

This study examines how infill-projects in the so-called "open gaten" of the Amsterdam urban fabric engage with its historic urban environment. Political, social, and architectural consequences are addressed through literature research, historical theory and architectural analysis, focusing on façades, material use, scale, urban context, and spatial organization.

As a central case study, the HoLaTuKa housing project in Amsterdam by Claus & Kaan Architects (1994–1998) is analyzed. Developed within the context of the city's "open gaten" and shaped by the Compact City policy, HoLaTuKa exemplifies broader design strategies in Dutch housing architecture of the late 1980s and 1990s and provides a suitable case for examining the spatial, aesthetic, and constructive challenges of infill development.

Whereas earlier infill projects often prioritized standardization and efficiency, resulting in relatively uniform architecture, HoLaTuKa represents a shift toward a more site-specific approach. Interventions along Hoogte and Laagte Kadijk respond to their immediate surroundings, producing distinct architectural translations. Rational principles and contextual considerations guide plans, structure, construction and inform architectural expression, enabling variation within a coherent design framework. By situating HoLaTuKa within the development of the "open gaten," the study demonstrates a broader transition in Dutch housing architecture toward a more context-driven and differentiated approach.

Claus & Kaan Architecten  
HoLaTuKa, Amsterdam

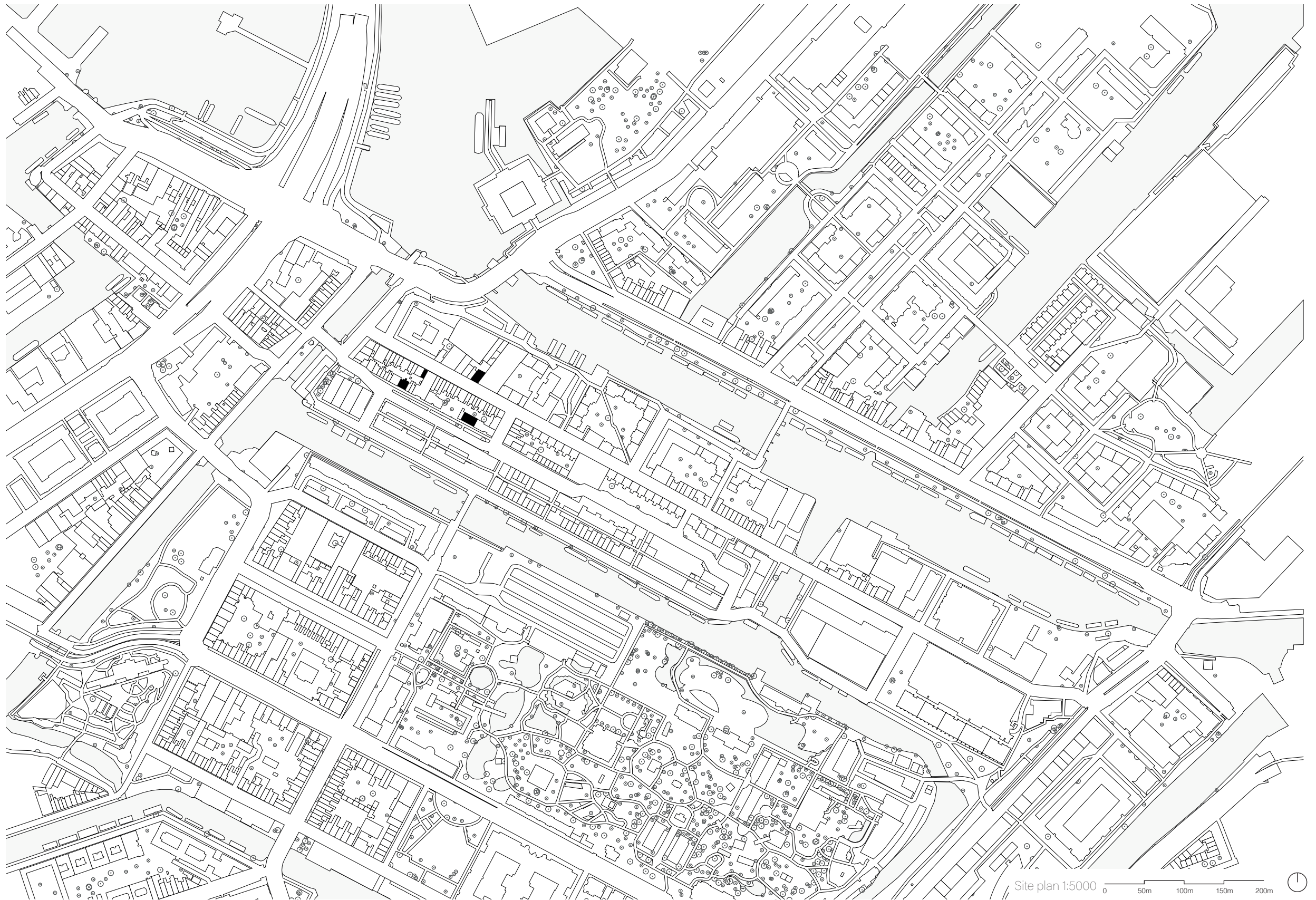


## HoLaTuKa Housing as Urban-Infill

HoLaTuKa as a Part of Amsterdam's "Open Gaten" Housing within the Urban Renewal of the 1980s and 1990s

Sanne Eland





Site plan 1:5000



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## Course

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## HoLaTuKa Housing as Urban-Infill

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### A Walk through Hoogte Kadijk

When walking along Hoogte- and Laagte Kadijk in Amsterdam, several residential façades become noticeable within the streetscape. Among the nineteenth-century historic residential and warehouse structures, characterized by rhythmic brick façades and ornamental detailing, a number of façades draw attention that appear at once familiar and subtly estranging. In terms of height and width, these façades align precisely with the adjacent buildings; however, their detailing is more restrained, the materials more recent, and the design choices more abstract. Moving from Kadijksplein into the narrow Hoogte Kadijk, you are gradually enclosed by a continuous sequence of refined Amsterdam townhouses. Upon approaching Nos. 26 and 28, a subtle shift in material expression becomes perceptible.

Although brick remains the primary material, it is employed in a darker tone and covers a larger proportion of the façade surface. The façade exhibits a more plastic articulation, with significantly fewer interruptions by openings than in the adjacent buildings. Smaller windows, deeper reveals, and the relatively extensive brick surfaces suggest an affinity with expressionist brick architecture of the early twentieth century, as seen in Amsterdam South and in parts of Germany. This distinctive appearance within the historic Amsterdam streetscape raises questions: why does this building not seem to originate from the same period as the surrounding structures, from which period does it instead derive, and what architectural motives underlie these more plastic design choices?

Dutch architecture from the 1980s and 1990s was characterized by a revision of the modernist and postmodernist design principles of the time. Rational design principles, in which clarity was central both in the exterior and the interior, were applied to the existing city and its historical layering.<sup>1</sup> During this period, Amsterdam's architectural production was primarily focused on urban renewal of housing. The accompanying policy was aimed at preserving the existing urban fabric, further densifying the city, and providing social housing. These political, social, and institutional forces had a significant influence on the decisions made regarding the redevelopment of Amsterdam.<sup>2</sup>

An example of the consequences of this policy was the selective demolition of a few adjoining houses within Amsterdam's

building blocks. These houses were removed in line with the "compact city" strategy, which sought to preserve the existing urban structure as much as possible and to remove only technically deficient buildings that were in poor condition and deemed unworthy of renovation.<sup>3</sup> This resulted in empty plots in the streetscape between existing buildings, so-called "open gaten". These spaces offered new opportunities for densifying the city through small-scale infill development, which was intended to enable affordable housing.<sup>4</sup> The open spaces presented not only a spatial and aesthetic challenge for integration between the historical buildings that were preserved, but also a constructive and design-technical challenge, due to the constraints of narrow plots and the specific conditions of the "open gaten". Conventional Dutch housing constructions (such as tunnel formwork) were, in fact, not applicable to these vacant plots.<sup>4</sup>

The HoLaTuKa housing project (Hoogte, Laagte & Tussen Kadijken), designed by Claus & Kaan Architects and mentioned earlier in this introduction, consisted of four housing developments that can be considered examples of the aforementioned "open gaten" and thus contributed to filling in the urban fabric. The project is located in an area where historical residential and warehouse structures converge with new urban interventions. While pragmatic rationalist principles of infill housing had already been developed in the 1970s by a range of architects, the architectural transformation of the "open gaten" during the 1990s distinguishes itself mainly through the design of the street façades.

This makes HoLaTuKa a suitable case study for analyzing how Claus & Kaan approached the spatial, aesthetic, and constructive challenges of the "open gaten".

Claus & Kaan were known in the early 1990s for their clear and rational architectural language, particularly in their detached neo-modernist buildings. Their work was often described as "the appearance of simplicity," in which abstract concepts were translated into practical and functional architectural solutions. The "open gaten" within housing infill projects, however, required a different architectural and construction-technical approach.<sup>5</sup> For HoLaTuKa, rational principles were carefully balanced with contextual historical considerations, and the design required a technical approach different from that commonly applied in Dutch non-infill housing projects of the period, as discussed earlier.

Based on literature research and architectural analysis, with attention to facades, material use, scale, urban context and floor plans, this study investigates how HoLaTuKa, as an infill-project within an Amsterdam "open gat", reconciles rational principles with historical-contextual references. By positioning the project within the broader context of Dutch housing architecture in the late 1980s and 1990s, this study aims to clarify how this combination reflects broader architectural design strategies of the period.

The central research question guiding this thesis is: **"How does the combination of rationalist principles and historical-**

**contextual references in the HoLaTuKa housing project reflect broader design strategies in Dutch housing architecture of the late 1980s and 1990s, particularly within Amsterdam's "open gaten" developments?"**

By addressing this question, the thesis aims to fill a gap in existing literature, in which the "open gaten" strategy is primarily discussed as a consequence of policy change rather than as a spatial and architectural phenomenon in its own right. As a result, the architectural implications of these infill projects, and their role in the practical implementation of the Compact City policy, remain underexplored. This study addresses this gap through an architectural analysis of design principles, typologies, floor plans, and façades, explicitly examining how new construction relates to the historic urban fabric.

<sup>1</sup> Stuhlmacher & Grafe, 1998.

<sup>2</sup> de Liagre Böhl et al, 2010.

<sup>3</sup> Klip, 2022.

<sup>4</sup> Verlaan, 2025.

<sup>5</sup> Rattray, 1997.

## Methodology

This thesis adopts a qualitative, historical-analytical research methodology that combines architectural history, design theory, and project-based analysis. First, a historical and analytical research approach is employed to establish the framework to situate Amsterdam's urban renewal. This analysis demonstrates how, among other factors, city repair and densification strategies implemented during the late 1980s and 1990s led to the emergence of so-called "open gaten" repetition within the Amsterdam's façade composition. This part is based on secondary literature, including books and scholarly articles, which describe the ambitions and constraints within which architectural design was carried out during this period. A theoretical and architectural approach is used to analyze the dominant design strategies in Dutch housing architecture of the 1980s and 1990s. To understand the earlier design strategies for "open gaten" projects, this analysis is based on a comparison with several infill projects from the 1970s and 1980s. Particular attention is given to theoretical perspectives on rationalism and neo-modernism during this era.

Second, the research positions HoLaTuKa Housing within the political, urban, and architectural context of Amsterdam's urban renewal in the 1980s and 1990s. The architectural analysis of this "open gaten" infill project by Claus & Kaan Architects is based on drawings, façade analyses, material analysis and floor plans. This approach enables an examination of the project across multiple scales, ranging from the urban

context to façade composition, spatial organization, and structural logic.

Third, through case studies of housing projects, such as "Haarlemmerbuurt", "Borneo-Sporenburg" and "Rietlanden", the work of Claus & Kaan is positioned within the broader design discourses. This step aims to clarify the extent to which their design strategies align with, or diverge from, the prevailing architectural conventions of the period.

The study is neither a social-scientific investigation based on quantitative data nor a personal or autobiographical reflection, but a contextual architectural analysis grounded in historical sources, design analysis, and a critical theoretical framework. Comparisons with other "open gaten" housing projects in Amsterdam and selected housing projects by Claus & Kaan are used to assess whether HoLaTuKa should be understood as an exceptional case or as part of a broader design strategy.

In addition, an interview is conducted with Kees Kaan, one of the architects involved in the design of HoLaTuKa Housing. This interview does not function as an explanatory model, but rather as a reflective and evaluative instrument. Kaan's statements are used to confront the interpretations and conclusions derived from the analysis with the original design intentions of Claus & Kaan. Furthermore, anecdotes and project-specific insights emerging from the interview contribute to a more nuanced understanding of the design decisions, without dominating the analytical autonomy of the research.

## Amsterdam's Urban Renewal as a Framework for Rational yet Contextual Design

In Amsterdam, the period from the mid-1960s to the mid-1990s was marked by a significant shift in urban policy. While the 1960s and early 1970s were dominated by large-scale modernist urban planning and a focus on urban expansion, such as the development of the Bijlmermeer, from the late 1970s onward policy shifted toward urban renewal and restoration. This new approach emphasized the preservation of the existing urban fabric and encouraged resident participation. Demolition was limited to buildings in such poor condition that renovation was no longer viable.<sup>6</sup> This selective demolition resulted in the emergence of so-called "open gaten" within the urban fabric. The policy shift meant that, alongside renovation projects, these gaps could now also accommodate infill development. As such, they became key sites for new architectural and technical approaches within urban renewal. This chapter argues that these "open gaten" forced architects to reconsider the front elevation of their housing projects, as these were now literally contained within historic street façades. In addition, policy changes stimulated and in some ways reinforced a more rationalized approach to façade design.

### From Modernist Expansion to Urban Renewal (1966–1978)

Between 1966 and 1978, Amsterdam's urban policy was dominated by modernist ideals and large-scale planning. Under the leadership of figures such as Joop den Uyl and officials within the Department of Public

Works, sections of the historic city were slated for demolition to make way for new infrastructure and housing developments.<sup>7</sup> New residential districts, including the Bijlmermeer, were constructed to address post-war housing shortages. This outward expansion, however, contributed to the neglect of the inner city, where housing conditions deteriorated. As middle-class families relocated to the new developments, nineteenth-century neighborhoods increasingly became home to students, young singles, and migrant communities.<sup>8</sup> By the early 1970s, large-scale demolition plans had generated strong social resistance under these new residents of the neighbourhood. Protests such as the "Nieuwmarktellen" (Nieuwmarkt Riots) highlighted these growing tensions between municipal authorities and residents' interests.<sup>9</sup> This period revealed a fundamental conflict between large-scale modernist urban planning and emerging ideals focused on preserving the historic urban fabric, making it evident that a significant policy shift was necessary.

### The Compact City and the "Open Gaten" Approach (1978–1990)

A turning point came in 1978 with the introduction of the "Compact City" policy under Michael van der Vlis, Jan Schaefer, and Jan Etty. The focus shifted from expansion and demolition toward renovation and preservation of the urban fabric. The principle of "building for the neighborhood" emphasized affordability and continuity

<sup>6</sup> Van Stipriaan Luiscius, 2022, pg. 54-84.

<sup>7</sup> Van Stipriaan Luiscius, 2022, pg. 54-71.

<sup>8</sup> Verlaan, 2025.

<sup>9</sup> Van Stipriaan Luiscius, 2022, pg. 67-68.

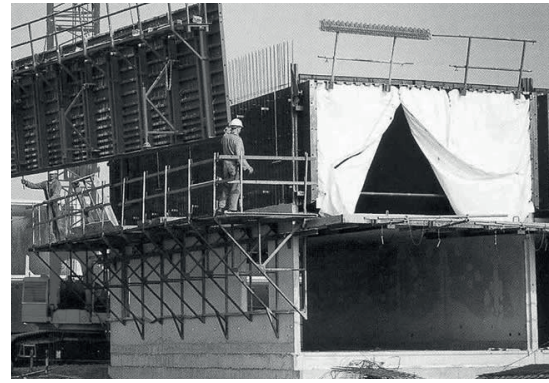
for existing residents. Demolition became selective and was only applied in cases of severe technical failure, such as a poor foundation or other major constructional defects. This resulted in small vacant plots within continuous urban blocks: the “open gaten”. Around 1980, approximately 400 such sites were identified across Amsterdam.<sup>10</sup> These sites combined three policy goals: densification within the existing city, the provision of affordable housing, and the preservation of the historic urban structure.

### Technical Constraints and Standardized Solutions

The “open gaten” presented both spatial and technical challenges. Their narrow dimensions and position between existing buildings required construction methods that could operate within highly constrained sites while maintaining continuity with the surrounding urban fabric.

At the time, tunnel formwork was a commonly used technique to construct mass housing in the Netherlands, enabling the simultaneous casting of walls and floors (F. 3). This method enabled rapid, repetitive, and efficient construction, aligning with the priorities of contemporary housing production.<sup>11</sup> However, it required relatively large, unobstructed construction sites and was therefore ill-suited to the confined conditions of inner-city infill locations. Instead, more flexible structural systems were adopted, such as filigree floor slabs combined with lime-sand brick walls, which required less working space and allowed for phased construction. Within this structural framework, the use

F. 3



of prefabricated elements, such as façade panels and prefabricated “wet units,” offered an additional strategy to address the logistical constraints of these sites, while speeding up the building process. Prefabricated façade panels made of glass-fiber-reinforced cement and plastic sanitary units enabled serial production, while also reducing on-site construction time and complexity. This made it possible to build efficiently within the limited space available. F. 4 shows the installation of a prefab façade panel on the Insulindeweg in 1982. The first large-scale applications of this approach were realized between 1982 and 1984 in the form of HAT-units (Housing for One- and Two-Person Households), designed by Herman Zeinstra.<sup>12</sup> Approximately 180 units were constructed at fifteen locations. These compact dwellings responded to changing household compositions while benefiting from government subsidies and cost-efficient construction methods. A second series (1985–1988), designed by Rob Budding, expanded the typology to include larger dwellings, resulting in around 300 units across 29 locations.<sup>12</sup>

F. 4



### Rational Design and Architectural Expression

The infill projects by Zeinstra and Budding illustrate how rational design principles emerged in response to policy and economic constraints. Efficient use of space, repeatable construction systems, and cost control were central considerations. In projects employing standardized façade fragments, this translated architecturally into repetitive façade rhythms, minimal ornamentation, and simplified elevations. Logical and compact floor plans and restrained material use, likewise reflected rationalist design principles applied in these infill series.

Despite the serial approach, Herman Zeinstra sought to introduce subtle variations in façade composition, corner solutions, and recessed top floors in order to create diversity within the rationalist façade image (F. 5 - F. 7).<sup>12</sup> Although infill projects of the 1970s and 1980s did respond to their urban context to a certain extent, this response was often constrained by the use of standardized construction systems and cost-efficient design strategies.

The façades of the second series of infill projects, designed by Rob Budding, were characterized by prefabricated façade panels measuring 1.40 by 2.80 meters.<sup>12</sup> Although the façade structure and layout remained largely identical, this time differentiation was achieved through color, thus generating variation without altering the underlying system (F. 8–F. 10). Within this serial framework of Rob Budding, a clear color scheme was implemented: red and white in De Pijp, yellow in the Czaar Peterbuurt, yellow and green in the Oosterparkbuurt, and black in the Dapperbuurt.<sup>12</sup> This demonstrated that, within these limitations, variation was primarily achieved through surface-level interventions, such as color, rather than through fundamental changes in façade composition.

Although the different approaches of Zeinstra and Budding both introduced a degree of visual diversity, they offered limited architectural freedom and often led to a sober and simplified façade expression, in which materialization and ornamentation differed significantly from the adjacent historic buildings.

<sup>10</sup> Klip, 2022.

<sup>11</sup> Van Dijke, 1986.

<sup>12</sup> Klip, 2022.

F. 3 Low-rise housing constructed using tunnel formwork. From: Klip (2022). Photo provided by the Housing Annual Report 1982.

F. 4 The placing of a façade element - Insulindeweg, 1982. From: Stubeco (2015).

F.5



F.6



F.7



F.8



F.9



F.10



In this context, rationality did not manifest primarily as an ideological modernist ambition, but rather as a strategy for realizing affordable housing on narrow plots. The “open gaten” functioned as experimental spaces in which urban policy, technical innovation, and architectural order converged. The technical, spatial, and economic constraints of these sites stimulated a rationalized building practice centered on standardization, efficiency and systematic façade composition. This can be seen in the similar facade designs shown in F. 9 and F. 10. The open gaps thus demonstrate that

rational design principles are not detached from urban policy, but may directly emerge from it. This development provides a relevant context for understanding later projects, such as HoLaTuKa, where the architects faced similar challenges in balancing rational construction strategies with integration into the historic urban fabric. While pragmatic rationalist principles for infill housing had been explored by architects such as Zeinstra and Budding since the 1970s, HoLaTuKa demonstrates how other principles were applied and further developed during the 1990s by Claus & Kaan Architects.

## Project HoLaTuKa: Description and Urban Context

The HoLaTuKa project (Hoogte, Laagte & Tussen Kadijken), designed by Claus & Kaan Architects and realized between 1994 and 1998, was officially the final housing project within Amsterdam’s urban renewal program for its city centre.<sup>13</sup> This infill project comprises four small-scale residential sites in the Kadijkbuurt, distributed across two streets with markedly different urban characters: the narrow Hoogte Kadijk and the wider Laagte Kadijk, in which the industrial history of the neighbourhood is more visible.

The project emerged in the early 1990s within the framework of Amsterdam’s urban renewal, in which vacant spaces in the urban fabric, the so-called “open gaten”, were to be refilled with housing. These “open gaten” in the urban streetscape had diverse origins. Some resulted from wartime destruction and were never redeveloped, while others were caused by fire or prolonged neglect: dwellings that had fallen into technical disrepair, were worn out, or had ceased to be maintained by their owners. The precise origins of the specific “open gaten” within the HoLaTuKa project cannot be fully reconstructed. However, it is known that at least one of the sites on Laagte Kadijk temporarily accommodated a different function. In the postwar period, such vacant lots in Amsterdam neighborhoods were often used for small-scale public facilities.<sup>13</sup> In collaboration with Jacoba Mulder of the Department of Public Works, a network of public playgrounds was developed in Amsterdam from 1947 onwards under the

leadership of Aldo van Eyck.<sup>14</sup> One of the vacant plots on Laagte Kadijk proved suitable for this purpose. Kees Kaan, who notes that Claus & Kaan Architecten acted as external consultants during the urban renewal of the neighborhood, recalls that they had previously contributed, on behalf of local residents, to the refurbishment of this playground. In the early 1990s, they were asked to adapt this temporary use once more, this time for residential development.<sup>15</sup> The “open gaten” were thus reintegrated into the urban fabric, now as a permanent architectural intervention.

The commission was issued by the housing corporation “De Principaal” and followed earlier studies on small-scale building sites in Amsterdam’s historic center.<sup>16</sup> The project can be understood as a continuation of research into building within a dense and fragmented urban fabric. Kees Kaan explains that the office had been located on the Hoogte Kadijk in its early years, which meant they were familiar with the surroundings, the site’s characteristic qualities, and its residents.<sup>17</sup> This knowledge was further reinforced by their earlier role as external advisors in the neighborhood, as mentioned above. Due to their close involvement with the area, the architects were able to fully support the new urban policy of “Building for the City.” Claus & Kaan were assigned four separate plots, ranging from one to four bays in width. Social housing was to be designed for Hoogte Kadijk, while mid-range owner-occupied housing was to be developed on

F. 5 De Wittenstraat & Jacob Catskade. Series 1, by Herman Zeinstra. From: Klip (2022).

F. 6 Haarlemmer Houthuinen. Series 1, by Herman Zeinstra. From: Klip (2022).

F. 7 Eerste Jan van der Heijdenstraat & Ruysdaelkade. Series 1, by Herman Zeinstra. From: Klip (2022).

F. 8 Eikenplein. Series 2, by Rob Budding. From: Klip (2022).

F. 9 Vrolikstraat. Series 2, by Rob Budding. From: Klip (2022).

F. 10 Ruyschstraat. Series 2, by Rob Budding. From: Klip (2022).

<sup>13</sup> Kaan, interview with author, March 9, 2026.

<sup>14</sup> Heijselaar, 2018.

<sup>15</sup> Kaan, interview with author, March 9, 2026.

<sup>16</sup> Gemeente Amsterdam, n.d.

<sup>17</sup> Kaan, interview with author, March 9, 2026.

Laagte Kadijk<sup>18</sup>. What makes this project distinctive is the explicit decision not to apply a uniform solution across all sites. Whereas urban renewal often relied on standardized systems, as demonstrated, for example, in the series of infill projects by Herman Zeinstra and Rob Budding, Claus & Kaan deliberately chose an approach in which each site received a specific architectural response. This decision was based on several considerations. First, the conviction that architectural quality is diminished when a single system is applied to different urban conditions. Additionally, from earlier studies, including research on the western canal belt and a previously designed infill project in the Haarlemmerbuurt, they had concluded that fixed systems were ineffective for “open gaten”, which varied in shape and size. Each gap therefore required its own solution. Instead of uniform standardization, the aim was to carefully understand the logic of each site: its scale, rhythm, and relationship to public space. Based on this understanding, an appropriate design was developed for each location.<sup>19</sup>

### Urban Differences: Hoogte and Laagte Kadijk

The contrast between Hoogte and Laagte Kadijk forms the core of the project. Hoogte Kadijk is a narrow street characterized by a rhythm of relatively slender, traditional Amsterdam townhouses. The façades are marked by vertical articulation, numerous openings, artisanal materialization with narrow brick surfaces, and decorative ornamentation. The windows feature white frames positioned flush with the façade and are accentuated at the top by vertical

brick lintels. Openings are often subdivided into smaller panes and occasionally include stained glass. Entrances are frequently elevated and accessed via stone steps, with doors framed by decorative elements that are echoed in the roof edges. By contrast, Laagte Kadijk has a much broader profile and is directly related to the large warehouses of the Entrepotdok. Here, the traditional rhythm of individual plots is absent, and a more horizontal, industrial scale predominates.

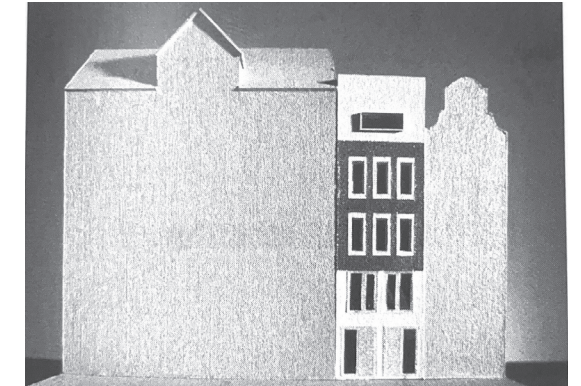
These contextual differences translated directly into the architectural approach of the designed façades. On Hoogte Kadijk, the new dwellings align with the existing street rhythm, featuring narrow, vertical façades. These façades exhibit a plasticity in brick architecture, with deep window reveals and relatively small openings, resulting in a restrained and simple appearance (F. 11). Notably, despite their apparent contextual alignment, this architecture shows stronger affinities with early twentieth-century brick expressionism, as seen in Amsterdam-Zuid and parts of Germany, than with the traditional Amsterdam canal house.

On Laagte Kadijk (F. 13), the approach is fundamentally different. The façades are wider and flatter in composition, with larger glazed openings and a strongly repetitive rhythm of outward-opening aluminum windows. These windows allow balustrades to be positioned on the interior, enabling the façade to retain its flat, unarticulated character.<sup>20</sup> The window-doors reference the shutters of the surrounding warehouses and formed the basis for the façade design of the infill projects on Laagte Kadijk.

F. 11



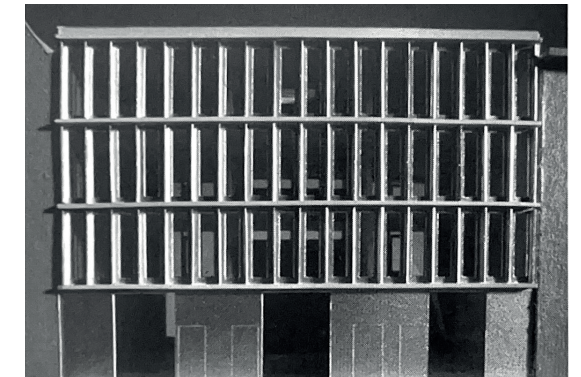
F. 12



F. 13



F. 14



The original design, which is shown in F. 14, consisted entirely of doors, but this was rejected by planning authorities as it did not fit the streetscape of Laagte Kadijk.<sup>21</sup> In the final design, each sequence includes one section replaced by masonry, creating a rhythmic façade with consistent spacing and proportions. The hinges of the doors serve as the only subtle ornamentation, making the fixings of the aluminum frames part of the architectural expression. Kees Kaan described the two different facade design

approaches, shown in F. 15 and F. 16, as an interesting paradox: at first glance, the Hoogte Kadijk appears to follow more typical Amsterdam architectural characteristics with its expressive brick façades, which are in fact more reminiscent of early twentieth-century German brick expressionism. In contrast, it is the more rational and planar façade of Laagte Kadijk, with its large glass surfaces and clear geometry, that aligns more closely with the underlying urban logic characteristic of Amsterdam buildings.<sup>21</sup>

<sup>18</sup> Ibelings, *Claus en Kaan Building*, 2001, pg. 90-95.

<sup>19</sup> Kaan, *interview with author*, March 9, 2026.

<sup>20</sup> Ibelings, *Claus en Kaan Building*, 2001, pg. 90-95.

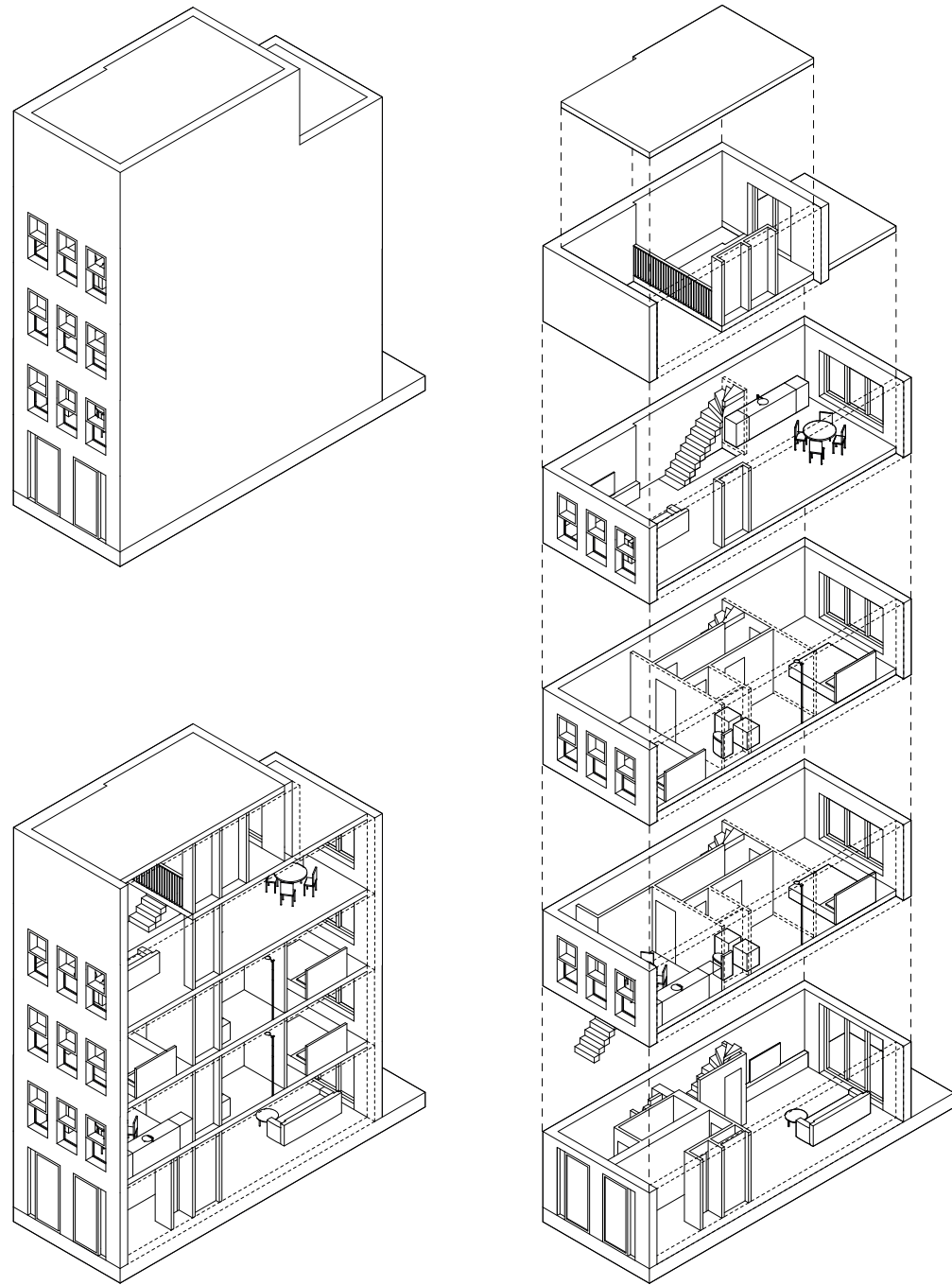
<sup>21</sup> Kaan, *interview with author*, March 9, 2026.

F. 11 Hoogte Kadijk streetscape - infill project, location A. From: Claus & Kaan Architects (2001).

F. 12 Hoogte Kadijk - infill project, location A, first façade design. From: Claus & Kaan Architects (2001).

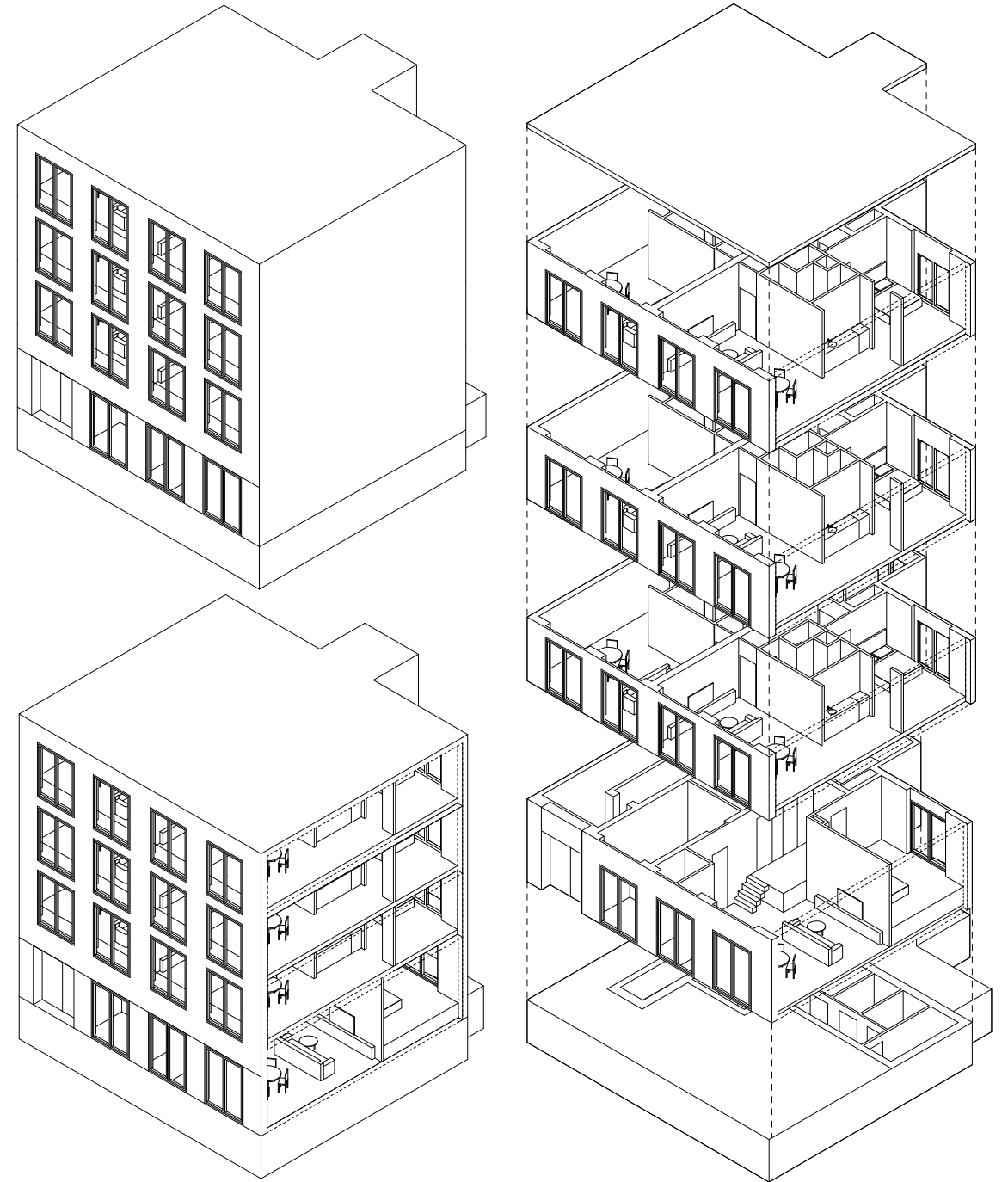
F. 13 Laagte Kadijk streetscape - infill project, location C. From: Google Maps (2023).

F. 14 Laagte Kadijk - infill project, location D, first façade design. From: Claus & Kaan Architects (2001).



F.15 Axo Hoogte Kadijk, location A. Relationship between façade design and floor plan.  
From: own work (2026).

AXO 1:200 0 2m 4m 6m 8m



F.16 Axo Laagte Kadijk, location C. Relationship between façade design and floor plan.  
From: own work (2026).

AXO 1:200 (scaled to 89%) 0 2m 4m 6m 8m



## Housing Typologies and Spatial Organization

Despite the variation in façade design, the dwellings themselves are relatively simple and rationally organized. Kees Kaan explains that Claus & Kaan did not work with standardized floor plans, but rather with a clear spatial structure based on several key principles: the positioning of the staircase, the admission of daylight, and the relationship between the front and rear of the dwelling. These principles also guided this project.<sup>22</sup> Claus & Kaan continued to build on established methods of floor plans, construction techniques, spatial organization, and rational principles that had already been used in earlier housing projects of that period.

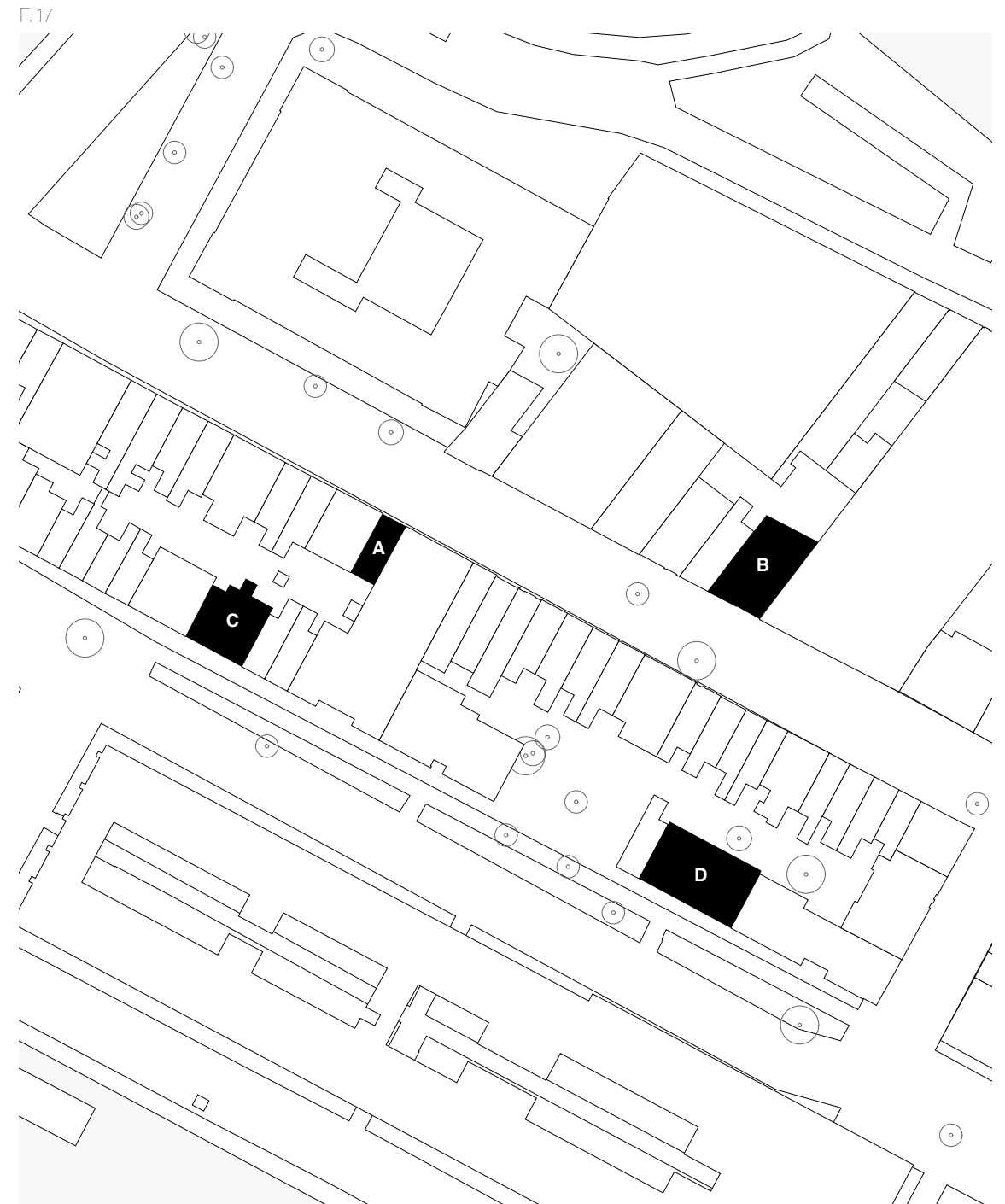
Prior to the design phase, several technical constraints had to be addressed. All four sites required new foundations, with piles positioned at sufficient distance from existing buildings. Additionally, thicker structural walls were needed to connect to the adjacent, often irregular structures. This raised questions such as: "Do you follow the skewed walls or straighten them?". Although such constraints did not impose severe limitations, they did affect the ultimately available interior space.

Differences in plot size had direct consequences for housing typology. On Hoogte Kadijk, the plots are narrow and deep, resulting in compact multi-level dwellings. This almost inevitably leads to a clear organization of floor plans. The single plot (location A) provided space for two maisonettes of two and three levels, each

with its own entrance, shown in F. 15. The upper dwelling is accessible via a staircase leading from the ground floor. This was a common construction principle, widely applied in buildings from the late 19th and early 20th centuries. Over time, however, this layout fell into obscurity. In Holatuka, this principle has been reintroduced.<sup>22</sup> Older rational design principles are also evident, such as grouping sanitary facilities, "wet areas," in the center of the dwellings. This is practical because these spaces do not require natural light and because plumbing and installations can be efficiently centralized. As a result, more space is available for living functions that do require daylight, such as the living room, dining room, and bedrooms, enhancing both the quality and functionality of the dwellings.

On the double plots of location B, two loft dwellings per floor were realized. These typologies make efficient use of the available space and respond to the vertical character of the streetscape. These layouts are less the result of abstract rational design principles, but more a consequence of efficient accommodation within minimal spatial constraints.

On Laagte Kadijk, location C and D, the plots are wider and less deep, allowing for more square and rational floor plans. Here, the emphasis is on the relationship with the street: living spaces are positioned at the front and characterized by large openings and maximum transparency. According to Kees Kaan, this results in an optimal form of urbanity in the façade.<sup>22</sup> Bedrooms are more recessed, creating a clear distinction



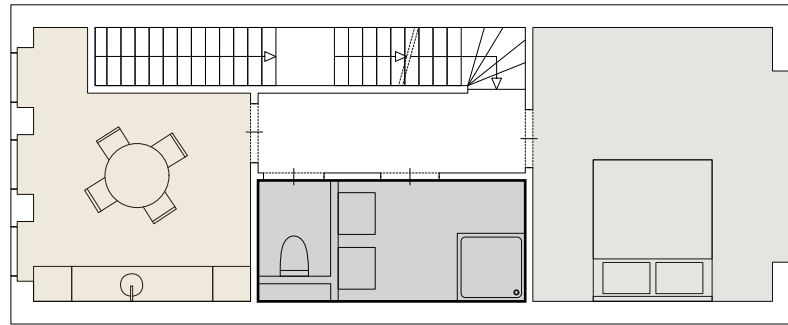
F.17 Different plots of the infill projects HoLaTuKa.  
From: own work (2026).

Site plan 1:1000 0 10m 20m 30m 40m

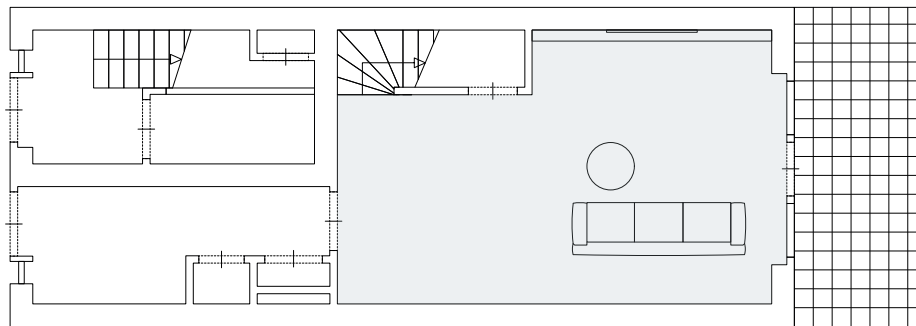


<sup>22</sup> Kaan, interview with author, March 9, 2026.

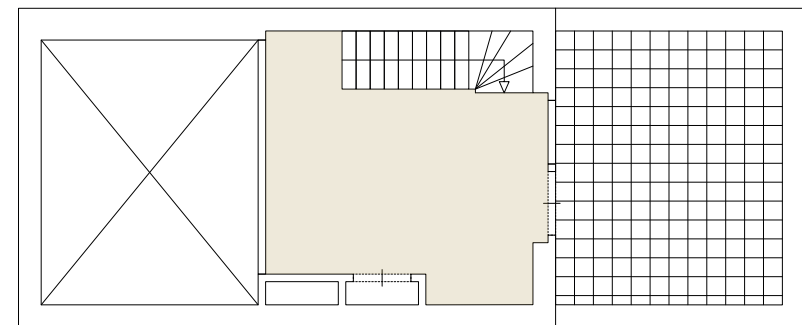
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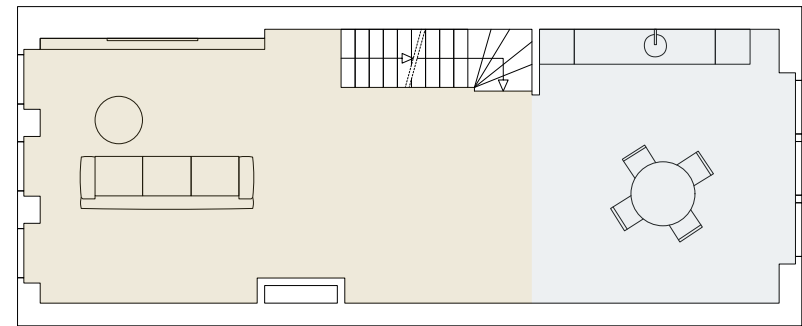
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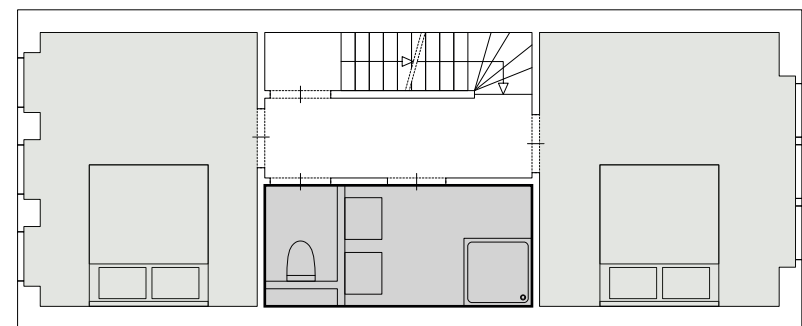
F.20



F.21



F.22



between public and private zones. In F. 18 till F. 26 the functional division of the dwellings from location A and C are made clearly visible by highlighting the “living” and “sanitary” functions.

In all cases, circulation was kept as compact as possible, for example through central staircases or entrances located at the garden side via a corridor. By placing storage in the basement, the relationship between dwelling and street remains as direct as possible.

Bedrooms are generally located at the rear, living spaces at the front, and service spaces in the middle. This spatial efficiency aligns with a rational design strategy and with the broader objectives of urban renewal, in which compact and affordable housing was central.

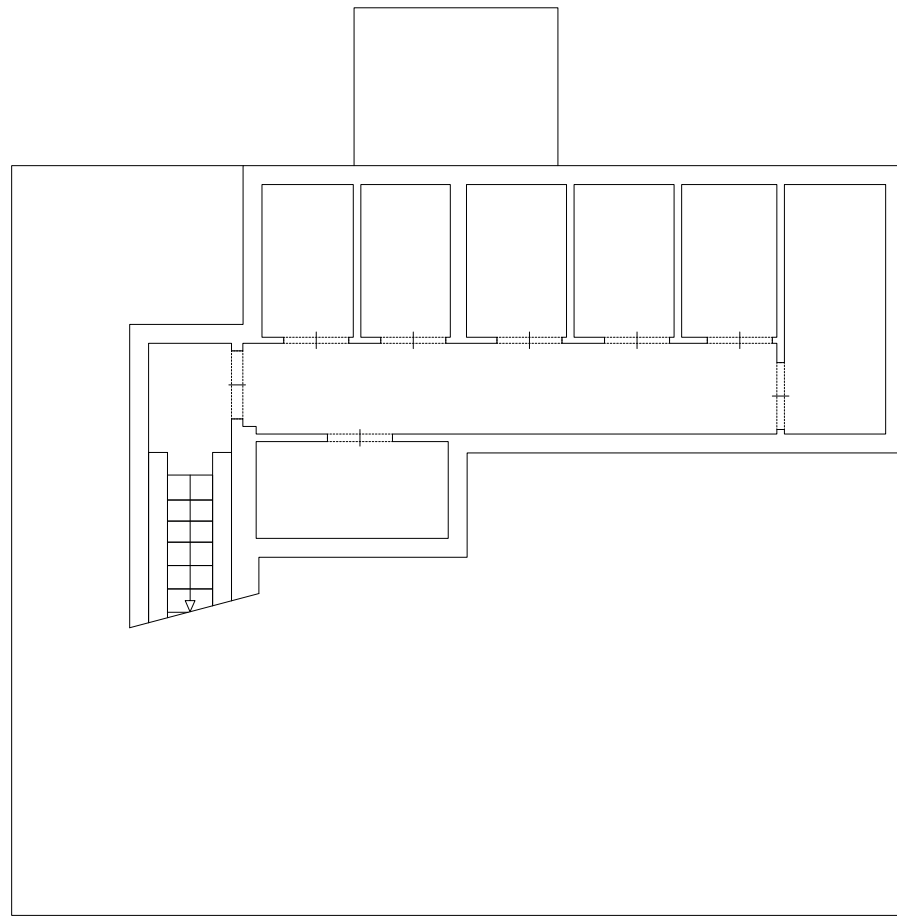
Bathroom  
 Living room  
 Bedroom  
 Dining room

- F.18 Hoogte Kadijk, location A - 26, first floor. From: own work (2026).
- F.19 Hoogte Kadijk, location A - 26, ground floor. From: own work (2026).
- F.20 Hoogte Kadijk, location A - 28, fourth floor. From: own work (2026).
- F.21 Hoogte Kadijk, location A - 28, third floor. From: own work (2026).
- F.22 Hoogte Kadijk, location A - 28, second floor. From: own work (2026).

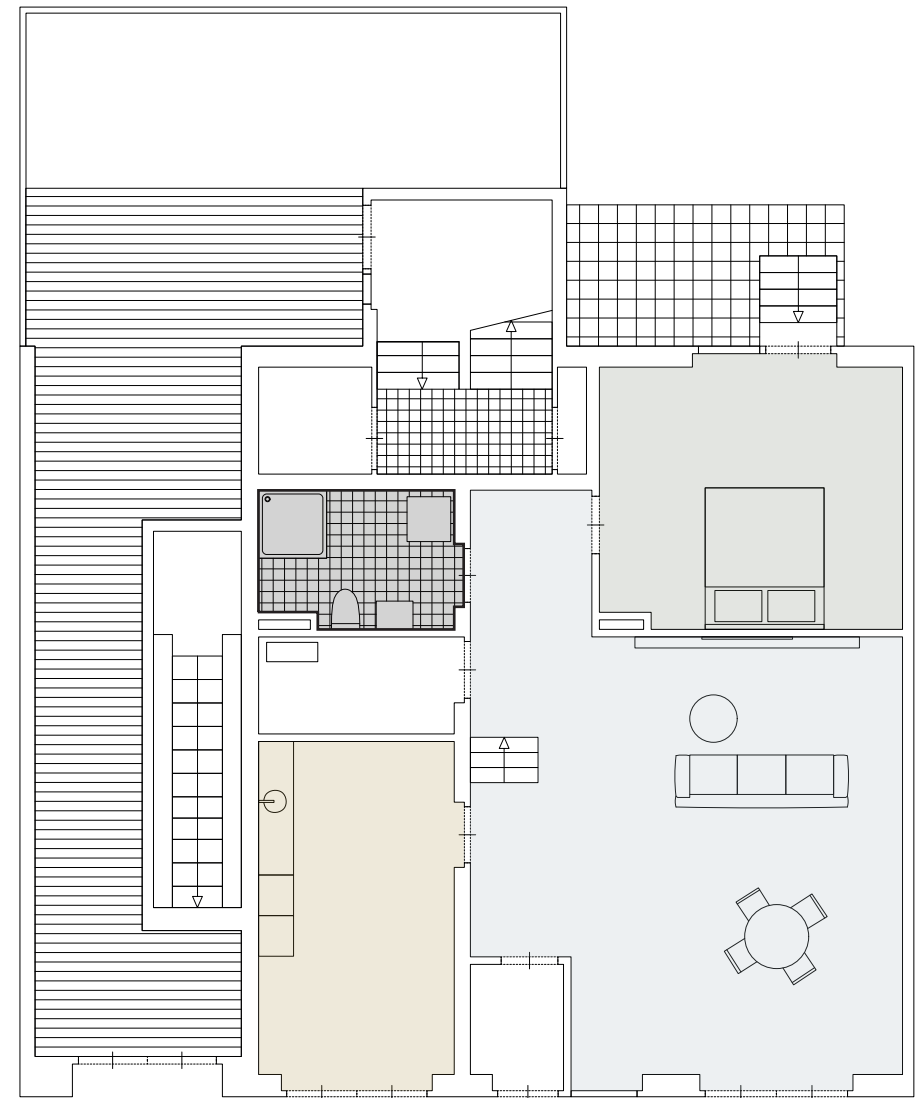
Floorplans 1:100 0 1m 2m 3m 4m



F.23



F.24



- Bathroom
- Living room
- Bedroom
- Dining room

F.23 Laagte Kadijk, location C, basement. From: own work (2026).  
 F.24 Laagte Kadijk, location C, ground floor. From: own work (2026).

Floorplans 1:100 0 1m 2m 3m 4m





F.25 Laagte Kadijk, location C,  
first, second and third floor. From: own work (2026).

Floorplans 1:100 0 1m 2m 3m 4m

### Rationality and Architectural Expression

The HoLaTuKa project demonstrates how rational design principles do not lead to uniformity but instead create opportunities for context-specific architecture. The dwellings are based on a logical and efficient organization, yet their architectural expression varies significantly depending on the urban condition.

Here, rationality does not manifest as a dogmatic design stance, but as a means of achieving clarity within constraints such as limited budgets, small plots, and complex construction conditions. The architect's freedom lies not in formal experimentation, but in how these constraints are interpreted and translated into architectural decisions.

In the façades, this approach is visible in the balance between simplicity and expression. Elements such as material use, detailing, profiling, and the treatment of openings play a crucial role. They introduce variation within a limited set of means and determine how the building relates to the existing city. In particular, the positioning of window frames, either flush with the façade or recessed, and the interplay of light and shadow contribute, within the HoLaTuKa project, to the perception of different architectural references, such as the Amsterdam School and the traditional canal house. Context, therefore, does not imply the literal copying of existing architecture. As Kees Kaan emphasizes in the interview, the aim is rather to understand the underlying principles of a place and to formulate a contemporary design that engages in dialogue with its surroundings.<sup>23</sup>

HoLaTuKa can thus be understood as a precise architectural response to the specific conditions of Amsterdam's urban renewal. The project demonstrates how small interventions in the urban fabric can give rise to fundamental questions about the relationship between housing, architecture, and the city.

It is precisely in the tension between rationality and context, between repetition and differentiation, that an architecture emerges which is both systematic and specific. In this sense, the project forms an interesting starting point for a broader reflection on how housing can relate to the city, and how similar design strategies have evolved in other projects.

<sup>23</sup> Kaan, interview with author, March 9, 2026.



### Motivations and design approaches in the early work of Claus & Kaan

The HoLaTuKa project does not stand alone, but forms part of a broader design attitude that Claus & Kaan developed in their early years. In the late 1980s and early 1990s, the office found itself in a phase in which several housing projects were being designed simultaneously. Projects such as the Haarlemmerbuurt, HoLaTuKa, Borneo-Sporenburg and Rietlanden did not function as isolated projects, but rather as interconnected studies into housing, urban integration, and architectural expression.<sup>23</sup> What characterizes this period is an investigative attitude in which the same questions repeatedly emerge: how does housing relate to the city, how should one engage with existing contexts, and to what extent is standardization desirable or, conversely, restrictive?

#### The study of the Western canal belt of Amsterdam

The study of the "Negen Straatjes", an investigation into the "open gaten" in the western canal belt of Amsterdam, was a guiding research project for the later infill-projects designed by Claus & Kaan Architects. This study was conducted between the late 1980s and early 1990s, although the exact date remains unclear, as it was an internal investigation carried out by Claus & Kaan and was not formally published. It explicitly examined whether these sites could be systematically filled. The conclusion drawn by Claus and Kaan was clear: the complexity and costs of such locations are primarily embedded in the

underground and spatial boundary conditions, foundation, height, depth, and connection, meaning that each floor plan and façade, by definition, deserved and required a unique design according to Claus & Kaan Architects.<sup>23</sup>

From this same research followed an important economic and architectural conclusion: since the majority of the investment is already contained within the basic conditions, the choice of a specific façade has only a limited impact on total construction costs. According to Henk Zantkuijl (1925–2012), a well-known Dutch architect and pioneer in post-war heritage conservation in Amsterdam, this difference amounts to only approximately 2%. In later projects, this created room to add additional quality precisely in the architectural elaboration.<sup>24</sup>

At the same time, a second, equally decisive insight was formulated: the feasibility of infill-projects can be increased by realizing more square meters. By building higher, additional exploitable surface area is created, which directly affects the available budget.<sup>25</sup> This reasoning forms the basis of the pronounced verticality of the buildings along Hoogte Kadijk, as illustrated in F. 27. The increased height is therefore not only an urban response, but also an economic strategy.

<sup>24</sup> Zantkuijl en Smeenk, 1973.

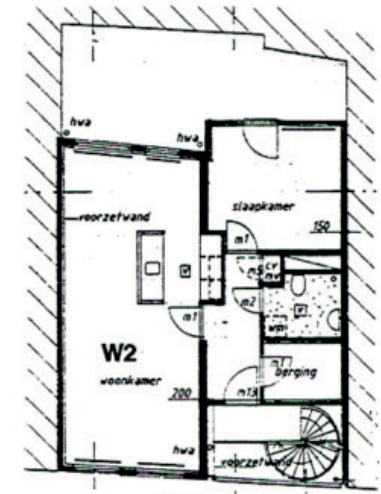
<sup>25</sup> Kaan, interview with author, March 9, 2026.



### Haarlemmerbuurt Project (1989–1997) as a learning process

Up to this point, the prevailing idea of infill projects in the “open gaten” was that such locations could be efficiently developed through repeatable housing typologies, standardized floorplans, and façade elements, as seen in series 1 by Herman Zeinstra and series 2 by Rob Budding. These earlier series already showed that this approach did not always prove workable. Insights from these experiences and the study of Amsterdam’s western canal belt re-emerged during the design process of subsequent infill-projects by Claus & Kaan Architects, such as those in the Haarlemmerbuurt. An important point

of departure for HoLaTuKa lies in an earlier infill-project “Binnen Wieringerstraat 8-10.”<sup>26</sup> Within the context of urban renewal, the task was to realize subsidized, compact housing. Together with the client, it was decided to distribute three dwellings across two plots. This was only possible by horizontally linking the dwellings, allowing residents to use both part of the existing and part of the new building. This intervention was described as a kind of “infusion” into the existing canal house: a glass façade with a staircase behind it, followed by a more closed rear wall.<sup>27</sup> This method of connecting dwellings led to forced solutions and complex, sometimes almost overworked floor plans.



F. 27 Highlighted verticality in Hoogte Kadijk as an urban and economic response. From: own work (2026). Photograph provided by Claus & Kaan Architects (2001).

F. 28 Infill-project Claus & Kaan Architects - Binnen Wieringerstraat 8-10, location B of Haarlemmerbuurt project. From: Rook & Nagelkerke (2009). Photograph provided by Architectuurgids.nl.

F. 29 Complex floor plan Binnen Wieringerstraat 8-10, location B of Haarlemmerbuurt project. From: Gemeente Amsterdam (n.d.). Drawings provided by <https://gebouwdin.amsterdam.nl>.

F. 30 Site plan Haarlemmerbuurt Infill-projects, location A, B and C. From: Gemeente Amsterdam (n.d.). Drawings provided by <https://gebouwdin.amsterdam.nl>.

<sup>26</sup> Kaan, interview with author, March 9, 2026.

<sup>27</sup> Ibelings, *Claus en Kaan Building*, 2001, pg. 34-37.

This specific assignment, with its characteristic requirements and properties, once again led Claus and Kaan to the insight that standardization did not offer a real solution to the complexity of most infill projects. Kaan mentioned that ignoring the specific qualities of a site led instead to a loss of spatial and architectural quality.<sup>28</sup> This is directly visible in the series by Zeinstra and Budding as discussed earlier. This way of thinking formed, among other things, the basis for the later decision in HoLaTuKa to approach each location individually.

The final intervention from this particular building from the Haarlemmerbuurt visibly deviated from the traditional image of the Amsterdam canal house. This concerned not only the contrast in façade expression, but also the underlying dwellings distributed across two plots. An important objection from the municipality was that the internal organization no longer corresponded to the classical plot structure, in which each dwelling forms an independent vertical unit. The idea that someone could move horizontally through different buildings was considered to conflict with the historical logic of the city. It was precisely this discussion that made clear that a strong focus on outward similarity to the context, the “cosmetic”, can conflict with a clear and contemporary spatial organization. For Claus & Kaan, this became an important insight: architecture should not primarily strive for visual resemblance, but for a correct interpretation of the underlying typological and spatial principles.<sup>28</sup>

This experience directly informed HoLaTuKa. In this sense, the Haarlemmerbuurt marks

an important learning process, in which the tension between typology and image led to a sharper and more conscious design approach in later projects.

#### HoLaTuKa (1994–1998) as a turning point

Where the Haarlemmerbuurt project still involved research and experimentation with repeatable systems, HoLaTuKa marks a clear shift toward a context-specific design approach. Instead of a single generic solution, an explicit choice was made here for customization per location. This shift did not imply abandoning rationality. The dwellings remained based on clear and efficient floor plans, but were directly linked to the specific characteristics of the plot and the street. The verticality along Hoogte Kadijk is a direct result of this: both a response to the narrow, deep plots and to the necessity of generating sufficient square meters. All these aspects became decisive for both the spatial organization and the architectural elaboration.

Equally important as what is further developed is what is deliberately abandoned. A clear example is the earlier proposal for a concrete plinth along the Hoogte Kadijk. This design ultimately proved technically and economically illogical.

Prefabricated concrete requires the use of molds that only become efficient in serial production. In the case of unique, small-scale infill projects, each element would have required a separate mold, making the system costly and inefficient. This consideration would not be proposed as readily in the future.<sup>28</sup>

F.31



F.32



F. 31 Front façade Hoogte Kadijk 26 & 28 - first façade design with concrete plinth. From: Gemeente Amsterdam (n.d.). Drawings provided by <https://gebouwdin.amsterdam.nl>.

F. 32 Front façade Hoogte kadijk 26 & 28 - final design with brick façade. From: Gemeente Amsterdam (n.d.). Drawings provided by <https://gebouwdin.amsterdam.nl>.

<sup>28</sup> Kaan, interview with author, March 9, 2026.

The decision to abandon this approach and adopt a fully brick façade demonstrates how material choice is directly linked to feasibility and customization. Brick offered the flexibility to respond to the specific dimensions of the plots, while simultaneously enabling a richer architectural articulation.

HoLaTuKa can be understood as a project in which the architects explicitly developed two distinct architectural attitudes regarding the design of the façade: on the one hand, a more plastic, material-driven approach, and on the other, a flat, rational façade composition. This duality reappears in later projects and is further elaborated there. Just as the Haarlemmerbuurt constituted a learning process for HoLaTuKa, HoLaTuKa in turn functioned as an important link in the further development toward projects such as Borneo-Sporenburg and Rietlanden.

### Borneo-Sporenburg (1994–2000): scaling up the experiment

The insights from HoLaTuKa were continued in the larger-scale urban project Borneo-Sporenburg. Although the scale and context were entirely different, a newly developed residential area in the Eastern Docklands, similar thematic questions remained central.

Here too, the relationship between plot size and housing typology played a crucial role. Different plots had varying widths and depths, resulting in a wide variety of housing types. As in HoLaTuKa, it became clear that these differences could not be resolved with a single uniform strategy. What was still small-scale and experimental in HoLaTuKa was further developed in

Borneo-Sporenburg into a more systematic exploration of architectural variation within an urban framework. The previously developed duality between plastic and flat façades reappears here. It becomes evident that HoLaTuKa functioned as a kind of “test” for ideas that could later be deployed on a larger scale.

### Rietlanden (1996–2000): refinement of the rational façade

In the housing project Rietlanden, the rational, flat approach from the infill project at Laagte Kadijk is further developed in particular. At that time, Adriaan Geuzen, who advocated for deep reveals and timber window-frames as seen at the Hoogte Kadijk, was no longer supervisor, and Claus & Kaan Architects chose to focus more explicitly on the real Amsterdam architectural traditions.<sup>29</sup> Elements such as large façade openings, flush-mounted window frames, and outward-opening windows reappear here and are further refined.

Where this strategy in HoLaTuKa was still strongly tied to the specific context of Laagte Kadijk, in Rietlanden it is applied more freely and further abstracted. This demonstrates how a context-bound solution can also evolve into a more generic architectural principle.

F. 33



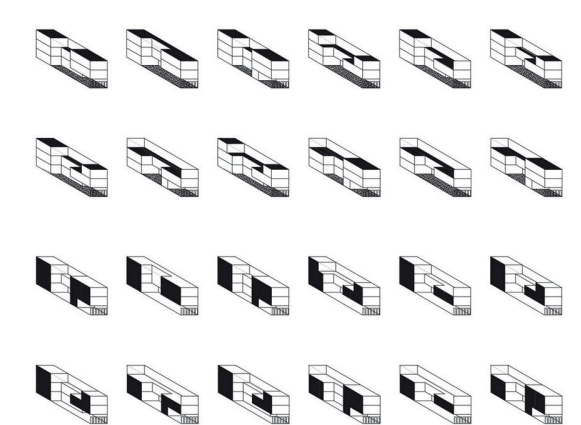
F. 34



F. 35

LOKATIE	SP-02			SP-07			SP-13						SP-15/16					RIET-LANDEN					
WONINGTYPE	1	2	3	1	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
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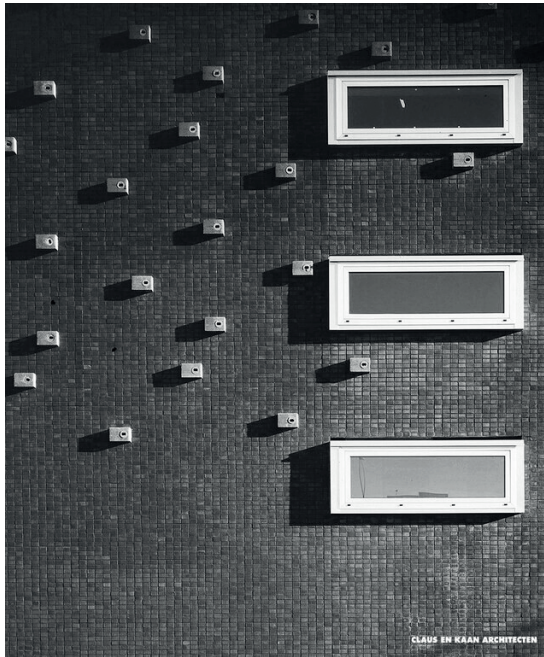
F. 36



F. 33 Design principles from HoLaTuKa in Borneo-Sporenburg project façade 1. From: Claus & Kaan Architects (2001).  
 F. 34 Design principles from HoLaTuKa in Borneo-Sporenburg project façade 2. From: Claus & Kaan Architects (2001).  
 F. 35 Scheme with different housing typologies used in Borneo-Sporenburg project. From: Claus & Kaan Architects (2001).  
 F. 36 Schematic sections of the housing typologies used in Borneo-Sporenburg project. From: Claus & Kaan Architects (2001).

<sup>29</sup> Kaan, interview with author, March 9, 2026.

F. 37



F. 38



F. 39



F. 40



### Recurring themes in the design approach of Claus & Kaan Architects

When these projects are considered in relation to one another, a clear picture emerges of the design approach of Claus & Kaan during this period, in which several themes consistently recur.

The relationship between plot and housing typology: the size and proportion of the plot form the starting point for spatial organization. Narrow, deep plots lead to different housing types than wide, shallow plots. This logic directly informs both the floor plan and the section.

The coherence between plan and façade: the façade can be read as an 'autonomous composition', yet it relates to the spatial structure of the dwellings and their floor plans. The rhythm of the façade openings is related to the layout of the dwellings and the width of the plots.

The interpretation of context: context is not understood as something to be literally copied, but as a system of underlying rules and proportions. By analyzing these, space is created for a contemporary architecture that nonetheless relates convincingly to its surroundings.

In the interview with Kees Kaan, he emphasizes that projects such as the Haarlemmerbuurt and HoLaTuKa were never experienced as a limitation. On the contrary, it is precisely the specific boundary conditions of infill projects that compel sharper choices and greater architectural precision. Design freedom, he argues, is to

some extent an illusion, it is within constraints that new possibilities arise.<sup>30</sup>

This idea forms an apt summary of the design approach of Claus & Kaan during this period. The complexity of the city, the plot, and the context is not seen as an obstacle, but as a guiding framework within which architecture can develop. Freedom, therefore, lies not in the absence of rules, but in the way they are interpreted and translated into spatial and architectural quality.

F. 37 Design principles from HoLaTuKa in Rietlanden project, photograph 1. From: Claus & Kaan Architects (2001).

F. 38 Design principles from HoLaTuKa in Rietlanden project, photograph 2. From: Claus & Kaan Architects (2001).

F. 39 Design principles from HoLaTuKa in Rietlanden project, photograph 3. From: Claus & Kaan Architects (2001).

F. 40 Design principles from HoLaTuKa in Rietlanden, project photograph 4. From: Claus & Kaan Architects (2001).

<sup>30</sup> Kaan, interview with author, March 9, 2026.

## Conclusion

This thesis has examined how the combination of rationalist design principles and historical-contextual references in the HoLaTuKa project by Claus & Kaan Architects relates to broader design strategies within Dutch housing architecture of the late 1980s and 1990s, particularly within the Amsterdam “open gaten” developments. Based on historical-analytical research and a detailed case study analysis, it can be concluded that HoLaTuKa is exemplary of a shift in architectural thinking in which rationality and context do not function as opposites, but rather as mutually reinforcing design instruments.

The study argues that the emergence of the “open gaten” strategy, stemming from the Compact City policy, introduced a fundamentally new design framework. The combination of technical constraints, spatial limitations, and policy objectives compelled architects to adopt a rational approach to housing design, focused on efficiency, standardisation, and constructional feasibility. In earlier infill projects from the 1970s and 1980s, this often resulted in serial and relatively uniform architecture, in which contextual integration was primarily pursued at a superficial level. This is evident in the series 1 infill projects by Herman Zeinstra and the series 2 infill-projects by Rob Budding.

HoLaTuKa, however, marks a clear development in relation to these earlier approaches. While Claus & Kaan employ a rational foundation in the organisation of floor plans, structure, and programme, they combine this with a distinctly context-specific approach to architectural elaboration. Rather than applying standardisation, each “open gat” is approached as a unique design assignment, in which the specific characteristics of the plot, the street, and the urban context are leading. This results in an architecture in which rationality does not produce uniformity, but instead creates opportunities for differentiation.

Furthermore, the interpretation of context within HoLaTuKa is not based on the literal imitation of historical forms, but on an abstract and analytical approach to underlying urban principles. The façades refer to historical architecture through plot proportions, rhythm, materiality, and detailing, yet translate these into a contemporary architectural language. The contrast between the more plastic brick architecture along the Hoogte Kadijk and the flatter, more rational façade composition along the Laagte Kadijk illustrates how different contexts give rise to distinct, yet conceptually coherent design solutions.

In addition, the study demonstrates that the relationship between plan and façade plays a crucial role in this approach. The façades can be understood as autonomous compositions, yet are closely connected to the internal organisation of the dwellings and the logic of the plot. This confirms that rationalist principles, such as efficient use of space, central positioning of services, and clear circulation, are not only functional, but also contribute to architectural expression.

Finally, HoLaTuKa can be understood as part of a broader development within the oeuvre of Claus & Kaan and within Dutch architectural practice of that period. The project functions as a link between earlier experiments with standardised infill and later projects in which contextual differentiation and typological variation are further elaborated, such as in Borneo-Sporenburg and Rietlanden. In this sense, HoLaTuKa reflects not only a specific design assignment, but also a broader shift from serial to situational architecture.

In summary, the combination of rationalist principles and historical-contextual references in HoLaTuKa embodies a design strategy characteristic of late twentieth-century Dutch housing architecture and rooted in the Compact City policy. Within the context of the Amsterdam "open gaten", this combination results in an architecture

that is grounded in rational principles such as efficiency, structural logic, and a clear organisation of the floor plan, while simultaneously being shaped by the specific characteristics of the plot and the urban environment. HoLaTuKa thus demonstrates how general design principles do not lead to uniform solutions, but instead allow for differentiation per location. The project provides insight into how architecture can emerge from both abstract design rules and the concrete spatial and historical conditions of the city.

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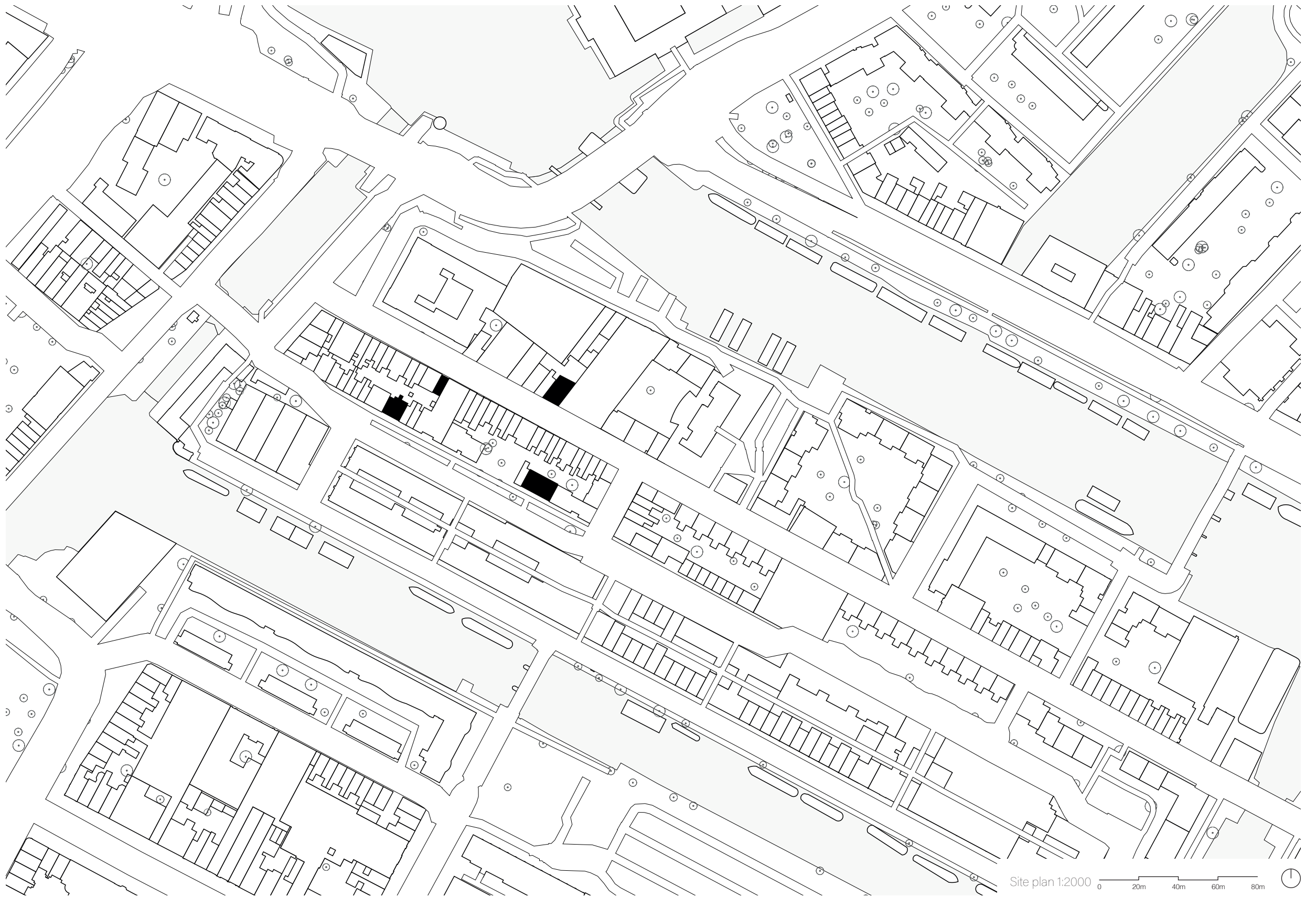
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## Figures

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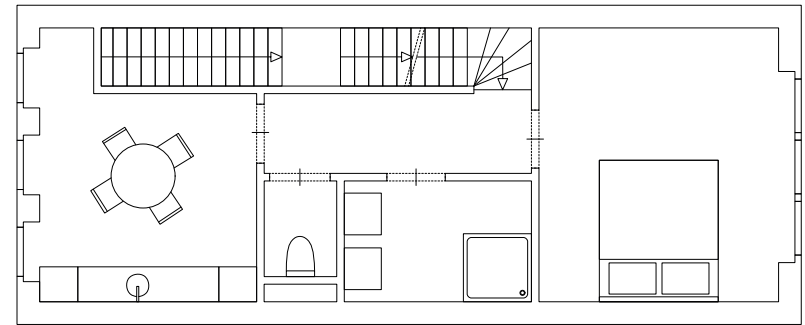
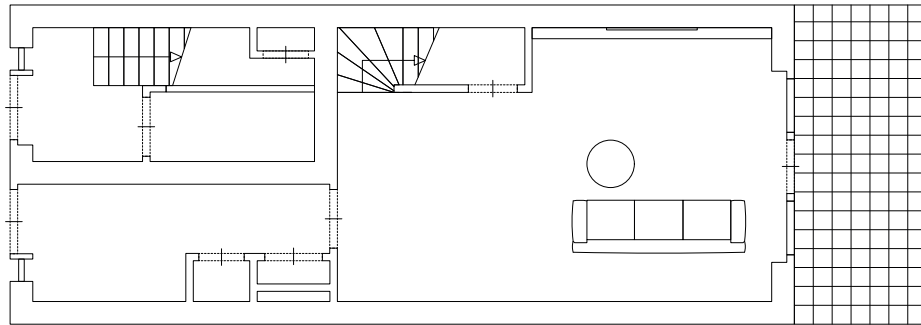
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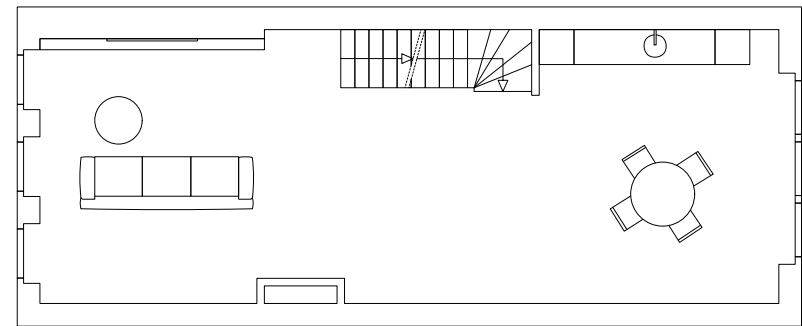
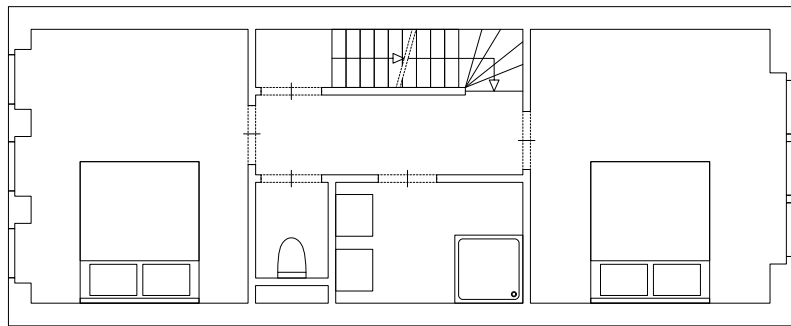
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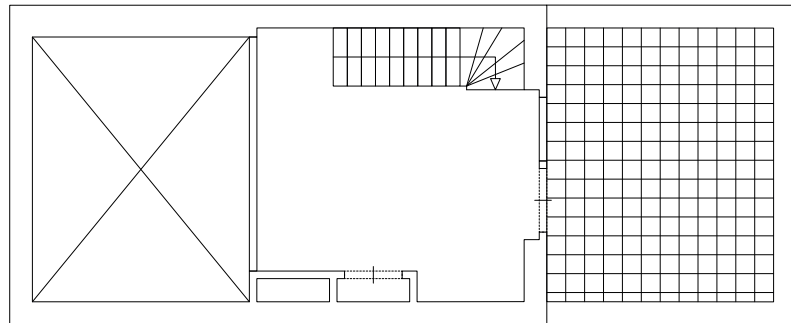


Site plan 1:2000 0 20m 40m 60m 80m

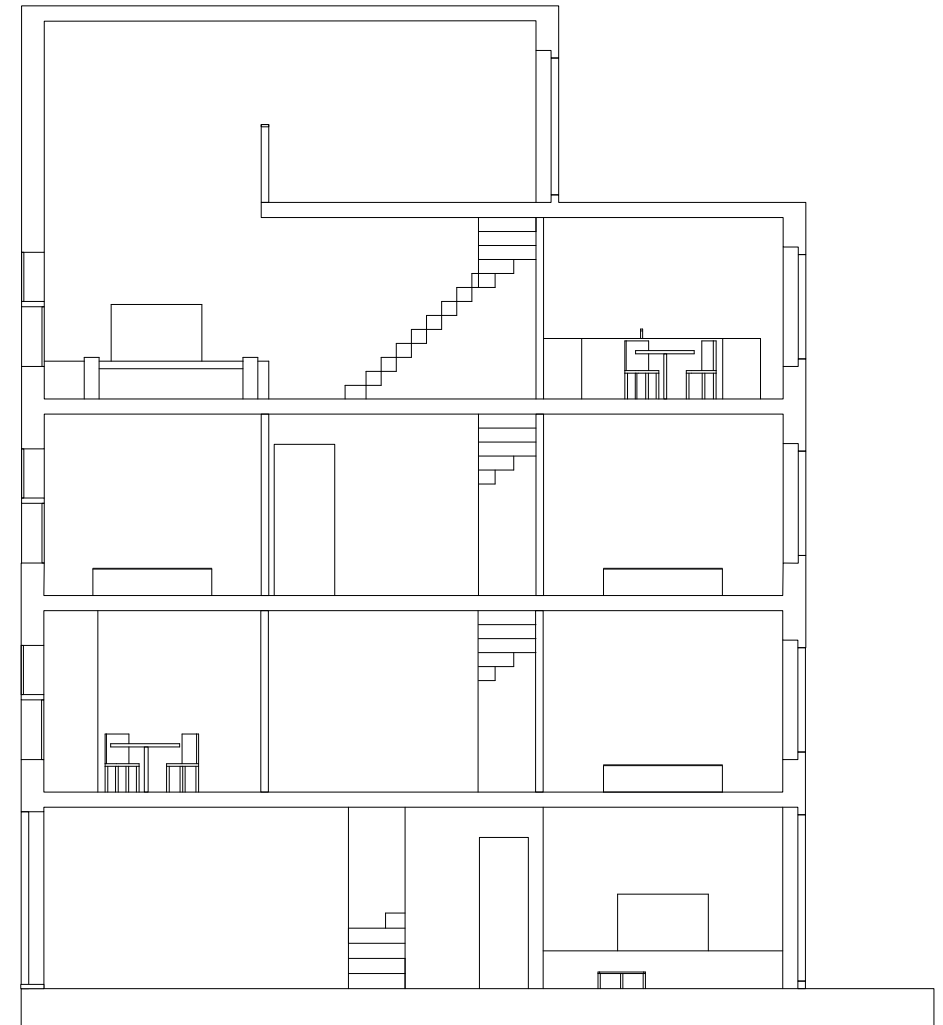
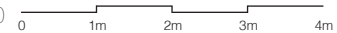




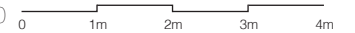




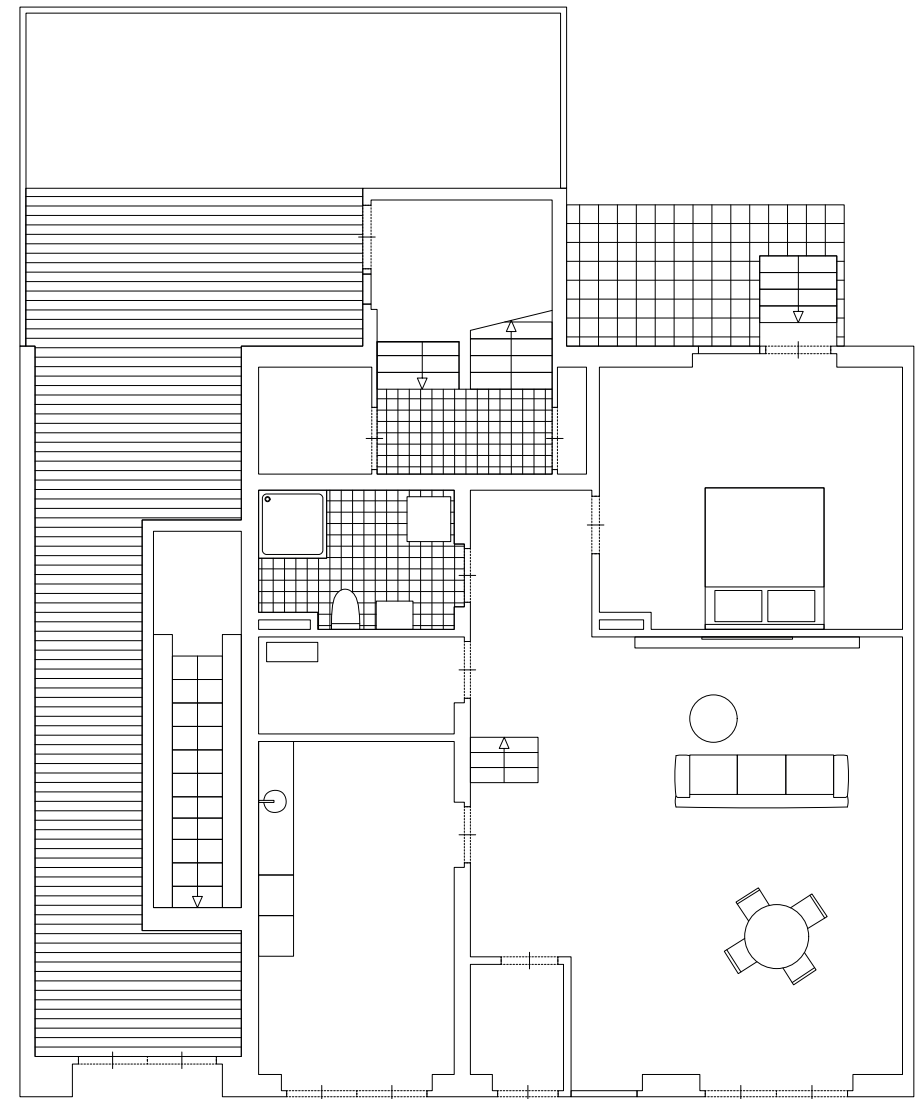
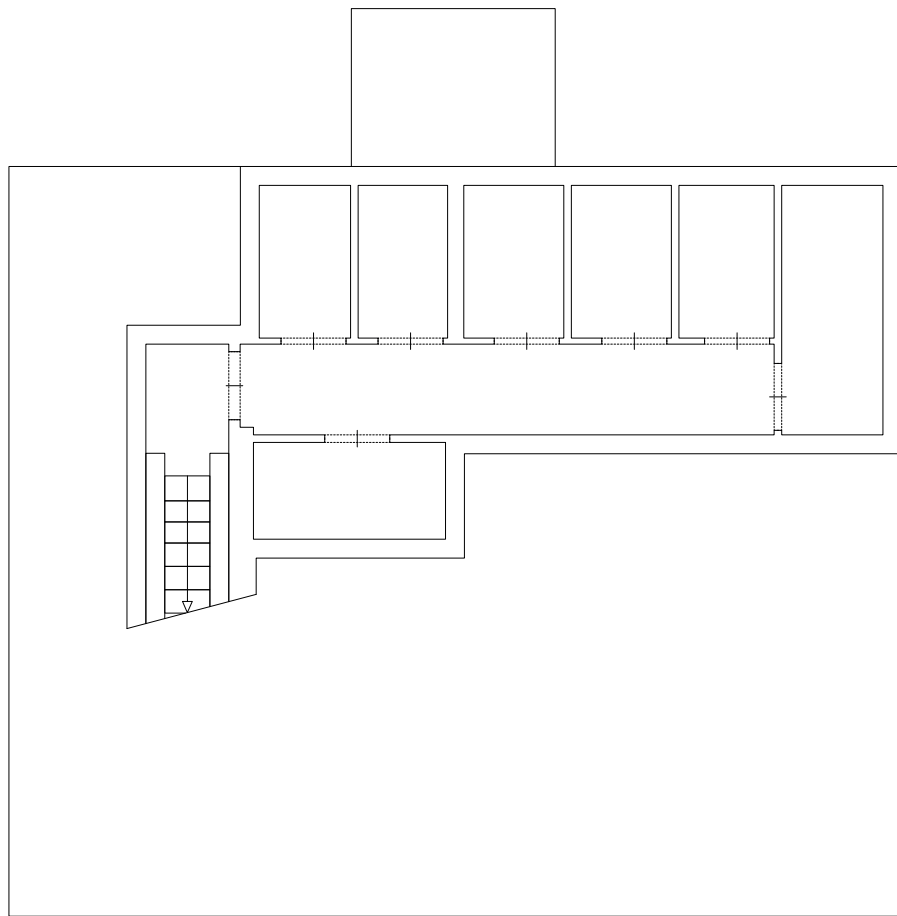
Floorplans 1:100



Section 1:100

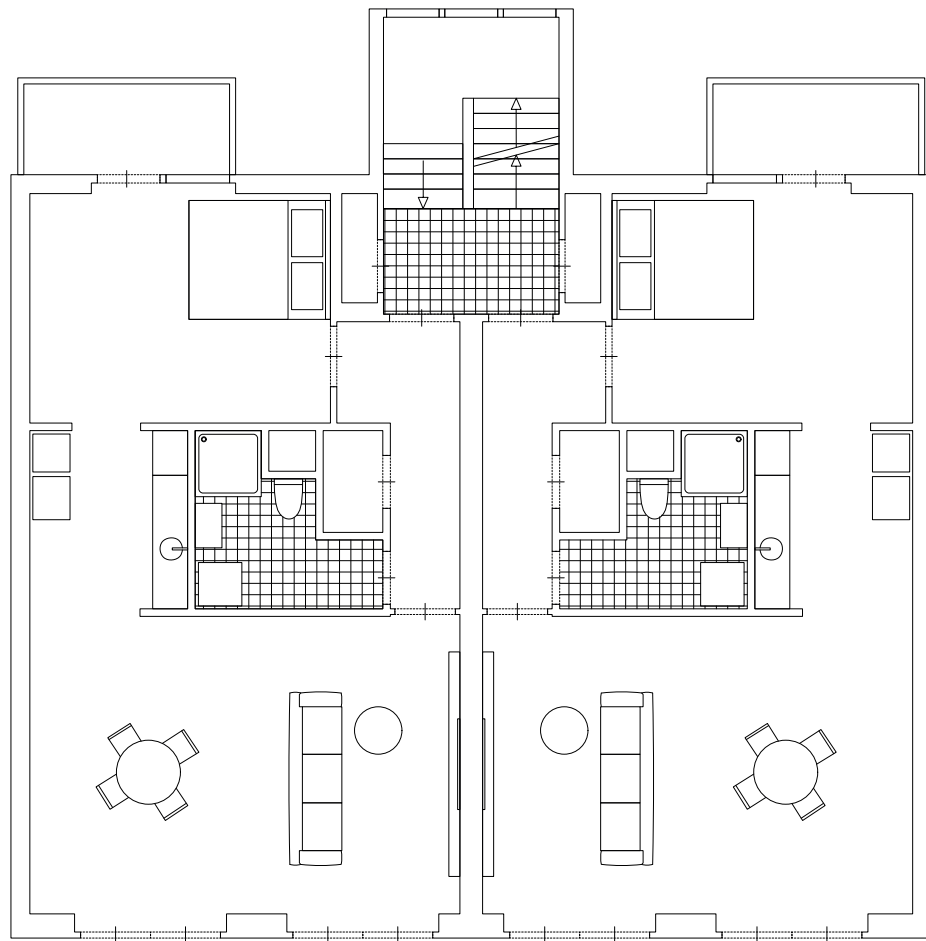


Hoogte Kadijk 26 and 28

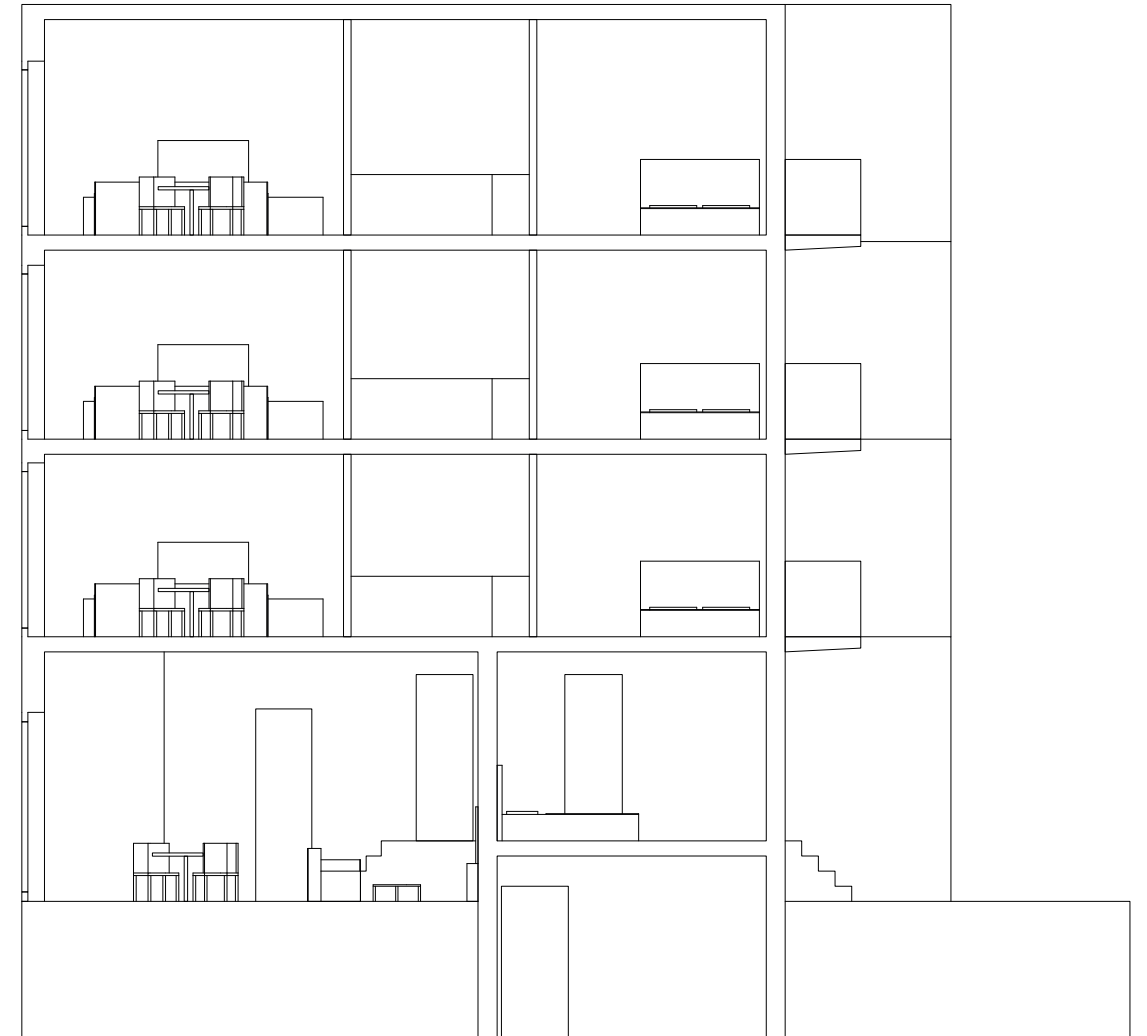
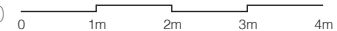


Floorplans 1:100 0 1m 2m 3m 4m





Floorplans 1:100



Section 1:100

