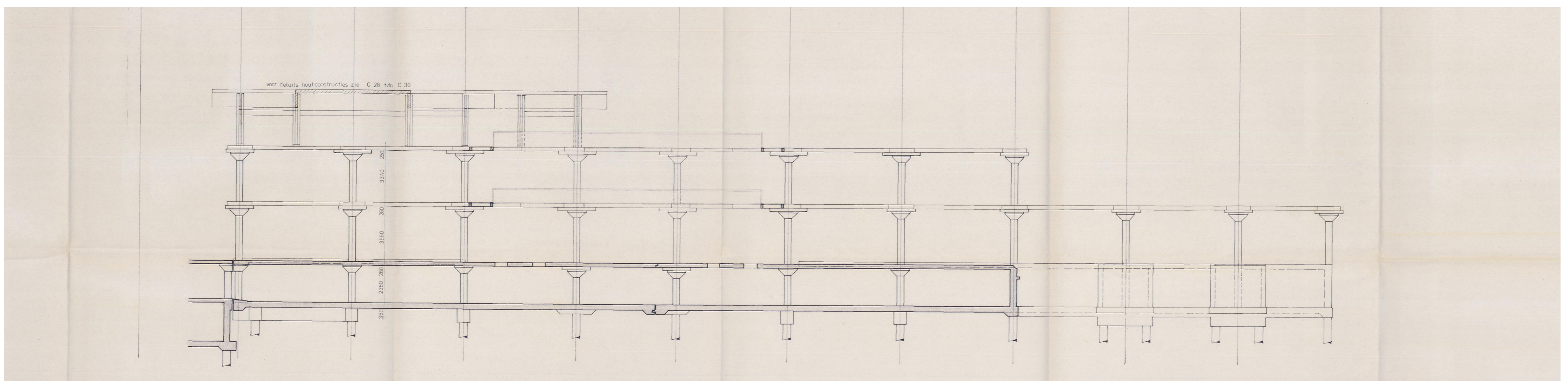MAIN
LIBRARY

MECHANICAL
INSTALLATION ROOM

MECHANICAL
INSTALLATION ROOM

OPEN
PEDESTRIAN
STREET

RESIDENCE

# North Cluster: Components

## Program

BOOK WALL
LUCL: DUTCH LANGUAGE
OPEN DESK
WORKSHOP
PRIVATE OFFICE
CLASSROOM

DIGITAL CULTURE
OPEN DESK
NETWORK SER-
DATA ARCHIVES

RELIGIOUS STUDIES
OPEN DESK
WORKSHOP
PRIVATE OFFICE
MEETING ROOM

BOOK WALL

STUDENT ADMIN

LUCIS: ISLAMIC STUDIES
OPEN DESK
WORKSHOP
PRIVATE OFFICE
CANTEEN

LAS: ASIAN STUDIES
OPEN DESK
LIBRARY
PRIVATE OFFICE
CLASSROOM

NINO: NEAR EAST STUDIES
OPEN DESK
LIBRARY
PRIVATE OFFICE
MEETING ROOM

BOOK WALL

## Reprogram

DIGITAL CULTURE

STUDENT ADMIN

LAS: ASIAN STUDIES

## Public Hub

SEMINAR CENTRE

COLLABORATIVE COURTYARD (LIVING ROOM)

COLLECTIVE COURTYARD (LIVING ROOM)

PUBLIC LIBRARY

## Collaborative Platform

## Timber Construction
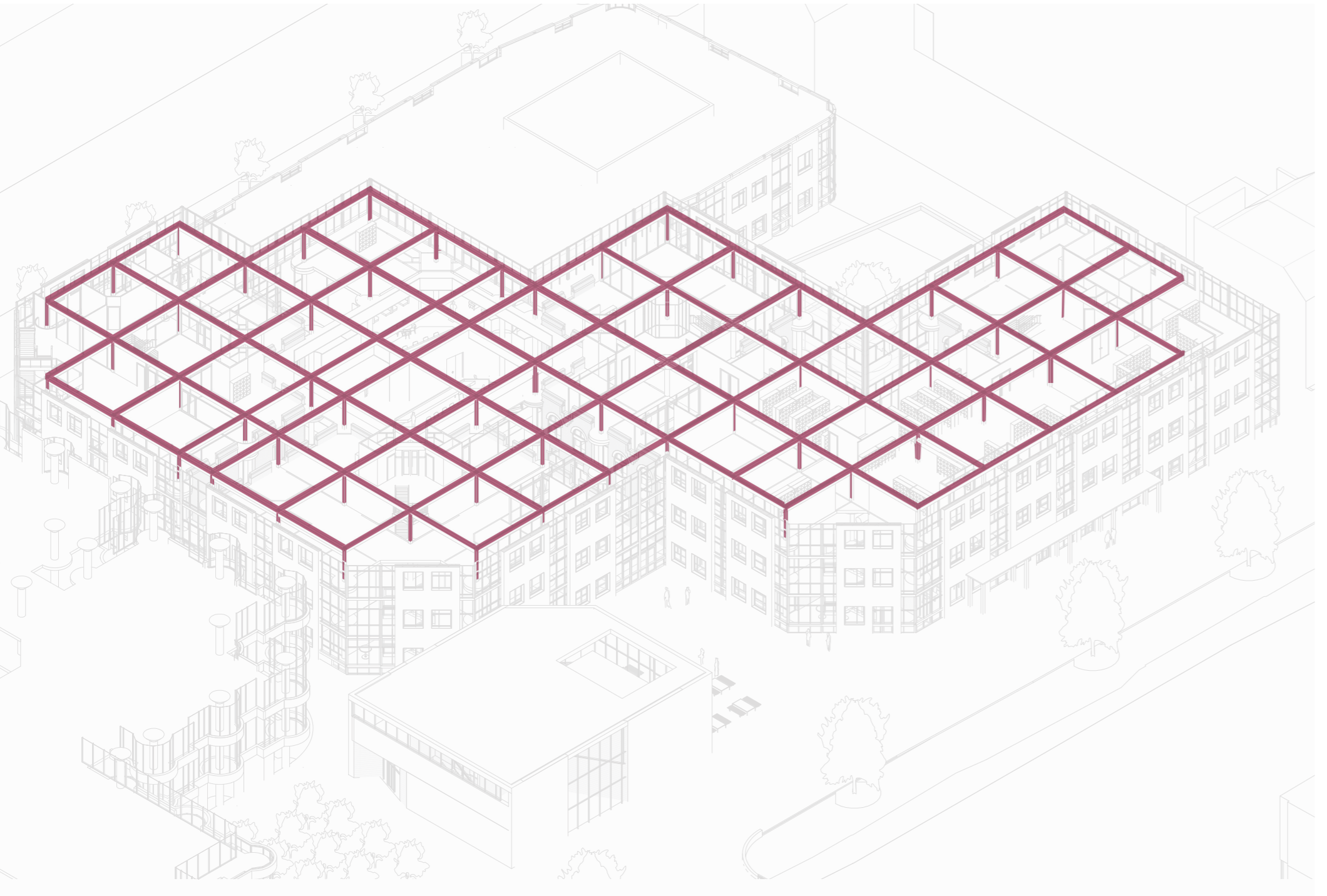
## Reused Roof Structure

# North Cluster
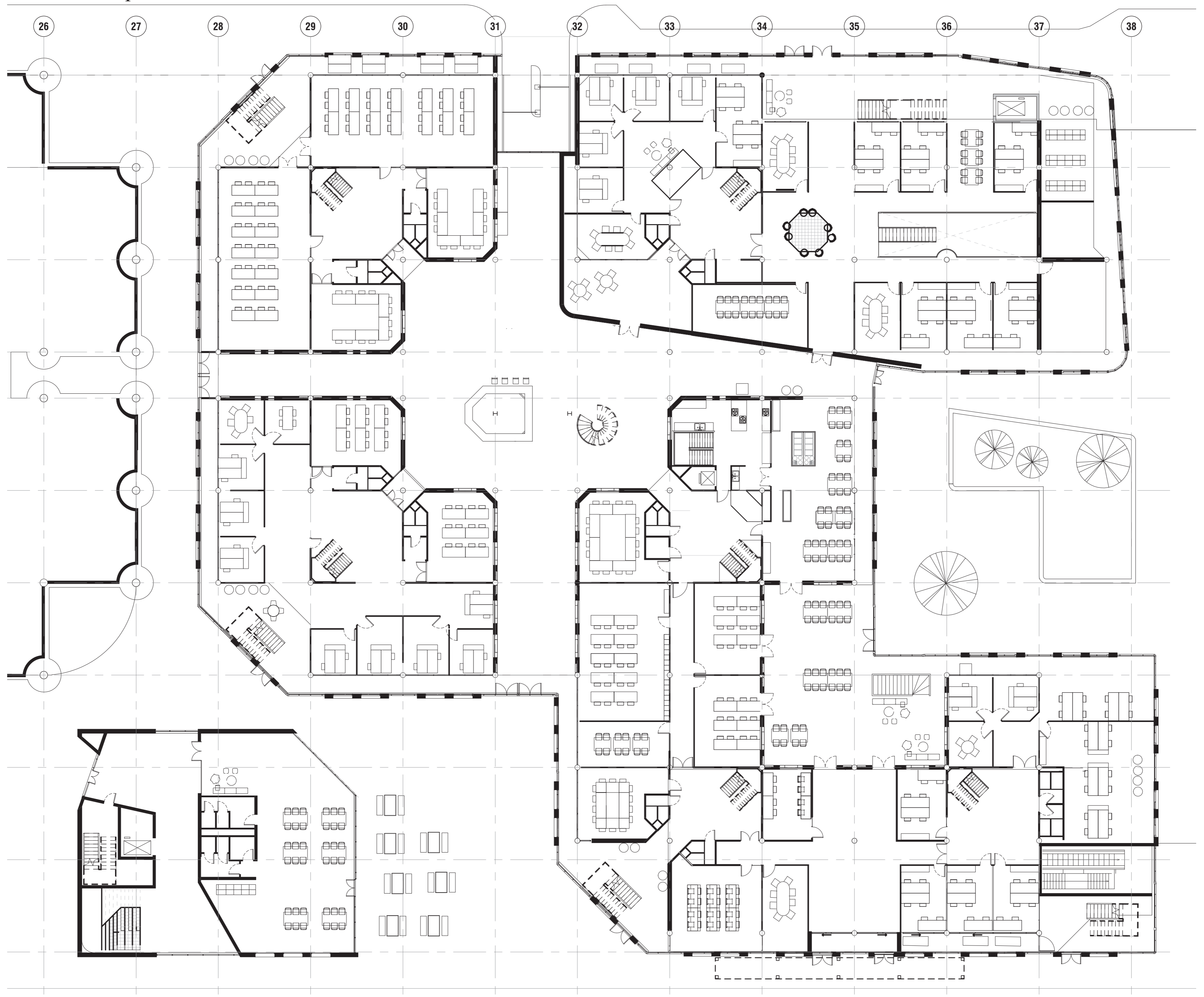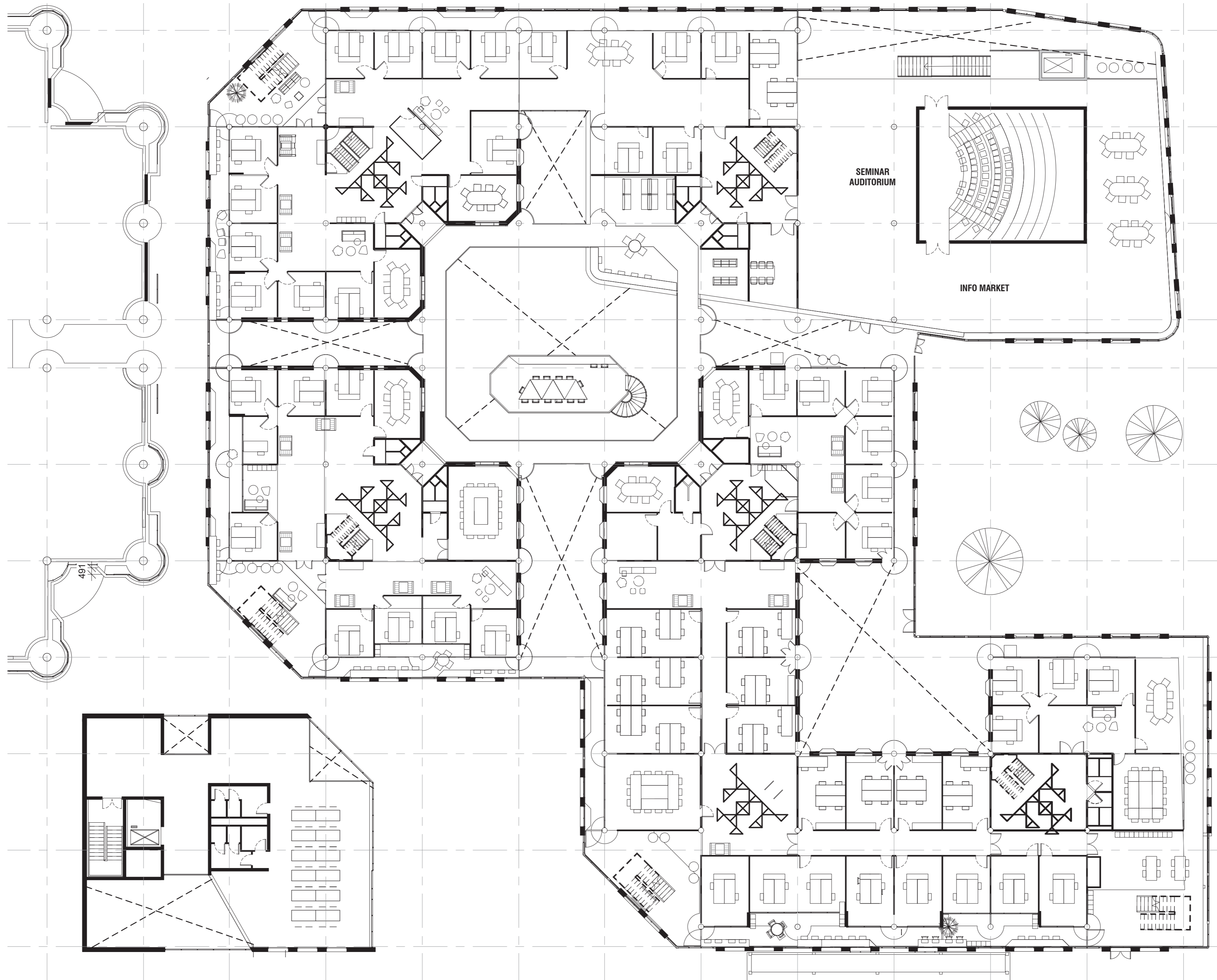
26 27 28 29 30 31 32 33 34 35 36 37 38

SEMINAR AUDITORIUM

INFO MARKET

# North Cluster

27  28  29  30  31  32  33  34  35  36  37  38

ARCHIVE STORE

LIBRARY LOBBY

RECEPTION DESK

Third floor plan 1:200 → N

Roof garden

Atrium roof

# Structure, Services and Sustainability
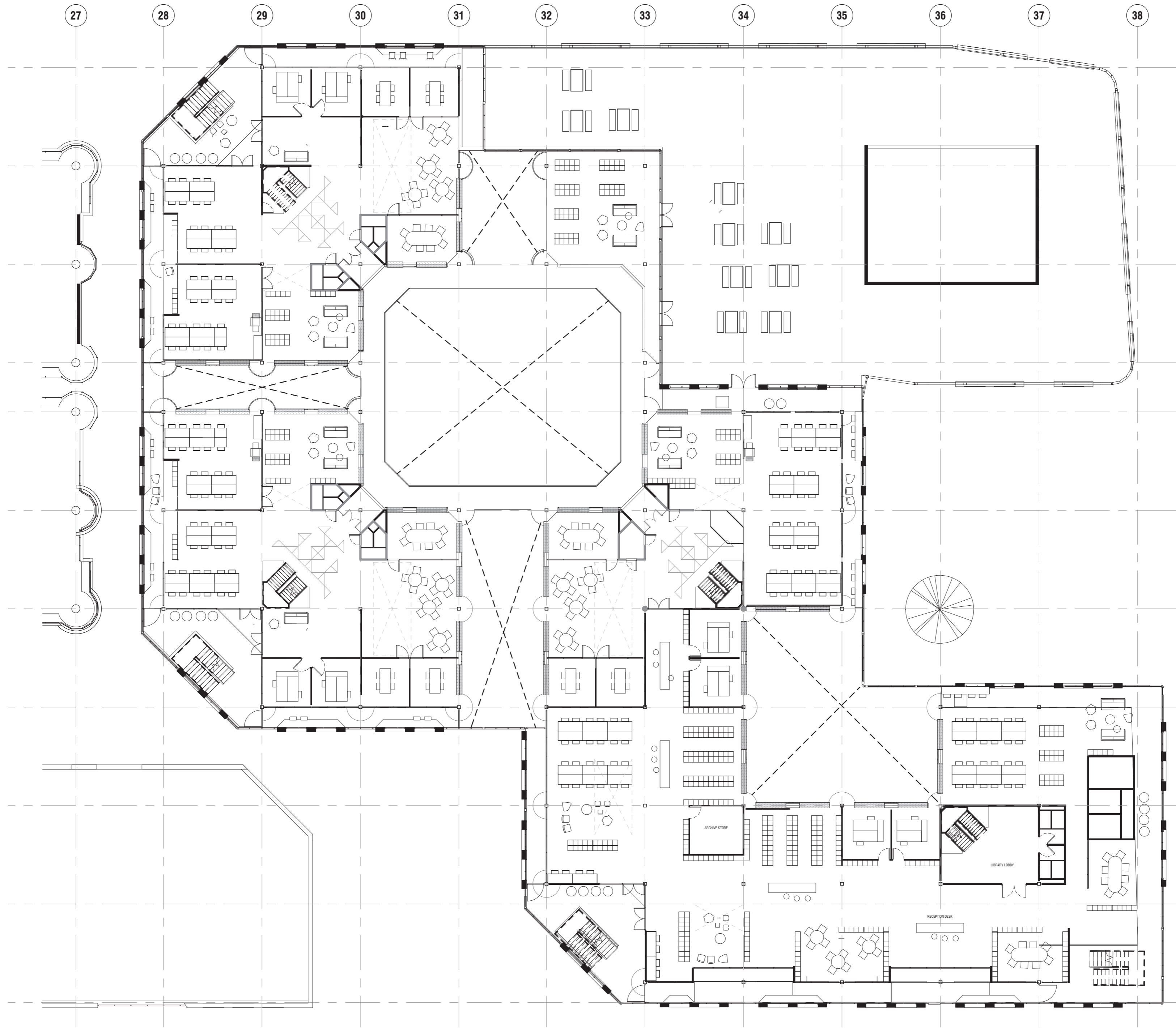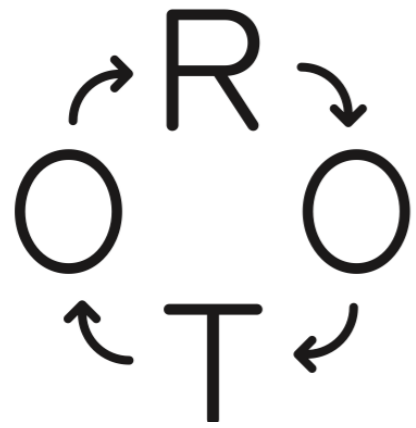


Deconstruction (Temporarily) roof.

1. Remove top layer of timber boarding + waterproof layer.

Recycle Throw away top layer.

Recycle glass and timber frames.

Loosen the primary timber beam structure and temporarily store on site in a dry way.

eg. plastic over to keep dry. on wooden plates elevated off the floor on concrete block.

- Demolish existing brick facade.
- Build new structure analogue on top of old concrete. Connecting steel plate between concrete + timber

chemical anchor into concrete.

7. Add new floor level + steel column to bar.
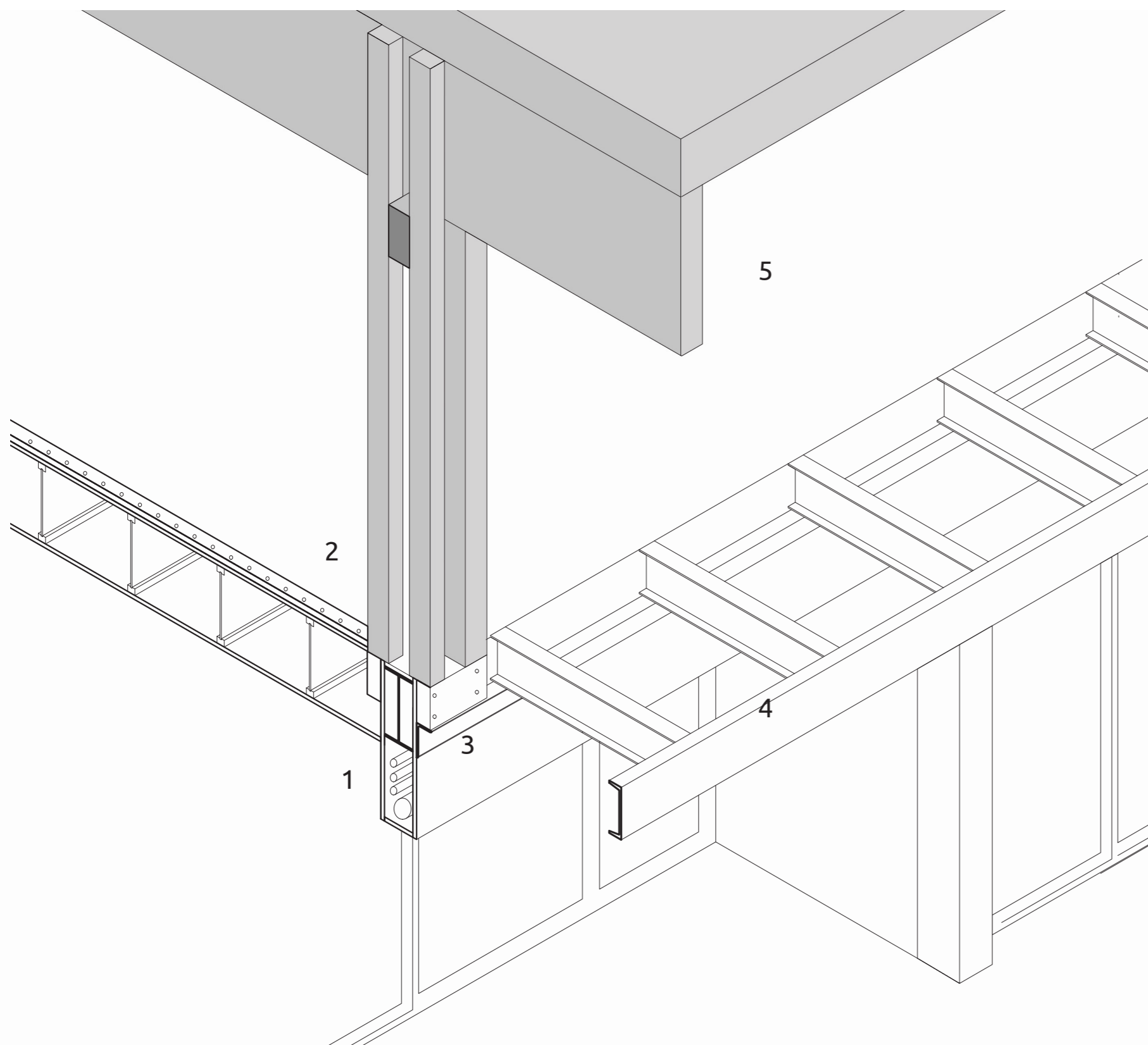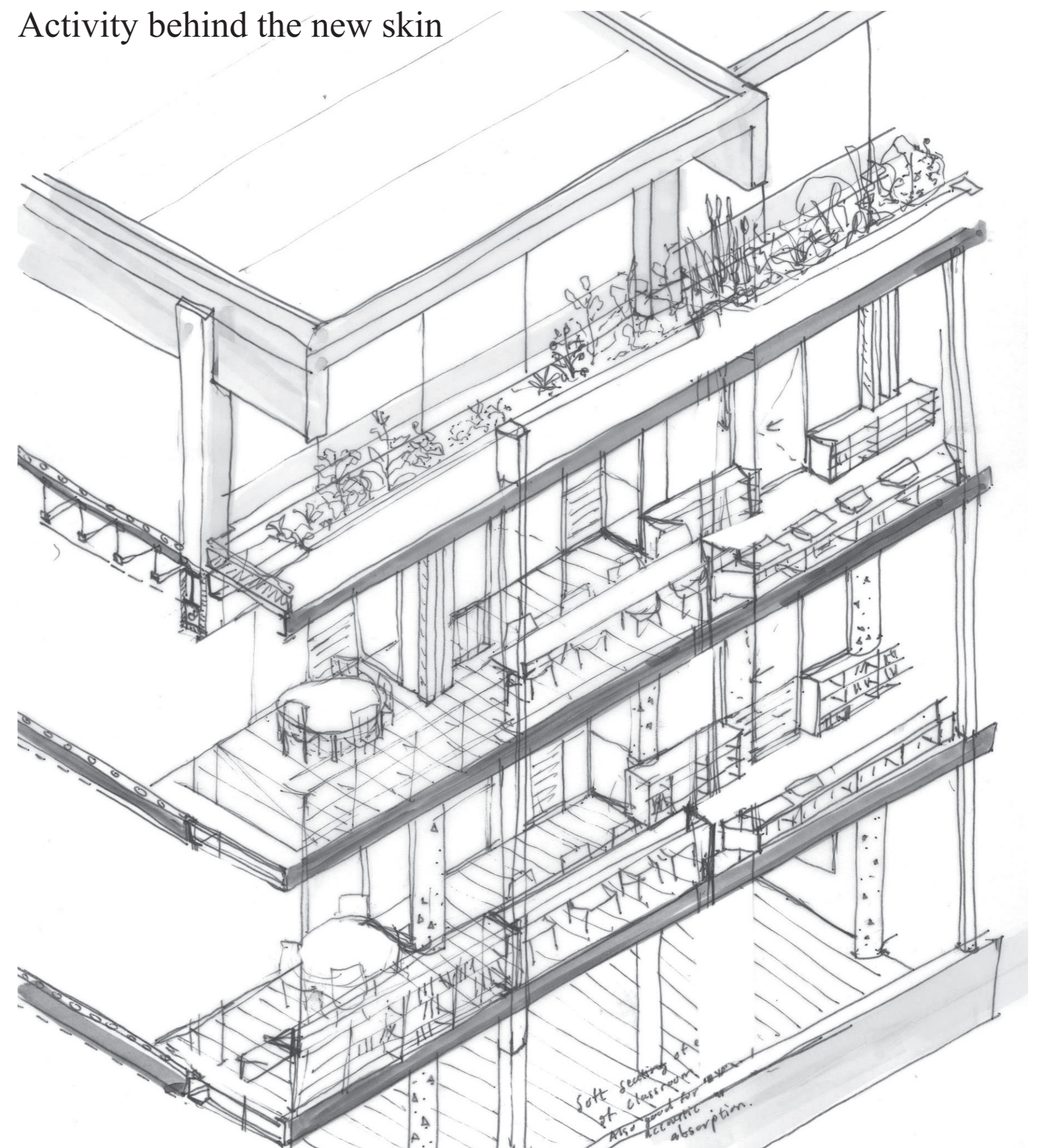
Process of reusing existing building materials according to themes from MSc2 studio: Deconstruction led by visiting professors from Rotor

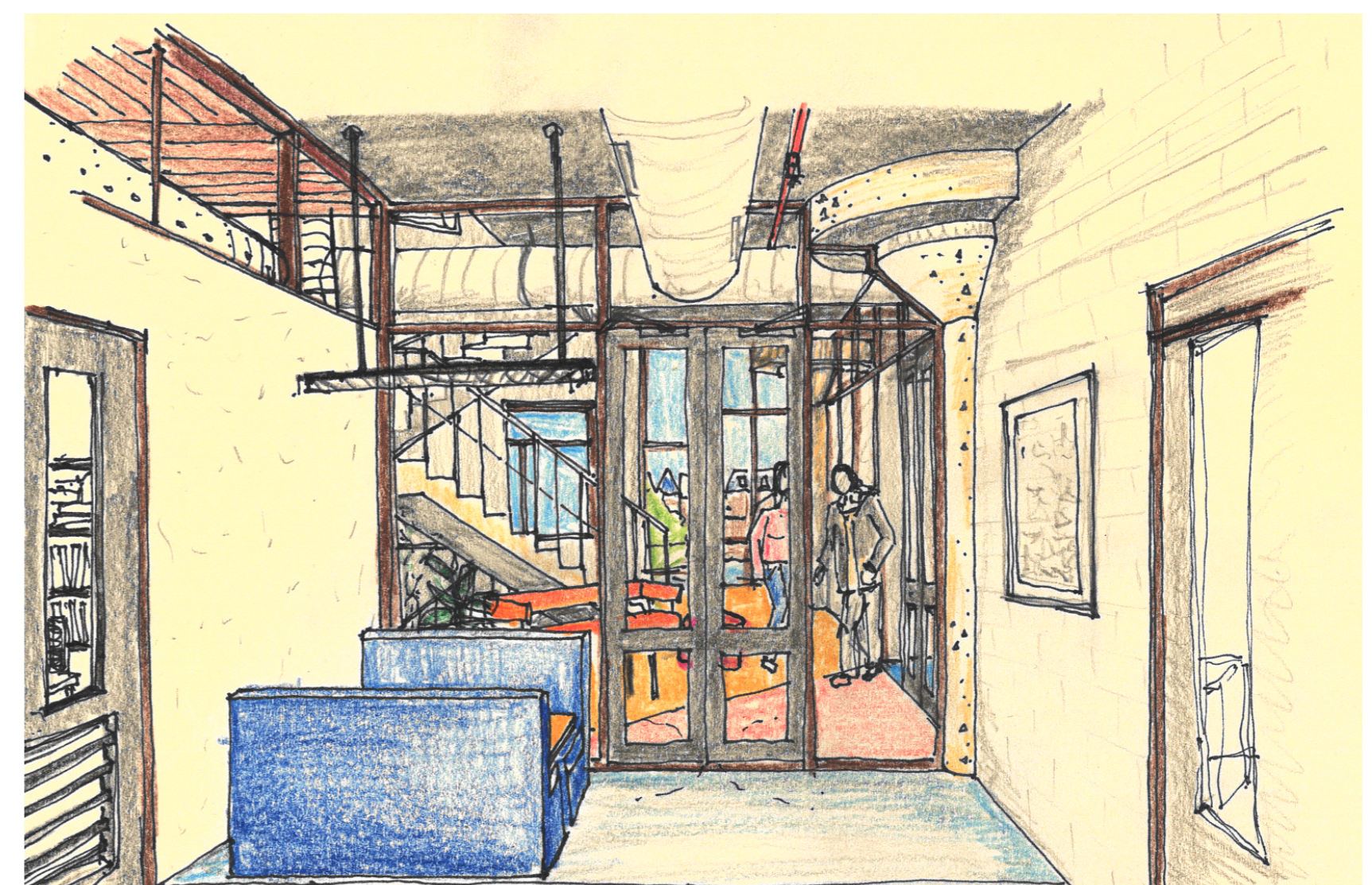## Dilemma: How to attach reused roof to new floor level?



1 - New 420x180 steel I beam cladded in redwood timber box with opening latch to access service cables.
2 - New IJC composite timber floor joist beams spanning between 90x 140mm redwood laminated timber beams.Plywood floorboard. 70mm suspended screed with intergrated water piping system. Polished screed floor finish
3 - Base thickening of beam with timber blocks to support existing column above.
4 - Extension floor:
    250mm L- profile steel edge beam.
    Steel I-beam floor joist, 600mm spacing.
    Steel floor plate (30min fireproof rating)
    Acoustic floor insulation
    Redwood floor boarding
5 - Reused roof structure

## Heating and cooling system in the floor slabs
using water aquifers placed under the squares flanking the Main Library



## Activity behind the new skin



## Perspective view of service installations