

a boost for standardisation

an adaptive reuse of the kolonel palmkazerne into an ensemble for contemporary housing design

Graduation Studio:
Course code:

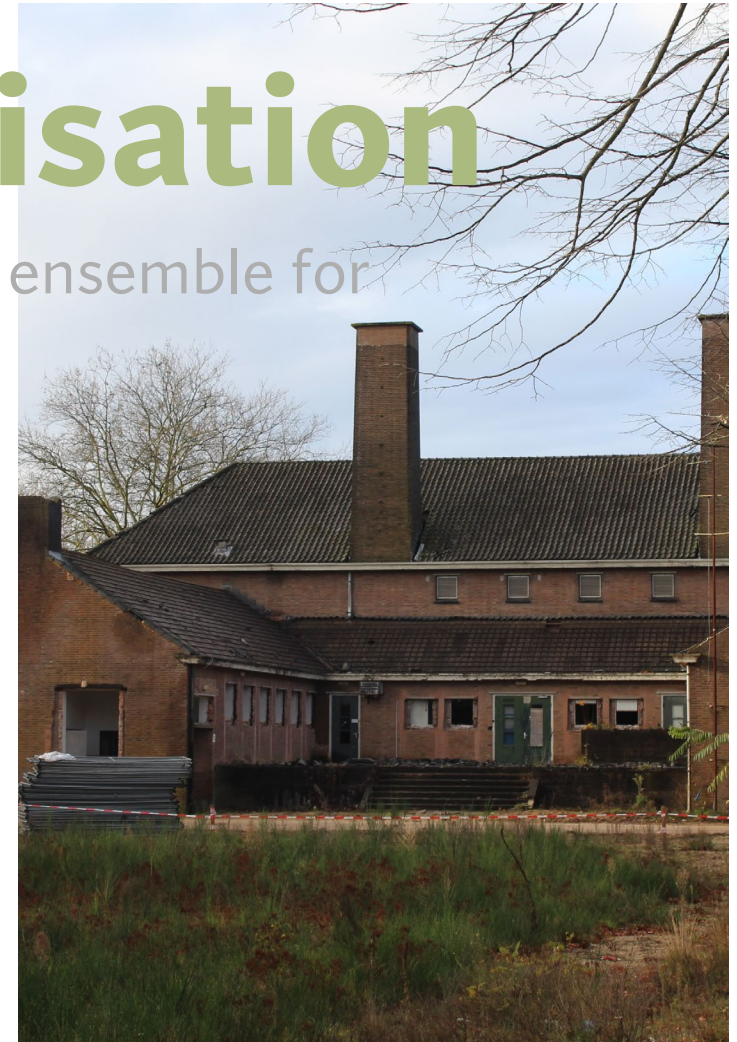
MSc Studio Heritage & Architecture
AR4AH120 Adaptive Reuse of Heritage Graduation Studio

Name:
Student number:

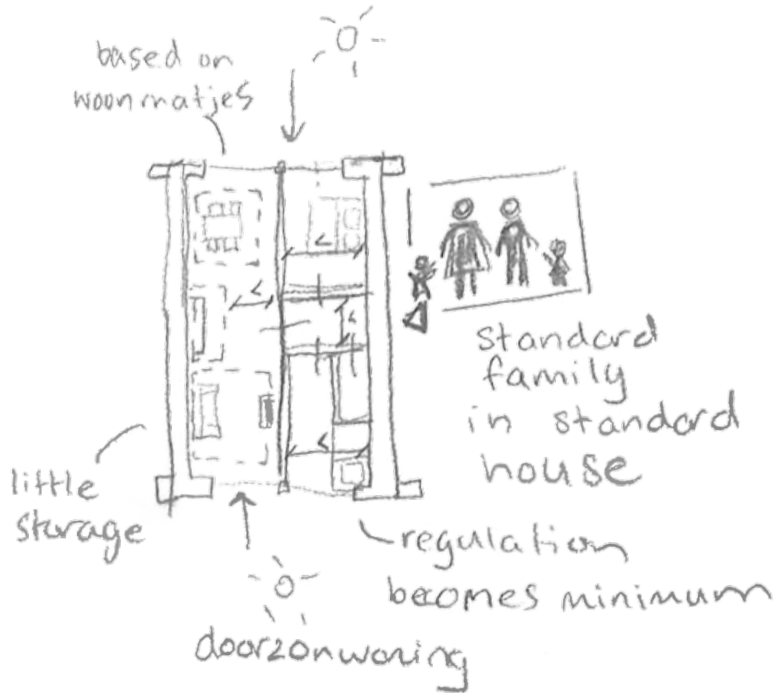
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Responsible supervisor:
Supervisor:

Lidy Meijers
Thijs Bennebroek



Standardisation



Cold War Heritage



Officerscasino, Soesterberg



Airbase, Soesterberg



Kolonel Palmkazerne, Bussum



SAS-site, 't Harde

Cold War Heritage



Kolonel Palmkazerne, Bussum



Dutch kazernes 1945-1997



Kolonel Palmkazerne



Location



Kolonel Palmkazerne

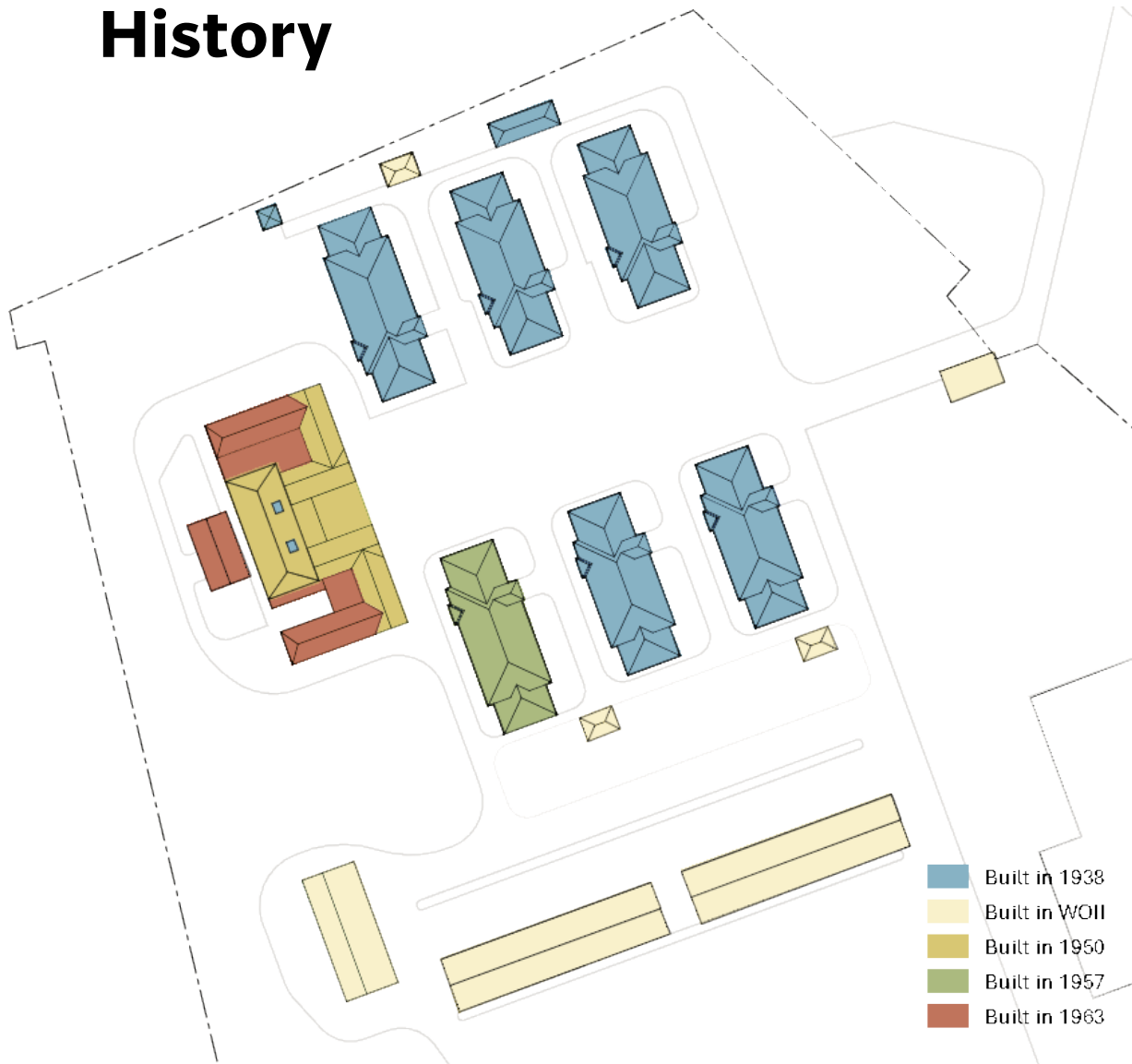


Green structure
(*inspiration source: Crimson, 2020*)



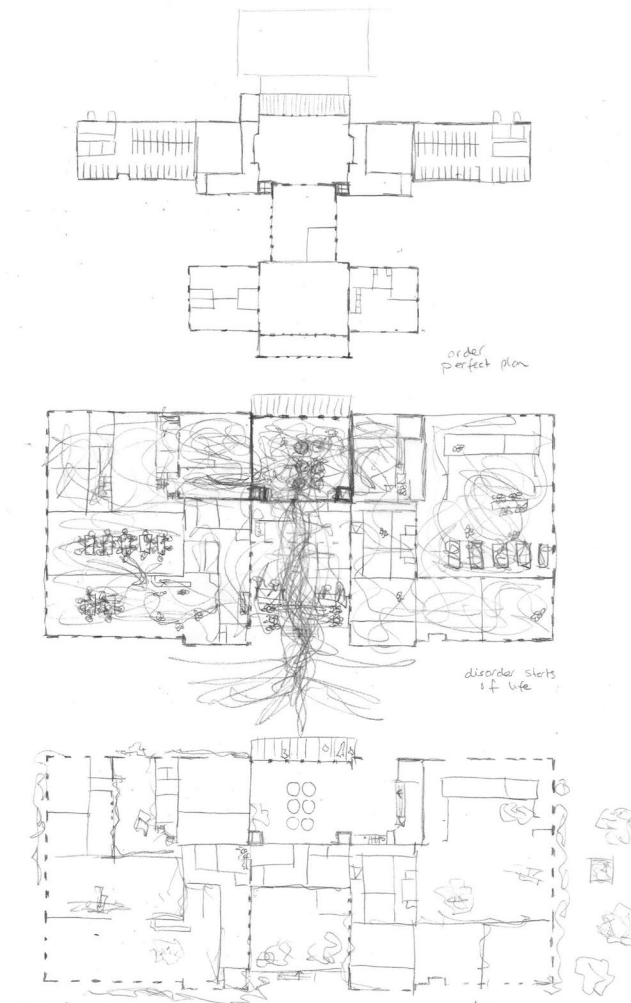
Open and closed space
(*inspiration source: Crimson, 2020*)

History



- <1938 Military barrack as tents in open field between Bussum & Laren
- 1938-1940 Construction barracks and first part Keukengebouw (official design was never finished)
- 1940-1945 Second World War, Kazerne in use by German Wehrmacht and Luftwaffe, heavily bombed in 1944 and 1945
- 1948-1957 After re-construction in use by Royal Dutch Army, kitchen building added
- 1957 Vliegramp, Airplane demolished building 3 (again)
- 1957-2006 Multiple military uses (Intendance School, education), interiors renovated, expansions kitchen building added
- >2006 Military sold the Kazerne, temporary use or vacancy: new plan needed

Keukengebouw



source: own image based on Sarah Wigglesworth and Jeremy Till drawing titled *Increasing Disorder In A Dining Table* (1997).

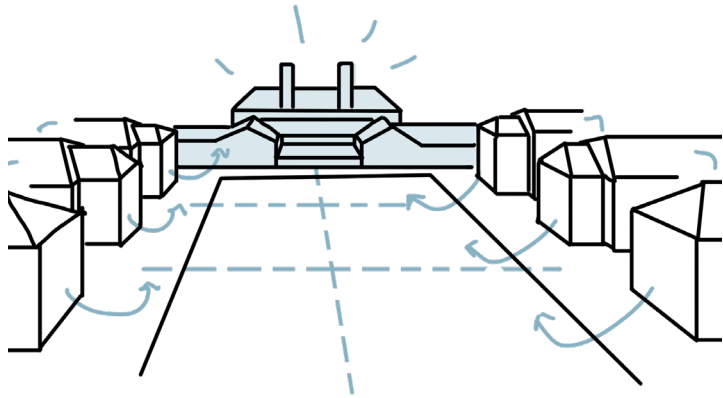
Value Assessment

Value Assessment based on the matrix proposed in Kuipers & de Jonge (2017) with on the vertical axis Brand's layers (1995) and the horizontal axis the values proposed by Tarrafa Silva & Pereira Roders (2012).

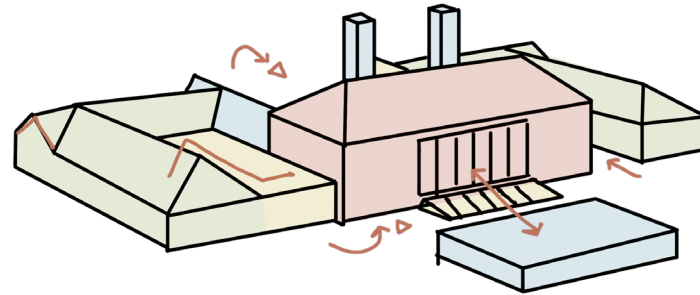
Value assessment matrix	social	economic	political	historic	aesthetical	scientific	age	ecological
surroundings	Kuipers has been social separated from its direct environment for a period of time.			Good accessibility of a Kazanka was important. "air-kazanka close by "Michalides Waterline" which was important in case of emergency.	The objects form an ensemble, in which repetition, uniformity, sight lines and the classical, hierarchical arrangement of buildings are important elements.		Although part of standardised forest system has the kazanka through time developed it's own identity and character.	The site is in a green area with large green structure.
site	Cultural historical value because military references are limited in this area, so the Kolonel Polnikowicz is unique as social hierarchy/status of the military time period. Kitchen building is highly valuable due to its visibility and function.	Negative value because extra costs are expected for remediation of asbestos and toxic materials in the basement.	Connection with WWII and Cold War Part of large political standardisation system to build as much as possible military housing for the amount of soldiers in conscription period.	Part of large standardised Boost-system. All buildings, paths, appellants and roads attribute to the bigger ensemble of the Polnikowicz which is essential for this site. Historical layers. The other buildings: Not part of Soviet's war's design, all the story of WWII. Sogetelco: is not representative or unique. It is separated from the ensemble.	Kitchen building as visual border of the appellants, central position.	Ensemble is ordered in strict, orthogonal structure.	Technical state of basement is well. This has high age value as it has already been there for a long time.	The green structure is a characteristic of the Goczi moraine landscape. The "Global zander Ernst" forms a defining line in the plan area. Environment: stress & health risk because of chemical substances and asbestos.
skin		Re-use possible for timber frame and facade masonry because in good state. Concrete, steel frames and roof tiles need replacement/renovation, no re-use possible.		Steel window frames as historic characteristics building method for its period (20th century). Kitchen building west facade still owns original steel window frames.	Simple appearance and little attention to detail, decoration or ornamentation. Detailing of kitchen building is uniform with the barrack buildings. Reproach addressed for the narrow cake-like still.	Excellent brick work, different forms and details.	State of masonry and roof tiles high value with good treatment of concrete. So it can stay visible reminder of its age.	Moist infiltration and energy loss because of leaking gutters and bad connections.
structure		Function and utility of entire basement complex is possible because the basement is strong, water-resistant, affordable and fire-resistant. This is because of construction of reinforced concrete, monolith of beams, walls and floors.					Case is in good condition and longer technical lifespan of existing elements is possible.	
space plan		Light separation walls have been removed. No structural problems.		Historical layers: Building consists of 2 architectural plans. The basement and chimneys are from the original design from 1900s. In the 1950s Horbans added the central and L-shaped wings in the kitchen building. 1st addition area made form, it was the basement building.	Incoherent building composition because of many additions throughout the years.		Technical state is mostly cosmetic, no big threats to rest-of-life.	
surfaces		Ceilings partially destroyed due to leakages. Kitchen is technically usable.			Post-war additions in interiors.		Interiors have been transformed and current interiors has little life-span. No possibility of keeping age value.	
services		Many services need replacement because of age (electrics, climate installations, fire safety and plumbing system).		The 2 chimneys and basement complex are the oldest part of the design. Its former function was to serve as central heating system for the Kazanka.	Central elevated part of building has a lot of daylight access.		Replacement is needed, age value cannot be held.	Installations are very energy inefficient.
stuff		Additions of "physiotherapy" aids, colour coding and finishing layers are not economic profitable because of bad maintenance. Kitchen equipment is still functioning, but might be outdated.						Reuse of kitchen equipment is possible.
spirit of place	Education purposes for military and cooling classes). Many (ex-)soldiers have served during conscription period with a connection to this site.		Connection with WWII and Cold War.	The kitchen building tells something about the history of Kazanka complexes from 1900-1990. Separation of functions was a central theme. Site is ready in use before construction of buildings. In WWII used by the Germans.				The hilly and sandy character of the Craic plan area has remained unspoiled over the centuries.

- High value
- Positive value
- Indifferent value
- Negative value

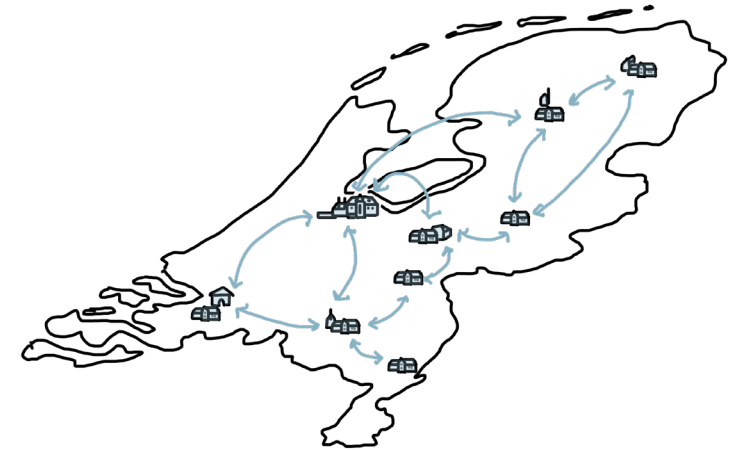
Conclusion values



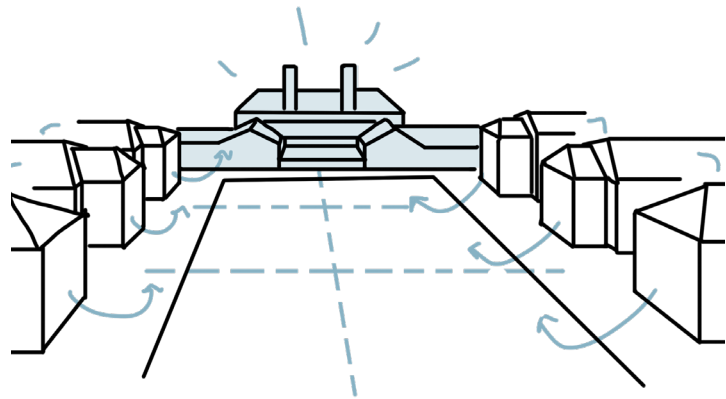
Original ensemble has high value



Historical layers keukengebouw can make an incoherent building



Part of larger system as high national value



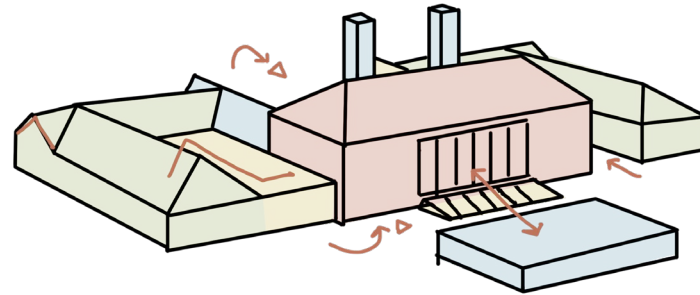
Original ensemble has
high value



Photo by Jasmijn van Breemen



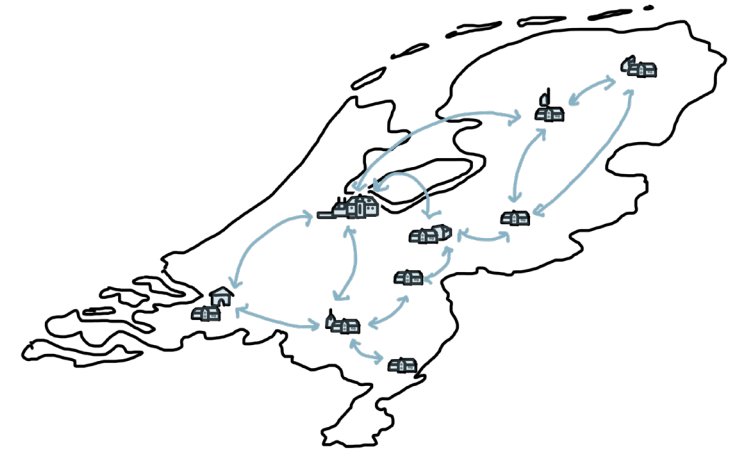
East façade, “original front”



Historical layers keukengebouw
can make an incoherent
building



West façade, “original back”



Part of larger system as high national value

Palimpsest

Modest position as architect

Old and new not separated worlds

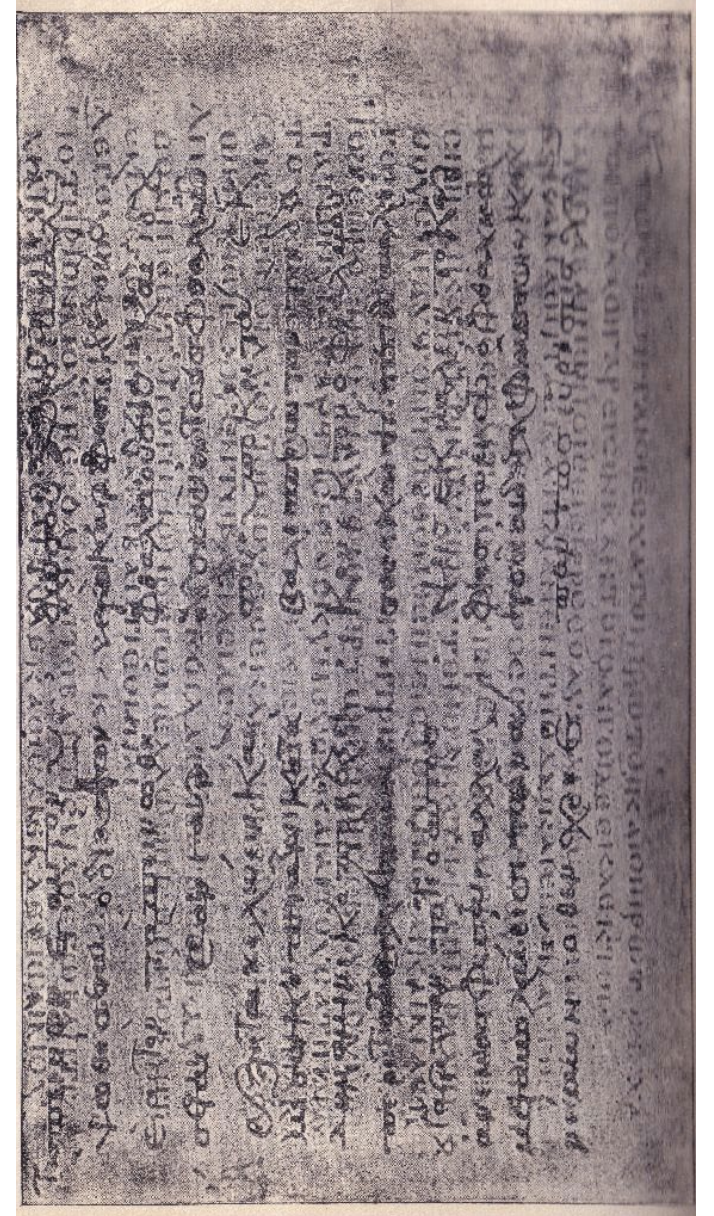


Photo in public domain

References



Buurschap de Blokskens, Zandhoven (BE),
Happel Cornelisse Verhoeve Architects, 2017



FRAC, Nord Pas-de-Calais. Dunkerque (FR),
Lacaton & Vassal Architectes, 2013



Schreber, Aachen (DE), Amunt Architekten
Martenson und Nagel Theissen, 2011



Leiden's City Hall, Leiden (NL) Office
Winhov, 2022

Research Question

“How can lessons learned from the military Boostkazernes, in relation with contemporary housing design, along a focus on standardisation, be implemented in an adaptive reuse design for the keukengebouw of the Kolonel Palmkazerne in Bussum?”

A

“What is the theoretical debate about standardisation in housing design?”

B

“What can we learn from the military Boostkazernes for standardisation?”

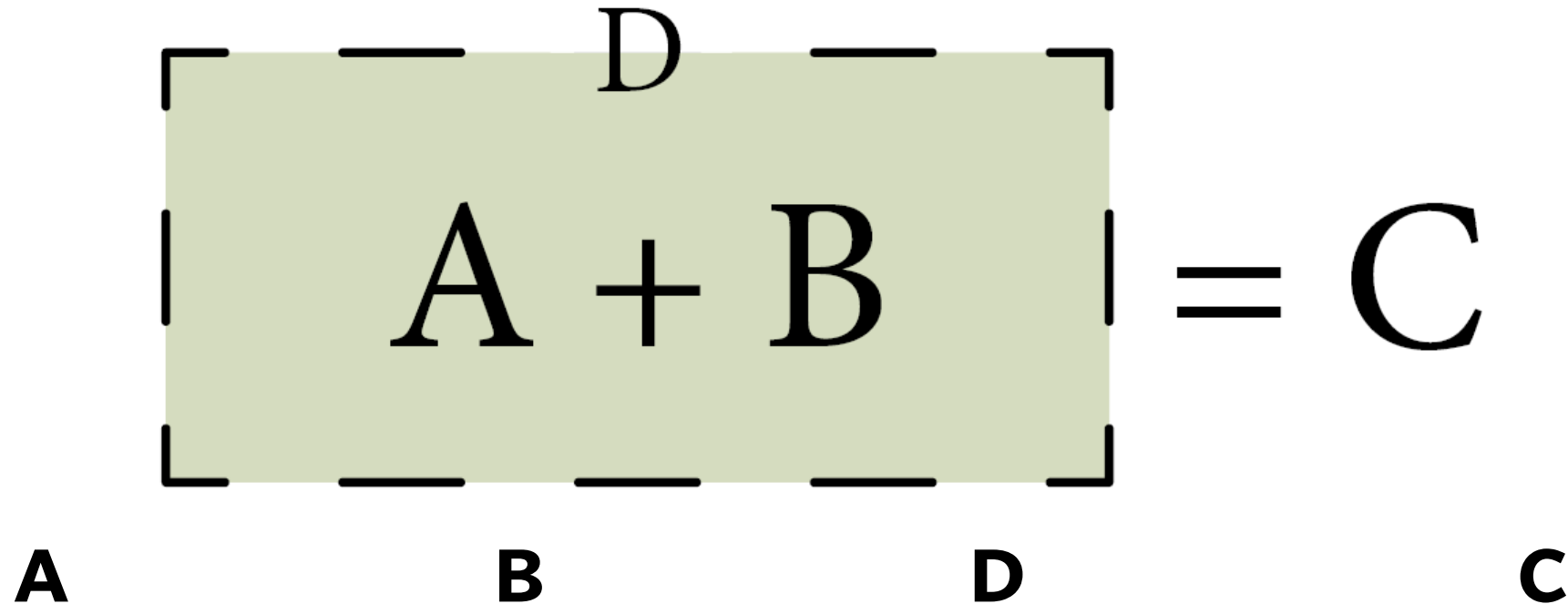
D

“What are the values of the existing keukengebouw of the Kolonel Palmkazerne?”

C

“How can lesson learned be implemented in a re-design for the keukengebouw of the Kolonel Palmkazerne?”

Research Question



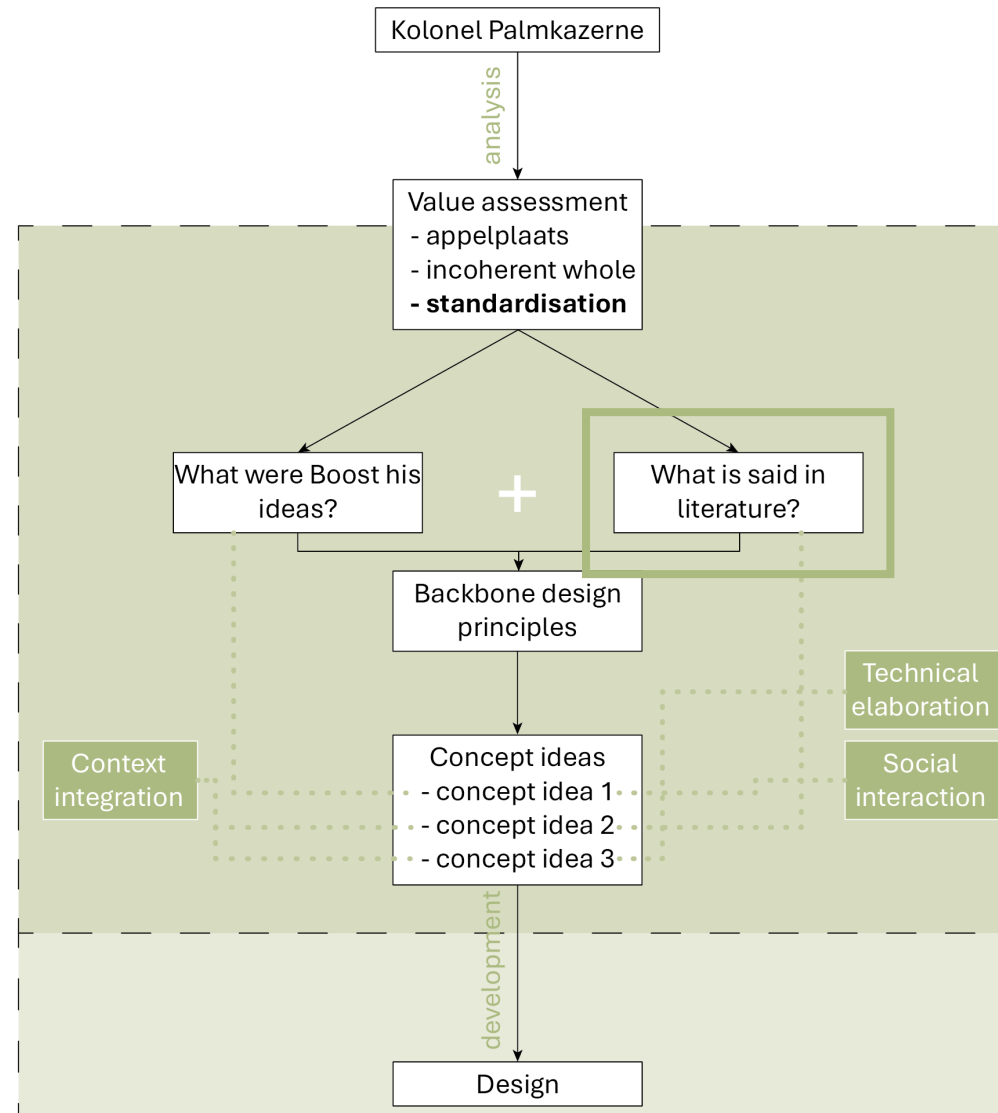
“What is the theoretical debate about standardisation in housing design?”

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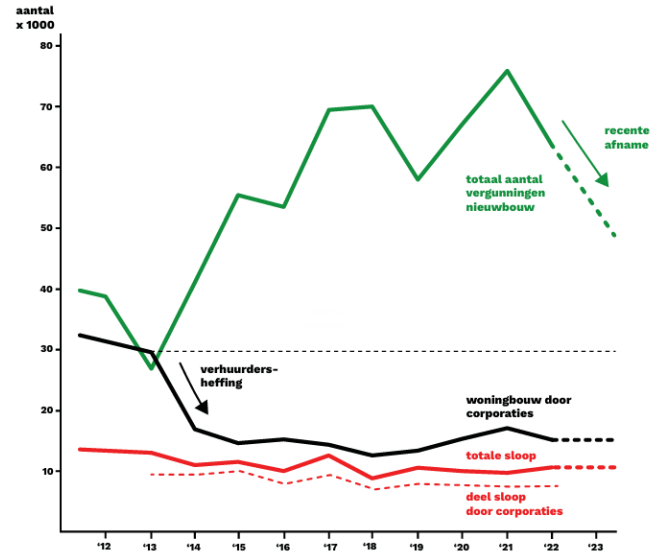
“What are the values of the existing keukengebouw of the Kolonel Palmkazerne?”

“How can lesson learned be implemented in a re-design for the keukengebouw of the Kolonel Palmkazerne?”

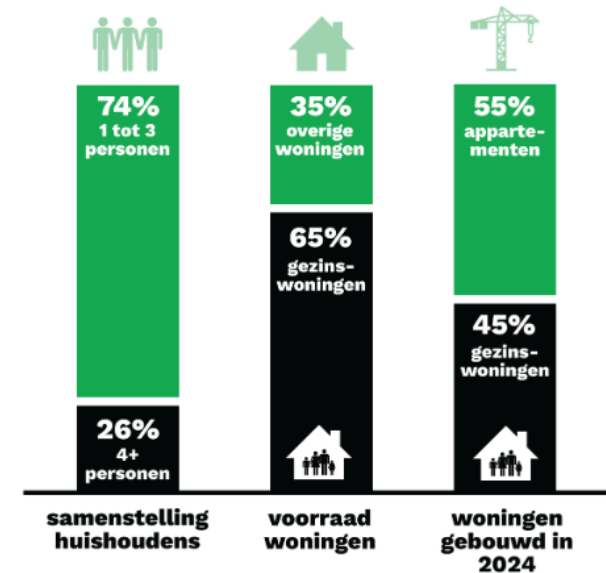
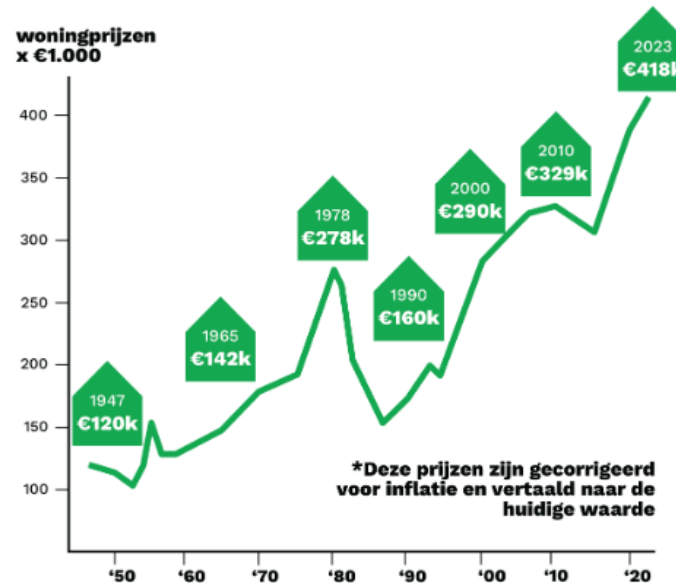
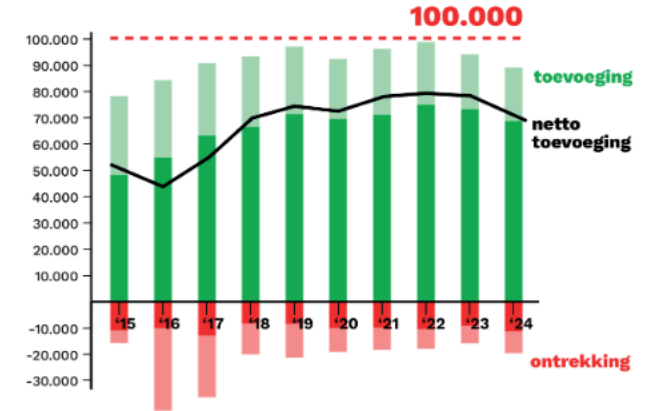
Diagram



Housing shortage



Jaar na jaar worden de beloofde aantallen niet gehaald en dat lijkt ook voor de komende jaren onmogelijk.



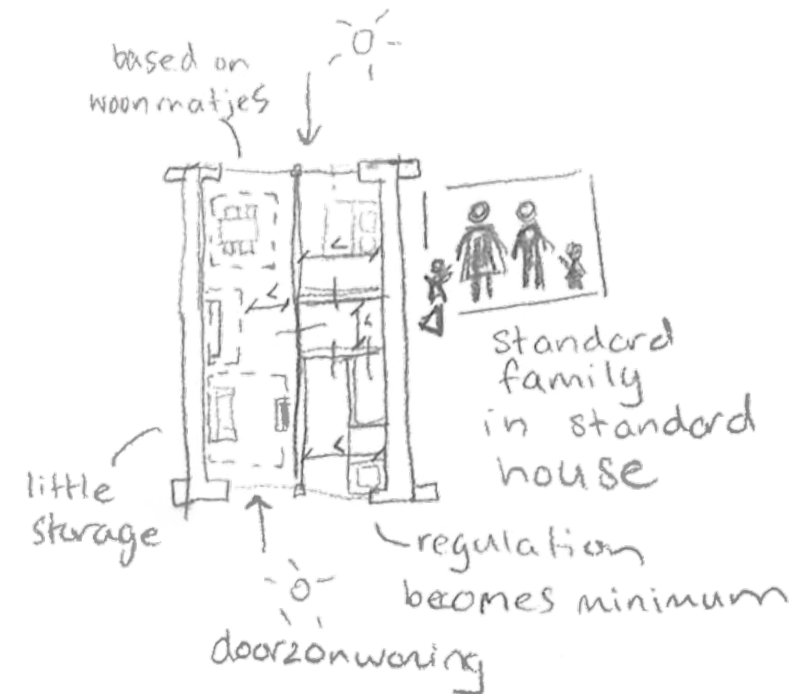
source: Platform Woonopgave

Standardisation paradox?

Architectural quality



Standardisation



Theoretical framework

No 'object'

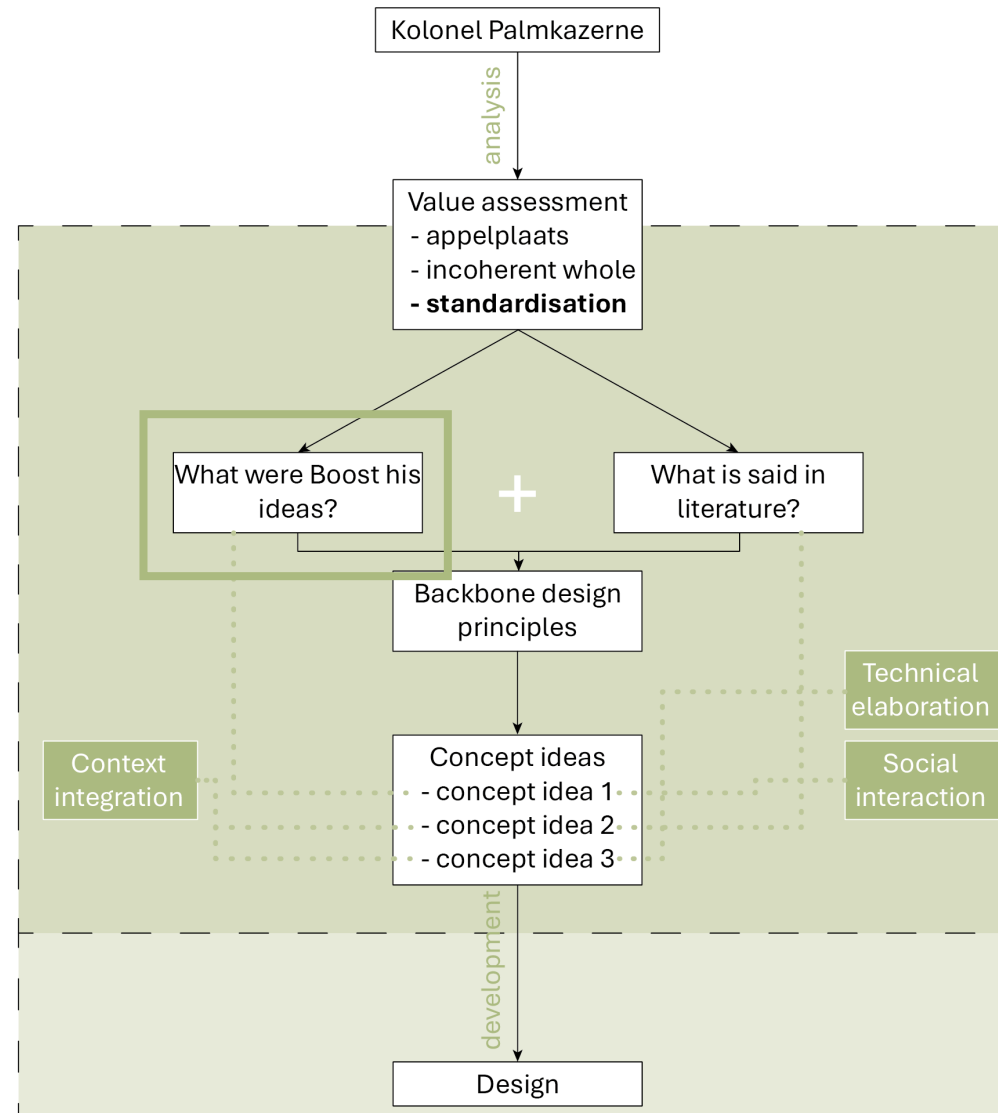
Architect John Habraken's book: *De dragers en de mensen* (1961)

Standardisation as framework

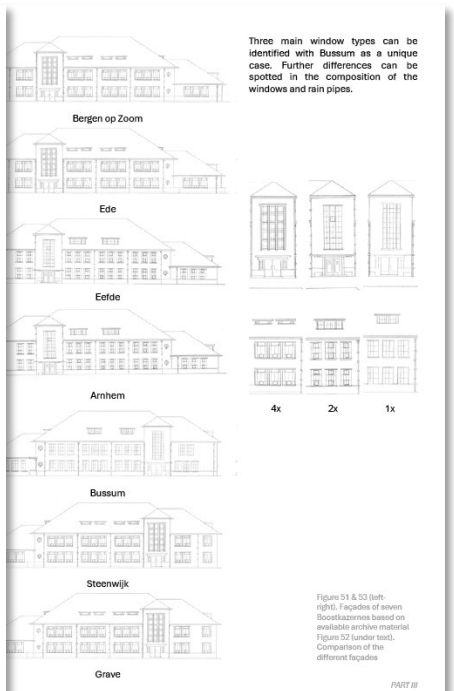
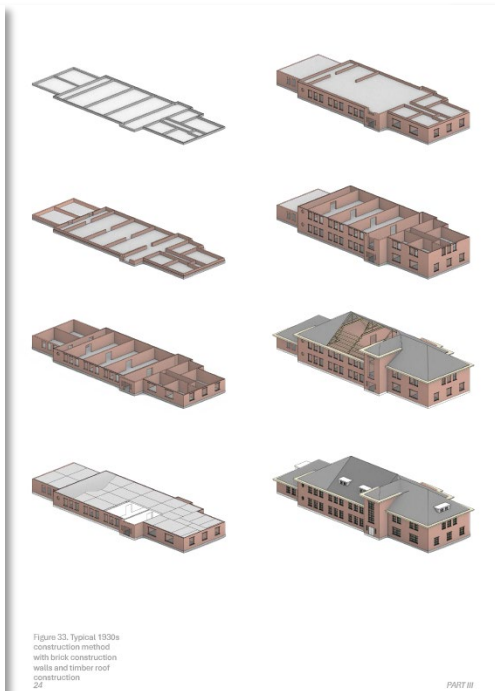
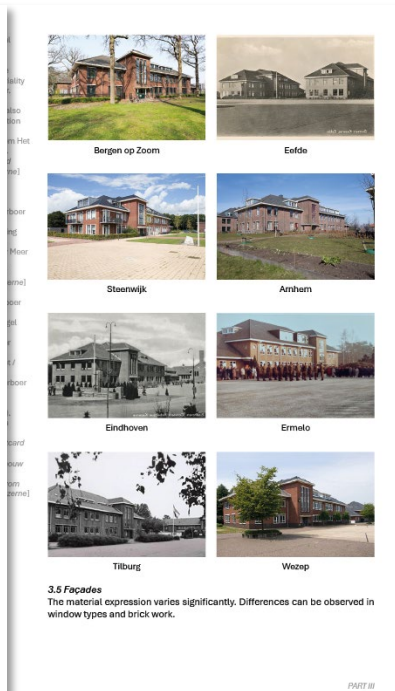
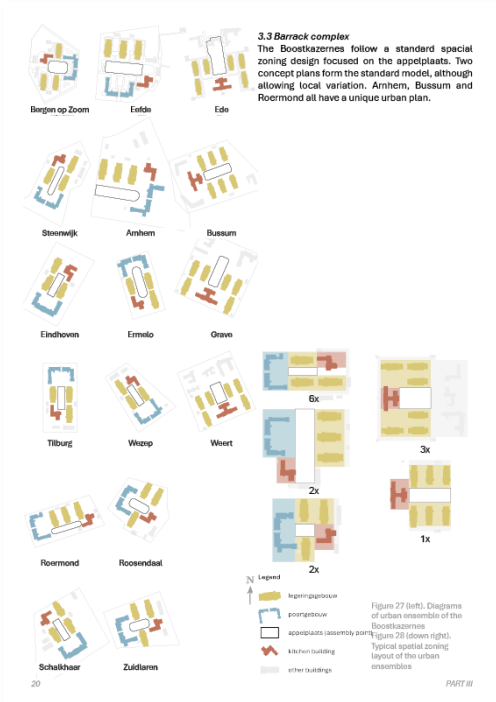
***“ruimte maken,
ruimte laten”***

Herman Hertzberger

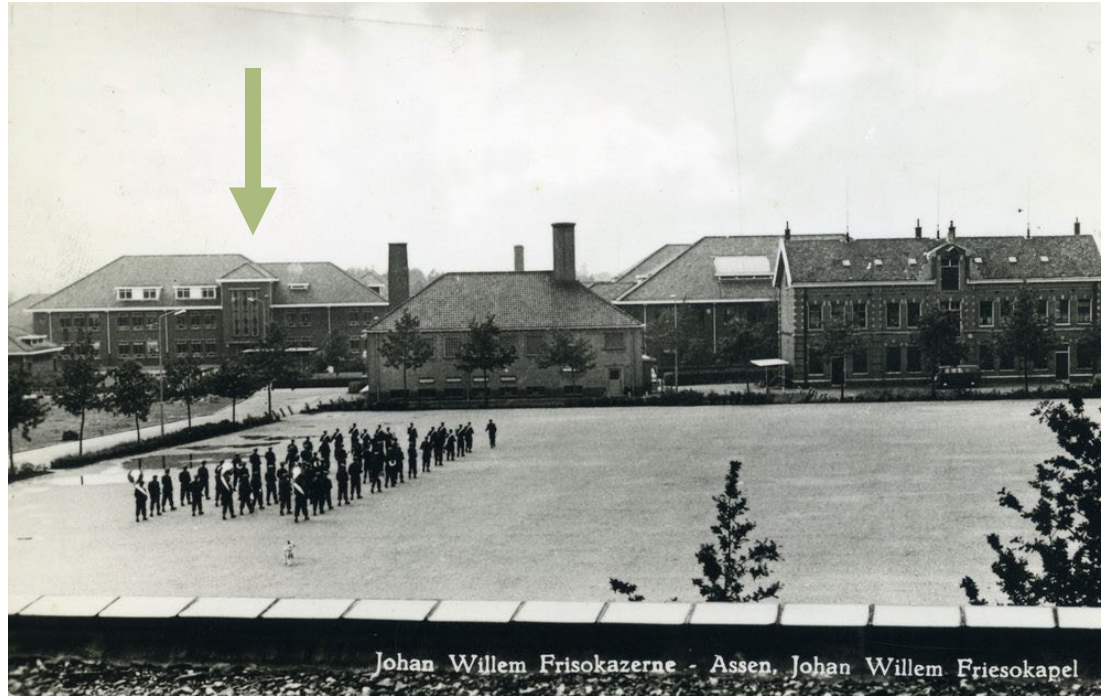
Diagram



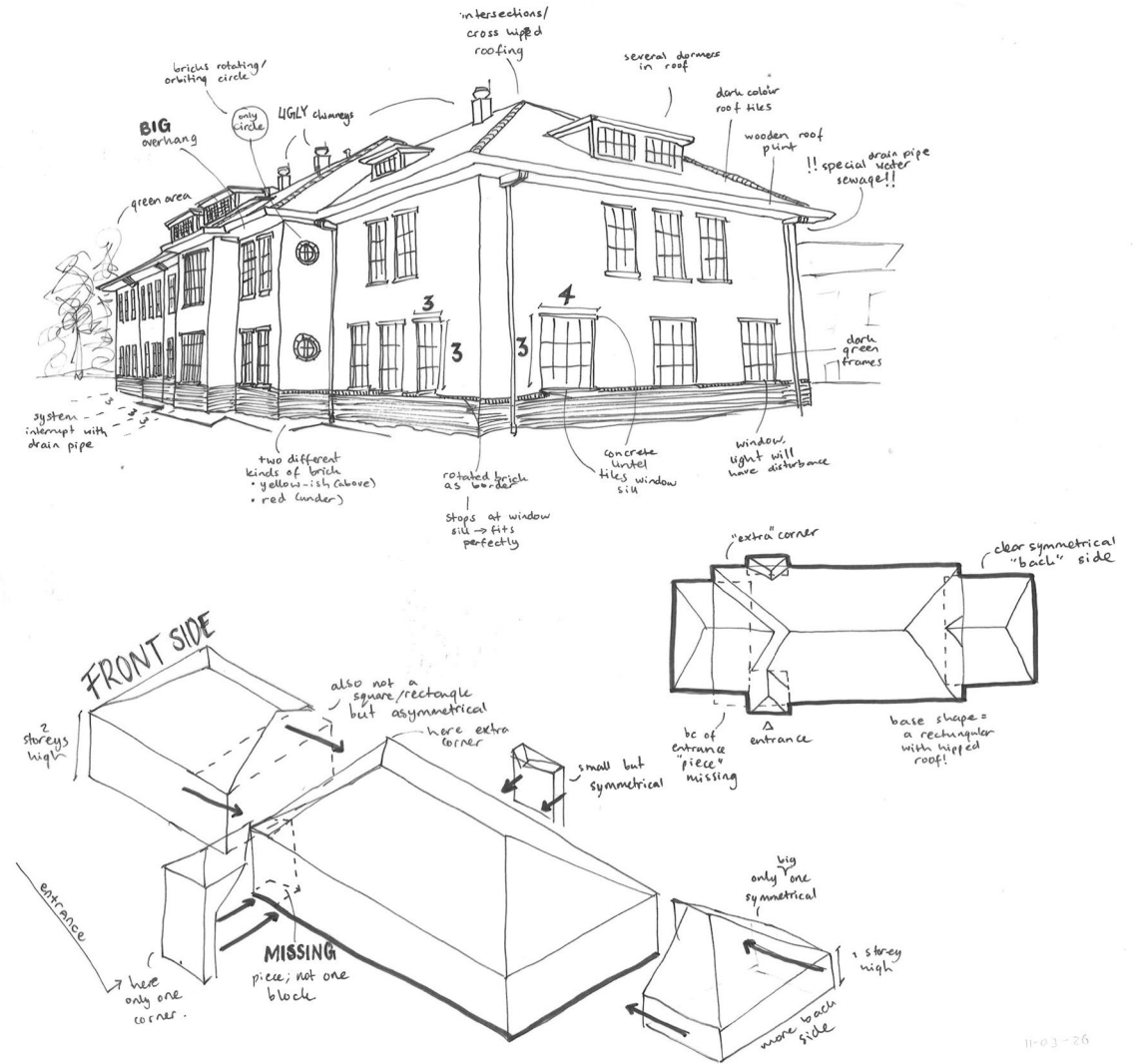
Case study comparison



Boost's blokkendoos



source: N.V. Fotodrukkind. "Emdeeha"



Connection with surroundings



source: SVP, 2025

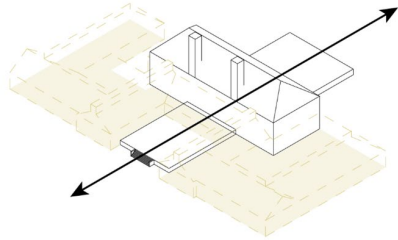


source: SVP, n.d. Crailo, buurstchap in de natuur

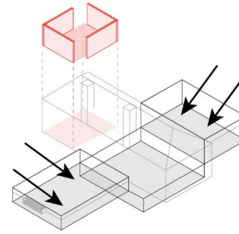
Conclusion:

- Connect with surrounded green
- More one person households and more elderly (individualisation)

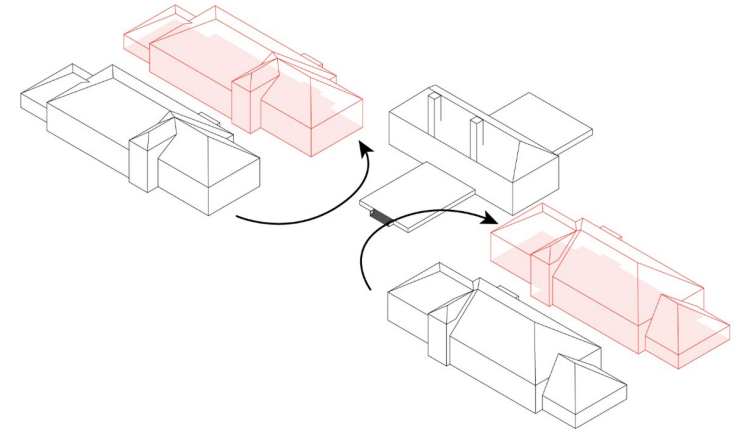
Concept schemes



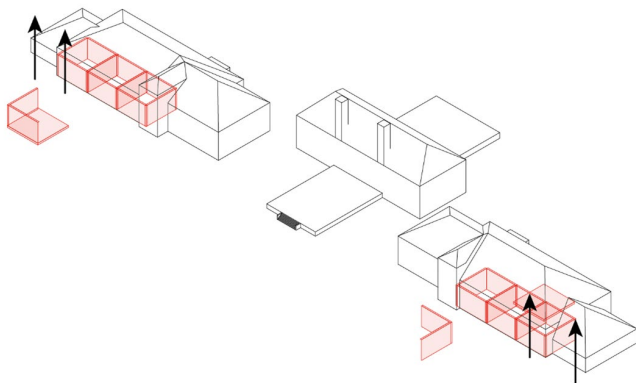
1. Demolish existing wings in poor condition



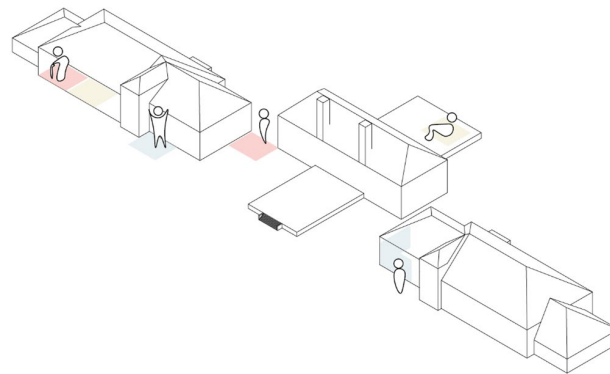
2. Activate basement



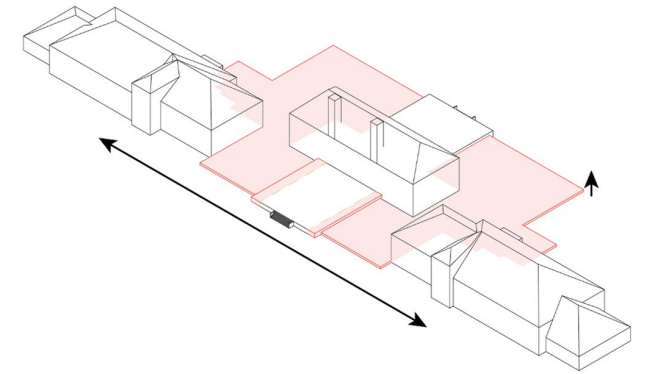
3. Add translation of legeringsgebouwen



4. Use contemporary sustainable construction method

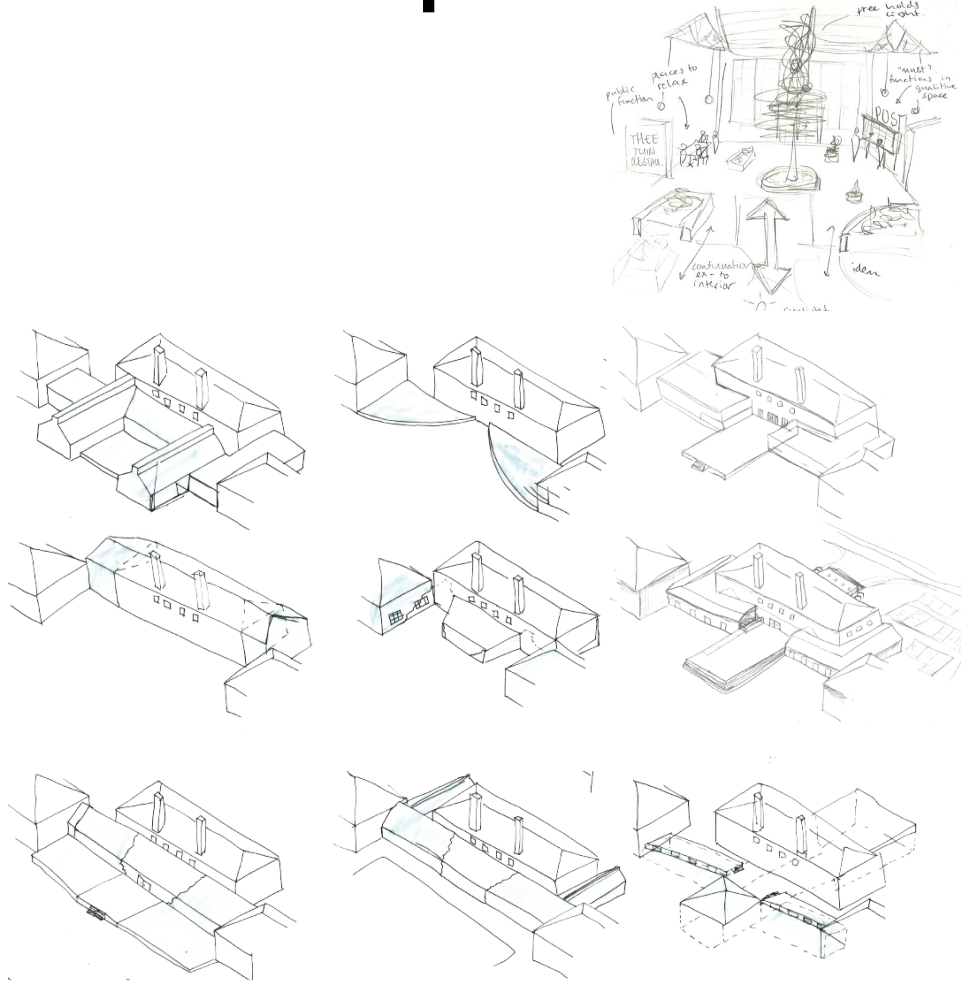


5. Leave space for interpretation user



6. Connect by elevated platform

From concept to architecture



connection old and new



activate basement

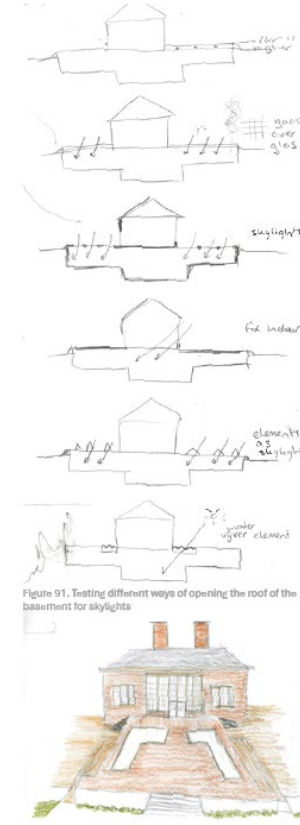


Figure 91. Testing different ways of opening the roof of the basement for skylights



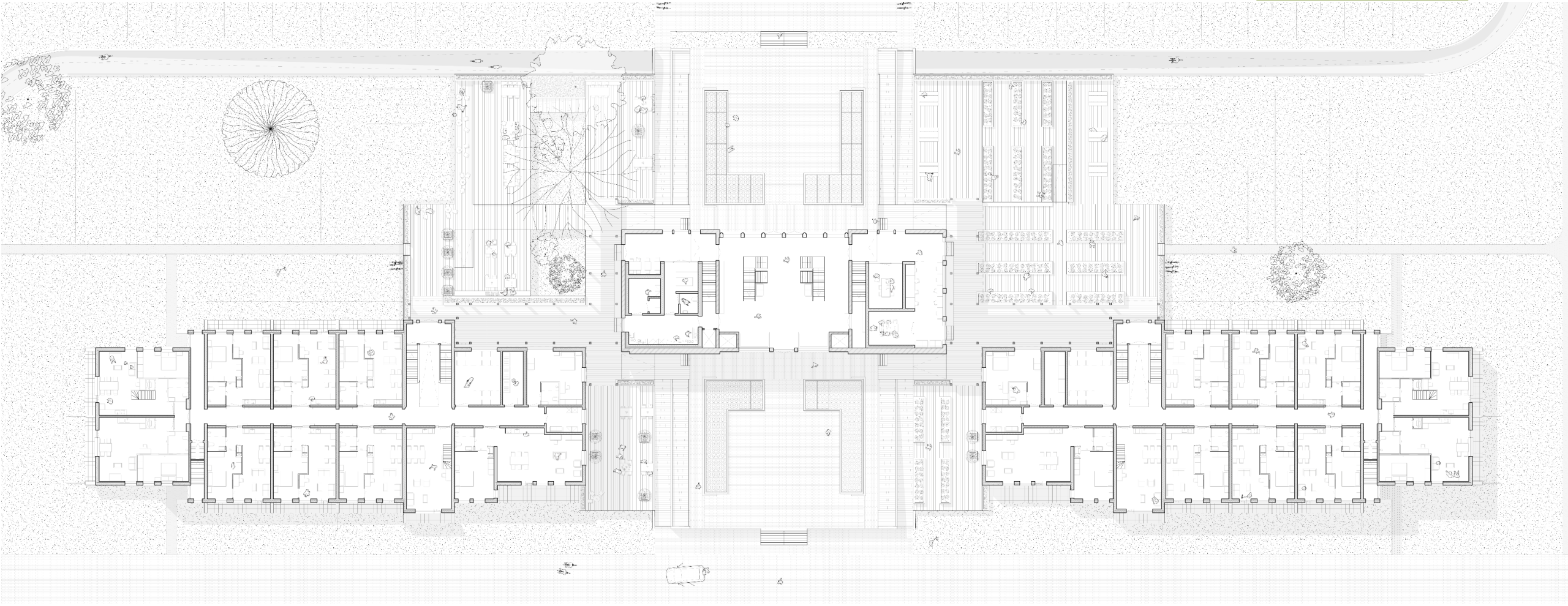
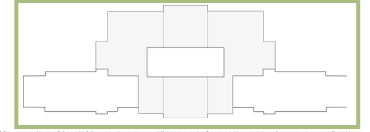
Figure 93. Paleis 't Loo by KAAO Architecten has a pond in front of the building with skylights (from Menges, 2023).




Research by design

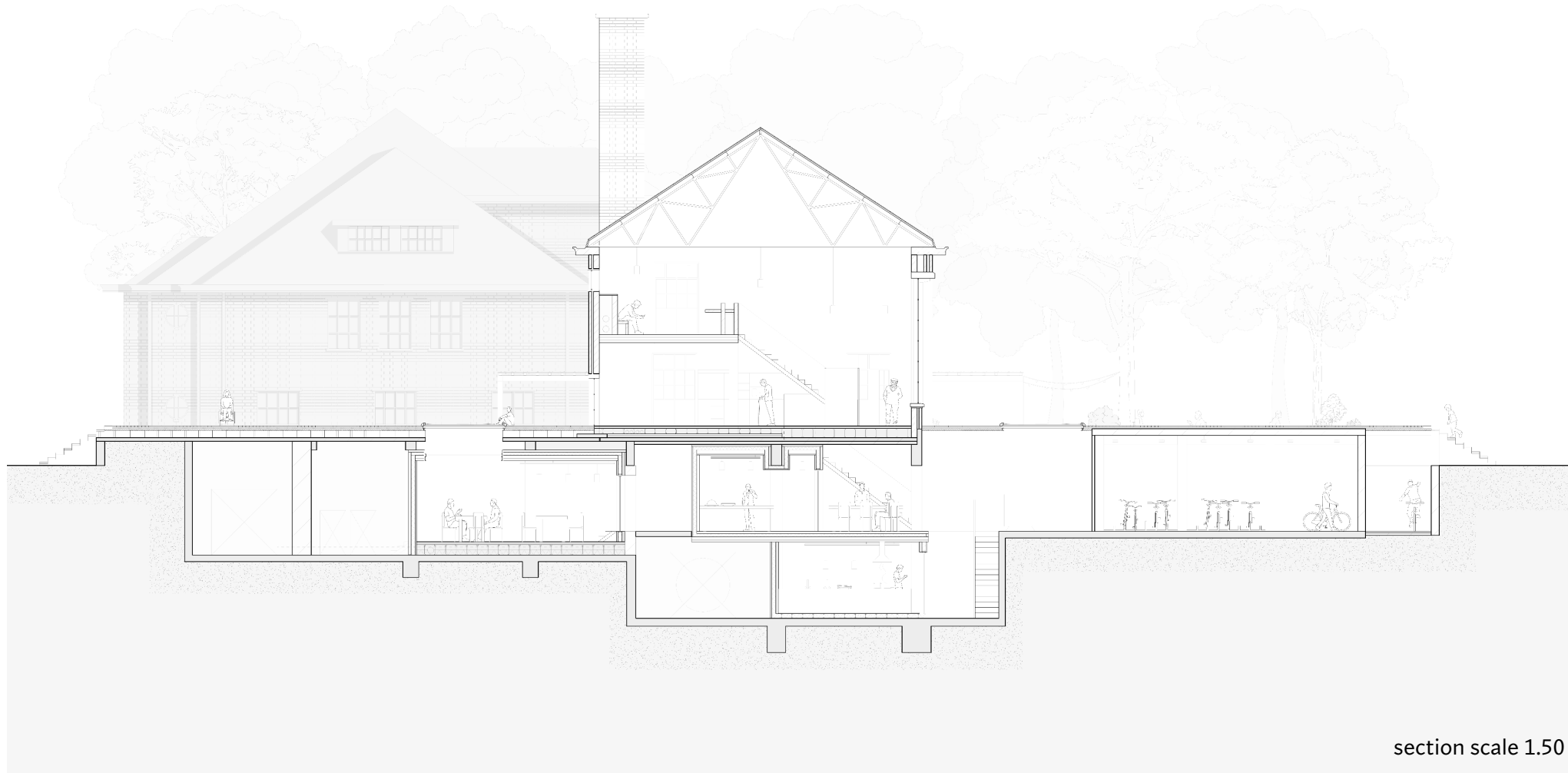
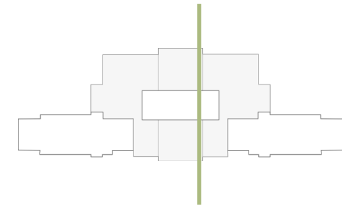


Ground floor plan

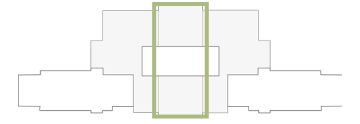
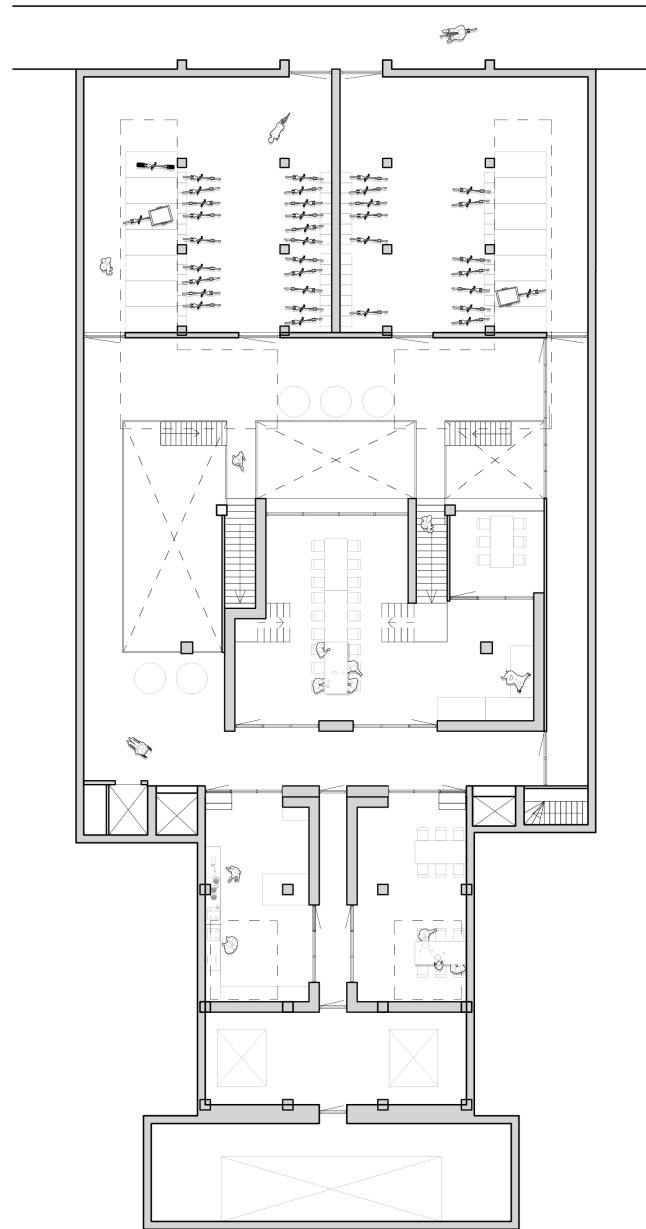



plan scale 1.200 

Short section

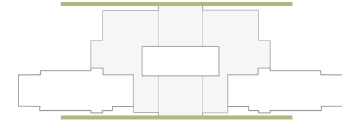


Basement

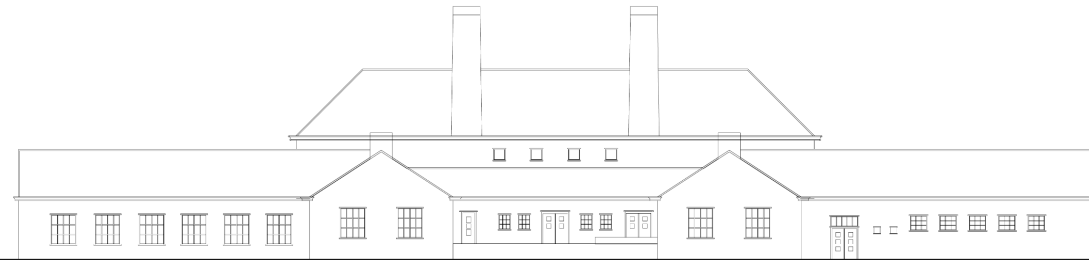


basement plan scale 1.100 

Former façade

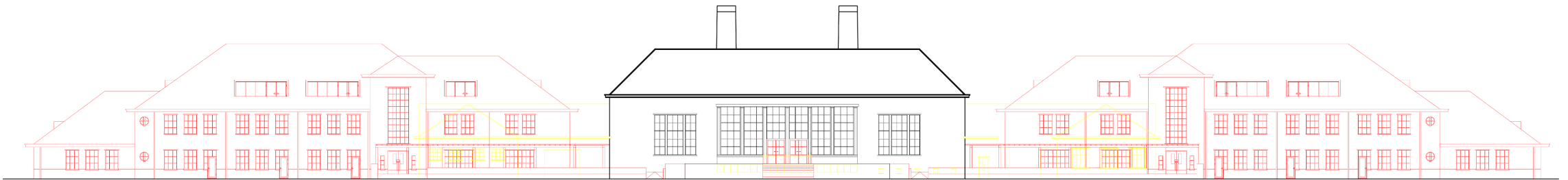
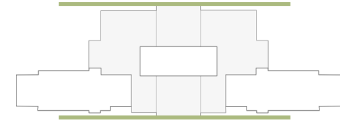


west façade scale 1.200

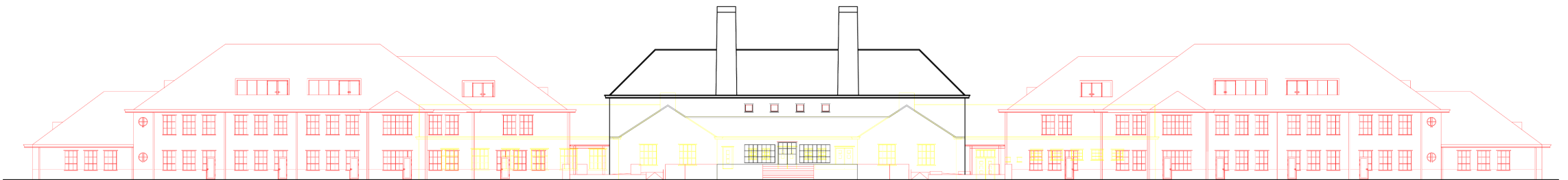


east façade scale 1.200

Additions to façade

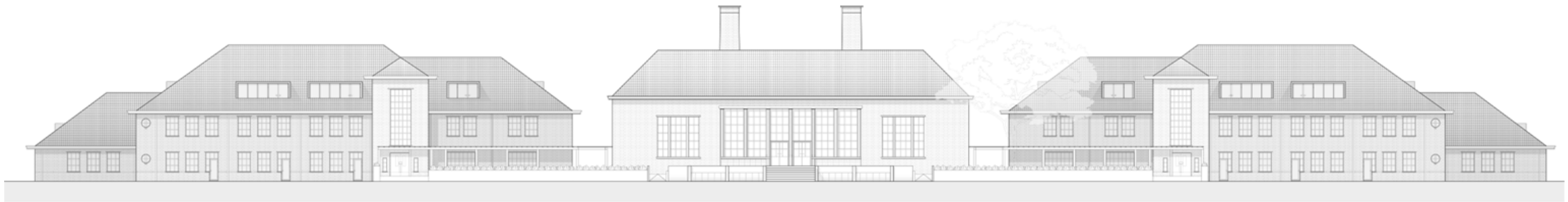
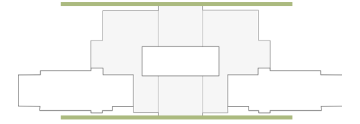


west façade scale 1.200

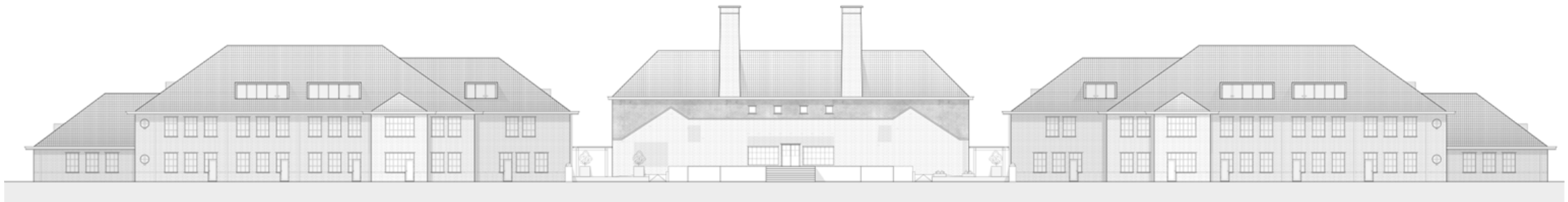


east façade scale 1.200

Façade 1.200

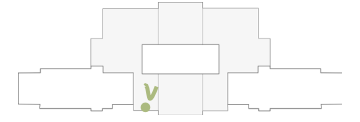


west façade scale 1.200

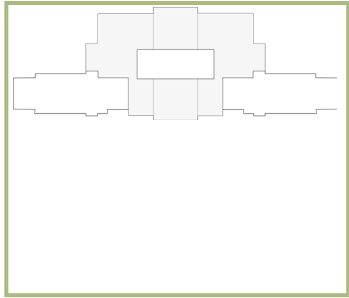
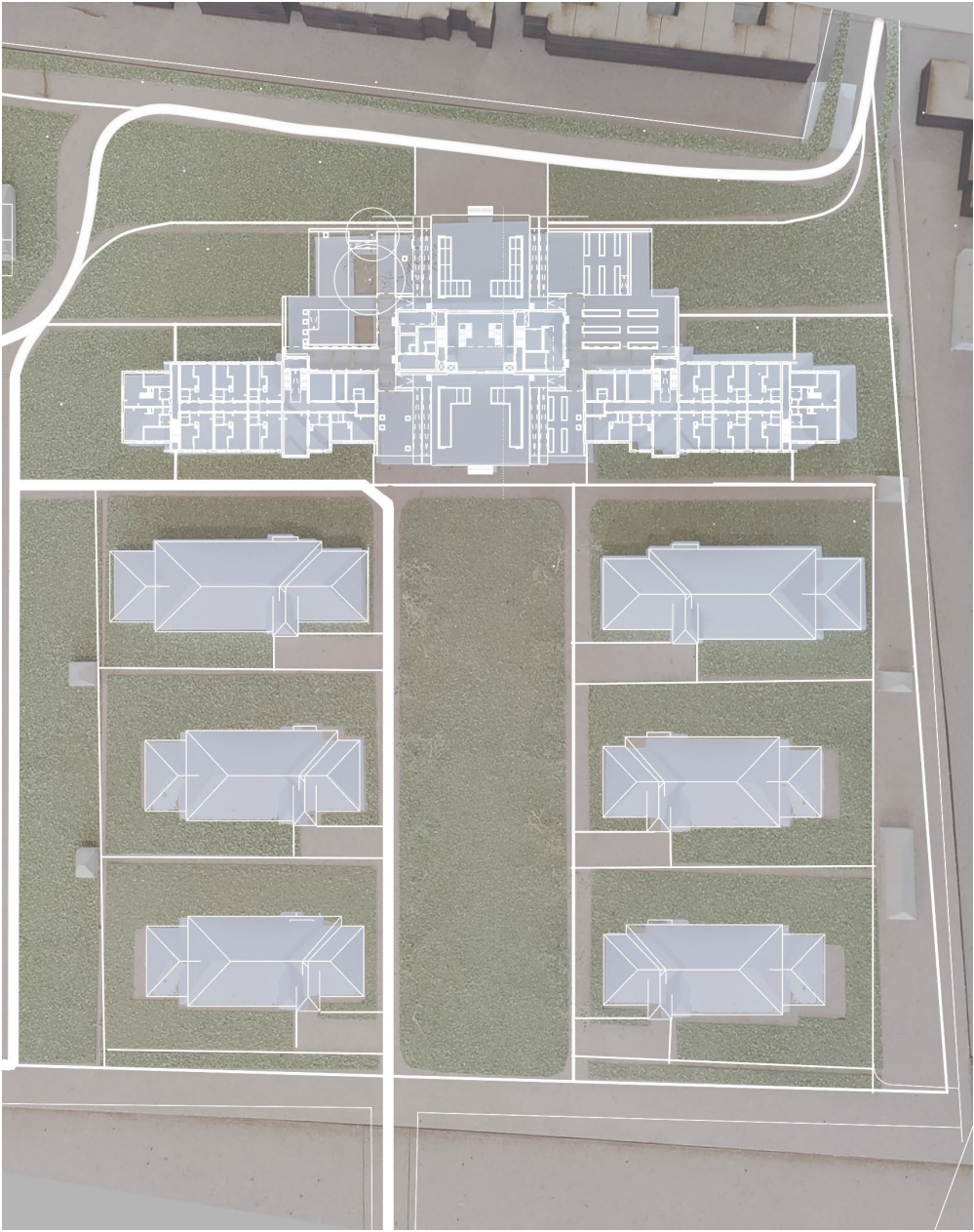



east façade scale 1.200

Palimpsest

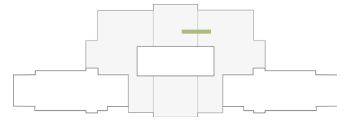
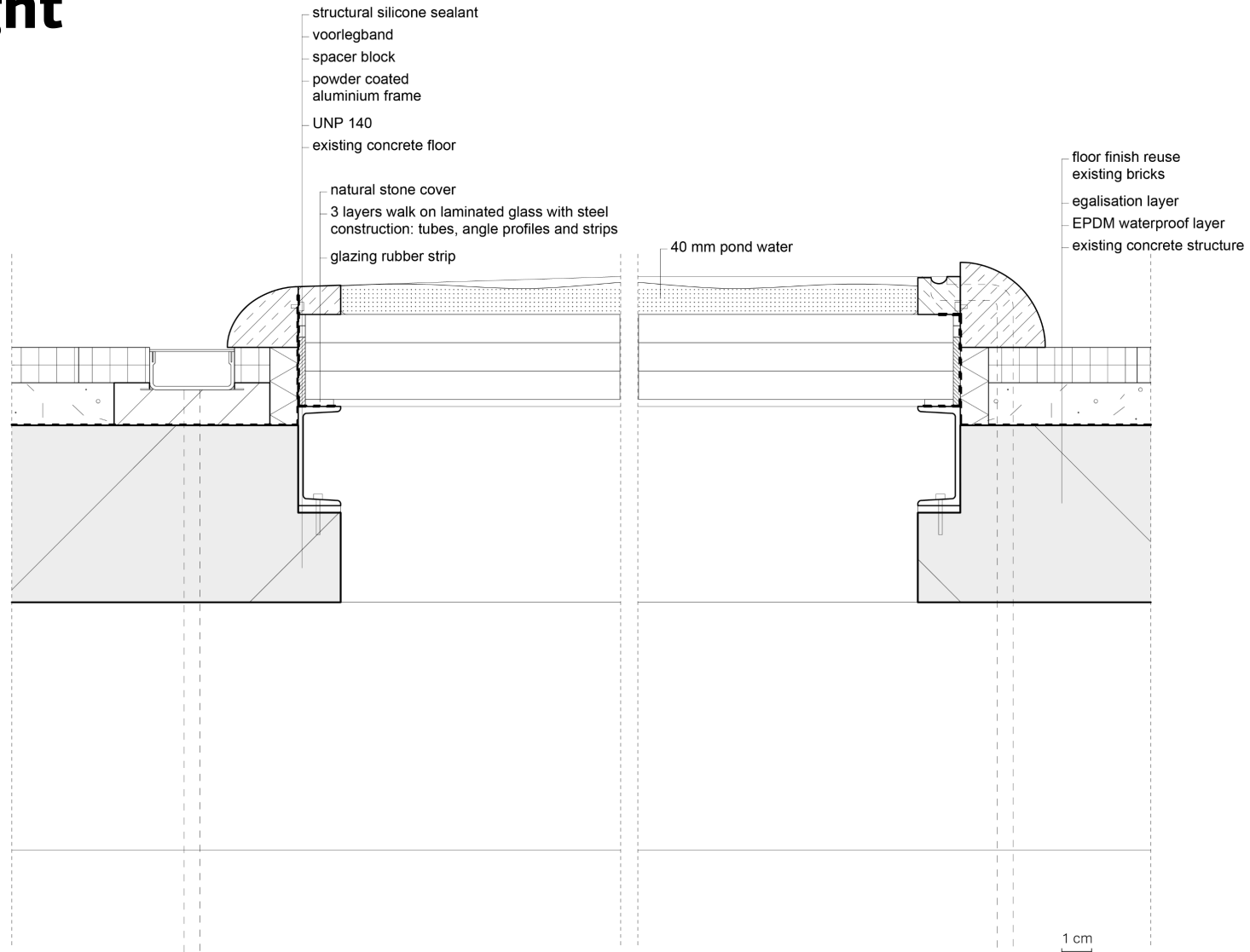


Symmetry

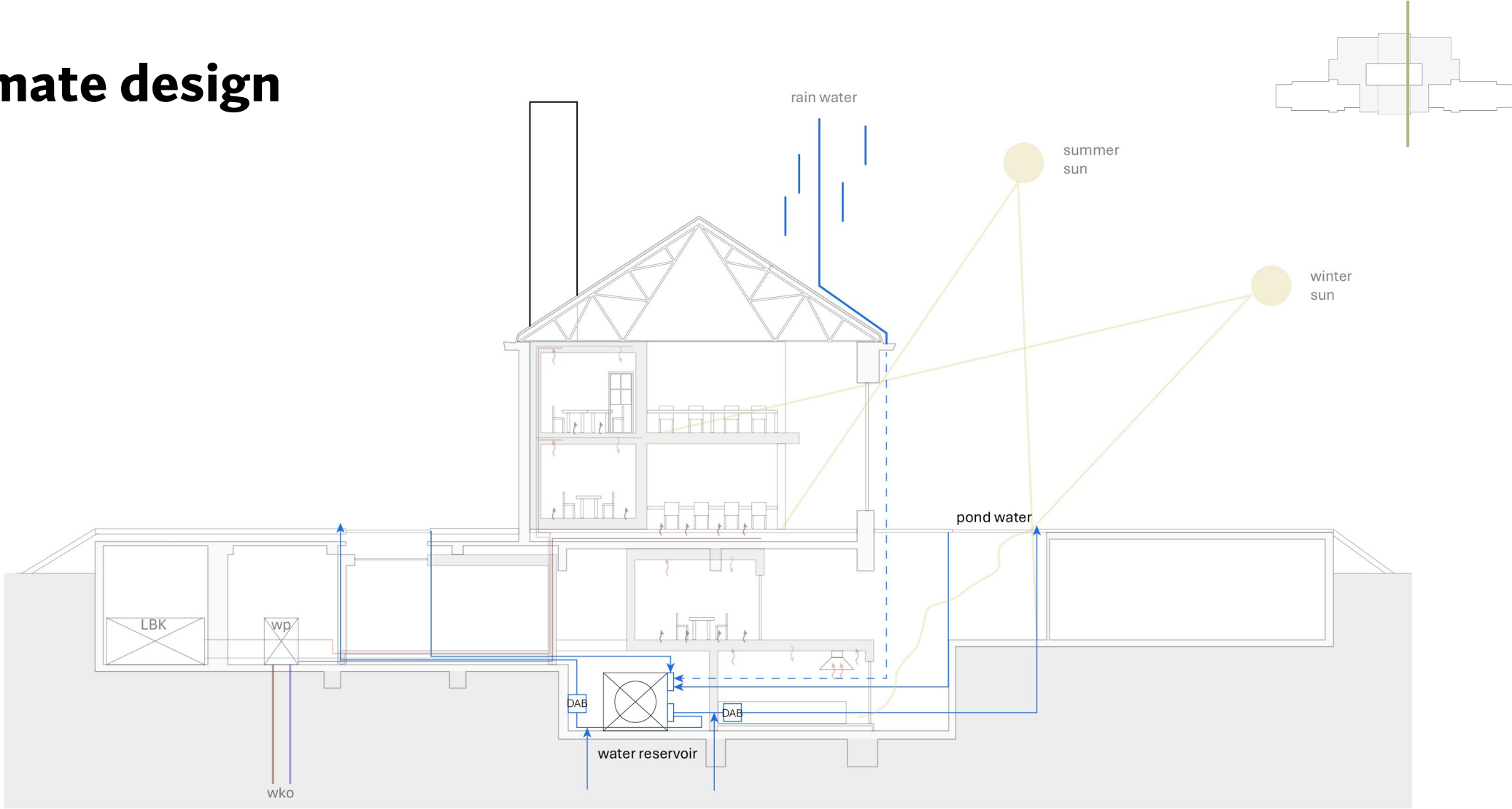


context scale 1.500 

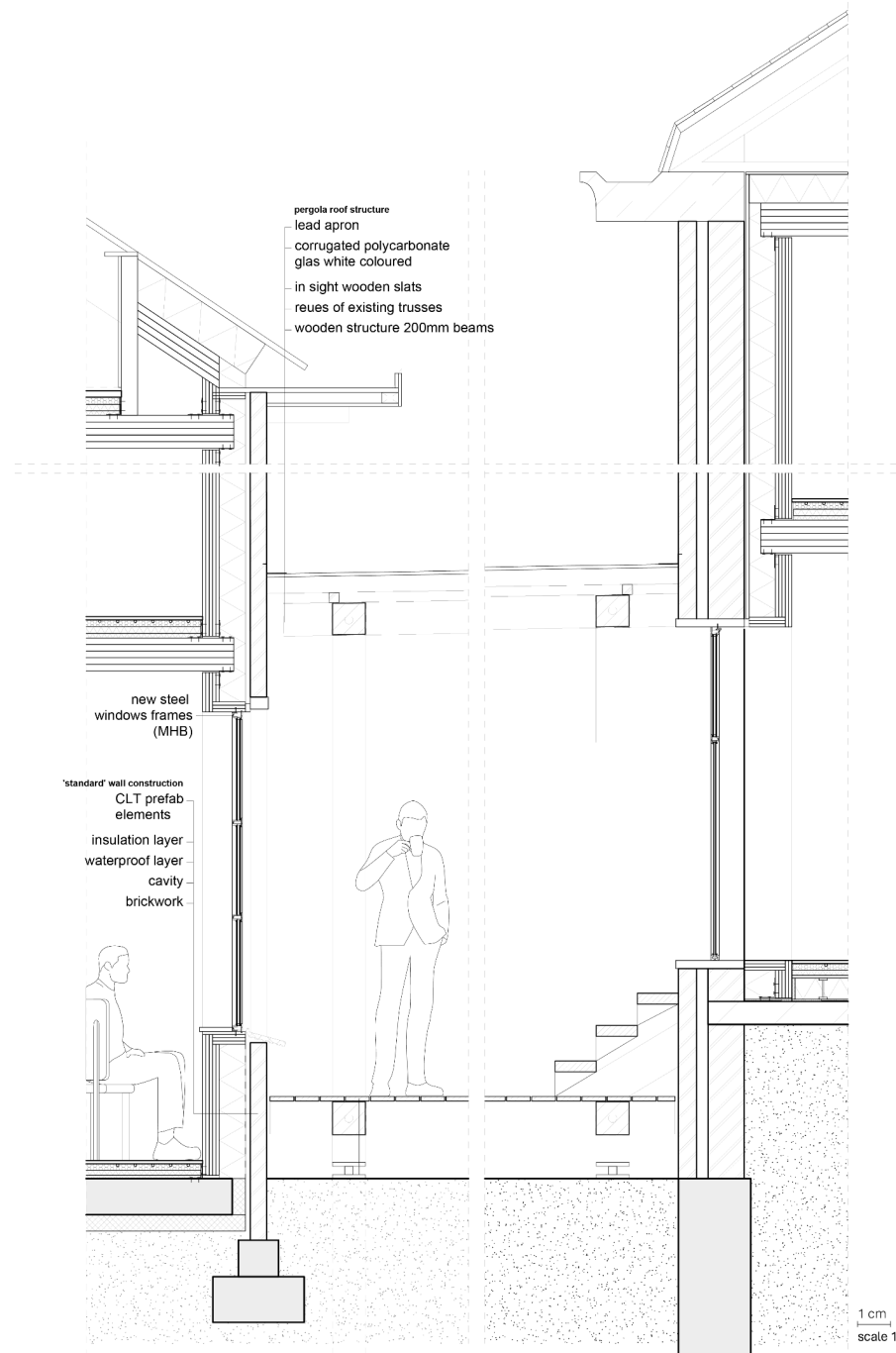
Pond skylight



Climate design

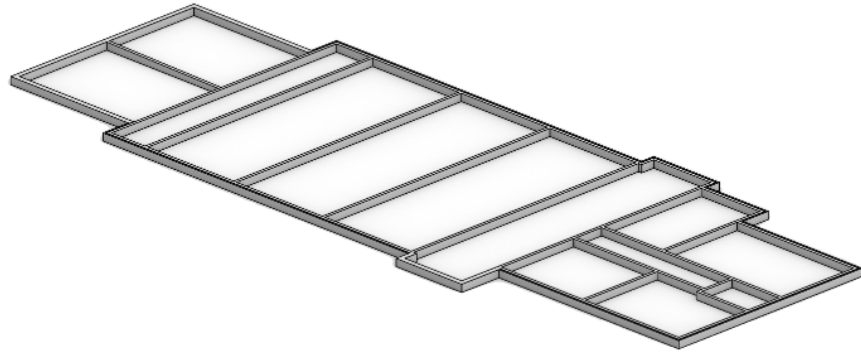


Platform new/old

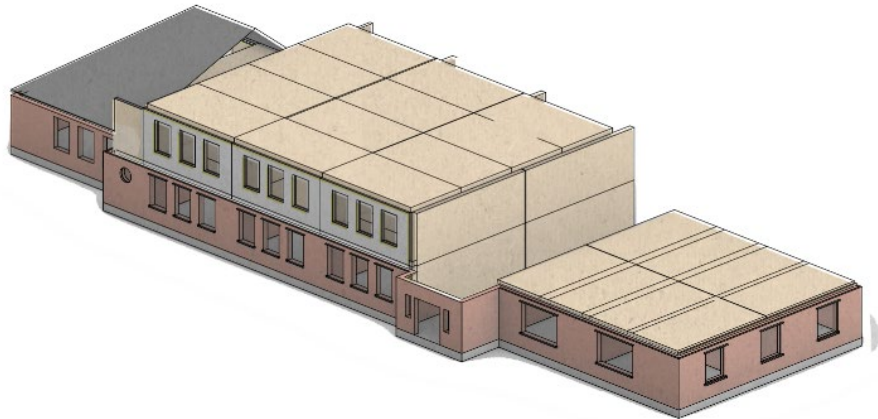


section scale 1.20

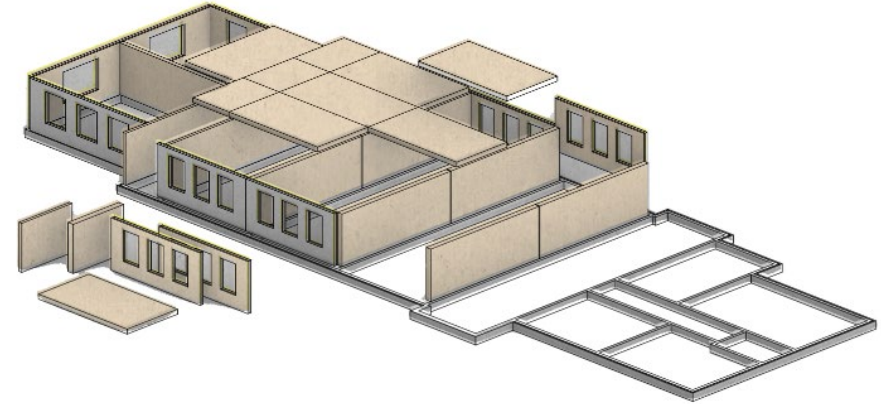
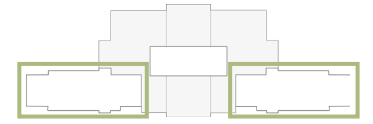
New structure



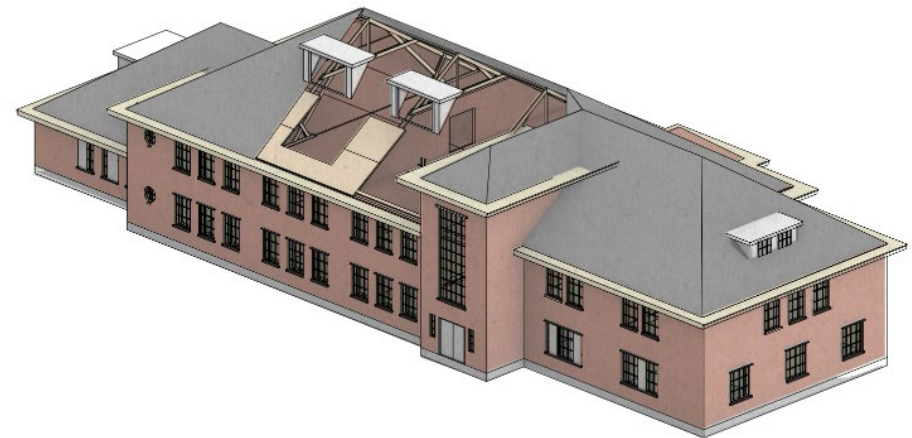
01 foundation



03 brickwork

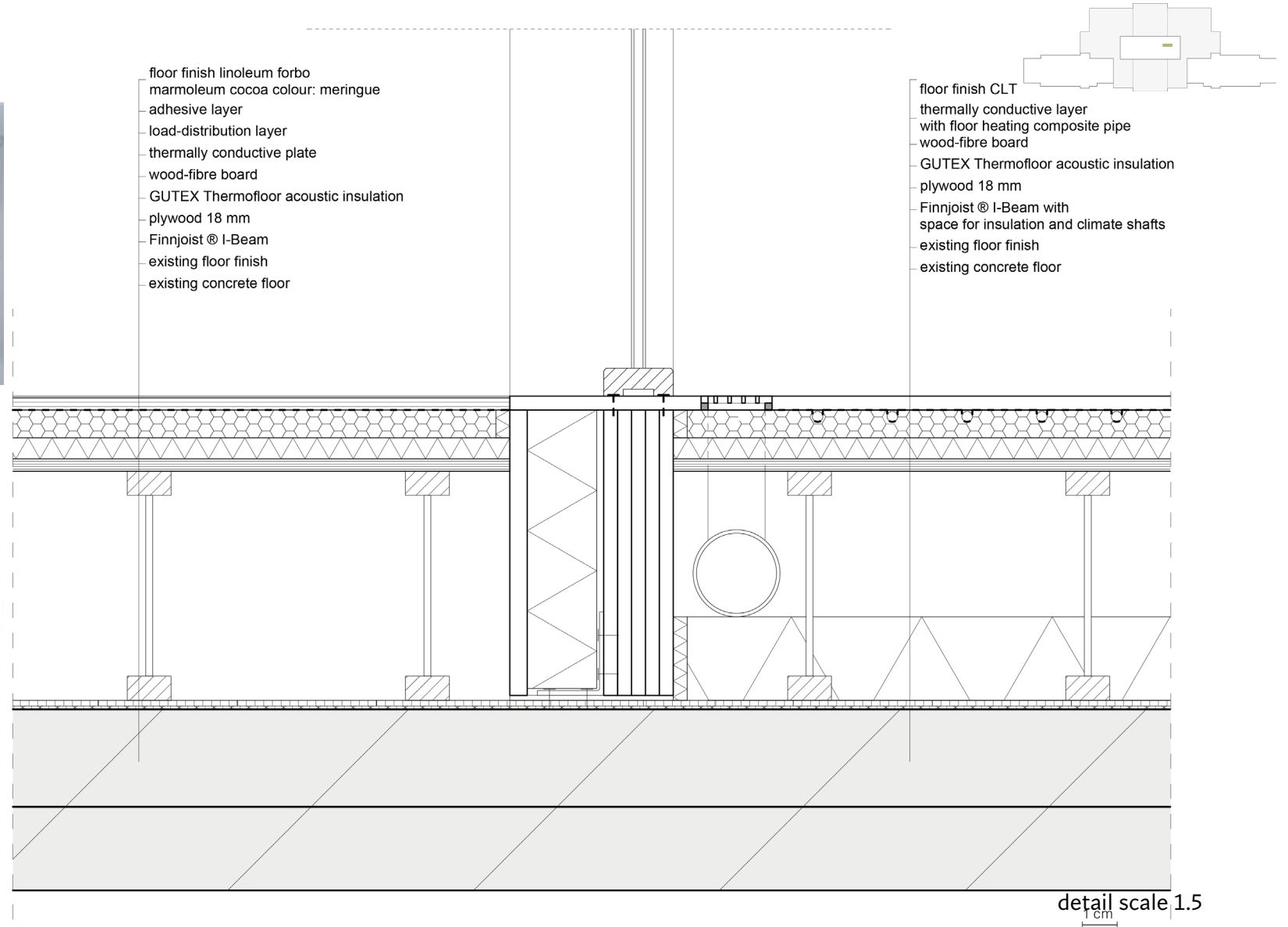


02 prefab CLT elements

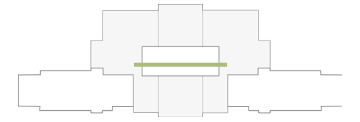
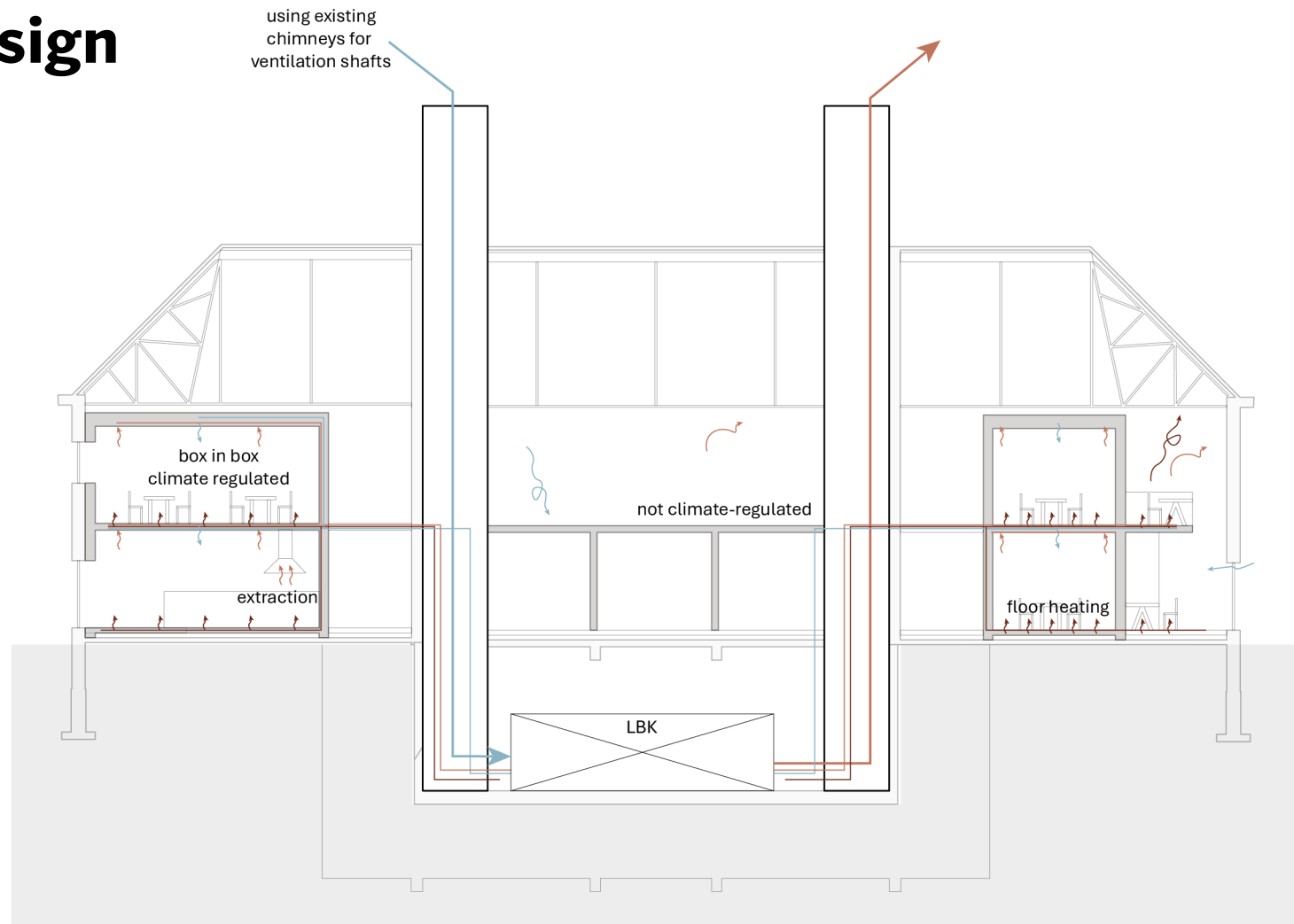


04 finishing roof, prefab dormers

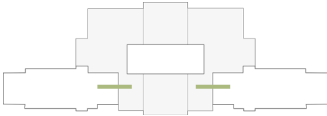
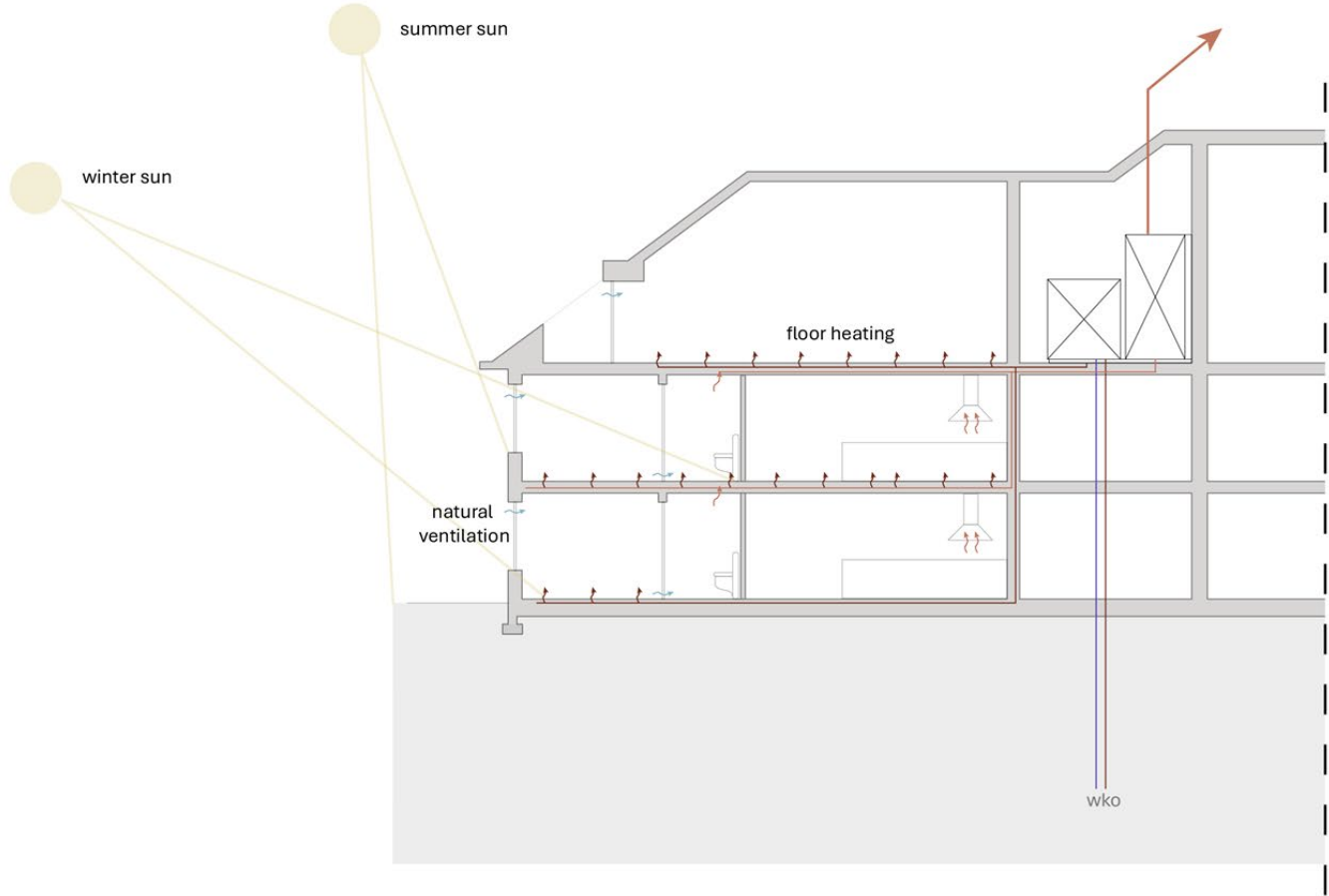
Box-in-box



Climate design



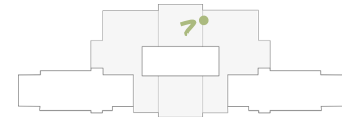
Climate design legeringsgebouw



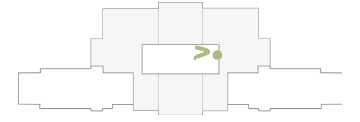
Elevated platform



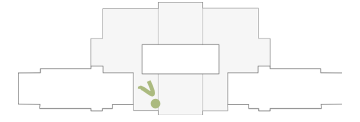
Bike storage



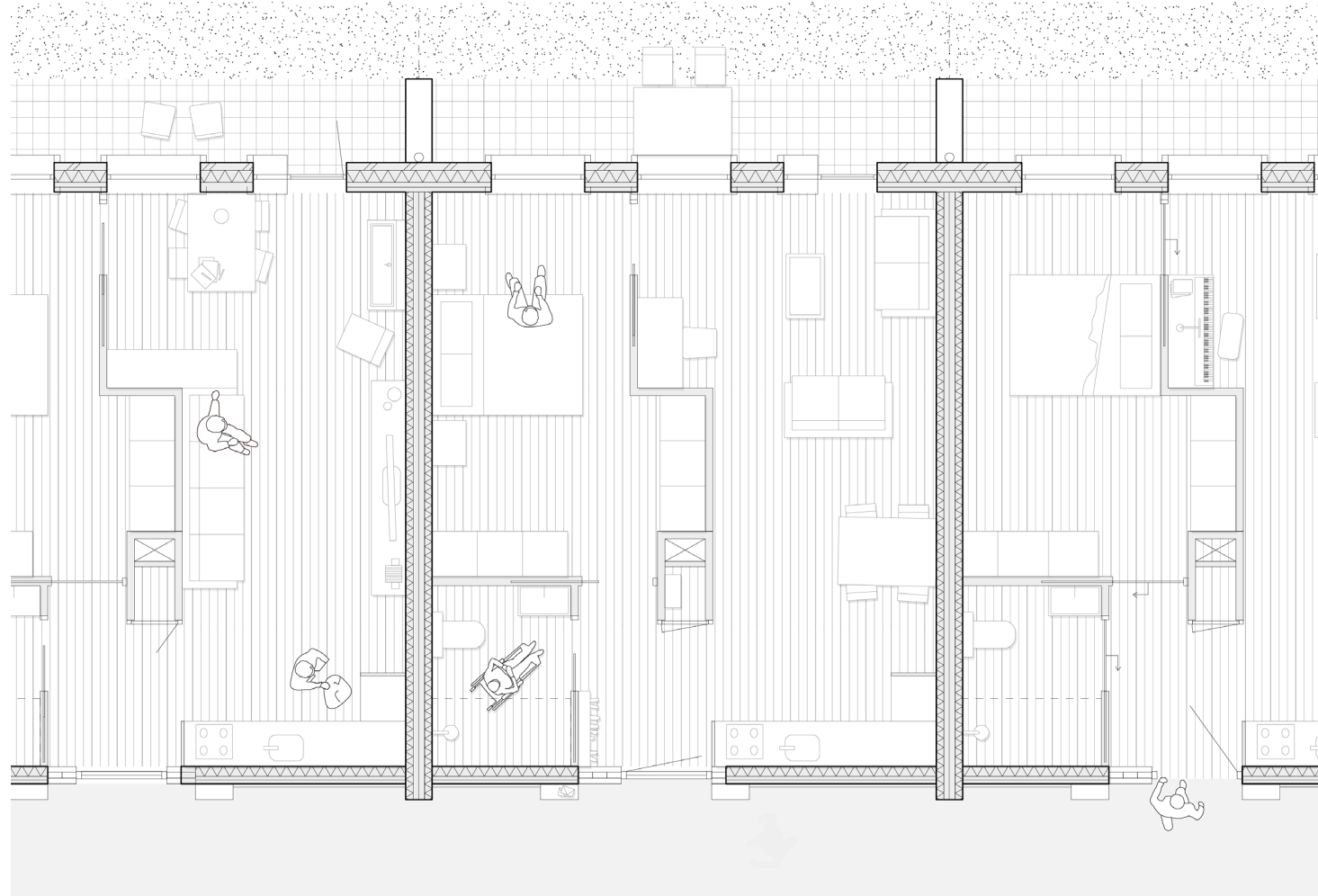
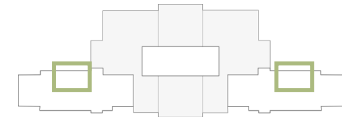
Working spaces




Pergola

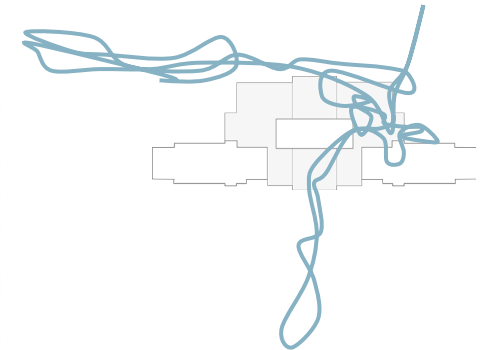
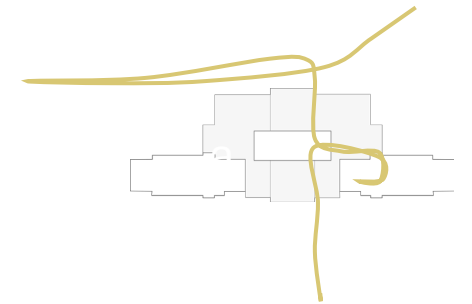
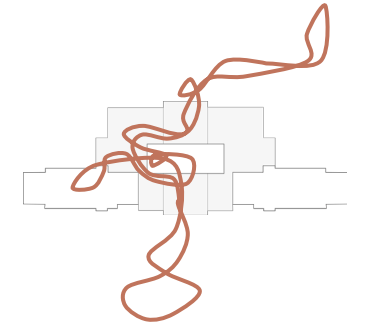


Variation of lifestyles



housing plan scale 1.50 

Conclusion

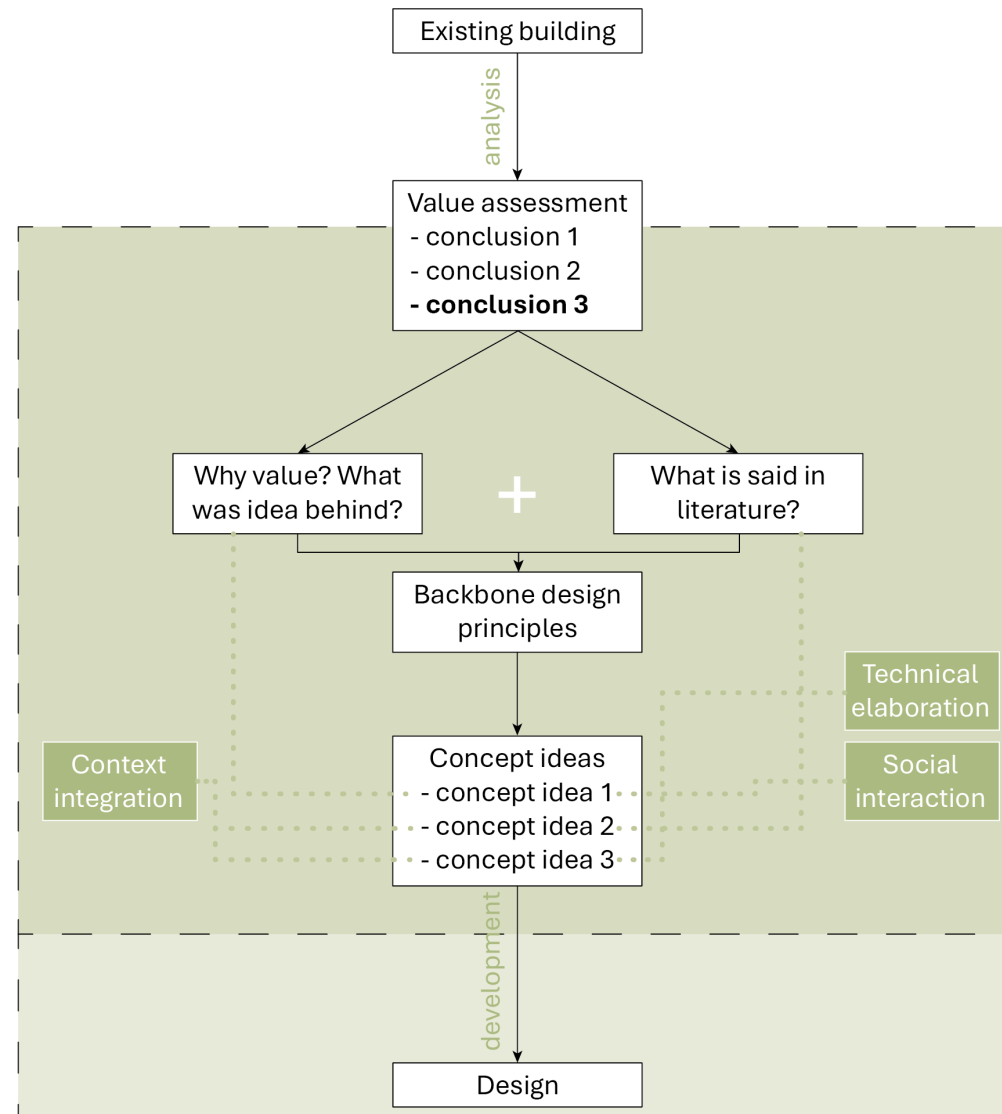




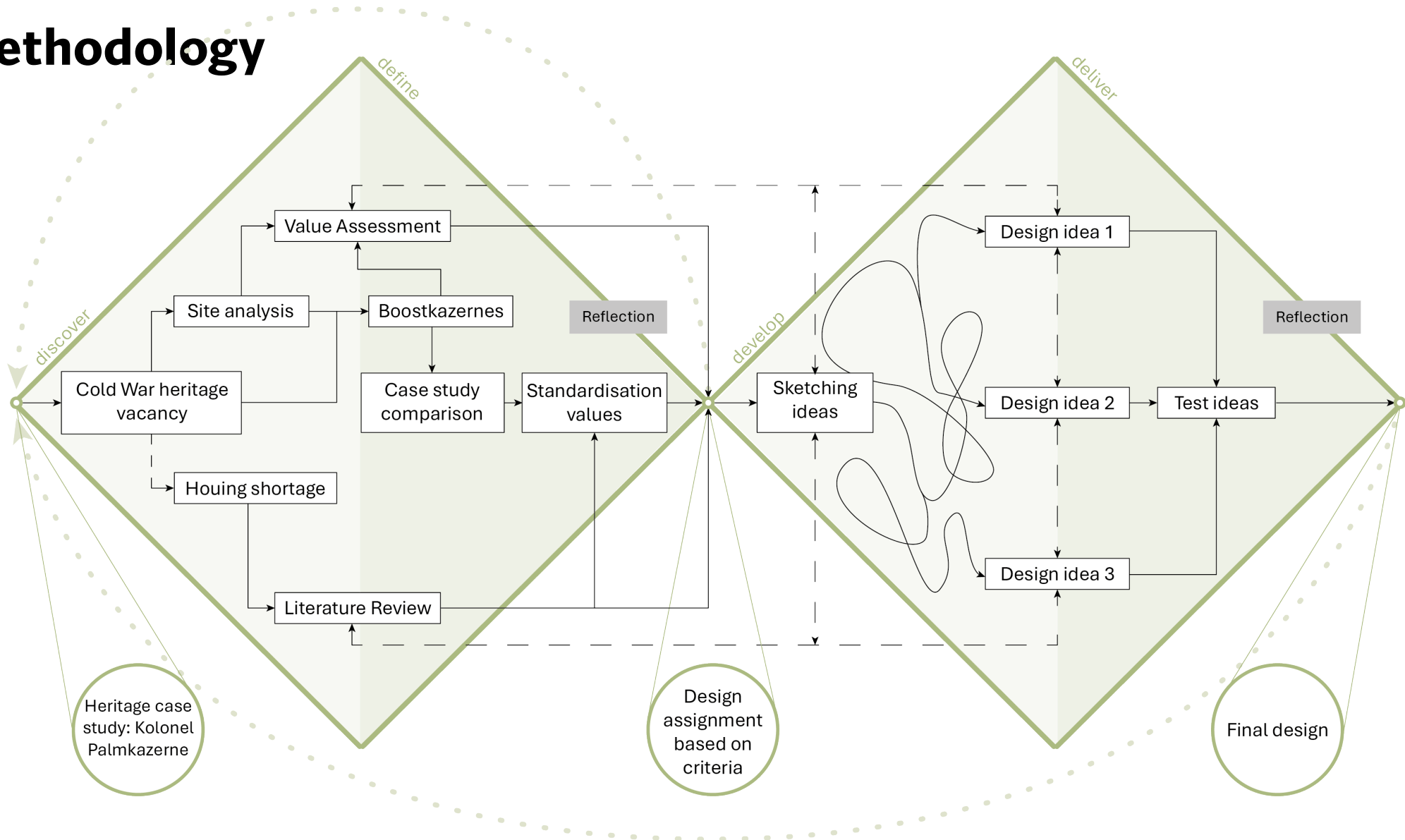
a boost for standardisation

an adaptive reuse of the kolonel palmkazerne into an ensemble for contemporary housing design

Methodology



Methodology



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