Lotte Stam Beese - the functionalist foundation of post-war Rotterdam

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1. Introduction

The topic explores how Lotte Stam Beese's time abroad, especially in Eastern Europe, shaped her functionalist designs for the post-war reconstruction of Rotterdam. Most research done on Lotte Stam Beese is focused on her contribution to Rotterdam's post-war reconstruction [1]. Research explains Beese's trips made abroad, yet an architectural comparison between the Soviet Union designs and the Rotterdam reconstruction has not been thoroughly explained. Through this new perspective, the focus lies on Beese's time abroad while mentioning the well-known architects Beese shared these experiences with. Beese's earliest experiences with urban planning started in the Soviet Union [2], surrounded by functionalist architects, who helped shape Beese's vision for functionalist planning.

Beese's years at the Bauhaus, emphasizing her training under functionalist Hannes Meyer, are examined. After her training, Beese spent many years abroad in Eastern Europe. Here, Beese's exposure to functionalist architects was influential in defining her architectural philosophy and approach for Rotterdam. Beese's experiences in Eastern Europe exposed her to the principles of socialist urban planning and the innovative designs of Sotsgorods. During Beese's travels to Moscow, Russia, and Brno, Czech Republic, she devoted herself to the principles of socialist urban planning and collaborated with like-minded functionalist architects. Her relationship with Mart Stam, a leading advocate of functionalism, led to her involvement with the May-Brigade. This deepened her understanding of architecture as a socially transformative discipline. [3]

A critical analysis of foreign architects in the Soviet Union explains the downside of the functionalist principles Stam Beese learned abroad. It questions whether this experience influenced Beese into becoming an idealist or utopian. [4]

The Sotsgorod case study in Orsk, Russia, where she worked alongside Mart Stam, is examined. This exposed her to the practical implementation of functionalist ideals in large-scale urban design. [5] Furthermore, Beese's dominant role in Rotterdam's post-war reconstruction is examined. The focus lay on the designs of key neighborhoods: Kleinpolder, Pendrecht, and Ommoord. Each neighborhood reflects modernist principles characterized by a clear structure and division between living, working, traffic, and recreation [6]. Apart from these corresponding principles, each neighborhood has its character. Kleinpolder, also known as 'het woonpad', shows principles of green integration through communal green areas designed for people to gather [7]. Pendrecht became a model for modernist, functionalist residential neighborhoods aimed at housing different family compositions [8]. In Ommoord Beese's emphasis on community building is featured through mixing housing types, green integration, and a focus on accessibility [9].

A comparative analysis of Beese's work on neighborhoods in Orsk and Rotterdam is revealed. The continuity of her architectural philosophy within different cultural and political contexts in Europe is examined. The designs reflect adaptations to each unique setting. Architectural aspects regarding material use and urban approach are discussed.

Both projects will demonstrate her devotion to functionalist principles, emphasizing the importance of community building and practical solutions.

The thesis concludes by providing how Beese's cultural, political, and architectural experiences in Eastern Europe influenced her architectural designs of the post-war Rotterdam neighborhoods. Her work in Rotterdam's iconic neighborhoods showcases the lasting impact of functionalist principles learned during her participation in urban planning abroad.

[1] Oosterhof, Hanneke. "Want de grond behoort ons allen toe". Leven en werk van stedenbouwkundig architecte Lotte Stam-Beese.
[2] Ibid.
[3] Ibid.
[4] Bosma, Koos. "New socialist cities: foreign architects in the USSR 1920–1940". Planning Perspectives, 29(3), 301–328. https://doi.org/10.1080/02665433. 2013.825994
[5] Oosterhof, Hanneke. "Want de grond behoort ons allen toe". Leven en werk van stedenbouwkundig architecte Lotte Stam-Beese.
[6] Lotte Stam Beese. (n.d.). Canon Van Nederland. https://www.canonvannederland.nl/nl/page/292799/lotte-stam-beese
[7] Lotte Stam-Beese en de wederopbouw van Rotterdam. (n.d.-a). Platform Wederopbouw Rotterdam. https://wederopbouwrotterdam.nl/artikelen/lotte-stam-beese-en-de-wederopbouw-van-rotterdam
[8] Pendrecht urban design. "Post-war Reconstruction Community Rotterdam". https://wederopbouwrotterdam.nl/en/articles/stedenbouwkundig-ontwerp-pendrecht
[9] Oosterhof, Hanneke. "Want de grond behoort ons allen toe". Leven en werk van stedenbouwkundig architecte Lotte Stam-Beese.

2. The education of Lotte Stam Beese

2.1 Education at Bauhaus

Lotte Stam Beese began her studies at the Bauhaus in Dessau in 1926 [10]. She originally enrolled in the weaving workshop led by Gunta Stölzl. Beese also attended courses taught by Josef Albers, Wassily Kandinsky, and Joost Schmidt. In 1927, Beese made the switch to the architecture department. Beese was the first woman student to take the 'new theory of building' architectural course. This course was led by Hannes Meyer. Meyer looked at architecture and building as an elementary process. Functionalistic design and Marxist-philosophical thinking are what inspired Meyer. He believed biological, mental, and physical needs led the design process. He often spoke of "people's needs instead of luxury needs". This philosophical thinking inspired Lotte Stam Beese to take part in Meyer's course. Meyer, for instance, taught Beese the basics and importance of daylight and wind direction regarding the placement of dwellings. Every design process in Meyer's course was led by people's needs, lifestyle, and relationship with their surroundings. [11]

Besides Beese taking the architectural course from Hannes Meyer, they also had an affair, which led to complications within the school's environment [12]. In December 1928, Meyer suggested that Beese leave the Bauhaus, which she did. Meyer played a fundamental role in the start of Beese's architectural career, as he was the main initiator of Beese's jobs. After Beese departed from the Bauhaus, Meyer arranged a job for Beese at Meyer's architecture firm in Berlin. Shortly after, Beese found a new job in Vienna. This was the start of Beese's time abroad. [13]

2.2 Hannes Meyer and the Soviet Union

Meyer was fired from Dessau in 1930, which initiated the move to Moscow. Meyer became a professor for the architecture school VASI and a leading architect for Giprovtus [14]. During the 1930s, along with many other foreign architects, Meyer took part in designing for the Soviet Union [15]. Like his projects in Germany, the focus of Meyer's designs lay on the 'psychological effects' on socialist cities. Alone, Meyer worked on a plan for the reconstruction of Greater Moscow, where his initial idea was to place skyscrapers in a widened Red Square to enhance the effect of mass demonstrations psychologically [16].

Along with seven Bauhaus students, Meyer formed the Bauhaus Brigade, also known as the 'Rote Brigade' [17]. René Mensch, Konrad Püschel, Tibor Weiner, Antonin Urban, Klaus Meumann, Bela Scheffler, and Philip Tolziner were part of this group. The Bauhaus Brigade used technology to heighten the 'psychological effects'. A citywide demonstration route that connected the Palace of the Soviets to the Kremlin, Red Square, and the park to the south was part of the Brigade's design. A large and small hall were integrated into this route. This design once again shows Meyer's psychological approach. [18]

"The construction also ensures unity in terms of traffic due to the passageway going through both halls and the public event venue on the ground level." The demonstration route was clearly well planned inside and around the construction site. The project concept makes explicit the group's psychological objectives for the demonstration route: "This intentional mass psychological arrangement of the two main demonstration routes will certainly result in the strong emotional experience of every participant." [19].

Meyer concludes that 'psychological effects' elevated functionalism to a new level [20].

[10] Oosterhof, Hanneke. "Want de grond behoort ons allen toe". Leven en werk van stedenbouwkundig architecte Lotte Stam-Beese.
[11] Ibid.
[12] Ibid.
[13] Ibid.
[14] Ibid.
[15] Tomita, Hideo & Ishii, Masato. "The influence of Hannes Meyer and the Bauhaus Brigade on 1930s Soviet architecture". Journal of Asian Architecture and Building Engineering, 13(1), 49–56. https://doi.org/10.3130/jaabe.13.49
[16] Ibid.
[17] Ibid.
[18] Ibid.
[19] Ibid.
[20] Ibid.

3. Time abroad

3.1 Brno, Czech republic and Charkov, Ukraine

Beese eventually made her way to the Czech Republic. Once again, Meyer initiated a new job for Beese in Brno, where she worked for architect Bohuslav Fuchs [21]. Fuchs was the leading architect in Brno at the time. The Czech architecture was influenced by the Amsterdamse School, De Stijl, and the architecture of Le Corbusier. Later, Fuchs also incorporated the functionalistic approach. Beese worked on various projects under the lead of Fuchs. Fuchs fired Beese in 1931, which led to Beese becoming politically active as part of the KSC (Komunistická Strana Československa) and the cultural organisation Leva Fronta (Left Front). Beese contributed to proletarian evenings, where politics regarding the communist system in Russia, pacifism, and the philosophy of Karl Marx were discussed. Beese took part in pro-Russia demonstrations for the KSC, where she held a speech. These events resulted in Beese being arrested, making her stay in Brno feel unsafe. [22]

In April 1932, Beese made her way to Charkov, Ukraine, with the help of Karel Teige and Jaromir Krejcar from Leva Fronta [23]. During Stalin's five-year plan (1928-1933), the growth of foreign architects in the Soviet Union reached its peak [24]. At the beginning of the five-year plan, the transition to industrialization and the emergence of a morphotype that required decisions on the rapid construction of a large amount of housing started. Communal living became embodied within the socialist city, along with prefabricated housing [25].

3.2 Moscow, Mart Stam and the May-Brigade

After many years, Beese and Mart Stam met again in Charkov in 1933 [26]. Stam and Beese knew each other from Stam's guest lectures at the Bauhaus. Mart Stam was a leading advocate of functionalism, which he had practiced in the Soviet Union since the 1930s. [27]

Beese travelled to Moscow together with Mart Stam in 1933. Meyer also lived and worked in Moscow as an architect, which made it irresistible for Beese to move [28]. Beese's idealistic objectives to work in a community that represented a just society without class divisions also played an important role in her moving to Moscow. [29]

Together they worked within the May-brigade led by Ernst May. The May-brigade worked within the 'Standartgorproekt', a design institute with 150 foreign architects for standardized building. Meyer's 'Rote Brigade' was also a part of this organization. [30] The May-brigade included radical left architects, like Mart Stam and Hans Schmidt. The planning principles of the May-brigade consisted of zoning, egalitarian and collective living facilities, prefabrication, and serial production of building types. [31]

Ernst May was a German architect and urban planner who played a significant role in shaping modernist architecture and city planning [32]. From 1925 to 1930, May was the leading architect of Frankfurt am Main. May's principles were based on modernist ideals of functionalism and rational urban planning. With his urban designs, he sought to balance efficiency, social cohesion, and technological advancement. May believed that architecture could shape human relationships and societal progress. [33]

Together with Stam, Beese worked on Sotsgorod Orsk. During this period, Russian authorities frequently criticized the designs of foreign architects [34]. The internal power struggles of the Russian authorities led to the departure of many lead architects like Ernst May. The May-brigade and 'Rote Brigade' now came to work within the 'Gorstroiproekt', a government planning office run directly by the Russian authorities. [35]

[21] Oosterhof, Hanneke. "Want de grond behoort ons allen toe". Leven en werk van stedenbouwkundig architecte Lotte Stam-Beese.
[22] Ibid.
[23] Oosterhof, Hanneke. "Want de grond behoort ons allen toe". Leven en werk van stedenbouwkundig architecte Lotte Stam-Beese.
[24] Engel, Barbara; "The Concept of the Socialist City. Plans and Patterns of Soviet Urbanism". In Carola Hein (ed.), International Planning History Society Proceedings, 19th IPHS Conference, City-Space-Transformation, TU Delft, 5 - 6 July, 2022, TU Delft Open, 2022.
[25] Ibid.
[26] Oosterhof, Hanneke. "Want de grond behoort ons allen toe". Leven en werk van stedenbouwkundig architecte Lotte Stam-Beese.
[27] Ibid.
[28] Ibid.
[29] Ibid.
[30] Ibid.
[31] Bosma, Koos. "New socialist cities: foreign architects in the USSR 1920–1940". Planning Perspectives, 29(3), 301–328. https://doi.org/10.1080/02665433.2013.825994
[32] Lane, Barbara, Miller. "Architects in Power: Politics and ideology in the work of Ernst May and Albert Speer". The Journal of Interdisciplinary History, 17(1), 283. https://doi.org/10.2307/204134
[33] Ibid.
[34] Oosterhof, Hanneke. "Want de grond behoort ons allen toe". Leven en werk van stedenbouwkundig architecte Lotte Stam-Beese.
[35] Ibid.

3.3 Criticism on The Soviet Union

Architectural historians refer to Western architects in the Soviet Union as 'Utopians' [36]. Koos Bosma and Manfredo Tafuri both criticized the work of Western architects in the Soviet Union. The goal to create a new reality with architecture remained utopian. The lack of proper materials and the Russians' sudden switch to the neo-classicist style, socialist realism, meant that the Avant-Garde architecture could not be built according to plan. [37]

As Koos Bosma describes, the five-year plan (1928-1933) was a highly idealized framework that can be seen as an accelerated process for industrialization and the collectivization of agriculture. A planned economy, socialist competition, and Fordism (ratio nalization, standardization, and the assembly line) are characteristics of this plan. [38]

Foreign experts were invited to help and speed up the transition [39]. Western participation, especially German participation, is what the Soviet Union longed for during this period. Therefore, the May-Brigade played a significant role, and the group Lotte Stam Beese was also part of. Bosma critiques the May-Brigade's rigid idealism and failure to adapt to the realities of Soviet planning and governance. Ernst May underestimated the challenges of local politics, shortages, and the Soviet preference for monumental, hierarchical, symbolic urban planning. Therefore, Bosma describes a failure to consider human and social realities. The May-Brigade assumed the Soviets would embrace standardized, minimalist housing, like the European modernist movements. Contrarily, the residents longed for traditional domestic structures. The poor construction quality, climatic conditions, and bureaucratic inefficiencies reduced the effectiveness of the plans. [40]

Manfredo Tafuri also critiques the Soviet Union's five-year plan regarding urban and architectural planning. Initially, the Soviet Union sought to create a revolutionary urban ideology, which was eventually absorbed into pragmatic state capitalism. The Avant-Garde architects and constructivists were replaced by a bureaucratic model, shifting architecture to a functionalist tool rather than a medium for radical transformation. Tafuri mentions how the planning process became an operational mechanism driven by economic efficiency while architecture lost its ideological role. Capitalist and state-driven rationalization took over the longed-for ideological urban planning. [41]

Tafuri views utopianism as a self-defeating construct. Critiques of utopian socialism reveal an inherent contradiction. The attempt to escape the existing order often accelerates its downfall by exposing its impracticality. This impracticality can be seen in the way Western architects engaged with Soviet urbanism. Tafuri suggests that the Western architectural Avant-Garde often ended up reinforcing capitalist rationalization rather than opposing it. With their utopian view, they claim to challenge economic structures, but their work was frequently criticized. [42]

Koos Bosma's and Manfredo Tafuri's critical view of the May-Brigade and the Western participation in Soviet planning can make you question how this affected Lotte Stam-Beese's career. How did she take these idealist principles, learned by e.g., Ernst May, with her during her career in Rotterdam?

[36] Oosterhof, Hanneke. Lotte Stam-Beese (1903-1988): from "Entwurfsarchitektin" to urban-planning architect. Onderzoeksportaal Eindhoven University of Technology. https://research.tue.nl/nl/publications/lotte-stam-beese-1903-1988-from-entwurfsarchitektin-to-urban-plan
[37] Ibid.
[38] Bosma, Koos. "New socialist cities: foreign architects in the USSR 1920–1940". Planning Perspectives, 29(3), 301–328. https://doi.org/10.1080/0266543 3.2013.825994
[39] Ibid.
[40] Ibid.
[41] Tafuri, Manfredo. "Architecture and utopia: Design and capitalist development (B. La Penta, Trans.)". MIT Press.
[42] Ibid.

4. Urban planning in Eastern-Europe and Rotterdam

4.1 Orsk, Russia

Urban planning

The urban planning of Orsk is part of Soviet planning and industrialization, creating self-sufficient communities that aligned with socialist ideas [43]. Together with the May-brigade and Mart Stam, Beese worked on Orsk, an industrial 'sotsgorod', meant for 100.000 residents. Beese took part in designing for district no.8 that consisted of at least 450 dwellings, a school, a daycare center, a meeting house, and sports fields. [44]

Functionalist principles like the zoning of functions were used in the urban layout, seen in Figures 1-2. The buildings are arranged in a functional, repetitive layout within a grid. Residential, industrial, and recreational functions were kept separate in the neighborhood while communal facilities were incorporated to promote social interaction and collective living [45]. Along with low-rise buildings, three- to five-story residential buildings make up part of a structured composition.
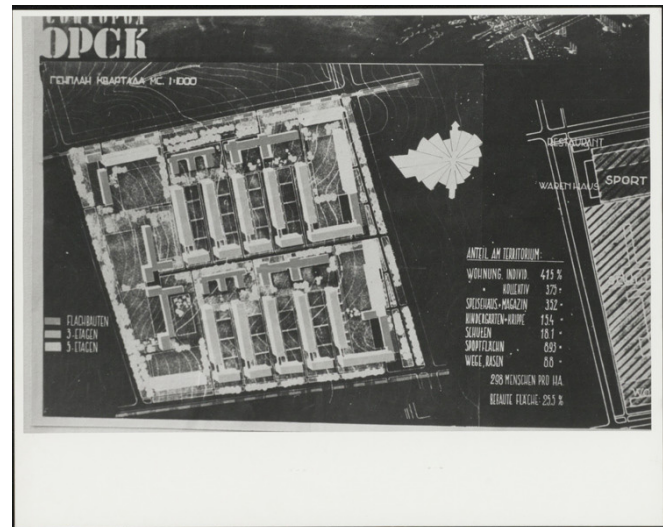
1. Orsk urban layout, *source: Nieuwe Instituut online archive*

2. Orsk urban layout, *source: Nieuwe Instituut online archive*
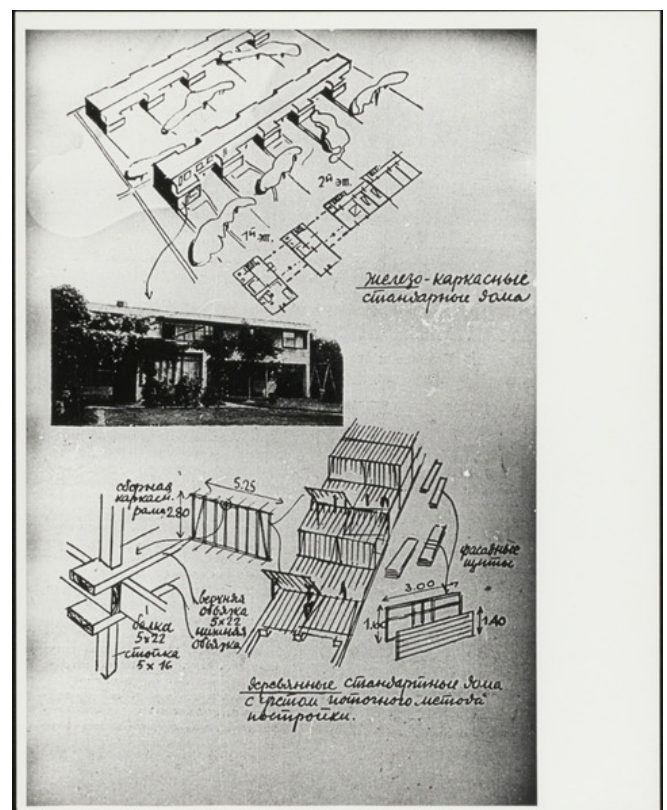
3. Urban sketch of Orsk and construction details *source: Nieuwe Instituut online archive*

[43] Oosterhof, Hanneke. "Want de grond behoort ons allen toe". Leven en werk van stedenbouwkundig architecte Lotte Stam-Beese.
[44] Ibid.
[45] Ibid.

Architectural forms

Typical of the Soviet planning is the prefabrication and standardization of buildings [46]. The great demand for housing made it necessary to build as much, as quickly and cheaply as possible. Therefore, the urban ensemble had priority over the architectural forms and quality. [47]

The sketches shown in Figures 3-6 show these functionalist principles. A repetition of symmetrical windows, small rectangular balconies, and a lack of ornamentation reflect these Soviet principles. The clear and simple architectural forms made it possible to build fast.

The work on the Orsk sotsgorod provided a foundational experience for Beese in applying functionalist principles on a large scale project. This project gave Beese a firsthand insight into the way architecture contributed to the Soviet Union's ideological and socialist goals for fostering community. The emphasis on zoning, communal areas, standardization and prefabricatoin cleary dominated over aesthetics. Beese's time in Moscow and working on Orsk became a reference point for her contribution to the reconstruction of Rotterdam.
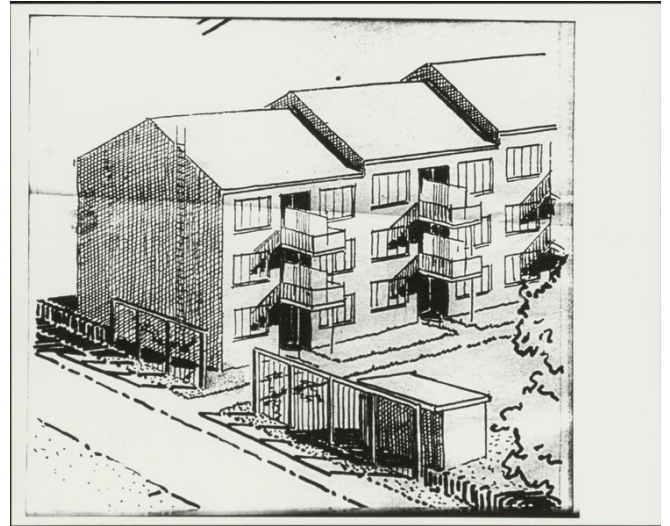
4. Orsk housing, *source: Nieuwe Instituut online archive*
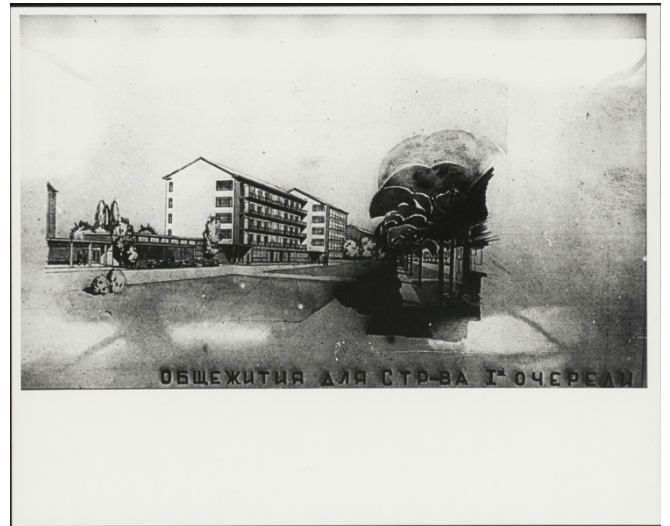
5. Orsk housing, *source: Nieuwe Instituut online archive*

6. Orsk housing, *source: Nieuwe Instituut online archive*

[46] Engel, Barbara; "The Concept of the Socialist City. Plans and Patterns of Soviet Urbanism". In Carola Hein (ed.), International Planning History Society Proceedings, 19th IPHS Conference, City-Space-Transformation, TU Delft, 5 - 6 July, 2022, TU Delft Open, 2022.
[47] Ibid.

4.2 Kleinpolder, Rotterdam

Urban planning

Kleinpolder is also known as the "Woonpad". Beese introduced the "Woonpad" to this neighborhood after learning about this principle during her time in Charkov, Ukraine [48]. This principle introduces a paved pedestrian path between two residential blocks, with dwellings facing the streetside. Besides the functionality of these pedestrian paths, it was also cost-efficient, reducing costs for streets [49].

Kleinpolder was meant for young working families, middle-class families, the elderly, and people living alone. The goal was to house 33.000 people with 40 dwellings per hectare. [50]

The schematic principles of Kleinpolder, shown in Figure 7, show 4 small neighborhoods within an overall plan. Each neighborhood is connected by a center with communal functions. Green spaces run through these neighborhoods. Seen in the urban layout of Kleinpolder, in Figure 8, communal green spaces are arranged with playgrounds and seating areas. Kleinpolder is split up into an eastern and western side, due to the Rotterdam-Delft motorway [51]. The urban design emphasizes an open spatial configuration with low- to medium-rise buildings. The building alignments reflect functional principles of creating order and harmony. This alignment shows a rythm of street - housing block - garden-housing block - street.
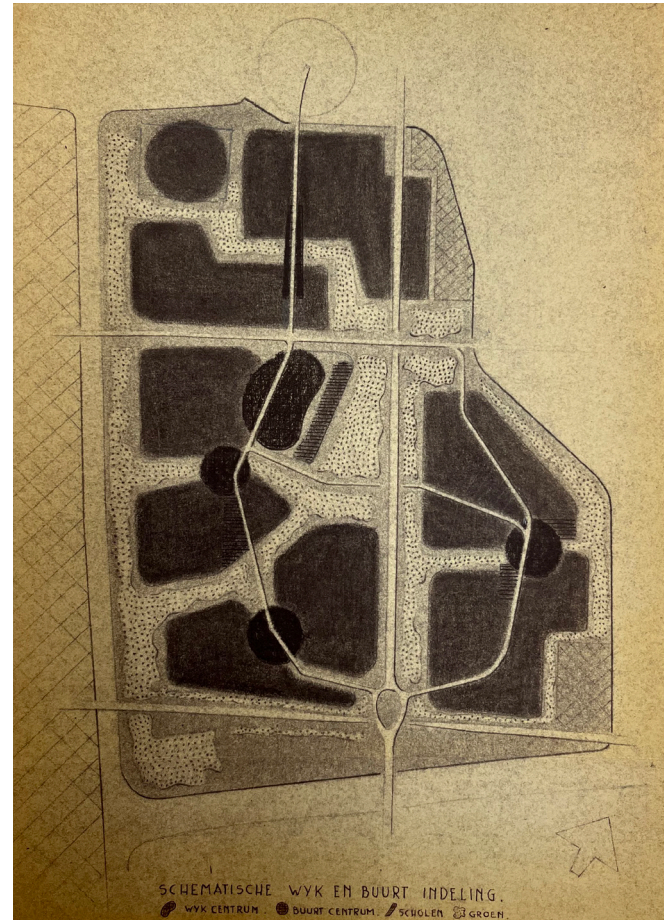
7. Schematic layout Kleinpolder, *source: Nieuwe Instituut archive*
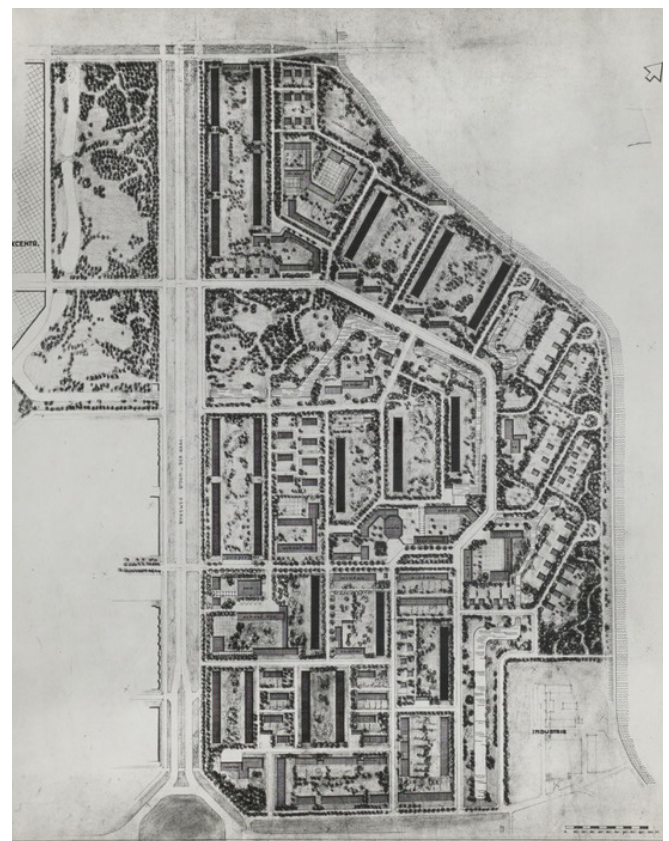
8. Kleinpolder urban layout, *source: Nieuwe Instituut online archive*

[48] Lotte Stam-Beese en de wederopbouw van Rotterdam. (n.d.-a). Platform Wederopbouw Rotterdam. https://wederopbouwrotterdam.nl/artikelen/lotte-stam-beese-en-de-wederopbouw-van-rotterdam
[49] Oosterhof, Hanneke. "Want de grond behoort ons allen toe". Leven en werk van stedenbouwkundig architecte Lotte Stam-Beese.
[50] Ibid.
[51] Ibid.

Architectural forms

Modernist architects delivered designs for the dwellings of Kleinpolder. The architects often consulted their ideas with Beese, due to her supervisory role for the municipality of Rotterdam. [52] The four- to five-story buildings of Kleinpolder can be characterized by their linear arangement, positioned in parallel rows shown in Figure 9. Functionalist principles like simplicity, repetition, functionality and a lack of ornamentation reflect this modernist aesthetic.

A simplified brick construction system was used with prefabricated floor and wall elements, as seen in Figure 10. This system-built method was used after the post-war reconstruction to rapidly build to meet the housing demand [53]. Along with reducing building time, this also aligns with the functionalist principles of a cohesive and uniform appearance.

Kleinpolder is the first example of how Beese introduced Soviet principles into Dutch post-war society. The "Woonpad" emphasizes the ideals of social interaction through communal green spaces, which Beese learned in Charkov [54] [55]. Spatial rhythm and clear zoning principles reflect the functionalist planning ideals seen in Sotsgorod Orsk. Though Kleinpolder's scale and context differ from Orsk, it demonstrates how Beese introduced her socialist philosophy into functionalist urbanism in Rotterdam.

9. Kleinpolder housing, image from Beeren & Dettingmeijer, *Het Nieuwe bouwen in Rotterdam*
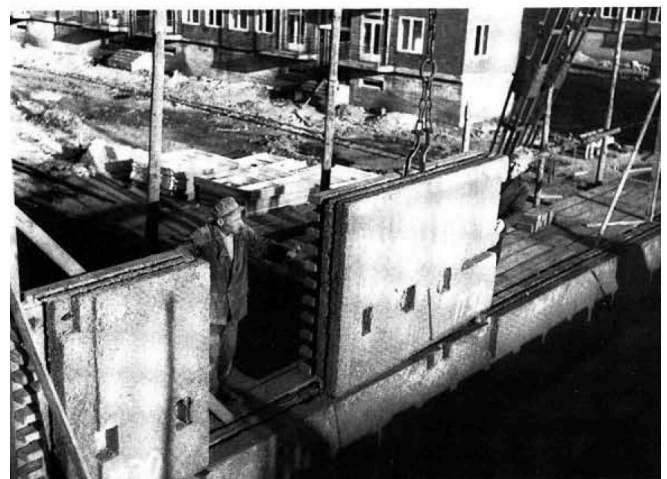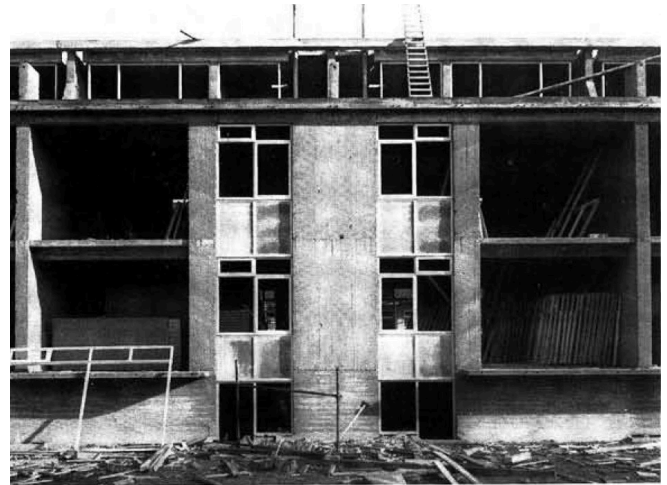
10. Prefab system building, image from Beeren & Dettingmeijer, *Het Nieuwe bouwen in Rotterdam*

[52] Oosterhof, Hanneke. "Want de grond behoort ons allen toe". Leven en werk van stedenbouwkundig architecte Lotte Stam-Beese.

[53] Beeren, W. a. L., & Dettingmeijer, R. "Het Nieuwe bouwen in Rotterdam, 1920-1960". http://ci.nii.ac.jp/ncid/BA21014357

[54] Lotte Stam Beese. (n.d.). Canon Van Nederland. https://www.canonvannederland.nl/nl/page/292799/lotte-stam-beese

[55] Oosterhof, Hanneke. "Want de grond behoort ons allen toe". Leven en werk van stedenbouwkundig architecte Lotte Stam-Beese.

4.3 Pendrecht, Rotterdam

Urban planning

Pendrecht was part of the 1949 expansion plan in Rotterdam for the left bank of the river. The neighborhood was considered the most successful example of responsible urban design for a long time [56]. Pendrecht was designed in consultation with architects from the association "Opbouw" [57]. The neighborhood has a large-scale character, realizing a residential area for 20,000 inhabitants. The neighborhood sought to foster community life through urban planning, longing for a balance between social and cultural functions. By late 1948, Beese introduced the "housing unit" (wooneenheid) to "Opbouw," which was intended to have 90 dwellings for various family compositions. 10 housing units formed a neighborhood alongside one high-rise apartment block and a small centre with facilities like shops and businesses. These neighborhoods are separated by green belts. The intent was to encourage 'community life' by dividing Pendrecht into two northern en three southern districts. Each housing unit consisted of two strips of three- and four-story apartment buildings for small families and two-story low-rise buildings for large families. There was also a strip intended for homes for the elderly, arranged around a communal garden. A division between car-centered and car-free streets was thereby essential. [58]

Looking at Pendrecht's urban layout, Figure 11, the configuration of the housing units, seen in Figures 12-13, becomes clear. The layout has a clear, repetitive structure. The buildings are spaced apart strategically, leaving room for pedestrian walkways, crossing through the green zones. This creates a sense of openness and community feeling.
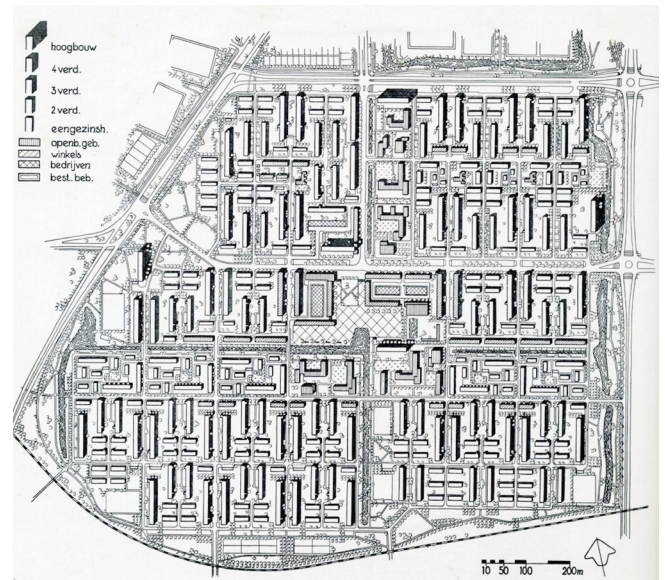
11. Urban layout of Pendrecht, *source: Nieuwe Instituut online archive*

12. Perspective drawing of Pendrecht, *source: Nieuwe Instituut archive*
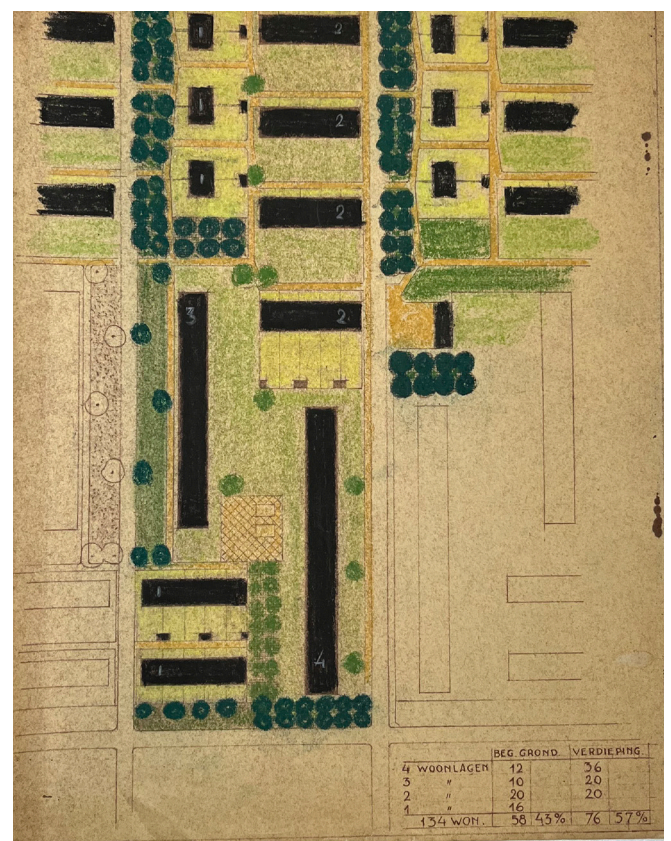
13. Sketch of the housing unit, *source: Nieuwe Instituut archive*

[56] Pendrecht urban design. "Post-war Reconstruction Community Rotterdam". https://wederopbouwrotterdam.nl/en/articles/stedenbouwkundig-ontwerp-pendrecht
[57] Beeren, W. a. L., & Dettingmeijer, R. "Het Nieuwe bouwen in Rotterdam, 1920-1960". http://ci.nii.ac.jp/ncid/BA21014357
[58] Ibid.

Architectural forms

The housing units have a functional and minimalistic aesthetic, reflecting the influence of "Het Nieuwe Bouwen" and modernist principles. Prefabricated building elements were used to speed up the construction process. [59] Figures 14-16 show the lack of ornamental use in the overall architecture. Both the two- and four-story buildings show a repetitive, geometrical appearance featuring simple forms. This repetitive, functional appearance is also seen in the Orsk neighborhood.

The concept of the "housing unit" not only served as a functional purpose, but it also reflected Beese's broader socialist ideals, emphasizing diversity in family compositions, communal green spaces, and a pedestrian-centered layout. As seen in the Soviet Union planning, these ideals once again reflect architecture's purpose of fostering social cohesion, in which Beese strongly believed.

14. Facade illustration of Pendrecht housing, *source: Nieuwe Instituut archive*

15. Pendrecht housing, *source: Platform Wederopbouw Rotterdam*


16. Housing unit, *source: Platform Wederopbouw Rotterdam*

[59] Beeren, W. a. L., & Dettingmeijer, R. "Het Nieuwe bouwen in Rotterdam, 1920-1960". http://ci.nii.ac.jp/ncid/BA21014357
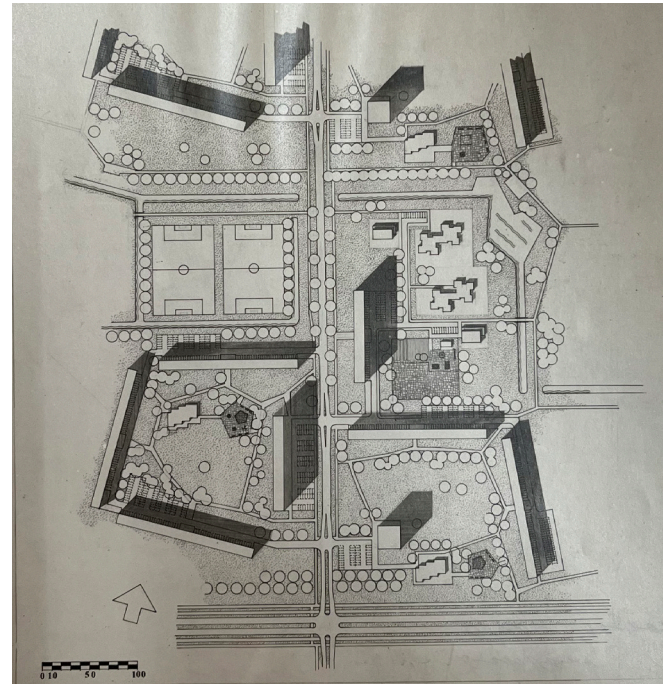
4.4 Ommoord, Rotterdam

Urban planning

Unlike the earlier neighborhoods designed by Beese, Ommoord (1962-1969) was the first high-rise neighborhood in the Netherlands, built in 1967. The ratio of high-rise to low-rise is 64:34% [60]. This would be Beese's last design for the municipality of Rotterdam. With a range of 340 hectares, the neighborhood was meant for middle- to high-class families [61]. The urban layout of Ommoord is focused on public green spaces that are designed with playgrounds for children, seating areas, and walking paths. All this is made possible by creating density with high-rise. The layout of the neighborhood consists of an ensemble of three slightly angled apartment buildings in combination with four straight apartment buildings, as seen in Figure 17. For Beese, it was important that the residents would experience a sense of community. This contributes to Beese's idealistic community-led approach learned from Meyer. [62]

Once again, functionalist principles were used in the urban design. Residential, commercial and recreational spaces are seperated. The green spaces between the apartment buildings promote a healthy and safe living environment. This is made possible by placing the main traffic road through the center of the neighborhood, keeping the residential area car-free, seen in Figure 18.
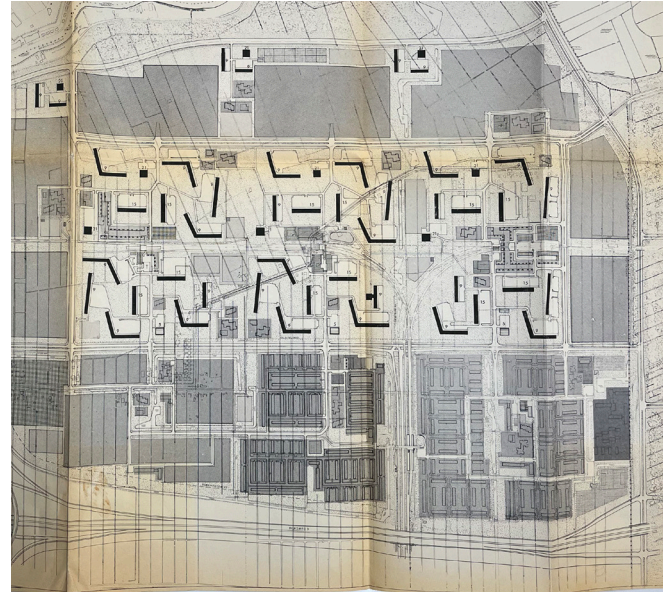
17. Urban layout of Ommoord, *source: Nieuwe Instituut archive*

18. Overview of building configuration of Ommoord, *source: Nieuwe Instituut archive*

[60] Lotte Stam-Beese en de wederopbouw van Rotterdam. (n.d.-a). Platform Wederopbouw Rotterdam. https://wederopbouwrotterdam.nl/artikelen/lotte-stam-beese-en-de-wederopbouw-van-rotterdam
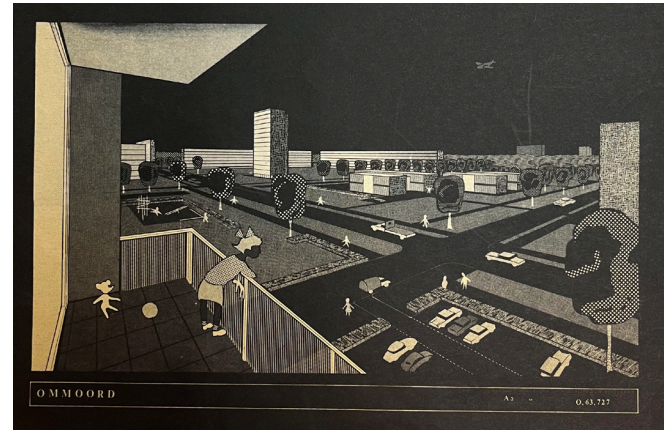[61] Oosterhof, Hanneke. "Want de grond behoort ons allen toe". Leven en werk van stedenbouwkundig architecte Lotte Stam-Beese.
[62] Ibid.

Architectural forms

Remarkably, the Ommoord neighborhood features apartment buildings with a slight kink in the structure. This kink broke the standard, linear approach, allowing improved sunlight conditions and views of the green areas. The main architectural features remain quite minimalistic and repetitive. The prefabrication and standardization of the buildings made it possible to build new homes quickly, as seen in Orsk. The functionalistic aesthetic of the apartment buildings was Beese's conscious choice to attract attention to the public green spaces [63]. Figures 19-21 show the effect achieved by the kinked structures, emphasizing openness and its public green areas.

Ommoord differs from the other Rotterdam projects, showing the evolution of Beese's architectural thinking during the 60's. This project showcases functionalist planning alongside high-rise modernity. Although this project reflects a slight shift in planning principles, it maintains Beese's foundational philosophy brought from her Soviet experiences. The clear zoning, separation of functions, integration of green spaces, and the ambition to foster community remain. As seen in the layout of Orsk, density is used to preserve public areas. Ommoord is an important example that shows how Beese evolved her philosophy, accommodating the demands in Rotterdam during the late 20th century.

19. Perspective of Ommoord, *source: Nieuwe Instituut archive*

20. Perspective of Ommoord, *source: Nieuwe Instituut archive*

21. Ommoord housing, *source: Platform Wederopbouw Rotterdam*

[63] Oosterhof, Hanneke. "Want de grond behoort ons allen toe". Leven en werk van stedenbouwkundig architecte Lotte Stam-Beese.

4.5 Comparative conclusion

Beese's career in Eastern-Europe exposed her to Soviet and functionalist design principles. Compared to Orsk, each Rotterdam neighborhood shows functionalist principles in urban- and architectural design. The comparison reveals a consistancy in Beese's design philosophy, each revealing functionlist principles in urban layout and architectural forms. [64]

The urban layout of Orsk reflects industrialization and a self-sufficient city. The separation of functions represents a clear structure and zoning of the neighborhood. This principle is repeated within the Rotterdam neighborhoods by Beese [65]. Each neighborhood consists of residential buildings alongside communal functions integrated with green zones, stimulating a sense of community and a healthy living environment. These spatial principles were not only practical, it reflected Beese's philosophy she found in the Soviet Union, that architecture and urban planning could shape social behaviour and foster community [66]. Regarding architectural forms, repetition, functionality, minimal ornamentation, uniformity, and prefabrication are all factors that each project represents.

The urban planning of Orsk reflects rapid industrialization within the Soviet Union's five-year plan [67]. Unlike this rapid industrialization, a more nuanced approach was used within the Rotterdam neighborhoods. Beese did not fully reproduce the Soviet ideals, she adapted these principles in response to the context. It shows how Beese translated these Soviet principles into Western European ideals, which suit its community. Beese's experiences in the Soviet Union laid the foundation for her design philosophy, which evolved into cross-cultural projects.

4.6 Was it always for the better?

Two critical questions can be asked: "Were these Soviet principles learned by Lotte Stam-Beese always for the better regarding her work in The Netherlands?" and "Was Lotte Stam-Beese an idealist?". The last question will be reflected upon in the conclusion. The comparison of the projects in the Soviet Union and Rotterdam show a significant overlap in functionalist principles described in the previous chapter. Though the urban projects in Rotterdam were praised, these ideals also had limitations.

Both Koos Bosma and Manfredo Tafuri critiqued the work of foreign architects in the Soviet Union. Bosma believes that Western architects, with whom Beese worked, operated through a form of rigid idealism [68]. These architects, like many within the May-Brigade, believed that architecture could shape new social realties, yet they underestimated the complexity of the political and cultural factors of the Soviet Union.

Tafuri deepens this critique by focusing on utopianism. He believes that the avant-garde architectural visions often collapsed under their idealism. [69] Their utopian visions often reinforced capitalist rationalization, instead of enforcing social cohesion. Beese's designs for Rotterdam can reflect both Bosma's and Tafuri's criticism. The neighborhoods reflect these socialist ideals by longing for social cohesion. In reality, the designed communal gardens were not used in the intended way, and the standardized housing was criticized [70].

The question, "Was it always for the better?" is not a critique of Beese's work, but rather a reflection on the translation of cross-cultural ideals into Western European architecture. Beese's projects are not failures, they reflect the battle between ideological ambitions and reality [71].

[64] Oosterhof, Hanneke. "Want de grond behoort ons allen toe". Leven en werk van stedenbouwkundig architecte Lotte Stam-Beese.
[65] Ibid.
[66] Engel, Barbara; "The Concept of the Socialist City. Plans and Patterns of Soviet Urbanism". In Carola Hein (ed.), International Planning History Society Proceedings, 19th IPHS Conference, City-Space-Transformation, TU Delft, 5 - 6 July, 2022, TU Delft Open, 2022.
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5. Conclusion

Lotte Stam Beese's architectural vision for post-war Rotterdam emerged and started to take shape during her formative years abroad in the Soviet Union. Here, Beese surrounded herself with architects sharing the ideals of socialist urban planning and functionalist designs [72]. This thesis answers the question, "How did Lotte Stam Beese's exposure to functionalist architects in Eastern Europe influence her architectural designs during the post-war reconstruction of Rotterdam?" This functionalist approach started within her educational background at the Bauhaus with Hannes Meyer [73]. Mart Stam and Ernst May also shaped her ideological and practical approach. From them, she learned different principles which she later incorporated into her urban designs in Rotterdam. Ernst May's principles, for instance, were based on modernist ideals of functionalism and rational urban planning. With his urban designs, he sought to balance efficiency, social cohesion, and technological advancement. May believed that architecture could shape human relationships and societal progress. [74] Hannes Meyer was focused on the psychological effects of his designs. His process was led by people's needs, lifestyle, and their relationship with their surroundings. In Beese's philosophy, she therefore sought social cohesion [75].

Through the analysis of case studies regarding Orsk in the Soviet Union and Rotterdam neighborhoods such as Kleinpolder, Pendrecht, and Ommoord, the research shows that Stam Beese did not simply implement generic modernist ideals. Beese rather developed a cross-cultural planning philosophy through the eyes of socialist ideals [76]. Beese believed in architecture's collective experimentation and role as a socially transformative solution. Functionalist principles such as zoning, centralized planning, and standardized and prefabricated mass housing were always linked to the broader goal of achieving community life and social cohesion [77].

The Soviet Union played an important role in Beese's design experience. Though she doesn't mention idealism [78], many architects went to the Soviet Union to rebuild its cities. They believed they could improve people's communities and living conditions [79]. Though the Soviet Union brought foreign architects to speed up the transition, they would later realize many were not fit for the task [80].

The Western European and Soviet ideals were quite contradictory. Beese might have believed she could contribute to the sense of belonging and community. This is, after all, what she had learned from Meyer. These ideals also had their limits in Rotterdam neighborhoods like Kleinpolder and Pendrecht. Initially, the projects sought ambitious goals for inclusive and socialist living, which later faced criticism and signs of deterioration. This research shows the complex negotiation between idealism and pragmatism, seen in Beese's work. The question of whether Beese was an idealist remains open.

The research reframes the view on Lotte Stam Beese. Beese is now known for her legacy in Rotterdam's post-war reconstruction [80], though she is an architect shaped by cross-cultural ideas, techniques, and political beliefs. The research shows the broader context behind Beese's urban plans. It critically shows that the Western European and Eastern European ideals will always contradict, but can be bridged by architects like Beese. Beese carried Soviet concepts back to Rotterdam, viewing functionalist urbanism through a wider lens and implementing these principles within a different context.

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6.2 Images

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17. Lotte Stam-Beese. *Urban layout of Ommoord.* Collection Lotte Stam-Beese, Het Nieuwe Instituut, Rotterdam.

18. Lotte Stam-Beese. *Overview of building configuration of Ommoord.* Collection Lotte Stam-Beese, Het Nieuwe Instituut, Rotterdam.

19. Lotte Stam-Beese. *Perspective of Ommoord.* Collection Lotte Stam-Beese, Het Nieuwe Instituut, Rotterdam.

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