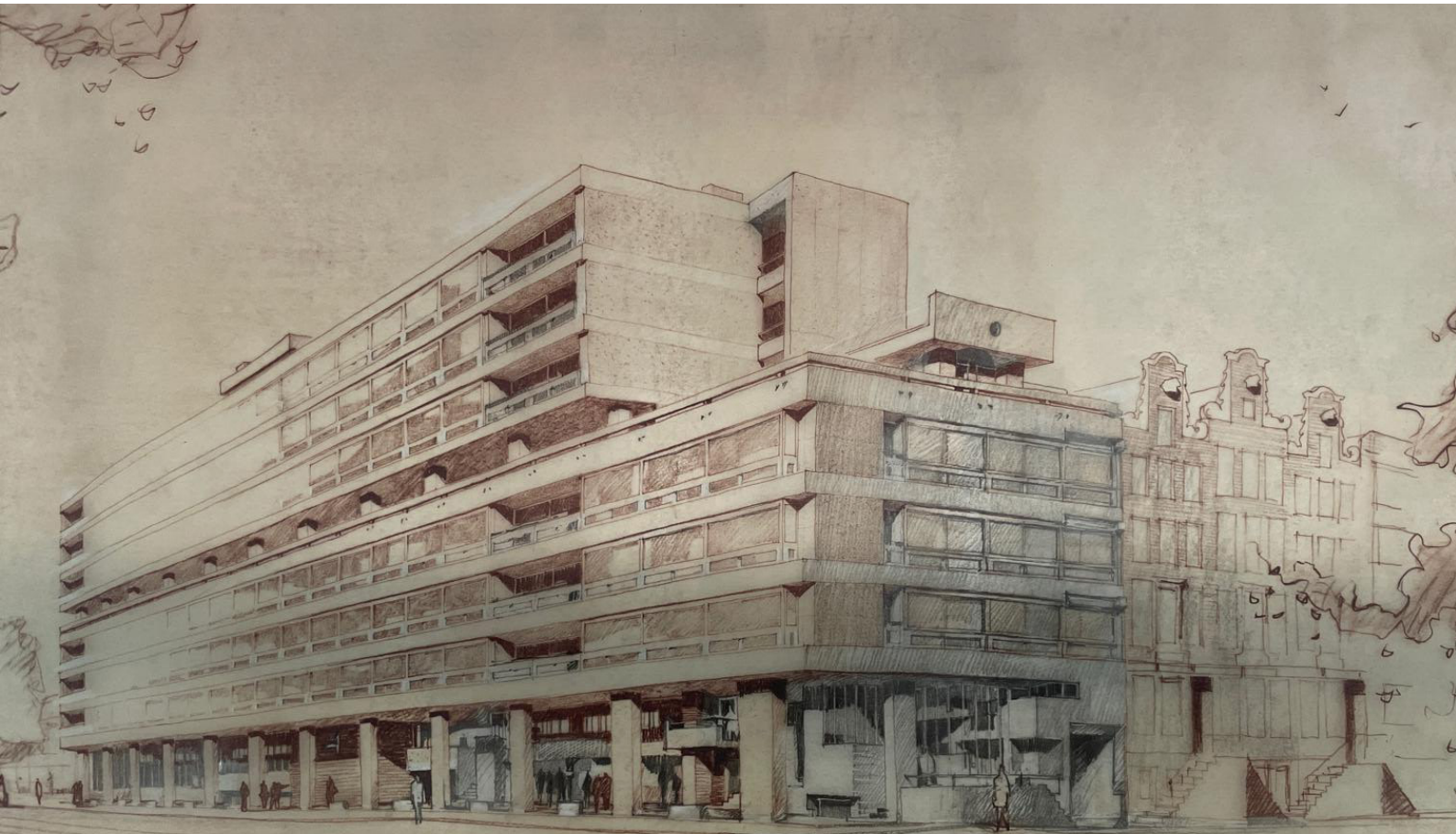


Architectural Research Thesis | Delft Lectures on Architectural History | MSc 2 | TU Delft | St.Nr.: 6291279 | Tutor: J. Hanna

Furniture Promoting Collectivity in Student Housing

Multicoding Architecture as a Reaction to Dutch Post-War Circumstances

Nils Ewen



competition drawing (1961), Street Perspective: student house: Weesperstraat 5, Amsterdam

Photo: Nils Ewen
Archive: Nieuwe Instituut, Rotterdam

STUDENTENHUIS WEESPERSTRAAT AMSTERDAM
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Abstract

The definition of architecture varies from only seeing it from the perspective of solid structures with load-bearing function to including doornubs and flexible elements into consideration of being architectural. However, the impact that each of those elements, if defined as architecture, furniture, or objects, has on people's behavior interacting with them is crucial to the definition of the space they are shaping. Especially when one element has more than one function. As Le Corbusier wrote in his book from 1930 (*"Precisions on the Present State of Architecture and City Planning"*): „To create architecture is to put in order. Put what in order? Function and objects.“, meaning that the creation of space is dependant of all the physical objects that define it.¹

This thesis investigates the impact of furniture in student housing in the Netherlands of the 1950s and how it promotes collectivity abroad borders of ordinary architecture-elements. The Weesperstraat in Amsterdam, designed by Herman Hertzberger is exemplifying how architecture-implemented furniture can form collective spaces, representing students' demands of the post-war urban environment in Amsterdam.

This research seeks to understand architectural design decisions made, being challenged by poverty, political countermovements, and housing shortages, concerning destitute groups like students the most. Through archival research, visual analysis of drawings, and interviews, it will be clarified how collective spaces were formed and perceived through the interplay between architecture and furniture.

¹

Le Corbusier. *Precisions on the present state of architecture and city planning: with an American prologue, a Brazilian corollary followed by The Temperature of Paris and The atmosphere of Moscow* (MIT Press, 1930). 207

1 Introduction

In architectural discourse of the past century, but even more specifically in the past 25 years, furniture is increasingly regarded as an integral component of architecture.² While some argue that furniture has always been an inherent part of architectural design, others suggest that its significance has evolved coherently with technology.³ Regardless, furniture plays a crucial role in shaping everyday experiences,⁴ comparable to the influence of walls and floors on spatial perception. Both, architecture and furniture, address two different scales of human interaction and simultaneously blur borders

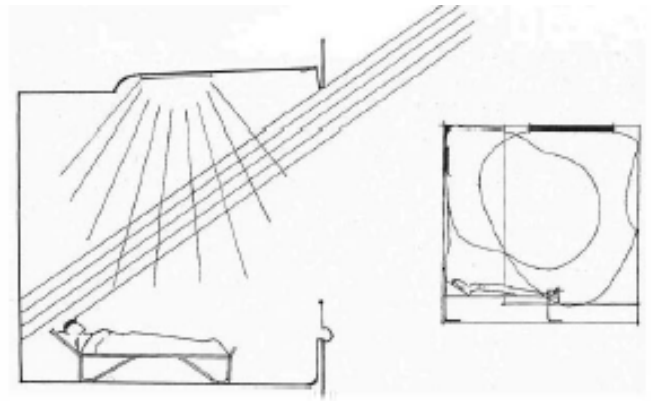


Fig. 1
Hyon-Sob Kim, *Alvar Aalto and the Humanizing of Architecture* (2009).

to each other, blending more and more into the same elements.⁵ The position of the bed in its relationship to the architectural composition is interrelative for the comfortable act of using space. (Fig. 1) The relationship between these two scales (architecture and furniture) is inherently interactive, as many spatial situations and human activities rely on their mutual engagement.⁶ The role of architecture varies significantly depending on the target group and the client. Beyond considerations of budget and individual needs, the interplay between these factors is essential. Architectural design is often shaped by negotiations between different interests, requiring an understanding that exceeds explicit demands. „*design control is highly mediated by the actions and demands of others (clients, cost managers, builders, and so on)*“⁷ In this context, the integration of furniture into architectural design can contribute to a holistic spatial composition, serving both functional and social purposes. Incorporating furniture into structural elements (multicode architecture), the combination of collectivity-forming elements (necessary for the resident) and structurally crucial components (necessary for the client). When multiple factors converge, architecture as the art of space creation for communities and furthermore, the architect as a negotiator between stakeholders is further challenged to balance these demands in a cohesive manner.

This thesis examines the impact of furniture as a structure-integral object and space-defining tool on architectural design within the context of student housing in the Netherlands during the 1950s and 1960s. The Student House Weesperstraat in Amsterdam, designed by Herman Hertzberger, is taken as a case study, to analyse design decisions and social considerations that shaped collective living environments in the aftermath of World War II. Through this investigation, the study explores how the design of furniture and its integration into architectural demands developed through societal and political forces in post-war Amsterdam.

1.1 Research question

As an active practitioner at that time, Herman Hertzberger tackled these specific post-war challenges in his designs. Therefore, this thesis seeks to analyse how Hertzberger reacted to students demands in the 1950s post-war Netherlands by designing the student house Weesperstraat in Amsterdam. It specifically investigates how furniture was used to foster collectivity within the building and in the threshold between private, collective and public realms. How did Hertzberger multicode architectural elements as a reaction to strict regulations and intervene in common practice with his approach? Detailed sub-sections like materiality, proportions and intentions for use are analysed to determine how the combination of architecture and furniture leads to the promotion of collectivity in a highly dense urban fabric. In order to understand the investigated topic sufficiently, it is crucial to explain often used terms first.

² Edwin Heathcote, *The furniturisation of architecture: from St Jerome in his study to built-in cupboards and summer pavilions* (The Architectural Review, 2018)

³ Jani Varpa, Minna & Jaakko Autio, *Sustainable Living: Young Adults Prolonging the Material Life Cycle of Objects Through the Appreciation of Used Furniture, Interiors, and Building Design In Circular Economy and Sustainability* (Springer, 2024), 2563

⁴ Demet Ertas, Secil Satir, *Furniture as a Design Product* (Journal of Art and Design ,2021), 117

⁵ Andreea Cutieru, *Blurring the Line Between Architecture and Furniture* (ArchDaily, 2025)

⁶ Allen C. Pierce, *Blurred lines: Reinvestigating the design possibilities of architecturalized furniture and furniturized architecture in modern housing* (Georgia Institute of Technology, 2014), 59

⁷ Jeremy Till, *Architecture Depends* (MIT Press, 2009), 169

1.2 Specific terms and the definition of multicoding architecture and furniture

Cambridge's Learner Dictionary defines furniture as „Things ... that are put into a house or other building to make it suitable and comfortable for living or working in“⁸ A definition that other dictionaries agree with.^{9,10} Susan Yelavich provides an additional perspective in her handbook *"Furniture Design"* by claiming that "... the acceptance of furniture as functional sculpture." is present since the 1980s.¹¹ This thesis extends beyond these definitions. It approaches furniture not only as typical furnishings, but also elements such as abstract volumes or even mailboxes that serve a functional role similar to furniture. The term is used as an overarching concept to describe elements that, while not strictly architectural, facilitate interaction with users in various ways. Multicoding in architecture and furniture refers to the integration of multiple functions within a single element. It aligns with Juani Pallasmaa's *"The Thinking Hand"*,¹² or Lilly Reichs and Ludwig Mies van der Rohes design of the Barcelona Pavillion,¹³ that architectural elements can embody multiple layered meanings and functions. For example, a structural wall, as an architectural component, may consist of stacked concrete blocks that extend horizontally, allowing them to be utilised for seating. This fusion of two distinct purposes within a single element exemplifies the concept of multicoding in design.

2. Political and social challenges in post-war Netherlands

General conditions could necessitate an even stronger reason to multipurpose built structures after World War Two. The overall shortage in the Netherlands, as in most of Europe, was accompanied by a housing shortage and an urgent reconstruction needs. The general destruction of infrastructure and the society required an extensive rebuild of a fractured core systems.¹⁴ Architecturally, this crisis promoted the rise of modernism and a striving of simplicity, with movements such as CIAM advocating for functionalism and to reinstate systemic clarity in the urban fabric.¹⁵

The widespread rebuilding progress, together with a weakened economy, however, resulted in strict building regulations. With little capital available, construction in the late 1940s and 1950s turned to rationalized forms and affordable materials, resulting in high-density social housing projects constructed predominantly from reinforced concrete. Social housing came to be in the center of urban renewal, with government initiatives expanding *woningbouwcorporaties* (engl: *housing cooperatives*) that soon influenced the national housing agenda.¹⁶

Economic constraints also transformed city planning. While normal Dutch buildings barely exceeded 12 meters, the need for cost-effective rebuilding encouraged vertical expansion. Although functionalism efficiently met the demand for affordable housing, it often came at the expense of communal integration and mental well-being. Rapidly, residents began critiquing the new methods, pointing to a loss of cultural continuity.¹⁷



Fig. 2
Johan van der Keuken, "Goed Wonen
9/1966," *Goed Wonen*, 1966, 19.

⁸ Colin McIntosh, *Advanced Learner's Dictionary Fourth Edition* (Cambridge, 2013)

⁹ Gerry Breslin. Cormac Mckeown. Robert Groves, *Collins Dictionary* (Collins, 2012)

¹⁰ Charlotte & Peter Fiell, *Oxford Dictionary* (Oxford University Press, 2009)

¹¹ Susan Yelavich, *Furniture Design*. In: Erlhoff & Marshall, (eds) *Design Dictionary* (Birkhäuser Basel, 2008), 181-182

¹² Juani Pallasmaa, *The Thinking Hand: Existential and Embodied Wisdom in Architecture* (Wiley, 2009), 95

¹³ Lily Reich, the Designer of Bauhaus University (Metalocus.es, 2019)

¹⁴ Simone Vermaat. Anita Blom, *Post-War Reconstruction in the Netherlands 1945-1965. The Future of a Bright and Brutal Heritage* (nai010, 2016)

¹⁵ Daniel Maurer. Gregor Weiss. Bruno Harbusch. Bruno, CIAM 4 and the 'Unanimous' Origins of Modernist Urban Planning (ArchDaily, 2020)

¹⁶ Daniel Maurer. Gregor Weiss. Bruno Harbusch. Bruno, CIAM 4 and the 'Unanimous' Origins of Modernist Urban Planning (ArchDaily, 2020)

¹⁷ Tim Verlaan, *The Magic Centre: The Provo Movement and Sociocultural Critiques on Urban Redevelopment in Amsterdam* (palgrave macmillan ,2024), 53-75

2.1 Advocating for collectivity

As the 1950s progressed, societal demands in the post-war Netherlands called for more humane and socially responsive architecture. First voices called for blending in communal life into modernist ideas of high efficiency. Prefabricated, low-cost architecture, driven by poverty and destitution could just not provide peoples wish to live in social environments again.¹⁸ Architects like Aldo van Eyck and Piet Blom, as well as Herman Hertzberger became vocal in implementing social spaces into architecture again, since "... the promoters of housing projects had very little interest in the variation in preferences of the occupants."¹⁹

This architectural counterculture aligned itself with broader cultural movements. The PROVO-movement, active between 1965 and 1967, exemplified a growing dissatisfaction with top-down, technocratic planning. On the western façade of Herman Hertzberger's student house on Weesperstraat, the writing "PROVO 12" directly references provocatie #12 (Fig. 2), emphasizing the shared interest of both architects and activists of more responsive, human-scaled urban planning, focused on building abroad functionalist interests and incorporating space for community. They not only addressed the building scale, but also the urban planning to be less car-oriented and focus on bikes and pedestrians.²⁰ Followers demonstrated peaceful and created smaller urban interventions for a more playful, user oriented environment and people to be able to identify with it. Hertzberger, like many others sympathised with this movement and incorporated these ideas into his architectural design.

2.2 Student housing and universities

In the period after second World War, international relations contributed to cause an increase in university enrolment. Not only nationally but also internationally, due to a markable decrease in tuition fees.²¹ Consequently, universities expanded rapidly, which lead to a surge in demand for student housing. Traditional boarding houses and three-story residential buildings proved inadequate for required densities. In response to a broader housing shortage, high-rise typologies were deployed across entire districts. This was evidenced in cities like Delft or Almere, which became known for their high-density student housing developments in close proximity to universities (Fig. 3). Given that student accommodations demanded less space and lower budgets than residential projects usually did, design quality often suffered. Architects had limited scope to create collective or sociable areas within these buildings. This limited freedom, while efficient, further fueled impersonal student living environments.²²



Fig. 3
Anne Jongstra, Rotterdam en de Wederopbouw (2020).

2.3 Furniture and affordability

The perceived impersonality of postwar architecture was frequently mitigated by the personal appropriation of interior space, compensated by residents filling their private space with personal objects and furniture. Furniture design, much like architecture, was profoundly influenced by postwar economic constraints that necessitated industrial mass production. During this period, resource scarcity led many individuals to repair or repurpose existing furniture, like chairs and tables. Simultaneously, government initiatives and social movements promoted the concept of *goed wonen* (*engl. good living*), promoting a vision of simple, affordable furniture and architecture for all social classes.²³ The compact dimensions of postwar dwellings gave rise to novel spatial strategies. Modularity be-

¹⁸ Tim Verlaan, *The Magic Centre: The Provo Movement and Sociocultural Critiques on Urban Redevelopment in Amsterdam* (palgrave macmillan, 2024), 53-75

¹⁹ Hugo Priemus, *Regeneration of Dutch Post-war Urban Districts: The Role of Housing Associations* (Journal of Housing and the Built Environment, 2006), 366

²⁰ Richard Kempton, *Provo: Amsterdam's Anarchist Revolt* (Automedia, 2007), 120

²¹ Erik Canton, Frank de Jong, *The Demand for Higher Education in the Netherlands, 1950–1999* (Elsevier Ltd., 2002), 654

²² Herman Hertzberger, *Interview with Herman Hertzberger, interviewed by Nils Ewen* (Amsterdam, January 6, 2025)

²³ Het nieuwe Instituut, *Stichting Goed Wonen, Amsterdam. 1946.* (Het Nieuwe Instituut, 2013), 6

came increasingly relevant, since space was less affordable. People moved more regularly and had to multicode their interior. Materials like plywood, molten plastic and tubular steel became more important. Foldable tables and built-in storage solutions crossed borders to architectural elements. Furniture became from major importance to architects, as they implemented furnishings into consideration in the original building design. Companies like Gipsen, Artifort and Pastoe influenced the furniture-market of the dutch 50s and 60s with the introduction of these prefabricated, lightweight materials and furnished public and corporate buildings as Van Nelle Fabriek with combinations such as seating and heating. (Fig. 4) Multi-coding became crucial to building designs. When comparing the work of two of the most renown architects of the post-war era, Herman Hertzberger and Le Corbusier, architecture diverged in either creating blank spaces where furniture can be moved as freely as possible or directly implemented furniture. However, both approaches addressed the demand of the densified urban living space.²⁴



Fig. 4
Gipsen, Dual Bench with Heater, Van Nelle Factory (1954).

3. Case Study: Weesperstraat

The Weesperstraat, designed by the architect Herman Hertzberger and built from 1963 - 1966 was and part of a larger urban renewal strategy in postwar Amsterdam. Formerly a street of small shops and artisans, the area was cleared to make way for a central urban axis, integrating metro infrastructure and large housing projects.²⁵ The building brings a relevant case study due to its representational ideas of the architectural counter movement in the post-war period and as being a competition design of a student house, aiming for dense accomodation in the city center. Commonly referred to as “De Weesper”, the building resembles the functionalist architectural style of the post-war era and became a municipal monument later on. Hertzberger received the "Architectuurprijs van de gemeente Amsterdam“ in 1967 for this building.²⁶

3.1 Competition brief and the challenges in designing student housing

The competition brief for the student housing project outlined strict spatial and financial constraints, prioritizing efficiency over architectural expression.²⁷ The proposal included accommodations for 250 students, structured into twelve housing units for eighteen residents each (fig. 5 - green outline), three units for six female students (fig. 5; east wing extension - orange outline), and eight apartments designated for married couples. The fourth floor housed a gallery and the residence of the

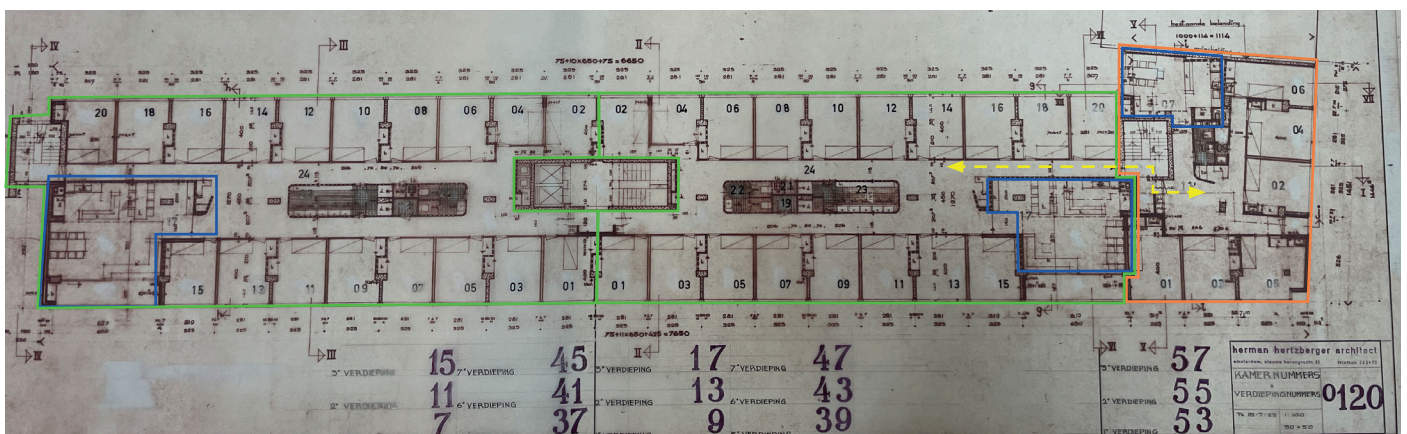


Fig. 5 Nieuwe Instituut, Floor Plan 3rd Floor – Weesperstraat Student House (Rotterdam: Nieuwe Instituut Archives). annotated by author (blue: collective kitchens; green: male students' apartments; orange: female students' apartments; yellow: unit orientation, connection)

²⁴ Alexander James Hull, *Architecture In Transition - Herman Hertzberger and The Diagoon Dwellings Revisited*, (Delft, 2007), 18
²⁵ Marja Vuisje, *Weesperstraat - Joodse Sporen in Amsterdam en omgeving* (Joodsamsterdam, 2025)
²⁶ contentcontent.com, *Weesperstraat 3-59* (contentcontent.com, 2023)
²⁷ Hertzberger, *Interview*. 2025

house manager. Additionally, public amenities such as a cafeteria, banquet hall, shops, and office spaces were incorporated along the street-facing façade.²⁸ Given the project's limited budget and limited resources, spatial efficiency dictated the design process. *"There was no freedom to propose anything different from the brief. If it exceeded the numbers, it was rejected"*, Hertzberger explains.²⁹ The separation of living spaces based on gender further influenced the layout, reinforcing the compartmentalized nature of the housing scheme.

Notably, the initial brief did only allocate little space for kitchens or other collective spaces, a measure aimed at maximizing space efficiency. As Hertzberger recounted, a police officer representing municipal interests remarked in 1959 that residents *"should be able to bake an egg in there, nothing more."*³⁰ However, collective kitchens in both units on each floor was introduced (fig. 5; blue outline) as a compromise that both optimized space usage and fostered social interaction among residential units. Similarly, while collective spaces were scarcely planned in the competition brief, Hertzberger's interventions created opportunities for communal living within the constraints of the project. According to the architects, balancing economic pragmatism with social engagement was the highest value in this project in order to create livable space while matching strict regulations by the municipality.³¹

3.2 Analysis of intended collective spaces and how furniture is forming collectivity in it

The rather little areas that were actually intended to be utilised as collective spaces where people could gather were mostly formed and allocated as transitional zones between building compartments and apartment units (Fig. 5). In this case, all shared spaces are considered as such with social interaction, fostering collectivity (shared bathrooms, shared kitchens, shared access and circulation routes, shared balconies and galleries, shared living rooms). As indicated in the annotated floor plans (Fig. 5), shared areas are consistently oriented inward, generating spatial friction between private units and communal domains. Furthermore, the attached building part, accommodating the female residents, locates its access core and circulation space between the apartment units orientated towards the circulation system of the main building. (fig. 5; yellow arrow) This underscores the intent of the architect to imagine a possible unification of both building parts that are strictly detached, subtly undermining the original gender separation even including separate access systems. It reinforces an overall striving for maximal human encounter.³²

Collective areas, originally outlined in the brief, can be further analysed through their varying degrees of privacy, clarifying thresholds between communal and public realms and the spatial agency of furniture within them.

The entrance lobby, which serves both the residents and visitors and the adjacent mensa, creates a shared access point. This layout brings together different groups of people, facilitating encounters while directing movement to various parts of the building. The lobby's relatively modest size strengthens this effect by compelling close interaction. Hertzberger's plan of the entrance area (Fig. 6) clearly displays the emphasis on the space's role beyond circulation with its built-in furnishing elements. Centrally placed seating arrangements suggest an intent to create a space for people to dwell rather than just pass through. Additionally, the diagrammatic drawing (Fig. 6) guides through arrows pointing towards the entrance hall from

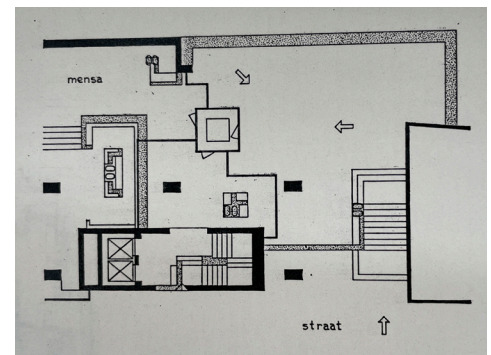


Fig. 6
Nieuwe Instituut, Building Entrance – Weesperstraat Student House (Rotterdam: Nieuwe Instituut Archives).

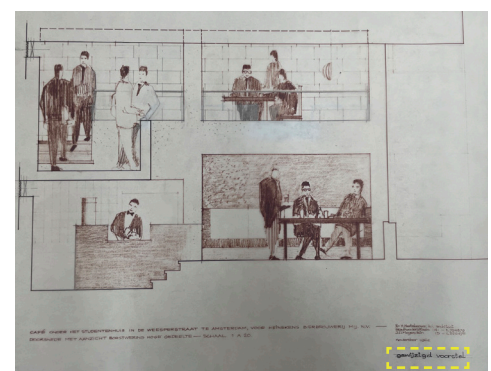


Fig. 7
Nieuwe Instituut, Building Section – Weesperstraat Student House (Rotterdam: Nieuwe Instituut Archives).

²⁸ Hertzberger, *Interview*. 2025

²⁹ Ibid., discussing the competition briefs in the 1960s

³⁰ Ibid., elaborating the kitchen functions of Weesperstraat student house

³¹ Ibid., discussing municipalities priorities in Amsterdam (1960s)

³² Ibid., about the future oriented design of Weesperstraat student house

different directions, reinforcing the importance of the divider space for the design.

The restaurant defines the interface between public and communal interaction through its spatial organisation and location in the building. Multiple levels create varied sightlines and connections between different seating areas (Fig 7), while the furniture arrangement blends smaller, enclosed niches with larger, open gathering zones. Certain seating is directed toward the street, establishing a visual link between the interior and the exterior public space, while maintaining a degree of separation through an elevated floor level (Fig. 8, yellow outline). In addition to rectangular tables, circular forms and flexible seating arrangements promote interactions and conversations.³³ (Fig. 8, south facade below koffiebar) Drawings highlight

these elements, underscoring how split levels and built-in furnishings contributed to the restaurant's intended function as a social space. A handwritten note on a hand-drawn sketch of the cafeteria (Fig. 7, yellow outline) says "gewijzigd voorstel" (engl.: *revised proposal*) further prove the importance of collectivity and inclusion of furniture not only as part of the design process but also for the design.

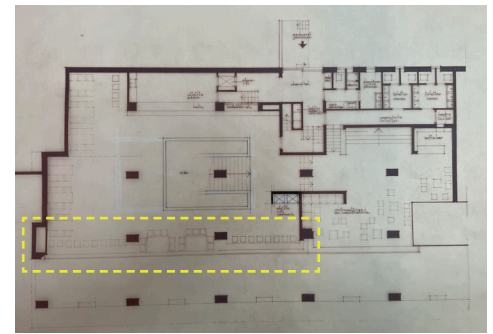


Fig. 8
Nieuwe Instituut, Floor Plans – Weesperstraat Student House (Rotterdam: Nieuwe Instituut Archives).

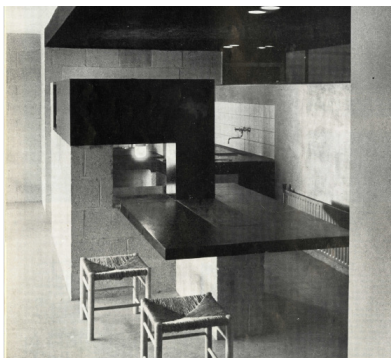


Fig. 9
Johan van der Keuken, "Goed Wonen 9/1966," *Goed Wonen*, 1966.

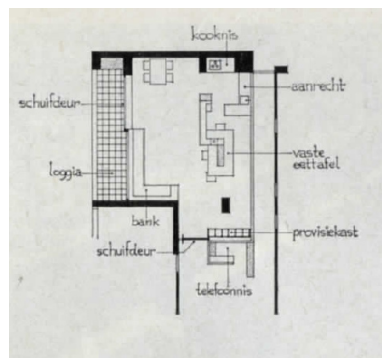


Fig. 11
Goed Wonen, floor plan kitchen. "Goed Wonen, 1967."

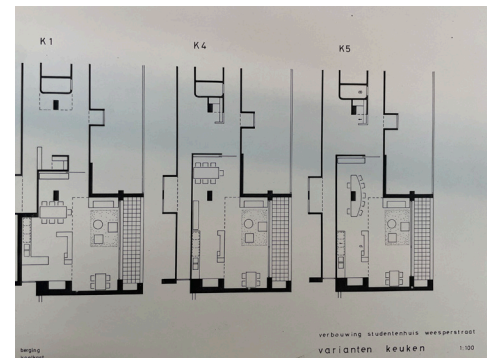


Fig. 10
Nieuwe Instituut, Floor Plan Variations – Weesperstraat Student House (Rotterdam: Nieuwe Instituut Archives).

The shared kitchens serve as the primary spaces fostering collectivity within the housing units. Designed for groups of eight residents, these kitchens extend beyond their basic function and become informal gathering areas. The layouts incorporate flexible as well as static furniture arrangements that are integrated with the architectural framework (Fig. 9). Different variations (Fig. 10) from the design process show the intention to maximise capacity and accommodate as many people as possible. In comparison to published drawings (Fig. 11), the informal design variants include a substantial increase in seating, including the addition of furniture commonly found in living rooms. While the kitchen itself remains relatively small in proportion to the entire room, which also features additional seating and a phone booth, indicating it being intended as a dual-functional space for both cooking and socialising. Large openings to the loggia and seating for more than eight people further emphasise this dual function. Consequently, the kitchen serves as an extension of the communal living spaces within the building.

The communal space on the third floor is connected to the gallery and provides a shared area for residents (Fig. 12, yellow outline). This space was designed for social gatherings and serves as the only collective living room in the building aside from the kitchens, applicable for indoor and outdoor space.³⁴ Photographs of this space consistently show furniture in use, reinforcing its function as an active communal area. However, some of the images appear to have been staged, featuring Hertzberger, Hezewinkel and others presenting the space rather than capturing spontaneous use (Fig. 13 & 14). These photos might not represent the actual use case. This space was "the only thing that was outspoken collective and demanded by the municipality", Hertzberger noted. But it was not even used very collectively as it was located next to the janitor's apartment (Fig. 12, blue outline) and

³³ Kassadie Cole. Kaitlin Schröder. Mohamed Bateineh, *Flexible Seating Impact on Classroom Environment* (TOJET, 2021), 63
³⁴ Hertzberger, *Interview*. 2025



Fig. 13
Johan van der Keuken, "Goed Wonen 9/1966," *Goed Wonen*, 1966.



Fig. 14
Johan van der Keuken, "Goed Wonen 9/1966," *Goed Wonen*, 1966.

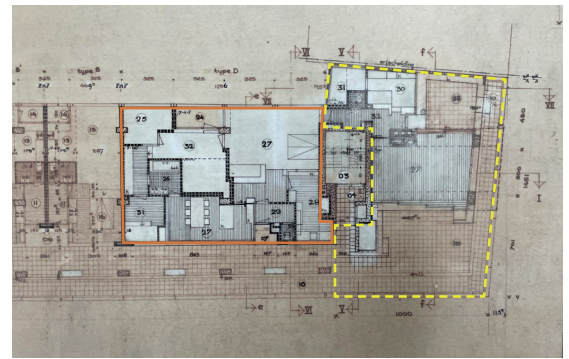


Fig. 12 Nieuwe Instituut, Floor Plan 3rd Floor – Weesperstraat Student House (Rotterdam: Nieuwe Instituut Archives).

became informally occupied by him, Hertzberger continued.³⁵ Even within the private apartments, social interaction was valued highly by the architects. Although the units were compact, Hertzberger included at least one additional seat and a desk with a chair, allowing for visitors (Fig. 15). The architectural models emphasise the role of furnishings in defining the space, suggesting that social interaction was a consideration even in individual apartments (Fig 16). The determined collective areas within the student house were designed to be flexible in terms of different or additional functions, movable furnishings or structural components, despite strict regulations and limited room for architectural expression. Within these constraints, interpretative flexibility was achieved through the strategic use of furnishings, blending architectural versatility.

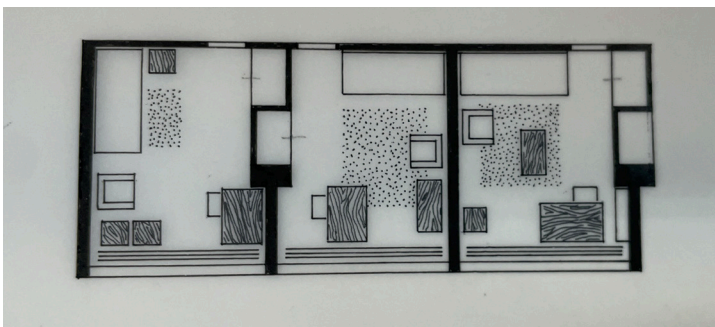


Fig. 15
Nieuwe Instituut, Apartment Typologies – Weesperstraat Student House (Rotterdam: Nieuwe Instituut Archives).

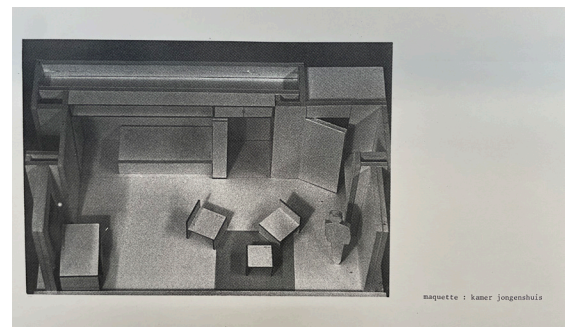


Fig. 16
Nieuwe Instituut, Model Picture – Weesperstraat Student House (Rotterdam: Nieuwe Instituut Archives).

3.3 Multicoding architecture as a reaction to low budget-briefs

Hertzberger's approach to fostering collectivity extended beyond mere spatial arrangements or movable elements. He designed objects that had secondary functions that complemented their primary architectural purpose. Furniture and elements to encourage social interaction were incorporated or added to architecture to justify their existence, due to strict briefs and limited budgets (chapter 3.1). These additions were not significantly more expensive, and investors had no reasons to intervene.³⁶

To fully comprehend how Hertzberger multicoded architectural elements with furniture, it is essential to consider the reason behind different multicodings and how they contribute to the promotion of collectivity. Beside the importance of holistic efficiency in building costs, materiality, and saving space where-

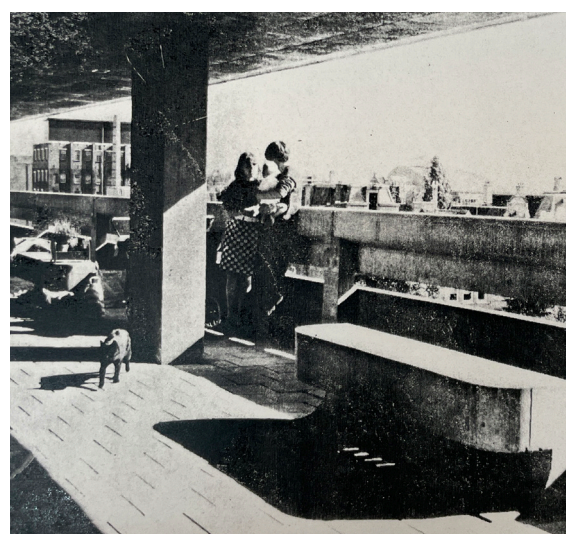


Fig. 17
Johan van der Keuken, "Goed Wonen 9/1966," *Goed Wonen*, 1966.

³⁵ Hertzberger, *Interview*. 2025

³⁶ Ibid., about cost efficiency and investors' requirements

ver possible, according to Hertzberger, a design "solves the brief and manages to implement livable space within it.". The Weesperstraat exemplifies three different types of architectural multicodings, that meet practicability and sociability.

Multicoding space. The design integrates spaces where circulation areas serve dual functions beyond their primary architectural purpose. By integrating social elements into functional spaces such as staircase landings, galleries, and corridors, interaction is promoted. These spaces, initially conceived as access routes, were intentionally widened or redefined to invite residents to socialise and occupy space rather than merely pass through.

The outdoor gallery and inner corridors leading to the apartment units exemplify this approach. More spacious than necessary, these circulation routes provide opportunities for residents to engage and use space informally (Fig. 17). Regular floors and corridors are incorporated into the enclosed apartment units (Fig. 6), making them semi-private extensions of living spaces. This allows for personalising and "socialising" space according to individual needs.

The entrance staircase further contributes to the blurring of spatial boundaries between public and private realms. It encourages lingering and interaction among different user groups through its integration into the sidewalk (Fig. 18). The design concept aimed to create an open entrance, visually and physically including the public into the building.³⁷ The entrance staircase cuts through the entire building (Fig. 18), drawing the public in and promoting engagement between residents and visitors. In this way, the building's interior partially becomes an extension of the surrounding urban environment. The specific drawing in Fig. 17 puts emphasis on the importance of collectivity, representative for the designers focus, only showing the spaces where people meet, while excluding

the rest by leaving it blank. The use of split levels in the threshold between those privacy domains further reinforces this connection between public and communal spaces. The stair balcony extends as a cantilever into the street, acting as both circulation path and vantage point (Fig. 19). These elements encourage residents to pause and observe the street while also making the space visible and intriguing to pedestrians. Partially differing in height between the mensa and ground floor facade, the architects created an interplay of pedestrians and residents. By standing "in the way" of conventional movement, these split levels naturally promote visual interaction (Fig. 20).

Through these spatial strategies, the project transforms functional circulation elements into social spaces, reinforcing the overarching goal of integrating collectivity.

Multicoding architectural elements (external). Hertzberger expanded architecturally necessary building elements with additional layers of function, transforming them from purely practical components into socially charged spaces. This approach was not limited to spatial organisation alone but extended to specific architectural elements, which were "socialised" to encourage interaction and community. By subtly modifying elements such as stairs, walls, and lighting fixtures, the design furthermore fosters interaction in spaces that might otherwise be purely functional. Multi-coding these essential building components, the design promotes spontaneous encounters and personal

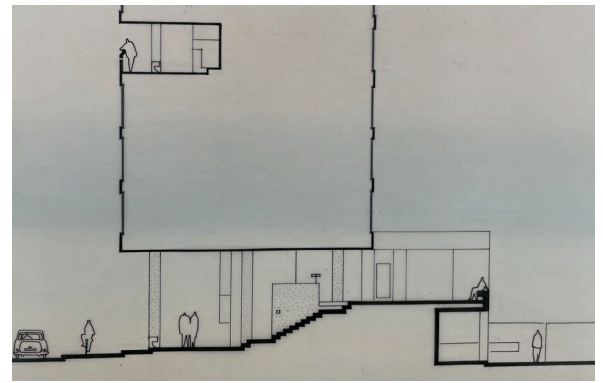


Fig. 18
Nieuwe Instituut, Section Drawing – Weesperstraat Student House (Rotterdam: Nieuwe Instituut Archives).



Fig. 19
Nieuwe Instituut, Sketch/Impression – Public Street – Weesperstraat Student House (Rotterdam: Nieuwe Instituut Archives).

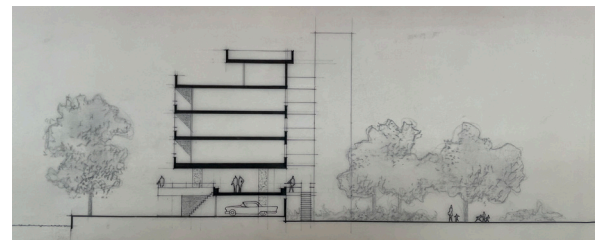


Fig. 20
Nieuwe Instituut, Sketch/Impression – Balconies – Weesperstraat Student House (Rotterdam: Nieuwe Instituut Archives).

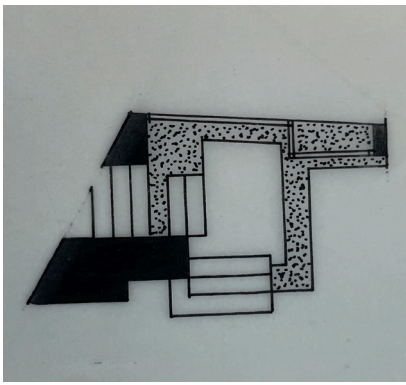


Fig. 21
Nieuwe Instituut, Sketch/Impression
- Staircase – Weesperstraat Student
House (Rotterdam: Nieuwe Instituut
Archives).



Fig. 22
Johan van der Keuken, "Goed Wonen 9/1966," *Goed Wonen*, 1966.

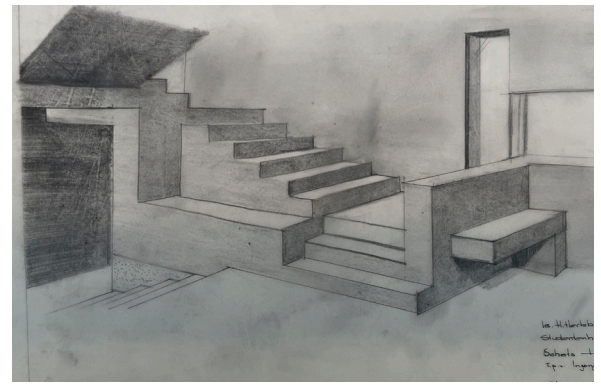


Fig. 23
Nieuwe Instituut, Sketch/Impression -
Staircase – Weesperstraat Student House
(Rotterdam: Nieuwe Instituut Archives).

engagement, as well as residents' identification with their close surroundings.

Staircases are a primary expression of this approach. By an extension of slabs and blocks, additional seating elements were integrated into spaces where people naturally meet but may usually not have a designated place to interact. *"You extend the space a little where people meet anyway".*³⁸ Through this minimal intervention, stairs become more than circulation elements where encounters can take place (Fig. 23). By hatching differently, hand-drawn details put emphasis on the importance of those elements by distinguishing between those parts of the stairs that enable people to walk and those that also serve as seating elements (Fig. 21). Additional sketches from the design phase exemplify the deliberate elevation of certain stair treads by two steps beyond the structural requirement, to activate these as seating surfaces at the landing level (Fig. 22).

A similar principle was applied to lighting fixtures on the outdoor galleries. The lighting elements, located at the gallery and the public streetwalk, were combined with seating features, creating dual-purpose structures that provide both illumination and opportunities for social engagement (Fig. 24). The light (providing secure movement in the dark) had to be located close to the floor to not blind residents or pedestrians through the higher windows. Therefore, protection from people moving around it was needed. Hertzberger explained the bench to be a crucial necessity as a protection layer for the lights, not as furniture.³⁹ This highlights once more that the architects justified social furnishings by multi-coding it with a, for the design brief inevitable, element.

An conceptual sketch from 1950 (Fig. 25) evidently illustrates that the idea of a bench existed before its integration with lighting. This suggests that the original seating concept may have been rejected in its simplest form but was later justified by incorporating



Fig. 24
Johan van der Keuken, "Goed Wonen 9/1966," *Goed Wonen*, 1966.

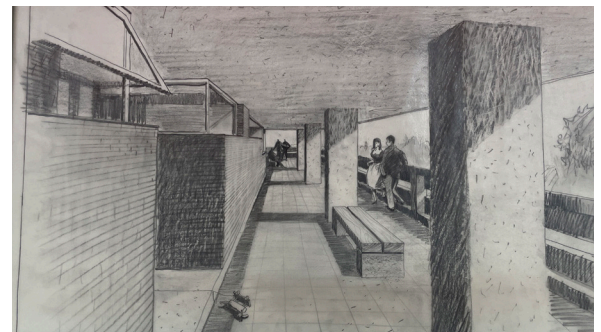


Fig. 25
Nieuwe Instituut, Sketch/Impression - Gallery – Weesperstraat Student House (Rotterdam: Nieuwe Instituut Archives).



Fig. 26
Johan van der Keuken, "Goed Wonen 9/1966," *Goed Wonen*, 1966.

38 Hertzberger, *Interview*. 2025

39 Ibid., explaining varying justifications of design choices

a functional necessity (lighting). By adapting the design, the architects ensured that the element remained in place while preserving its intended social use.

The design of other building parts show extended walls to create surfaces to create ledges where residents could sit or place personal objects, such as plants or decorations (*Fig. 26*). These interventions not only enhanced the utility of passive architectural elements without needing more space but also fostered a sense of community and personal investment in shared spaces. As Hertzberger noted, "*If my neighbour places something there, I want to do it as well*";⁴⁰ underlining how small architectural gestures encouraged residents in the student house to participate and identify with the building itself and their close living environments.

Multicoding architectural elements (integral). Beyond extensions or attachments to architectural elements, the building exemplifies multi-coding that can be found embedded in architecture itself. Unlike additive components, these integral elements are designed to inherently support multiple functions. The defining distinction lies in whether they can accommodate or incorporate additional uses. A load-bearing wall, for example, cannot easily be pierced with openings and it has to be decided if "*it is smart to intervene*", Hertzberger stated.⁴¹ By embedding additional functions within structural elements, the architects improved space efficiency while promoting usability. These interventions provided practical solutions without the requirement of additional space, as a strategy to design social space under restrictive conditions. An example is the use of hollow brick walls, which were implemented for communal use. These elements function as informal storage and communication points, allowing residents to place mail, share newspapers, leave objects for others (*Fig. 27*).⁴² Their non-specific function encouraged interpretation and demonstrate how the architects included rather small design choices to encourage collectivity among residents.

In the restaurant area, street-facing windows served not only as visual connectors between the pu-

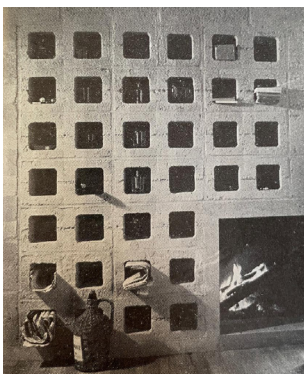


Fig. 27
Johan van der Keuken, "Goed Wonen 9/1966," *Goed Wonen*, 1966.



Fig. 28
Johan van der Keuken, "Goed Wonen 9/1966," *Goed Wonen*, 1966.

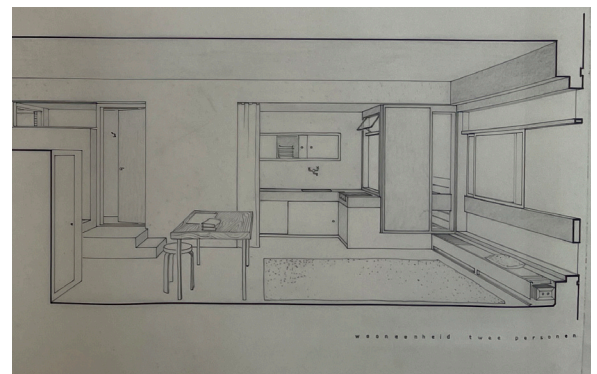


Fig. 29
Nieuwe Instituut, *Single Room Apartment – Weesperstraat Student House* (Rotterdam: Nieuwe Instituut Archives).

blic and collective spaces but also as functional elements (*Fig. 28*). The furniture is orientated towards these windows, which themselves became seating and leaning objects, which further reinforced their role as active spatial components, performing as furniture and architecture simultaneously.

Additionally, the heating elements within the apartments were shaped to function as benches (*Fig. 29*). This seemingly small adaptation exemplifies the overarching strategy of the project, that transformed necessary infrastructural elements into usable furniture. While radiator benches are common in architectural

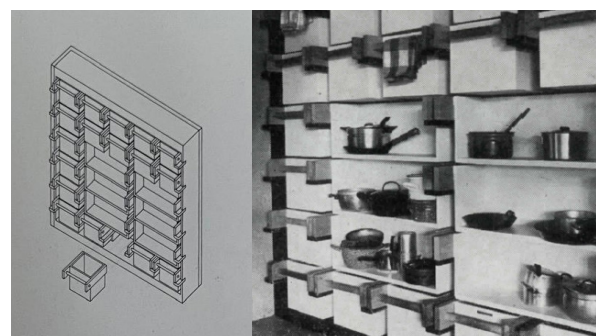


Fig. 30
Johan van der Keuken, "Goed Wonen 9/1966," *Goed Wonen*, 1966.

⁴⁰ Hertzberger, *Interview*. 2025

⁴¹ Ibid., discussing the danger of over-designing

⁴² Het nieuwe Instituut, *Stichting Goed Wonen, Amsterdam*. 1946 (Het Nieuwe Instituut, 2013), 9

history,⁴³ their inclusion in this design reflects a broader approach of systematically optimising every possible element under constrained conditions.

In the kitchens of residential units, built-in wall shelving systems give evidence to another use of multi-coded design. Integrated into the wall space, these shelves included carryable trays and boxes addressed the needs of student residents who required shared use and flexible storage (*Fig. 30*). This integrated storage solution was not initially accounted for in the competition brief (*chapter 3.1*), highlighting how embedded design interventions compensated for programmatic omissions and supported communal use without increasing the building's spatial footprint.

Most of the photographs like *Fig. 13*, *14* or *16* were taken specifically to show the functionality of architecture and its multi-coded parts. While such staging might be critiqued as inauthentic representations of spontaneous use, it can equally be interpreted as a descriptive visual instruction. To assess the success of these interventions and if the collective areas worked as intended, however, the actual lived use of the collective spaces within the Weesperstraat student housing must be put into consideration.

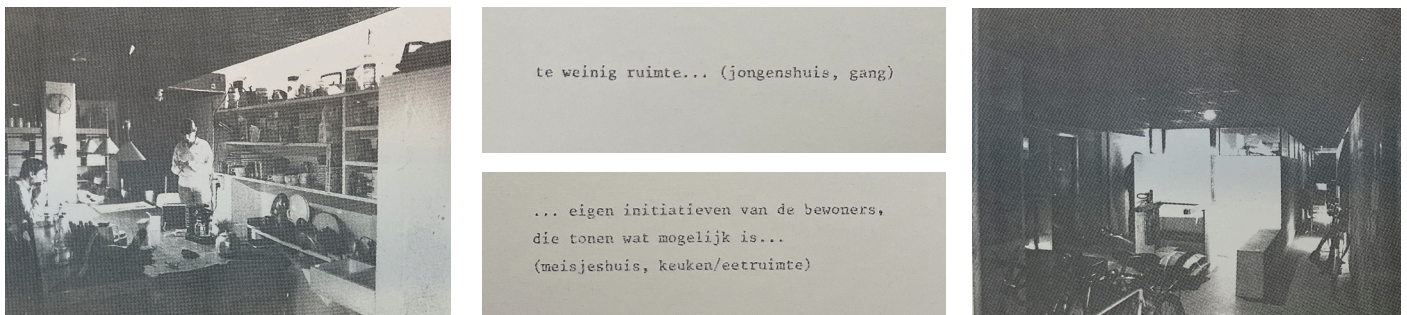


Fig. 31 Nieuwe Instituut, Users Study – Weesperstraat Student House (Rotterdam: Nieuwe Instituut Archives).

3.4 Residents adapt to the building and its collective areas / interventions

Post-occupancy images of student house in Weesperstraat record a significant adaptation of residents to spatial constraints and collective areas. The design interventions implemented in the building have led to varied responses, indicating both the effectiveness of community-promoting architecture.

Despite the spatial constraints, students have actively engaged with shared spaces, making them an integral part of daily life. Observational studies that were mentioned in a renovation report from 1987⁴⁴ and photographic evidence (*Fig. 31*) highlight overcrowded conditions, particularly in communal kitchens and living areas. Residents' vernacular modifications, such as informal rearrangements and personal adaptations,⁴⁵ demonstrate their agency. Comments under these images further reinforce the perception of limited space, reflecting a recurring concern among residents. Most of the multi-coded elements that were visible or mentioned in the photographs and report were used as intended. Intentionally, architecture-included but flexible furniture in the kitchens resulted in residents' collective adaptations. However, some of the spaces or multi-purposed elements have not been used collectively, even if intended. According to Hertzberger it was a "*mistake to locate the janitor's place beside the collective living room*",⁴⁶ because it was never used by the students due to him "*occupying*" it.⁴⁷ The integral architectural multi-codings (*chapter 3.3*) were mostly used and accepted by the residents. Less understood and used were the multi-coded spaces. Besides the collective living room, the entrance stairs and the lobby were not as collectively used as promoted and were further enclosed in the renovation act in 1987.⁴⁸ Around 1985, the necessity for structural renovation and spatial reconfiguration became apparent. Archival documents indicate that discussions on renovation had been ongoing since 1984.⁴⁹ Besides general renovation of the architectural structure,

⁴³ Hertzberger, *Interview*. 2025

⁴⁴ G.M.E. Keteleer, SSHA Woonstichting Amsterdam, *Vorheen Stichting voor Studenthuisvesting Amsterdam - Protocoll* (1984)

⁴⁵ P. Weyland, SSHA Woonstichting Amsterdam, *Wergroep Weesperstraat - Protocoll* (1987), 3

⁴⁶ Hertzberger, *Interview*. 2025

⁴⁷ *Ibid.*, discussing residents' adapting to incorporated interventions

⁴⁸ G.M.E. Keteleer, SSHA Woonstichting Amsterdam, *Vorheen Stichting voor Studenthuisvesting Amsterdam - Protocoll* (1984)

⁴⁹ P. Weyland, SSHA Woonstichting Amsterdam, *Wergroep Weesperstraat - Protocoll* (1987), 3

primary objectives of the proposed interventions included expanding living space and improving circulation spaces. Key modifications discussed included enlarging individual rooms to improve comfort, introducing dedicated storage areas to address clutter, widening corridors to foster a sense of openness and facilitate interaction. Refinement of space were also part of the modification proposal, including the transformation of the janitors quarter into apartments and a collective living room, as well as the reconfiguration of separated male and female wings into one corridor system to promote social integration and engagement.⁵⁰

Though the renovation proposal partially differed from the residents' initial call, the housing board ultimately approved the plans due to the overall positive reception from the student community. This decision underscores the good relationship between architectural design and user adaptation, where spatial purposes alongside the needs of residents.

In an interview, architect Hertzberger reflected on his design of Weesperstraat and its impact on student living. He emphasised the philosophy behind communal housing, stating that financial constraints necessitated shared living arrangement and making social interaction an architectural priority.⁵¹ His approach focused on dissolving rigid boundaries between public and private domains. For instance, in the setback facade that allows the street to permeate the building's perimeter (*Fig 19*). Further he articulated that space should invite interaction, blurring demarcations to encourage social connectivity. He acknowledged that while some resident-driven interventions were anticipated, others emerged organically, and some did not work at all, depending on the residents' needs. While positively recapitulating, he concluded: *"When you face such boundaries and encounter strict regulations, you become even more creative to defeat those"*.⁵² Many multicode elements, especially their integral furniture, cannot be evaluated in terms of their impact on fostering social interactions. However, those who were mentioned in the historic evidence of the building were mostly successfully adapted.

4. Concluding Synthesis

The Weesperstraat case study illustrates the potential of furniture as an architectural tool to redefine spatial hierarchies and blur the boundaries between private, collective and public domains. The multi-coded elements within the building have served as incubators for social interaction through spatial and functional integration. Most of the intended socially "interaction-promoting" elements introduced were successfully used, as the mentioned study and protocol prove. Not only the residents and visitors were influenced by those elements, but the urban fabric as well. In addition to the "bench-light-objects" that are to be found in the public street in front of the building, the setback on the ground floor and the offset of the first floor (*Fig. 17*) are indicative of a broader strategy to orient the building externally, engaging with its surroundings.

Hertzberger's reflections reinforce the significance of creating spaces that invite interaction. He states, *"Only a building incorporating space for people to meet can make people identify with it and the community it reflects."*⁵³ He acknowledges the challenge of balancing openness and security, asserting that *"the more people can connect, the better a community must function."* Hertzberger continued. His approach to integrate collective elements despite budgetary constraints exemplifies how multi-purposing architecture functioned successfully as a catalyst for social engagement. The evaluation of multi-coded elements in Weesperstraat highlights the deliberate efforts to embed social furniture into the spatial framework of the case study. However, an analysis of photographic evidence raises questions about whether these interventions were staged to emphasise their effectiveness or if they truly functioned as intended. Comparing the initial design intentions with subsequent adaptations and the renovation plans suggests that multi-purposed spaces were largely successful in fostering collectivity. This is additionally underlined by the fact that the building is still used for student housing.

Specific students demands were not being valued in the given design task, which did not stop the architects from playfully introducing those to their design (*reference chapter 2.1*). Since they were a large part of the overall "social interventions", it becomes clear that the investigated elements (embedded furniture into architecture) were a crucial factor of designing the building suitable for those

⁵⁰ P. Weyland, SSHA Woonstichting Amsterdam, *Wergroep Weesperstraat - Protocoll* (1987), 3

⁵¹ Hertzberger, *Interview*. 2025

⁵² Ibid., about the architects focus and design approaches

⁵³ Ibid., about how buildings can promote social interaction

demands. If not the ones that made social life within the building and a transition between levels of privacy possible in the first place.

The Weesperstraat as an example for a post-war architecture in the Netherlands of dense urbanism, a scarcity of resources and its influencing social demands, clarifies that architecture was predominantly influenced by political and societal shifts, advocating for social and identifiable living environments in urban neighborhoods. Hertzberger thematised these needs by successfully introducing furniture as interaction-fostering, sociable objects to architecture. This thesis evidently illustrates the importance of furniture as a social incubator, bridging between architecture and its users, being a tool to facilitate social interaction as a response to broader societal challenges and utilised through integration into building components to tackle a lack of social space.

Historically, housing shortages are still apparent and will eventually be even more critical in the future due to climate change and overpopulation.⁵⁴ The building serves as an early example of how architecture can react to inevitable challenges through multi-purposing its structure to gain space-efficient, livable and social buildings.

⁵⁴

Eduardo Souza, *Revolutionizing Affordable Housing: The AI-Powered, Climate-Friendly Solution of Project Phoenix* (ArchDaily, 2024)

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