



A Comparative Schema Proposal for Three Siedlungen: Design for a New Living

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ABSTRACT

Alongside the advent of industrial capitalism in the nineteenth century, Europe witnessed a profound transformation in its social, economic and political structures. This resulted in a shift in architectural styles that reflected the changing needs and aspirations of the age. This transformation was not merely a material one, manifesting in formal architectural expressions, but also an inherent one, characterized by a transformation in living styles. The Siedlung (settlement) was a typology of architecture that emerged in Germany, Austria, Switzerland, the Netherlands and Poland in response to the socio-spatial reorganization of urban areas. It was part of a larger urban zoning plan and constituted a housing district within an industrial city. However, in addition to residential buildings, the Siedlung also included facilities such as educational, commercial and religious institutions, integrated into the settlement area with the aim of fostering a sense of community. The organization of living space in each Siedlung was not entirely identical; rather, their design was formed within a conceptual understanding that sought to address the needs of its users or the context in which it was built. This study aims to interpret the diverse architectural formulation of the Siedlung and its interaction with society. Furthermore, the objective is to propose a comparative scheme for these distinctive settlements. To this end, three cases are selected from diverse time periods, contexts and places: the Siedlung Praunheim in Germany; the Siedlung Frankendaal in Netherlands; and the Siedlung Halen in Switzerland. These cases are presented and discussed in order to illustrate the multiplicity of design concepts.

Keywords: Siedlung, urban settlement, Post-war architecture, new social housing, housing development or estate

1. INTRODUCTION: EUROPE AFTER WORLD WAR

The formation of Siedlung was not an isolated phenomenon; rather, it was shaped by the theoretical approach of the architects, urban planners, and landscape designers who were influenced by the prevailing ideologies of the era. Therefore, this section examines the historical, social, economic, and political context of the period during which Siedlungen were constructed. The social issues in Germany and Austria were first discussed in the 19th century with the term *Gründerzeit* (economic uprising) (Volberg, 2015, p. 1). Following the destruction and bombardment of European cities during World War I (1914-18), a housing shortage emerged in these cities (Sennott, 2004, p. 893). In the post-war period, Europe experienced economic growth until the onset of the Great Depression in the 1930s. Derek Aldcroft asserted that "Nearly all countries registered some economic progress in the 1920s and most of them managed to regain or surpass their pre-war income and production levels by the end of the decade" (Aldcroft, 2001, p. 30). Thus the expansion of industry and the growth of the economy, coupled with an increase in consumer demand, had a profound impact on architectural design, urban planning, lifestyle and culture.

"The housing problem can only be resolved by mass production. In order to find a viable solution one has again to go back to housing blocks, but a larger scale than previously" as the Dutch designer and architect Hendrik Petrus Berlage clarified (Samuels et al. 2004, p. 56). The severe problem resulting from a lack of housing and a changing lifestyle, as Berlage stated, necessitates the implementation of an expansive housing strategy that

addresses the social, physical and ecological facts of architectural and urban issues (Eisenman, 2007, p. 26). In the case of Frankfurt, Mayor Ludwig Landmann initiated a series of reforms in 1924, including the reorganization of the municipal government and the implementation of new tax legislation. Landmann appointed the German architect and urban planner Ernst May to oversee the construction and development of the housing programme, Das Neue Frankfurt, which commenced between the years of 1925 and 1930.



Figure 1. The Journal of Das Neue Frankfurt (monthly magazine for questions of large-scale design 1926 - 1927) (The Digital University Archive of Heidelberg, accessed on 14.03.2023)

The post-World War II era was marked by similar challenges as the previous one, yet it also witnessed an economic expansion and the rise of capitalism from the end of World War II in 1945 to the 1970s. The governments of the Netherlands and Switzerland devised plans for industrial and economic reconstruction. The cases of Siedlung Frankendaal and Halen exemplified this late period. Three cases could be interpreted through multiple architectural approaches, reflecting not only the diversity of contexts but also the evolution of design across different historical periods. Concurrently, this study presents a comparative model/schema of urban and architectural design among these three models through an analysis of the period, geographical location, urban planning decisions, building programme, connection with nature, private-public relation, significant design element, and housing typologies.

2. THE CONCEPT OF SIEDLUNG AND THEIR ARCHITECTURAL ANALYSIS

The concept of the Siedlung (settlement) emerged in Germany, Austria, Switzerland, the Netherlands and Poland, and was subsequently disseminated to other geographical regions. The Siedlung was one of the architectural typologies that responded to the socio-spatial reorganization of industrial cities in the post-war period. The term "Siedlung," which is German for "settlement," is also used in English to refer to housing developments or estates. Other examples of this include the Siedlung Schillerpark and Friesenberg. In essence, a Siedlung can be defined as an area of new-build social housing. This development was designed to address the architectural challenge of constructing large-scale housing in a way that balanced the competing considerations of cost, time, design and social sensibility. In this context, the Siedlung introduced the modernist concept of the Existenzminimum (minimum living standards). This tendency towards minimalism manifested not only in the emergence of a modern architectural concept, characterized by simplicity, standardization and efficiency in floor plans, the Frankfurt kitchen and concrete as a building material, but was also shaped by the economic and social context of the post-war period.

The Siedlung constituted a component of a broader urban zoning plan, representing a residential district within an industrial city rather than an autonomous settlement. It was situated in close proximity to the industrial zone and the city centre, and its development was closely intertwined with that of the surrounding urban fabric. These settlements prompted a shift in the residents' perception of space, urban life, and society. The integration of facilities responding to the fundamental necessities, such as education, commerce, and recreation, within the settlement area facilitated the formation of a habitat or community for a heterogeneous population. Nevertheless, the Siedlung was required to maintain an obligatory link with the industrial zone and the city centre. For that reason, they were referred to as satellites (*trabanten*), indicating their dependent but not separate status. The transport network, including high speed roads and public transit, was designed to connect the settlement with old city core and working zone. Therefore, Siedlung was not characterized by an introverted or enclosed nature, but rather presented a degree of connectivity with other zones (Samuels et al., 2004, p. 95). These housing estates provided accommodation for middle-income workers in high-density blocks and in long row houses.

The Siedlung was developed through a sociological approach with the objective of establishing a residential community or habitat comprising individuals from diverse backgrounds. This was achieved by creating a variety of shared spaces, including swimming pools, parks, shops and communal areas (Macdonald, 2013). In the journal of *Arkitekt*, Burhan Arif introduced that the Siedlung was not solely consisted of dwellings. Rather, it encompassed a variety of commercial establishments, including a grocery store, a pastry shop, a bakery, a stationer, and a hairdresser, which collectively addressed the daily needs or *kolonialwaren* [colonial goods] of the residents. These commercial spaces not only provided essential goods and services but also facilitated the emergence of novel forms of sociability and daily life (Arif, 1932, p. 11). In their analysis, Samuels et al. placed particular emphasis on the social aspects inherent to the Siedlung design, asserting that "These are not only...built objects, but also a habitat, a living structure in which the internal relations are determined by social life" (Samuels et al. 2004, p. 124).

The Siedlung played a pivotal role in the practice of urban space. They were formed by a dual understanding: firstly, as an architectural product and secondly, as cultural models that shaped social practices. This is evident in the studies of the French sociologist Henri Lefebvre and the Welsh writer Raymond Williams. The principal concept, as being rational and efficient, was not only applied through formal organization or construction system, but also through social organization.

2.1. The Siedlung Praunheim (1927-29), Frankfurt/ Germany

In Frankfurt, a tremendous building programme was implemented between 1926 and 1931, comprising 24,000 social housing units through the leadership of Ernst May. This development included the Siedlung Westhausen, Römerstadt, Praunheim, Hellerhof and Riedhof. May's approach was shaped by the progressive ideals of the modern movement, which had not been as adversely affected by the aftermath of the First World War as Germany.



Figure 2. The Aerial Photograph of Praunheim Siedlung (The Archive of Ernst May Foundation, accessed on 12.04.2023)

The construction of Praunheim was undertaken in three phases, reflecting the prevailing economic context of the period. The initial phase of Praunheim, as Praunheim 1, was planned in accordance with the principles of the garden city movement, featuring an oblique street pattern. Praunheim II (1927-8) can be considered as a transition phase between the garden city concept and a more rationalised one with a simple grid. The introduction of minimal dwellings and block orientation, which were fundamental principles of the Siedlung, can be identified as a key feature of Praunheim III.

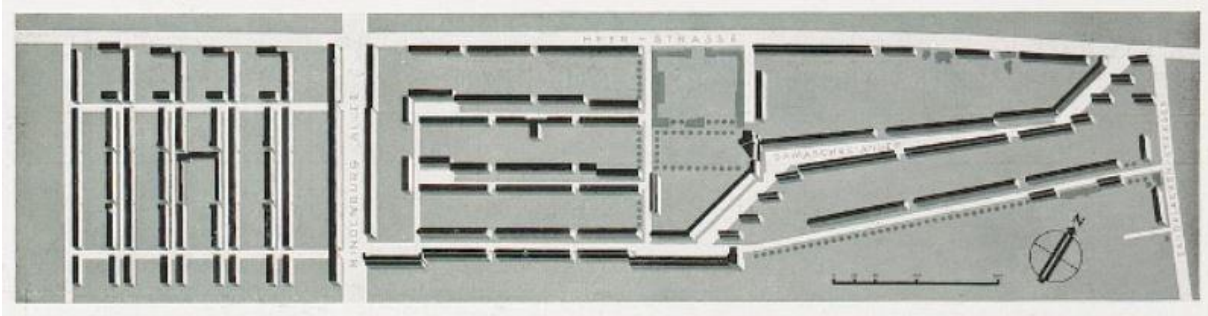


Figure 3. The urban plan of Praunheim Siedlung in the Journal of Das Neue Frankfurt, July-August 1928, number 7-8 (monthly magazine for questions of large-scale design 1926 - 1927) (The Digital University Archive of Heidelberg, accessed on 14.03.2023)

Damaschkeanger Strasse, located in the south-eastern corner, constituted the focal point of the settlement, encompassing social and commercial activities. A wedge-shaped site in Praunheim 1 was designed for a community building, followed by a row of shops. Neue Adler (translated from German as new eagle to symbolize the city's crest), comprising a hotel and restaurant, was located at the opposite corner. A variety of activities, including festivities, exhibitions and meetings, were conducted in a range of locations, including common rooms, terraces and orchards. Other facilities included laundry, a kindergarten and a school.

Praunheim was referred to as a "workers' paradise" in a 1927 German newspaper article that highlighted the town's reconciliation with nature.

Whoever undertakes a visit to Praunheim will have an amazing experience. The row houses begun in the early part of the year have already merged with their natural surroundings. They no longer stand as strange objects in the landscape... And the people who live here are already "at home" and being back in nature..." 1927 newspaper account (Henderson, 2013, p. 53).



Figure 4. The Garden of Siedlung Praunheim (URL-1)

"We have lived to see great triumph of housing standardization... What could be more welcome in representing this homogeneity, this tranquil harmony, or bring a fresher and more joyful sensibility, than color ?!" (Ernst May, 1925). These words by Ernst May underline one of the most striking aspects of Praunheim Siedlung: the systematic display of color.

In 1923, Ernst May and Walter Rudolf Leistikow, a German landscape painter, graphic artist, designer, lithographer and art critic, used washes of red, green, blue and yellow to transform former military barracks into refugee housing in the Silesian settlement of Biskupitz. They introduced colour as a source of optimism for the inhabitants. In the housing estate, a rhythm was created between the blocks and the planar surfaces were differentiated. With the same aim, the German architect and urban planner Bruno Taut designed the Gartenstadt Falkenberg (1913-16) in Berlin, using colour in accordance with his research into the German vernacular through stucco facades (Henderson, 2013, p. 59).

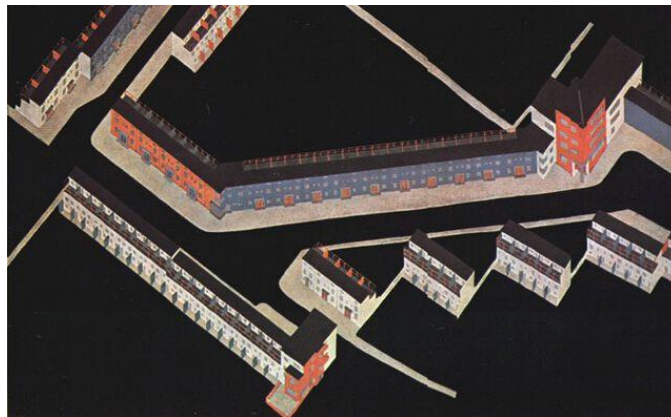


Figure 5. The urban plan of Praunheim Siedlung in the Journal of Das Neue Frankfurt, July-August 1928, number 7-8 (monthly magazine for questions of large-scale design 1926 - 1927) (The Digital University Archive of Heidelberg, accessed on 14.03.2023)

Ernst May was inspired by Bruno Taut and used colour as a practical tool after a rationalist examination. The design of the settlement was created by the figure-ground relationship between the landscape and the built forms. There were three principles of composition:

- Large blocks and towers were positioned on the edge or in the centre, identified by vibrant colours: red, blue or yellow.
- The peripheral facades were defined by white to create masses that float in the green landscape, contrasting with dark corners at intersections.
- The fronts and backs of the houses were characterized by ambient lighting colours. Brightly coloured details, such as railings and windows, created a rhythm and defined each house.

White is used for the exterior and red and blue for the interior. Praunheim clearly defines the relationship between inside and outside, or its boundary, through the use of colour (Heynen, 1999, p. 66).

"The color of the villas, blue and white, or red and white, is somewhat muted and harmonizes well with the green of the lawns and the lively colors of the gardens. All is happily disposed, and the many small, half-naked children that tumble in the open or play on roof gardens immediately reveal how free and happy, how healthy and unconstrained it is to be and to live here." A local newspaper (Henderson, 2013, p. 61)

In line with the above statement, the Siedlung Praunheim had a particular place among the Frankfurt Siedlungen because of its practice of one of the design elements: colour,

modern features such as the roof garden, which provides healthy living conditions, and also its adaptation to economic reality through the gradual application of construction phases.

2.2. The Siedlung Frankendaal (1949-52), Amsterdam/ Holland

Following the Second World War, the Netherlands underwent a massive period of reconstruction, known as *Wederopbouw* (the post-war reconstruction period), which lasted until the early 1970s. Jacobus Johannes Pieter Oud, a Dutch architect, had constructed his innovative public housing estates in Rotterdam during the 1920s (Moravánszky & Hopfengärtner, 2017, p. 150).



Figure 6. The Houses and Courtyard Design of Siedlung Frankendaal (Zijlstra & Heinemann, 2011)

From the late 1940s onwards, the post-war architectural idiom and new housing estates were subjected to scrutiny and incorporated into the reconstruction programme. This resulted in a period of rapid urban expansion, characterized by the construction of new suburban areas in accordance with the design principles set out by CIAM (the International Congress of Modern Architecture) (Clarke, 2016, p. 2). The Siedlung Frankendaal, which was named "Jeruzalem" or "Little Jerusalem" or "die Siedlung Neu-Jerusalem," was constructed as part of the post-war reconstruction program. Its modernist expression consisted of a flat roof and a white facade design. The Siedlung Frankendaal was a part of the Water-graafsmeer project, which had 25,000 inhabitants. The Water-graafsmeer, as a pilot project to adapt the setting to climate change, constructed in a polder of Amsterdam. The Siedlung Frankendaal was a collaborative work among the urban designers Cornelis van Eesteren and Jacoba Mulder; the architects Ben Merkelbach and Charles Karsten; and the landscape designers Mien Ruys and Aldo van Eyck (Zijlstra & Heinemann, 2011, p. 4).

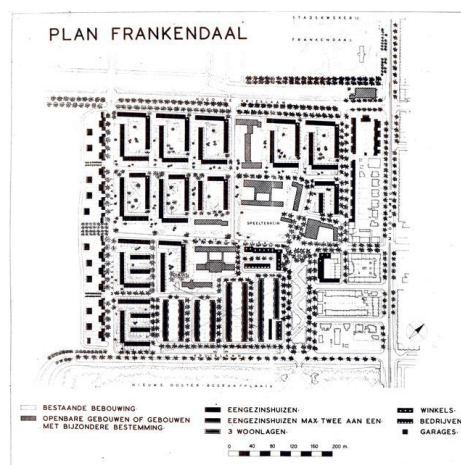


Figure 7. Plan for Frankendaal, Amsterdam, 1952 (Martin & Wagenaar, 2017)

A total of 792 duplex apartments were constructed in a cluster structure around a central courtyard. The courtyards were planned with the use of two L-shaped strips of building blocks placed opposite one another, thereby creating an open green space in between. This spatial organization was designed with the intention of promoting public space and a sense of community. The courtyard model was employed not only for the purpose of situating playgrounds, but also to enhance the quantity of light. The landscape designers Aldo van Eyck and Mien Ruys designed the concept of inner courtyards, which were not standardized in their design, but rather constituted a diverse array of variations based on a predetermined form (Lefaivre, 2007, p. 71).

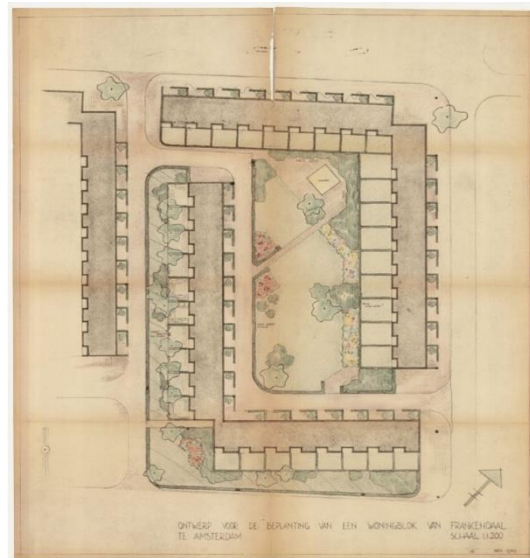


Figure 8. The Courtyard Design in Frankendaal, 1949 (URL-2)

The spaces were designed in accordance with the modernist concept of the Existenzminimum and post-war industrialized construction. The houses were positioned on a grid of 6.30 metres. All design elements were created in alignment with the Dotremont-Ten Bosch building system, comprising vertical concrete posts over which pre-fabricated concrete panels are suspended and completed by a lightweight concrete-channel flat roof. Dotremont-Ten Bosch system used only pre-fabricated concrete elements which allowed single span and freedom in the use of the space (Clarke, 2016, p. 7). This was the only project constructed in the Netherlands using the Dotremont-Ten Bosch building system. The Airey System was more prevalent in the Netherlands and displayed comparable characteristics to the Dotremont-Ten Bosch System. In contrast to the latter, the Airey system is composed of steel and concrete. The concrete prefabricated elements served as the basis for the entire design. The concrete prefabricated elements determined the whole design. For instance, 50 x 116 cm concrete panels specified the dimension of the facade (Zijlstra & Heinemann, 2011, p. 4).

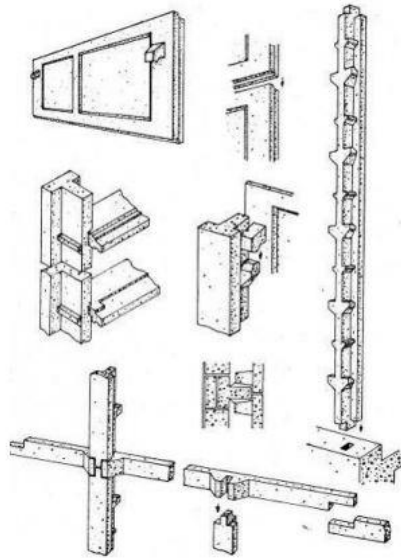


Figure 9. The Dotremont-Ten Bosch Building System (Quist, Zijlstra, & Spoormans, 2017)

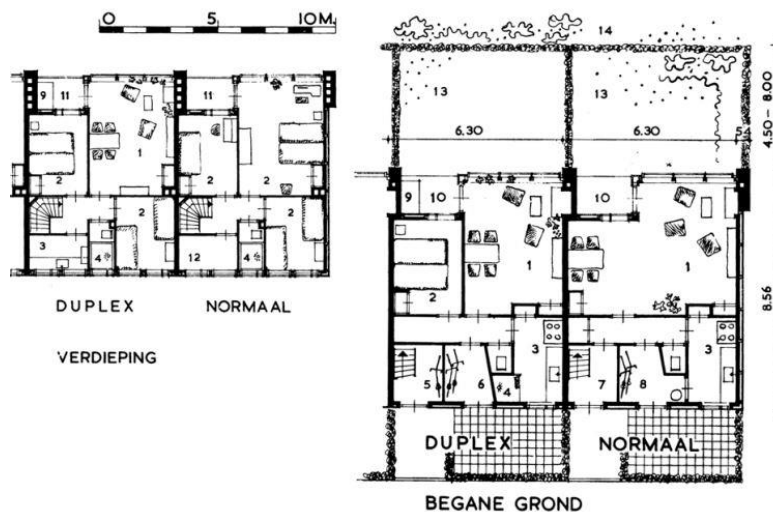


Figure 10. Floor Plans of the Houses in The Siedlung Frankendaal (Zijlstra, 2007)

The design of the Siedlung Frankendaal was notable for its courtyard design, which informed the overarching concept of large-scale planning. The development incorporated modernist principles, including the use of a flat roof and a white facade design, as well as a novel technology, namely the Dotremont-Ten Bosch building system.

2.3. The Siedlung Halen (1955-61), Bern/ Switzerland

In Switzerland, the post-war period was characterized by an economic boom that gave rise to significant changes in society and lifestyle in relation to other countries of Western Europe and North America. In line with this development, the Siedlung Halen, located outside the city of Bern, was designed by the Swiss architects of atelier 5 in 1955.



Figure 11. The Aerial View of the Siedlung Halen (URL-3)

Terrassenhäuser [The Terraced house typology] was suitability in adapting the programme to the setting. The residential dwelling units were planned in a row parallel to each other and took advantage of the slope, with the objective of providing residents with a view of the valley comprising woods and green hills.

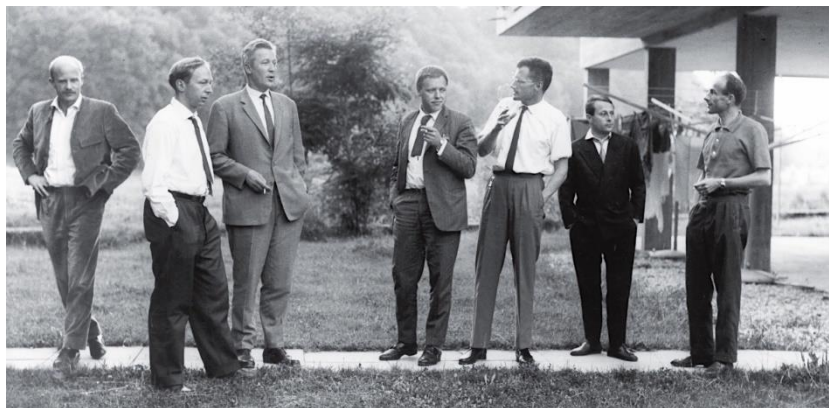


Figure 12. The Swiss Architects of atelier 5 (URL-3)

The residential dwellings, comprising three storeys, were constructed with a narrow plan (3.86 or 4.81 metres wide and with floor space between 120 and 170 square metres) and had six rooms. These were arranged in rows along footpaths and a communal square (Leupen & Mooij, 2010, p. 137). The living space was designed within a conceptual approach that prioritized on the needs of the users. The entrance was located on the first floor at the level of the footpath. This level was designed for daily use, comprising a kitchen, living space and a terrace, accessed via a small courtyard garden. The second floor comprised bedrooms, a bathroom and a small balcony. The ground floor reserved for a home office or an additional bedroom, with access to a garden (Macdonald, 2013). The initial level was situated between two private zones and could be conceptualized as a social space where the activities within the house and outside were integrated. Additionally, it served as a separation zone between the two private levels. The interior walls, with the exception of the walls separating the gardens, were not monolithic in order to facilitate design flexibility. The walls in the gardens were constructed at a considerable height to ensure privacy in outdoor spaces.

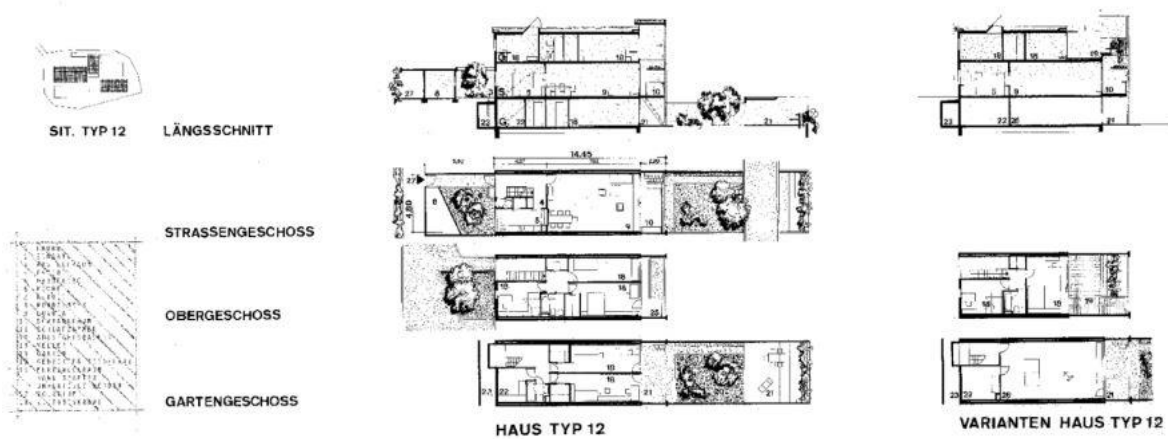


Figure 13. The Floor Plans of the Siedlung Halen (URL-4)

The use of raw concrete as the primary design material was initially driven by functional considerations, such as the lack of time and shortage of housing stock during the period of rapid economic growth. In the context of architecture, the use of raw concrete was associated with notions of progress, prosperity and social welfare. The utilization of this innovative material in the construction of new housing concepts marked a pivotal point in architectural history exemplifying the development of the age. By these reasons, raw concrete manifested the outstanding feature of the Siedlung, as evidenced by its redefinition within the architectural lexicon and its reception within society (Volberg, 2015, p. 1).

One of the concepts was that the shared ownership of communal spaces had the effect of dissolving the sense of hierarchy between inhabitants in a democratic way. These spaces included a swimming pool, playground, shop, community hall, petrol station, garage and car-free public spaces and facilities with green areas between rows of houses (Macdonald, 2013). The Siedlung Halen was not only a housing development that incorporated contemporary notions of public and private space, but it also fostered a sense of community through the creation of a collective space (Volberg, 2015, p. 5). The Siedlung Halen displayed a sophisticated design that bridged the gap between diverse concepts, such as private and public, and inside and outside.



Figure 14. Village square in the Siedlung Halen (URL-4)

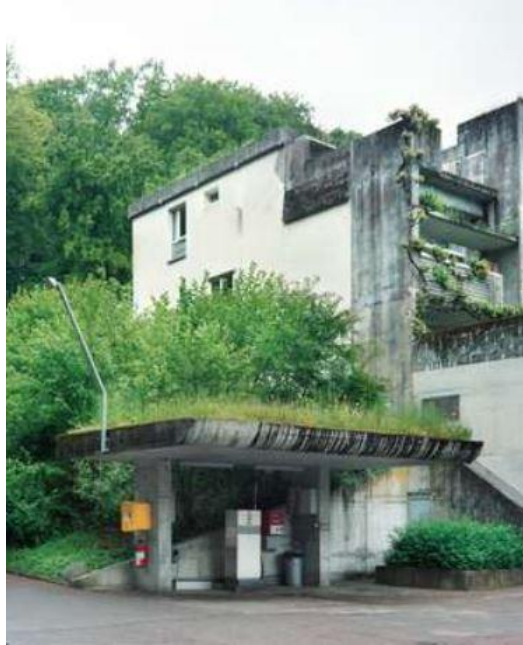


Figure 15. Petrol Station (Macdonald, 2013)

3. CONCLUSION: A COMPARATIVE SCHEMA PROPOSAL

The present study encompasses a research of the design concept and social aims of the three Siedlungen: Praunheim, Frankendaal and Halen.

The Siedlung was designed in accordance with requirements of zeitgeist. The premises of industrialization, such as the use of new construction materials and the principles of Taylorism in the organization of space, were foregrounded due to the housing shortage, the economic upheaval and the transformation of daily life (Heynen, 1999, p. 46). This rational and efficient understanding was not only towards the construction system but also to the aesthetic and social organization.

First inference regarding the Siedlung is that all of them were large scale housing developments in terms of their physical dimensions and conceptual framework. These developments constituted micro-urban villages within the context of the existing city. In that context, the Siedlung was not merely an architectural or urban phenomenon; it was also a social project that fostered a sense of community. Due to their distinctive organizational structure, the designers were confronted with a number of challenges in the construction of the habitat. In order to address these issues, the designers conducted extensive research into the practice in which the block facilitated the integration of external and internal spaces, as well as the relationship between private and public life. The diverse socio-spatial relationships were formed by different types of space such as private space within the individual dwelling and collective space on the inner court or house entrance. The aforementioned estates, situated in a peripheral position linked to the city centre, offered housing and a basic range of facilities for everyday living, including swimming pools, playground, shop, community hall, and educational establishments. These developments were designed with a long-term perspective, in line with the prevailing sociological understanding. The approach taken, particularly in Dutch estates, was criticized due to being contradictory to experience the "wholeness of life" and was deemed to be lacking cultural facilities (Moravánszky & Hopfengärtner, 2017, p. 153). The other ambiguous issue was put forth by Hilde Heynen, which is the dilemma between homogeneous public and the freedom of every individual. The new social idea, which posits "everyone and everywhere being equal" without hierarchy, homogenized the choices and lifestyle of every inhabitant, thereby weakening individualism and freedom.

The relationship between the Siedlung and tradition was more complex and naive than the avant-garde tendencies. It offered an integration of old and new that tended to erase the historical strata of the city. The settlement could be interpreted as a new addition to the existing strata in order to modernize it and adapt society to capitalist development.

Their aim was to create a new man through the design of everyday life. In a broader perspective, this design of society or culture could only be possible through the space formation. Therefore, every element of the built environment was determined and this understanding was summarized by Catherine Bauer as follows:

“...Ernst May included a new system of construction, all kinds of innovations in planning and community facilities, and even specially designed kitchen equipment, which was mass-produced and sold in packages. Housing schemes were quite carefully designed for varied social uses: old people, single women, families at different income levels and so on. Everywhere technical, economic and social research was going on, including Alexander Klein’s ingenious studies of minimal dwelling plans, based on analysis of family functions and household circulation.”

Catherine Bauer (Henderson, 2013, p. 35)

The difference between the early and late settlements was based on design choices. The early developments, such as the Siedlung Praunheim settlement, were laid out in more traditional curved streets, whereas the later developments, such as the Siedlung Frankendal or Halen, were laid out in rigid, uniform rows and standardized building components.

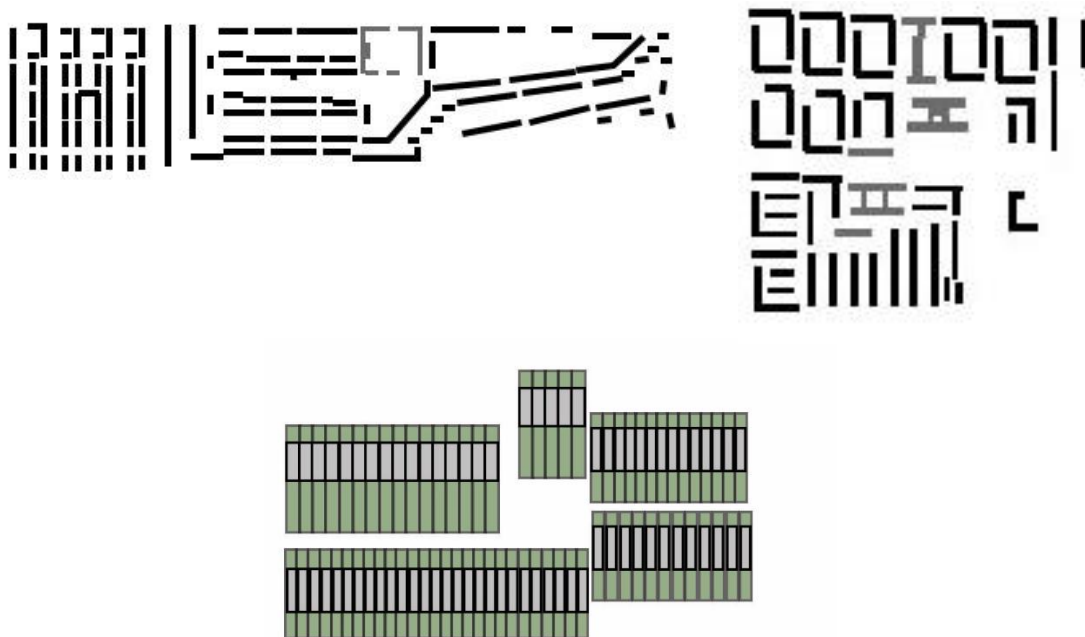


Figure 16. Planning diagrams of three Siedlungen: Praunheim, Frankendal and Halen (reproduced by the author, 2024)

One of the most significant aspects is how three of the projects identified their key elements related with material and construction in different ways: colour as a design element in the Siedlung Praunheim, raw concrete as an innovative material in the case of the Siedlung Halen, or the Dotremont-Ten Bosch building system as a construction element in the Siedlung Frankendal.



Figure 17. colour as a design element in the Siedlung Praunheim and raw concrete as an innovative material in the case of the Siedlung Halen (reproduced by the author, 2024)

In each case, nature had a broader meaning in order to position modern man in relation to universal nature or the cosmos (Moravánszky & Hopfengärtner, 2017, p. 152). The Siedlung Halen was more radical in its design, using the existing landscape as its main design element: the terraced house typology, which took advantage of the steep terrain. The Siedlung Praunheim used colour to adapt the design to the setting, as floating figures in a green landscape.



Figure 18. The Siedlung Halen, the section showing terraced house typology adapted to landscape (reproduced by the author, 2024)

The garden of the house is not considered as an isolated element, rather tightly integrated to and designed with the house. As exemplified in Frankendaal Siedlung, the garden is thought to be "an outdoor living room" (Lefaivre, 2007, p. 71). Reconciliation with nature is therefore an essential aspect. The houses were designed in parallel with the 'house in the garden' approach introduced in the Garden City model, thus providing a solution to the problem of alienation of workers from rural backgrounds. In each of the Siedlungen, the green areas of the houses were planned with different design approaches. In Praunheim a semi-divided garden design with natural vegetation, in Frankendaal a designed courtyard for the connected houses, and in Halen separate garden designs for each terraced house. From Halen to Frankendaal the emphasis on privacy decreases.



Figure 19. The garden design in Siedlungen Frankendaal (reproduced by the author, 2024)

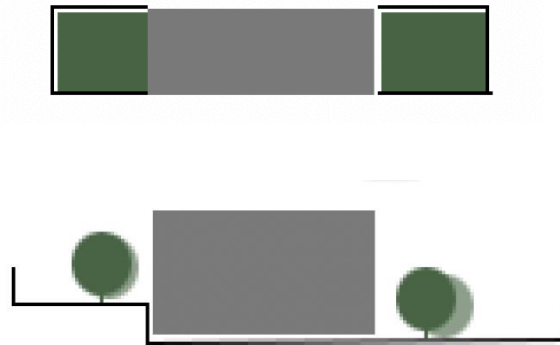


Figure 20. The garden design in Siedlungen Halen (reproduced by the author, 2024)

Table 1. A comparative schema for three Siedlungen

SIEDLUNG	The Siedlung Praunheim	The Siedlung Frankendaal	The Siedlung Halen
Date of Design	1926-1930	1949-1952	1955-1961
Period of Design	The post-World War I	The post-World War II	The post-World War II
Location	Frankfurt	Amsterdam	Berne
Designer	Ernst May	the urban designers Cornelis van Eesteren and Jacoba Mulder; the architects Ben Merkelbach and Charles Karsten; and the landscape designers Mien Ruys and Aldo van Eyck	the Swiss Architects of atelier 5
Building Programme (residential + ...?)	community building, shops, restaurant, rooms, orchards	building, hotel, common terraces,	facilities for everyday life, shops
Urban planning decision – form	orthogonal and curved	orthogonal, rigid, uniform	swimming pool, playground, shop, community hall, petrol station, garage and car-free public spaces and facilities with green areas
Significant Design Element	color (red, blue, white)	Dotremont-Ten Bosch building system	orthogonal, rigid, uniform
Nature (private garden)	semi-divided garden with natural vegetation	raw concrete	separate garden for terraced house, adaptation to landscape
House Type	row house	semi-enclosed courtyard	terrace row house

In conclusion, three of the Siedlungen, Praunheim, Halen and Frankendaal, were innovative housing developments between 1927 and 1955 that contributed to improving housing, architectural design, everyday life and society through the collaborative work of several disciplines: sociology, urban planning, architecture and landscape design.

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