Suburban Renewal

A Future for Post 65 Aesthetic and Spatial Identity in Suburban Housing Renovation and Densification

June, 2022

Maaike Waaldijk

Suburban Renewal

A Future for Post 65 Aesthetic and Spatial Identity in Suburban Housing Renovation and Densification

Maaike Waaldijk
4371488

Heritage & Architecture
AR3AH115 Graduation Studio Revitalising Heritage
'New Heritage'
2021-2022

Tutors
Nicholas Clarke
Wido Quist
Lidwine Spoormans

Master of Science Architecture, Urbanism and Building Sciences
Track: Architecture

Delft University of Technology
Faculty of Architecture and the Built Environment

De openheid die zich aan het eind van de jaren zestig manifesteerde betekende voor velen een bevrijding van het dogmatische modernisme, maar leverde uiteindelijk niet één krachtig (ideologisch) alternatief op, terwijl ze wél tot een herkenbare, gevarieerde maar toch eenvormige architectuur leidde. Dat is voor de architectuur en de stedenbouw in de jaren zeventig niet positief geweest – en evenmin voor de perceptie ervan. Het blijven daardoor de:

'jaren van de kinderziektes'

- Dirk Frieling

'lullige jaren'

- Arne van Herk

'tijd van verwarring'

- Adri Duijvestein

(De Vletter, 2004, p. 30)

'De bloemkoolwijk werd in het architectuurdebat – zeker niet door de bewoners – neergezet als uiting van 'Nieuwe Truttigheid' en gezien als de zoveelste mislukking in de naoorlogse stedenbouw.'

(Abrahamse, 2019, p. 5)

'In de 'Smaaktest' blijk dat de jaren 70 en 80 – waar het detail eraf gaat – dat het heel slecht gewaardeerd wordt.'

(Van der Ploeg, 2008)

'Mooi van lelijkheid. Zo populair de jaren '30 bouwstijl is, zo verguisd zijn de bouwwerken uit de jaren 80.'

(De Jong, 2018)

'De tijd zal uitwijzen of we bijna vijftig jaar later de unieke maar lelijke jaren zeventig eindelijk kunnen omarmen.'

(Biggelaar, 2018, p. 158)

‘The openness that manifested itself at the end of the 1960s meant for many a liberation from dogmatic modernism, but ultimately did not provide a single powerful (ideological) alternative, while it did lead to a recognisable, varied but uniform architecture. This was not positive for architecture and urban planning in the 1970s – nor for their perception. As a result, they remain the:’

‘years of teething problems’

- Dirk Frieling

‘dull years’

- Arne van Herk

‘time of confusion.’

- Adri Duijvestein

(De Vletter, 2004, p. 30)

‘In the architectural debate, the ‘bloemkoolwijk’, was presented – not by residents – as an expression of the ‘Nieuwe Truttigheid’ and seen as the next big failure in post-war urban planning.’

(Abrahamse, 2019, p. 5)

‘The 1970s lacks detail.’

(Van der Ploeg, 2008)

‘Beautiful in ugliness. As popular as the 1930s architectural style is, the buildings from the 1980s are

reviled.’

(De Jong, 2018)

‘Time will tell whether, almost fifty years later, we can finally embrace the unique but ugly 1970s.’

(Biggelaar, 2018, p. 158)

Content

Fig. 1. Goedewerf is a residential neigbourhood, consisting of 156 dwellings in woonerf configuration located in Almere Haven. Almere Haven was the first nuclear of the poly-nuclear new town Almere. Goedewerf has 2,3,4 and 5 room apartments and single family homes. Goedewerf was designed by Inbo between 1976-1978. For a large part it is owned by housing corporation Ymere, the rest is privately owned. This is called neighbourhoods with ‘gespikkeld bezit’ [mixed ownership] which is typical for this type of neighbourhoods (‘bloemkoolwijken’).

1 Introduction

1.1 Revitalizing ‘New Heritage’

This graduation studio is aimed at revitalising heritage. ‘How to bring new life to abandoned or dilapidated buildings or areas? What combination of architectural interventions and functional program leads to preservation by revitalisation? What is the capacity for change?’ (Studiegids TU Delft, 2021). More precisely the studio focusses on so called ‘New Heritage’:

> ‘Buildings and areas that are relatively young and usually not regarded as heritage. However, the assumption of the studio is that these areas can be seen as our future heritage. We think that exploration of their characteristics, assessment of values and problems–in combination with the education of academics, professionals and users–is necessary to prevent a disregard of the qualities and values of this housing stock’
> (Clarke & Spoormans, 2021, p. 3).

The possible case studies were the expansion area Amsterdam Zuid-Oost –with focus on the Bijlmerplein neighbourhood (1986) – and new town Almere Haven – here focussing in on the Goedewerf cluster (1978). Buildings and complexes from the period 1965-1990 now require renovation, adaptation and preservation. It is therefore important that the significance of this (future) Post 65 heritage is recognised and that we treat it with care (Rijksdienst voor het Cultureel Erfgoed, 2022). We, as students, were asked to explore the potential of existing urban structures and buildings for creating more homes or making those that already exist more suitable to contemporary and future needs. The studio’s aim is to discover the qualities of what could possibly be new heritage and to use these qualities in a sustainable redesign (Clarke & Spoormans, 2021, p. 2).

Fig. 2 Stedenwijk Noord, Almere, from *Bouw*, 1982, p. 61.

Fig. 3 Renovation Stedenwijk Noord, 2012 (19HetAtelier, 2012)

Fig. 4 Villa Voorschoten, before renovation (Jade Architecten, 2017)

Fig. 5 Villa Voorschoten, after renovation (Jade Architecten, 2017)

Fig. 6 Villa, Bilthoven, before renovation (Jeroen Dingemans, 2008)

Fig. 7 Villa, Bilthoven, after renovation (Jeroen Dingemans, 2008)

1.2 Unvalued Post 65 aesthetic

In 2007, FARO architects put a so called Smaaktest up on the internet. From the results we could learn that post-war high-rise and housing from the seventies and eighties were the most unfavoured aesthetically of all the categories. Jurgen van der Ploeg (FARO) stated in NRC about his survey (Hulsman, 2007):

> 'Over de naoorlogse hoogbouw en over de woningbouw uit de jaren zeventig en tachtig is iedereen het eens: die zijn erg lelijk'
> [Everyone agrees about the post-war high-rise buildings and about the housing from the seventies and eighties: they are very ugly]

Moreover, in today's public debate one only has to look at some of the popular book titles to get an idea of the dominant perception. Compare for example book titles like 'De lelijke jaren zeventig' (Biggelaar, 2018) and 'De magie van de jaren 30' (Kingma, 2016). Of course, the content of these books describes nuanced stories but it gives an idea of the general associative terms. And worth noting is that the style of 70's architecture has not been undisputed in history either, even then, critical terms were given to the architecture that were not meant positively: 'Nieuwe Truttigheid' or 'schuin en bruin' (Vletter, 2004, p. 29).

There is the risk of erasure of an entire period of this particular architectural appearance just because the dominant opinion about is that it is ugly. An example of this is the renovation of Stedenwijk Noord or 70s villas where the existing Post 65 aesthetic identity is disregarded. I predict that what is going on with 70s villas could be the possible foreland of Post 65 housing. The metamorphosis of 70s buildings is already going on. Developers, architects or owners now often choose to do a make over - to erase its original aesthetic identity and to some extent its spatial characteristics. The aesthetic is ignored and must make way for an aesthetic of a different style. Stedenwijk Noord was renovated in 2012, a 1970s neighbourhood consisting of 750 houses, with mixed ownership, both social housing and private owners. Perhaps due to popular opinion, architects taste, lack of knowledge or the urgency of energy-driven renovation which often consists of exterior insulation the architects chose to change the aesthetic, in this specific case, into an Amsterdam School style. To protect the overall Post 65 architectural integrity, I think it is necessary to avoid forcing a new aesthetic or spatial identity and vocabulary onto the existing housing. As was done in Stedenwijk Noord unfortunately, because this creates an unsettling effect and there is the risk of having produced an unsustainable renovation, because in terms of the façade design existing Post 65 aesthetic and spatial identity was not acknowledged in the renovation design. When significant characteristics of this architecture are not recognized and valued they will be disregarded in renovations and we lose (potential) embodied cultural energy.[1] Instead, this project will show the endless aesthetic and spatial richness Post 65 has to offer that can help strengthen a further sustainable future for this architecture. Only when we have opened our eyes to the qualities of Post 65 architecture can we renovate, demolish or preserve it in a valuable way. The cultural impoverishment, caused by the lack of imagination in facade insulation practice, was already warned about in the publication of the Flemish Architecture Institute: 'Dierbaar is duurzaam' (Fig. 8).

1 The notion of 'embodied cultural energy' is introduced by Clarke et al. (2019).

‘Het feit dat bestaande gebouwen stelsmatig en ten koste van alles van een dikke isolatielaag worden voorzien is zonder meer een culturele ramp. Los nog van het louter esthetische aspect, verliezen gebouwen op die manier alle elementen die hen specifiek maken, en waarmee mensen zich identificeren.’
(p. 35)

[The fact that existing buildings are systematically and at all costs covered with a thick layer of insulation is undoubtedly a cultural disaster. Apart from the purely aesthetic aspect, buildings thus lose all the elements that make them specific and with which people identify.]

‘Evolueren naar een duurzame samenleving mag, en kan niet resulteren in een culturele verarming. De maatschappelijke (r)evolutie waar we tegen aankijken moet en kan integendeel ook een culturele (r)evolutie betekenen, waar ‘oud’ en ‘nieuw’ heruitgevonden en naadloos in elkaar versmelten. Dit impliceert dat we evolueren van een duurzaamheid die op bouwproducten gebaseerd is naar een manier hoe we ons dagelijks leven inrichten.’
(p. 35)

[Evolving towards a sustainable society may, and cannot, result in cultural impoverishment. On the contrary, the social (r)evolution we are facing must and can also mean a cultural (r)evolution, where ‘old’ and ‘new’ are reinvented and merge seamlessly. This implies that we evolve from a sustainability based on building products to a way of structuring our daily lives.]

Fig. 8 *Dierbaar is duurzaam. Zes stellingen rond architectuur, cultuur en ecologie* [Loved lasts. Six statements on architecture, culture and ecology] by Het Vlaams Architectuurinstituut, 2011. Texts by Christoph Graf with assistance of Nathalie Janssens de Bisthoven.

1.3 Vision on sustainability

In this studio the 'Sustainability focused decision-making in building renovation' approach developed by Kamari et al. (2017) was used. The idea behind this approach is to achieve a holistic sustainable building renovation because all indicators that relate to sustainability in the broadest sense of the word are acknowledged. The different sustainability indicators are divided in three categories: 'Accountability', 'Funtionality' and 'Feasibility'. Sustainability is only achieved when all three categories are acknowledged and incorporated in plans and strategies. The intent of this framework is a optimum of all requirements, not maximization of some. It is a similar way of thinking as the '3P' 'People, Planet, Prosperity'[1] sustainability philosophy originally developed and created by John Elkington in 1994.

The part of sustainbility that has been structurally overlooked is the part that Kamari et al. call 'Accountability' (Fig. 9). It refers to the aspects of sustainable development which 'embraces municipal, architectural, cultural, human and community' (Kamari et al., 2017). The research and design aim focuses in particular on the indicators that relate directly to the Post 65 aesthetic and apatial identiy and its (potential) heritage value: 'Aesthetic', 'Spatial' and 'Integrity' of Kamari's et al. wheel of 'Holistic sustainability decision-making support framework for building renovation'. These categories need extra attention in today's renovation practice because these are in danger of being left unacknowledged.
The hypothesis is that a sustainable future for Post 65 suburban housing partly lies in to what extent existing Post 65 aesthetic and spatial identity is acknowledged. This is based on the group analysis and personal research in this studio. This project argues that the heritage value of this housing partly lies in the aesthetic and spatial attributes that are part of the Post 65 architectural characteristics.

1.4 Research question

This projects tests if through utilisation and strengthening of the Post 65 architectural aesthetic and spatial identity more holistic sustainability can be achieved in suburban housing renovation. A research informed design is the output of this graduation project where I developed an design approach for revitalisation of Post 65 suburban housing where Post 65 aesthetic and spatial identity is not disregarded. For this purpose a approach was chosen that uses the urban renewal (1968-1989) principles. This approach enables designers to incorporate the vocabulary of the existing housing: strengthening existing attributes but also the introduction of new attributes that improve the quality of the house but also revitalizes neighbourhoods.

Can the principles of the '1968-1989 urban renewal' approach provide a viable strategy to revitalize Post 65 neighbourhoods, such as Goedewerf (1978) in Almere Haven?

1 The third P used to stand for *profit*. For the world summit on sustainable development in Johannesburg in 2002, the word profit was replaced by prosperity, in order to include social profit in addition to economic profit.

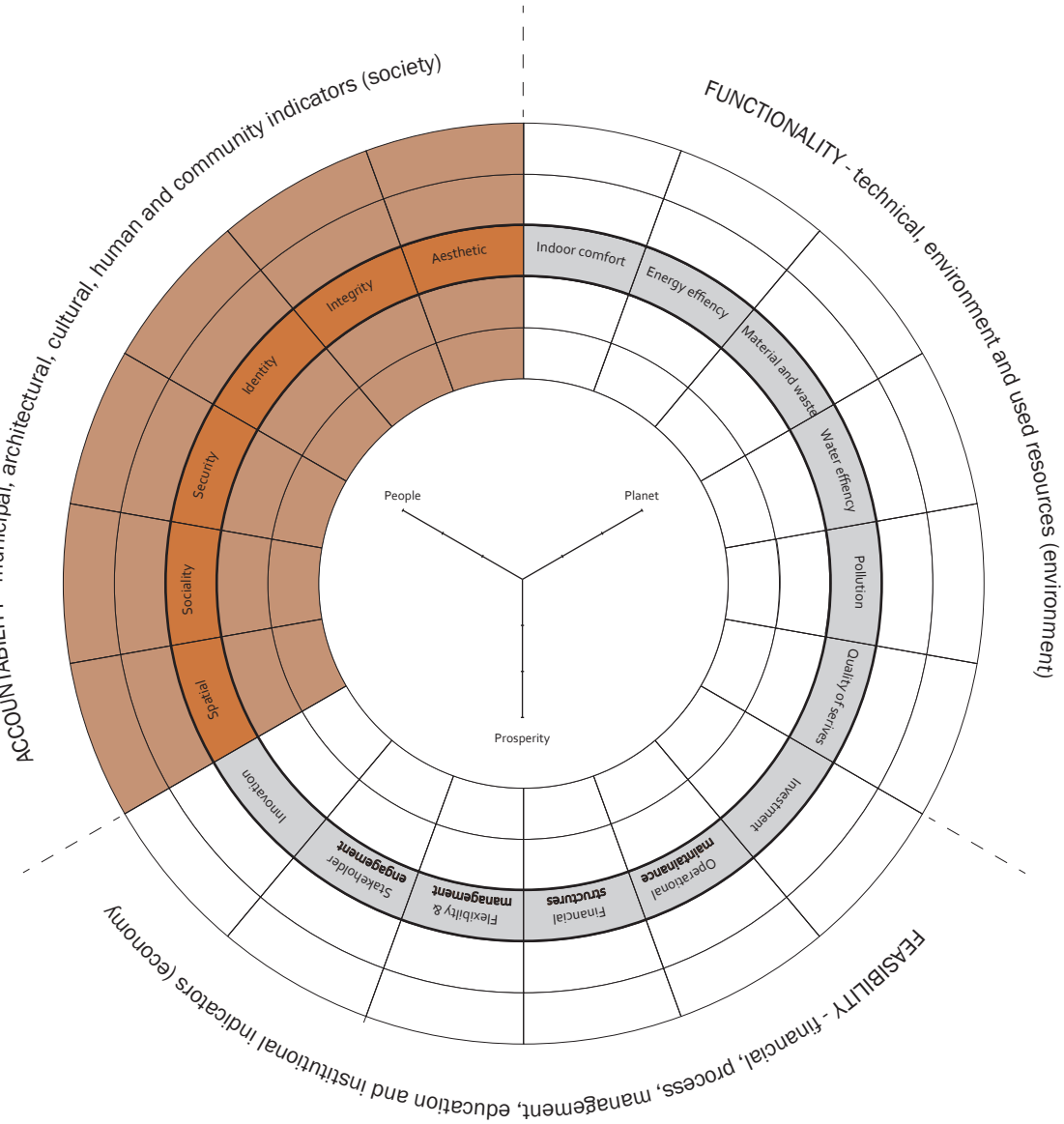


Fig. 9 'Accountability' within sustainability: undervalued sustainability category. Adapted *Holistic sustainability decision-making support framework for building renovation* by Kamari et al., 2017, p. 344.

2 Methodology

2.1 Research design

The first part of the collective studio work was dedicated to developing renovation models. In preparation for this an analysis of Goedewerf in the domains of architecture, building technology and culture was made collectively by the New Heritage group. In addition to this, the results of the 'Speurtocht' survey for the research project 'Respectful Renovation'[1] were examined. The 'Speurtocht' results consist of what different stakeholders mention what they think is valuable about the neighbourhood, public space and complex. Based on the knowledge gained, a preliminary value assessment of Goedewerf was made using our own adapted version of Kamari's 'Holistic sustainability decision-making support framework for building renovation' (2017, p.344). Through a brainstorm session two or three Kamari criteria were combined and renovation models were created with the aim of achieving a higher score in these areas. The renovation model that comes closest to this project's aim was the model called 'Beautification'[2] where the categories 'Aesthetic' and 'Energy efficiency' were combined to focus on strengthening aesthetic value while improving the energy efficiency. I chose to do this model with Goedewerf because it showed similarities with some of the urban renewal architecture I was familiar with, for example the 45 degree angle sloped roofs, but I was confronted with insecurity in terms of how to relate to this existing aesthetic identity and spatial aspects in the redesign. What is the value of this aesthetic and spatial identity? And how far can we go with exterior insulation and additional building volumes in this neighbourhood for example? This renovation model however does not take into account possible heritage values in aesthetic or spatial attributes. Therefore additional Kamari criteria will be paid attention to in this project: 'Integrity' because this category includes the sub-criteria 'Site protection - Cultural heritage privacy', and 'Spatial' because next to 'Aesthetics', this is an important component to be able to identify the characteristics of the architectural Post 65 vocabulary.

The aesthetic and spatial identity is defined as architectural aspects and concepts elements or principles that provide a spatial identity or effect. Without qualifying it as positive or negative. The aim of this research is to find what the identity is, without directly forming a opinion about it. That would be personal opinion anyway, most likely influenced or coloured by existing views and opions, which is exactly what needs to be avoided in this study because I believe that the opions by prominent persons in the field of architecture have dominated the debate on Post 65 in the past and to some extent have created the popular opion on Post 65 suburban architecture. I need to keep as open a mind as possible and I should not be guided, consciously or unconsciously, by opinions of others.

2.2 Data collection approaches

The first start of the identification of the Post 65 aesthetic en spatial identity was done through listing the elements and aspects mentioned in the relevant existing literature (Bosma et al, 2007; De Vletter, 2004; De Vreeze, 1993; Abrahamse, 2019; Blom et al., 2019; Somer, 2020). Only there was a suspicion that this information combined still did not give a true picture of Post 65 housing. I suspected that certain elements appeared more often in the literature than in reality, for example the 'zitkuil' [conversation pit].

A way was needed to look at a large number of Post 65 housing projects that was as random as possible. Geographically, but also to what extent the projects were known. It had to be as respresentative as possible of the large quantities of Post 65 suburban housing. For that purpose the real-estate marketing website 'Funda' was used to get a more trustworthy image of Post 65 suburban housing. Hundreds of houses that were built between 1965 and 1989 were looked at. From this visual destillation of various aesthetic and spatial elements and aspects the Visual Lexicon of Post 65 housing Aesthetic and Spatial Identity was created. It consists of schematic drawings of each aesthetic or spatial element or aspect and they are accompanied by multiple examples of projects where they were applied in the design. The collection of elements and aspects provide an overview and a source of inspiration which can be used to achieve richness in spatiality and aesthetic quality within the scope of Post 65 aesthetic and spatial architectural vocabulary.

Real-estate marketing website,Funda was used to get a more trustworthy image of Post 65 suburban housing in the Netherlands. The search filters were housing up to €500.000 (with a few exceptions) and built between 1965-1989[3].

1 The 'Respectful Renovation' research project focuses on the renovation of housing built between 1965 and 1985. The purpose of the research is to develop a method by which values can be incorporated in design decisions aimed at sustainable housing renovation. https://www.tudelft.nl/en/2021/bk/respectful-renovation

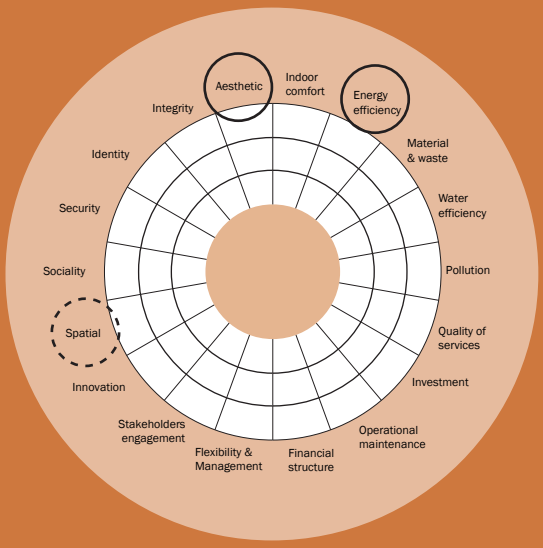
2 In retrospect, 'Makeover' would have been a more fitting name.

3 The delineation in time is a consequence of the time periods used by the Dutch Cultural Heritage Agency (RCE, Rijksdienst voor het Cultureel Erfgoed) and because the public debate often refers to the group: 70s and 80s architecture.

PRELIMINIARY ASSESSMENT GOEDEWERF

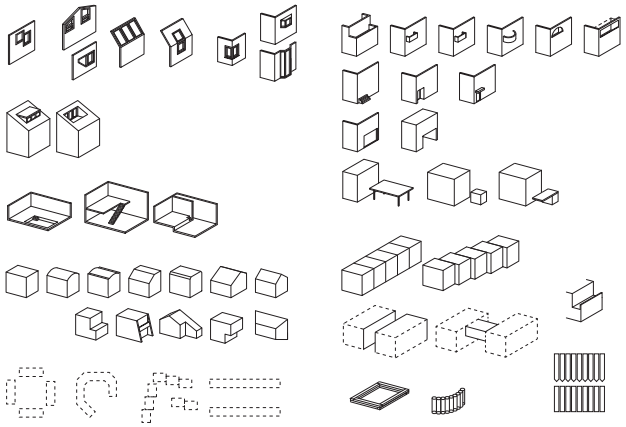
ABC building analysis

RmR research
'Speurtocht' results



Adapted version of 'Holistic sustainability decision-making support framework for building renovation' (Kamari et al., 2017, p.344)

Visual Lexicon of Post 65 Aesthetic and Spatial Identity



FUNDA VISUAL ANALYSIS POST 65 SUBURBAN HOUSING

RESEARCH QUESTION

Can the principles of the '1968-1989 urban renewal' approach provide a viable strategy to revitalize Post 65 neighbourhoods, such as Goedewerf (1978) in Almere Haven?

principles 1968-1989 urban renewal approach

'Energy efficiency'
Reduction Energy Consumption

X

'Aesthetic'
Temperature
Harmony

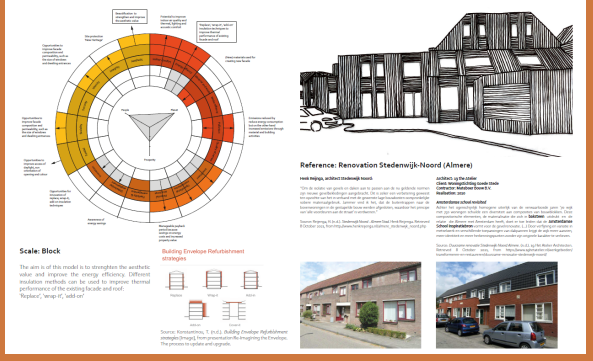
STUDIO QUESTION

How could renovation and densification strengthen qualities and help solve current problems, without compromising heritage values and identities?

GROUP RESEARCH

BEAUTIFICATION
energy efficiency x aesthetics

Goedewerf, Almere Haven



*in retrospect, makeover is a better name

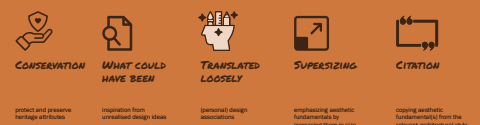
\+ **'Spatial'**
The articulation between space and its boundaries, and between adjacent spaces

\+ **'Integrity'**
Site protection - Cultural heritage privacy

Literature Anaylisis

IDENTIFICATION
POST 65 SUBURBAN HOUSING AESTHETIC & SPATIAL IDENTITY

INDIVIDUAL RESEARCH



design methods

POST 65 AESTHETIC AND SPATIAL DESIGN STRATEGY

RESEARCH INFORMED DESIGN

ASSESSMENT
Kamari wheel scores before and after redesign

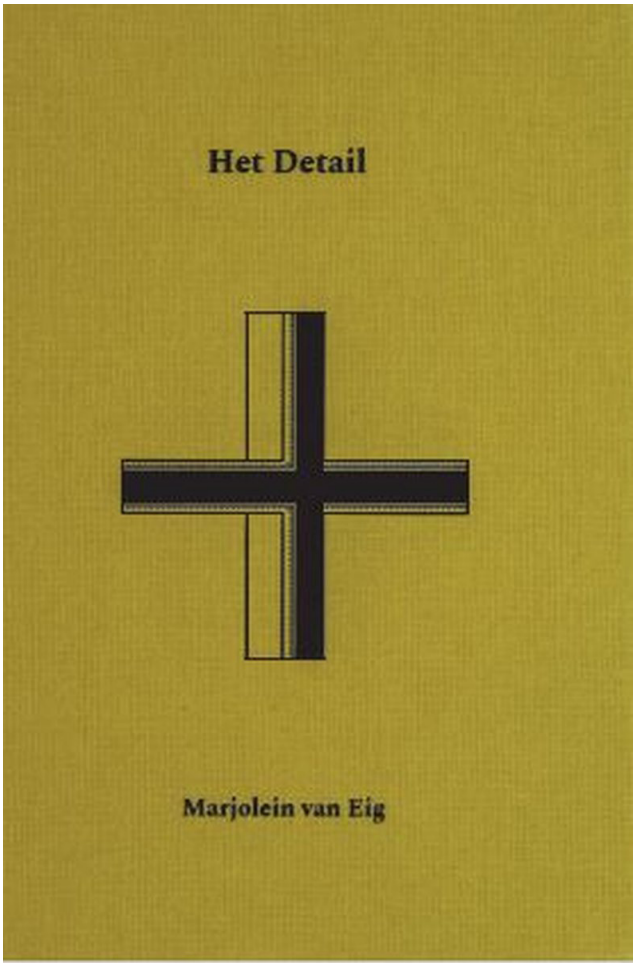


Fig. 10 *Het Detail,* by Van Eig, 2021.

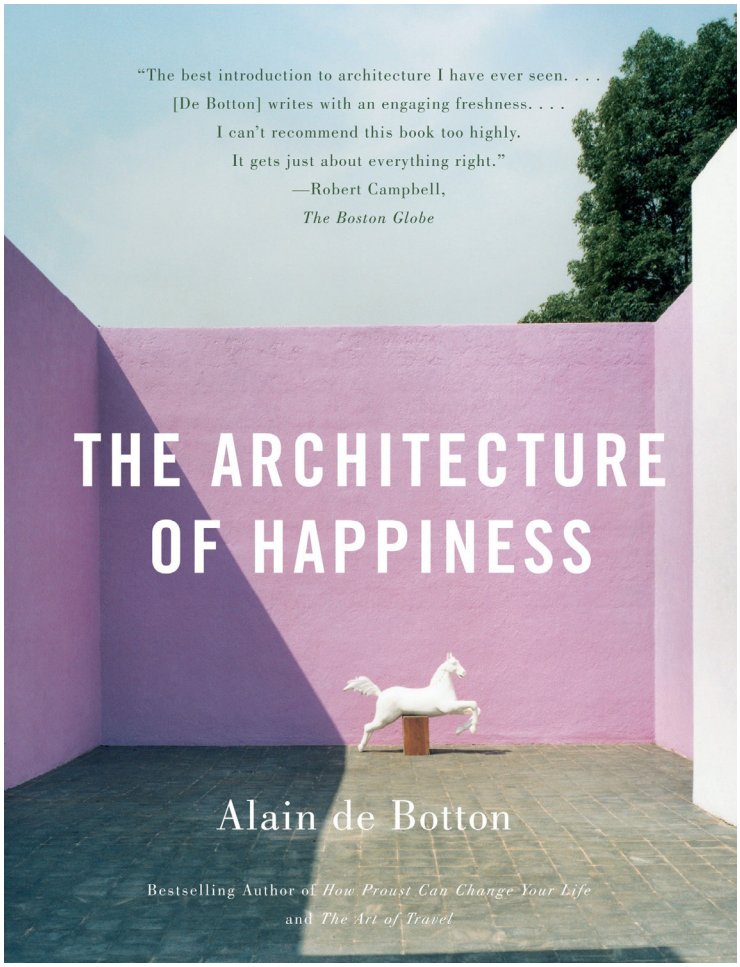


Fig. 11 *The architecture of happiness*, by De Botton, 2014.

Fig. 12 *De magie van het jaren '30 huis*, by Kingma, 2012.

ARCHITECTUUR

Waardering voor details

Meer dan 8.000 mensen deden mee aan de Smaaktest Nederlandse Woningbouw. Bijna allemaal houden ze van de Amsterdamse School.

Bernard Hulsman 8 december 2007 Leestijd 3 minuten

Lezers van De Telegraaf houden meer van retro-architectuur dan lezers van NRC Handelsblad. Ook vrouwen waarderen retro meer dan mannen.

Dit zijn een paar van de uitkomsten van de grote Smaaktest Nederlandse Woningbouw, de enquête die architectenbureau FARO een paar maanden geleden op het internet zette (zie kader). Eerst verscheen een artikel in NRC Handelsblad over de test, een paar weken later volgde er een in De Telegraaf. „Na het artikel in De Telegraaf werd de waardering voor retro onder de deelnemers aan de smaaktest plotseling groter", zegt Jurgen van der Ploeg, een van de vier FARO-architecten en bedenker van de enquête. „We hebben kunnen vaststellen dat ongeveer vijftig procent van De Telegraaf-lezers van retro-architectuur houdt en veertig procent van de NRC-lezers."

Fig. 13 *Waardering voor details,* NRC Handelsblad, by Hulsman, 2007.

3 Frame of reference

3.1 Theories on 'Aesthetics'

This research touches upon the field of architectural aesthetics, or in other words: beauty in architecture. Van der Ploeg (FARO) stated that the aesthetic problem of Dutch 70's architecture is that it lacks detail and therefore is not valued as much as Amsterdamse School or 1930's architecture for example, where there was (supposedly) much more attention paid to detail. Van der Ploeg concluded on the basis of the 'Smaaktest' results that detailing is very important for the appreciation. The results showed that a house with an elegant eave and door frame is considered more beautiful than one with standard details, regardless of what architectural style it was. However, it is important to emphasize this is only a hypothesis. Ofcourse 70's architecture has detail but Van der Ploeg suspects they are valued less. Among architects the attention for detailing has always been a popular topic. Van der Ploeg's line of thinking fits in with the line of thinking which is represented by popular phrases like 'God is in the details', attributed to Mies van der Rohe, but also recently quoted again by Bekkering (2019) and acting as the foundation in *Het Detail* by Van Eig (2021). Furthermore, it was Rem Koolhaas who complained: 'No money, no details.' However, there are also other theories on aesthetics where 'detail' or 'detailing' is not explicitly mentioned. The popular book by De Botton, called Architecture of Happiness, presents a list of certain 'aesthetic virtues' (2006, p. 249). De Botton argues that in architectural designs attention should be paid to 'Order', 'Balance', 'Elegance', 'Coherence' and 'Self-knowledge'. In addition, there is Kingma who proposes a different theory of why a certain aesthetic is valued (2012, p. 95). He argues the 1930s style is widely loved because it is the perfect balance between rationalism (function, impression, modern, reason) and romanticism (beauty, expression, traditional, feeling), and between the urban (cultural, creative, fast, innovative) and the rural (nature, organic, slow, conserving). According to Kingma, this is crucial for appreciation because balance is an integral part of the Dutch bourgeois residential culture based on certainty and civilisation.

By collecting different theories and comparing different theses, a wide range of aesthetic principles in architecture emerges. The aesthetic foundations of the Post 65 architecture can then be placed in a broader context of aesthetics. The frame of reference in this case will be used to provide a reasoned argumentation of potential value in Post 65 aesthetic and spatial identity.

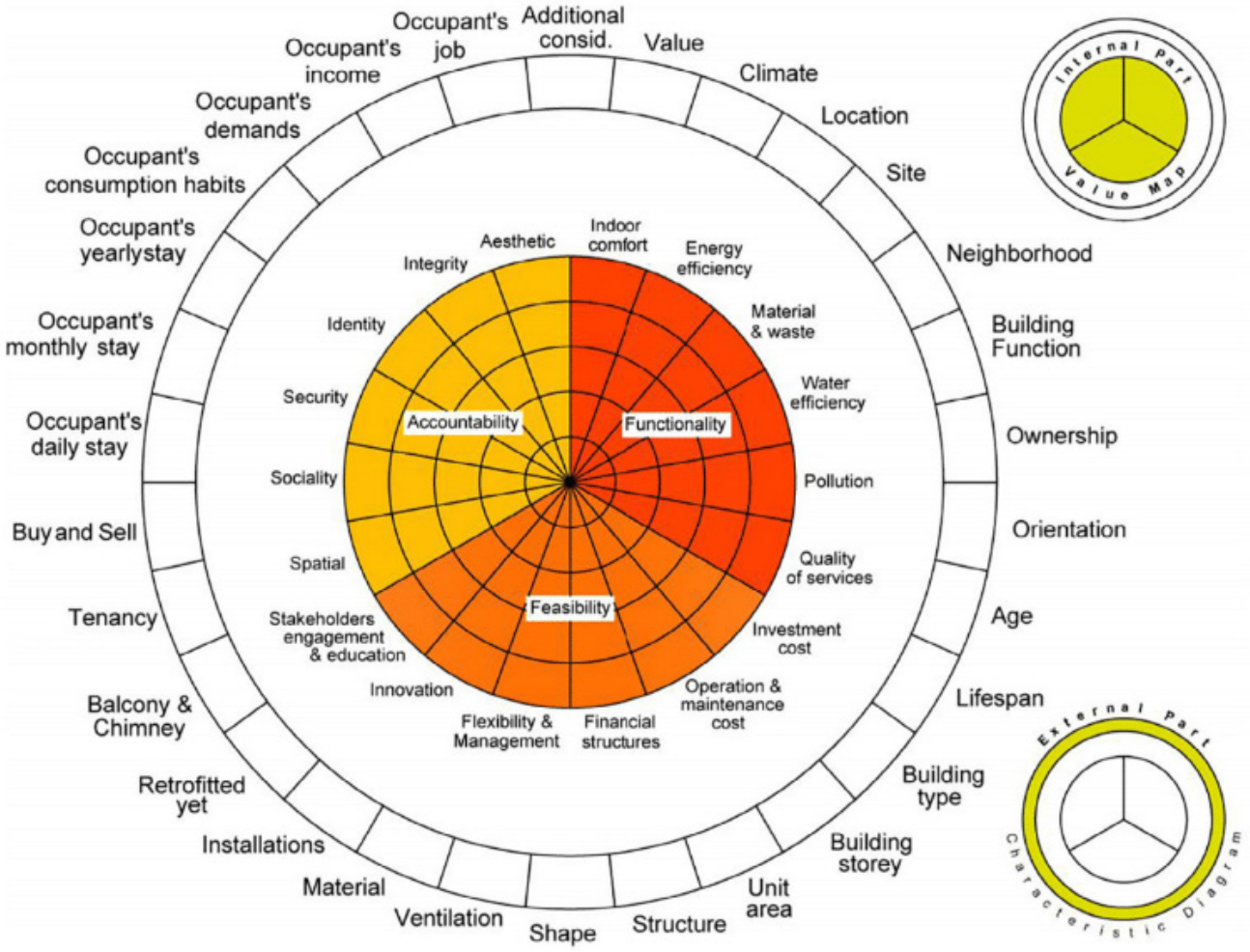


Table 4 (*continued*)

Column A: Category
Column B: Criteria
Column C: Indicators or sub-criteria
Column D: Source of creation

A	B	C		D
Accountability	Aesthetic	Temperature	Intensity of perceivable details	1, 4
			Density of differentiations	1, 4
			Curvature of lines and forms	1, 4
			Intensity of colour hue	1, 4
			Contrast (amongst other colour hues)	1, 4
		Harmony	Reflectional symmetries on all scales	1, 4
			Translational and rotational symmetries on all scales	1, 4
			Degree to which distinct forms have similar shapes	1, 4
			Degree to which forms are connected geometrically one to another	1, 4
			Degree to which the colours harmonize	1, 4

Fig. 14 'Aesthetic' within sustainability '*Holistic sustainability decision-making support framework for building renovation'* by Kamari et al., 2017, p. 344.

3.2 Application of the notion of 'Aesthetic'

It is tempting to go along with such theories and to reason from this perspective why Post 65 architecture is not appreciated. That seems too short-sighted and unscientific[1]. I would like to argue instead for a broader approach to aesthetics where we are not guided or distracted by less attractive standard detailing or worn materials. In that case, only the buildings with big budgets, with the application of expensive materials and special detailing would qualify for aesthetic appreciation, which is the case now. That is too limited. In the case of Post 65, we could focus on composition, coherence and form for example. There is enough beauty to be found there. Fortunately, 'Aesthetic' is defined by Kamari et al. in a more neutral and broad way (2017, p. 342). According to Kamari et al. 'Aesthetic' consists of 'Temperature' and 'Harmony', with a further breakdown of what aspects are covered by these criteria. Thereby, an account was provided of how this definition of aesthetic was created. [2]

Kamari et al. do not give a conception of aesthetics but a more neutral definition of the constituents of aesthetics, in other words what kind of aspects make a 'aesthetic'. It seems to me that it makes more sense to follow this way of thinking about aesthetics, given that we can avoid personal taste in this way. An neutral view is needed to look at this architecture.

1 As far as scientific research into aesthetics is possible.

2 Column D 'refers to the procedure which the indicator has been created from. In this regard, '1' refers to the indicator which was extracted from Literature Review; '2' refers to the indicator which was extracted from considering of the existing assessment methodologies (BREEAM, LEED, CASBEE, and SBTool in addition to the items considered in Jensen et al. (2017), '3' refers to the indicator which was outlined from the Interviews, and '4' refers to the indicator which was resulted from the Group discussion.

4 Findings

4.1 Background Post 65 suburban housing

Housing construction in the 1970s and 1980s is often dismissed as unenlightening, boring and predictable, but underlying this architecture are great ideals. The building production of that time was in fact a major countermovement to the reconstruction period and its modernist urbanism (Abrahamse, 2019, p. 4). Biggelaar explains in 'De lelijke jaren zeventig' (2018) how a new generation of architects manifested itself after the post-war reconstruction period. A group of young, critical, and often academically educated architects had a different vision on public housing compared to modern architects and planners. This 'group' focused on the human experience and social interaction. After years of relatively great economic prosperity and progress, there was room again for human well-being. The modernisation in housing had resulted in spacious, light and healthy homes with separate bedrooms and private sanitary facilities accessible to a large group of people. But this new functional living environment undermined the possibility for spontaneous social interaction and individual expression, which some architects considered fundamental to being human. The fixation on the functional and material well-being of residents would lead to 'geestelijke armoede en een gebrek aan verbeeldingskracht' [spiritual poverty and lack of imagination]. Aldo van Eyck was the main exponent of this counter-movement within CIAM: Team X (Team 10). This new generation of architects tried to reform modern architectural theory by incorporating various social science disciplines. Human needs and experience of the individual user should be central again in architectural design. In the early 1960s, stories regularly appeared in the media about the poor quality of new buildings, presented as the cause for mental health problems such as 'flat neurosis' and social isolation (Biggelaar, 2018, p. 102).

Urban Renewal 'Bouwen voor de buurt'

The urge for renewal manifested itself strongly in the discussions on urban renewal Somer explains (2020, p. 10). At the same time, the uniform and large-scale extension districts, dominated by high-rise buildings and terraced houses, and the 'imponeerarchitectuur' of the 1960s were faced with increasing impopularity. The ideas of residents and others about a different way of urban renewal found resonance. In 1968, Minister Schut pointed out the importance of 'rehabilitation' in urban areas instead of the usual practice of demolishment and reconstruction. This meant improving housing while preserving its original character as much as possible. Minister Schut also radically broke with the incentive policy for cast construction, and in the mid-1970s high-rise construction came to a rather abrupt end (Somer, 2020, p. 12).

'Groeikernen' en 'bloemkoolwijken'

In the 1970s and 1980s, a huge number of suburban neighbourhoods were built. In order to cope with the increase in the urban population, designated overflow areas were needed. These were so called 'groeikernen' such as Almere, Zoetermeer, Alkmaar, Capelle aan den IJssel, Nieuwegein. Partly due to the changed views on the city as a recognisable and welcoming human biotope, housing construction in the urban renewal areas, expansion areas and 'groeikernen' quickly changed. Important was a growing attention for residential and architectural quality and the aspiration to achieve greater differentiation in housing types, building block composition and the incorporation of site characteristics.

Although this group of architects did not form an official group and their architectural views were quite varied, Somer (2020) and De Vletter (2004) explain, you can speak of a 'Forum' generation that, with Van Eyck as its sort of spokesperson, had a great deal of influence on Dutch architecture at that time. This was expressed in a striving for a small scale, recognisability and 'herbergzaamheid'; for a merging of urban planning and architecture in a built environment that was based on the human scale and had to offer opportunities for encounter, a form of surprise and 'individuele ontplooiing' (Somer, 2020, p. 13).

Abrahamse (2019) describes in *Opkomst en ontwikkeling van de bloemkoolwijk Het ontwerp van woonwijken in Nederland en de zoektocht naar identiteit* three design characteristics that architecture in cauliflower neighbourhoods have in common:

Façade

The diversity and variety in the urban space and building volumes was to be achieved by façade articulation: differences in form, plasticity, texture and colour. This meant that the exterior of a building had to be more (again) than the simple expression of the functional programme (Abrahamse, 2019, p. 13).

'Drempelzone' [threshold zone]

One of the fundamental ideas of Forum, especially of Van Eyck and Hertzberger, concerned the 'threshold zone' between the home and public space. In housing construction in the 1970s, great importance was attributed to this: the transition from the individual dwelling to the public space, the place where social interaction takes place, was specifically designed.

Recognisability

The keywords identification, perception, recognisability, needs, orientation, participation, were considered to be represented in the design.

Fig. 15 Consulted literature in first identification Post 65 aesthetic and spatial identity

4.2 Literature findings Post 65 Aesthetic and Spatial Identity

Looking at the existing literature only brief summaries of Post 65 aesthetic and spatial identity can be found (e.g. exploratory research reports by the RCE). Often these are general descriptions without examples and almost always no visual presentation. These publications do not delve into the origin and refrain from explaining on what basis the lists of aesthetic or spatial attributes were compiled. Furthermore, the literature that presents overviews of Dutch architecture through the past centuries (e.g. Bosma et al, 2007), only give brief general descriptions of Post 65 architecture. And in the available monographs of prominent Dutch Post 65 architects only background on individual developments of architectural aesthetics is outlined. This research aims to solve this problem by combining the existing knowledge together with new additional analysis, in order to create a more complete picture and knowledge of the Post 65 aesthetic and spatial Identity. In my research I tried to make a contribution to this literature by systematically taking account of every element that was mentioned and how often it was mentioned. The aim was to get an idea how the existing literature defines the Post 65 aesthetic and spatial identity of suburban housing and to combine the existing knowledge to see where there is overlap or gaps or where certain aspects might contradict each other.

On the following two pages the overview of the mentioned attributes is presented. The attributes are divided into different categories for the purpose of readability. The following sources were consulted:

Abrahamse, J. E. (2019). *Opkomst en ontwikkeling van de bloemkoolwijk. Het ontwerp van woonwijken in Nederland en de zoektocht naar identiteit*. Rijksdienst voor Cultureel Erfgoed.

Blom, A., Abrahamse, J. E., Linssen, M., Altenburg, F., van Beers, M., Broex, B., ... Vermaat, S. (2019). *Verkenning Post 65. Nieuwe perspectieven tussen welvaart en weerstand*. Rijksdienst voor Cultureel Erfgoed.

Bosma, K., Mekking, A., Ottenheym, K. & Van der Woud, A. (2007). *Bouwen in Nederland*. Waanders.

Somer, K. (2020). *Groei, verandering, differentiatie. Architectuur in Nederland 1965–1990*. Rijksdienst voor Cultureel Erfgoed.

De Vletter, M. (2004). *De kritiese jaren zeventig*. NAi Uitgevers.

De Vreeze, N. (1993). *Woningbouw, Inspiratie & Ambities*. Nationale Woningraad.

Neighbourhood
Buurt ordeningsprincipe

woonerven[1]
woonerven[2]
woonerf[3]
woonerf[4]
erven[5]

hofjes[6]

verkavelingsstructuren met veel korte autovrije straatjes[7]
autovrije straatjes in compacte verkavelingen[8]

eengezinshuis met tuin, gelegen aan een woonerf, dat vrij is van doorgaand verkeer[9]
grondgebonden eengezinswoningen gegroepeerd rond openbare ruimtes (hofjes, straten of woonerven)[10]
kleinschalige, dorpsachtige bebouwing, georganiseerd rond woonerven[11]

grote variatie in zichtlijnen[12]

een enorme variatie straat- en pleinvormen[13]

een enorme variatie in verkavelingstypen[14]

onderling sterk afwijkende, per buurt vormgegeven woonwijkjes[15]
autonome vormgeving op buurtniveau[16]

grote variatie aan woningtypen en gebouwvormen[17]

bloemkoolwijken in vele soorten, maten en vormen[18]

suburbane huizenzee[19]

doorgaande routes verdoezeld[20]

lage dichtheid[21]

[bloemkoolwijken] zeer breed scala aan gebouwtypen[22]

grondgebonden eengezinswoningen[23]

appartementen in laag- of middelhoogbouw[24]

[woonerf] op het grote schaal kleinere omgevingen te ontwerpen[25]

oplossingen voor het autovraagstuk[26]

milieudifferentiatie[27]

ontbreken van een duidelijke hiërarchie in het stratenpatroon[28]

Building mass form
Bouwmassa vorm

grillige massa's[29]
grilligheid[30]
grote variatie in verrassende bouwblokvolumes[31]
variatie[32]
veelvormigheid[33]
hoogteverschillen[34]
ritmeveranderingen[35]
verspringingen[36]
een enorme variatie bouwblokvormen[37]
wijken opgedeeld in kleine eenheden, ruimtes en volumes[38]
onregelmatige verdeling van die rijtjes over het grondoppervlak[39]
typische structuralistische laagbouw[40]
verspringende rooilijnen[41]
verspringende gevels[42]
verspringende bouwhoogten[43]
verspringende daklijnen[44]
verspringende rooilijnen[45]
verbrokkelde en gelaagde vormen[46]
gebroken configuraties[47]
verschillen in vorm[48]
verschillen in vorm[49]
onregelmatige bouwvormen[50]
een schikking van maximale mate van onregelmatigheid[51]
ongenuanceerde springerigheid[52]
schakelingen van bouwvolumes[53]
uitstulpingen[54]
inspringingen[55]
overdonderende labyrintische sfeer[56]
diagonalen[57]
schuine lijnen[58]
een bijna chaotische kleinschaligheid[59]
architectuur is kleinschalig[60]
geen lange lijnen[61]
geen doorzichten over te lange afstanden[62]

laagbouw[63]
laagbouw[64]
laagbouw[65]
laagbouw de norm[66]
Vier of vijf bouwlagen het maximum[67]
twee lagen en split-level waren populair – vaak in combinatie met toegang tot een galerij[68]
nieuwe vormen van middelhoge meergezinshuizen[69]
open bouwsels op uiteenlopende schaalniveau's[70]
patio's[71]
patio's[72]

Building envelope feature
Gebouwschil karakteristiek

erkers[73]
erkers[74]
erkers[75]
erkers[76]
erkers[77]

balkons[78]
balkons[79]
balkonnetjes[80]
balkonnetjes[81]

overstekken bij de voordeur[82]
portieken[83]
portieken[84]
portieken[85]
afdakjes[86]
afdakjes[87]
afdakjes[88]
nisjes[89]
dakoverstekken[90]
loggia's[91]
loggia's[92]

dakkapellen[93]
dakkapellen[94]
dakkapellen[95]

uitgebouwde bergingen[96]
uitgebouwde bergingen[97]
bergingen[98]
bergingen[99]
carports[100]
carports[101]
garages[102]
garages[103]
pergola's[104]
pergola's[105]
pergola's[106]

onregelmatige geplaatste ramen[107]
onregelmatige geplaatste balkons[108]
onregelmatige geplaatste overbouwde buitenruimtes[109]

korte galerijen en trappen[110]
galerijen die door middel van trappen zijn verbonden met de openbare ruimte[111]
binnenstraten die door middel van trappen zijn verbonden met de openbare ruimte[112]
trappen[113]
trapjes[114]

Roof
Dak

schuine daken[115]
schuine daken[116]
schuine kappen[117]
hellend dak[118]

[eerste wijken uit de jaren zeve

grote variatie in dakvormen[120]
uitbundige kapvormen[121]
uitbundige kapvormen[122]
kappen in alle mogelijke richtin

1 Vletter, 2004, p. 9
2 Vletter, 2004, p. 10
3 Vletter, 2004, p. 17
4 Vletter, 2004, p. 141
5 Vletter, 2004, p. 61
6 Vletter, 2004, p. 61
7 Bosma et al, 2007, p. 610
8 Bosma et al, 2007, p. 610
9 De Vreeze, 1993, p. 405
10 Abrahamse, 2019, p. 4
11 Abrahamse, 2019, p. 5
12 Bosma et al, 2007, p. 610
13 De Vreeze, 1993, p. 354
14 De Vreeze, 1993, p. 354
15 De Vreeze, 1993, p. 405
16 De Vreeze, 1993, p. 405
17 De Vreeze, 1993, p. 405
18 Abrahamse, 2019, p. 4
19 Abrahamse, 2019, p. 9
20 Abrahamse, 2019, p. 16
21 Abrahamse, 2019, p. 17
22 Abrahamse, 2019, p. 18
23 Abrahamse, 2019, p. 18
24 Vletter, 2004, p. 21
25 Vletter, 2004, p. 101
26 Vletter, 2004, p. 101
27 Vletter, 2004, p. 61
28 Vletter, 2004, p. 10

29 Vletter, 2004, p. 9
30 Vletter, 2004, p. 21
31 Bosma et al, 2007, p. 610
32 Vletter, 2004, p. 221
33 Vletter, 2004, p. 221
34 De Vreeze, 1993, p. 354
35 De Vreeze, 1993, p. 354
36 De Vreeze, 1993, p. 354
37 De Vreeze, 1993, p. 354
38 Abrahamse, 2019, p. 16
39 Abrahamse, 2019, p. 18
40 Abrahamse, 2019, p. 18
41 Abrahamse, 2019, p. 18
42 Abrahamse, 2019, p. 18
43 Abrahamse, 2019, p. 18
44 Abrahamse, 2019, p. 18
45 Abrahamse, 2019, p. 20
46 Vletter, 2004, p. 10
47 Vletter, 2004, p. 10
48 Abrahamse, 2019, p. 13
49 Abrahamse, 2019, p. 13
50 Abrahamse, 2019, p. 20
51 Abrahamse, 2019, p. 16
52 Abrahamse, 2019, p. 20
53 Somer, 2020, p. 13
54 Somer, 2020, p. 13
55 Somer, 2020, p. 13
56 Vletter, 2004, p. 10
57 Vletter, 2004, p. 10
58 Vletter, 2004, p. 17
59 De Vreeze, 1993, p. 405
60 Abrahamse, 2019, p. 4
61 Abrahamse, 2019, p. 16
62 Abrahamse, 2019, p. 16
63 Abrahamse, 2019, p. 4
64 De Vreeze, 1993, p. 354
65 Abrahamse, 2019, p. 9
66 Abrahamse, 2019, p. 14
67 Vletter, 2004, p. 21
68 Vletter, 2004, p. 21
69 Vletter, 2004, p. 101
70 Vletter, 2004, p. 9
71 Vletter, 2004, p. 61
72 Vletter, 2004, p. 221

73 Bosma et al, 2007, p. 610
74 Somer, 2020, p. 13
75 De Vreeze, 1993, p. 405
76 Abrahamse, 2019, p. 18
77 Vletter, 2004, p. 221
78 Bosma et al, 2007, p. 610
79 De Vreeze, 1993, p. 354
80 Somer, 2020, p. 13
81 De Vreeze, 1993, p. 405
82 Bosma et al, 2007, p. 610
83 De Vreeze, 1993, p. 405
84 Abrahamse, 2019, p. 18
85 Somer, 2020, p. 13
86 De Vreeze, 1993, p. 405
87 Abrahamse, 2019, p. 18
88 Somer, 2020, p. 13
89 Vletter, 2004, p. 61
90 De Vreeze, 1993, p. 354
91 Abrahamse, 2019, p. 18
92 Vletter, 2004, p. 221
93 Somer, 2020, p. 13
94 De Vreeze, 1993, p. 405
95 Abrahamse, 2019, p. 18
96 De Vreeze, 1993, p. 405
97 Somer, 2020, p. 13
98 Abrahamse, 2019, p. 18
99 Abrahamse, 2019, p. 18
100 Abrahamse, 2019, p. 18
101 Abrahamse, 2019, p. 18
102 Abrahamse, 2019, p. 18
103 Abrahamse, 2019, p. 18
104 De Vreeze, 1993, p. 354
105 De Vreeze, 1993, p. 405
106 Somer, 2020, p. 13
107 Abrahamse, 2019, p. 18
108 Abrahamse, 2019, p. 18
109 Abrahamse, 2019, p. 18
110 De Vreeze, 1993, p. 354
111 Abrahamse, 2019, p. 18
112 Abrahamse, 2019, p. 18
113 Somer, 2020, p. 13
114 Vletter, 2004, p. 221

115 Vletter, 2004, p.
116 Vletter, 2004, p.
117 Abrahamse, 201
118 Vletter, 2004, p.
119 Abrahamse, 201
120 Bosma et al, 20
121 De Vreeze, 1993
122 Somer, 2020, p.
123 Abrahamse, 201

Fig. 16 Post 65 aesthetic and spatial identity according to existing literature

ntig] platte daken[119]

ngen[123]

Facade
Gevel

grote variëteit[124]
een enorme variatie gevelbeelden[125]
gebrek aan monumentaliteit[126]
bescheiden vormentaal[127]

een verhevigde plastiek[128]
verschillen in plasticiteit[129]

verschillen in textuur[130]

verschillen in kleur[131]

de kant van het openbaar gebied vaak een zeer gesloten gevelbeeld[132]
gesloten gevel naar het wooner[133]
het meer open geveldeel ligt aan de eigen tuin[134]

grote glasvlakken werden niet meer toegepast[135]

ontbreken van een verticale geleding in de architectuur[136]

Materialisation
Materialisatie

een enorme variatie materiaalkeuzen[137]
diversiteit in (toepassing) materialen[138]

baksteengevels[139]
baksteenindustrie vierde hoogtij[140]
baksteen[141]
metselwerk[142]
herintroductie van baksteen als gevelmateriaal[143]
baksteen[144]
baksteen[145]

hout[146]
hout[147]
hout[148]

incidentele gebruik betonsteen en grindbeton[149]
B2-blokken[150]

rode en bruine pannendaken[151]
met pannen gedekte kappen[152]
pannen- of asbestdaken in gedempte bruin- en grijstinten[153]

Interior
Interieur

modern doe-het-zelfmeubilair[154]

zitkuilen[155]
zitkuilen[156]
zitkuil[157]
zitkuil[158]

complexe en ambigue ruimten[159]
plattegronden werden ondoorgrondelijker[160]
experimentele woningplattegronden[161]

bewoonbare zolder onder de kap[162]

entrees van de woningen zijn gericht op de woonerven[163]
woonkamers georiënteerd op de privetuin[164]
bergingen en keukens vaak aan de voorkant[165]

split-level[166]

vrijheid van de plattegrond[167]

binnenshuis en buitenshuis ontmoetingsplekken[168]

extreme gevarieerdheid van plattegronden[169]
plattegronden flexibel in kunnen delen[170]

9
221
9, p. 4
17
9, p. 19
07, p. 610
8, p. 405
13
9, p. 20

124 Somer, 2020, p. 13
125 De Vreeze, 1993, p. 354
126 Somer, 2020, p. 13
127 Somer, 2020, p. 13
128 Somer, 2020, p. 13
129 Abrahamse, 2019, p. 13
130 Abrahamse, 2019, p. 13
131 Abrahamse, 2019, p. 13
132 Abrahamse, 2019, p. 17
133 Abrahamse, 2019, p. 19
134 Abrahamse, 2019, p. 19
135 Abrahamse, 2019, p. 18
136 Vletter, 2004, p. 61

137 De Vreeze, 1993, p. 354
138 Vletter, 2004, p. 221
139 Vletter, 2004, p. 9
140 Vletter, 2004, p. 17
141 Abrahamse, 2019, p. 4
142 Bosma et al, 2007, p. 610
143 Abrahamse, 2019, p. 14
144 Somer, 2020, p. 13
145 Abrahamse, 2019, p. 19
146 Somer, 2020, p. 13
147 Bosma et al, 2007, p. 610
148 Abrahamse, 2019, p. 19
149 Abrahamse, 2019, p. 19
150 Somer, 2020, p. 13
151 Bosma et al, 2007, p. 610
152 Abrahamse, 2019, p. 4
153 Abrahamse, 2019, p. 19

154 Vletter, 2004, p. 9
155 Vletter, 2004, p. 9
156 Vletter, 2004, p. 10
157 Vletter, 2004, p. 28
158 Vletter, 2004, p. 17
159 Vletter, 2004, p. 10
160 Vletter, 2004, p. 17
161 Abrahamse, 2019, p. 20
162 Bosma et al, 2007, p. 610
163 Abrahamse, 2019, p. 17
164 Abrahamse, 2019, p. 17
165 Abrahamse, 2019, p. 17
166 Vletter, 2004, p. 21
167 Vletter, 2004, p. 61
168 Vletter, 2004, p. 61
169 Vletter, 2004, p. 221
170 Vletter, 2004, p. 221

4.3 'Funda' visual analysis distillation Post 65 Aesthetic and Spatial Identity

After the literature analysis there was the suspicion that this information combined still did not give a true picture of Post 65 housing. I suspected that certain elements appeared more often in the literature than in reality, for example the 'zitkuil' [conversation pit]. The findings of the following 'Funda' visual analysis that resulted in the 'Lexicon of Post 65 Aesthetic and Spatial Identity' proves that the attributes mentioned in the existing literature do not give a representative picture of the Post 65 suburban housing aesthetic and spatial identity. The Lexicon also identifies the other, yet unmentioned attributes, such as the 'hemelraam'. It shows the variety and diversity of Post 65 suburban housing. There is so much diversity that general qualifications do not apply to this housing. However the 'Lexicon' does try to identify different types, and to see whether any different aesthetic groups can be distinguished at all. Vletter (2004, p. 3) described this possibility of a subdivision shortly in *De kritiese jaren zeventig* but without presenting it with such a identification and examples.

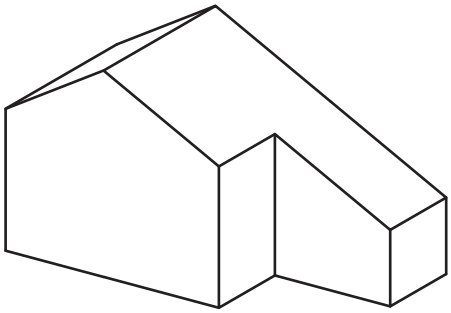
> De behoefte aan (en de mogeljikheid tot) een veelheid van keuzes leidden er in de architectuur toe dat geen enkele nieuwe stijl of stroming dominant werd in Nederland, terwijl vreemd genoeg de resultaten wel als typische 'jaren zeventig architectuur' herkenbaar zijn. Er ontstonden kleine groeperingen, elk met zijn eigen kenmerken, zoals afwisselende en nieuwe vormen, de menselijke schaal, herwaardering voor de oude stad, gebruik van prefabelementen voor een flexibele plattegrond, of hybridische omgevingen.
> (De Vletter, 2004, p. 23)

This research's identification of 'types' has been done on the basis of the aesthetic 'language' of the housing projects. The materialisation and composition were particularly paid attention to in this process. It would also have been possible to make the distinction on the basis of other characteristic. But in this case, it focuses on the Post 65 aesthetic identity, hence the name: 'Aesthetic Families'.

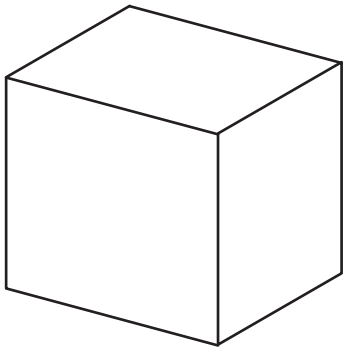
At the same time, the lexicon also shows the underlying ideals better. For example, the pursuit of spatial richness in mass housing. It is an underexposed characteristic, that is only present in the literature implicitly. As the visual Funda analysis has shown, there are many examples of housing in which something unusual has been incorporated in the design to add spaciousness. For example, surprising sightlines within the house, (partly) vaulted ceilings, split levels and mezzanines or with special windows, corner windows, skylights, also in special unusual shapes. They are experienced as something playful or special, especially within the context of mass housing project. Even in the enormous quantity of Post 65 housing that was built, often an attempt has been made to incorporate something special, unusual and playful in the design. As can also be seen in the first sketch designs of Goedewerf by the architectural firm Inbo, there are several spatial elements and characteristics that fit within the Post 65 aesthetic but there was not enough money available to include them in the design. The ambition was greater than they were able to realize. This aspect of the pursuit of something special within the ordinary is great quality and could be rare in recent affordable housing architecture. It is an aspect that justifiably requires more attention.

Lexicon
Aesthetic and Spatial Identity Post 65 Suburban Housing

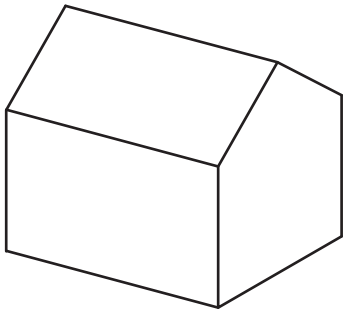
Roof types
Daktypen



Brugakker 5216, Zeist (Funda, 2021)



Koebergstraat 86, Tilburg (Funda, 2022)



Molenring 95, Waddinxveen (Funda, 2022)

Bernhardlaan 8, Groningen (Funda, 2021)

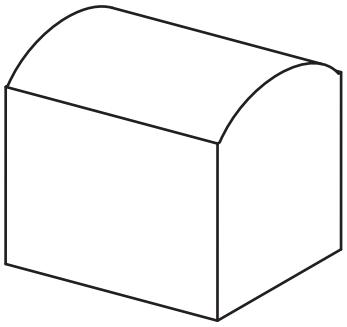
Verenwei 86, Arnhem (Funda, 2021)

Bijland 904, Uden (Funda, 2022)

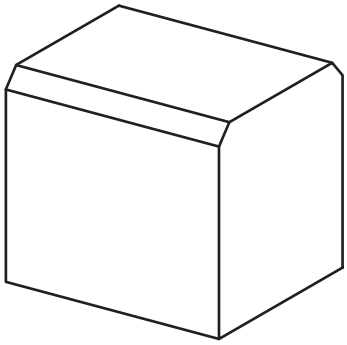
Boeg 113, Groningen (Funda, 2022)

Golfslag 126, Groningen (Funda, 2021)

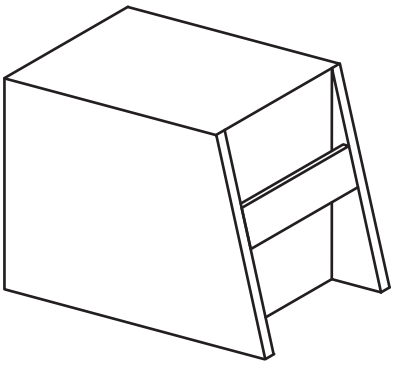
(Funda, 2021)



Burg Gautiersingel 37, Coevorden (Funda, 2022)



Mosselbank 12, Leiden (Funda, 2022)



De Wieken 74, Malden (Funda, 2021)

Jasmijnlaan 293, Winterswijk (Funda, 2021)

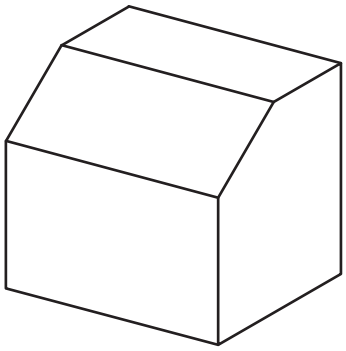
Wandelmeent, Hilversum (2022)

Boomstede 396, Maarssen (Funda, 2022)

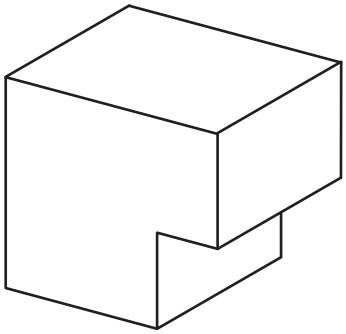
Esdoornhof 169, Kampen (Funda, 2022)

Ten Ankerweg 41, Tholen (Funda, 2022)

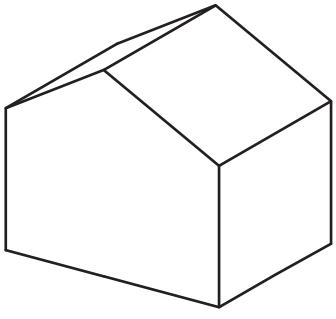
Sterremos 31, Rotterdam (Funda, 2022)



Boerderijstraat 39, Delft (Funda, 2022)



Saturnus 75, Berkel en Rodenrijs (Funda, 2021)



Sleggeplantsoen 43, Arnhem (Funda, 2022)

Dapperstraat 10, Tilburg (Funda, 2021)

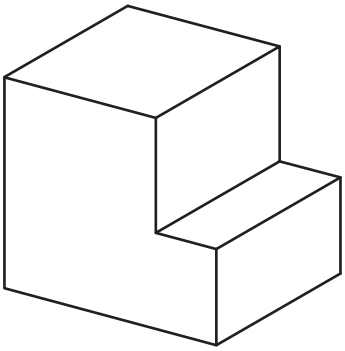
Holtstek 20, Groningen (Funda, 2021)

Sellekamp 28, Zwolle (Funda, 2021)

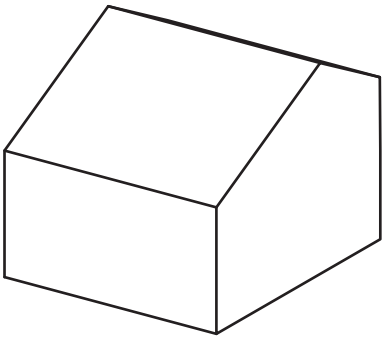
Bijendans 26, Capelle aan den IJssel (Funda, 2022)

Waterlelie 7, Nieuwegein (Funda, 2022)

Brahmsstraat 92, Tilburg (Funda, 2022)



Ambachtenlaan 129, Breda (Funda, 2021)



Grondmolen 11, Papendrecht (Funda, 2022)

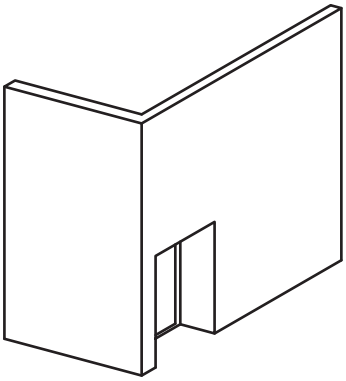
Botter 9, Maassluis (Funda, 2021)

Tolhuis 4353, Nijmegen (Funda, 2021)

Skagerrak 90, Hoofddorp (Funda, 2022)

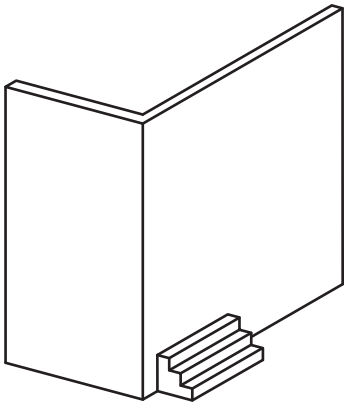
Twintighoven 40, Zevenhoven (Funda, 2022)

Receded main entrance
Teruggelegen voordeur



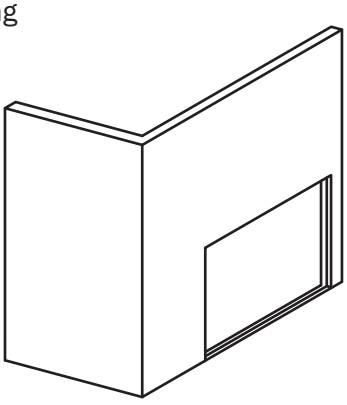
Ambtstrichterveld 211, Apeldoorn (Funda, 2021)

Piano nobile
Bel-etage



De Burcht 18, Arnhem (Funda, 2021)

Drive in
Drive-inwoning



Derde Hambaken 81, Den Bosch (Funda, 2021)

Polderstraat 12, Groningen (Funda, 2021)

Chris Wegerifstraat 17, Apeldoorn (Funda, 2021)

Nimfkruidvaart 22, Zoetermeer (Funda, 2021)

Bachlaan 124, Doorwerth (Funda, 2021)

Tjamme 46, Veendam (Funda, 2021)

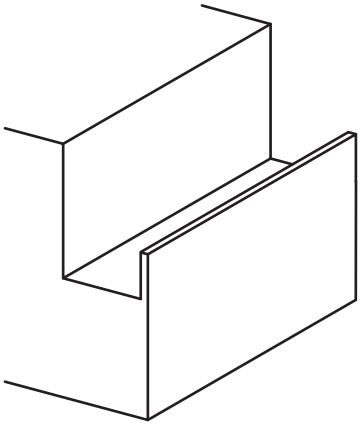
Verhulstlaan 204, Tilburg (Funda, 2022)

Stairs to front door
Voordeur aan de straat

De Burcht 18, Arnhem (Funda, 2021)

Citadeldrift 28, Nieuwegein (Funda, 2021)

Elevated street
Verhoogde straat



Meindert Hobbemastraat 123, Dordrecht (Funda, 2021)

Aletta Jacobsplantsoen (Funda, 2021)

Slakkeveen 226, Spijkenisse (Funda, 2021)

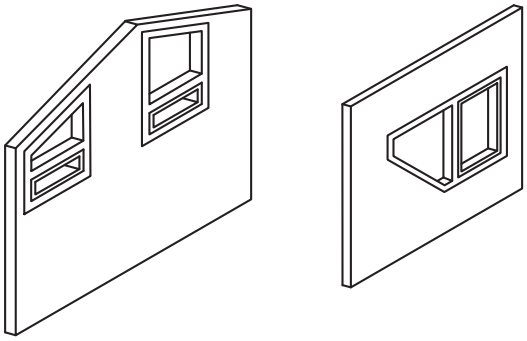
Koninklijke Marinelaan 18, Voorschoten (Funda, 2022)

Sellekamp 44, Zwolle (Funda, 2022)

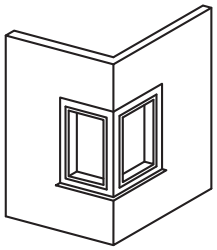
Kastanjestraat 27, Amersfoort (Funda, 2021)

De Veste, Lelystad (Funda, 2021)

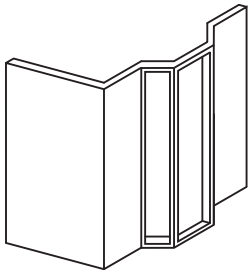
Different window types
Verschillende raam typen



Esdoornhof 169, Kampen (Funda, 2021)



Polderstraat 12, Groningen (Funda, 2021)



Zwaluw 12, Nieuwegein (Funda, 2021)

Golfslag 135, Groningen (Funda, 2021)

Dapperstraat 10 (Funda, 2021)

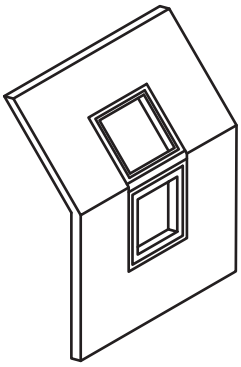
Tweevoren 14, Nuenen (Funda, 2021)

Lemnosdreef 8, Utrecht (Funda, 2021)

Benedictijnenhove 66, Leusden (Funda, 2021)

Het Stroink 209, Enschede (Funda, 2021)

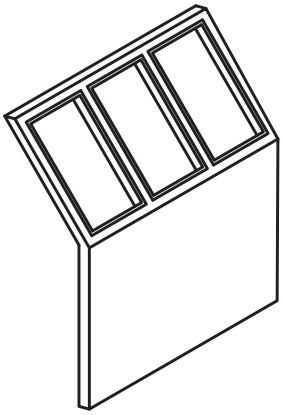
Sky window
Hemelraam



Charlie Parkerrode 2, Zoetermeer (Funda, 2021)

Charlie Parkerrode 2, Zoetermeer (Funda, 2021)

Skylight
Lichtstraat



Weerdesteinlaan 12, Arnhem (Funda, 2021)

Oostgriend 81, Almere (Funda, 2021)

Haspelstraat 3, Zevenaar (Funda, 2021)

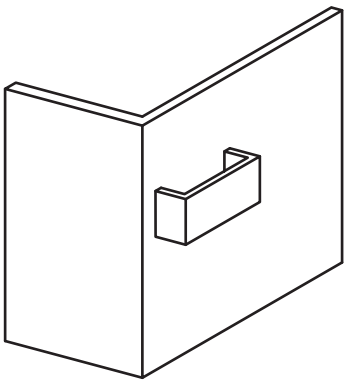
Oostgriend 81 (Funda, 2021)

Haspelstraat 3, Zevenaar (Funda, 2021)

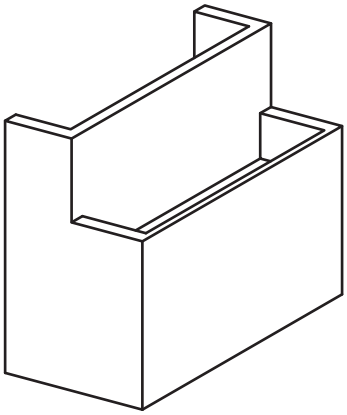
Westereiland 116, Medemblik (Funda, 2021)

Pijlstaart 5, Voorschoten (Funda, 2021)

Balcony
Balkon



Koninklijke Marinelaan 18, Voorschoten (Funda, 2021)



Huibertplaat 106, Zwolle (Funda, 2021)

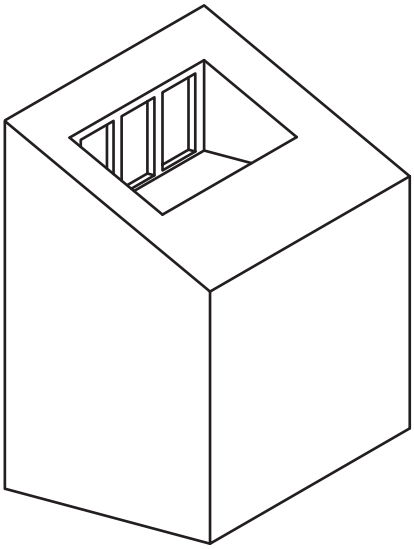
Woldberg 131, Capelle aan den IJssel (Funda, 2021)

De Huesmolen 141, Hoorn (Funda, 2021)

Akkersdreef 17, Renkum (Funda, 2021)

Reigerlaan 60, Ouderkerk aan den IJssel (Funda, 2021)

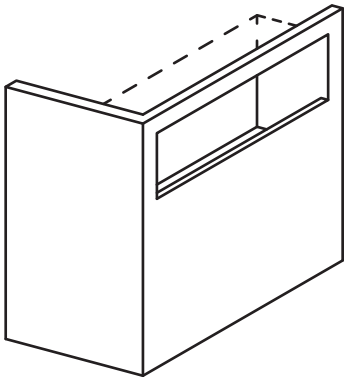
Roof balcony
Dakbalkon



Antilopeweide 7, Nieuwegein (Funda, 2021)

Mondriaanstraat 4, Groningen (Funda, 2021)

Loggia
Loggia



Datheenhove 22, Zoetermeer (Funda, 2021)

Bloemgaarde 57, Castricum (Funda, 2021)

De Poll 8, Almelo (Funda, 2021)

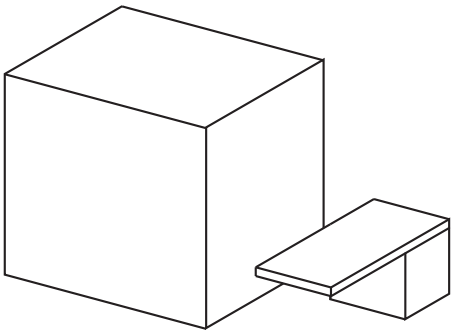
Kostertuin 99, Zwaag (Funda, 2021)

Brugstraat 34, Wilhelminadorp (Funda, 2022)

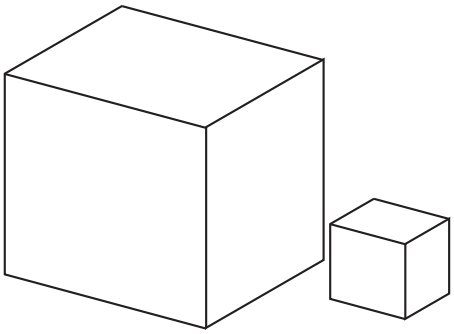
Archipel 2321, Lelystad (Funda, 2021)

Citadeldrift 9, Nieuwegein (Funda, 2021)

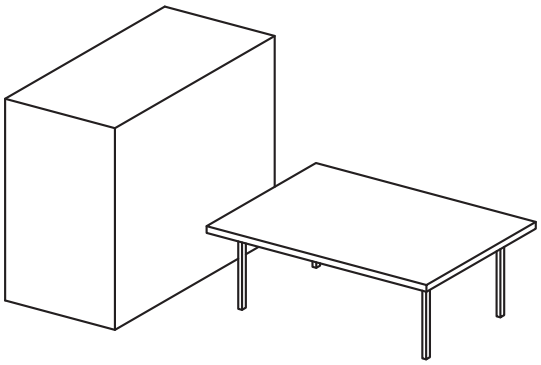
Storage
Berging



Havilsdonk 20, Veghel (Funda, 2021)



Wever 63, Hoorn (Funda, 2022)



Standerdmolen 28, Papendrecht (Funda, 2022)

Bachlaan 124, Doorwerth (Funda, 2022)

Koerlingwei 24, Arnhem (Funda, 2022)

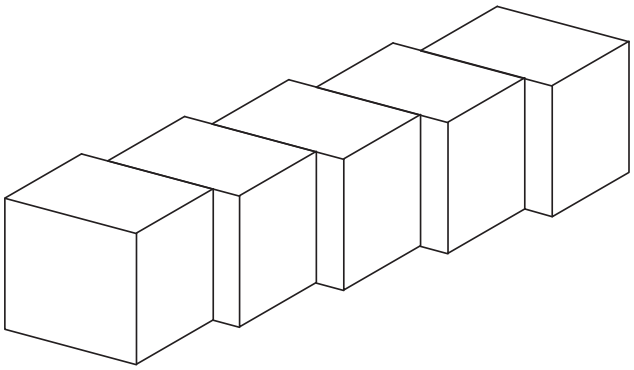
Middelzand 5501, Julianadorp (Funda, 2022)

Schubertstraat 15, Nieuwegein (Funda, 2021)

Grondmolen 11, Papendrecht (Funda, 2022)

Botter 9, Maassluis (Funda, 2022)

Staggered
Verspringend



Kempenaar 0624, Lelystad (Funda, 2021)

Zoom 9, Tilburg (Funda, 2021)

Bloemgaarde 38, Castricum (Funda, 2021)

Geuzingerbrink 79, Emmen (Funda, 2021)

Aragon 17, Leusden (Funda, 2021)

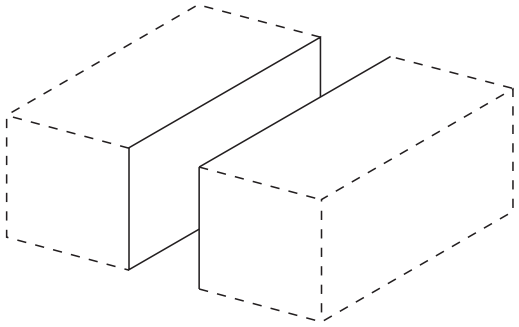
Bloemgaarde 57, Castricum (Funda, 2022)

Populierepad 9, Gouda (Funda, 2022)

Johannes Jelgerhuishof 22, Amsterdam (Funda, 2021)

Seringenplantsoen 12, Rijnsburg (Funda, 2022)

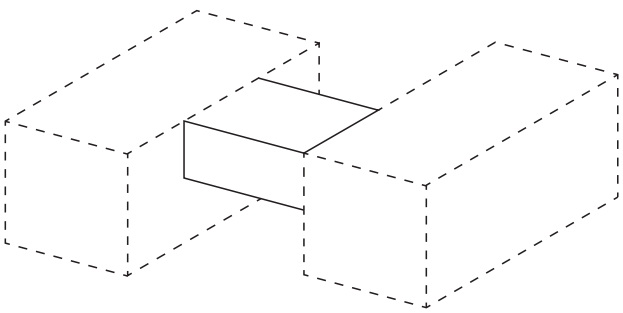
Pedestrian street
Voetgangersstraat



Braak, Eindhoven (Funda, 2022)

Bijendans 26, Capelle aan den IJssel (Funda, 2022)

‘Gatehouse’
Poortwoning



Archipel 2560, Lelystad (Funda, 2021)

Binnendijk 116, Huissen (Funda, 2022)

Nimfkruidvaart 1, Zoetermeer (Funda, 2022)

Eduard Verkadelaan 69, Utrecht (Funda, 2022)

De Veste, Lelystad (Funda, 2021)

Lijsterbes 21, Naaldwijk (Funda, 2021)

Parking under the housing
Parkeren onder de woningen

Holterberg, Dordrecht (Funda, 2021)

Perpignanlaan 15, Eindhoven (Funda, 2021)

Puttenstein, Dordrecht (Funda, 2021)

Brugakker, Zeist (Funda, 2021)

Zandberg 15, Zoetermeer (Funda, 2021)

Op Gen Hoes 18, Brunssum (Funda, 2021)

Vaulted roofs
Gewelfd dak

Archipel 2560, Lelystad (Funda, 2021)

Kyftebeltlaan 54, Hoevelaken (Funda, 2021)

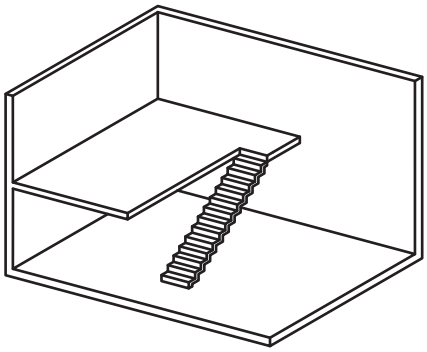
Boogjes 16, Dordrecht (Funda, 2021)

Burg Gautiersingel 17, Coevorden (Funda, 2021)

Ravelijnspad 7, Muiden (Funda, 2021)

Kastanjelaan 41, Groningen (Funda, 2021)

Mezzanine
Vide



Brugstraat 34, Wilhelminadorp (Funda, 2021)

Piraeuserf 25, Rotterdam (Funda, 2021)

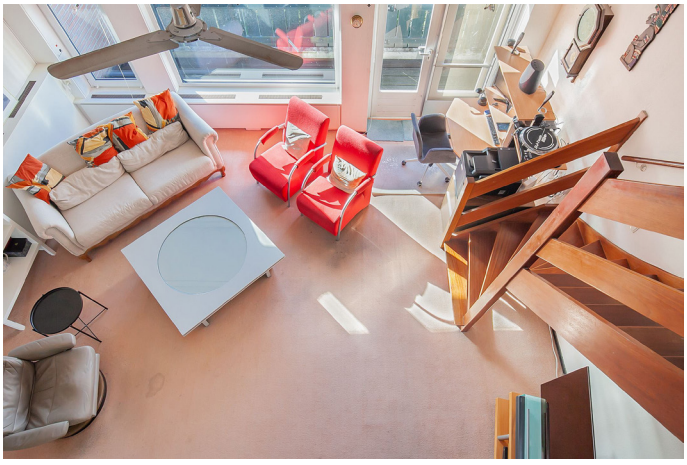
Hildebrandhove 116, Zoetermeer (Funda, 2021)

Archipel 2321, Lelystad (Funda, 2021)

Zwaluw 80, Nieuwegein (Funda, 2021)

De Poll 8, Almelo (Funda, 2021)

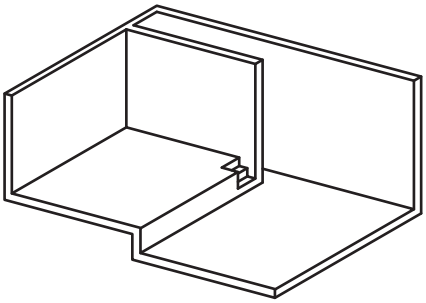
De Huipen 60, Waalre (Funda, 2021)



Nesciohove 41, Zoetermeer (Funda, 2021)

Bloemgaarde 57, Castricum (Funda, 2021)

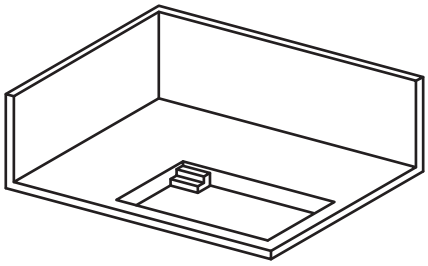
Split-level home
Splitlevel woning



Lindeboom 30, Mook (Funda, 2021)

Verhulstlaan 204, Tilburg (Funda, 2021)

Seating pit
Zitkuil



Westllan 9, Pijnacker (Funda, 2021)

Vloed 6, Breda (Funda, 2021)

Op Gen Hoes 20, Brunssum (Funda, 2021)

Sterremos 31, Rotterdam (Funda, 2021)

Richterdael 19, Roermond (Funda, 2022)

Brugstraat 34, Wilhelminadorp (Funda, 2021)

De Poll 8, Almelo (Funda, 2021)

Open and central staircase
Open en centrale trap

Schans 37, Eindhoven (Funda, 2022)

Schans 37, Eindhoven (Funda, 2022)

Kaarder 30, Hoorn (Funda, 2022)

Koggewagen 32, Blaricum (Funda, 2022)

Schutwant 92, Hoogvliet (Funda, 2022)

Nimfkruidvaart 1, Zoetermeer (Funda, 2022)

Living area on first floor
Leefverdieping op de eerste verdieping

Anne Franklaan 211, Bussum (Funda, 2021)

Couwenhoven 6102, Zeist (Funda, 2021)

Sterremos 31, Rotterdam (Funda, 2021)

Aragon 17, Leusden (Funda, 2021)

Lankforst 3201, Nijmegen (Funda, 2022)

Bloemgaarde 59, Castricum (Funda, 2022)

Fireplace
Haard

De Bloemen 16, Castricum (Funda, 2022)

Bloemgaarde 59, Castricum (Funda, 2022)

Mozartrode 40, Zoetermeer (Funda, 2022)

Donizettipad 3, Amersfoort (Funda, 2022)

Slingerbeek 6, Zwolle (Funda, 2022)

Ceintuurbaan Noord 7, Roden (Funda, 2022)

Maconlaan 18, Maastricht (Funda, 2022)

Westlaan 25, Pijnacker (Funda, 2022)

Bloemgaarde 38, Castricum (Funda, 2022)

Built-in cupboards as buffer
Inbouwkast als buffer

Lenningenhof 26, Eindhoven (Funda, 2022)

Lenningenhof 26, Eindhoven (Funda, 2022)

Prefab concrete ‘kwaaitaal’ floor
Kwaaitaalvloer

Noordmark 38, Almere (Funda, 2022)

Goedewerf 215, Almere (Funda, 2022)

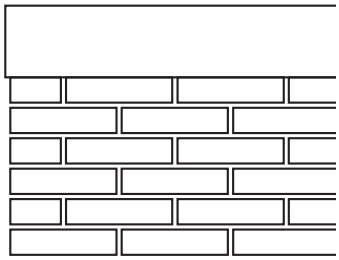
Noordmark 2, Almere (Funda, 2022)

Goedewerf 215, Almere (Funda, 2022)

Datheenhove 22, Zoetermeer (Funda, 2022)

Zwaluw 80, Nieuwegein (Funda, 2022)

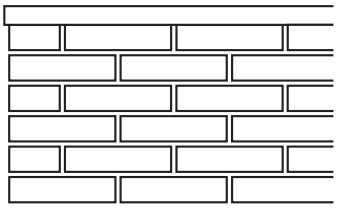
‘Boeiboord’



Brugakker 6815, Zeist (Funda, 2022)

Aluminium roof edge

Aluminium daktrim



Tuinlaan 14, Rhenen (Funda, 2022)

Bricks stick outward at corners

‘Muizentand’

Zwaluw 80, Nieuwegein (Funda, 2021)

Middelzand 5501, Julianadorp (Funda, 2022)

Slingerbeek 6, Zwolle (Funda, 2022)

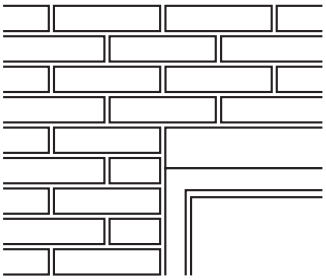
Tweevoren 14, Nuenen (Funda, 2022)

Akkerheide 88, Kerkrade (Funda, 2022)

Holterberg 118, Capelle aan den IJssel (Funda, 2021)

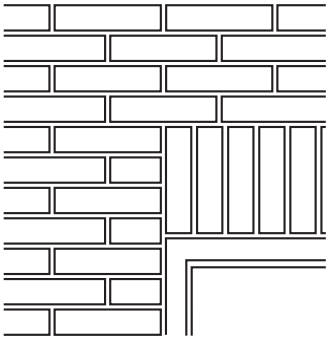
Castor 98, Berkel en Rodenrijs (Funda, 2022)

Concrete lintel
Beton latei



Burg Gautiersingel 37, Coevorden (Funda, 2021)

Brick lintel
Metselwerk latei



Havixhorst 12, Zuidlaren (Funda, 2021)

Peerdsbroek 42, Breda (Funda, 2021)

Rotterdamsedijk 359, Schiedam (Funda, 2021)

Appelgaarde 91, Houten (Funda, 2021)

Noordmark 38, Almere (Funda, 2021)

Aesthetic families

Musketiersveld 214, Apeldoorn (Funda, 2021)

Datheenhove 22, Zoetermeer (Funda, 2021)

Koerlingwei 24, Arnhem (Funda, 2021)

Dapperstraat 10, Tilburg (Funda, 2021)

Boerderijstraat 39, Delft (Funda, 2021)

Holtstek 20, Groningen (Funda, 2021)

Brugakker 6815, Zeist (Funda, 2022)

Meestoof 22, Oud-Beijerland (Funda, 2022)

Kruisland 9, Weesp (Funda, 2022)

Kanariesprenk 353, Vlissingen (Funda, 2022)

Snelliuslaan 4, Heemstede (Funda, 2022)

Deborah Hoeve 28, Gouda (Funda, 2022)

Derde Hambaken 81, Den Bosch (Funda, 2022)

Nynke van Hichtumwei 72, Leeuwarden (Funda, 2021)

Aragon 17, Leusden (Funda, 2022)

Boeg 113, Groningen (Funda, 2021)

Koninginneweg 46, Almere (Funda, 2021)

Ambachtenlaan 129, Breda (Funda, 2021)

Pollux 48, Berkel en Rodenrijs (Funda, 2021)

Vloed 6, Breda (Funda, 2021)

Tolhuis 4353, Nijmegen (Funda, 2021)

Waterlelie 2, Velserbroek (Funda, 2022)

Houtsnijdershorst 145, Apeldoorn (Funda, 2021)

Lambert Meliszweg 33, Hoorn (Funda, 2021)

Pastoor Spieringsstraat 38, Uden (Funda, 2022)

Vederwier 15, Leiden (Funda, 2022)

Erasmusstraat 64, Amersfoort (Funda, 2022)

Bachlaan 124, Doorwerth (Funda, 2022)

Brugakker 6516, Zeist (Funda, 2022)

Brugakker 6614, Zeist (Funda, 2022)

Piraeuserf 25, Rotterdam (Funda, 2022)

Hildebrandhove 56, Zoetermeer (Funda, 2021)

Huntum 49, Amsterdam (Funda, 2022)

Ringmus, Nieuwegein (Funda, 2022)

Rotterdamsedijk, Schiedam (Funda, 2022)

Vlinderveen, Spijkenisse (Funda, 2022)

Nesciohove, Zoetermeer (Funda, 2022)

Albert van Dalsumlaan 437, Utrecht (Funda, 2021)

Laan van de Mensenrechten 58, Den Haag (Funda, 2022)

Westeinde 9, Nunspeet (Funda, 2022)

Peilikaan 80, Ridderkerk (Funda, 2022)

Markiezenhof 17, Leerdam (Funda, 2022)

Pruimengaarde 11, Houten (Funda, 2022)

Standerdmolen 28, Papendrecht (Funda, 2022)

Oranjelaan 41, Nunspeet (Funda, 2022)

Rielant, Monnickendam (Funda, 2021)

Braak, Veldhoven (Funda, 2021)

Albatroshoek, Spijkenisse (Funda, 2021)

Morssingel 199, Leiden (Funda, 2022)

Lindengouw, Almere (Funda, 2022)

Marshallplein, Rijswijk (Funda, 2022)

Beneluxlaan 55, Dongen (Funda, 2022)

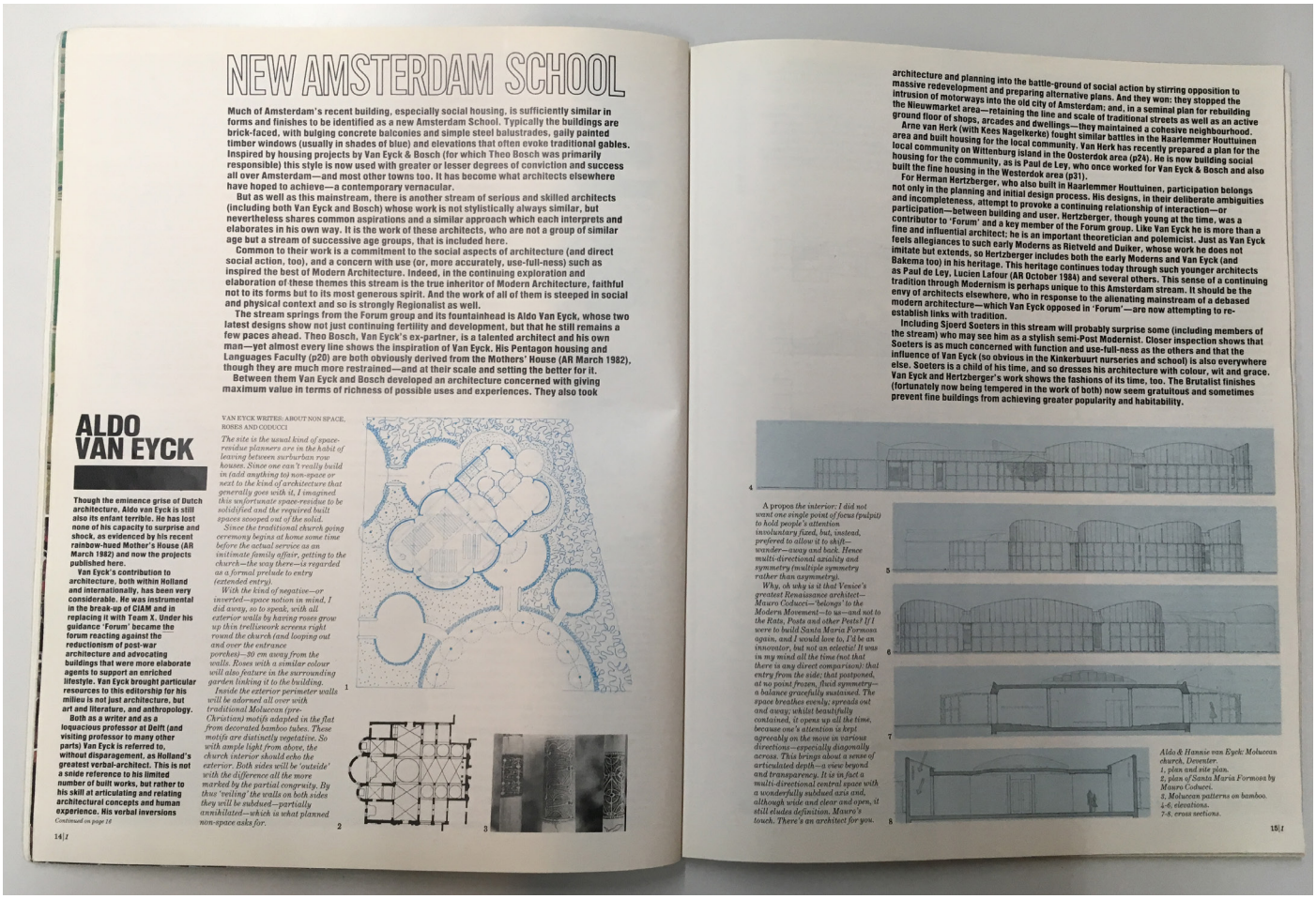
Haanderik 158, IJsselstein (Funda, 2022)

Golfslag 135, Groningen (Funda, 2022)

Kagerdreef 222, Sassenheim (Funda, 2022)

Iepenlaan 95, Bilthoven (Funda, 2022)

Karel van Doorman 146, Papendrecht (Funda, 2022)



NEW AMSTERDAM SCHOOL

Much of Amsterdam's recent building, especially social housing, is sufficiently similar in forms and finishes to be identified as a new Amsterdam School. Typically the buildings are brick-faced, with bulging concrete balconies and simple steel balustrades, gaily painted timber windows (usually in shades of blue) and elevations that often evoke traditional gables. Inspired by housing projects by Van Eyck & Bosch (for which Theo Bosch was primarily responsible) this style is now used with greater or lesser degrees of conviction and success all over Amsterdam—and most other towns too. It has become what architects elsewhere have hoped to achieve—a contemporary vernacular.

But as well as this mainstream, there is another stream of serious and skilled architects (including both Van Eyck and Bosch) whose work is not stylistically always similar, but nevertheless shares common aspirations and a similar approach which each interprets and elaborates in his own way. It is the work of these architects, who are not a group of similar age but a stream of successive age groups, that is included here.

Common to their work is a commitment to the social aspects of architecture (and direct social action, too), and a concern with use (or, more accurately, use-full-ness) such as inspired the best of Modern Architecture. Indeed, in the continuing exploration and elaboration of these themes this stream is the true inheritor of Modern Architecture, faithful not to its forms but to its most generous spirit. And the work of all of them is steeped in social and physical context and so is strongly Regionalist as well.

The stream springs from the Forum group and its fountainhead is Aldo Van Eyck, whose two latest designs show not just continuing fertility and development, but that he still remains a few paces ahead. Theo Bosch, Van Eyck's ex-partner, is a talented architect and his own man—yet almost every line shows the inspiration of Van Eyck. His Pentagon housing and Languages Faculty (p20) are both obviously derived from the Mothers' House (AR March 1982), though they are much more restrained—and at their scale and setting the better for it.

Between them Van Eyck and Bosch developed an architecture concerned with giving maximum value in terms of richness of possible uses and experiences. They also took architecture and planning into the battle-ground of social action by stirring opposition to massive redevelopment and preparing alternative plans. And they won: they stopped the intrusion of motorways into the old city of Amsterdam; and, in a seminal plan for rebuilding the Nieuwmarket area—retaining the line and scale of traditional streets as well as an active ground floor of shops, arcades and dwellings—they maintained a cohesive neighbourhood.

Arne van Herk (with Kees Nagelkerke) fought similar battles in the Haarlemmer Houttuinen area and built housing for the local community. Van Herk has recently prepared a plan for the local community on Wittenburg island in the Oosterdok area (p24). He is now building social housing for the community, as is Paul de Ley, who once worked for Van Eyck & Bosch and also built the fine housing in the Westerdok area (p31).

For Herman Hertzberger, who also built in Haarlemmer Houttuinen, participation belongs not only in the planning and initial design process. His designs, in their deliberate ambiguities and incompleteness, attempt to provoke a continuing relationship of interaction—or participation—between building and user. Hertzberger, though young at the time, was a contributor to 'Forum' and a key member of the Forum group. Like Van Eyck he is more than a fine and influential architect; he is an important theoretician and polemicist. Just as Van Eyck feels allegiances to such early Moderns as Rietveld and Dulker, whose work he does not imitate but extends, so Hertzberger includes both the early Moderns and Van Eyck (and Bakema too) in his heritage. This heritage continues today through such younger architects as Paul de Ley, Lucien Lafour (AR October 1984) and several others. This sense of a continuing tradition through Modernism is perhaps unique to this Amsterdam stream. It should be the envy of architects elsewhere, who in response to the alienating mainstream of a debased modern architecture—which Van Eyck opposed in 'Forum'—are now attempting to re-establish links with tradition.

Including Sjoerd Soeters in this stream will probably surprise some (including members of the stream) who may see him as a stylish semi-Post Modernist. Closer inspection shows that Soeters is as much concerned with function and use-full-ness as the others and that the influence of Van Eyck (so obvious in the Kinkerbuurt nurseries and school) is also everywhere else. Soeters is a child of his time, and so dresses his architecture with colour, wit and grace. Van Eyck and Hertzberger's work shows the fashions of its time, too. The Brutalist finishes (fortunately now being tempered in the work of both) now seem gratuitous and sometimes prevent fine buildings from achieving greater popularity and habitability.

ALDO VAN EYCK

Though the eminence grise of Dutch architecture, Aldo van Eyck is still also its enfant terrible. He has lost none of his capacity to surprise and shock, as evidenced by his recent rainbow-hued Mother's House (AR March 1982) and now the projects published here.

Van Eyck's contribution to architecture, both within Holland and internationally, has been very considerable. He was instrumental in the break-up of CIAM and in replacing it with Team X. Under his guidance 'Forum' became the forum reacting against the reductionism of post-war architecture and advocating buildings that were more elaborate agents to support an enriched lifestyle. Van Eyck brought particular resources to this editorship for his milieu is not just architecture, but art and literature, and anthropology.

Both as a writer and as a loquacious professor at Delft (and visiting professor to many other parts) Van Eyck is referred to, without disparagement, as Holland's greatest verbal-architect. This is not a snide reference to his limited number of built works, but rather to his skill at articulating and relating architectural concepts and human experience. His verbal inversions

Continued on page 18

VAN EYCK WRITES: ABOUT NON SPACE, ROSES AND CODUCCI

The site is the usual kind of space-residue planners are in the habit of leaving between suburban row houses. Since one can't really build in (add anything to) non-space or next to the kind of architecture that generally goes with it, I imagined this unfortunate space-residue to be solidified and the required built spaces scooped out of the solid.

Since the traditional church going ceremony begins at home some time before the actual service as an intimate family affair, getting to the church—the way there—is regarded as a formal prelude to entry (extended entry).

With the kind of negative—or inverted—space notion in mind, I did away, so to speak, with all exterior walls by having roses grow up thin trellis-work screens right round the church (and looping out and over the entrance porches)—30 cm away from the walls. Roses with a similar colour will also feature in the surrounding garden linking it to the building.

Inside the exterior perimeter walls will be adorned all over with traditional Moluccan (pre-Christian) motifs adapted in the flat from decorated bamboo tubes. These motifs are distinctly vegetative. So with ample light from above, the church interior should echo the exterior. Both sides will be 'outside' with the difference all the more marked by the partial congruity. By thus 'veiling' the walls on both sides they will be subdued—partially annihilated—which is what planned non-space asks for.

1

2

3

4

A propos *the interior: I did not want one single point of focus (pulpit) to hold people's attention involuntary fixed, but, instead, prefered to allow it to shift—wander—away and back. Hence multi-directional axiality and symmetry (multiple symmetry rather than asymmetry).*

Why, oh why is it that Venice's greatest Renaissance architect—Mauro Coducci—belongs to the Modern Movement—to us—and not to the Rats, Poats and other Pests? If I were to build Santa Maria Formosa again, and I would love to, I'd be an innovator, but not an eclectic! It was in my mind all the time (not that there is any direct comparison) that entry from the side; that postponed, at no point frozen, fluid symmetry—a balance gracefully sustained. The space breathes evenly; spreads out and away; whilst beautifully contained, it opens up all the time, because one's attention is kept agreeably on the move in various directions—especially diagonally across. This brings about a sense of articulated depth—a view beyond and transparency. It is in fact a multi-directional central space with a wonderfully subdued axis and, although wide and clear and open, it still eludes definition. Mauro's touch. There's an architect for you.

5

6

7

8

Aldo & Hannie van Eyck: Moluccan church, Deventer.
1, plan and site plan.
2, plan of Santa Maria Formosa by Mauro Coducci.
3, Moluccan patterns on bamboo.
4-6, elevations.
7-8, cross sections.

Fig. 17 *New Amsterdam School, Architectural Review*, by Buchanan, 1985.

4.4 Characterisation Post 65

In this chapter, an overview is presented in which the characterisations of Post 65 suburban architecture, which have been collected from the aforementioned selection of literature, will be assessed on the basis of aformentioned research findings. It is recognisable that in all attempts to give a name to Post 65 housing architecture 'style' there is no name that has really stuck with the public and/or professionals. The RCE also goes as far as not finding it very interesting to give a name to Post 65 architecture. The RCE argues that the architectural appearance is by no means always linked to a certain architectural style or architectural movement. However I have not found evidence in my research that that is the case.

> De algemene leidraad voor architectuurhistorisch onderzoek is veelal de indeling van stijlperiode en de chronologisch ordening. Voor de jongere en jongste bouwkunst is de architectonische verschijningsvorm echter lang niet altijd gekoppeld aan een bepaalde bouwstijl of architectuurstroming. Karakteristieke en eventuele waardering komen eerder in samenhang met bijvoorbeeld de omgevingskenmerken, de vormgeving, de toegepaste materialen en de constructie tot stand, en ook in relatie tot sociaalmaatschappelijke en beleidsmatige ontwikkelingen.
> (Blom et al, 2019, p. 9)

Despite the reluctance to make a division of style period, in the RCE publication *Groei, verandering, differentiatie. Architectuur in Nederland 1965-1990* Somer (2020, p. 13) does make an effort. Somer emphasizes the contradiction that there is great diversity in aesthetic appearances but at same time it is viewed as 'typically 70s'.

> De architectuur van deze periode wordt vaak als 'typisch jaren zeventig' aangeduid, maar in de vele uitingsvormen is niet een dominante stijl of stroming te onderscheiden. Als we er een trefwoord aan zouden willen toekennen dan is dat wel 'kleinschaligheid'.
> (Somer, 2020, p. 13)

Various other authors have made an attempt. For example Buchanan naming it 'The New Amsterdam School' as was the case in an Architectural Review issue from 1985.

> 'Much of Amsterdam's recent building, especially social housing, is suffiently similar in forms and finishes to be identified as a new Amsterdam School. Typically the buildings are brick-faced, with bulging concrete balconies and simple steel balustrades, gaily painted timber windows (usually in shades of blue) and elevations that often evoke traditional gables. Inspired by Van Eyck & Bosch this style is now used with greater or lesser degrees of conviction and success all over Amsterdam - and most other towns too. It has become what architects elswhere have hoped to achieve - a contemporary vernacular. (...) Between them Van Eyck and Bosch developed an architecture concerned with giving maximum value in terms of richness of possible uses and experiences.'
> (Buchanan, 1985, p. 14)

More recently, Buch (1993) and De Vletter (2004, p. 28) and also describe this paralell but this name however has never stuck.

> 'Opnieuw ontstond er een synthetische stijl, waarbij traditionele materialen ontdaan van een directe historische verwijzing naar nieuwe betekenissen, in dienst staan van sociaal verantwoorde doelen. Een groot verschil met de Amsterdamse School is echter dat de blokken in de jaren zeventig 'geen kop en geen staart hebben' (Ben Loerakker en daarmee de monumentaliteit missen die de architectuur van de Amsterdamse School juist zo aantrekkelijk maakt.'
> (De Vletter, 2004, p. 29)

Sometimes the namegiving is done with a degree of cautiousness, only going as far as calling it a new form of modern architecture:

> De discussie over de stad en de gebouwde omgeving resulteerde in een nieuwe vorm van moderne architectuur. In de jaren zeventig werd er overal in Nederland geëxperimenteerd met nieuwe interpretaties van moderne architectuur.
> (Biggelaar, 2018, p. 156)

Fig. 18 ‘Monumentality’ in Post 65 suburban housing, Albatroshoek, Spijkenisse (Funda, 2022)

Fig. 19 ‘Regionalism’ in Post 65 suburban housing. Het Salm 29, Zaandam (Funda, 2022)

Reputation

As mentioned earlier in the Introduction, Post 65 suburban housing is subject to a very negative reputation. It does not help that in books such as *Bouwen in Nederland*, edited by prominent Dutch architectural historians, relatively firm negative statements are presented. The general qualifications do not help and encourage opening one's eyes to make a (new) assessment of the (heritage) value.

> Wie de visuele en woontechnische kwaliteit van stadsvernieuwingsprojecten uit de jaren zeventig en tachtig vergelijkt met de nieuwbouw zogenaamde uitbreidingslocaties moet wel tot de conclusie komen dat de context van stadsvernieuwing meestal toch een ambitieuzer architectonische en stedenbouwkundige inzet van ontwerpers en opdrachtgevers opleverde. In de stadsvernieuwing werden in veel gevallen karaktervolle en vernieuwende projecten gerealiseerd (...) In de uitbreidingsnieuwbouw lijkt in deze periode iedere inspiratie op het gebied van architectonische en stedebouwkundige vormgeving te ontbreken. (...) Bijna ongemerkt werd tussen 1975 en 1985 de nieuwbouwproductie van sociale huurwoningen in uitbreidingsgebieden teruggebracht tot fantasieloze rijen van heel veel dezelfde woningen.
> (Bosma et al, 2007, p. 611)

It is correct that there 'fantasieloze rijen van heel veel dezelfde woningen' exist, but a general qualification like this is incorrect. What is also often referred to is the alleged lack of monumentality[1]. The findings of the study show that this general qualification does not apply to all Post 65 housing. An examples is given in Fig. 18.

> Veel bloemkoolwijken zijn naar binnen gekeerd en er zijn hooguit wat onopvallende achtergevels te zien tussen het groen, soms met allerlei aanbouwen, schuttingen en schuurtjes. Afwezigheid is eigenlijk het belangrijkste kenmerk van de architectuur van bloemkoolwijken. Er is uitdrukkelijk niet gestreefd naar een al te nadrukkelijke, laat staan een monumentale architectonische uitdrukkingsvorm naar buiten toe.
> (Abrahamsel, 2019, p. 16)

> De gemene deler is de afwezigheid van monumentaliteit, de onnadrukkelijkheid van de architectuur: de gebouwen hebben geen presentie maar gaan op in het grotere geheel.
> (Abrahamsel, 2019, p. 18)

Postmodernism 65

The fact that giving Post 65 housing a name has never really succeeded will probably be due to the huge diversity in aesthetic and spatial appearance. The naming attempts that have been made have been correct only for a certain subgroup. This research argues the strongest contender would be qualifying it as 'postmodernism' as was also cautiously done by De Vletter (2004, p.29).

> Het valt te beargumenteren dat in Nederland toch een vorm van postmodernisme is ontstaan in de jaren zeventig. Het postmodernisme heeft als attitude zeker navolging gekregen, maar tevens een heel eigen architectonische uitwerking gehad. De monumentaliteit van Aldo Rossi of Ricardo Bofill ontbreekt. In Nederland is duidelijk met een bescheidener vormentaal naar een andere geschiedenis gezocht.
> (De Vletter, 2004, p. 29)

The RCE however denies this relation with postmodernism in two publications from 2019. However Somer (2020) does not, only by also bringing in the familiar characterisation of lack of monumentality again.

> Het postmodernisme, in diverse andere landen een reactie op het modernisme, komt in Nederland als stroming nauwelijks van de grond.
> (Blom et al, 2019, p. 10)

> Postmoderne architectuur, die verwees naar een historische architectonische beeldtaal, met symmetrie in façades en in veel gevallen voorzien van historische elementen, zoals timpanen of zuilen, waren in de Nederlandse volkswoningbouw, en dus ook in de bloemkoolwijken, geheel afwezig.
> (Abrahamsel, 2019, p. 19)

> Zo kreeg in Nederland het 'postmodernisme' in de jaren zeventig een eigen architectonische uitwerking, die zich kenmerkte door een gebrek aan monumentaliteit en een bescheiden vormentaal.
> (Somer, 2020, p. 14)

As Charles Jenkcs describes in his publications about postmodernism there are multiple forms of postmodernism. Within his overviews of the evolution of postmodernism (Fig. 20), Post 65 could be categorised as originating from neo-vernacular roots resulting in forms of 'regionalism' and 'critical regionalism', as I interpret it both being forms architecture that strived for recognisability but differences in how explicit references to the architecture of the past are made.

1 Monumentality is interpreted in this context as 'massive', 'imposing', 'exceptionally great, as in quantity, quality, extent or degree'

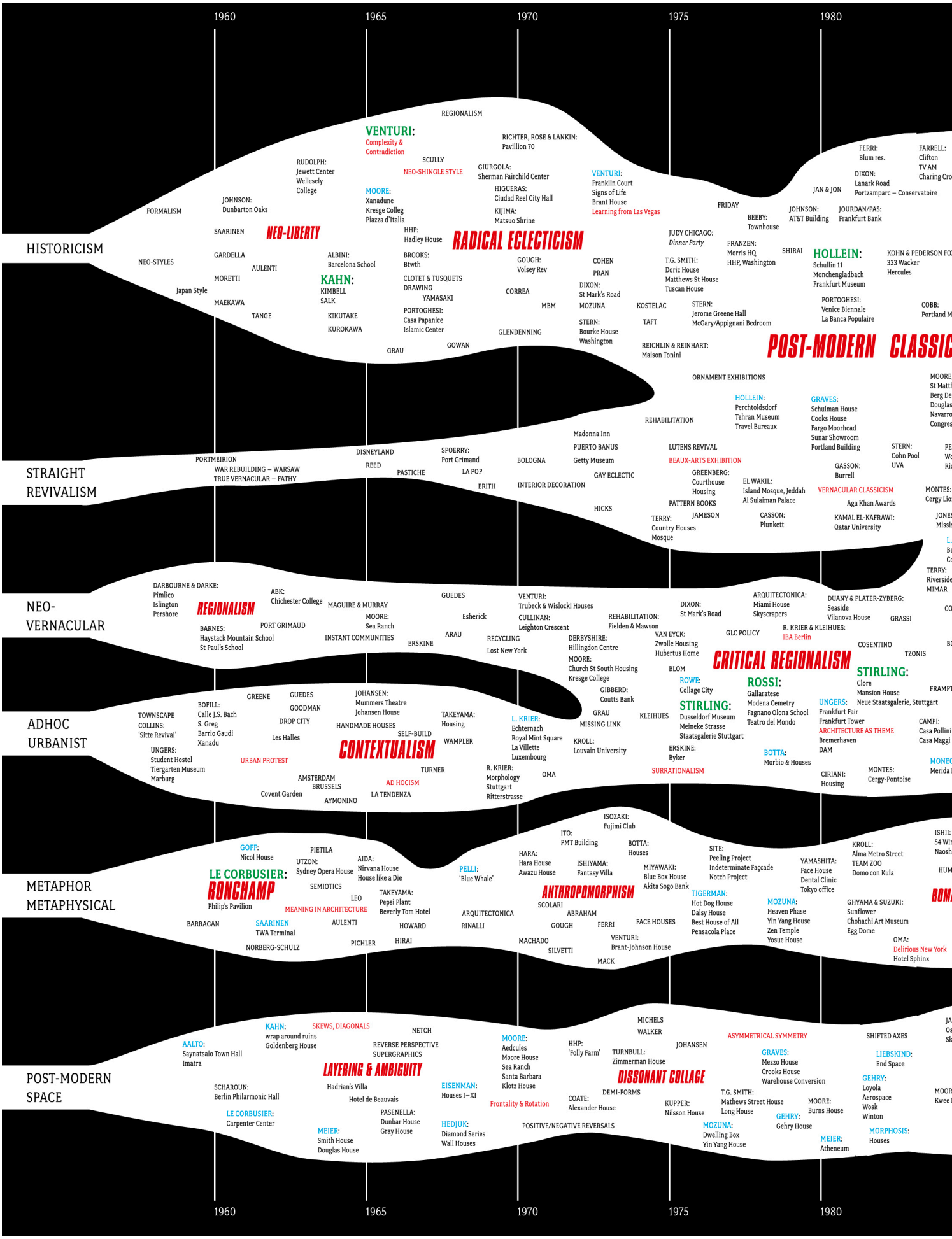


Fig. 20 'Post-Modern Evolutionary Tree' from *The Story of Post-Modernism* by Jenkcs, 2011. The six underlying traditions are classified far left; the 16 major architects are in green; 24 major movements in red, 74 significant architects in blue; and 500 architects and keywords in black.

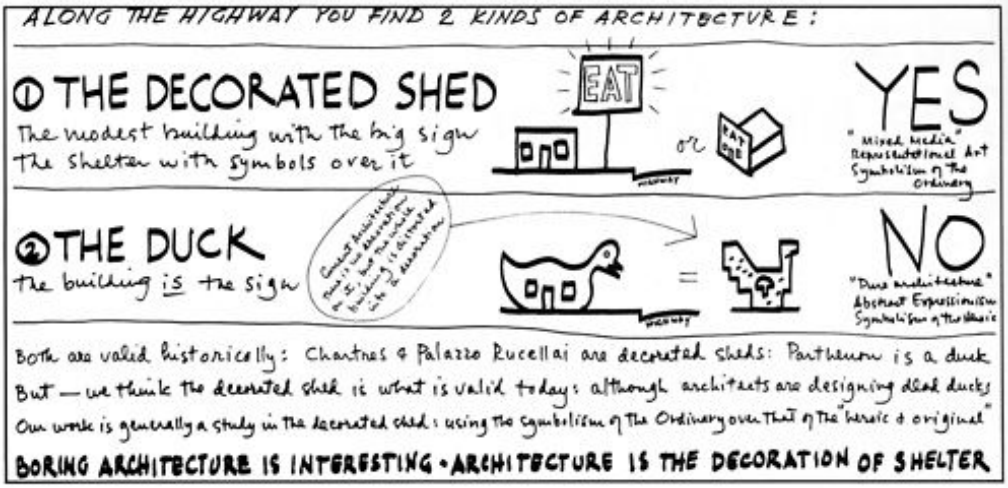

1985
1990
1995
2000
2005
2010
SYMBOLIC ARCHITECTURE
COSMIC SYMBOLISM
POST-MODERN ECLECTICISM
ICONIC BUILDING
PATTERNS OF ORNAMENT
ECOLOGICAL EXPRESSION
ADHOCIST MEMORY
HETEROPOLIS
DATASCAPES
CRITICAL MODERNISM
OMA & KOOLHAAS:
NEW COMPLEXITY PARADIGM
BIOMORPHIC
CYBERNETIC
FOLDING
FRACTAL ARCHITECTURE
DECONSTRUCTION
ANTIC REVIVAL
ZUMTHOR:
HERZOG & DE MEURON:
KOOLHAAS:
GEHRY:
EISENMAN:
LIBESKIND:
FOA:
VENTURI:
KLOTZ:
OUTRAM:
DOSHI:
PREDOCK:
FOSTER:
KUROKAWA:
HOLLEN:
HOPKINS:
ISOZAKI:
MacCORMAC:
ARQUITECTONICA
CONSTRUCTIONAL SYMBOLISM
URBAN ARTICULATION
METAPHORICAL
ZOOMORPHIC
ENIGMATIC SIGNIFIER
BILBAO EFFECT
FRACTAL ARCHITECTS
MILLENNIUM ARCHITECTS
GORMLEY
COATES
ELIASSON
SHAWCROSS
Telling Tales
CULLINAN
HEATHERWICK
CERN
SNØHETTA:
Oslo Opera House
ARTICONS
ARAD
KAPOOR
Eden Centre
GCS
MIRALLES:
Scottish Parliament
Prada
Walker
Bird's Nest Stadium
COSMIC & NATURAL CODES
OPERA HOUSES MUSEUMS OLYMPICS
CREDIT BUBBLE
PIANO
ROGERS:
Cardiff
Madrid
EGERAAT-BUDAPEST
CREDIT CRUNCH
ZAHA HADID :
Rosenthal, MAXXI
Wolfsburg
Zaragoza
SPECTACULAR FAILURES
BURJ KHALIFA
MGM LAS VEGAS
COOP HIMMELBLAU:
BMW
Lyon Museum
UN Studio
Mercedes
FOSTER:
Sage
Millau
Kazakhstan
ONE-LINERS
CALATRAVA:
Santa Cruz
Valencia
NOUVEL:
Agbar
Tower
Branly
R. Sophia
MOSCOW
VIÑOLY
ANDREU:
Beijing
LAS VEGAS
REGIONALIST ROMANTICISM
SUSTAINABLE
Holocaust
Museums
MONEO:
Merida Museum
Seville Airport
Copenhagen Museum
Los Angeles Cathedral
BADRAN:
Riyadh Palace
TALLER BOFILL:
Arcades
Abraxas
Montpelier
Cergy-Pontoise
KAHN:
Dacca Associates
HOLL
Purini & Thermes
TIGERMAN
Anti-Cruelty Boccara
ROCHE DINKELOO:
Union Cartridge
SOM:
Rowes Wharf
200 Ross
VANDENHOVE:
Maastricht Housing
Poort van Breda
Courts
BENSON FORSYTH:
National Museum of Scotland
Dublin Museum
VENTURI:
National Gallery Extension
Sainsbury
UCLA
Dartmouth
Toulouse
TAFT:
Rivercrest CC
KUROKAWA:
Fukui Museum
K.L. Airport
Amber Hall
Osaka Convention Center
Eco-Media City
BEEBY:
Glencoe Synagogue
Harold Washington Library
Center
American Academy of Pediatrics
VANDENHOVE:
Delforge House
Blanche House
Hors-Chateau
JOHNSON & BURGEE
RICE
BOTTA
EMBT:
Barcelona Tower
SEMANTIC ORNAMENT
SNØHETTA:
Alexandria Library
BALMOND
LYNN:
Blob Walls
ITO:
Tod
CARUSO ST JOHN
PTW:
WaterCube
La Peau
GARCIA:
Patterns of Architecture
NOX:
Lille
DIGITAL SKYSCRAPERS
ALL-OVER ORNAMENT
PLATONIC NATURE
SKIN
ROGER HIORNS:
Seizure
MATERIALITY
SAUERBRUCH & HUTTON
Brandhorst Museum
FRACTAL ORNAMENT
The Function of Ornament
MUF
FOA:
Spanish Pavillion
John Lewis
Ravensbourne
FAT:
Manchester Housing
Sky-scraper
Sint-Lucas
HERZOG & DE MEURON:
Eberswalde
Cottbus
Bird's Nest
FRANÇOIS:
Green Archite
Hotel Fouque
WILFORD:
British Embassy, Berlin
HOPKINS:
Norwich Refectory
READY MADES
ARCHITECTURAL COLLAGE AND PROMENADE
FRANÇOIS
TIME CITY
CONTEXTUAL COUNTERPOINT
BAN:
Travelling Museum
I.M. PEI:
Suzhou Museum
HERZOG & DE MEURON:
La CaixaForum
CHIPPERFIELD:
Neues Museum, Be
Eco-transformation
PIANO:
Tijbaou Cultural Centre
POUNDBURY
SHORT:
Lanchester
Poole
Lichfield
UCL
MORPHOSIS:
CAL Trans
Eden Project Fibonacci
GREEN CONTEXTUALISM
YEANG
CULLINAN:
Gridshell
PIANO:
California Academy
Barcelona Mayors
ROGERS:
Urban Task Force
P.M. GREEN
DUNSTER:
Bedzed
GREEN SKINS
BLANC
ARM:
NMA
SITE
FRANÇOIS:
Gites Ruraux
Montpelier, Paris, Louvier
CHETWOOD:
Oasis
KEW
ROGERS:
Cardiff
NOUVEL:
Branly
Cartier
KUMA
VERTICAL GARDENS
Utrecht Wonderwall
Law of Diminishing Architecture
ELEMENTAL GEOMETRY
STIRLING:
No.1 Poultry
Stuttgart Music School
Irvine Science Library
UNGERS:
Haus Ungers
Ambassadors Residence
Cologne Museum
KARMI:
Supreme Court
WILFORD:
Lowry Center
GEHRY:
Times Square
Chiat
MIT Stata Center
ROSSI:
Genoa Theatre
Bonnefanten Museum
Disney office
Verona Urbanism
New York Hotel
VAN BERKEL
DIAGRAMMING DIFFERENCE
AIDA:
Toy Block Houses
Gianola
VACCHINI:
Casa Maria
ITO:
Watanabe
Houses
HERSHMAN:
Gilch Quarter Housing
PORTOGHESI:
Vallo di Diano
Enel Housing
ALEXANDER:
Pattern Language
New Elshin Campus
ETOPIA
AGREST & GANDELSONAS:
Urban Fragments
ADHOC SYMBOLISM
DIRTY REALISM
MENDINI:
Groningen Museum
REGIONAL SKYSCRAPERS
SOM:
Jin Mao
PELLI:
Petronas
MORPHOLOGICAL AND DIGITAL ARTICULATIONS
C.Y. LEE:
Taipei Financial Center
YEANG:
Vertical Green City
CREDIT CRUNCH
THE ROUTE BUILDING
PALIMPSEST LAYERED BUILDINGS
TAMING BIGNESS
LIBESKIND:
Jewish Museum
RADICAL PRAGMATISM
SUPER DUTCH
FOA:
Yokohama
URBAN LANDSCAPES/
LANDSCAPE URBANISM
GRIMSHAW:
Waterloo
WEST 8:
Borneo Sporenburg
Rotterdam Square
Interpolis Gardens
Carrascoplein, Amsterdam
SMLXL
MVRDV:
WoZoCo
VPRO
Hannover Pavilion
KOOLHAAS:
Calcutta Minimalism
ZKM
Shopping Jerde
Pearl River
Jussieu
Congrexpo
Mies Campus
Seattle Library
Berlin Embassy
Casa M. Porto
Almere Variegated
HALL:
MIT Sponge
Linked Hybrid
DILLER & SCOFIDIO
HERZOG & DE MEURON:
Barcelona Forum
Tenerife
ALLEN/CORNER:
Field Operations
BERLIN URBANISM/ART
HIGH LINE
LANDFORMS
JENCKS:
Strange attractors
EISENMAN:
City of Culture
FOSTER:
Beijing Airport
EISENMAN:
Holocaust Memorial
ARM:
National Museum Australia
LAB Federation Square
HENEGEN PENG:
Grand Museum Egypt
Kildare Office
JACOB & MACFARLANE
ENSAMBLE ESTUDIO
GEHRY:
IAC
Serpentine Pavilion
HELMUT JAHN
ANGULAR FRACTALS
NEO EXPRESSIONISM
ITO/BALMOND:
Serpentine
WILKINSON EYRE:
Ballet Bridge
CALATRAVA:
bridges
Bilbao airport
Lyon Station
Valencia Science Centre
Milwaukee Art Museum
NOUVEL:
Torre Agbar
Domenig:
Volkemarkt
FOA
NEO-ORGANIC
PIETILA:
Mantyniemi
PRINCE:
Prince House
ARM:
Storey Hall
MACOVECZ:
Mortuary Hall
Sarospatak Cultural Centre
Ski Lodge
MANDELBROT &
FRACTAL THEORY
STARCK:
Ashai
COOP HIMMELBLAU:
Groninger Museum
Dresden Cinema
Vienna Housing
Lyon Museum
Mexican Shopping
MIRALLES:
Berlin School
Palmach
CAD
SZYSZKOWITZ & KOWALSKI
HASEGAWA
ALGORITHMIC
EISENMAN:
Diagrams
UN STUDIO:
Karbouw Building
Erasmus Bridge
Mobius House
Nijmegen Museum
MORPHOLOGICAL SHIFTS
HOK
DIGITAL ARCHITECTURE
HITOSHI ABE
MORPHOSIS:
CAL Trans
GSA
SMART GEOMETRY
SCHUMACHER
PARAMETRIC ARCHITECTURE
NEIL SPILLER
LIBESKIND:
ROM Museum
SGAE:
Santiago
ERODED COLUMNS/SPONGE
AUTODESK 3D MODELLING
ZVI HECKER
GARCIA:
Patterns of Architecture
ERIC MOSS:
Culver City
HADID:
Rosenthal Center
Phaeno, Wolfsburg
Zaragoza Bridge
ITO/BRANZI:
Minimal surface urbanism
Taiwan Opera House
TOYO ITO:
Sendai
Tods
CURVED FRACTAL
'GRATUITOUS SHAPE MAKING'
RON ARAD
GEHRY:
Marques de Riscal
Millennium Park
KAPOOR:
'Bean'
RAHIM/JAMELLE:
Elegance
CYBERPLASM
HUT:
Wood Studio
DIAZ ALONSO
FOSTER:
SAGE
AA Design Research Lab
Weaving
UN STUDIO:
Mercedes Museum
COOP HIMMELBLAU:
BMW Museum
GREG LYNN & FOLDING THEORY II
PLIANT ARCHITECTURE
NOX:
Lille Arts Centre
D-Tower
The Architecture of Continuity
FUSKAS:
Milan Fair
Nardini Research Centre
RON ARAD
BLOBS ON PODS
COOK FOURNIER:
Kunsthaus
SPUYBROEK-NOX:
Fresh Water Pavillion
Toilet Block
V2 Lab
Surrealist Exhibition
INTERACTIVE/BODY
MORPHOSIS:
Crawford
Blades
Hypo Ripe Adria Center
SHR
Diamond Rance
OOSTERHUIS
HYBRID SPACE
CRITICAL ARCHITECTURE
ARCHILAB
HYPERSPACE
ASYMPTOTE
DENARI
NOVAK
JACOB & MACFARLANE
ALSOP:
Hotel Marseille
Peckham Library
Ontario College
Rotterdam Centraal
BILBAO EFFECT
FLUID FRACTALS
GEHRY:
Vitra
Bilbao
Disney Hall
DG Bank
EMP
MOSS:
Gary Group
Lawson-Weston
The Box
IRS Records
Stealth
The Umbrella
Deformation
BLOBITECTURE
GRIMSHAW:
Waterloo Station
CACHE
FINDLEY
Computer Software:
Form Z
CATIA
3D Studio
LYNN:
animation
Hydroden House
blobs
FUKSAS:
Niaux caves
ZVI HECKER
YEANG:
Bioclamatic Skyscraper
HIROSHI HARA:
Yamato Int. Bank
ALBERTS:
NMB Bank
RANKO RADOVIC
ROKKAKU:
Kouko Ch.
TAKAMATSU
TIGERMAN:
Pompadour
TREMAGLIO:
Arena House
PELLI:
Four Leaf Tower
ASPLUND REVIVAL:
Villa Snellman
NOUVEL:
Belfort Theatre
EISENMAN:
Rebstock
Aronoff
Staten Island
Santiago
LYNN & KIPNIS
E. MOSS:
708 House
Culver City
Deleuze
Le Pli
Diagrams/Maps
HADID:
Cincinati
Rome
TSCHUMI:
Event Structure
DERRIDA
HOLBAUER:
House for Art Collector
E, RUBLE & YUDELL:
House
N & JON:
lo University Press
ogsbrand
VENTURI:
Gordon Wu
Long Island House
GOUGH
CORREA:
Goa Hotel
PELLI:
Petronas Towers
AMBASZ:
"Fables"
Banque Lambert
ISHII:
Gable Building
PEI:
Peking Hotel
SITE:
Haas House
Allsteel
JENCKS:
LPMA
Thematic House
LARSEN
RUBLE & YUDELL:
ew's Hoover
smond
County Admin
s Hall
LLI
rld Finance Center
e Jones School
Garay Linazasoro
sauga City Hall
KRIER:
rlin-Tegal
mpletion of Washington
MYERS:
Phoenix Group
INIGUEZ & USTARROZ
NSTRUCTIVIST CLASSICISM
Porphyrios:
'Classicism is not a style'
NATALINI:
Computer Center Bank
SHINTOKI:
Tsukuba Municipal Gym
TAKEYAMA:
Nakamura Hospital
COMMUNITY ARCHITECTURE
Prince Charles' speech
Rod Hackney
BATEY & MACK
CULOT:
Exhibitions
URBAN CLASSICISTS
ROBERTSON:
Houses
Washington Office

Fig. 21 Romanticism in Post 65. The habitable attic under the roof. Schepemakersdijk 12, Edam (Funda, 2021)

Fig. 22 Romanticism in Post 65. The habitable attic under the roof. Goedewerf 32, Almere (Funda, 2021)

Learning from Las Vegas

Parallels can also be drawn with the findings from Learning from Las Vegas (Venturi & Scott Brown, 1972) and the previous described Post 65 characteristic of 'recognisability' on page 27. Venturi and Scott Brown found rich layers of meaning in the symbolism applied to otherwise-boring buildings. They were inspired to integrate signs and symbols in their own designs, for example Guild House, perceived as an early work of postmodernism (Kohlstedt, 2016). In post 65 suburban housing, many elements can be found that have a symbolic and romantic function that refer to well-known associations about the concept of a 'home'. The 'Stichting Nieuwe Woonvormen' and the 'Vereniging Centraal Wonen' introduced a whole series of romantic ideas into housing design, such as reviving the habitable attic under the roof (Bosma et al, 2007, p. 610). The enormous numbers of pitched roofs and attic rooms testify to the longing for these romantic concepts on living.



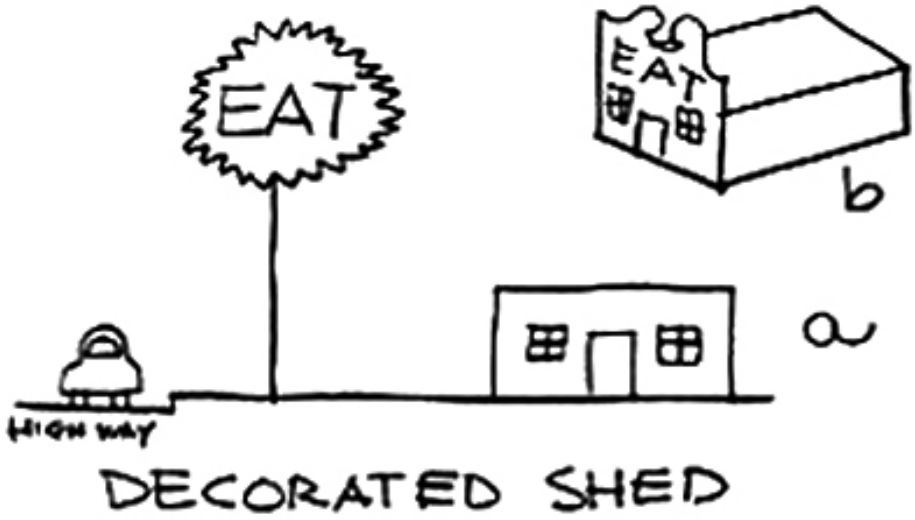
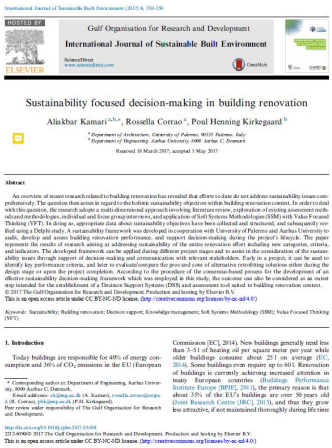


Fig. 23 Illustrations from *Learning from Las Vegas,* by Venturi, Scott Brown & Izenour, 1972.

Fig. 24 Post 65 home as ‘decorated shed’: ‘Pitched roof’ symbol for ‘home’ or reference to architecture symbol of classicist tympanum. Keverberg, Weert (Funda, 2022)

Fig. 25 Post 65 home as ‘duck’: The supersized gable roof as the symbol of a ‘home’ Donkergaarde 26, Nieuwegein (Funda, 2021)



Sustainability focused decision-making in building renovation

Aliakbar Kamari, Rossella Corrao, Poul Henning Kirkegaard

Gulf Organisation for Research and Development

International Journal of Sustainable Built Environment

Abstract

1. Introduction

Sustainability focused decision-making in building renovation
(Kamarit et al. 2017)

Criteria
Sub-criteria (heritage value)

Attribute

Source

Designing from Heritage: Strategies for Conservation and Conversion
(Kuipers, M. & de Jonge, W., 2017)

Fig. 26 Reading guide ‘Value Assessment’

5 Value Assessment

5.1 Value mapping method

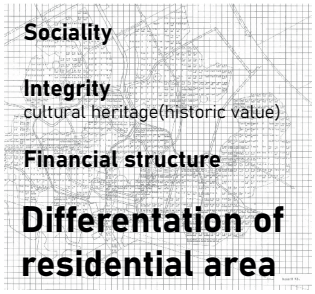
In the following two sections the qualities and weaknesses of Goedewerf are identified via this value assessment which gives qualitative insight into which aspects are important to solve or strengthen to then revitalize the Goedewerf neighbourhood.

The most important qualities and weaknesses are identified and for each attribute to which sustainability criteria and subcriteria from Kamari's et al (2017) they relate to is mentioned.

When the attribute concerns Kamari's et el (2017) sustainability criteria of 'Integrity' and classifies as (potential) cultural heritage, the relevant heritage value is attributed to this quality or weakness by means of the Rieglian+ values[1] (also used in the H&A 'Heritage Value Matrix').

1 Age value, Historical value, Intentional commerative value, Non intended commerorative value, Use value, Newness value, (relative) Art value, Rarity value (+), Other relevant values (+)

5.2 Qualities



Collective analysis Goedewerf students (Q1, 2021)
Individual research Aesthetic Fundamentals (Q2, 2021)

Collective analysis Goedewerf students (Q1, 2021)

Collective analysis Goedewerf students (Q1, 2021)

Collective analysis Goedewerf students (Q1, 2021)

Collective analysis Goedewerf students (Q1, 2021)
Individual research Aesthetic Fundamentals (Q2, 2021)

Individual research Aesthetic Fundamentals (Q2, 2021)

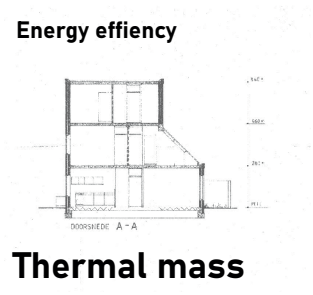
Collective analysis Goedewerf students (Q1, 2021)

Collective analysis Goedewerf students (Q1, 2021)

Speurtocht RMR research (2021)
Collective analysis Goedewerf students (Q1, 2021)
Individual research Aesthetic Fundamentals (Q2, 2021)

Collective analysis Goedewerf students (Q1, 2021)
Individual research Aesthetic Fundamentals (Q2, 2021)

Speurtocht RMR research (2021)
Collective analysis Goedewerf students (Q1, 2021)
Individual research Aesthetic Fundamentals (Q2, 2021)



Collective analysis Goedewerf students (Q1, 2021)

5.3 Weaknesses

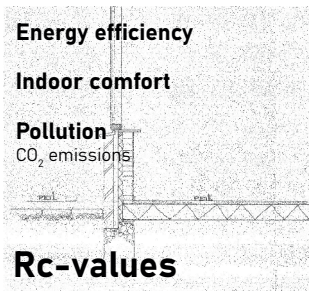
Individual analysis (Q2, 2021)

Collective analysis Goedewerf students (Q1, 2021)

Individual analysis (Q2, 2021)

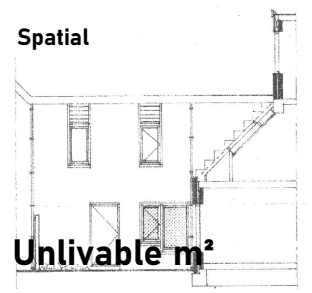
Collective analysis Goedewerf students (Q1, 2021)

Collective analysis Goedewerf students (Q1, 2021)



Collective analysis Goedewerf students (Q1, 2021)

Collective analysis Goedewerf students (Q1, 2021)



Individual analysis (Q2, 2021)

Collective analysis Goedewerf students (Q1, 2021)

Fig. 27 ‘Green’ networks between neighbourhoods. Wilgengriend, Almere (Funda, 2022)

Fig. 28 ‘Blue’ networks between neighbourhoods. Nimfkruidvaart, Zoetermeer (Funda, 2022)

Fig. 29 Relatively large amount of public space. Aragon, Leusden (Funda, 2022)

Fig. 30 High quantities of thermal mass: loadbearing structures made of concrete or brick. Dapperstraat, Tilburg (Funda, 2022)

Fig. 31 Large amounts of roof area. Verenwei, Arnhem (Funda, 2022)

Fig. 32 Relatively low density of residents. Noordmark, Almere (Funda, 2022)

5.4 Common characteristics Post 65 suburban housing

With regards to a sustainable future of the Post 65 housing estates, it is not only essential to have know-how with respect to the aesthetic and spatial identity. There are other similarities to be found within Post 65 suburban housing that can play a role in the revitalisation of these neighbourhoods.

6 Design Process

Although the focus in this project is Accountability, which includes the underrated aesthetic and spatial post 65 identity as criteria, the other two sustainability categories ‘Functionality’ (i.e. environment) and ‘Feasibility’ (i.e. economy) will be discussed in this chapter as well.

This graduation studio addresses the current urgent issues of housing, i.e. the housing shortage and the energy performance and energy transition of existing housing stock. According to the Ministry of the Interior and Kingdom Relations the housing shortage in 2021 was estimated at 279,000 homes, 3.5% of the housing stock. Although the number of new homes will increase significantly in the coming years, the number of households will grow faster, causing the housing shortage to increase (BZK, 2022, p. 7). Therefore the Netherlands need to build 900.000 homes before 2030, of these 600.000 need to be affordable homes, of which 300.000 need to be built by the public housing associations. Corporations are very much needed in the renovation and restructuring of the existing housing stock, the energy transition, the housing of vulnerable groups and the quality of life in the neighbourhoods. On average 35% of Post 65 suburban housing is social housing.

The other major challenge in housing is the energy transition. According to the IPCC sixth assessment report drastic reduction in our environmental impact needs to happen. 40% of energy consumption and 36% of CO2 emmissions is related to buildings (Kamari et al, 2017). Every year, just under a thousand buildings are upgraded to energy-neutral or energy-positive. To meet the 2050 targets this needs to be at least a thousand (TNO, n.d.). Although due to the crisis in the early 1970s, more demands were put on the energy efficiency of homes, the Post 65 housing does not meet the current standards on energy performance. Typically, the cavity walls (60-100 mm) in this housing were often only partially insulated with 30-40 mm of insulation (Energieloket, 2022). A significant part of the entire building stock is the Post 65 building stock. 31% of the entire housing stock in the Netherlands, was built between 1965 and 1985 (CBS, 2021).

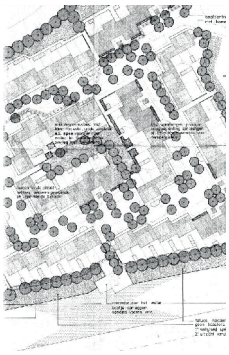
Conservation

protect and preserve heritage attributes

Renovation Het Schip, Archivolt architecten

What could have been

inspiration from unrealised design ideas



Design drawings Goedewerf 1976 (unrealised), Inbo

Translated loosely

(personal) design associations

Kasteel de Haar, Pierre Cuypers

Supersizing

emphasizing aesthetic fundamentals by increasing them in size, quantity or density

Intell Hotel Zaandam, WAM architecten

Citation

copying aesthetic fundamental(s) from the relevant architectural style or period

Housing Strijp R, Hilberink Bosch Architecten

Fig. 33 Design methods to incorporate or strengthen Post 65 aesthetic and spatial identity attributes or concepts in the revitalization design of Goedewerf, Almere Haven.

6.1 Designing with the Lexicon Post 65 Aesthetic and Spatial Identiy

In order to safeguard the heritage values present and to ensure a sustainable future, the Post 65 housing can have similar approach to that of urban tissue in Dutch inner cities during the urban renewal period (1968-1989). Residents are also rooted in neighbourhoods and the architectural and spatial characteristics of the ‘woonerf’ and ‘bloemkoolwijken’ need to be protected and strengthened as is clear from the research done. A background on the 1968-1989 urban renewal princples is provided in the next section.

For the architectural design of renovation of existing housing and the new infill architecture I strived for a contemporary translation of Post 65 architecture, in other words using the same vocabulary as the existing architecture. Which elements or aspects were chosen to include in the redesign of Goedewerf were picked intuitively and by testing them in sketches and digital models. Different design methods (Fig. 33) were used that explain in what way a certain Post 65 aesthetic or spatial identity attribute or concept is incorporated or strengthened in the project.

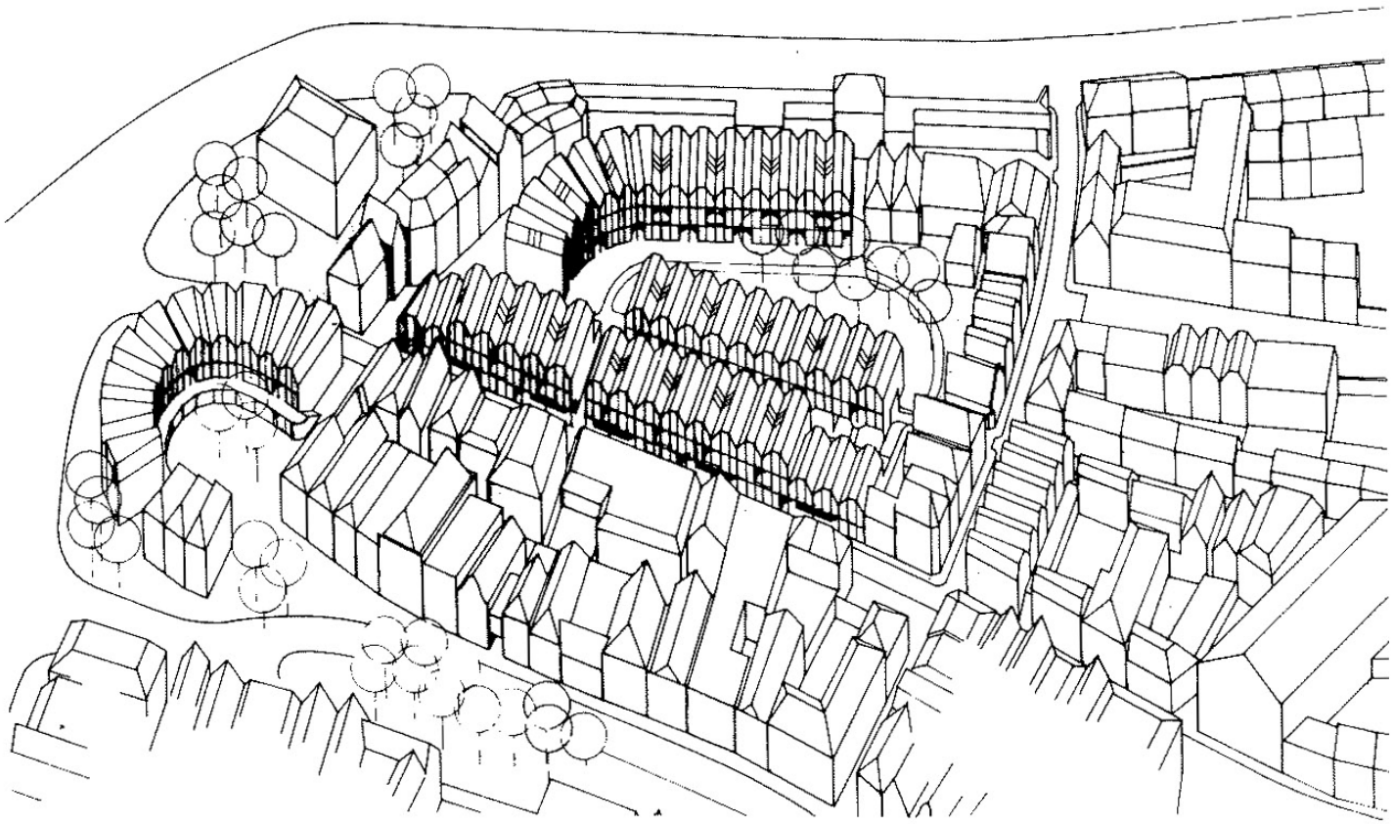


Fig. 34 Spatial impressions from ‘Onder de bogen’ via project documentation BONAS. The parcellation is expressed by the mansard roofs. The varying ridge heights and window sections contribute to a varied street scene.

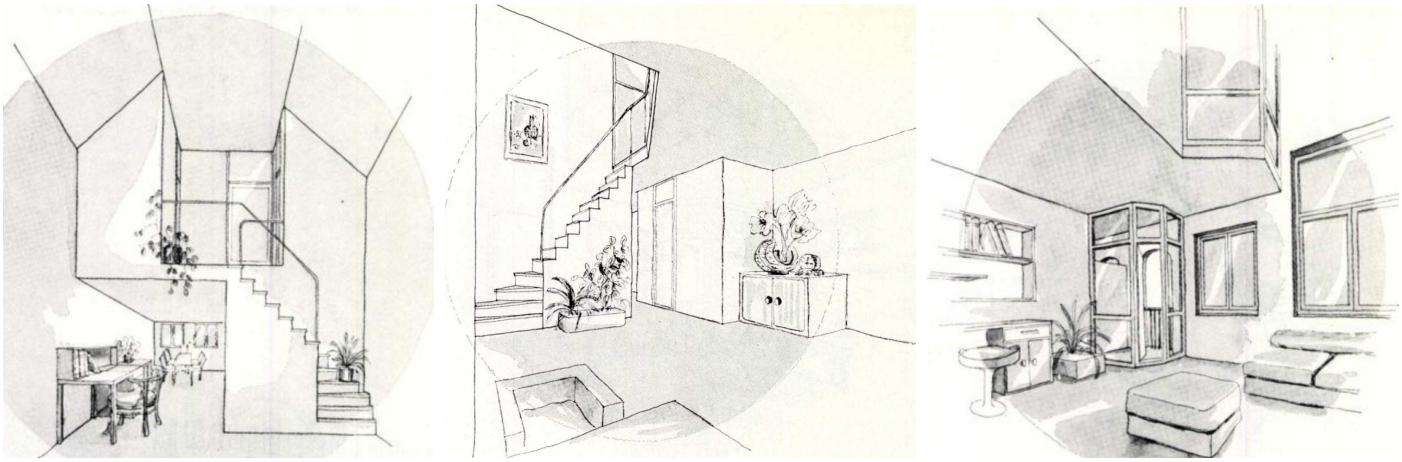


Fig. 35 Spatial impressions from ‘Onder de bogen’ via project documentation BONAS. The characteristic of the maisonettes, semi-detached houses and porch stacked houses is how spacious and light homes have been created with a relatively small floor area.

Fig. 36 Waterstraat 6, Zwolle (Funda, 2022)

Fig. 37 Bitterstraat 24, Zwolle (Funda, 2022)

6.2 Design research: Urban Renewal (1968-1989) principles

Before the 1970s, inner-city neighbourhoods had been neglected in municipal policy (Es & Voerman, 2018, p. 6). The more affluent residents and healthy businesses moved to new expansion districts on the outskirts of the city or to growth centres in the provinces. Those who stayed behind were seen as the social underclass. You could say that exactly the opposite has happened in recent times. Villages and cities have been concentrating on keeping their centres vital.

Reason enough to look back at methods that have proven successful in history for revitalising existing urban fabric. So, how do you revitatilise neighbourhoods? What was the strategy, what was strived for and what kind of architecture was used?

As already described on page 27, at the end of the 1960s the idea of how to deal with the existing city changed. Instead of demolition and new construction, administrators turned to 'rehabilitatie', a new term meaning housing improvement. Minister of Housing and Spatial Planning (VRO) W.F. Schut published the memorandum 'The future of the old housing stock', in which he pointed out the importance of rehabilitation. The existing urban structure of a neighbourhood could be changed to some extent, according to Schut, but only with a view to preserving or restoring its original character as much as possible. At the end of 1968, the National Planning Service added a social dimension to this starting point. In its annual report, the Dienst stated that the inner city should not only be an economic, but also a socio-cultural centre in which people could feel at home.

> 'Onder stadsvernieuwing wordt verstaan de stelselmatige inspanning zowel op stedebouwkundig als op sociaal, economisch en cultureel gebied, gericht op behoud, herstel en verbetering - zomede, indien nodig, op herindeling en sanering - van stadskernen en daarbij aansluitende stedelijke gebieden alsmede van andere door dichte bebouwing gekenmerkte centra van maatschappelijk leven.'
> Artikel 1 van de Ontwerp Wet op de Stadsvernieuwing 1976.

An example of successful urban renewal is a project by Aldo van Eyck and Theo Bosch 'Onder de bogen' (1970-1975) in Zwolle. The project is located in an area of the inner city that was in a state of rapid decay after the war. Demolition had left open gaps in many places. Van Embden's city plan envisaged a traffic route on this site. However, the changed ideas about how the city should look and function meant that Van Embden's plan was no longer supported. As a result of the plans for the Nieuwmarkt district, the council invited Van Eyck and Bosch to design an alternative. This gave them an opportunity to show how an old city centre can be renewed on the basis of a vision that demonstrates respect for the city and shows respect for the social, historical and urban planning structure.

Fig. 38 Urban renewal project ‘Onder de Bogen’, Zwolle by Theo Bosch and Aldo van Eyck (Funda, 2022) The transitions from the private domain of the home to the public space were designed with special attention. The density, small scale and building style are matched with the historical characteristics of the old Hanseatic town.

Fig. 39 Urban renewal project ‘Onder de Bogen’, Zwolle by Theo Bosch and Aldo van Eyck (Funda, 2022)

Fig. 40 Urban renewal project ‘Onder de Bogen’, Zwolle by Theo Bosch and Aldo van Eyck (Funda, 2022)

Fig. 41 Small infill developement in Almere Haven. Proposed densification concept for Post 65 suburban housing.

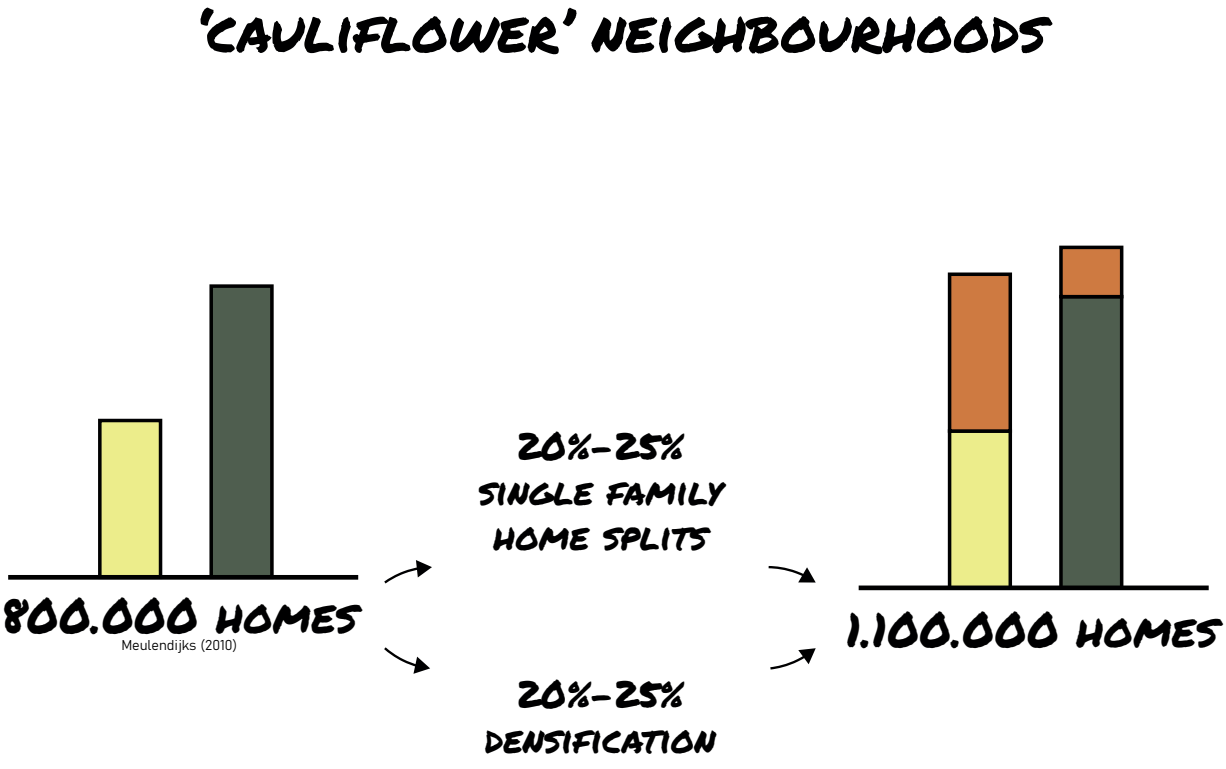


Fig. 42 Proposed concept for increasing population density in Post 65 suburban housing ('cauliflower neighbourhoods') by home splits and densification of small infill development.

6.3 Design research housing shortage ('Feasibility') Home splits and densification

In relation to the housing shortage, this project looks at the possibilities of densification in Post 65 suburban housing neighbourhoods. Since the density of Goedewerf is representative of Post 65 neighbourhoods there is potential applications of the results in practice.

It is estimated that there are 800.000 dwellings in cauliflower districts (Meulendijks, 2010; Abrahamse, 2019). My project argues that we can solve the 300,000 affordable houses that need to be built by housing corporations in those neighbourhoods. Often there is 'gespikkeld bezit'. On average, 35% of these neighbourhoods is owned by housing corporations. But this does not have to be a disadvantage. This way, housing corporations can kill two birds with one stone in these neighbourhoods: renovation and new housing. The two tasks that the government is now confronting them with.

Whereas the average household size in the 1970s was 3.5 people, nowadays the average number of people living in a home is 2,2 (Van Bockxmeer & De Korte, 2021). In 1990, when all 8960 houses were built according the residential plans for Almere Haven by the Rijksdienst IJsselmeerpolders, 22355 people lived in Almere Haven, with an average household size of 2,5. In 2021, 23.530 people are living in Almere Haven in 11.041 houses (allecijfers.nl), so 2.1 people per house.

Fig. 43 Home split project in Nieuwkoop by ‘Woningstichting Nieuwkoop’, from jwdegroot.nl, retrieved June 1st, 2022)

Fig. 44 Generaal Berenschotpad 16, Eindhoven, where Corporatie Woonbedrijf is splitting homes to house more smaller households. Upstairs the former bedrooms will serve as kitchen and living room. (ED, 2022)

Densification
Post 65 neighbourhoods in general have relatively large spaces for infill development without affecting the characteristic structure. How many extra houses is Goedewerf able to adopt? Through testing different infill development within Goedewerf, a densification of 20-25% is possible.

Home split
But building extra homes brings a new dilemma. Is building extra homes, next to or on top of existing housing within neighbourhoods, alone the smartest way to solve the housing shortage? On average, there are 65 square metres of house per person in the Netherlands (van Bockxmeer & de Korte, 2021). That should be enough. Are there also other ways to distribute the available square metres more efficiently? The problem is that a large proportion of the dwellings are single family homes and households are becoming smaller and smaller without the population growth decreasing.

In order to determine whether this is a feasible plan, reference projects were sought. Research conducted by the (Kooiman, 2020) has shown that 19% of people of the age of 60 and older are actually willing to move but do want to stay in the same neighbourhood. Dividing their house and selling half could be a solution to this, since finding a suitable home in the area only rarely happens. This applies to private owners, but home splitting could also be feasible within social housing according to what is happening in practice. At the end of the 1990s, Woningstichting Nieuwkoop recognised the need to add smaller houses to their housing stock. Building smaller houses in the 'Groene Hart' was not possible. However, the number of single-family homes was large. By splitting a number of these houses, it was possible to create smaller houses. And in 2021 a trial was started with splitting up houses which is currently being conducted in Woensel (Eindhoven) by Corporatie Woonbedrijf (Theeuwen, 2022).

Given the arguments for house splitting and the room there is for infill development, I decided to consider these measures as legitimate solutions for the housing shortage. Besides, serious problems sometimes require radical measures. And in terms of the potential high cost of such an approach, the advantage is that no new infrastructure or facilities need to be set up. In relation to that 1.75 billion euros is available as an impulse for housing construction and large-scale housing locations; in addition to this, 388 million euros is available for bottlenecks and efforts to focus on vulnerable groups and housing for the elderly. And most importantly, there is also 7.5 billion euros available for infrastructure to provide access to new housing locations. Since no money is needed for these purposes in this project's approach, it can be used for something else instead.

Hypothetically, one third of that 7.5 billion euros could then be used to help facilitate the deep renovations, small-scale infill development and home splits, If you were to reason that this amount could be divided proportionally over the entire 900000 housing construction. That would be 2.5 billion; divided by 300,000 new homes to be built by housing corporations, resulting in 8,333 euros per housing unit. It is not necessarily a more expensive approach perhaps, it is looking at the money available differently. 8,300 is a significant amount, considering that the cost of an average deep renovation for a single family house, depending on ambition: no more heating by gas or completely energy-neutral, is easily between 15,000 and 30,000 (NOS, 2019).

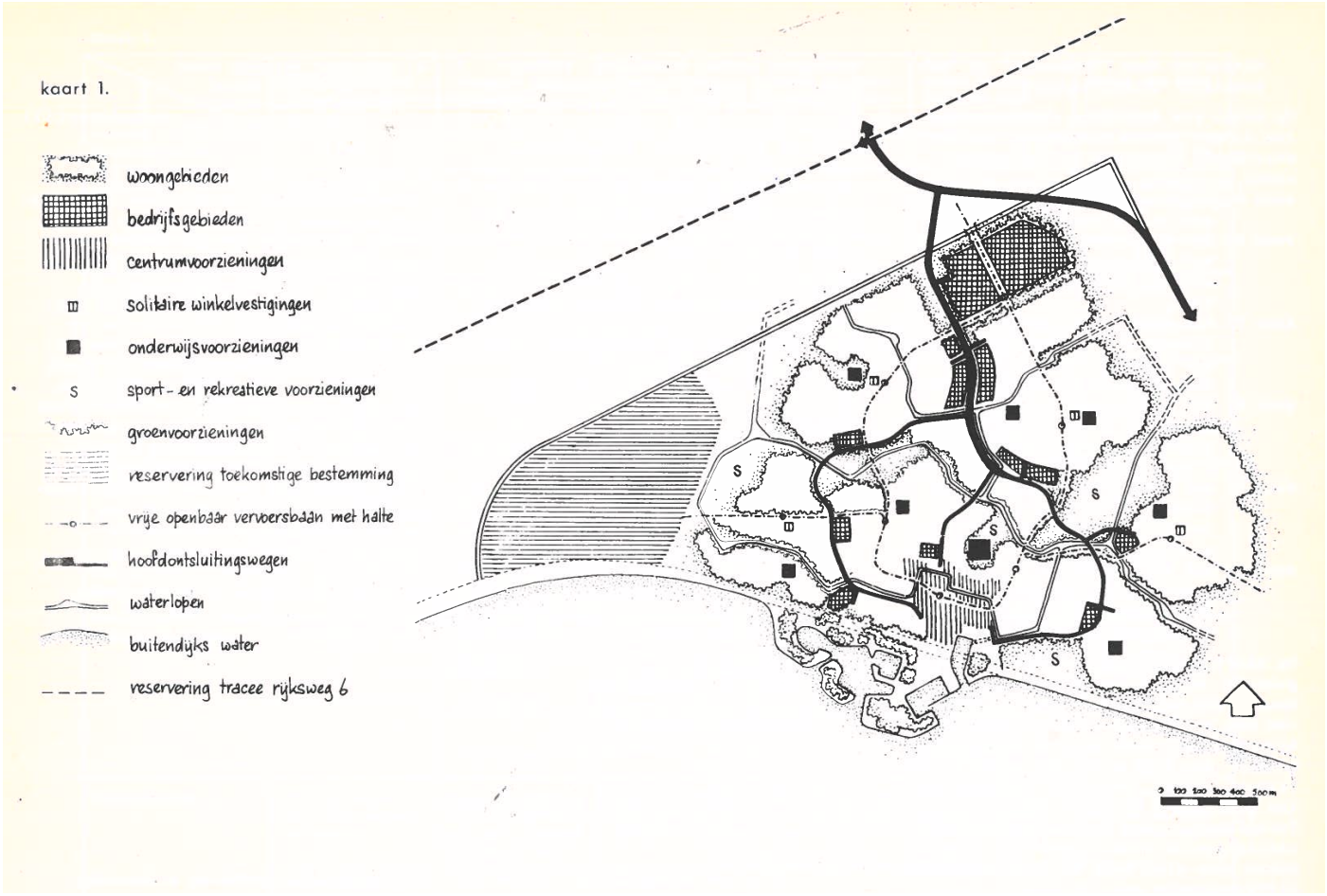


Fig. 45 Structure chart from *Programmering tot karakterisering van de verschillende situeringen van woongebieden in Almere Haven* (Nawijn, 1974)

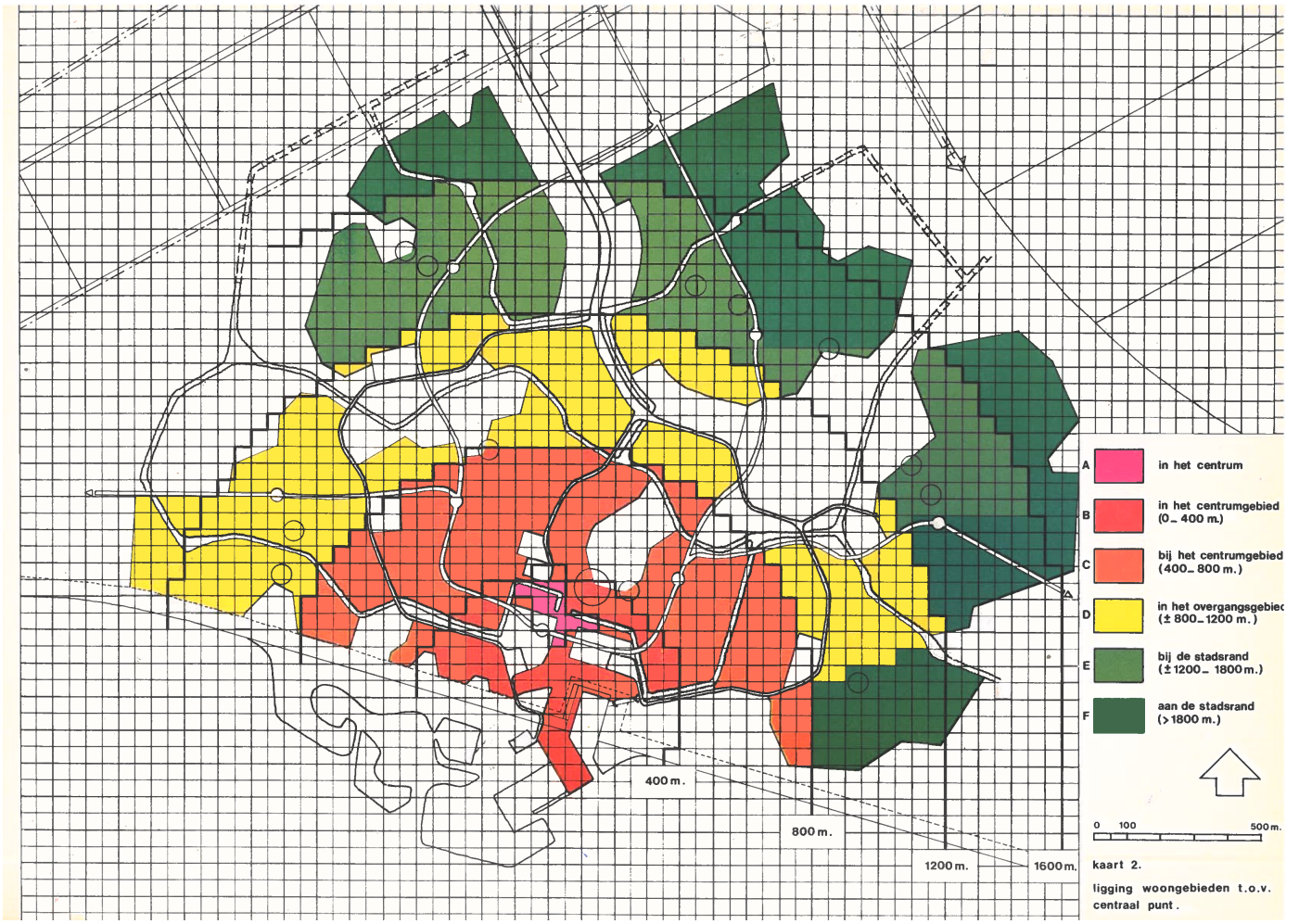


Fig. 46 'Ligging woongebieden t.o.v. centraal punt' from *Programmering tot karakterisering van de verschillende situeringen van woongebieden in Almere Haven* (Nawijn, 1974)

Vitality of Post 65 suburban housing

The original resident density of Post 65 housing neighbourhoods could be achieved again by densfication. This would also benefit the surrounding infrastructure, such as public transport, and the number and type of facilities that have been designed for Almere Haven that are essential for the vitality of the neighbourhood. This would also prevent the closing of local amenities and facilities that is happening in these neighbourhoods in recent years. This was already discussed as a problem in the eighties when Almere Haven was still being built.[1] We cannot say that we could not have seen this coming.

The density of residents was carefully designed for Almere Haven at the time, with associated infrastructure and space for facilities (Fig. 45 - Fig. 48). When this is no longer in the intended ratio, it affects the vitality of the neighbourhood. That is what we see happening in Almere Haven as well. The centre of Almere Haven has to deal with a lot of vacancy. In 2019, there was a vacancy rate of 14% of the available m^2, while in the rest of the Netherlands this was 6.7% (HavenHart2.0, 2020). With regard to facilities, in 2016 the local sportshall and swimming pool were demolished. The sportshall was replaced but the swimming pool disappeared for good, a new one was built in Almere Poort, much to the dismay of the residents of Almere Haven. A petition was organised because the loss of the swimming pool causes problems, especially for older inhabitants of Almere Haven, who used the swimming pool a lot. They cannot go to Almere Poort because they are disabled or do not drive a car (OmroepFlevoland, 2015).

1 'De groeikernbevolking gaat door de eenzijdige leeftijdsopbouw schoksgewijs vergrijzen, waardoor meer kleine huishoudens gaan ontstaan, die relatief snel van samenstelling veranderen. De eenpersoonhuishoudens bestaan verder zeker voor 2/3 uit vrouwen, merendeels weduwen en veelal 65 jaar en ouder. Locatie-aspecten worden voor deze groep steeds belangrijker, de aanwezigheid van hoogwaardige voorzieningen binnen handbereik wordt bittere noodzaak.'
'Het door vergrijzing hulpelozer wordende volksdeel, nu nog woonachtig in de perifere groeikernwijk raakt voor voorzieningen van niveau, te denken valt aan aangepaste huisvesting, verzorgingstehuizen en voorzieningen in de recreatieve sfeer, steeds meer aangewezen op de (donor-) steden. De wil en de financiele middelen om dat scala na verloop van tijd in de groeikernen te realiseren zal gaan ontbreken of ontbreek nu al. Kleine huishoudens, jong en oud, arm en rijk concentreren zich in de grote steden en de resulterende eenzijdige bevolkingsopbouw wordt verscherpt en heeft uiteraard zijn keerzijde in de bevolkingssamenstelling van de groeikernen. De oververtegenwoordiging van gezinnen met kinderen blijft bestaan en de onevenwichtige bevolkingsopbouw wordt bestendigd.' (Plan, 1987)

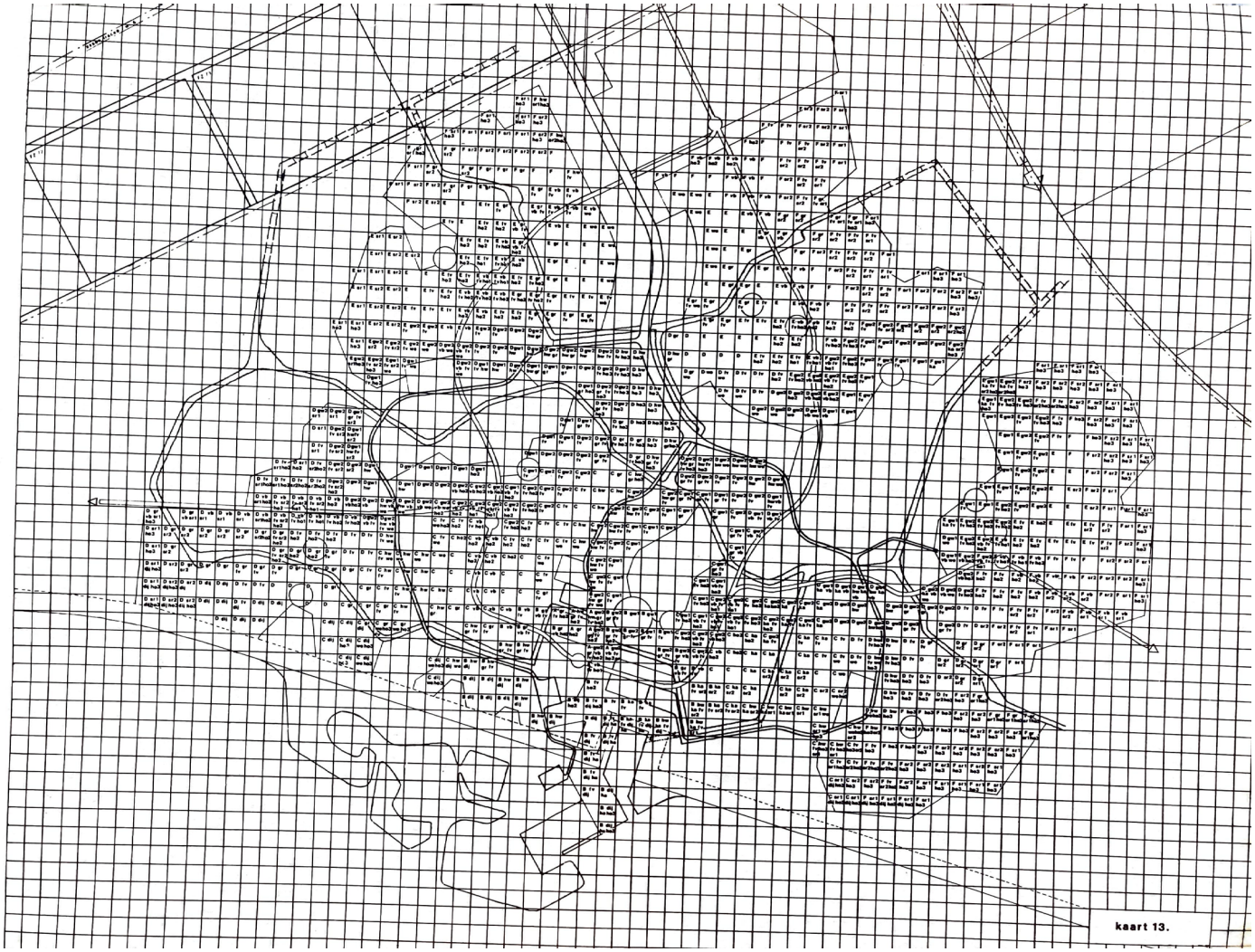


Fig. 47 'Overzicht van de karakteristieken per grid van 50 x 50 m in Almere Haven' from *Programmering tot karakterisering van de verschillende situeringen van woongebieden in Almere Haven* (Nawijn, 1974)

Tabel 1.

Zones / Kenmerken	A wonen boven en naast voorzieningen	B wonen in centrumgebied (0 - 400 m)	C wonen binnen invloed centrum (400 - 800 m)	D wonen in overgangsgebieden (800 - 1200 m)	E wonen binnen invloed rand (1200 - 1600 m)	F wonen aan rand (>1600 m)
Gebiedsgrootte	2 ha	14 ha	48 ha	66 ha	53 ha	72 ha
Dichtheid	50 won./ha	45 won./ha	16 ha--45 won./ha 32 ha--30 won./ha	30 won./ha	18 ha--20 won./ha 27 ha--30 won./ha 8 ha--45 won./ha	47 ha--20 won./ha 25 ha--30 won./ha
Aantal woningen	100	600	1700	2000	1400	1700
Aantal bouwlagen	4-7 (incl. voorzieningen) 3-6 (vanaf maaiveld)	75%---4 25%---3	50%---3 50%---2	2-3 (plaatselijk mag hier tot 5% van worden afgeweken bijv. rond openb. vervoershalte)	1-3	1-2
Woninggrootte 2-kam.	15%	40%	10%	5%	5%	20%
3-kam.	15%	25%	20%	15%	20%	10%
4-kam.	20%	15%	20%	25%	25%	20%
5-kam.	50%	20%	40%	40%	30%	30%
6-kam.	-	-	10%	15%	20%	20%
Parkeren	0.6 pp./won. onder woningen; verder op centrumparkeerterreinen	310 won.-0.8 pp./won. waarvan 50% onder woningen; 90 won. - geen parkeerplaatsen (autovrij gebied)	0.8 pp./won. waarvan 25% onder woningen; 3 autovrije woongebiedjes van 50, 100, 150 woningen	1 pp./won.	1,2 pp./won.	1,2 pp./won.
Verkavelingstype	in winkelstraten	in straten en beschutte pleintjes	vnl. langs routes; de autovrije gebiedjes met smalle straatjes en beschutte (speel) pleintjes	in woonbuurtjes, hofjes en groepjes, en langs beschutte fiets-/voetgangersroutes	in woonbuurtjes, hofjes en groepjes	in groepjes, langs stadsrand en fiets-/voetgangersroutes
Buitenruimte	min. 10 m2/won. als erf, balkon of terras	min. 10 m2/won. max. 50 m2/won. als erf, balkon terras of tuin	min. 50 m2/won. max.100 m2/won. als erf of tuin	min. 50 m2/won. max.100 m2/won. als erf of tuin	min. 50 m2/won. max.100 m2/won. als erf of tuin	min. 50 m2/won. max.100 m2/won. als erf of tuin
(voor hen die dit wensen bestaat de mogelijkheid tot huur van een volkstuin binnen 400 m afstand van de woning)						

Fig. 48 The total residential area of Almere port is divided into six zones A-F from *Programmering tot karakterisering van de verschillende situeringen van woongebieden in Almere Haven* (Nawijn, 1974)

Fig. 49 Unrenovated home in neighbourhood Stedenwijk Noord. Renovation design (2012) by 19HetAtelier Architects (photograph from kamersocial.nl, 2022)

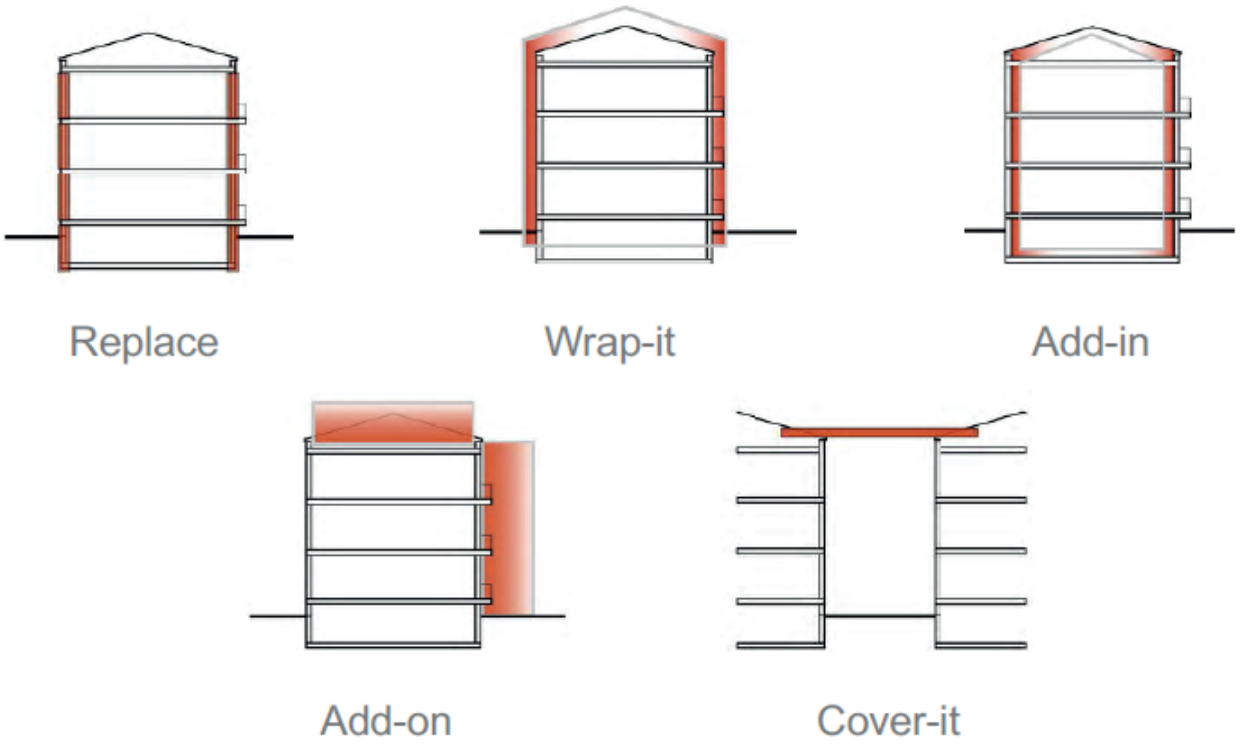


Fig. 50 Building Envelope Refurbishment Strategies (Konstantinou, 2021)

6.4 Design research energy transition ('Functionality') Building envelope refurbishment strategy

Within the the context of 'Functionality' this project focuses on the life cycle extension which has significantly less environmental impact than demolition and new construction (Konstantinou, 2021). In doing so, the project focuses, among other things, on the investigating and developing what a possible insulation strategy could be. The housing corporations have been given the task to build considerably more houses (300.000) and to make their existing housing stock more energy efficient. The Dutch government is aiming for an almost entirely sustainable energy supply in 2050 (Rijksoverheid, 2022). The aim is to no longer heat homes with gas-fired central heating but instead energy from renewable sources. From 2030 onwards, housing corporations and private owners are no longer allowed to rent out houses with an energy label of E, F or G. An energy label shows how energy-efficient a house is. There are major gains to be made with better insulation, in reducing energy demand and increasing indoor comfort.

Insulation strategy
With regard to the energy transition extra or new insulation is unavoidable. For most renewable sources of energy, higher insulation values are a prerequisite, because, for example, they use a heating system that operates at lower temperatures. Konstantinou (2019) defines different building envelope refurbishment methods to improve the energy efficiency. Looking at projects where the building envelope was refurbished I was motivated to explore a different strategy than the ones I came across, for example the renovation of Stedenwijk Noord. The major disadvantage of this strategy is the large negative aesthetic effect in the streetscape if a resident chooses not to participate in the building envelope refurbishment. Therefore, this graduation project explores another strategy instead, which is named 'patchwork'.

Since we cannot force people to participate in a renovation with (partial) exterior building envelope refurbishment, a strategy was sought that would not have a negative impact on the aesthetic coherence of the streetscape. Different methods were compared to find out which would be most suitable in the case of Goedewerf and a combination of 'replace' and 'wrap-it' was chosen. In the case of Goedewerf interior insulation would take away to much living area. In addition, it would not be wise not to use the thermal mass structures of (sand-lime) bricks and concrete to save energy.

A compromise was made for the purpose of aesthetic coherence of the streetscape, it was decided to leave the ground floor façade largely uninsulated. The masonry on the plinth continues as a result, and can still be experienced at the relevant height, namely the ground floor. The masonry was also noted as being valued in the 'Speurtocht' results.

This graduation project attempts to show that such a 'patchwork approach' is quite possible within Post 65 suburban housing. Moreover, there are enough examples of housing with 'patchwork'-like façade designs, (Fig. 51 - Fig. 54). It fits within the architectural aesthetic language of Post 65. In addition, if it was decided not to participate in the renovation, it is also possible to add external insulation at a later date, without it having a major negative impact on the aesthetics.

Fig. 51 Ds Rijperstraat 11, Amersfoort (Funda, 2021)

Fig. 52 Ringslangweide 32, Nieuwegein (Funda, 2021)

Fig. 53 Eekhoorntjesbrood 19, Alphen aan den Rijn (Funda, 2021)

Fig. 54 Ringslangweide 32, Nieuwegein (Funda, 2021)

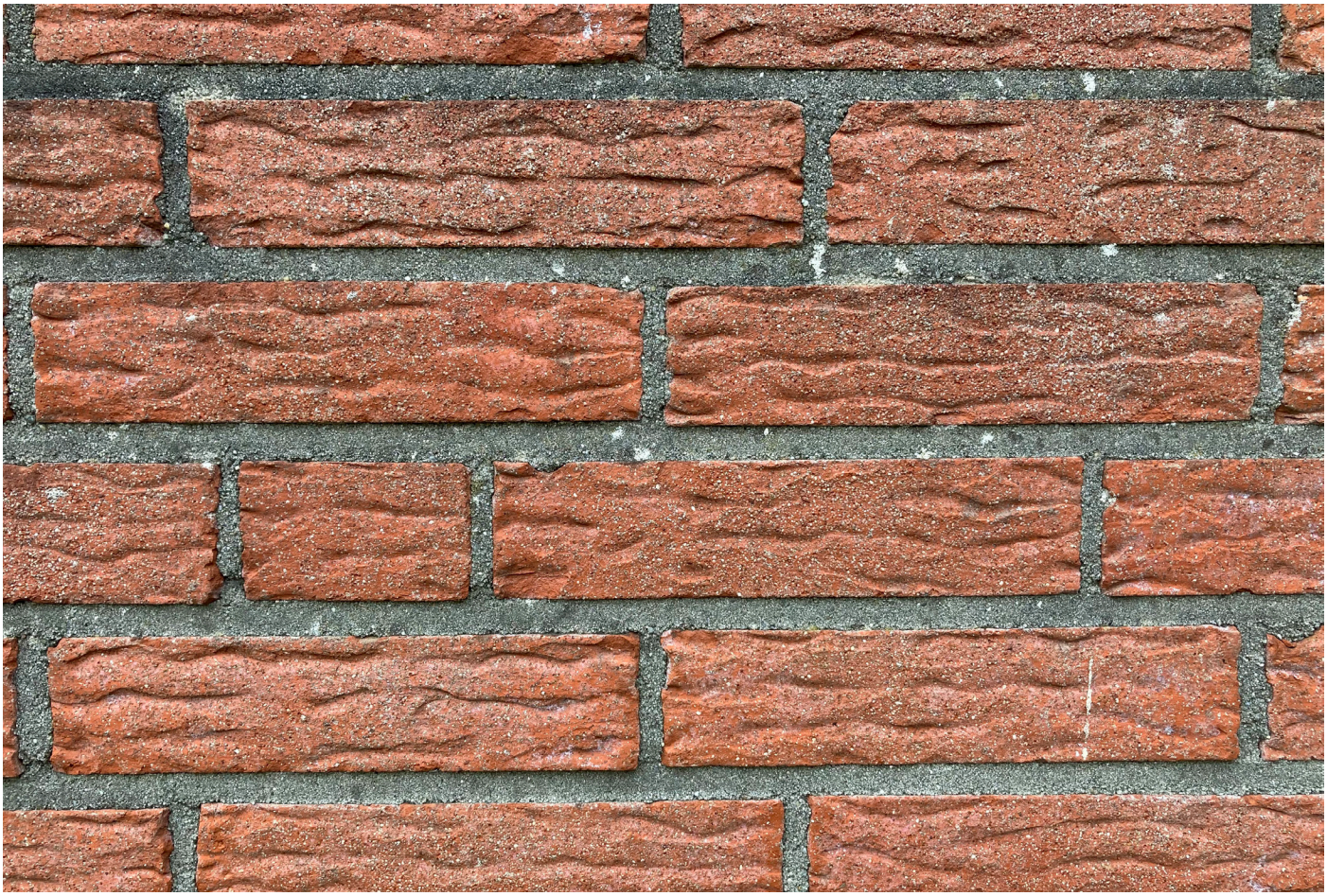


Fig. 55 Brickwork Goedewerf (photograph by author)

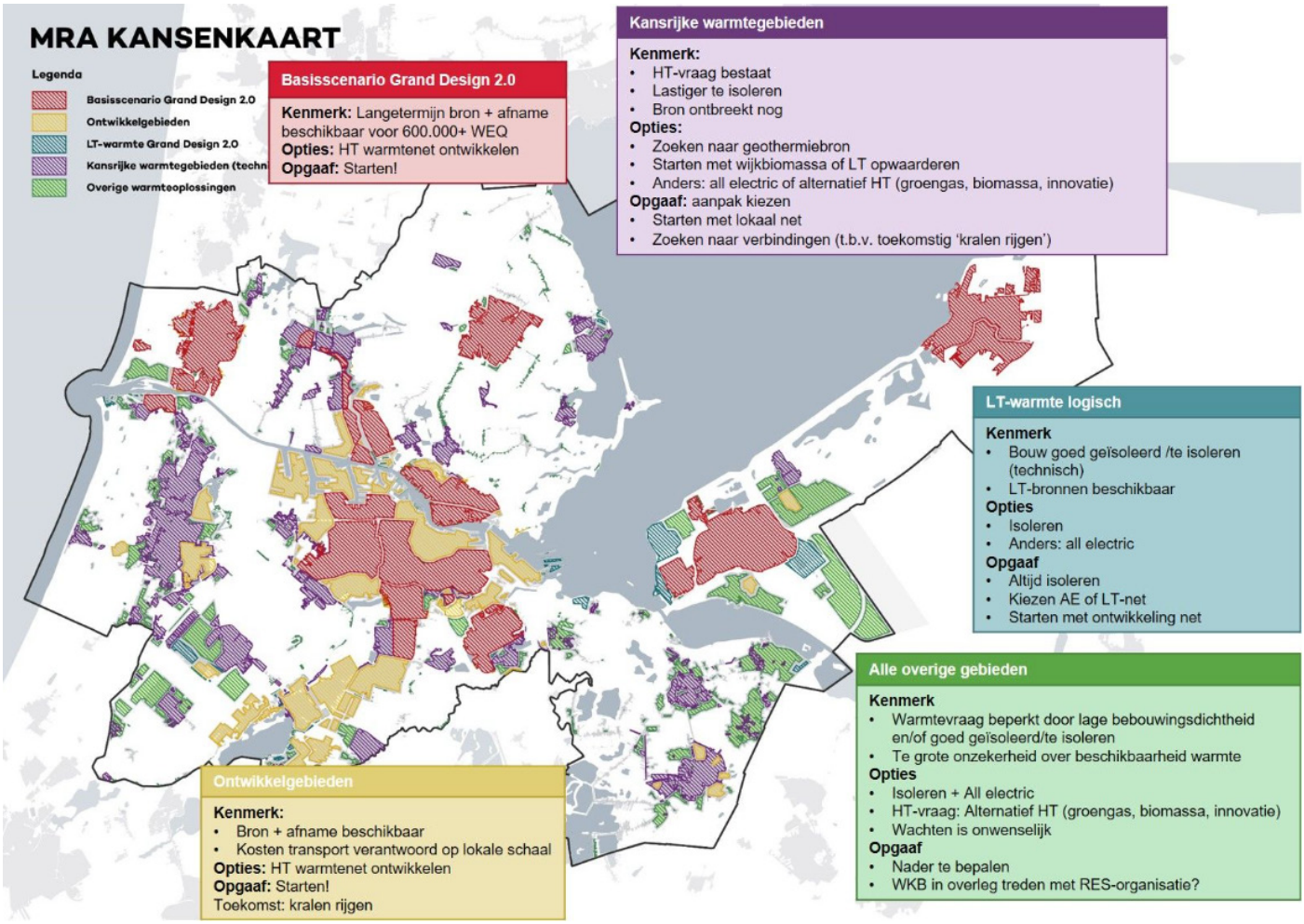


Fig. 56 'MRA kansenkaart' (mraduurzaam, 2018)

Renewable source of energy
The choice of what kind of renewable energy source to use can be very difficult and could potentially be, if it is not already, a bottle neck in the process of making Dutch housing sustainable so that CO_2 emmissions drastically are reduced.

Roadmaps like the one shown here for the 'Metropool Regio Amsterdam' can provide the essential help that is needed. Housing corporations that own large numbers of homes in particular need to have insight into the visions that municipalities have for how all homes can be supplied with sustainable sources of energy. It makes quite a difference to the choice of a sustainable source, in terms of investment, whether heat networks are planned to be constructed in the relatively short term for example. The 'MRA Kansenkaart' provides local and regional insight into the potential of sustainable heat networks for all residents in the MRA. Almere Haven is located in the green colored area. Green stands for 'Alle overige gebieden', which means that the heat demand is limited due to low building density and/or well-insulated/insulated housing being present. And there is too much uncertainty about the availability of heat.

Goedewerf
Because the construction of a heat network for the whole of Almere Haven is therefore unlikely, applying a collective Aquifer Thermal Energy Storage (ATES)[1], as is proposed for Goedewerf in this project, would not be a poor investment. It is also important to check if a ATES is allowed at the desired location. With the 'WKO-bodenergietool' a quick scan was made to determine whether an open or closed ground energy system may be constructed at a location.

1 ATES systems pump up groundwater, use the relative heat or cold of the groundwater to heat or cool the building, and then return the groundwater to the soil. ATES systems can only be used in combination with a system for low temperature heating in the building (underfloor heating and/or wall heating). Because of the pumping of groundwater, these systems are also called 'open bodemenergiesystemen'. When the building is heated, the groundwater temperature is lowered by a few degrees, and when the building is cooled, the groundwater temperature is raised by a few degrees. ATES systems always consist of at least two wells, which are placed next to or above each other in the underground. On average, ATES systems are located at a depth of 20 - 120 metres.

7 Goedewerf Suburban Renewal

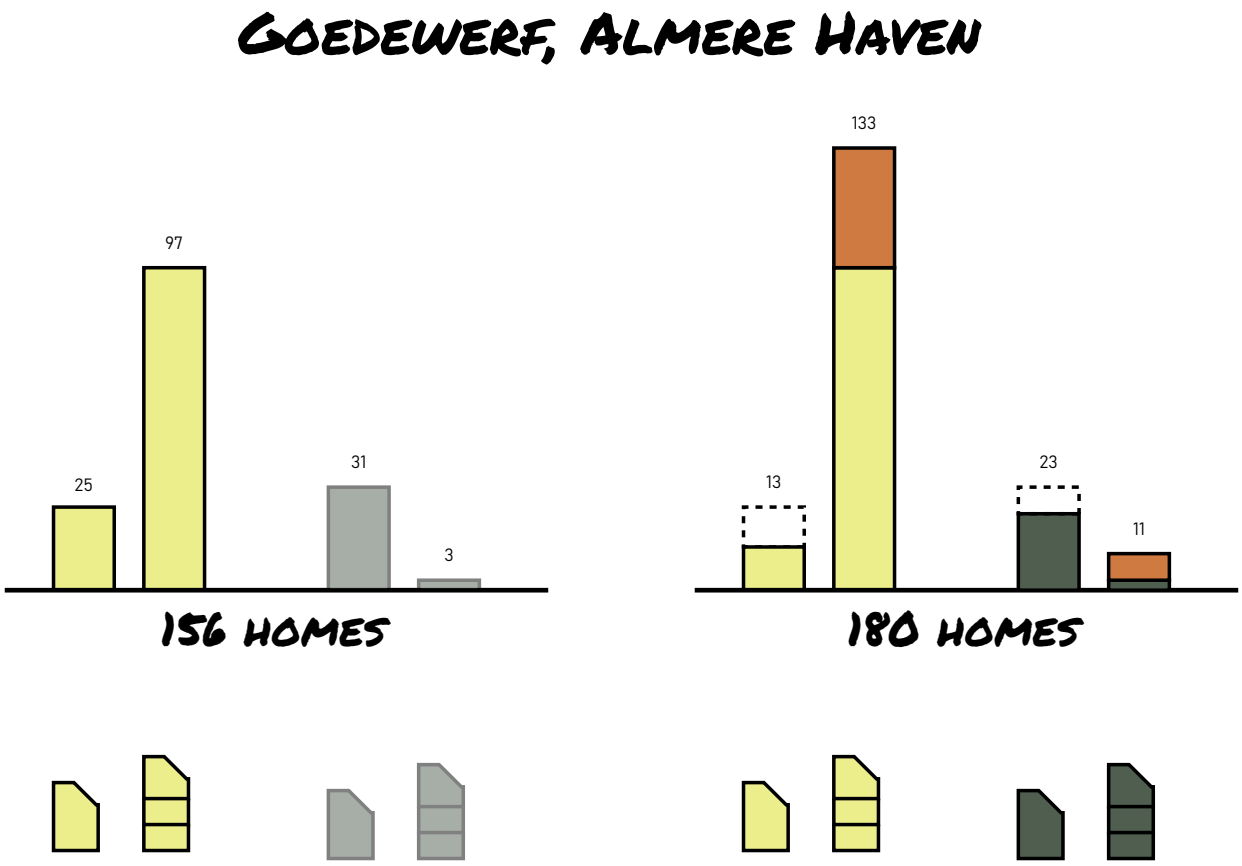


Fig. 57 Proposed concept for increasing population density in Goedewerf, Almere Haven by home splits and densification of small infill development. Yellow = Ymere, Green = private ownership

Fig. 58 Proposed concept for increasing population density in Goedewerf, Almere Haven by home splits and densification of small infill development.

7.1 Site 1:1000

Fig. 59 Site 1:1000

7.2 Possible variants densification and renovation participation 1:100

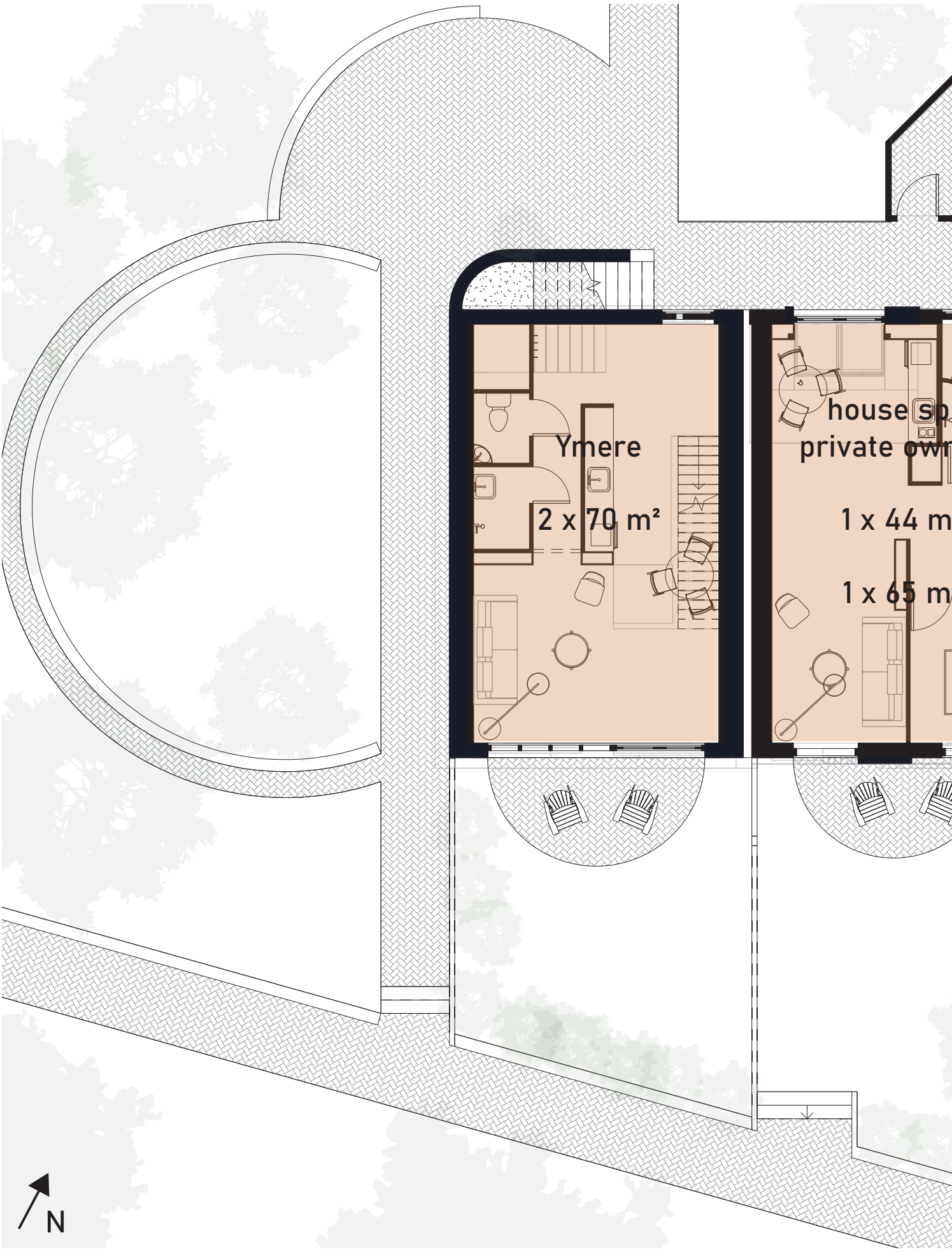
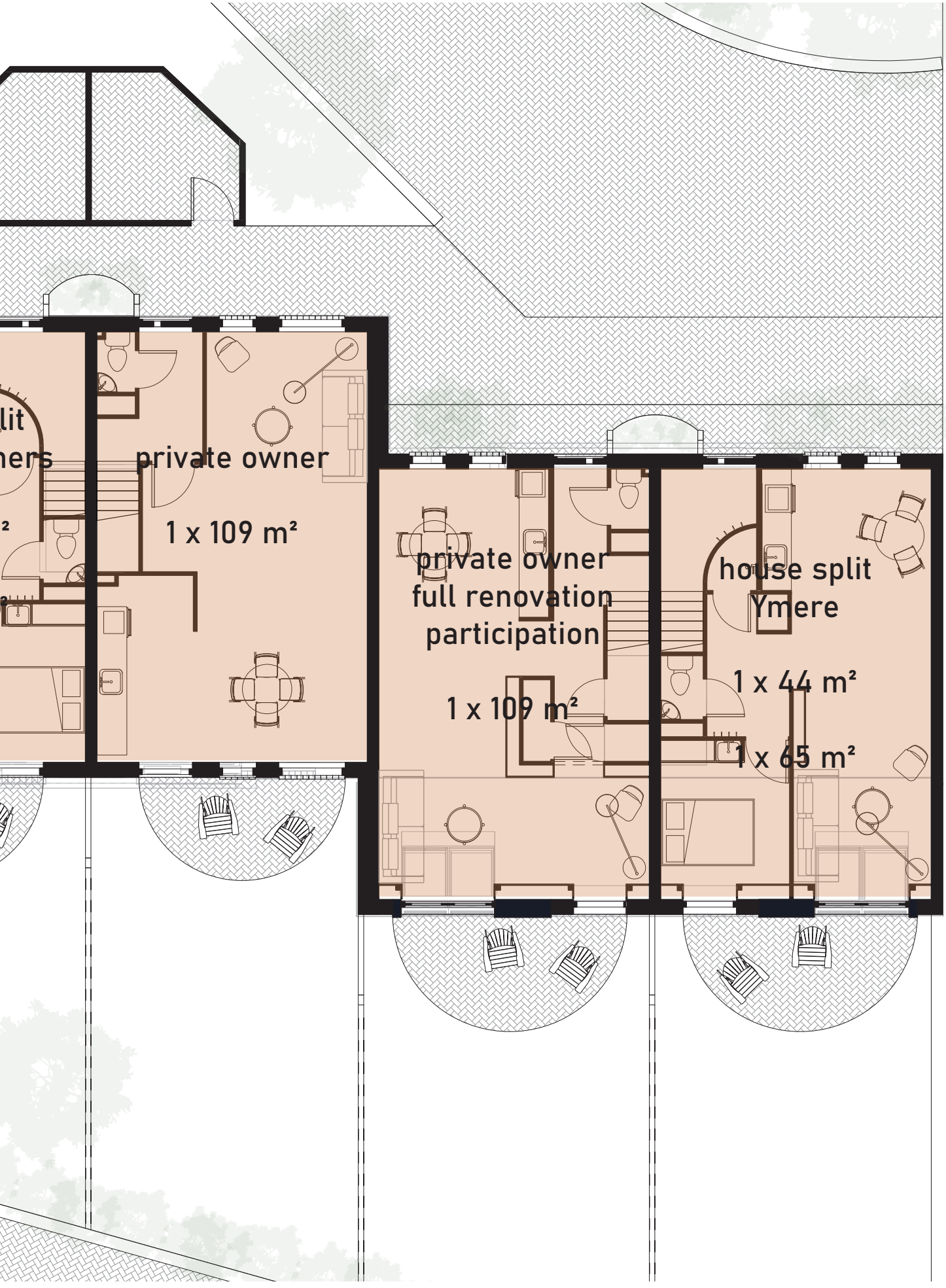


Fig. 60 Plan ground floor 1:100


lit
ners
²
private owner
1 x 109 m²
private owner
full renovation
participation
1 x 109 m²
house split
Ymere
1 x 44 m²
1 x 65 m²

7.3 Plans 1:100

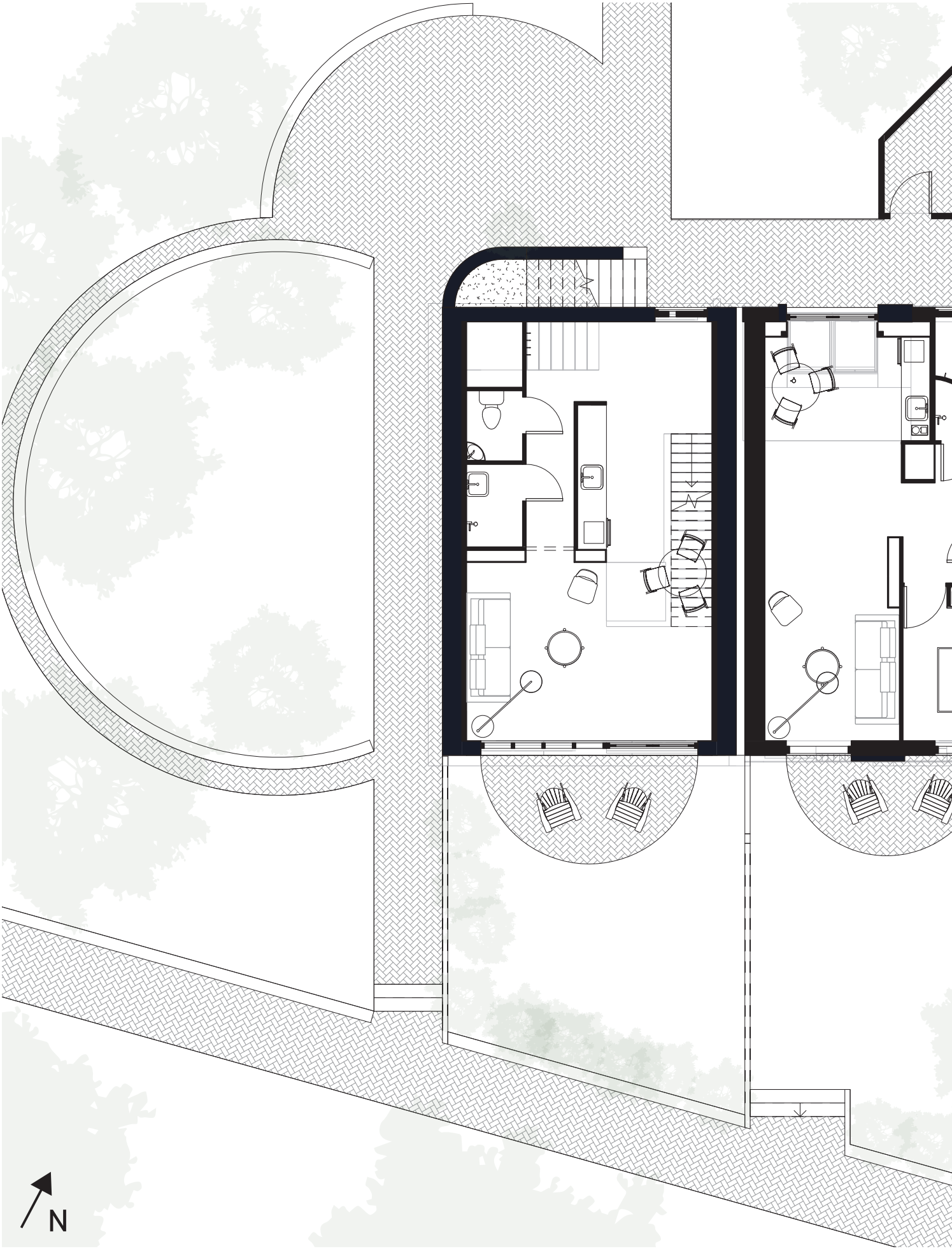
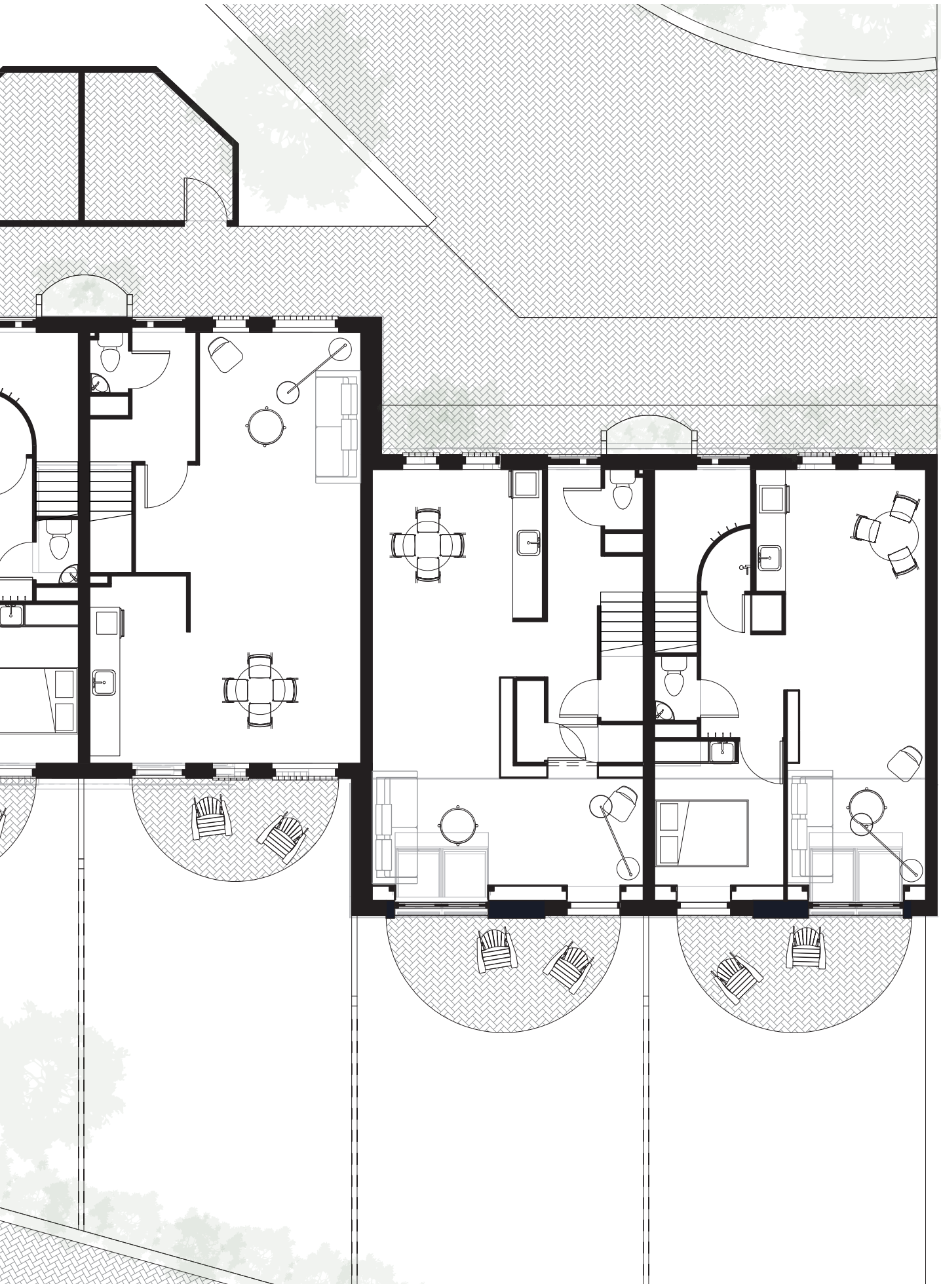


Fig. 61 Plan ground floor 1:100



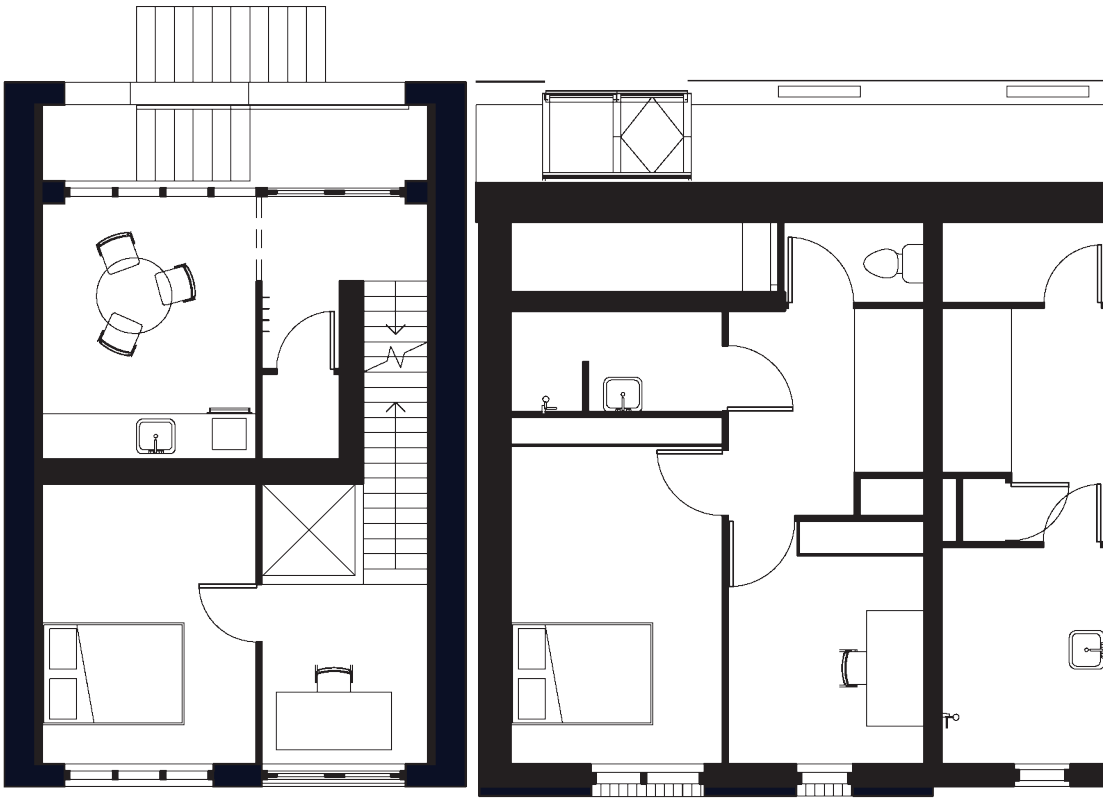


Fig. 62 Plan first floor 1:100

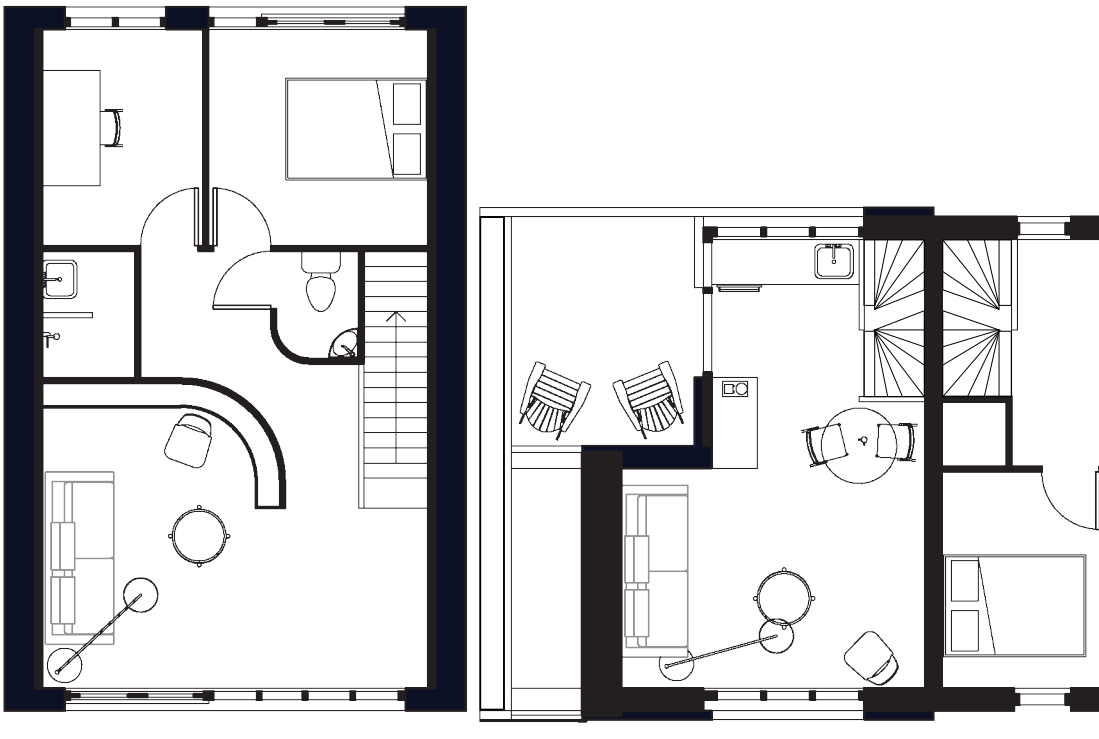
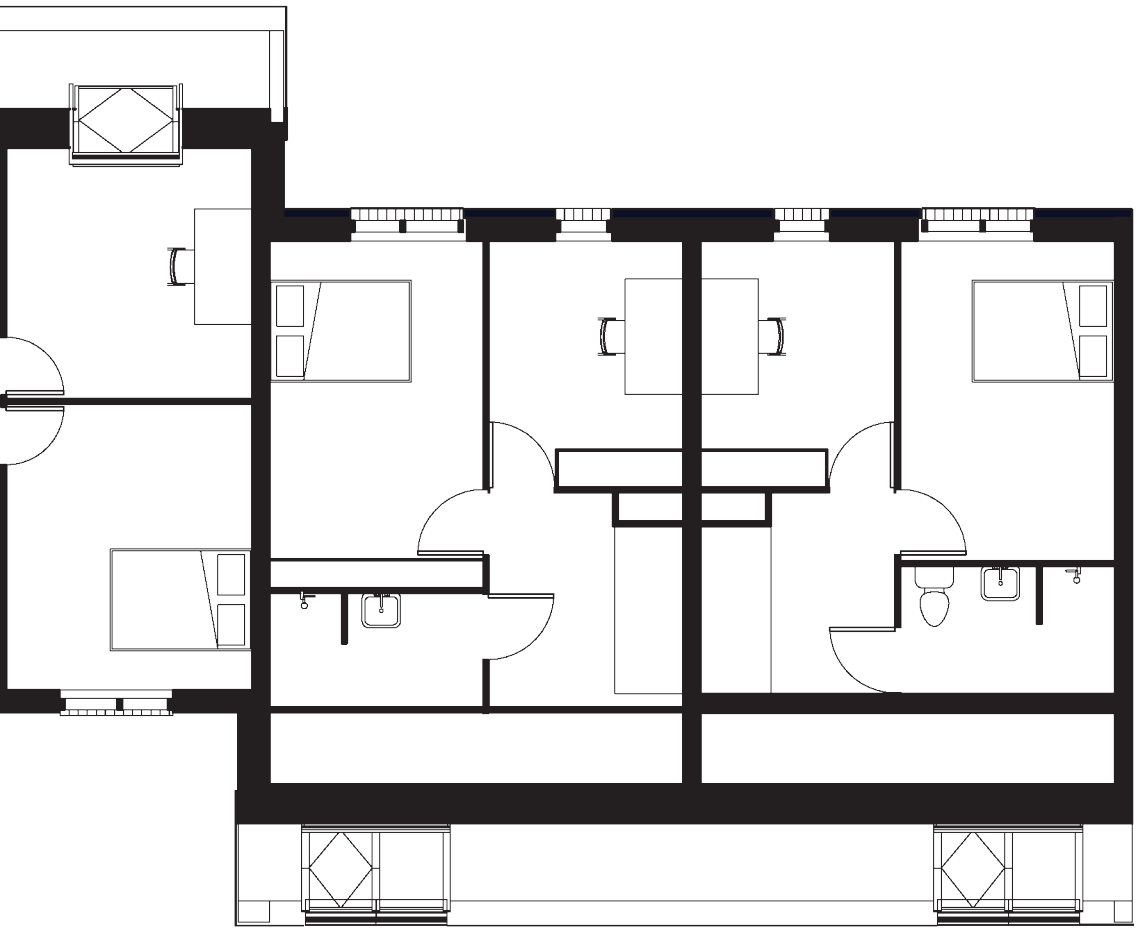
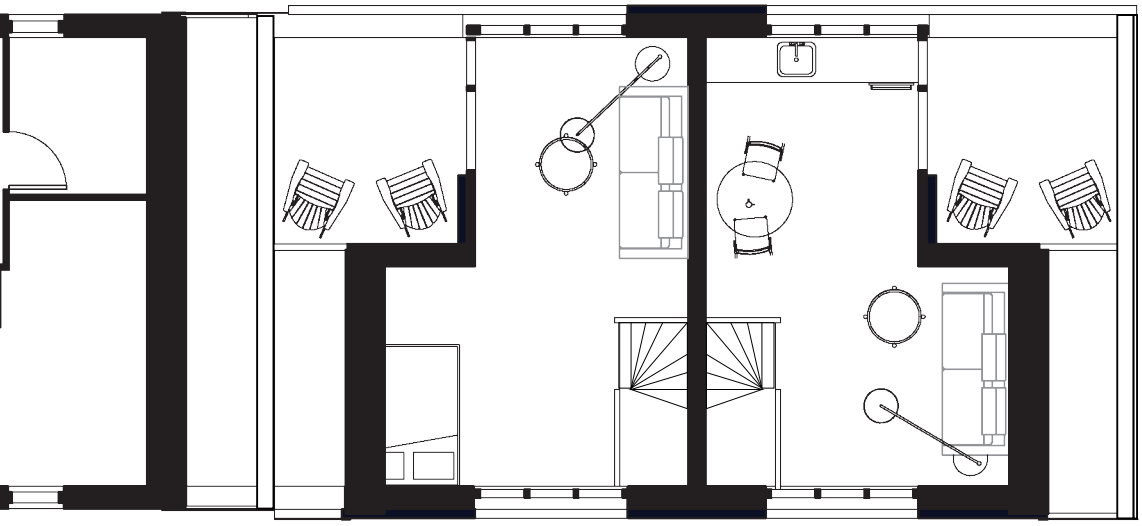


Fig. 63 Plan second floor 1:100





7.4 Elevations 1:100

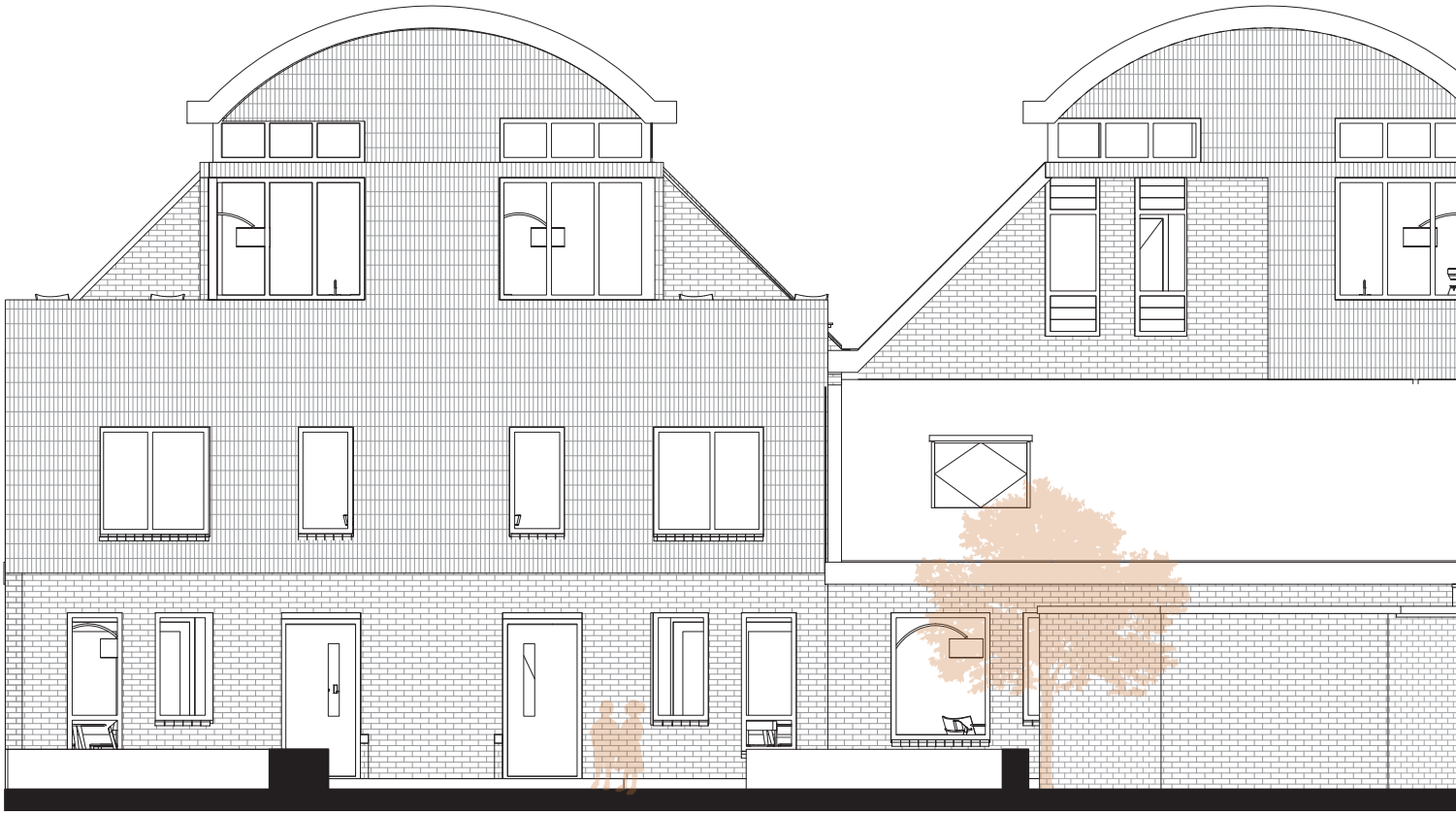


Fig. 64 Elevation street side 1:100

Fig. 65 Elevation garden side 1:100

7.5 Section 1:100

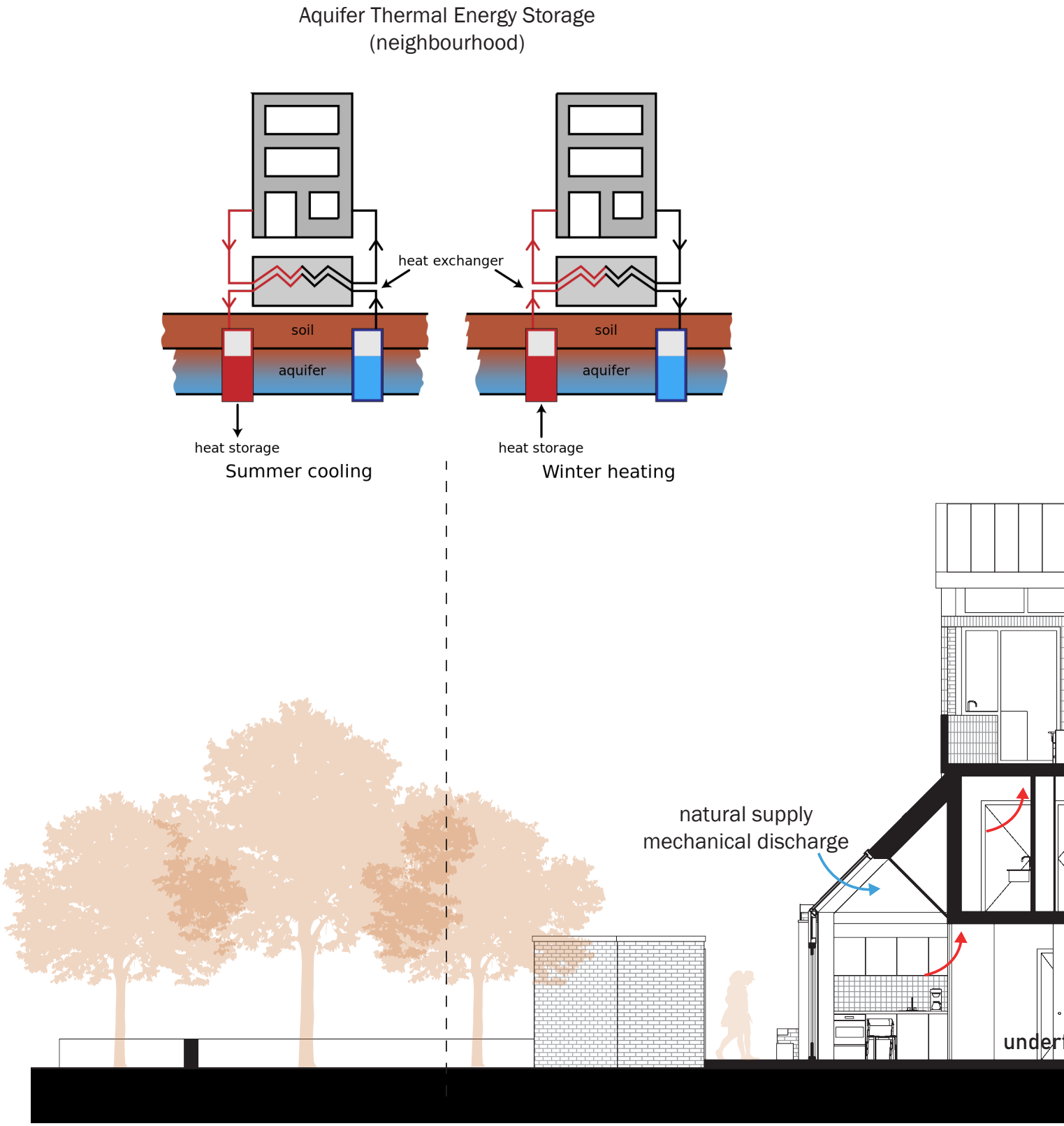


Fig. 66 Section with climate design principles 1:100

Thin-film solar cell

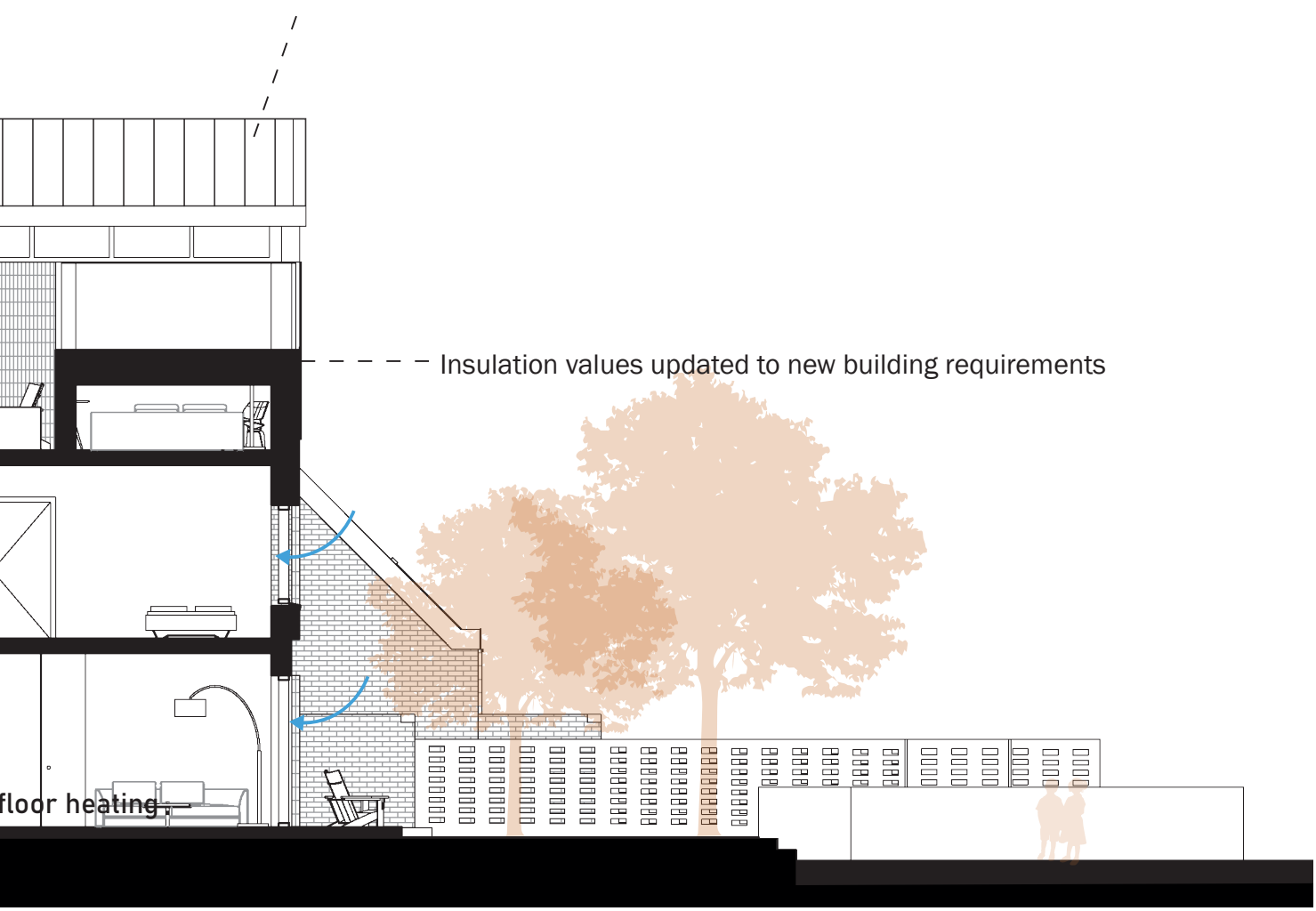
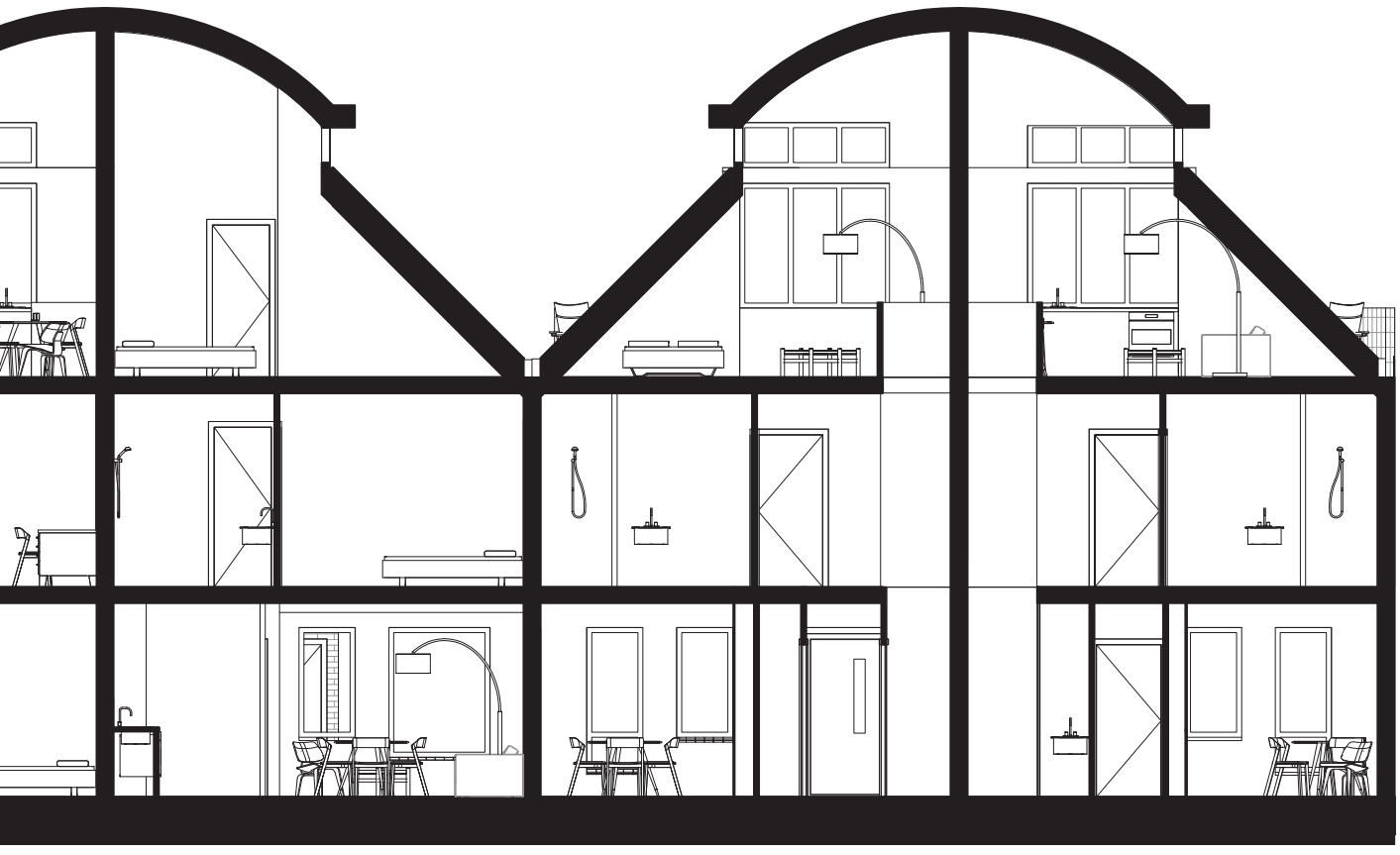


Fig. 67 Section 1:100



7.6 Section 1:50

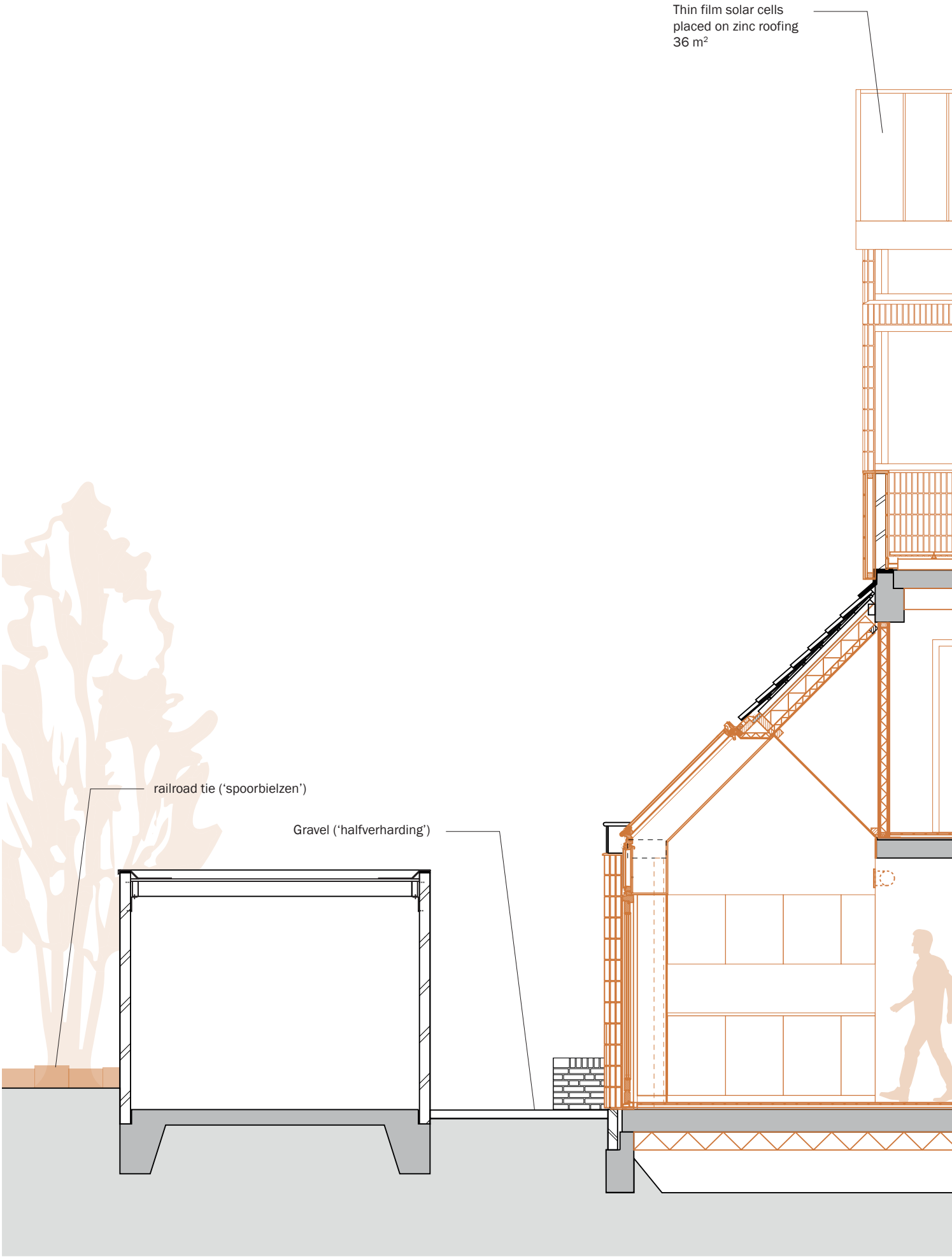
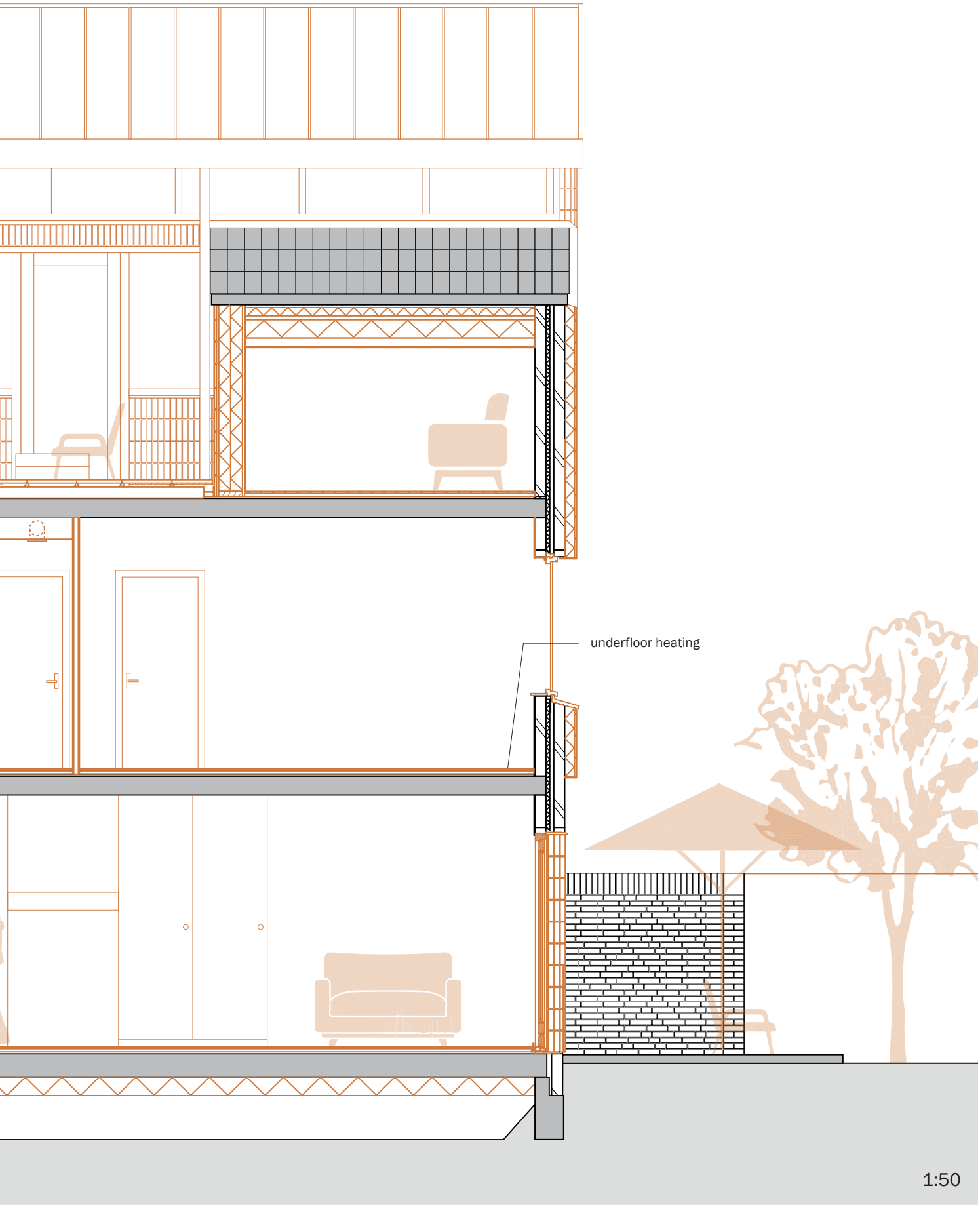
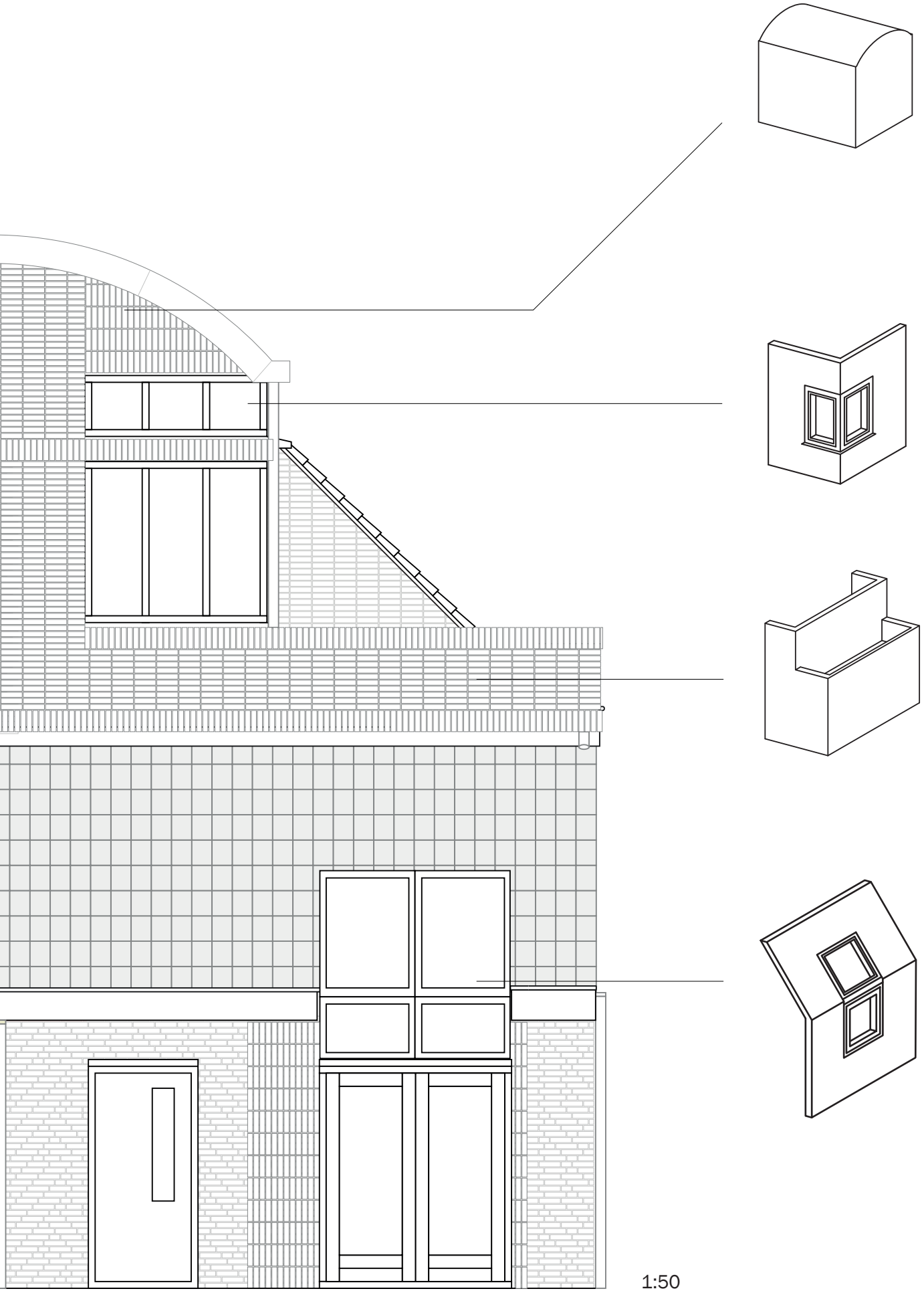


Fig. 68 Section 1:50 (orange = new)


underfloor heating
1:50

7.7 Facade 1:50

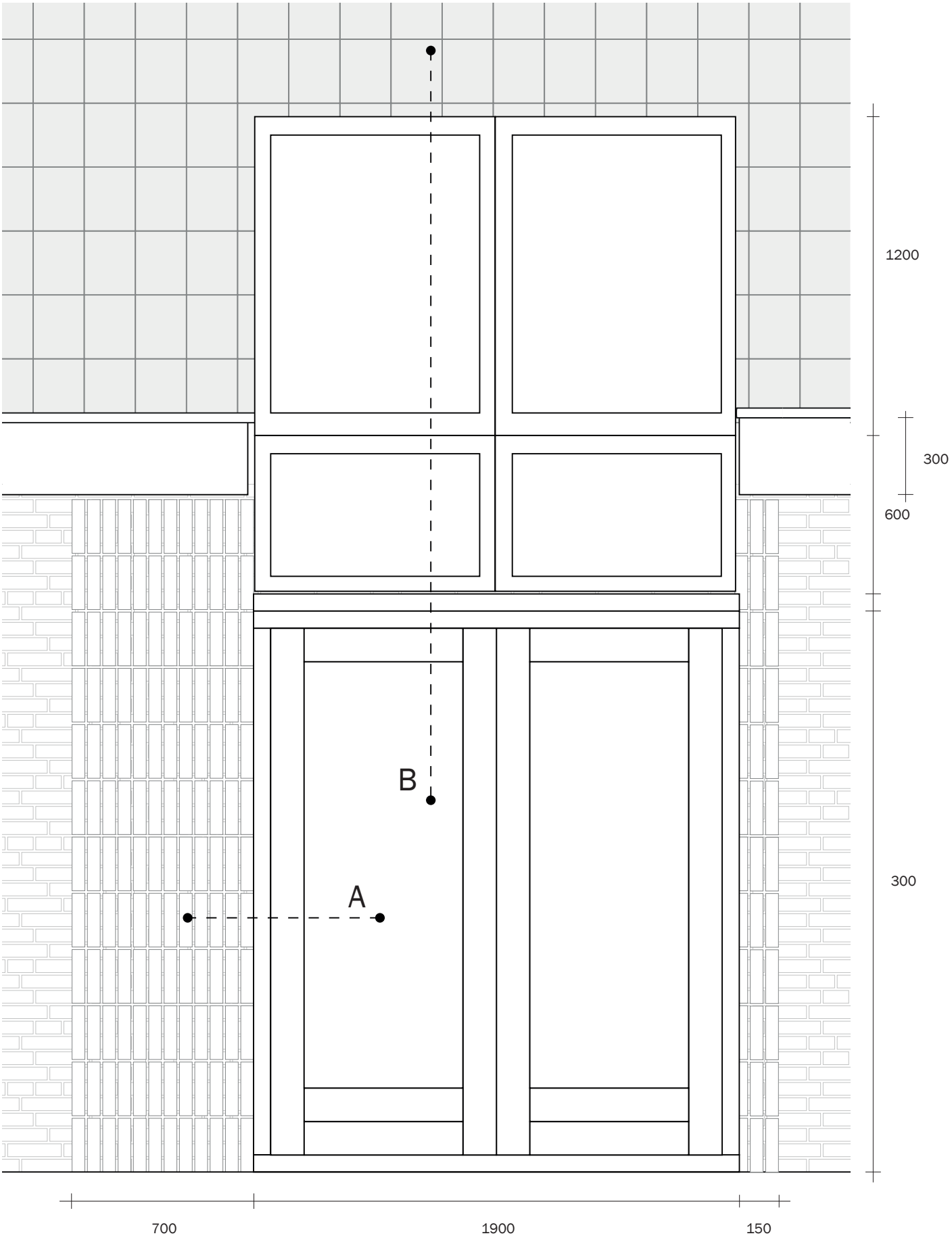
Fig. 69 Facade design 1:50, left: private that does not participate in full renovation, right: Ymere home with home split and full renovation



1:50

7.8 Sky window

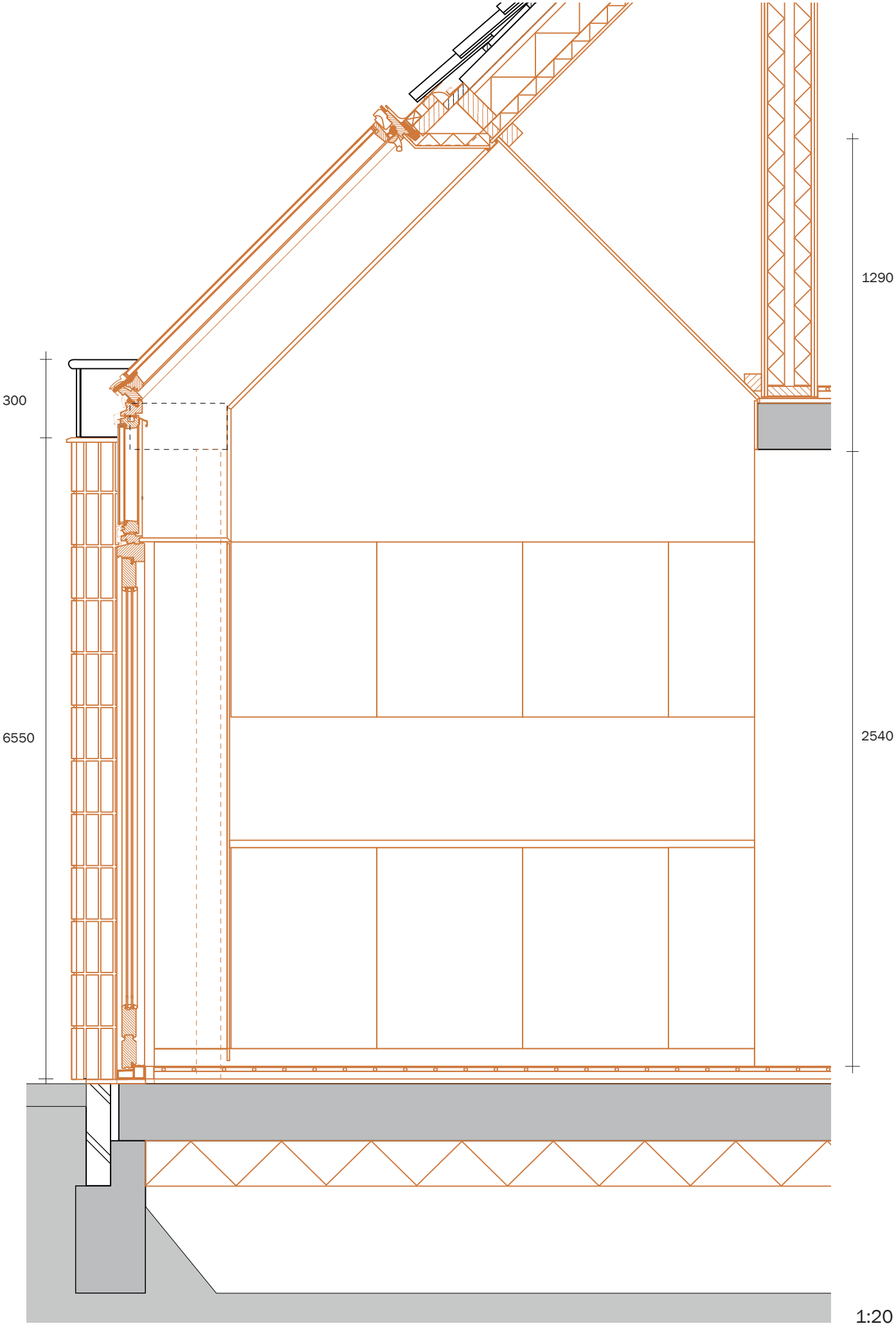
Fig. 70 Facade fragment 1:20



1:20

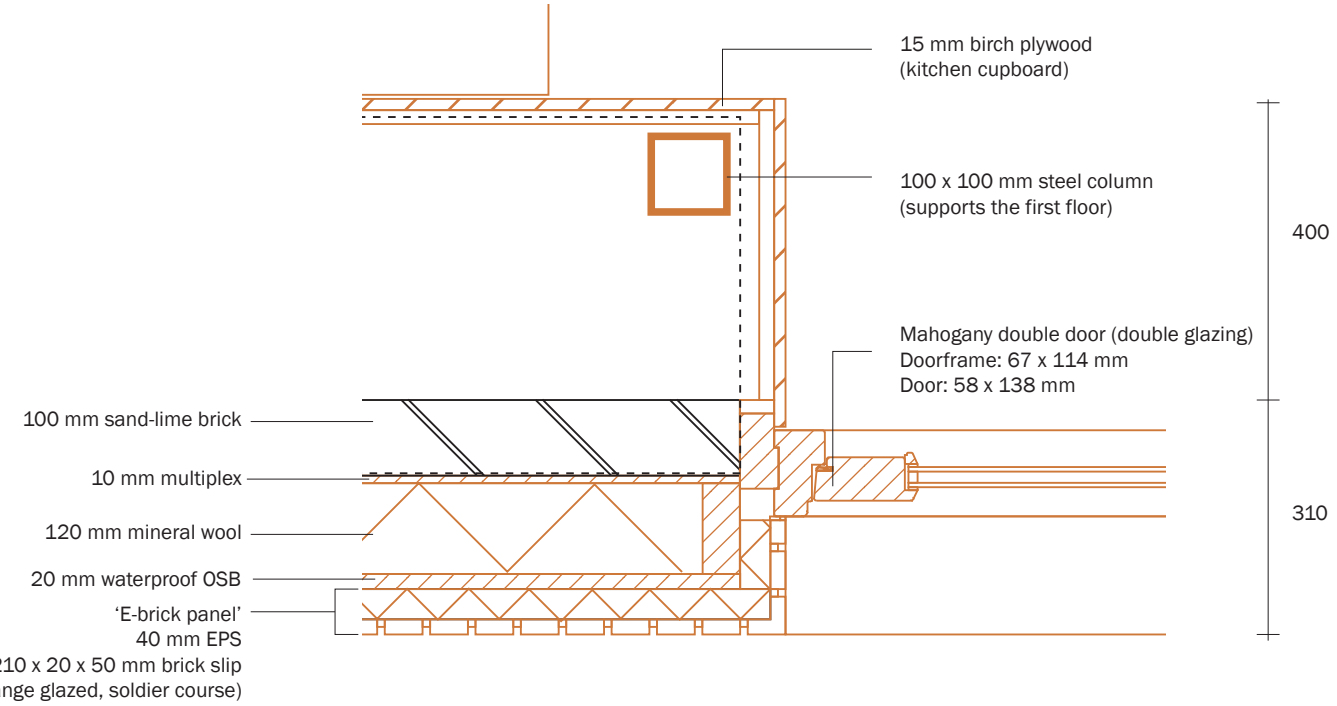
Fig. 71 Kitchen ‘split home’ with sky window

Fig. 72 Section kitchen ‘split home’ with sky window 1:20



1:20

A



Rc value = 4,9 m^2K/W

1:10

Fig. 73 Detail A 1:10

B

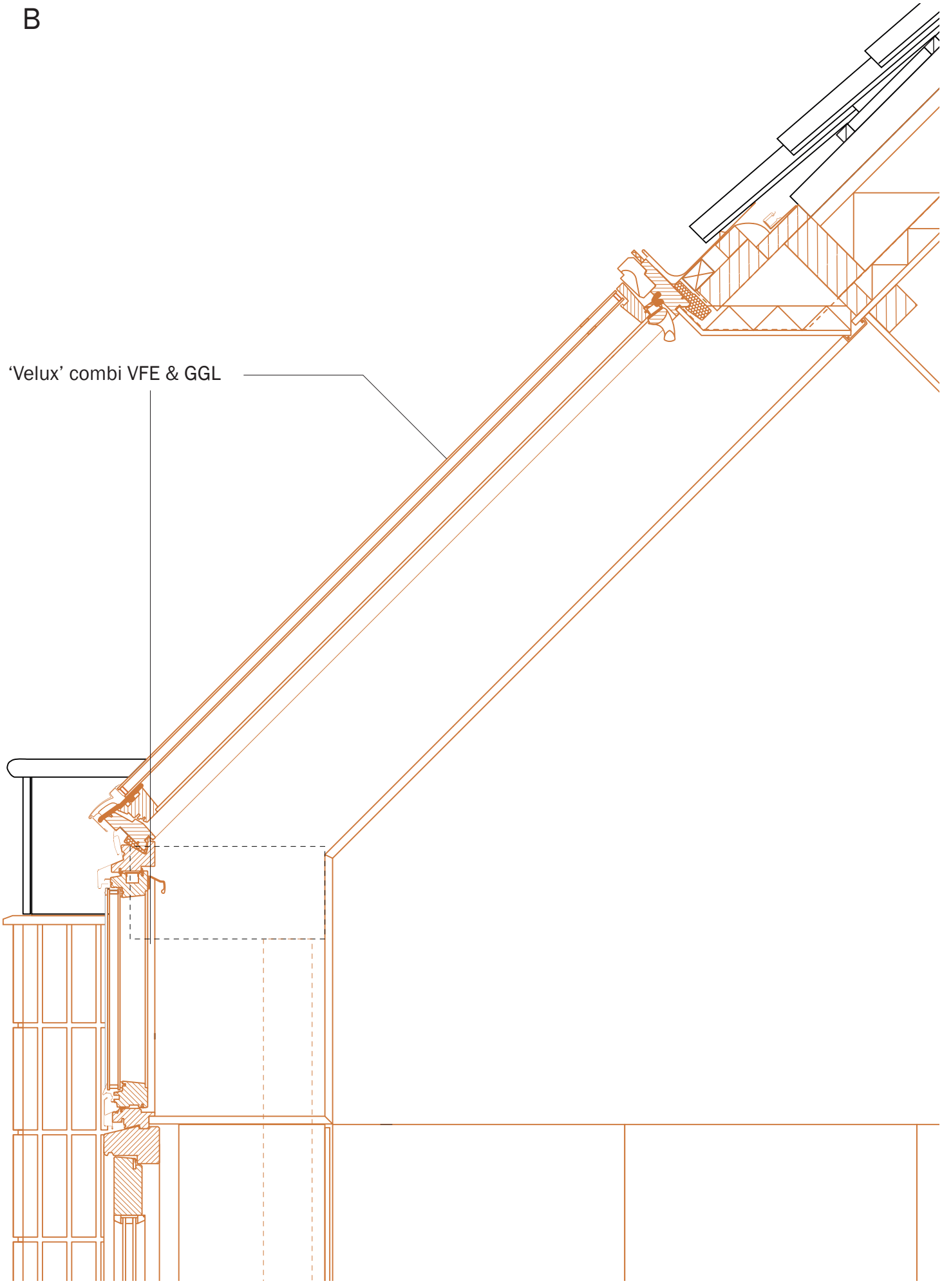
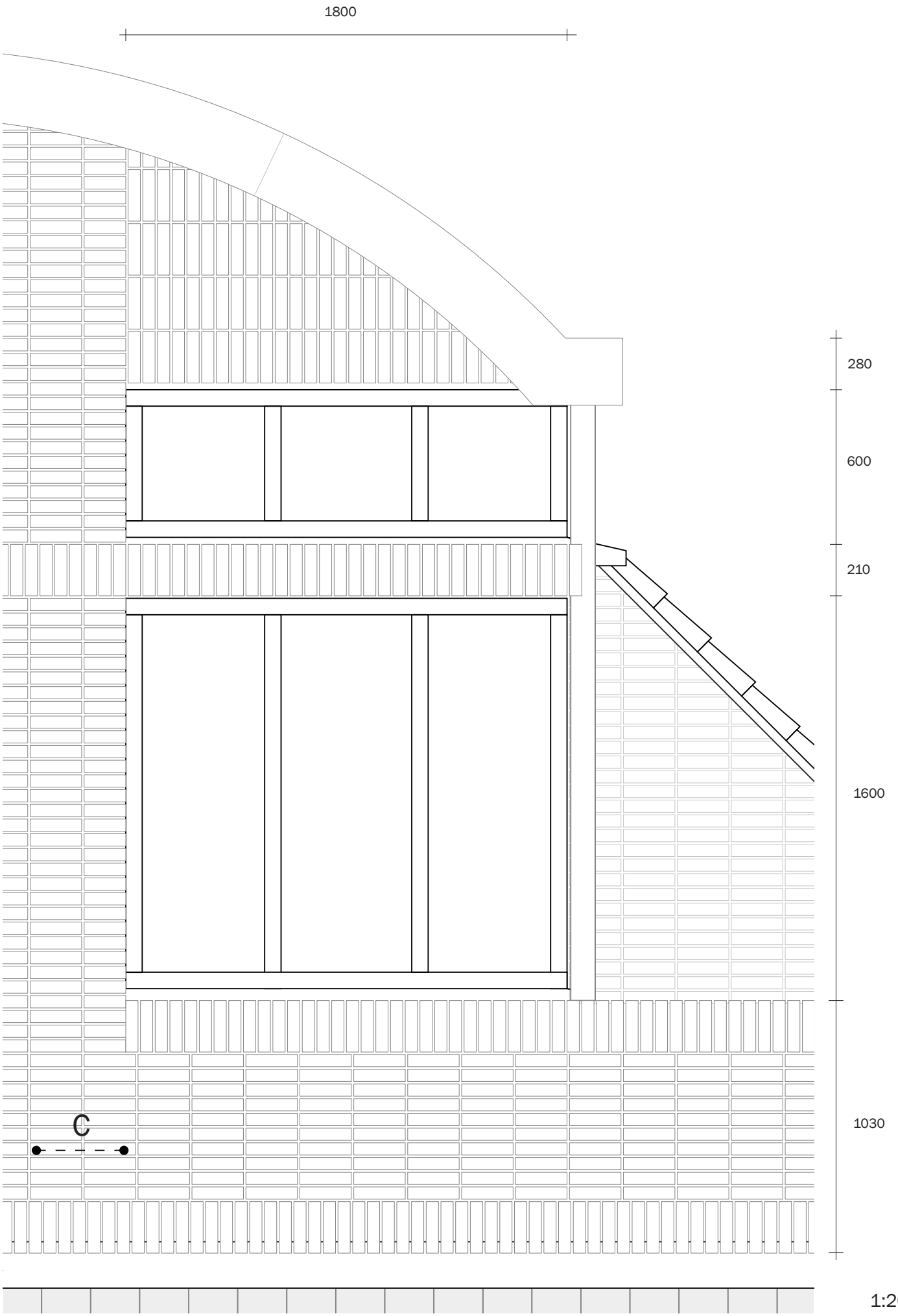


Fig. 74 Detail B 1:10

1:10

7.9 ‘Doorzonzolder’

Fig. 75 Facade fragment 1:20



1:20

Fig. 76 ‘Doorzonzolder’

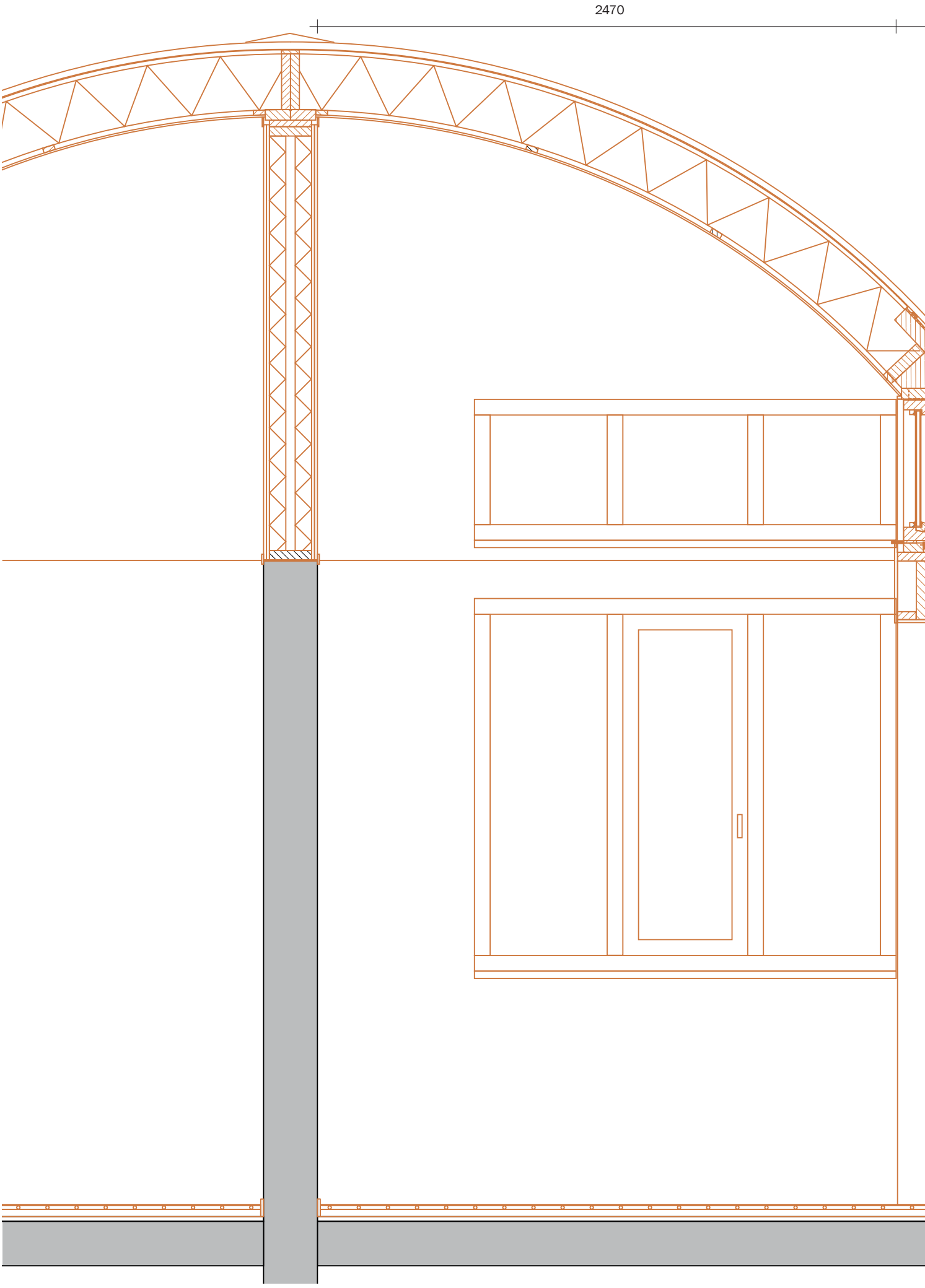
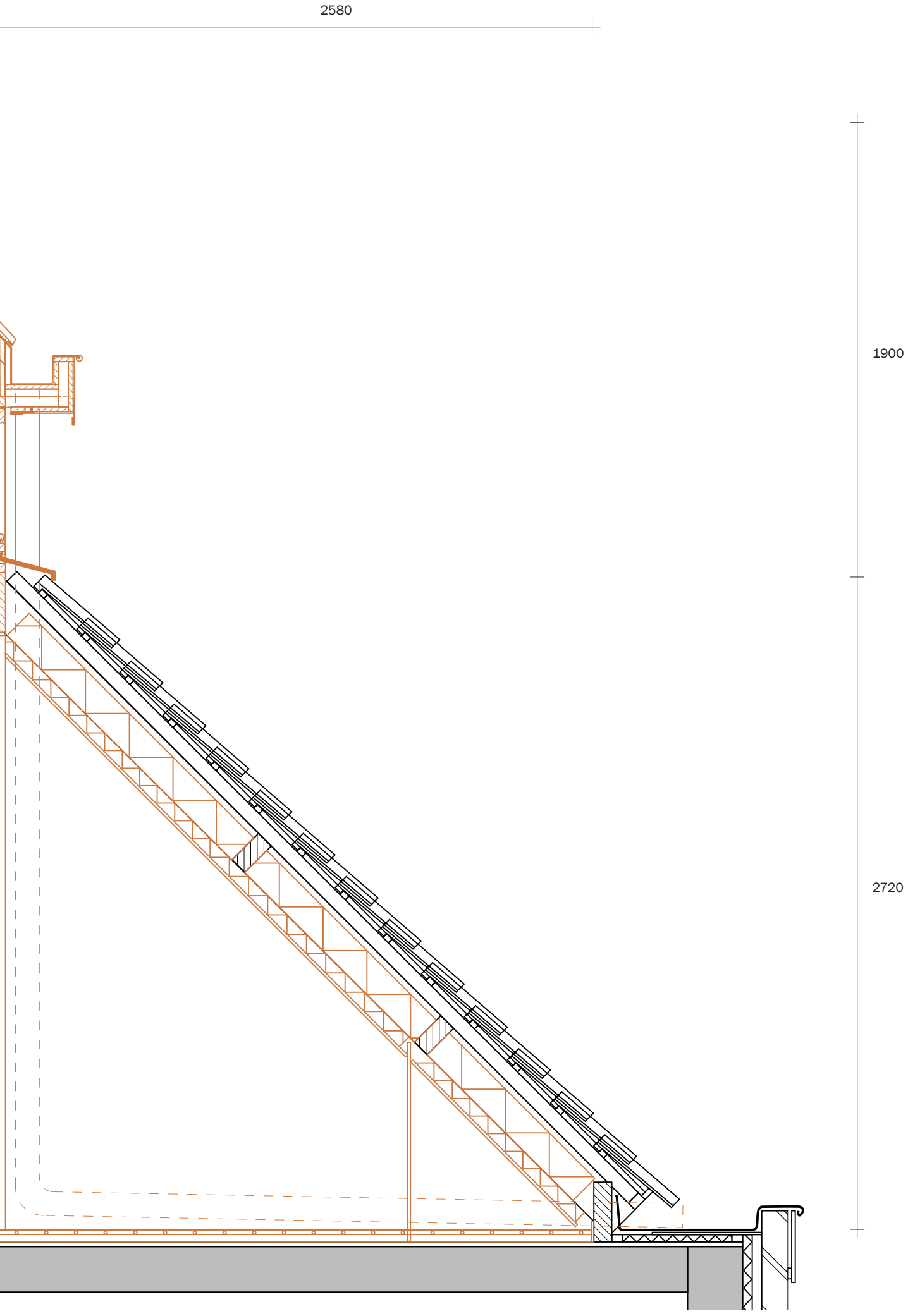
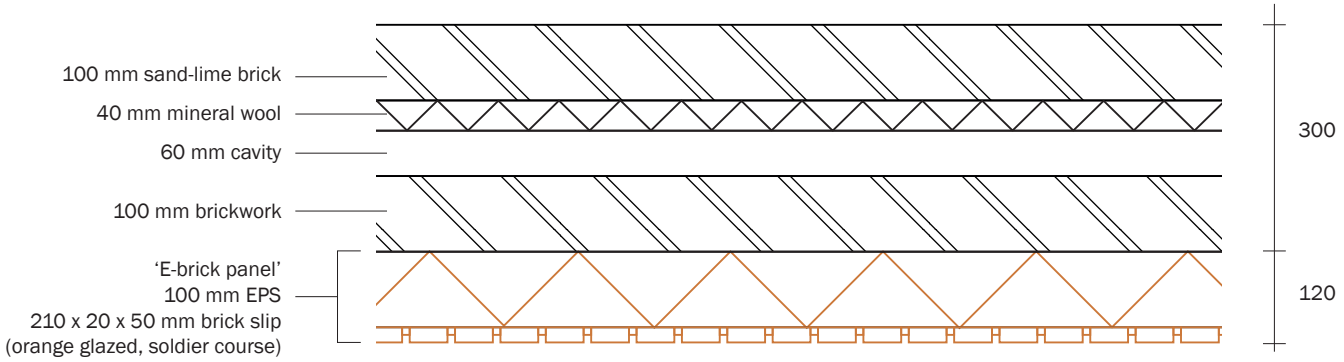


Fig. 77 Section ‘doorzonzolder’ 1:20



1:20

C



Rc value = 4,9 m^2K/W

1:10

Fig. 78 Detail C 1:10

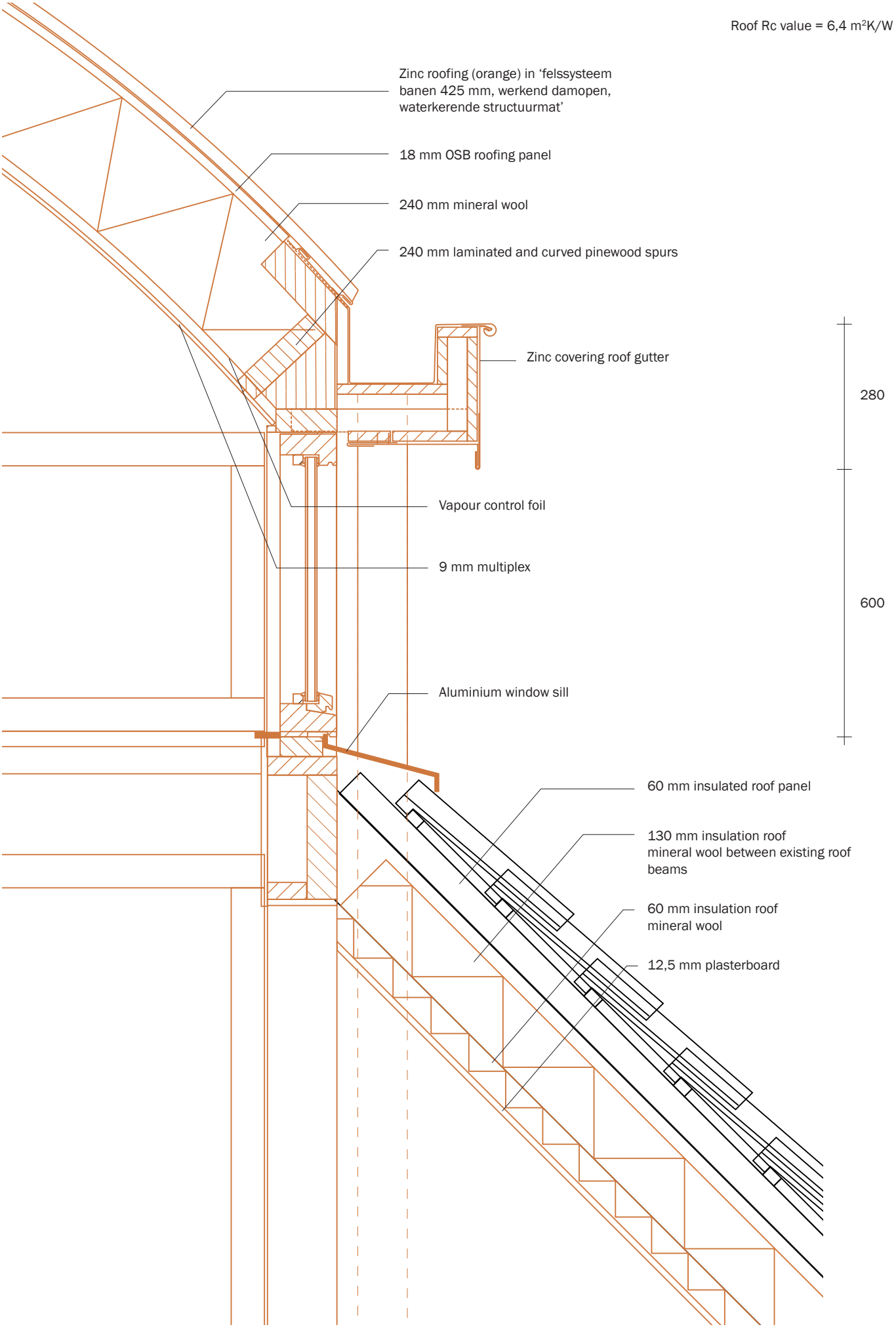


Fig. 79 Detail D 'doorzonzolder' roof connection 1:10

7.10 Construction sequence

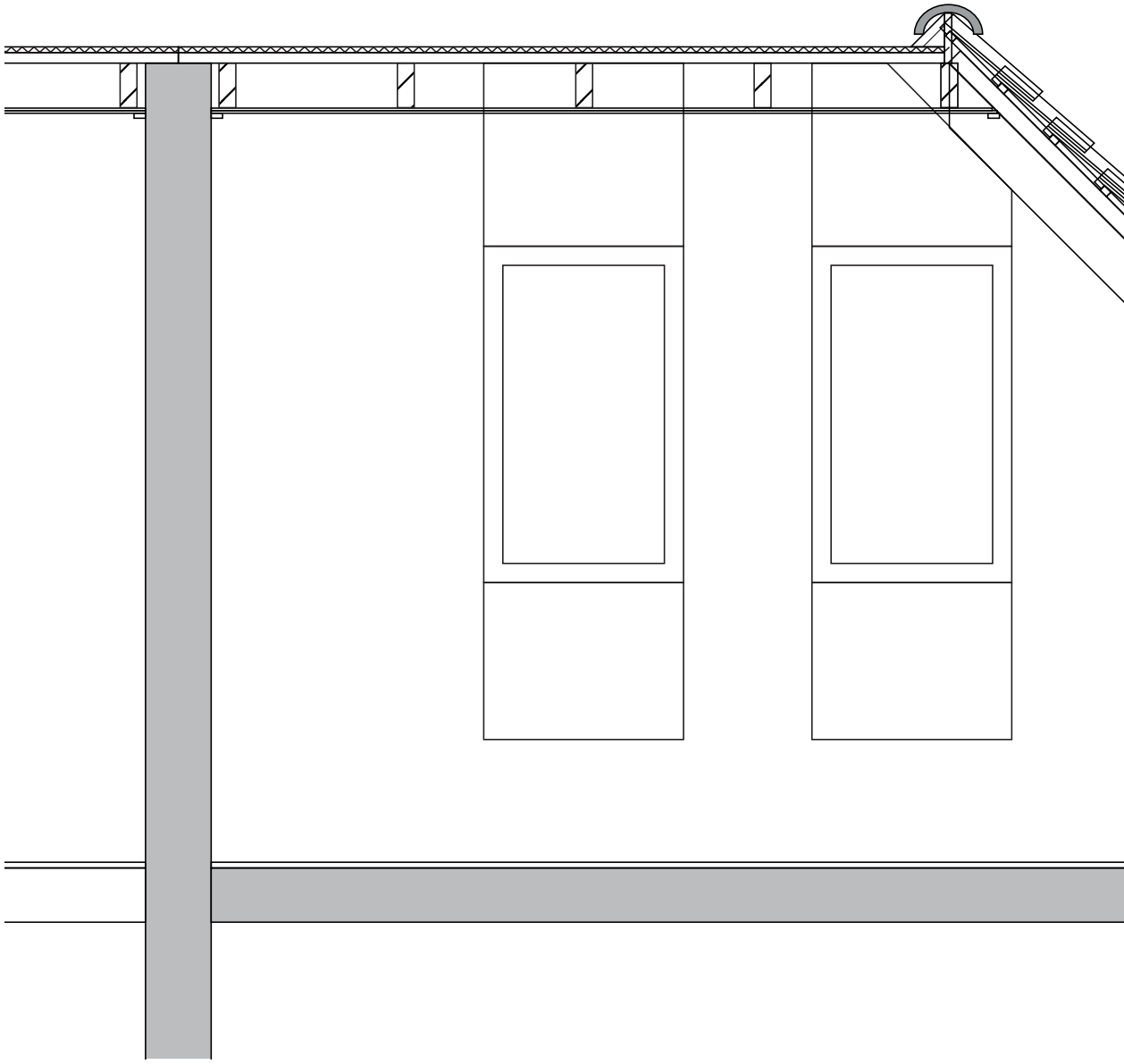
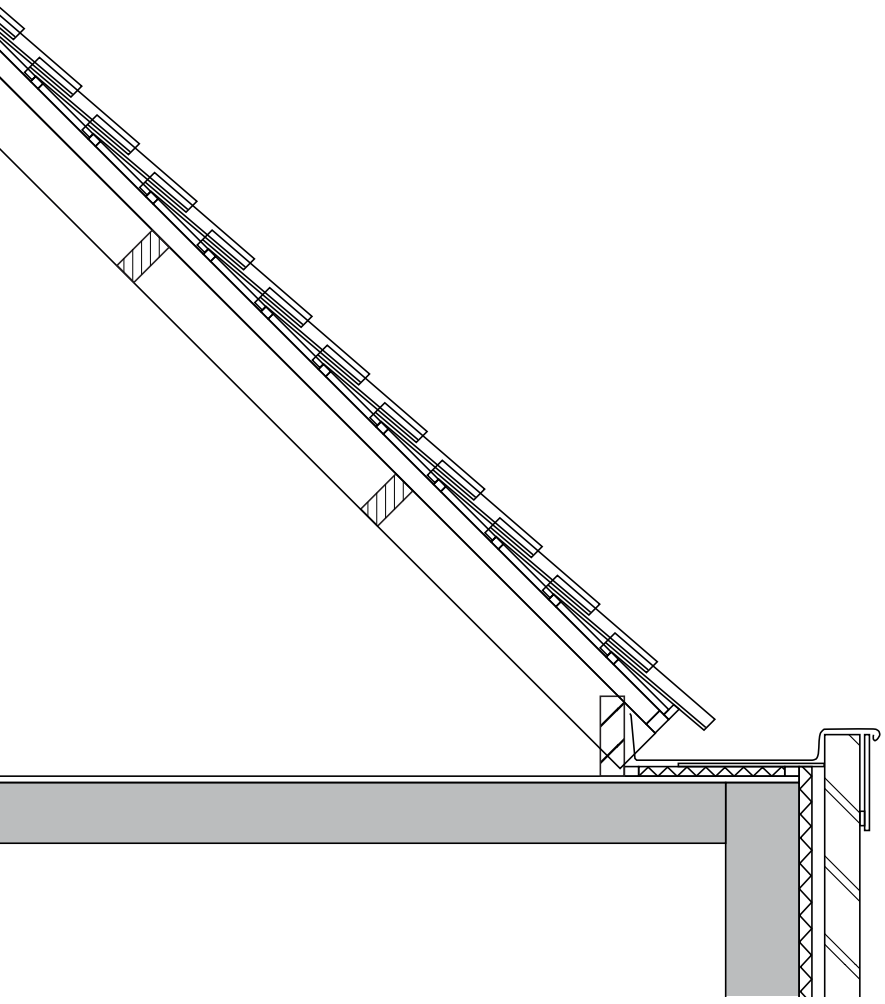


Fig. 80 Section existing situation 1:20



1:20

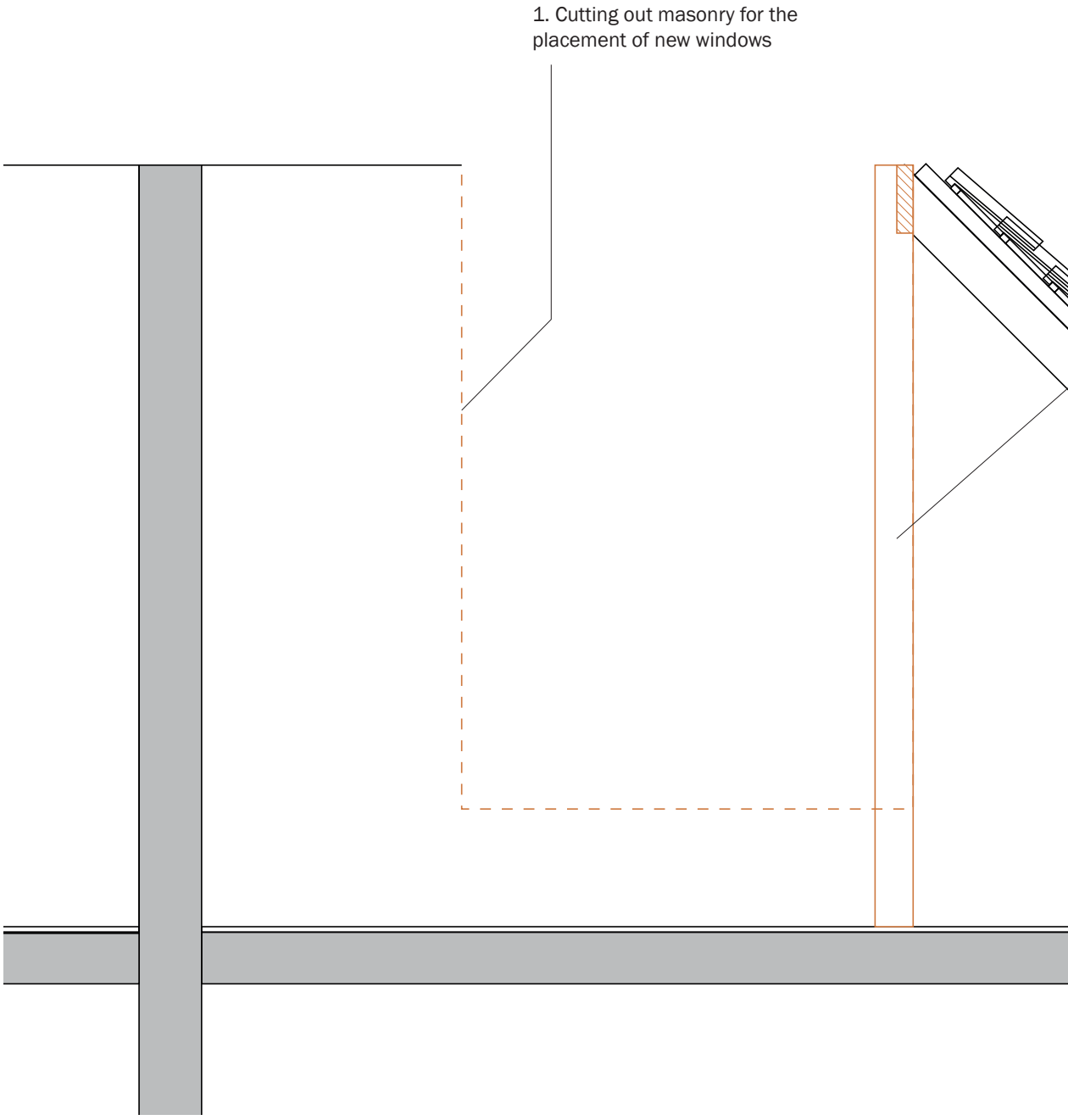
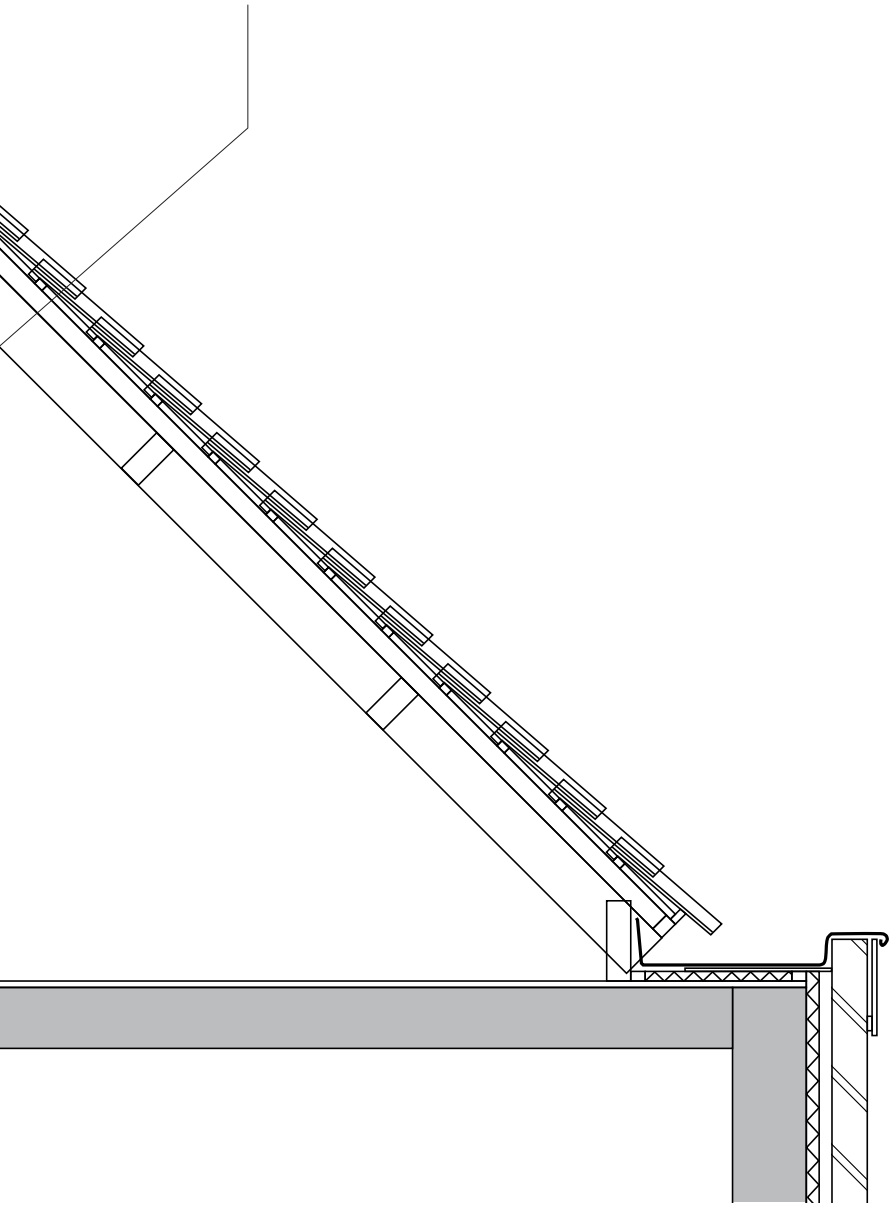


Fig. 81 Section 1:20

2. New crossbeam and column to support roof after demolition of part of roof for roof terrace



1:20

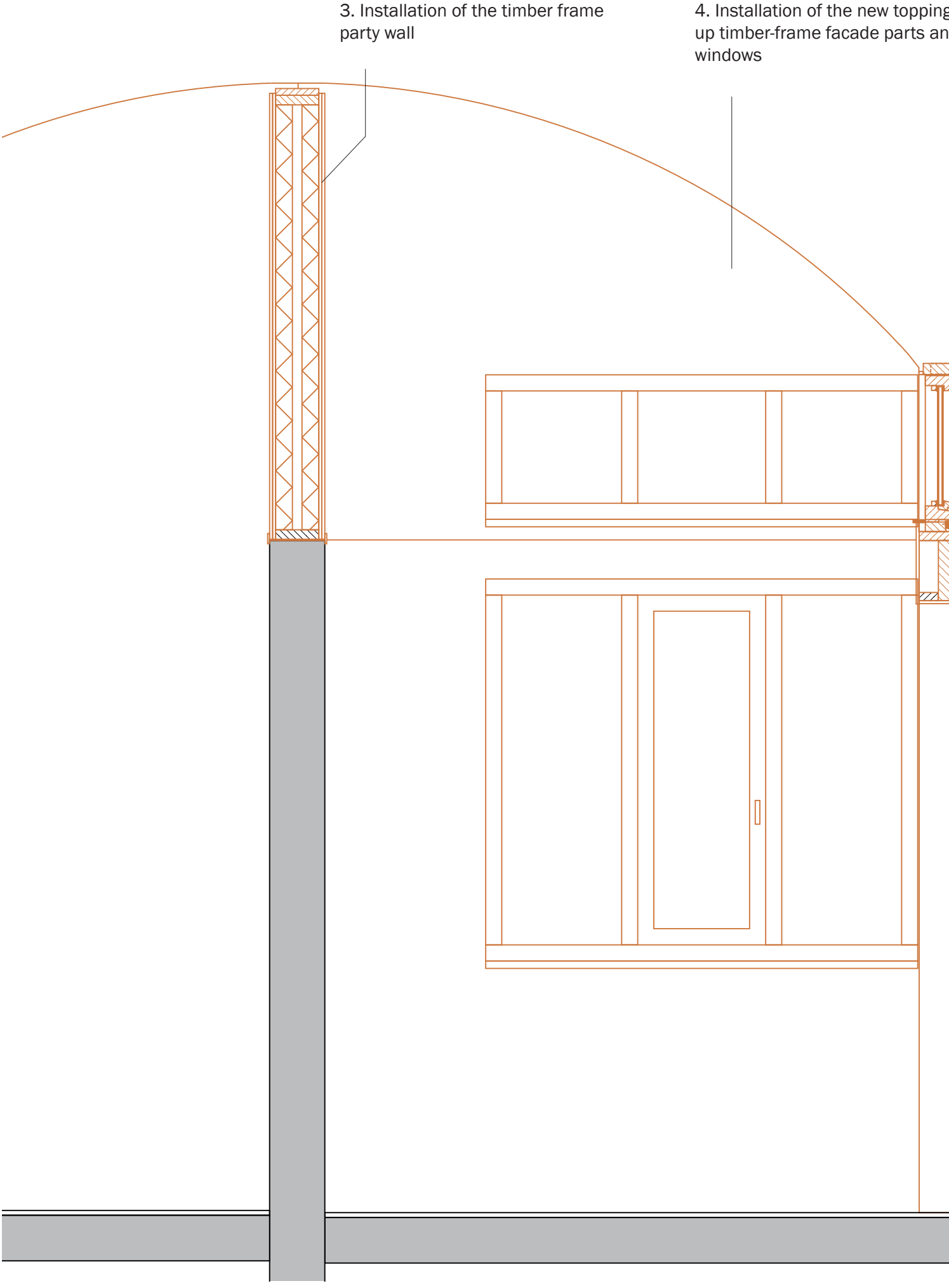
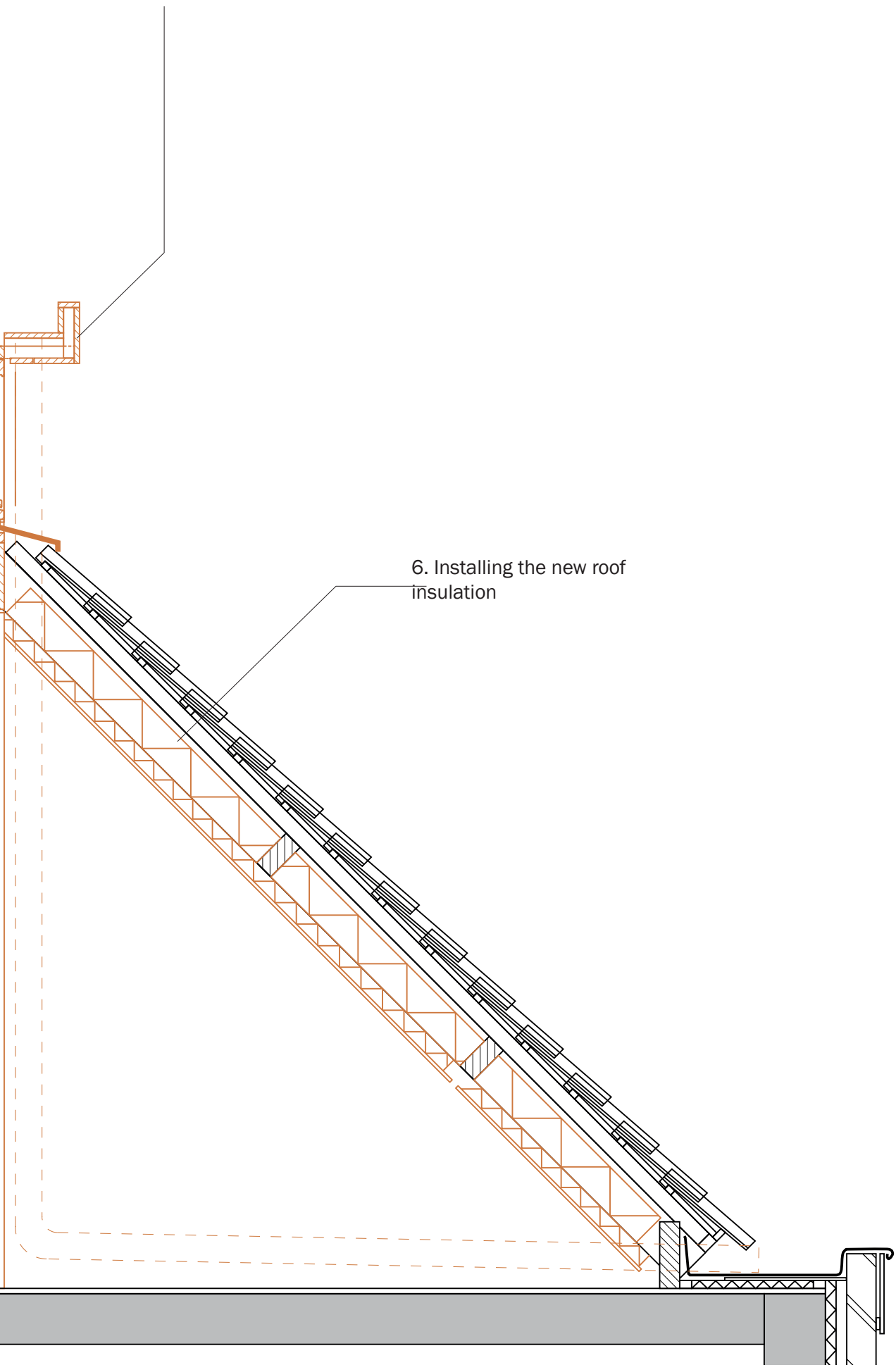


Fig. 82 Section 1:20

g
d



1:20

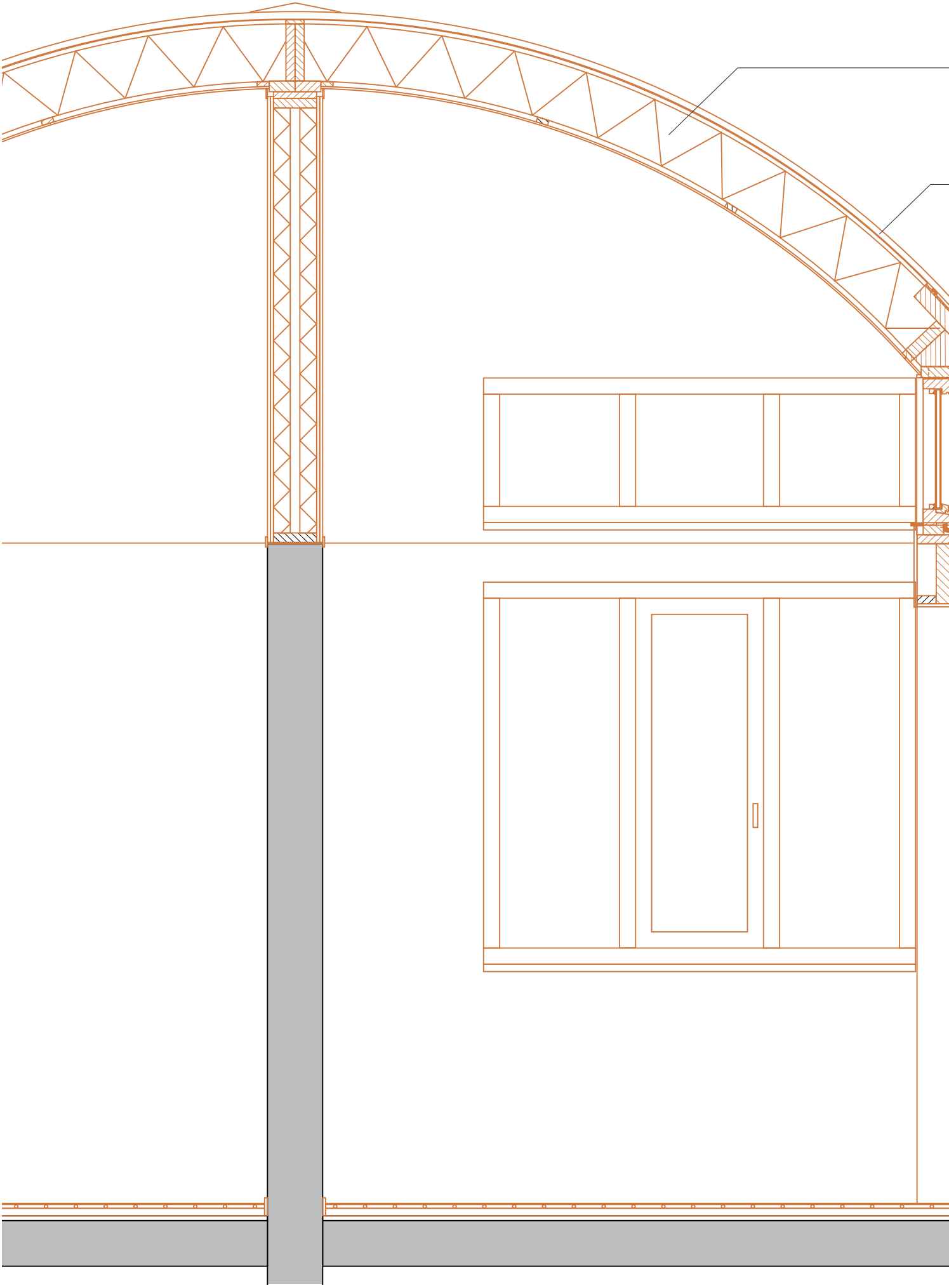
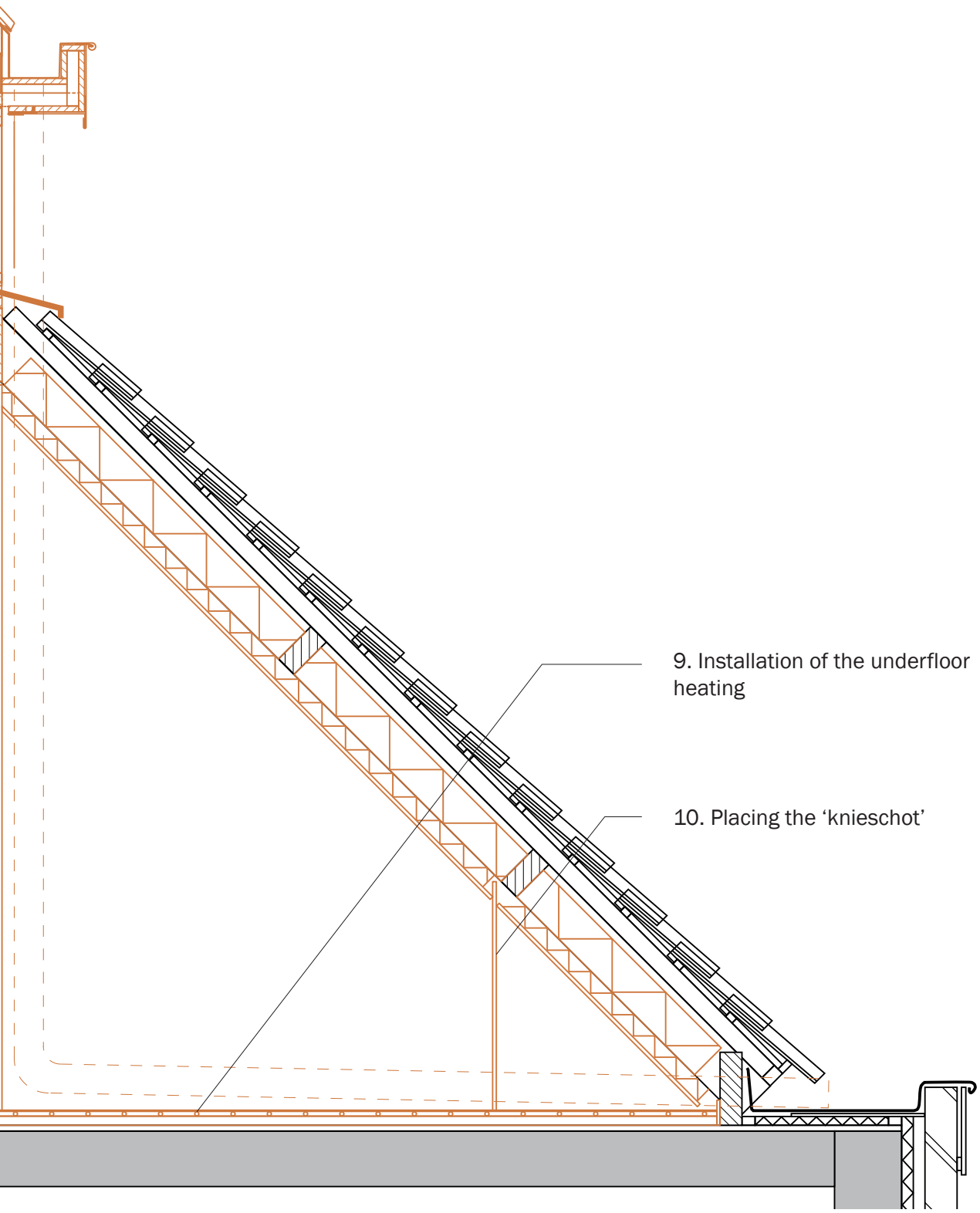


Fig. 83 Section 1:20

7. Placing the prefabricated timber frame roof elements

8. Installation of the zinc roofing and the thin film solar cells



9. Installation of the underfloor heating

10. Placing the ‘knieschot’

1:20

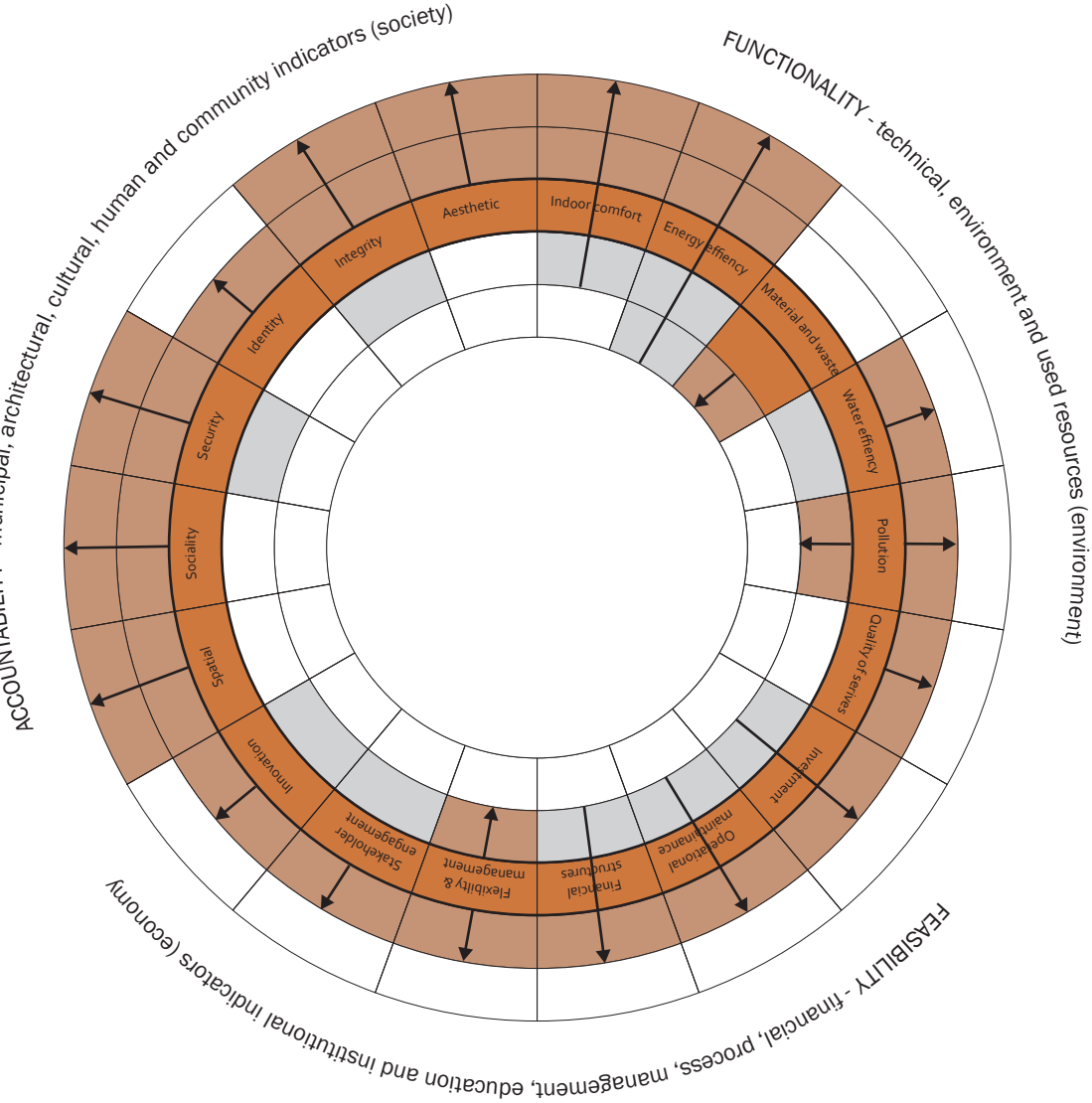


Fig. 84 Scores before and after revitalisation design for Goedewerf, Almere Haven. Adapted *Holistic sustainability decision-making support framework for building renovation* by Kamari et al., 2017, p. 344.

8. Conclusion & Recommendations

8.1 Conclusion

To determine if the approach is successful, is assessed on the basis of the Kamari et al. wheel scores before and after renovation. The preliminary results show positive impact in almost all categories, except at 'Material and waste' for example, because the necessary new building materials. It can be concluded the principles of the '1968-1989 urban renewal' approach can provide a viable strategy to revitalize Post 65 neighbourhoods, such as Goedewerf (1978) in Almere Haven. By applying the principles of the '1968-1989 urban renewal' approach, which offer room for the incoporation of existing aesthetic and spatial identity in redesigns, the project shows there is a future for the valuable Post 65 aesthetic and spatial identity in renovation practice.
This project shows that by strengthening and/or adding Post 65 aesthetic and spatial attributes, 'Accountability' is strengthened and thus the possibility of a more sustainable future can be assured because (potential) embodied cultural energy is not lost.
In the case of little qualitative Post 65 aesthetic or spatial identity present, elements can be chosen from the Post 65 Lexicon and these can be incorporated in a redesign or renovation. It is important to consider whether the element or feature to be added provides enough quality that it is worth the investment.
This project shows that densification and home split is a solution worthy of further investigation. Currently, finding new building locations is a bottleneck. By making building lots available within existing neighbourhoods, housing corporations could both build new houses and renovate existing ones at the same time. This might not necessarily be more expensive, given that no new infrastructure and facilities would have to be put in place.

Relevance
Goedewerf has a broad validity and was therefore suitable as a case study. The neighbourhood represents a subset of Post-65 housing architecture that strived for small scale and complexity. Furthermore, Goedewerf has a number of characteristic features that are representative of Post 65 neighbourhoods: low rise, sloped roofs, mixed ownership, relatively low density, surrounded by nature, relatively many single family homes.
The graduation project addresses the societal relevance of the increasingly urgent sustainable renovations of a significant part of Dutch housing stock (31%) (CBS, 2022). The combination of aesthetics and building envelope renovation is particularly relevant in the light of the necessary improvement of energy performance (e.g. insulation, detailing). Through testing the urban renewal approach and development of know-how for contextualist design that uses Post 65 aesthetic and spatial vocabulary in renovation this projects creates guidance for future-proof renovations for a lower probability of compromised heritage values. And with reference to the Kamari's et al. framework for 'Holistic sustainability decision-making support framework for building renovation' (2017, p. 344): the categories 'Aesthetic', 'Integrity' and 'Spatial' in particular are addressed in this project. These are categories that stand a good chance of being underexposed in renovation practice because of the lack of public appreciation of Post 65 architecture and the still developing body of knowledge. The academic relevance of this project is characterised by the critical historiographical perspective on existing literature that discusses Dutch Post 65 architecture. The research output is a contribution to this still developing body of knowledge on Dutch Post 65 architecture. Furthermore is the used method relevant, the funda method could also be applied to other building periods or typologies.

Added value research findings
The nature of my project is also educational, I think it is important for a sustainable future for Post 65 suburban housing to encourage everyone to open up their eyes and teach everyone how and what qualities can be recognised.
The added value of developed knowledge, compared to already existing knowledge, is that it shows that Post 65 is architecturally very rich, contrary to popular belief. This project attempts to show the diversity and richness of Post 65 housing architecture, which has previously received little attention.
In addition, the research results show that within Post 65 suburban housing several aesthetic families can be discovered. This can provide guidance in renovation or redesign projects. For example, in the sense of which attributes from the Lexicon can possibly be present and which attributes can possibly strenghten the existing aesthetic and spatial identity. In addition, the revitalisation design for Goedewerf has made it clear that there does not exist something as one ready made solution for all Post 65 suburban housing.

After the research done into the aesthetic and spatial identity of Post 65, I dare say that there is something special in almost every Post 65 suburban house. Even if it does not appear so from the outside. Take, for example, Noordmark 38 in Almere Haven, which has a beautiful spatial connection between the ground floor and the first floor through the open staircase and a small void with skylights (Fig. 85 - Fig. 90). I think in my research I have discovered only the tip of the iceberg.

Fig. 85 Noordmark 38, Almere (Funda, 2022)

Fig. 86 Noordmark 38, Almere (Funda, 2022)

Fig. 87 Noordmark 38, Almere (Funda, 2022)

Fig. 88 Noordmark 38, Almere (Funda, 2022)

Fig. 89 Noordmark 38, Almere (Funda, 2022)

Fig. 90 Noordmark 38, Almere (Funda, 2022)

8.2 Further studies

Ecology and Biodiversity
Often there are green ‘belts’ on the edges of cauliflower neighbourhoods. They offer enormous opportunities for strengthening and improving the green-blue networks in terms of ecology and biodiversity. Research is needed into how this can be realised in a feasible way.

Renewable sources of energy
In relation to which energy sources are to be used, it is worth investigating to what extent the blue structures can be used within cauliflower neighbourhoods.

Car in front of house as social interaction ‘incubator’
Research into the role of the car in Post 65 suburban neighbourhoods. To a large extent, I have moved the parking space to the edges of the neighbourhood, for the benefit of safety and quality of public space. But isn’t the car at the door perhaps an important ‘incubator’ for social interaction. In the case of the Eurowoningen (Leusden), the car has been given a place but, in my opinion, does not compromise the safety and quality of the public space. Various models could be investigated, also in relation to the characterisation of the neighbourhood. Goedewerf, for example, is located near the centre of Almere Haven, which means that several activities can be done on foot or by bike. The role of the car is therefore already less important.

Home splits
In terms of the number of divisions of single family homes, the project targets 20-25% of single-family homes. Further research will have to show whether this is a feasible percentage. There is a lack of data whether this is a realistic figure. For example resident surveys could be conducted where residents are asked whether they would consider participating in this.

9. References

Allecijfers. (2021). Wijken en buurten in Almere. Retrieved 13 January 2022, from https://allecijfers.nl/gemeente-overzicht/almere/

Abrahamse, J. E. (2019). *Opkomst en ontwikkeling van de bloemkoolwijk. Het ontwerp van woonwijken in Nederland en de zoektocht naar identiteit.* Rijksdienst voor Cultureel Erfgoed.

Bekkering, J. (2019, May 27). God is in the details. *De Architect.* Retrieved 15 October 2021, from https://www-dearchitect-nl.tudelft.idm.oclc.org/architectuur/blog/2019/05/blog-god-is-in-the-details-101210644

Bierman, M., & Bongenaar, A. (1987). Groeikernen als donor en donorstad als groeikern? *Plan*, 11.

Van den Biggelaar, J. (2018). *De lelijke jaren zeventig. Moderne architectuur, publieke perceptie en de vroegtijdige sloop van vier prestigieuze projecten.* Spectrum.

Ministerie van Binnenlandse Zaken en Koninkrijksrelaties. (2022, March). *Programma Woningbouw.* Rijksoverheid. https://www.rijksoverheid.nl/documenten/rapporten/2022/03/11/programma-woningbouw

Blom, A., Abrahamse, J. E., Linssen, M., Altenburg, F., van Beers, M., Broex, B., ... Vermaat, S. (2019). *Verkenning Post 65. Nieuwe perspectieven tussen welvaart en weerstand.* Rijksdienst voor Cultureel Erfgoed.

Van Bockxmeer, J., & De Korte, L. (2021, May 17). Over deze oplossing voor de woningnood hoor je nooit iemand. *de Correspondent.* Retrieved 29 March 2021, from https://decorrespondent.nl/12375/over-deze-oplossing-voor-de-woningnood-hoor-je-nooit-iemand/2545901906625-48bfddfa

BONAS. (n.d.). *Woningen en bedrijfsruimten Nieuwstraat e.o. Zwolle.* BONAS Archiwijzer. https://www.bonas.nl/archiwijzer/gegevens.php?inr=0104.00029

Bosma, K., Mekking, A., Ottenheym, K. & Van der Woud, A. (2007). *Bouwen in Nederland*. Waanders.

De Botton, A. (2014). *The Architecture of Happiness.* Adfo Books.

Bouw. (1982, March 20). Woonwijk te Almere-Stad. *Bouw*, 6.

Buch, J. (1993). *Een eeuw Nederlandse architectuur 1880–1990.* NAi Uitgevers.

Clarke, N., Kuipers, M., & Roos, J. (2019). Cultural resilience and the Smart and Sustainable City: Exploring changing concepts on built heritage and urban redevelopment. *Smart and Sustainable Built Environment.* https://doi.org/10.1108/SASBE-09-2017-0041

Centraal Bureau voor de Statistiek. (2021, October 27). *Voorraad woningen; gemiddeld oppervlak; woningtype, bouwjaarklasse, regio.* Opendata Statline. Retrieved 15 October 2021, from https://opendata.cbs.nl/statline/#/CBS/nl/dataset/82550NED/table?ts=1635012721306TNO

Van Eig, M. (2021). *Het Detail.* Vakmedianet Bouwcommunities.

Havenhart 2.0. (2020, May). *Havenhart 2.0 Samen-leven in haven. Visie 2040 en Aanpak 2020–2040. Vernieuwing binnenring van Almere Haven.* https://havenhart2punt0.nl/wp-content/uploads/2020/05/Vergezicht-Visie-Aaanpak-Mei-2020.pdf

Hulsman, B. (2007, 8 december). Waardering voor details. *NRC Handelsblad.* https://www.nrc.nl/nieuws/2007/12/08/waardering-voor-details-11449075-a256107

IPCC. (2021, August). *IPCC Sixth Assessment Report.* https://www.ipcc.ch/report/ar6/wg1/

Jencks, C. (2011). *The Story of Post-Modernism: Five Decades of the Ironic, Iconic and Critical in Architecture.* John Wiley & Sons.

De Jong, T. (2018, May 18). *Mooi van Lelijkheid.* AD.

Kamari, A., Corrao, R., & Henning Kirkegaard, P. (2017). Sustainability focused decision-making in building renovation. *International Journal of Sustainable Built Environment*, 2017(6), 330–350. https://doi.org/10.1016/j/ijsbe.2017.05.001

Kingma, J. (2012). De magie van het jaren '30 huis. Boom Uitgevers.

Kohlstedt, K. (2016, September 26). *Lessons from Sin City: The Architecture of "Ducks" Versus "Decorated Sheds"*. 99%invisible. Retrieved 4 June 2021, from https://99percentinvisible.org/article/lessons-sin-city-architecture-ducks-versus-decorated-sheds/

Konstantinou, T. (2021, September 9). *Re-Imagining the Envelope. The process to update and upgrade* [Slides]. Brightspace. https://brightspace.tudelft.nl/d2l/le/content/398790/viewContent/2493519/View

Kooiman, N. (2020, November 4). *Een analyse van het verhuisgedrag van zestigers.* CBS. Retrieved 3 May 2022, from https://www.cbs.nl/nl-nl/longread/statistische-trends/2020/een-analyse-van-het-verhuisgedrag-van-zestigers?onepage=true

Van der Ploeg, J. (Architect). (2008, February 24). *Smaaktest Faro Architecten. Debat over de kloof tussen architect en bewoners. De Kunst.* Amsterdam, The Netherlands: NPS.

NOS. (2019, April 2). *Je woning verduurzamen, wat gaat dat kosten? Dit zijn de voorspellingen.* NOS Nieuws. Retrieved 4 June 2022, from https://nos.nl/artikel/2278704-je-woning-verduurzamen-wat-gaat-dat-kosten-dit-zijn-de-voorspellingen

Omroep Flevoland. (2015, December 3). *2.000 handtekeningen voor behoud zwembad Haven.* Omroep Flevoland Nieuws. Retrieved 3 June 2022, from https://www.omroepflevoland.nl/nieuws/130308/2-000-handtekeningen-voor-behoud-zwembad-haven).%203%20

Rijksdienst voor het Cultureel Erfgoed. (n.d.). *Post65: de gebouwde omgeving 1965 -1990.* Retrieved June 1, 2022, from https://www.cultureelerfgoed.nl/onderwerpen/post-65-erfgoed

Rijksoverheid. (n.d.). *Duurzame energie.* Retrieved 3 June 2022, from https://www.rijksoverheid.nl/onderwerpen/duurzame-energie

Rijksoverheid. (2022, March 11). *Meer regie om woonimpasse te doorbreken.* Rijksoverheid Nieuws. Retrieved 4 June 2022, from https://www.rijksoverheid.nl/actueel/nieuws/2022/03/11/meer-regie-om-woonimpasse-te-doorbreken

Regionaal Energieloket. (z.d.). *Woningen-gebouwd-tussen-1976-en-1987.* https://regionaalenergieloket.nl/woningen-gebouwd-tussen-1976-en-1987

Somer, K. (2020). *Groei, verandering, differentiatie. Architectuur in Nederland 1965–1990.* Rijksdienst voor Cultureel Erfgoed.

Theeuwen, M. (2022, 12 april). *Nieuw wapen tegen woningtekort: huizen in Eindhoven gesplitst, zodat er twee gezinnen in kunnen. Eindhovens Dagblad.* Retrieved 17 April 2022, https://www.ed.nl/eindhoven/nieuw-wapen-tegen-woningtekort-huizen-in-eindhoven-gesplitst-zodat-er-twee-gezinnen-in-kunnen-br~afb85d5a/

TNO. (n.d.). *Versnelde renovatie van woningen en gebouwen.* Retrieved 15 October 2021, from https://www.tno.nl/nl/aandachtsgebieden/energietransitie/roadmaps/duurzame-ondergrond/naar-een-energie-producerende-gebouwde-omgeving/versnelde-renovatie-van-woningen-en-gebouwen/

Venturi, R., Scott, B. D., & Izenour, S. (1977). *Learning from Las Vegas: The forgotten symbolism of architectural form.* Cambridge, Mass: MIT Press.

De Vletter, M. (2004). *De kritiese jaren zeventig.* NAi Uitgevers.

Voerman, L., & van Es, E. (2018). *Stadsvernieuwing in de Stroomversnelling. Inventarisatie stadsvernieuwingsplannen Interim Saldo Regeling 1977 – 1985.* Rijksdienst voor het Cultureel Erfgoed.