

KATOENVEEM

heritage and architecture

harbour heritage

P5  
17.04.18

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*FROM COTTON WAREHOUSE TO CULTURAL & LEISURE CENTRE*

Jan Huis in 't Veld

content

P5

introduction

analysis & research

values & concept

design

conclusions

theme

heritage & architecture: transformation in the Rotterdam harbour

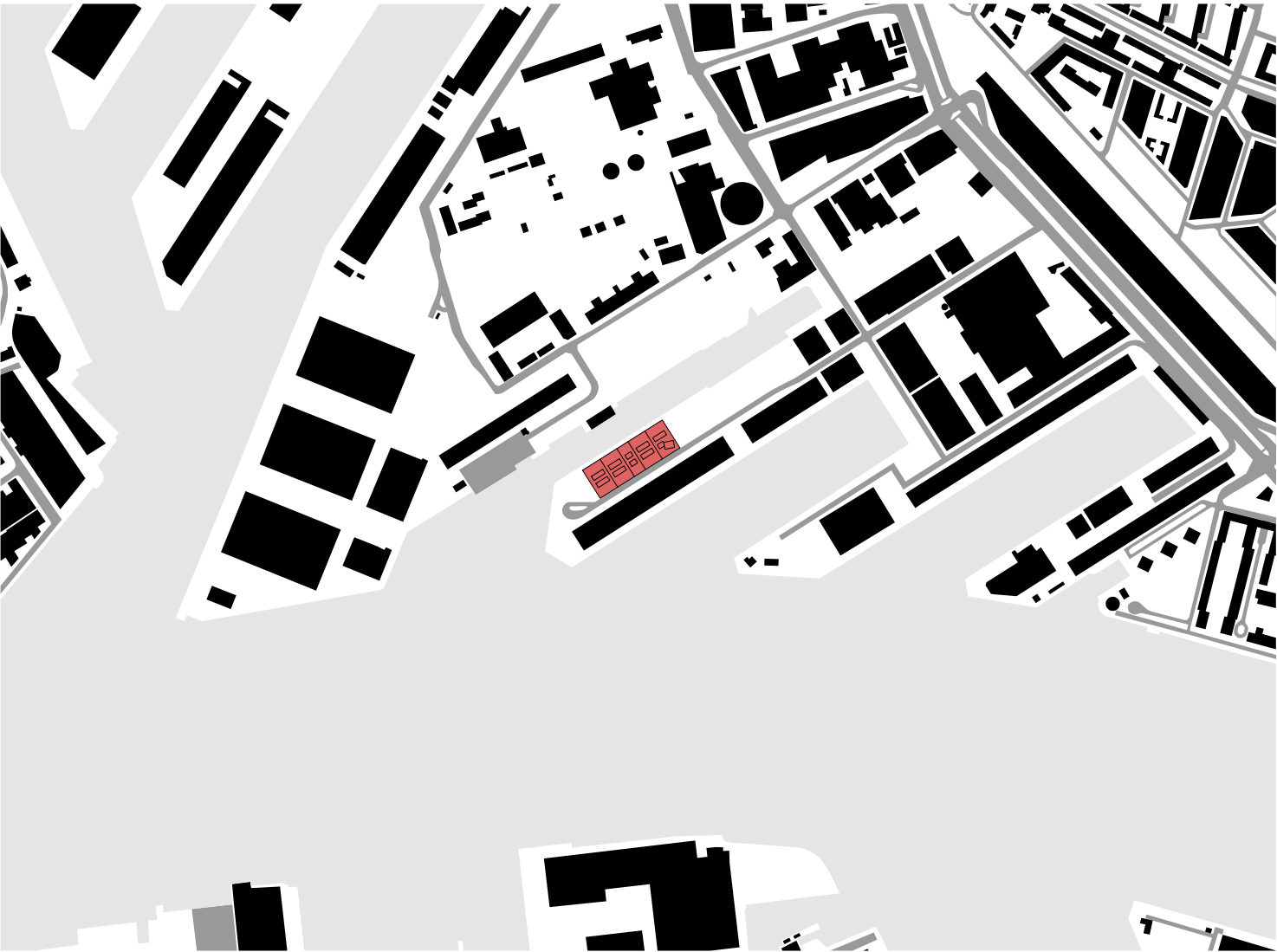


*all illustrations are of own creation, unless differently stated*

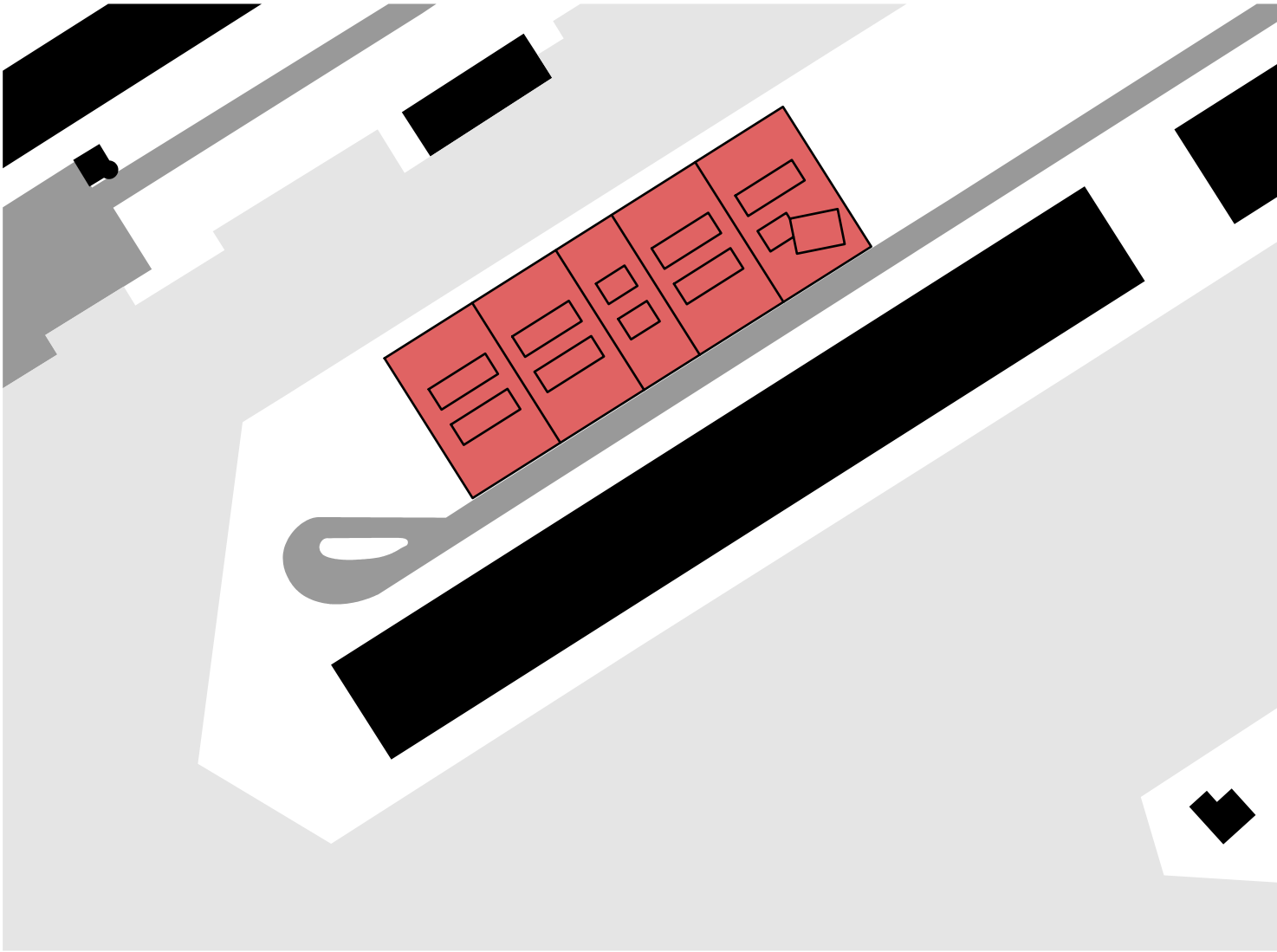
*all photographs have been taken by group members, Audrey, Joost, Elmer and Xihao*

introduction

site



Port of Rotterdam

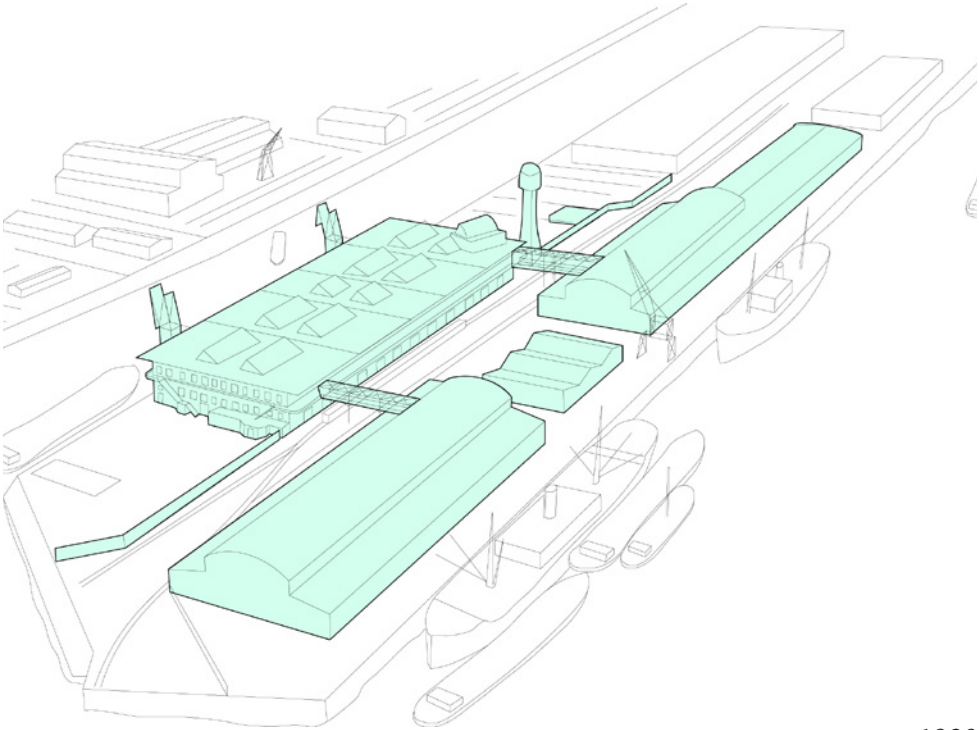


Katoenveem

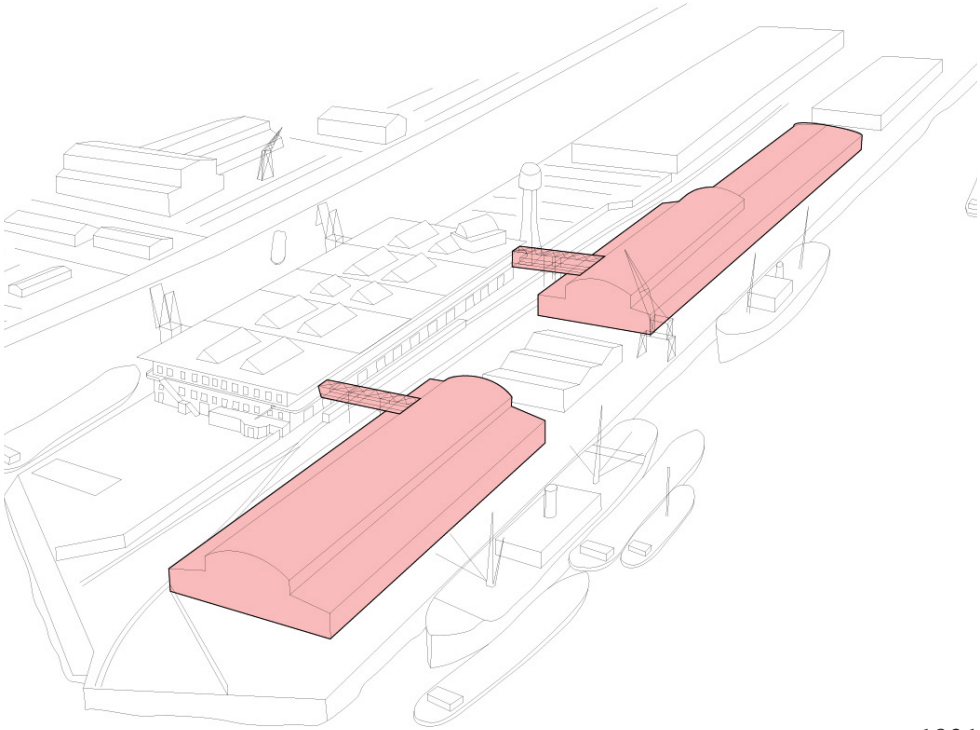


analysis

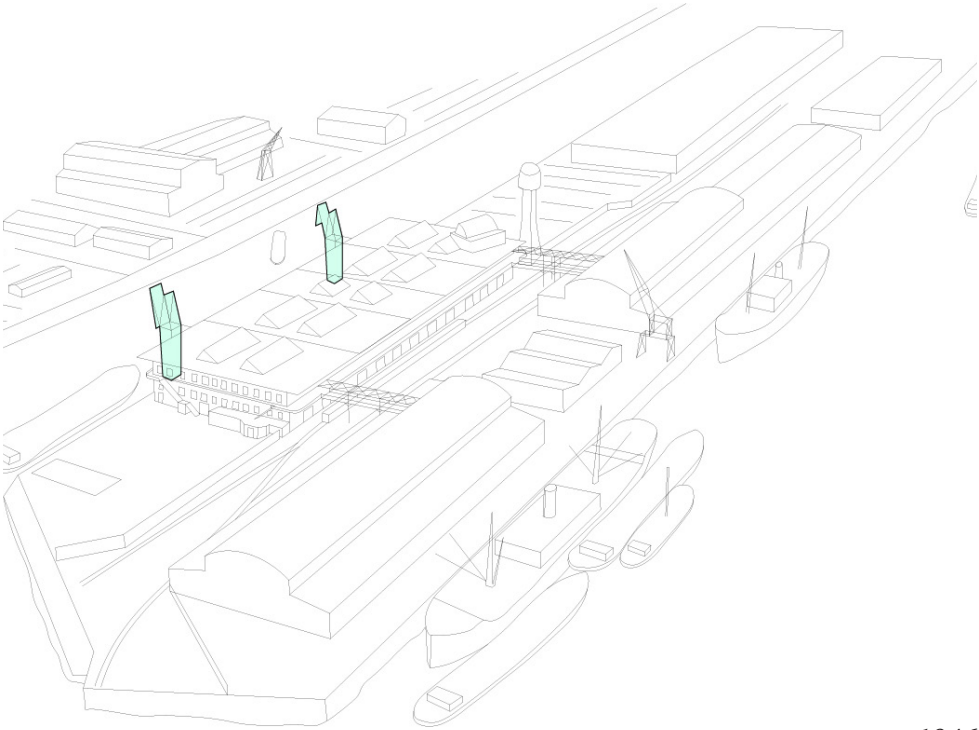
historical development



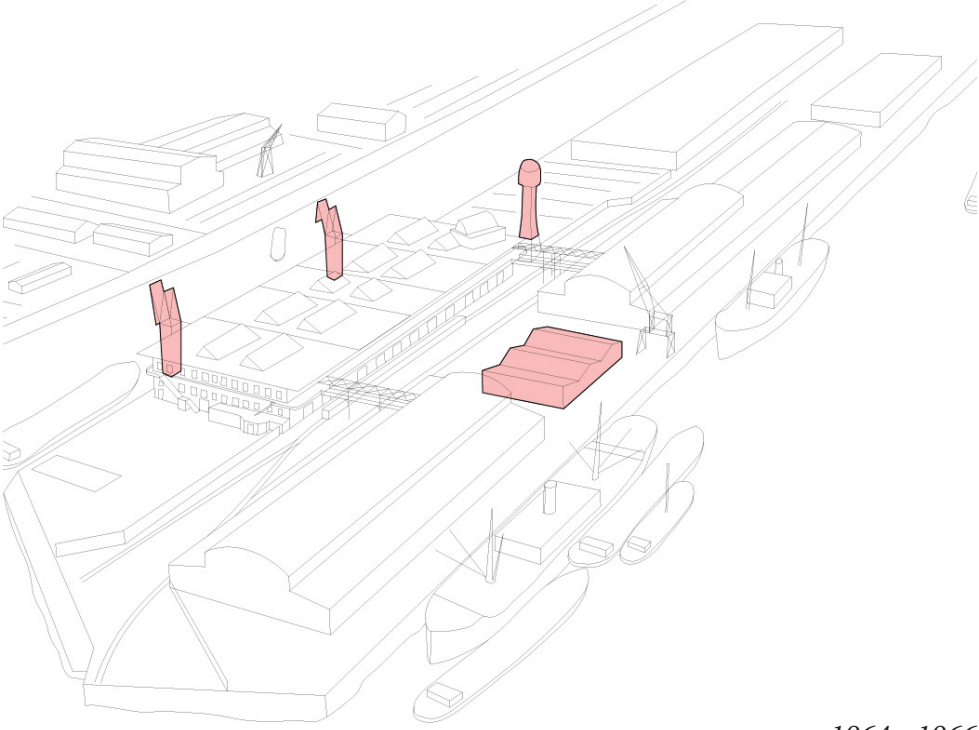
1920



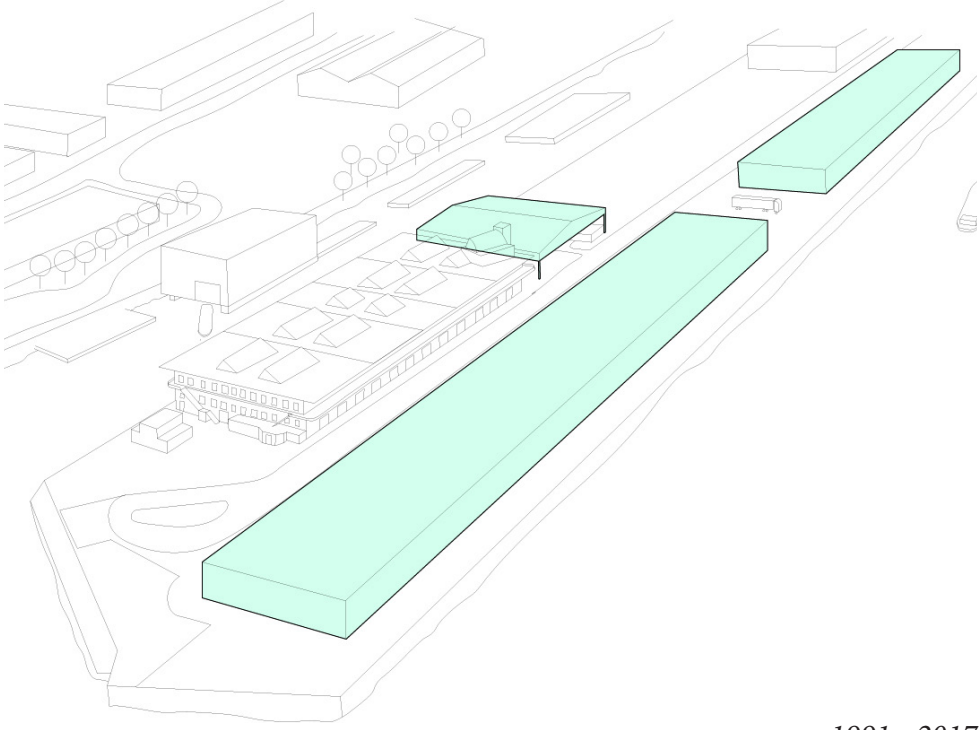
1931



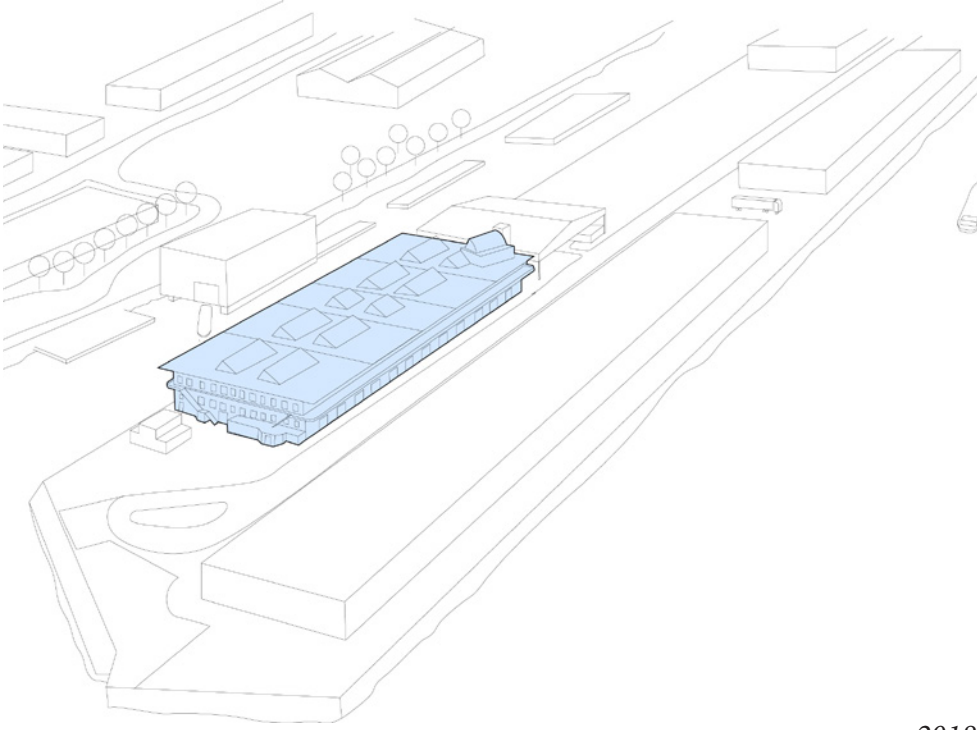
1946



1964 - 1966



1991 - 2017



2018

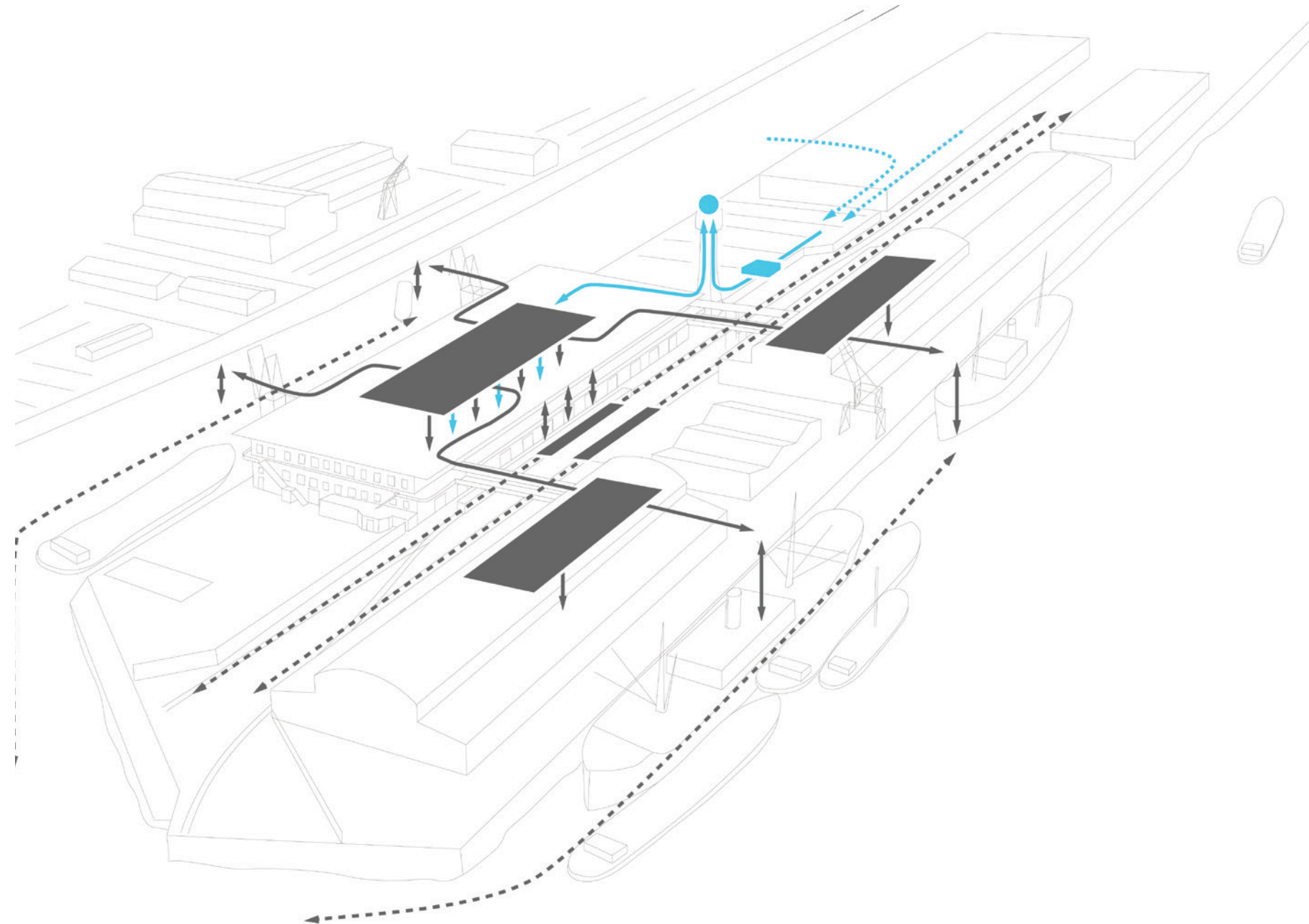
analysis

cotton transshipment

Katoenveem was part of a  
comprehensive network

Combined the buildings operated  
as a machine

Design followed the functionality  
of the system

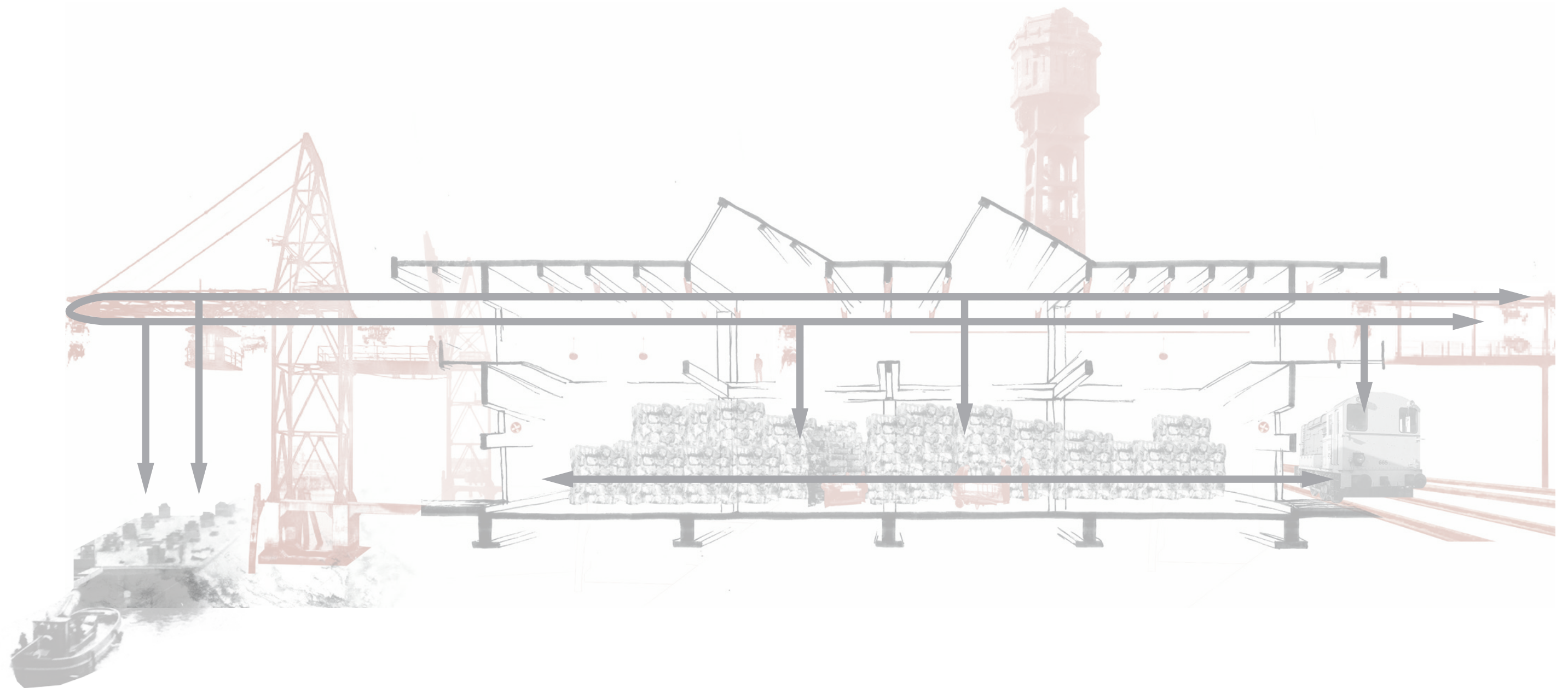


*cotton transshipment - scheme*



analysis

cotton transshipment

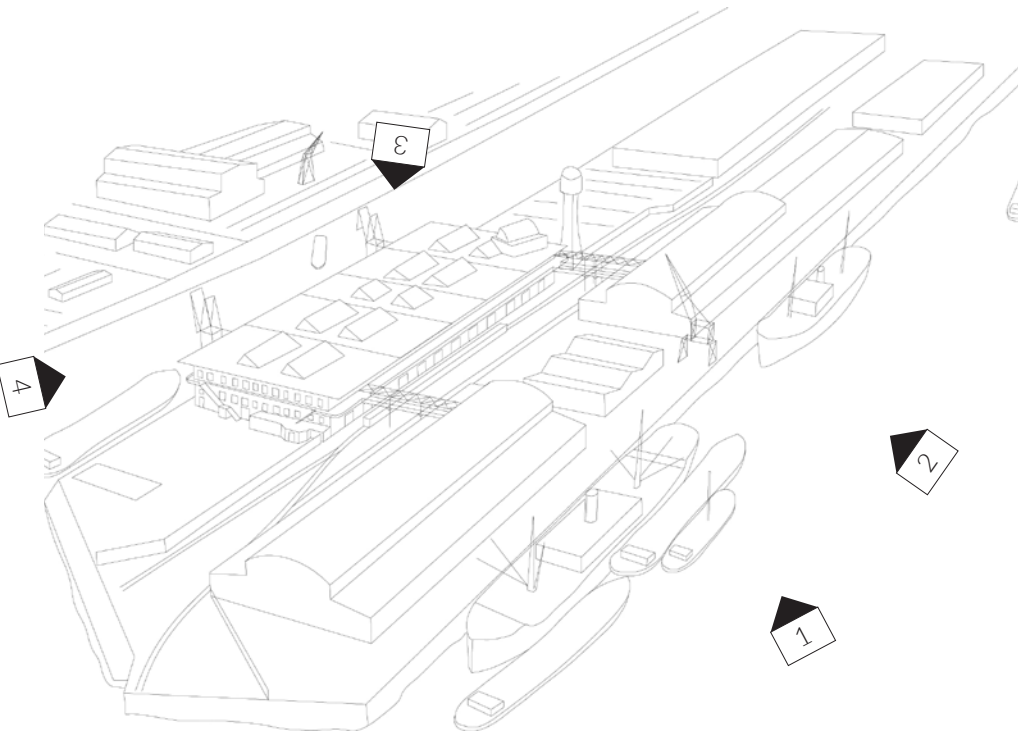


*cotton transshipment - section  
(adaptation illustration Audrey Loef)*



analysis

cotton transshipment



Lekhaven 1940 (1)



Lekhaven 1936 (2)



Keilehaven 1925 (3)

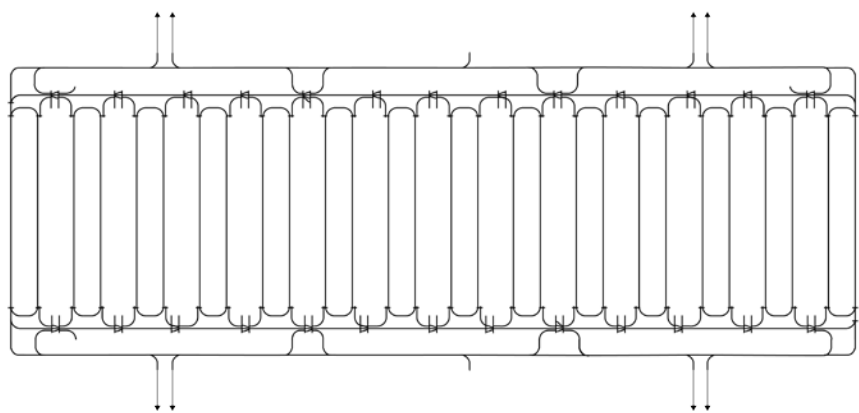


Keilehaven 1933 (4)  
(old photographs Rotterdam archive)

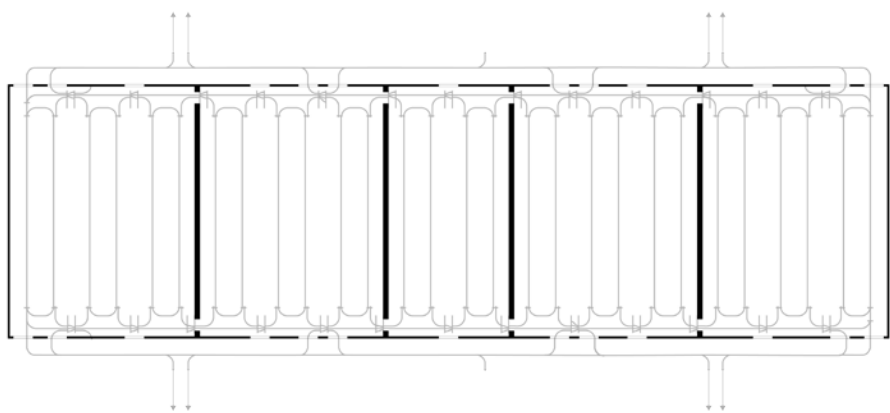


analysis

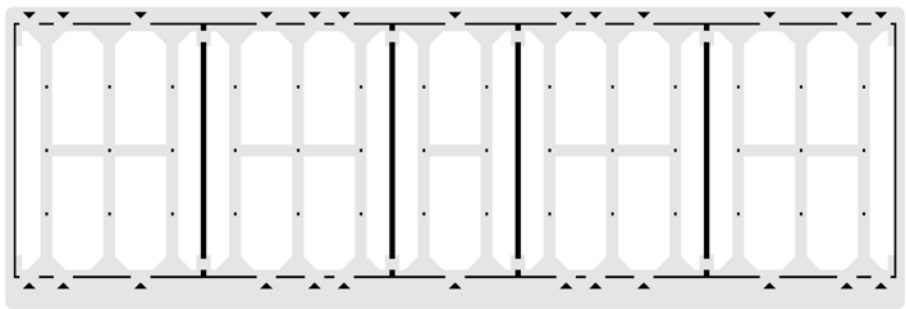
space plan



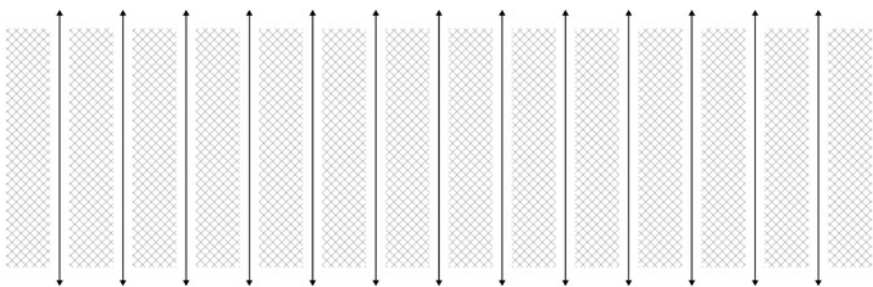
first floor - function



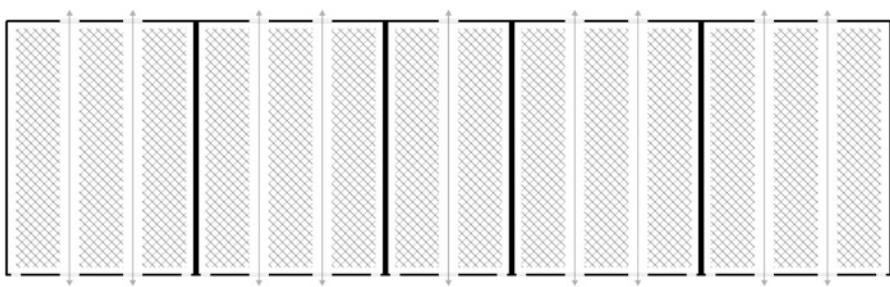
first floor - compartments



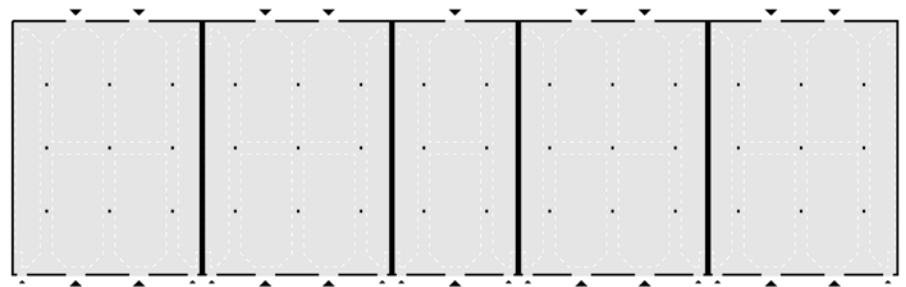
first floor - plan



ground floor - function



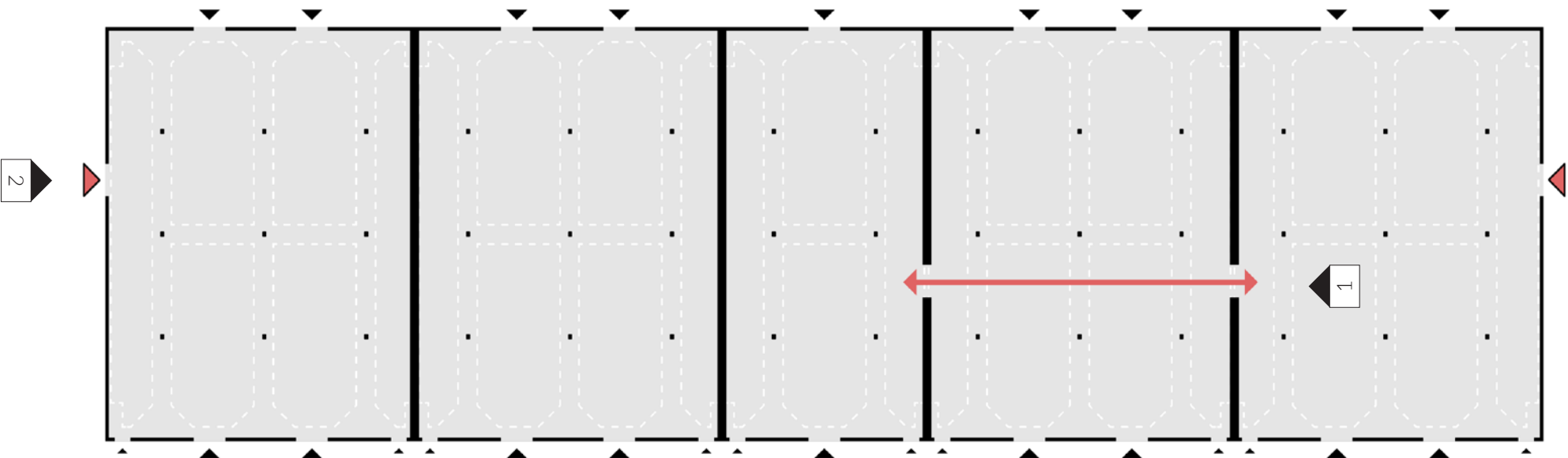
ground floor - compartments



ground floor - plan

analysis

space plan



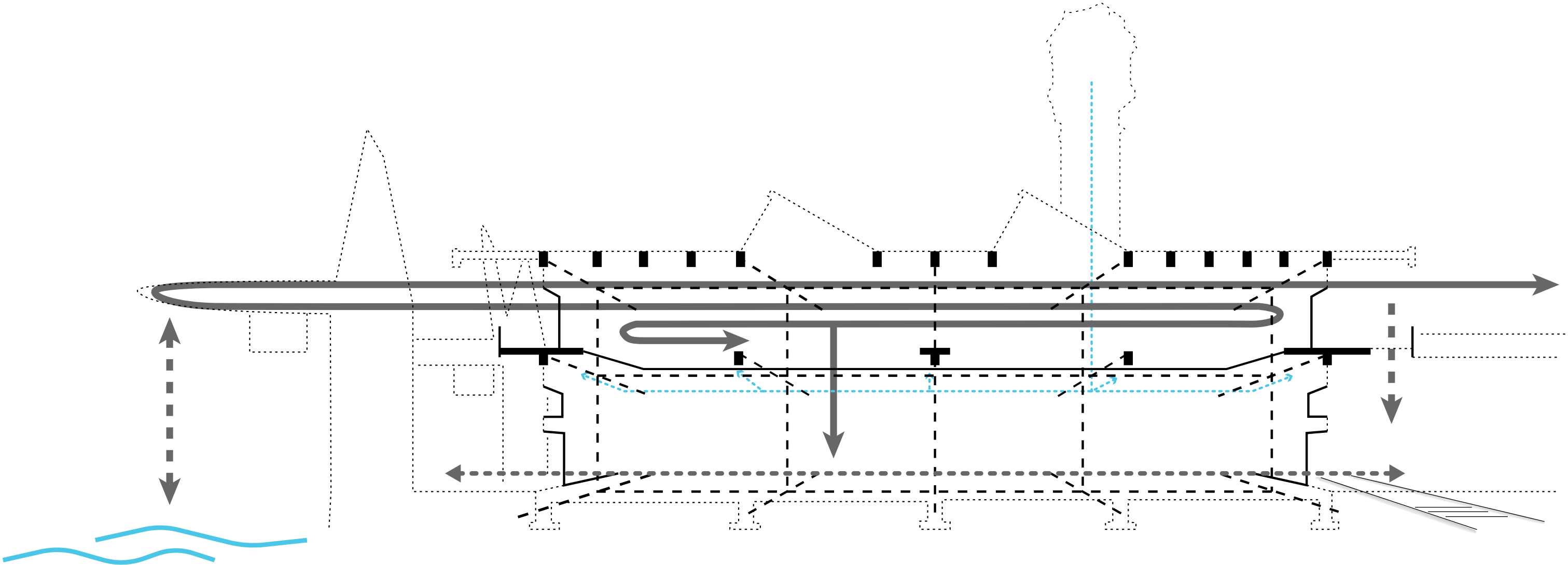
compartment wall opening (1)



head facade opening

analysis

space plan

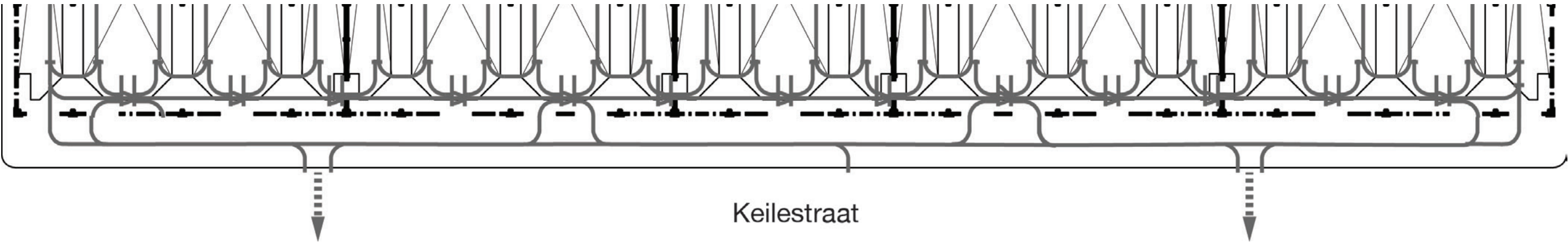


compartment section  
(adaptation illustration Audrey Loef)

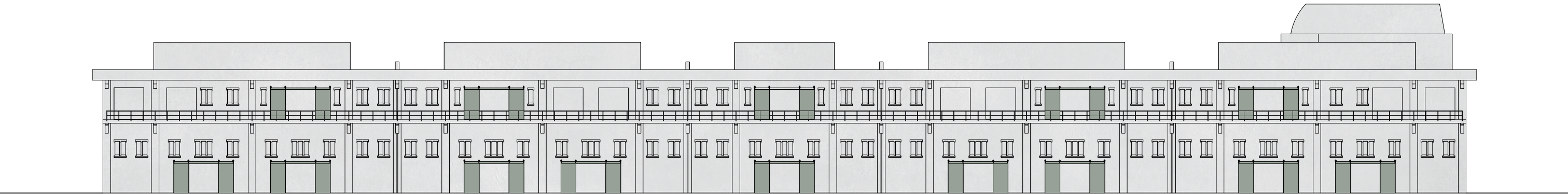


analysis

skin



conveyor system - plan



keilestraat facade - elevation

rhythm facade functional design

composition is translation of use

bridges, doors correspond to system



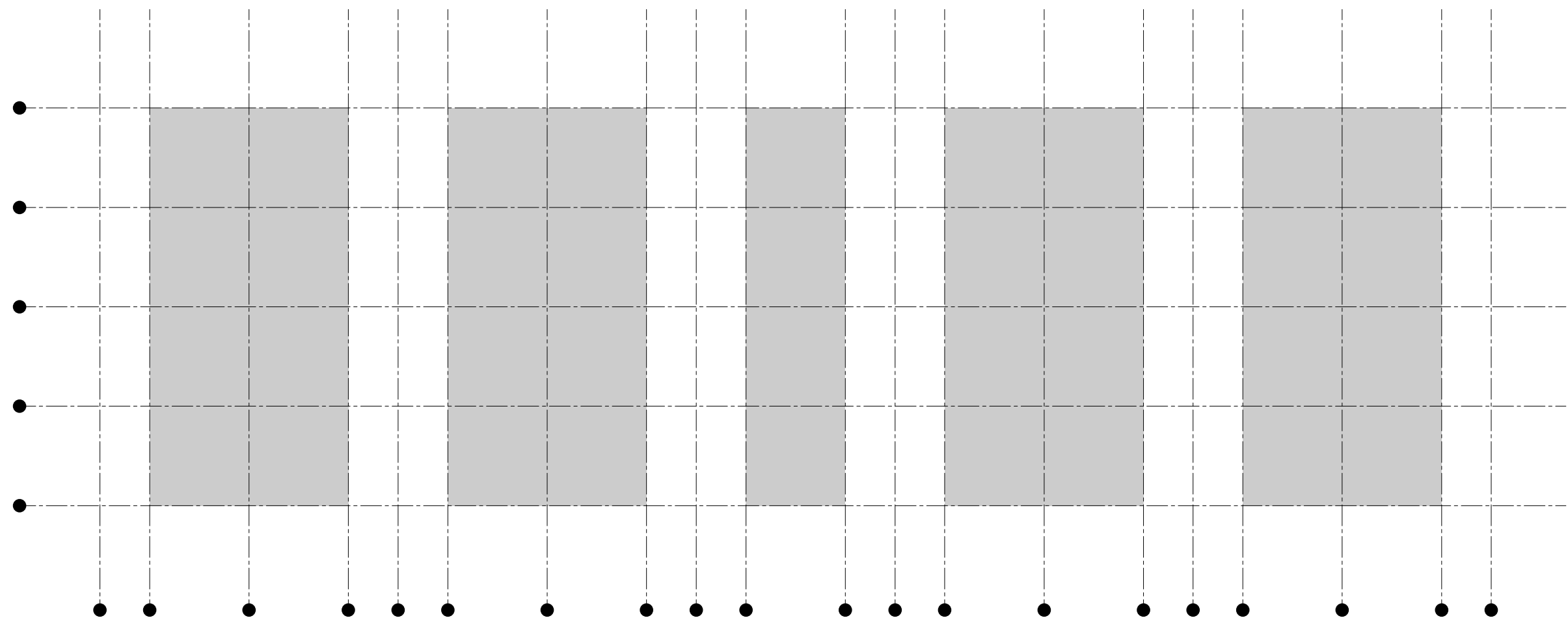
analysis

skin



analysis

structure



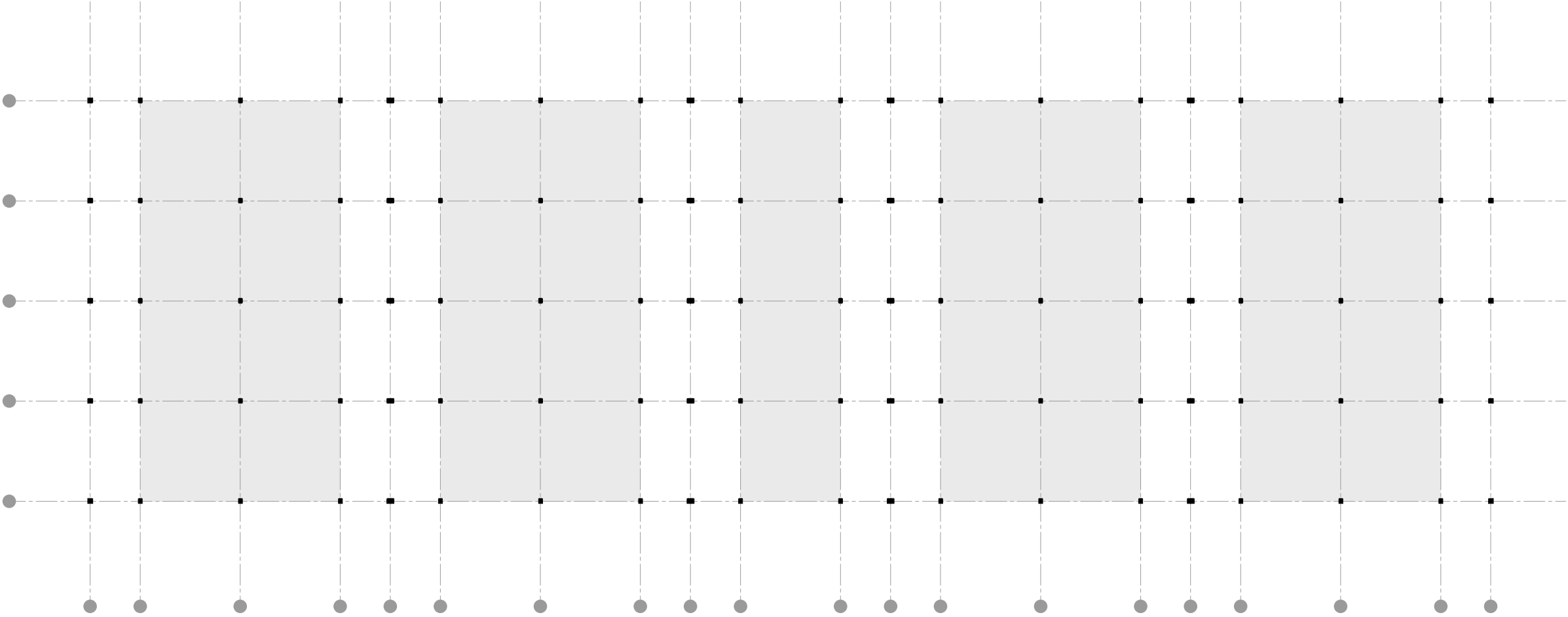
grid

full grid : 10050mm x 10050mm

half grid : 10050mm x 5025mm

analysis

structure



ground floor - structure

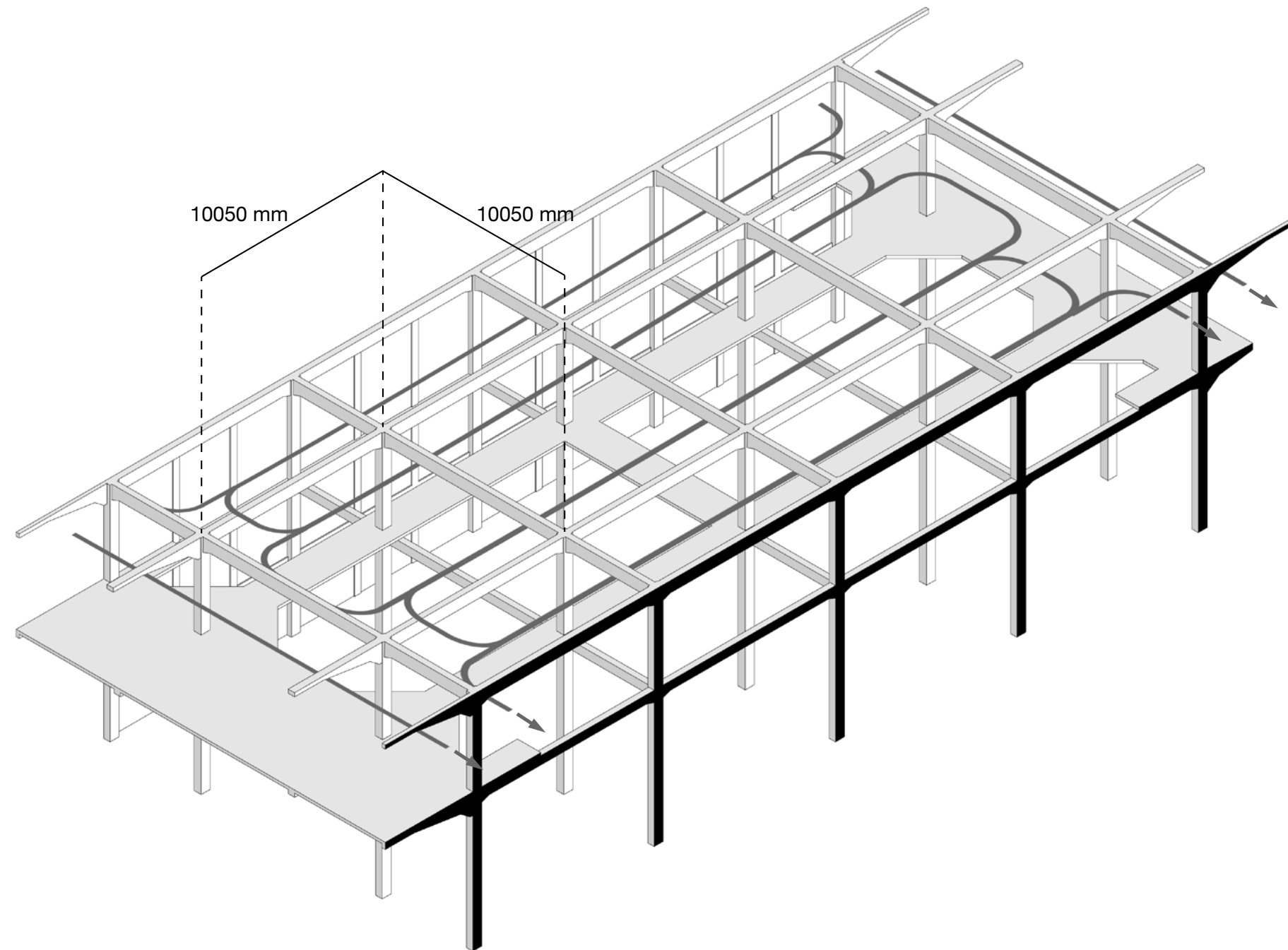
columns in accordance with grid

analysis

structure

grid is related to the size of Egyptian  
cotton bales

structure is designed to enable optimal  
functionality of the conveyor system

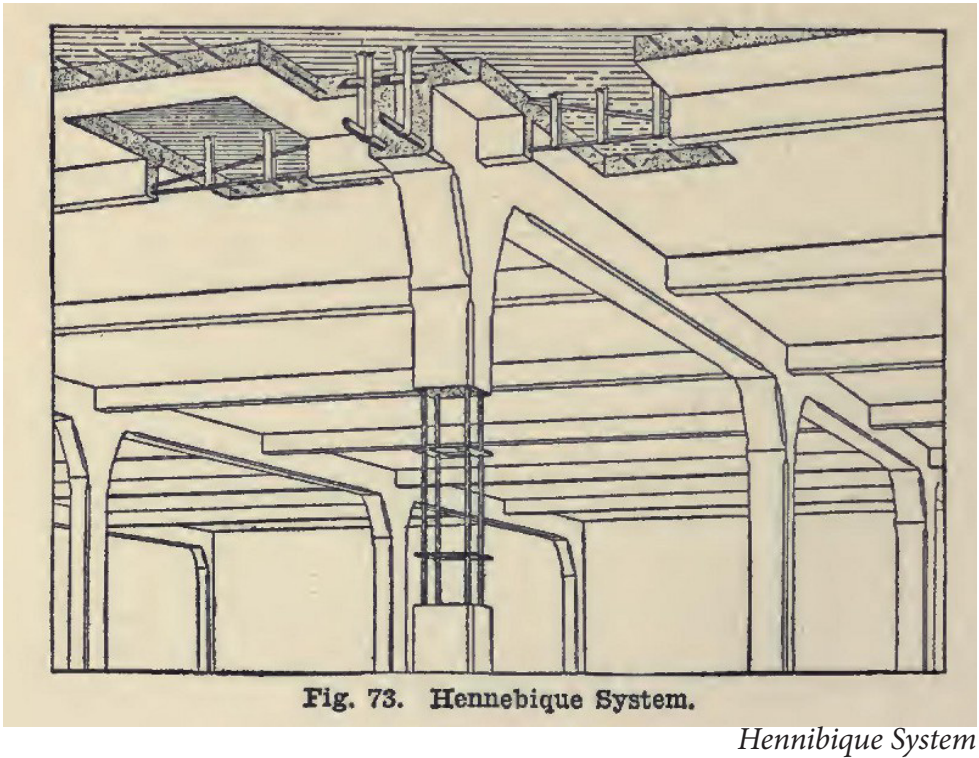


*3D compartment - structure*

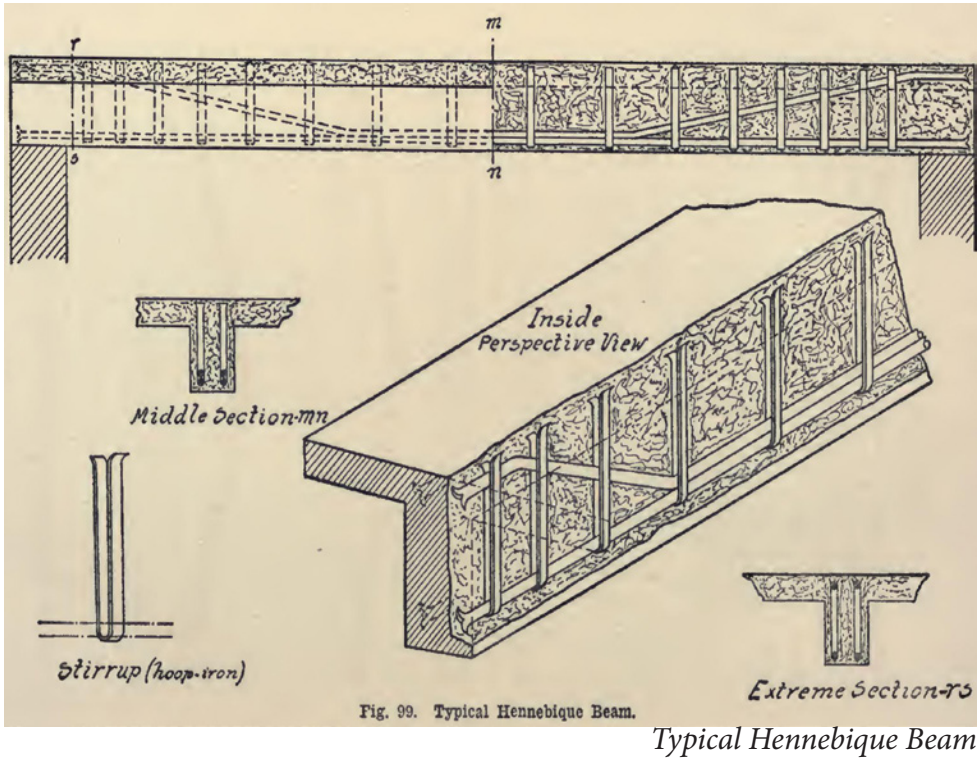


analysis

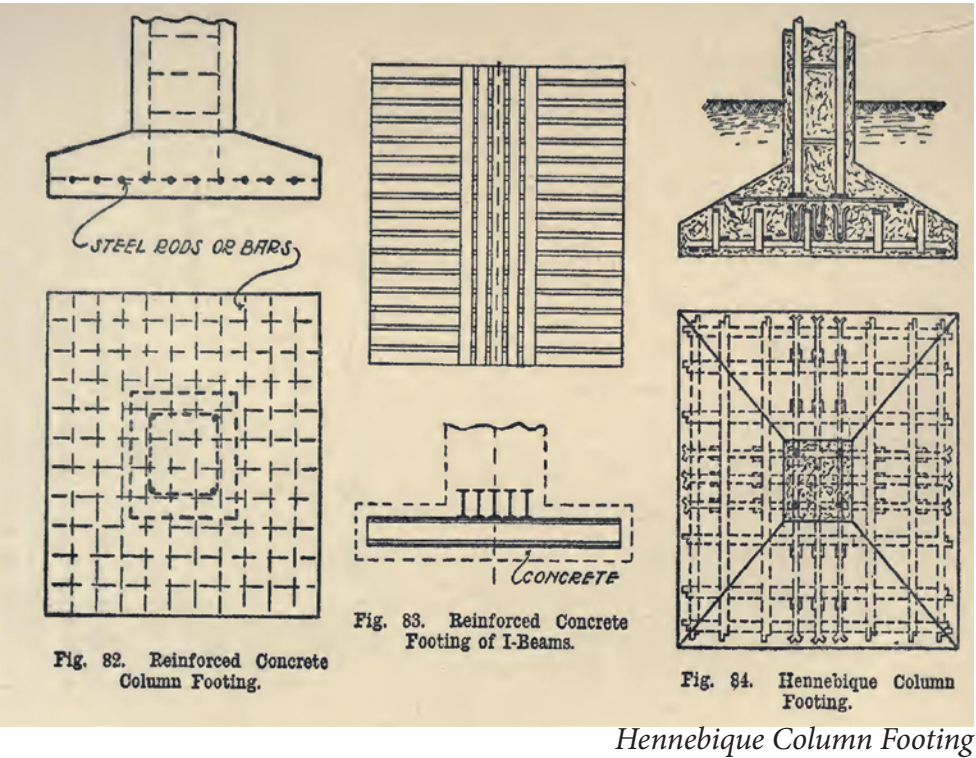
structure



Hennibique System



Typical Hennebique Beam



Hennebique Column Footing  
(illustrations from Radford's Cyclopedia of Construction)

Hennebique-like construction system is used in the Katoenveem building



analysis

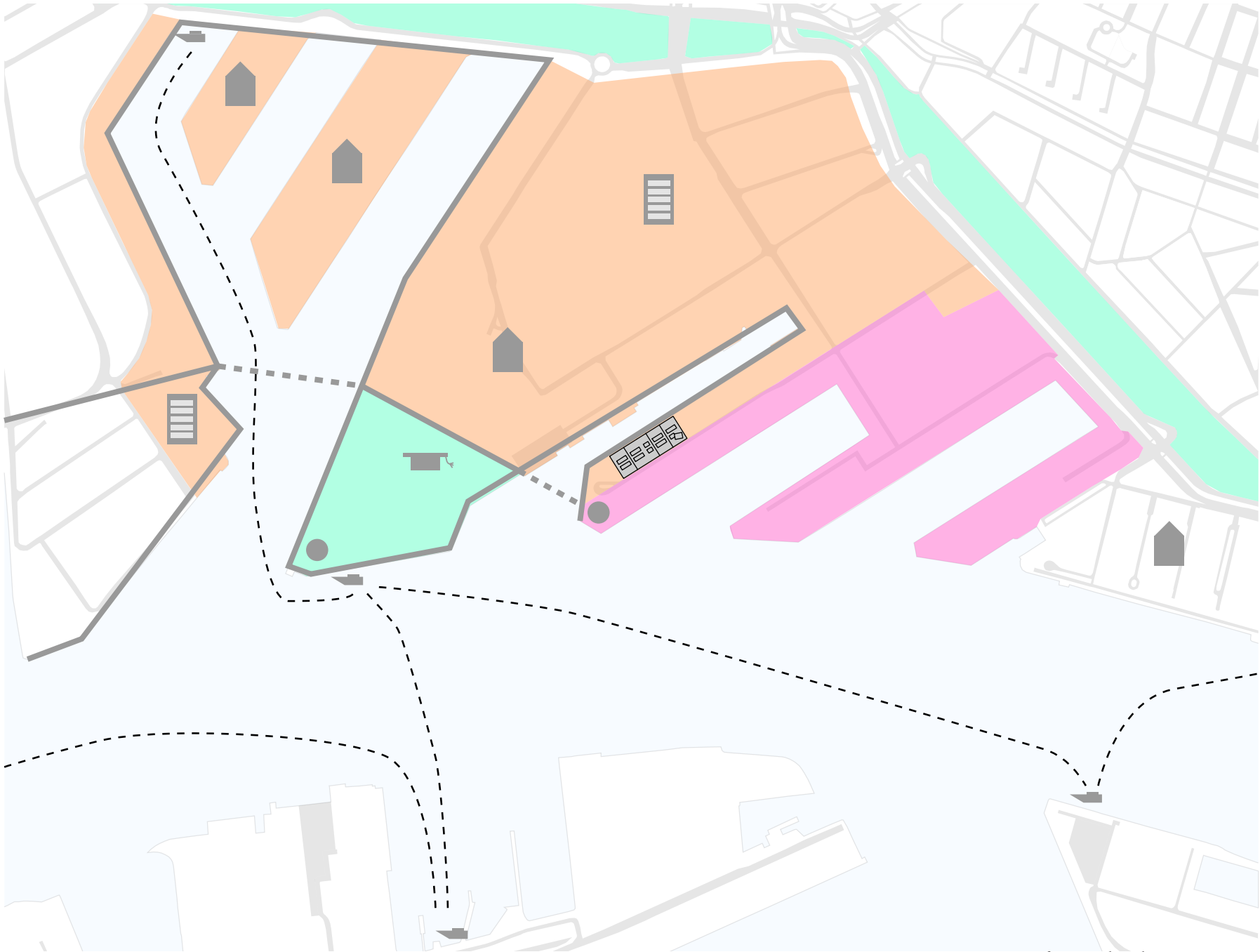
structure



research

urban

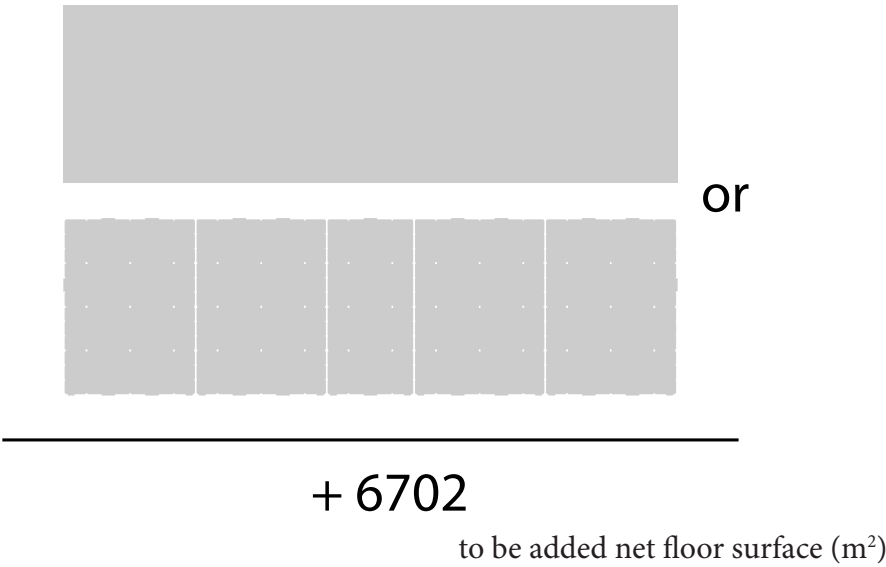
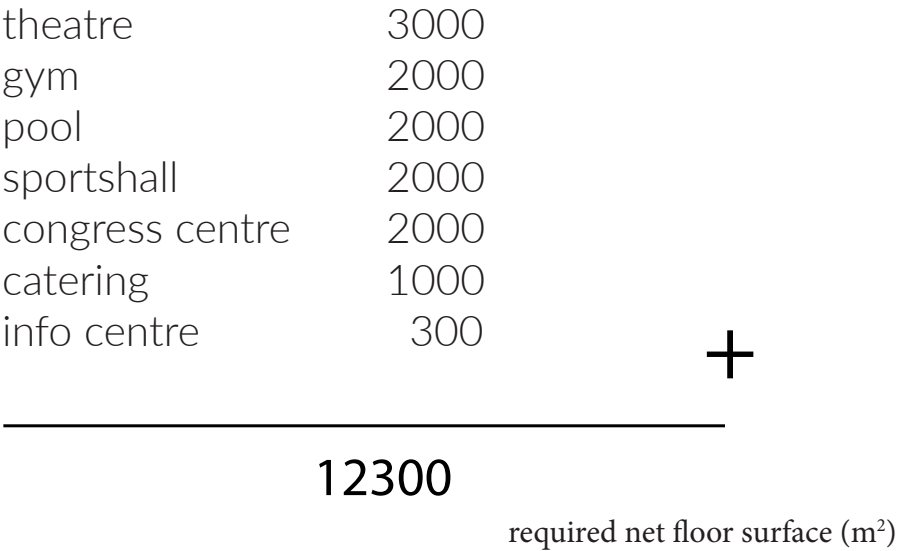
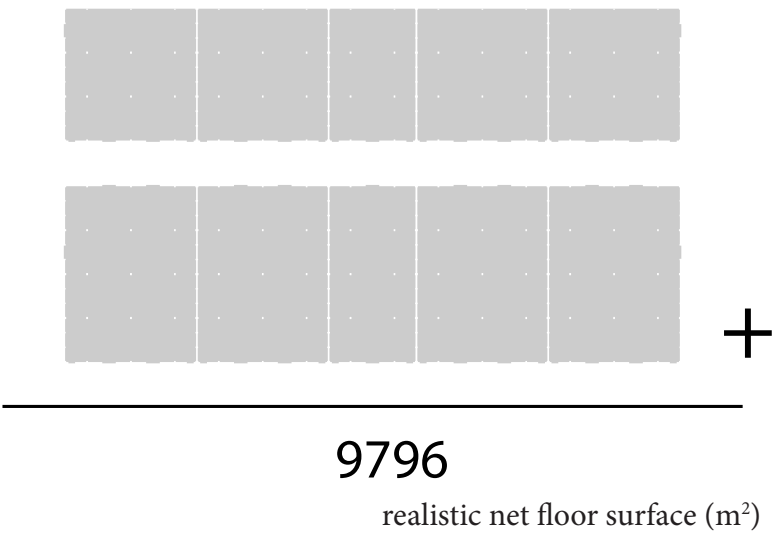
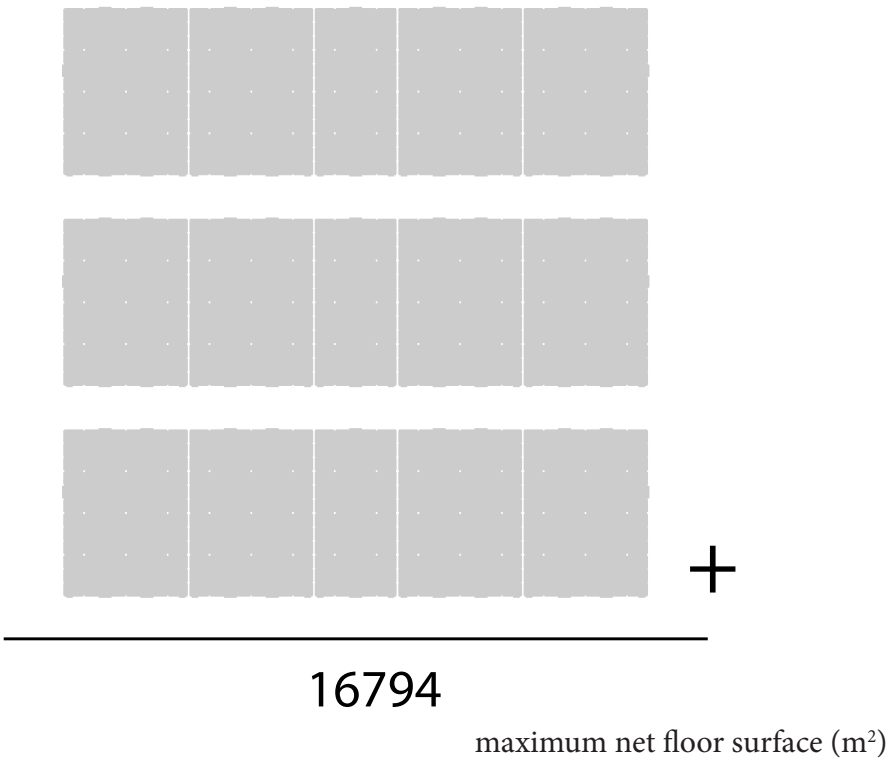
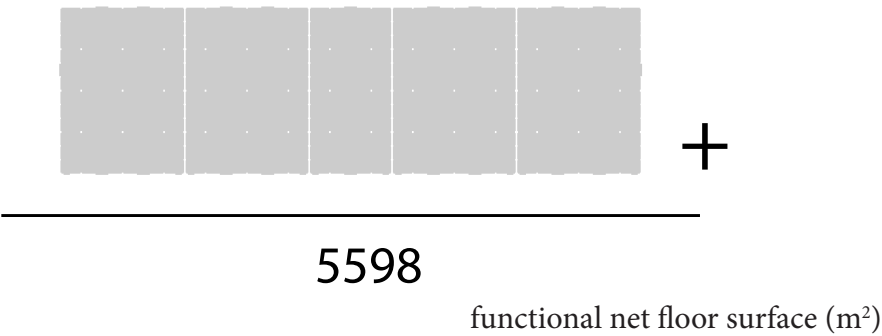
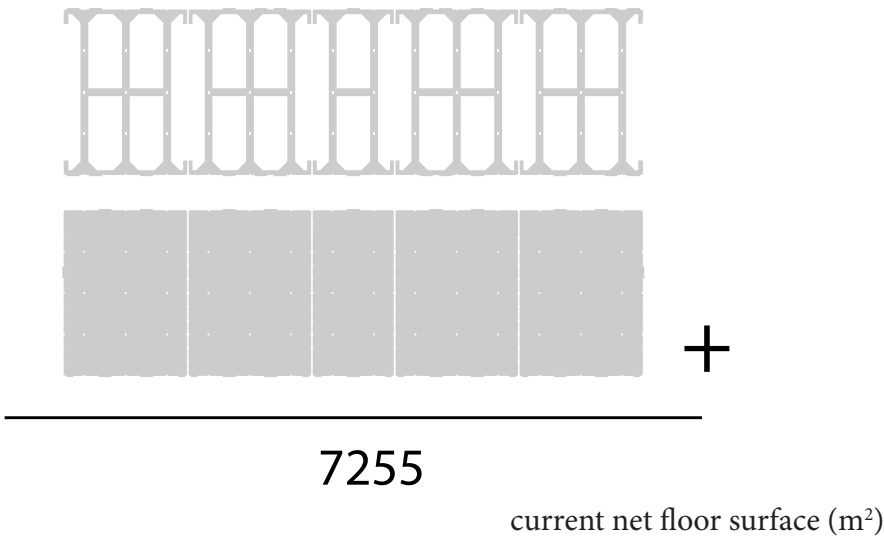
redevelopment in near future  
working, living and studying  
green areas and circulation



*future developments M4H*

research

program





values

historic services



*conveyor system*



*sprinkler system*

historic services will be maintained were possible

services will only be used if at all functional

values

historic complex

tower

bridges

wall





values

restoration



severe damages to concrete facade and steel doors

restore shape with repair mortar

finish with layer of spray concrete in Agate Grey colour (3052)



application of repair mortar



application of spray concrete

take of rusted layers top layer

repaint in green colour



values

preservation



*visual representation repaired column*

damages to interior structure not as severe as exterior

interior structure repaired with repair mortar, only if structurally required

no extra finish is added

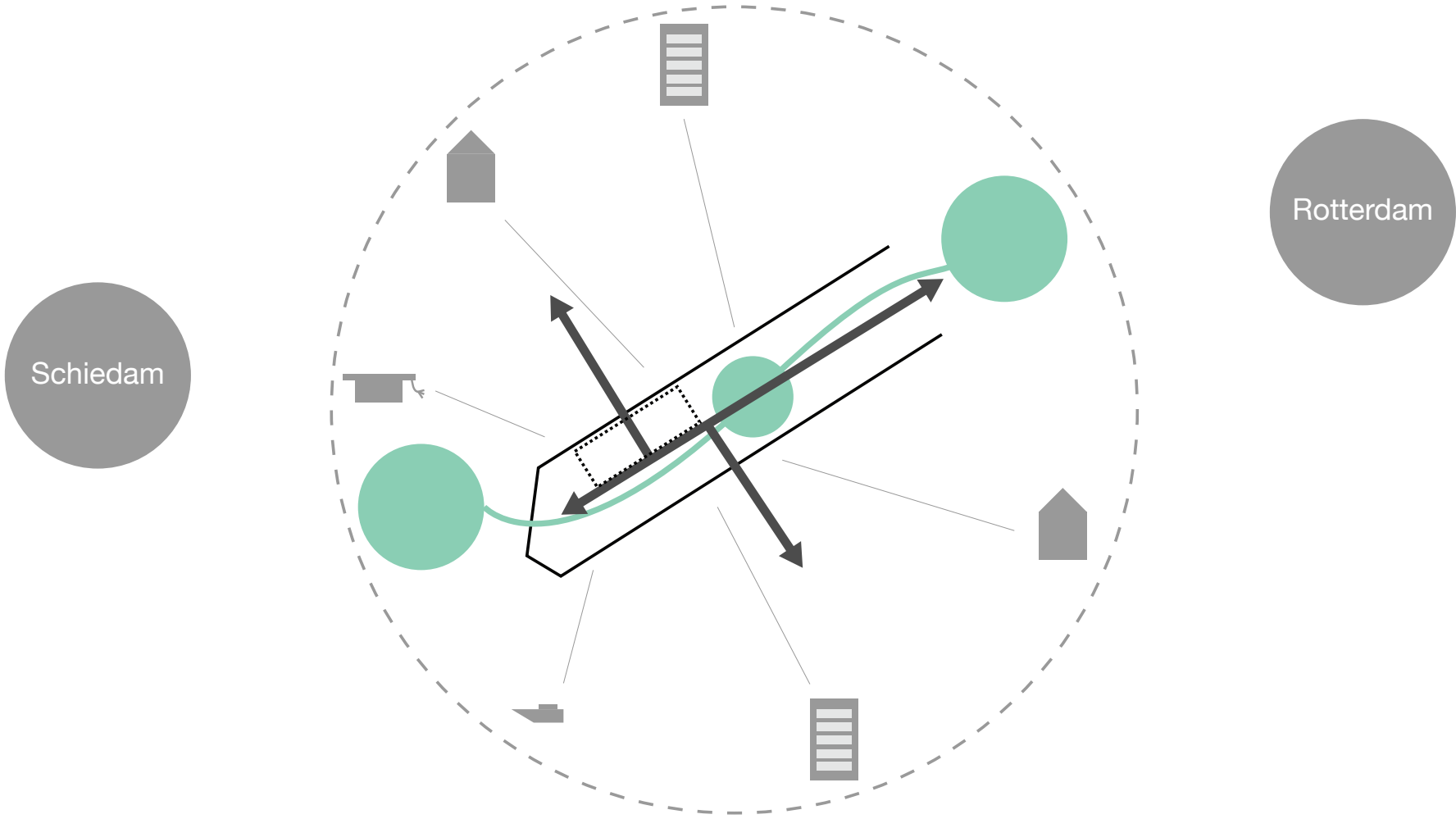
design

urban concept

connection to new green structure

bringing together different groups

node in new urban circulation

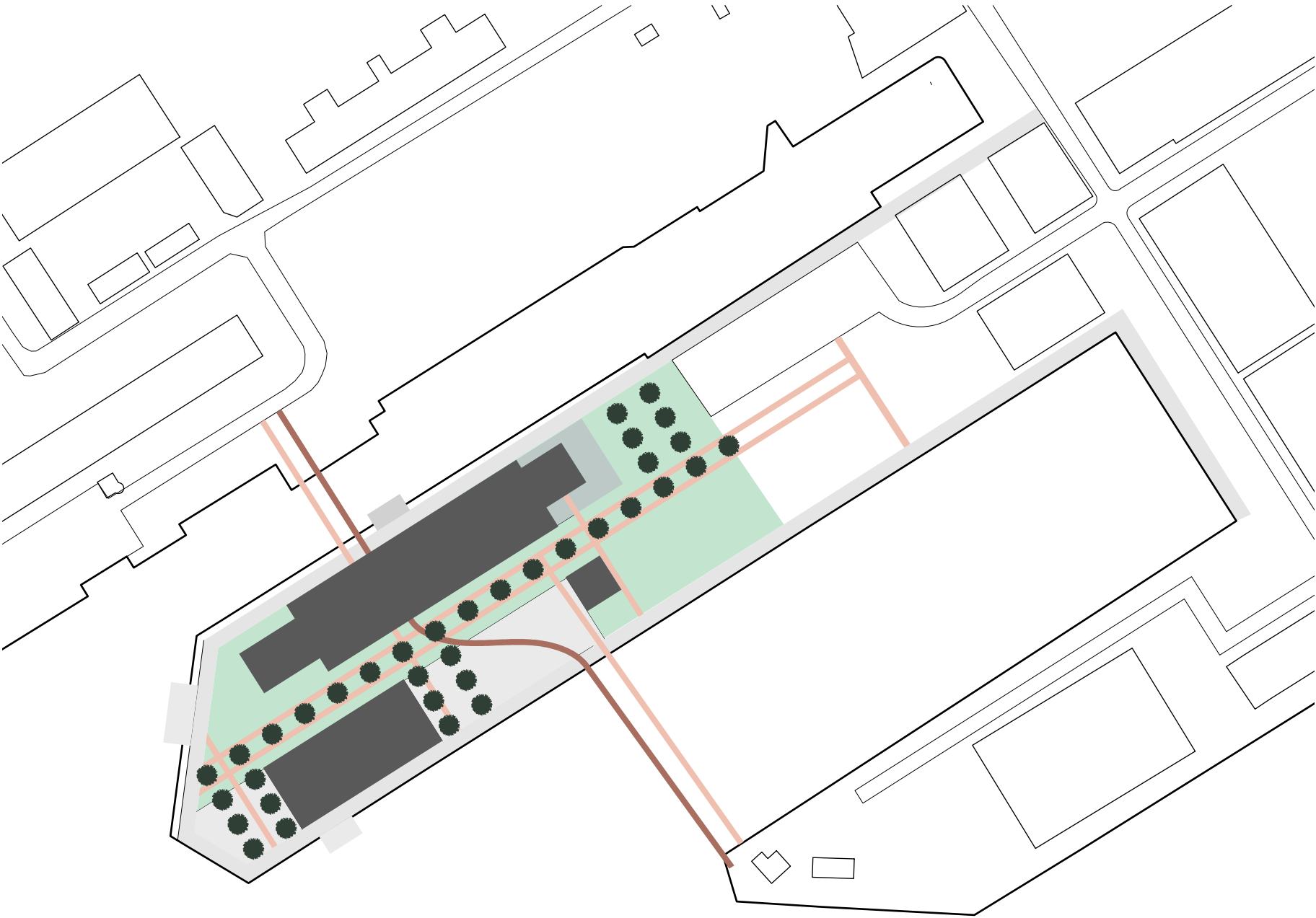


*scheme - urban concept*



design

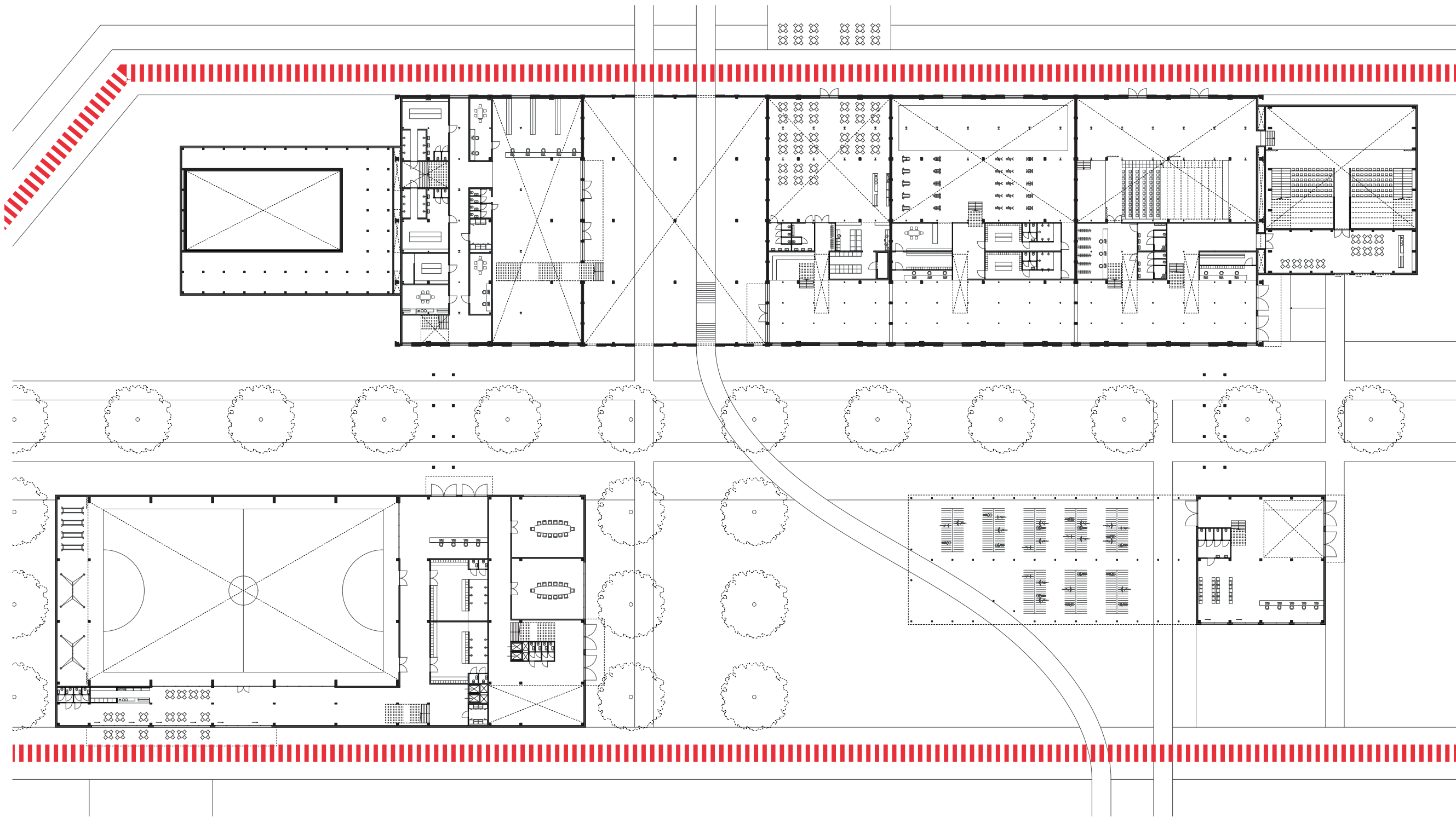
master plan



*scheme - master plan*

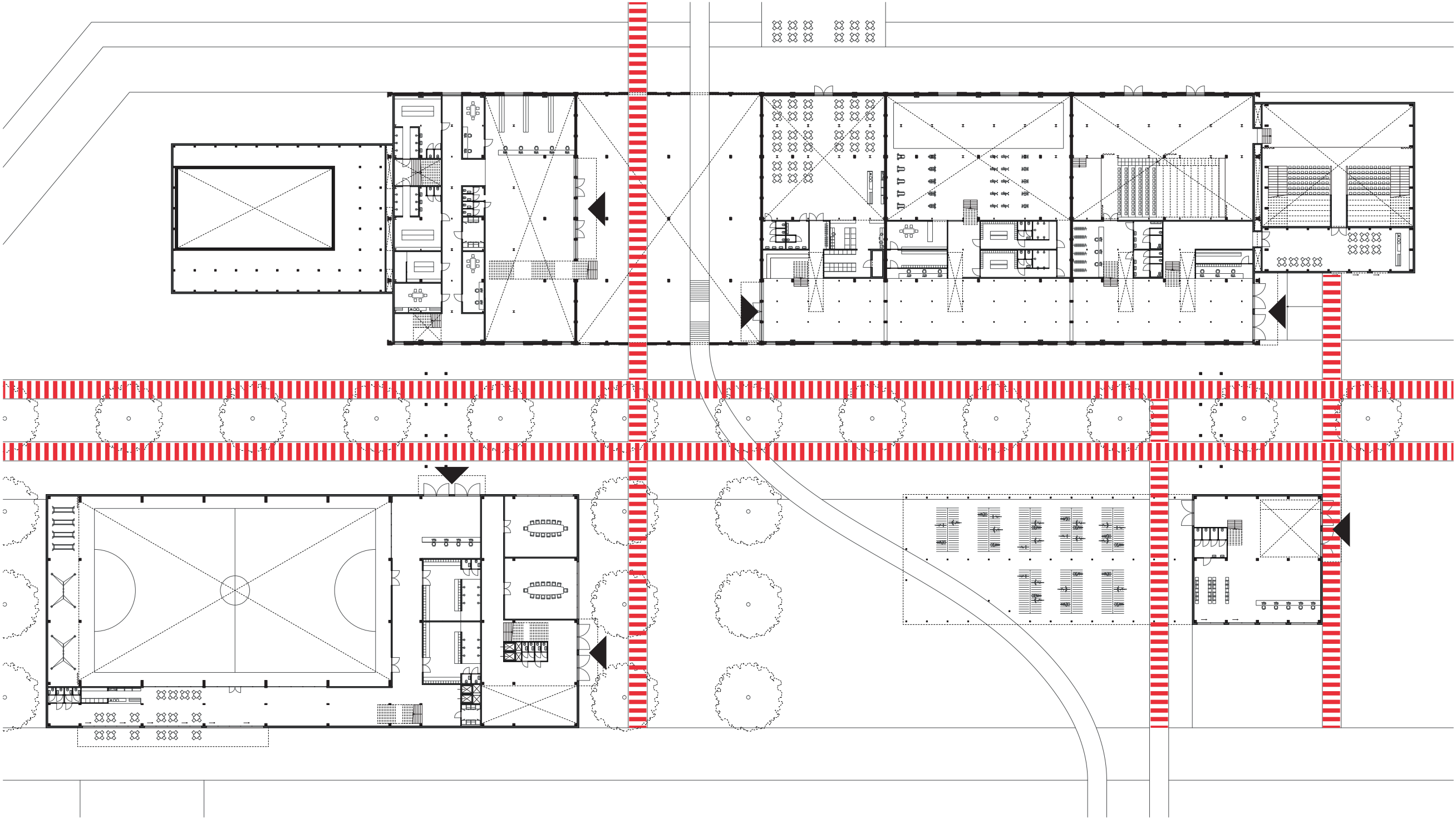
design

waterfront boulevard



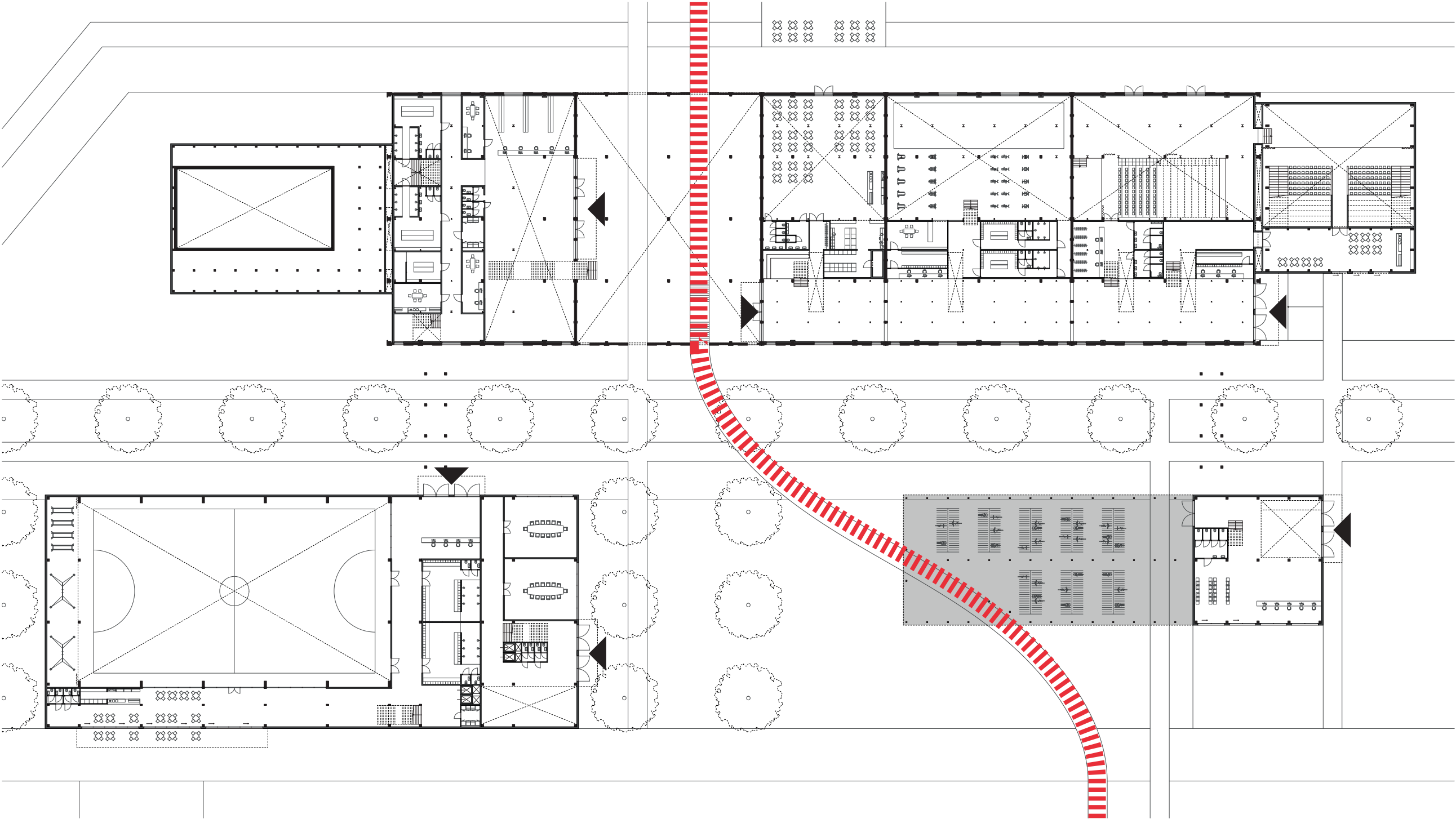
design

pedestrian routing



design

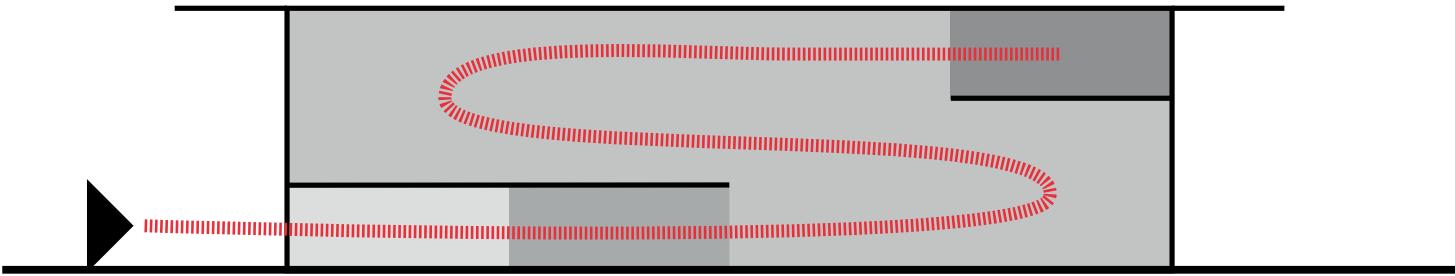
cycle routing



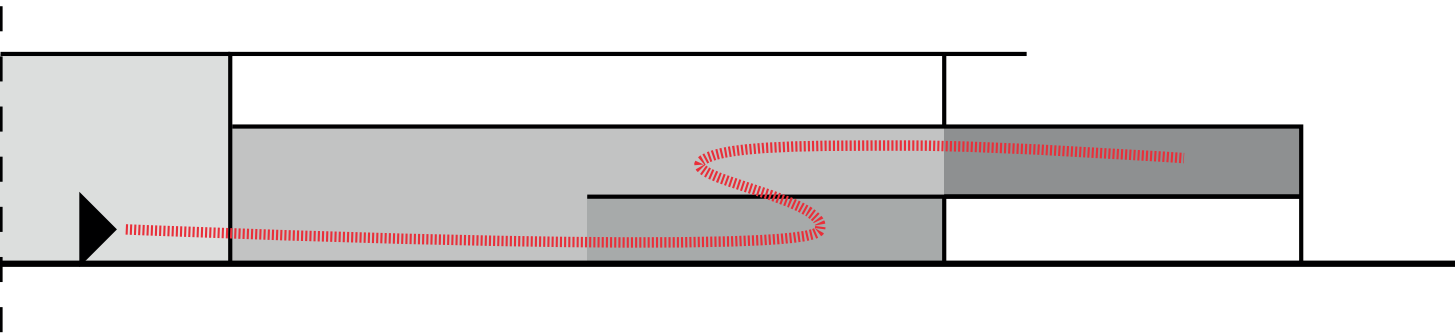


design

space plan concept

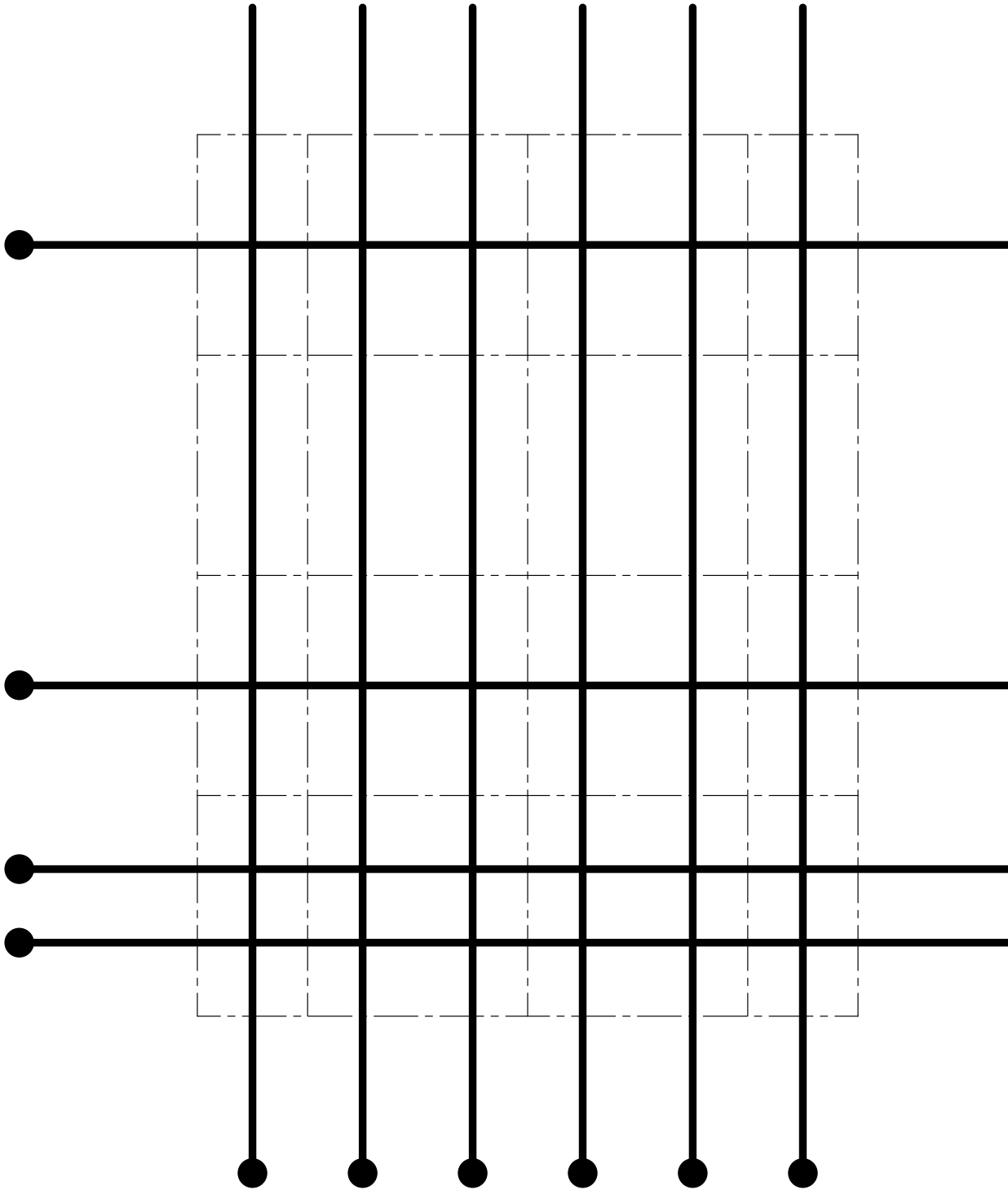
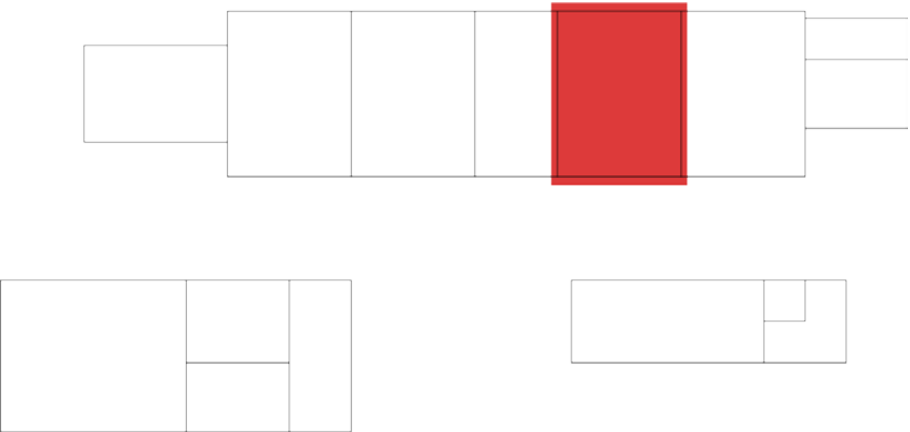


experience through zon



design

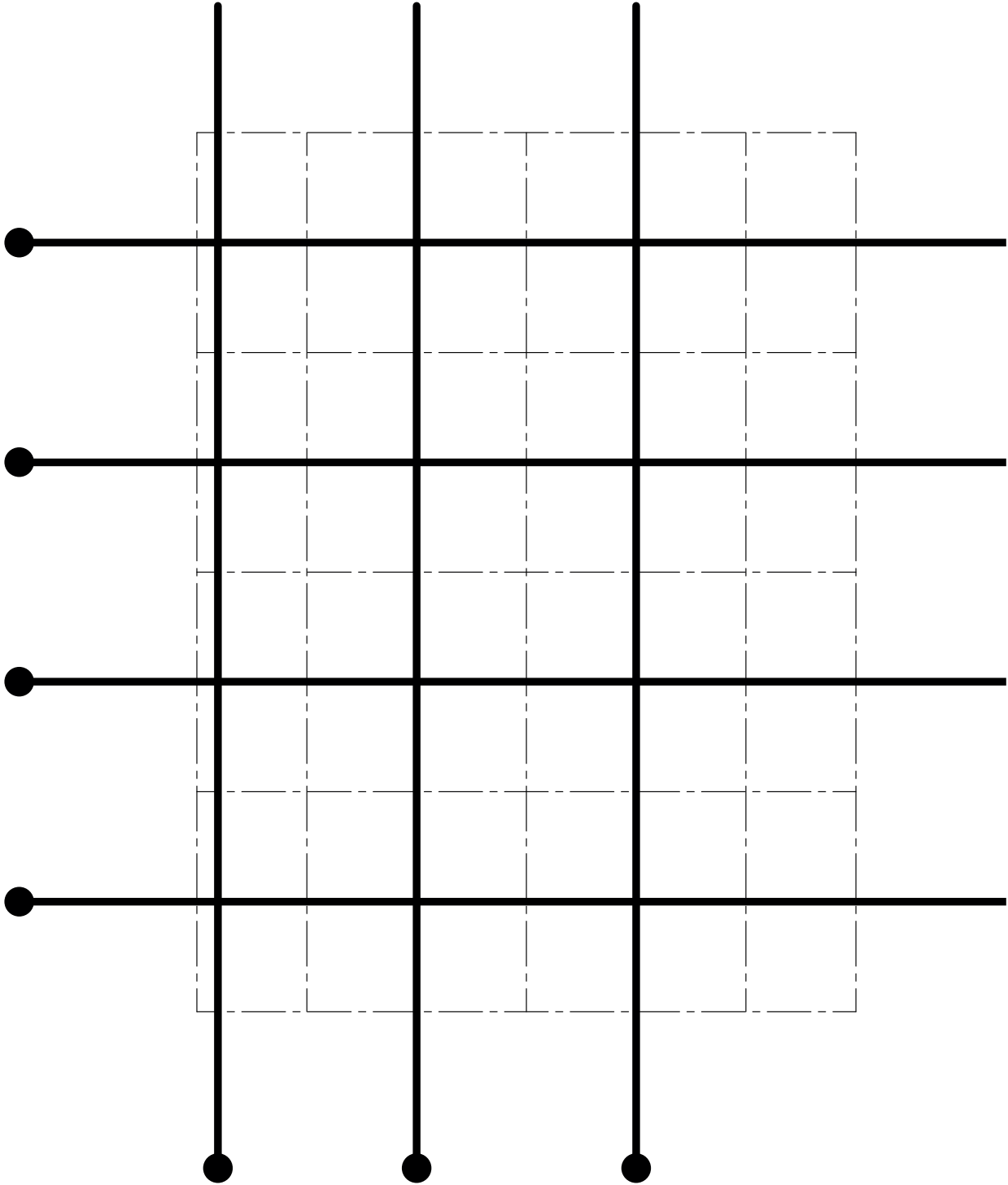
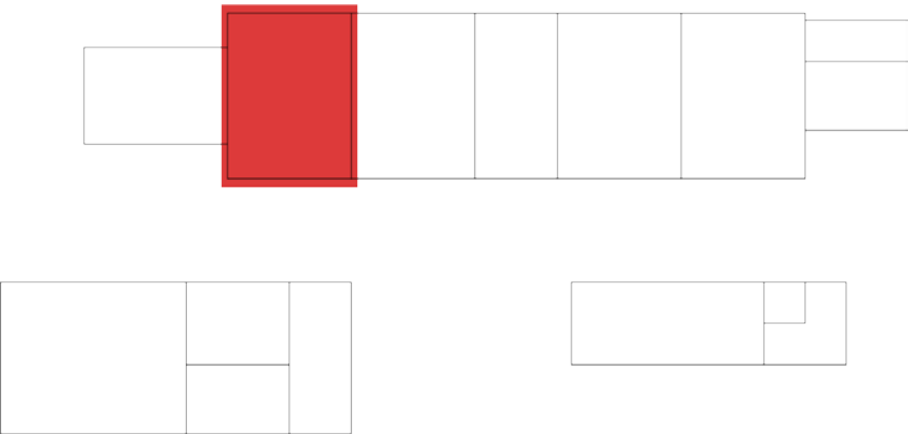
structure concept



scheme - new grid structure 1

design

structure concept

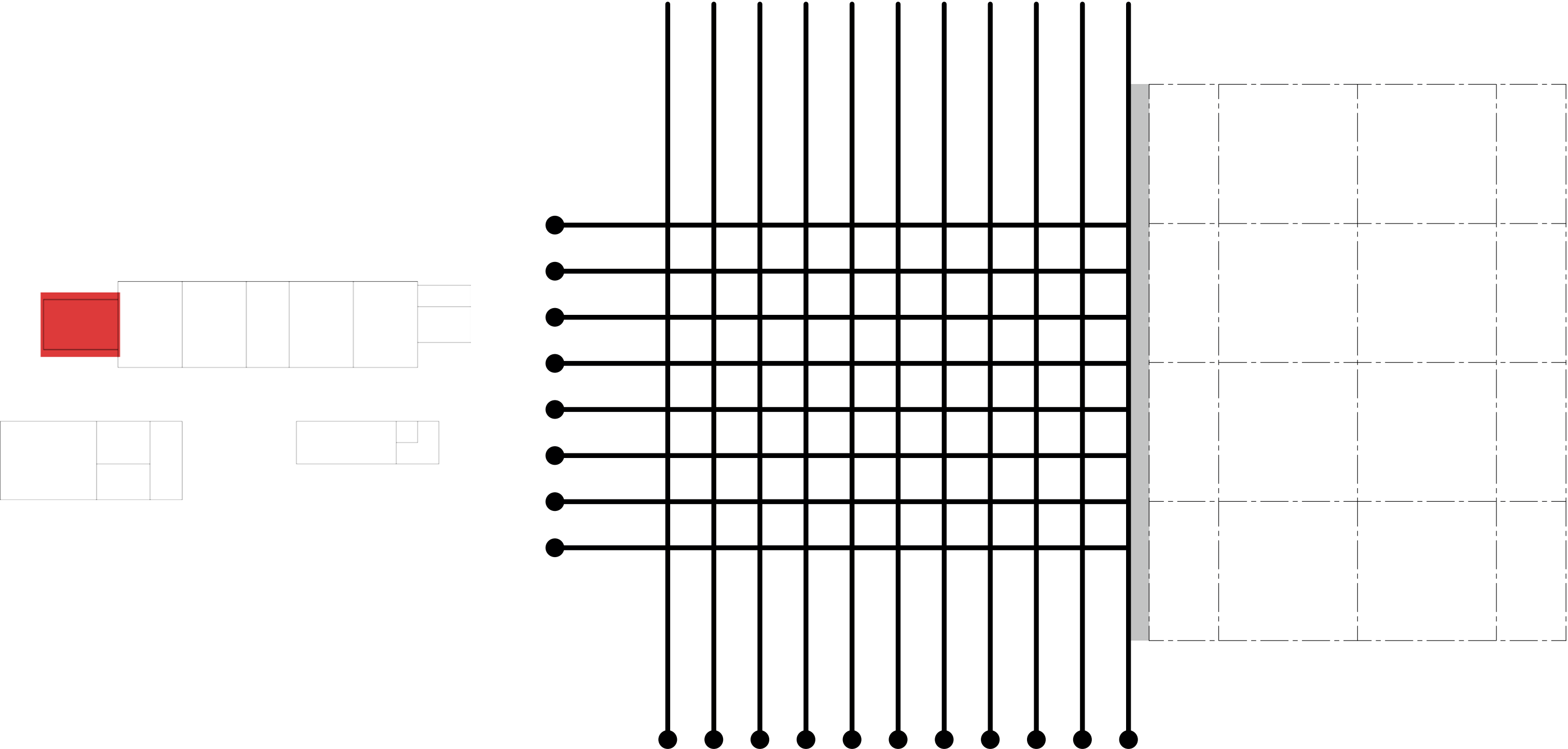


scheme - new grid structure 2



design

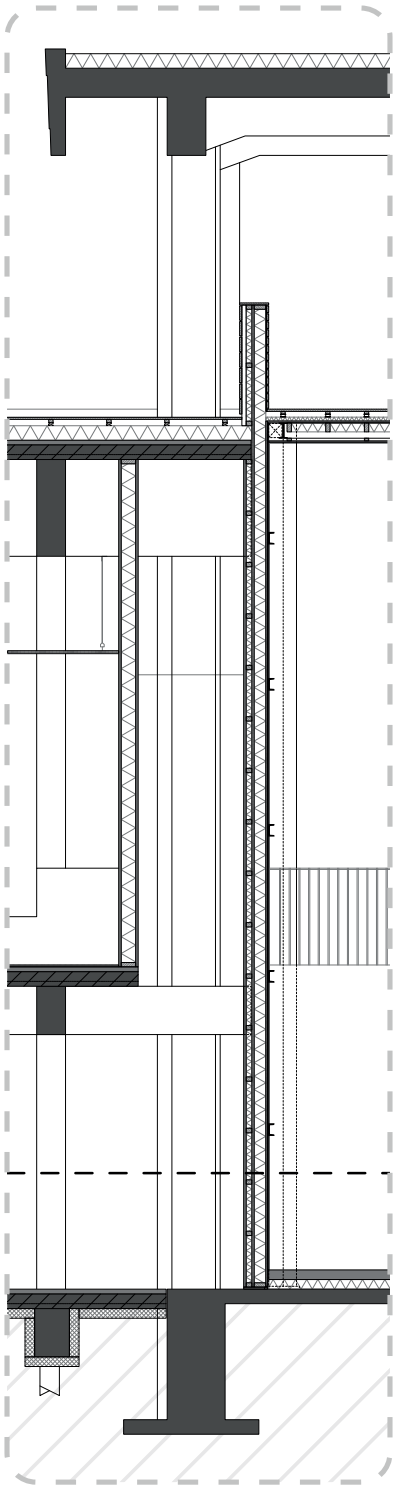
structure concept



scheme - new grid structure 3

design

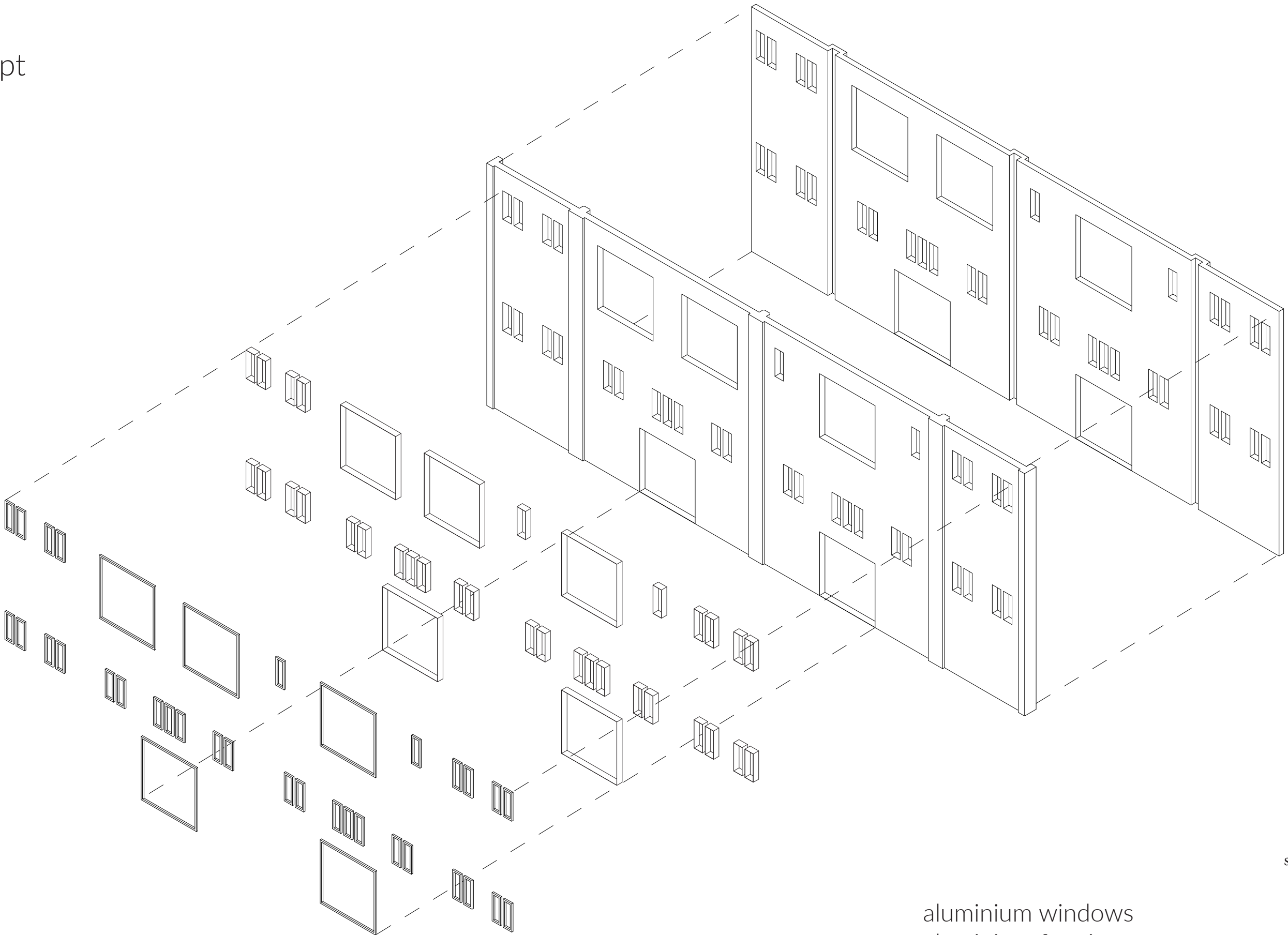
structure concept



section - structural transition

design

skin concept



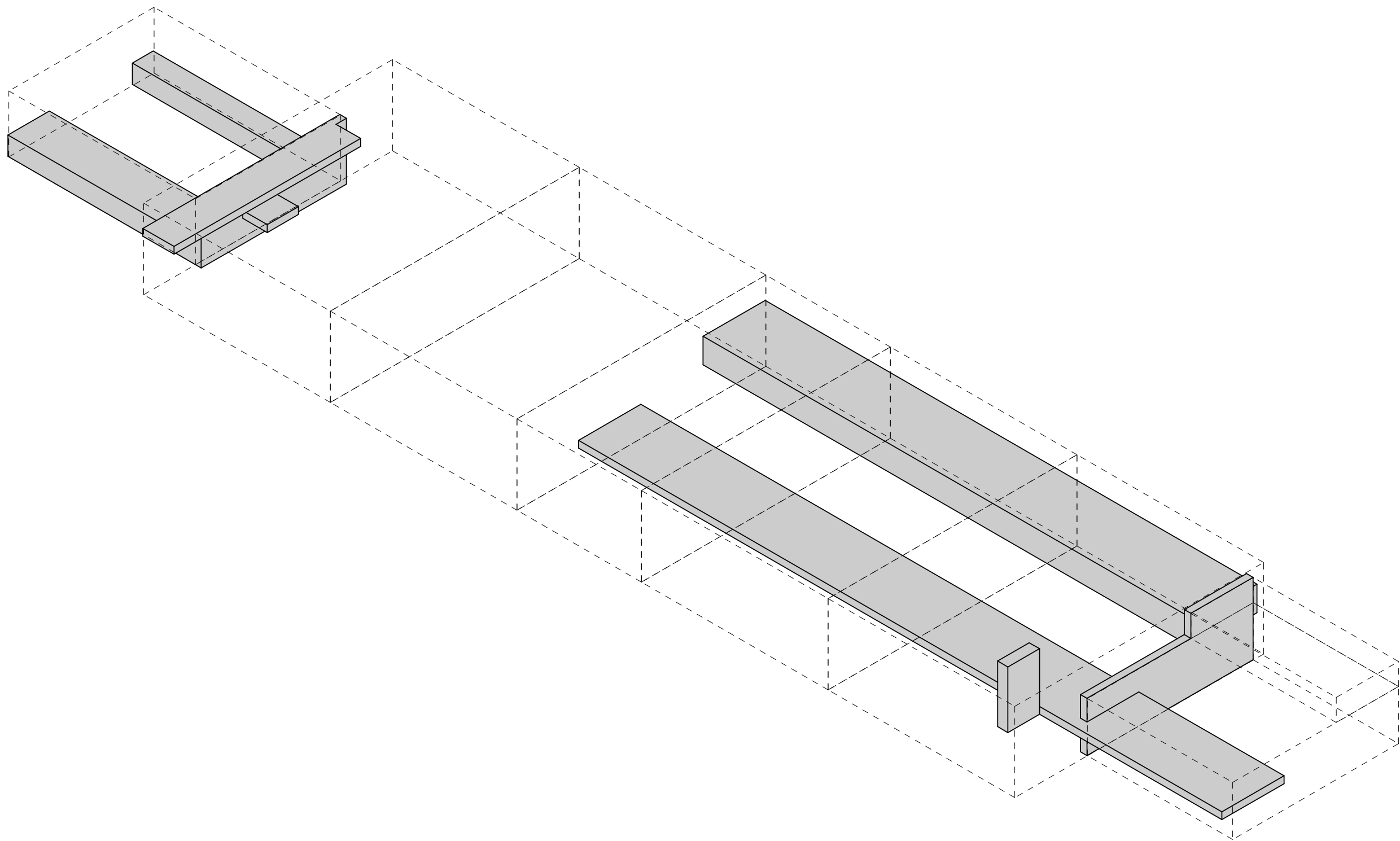
skin build-up scheme

aluminium windows  
aluminium framing  
restored katoenveem facade  
retention wall



design

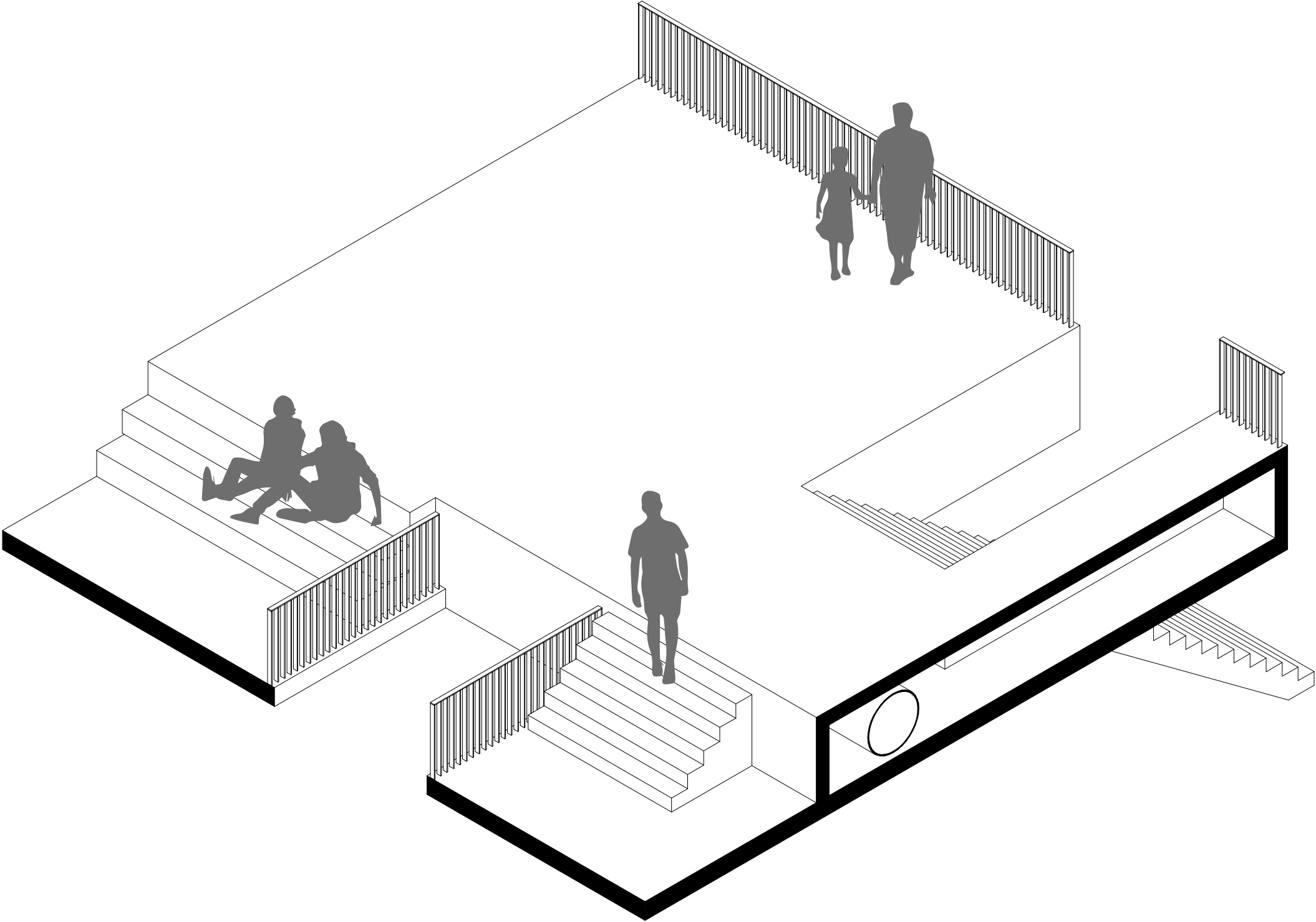
climate concept



3D - shaft space

design

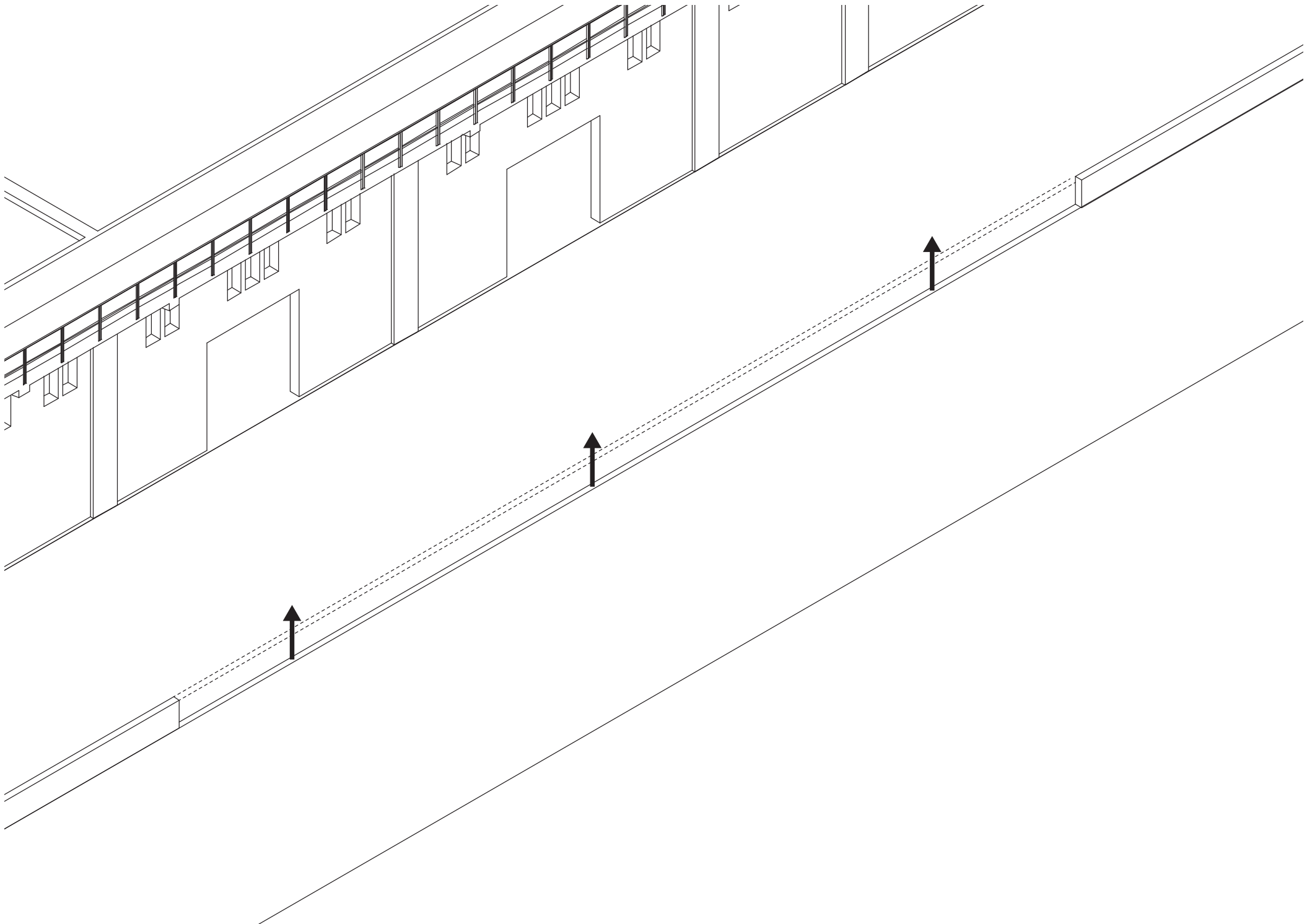
climate concept



3D - shaft into interior

design

climate concept

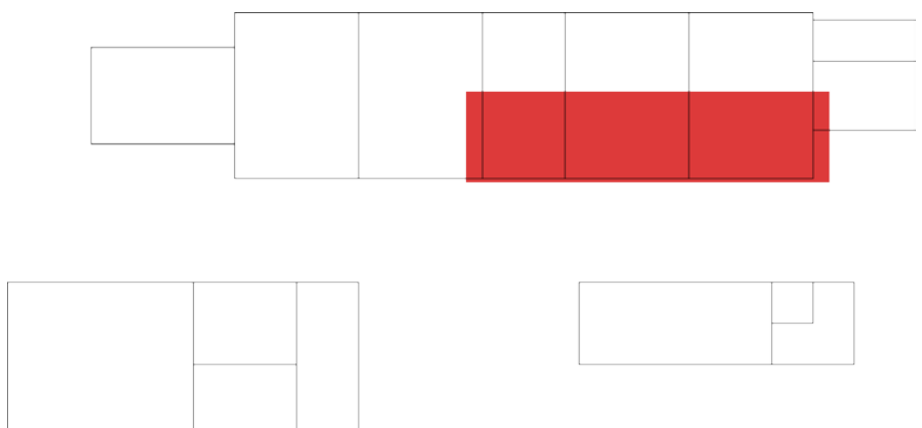
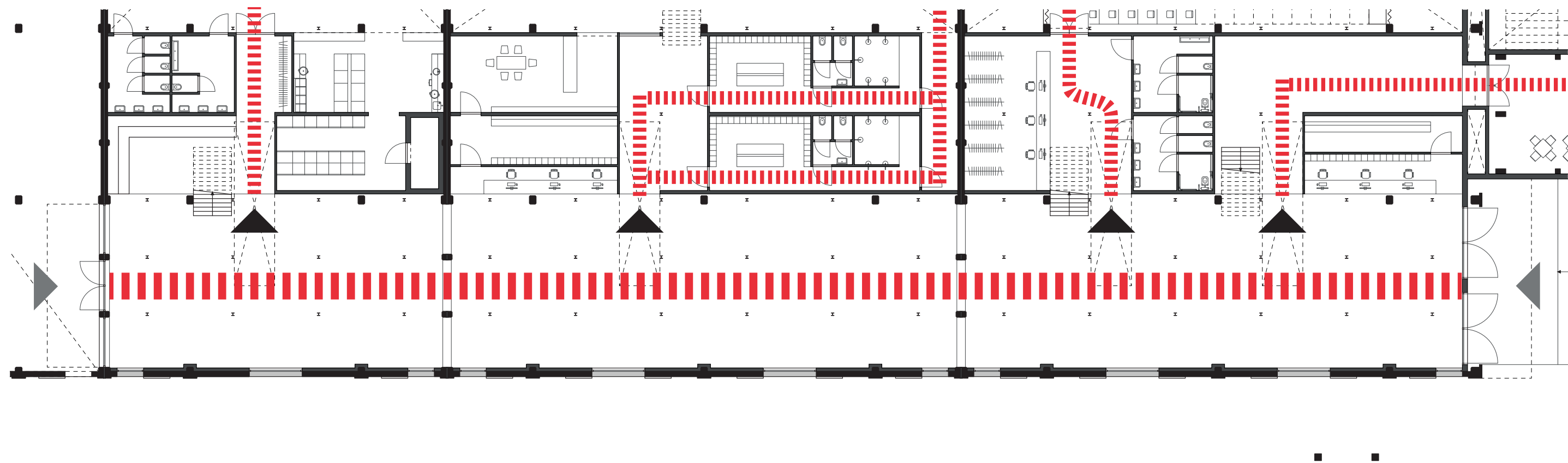


3D - self-closing dam



design

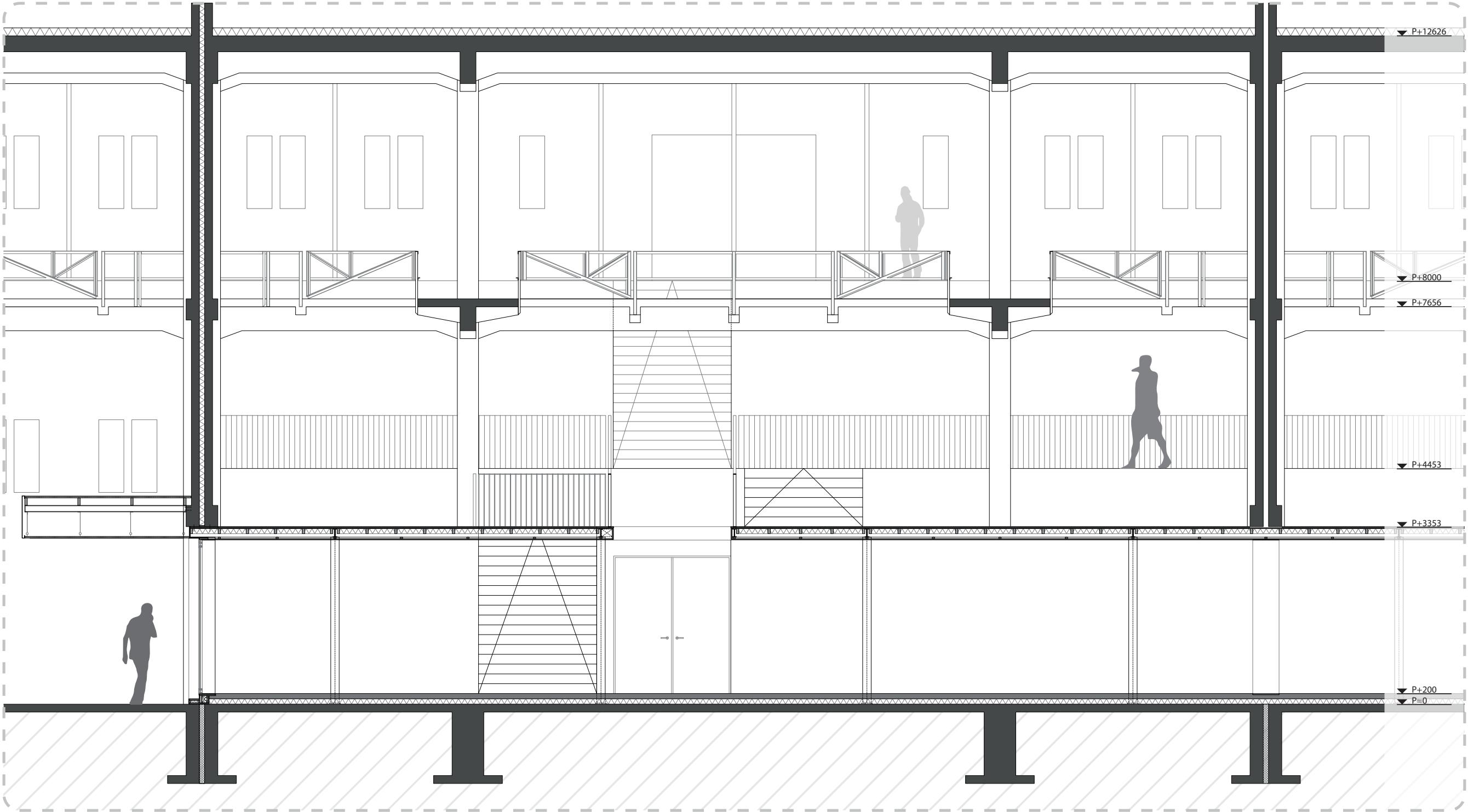
compartment entrance



ground floor

design

compartment entrance



section - compartment entrance

design

material palette



dark oak wood



cast house floor



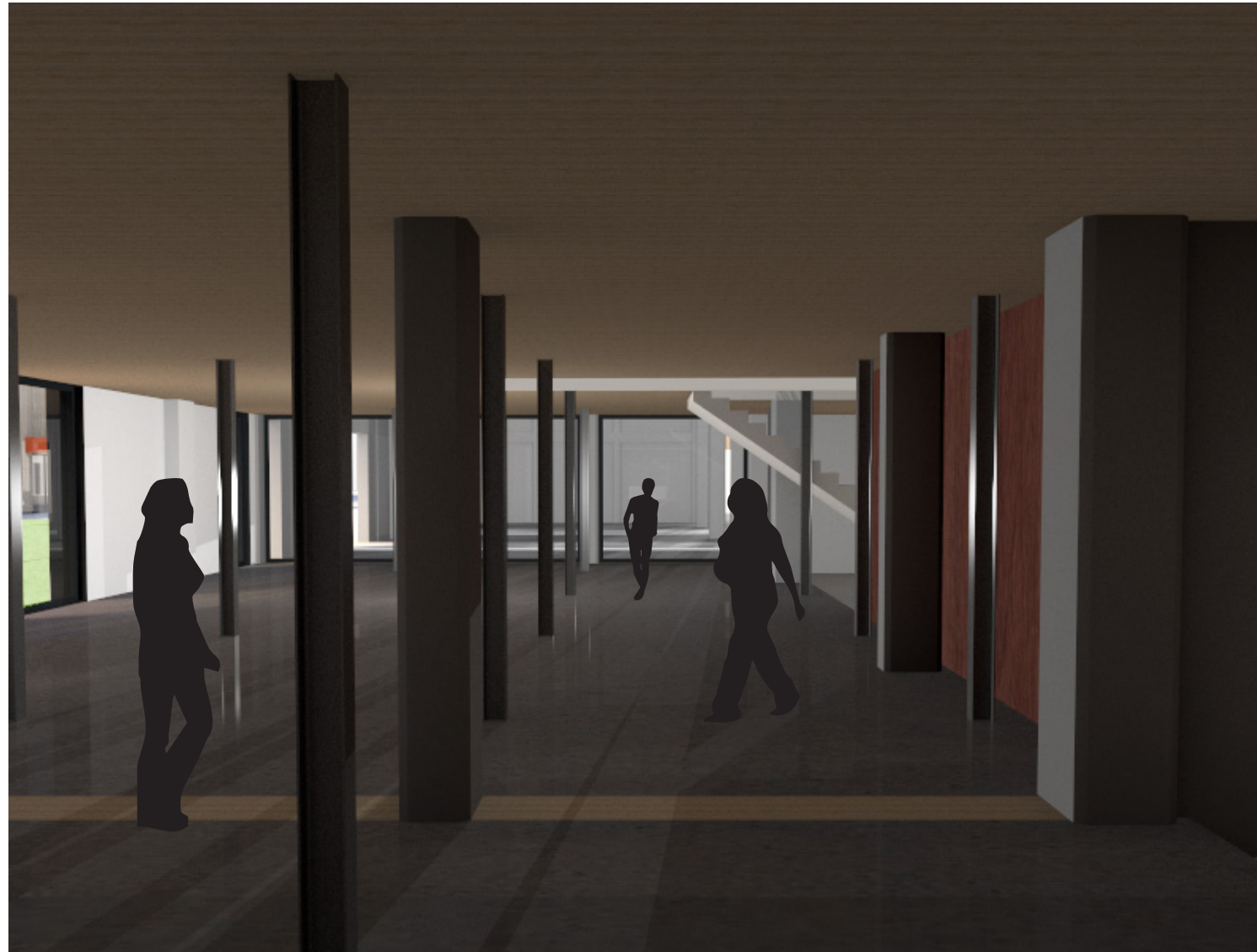
light oak wood



stucco

design

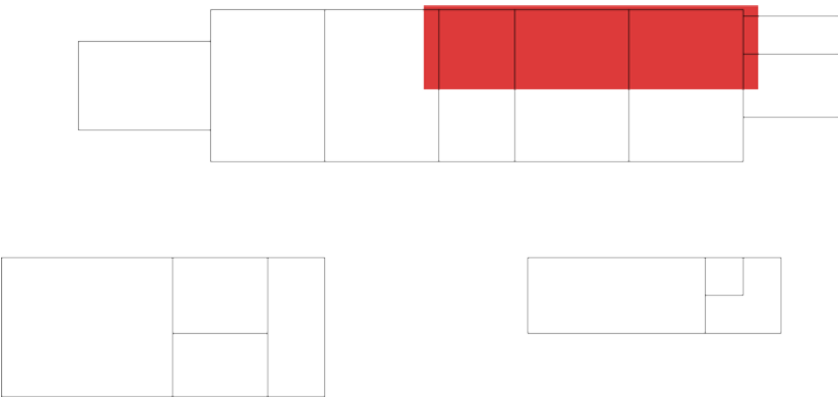
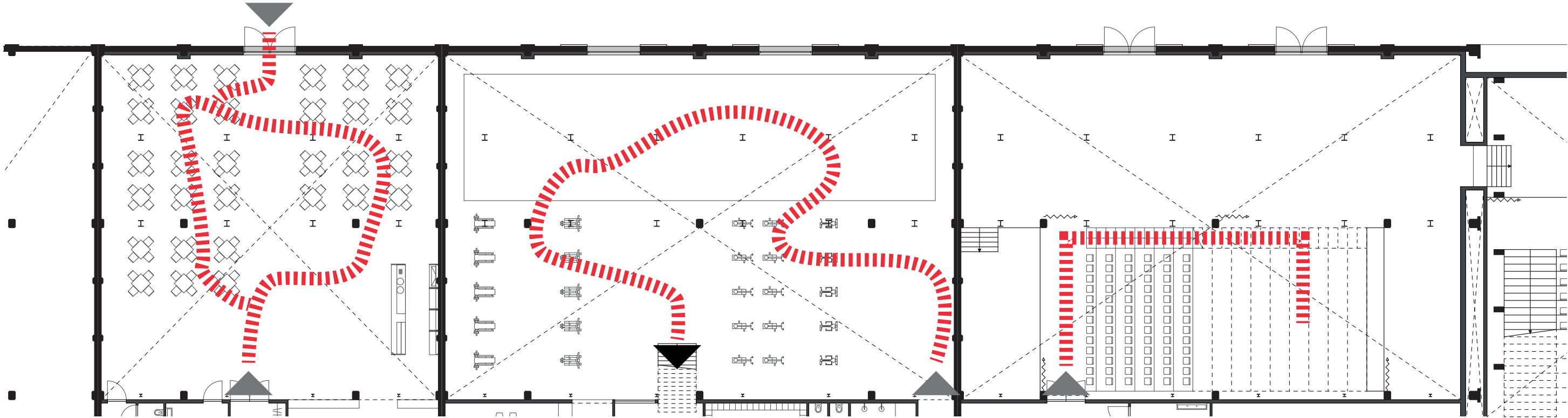
compartment entrance





design

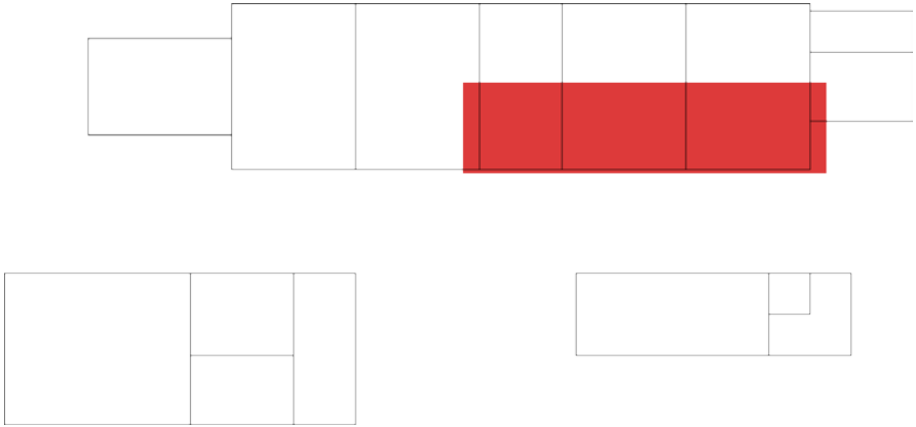
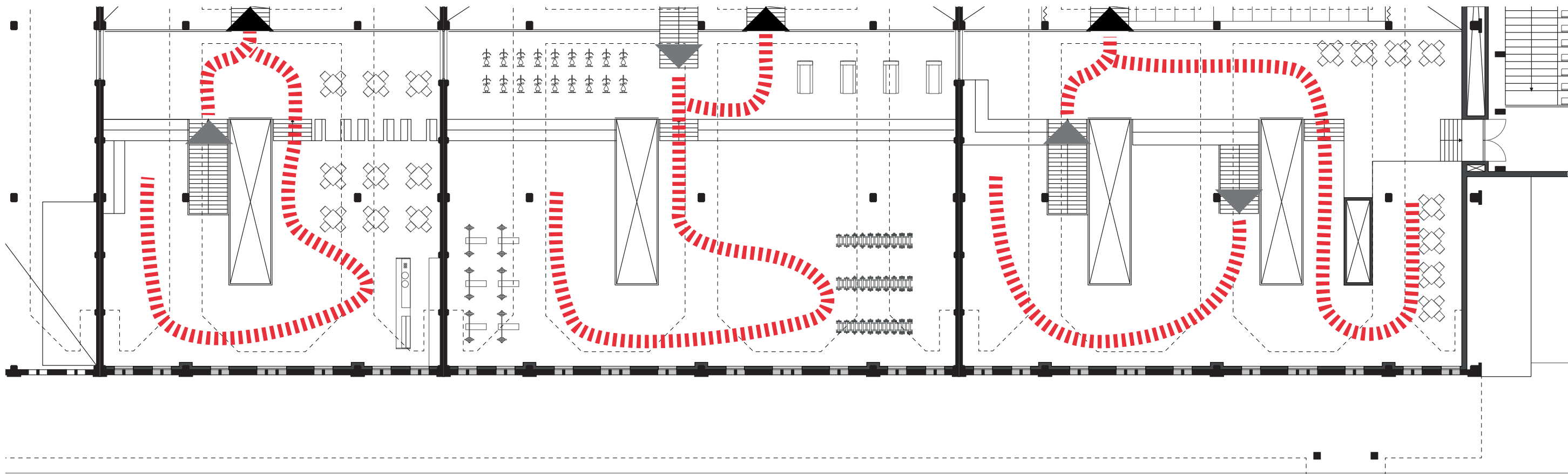
compartment activity zone



ground floor

design

compartment split level zone



first floor

design

material palette



dark steel railing



original concrete structure



light oak wood



stucco



design

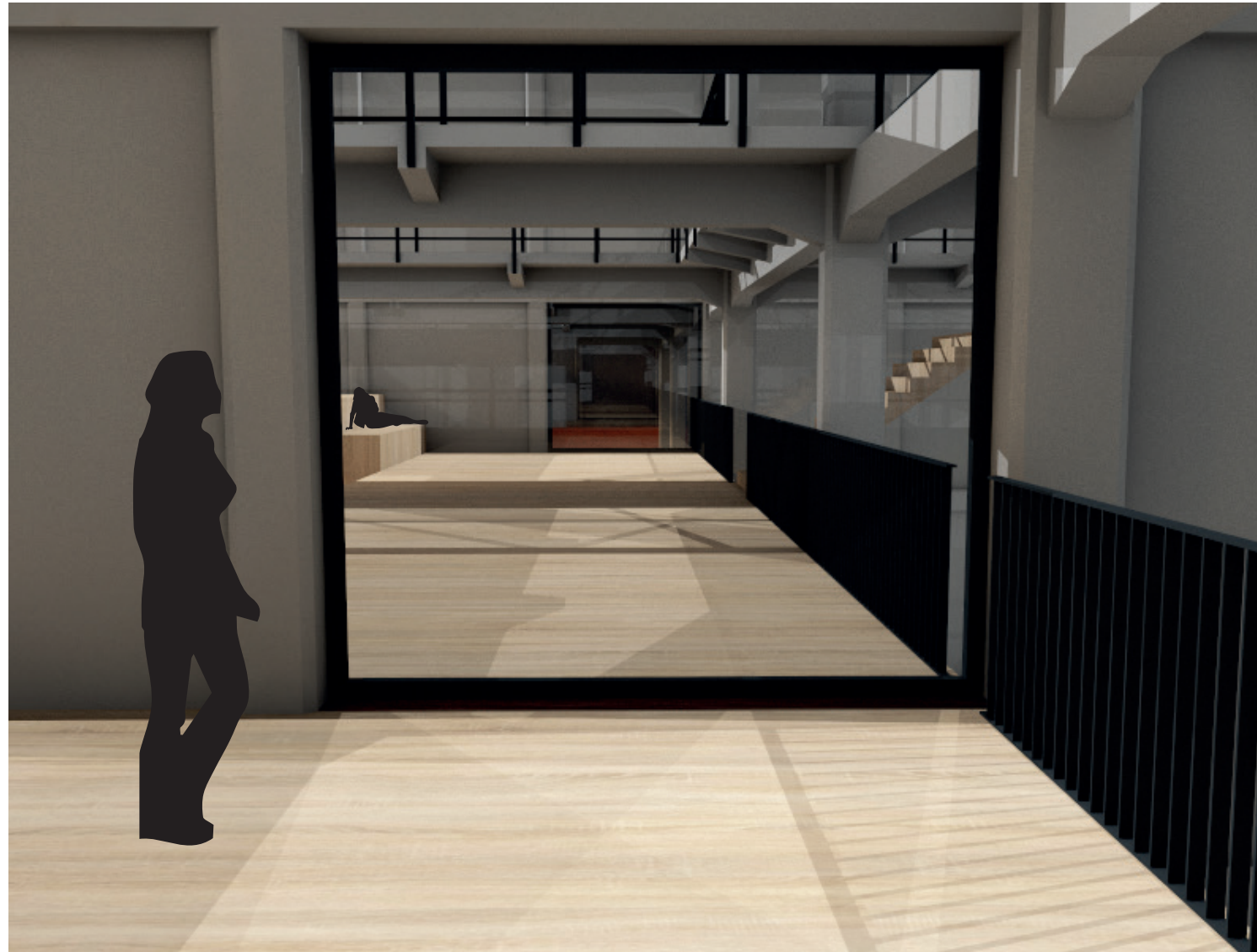
compartment activity zone





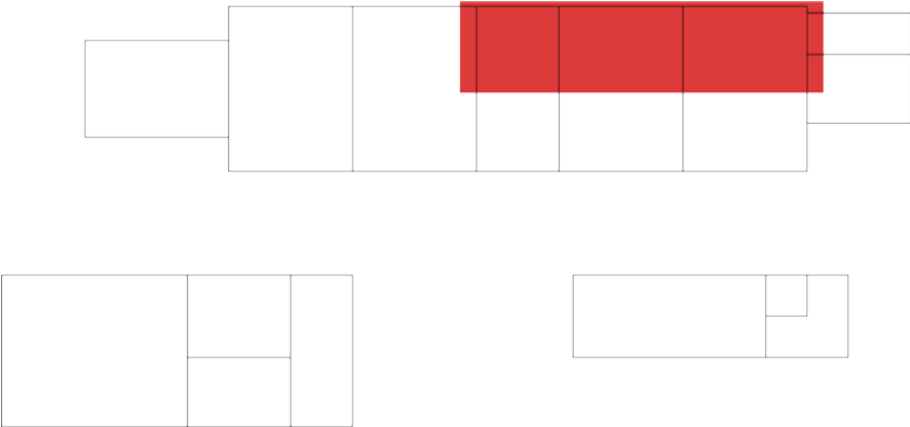
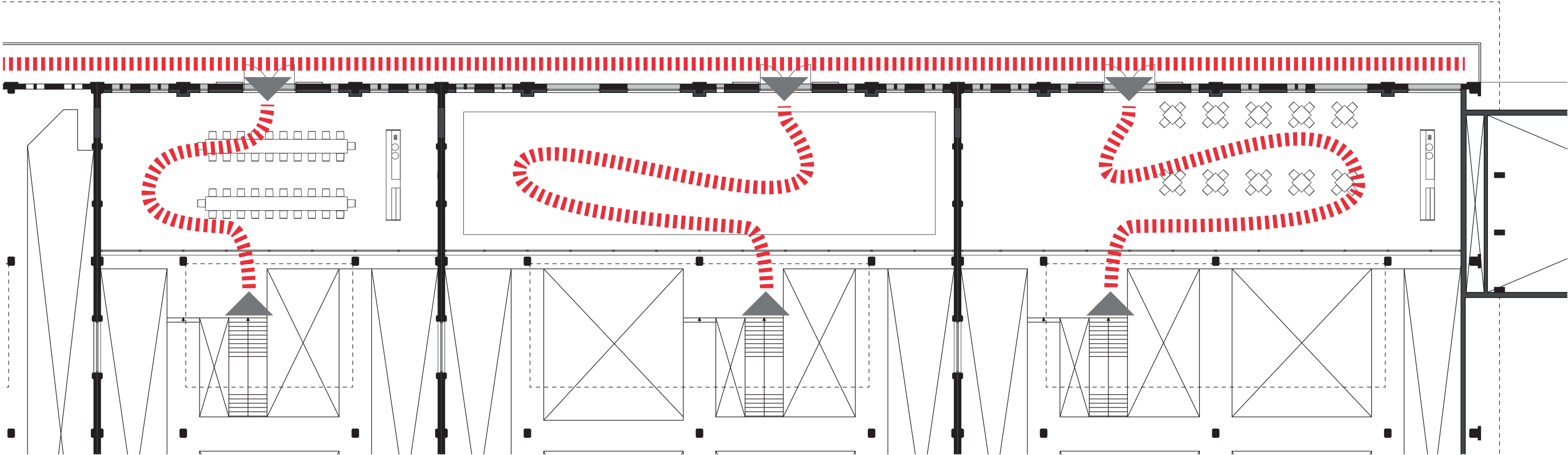
design

compartment split level zone



design

compartment view zone



second floor

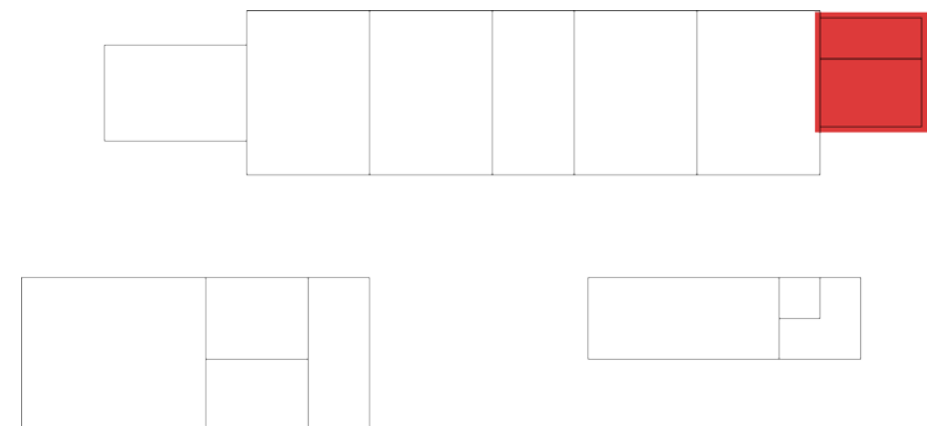
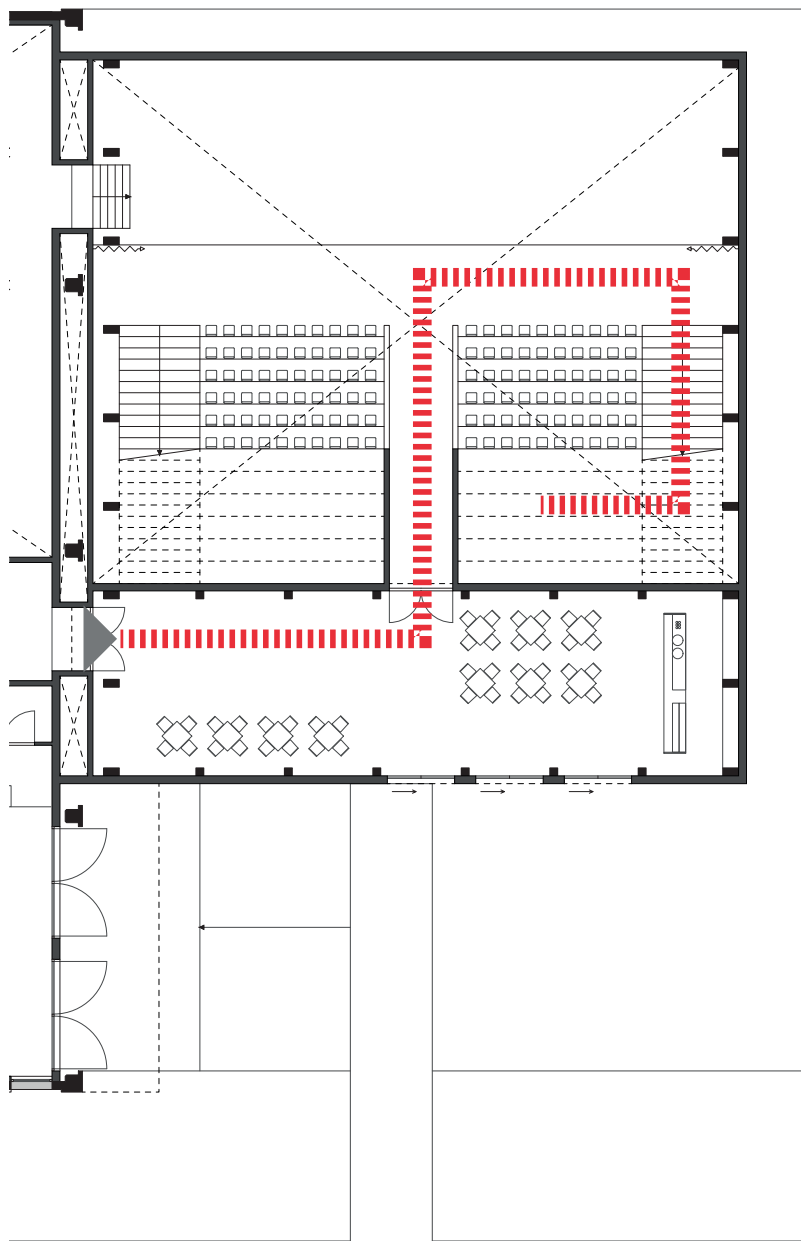
design

compartment view zone





design  
theatre



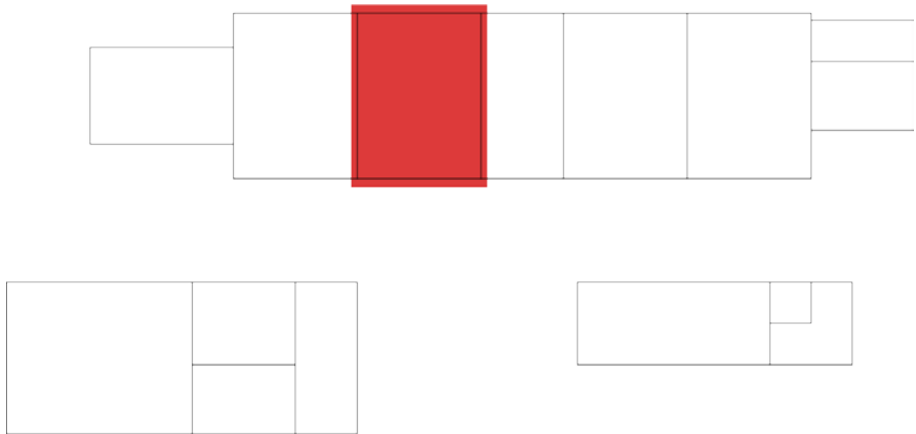
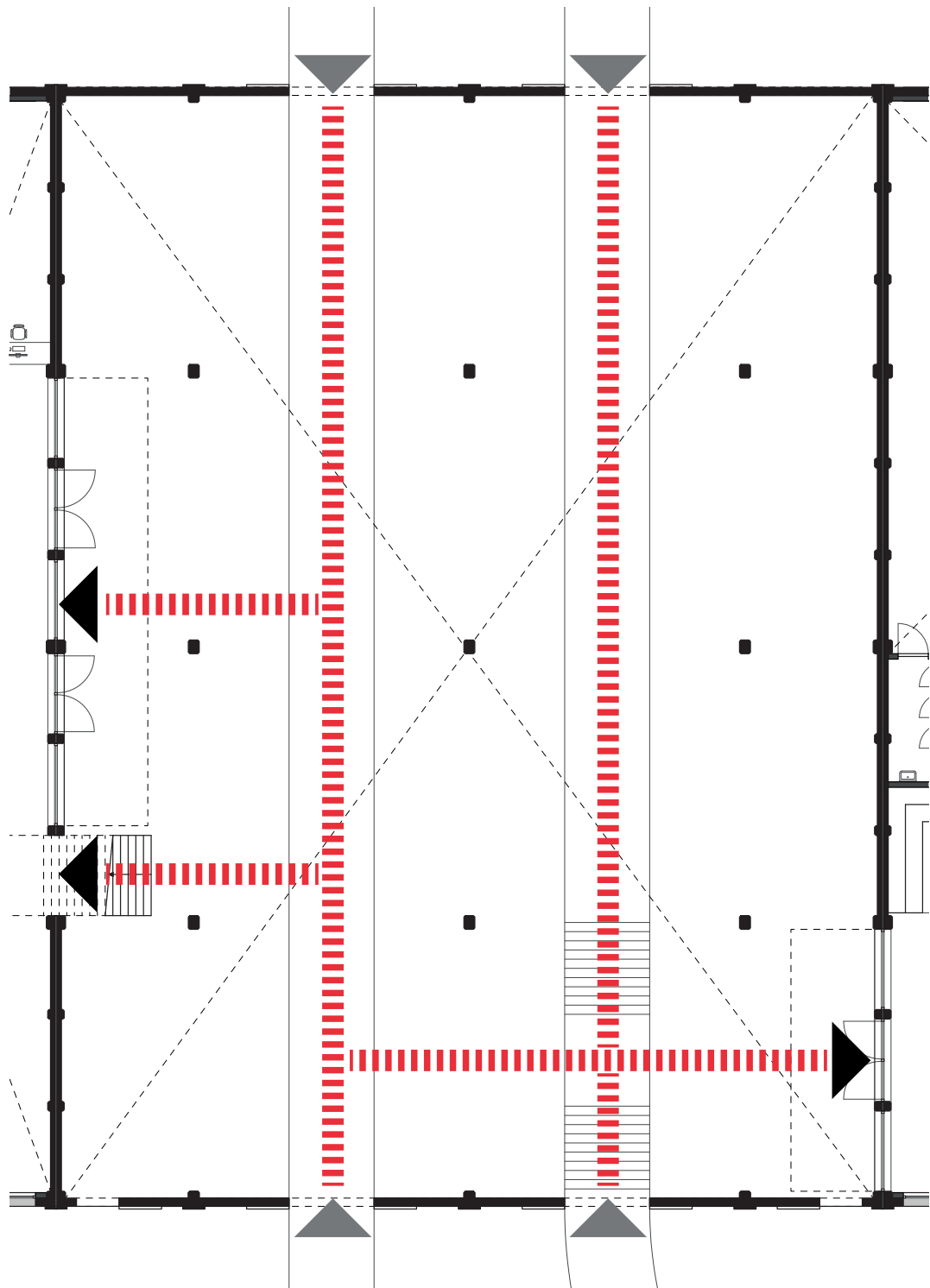
ground floor

design  
theatre



design

routing compartment



ground floor

design

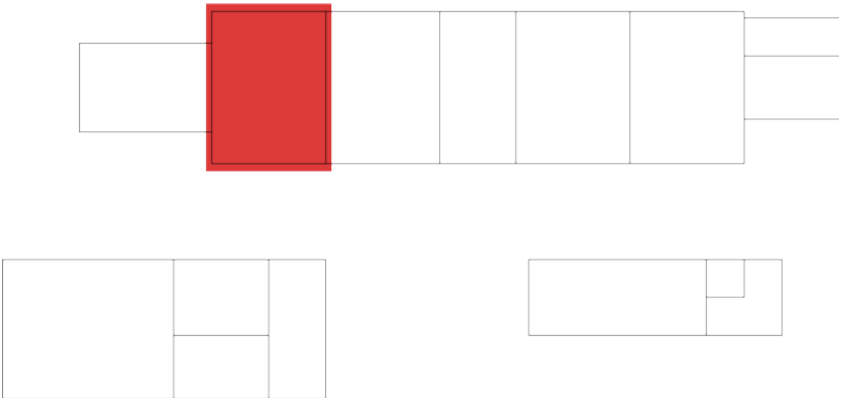
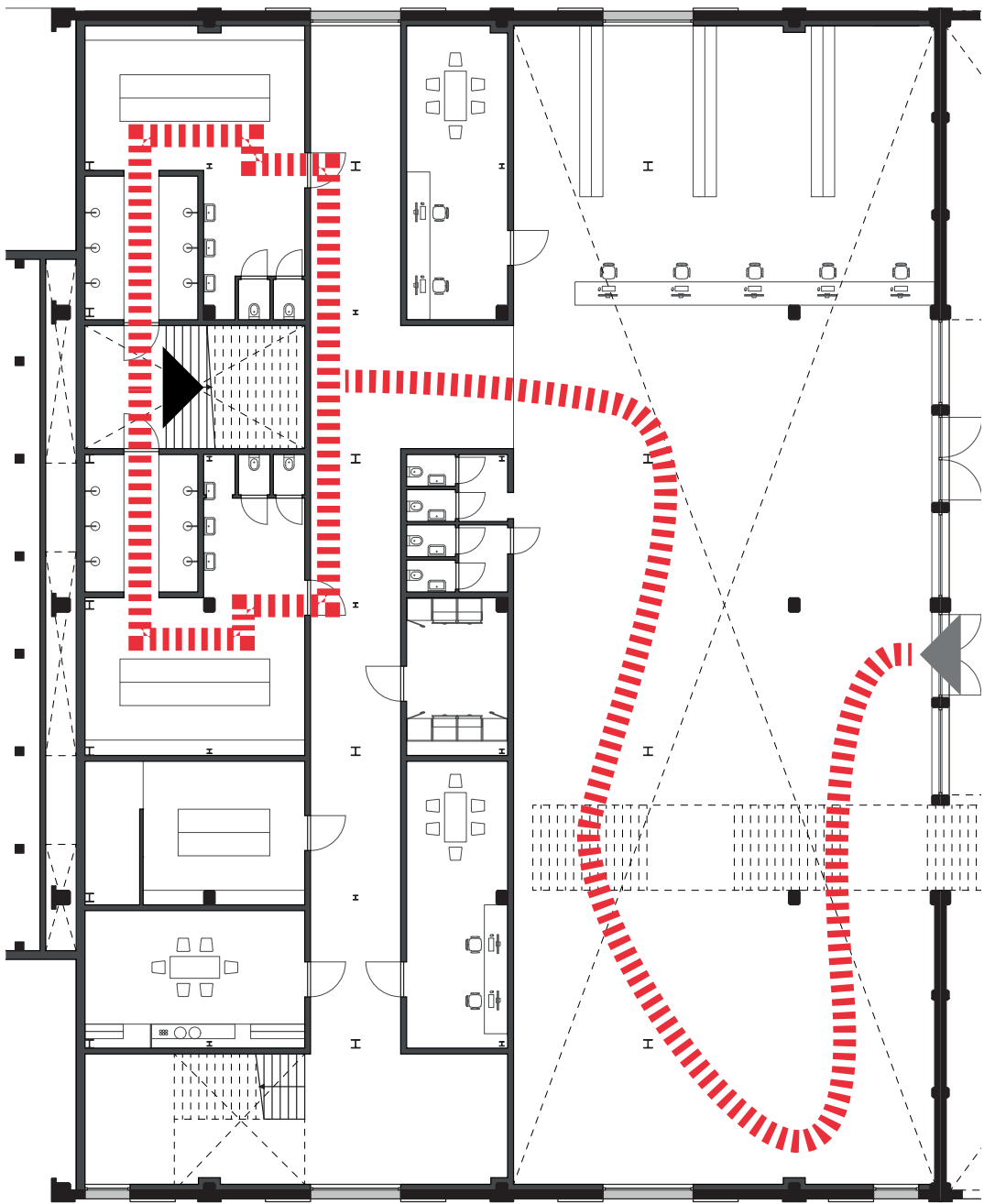
routing compartment





design

pool lobby



ground floor

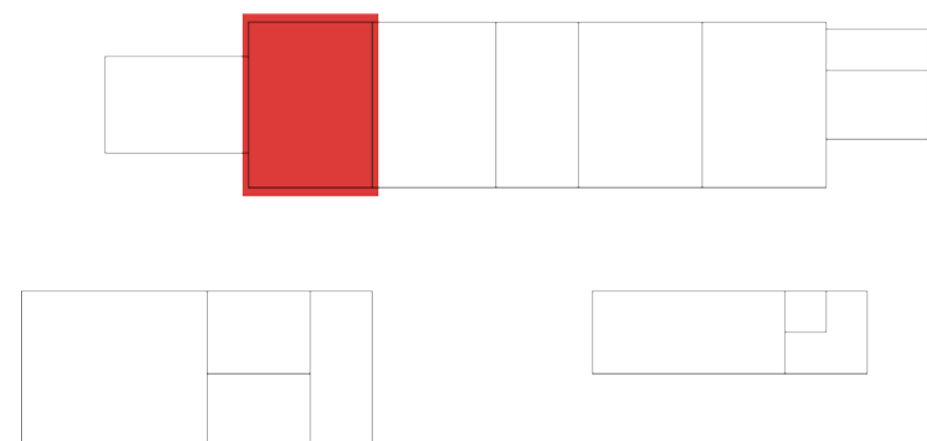
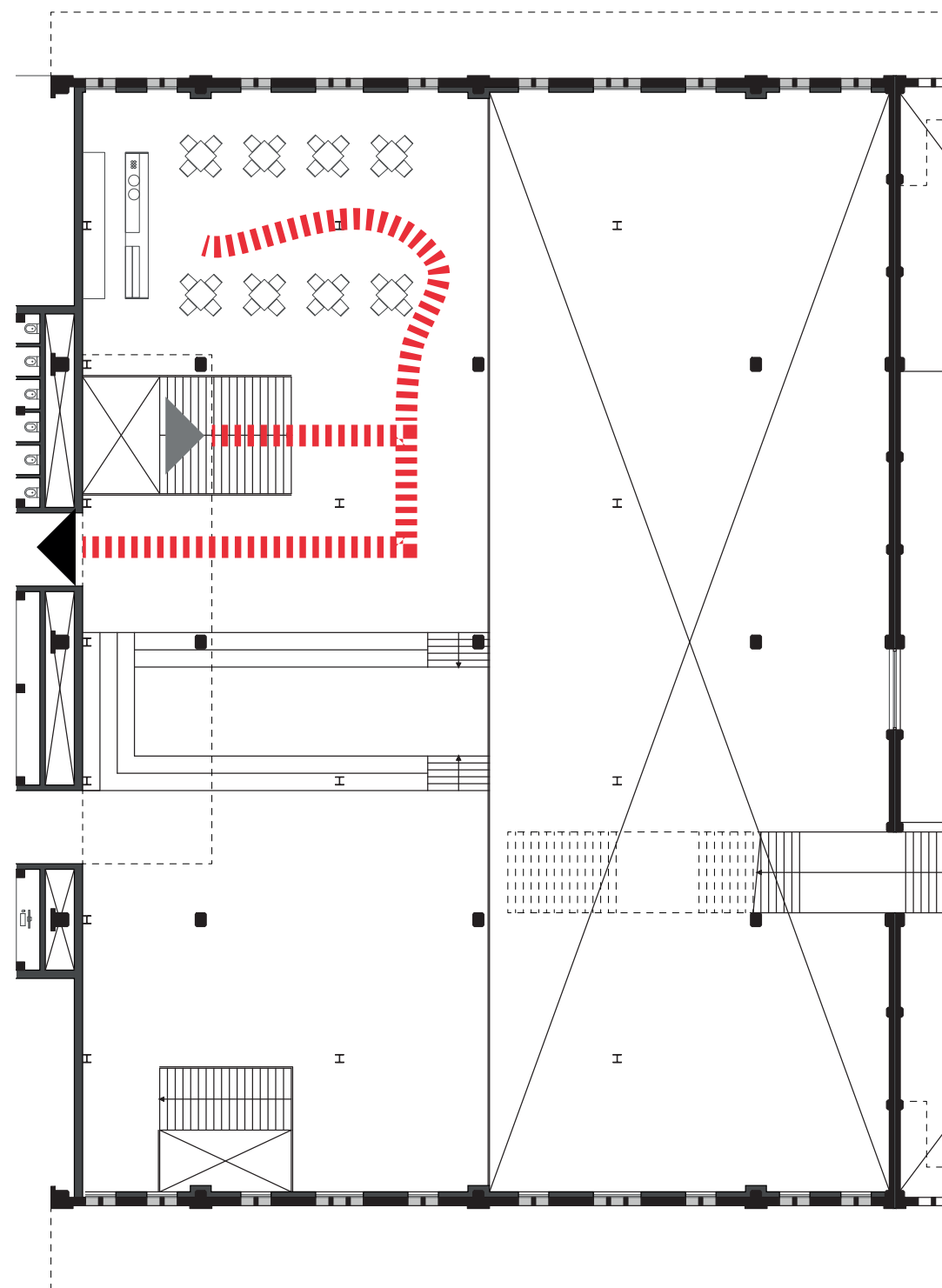
design

pool lobby



design

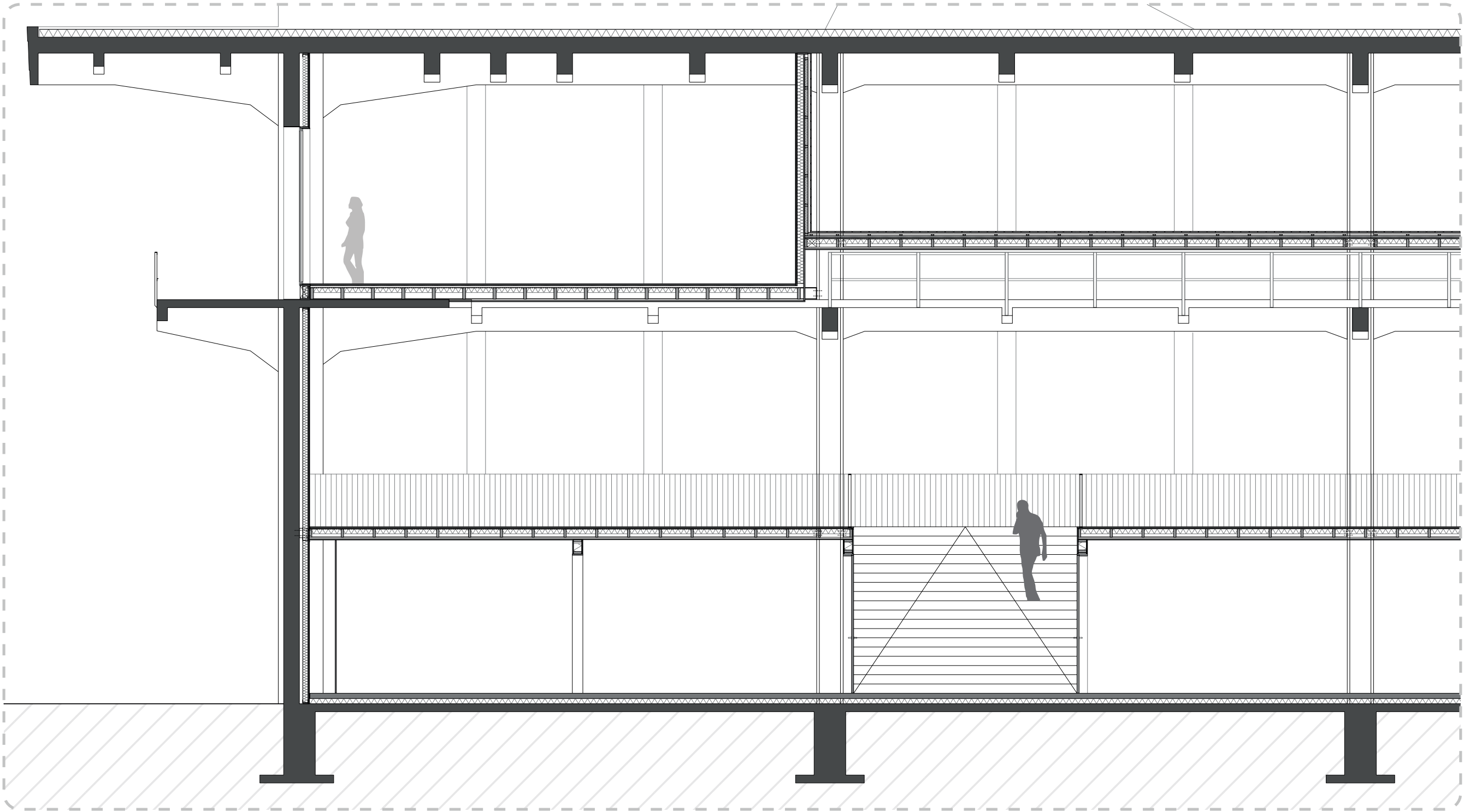
pool split level



ground floor

design

pool split level



section - pool split level



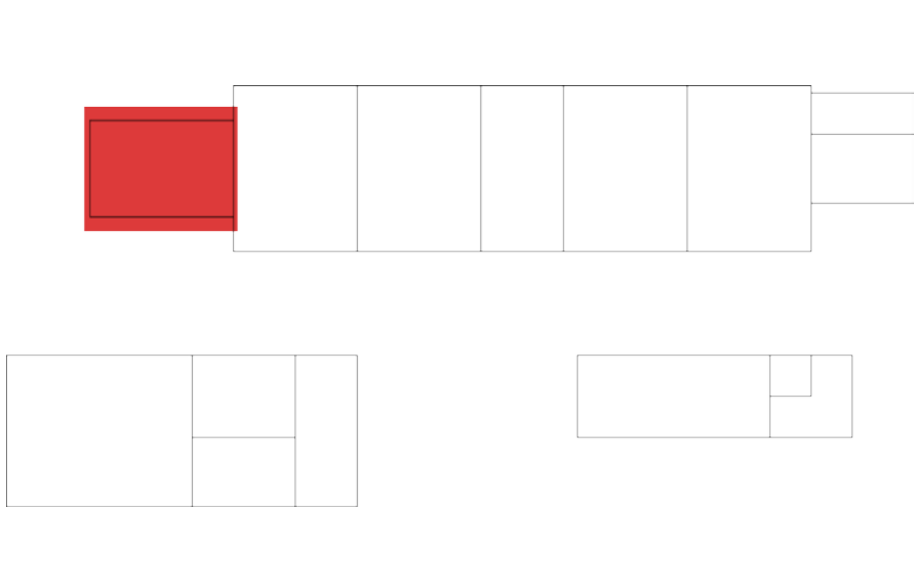
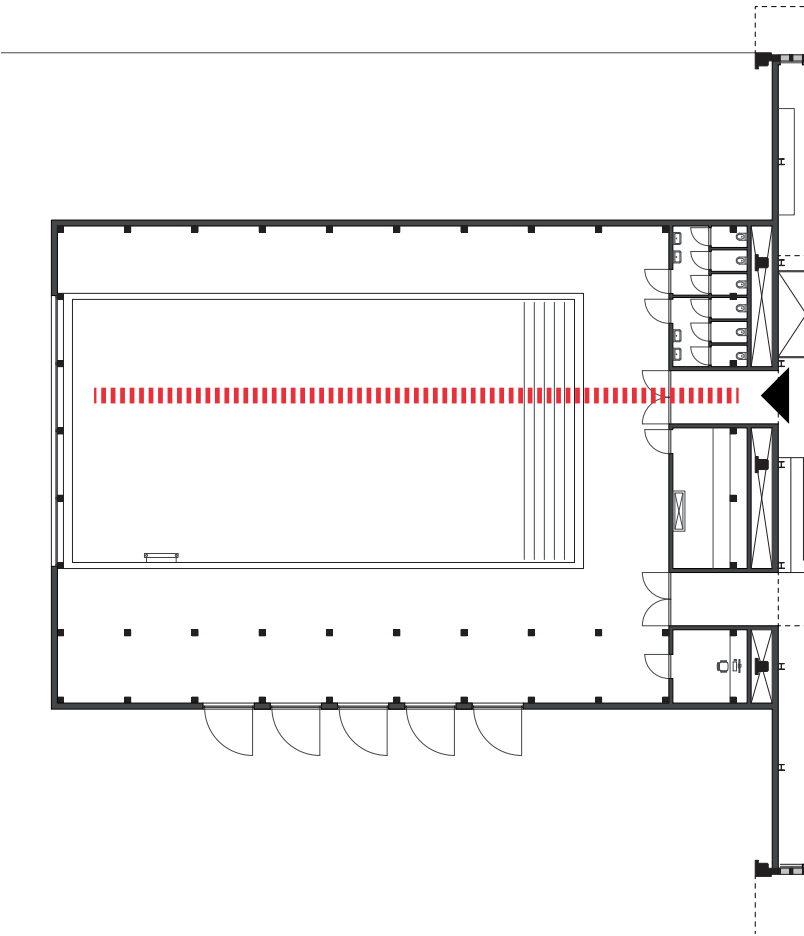
design

pool split level



design

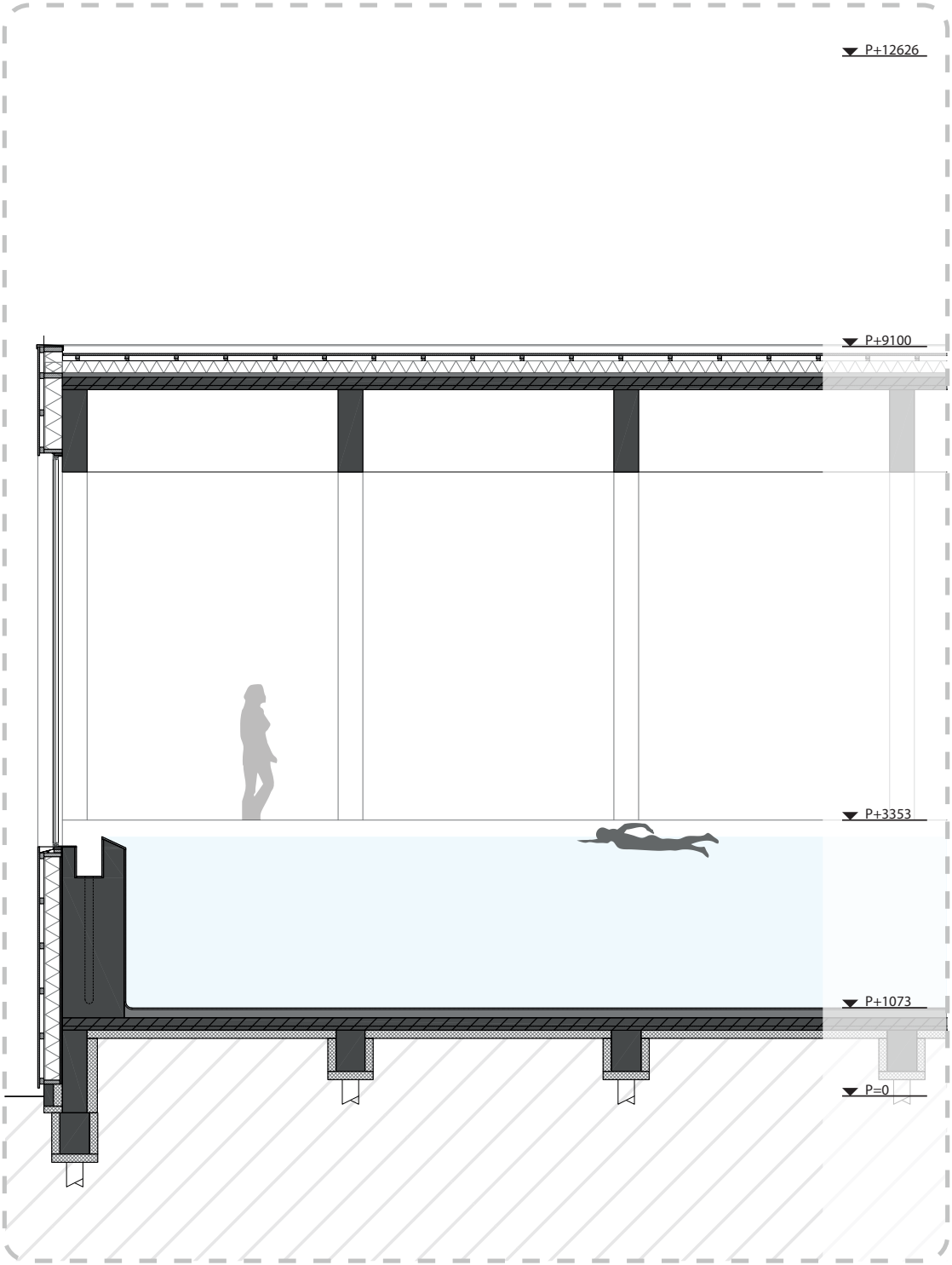
pool



ground floor

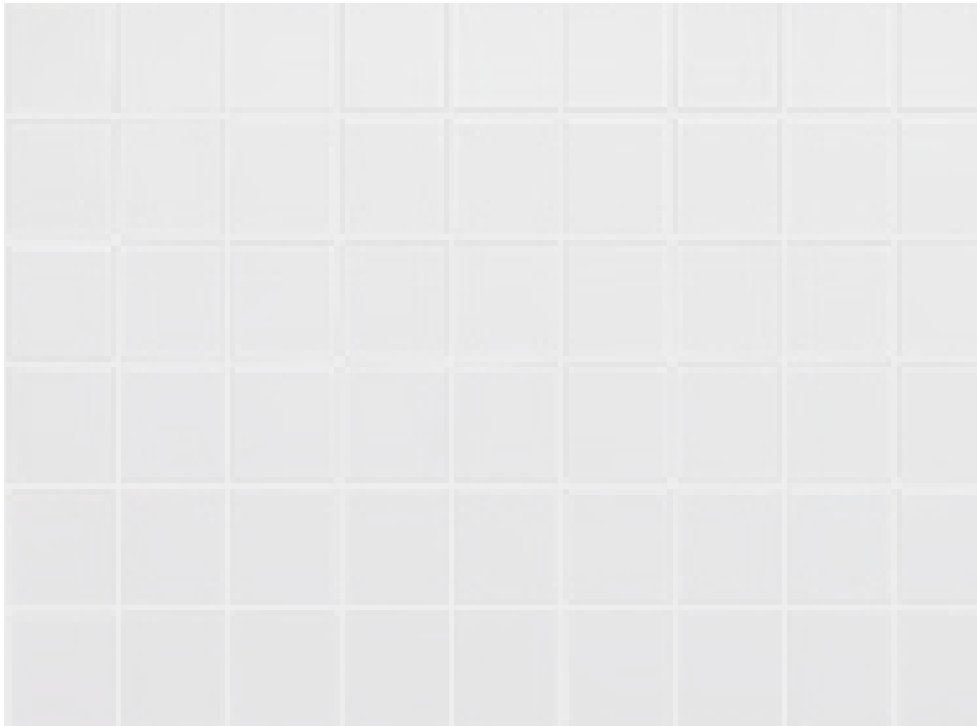
design

pool



design

material palette



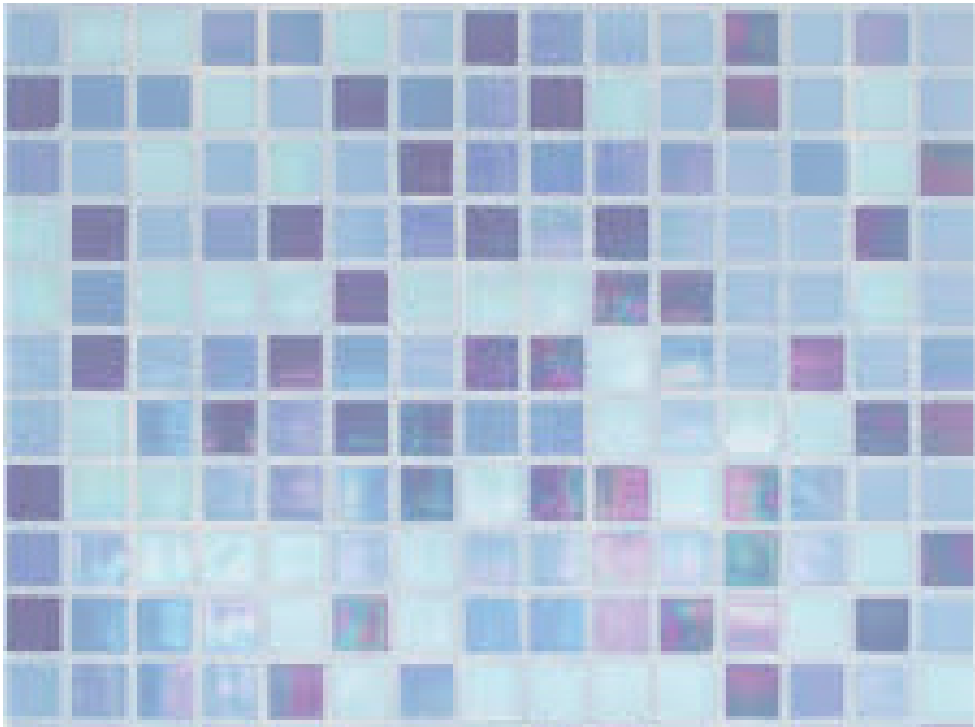
white 100x100mm tiling



light concrete



light oak wood

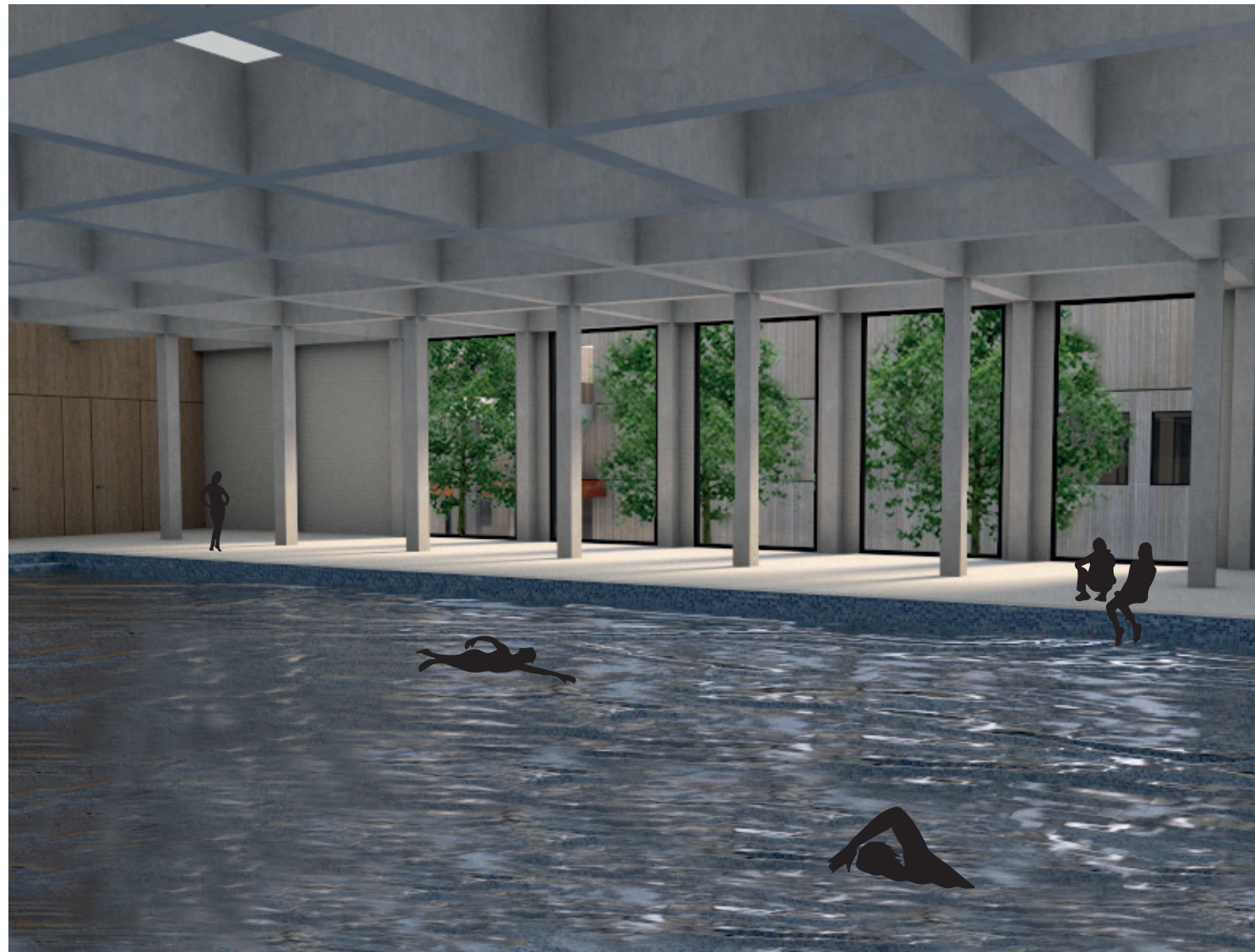


blue pool tiling



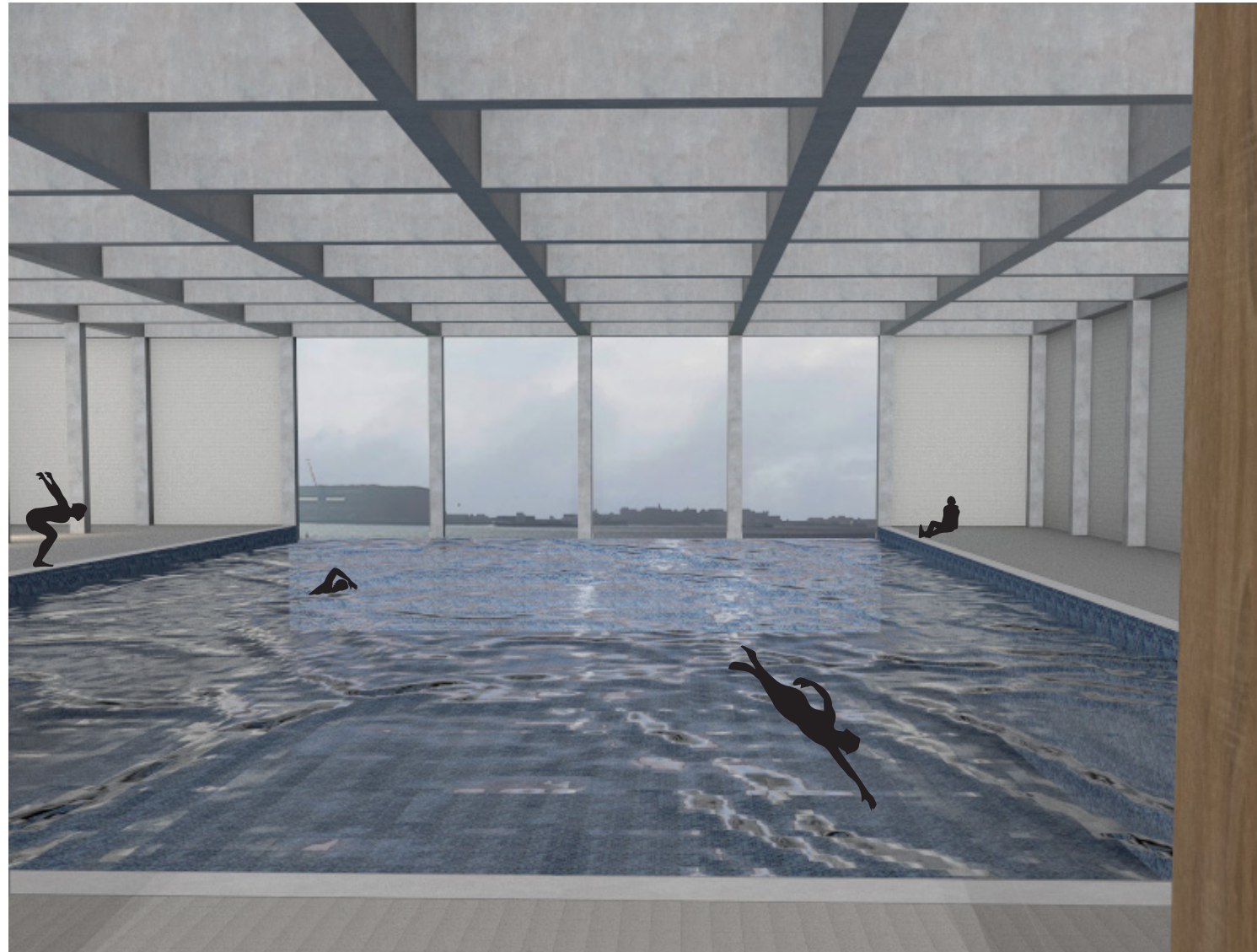
design

pool



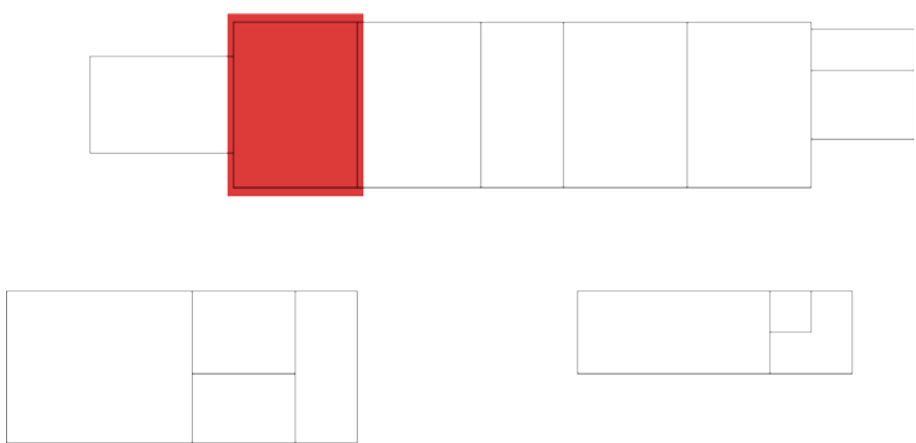
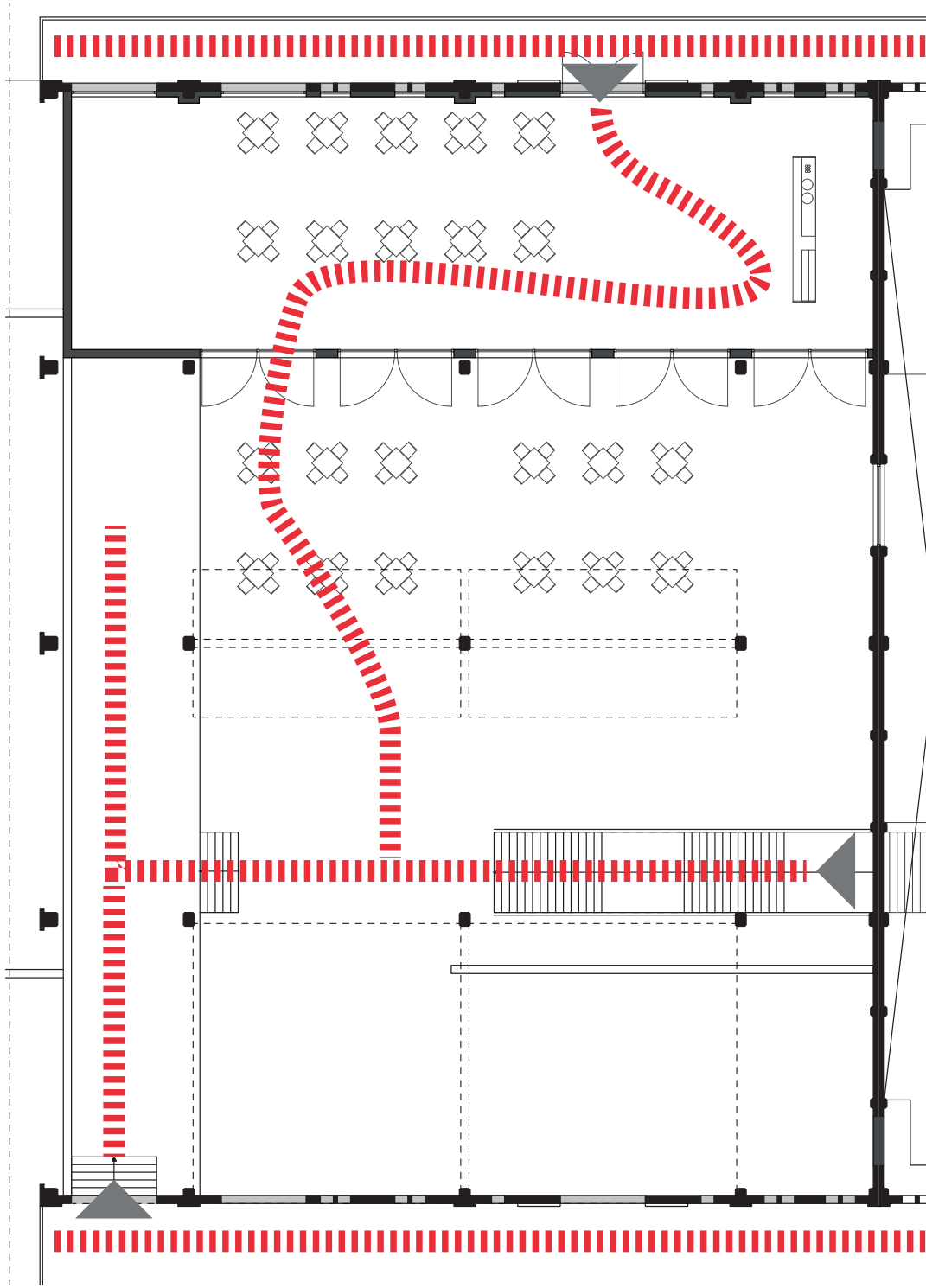
design

pool



design

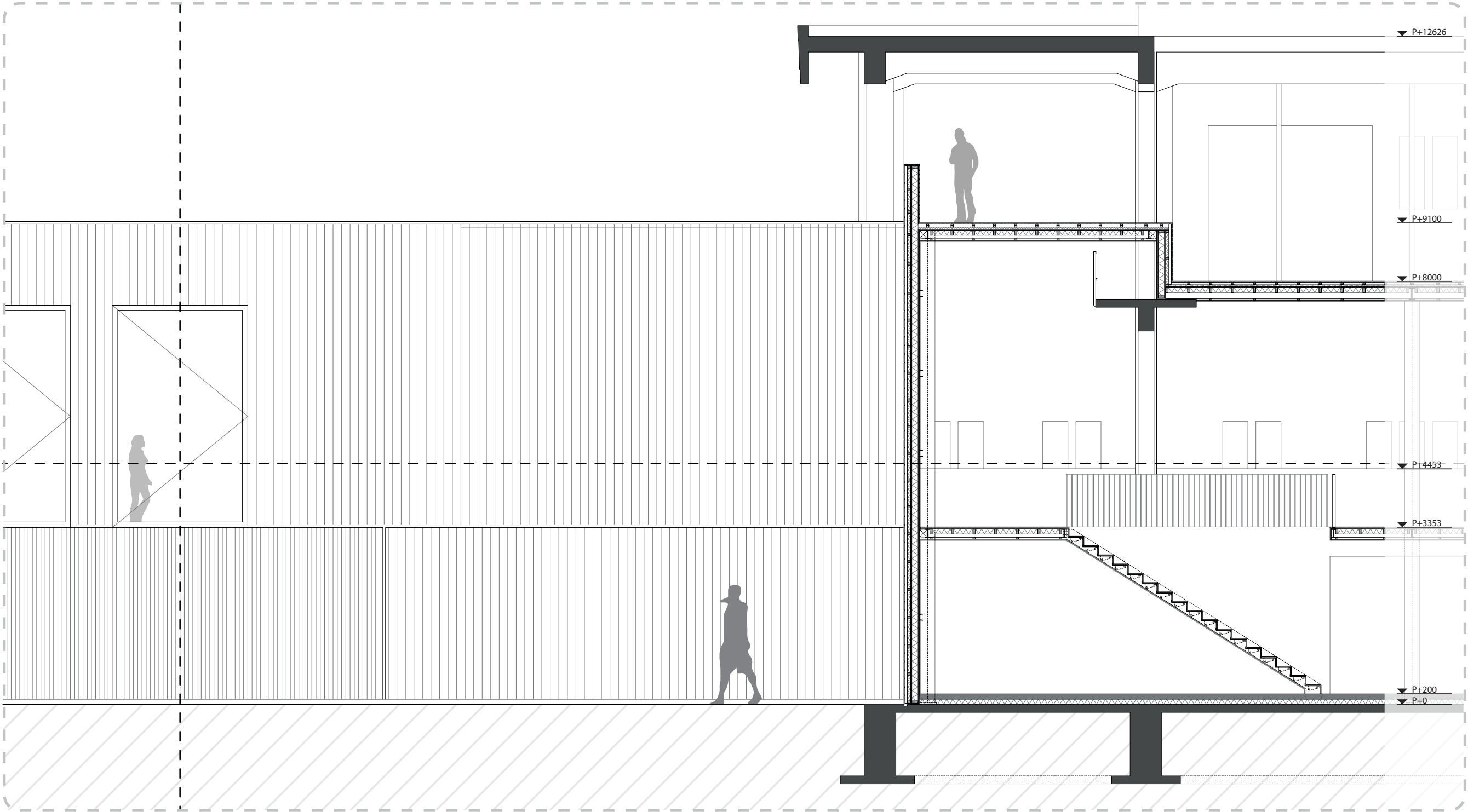
roof terrace



second floor

design

roof terrace



section - roof terrace



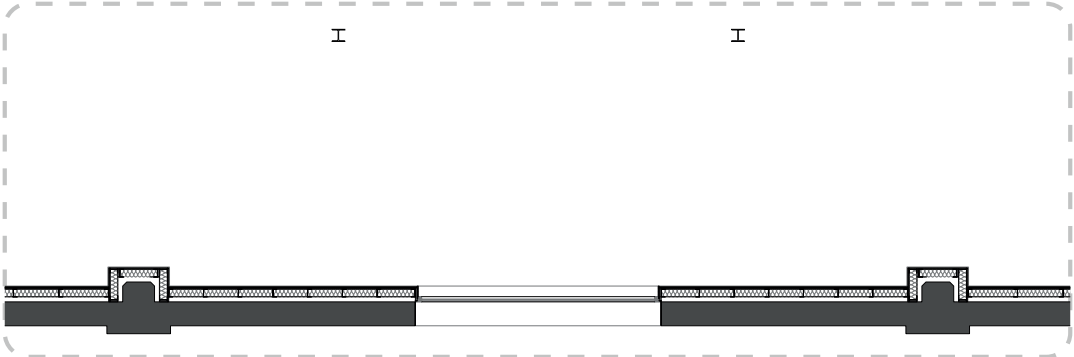
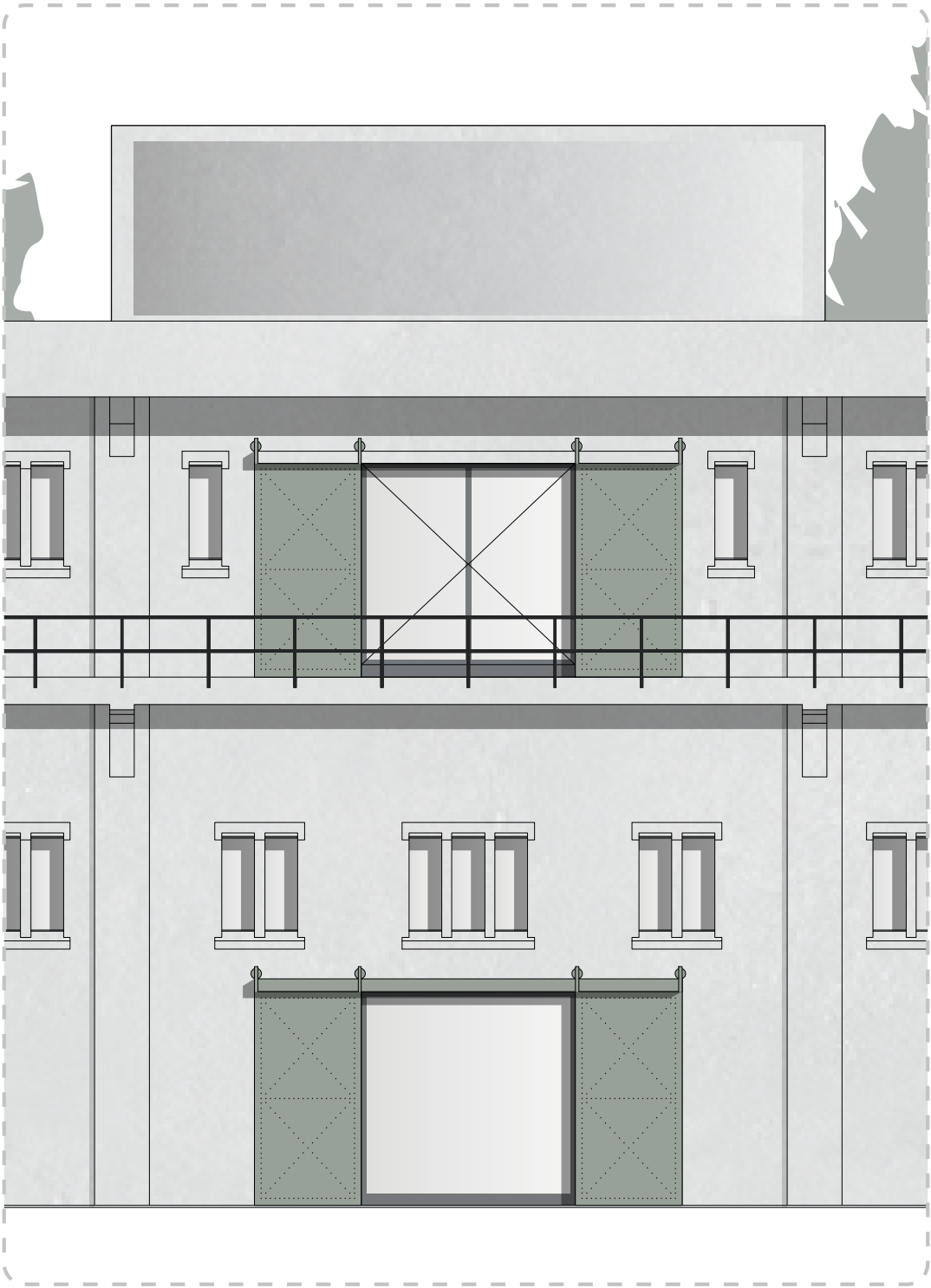
design

roof terrace



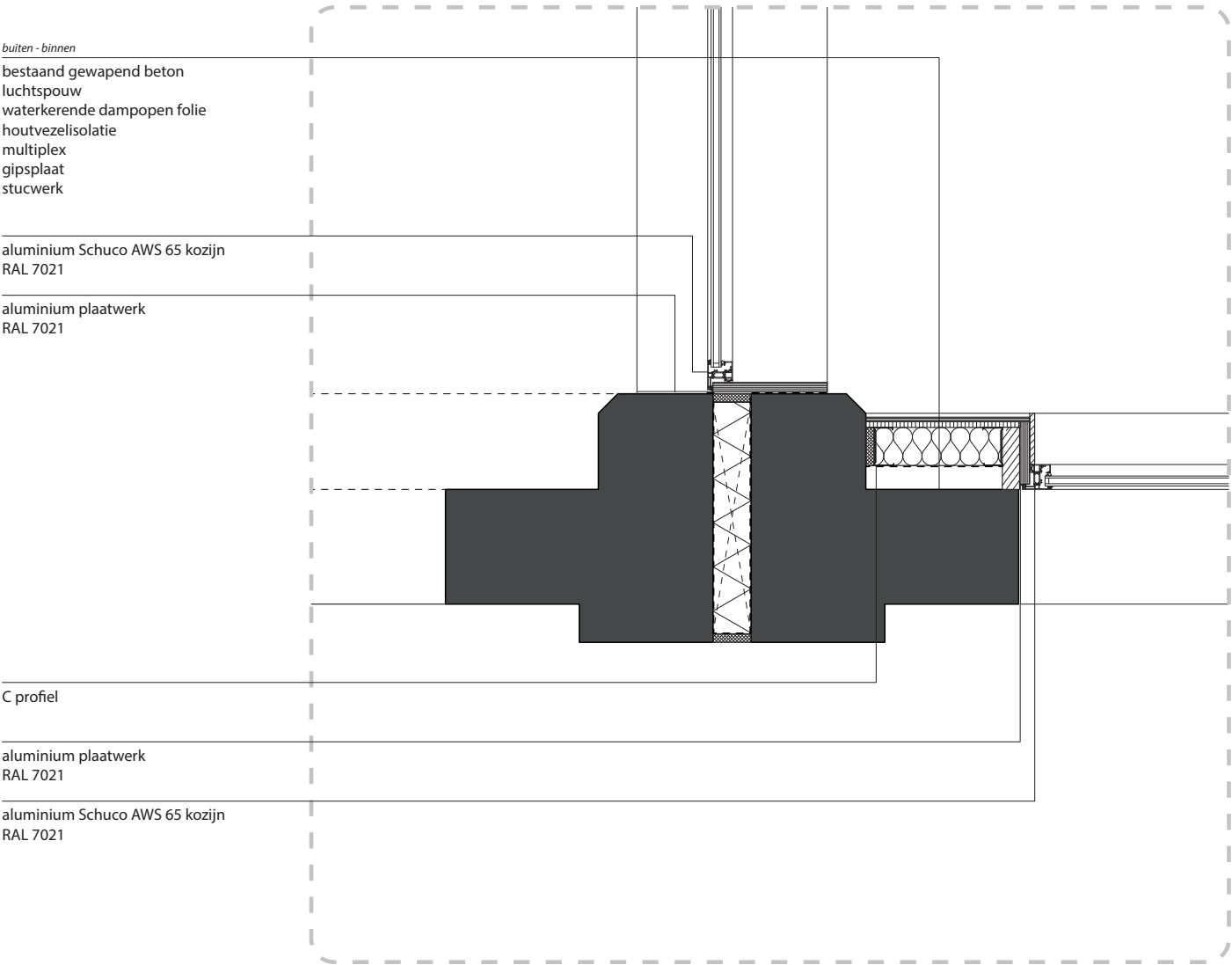
design

skin

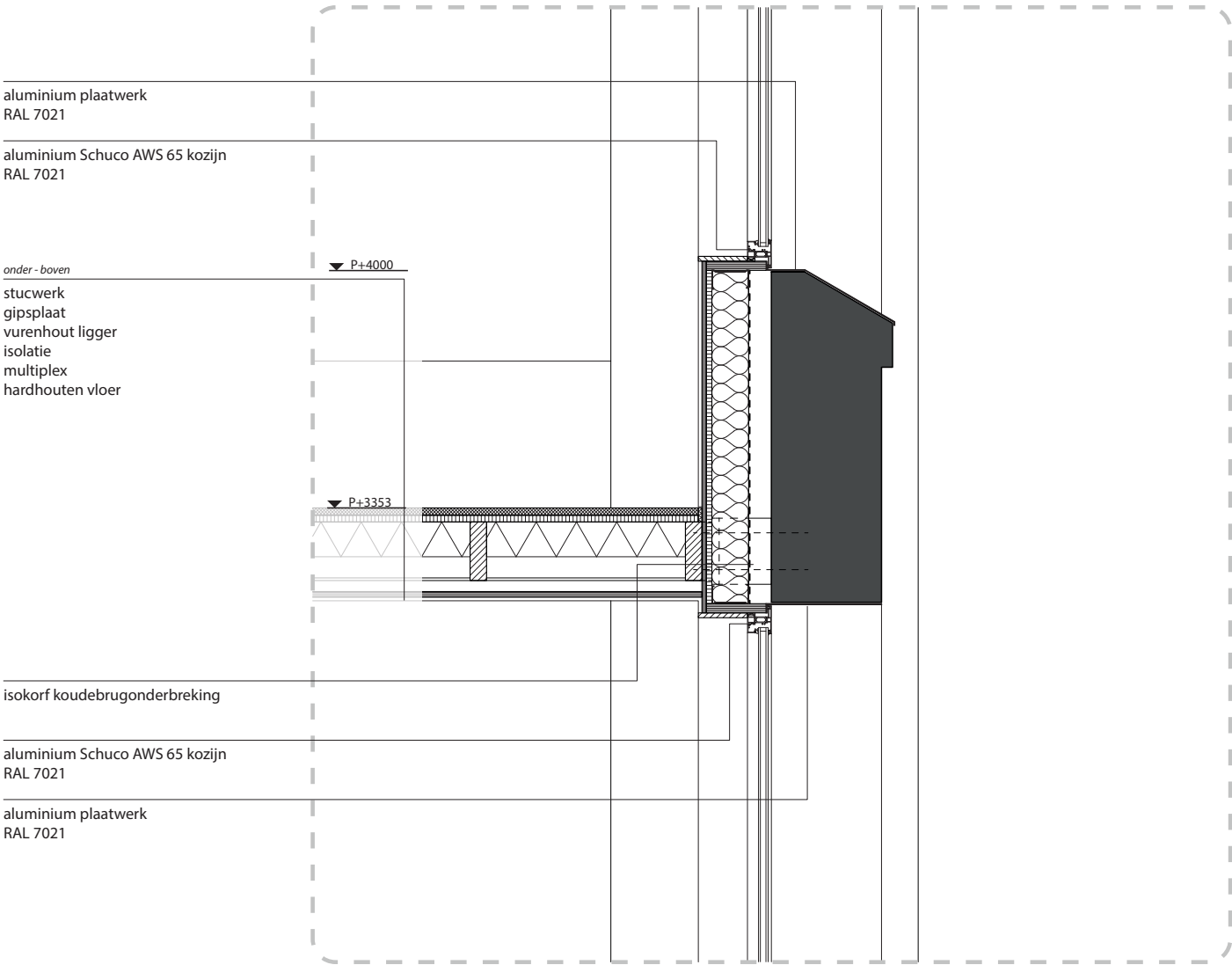


design

skin



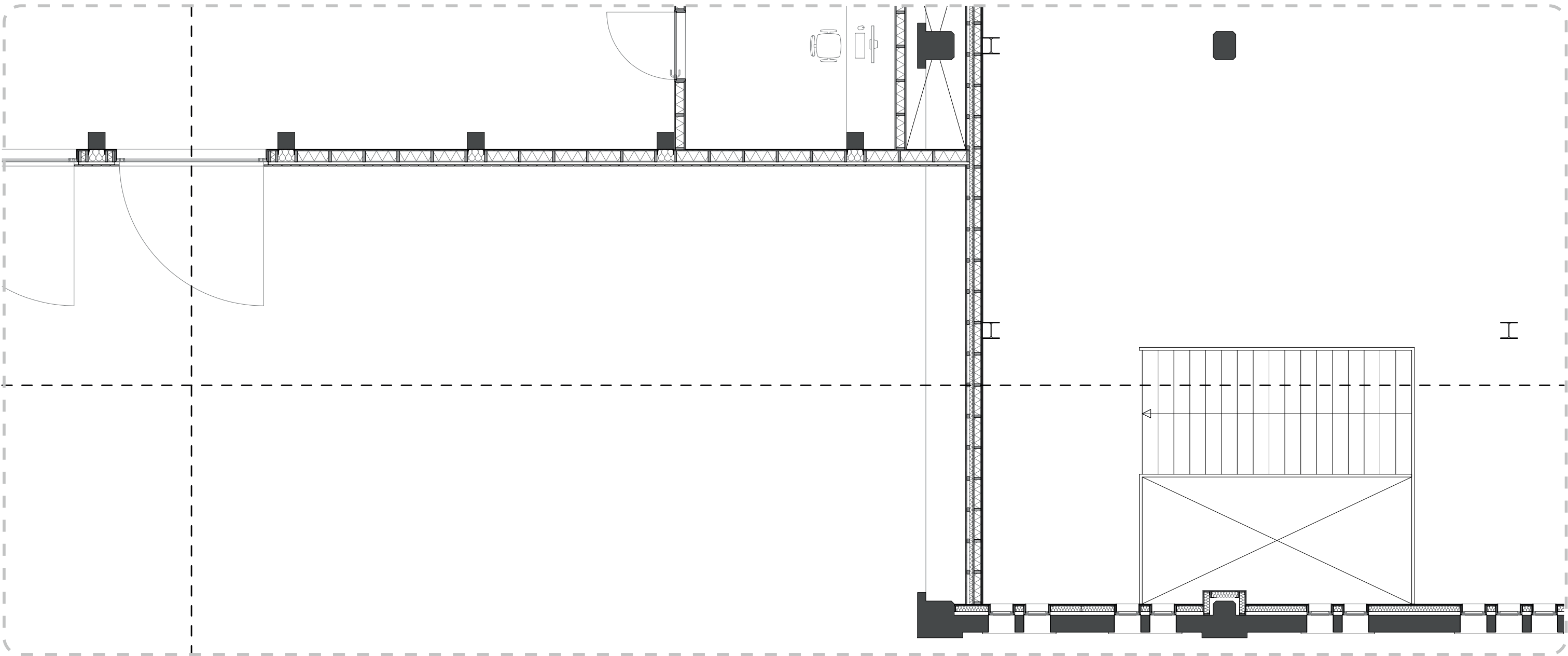
horizontal detail skin



vertical detail - skin

design

skin



ground floor plan - transition between old and new

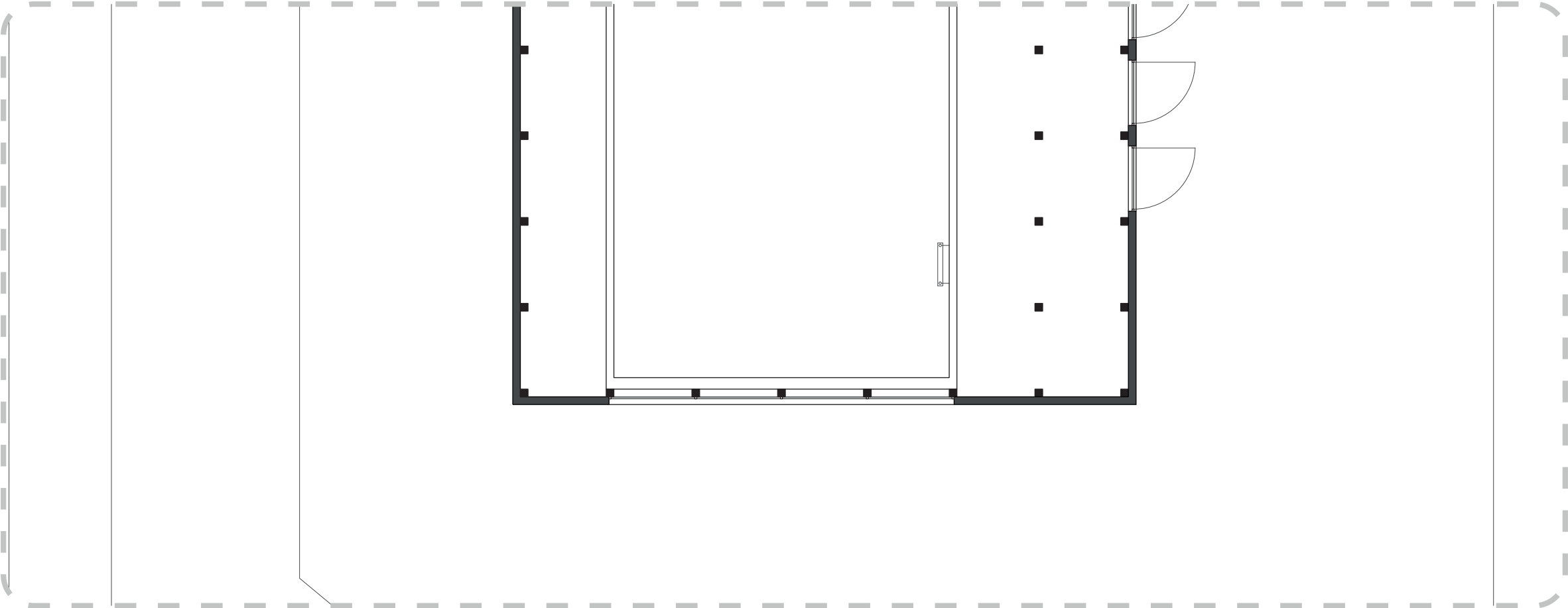
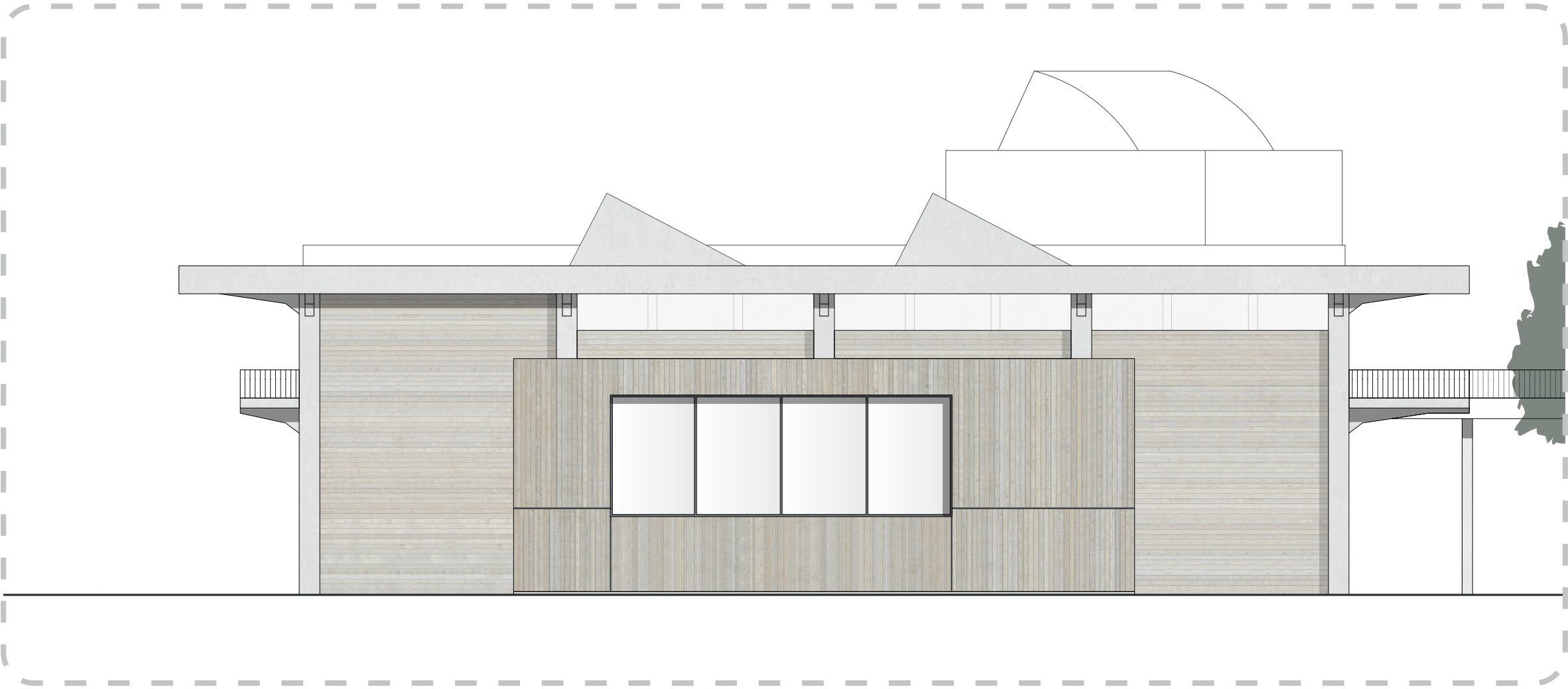


design

skin



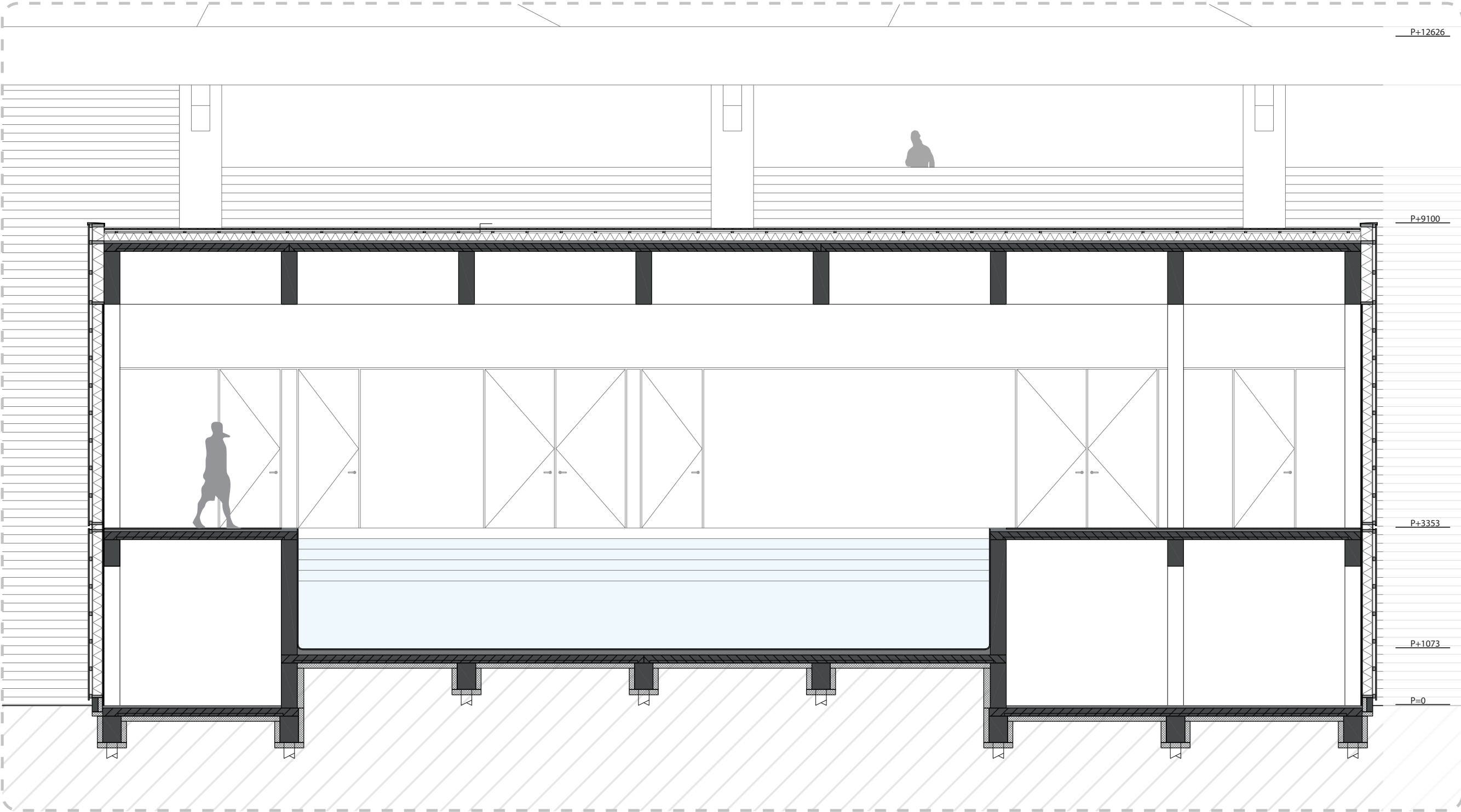
design  
skin



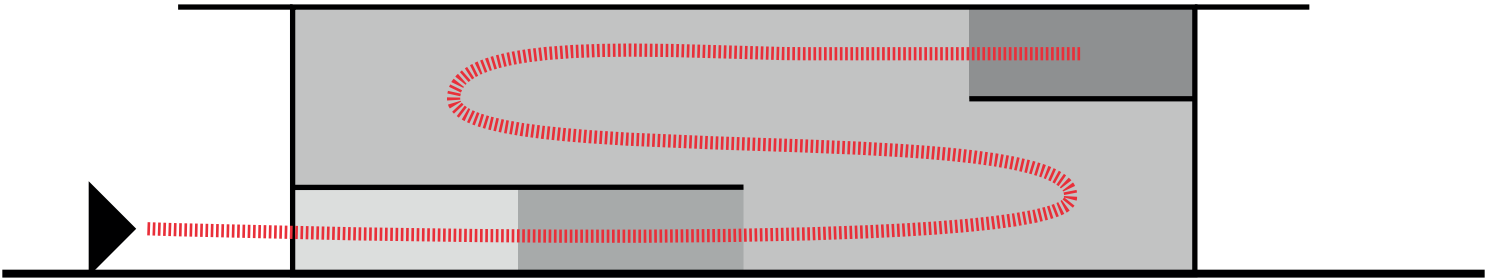
fragment - pool

design

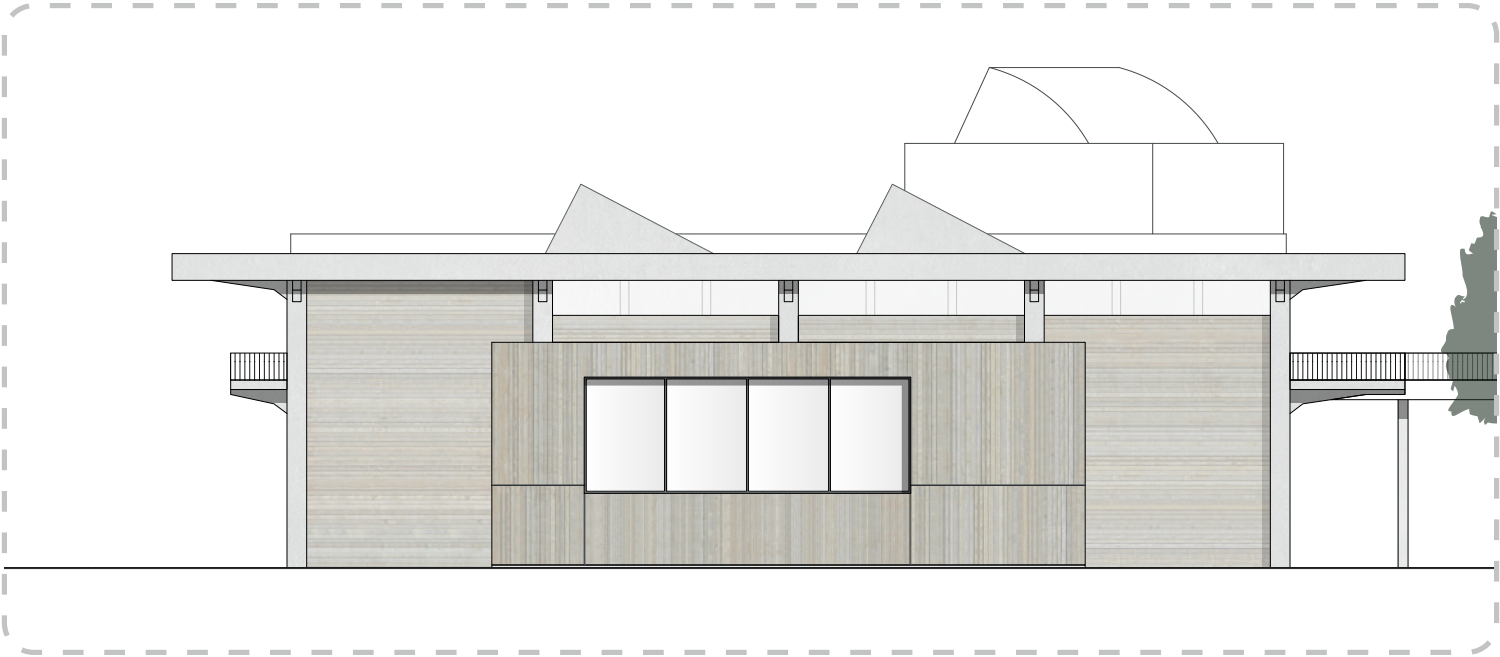
skin



section - pool

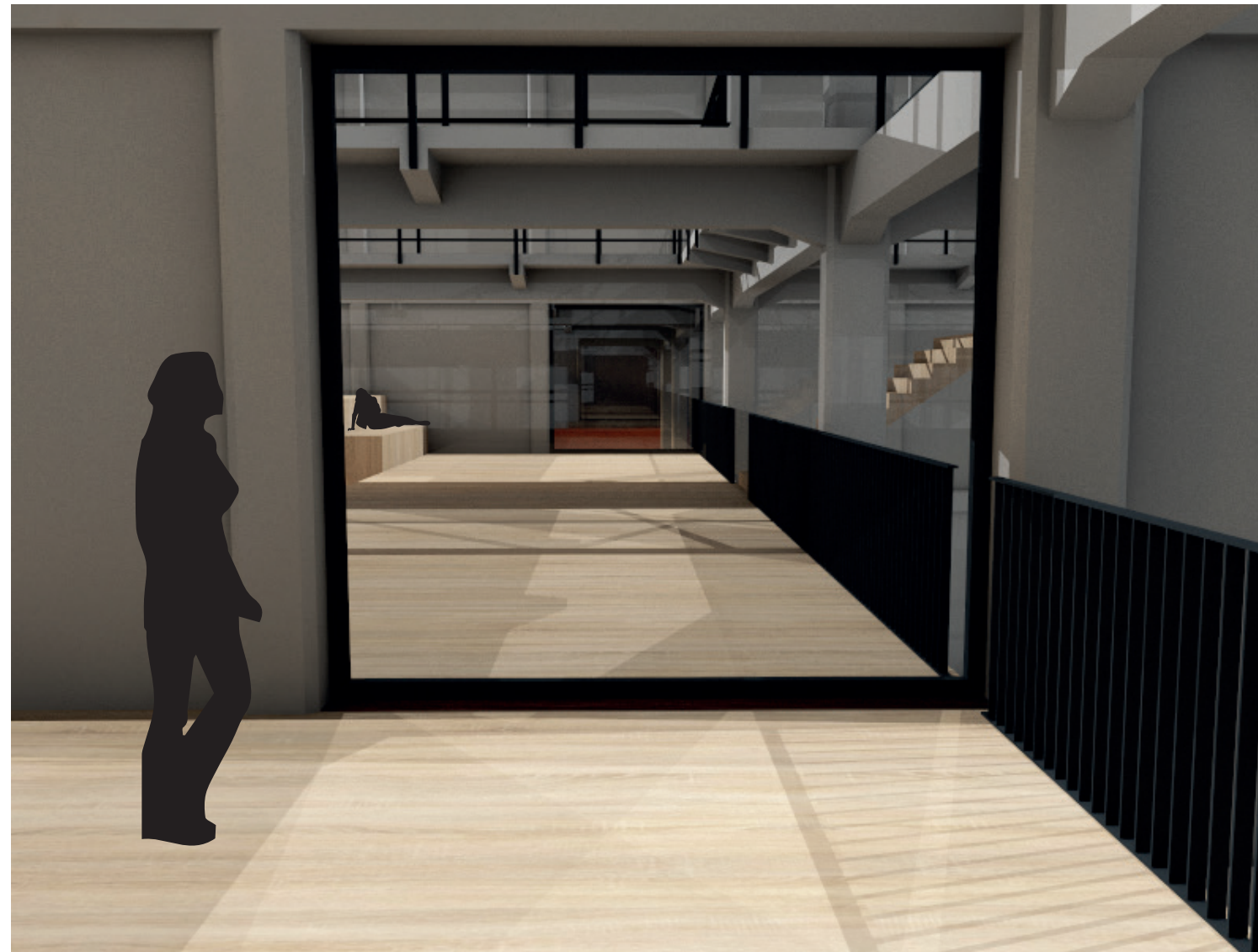






P5

conclusions



P5

conclusions

