HERITAGE & ARCHITECTURE
SHARED HERITAGE LAB
BANDUNG 2018 / 2019

COMMUNITY BASED TRANSFORMATION TOWARDS A RESILIENT FUTURE

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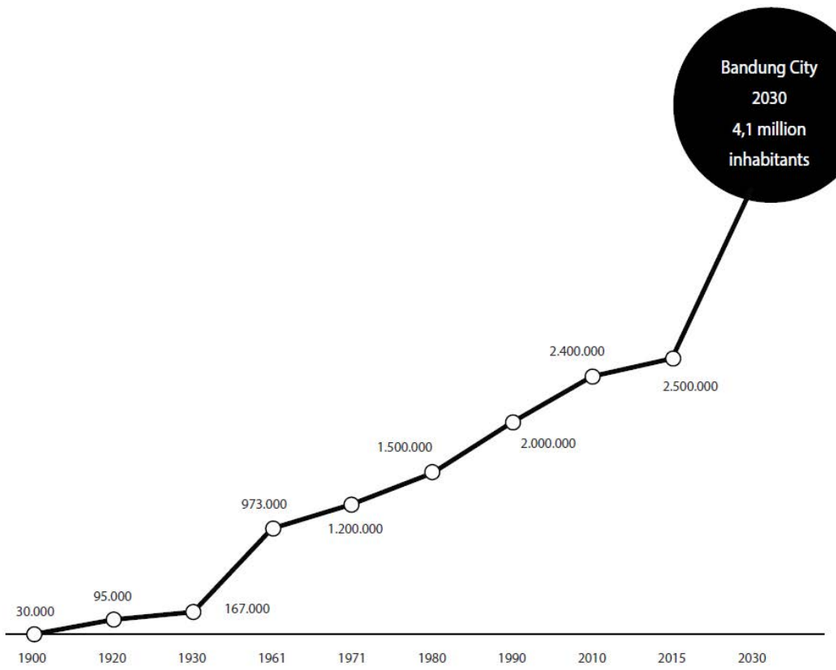
4741455

Bandung, Indonesia

SHARED HERITAGE LAB

- How heritage sites and buildings can contribute to the future of former colonial cities?
- How to give new meaning and use to this environment, taking history, present and future into account?
- How to evolve important heritage structures and areas of Bandung (Railroad, Cikapundung River, historic neighborhoods and infrastructure), in order to realise inclusive, thriving and healthy environments for working, living and leisure?

Bandung, Indonesia

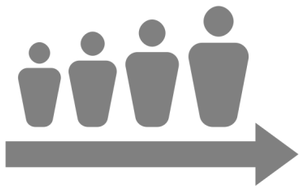


Growth of urban population in Bandung, between 1900 - 2030
Source: Shared Heritage Lab, Introduction Presentation

Unprecedented growth of population

Urban Challenges

Urban Challenges



Unstructured densification -
unhealthy living environment

Urban Challenges

Increased motorized traffic -
uncomfortable public spaces

Urban Challenges

Lack of waste management - degraded environment

Urban Challenges

Segregation between rich and poor - non inclusive city

Urban Challenges

Abandoned heritage buildings -
“Dead” city center

SMART CITY

Implementation of technology for efficiency in resource use & improved level of services

Data collection from citizens, devices, and assets that is processed and analyzed to monitor and manage traffic and transportation systems, power plants, water supply networks, waste management, law enforcement, information systems, schools, libraries, hospitals, and other community services.

Bandung Policies towards a Smart City

Smart Branding

Smart Government

Smart Environment

Smart Life

Smart Economy

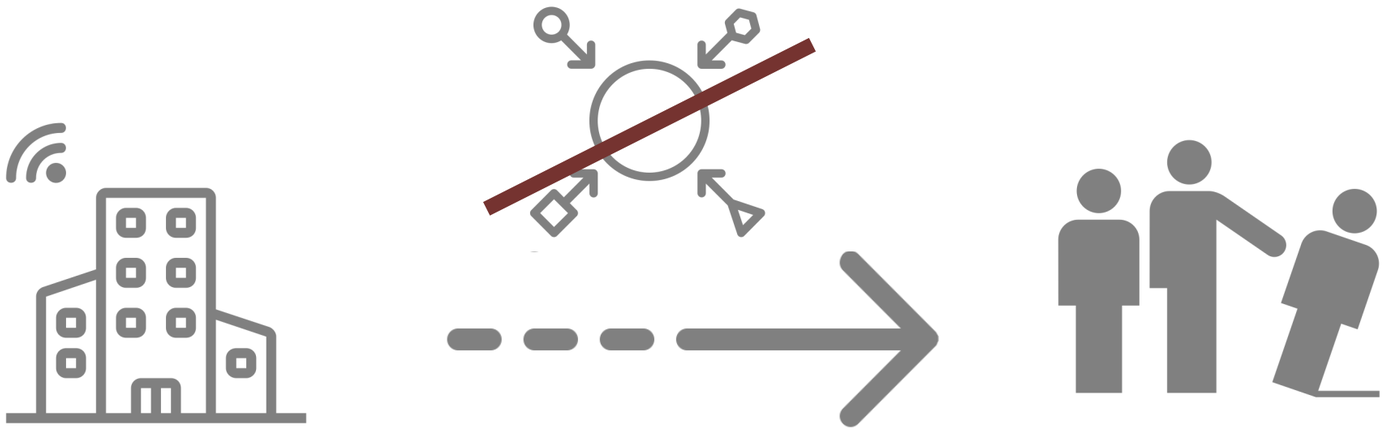
Intelligent Society

Source: https://smartcity.bandung.go.id/smartcity/slide_kota_bandung

Problem statement

*“In low-income countries, **smart cities** are irrelevant to the majority of the urban population, which lives in poverty with limited access to basic services. A focus on smart cities may worsen **inequality and marginalization**.”,*

Vanessa Watson



A Smart City

where NOT all citizens can equally access and profit from smart technology

will lead to further segregation.

Ambition

Focus on a more human aspect of smartness, in which the goal is to educate people and to equip them with skills and motivation towards a more sustainable future, while adapting the colonial legacy to serve these societal needs.

Social Sustainability

By locals, for locals

- social & health equity
- quality of life
- education
- community development
- community resilience
- social support

Environmental Sustainability

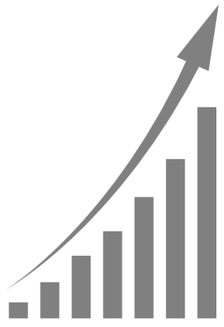
Resource & Energy saving

- local building materials
- use of renewable energy
- use of recucled materials
- reuse of existing infrastructure
- rainwater recovery

Economic Sustainability

Generate income for maintenance & expansion.

- create business opportunities
- include facilities that generate income
- smart growth



Cultural Sustainability

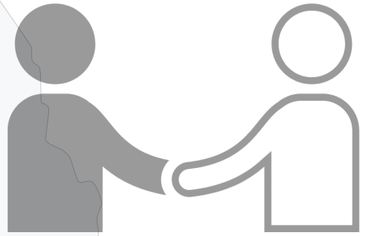
Encourage respect for cultural heritage and the preservation of native customs.

- identity
- engagement
- creativity and recreation
- enquiry and learning

Sustainability on 4 pillars

Urban Scale

Create bottom-up programs that focus on people & their development

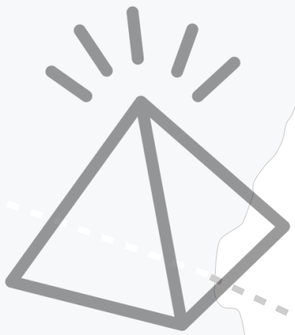


Tackle existing inequalities & create an inclusive city

Improve the mobility of the city

Raise awareness regarding the colonial legacy & its benefits for the city

Create a healthier environment for living



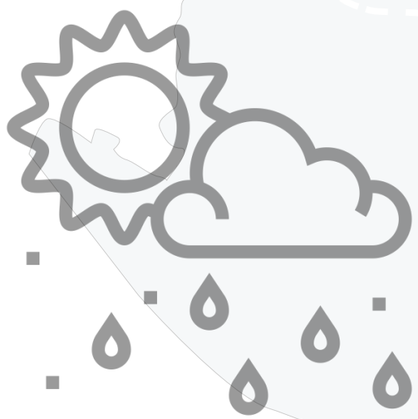
Create a new destination for the city

Architectural Scale

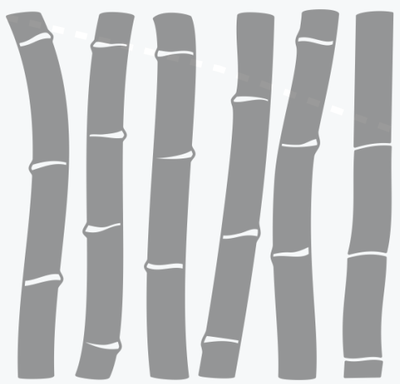
Involve people in the process of making

Upgrade existing heritage buildings

Encourage respect for vernacular principles



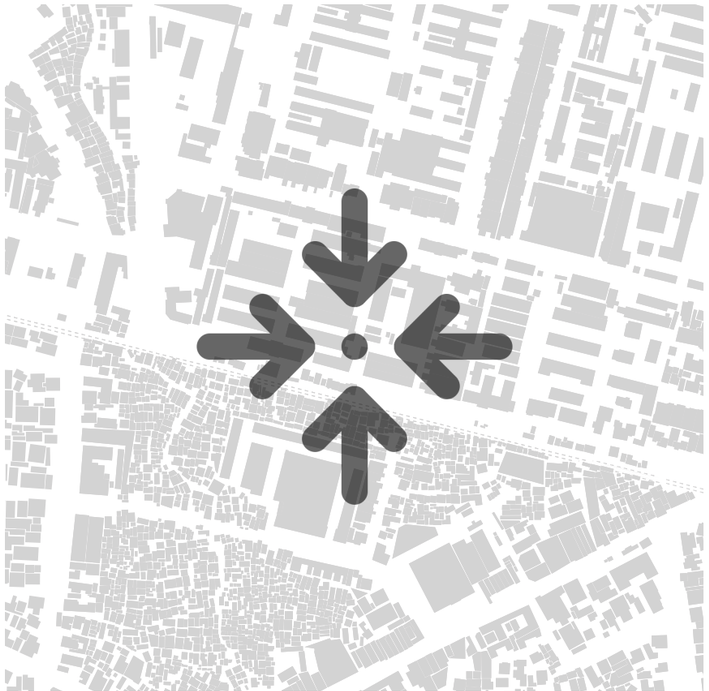
Be climate responsive



Use locally found materials

Design for disassembly

Impact of the project

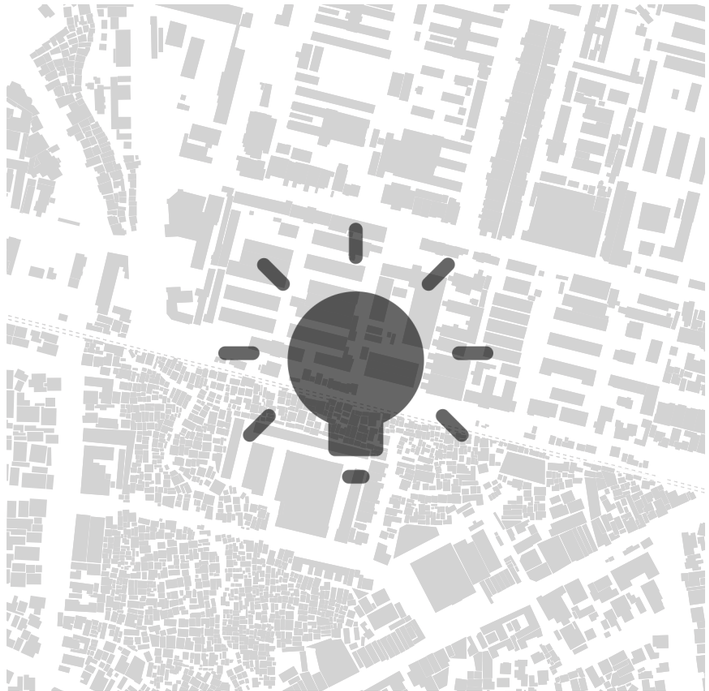


a showcase for the city

of how the colonial legacy can be transformed to serve societal needs

an influence for locals

to get closer to nature again, and to their cultural identity



an inspiration

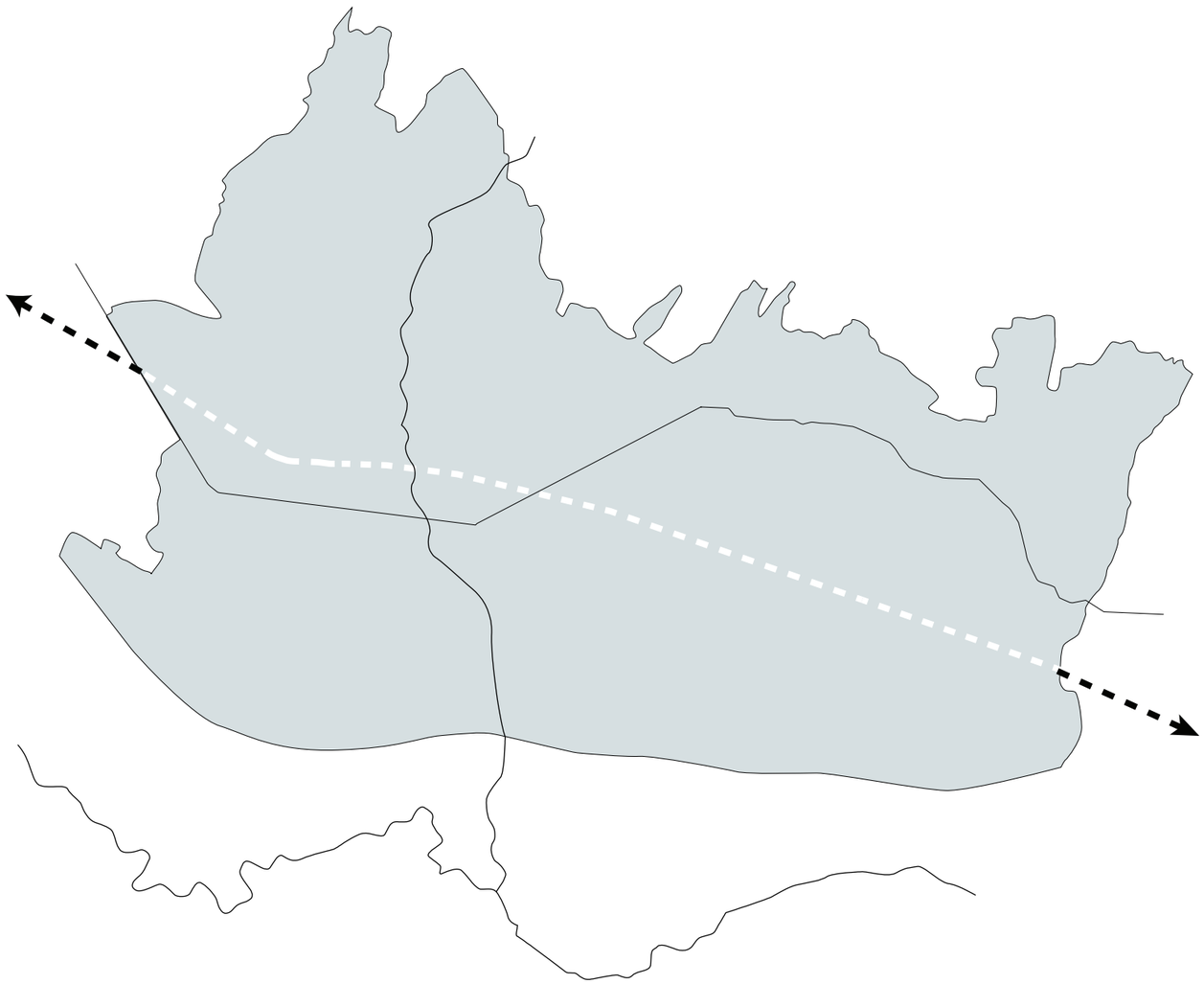
by providing an experience of vernacular craftsmanship and locally found materials

Research Question

How can adaptive reuse of the colonial legacy in Bandung, be used as an asset to create the necessary environment for cultural resilience and development of the existing communities in a smart, inclusive and healthy way?

Strategy

Urban Scale

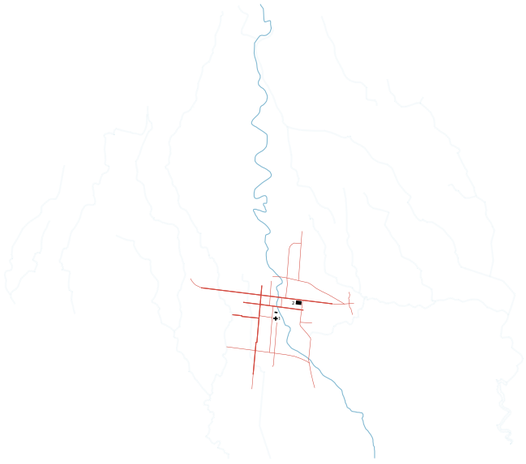


The Railroad

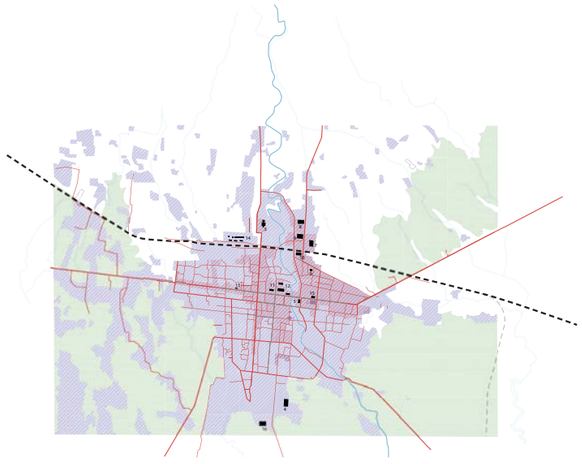
Urban Scale

DEVELOPMENT OF BANDUNG & RELATION WITH THE RAILWAY

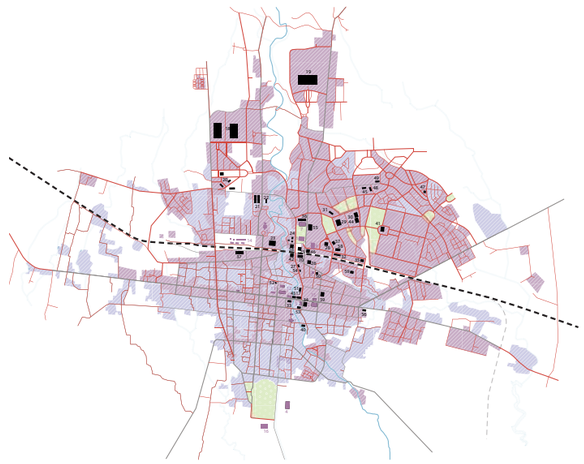
1810



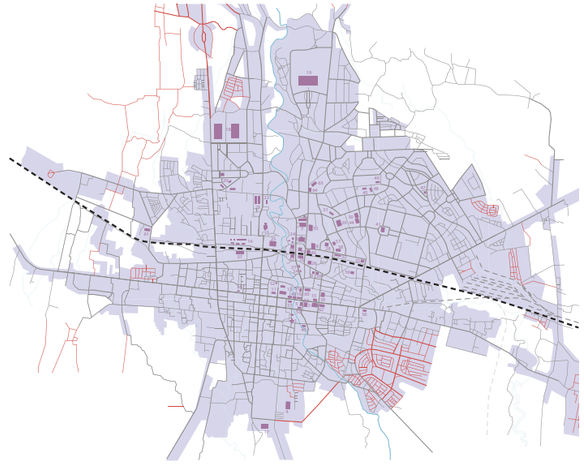
1882

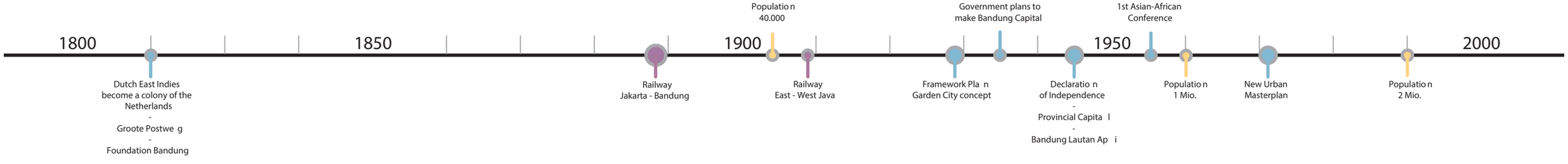


1921



1952



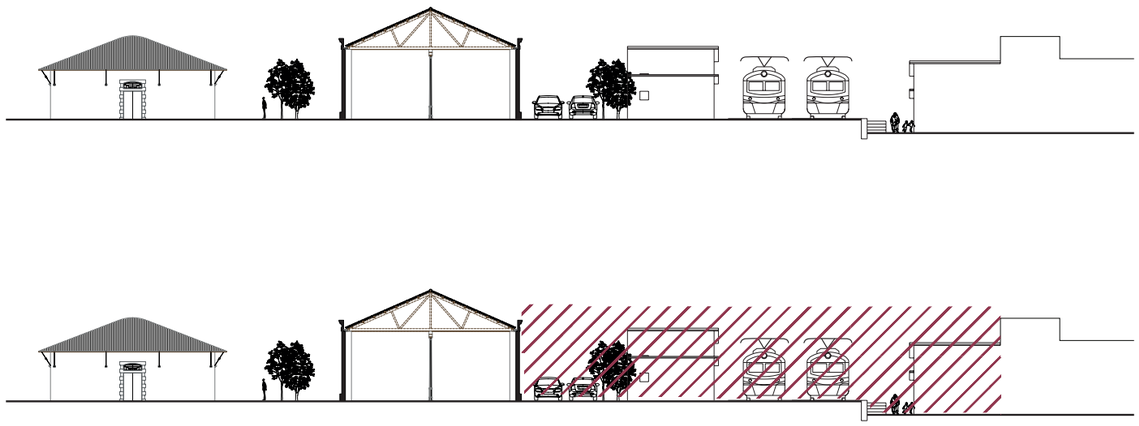


Urban Scale

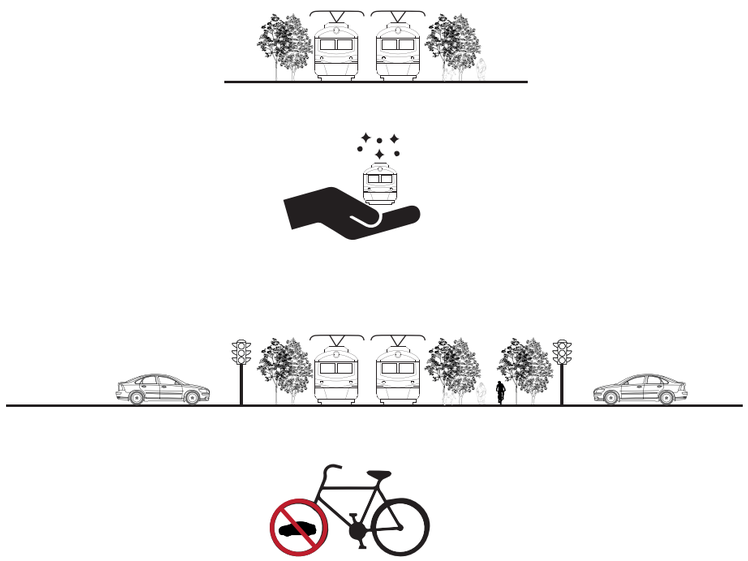
Urban Scale

Urban Scale

The railway becomes a tram line



new circulation system & community mobility
integrated cycle path & pedestrian zone



Urban Scale

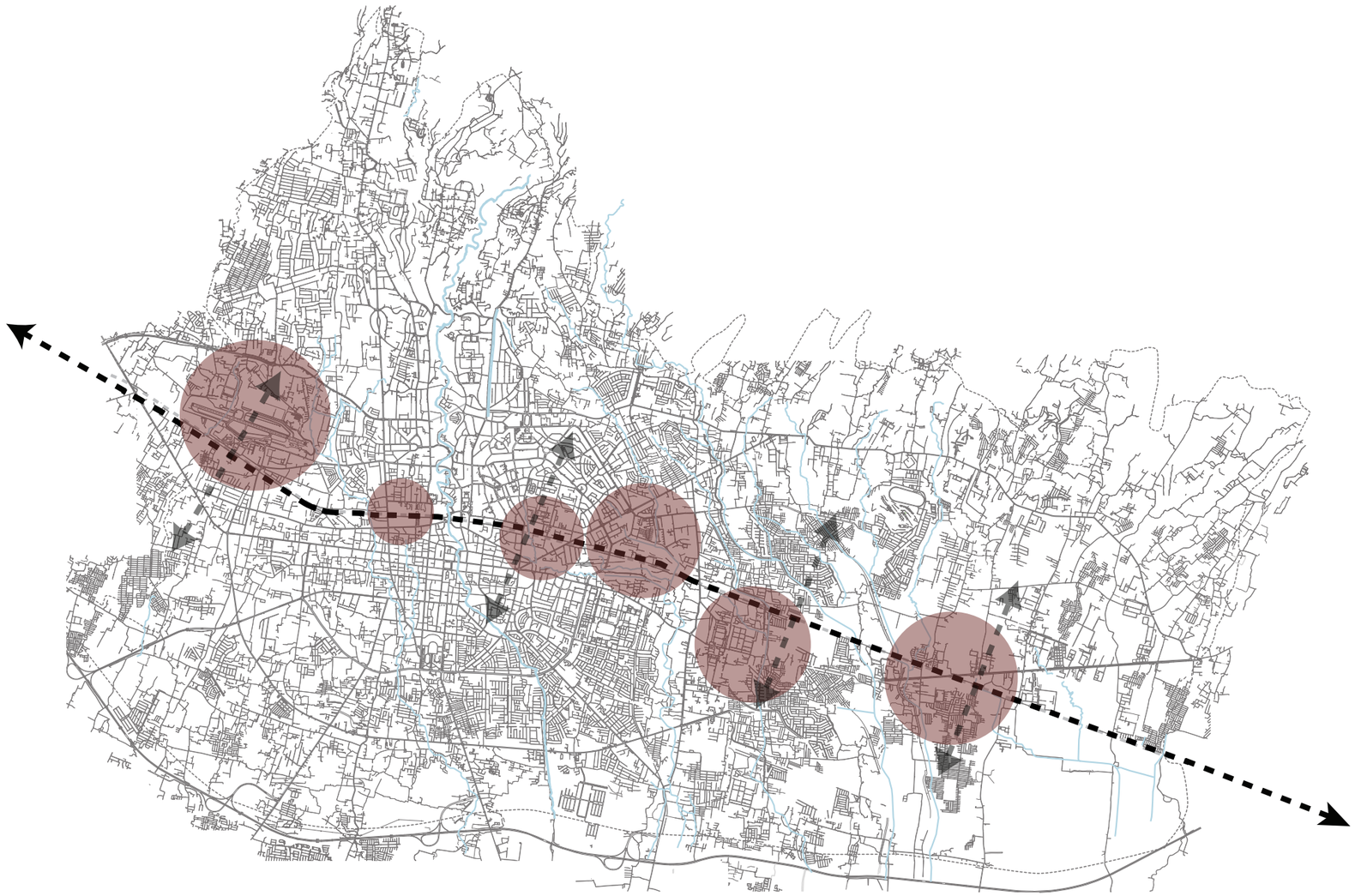
- Transform the existing Railway line from a **barrier** dividing Bandung into two, to a **connector** between the different parts of the city, and a vibrant part of it.

- Establish a new **tram line** instead of the existing **Railway line**, with multiple stops within the city, and include a **pedestrian zone** and a **cycle path** in this new “green belt”.

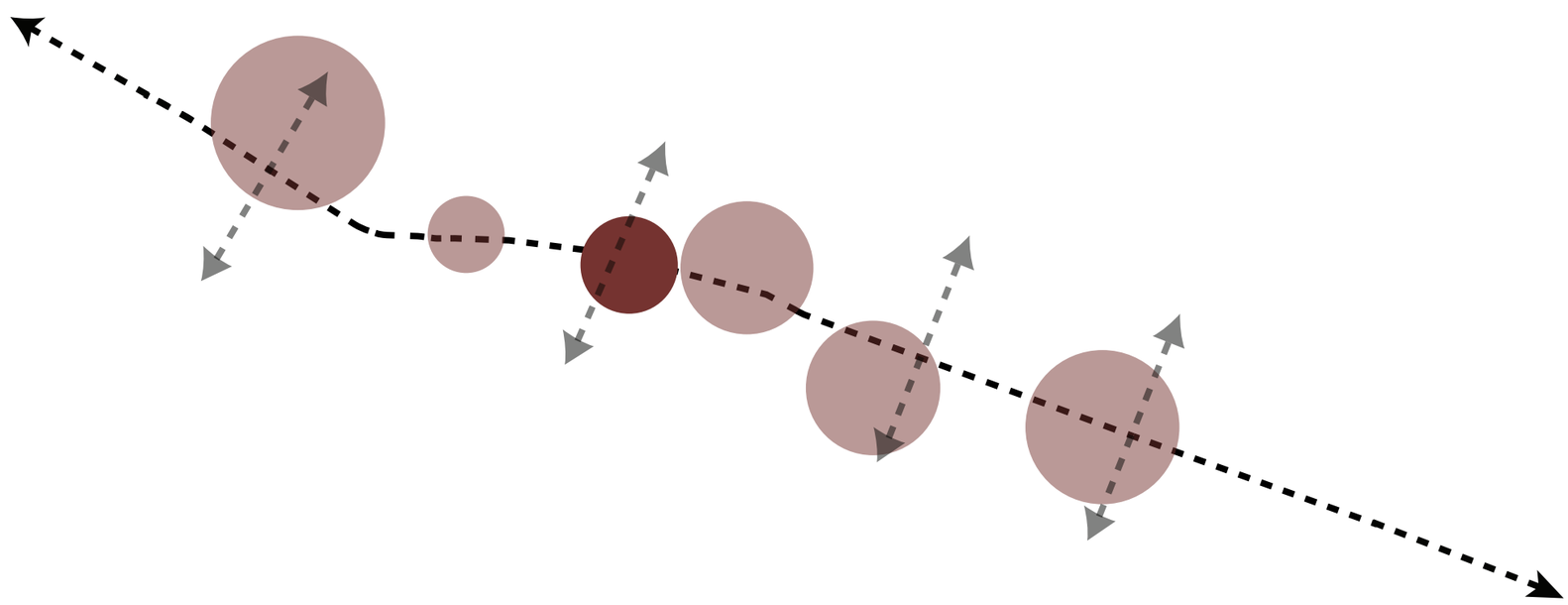
- Create **community based programmes** along the new green zone, that focus on developing the communitites and **balancing inequalities**.

- Create new **business opportunities**.

- Make use of the **existing building stock** in the inner city.



Focus on one of the possible transformation areas along the Railway

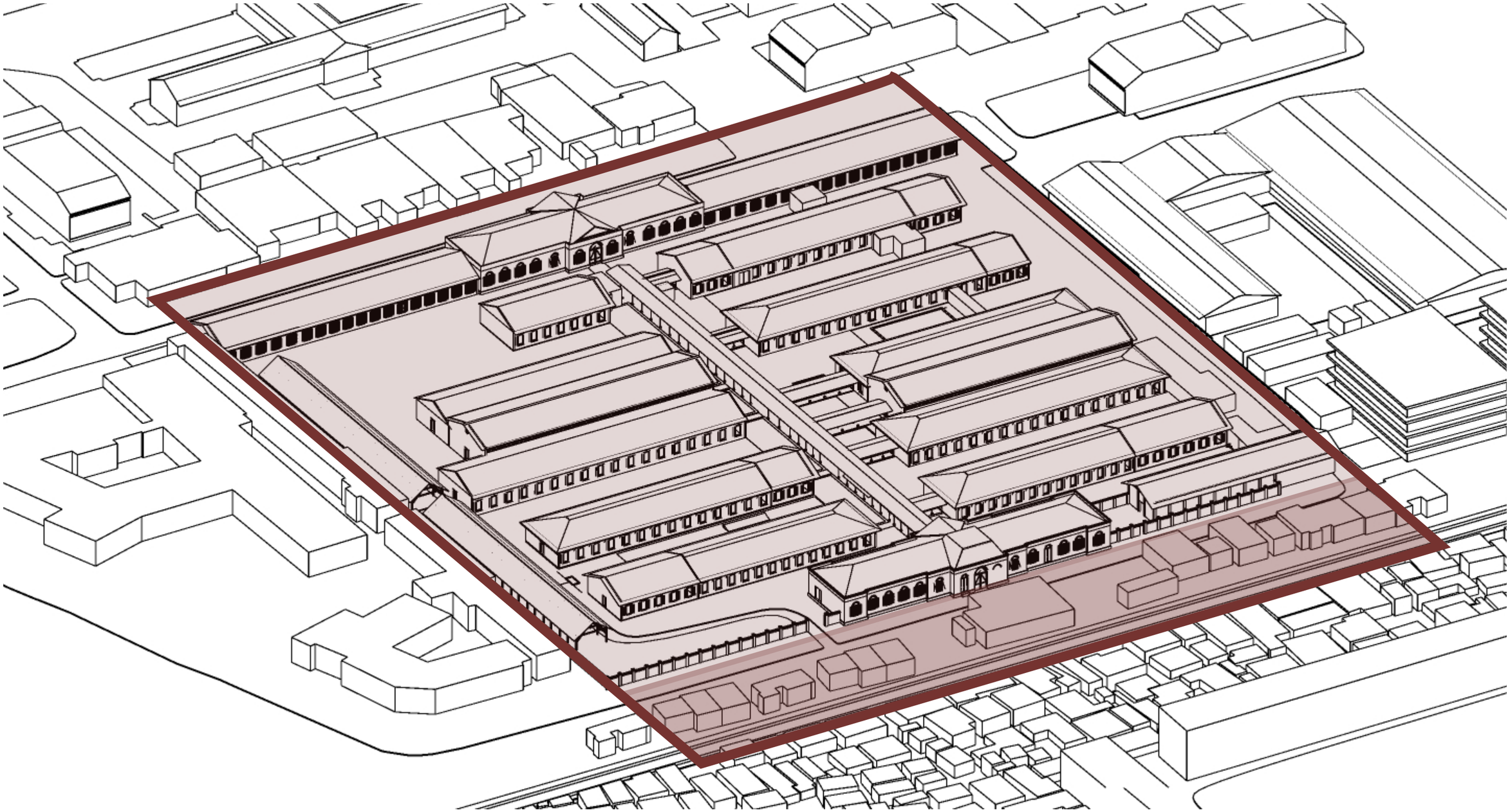


Complex Scale

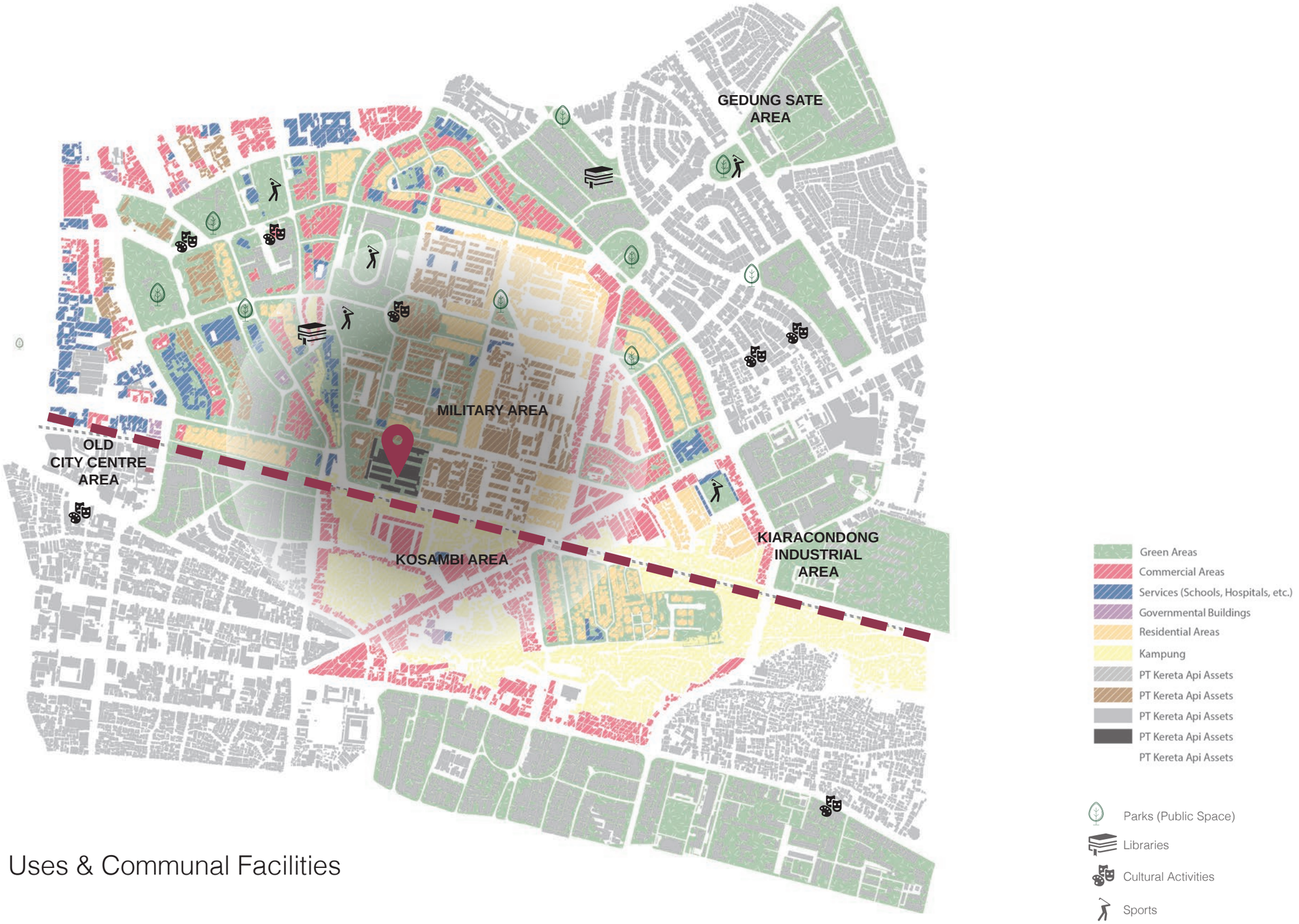
The ‘KNIL’ Magazijnen
Military Area

Location of intervention

“KNIL” Magazijnen & Border Line

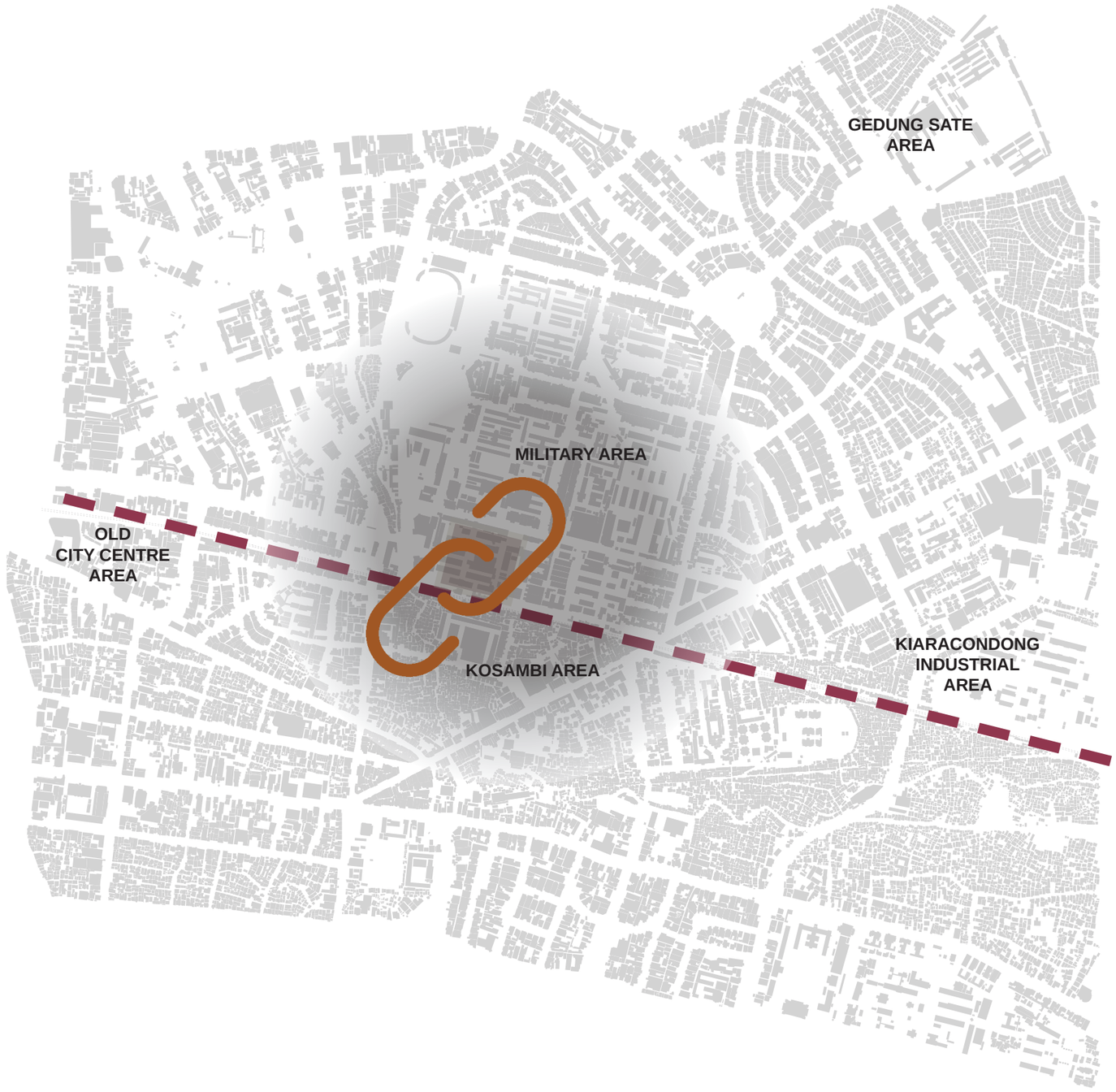


Complex Scale



Land Uses & Communal Facilities

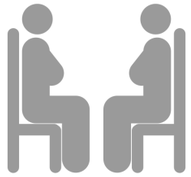
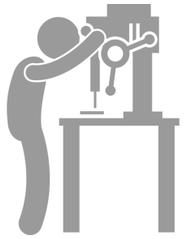
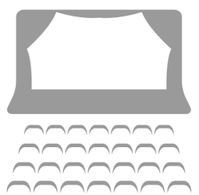
Complex Scale



Program

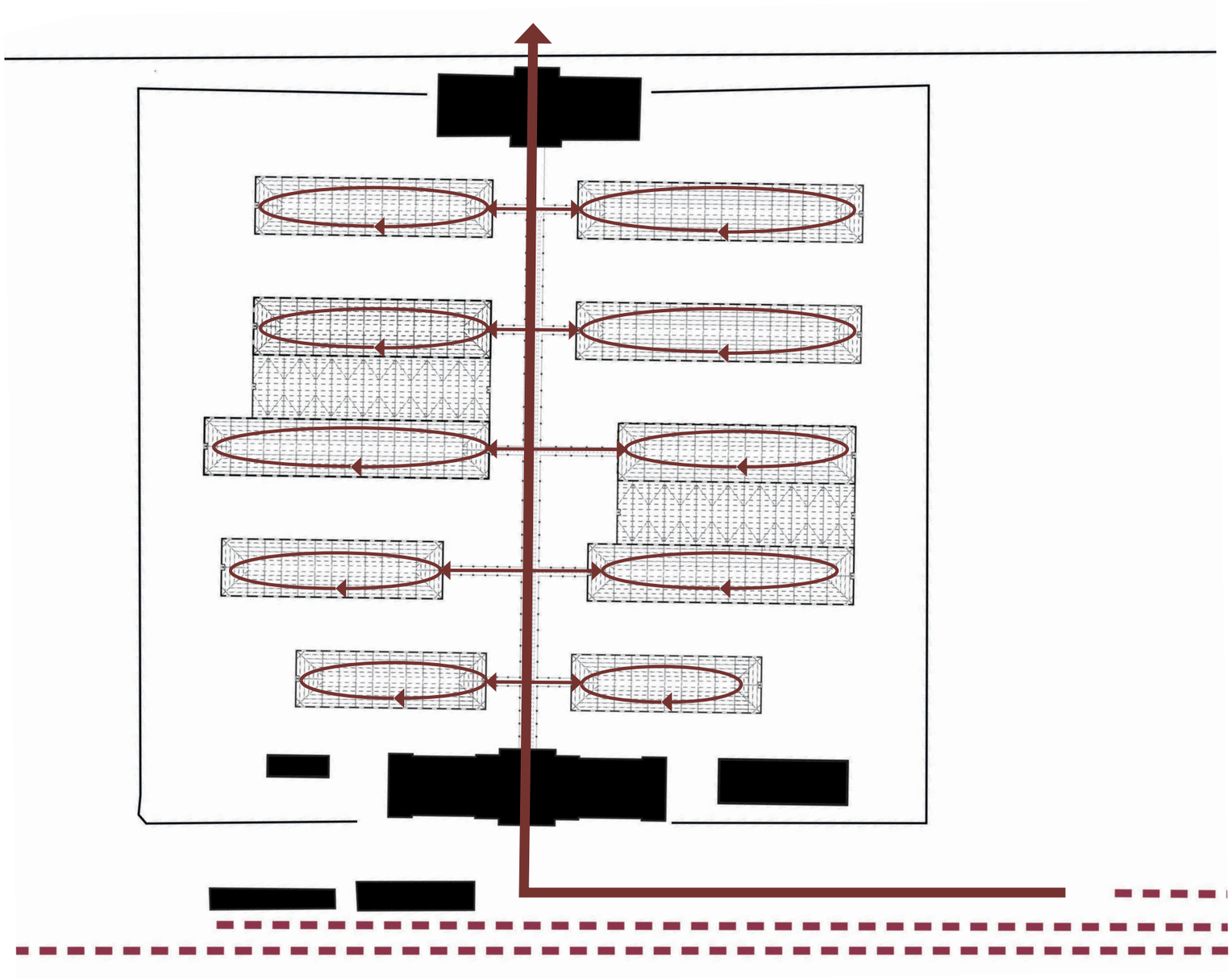
Transform the former military storage complex into a creative Community Center that focuses on the **elimination of segregation** and on **communities development**, through **leisure, educational & creative activities** that engage all different groups of people.

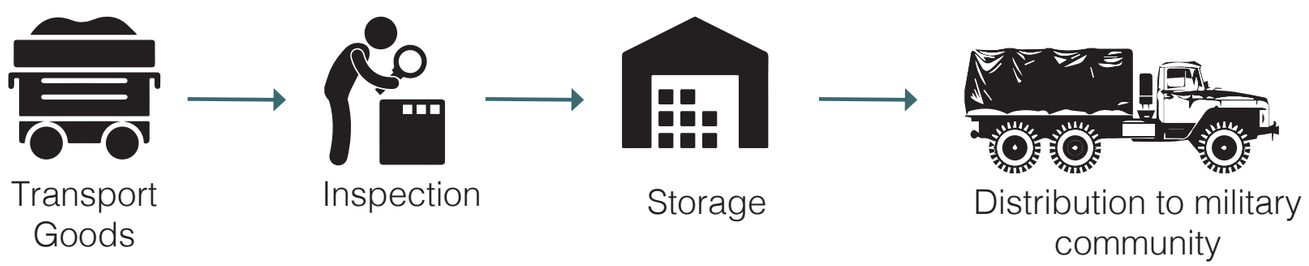
Program

A place for the community	administration space	 counselling services	day - care center	meeting rooms
A place to learn & to develop skills	library	 production space	arts & crafts studios	meeting rooms
A safe place for after school activities	sports facilities	dance/music/ theater classes	 multipurpose space	outdoor facilities
A place to generate income	existing creative community	start-up space	urban farming	cafe & food

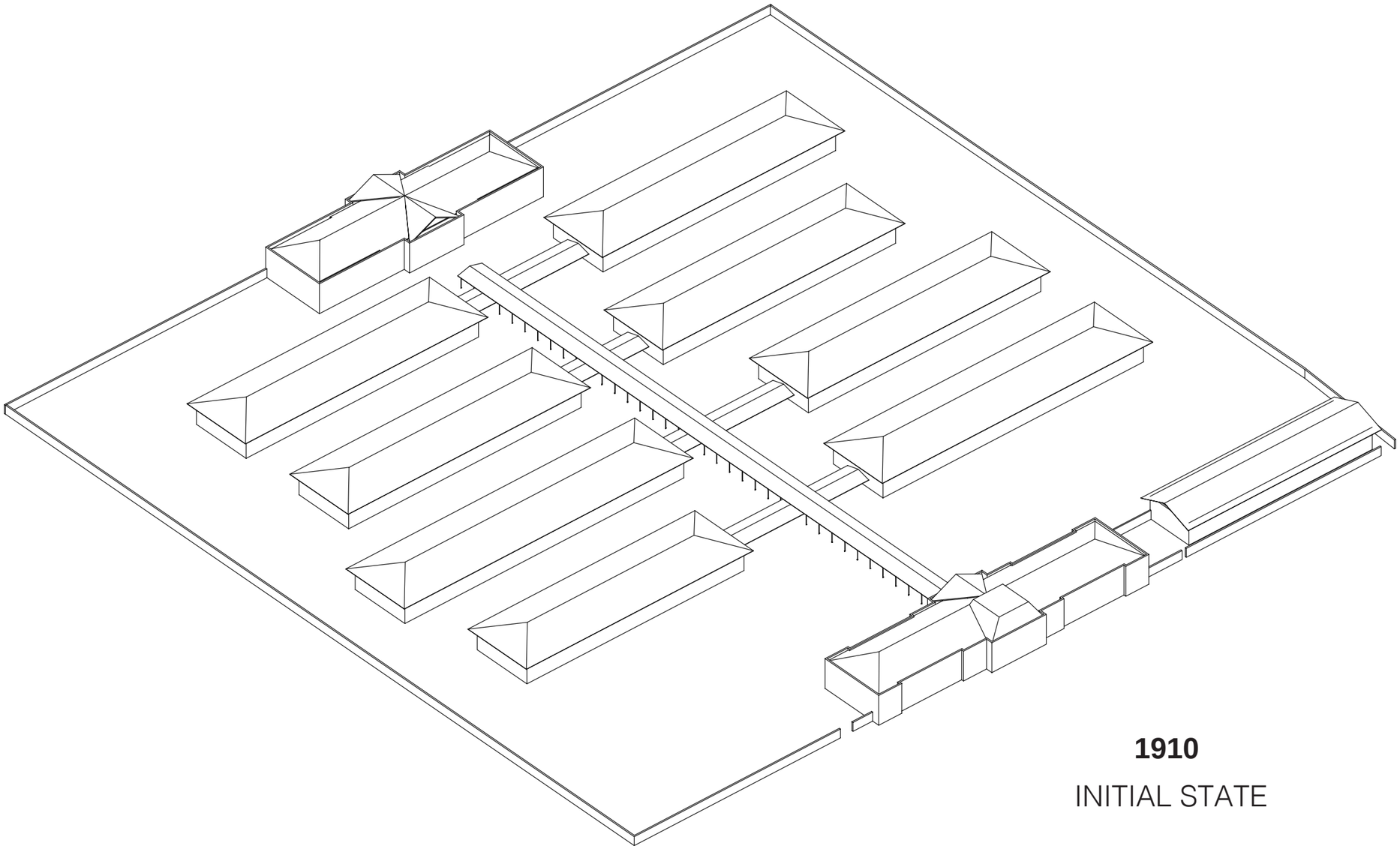
Location of Intervention

Location of intervention





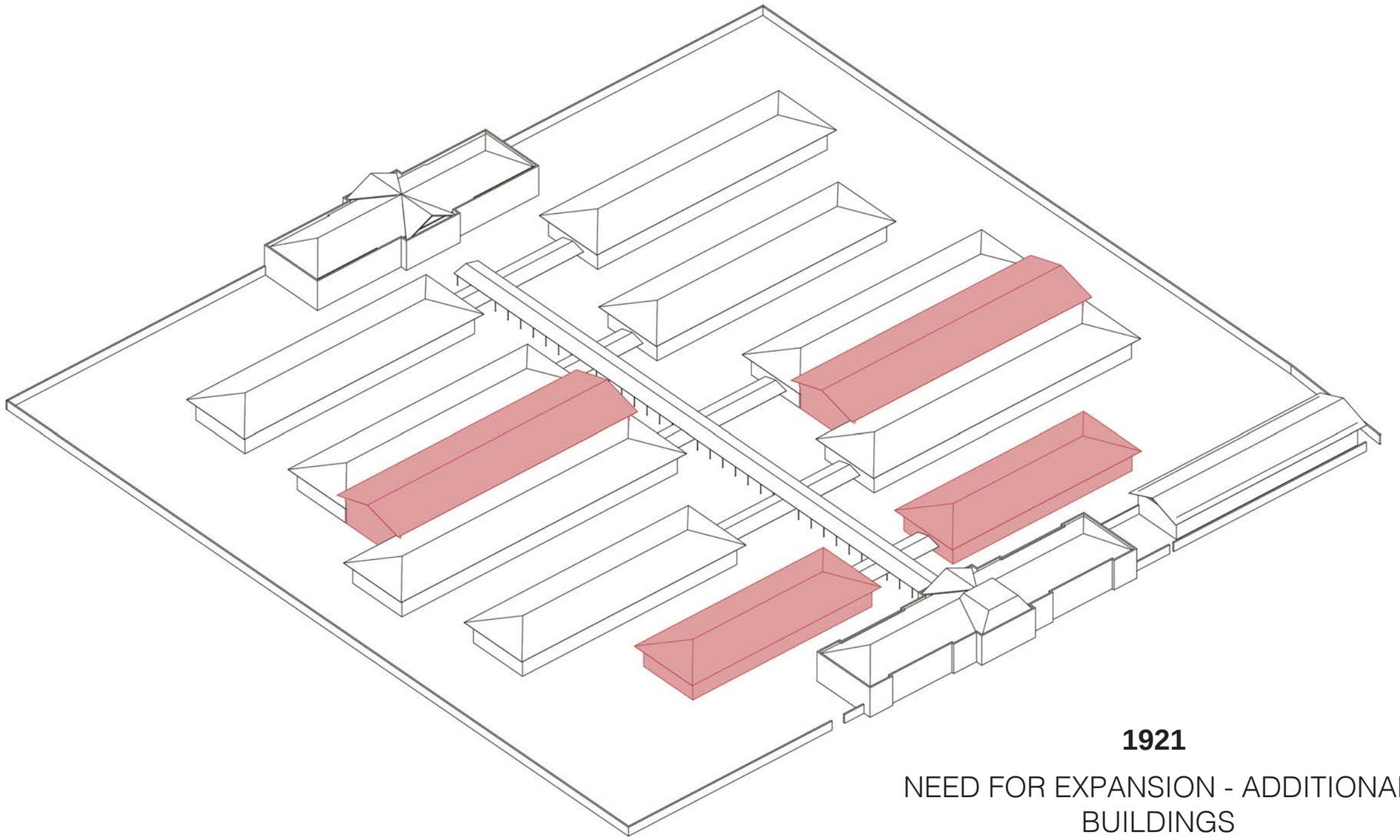
DNA of the space / Chrono-mapping



1910

INITIAL STATE

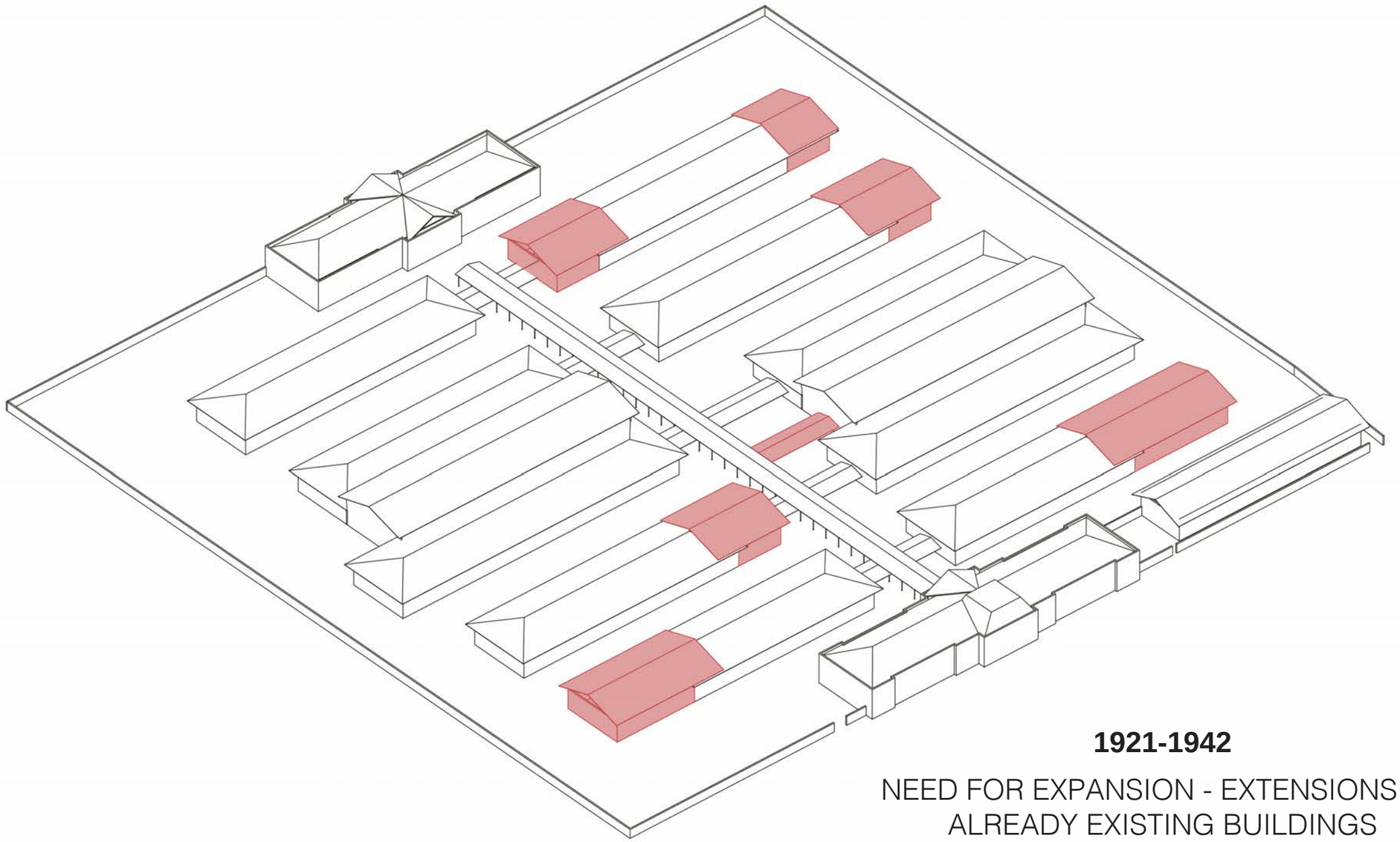
DNA of the space / Chrono-mapping



1921

NEED FOR EXPANSION - ADDITIONAL BUILDINGS

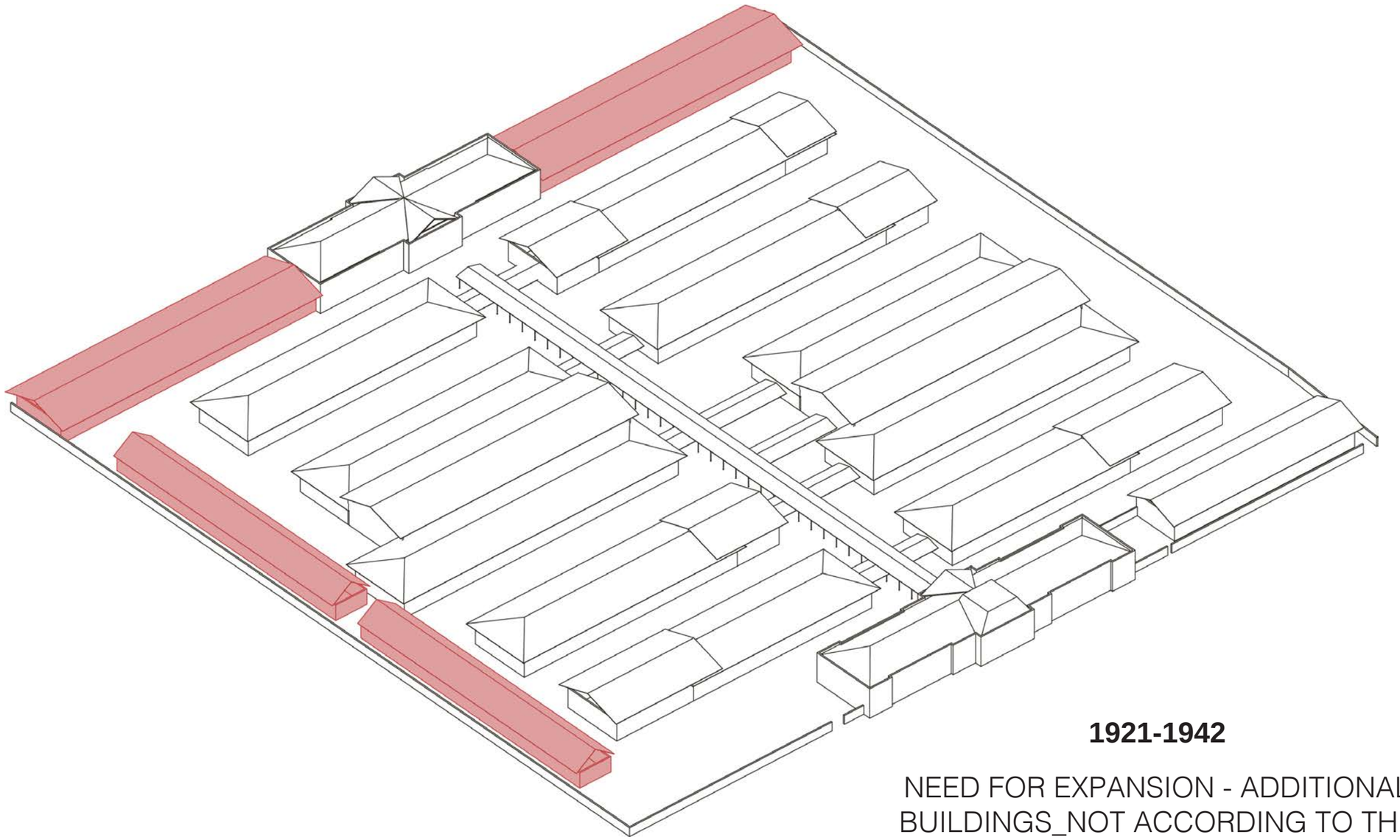
DNA of the space / Chrono-mapping



1921-1942

NEED FOR EXPANSION - EXTENSIONS TO ALREADY EXISTING BUILDINGS

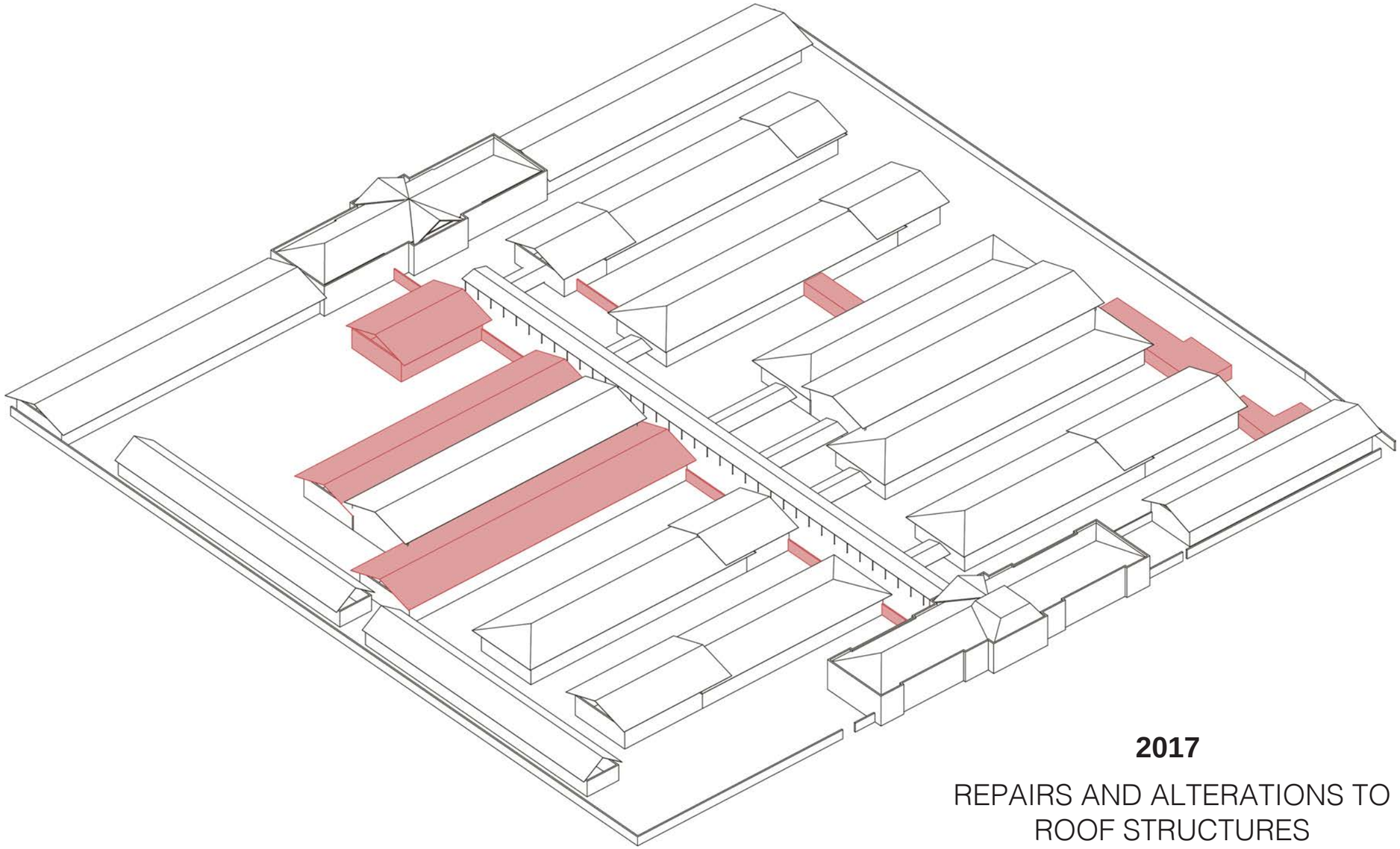
DNA of the space / Chrono-mapping



1921-1942

NEED FOR EXPANSION - ADDITIONAL BUILDINGS_NOT ACCORDING TO THE INITIAL PLAN

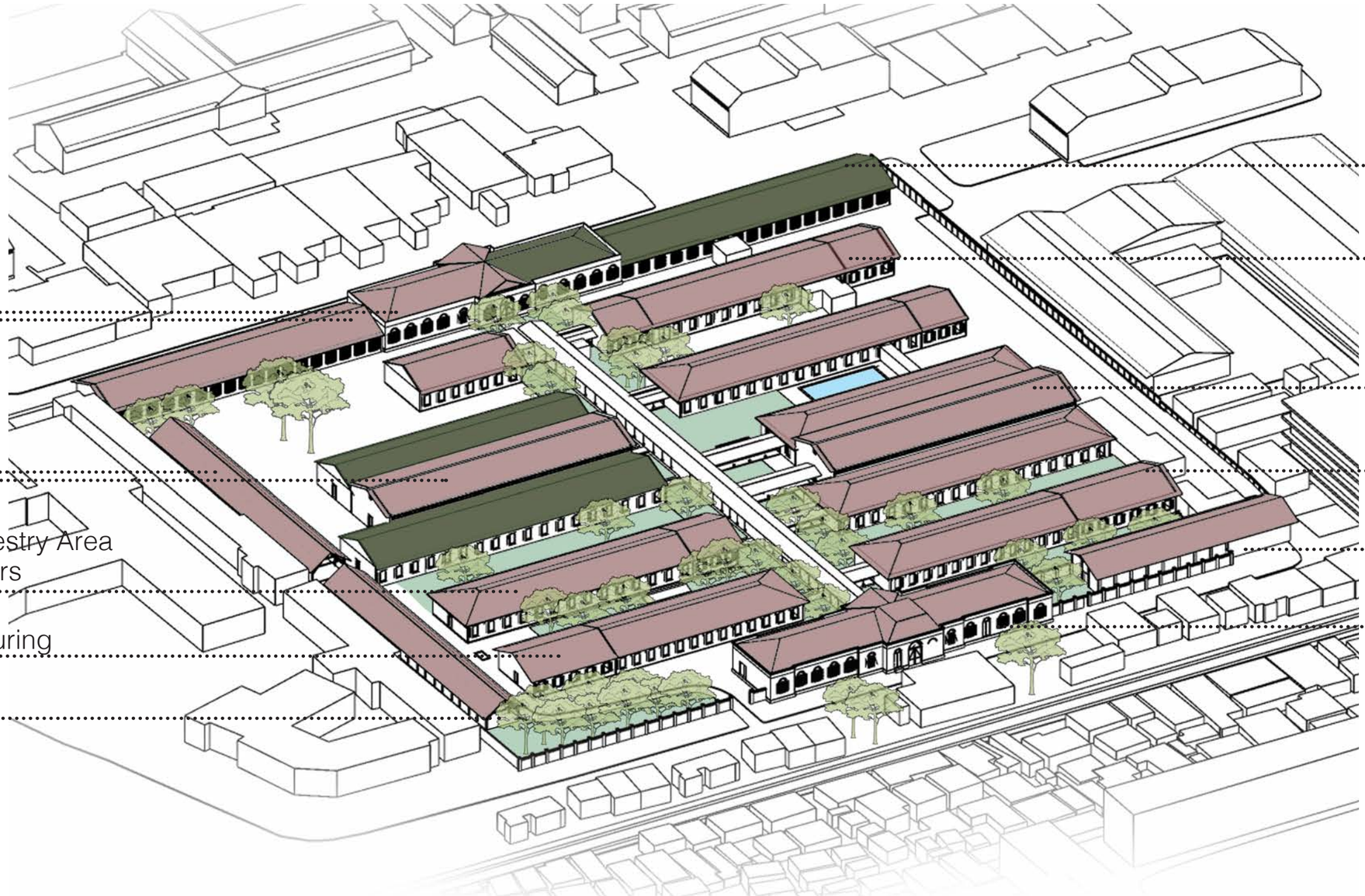
DNA of the space / Chrono-mapping



2017

REPAIRS AND ALTERATIONS TO
ROOF STRUCTURES
ADDITIONAL VOLUMES OF LOW QUALITY

Current use of the complex



Military

Playhouse

Spasial

Food retail

Military Cooperative

Offices

Military

Military

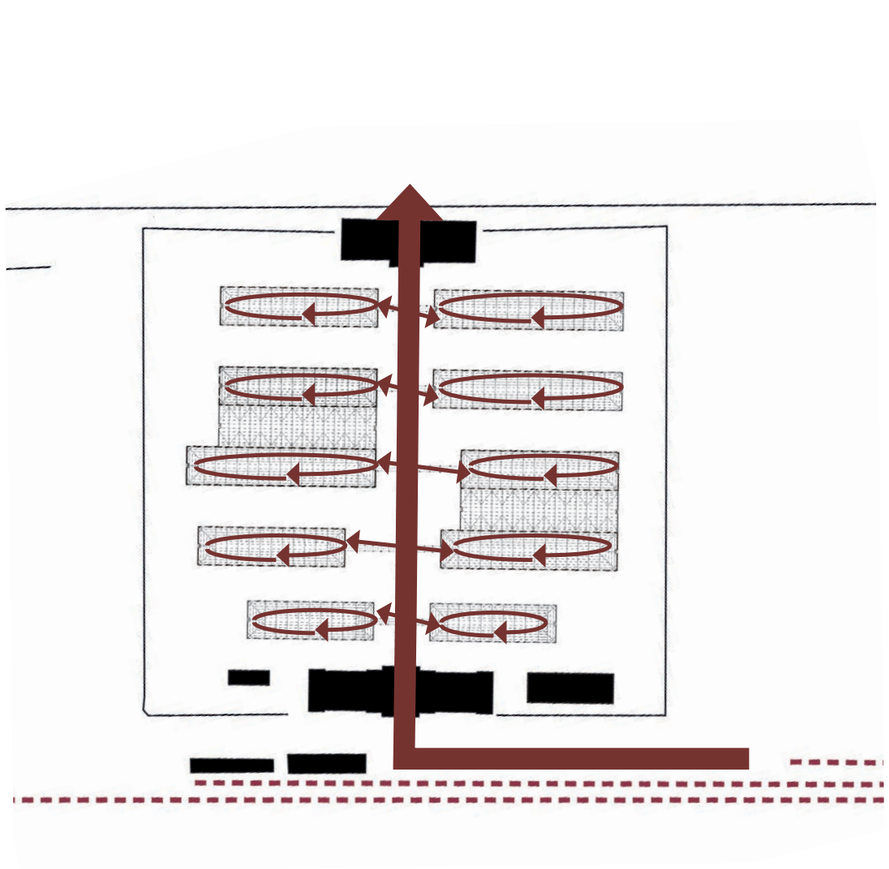
U&KL Eco Forestry Area
Furniture makers

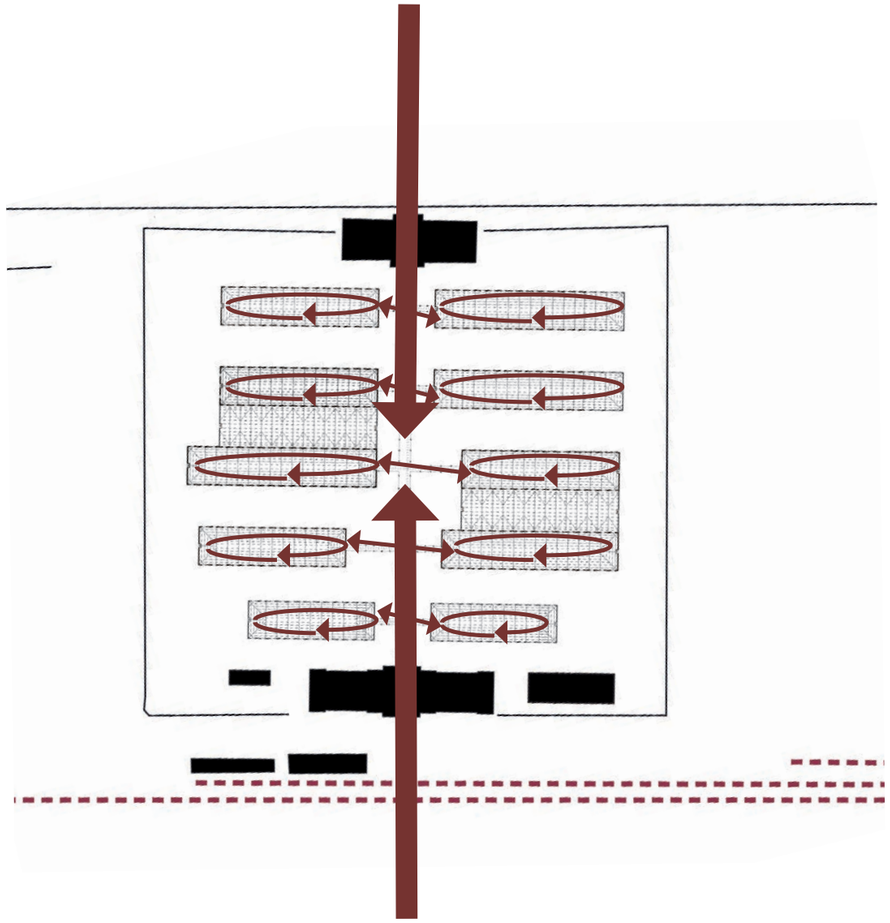
Glass manufacturing

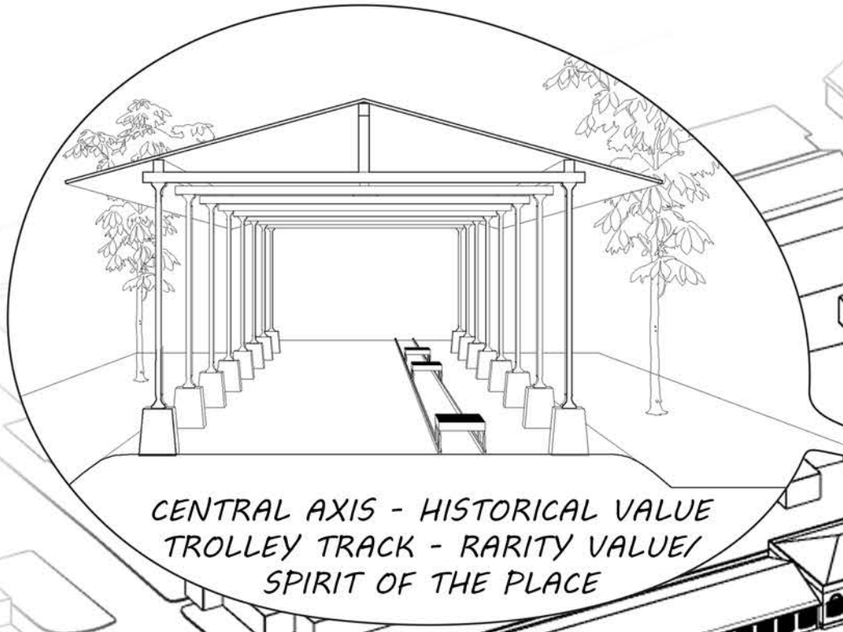
Shoe makers

Design Question

How can the former military complex be transformed from a place for the provisioning of goods to the military, into a place for provisioning intangible “goods”to the surrounding communitites?



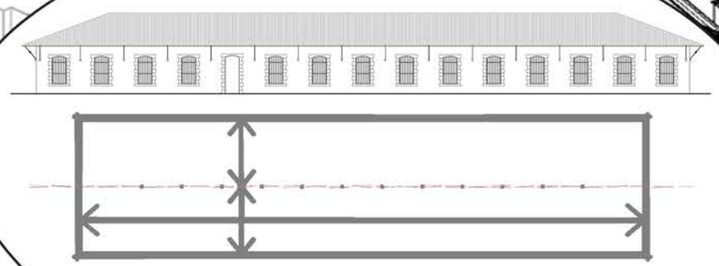




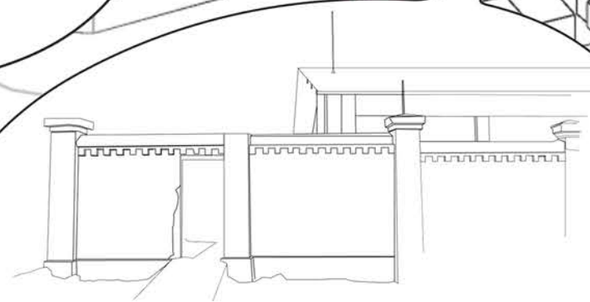
CENTRAL AXIS - HISTORICAL VALUE
TROLLEY TRACK - RARITY VALUE/
SPIRIT OF THE PLACE

SPASIAL/NEW SOCIAL USES
SPIRIT OF THE PLACE

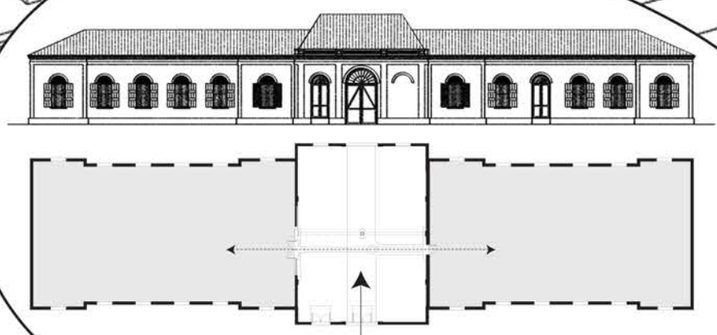
TIMBER ROOF STRUCTURE -
RARITY VALUE



FLEXIBILITY & REPETITION -
USE VALUE

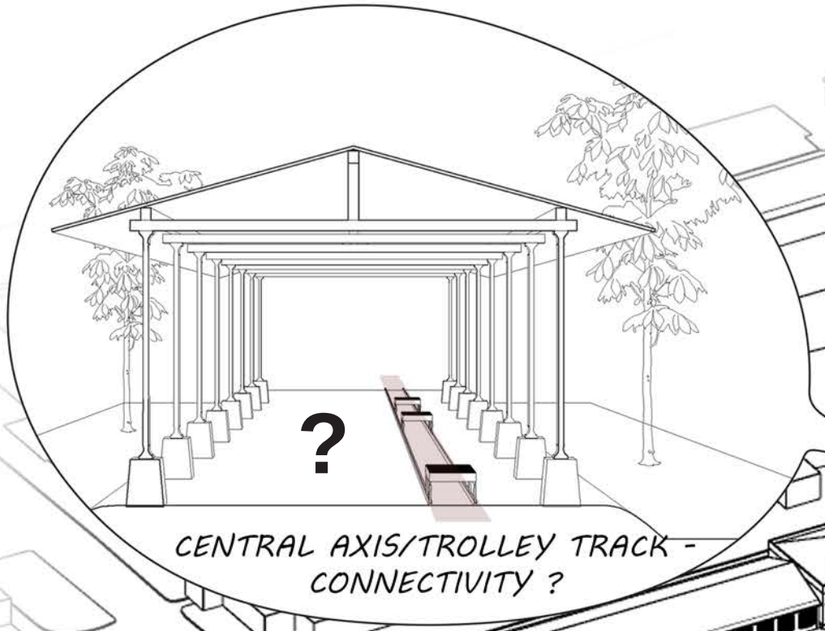


ENCLOSURE BY WALL -
HISTORICAL & AGE VALUE



IMPERIAL CHARACTER -
HISTORICAL VALUE

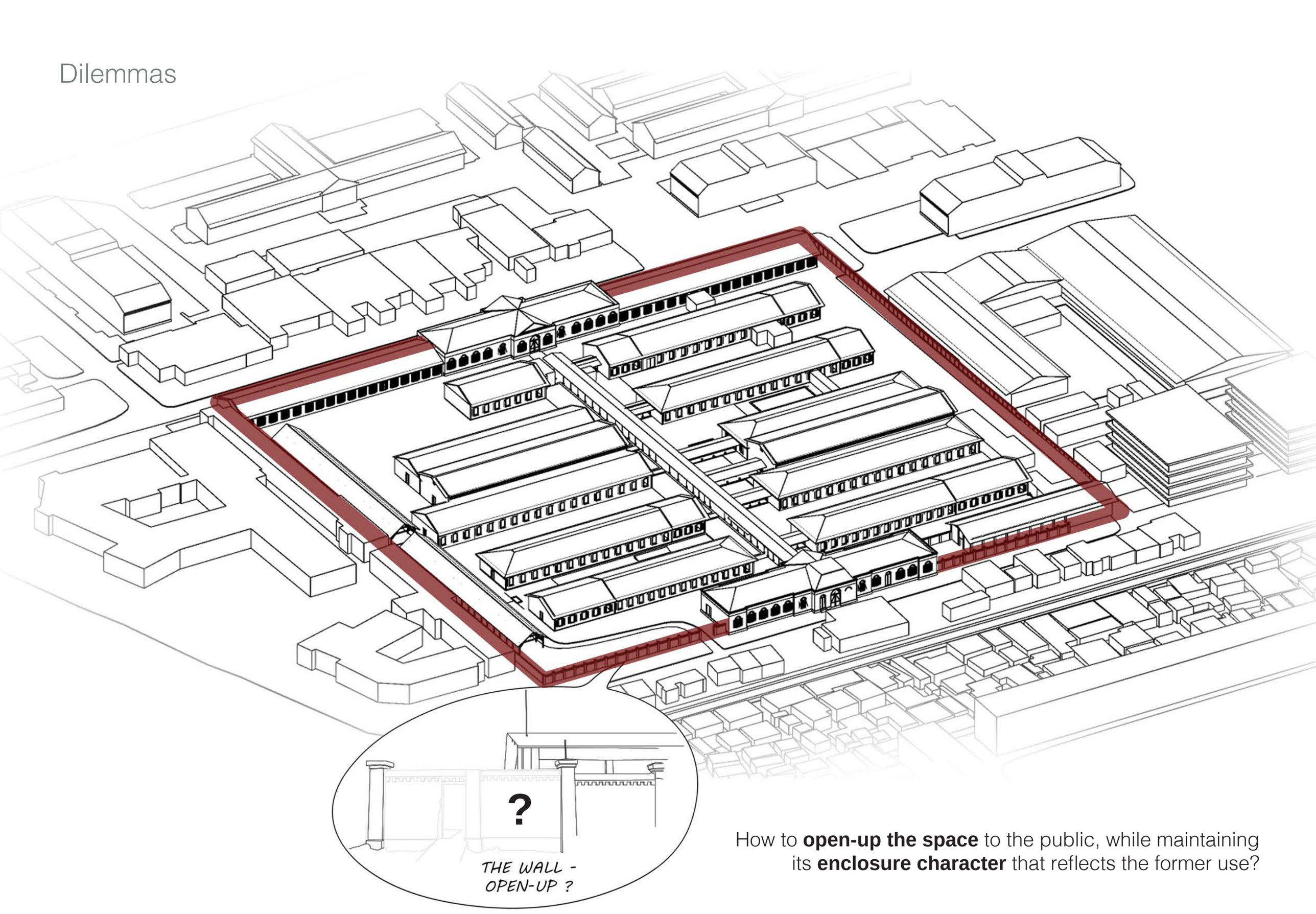
Cultural Valuation



Dilemmas

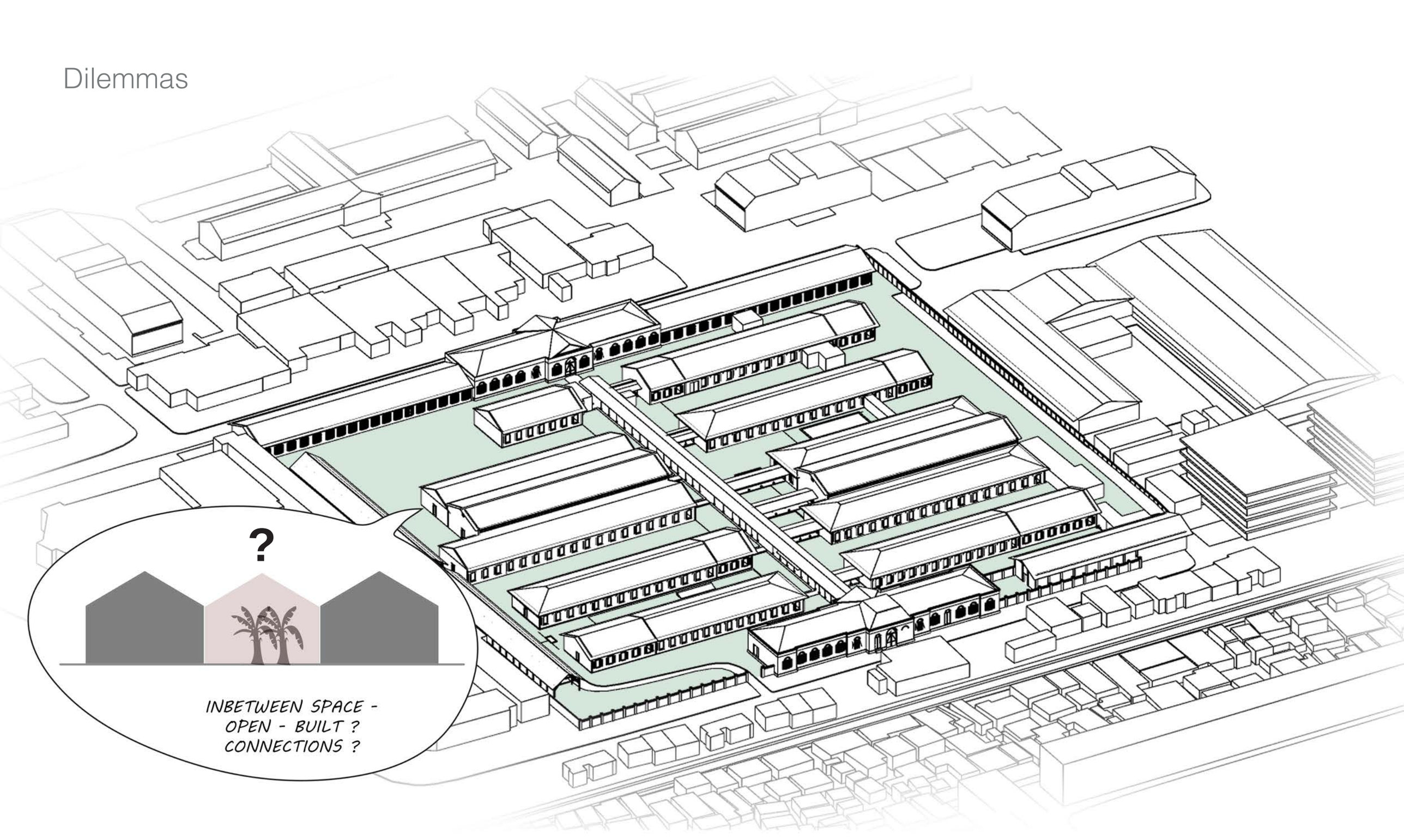
How to re-establish **connectivity** between buildings through the trolley path?
Do you keep the system visible and/or working or the tracks are enough to tell the **story of the place**?

Dilemmas



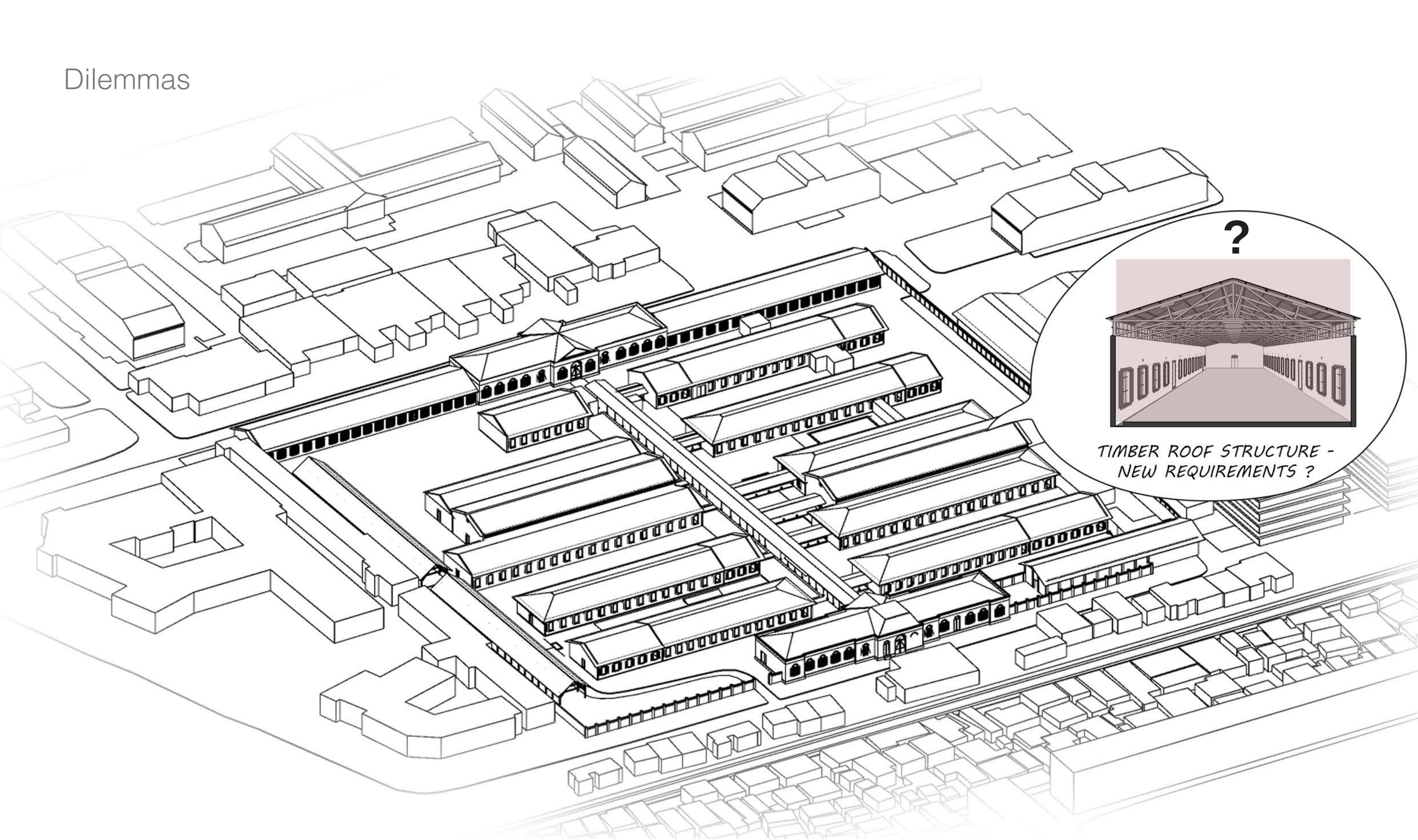
How to **open-up the space** to the public, while maintaining its **enclosure character** that reflects the former use?

Dilemmas



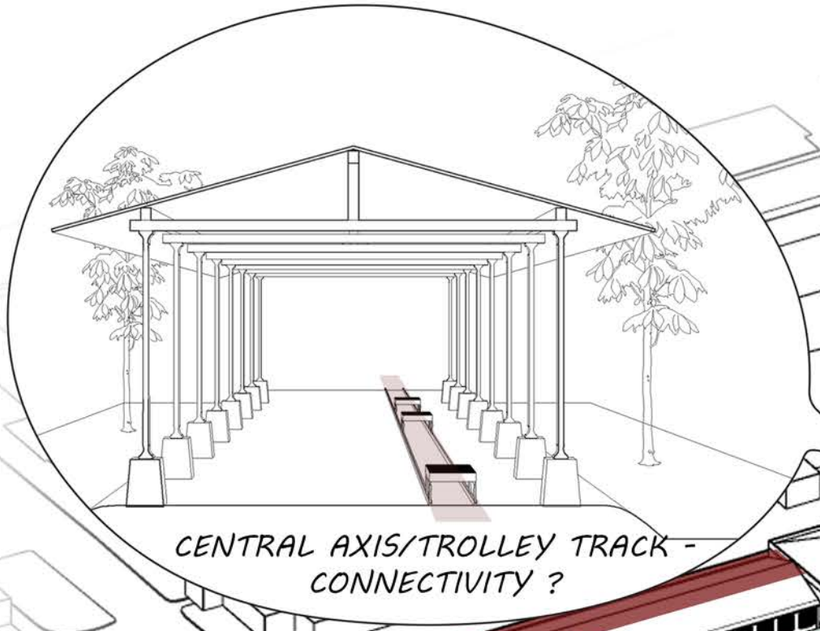
How do you maintain **openness** and flexibility while **densifying** the complex so as to address the needs of the growing population in Bandung? What is the **inbetween space**?

Dilemmas



How do you meet the **requirements** for the new uses,
while maintaining the **original roof structures**?

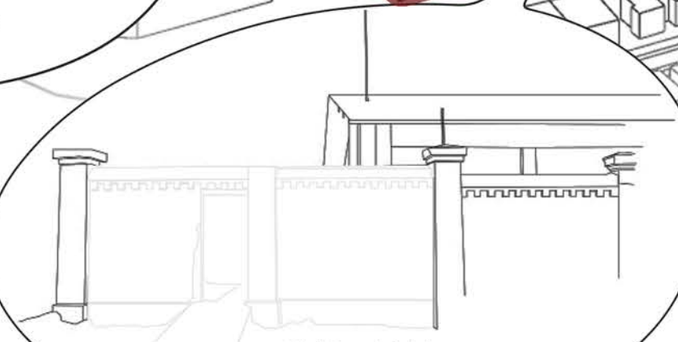
What is the apporach for roof structures that already have **interventions**?



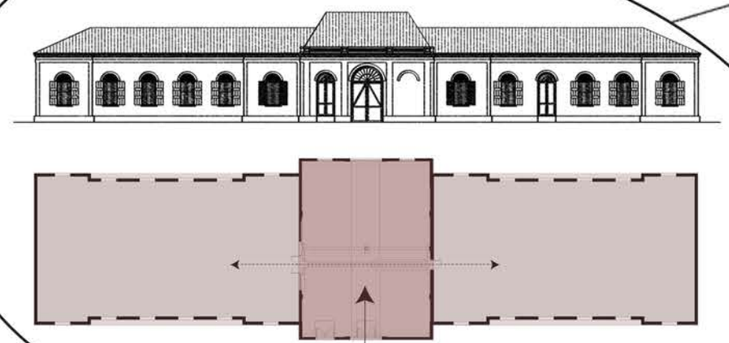
CENTRAL AXIS/TROLLEY TRACK -
CONNECTIVITY ?

TIMBER ROOF STRUCTURE -
NEW REQUIREMENTS ?

INBETWEEN SPACE -
OPEN - BUILT ?
CONNECTIONS ?



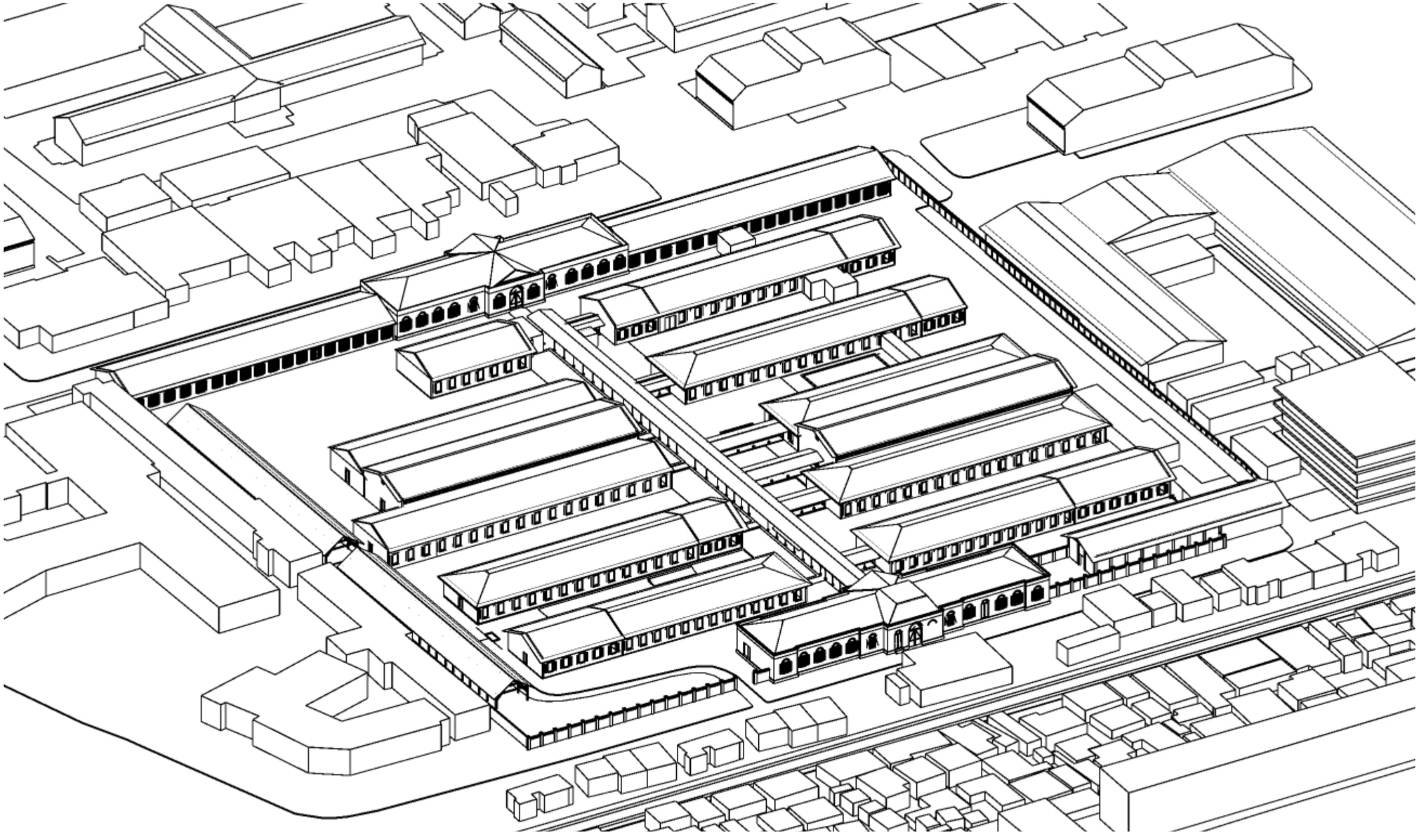
THE WALL -
OPEN-UP ?



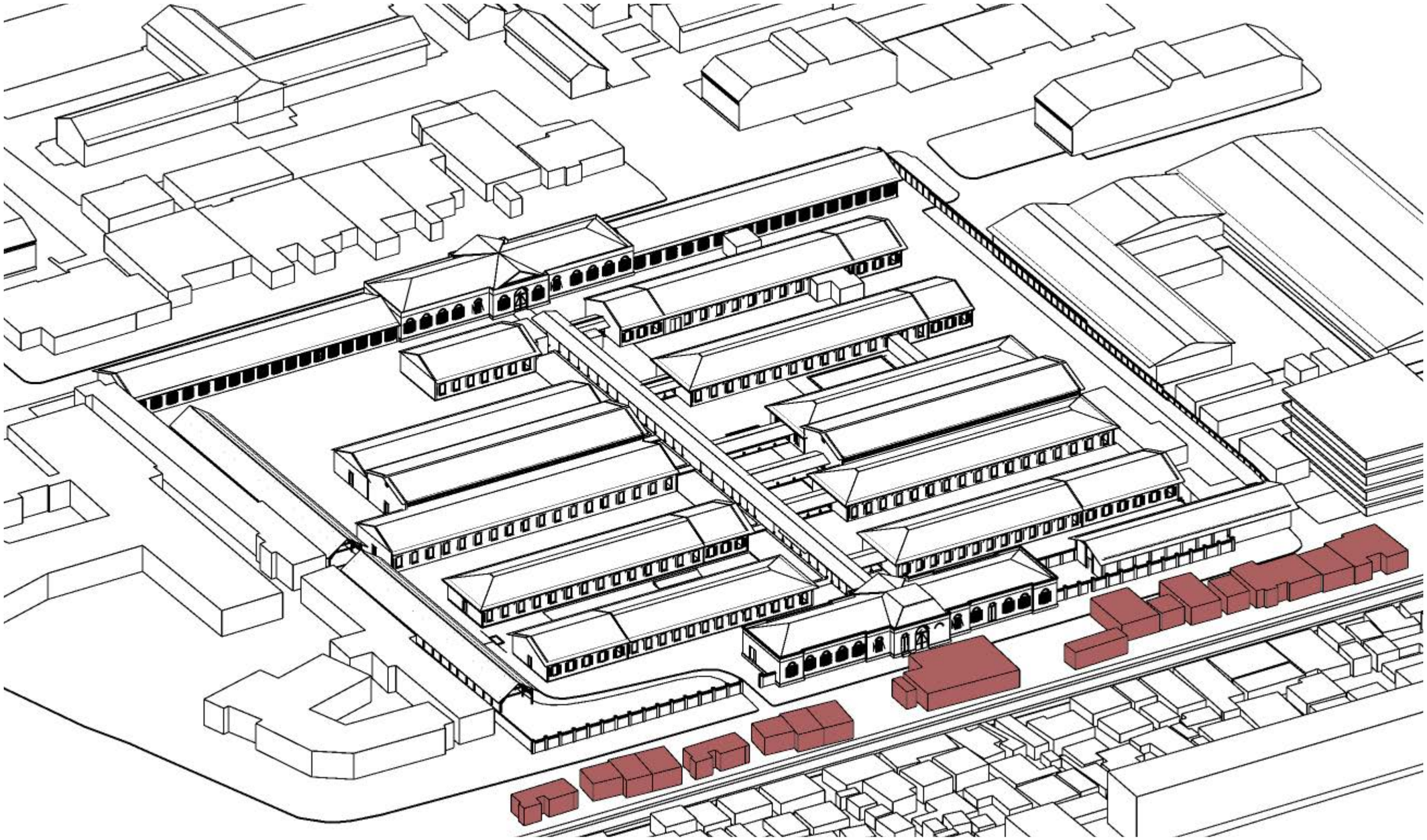
IMPERIAL CHARACTER

Dilemmas

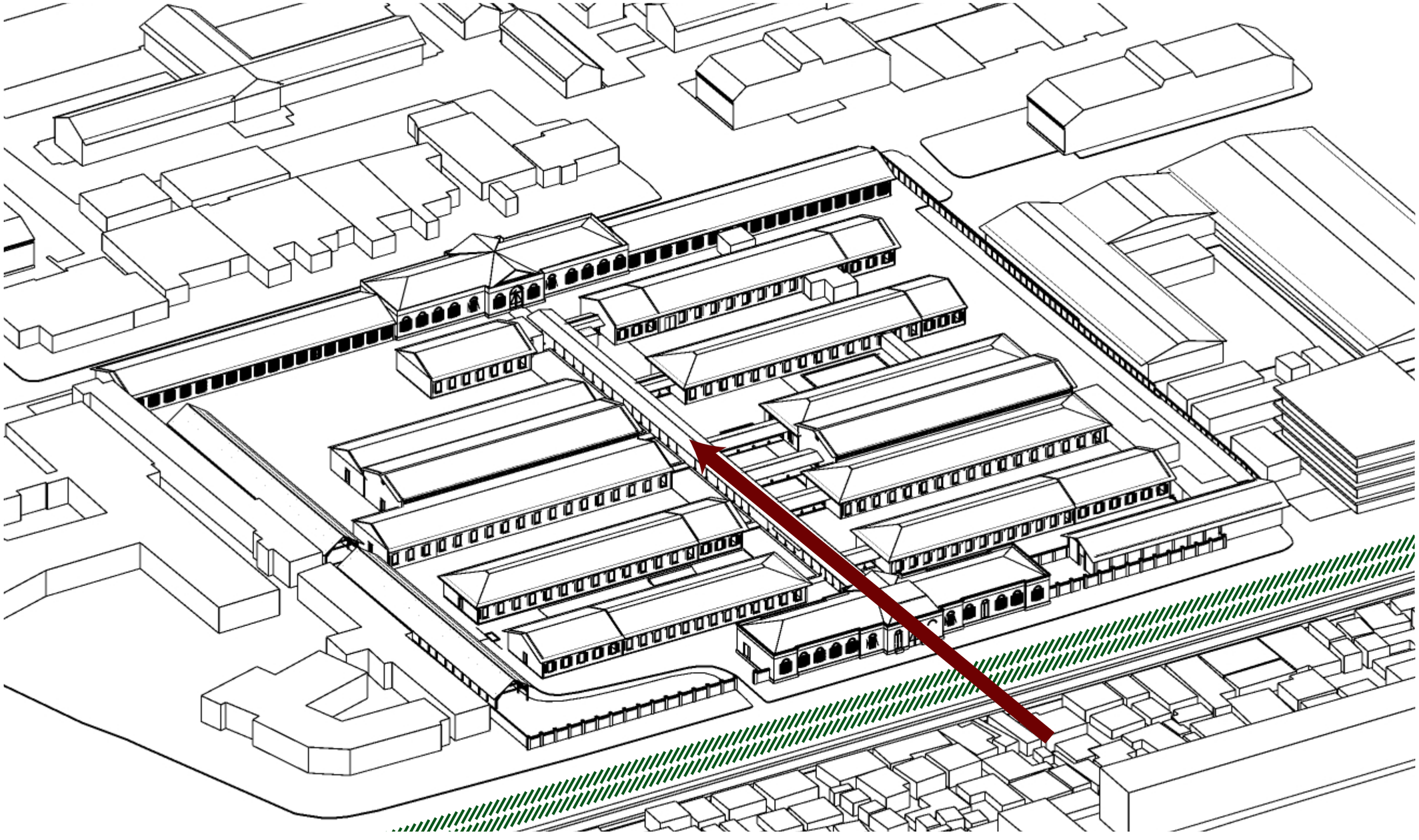
Design Strategy



Existing site

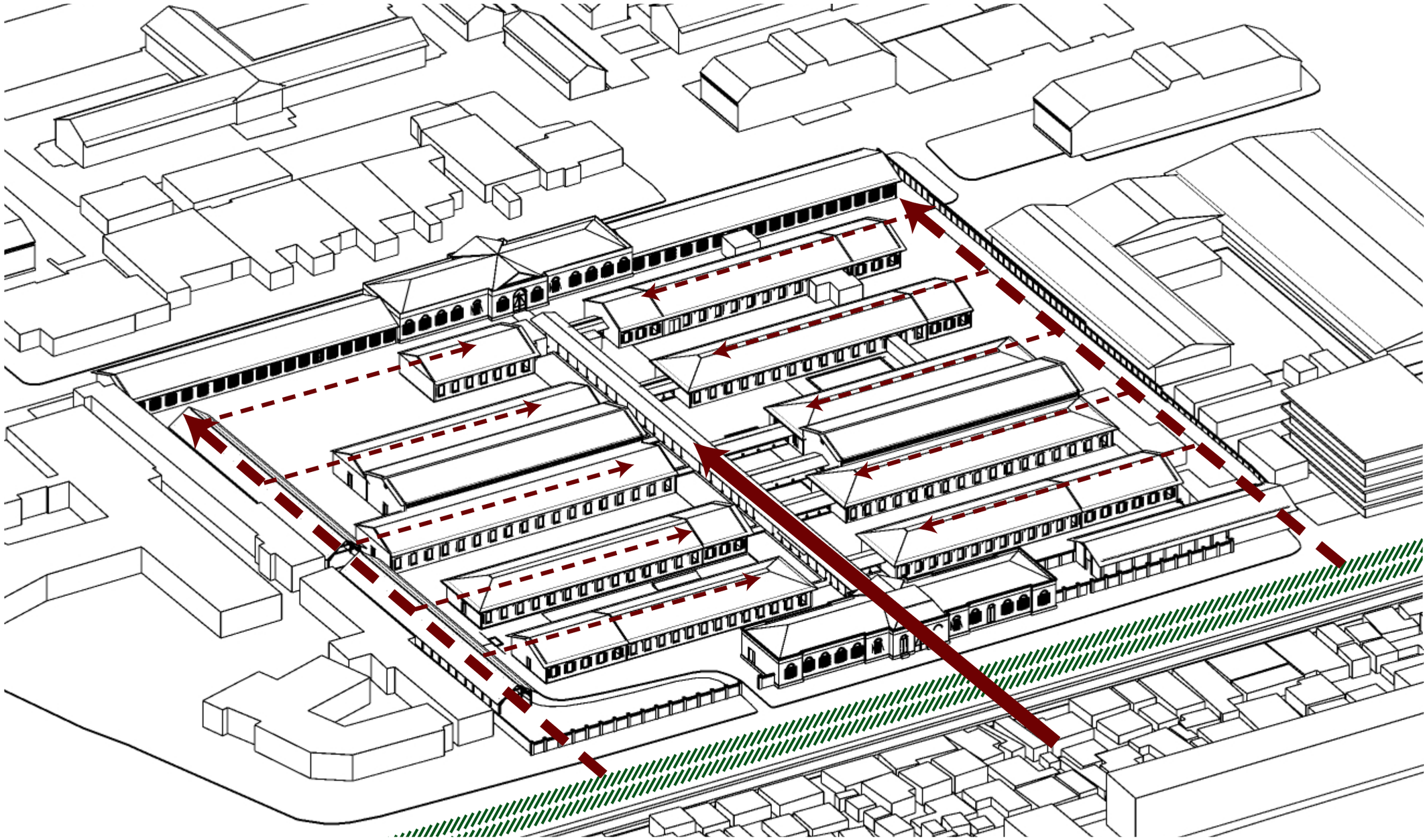


Existing plastic collection activities moved to another
transformation point that focuses on waste management

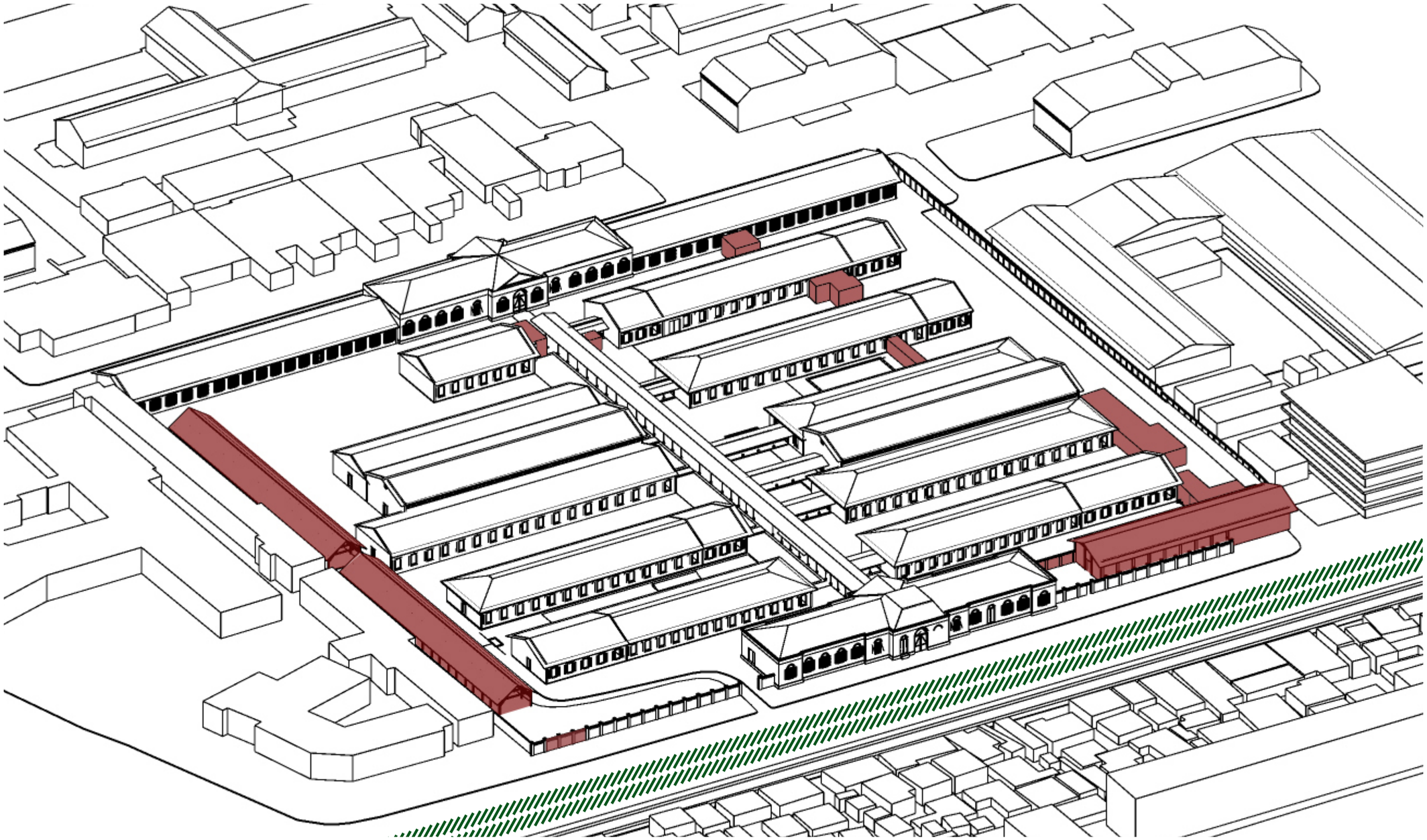


New green belt in front of the complex
The area is directly connected to the new tram line

Strategy

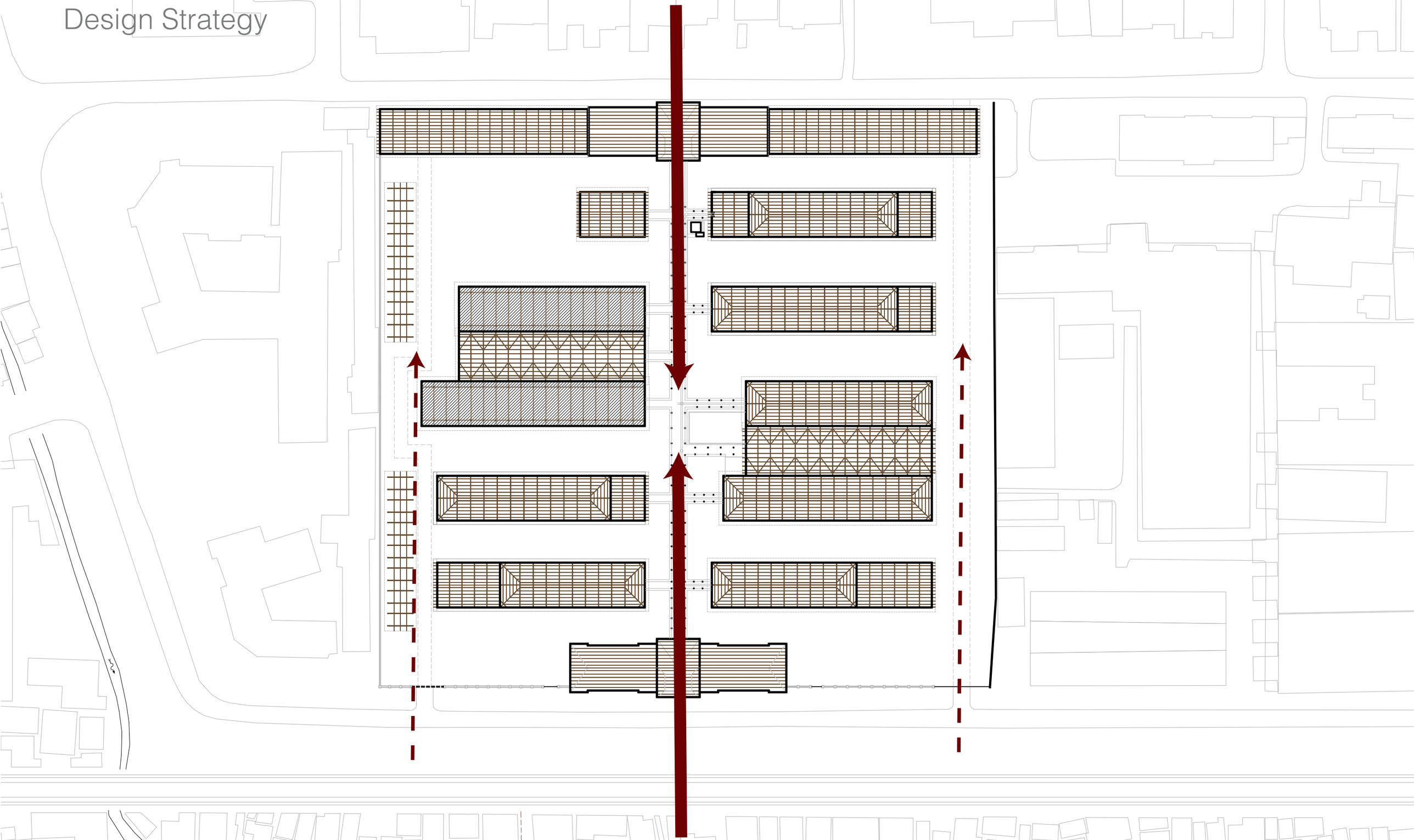


Need to create side routes, in order to be able to transfer goods to all the buildings

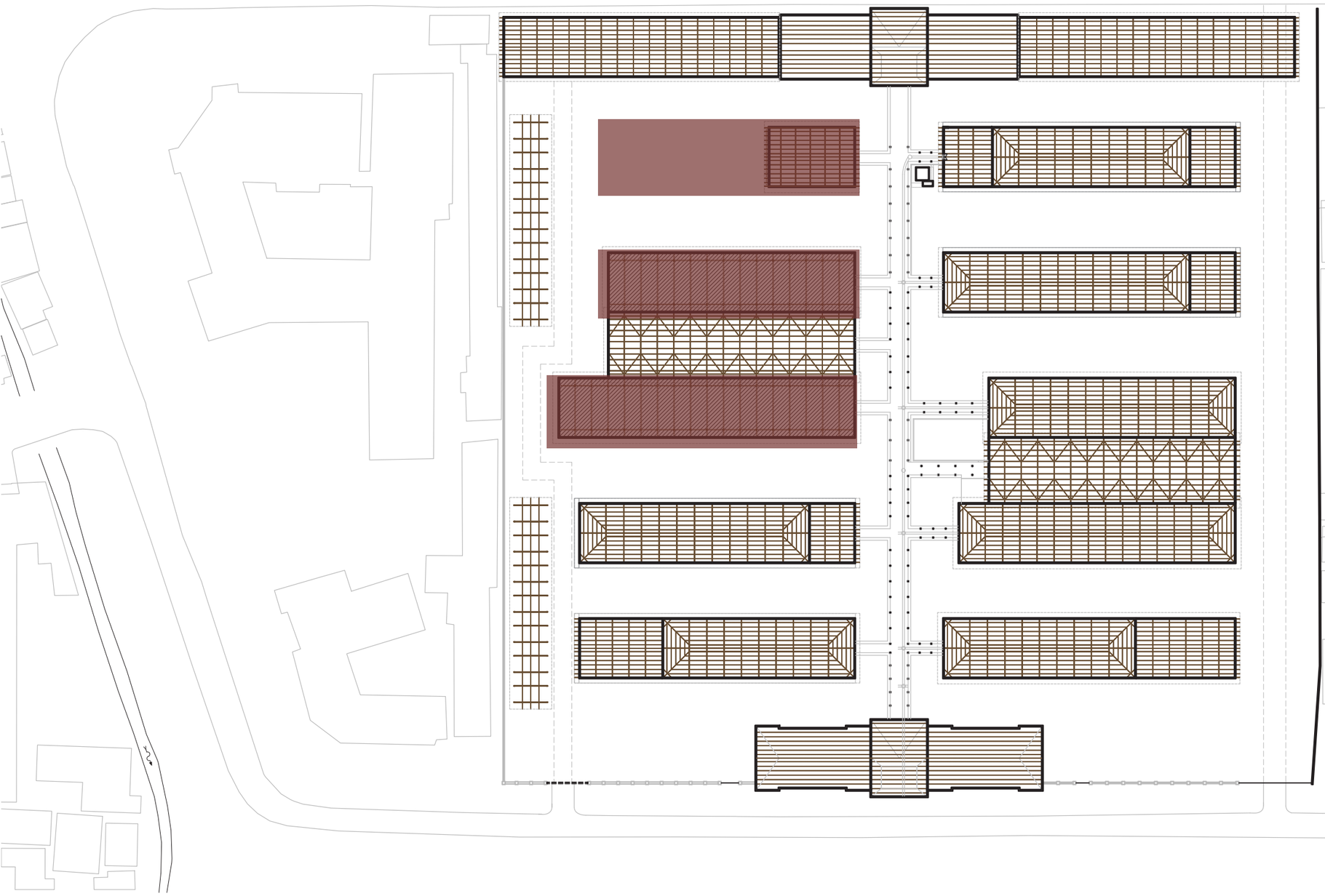


Structures that need to be removed/altered

Design Strategy



Design Strategy

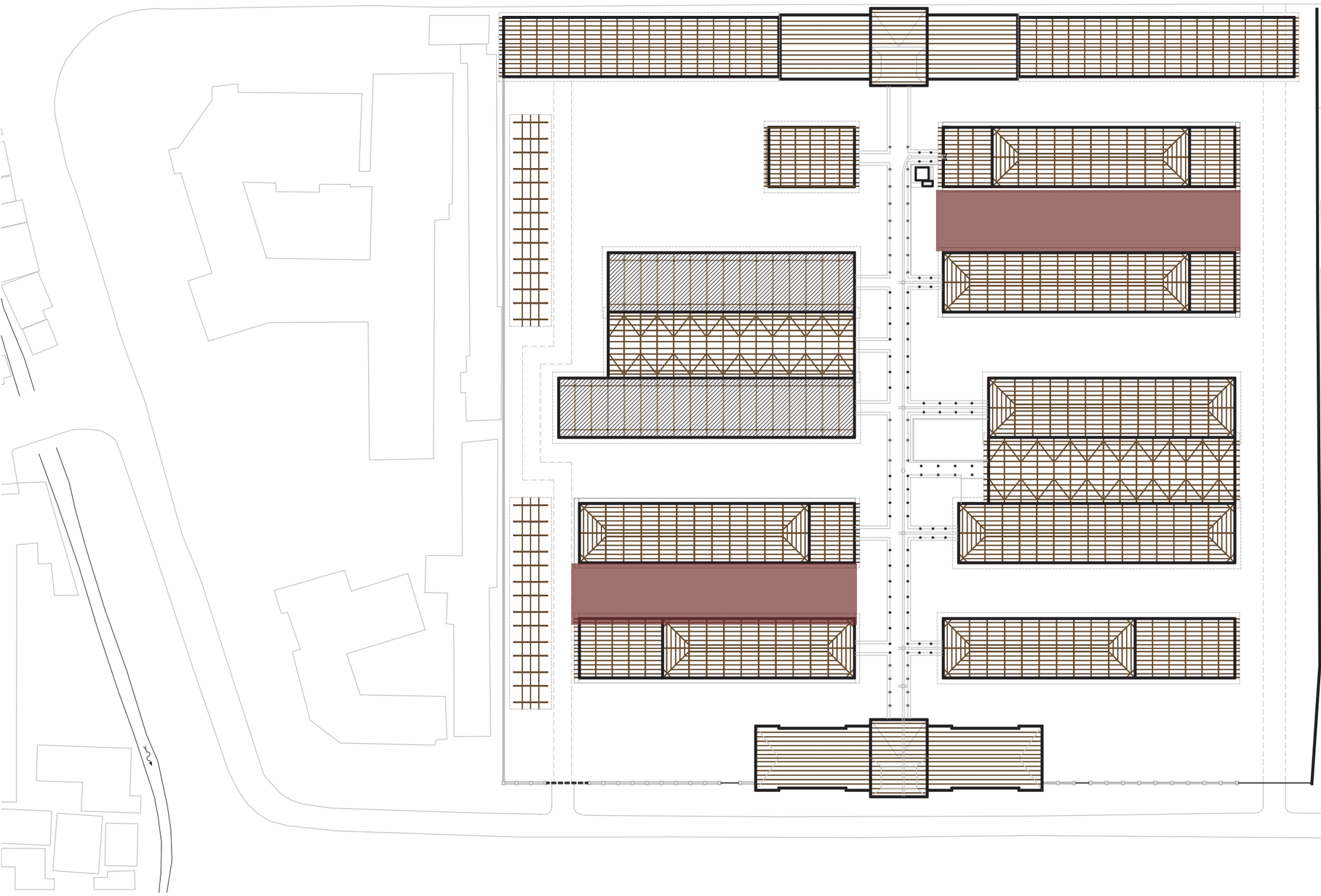


interventions in units where value is lost
in-between existing walls - inside

Design Strategy

interventions in units where value is lost
in-between existing walls - inside

Design Strategy

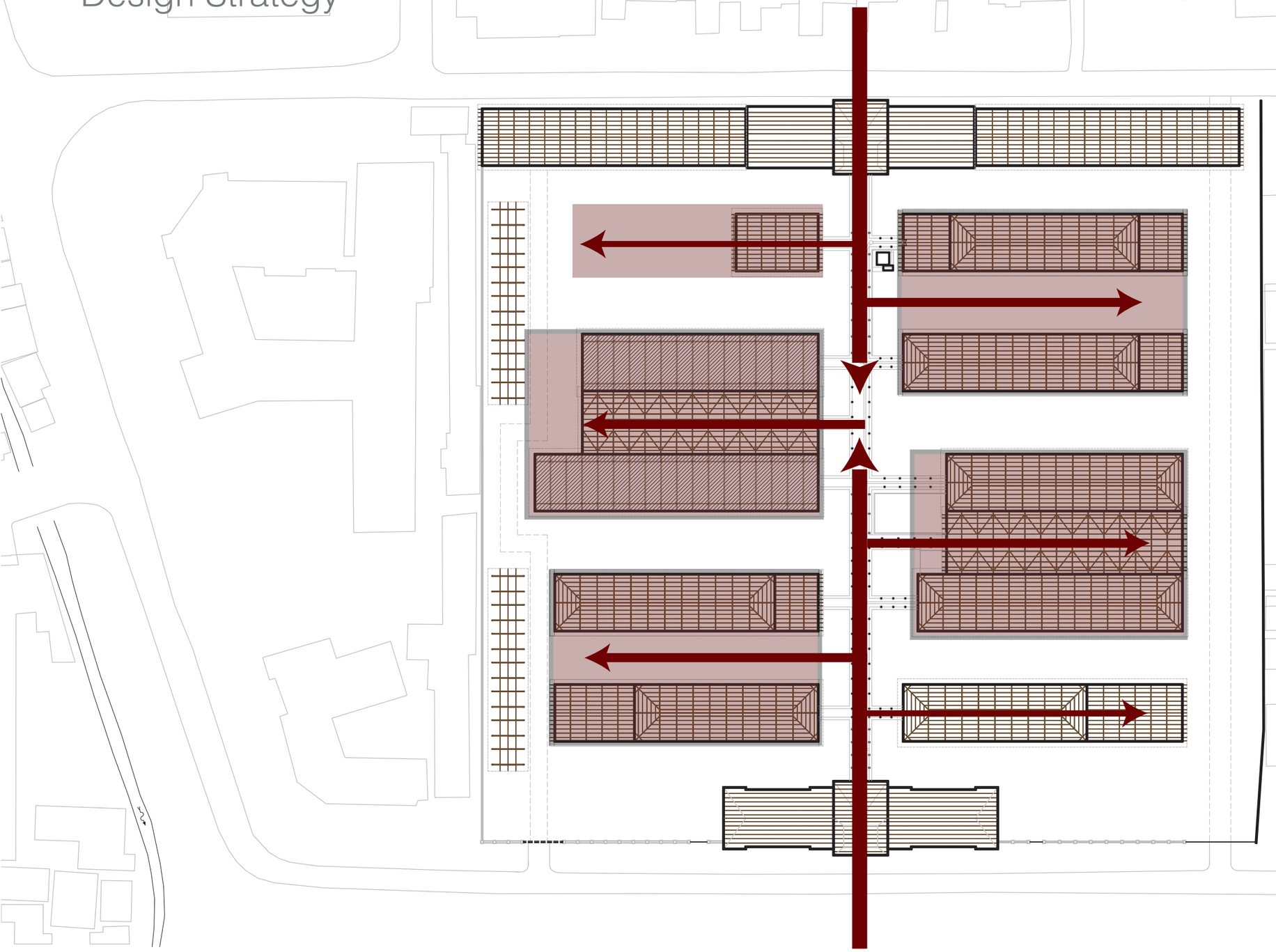


interventions in the in-between zones - outside
DNA of the space

Design Strategy

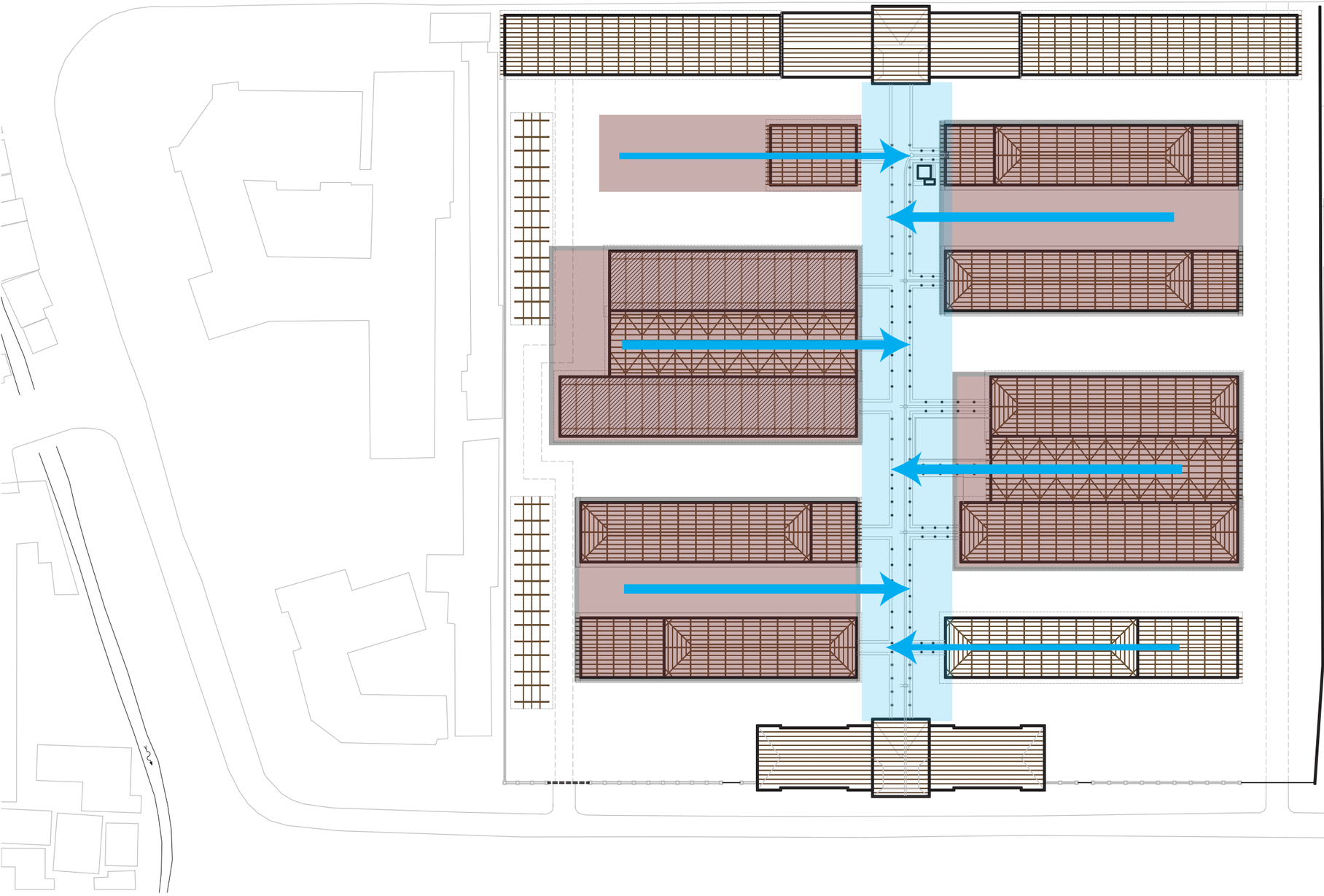
formation of 4 primary units
main functions

Design Strategy



redefined circulation
central axis
central entrance points

Design Strategy



enhance the climatic condition of the complex
through the central axis
rainwater harvesting

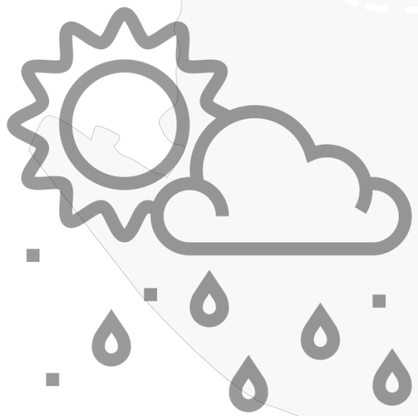
Interventions

Architectural Scale

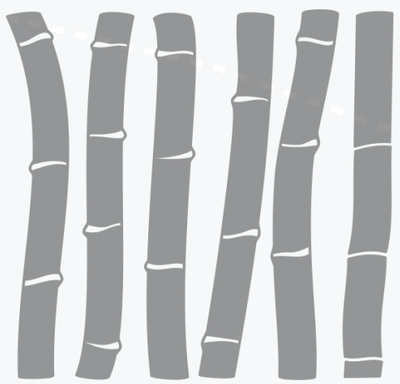
Involve people in the process of making

Upgrade existing heritage buildings

Encourage respect for vernacular principles



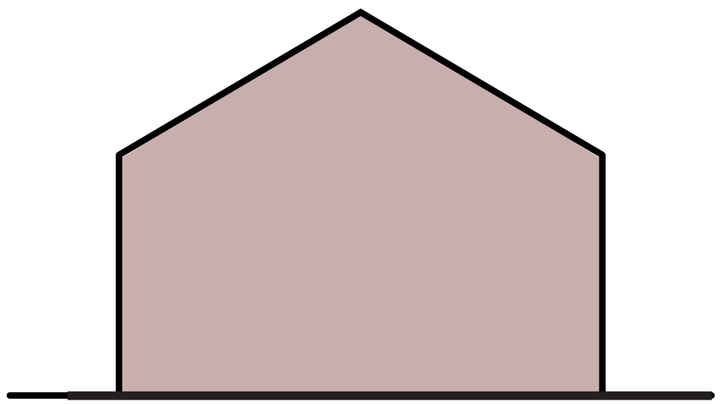
Be climate responsive



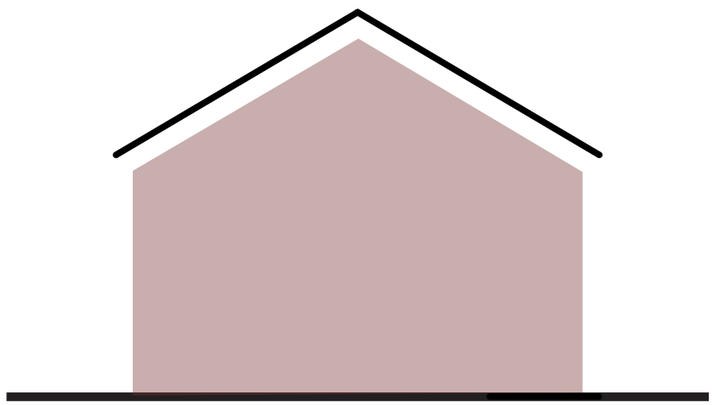
Use locally found materials

Design for disassembly

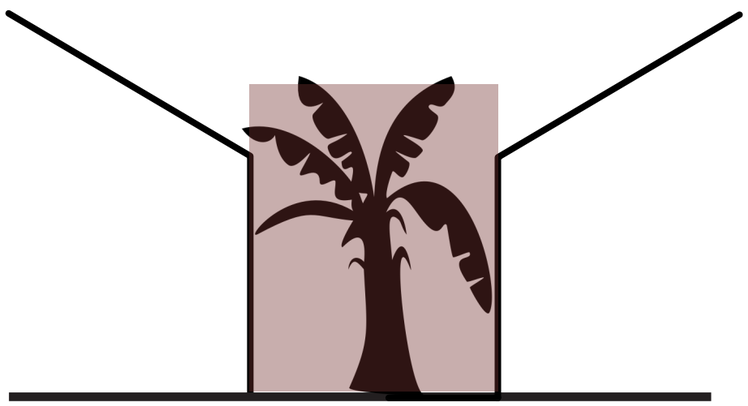
“in-between” existing walls



enclosed space



covered space

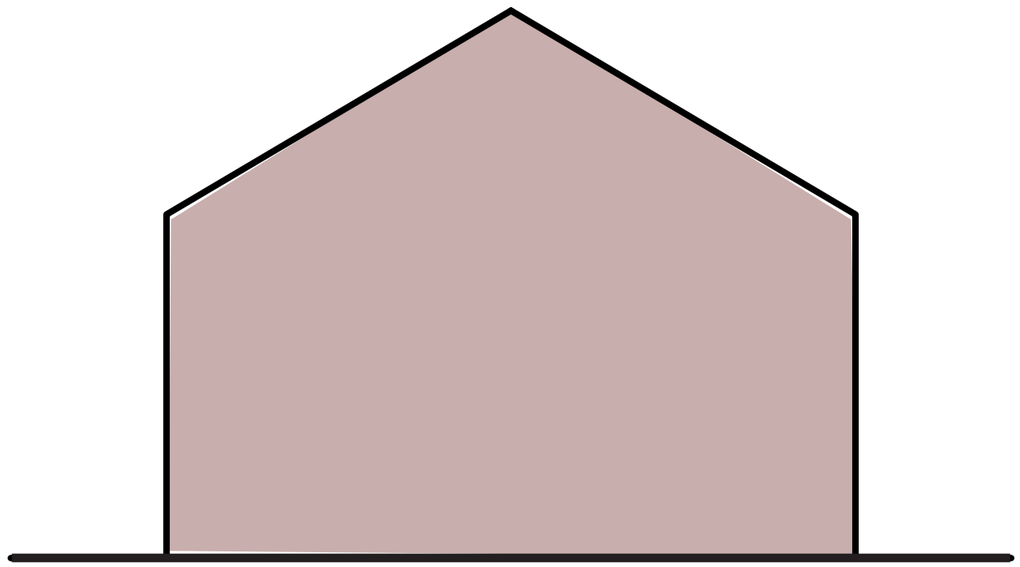


open space

Masterplan

Complex

Type of programme



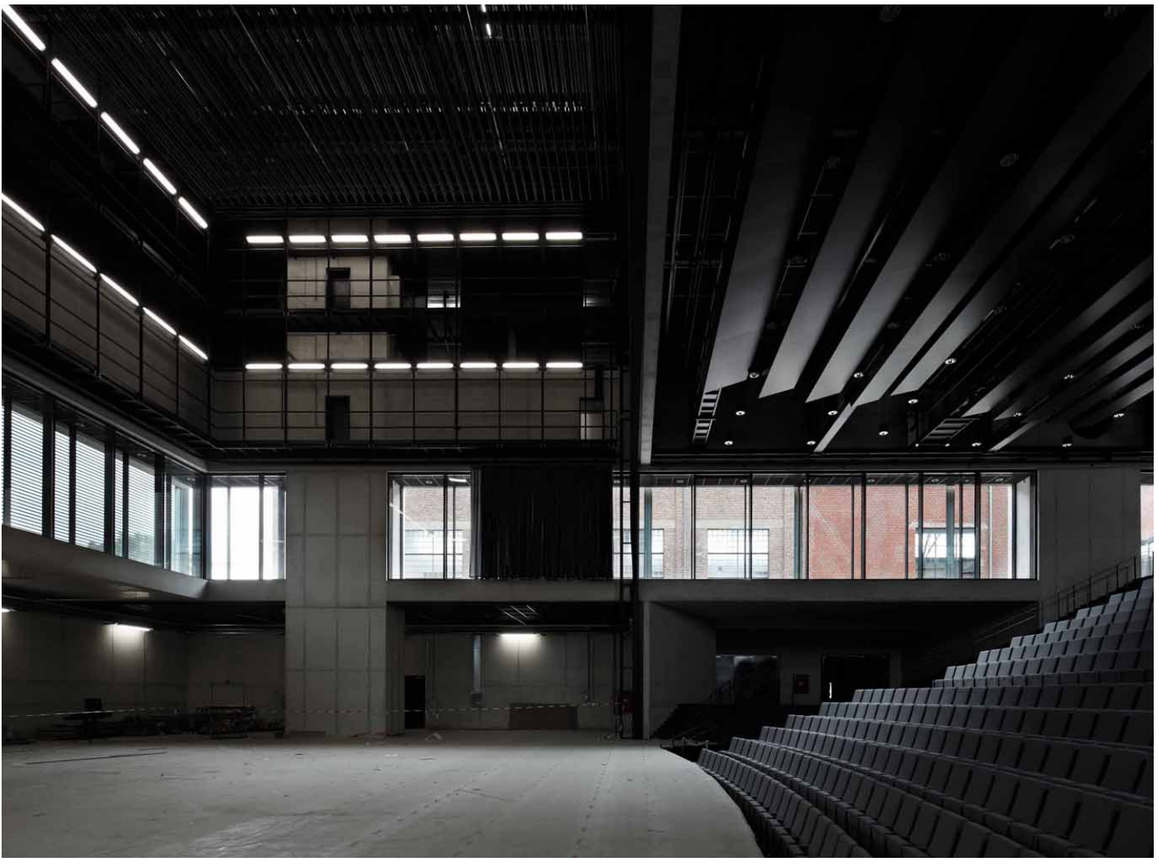
enclosed space

Recreational unit

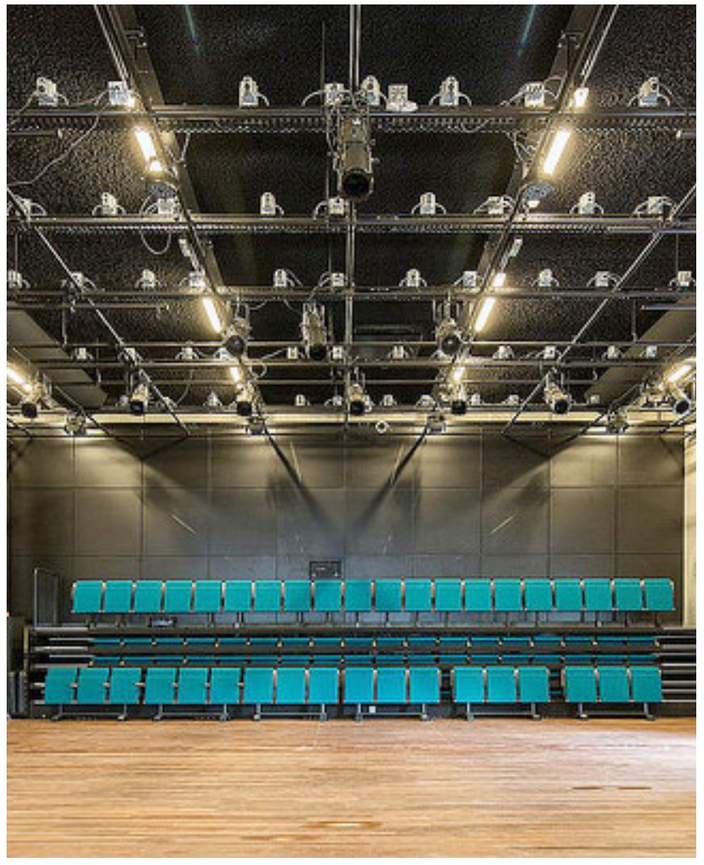
Recreational unit

A safe place for after school activities

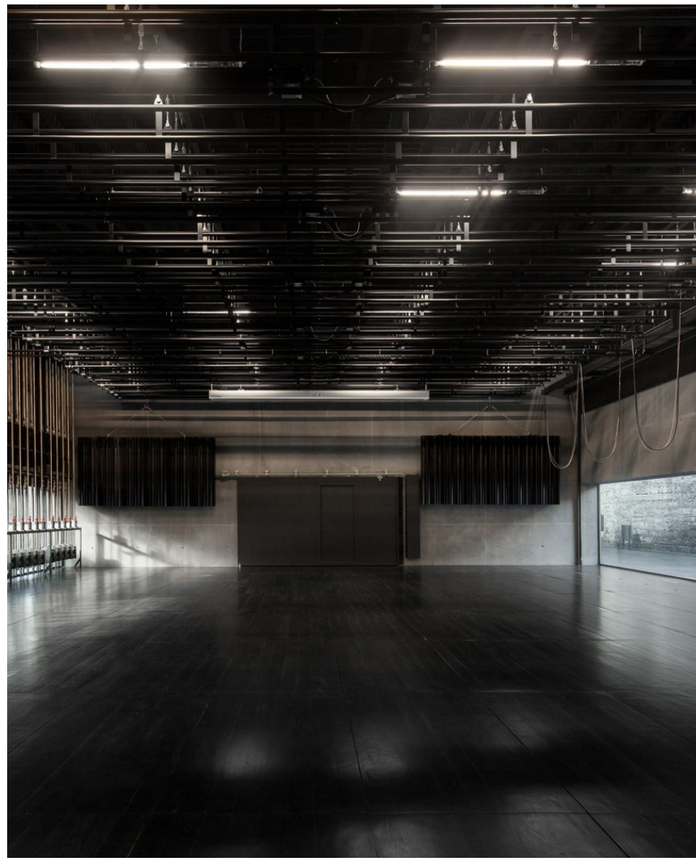
multipurpose space



C-Mine, Belgium
(1000.0 m^2)



Het Wilde Westen, The Netherlands



Arquipélago – Contemporary Arts Centre, Portugal
(600 m^2)

events

music performances

dance performances

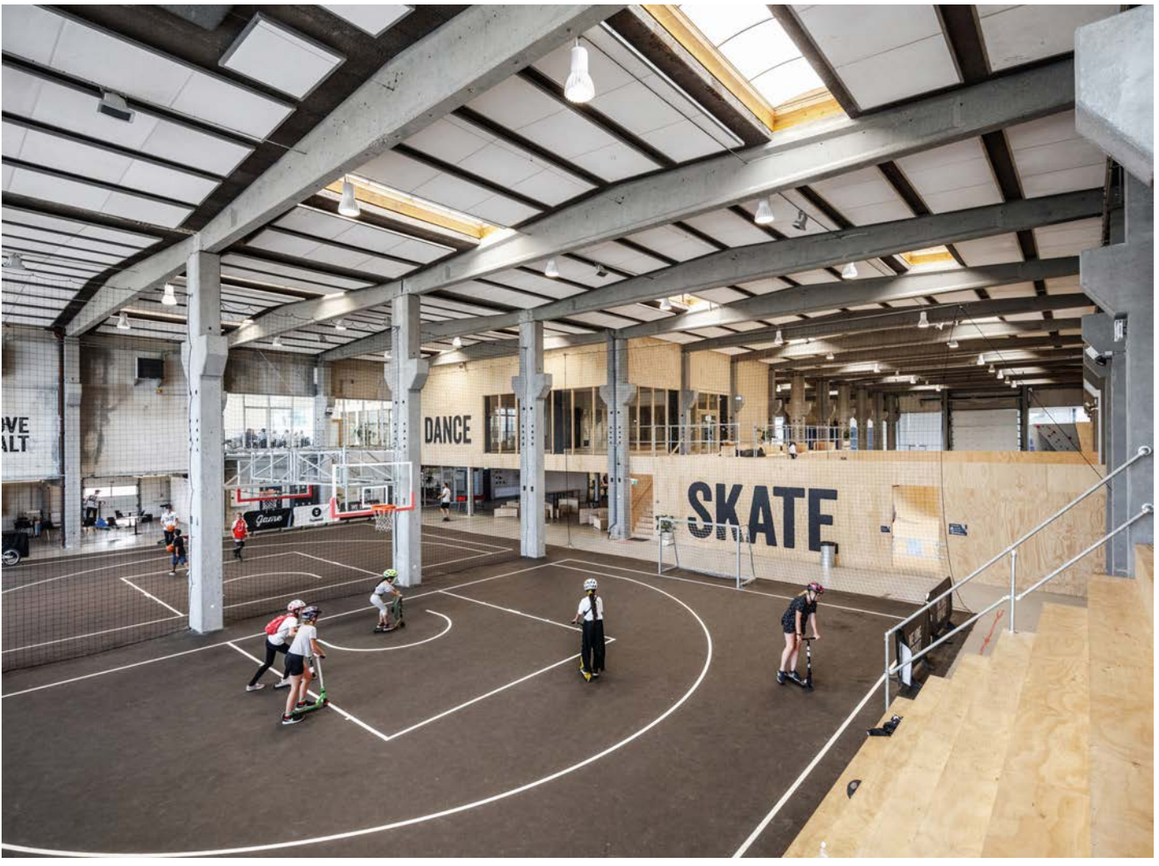
theater

screening

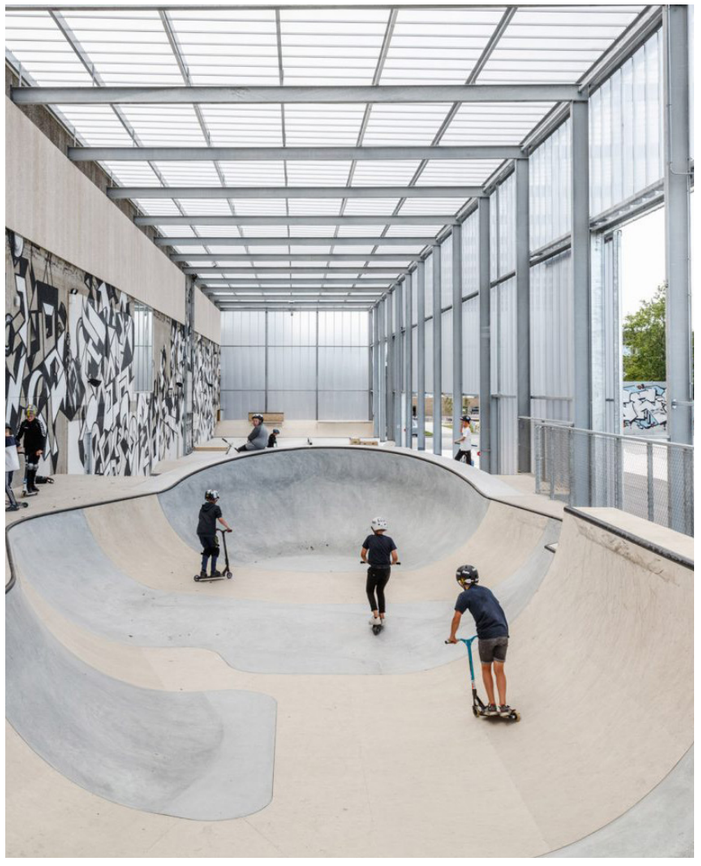
A safe place for after school activities

sports facilities

dance/music/ theater classes



Streetmekka Viborg Build, Denmark
(3170.0 m^2)



Streetmekka Viborg Build, Denmark
(3170.0 m^2)

Musholm, Denmark
(3200.0 m^2)

football

basketball

skate park

climbing wall

gym

music classes

dance classes

theater classes

storage space

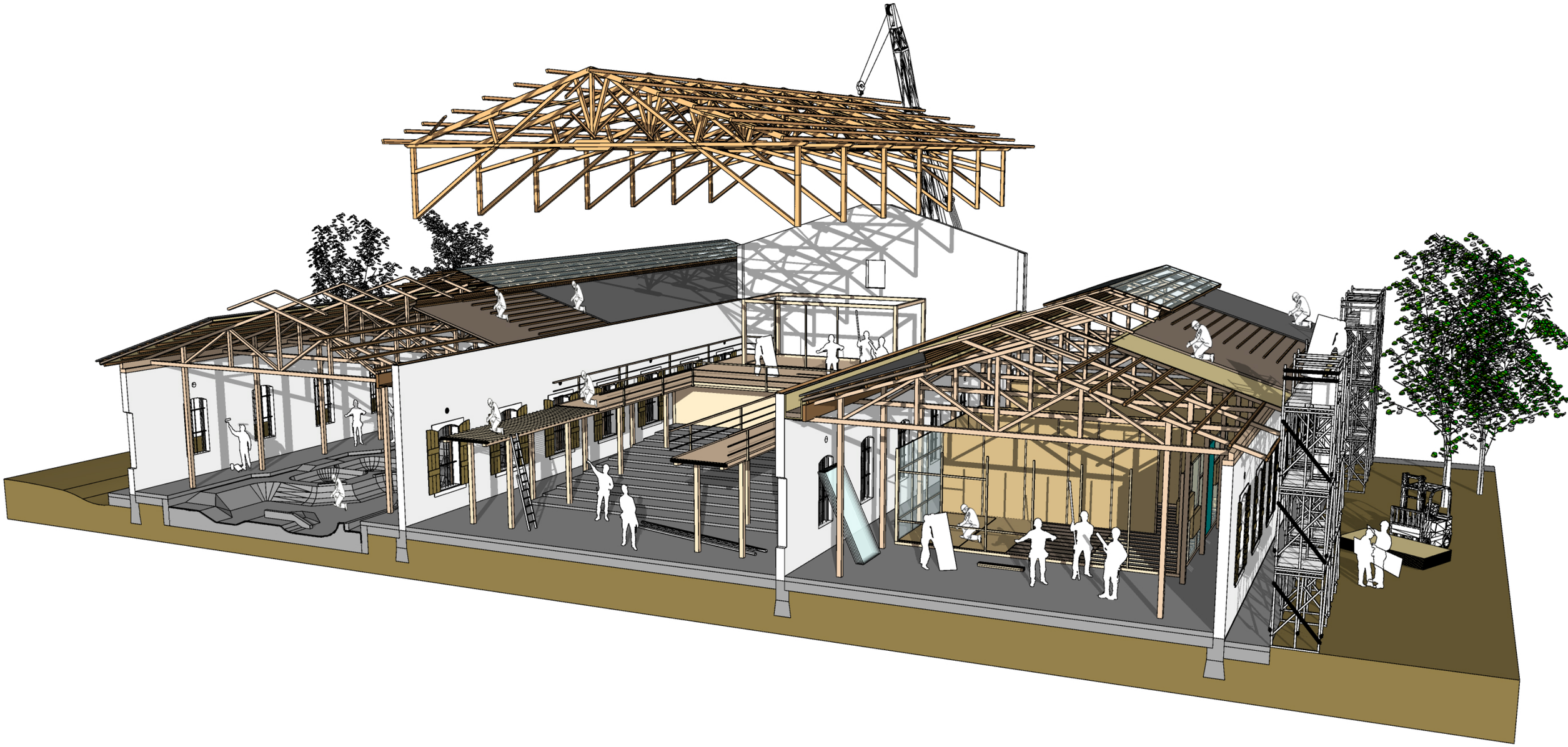
toilets

Recreational unit

Recreational unit

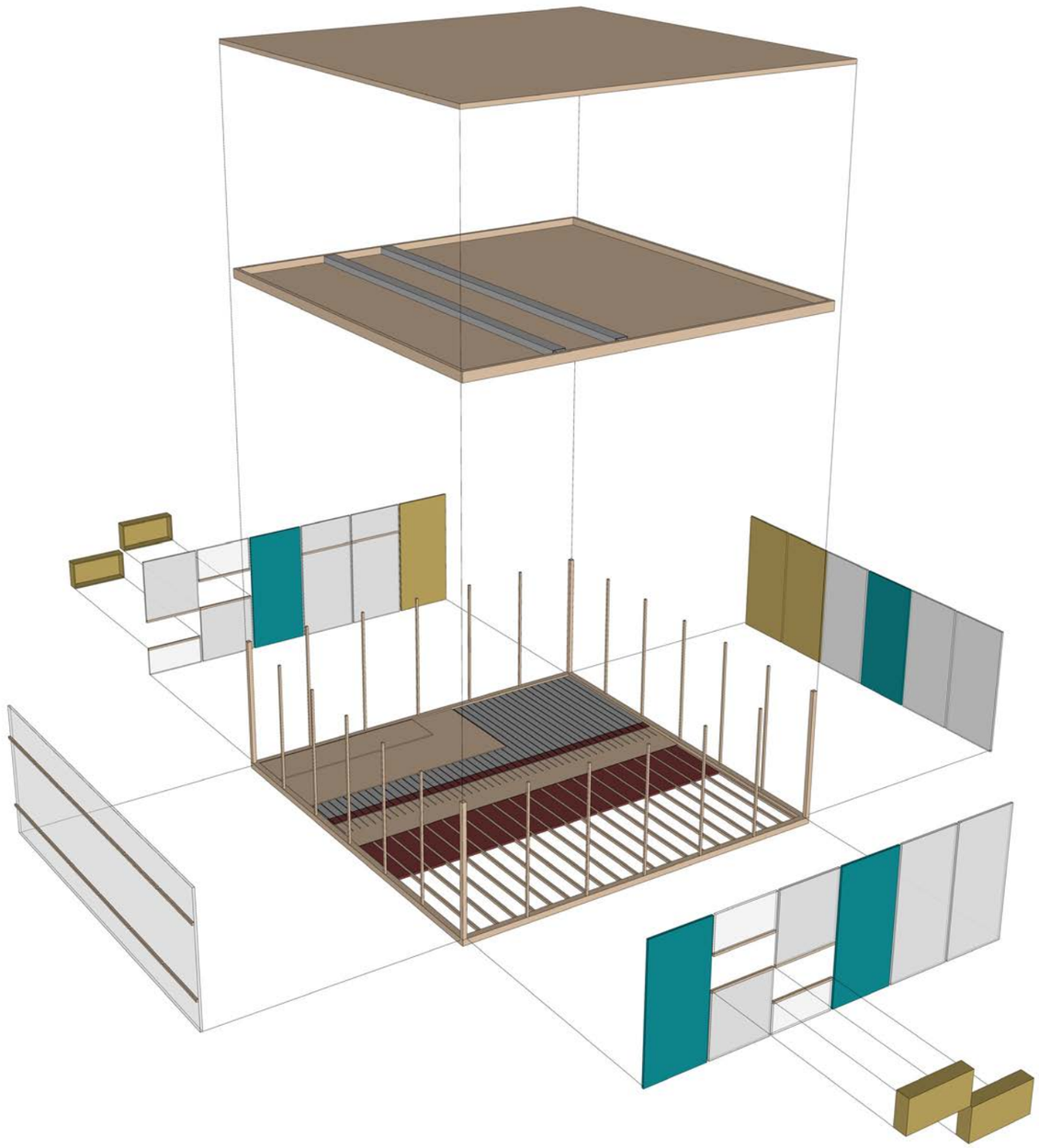
Recreational unit

enclosed space



enclosed space

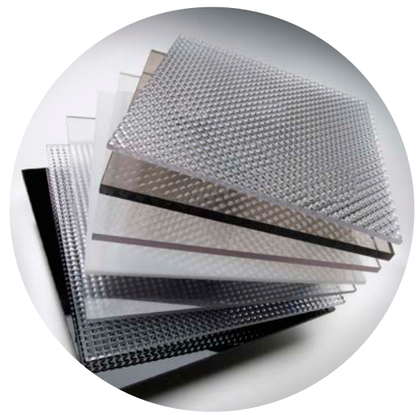
“box”structures



structural engineered
bamboo in natural color

bamboo acoustic panels

colored acoustic panels

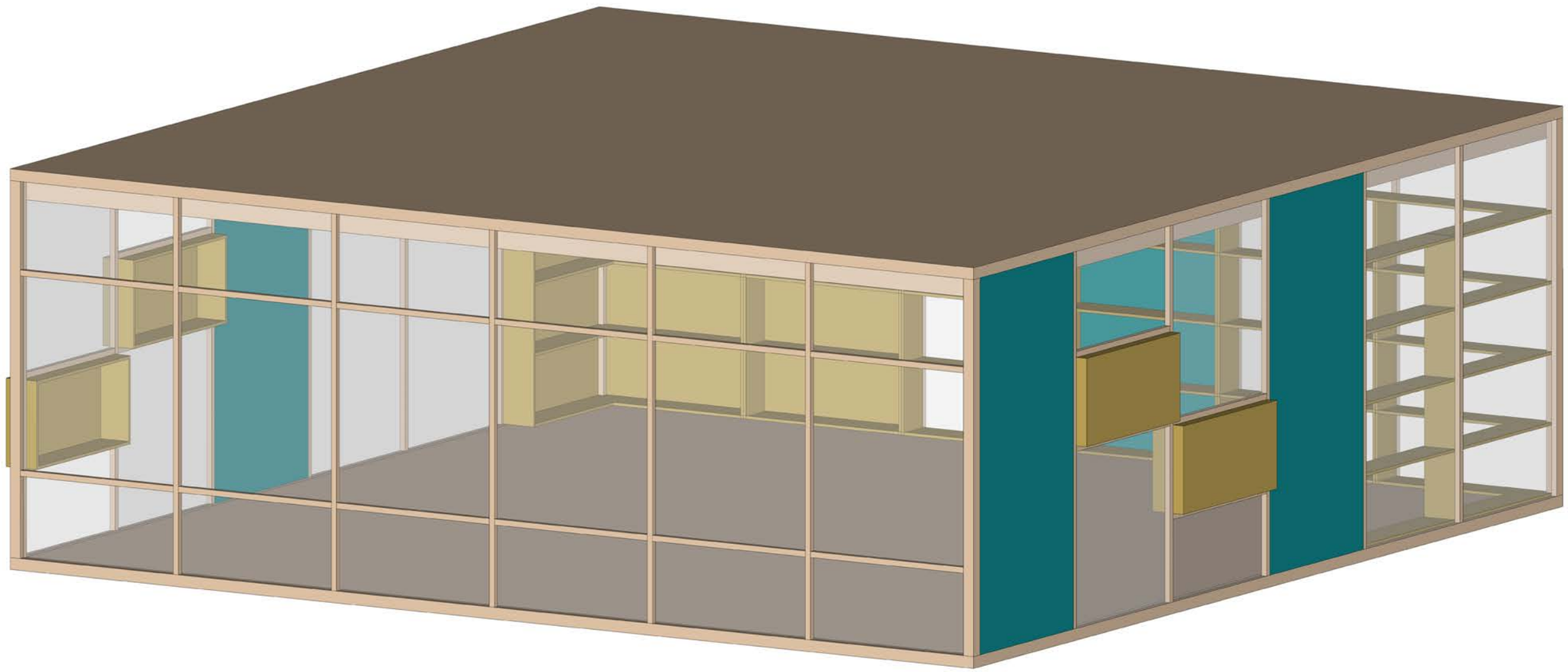


sound absorbing
polycarbonate panels
from reused material

Recreational unit

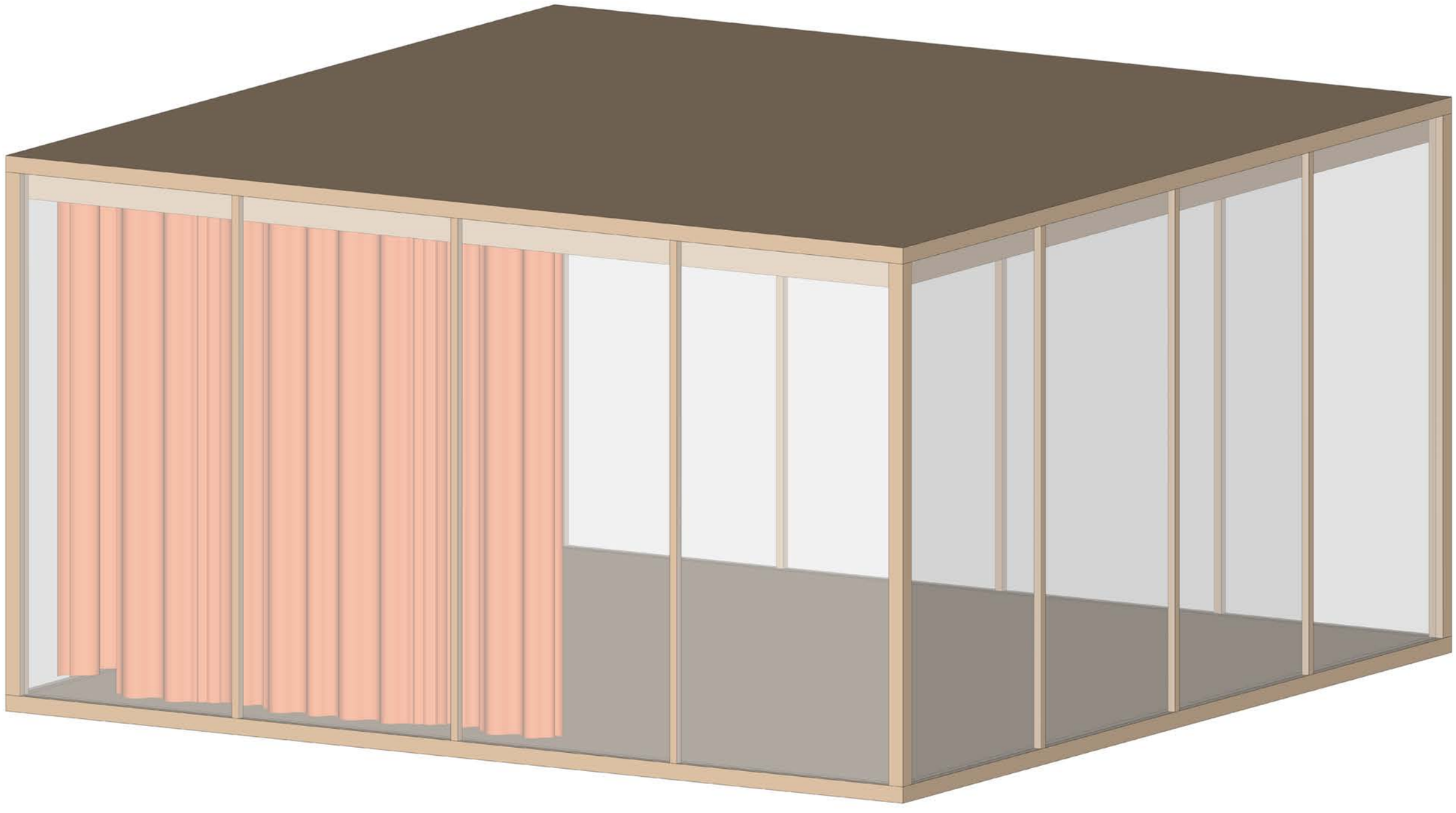
enclosed space

“box”structures



enclosed space

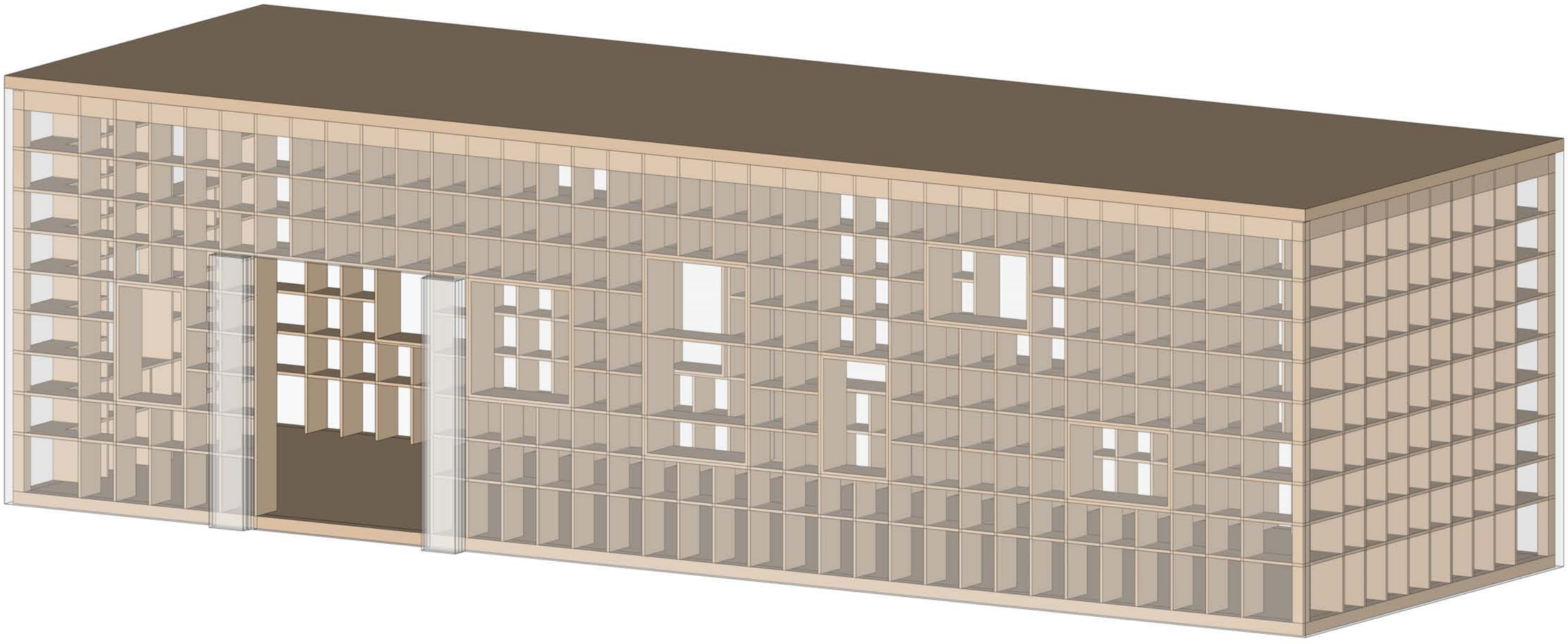
“box”structures



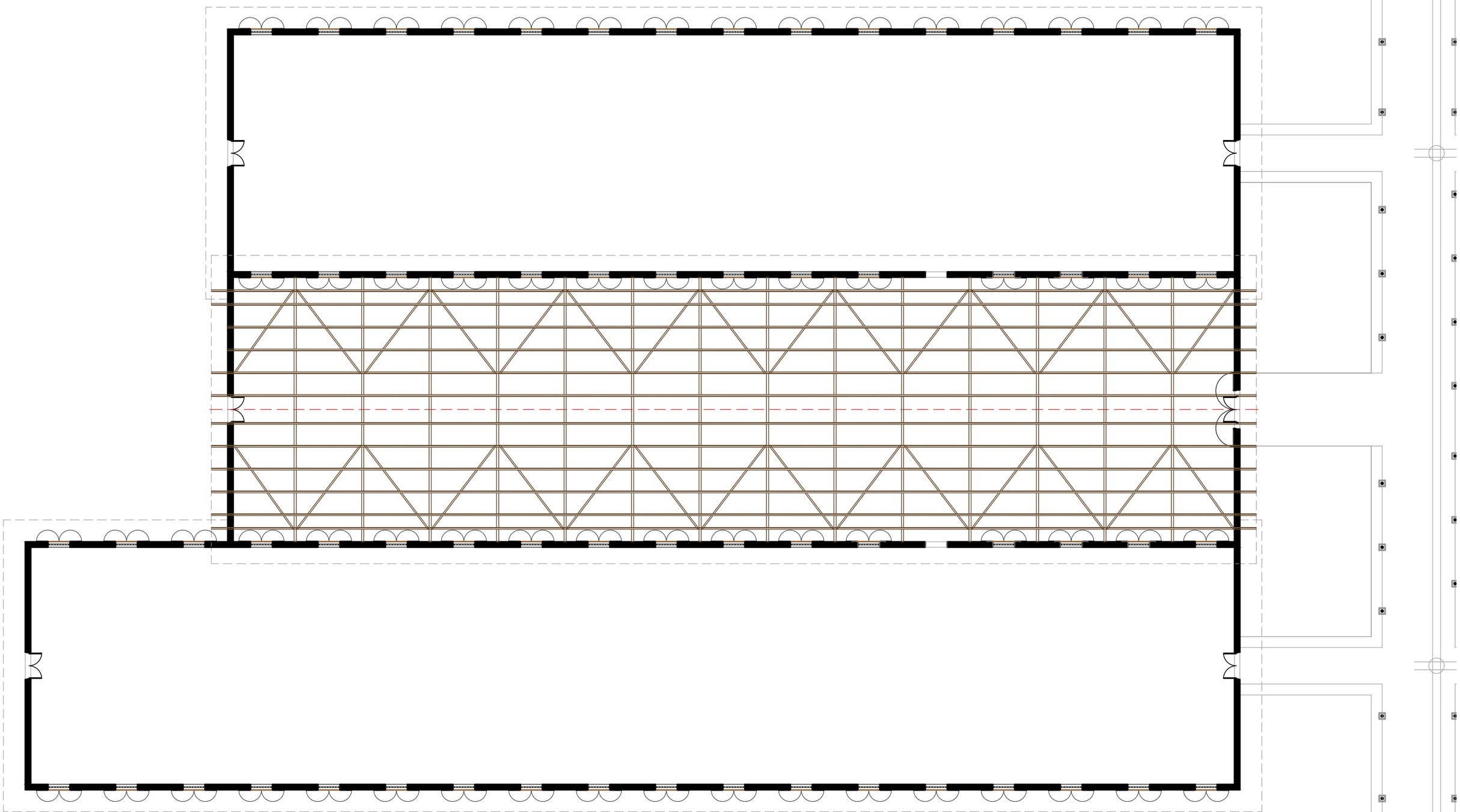
Recreational unit

enclosed space

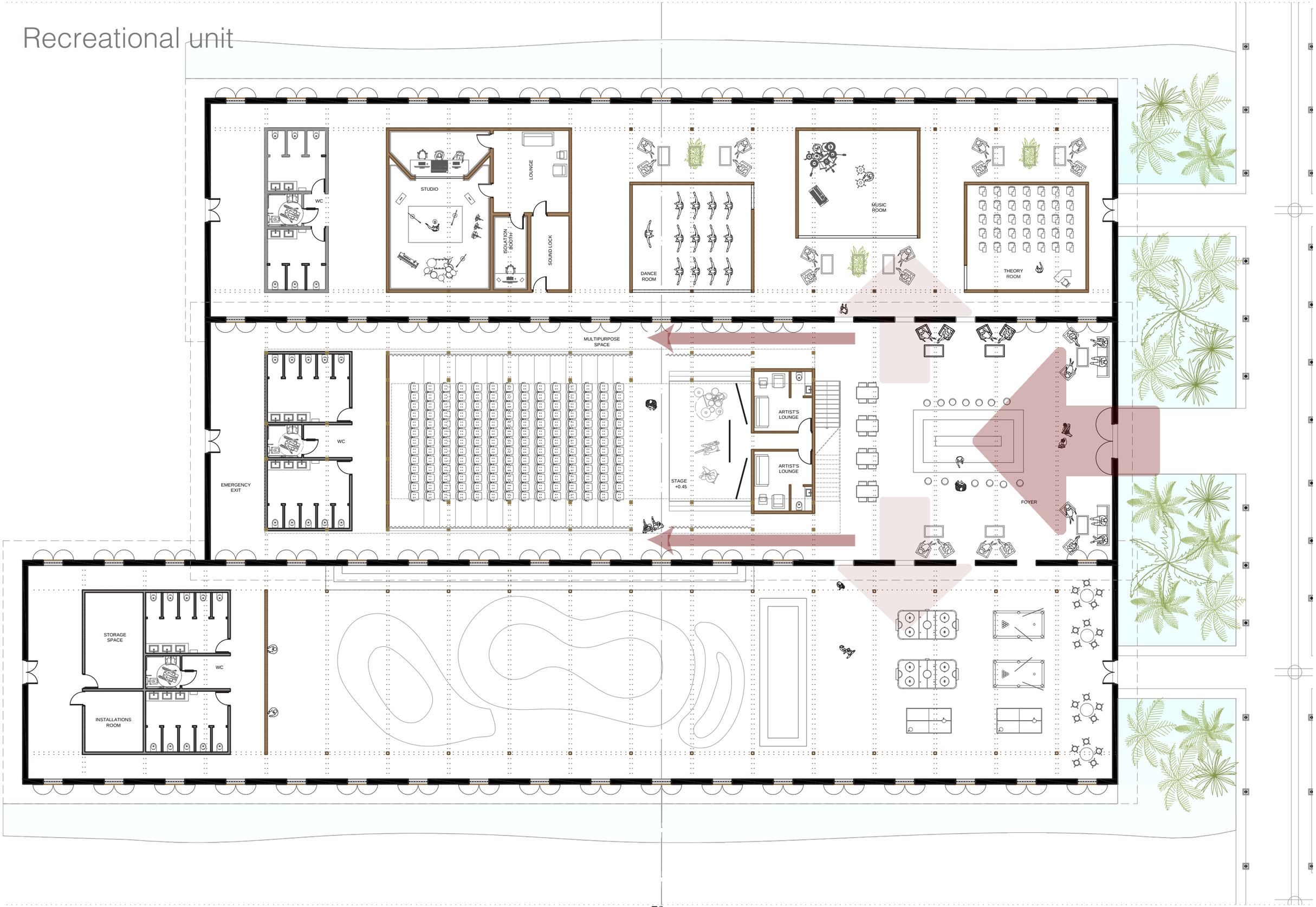
“box”structures



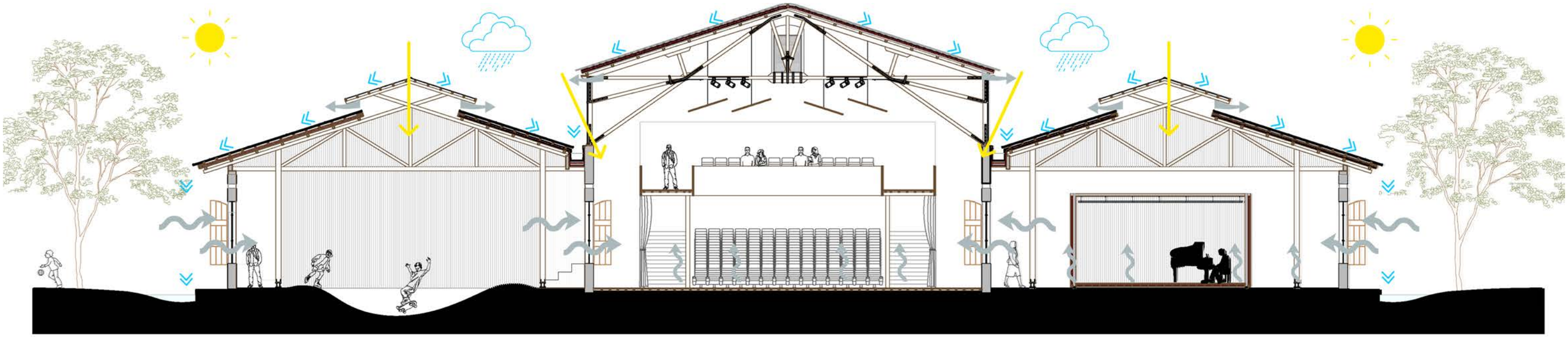
Recreational unit



Recreational unit



Recreational unit



Recreational unit

Recreational unit

“a place to gather”

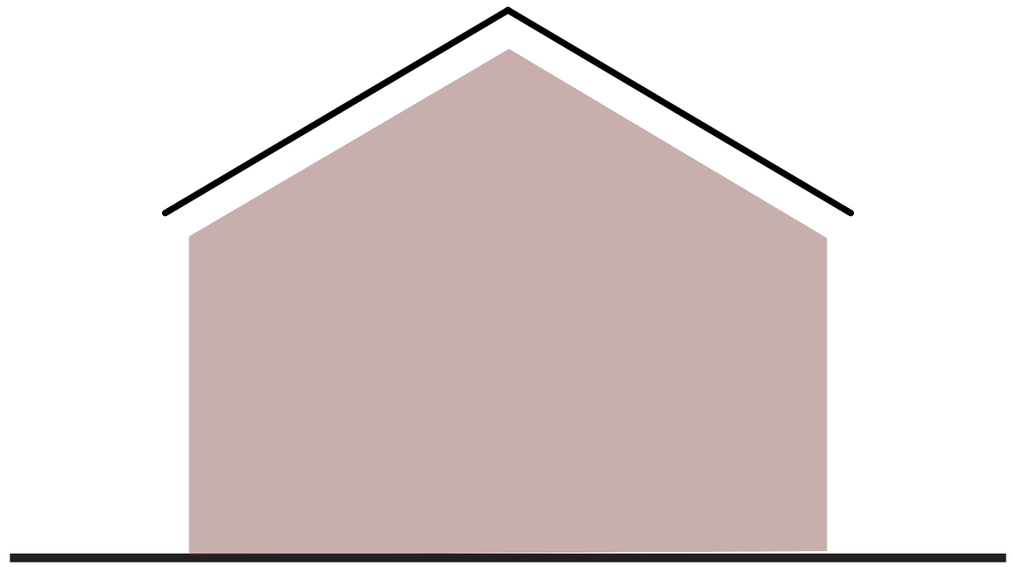
Recreational unit

“a place to gather”

Recreational unit

“a place to gather”

Type of programme



covered space

Urban farm

Urban farm

A place to generate income

urban farming

cafe & food

Regen Villages, The Netherlands

Malmö Saluhall, Sweden

market

kitchen

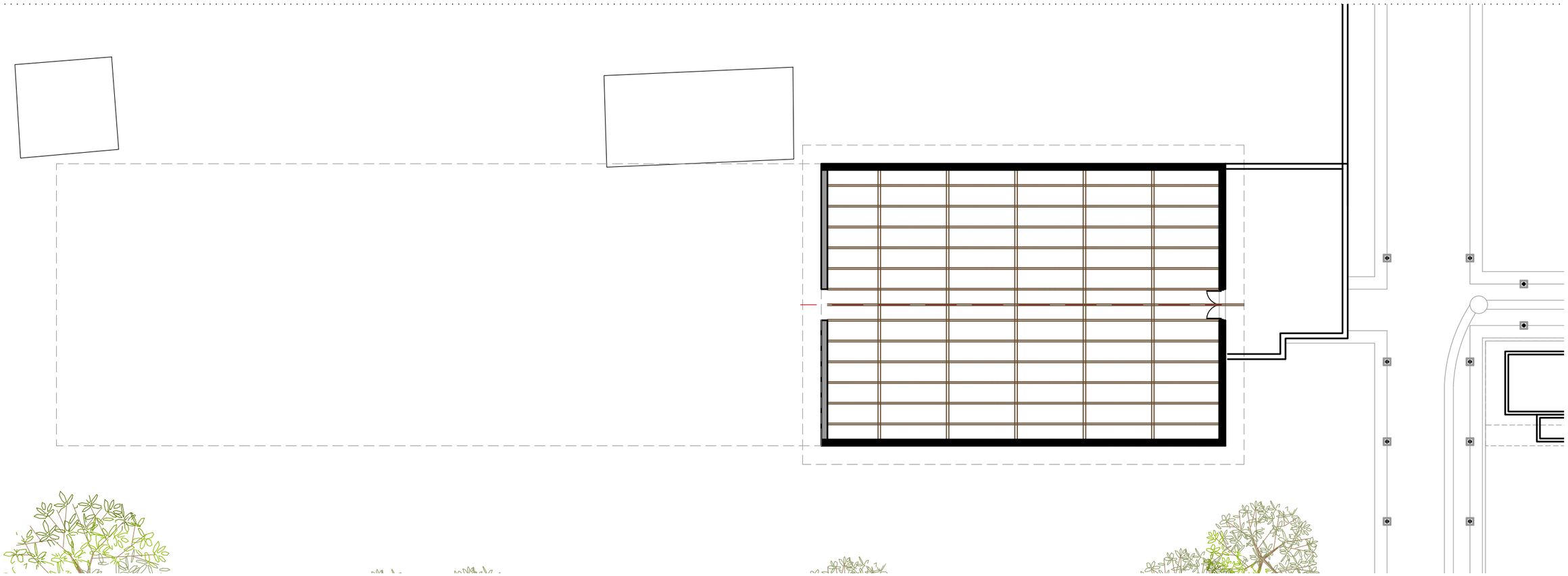
common space

storage space

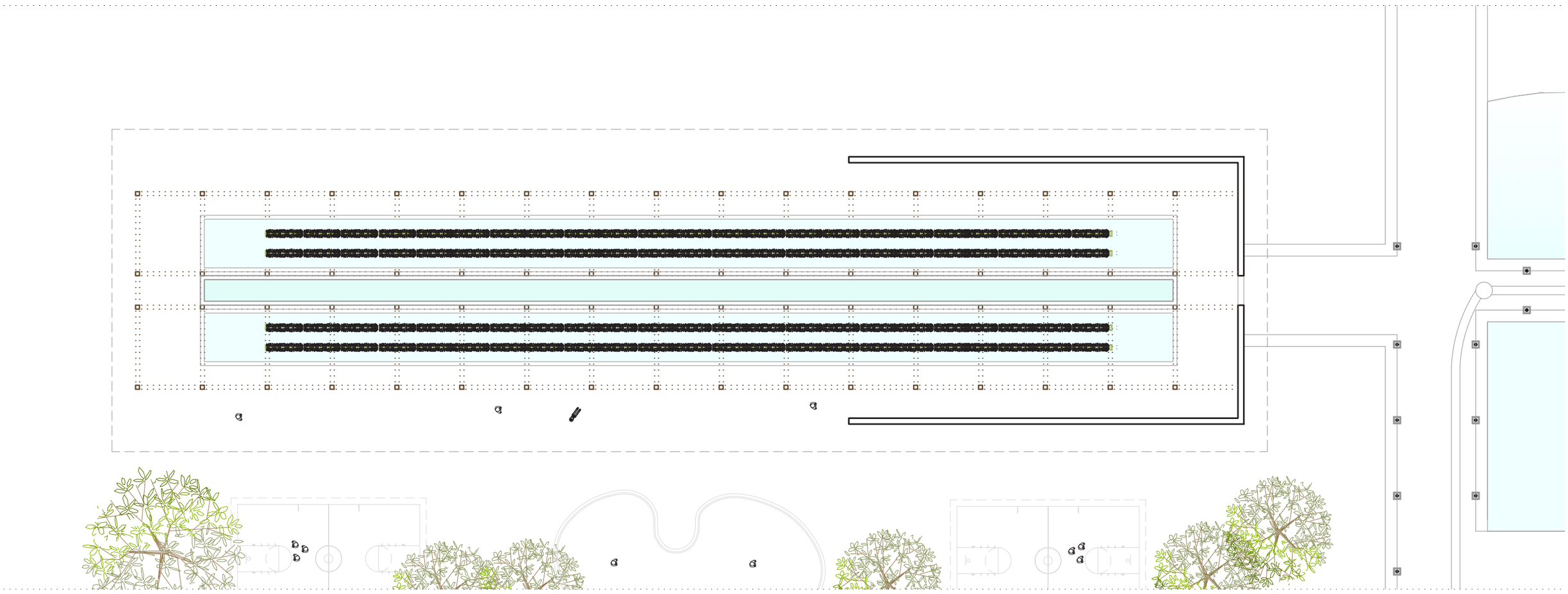
toilets

Urban farm

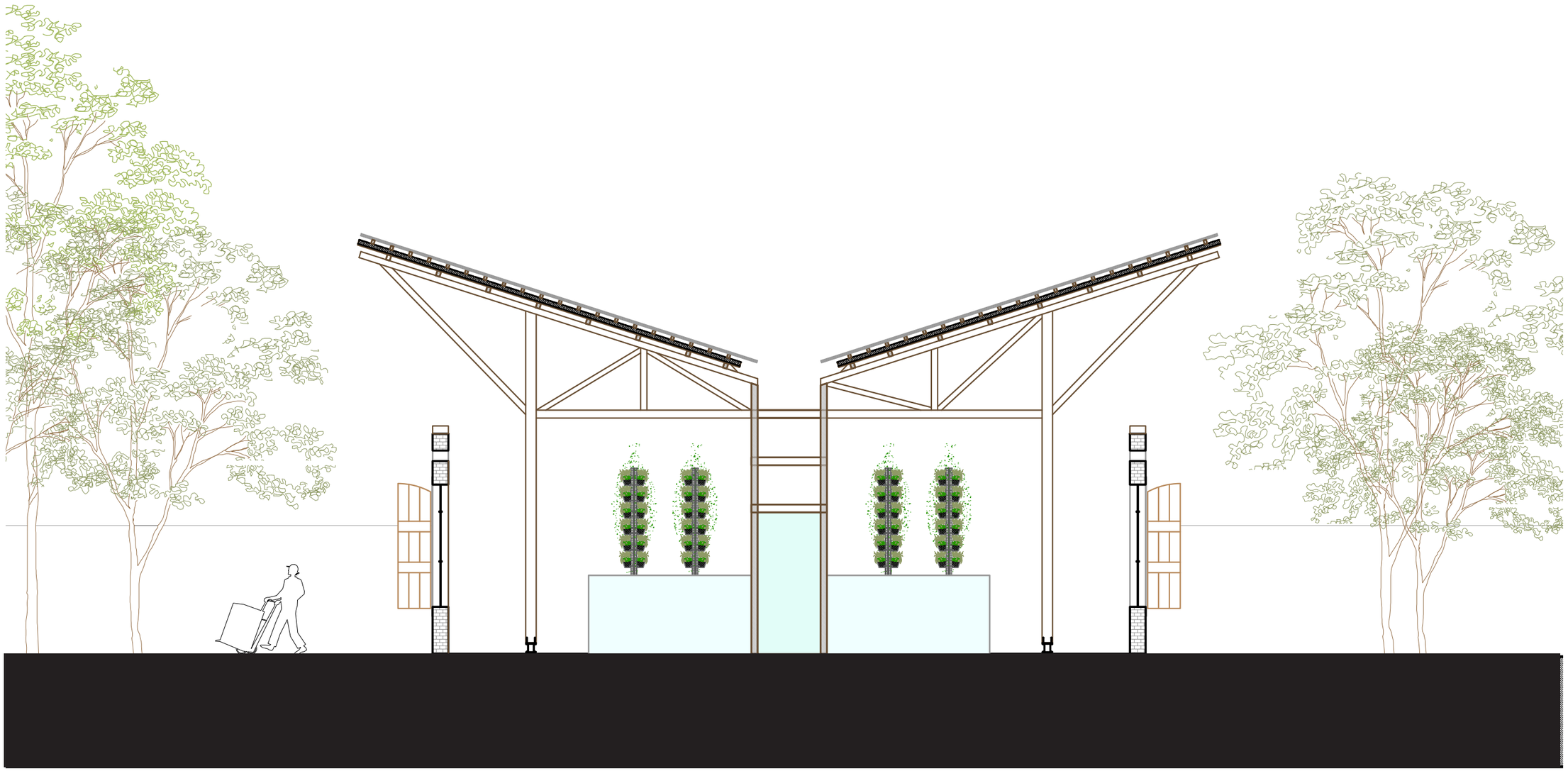
Urban farm



Urban farm



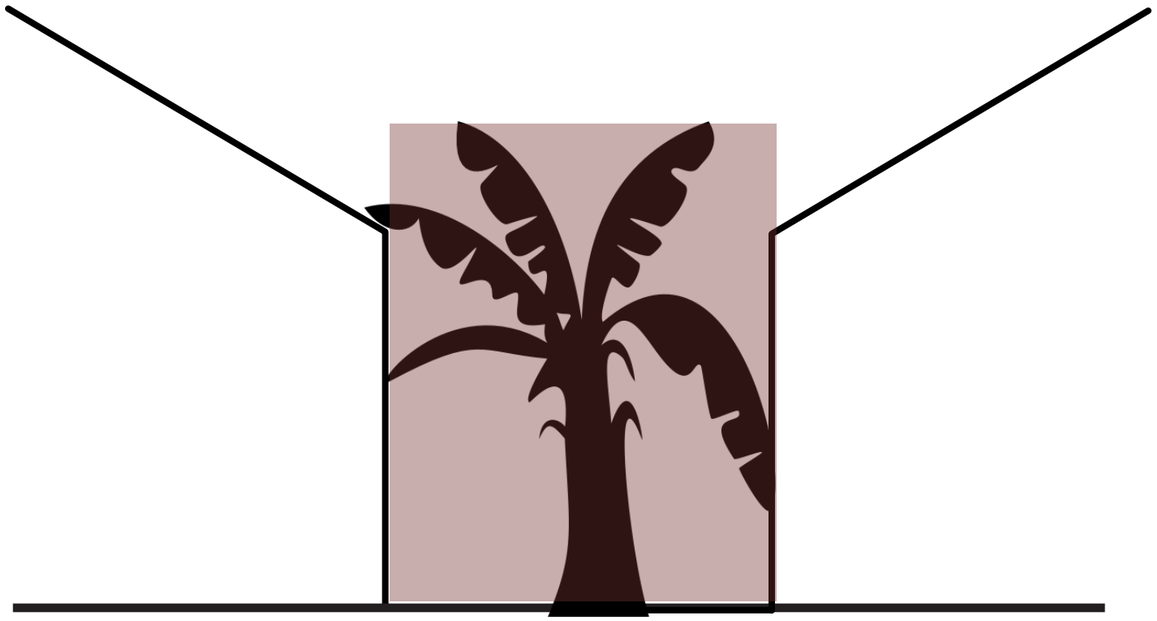
Urban farm



Urban farm

“a place to gather”

Type of programme



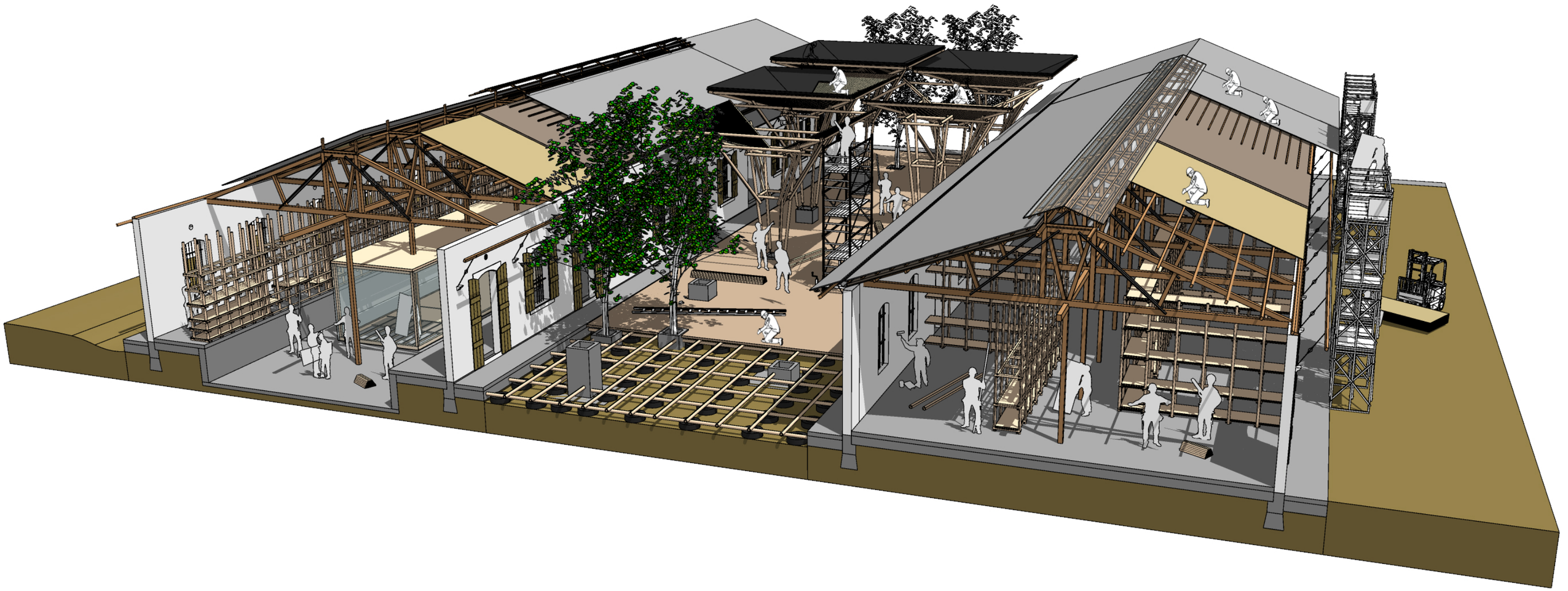
open space

Day-Care & Educational Unit

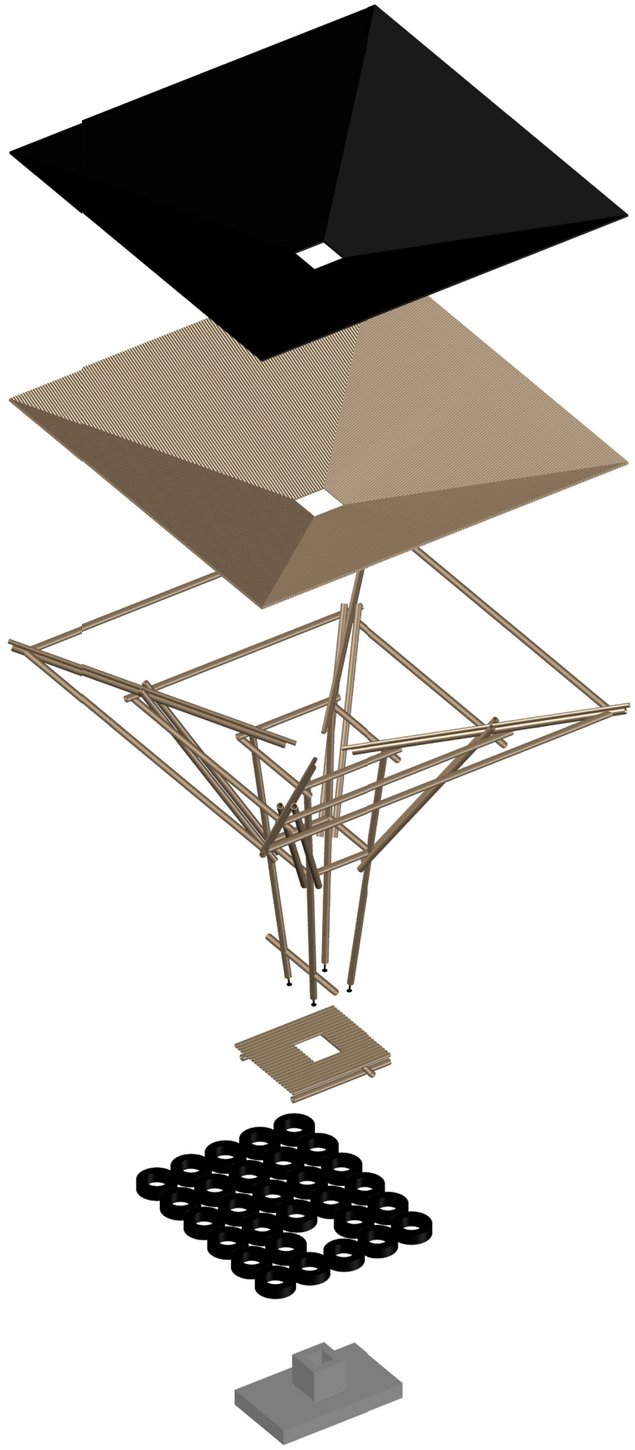
Day-Care & Educational Unit

SECTION A-A
EXISTING SITUATION
SCALE 1:200

open space



open space



INTEGRATED SOLAR PANELS

BAMBOO ROOFING

BAMBOO CONSTRUCTION WITHTRADITIONAL
BAMBOO CONNECTIONS WITH DOWELS &ROPE

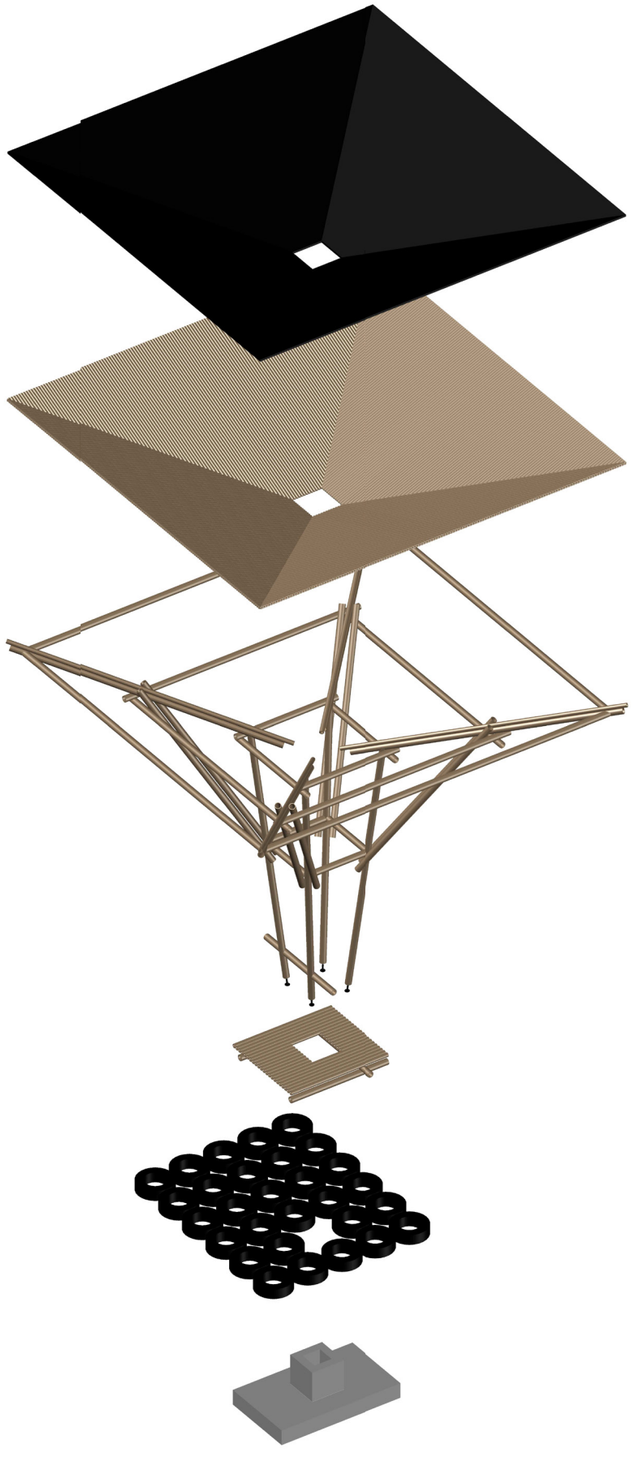
GALVANIZED STEEL BRACKETS ATTACHED
TO THE CONCRETE BASE

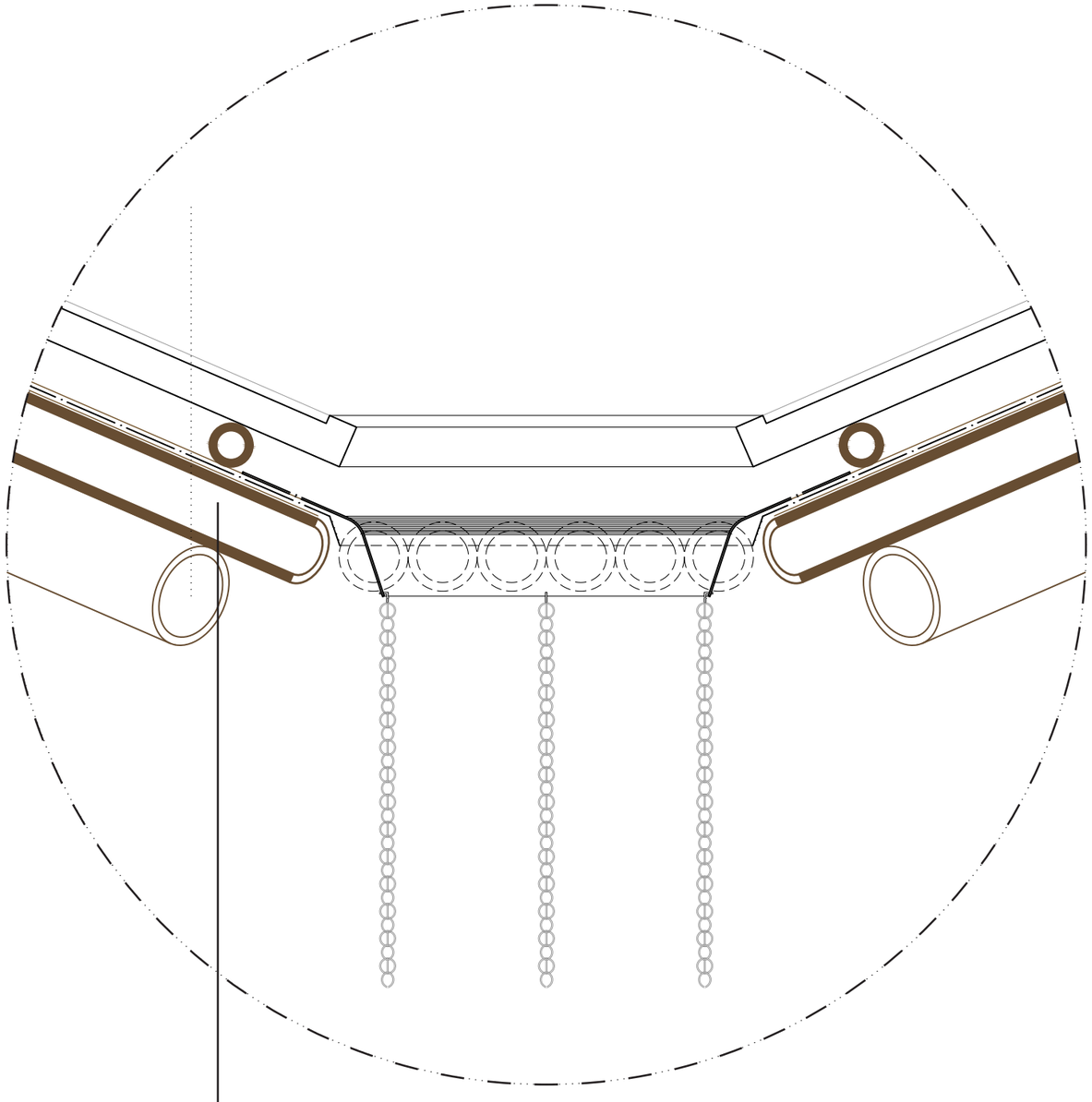
BAMBOO FLOORING

REUSED TIRES FOR FLOODING PROTECTION

CONCRETE BASE

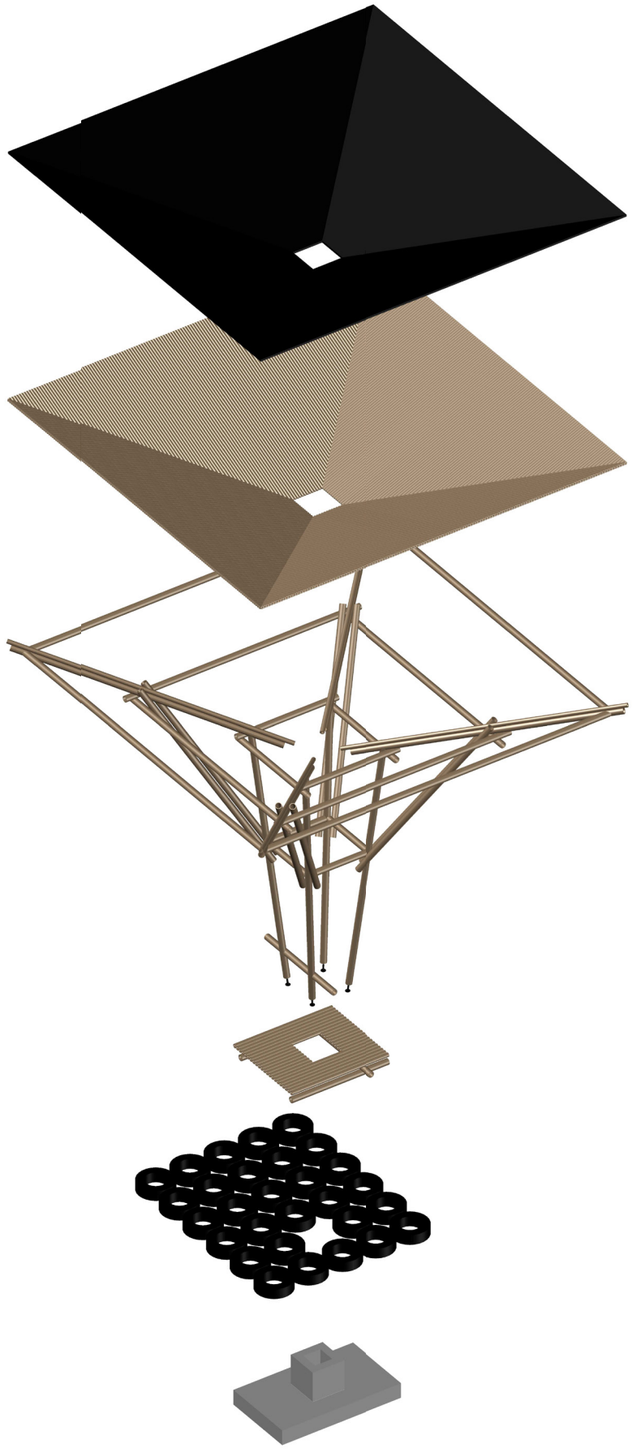
open space

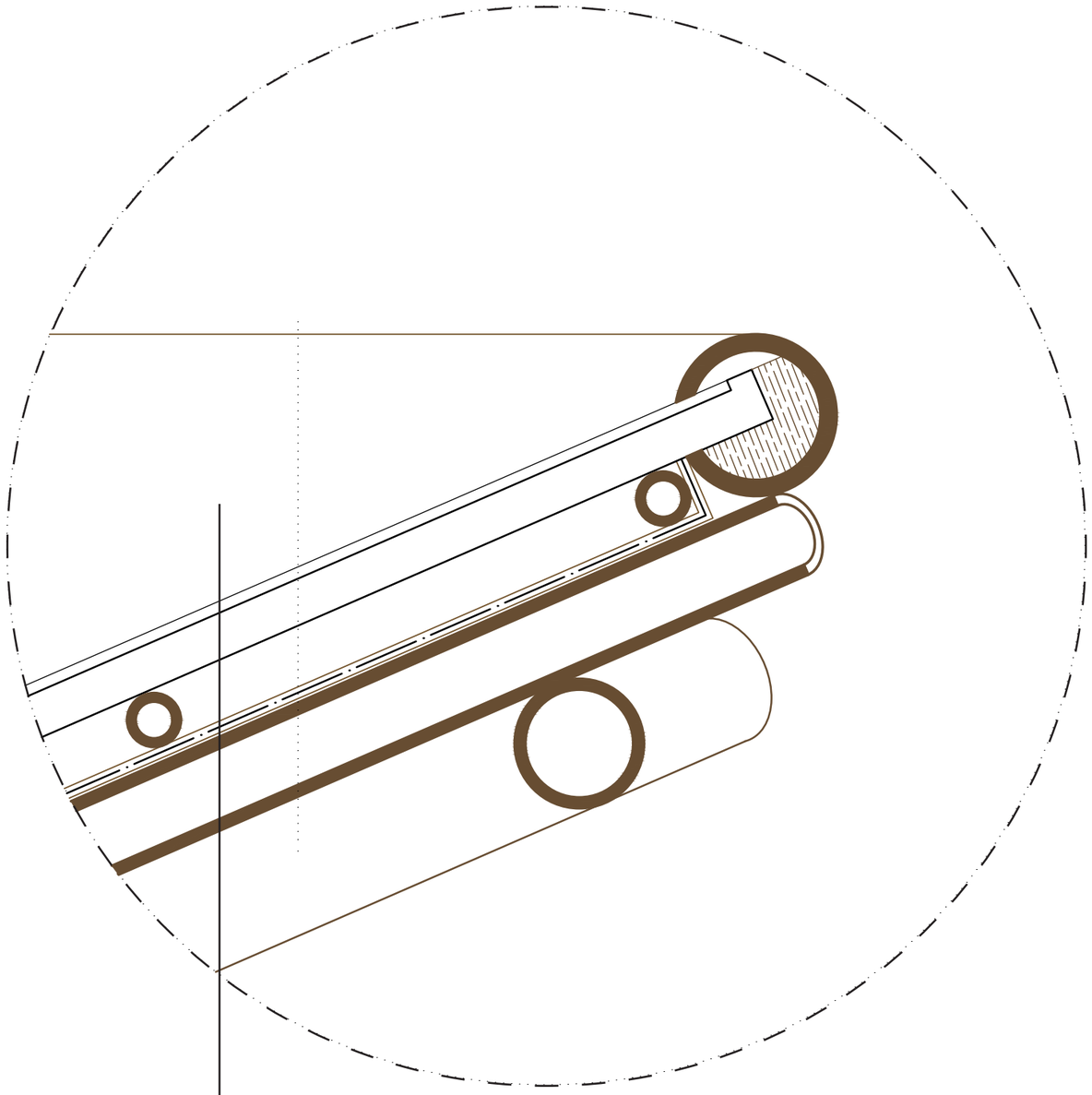




solar pv panels
bamboo poles 50mm
metal mesh for rain chain
epdm layer
bamboo poles 80mm for roofing
bamboo structure

open space





bamboo pole 150mm for rain protection
integrated solar pv panels
bamboo poles 50mm
epdm layer
bamboo poles 80mm for roofing
bamboo structure

A place for the community

Day - Care
Center

Galaxen Day-Care Center, Denmark
(1300.0 m^2)

KM Kindergarten and Nursery, Japan
(1.244m^2)

Act for Kids, Australia

0-3 years old

3-6 years old

6-12 years old

play area

reading corner

common room

kitchenette

sleeping area

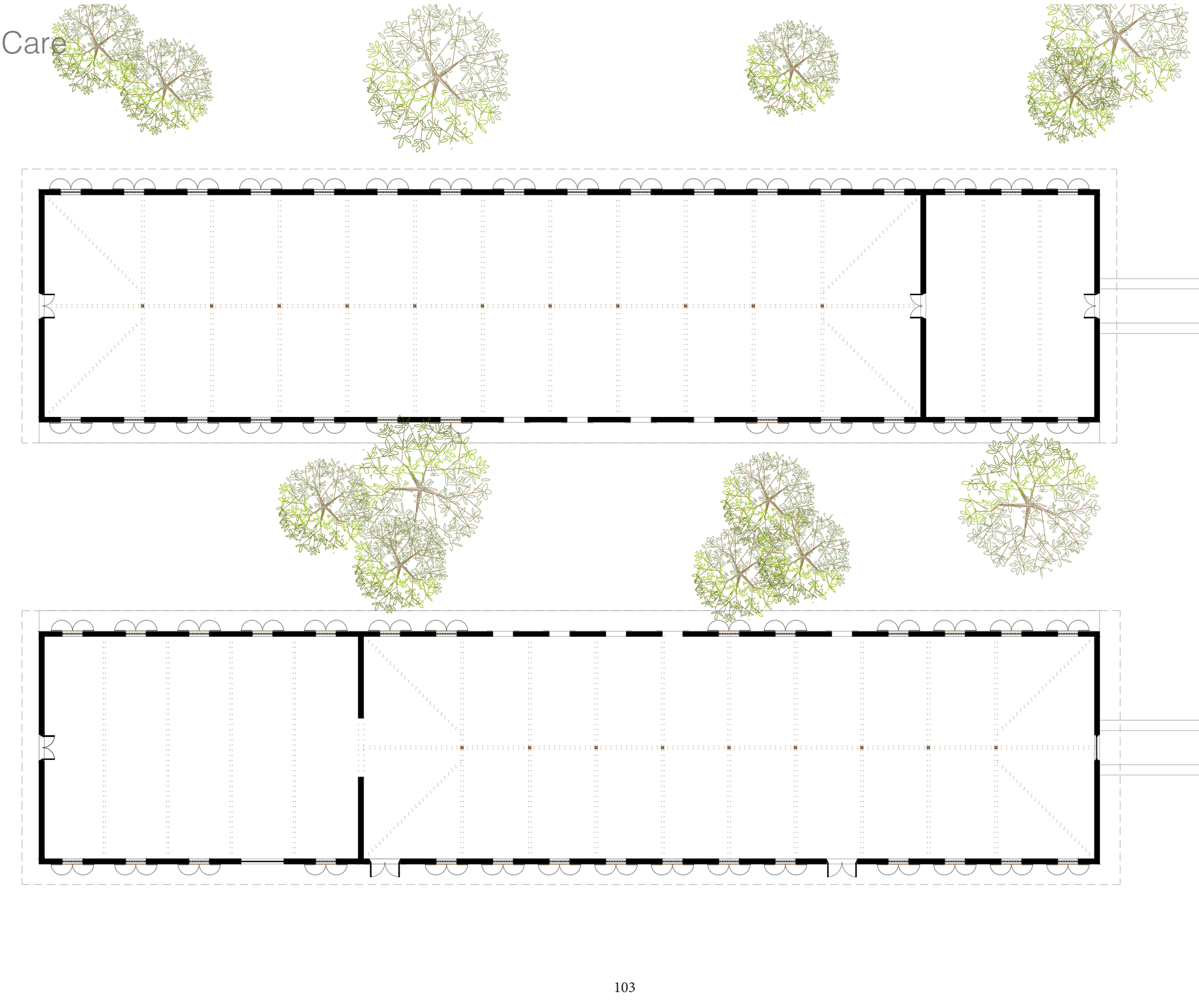
staff meeting room

storage space

toilets

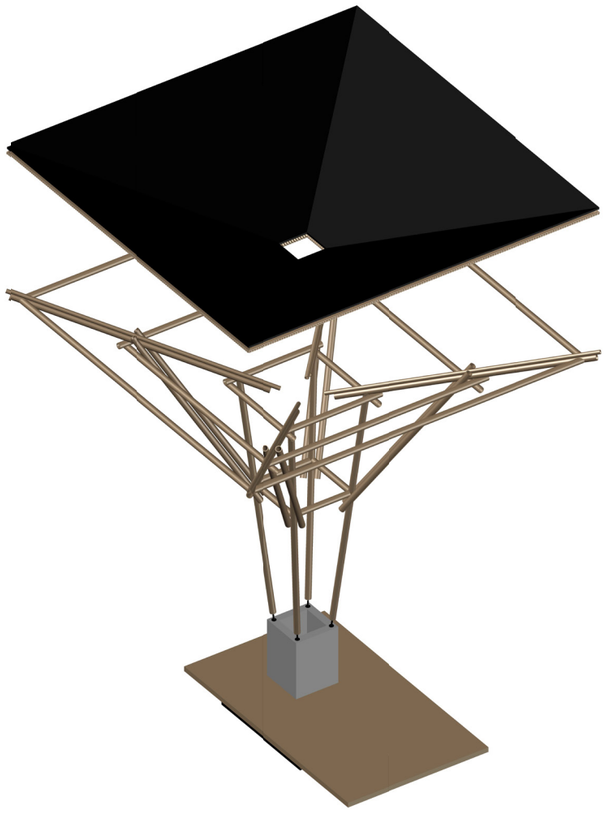
Day-Care

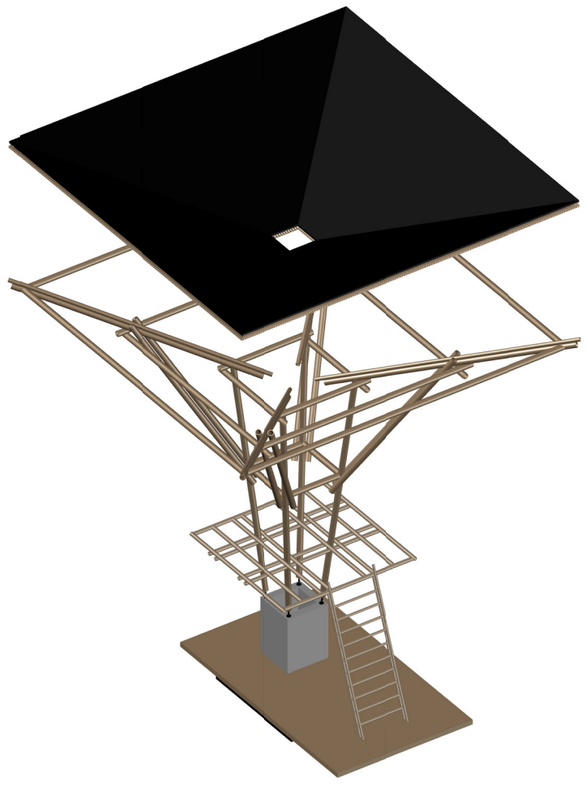
Day-Care

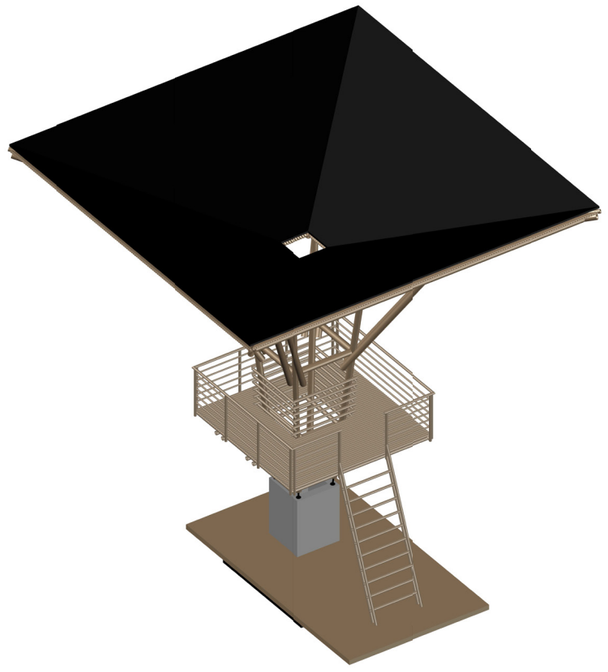


Day-Care

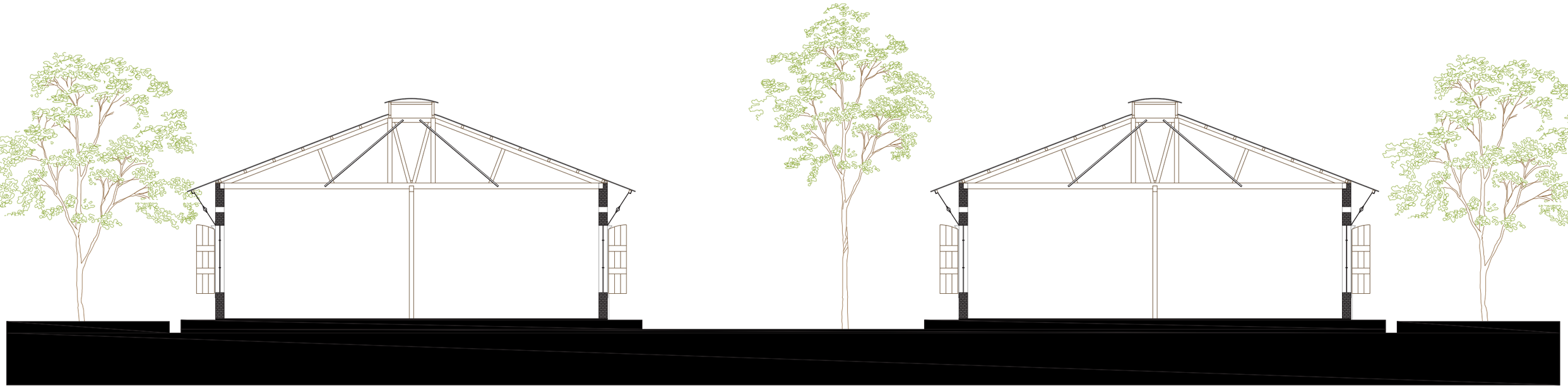
“treehouse”



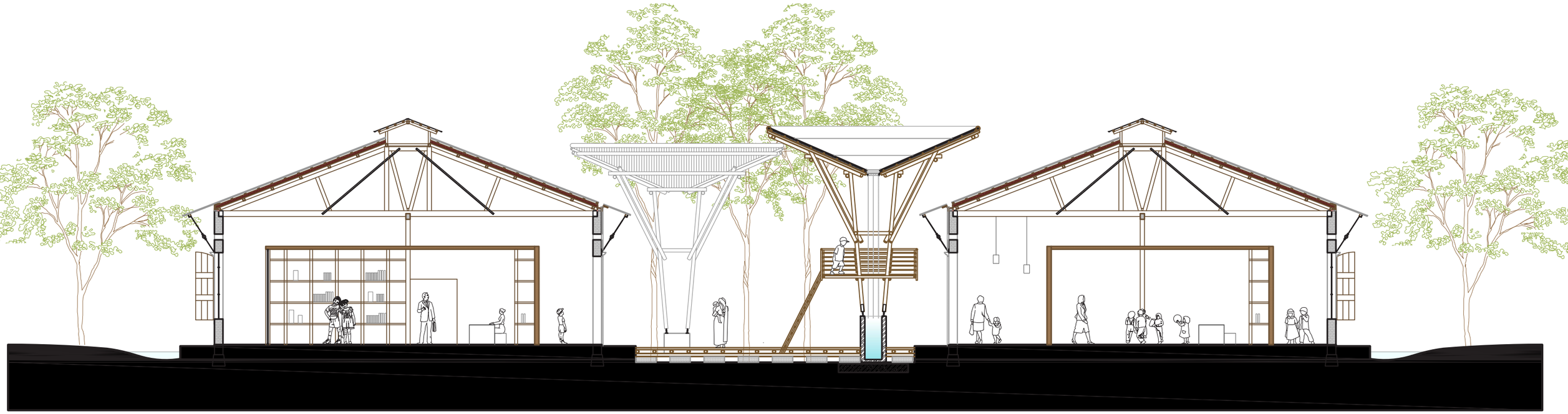




Day-Care



Day-Care



Day-Care

“a home for the community”

Day-Care

“a home for the community”

Day-Care

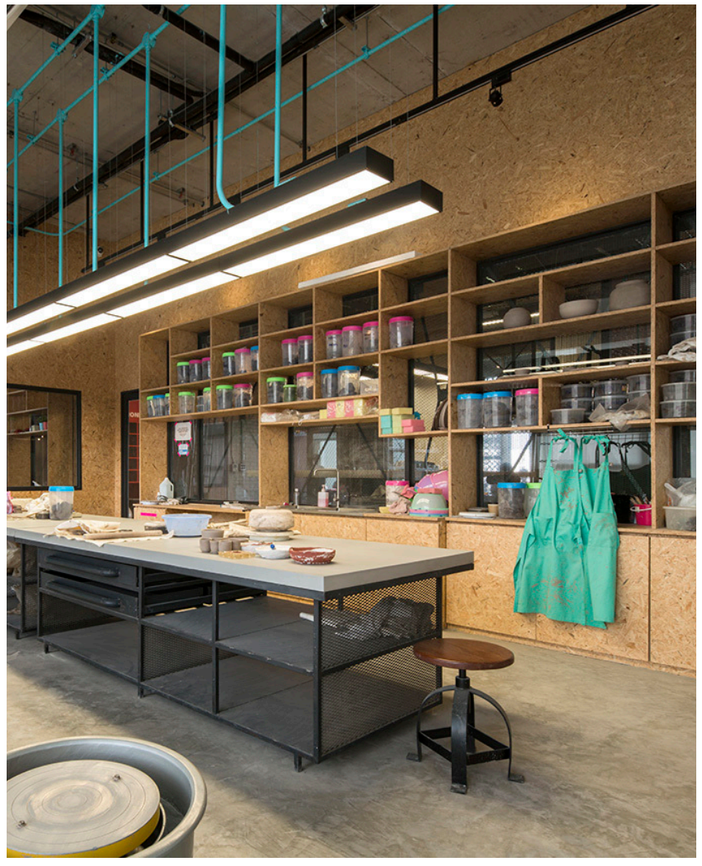
“a home for the community”

Educational unit

A place to learn & to develop skills

library
production space
arts & crafts space
meeting rooms

Curra Community Hall, Australia
(1300.0 m^2)

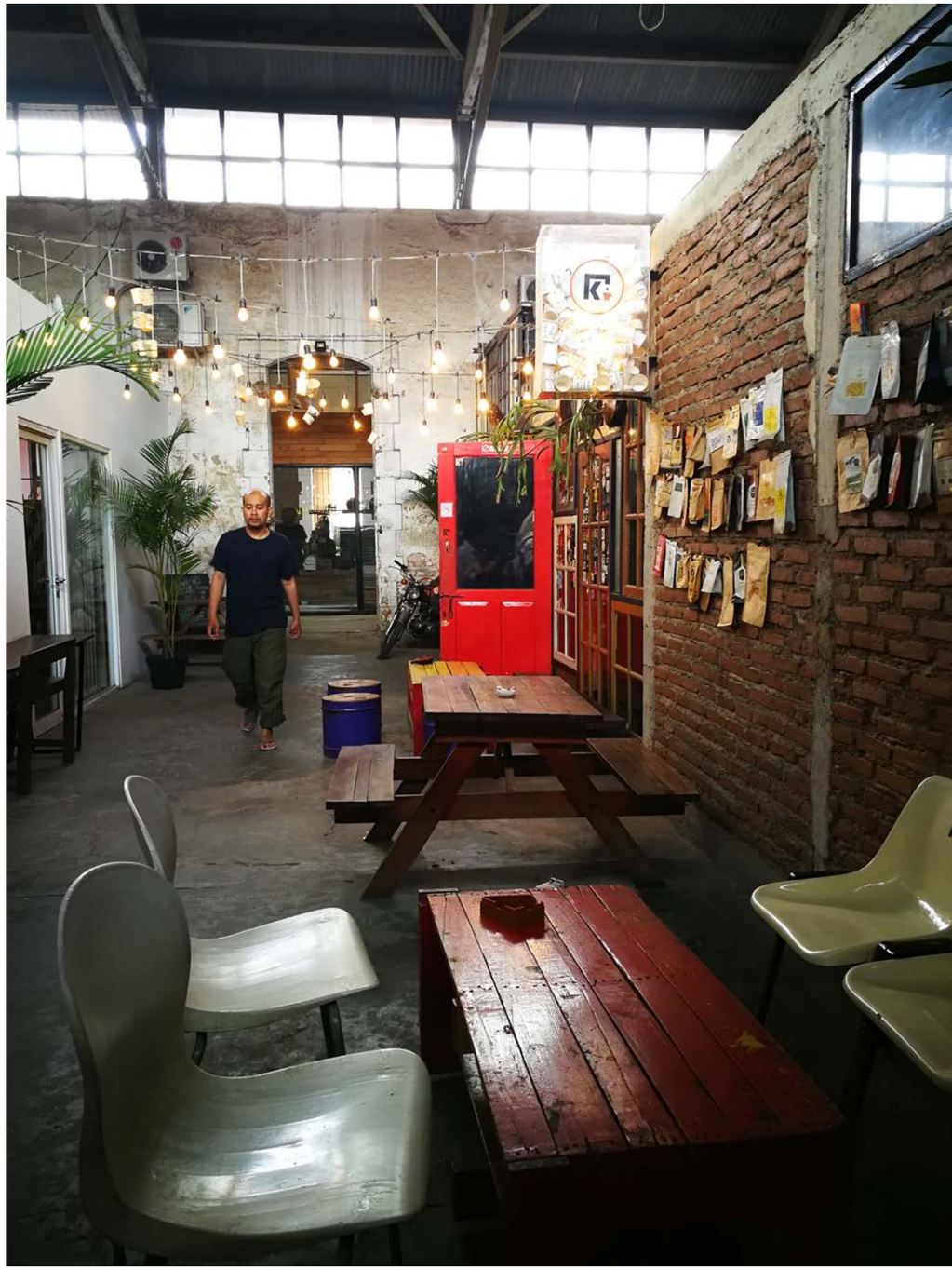


Hubba-to, Thailand
(989 m^2)

Sopoong-gil Community, South Korea
(300 m^2)

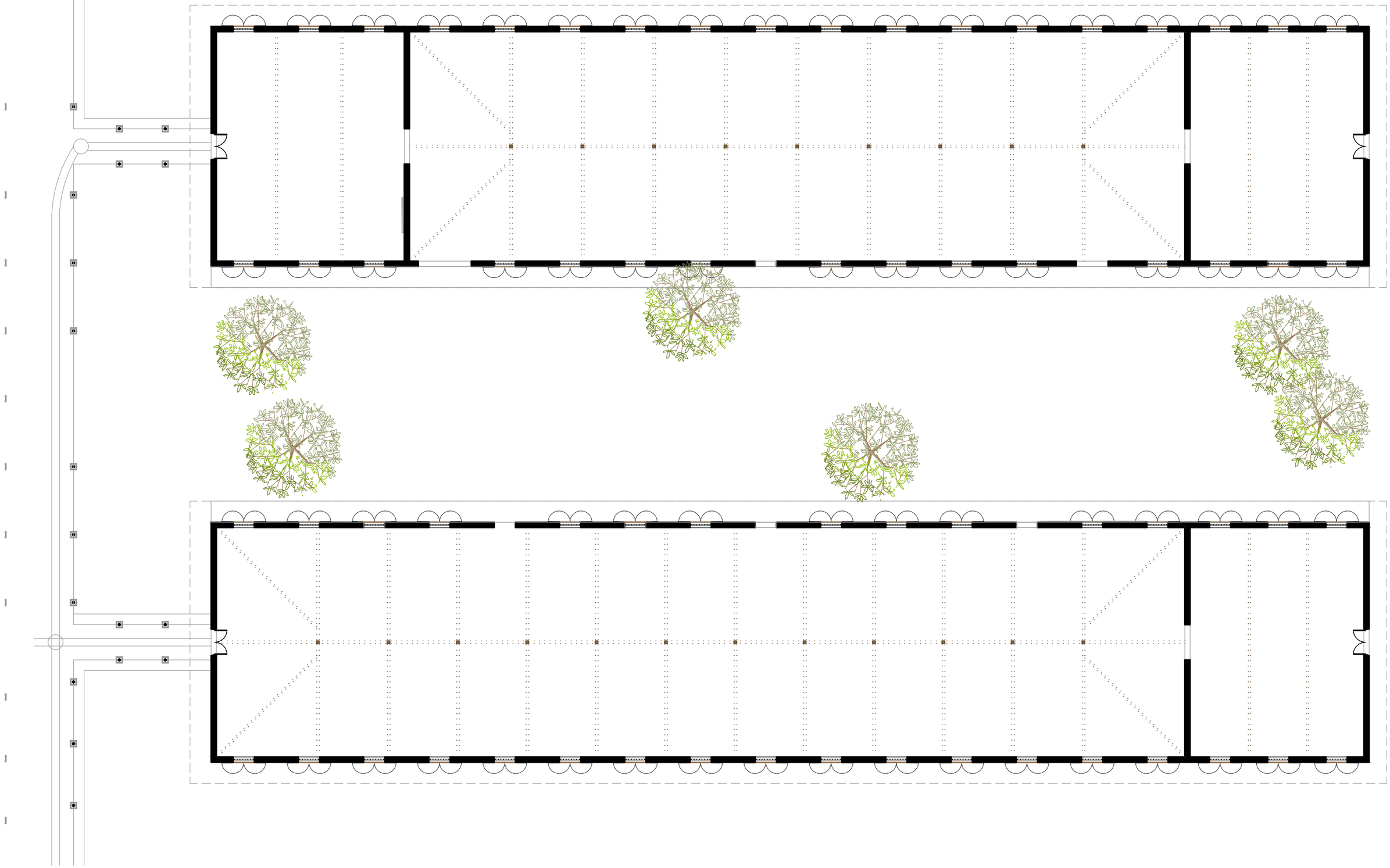
library stacks
reading corners
workshop area
individual studios
storage space
meeting rooms
coffee shop
toilets

Educational unit

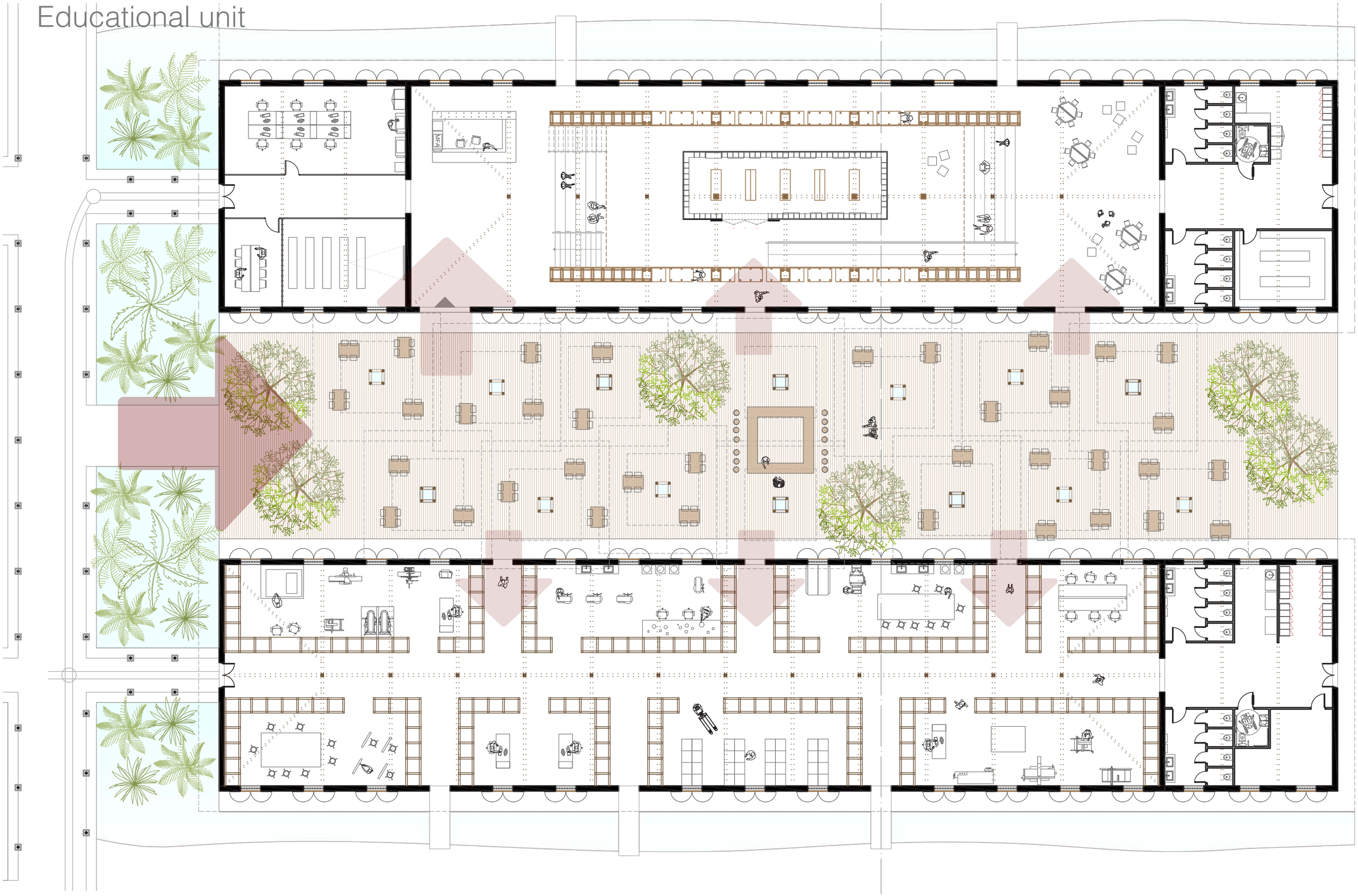


Educational unit

Educational unit

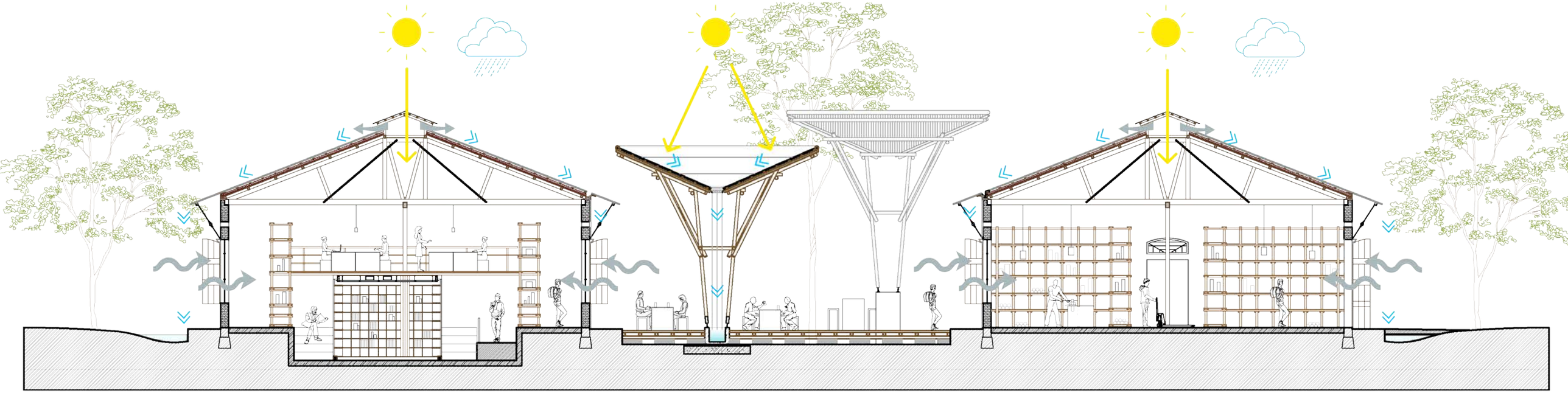


Educational unit



Educational unit

Educational unit



Educational unit

Educational unit

“a place to meet & learn”

Educational unit

“a place to meet & learn”

Educational unit

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“a place to meet & learn”

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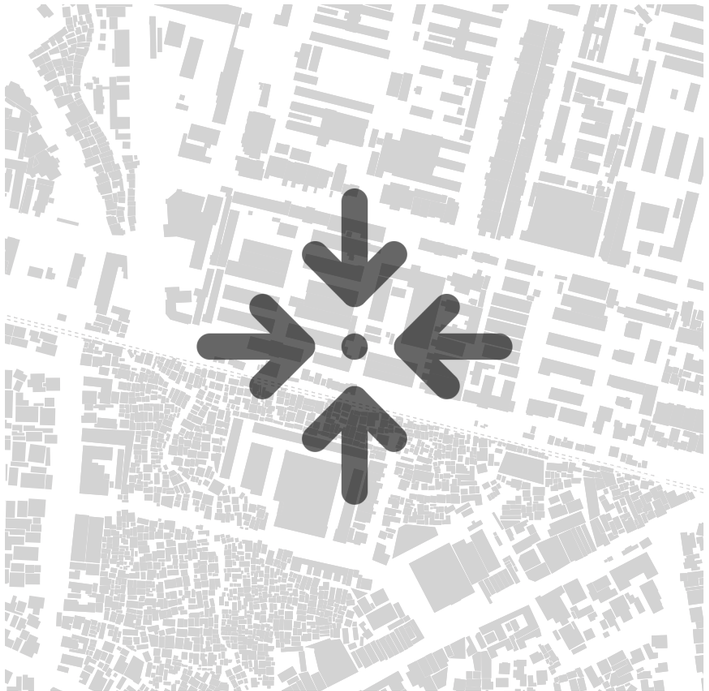
“a place to meet & learn”

Impact of the project

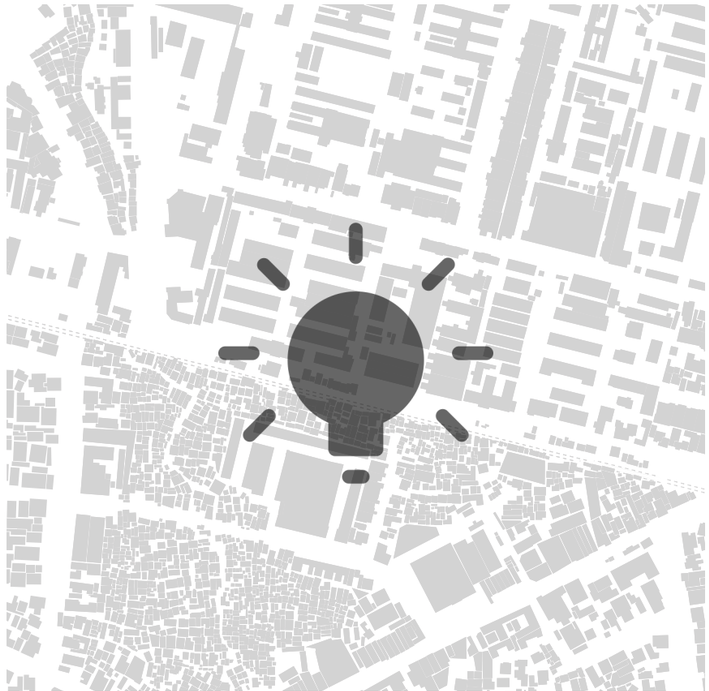


a showcase for the city

of how the colonial legacy can be transformed to serve societal needs

an influence for locals

to get closer to nature again, and to their cultural identity



an inspiration

by providing an experience of vernacular craftsmanship and locally found materials

PROGRAM

Bottom-up project that focuses on people & their development

DESIGN

HERITAGE

Re-use & create something new

TECHNOLOGY

Performance & Innovation

THANK YOU!