Maak een stad; Rotterdam en de architectuur van J.H. van den Broek
Vanstiphout, Wouter August Jozef

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This book is about the relationship between the work of the architect J.H. van den Broek (1898 – 1928) and the physical changes experienced by the city of Rotterdam from the last quarter of the 19th century to the end of the Second World War. Van den Broek is one of the most respected figures among Dutch 20th-century architects and at the same time one of the least known. His fame is mostly due to his partnership with Jaap Bakema in Van den Broek & Bakema, the Dutch office famous for its combination of large-scale realizations and metaphysical speculation in the international group of Team X, the successor to CIAM. Of his work before his association with Bakema, a small number of buildings have reached the architectural historical handbooks. Van den Broek’s name stands for an ethical, organizational approach to architecture as a contrast to the more hot-blooded, polemical and idealistic approach by the younger Bakema. Van den Broek’s position has always been seen and understood from the point of view of the world-famous office he was part of between 1948 and 1978. Even his pre-war works were seen as stepping stones to this office and never regarded independently. This book seeks to examine the work, rather than the position, of Van den Broek in terms of the context he was really working in, namely the city of Rotterdam.

Rotterdam therefore has been given a role in this book that is at least as important as that of the architect Van den Broek. It was necessary to delve deep into the mechanics that steer this city’s transformation and into its particular tradition of urban planning and urban engineering. The theory is that Rotterdam is a kind of inversion of the ‘normal’ values attached to urbanistic qualities and ambitions. While other cities
use transformation as a means to one particular end – the realization of a coherent city shape – in Rotterdam urban planning has always been a means to another end entirely, that of constant transformation, with coherence always a minor issue. This exocentric urban tradition has to do with two exceptional occurrences: the opening of the city to mechanized global trade in the late 19th century and the bombing of the city centre in May 1940. The focus on transformation and flexibility rather than on urbanistic composition, is one of the strongest factors in shaping Van den Broek’s focus on process rather than on form, on organization rather than on aesthetics, on the large number and the series rather than on the single object, and, as a modernist architect, on private entrepreneurship rather than on state intervention.

In disconnecting Van den Broek from the position he was given within Van den Broek & Bakema, and trying to understand his work in a specific, urban context, this book follows in the footsteps of earlier studies and critiques done in the 1970s at Delft University of Technology, where Van den Broek himself had been a professor. The first attempt to un hitch Van den Broek from the narratives of modern architecture was by a group of highly politicized young architects trying to struggle from beneath the shadows of their masters; architects like Jaap Bakema and Aldo van Eyck. Van den Broek’s highly realistic, independent and non-sentimental approach gave them a way out. It broke open the one-sided, idealistic history of modern architecture and opened up a more complex reality of the interaction of societal, economic and formal developments. This book is therefore, in an indirect way, also about the implications of Van den Broek’s work for the historiography of modern architecture in the Netherlands. It pays its respects to the border crossing between architectural history and architecture and to the polemical, operational agendas that are, always have been and always will be central to the writing of architectural history.

The Mechanization of Rotterdam

The fact that Rotterdam became a hugely mechanized port city with an ever westward moving harbour, was provoked by the national government’s decision to create a direct sea link between the Rhine and the North Sea, thereby placing Rotterdam in the middle of a global network of trade routes. This was intensified by the same national government which in the 1860s decided to build a railway viaduct over the Rhine, and run it straight through the old centre of Rotterdam. Initially it was not the city itself that saw the implications of this repositioning in an urban sense, but an entrepreneur named Lodewijk Pincoffs who created on the other side of the river from the town centre a state-of-the-art mechanized port facility that profited from the confluence of railway and sea link. In a sense Pincoffs was building on the work done in the 1840s and ’50s by the influential city planner W.N. Rose. But whereas Rose had an integral, architectural vision for the new port city, Pincoffs constructed a highly specific, monofunctional fragment consisting of harbour basins, railway yards and warehouses enclosed by a perimeter wall. The fragmentation of the city form that determines the urban identity of Rotterdam up to this day was therefore initiated by Pincoffs in the 1870s when he built the area to be called ‘Kop van Zuid’. It took the bankruptcy of Pincoffs’ company in 1879 to force the City of Rotterdam to take the lead once more in the urban planning. The arrival of the military engineer G.J. de Jongh during this period as head of public works ushered in three decades of radical growth and modernization. De Jongh conceived of the city as a whole, albeit not spatially or aesthetically but as a technical, infrastructural and logistical whole. He and his department rapidly built entire new workers’ neighbourhoods for the thousands of new arrivals, and laid out networks for telephone and telegraph services, electricity, gas and hydraulic power that served mainly the port facilities but also the new bridges, commercial buildings, boulevards and squares of the booming city. Out of De Jongh’s integral strategy with the city came urbanistic and architectural typologies peculiar to Rotterdam. Exemplary among his achievements are the vast workers’ neighbourhoods that follow the harbour basins and have curvilinear boulevards running through them shared by freight trains, public transport, pedestrians and cyclists. The technical apparatus of the late 19th century fitted seamlessly into the forms and attributes of Beaux-Arts planning. The criticism of De Jongh has always been harsh; he has been accused of sacrificing the city as a living place to a purely mechanistic harbour policy. A closer look however reveals a tightly interwoven structure of housing areas, infrastructure, public buildings and communication and other networks. This physical structure was based on an even more important organizational structure that integrated all the municipal departments behind a tough-minded and clear-headed vision for the city of Rotterdam as an ever evolving node in the global network of mechanized trade. What was lacking, and what would cost De Jongh his reputation as a major city planner, was a clear aesthetic perspective expressed in an urban masterplan and a visually coherent city-form. The combination of spatial fragmentation with structural and technical coherence has always been Rotterdam’s urbanistic strength throughout the late 19th and 20th centuries.
Van den Broek and the Beaux-Arts system

Modernist architecture has often been pitted against the 19th-century Beaux-Arts tradition as a radical alternative to its functional and aesthetic conservatism. Van den Broek was educated in the system of the Beaux-Arts. To trace the Beaux-Arts methods and attitudes in Van den Broek’s work it is necessary to distinguish between the Beaux-Arts aesthetic and compositional rules and the Beaux-Arts as a scientific model for managing the functional, logistical and technical requirements of complex programmes in a rational design process. A Beaux-Arts building, by the rational and clear ordering of its functions and representational elements, was expected to be an agent of order and dignity in the very heart of the historical cities. An influential example of this type of design is Gondoin’s École de Chirurgie in Paris (1775).

One of the most complete Beaux-Arts buildings in the Netherlands, both technically and architecturally, is Rotterdam City Hall (1920) by the professor of architecture Henri Evers, Van den Broek’s tutor at Delft. Evers was instrumental in bringing the doctrines and ideas of French Beaux-Arts teachers like Julien Guadet to the Netherlands. One of these ideas was that Beaux-Arts design was fundamentally non-formalistic; it was neutral vis-à-vis style and used in a completely pragmatic way. Henri Evers stood for a liberal, inclusive approach to style and a rational, scientific attitude towards technological and planning issues.

In his earliest competition entries, amongst others for the Palace of Nations in Geneva (1926) Van den Broek used an explicitly classicist architectural language and rational Beaux-Arts planning. But even when designing utilitarian buildings for the port city, he was still something of a Beaux-Arts architect. In their rationality and attention to system, the buildings are methodologically related to the Beaux-Arts, even if architecturally they are resolutely modernist. Van den Broek’s methodology in inserting complex contemporary programmes in different types of urban contexts used three basic spatial concepts related to the Beaux-Arts idea of parti and marche. The first category is that of the ‘hinge’, with which a modern programme is inserted into a centuries-old, dense urban tissue. The irregularities of the site combined with the fundamental regularity of the prototypical design are combined in the figure of a hinge-like footprint. The best example of this is the Van Ommeren shipping company building (1938) in the old centre of Rotterdam’s principal rival Antwerp. This glazed, curved and extremely modern building is absorbed naturally by the medieval urban tissue and at the same time transcends it completely.

Another category of urban tissue is that of the kilometres-long bundles of parallel infrastructures in the port area. Buildings placed along these bundles can play the role of a ‘sluice’ negotiating between the different logistical flows. Van den Broek’s design for the Thomsen shipping company (1943–48) is an example of this type of spatial concept. The building consists of a part for passengers, workers and clerks that hovers above a gateway through which trains can pass from the street to the quay. Internally the building proves to be a sophisticated and at times exhilarating play of parallel axes and transparent and translucent walls designed to manage the flows of passengers, workers, clerks and luggage to and from the arriving boats. The Beaux-Arts methodology or design ethic can be found in the fact that the building is conceived in terms of managing the movements through it.

The third category has to do with the expansion in size and complexity of companies and industries to a point that they cannot function anymore in the spaces available to them in the existing city. They then move to the edges of the city and create semi-autonomous satellites with their own internal logic to govern the many parts and functions of which they consist. This spatial logic we call that of the engine: a semi-autonomously functioning group of separate elements. An example of this is Van den Broek’s project for the Municipal Transport and Motor Services (1940–53). Following the 13-year-long gestation of this complex on the north-western edge of the Rotterdam agglomeration, we can see the precise way in which the programme was translated into diagrams, which in turn were translated into spatial scenarios, which led to the separate definition of the buildings, which were then brought together in several urbanistic combinations, which finally led to a masterplan and a realized compound. To this day the project functions as an agent of order in the radically changed urban context.

Mass Housing

Van den Broek arrived on the Rotterdam scene in the late 1920s as a supplier of housing designs for small family-run building companies, of which there were literally hundreds in Rotterdam. This brings us to a discussion of the real meaning, the context and the implications of the famous Housing Bill of 1901, which is intimately connected to the reputation of Holland as a source of modernist architecture and planning in the 20th century. It has been presented as a radical change from the capitalist 19th century and as a triumph for the intervention in social housing and urban planning by the Dutch social-democratic
government. A survey of the pre-war housing industry, the debates being held in circles of architects, policy-makers and entrepreneurs and the architectural production reveals a much less clear-cut picture. The Housing Bill was not meant to replace private initiatives in housing and urban planning, but to regulate and professionalize them. There was a thriving debate and research culture in the building trade, aimed at producing more and better housing and other buildings at a faster rate for the burgeoning cities.

J.H. van den Broek (along with architects like Willem van Tijen and researchers like J.J. van der Wal) represented an attitude towards mass housing that has proved to be too mainstream, too nuanced and not revolutionary enough to feature in the annals of Dutch modern architecture. He believed that architects and scientists should reform the building trade by providing it with new methods and models so that cheap modern workers’ dwellings could be produced profitably. Any subsidization or direct intervention by the state would never be more than an incident or an emergency measure. Van den Broek’s attitude as an innovative – even experimental – architect was therefore more ‘third way’ than utopian. He felt it to be his task to constantly innovate architectural products in roughly the same way as consumer goods keep developing. Already after four years as an active architect he was able to articulate his sharply critical yet pragmatic attitude towards the building trade in a speech given to Rotterdam housing entrepreneurs in 1931. Ten years later, in a visionary document on the challenges posed to the housing industry by the Second World War, Van den Broek and his colleague Van Tijen presented a broad survey of the typological innovations of the past decades. The examples were presented as the logical products of a dynamic market situation and were judged on their architectural but also their economic and structural usefulness. In Van den Broek’s design and research between 1931 and 1941 we can see a shift from the individual dwelling design to the organizational principles behind the planning and building of mass housing. The same movement from the unique project to the general method, from the object to the series and from architecture to organization, can also be traced in his career as an architect of thousands of dwellings in Rotterdam.

During the 1920s, ‘30s and ‘40s Van den Broek built hundreds of dwellings in Rotterdam. Yet only a small portion of them are well known. It is by following the step-by-step, door-to-door developments in his housing architecture, rather than making detailed analyses of single objects, that Van den Broek’s growth as an architect and a planner becomes clear. Van den Broek’s housing work in Rotterdam can be roughly divided into five categories. First there are the large ensembles: Mathenesserplein, Willem Buytewechstraat and Ungerplein. In those Van den Broek seeks monumental urbanistic effects in a way reminiscent of H.P. Berlage by combining towers, squares and gate-buildings. Second, there is the hitherto unknown mass of housing built in the southern, harbour dominated part of Rotterdam. These offer an insight into the minutiae of working between the urban planning rules set by W.G. Witteveen’s masterplan for this part of the city, and the demands of individual building entrepreneurs. A special interest is expressed in the theme of the corner, where two different building heights, two different typologies and two different street types meet. The corner dwelling of the closed building block had posed a planning problem to many architects before Van den Broek. Van den Broek clearly takes his cue from the earlier housing work by the Rotterdam architect and De Stijl member, J.J.P. Oud.

Third, there is the group of middle-class dwellings built in the northern part of Rotterdam, again within a masterplan by W.G. Witteveen. The theme in this cluster of apartment buildings is a more luxurious and evolved one than in Rotterdam South or in the ensembles. Here Van den Broek searches for openings, inversions and softenings for the urbanistic model of the closed building block. By accentuating balconies, external staircases and terraces and by manipulating the orientation of the apartments, Van den Broek creates dwellings that absorb the street and parks around the building blocks. Another theme is again that of the corner and the ‘kinks’ that keep turning up in the street plans of Witteveen. Van den Broek uses these places where the facade bends or folds to open up the block with glazed staircases and entrances. The result is a middle-class neighbourhood of elegant though unpretentious apartment buildings that only reveal their architectural and urbanistic sophistication on much closer inspection.

The fourth group of housing designs is determined by location but by methodology. From about 1930 Van den Broek’s firm pursued certain typological and structural studies that had to do with the flexible use of house plans and the half-open building block. The arrival of the German architect Heinrich Leppla at Van den Broek’s office introduced a German, scientific perspective into the Dutch pragmatic practice. Leppla had been trained at what has been called ‘the other Bauhaus’, the Bauhochschule in Weimar, an architectural school with a strong emphasis on research and
analysis in its curriculum. Leppla’s analytical attitude together with Van den Broek’s pragmatic, empirical and strategic position produced a series of unrealized studies for clusters of modern housing typologies in the Rotterdam neighbourhood of Bergpolder, as well as a number of realized designs. Van den Broek’s expectation was that by giving houses sliding walls, folding beds and sophisticated use-diagrams, a smaller but more efficient mass housing typology could be developed. The experimentation culminated in the famous Vroesenlaan block on the Vroesenpark. But in its singularity as a monument to modernist housing architecture, the Vroesenlaan can also be seen as proof that solving the housing problem would not be achieved by designing a state-of-the-art prototype. The workers for whom the project was intended never were able to afford the apartments and the building stood half empty for decades.

The fifth and last cluster of housing projects designed by Van den Broek in fact consist of one single design. In 1938 Van den Broek made a design for an apartment type in three storeys with six apartments to each staircase. It was a reduction in extremis of the Vroesenlaan block without any of its flexibility or innovative construction principles. The building could be made to any length and placed in many different configurations. Its client was a group of small building firms for whom Van den Broek made a single design that they could then produce collectively. This made it possible for the Rotterdam builders to construct vast quantities of houses cheaply and swiftly. Some years after the first ones were built, Rotterdam was bombed and an enormous housing shortage was the result. Van den Broek’s ‘Algemeen Belang’ project was renewed and used as an instant solution to the acute housing problem. This did not happen once but three times during the war. Van den Broek’s neutral, cheap and efficient blocks were built in many different urbanistic configurations across the city, from the modernistic open slab to the classical closed building block. The project combined a distillation of decades of architectural experience and experimentation with a purely economical and organizational approach to the building trade. As architecture it is hardly visible in the streetscape. For these reasons it can be seen as the ultimate Van den Broek project.

Reconstructing Rotterdam
The bombing of the centre of Rotterdam on May 14th 1940 by the German Luftwaffe was the most influential event in Rotterdam’s urbanistic history since the mechanization of the harbour in the late 19th century. The four years of occupation meant that it was very hard to start the actual reconstruction of the city right away and forced the elites — entrepreneurial, architectural, administrative and cultural — into a kind of reflective retreat. However, the first act by the city said much about its urban culture. It was decided to remove all traces of the old city, both physical and administrative. Piles were pulled out of the ground and all property rights were abolished. This meant a total tabula rasa, a surreal empty field, planted with wheat and grazed by cattle, where there once was a bustling and chaotic centre. While the City’s master planner W.G. Witteveen was drawing up a masterplan for the reconstruction of the city centre that was to constitute the coping stone of all the extension plans he had made in the past decades, a group of writers and theatre makers were reflecting on the meaning of the eerie emptiness in the middle of the city. These ‘rubble writers’ did not lament the destruction of the historical core, but developed a thesis about Rotterdam as a city that was not defined by its monuments but by its entrepreneurial spirit and its perpetual, violent, physical change. They described the city as a ‘soul’ that became stronger after every attack and whose essence lay in constantly reinventing itself.

This romanticist interpretation of the city as a dynamic process of violent change was echoed in the debates during the war between the planners and the city’s entrepreneurs. These were harshly critical of Witteveen’s architectural vision for the city’s reconstruction and searched for an urbanistic matrix that would not fix things, but would leave the city open for unknown dynamics of change and expansion. Under the leadership of the director of the Van Nelle company, himself a patron of modernist architects like J.H. van den Broek, a number of modernist architects and industrialists came together to offer alternatives to Witteveen’s plan. The alternatives became so numerous and fundamental that their sum total became the basis for Cornelis van Traa’s ‘Basic Plan for the reconstruction of Rotterdam’s city centre’, according to which the centre was indeed rebuilt. Van den Broek came into his own as an urban planner and strategist by heavily contributing to the rethinking of Rotterdam’s city centre.

He started out with a number of designs for the rehousing of shops and cultural institutions as well as new concepts for Rotterdam’s entrepreneurs after the war. These designs share a certain romantic, narrative directness. In these early years the emotional impact of the destruction of the city centre was still clearly present in the designs for its new future. Later, as the resistance to Witteveen’s plan became more organized,
Van den Broek’s proposals shifted to a more urban scale. By working with variations and scenarios he made designs for squares on the river and traffic nodes in the city centre. Combined, these piecemeal designs would form the groundwork for many of the features of the later ‘Basic Plan’. During the last years of the occupation and the first years after the liberation, Van den Broek’s focus shifted again, away from urban design and towards a systems approach to the logistics of the city. The designs looked less and less like designs and more and more like the diagrams of traffic experts. The architectural level of these urbanistic studies practically disappeared and in its place came models for the manipulation of the city as a mechanism. In one of his most influential studies Van den Broek proposed the deconstruction of the city block and its surrounding infrastructure into a new urban unit consisting of a pedestrian shopping area, low-rise shops, service streets and housing slabs around green parks. It would become the Lijnbaan, one of the most influential examples of urban architecture anywhere. It single-handedly introduced the pedestrian shopping centre into post-war cities. The modernist architecture of the Lijnbaan was the work of Van den Broek’s new post-war office, Van den Broek & Bakema; in 1948 he had entered into partnership with the idealistic, modernist expressionist and future Team X founder Jaap Bakema. Van den Broek more or less disassociated himself from architectural design after forging this alliance and took on the role of the strategic, scientific and logistical brain alongside the architectural and visionary heart of Jaap Bakema. This book ends with Van den Broek’s carefully stage-managed retreat from architectural visibility and his entrance into the nether world of universities, government commissions and international organizations.