Housing in The Netherlands 1900-1940
HOUSING IN THE NETHERLANDS 1900-1940

Foreword by J. B. Bakema

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Contents

List of illustrations 7
Foreword by J.B. Bakema 9
Acknowledgements 11

1. Introduction 13
2. The pre-industrial period 15
   Spatial openness
   The town/country dichotomy
   The street and the dwelling
   The hofje
3. Industrialization and urbanization 19
4. Housing production before 1900 21
   Industrial housing
   Speculative housing
   Housing associations
   Agneta Park
5. Dwelling conditions before 1900 27
   Rural poverty
   The typical row house
   Hand-me-down housing
   Back-to-back dwellings
   The closed block: double exposure flats
   Cupboard beds and alcoves
6. The housing act of 1902 33
   Municipal regulation before the Act
   National reform precedents
   The Act: building regulations
   The Act: agents of productions
   The Act: city planning
   The context for progress
7. The influence of Camillo Sitte 42
   H.P. Berlage
   J.J.P. Oud
8. New role for the architect 46
   Socialism
   Artist, ego, and universalism
   The dwelling as cultural symbol
   Expressionism and the Amsterdam School
   The Nieuwe Zakelijkheid
9. The garden city tradition 54
   Introduction of the tuinstad idea
   Romanticism
   Paternalism
   Utopia and self-sufficiency
   H.P. Berlage
   Polarization and critique
Influence
Preliminary tendencies to spatial openness

10. Collectivity and communal space 67
The influence of hygiene
The hofje tradition
Communal garden prototype
Front and back: Tuinwijk Zuid, Haarlem
In and out: Spangen, Rotterdam
J.J.P. Oud
Symbolism of collectivity

11. Standardization 87
Crisis 1917-18
Berlage and ‘Normalisatie’
Concrete village: Watergraafsmeer, Amsterdam
J.J.P. Oud and De Stijl
The problem of the prototype

12. Ideology: ends and means 101
De 8
Union with Opbouw

13. The new conception of space 104
Orientation and light
Universal space
Flexibility

14. Spatial openness: high-rise 112
The image of America
Romantic socialism
Propagation of the image
Aesthetic applications
Rationalization
Rejection: Commissie voor den Hoogen Bouw
The Bergpolder Flats, Rotterdam
The 1934 Competition for Inexpensive Workers’ Dwellings
Final rejection before the war

15. Conclusion 131
Notes 133
Bibliographical note 139
Index 141
List of illustrations

Frontispiece: M. Brinkman, municipal housing Spangen, Rotterdam, 1919-21

1 Burgher houses, Amsterdam, 17th and 18th centuries
2, 3 Hand-me-down housing, Amsterdam
4 Housing association dwellings, Arnhem, 1854
5 Housing association dwellings, Amsterdam, 1884
6-11 Factory housing Agneta Park, Delft, 1885
12 Basement dwelling, Amsterdam, ca. 1900
13-15 Back-to-back dwellings, Amsterdam, 1877
16-18 Speculative housing, Amsterdam, 19th century
19 Alcove dwelling, Amsterdam, 19th century
20 Alcove dwelling, Rotterdam, 19th century
21 High density housing, The Hague, 19th century
22 Alleyway, 's-Hertogenbosch
23-24 J. E. van der Pek, Rochdale, Amsterdam, 1909
25 K. P. C. de Bazel, design for a World Capital, The Hague, 1905
26 H. P. Berlage, expansion plan for The Hague, 1908
27 H. Th. Wijdeveld, expansion plan for Amsterdam, 1919
28 K. Muller, garden village Het Lansink, Hengelo, 1911
29 H. P. Berlage, expansion plan for Amsterdam South, 1915
30 J. F. Repko, first prize, competition for the design of a garden city area, 1915
31-32 M. de Klerk, Eigen Haard, Amsterdam, 1915-16
33-35 M. de Klerk, Eigen Haard, Amsterdam, 1917-20
36-37 M. de Klerk, De Dageraad, Amsterdam, 1921
38 H. Th. Wijdeveld, private sector, Amsterdam, 1926
39-41 K. P. C. de Bazel and others, Philipskorp, Eindhoven, 1910-17
42-44 H. A. J. Baanders, garden village Heyplaat, Rotterdam, 1915
45-49 H. P. Berlage, M. J. Granpré Molière and others, garden village Vreewijk, Rotterdam, 1916-19
50-51 H. P. Berlage, J. Gratama, and G. Versteeg, municipal housing, Amsterdam, 1919
52 Raymond Unwin, illustration from Town Planning in Practice, 1909
53-54 J. E. van der Pek, Rochdale, Amsterdam, 1912
55-57 H. J. M. Walenkamp, Het Westen, Amsterdam, 1919
58-62 J. B. van Loghem, Tuinwijk Zuid, Haarlem, 1919-22
63-74, 91 M. Brinkman, municipal housing Spangen, Rotterdam, 1919-21
75-79 J. J. P. Oud, municipal housing Spangen, Rotterdam, 1918-20
80-82 J. J. P. Oud, municipal housing Spangen, Rotterdam, 1919-20
83-85 J. J. P. Oud, municipal housing Tusschendijken, Rotterdam, 1920-23
86-89 J. J. P. Oud, municipal housing Oud Mathenesse, Rotterdam, 1922-23
92 B. T. Boeyinga, municipal housing Tuindorp Oostzaan, Amsterdam, 1922-24
92 J. B. van Loghem, Tuinwijk Zuid, Haarlem, 1919-22
93 Advertisement, Wendingen, 1918-19
94-95 Private sector housing, Amsterdam, 1934
96-98 D. Greiner, municipal housing Watergraafsmeer, Amsterdam, 1922-24
99-105 J. J. P. Oud, municipal housing, Hoek van Holland, 1924-27
106-111, 113 J. J. P. Oud, municipal housing Kieftoek, Rotterdam, 1925-29
112 M. de Klerk, private sector, Amsterdam, 1921-22
114 A. Pet, competition for the design of a garden city area, 1915
115-116 G. Th. Rietveld, Schröder House, Utrecht, 1924
117-119 G. Th. Rietveld, private sector, Utrecht, 1930-31
120-125 J. H. van den Broek, Eendracht, Rotterdam, 1931-34
126-128 H. Th. Wijdeveld, Vondelpark project, 1919
129 Cover, Wendingen, 1923
130-131 J. F. Straal, private sector, Amsterdam, 1929-32
136 J. B. van Loghem, competition for inexpensive workers' dwellings, 1934
141-143 J. Brinkman, L. C. van der Vlugt, and W. van Tijen, Volkswoonbouw Rotterdam, Bergpolder flats, Rotterdam, 1933-34
144 J. H. van den Broek, competition for inexpensive workers' dwellings, 1934
145 G. Versteeg, competition for inexpensive workers' dwellings, 1934
146-149 B. Merkelbach, C. J. F. Karsten and others, Het Westen and others, Landlust, Amsterdam, 1935-38

Illustrations are referred to throughout the text between brackets [ ].
Donald Grinberg has made a study which brings to light some aspects of Dutch housing which till now have been neglected in most analyses in books and magazines.

Grinberg is a USA citizen and studied architecture at Harvard's Graduate School of Design. With the help of a Sheldon Fellowship and a grant from the Dutch Ministerie van Volkshuisvesting en Ruimtelijke Ordening he was able to do the research for this book in The Netherlands for a year. Grinberg is working together with his wife, who is Dutch – one of the reasons he can read and speak Dutch. His specific situation as an American who can read publications in the Dutch language gave him a unique opportunity for access to original source material and recent studies.

Until now, most publications about Dutch architecture in the period 1900-1940 included housing projects mostly because they were part of 'het Nieuwe Bouwen'. This is the Dutch expression for the modern architecture resulting from action groups such as De Stijl, who introduced new space-time awareness as a basis for the expression of architecture. Oud, Mondriaan, Rietveld, and Van Doesburg of De Stijl were followed by the groups de 8 from Amsterdam and Opbouw from Rotterdam. Members of these groups called themselves anti-aesthetic functionalists – Stam, Merkelbach, Van Tijen, Van Loghem, Duiker, Van der Vlugt, Van den Broek, and others.

Grinberg kept himself cool up against the manifestos and proclamations of this period in his study of the background and practical results. He used the 'measure-stick' of territorialization in comparing the elevated street system in Brinkman's Spangen of 1919 with the galleries of the high-rise Bergpolderflat of 1934. Here he did find that the possibility of the user to define his own territory outside the front doors of Spangen was more successful than in the Bergpolderflat, which is generally praised as one of the best examples of 'het Nieuwe Bouwen'.

This study also brings to light facts which till now were not well-known. For example, Grinberg points out in Oud's work a sympathy for some of the ideas of Camillo Sitte. In 1911 Oud went to Munich where he worked for Theodor Fischer, a strong promoter of Sitte's ideas. Another point about Oud shows how corner-window solutions of his housing were similar to corner solutions of the expressionist Amsterdam School. Grinberg relates Berlage's association with the Dutch socialist party (SDAP) and the Bond van revolutionair-socialistische intellectuelen to housing. Elements such as entrances to communal gardens, as interpretations of Sitte's ideas by Berlage and later by Van Loghem in Tuinwijk Zuid (1919-1922) and by Brinkman in the Spangen housing, became expression and symbol for collectivity and social equality.

Grinberg's work is not only an essential contribution to the study of Dutch housing, but is also an example of how research can be part of an architectural education program. Grinberg made this study five years after the democratization of the School of Architecture of Delft's Technical University. The changes meant, for example, that advanced students and staff could research the background of housing policy in the period 1900-1940, including the heroic period 1920-1930. This research resulted in studies which stayed until now only accessible to those working-studying in the department Bouwkunde at Delft. Grinberg's study makes good use of the unique circumstances which became possible by the 1969 changes. Since then more small groups have been allowed to work in specific problem areas and to do research in the total design process in which architecture-urbanism is functioning.

The publication of this study, with illustrations and documentation of source material, means that Grinberg's work can become a fundamental tool for those who would like to better understand Dutch housing in the period 1900-1940.
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D.I.G.
1. Introduction

Youth should only build upon the best of their elders. The best is Berlage's beginning and end; his significance for historical development is the start of the new elementary perception.

Amsterdam is betraying the faith: it abandons the new discoveries in favor of over-drawn, emotional, romantic irrelevancies and loses itself in variegated modern trifles. Only what is simple can be understood collectively: what is individualistic remains, in the last analysis, meaningless. Here is where I seem to detect an understandable tactical error on the part of Oud. Oud is, to borrow Gropius' language, functional. Amsterdam is dynamic.

A union of both concepts is conceivable, but cannot be discerned in Holland. The first puts reason foremost - perception through analysis. The second, unreason - perception through vision. Analytic Rotterdam rejects vision. Visionary Amsterdam does not understand analytic objectivity.

Certainly the primary element in architecture is function, but function without sensual contributions remains mere construction.

More than ever do I stand by my program of reconciliation. Both are necessary. Both must find one another.

If Amsterdam goes a step further towards ratio, and Rotterdam does not freeze up, they may still unite. Otherwise both will be destroyed; Rotterdam by the deadly chill in its veins, Amsterdam by the fire of its own dynamism.

Erich Mendelsohn to his wife, 19 August 1923

When Mendelsohn wrote to his wife in 1923 about his perception of the differences between the architecture of Amsterdam and Rotterdam, he had in mind a number of innovative housing projects. This housing falls roughly at the mid-point of this study, which will investigate the precedents and influences of the two streams identified by Mendelsohn. The process of reconciliation in his terms may not yet have been in evidence, but as this study of the development of Dutch housing ideals and practice will show, the judgment of Amsterdam versus Rotterdam is not a simple one to make.

The polemic of J.J.P. Oud and others against the expressionist architecture of the Amsterdam School preceded Mendelsohn's comments by six years, but the influence of the Amsterdam School began a rapid decline in 1923. It was not only the year of the death of Michel de Klerk, the Amsterdam School's most talented architect, but it was also the year in which the term Neue Sachlichkeit was first used by the director of the Mannheim Art Gallery, G.F. Hartlaub. The 'New Objectivity', originally used as the title of an exhibition of post-expressionistic objective paintings and graphics, eventually signified a mental attitude which rejected all emotionalism. Mendelsohn's and Oud's perceptions represented the ease with which the term spread to architecture, and to the Dutch language, as Nieuwe Zakelijkheid.

Mendelsohn anticipated one meaning of Nieuwe Zakelijkheid's full application to architecture by 1926 in his observation of Rotterdam's 'analytic objectivity'. Although the term Nieuwe Zakelijkheid is used in this study to refer to architects of het Nieuwe Bouwen, the use of the label must not preclude an understanding of the symbolic and formal aspects of the radical architecture of the 1920s and 1930s.

The dichotomy between Amsterdam and Rotterdam as expressed by Mendelsohn and many later critics has hindered a true understanding of Dutch architecture between 1900 and 1940. This has been especially true in regard to housing, since neither city had a monopoly on rationalism or formal exuberance. Perhaps the de-
gree of differences so often pointed out between the two cities results from the political milieu in which Dutch architects found themselves from the 1920s onwards. This atmosphere, especially affected by developments in Germany and the Soviet Union, increased the tendency to associate architectural form with a political position.

Architects who designed housing in Amsterdam or Rotterdam were indebted to the buildings, lectures, and writings of H.P. Berlage, who in a discussion of any aspect of Dutch architecture must be emphasized as a key figure. However, the stressing of Berlage's contribution towards a simplified aesthetic conception of the wall as a definer of space, or the stressing of his role as an architectural moralist, is insufficient to understand the bridges between the traditions of Dutch housing and the innovations that took place in the 1920s and 1930s. This study will show not only other ways in which Berlage was the transition between traditions and innovations, but will also show that what has often been viewed as experimental and innovative in Dutch housing in the 1920s and 1930s had its roots prior to the polemics of De Stijl. As self-evident as this may appear, it is a distinctly revisionist approach compared to the arguments defending the uniqueness of the functionalists' contributions.

The development from closed to open site planning for housing, a major theme of this study, was a process not confined to Holland alone. However, the Dutch contribution has long been misunderstood outside of The Netherlands because of the myths which surround Le Corbusier and the problems of language. Following the First World War, the Dutch were in a unique position to build, but they were only able to exploit the situation because of the important changes that had taken place through the enactment of the Housing Act of 1902 and the housing built under its aegis prior to World War I. Furthermore, the late industrialization of The Netherlands allowed the development of a receptive climate towards the city and technology. Positive, optimistic attitudes towards these were essential to innovations occurring before and after the beginning of De Stijl in 1917.

Many of the housing projects which are examined in this study possess a uniqueness that is intriguing and relevant today. This uniqueness not only represents the positive aspects of Dutch traditions and inventions, but also represents the integration of influences from other countries. The receptiveness of Dutch architects, city planners, and housing officials to developments elsewhere enhanced the extremely important process of synthesizing ideas. However, the integration of rationalism and dynamics that Mendelsohn pointed out was not the objective of most architects prior to the Second World War, and those who did integrate the two streams were not those who made the most significant contributions to Dutch housing. Unfortunately for most housing built since the Second World War, traditions and innovations were too often regarded as mutually exclusive.
2. The pre-industrial period

The foreigner's image of The Netherlands remains constant despite actual change: windmills, wooden shoes, vast tulip fields, canals, and stately burgher houses in the cities. As one often does when writing about the Dutch, it is necessary to begin with the pre-industrial period, and we must especially understand the nature of the physical environment. This will clarify the constants and transformations of Dutch values about housing. Furthermore, the influences of geographical features must be distinguished from intellectual and practical influences not originating in The Netherlands.

Spatial openness

One very often imagines that the Dutch towns prior to as well as after industrialization were very densely overbuilt as a result of the scarcity of buildable land and the need to form settlements that could be easily defended. But compared to nineteenth-century conditions, Dutch towns prior to industrialization were spacious, and contained significant amounts of greenery. This vegetation was found behind the individual houses rather than in public places. The residents of the towns had strong attachments to the soil of their more rural backgrounds, and tending a vegetable garden, fowl, or orchards was important both economically and psychologically. To accommodate these outdoor activities, each house had a long, narrow strip of land behind it. ¹

This is not to say, however, that the land was not intensively used; whether settlements were built on terpen, dikes, or impoldered land, economy of means and physical compactness were ensured because of the great amount of labor required. One must distinguish the high density and physical compactness of the pre-industrial period from the overcrowding and lack of space resulting from urbanization and housing speculation.² In contrast to the claustrophobic squalor of the nineteenth century, 'the medieval towns, particularly those which were not too continuously preoccupied with defense, were on the whole remarkably spacious and even hygienic'.³ This was one of the many reasons why the medieval period was admired by both conservative and radical reformers of the late nineteenth and early twentieth centuries.

The town/country dichotomy

The geographical conditions which very early required cooperation between municipalities to maintain constant water levels, necessary for the wooden pile foundations, were a major incentive for a strong tradition of planned land use. Furthermore, because of the intensive land preparations required for a town's horizontal expansions, planning was a necessity. Planning in the form of zoning for commercial use existed before the seventeenth century. The economic successes of the seventeenth century fostered many medium-sized towns whose commercial specialties, unique geographical situations, and an already existing tradition of municipal autonomy ensured that this planning was an affair of the municipality. Dutch seafaring capabilities were not only a basis of prosperity, but also stimulated the development of surveying and mapping techniques. These tools were quickly adapted to the requirements of land planning. Although there was a tendency for a concentration of wealth in the provinces of North and South Holland in the western part of the country, no very large cities developed, as was the case in France and England.

Yet despite the qualities of openness that could be found in the towns, there was a pronounced town/country dichotomy. The compactness of the settlements contrasted with wide open views over green pasture or bodies of water. Surfaces in the
Burgher houses
Seventeenth and eighteenth centuries
Amsterdam
Leidsegracht

The urban poor had to find their own habitat within the oldest, least desirable housing stock. Although the spatial openness of the canal housing could not be achieved elsewhere, the symbolic content of the poorer housing was based on the burgher model. All lacked an image of collectivity sought by architects in the twentieth century.
towns were quite thoroughly paved, views were contained, and there was a strong sense of the man-made town or village as an entity separate from the flat landscape. The Dutch word 'geslotenheid', the state of being enclosed, had traditionally favorable associations both before and during the twentieth century; this is apparent in Vermeer’s painting of Delft as it would be later with Berlage’s and others’ fascination with the ideas of Camillo Sitte. Geslotenheid had a meaning that went deeper than aesthetics, however, to the level of psychological security that was made possible by the defendable form that the towns assumed.

The contrasts between town and country, however man-made the land might have been, formed an important psychological background to many of the conscious intellectual movements of the twentieth century. The physical character of The Netherlands was invoked in the defense of positions as diverse as De Stijl and the garden city movement. Theo van Doesburg, De Stijl’s organizer, wrote in 1926: A flight in an airplane can convince one of the great difference in method between nature and the human spirit, when one compares the countryside and town. Everywhere that the human spirit has intervened, as in the town, a totally different order prevails, based on totally different laws and expressing itself in completely different forms, colors, lines and tension.

Equally contrasting, equally hostile as the relationship of town to countryside, is the relationship of the structure of the human spirit to the structure of nature. The spirit is the natural enemy of nature (however paradoxical that may sound), without this necessarily implying a duality. Yet others, such as Granpré Molière, a protagonist of the garden city ideals, would find the source of inspiration for the human spirit in the duality between man and nature perceived as a harmonic unity. For the Nieuwe Zakelijkheid as well as for the traditional Delftse School, nature was associated with the past and romanticism, whereas the city evoked rationalism and the future.

The street and the dwelling

With few exceptions, the deliberately designed closed building block was unknown before the nineteenth century. Dwellings were built along the available street frontage, and rather than being continuous around a corner at an intersection, a row of dwellings ended and another detached one began. Because the building of roads, often on dikes, was so labor intensive, the frontage of the houses became very narrow in order to maximize the number of dwellings that could be served from a road. Not only were dwellings in a row usually deep and narrow, but also they often shared a common brick wall in order to minimize the cost of the foundation piles.

Because there are only moderate amounts of sunshine in the northern latitude, the narrow, non-structural ends of the dwellings were exploited in the creation of large windows. The burgher houses of the seventeenth and eighteenth centuries are well-known for their good use of daylight. The combination of shutters and glass allowed a completely modifiable quality of light to be obtained: high, low, intense or diffuse, the seventeenth-century paintings of interiors best describe and evoke the variety.

But windows served more than the interior of the houses. Since part of the municipal tax on dwellings was based on the quantity of glass used, the larger the burgher's windows the more they expressed his wealth and status. One’s progress on the economic ladder in the seventeenth century was often marked by successive increases in the number and size of windows on the street façade. As a result of the great depth of the dwelling, the room on the street sometimes had a greater vertical dimension than the smaller, interior rooms in order to allow for penetration of natural light as deeply as possible into the dwelling. This fact, along with the prestige of the large windows, made this front room the 'mooie kamer' (literally, 'beautiful room'), the symbolic presentation of the home to the street.

An equally compelling contributor to the image of bourgeois prestige and self-esteem was the language of forms developed throughout Europe but significantly
modified as applied within the Dutch brick construction tradition. This system of forms ranged from the majestic baroque gable to classical moulding configurations and details. These visual characteristics were standards for emulation, and were widely used throughout the country. For example, simplifications of the baroque gables of the Amsterdam canal houses adorned the street facades of both farm houses and the most modest housing in the cities [2 - 3].

The self-conscious artistry of the Renaissance or the Baroque was less pronounced in The Netherlands than elsewhere and the most prominent values were those of early capitalism, especially private property. Each dwelling had its own identity in the collective whole bound together by a common street alignment and detailing. And although on the one hand the dwelling increment was but a few meters wide, on the other hand city elements of a large scale - the canals - provided a constant frame of reference for the symbiosis between the private and the communal. This validation of one scale by another remains an important theme to follow throughout the period of this study. Whatever the causes that led the merchants to avoid building separate detached dwellings, as a part of a larger fabric of built mass these continuous rows of dwellings became standard long before Camillo Sitte's influence and the advent of mass construction methods.

Although the Dutch nobility played a smaller part in creating the character of the towns and cities than in England or Germany, in Holland too the dispersion of the vocabulary of the burgher house sometimes resulted in a street where appearance misrepresented what lay behind. In the regularity and repetition of eighteenth-century forms which, especially outside Holland, were means for an effect, 'the avenues are flanked by trees and imposing façades, impersonal fronts which give little clue to any extreme of luxury or squalor, of spacious gardens or congested alleys, which may exist behind them.'

In contrast to this system of architectural form, which was valid for the culture as a whole, Dutch architects in the first few decades of the twentieth century were preoccupied with creating a new language which specifically symbolized a single class - the workers.

The hofje

A type of pre-industrial housing in which the enclosed space was consciously created was the hofje. The word 'hof' has long been used in the Dutch language to mean garden (e.g., Garden of Eden), and the term has the richness of the meaning of the English word 'court', with its spatial, judicial, and amorous meanings. However, the diminutive, 'hofje', narrows the word's meaning considerably to denote the philanthropic almshouses for orphans, the elderly, or the pious which existed as early as the thirteenth century. Entrances to the various rooms of these institutions fronted on a courtyard, which was a functional and symbolic focal point. Some of the larger hofjes were self-supporting, and the enclosure was necessary as a defense against plunderers.

The hofjes were the earliest examples of the wealthy providing housing for the more needy, and the paternalism which marked their operation continued as an unbroken tradition through the scattered attempts to house the working class in the nineteenth century. The hofjes sometimes exuded an air of luxury that reflected their role as monuments to the governing committees that built them. The lavish ground floor of the Frans Hals Museum in Haarlem, once a hofje for old men, was used solely by the warden and overseers, and the old men under their care had their quarters in the more simple and confining upper-level spaces. The quality of the inner world found within the hofjes parallels what has been said above in regard to the towns: spatial enclosure did not preclude spaciousness. The sense of inner and outer, and of the symbolic center where one found a pump or a formal garden, are features that were reinterpreted for the first communal gardens in workers' housing in the twentieth century.
3. Industrialization and urbanization

The first tentative moves towards industrialization in The Netherlands began in 1813 when King Willem I acceded to power, at a point when the economy was at its lowest point following a period of stagnation under French rule. Having been raised in England, he had experienced firsthand the strongest manifestations of industrialization in Europe, and his rule was marked by efforts to modernize the infrastructure of roads, canals, and harbors. However, the continued dominance of domestic industry meant that the first half of the nineteenth century differed little from earlier periods. Modern capitalism could not be observed until about 1870.

Capital investments were not directed towards the reorganization of Dutch production, but rather towards more immediately profitable areas in the already industrializing countries such as England and Belgium, which separated from The Netherlands in 1831. Just as trade had been a source of much wealth in the seventeenth century, the forming of the Nederlandsche Handel Maatschappij (Dutch Trading Company) in 1824 ensured that much financial speculation would be directed abroad, which resulted in little structural change in the domestic economy. Although steam-producing machinery had been used in the drainage of polders as early as 1787 and beginning in 1800 for milling operations, industry remained more of a medieval craft nature with technical improvements being isolated and relatively unimportant.

The first Dutch railway began operating in 1839, but was used only for passenger service between Amsterdam and Haarlem. Thus, similar to the first uses of steam power, the railways had little effect on the economic structure until about 1870 when the railway network was extended and used for freight transport. This date was an important turning point, marked by the opening of the Suez Canal in 1869 which resulted in a burgeoning colonial trade. The increased possibilities of overseas trade required a better link between Amsterdam and the North Sea than the Zuiderzee provided, and thus the opening of the North Sea Canal in 1876 was an important improvement for Amsterdam's economic future. At Rotterdam, improved harbor conditions enabled it to serve as a sea connection with the Ruhr district in Germany. The industrialization in the Ruhr helped to guarantee the Dutch a supply of steel, which stimulated the revitalization of the ship building industry in Rotterdam. The economic link with Germany also generated increased cultural interaction, which eventually had significant effects on both German and Dutch housing.

Inland, large textile manufacturing businesses began operating in the 1830s, but more important transformations occurred in the 1860s when steam power was applied on a wide scale. Enschede became a major textile producing center, Almelo the center of men's ready-made clothing, and Hengelo a center of metal industries. Hengelo was exploited as a railway interchange at the edge of a river by the Stork brothers, whose enterprises there included dye works, weaving and spinning, and a foundry. Their successes were rapid and resulted in labor and housing shortages, conditions which led to recruitment of foreign workers and the formation of an association for the building of housing.

Eindhoven was the location of the founding of a small electric lamp factory in 1891 by G. Philips. The firm rapidly prospered under A. Philips, who supervised almost all matters of the company in the manner of nineteenth-century paternalism common among almost all industrialists. Yet except for these examples, industrialization in The Netherlands occurred later and much less intensively than in England, Germany or Belgium. Various retarding factors included an excise tax on imported fuel before 1863, a reluctance to build railroads because of a widespread belief in the sufficiency of the canal system, and a flood of cheap British goods on the Dutch market. The improvements in farming techniques prerequisite for industrialization were hampered by the European agricultural depression of 1878-1895, whose effects were particularly severe in The Netherlands. The British banned live cattle imports, and
Bismarck instituted a protectionist policy for German agriculture. But the greatest damage resulted from the importation of cheap grain from North America. The resulting lowered demand for Dutch grain and sustained bad weather caused large-scale migration to the cities.

Contrary to popular opinion, population in the European cities grew faster than in the American ones, and in the Dutch cities this growth was extreme. Between 1830 and 1896, Amsterdam's population increased 240 percent, Haarlem's 286 percent, Rotterdam's 347 percent, and Arnhem's 367 percent. These large increases of population in the cities were significant in causing the poor housing conditions of the nineteenth century, but city expansion continuing into the twentieth century was the context of both architectural and planning innovations in housing.
4. Housing production before 1900

Industrial housing

The great influx of rural inhabitants to the cities did not necessarily take the worker nearer to his work, because the short supply of housing allowed little freedom of choice of location. As a result of this, as well as an increasing recognition that the welfare of the worker was vital to economic success, a number of industrialists built housing for their own laborers. Descending from the paternal philanthropy that had characterized the hofjes, these efforts were motivated chiefly by economic self-interest.

A few instances of employers building for their personnel existed before 1800 in the paper industry in the western provinces of North and South Holland, and the motives were purely economic. Thomas Ainsworth, an Englishman who founded the first steam bleaching plant in The Netherlands in 1831, had as early as 1834 established an extensive plan for the building of workers' dwellings in Twente. The textile company evolving from Ainsworth's work and owned by G. and H. Salomonson finally built about eighty dwellings in 1852. One of the most authoritarian examples of housing was built by Petrus Regout in Maastricht in 1864 for workers in his pottery factory. In what was later referred to as a 'human warehouse' there were seventy families housed - all had access to their quarters through only one entrance. But housing built by industrialists for their workers often constituted a significant increase in the standard of living. In some cases these efforts were predecessors of projects associated with the garden city movement. Such a case was the housing association Hengelosche Bouwvereeniging which was chiefly sponsored by the industrialist Stork. Formed in 1867 after a similar society had been founded two years earlier in Almelo, this association was the forerunner of the garden village Het Lansink in Hengelo of 1911.

Speculative housing

In nineteenth-century Holland, examples of housing built by industrialists and associations were exceptions to the general situation in which most new housing produced for the working class was through private speculation. Although housing had been an object of speculation in Europe as early as the thirteenth century, not until the prosperous middle decades of the nineteenth century did buildings appear which were slums from the moment the plans were conceived or set on paper, slums duly legalized and codified and accepted in general practice. This inferior housing and the processes which produced it were the focus of most nineteenth- and twentieth-century reform.

The Netherlands inherited finance practices from the years of Napoleonic influence which deeply affected the amount and quality of the housing built. This legacy included rigid class divisions and preference for capital investment in land, mortgages, and foreign bonds. The French Crédit Mobilier included among its three branches a mortgage banking system whose funds were originally intended for agricultural investment. However, with reduced investment possibilities because of the agricultural decline, new sources of return were sought in the housing market, where the demand for housing was rapidly increasing. The first mortgage bank was founded in 1861, followed by the Nederlandsche Crediet en Depositobank founded by Samuel Sarphati in 1863. In general, the banking methods before 1870 were very much under the influence of the Crédit Mobilier.

Thus, in the atmosphere of economic liberalism and expansion in the second half of the nineteenth century, investors' speculation in housing for the general market became commonplace, and it was very much a renters' market. Small contractors
first made use of the mortgaging possibilities but the production of speculative housing proved to be so lucrative\(^8\) that investors soon included entrepreneurs who were isolated from the actual construction of the dwellings. The easy availability of mortgages usually ensured high profits, and land prices were as subject to the forces of speculation as the dwellings themselves since the mortgages could often apply to the purchase of land. Victims of their own land speculation, the investors tried to compensate for soaring land prices by increasing the dwelling density. This high density, an extremely high demand, investments based on the profit motive, and a paternal attitude towards the working class resulted in a very low-quality dwelling called ‘revolutiebouw’ or jerry-buildings.\(^9\)

The inhabitants of the speculators’ housing were confronted with not only the bad physical conditions, but also rents which were very often beyond their ability to pay. Thus in effect many of the dwellings produced were for the middle-class market.\(^10\) The supply was also totally inadequate. The rapid expansion of the Dutch economy after 1870 did not result in a significant increase of housing production because the initial attractiveness of speculation in housing diminished as the profit margin began to be regarded by the capital investors as more precarious in housing than elsewhere. With increasing interest rates, operating expenses, and land prices, capital sought more profitable areas of investment, and thus housing demand went unanswered. Between 1850 and 1900 not more than 5,000 good and inexpensive dwellings were built, which approximated one percent of the total dwelling supply of the period.\(^11\)

Dwelling density increased over earlier periods not only because of the increasing application of multi-story construction, but also because the corners of the blocks were filled in with dwellings. The resulting closed housing block resulted from a profit motive, and only later was such total enclosure defended on functional and aesthetic grounds by Berlage and other followers of Camillo Sitte.

**Housing associations**

The paternalism which characterized the industrial settlements both before and after the 1902 Housing Act was not restricted to the wealthy industrialists, but also could be found in the housing associations. In 1818 the *Maatschappij van Weldadigheid* (Benevolent Society) was founded in order to provide opportunities for unemployed town inhabitants to colonize areas of heath and bog for farming.\(^12\) This same association built thirty-three workers’ dwellings in 1835 in Leyden,\(^13\) but it was not until after the 1850s that the number of attempts by associations to build housing became significant.

The first association whose sole purpose was to build housing was the *Vereeniging ten behoeve van de arbeidersklasse* (Association for the working class), founded in Amsterdam in 1851. Like other that followed it, the initiatives were taken by the well-to-do with a strongly paternalistic mode of control which often specified that the housing constructed was only for the diligent and the well-behaved. Those who drank were often excluded from the housing of such associations.\(^14\) The Amsterdam association built eighteen dwellings in 1853 which consisted of two rooms, a privy, an iron bed, and a sink; this was a relatively high standard for a time when a freestanding bed was uncommon. Associations similar to the one in Amsterdam were founded in Arnhem in 1853 and in The Hague in 1854; nation-wide there were nine by 1860, seventeen by 1870.\(^15\)

Most of the associations could be characterized by their half-speculative, half-philanthropic character.\(^16\) For example, the Arnhem association, *Vereeniging tot het verschaffen van geschikte woningen aan de arbeidende klasse* (Association for the provision of suitable dwellings to the working class), paid a 4 percent dividend to its shareholders, with the additional possibility of capital gains. The association built mostly one-room dwellings [4], but its profits were not channelled into new or better quality housing. In 1879 a two-for-one split in effect raised the statutory dividend limit of 4 percent to 6 percent.\(^17\)
A comparison of these two projects shows the extent to which housing associations in the largest city remained victims of the land speculation created by private capital. In the Arnhem example, traditional village imagery has not been lost, whereas in the Amsterdam case neither the family unit nor the collective whole received attention. The Amsterdam project is the forerunner of the apartment dwelling block organized on a technical basis in which vertical organization and production efficiency are key factors. The Arnhem dwellings, being more traditional, are the basic forms later used in the garden city areas. In the nineteenth century, however, these two types did not represent two opposing ideologies, as occurred later between their descendant types.

Housing association
Amsterdamse vereeniging tot het bouwen van arbeiderswoningen
Amsterdam
Roggeveenstraat/Dirk Hartoghstraat
1884
The first attempt of workers to produce housing themselves grew out of the consumer cooperative movement which had begun in about 1860. In 1868 the Amsterdam Bouwmaatschappij tot verkrijging van eigen woningen (Building Company for the acquisition of self-owned dwellings) was founded, and the rents it collected were applied towards the tenant's future purchase of the dwelling. These cooperative associations were realizations of some of the broad objectives of the workers' movement, and although they provided only a very small fraction of workers' housing built before the Housing Act of 1902, they, as well as the municipalities themselves, eventually became the most innovative producers of working-class housing.

Agneta Park

Among the best known and highest quality workers' housing built before the 1902 Housing Act was Van Marken's Agneta Park in Delft [6-11], begun in 1884 for the workers in his Nederlandsche Gist en Spiritus Fabriek. J.C. van Marken (1845-1906), a Francophile, probably developed the idea of a housing park for his workers from the example at Mulhouse where the Société des cités ouvrières was founded in 1853. The English Bournville might have also influenced him, but some of the Agneta Park dwellings are almost copies of the Mulhouse type. Van Marken, who derived his values more from his Protestant preacher father than from any knowledge of the work of Robert Owen, desired that Agneta Park become a completely self-sustaining colony. Thus, along with the physical housing and some social facilities, he sponsored various recreational activities and cooperatives.

Founded officially as N.V. Gemeenschappelijk Eigendom Maatschappij tot vervulling van eerste levensbehoeften (Communal Property Society for the fulfillment of the first needs of life), Agneta Park bore the full personal stamp of the Van Markens, whose villa stood in the middle of the park. Van Marken's wife, after whom the colony was named, was active in the preliminary inquiry into the living desires and ways of the workers, and she served as a sort of mother figure for the settlement. It is said that Van Marken took such personal interest in the lives of his workers and the park they inhabited that he would frequently reprimand residents who had not kept the exterior around their dwelling respectable. The motto of the factory, 'De fabriek voor allen, allen voor de fabriek' ('The factory for all, all for the factory'), reflected the paternalistic and economic self-interest of the colony.

To the workman wages alone create indifference ending in strife; participation in the profits engenders peace, ending in devotedness. Yet despite its paternalistic or escapist qualities, Agneta Park marked a high point in the quality of dwelling provided to workers in the nineteenth century. Both the more ample living areas and the sense of spatial openness among the dwellings were significant innovations. The site plan of the settlement was designed by J.D. Zocher, who had earlier designed parks in the English landscape style. This approach at Agneta Park, including curved roads, abundant vegetation and a pond, resulted in a picturesqueness that was not characteristically Dutch, but these features projected an image of wealth and dignified repose. Here was a successful attempt to give workers' dwellings the dignity of upper-class homes; four dwellings under one roof created a visual consistency with Van Marken's nearby villa. In the twentieth century the desire to dignify workers' dwellings developed even more consciously, but moved away from the method of imitation as used at Agneta Park. Preceding Port Sunlight in England, Agneta Park never reached that settlement's international influence, but within Holland it served as an important example of what could be built when the production of housing was removed from the forces of speculation.
The site planning by Zocher, in the English garden style, created a picturesqueness which belied the fact that this was an industrial settlement. The concern for appearance was pervasive; the workers’ dwellings were designed to be similar in scale to Van Marken’s nearby villa.
The restful setting, epitomized by the factory chimney subdued by the natural landscape, became a main ingredient of the garden city vision. However, the Dutch garden city movement never went as far as Agneta Park did in establishing a self-sufficient community.

"For twenty years and more these works have been carried on, and never so much as a threatened strike. And why? Because the system of mutual interests has welded master to man, and so in the area influenced by the Netherland works we find a peaceful, happy community, free from any marked degree of vice, cleanly and sober in habits, all anxious to promote the common end in view, viz., the commercial success of the undertaking to which they owe their daily bread and comforts."

"The Pilgrimage into Yeast-Land"
The British Bakers Press, Quarterly Trade Review, July 1893
5. Dwelling conditions before 1900

Rural poverty

Not all bad dwelling conditions\(^1\) were a direct result of speculation or of industrialization. Often the worst housing conditions were found in rural areas, where isolation as much as negligence caused considerable hardship. In the eastern and southern provinces, which did not share the economic fortunes and speculation of the coastal provinces, one could find colonies of sod-cabins. Built in a day by their occupants, these *plaggenhutten* consisted of walls of branches and sod, a door of oak twigs, no windows, and a hole in the primitive pole and whatever-available infill roof for fire exhaust.\(^2\) Such dwellings were often found in settlements containing as many as a few hundred inhabitants, who were agricultural day laborers if employed at all. In Drente the construction of these minimal shelters continued until the 1930s.

The typical row house

The most typical urban dwelling in the last half of the nineteenth century was one built by speculators on the edge or outside of the zones of high land prices. These were low, one-story dwellings with a pitched roof in order to avoid using piles. The dwellings were built in rows with common party walls, and were basically square in plan. However, a vestibule, cupboard bed and stairs reduced the usable area of the main space substantially. Early examples of this type of house had a sink counter and pump along one wall of the main space, but a kitchen was sometimes appended onto the rear of the house. The privy was either freestanding, or attached to the house, and was sometimes accessible only through the kitchen. The usable space under the 45° pitched roof was minimal, and had only one tiny window for daylight. Yet such a house was far superior to a dwelling contained within the more urban block, for not only was there some possibility of through-ventilation, but the residents also had their own door on the street, and usually a garden behind the house.

Addition of rooms onto the rear was common for this was the only direction where expansion was possible because of the building line regulation on the street side, adjacent units, and inadequate foundations to support more than the original load. The width of the dwelling was usually a function of the spanning capacity of the available timbers, and the narrowness resulted in problems when expansion occurred. New rooms on the back of the dwelling often eliminated the rear windows, resulting in a reduction of natural light and ventilation. Curiously, the type of dwelling with the main spaces under the pitched roof and with the kitchen and other rooms added onto the back became so common that later many architects intentionally designed such dwellings whose plans were similarly additive and fragmented.\(^3\)

This basic row house was the traditional prototype to which both garden-city type dwellings and such projects as J.J.P. Oud's Kiefoek\(^{[106-111,113]}\) owe their morphology. It was the simplest form of the one-family house but was repeated in a series which resulted in a continuous whole. Perhaps its most important feature was the potential of territorialization it offered its inhabitants through their own door to the outside world and a piece of land at the rear. In this earliest type the functions occurring at the front and rear of the house were radically different. This was a result of the same psychology which caused the *mooie kamer* of more luxurious housing to be located on the street side. The inhabitants presented as much dignity as possible to the street side and used the rear for more free and private functions. Thus the one-room dwelling with its tiny attic was a mediator between two extremely different kinds of exterior spaces. The attempts of innovators to modify this traditional dichotomy eventually became an important theme of twentieth-century developments.
Hand-me-down housing

When the new urban dweller arrived in the larger Dutch cities, there awaited little or no housing built specifically for him. The old burgher dwelling once inhabited by one family, but abandoned in the passage of time, was subdivided to such an extreme that each of its rooms housed a family. Even the cellars were used, and in Amsterdam in 1859 there were about 23,000 people living in cellars - damp, dark unventilated places originally intended for storage. By 1874, when the Amsterdam health board undertook a study of the problem, this figure had decreased only slightly. Eight percent of the population was living in basements, and in 1,000 of these dwellings, there was not even full adult head room.

Back-to-back dwellings

In 1899 the Amsterdam census showed that the average dwelling occupancy was five persons and that almost 60 percent of the dwellings consisted of not more than two rooms. One of the most common types in this major group was the back-to-back dwelling, which financial speculation also produced in England. As their name implies, these dwellings shared party walls with three other dwellings, and had only one wall with windows. Approximately square in plan, these rooms had a kitchen space along a side wall, and either cupboard beds or the slightly more spacious alcoves along the side or back wall. In either case the sleeping area very rarely received sunlight, and never through-ventilation. One toilet at the communal entrance served six, eight or ten families, and only later in the century was one provided in the dwelling itself. A shower or bath was unheard of.

These dwellings had no open space around them except streets, and so all the backs of the dwellings were internalized, i.e., they were one-dimensional. This type of dwelling was found in Amsterdam where the land speculation was the fiercest, but after a well-intended building law in Rotterdam in 1860 required all housing to have pile foundations, this type of multi-story construction was stimulated in order to distribute the cost of the piles among more dwelling units. The lack of proper ventilation, the small amount of space per person, long working hours and low wages made the lives of the families who lived in this housing very miserable.
These municipally-subsidized, back-to-back dwellings were better than many others built at the same time because each family had its own WC within the dwelling. The cupboard bed, the absolute retreat, was often missed by those who occupied the first dwellings built under the 1902 Housing Act. Although the communal stair was slightly expressed, the ideological intention to glorify the worker's dwelling was not yet present. The failure of the well-intentioned housing associations to provide better housing than this impressed upon many the need for comprehensive change which the 1902 Act eventually provided.
The closed block: double exposure flats

A much better living situation existed in those blocks where there was a street and a rear exposure [16-20]. This did not necessarily mean that there was through-ventilation, however, for the sleeping facilities were cupboard beds or alcoves in the center of the deep, rectangular apartment. There was a separate space for the kitchen at the rear, on the inside of the block. Towards the end of the century, a balcony for storage and drying was appended to the kitchen. The outdoor spaces within these blocks were accessible only to the ground floor residents, who paid the most rent (which decreased vertically). From old photographs it appears that use of this space reflected the rural background of the inhabitants, and the keeping of small animals as well as growing vegetables was common. Wooden outbuildings proliferated, and with time became more necessary for household storage, which intruded on the agricultural use of the block's enclosed space. The image of such a space was one of visual chaos to which the territorial access of the ground floor residents contributed the most.

Cupboard beds and alcoves

The feature most common to all the dwelling types discussed above was the bedstede, a built-in bed enclosed by a curtain or wooden doors [15]. It usually served as sleeping space for at least two adults and a child, who lay along the short dimension at the feet of the parents or siblings; cases of eight members of a family with one cupboard bed were known. The slightly larger alcoves [19-20] were tiny rooms where there was space to stand next to the bed, but these had the same lack of ventilation and natural light as the cupboard beds.

There seems to have been a deep psychological attachment to these overcrowded, dark and oppressive sleeping spaces, whose elimination was among the major objectives of nineteenth- and twentieth-century reform. The inhabitants of the first dwellings built under the 1902 Housing Act in Amsterdam by the Rochdale housing association in 1909 [23-24] strongly felt the absence of their former alcoves and cupboard beds:

The missing of alcoves and cupboard beds bothered some, however strange this may sound; in the separate fresh bedrooms they did not feel at home. Because of such reasons occupancy went slowly. 9

An American commentator noted a similar attitude in 1923:

the built-in cupboard bed with closed wooden doors is still the favorite sleeping place of an appreciable part of the population. 10

A reading of Gaston Bachelard's The Poetics of Space (1958) can help to overcome our difficulty in understanding this most basic territorial phenomenon. He uses a combination of phenomenology, psychology and literary criticism to unlock the secrets of 'nests', 'shells', 'corners', and 'intimate immensity':

For our house is our corner of the world. As has often been said, it is our first universe, a real cosmos in every sense of the word. If we look at it intimately, the humblest dwelling has a beauty ... a primitiveness which belongs to all, rich and poor alike, if they are willing to dream . . . .

If I were asked to name the chief benefit of the house, I should say: the house shelters daydreaming, the house protects the dreamer, the house allows one to dream in peace . . . .

And always, in our daydreams, the house is a large cradle . . . . But in the daydream itself, the recollection of moments of confined, simple, shut-in space are experiences of heartwarming space, of a space that does not seek to become extended, but would like above all to be possessed . . . .

With nests and, above all, shells, we shall find a whole series of images that I am going to try to characterize as primal images; images that bring out the primitiveness in us. I shall then show that a human being likes to 'withdraw into his corner', and that it gives him physical pleasure to do so. 11
Speculative housing
Amsterdam
Nineteenth century

Extensive social stratification between lower and upper floors was common in Paris, but it was unknown in Amsterdam. However, in Amsterdam too, rents decreased from ground floor to top story dwellings. The inhabitants of the ground floor had the exclusive use of the outdoor area within the closed block. Much of the use of this space reflected the agricultural backgrounds of many of the residents.

The inclusion of a wooden balcony for the upper dwellings towards the end of the nineteenth century was a step towards equalizing them with the ground floor dwellings, but for later critics the aesthetic and functional results were equally poor. In both cases, with or without balconies, the dichotomy between street and rear was extremely pronounced.
Typical alcove dwelling
Amsterdam
Nineteenth century

Alcoves provided more sleeping area than cupboard beds, but they too lacked through-ventilation and direct sunlight. The Amsterdam example shows back-to-back dwellings, which are part of a housing block with an enclosed outdoor space in its center. Thus one dwelling faced towards the street, the other towards the inside of the block.

The Rotterdam example, known as a 'double alcove', was spatially more generous. One family had two exposures to the outside – one to the street, the other to the inside of the housing block. Nevertheless, the alcoves remained inferior sleeping areas. The strong hygiene-based attitude which developed in response to these conditions became almost a cult which profoundly affected Nieuwe Zakelijkheid housing.
6. The housing act of 1902

The Housing Act of 1902 was a direct response to the dwelling conditions described earlier as the consequences of a speculative market in a time of rapid population growth and migrations to the cities. It was conceived in a liberal-paternal atmosphere characteristic of social legislation of the time.  

The particular nature of the class division between workers, and the wealthy and the established played an especially important role: there is very little which does not seem readily explicable in terms of fear and class politics. The paleotechnic slum had played its part, along with starvation wages, child labor, and general exploitation of the under by the upper classes, in driving the former at last to some sort of desperate consciousness, and developing in the latter the halting, compromising 'conscience' whose major element by weight was fear. The bogeys were revolution, epidemic, and the weakening of national defense.  

Yet whatever the motivations for the enactment of the new legislation, the Housing Act brought about significant structural change in the housing industry which resulted in an improved record of dwelling construction in terms of the quality of improvements and the quantity of dwellings built. Most significantly, the Act removed a large portion of workers' housing from the forces of speculation, and although the Act placed emphasis on the local autonomy of the municipalities, it made housing a national concern. New areas of professional responsibility and new forms of cooperation grew out of its spirit and specific contents. As a product of its times, it is useful to consider its provisions in relationship to the specific architectural theories which developed under its aegis; thus it is necessary to trace briefly the background of the Act.

Municipal regulation before the Act

The Housing Act of 1902 had no legal precedents in The Netherlands on a national scale, but at the municipal level there was an extended development of regulations, and in some cases provisions of the Act overlapped older, local traditions. But for the most part, the older municipal regulations were piecemeal, and weakly addressed the physical characteristics of housing rather than regulating the nature of its production. This was a consequence of a wide belief in laissez-faire which tended to make municipal officials reluctant to interfere in the affairs of others.  

Although prior to the nineteenth century local regulations had been exclusively concerned with the prevention of fires and collapse, both the population increases in the cities and the relative decline in the living conditions required more regulation. There was also an increasing concern of the well-to-do for their own health and safety. Slums grew up next to burgher districts, and the prior concern for the spread of fire grew to include a concern for the spreading of epidemics, which, nineteenth-century medicine taught, knew no boundaries. The tendency, however, in almost all municipalities, was to consider safety before health.  

Amsterdam had very early forbidden tar to be used on wooden buildings, but the first significant building regulations written in the 1850s coincided with the founding of a number of housing associations. Perhaps the most progressive legislation was in Schiedam where the mayor and councilmen were authorized to declare dwellings untenable if specified improvements were not carried out. Although this type of regulation was imitated, a more typical regulation from this period was that of The Hague's of 1855:

No one may place a single building or renew wholly or partly a façade on the public roads without written permission of the Mayor and City Council.  

In this regulation the differences between the public and private realms were implic-
itly recognized; regulatory control encompassed the front but not the rear. By 1860 there was a law prohibiting the building of dwellings in ‘closed-off areas’ without similar provisions. These closed-off areas were legally referred to as hoffjes [21-22]. However, the word did not legally refer to the institution of almshouse, but to the interior space surrounded by a housing block where additional dwellings were often built. This intensification of land use resulted from the pressures of high land prices, which in turn were related to the difficulty of the city’s horizontal expansion. Entrances to these closed-off spaces were given a minimum width by the 1860 law in The Hague, but the dimension was reduced five years later. This was typical of the oscillations that resulted from the pressure of speculators on those who wrote municipal regulations.

We will follow The Hague story because it is a good illustration of the evolutionary nature of developments. In 1871 a regulation stipulated that no one may lay out a single street whose width and direction are not defined by the municipal council. Elsewhere the law stated that building heights were to be determined by the municipal council. In 1878 the first recorded criticism of the hoffje system of enclosure was made, but the objections were not significant enough to mark an end of closed blocks. This ordinance required, however, prior approval for the construction of this type, and instituted a minimum of six meters between the back of one building and another. In 1892 another new regulation prohibited building other than on streets designed according to the dimensions, direction and building height approved by the city council, while further than ten meters behind the building cannot be built. However, this ordinance allowed exceptions to the ten-meter limit, and these became the rule in practice. Another way around the regulation, which attempted to stimulate the provision of more open space, was building on very narrow side streets. These alleys met the requirements of the law but were as cramped as the spaces within the blocks. These developments in The Hague illustrated that the municipality was relatively powerless with respect to the speculative builders, and that dealing with the symptoms of the problem was not enough.

National reform precedents

It was the serious cholera epidemics of the late 1840s and early 1850s which generated awareness for the link between dwelling conditions and public health. The observation that the epidemics struck most seriously in those areas with poor housing was the basis of all of the reform efforts which followed. The King commissioned the Koninklijk Instituut van Ingenieurs to study problems of hygiene and possible remedies, and its conclusions marked an increase in the understanding of the problem. However, the structure of the means of production of housing was not yet a concern. Proposed improvements in the commission’s report were that all buildings be separated according to a fixed plan, in which the height and ground surface area, the direction of streets, and the mutual distance between the dwellings with relationship to the height must be taken into consideration.

In the outfitting of the dwelling attention must be given to good ventilation, lighting, heating, and construction, as much as in the houses themselves as in the privies, sewers, and gutters. The sizes of the houses should be in accordance with the number of inhabitants. This report had little immediate impact, and in The Hague as elsewhere the already cramped inner city areas were being built at ever increasing densities not because there was too little building ground, but with the intention to obtain the greatest possible return on the land. In 1887 the Maatschappij tot nut van ‘t algemeen (Society for the general welfare) sponsored an investigation into the housing of the workers’ class, but this concentrated more on documenting the existing situation than making proposals for
Speculative housing
The Hague
Nineteenth century

High density in The Hague and elsewhere resulted in part from the difficulties in obtaining vacant land for speculative housing. This plan shows dwellings which were built in the garden area within a block of housing.
change. As a result, in 1894 another study was commissioned by the same group, and in 1896 ‘Het vraagstuk der Volkshuisvesting’ (‘The Question of Social Housing’) was published. This report recommended the lending of capital at low interest to building associations, the provision of cheap land to the associations, the establishment of general building ordinances, and the use of land expropriation powers to facilitate the clearance of slum dwellings. These proposals were based on the results of a number of investigations that had been made shortly before in The Netherlands, and the English ‘The Housing of the Working Classes Act of 1890’ was also particularly influential.

The Housing Act was introduced into the Second Chamber in 1899, three years after the issuance of the very influential ‘Het vraagstuk der Volkshuisvesting’. In 1901 the law was passed almost unanimously in the Second Chamber, and by 25-19 in the First Chamber; the latter vote did not indicate the vigorous opposition to the new law in the higher body resulting from provisions which regulated private property ownership. That the law was a ‘product of socially concerned political liberalism’ and not a direct result of agitation by the workers themselves is evidenced by the fact that the Act itself was drafted by the ministers of domestic affairs, justice and finance. The law went into effect on August 1st, 1902 after final approval by the Crown.

The Act: building regulations

The provision of the law that most related to the actual dwellings themselves as distinct from the means of their production was the requirement that the municipalities establish building regulations. Not only did this provision eventually result in improved standards throughout the country, but it represented an important change in the power relationships between the municipalities and the national government. However, the Housing Act intended no unity of building ordinances from one municipality to the next:

For the liberal ministers who made the Housing Act, a certain binding model ordinance would have been too drastic for municipal autonomy.

The larger municipalities, probably because of a prior tradition of providing some degree of legal control themselves, proved to be more willing to accept the obligations of the law than the smaller communities. The power of the housing contractors in the smaller towns was greater with respect to the municipal government than in the larger cities, and the various difficulties resulting from local opposition to the implementation of building ordinances required a one-year extension to the two-year period allowed for enactment of ordinances. Not infrequently, attempts were made to write local regulations in the image of local practice, and some towns continued to allow partial street plans to be created by land owners. Not surprisingly, this occurred in wealthier communities where the ideological reaction to the control of private capital was stronger.

Most of the first building regulations enacted under the Housing Act’s requirements dealt with the provision of WCs, ventilation, drinking water, fire, sewage, and exhaust. The new building ordinance in The Hague in 1906 contained the first important limitations on uncontrolled outbuilding within the interior of a block, but this was the continuation of a prior tendency. The Housing Act itself placed no stipulations against the practice of building closed housing blocks. Some municipal regulations required stronger construction of roofs, which resulted in possible two-story housing, since bedrooms could then be made under the eaves. This of course was advantageous compared with expansion to the rear, which cut off light and ventilation.

Yet for all its relative power compared to its predecessors, the Act was not strong enough to require communities to immediately abolish cupboard or alcove sleeping quarters. Amsterdam was an exception with its early (1912) prohibition of the cupboard bed in the portion of the city covered by Berlage’s South extension plan, but elsewhere their continued use was allowed. Alcoves remained a very great point of
These first 1902 Housing Act dwellings in Amsterdam provided a much improved standard, but the housing association reported that some residents missed their former cupboard beds and alcoves. Note that the ground floor units have their own entrances. The architecture is quite straightforward and less eclectic than much housing built at the same time.
conflict between contractors and reformers in Rotterdam, and they were not prohibited there until 1937. Housing cooperatives, however, built dwellings with exterior bedrooms before municipal regulations prohibited the alcove [23-24].

In order to enforce the building regulations, the Housing Act – through the Health Act – required the establishment of municipal health commissions, although these had already existed previously in Amsterdam, Haarlem, Rotterdam, Arnhem and Nijmegen. These commissions were to serve as research agencies, advisers for improvements, and agents of the provision of the Housing Act which gave municipalities the power of condemnation.

The Act: agents of production

One of the major strengths and accomplishments of the Housing Act was its emphasis that housing for low rents had to be removed from the speculative market. To this end, the law authorized the Crown to recognize building associations whose sole purposes were to build housing. Through the municipalities, these associations were able to obtain mortgages from the State. The cooperative movement had been gaining strength especially during the last decade before the passage of the Housing Act, and the interest in forming associations was enormous. By 1906 fourteen had been allowed, between 1918 and 1920 under the impetus of a severe housing shortage 743 were recognized, and by 1922 there were 1,341. Although by no means were all the associations cooperatives, the housing association Rochdale, founded in 1903 in Amsterdam, indicated the importance of the Housing Act to the widespread cooperative movement as well as the strength of the social-democratic politics of the time. Rochdale took its name from the town where the first successful English consumers’ cooperative – influenced by Owen and Fourier – was founded in 1844.

The Act: city planning

The provision of the Act that was most revolutionary – and in retrospect relevant to today’s problems – was that which regulated city planning. One section affirmed the power of the local authorities to prohibit building where the city council had determined a road would be built, a power which was questionable before the Act. The more important part of the city planning provisions required municipalities larger than 10,000 residents or those whose population had increased more than 20 percent in the preceding five years to establish an extension plan, whose revision was required every ten years. The municipalities already had this authority, but for the most part expansion plans had been partial, such as Niftrik’s 1866 plan for Amsterdam. Despite the fact that by ‘expansion plan’ the Act meant simply a set of building lines, it was extremely important in changing the whole nature of city planning. Appearing at a time when Camillo Sitte’s ideas were becoming very popular, the Act reinforced the growing tendency to think of housing as the basic part of the fabric of the city. For some architects such as H.P. Berlage (1856-1934), who designed important expansion plans for The Hague [26], Amsterdam [29], and Utrecht, it signified a change in the scale at which architects worked. As an early example of the architect who designed at all levels of scale within the city, Berlage helped to make housing a basic concern of city planners.

This aspect of the Housing Act probably underlies one of the most fundamental
Various trends of ideas of the early twentieth century are reflected in these three plans. The Baroque and Sittesque planning traditions are especially evident in De Bazel's and Berlage's plans for The Hague. The theosophical movement, with which both De Bazel and Wijdeveld had contact, influenced their schemes. Berlage acknowledged De Bazel's plan as a source for his plan, which seems to be an interpretation of Howard's garden city diagrams. Wijdeveld's indication of high-rise residential towers in green belts was the most visionary of these expansion plans.
This settlement, preceded by housing of the earlier Hengelo'sche bouwvereeniging (1867), was built under the initiatives of Stork and other Hengelo industrialists. The project was innovative in its conscious use of north-south planning and in its mixing of housing types reflecting varying income levels.

Het Lansink typified other Dutch garden city areas by its spatially defined central square and its mixture of traditional housing imagery in the context of open site planning.
contributions of the Dutch to the field of city planning. D. Hudig, the founder of the *Nederlandsch Instituut voor Volkshuisvesting* in 1918 (and in 1923 *en Stedebouw* was added) introduced the idea of the regional plan to the 1924 Housing Congress held in Amsterdam. Ten years later the Expansion Plan for Amsterdam became the most sophisticated of its kind.

**The context for progress**

Progress in improving housing environments did not immediately follow the enactment of the new housing law. The most innovative housing built before World War I with Housing Act financing were the garden villages *Het Lansink* in Hengelo [28] and *Vreewijk* in Rotterdam [45-49]. In Amsterdam the first preliminary attempt to develop a modern aesthetic for workers’ dwellings was made by M. de Klerk in the *Spaarndammerbuurt* [31-35]. Not until after the crisis year of 1918 was progress swifter, aided by the Dutch position of neutrality during the war. 1921 was the high point for dwellings built (19,298) by housing associations before the Second World War, with the lowest production year occurring in the Depression year of 1933. The Housing Act also greatly affected the private sector, which by 1923 supplied half of the country’s housing, and from then on an increasing portion.

Improvements in infant mortality rates were rapid; bearing in mind that the population of the country increased 27 percent between 1899 and 1920, the reduction in the per room occupancy from 1.65 in 1900 to 0.95 by 1930 was quite remarkable. In this same period the percentage of dwellings with two rooms or less dropped from 60 percent to 22 percent.

But this was only the context for change, and now attention must be turned to the specific contributions of architects in the development of Dutch housing and to the nature of that housing with respect to its inhabitants. Whatever new ideas were contributed by the architects, however, it must be remembered that they worked within a tradition of reform that well preceded the important decade of the 1920s.
7. The influence of Camillo Sitte

Much of the available recent literature concerned with Dutch housing omits consideration of the importance of Camillo Sitte (1843-1903), whose book Der Stadtebau nach seinen künstlerischen Grundsätzen (City Planning According to Artistic Principles) was first published in Vienna in 1889. Deriving his theories from his work in modernizing Vienna as well as from extensive travelling, Sitte analyzed classical, medieval and baroque spaces in arriving at his conclusions. He condemned classicist site planning which isolated buildings, and from three periods of history he conceptualized architecture as continuous such that inter-relationships among buildings create their value. His approach to city planning was based on the qualities of space which are concave—enclosing—which he defended on aesthetic and psychological grounds. He stresses the existential value of space and defines what might be called a behavioral space, but his basic disposition to space was aesthetic. Irregularity, asymmetry, enclosure, diversity, continuity of mass and connecting elements which have their own significance were considered to be desirable for visual effect.

H.P. Berlage

Apparently it was Berlage who introduced the ideas of Sitte to Dutch architects for the first time in March 1892, during a lecture to the Amsterdam division of the Maatschappij tot Bevordering der Bouwkunst. In Berlage’s first interpretation of Sitte, one finds a tendency to extrapolate functional ideas, although Berlage for the most part accepted the aesthetic assumptions of Sitte. In explaining Sitte to his audience, Berlage said that the aesthetic of closure ‘is useful for the people and is daily of direct influence’. He applied this directly to dwellings: gardens should be more or less at a distance from each other and not openly situated on the street, but totally surrounded by houses and accessible by two or more dissimilar portals. Through this the gardens are protected and the long rows of houses as a result become of great value. This was, of course, a description of a type of housing site planning that eventually saw widespread application in The Netherlands.

The long rows of connected houses were viewed by Sitte and Berlage as aesthetically superior to the repetitious cutting-up of streets with side streets, resulting in a city fabric formed by discontinuous dwelling blocks, with corner dwellings more dominant than the continuous whole. This theme evolved especially from the baroque, and, among the various city expansion schemes, Berlage most admired Paris, since it had remained closest to the baroque example. The principle that buildings have to be united to form one total guided almost all of Berlage’s city extension projects, beginning with his first scheme for the southern extension of Amsterdam in 1899. Although A.E. Brinkmann’s Platz und Monument (1906) influenced Berlage to introduce wide avenues in the 1915 version of the extension plan, Sitte’s ideas still remained critical in the justification of the plan. Perhaps even more significantly, as will be shown later, Berlage applied the ideas of Sitte to a defense of housing standardization in 1918.

Berlage’s explanation in 1915 for his extension proposal for Amsterdam South consisted for the most part of a description of the actual plan and a defense of the building block. The rationale was not based on enclosure as such, but more from the point of view of the beneficial effects on city unity, which was necessary because of the large increase in scale of the project. Noting that the building of a detached house was becoming more and more of an exception, he stressed that the construction of dwellings was increasingly becoming mass construction. He observed that building blocks had been built earlier, but considered this the exception to the rule in which each house was separate, and visual unity was provided through the
Extension plan for Amsterdam South
1915
H.P. Berlage

Berlage's expansion plan was an urbanistic vision reflecting the influences of Brinkmann, Sitte, and Unwin. The street, the housing block, and special buildings for points of emphasis were the basic planning elements. For Amsterdam, the plan contained a degree of spatial openness not yet obtained at this scale. Berlage contributed to the merger of garden city ideas with city expansion by including in his plan the winning entry from the 1915 Competition for the design of a garden city area.

Competition for the design of a garden city area
sponsored by the Sociaal-Technische Vereeniging van Demokratische Ingenieurs en Architecten
1915
'Huis en Tuin'
J.F. Repko, first prize
Berlage, Jury Chairman
Keppler, Jury Secretary
unity of the building style of the various subparts. In the Renaissance and Napoleonic eras the building block began to be applied on a large scale, but Berlage believed this tradition was lost in the nineteenth century, when the monotonous row houses only appeared to answer the principle of unity. Thus believing in the use of continuity of mass to achieve unity, Berlage argued that the building block had to be accepted again.9

Berlage also conceptualized unity in terms of street and square, and his high regard for the housing block as a definer of urban space was a reaction to the increasing degeneration of form he saw being applied by architects to each house separately. Later, when Berlage's socialist views were more formulated, one can find this aesthetic position being strengthened through a symbolism of social ideas by means of repetition, continuity, and 'unity in diversity'. In this way Berlage took the views of Sitte far beyond their original aesthetic origins and intentions.

The English town-planner, Raymond Unwin, also influenced Berlage and other architects to take Sitte's views seriously. Unwin's 1909 Town Planning in Practice employs many Sittesque arguments and illustrative material, and seems to have been quite widely known in The Netherlands. Many Sittesque qualities found in the various Dutch garden suburbs can be traced to its influence if not to Sitte's influence directly.10

J.J.P. Oud

Sitte's ideas also found their way to The Netherlands through an architect whom many would consider a more unlikely source than Berlage: J.J.P. Oud (1890-1963). Oud worked for Theodor Fischer (1862-1938) in Munich during the summer of 1911, by which time he had already been very influenced by Berlage. Fischer, "who held unqualified admiration for Sitte, whom he considered to be 'the father of modern city planning'"11 had been supervising the extension of Munich since 1893, and details of his work were illustrated in the French translation of Sitte, as well as by Stübben. It has been impossible to discover what specific projects Oud worked on in 1911 while in Munich, but there can be little doubt that he gained a thorough knowledge of Sitte's ideas there. It is also possible, but remains to be proven, that Oud's motives for going to Munich related to Fischer's enthusiasm for Sitte.

In July of 1917 Oud wrote 'Het Monumentale Stadsbeeld' ('The Monumental Townscape'), which was published in the first issue of the new periodical De Stijl the following October. Here, acknowledging that the tendency to universality and monumentality followed the ideas of Berlage, Oud wrote, 'the town is generally dominated by two elements: the street and the square. The street as a string of houses; the square as a focus of streets.'12 Elaborating further what were pure Sittesque ideas, Oud wrote that the starting point in determining the image of the street would have to be the 'street picture as a whole', because building in blocks or large groupings will take the place of the building of the individual house.13

Oud went further than Berlage, however, in stating that the beauty of the block would derive from the use of modern materials, emphatic rhythm, and flat roofs. Oud's first two large projects as Rotterdam City Architect, the Spangen [75-82] and Tusschendijken [83-85] blocks, reveal the strength of the Berlage-Sitte tradition, whose planning aspects Oud incorporated although his aesthetic approach anticipated future innovations. M. Brinkman's Spangen block of 1919 [63-74], also conceived within the tradition of closure, has a closed building mass penetrated by entry portals, a motif that continued to enjoy widespread application even when joined with the garden city attempts which presumed a more open planning.

Remaining indebted to Berlage and Sitte for their ideas about the continuity of mass and about architecture as space, Oud nevertheless moved, from one project to the next, successively away from the principles of closure. Yet the site plan of Kiehoeck in Rotterdam [106] reflects the historical tradition of closure as much as it re-
reflects an increase in the continuity of exterior residential space.

As the reaction against eclecticism deepened, Sitte’s ideas became less acceptable because of their association with medievalism. Furthermore, those architects more distant from Sitte than Oud consciously rejected his approach to planning on functional grounds. In 1932, the functionalist J. Duiker (1890-1935) wrote in a review of the CIAM publication *Rationelle Bebauungsweisen*:

Then there is the ‘aesthetical consideration’, the legacy of Camillo Sitte, of closed building, dead end streets sometimes with an ‘accent’ at the end, an extremely effective way to take away the last little bit of cheerfulness from such a neighborhood by means of a false intimacy which changes our most recently built districts into stuffy beguinages; we will not speak about the endless muddling in ground-plans in order to obtain some light in the inner corners of the ‘closed’ building blocks (once more, closed because of aesthetics).¹⁴
8. New role for the architect

In a general sense the first few decades of the twentieth century are as important in architectural history for the changes in the architect's view of his role in and relationship to the society in which he works as the changes of a formal, spatial, or technological nature. It will be argued below that much of the Dutch architects' interest in housing and the resultant designs owed much to the general world view from which the formal symbolic language was derived.

Socialism

The Netherlands did not have true counterparts to Robert Owen or William Morris, and the idea that architecture should be a profession with social responsibilities derived from Gottfried Semper before Morris was to have a direct influence. Influenced by Semper, Berlage is the key figure in understanding the effect of socialism upon Dutch architectural ideals.

Berlage studied at the Bauschule in Zürich between 1875 and 1878 under teachers such as Stadler and Lasius, who were disciples of Semper and who personalized his ideas even after he had left the Bauschule in 1871. Semper, who 'exerted such a lasting influence on Berlage that he appears to be the starting and final points of his training in Zürich',1 was often involved with politics and his courses in Zürich dealt with the relationship between the artist and society as well as with aesthetics. Semper believed that the low-standing position of the arts originated in the unsatisfactory conditions of society, and this was the basis of his support for the Paris revolution in 1848. Berlage's views in Gedanken über Stil (1905) are directly indebted to Semper; both desparingly observed the power of capitalism over people's lives. For Berlage, who since his youth saw the need to reform society, social democracy provided the remedy to allow the artist or architect to serve a society of equals who participated in a unified, commonly held culture.

William Morris also significantly influenced Berlage. A translation of Morris' writings, Kunst en Maatschappij, which appeared in 1903, was accompanied by a historical sketch of Morris by Henri Polak, who was a friend and client of Berlage. The influence of Morris also extended especially to Toorop and Wijdeveld.

Events, too, provided support for the direction of Berlage's thinking, highlighted by the formation of the Sociaal-Democratische Arbeiders Partij (SDAP) in 1894 with which Berlage associated himself along with other intellectuals.2 Towards the end of his life, Berlage's socialism developed a strongly religious-ethical dimension. He wrote in 1932 that

| Christianity, democracy and socialism are three different forms of one and the same thought.3 |
| But Berlage's simultaneous examination of ethics, socialism, culture and style in 1918 already contained a moral imperative which formed the basis of his belief that architects should involve themselves with the housing problem. Personally interpreting Semper, Berlage believed that |
| socialism is more than politics. It is an ethical state of mind, evolving to become a culture; and culture is nothing else than a philosophical attitude in a certain form, which together form the style of a time.4 |
| Berlage's often repeated belief that the art of building was exclusively a social art5 found a unique juncture with his aesthetic principles at the 1918 Housing Congress in Amsterdam, where in defense of a proposal for standardized housing he said to fellow architects, |
| there is an opportunity to show that you are indeed servants of the community.6 |

Berlage's socialism in general and comments of this sort in particular played a more influential role on the following generation of architects than his actual built work.
Although it has been frequently mentioned that the attraction of socialism for the Dutch lay rooted in the past needs of the country whose very existence depended upon sophisticated forms of cooperation, Berlage became a personification of the socially committed architect. Not only were the socialistic visions of Van Loghem, Stam, or Merkelbach indebted to Berlage, but his influence was to affect more apolitical men, such as Oud or Duiker.

Berlage’s philosophical position did not remain an unfulfilled ideal in Holland. In contrast to the relative isolation of the avant-garde architects in France or Germany from positions of official authority, Berlage, Oud, Dudok, Van Eesteren, and many others served either directly as public officials or designed and built on their behalf. The strength of municipal and state socialism was as vital a factor in housing quality as individual talents.

**Artist, ego, and universalism**

The call for social commitment was intimately linked to a particularly negative view of individualism. In the atmosphere of Dutch neutrality during the First World War, individualism came to be regarded as one of the causes of the world disorder. Theoreticians in the arts, such as Berlage, blamed individualism for failures in artistic progress. Shortly after the 1918 Housing Congress Berlage said that the opportunity for architects in housing calls upon your humility.... It calls upon you not to desire to press your art on the community. At this time he was writing his important *Schoonheid in Samenleving*, which was published in the following year, 1919. Arguing that architecture cannot be a personal art, Berlage at this point seems to share much of the *De Stijl* position, which actually owed much to his ideas.

The suppression of individualism can be considered one of the fundamental concepts of *De Stijl*, and the formulation of this principle by Mondriaan and Van Doesburg must be interpreted with respect to its psychological influence as well as aesthetic influence. The *De Stijl* manifesto of November 1918 which stated that the old is connected with the individual, the new is connected with the universal was a reformulation of what Van Doesburg had written a year earlier:

One of the most significant points of difference between it and earlier concepts of art consists in the fact that in the new art the artist’s temperament is not longer prominent.

Mondriaan wrote consistently of the ‘universal ego’ evidenced in the cubist, purist and constructivist movements, and believed one of the foundations of style was the expression of the ‘universal over the individual’. Not until 1926 did Mondriaan write anything which connected this view clearly to architecture, but the statement below certainly reflects his position in 1918:

One must occupy himself at present very differently with the dwelling than one did in earlier times .... For the whole period up to the present the concentration on the external self ‘ego’ has been fatal. If our material environment desires to be of a pure beauty, thus healthy and responding to real needs, then it is necessary that it no longer reflect the egotistical feelings of our small personality: not even any longer a certain lyrical expression but a pure image.

These views, along with Berlage’s observation that the orgy of architectural individualism lay in the past implied a commitment to principles founded upon ethical imperatives, but also raised the question of what actually was to replace the artistic and architectural products of the rejected individualism. While *De Stijl* strove to answer this question by the use of a symbolism of neo-plastic laws, architecture was able to proceed on a less theoretical level, less systematic level, but by no means less symbolic level.
The dwelling as cultural symbol

The striving for unity between aesthetics, ethics, and culture that characterized De Stijl polemics owed much to Berlage's view that style was a reflection of culture. However, the various opinions about individualism expressed above did not in themselves result in a particular approach to housing. To understand what type of integration was possible between housing theory and practice, it is necessary to consider again Berlage's socialism. Specifically, his admiration for the workers' movement in The Netherlands also encompassed the relationship of the movement to housing. Berlage believed that the progress towards the development of a unified conception of dwelling types was mainly the work of the workers themselves. The whole activity in the business of housing is the result of their efforts; and the cheering result of the tentative achievement is the result of their participation in plan and execution.\textsuperscript{14}

It was in the worker's dwelling that Berlage saw one of the purest manifestations of his society, and in this sense for him the worker's dwelling assumed a symbolic role, which transcended other concerns of architecture:

Thanks to the democratic spirit which lies in the working class, in the worker's dwelling there has already been symbolized a certain cultural expression which is still missing in all other manifestations of architecture.\textsuperscript{15}

Berlage's defense of standardization in housing was reinforced by his belief that the same dwelling repeated to form a series, presupposes a complete social equality of the inhabitants.\textsuperscript{16}

As the converse of his idea that 'the individualistic city image' is intolerable as 'the expression of the workers' hostile class', he believed that a city image formed by standardized, repeated dwelling units would be a valid and representative aesthetic of the working class.

What was revolutionary in Berlage's position was not that aesthetics could reveal underlying social organization, for this, he observed, had happened already in the Middle Ages. Rather, it was because Berlage discussed aesthetic principles as they applied to workers' dwellings\textsuperscript{17} that his arguments facilitated the social involvement of architects whose traditional and apolitical approach to design had been solely through aesthetics.

The idea that a dwelling was a symbol of the culture was of course not an invention of socialist thought. The seventeenth-century burgher houses of Amsterdam aspired to symbolize dignity, wealth and individual success. Some industrialists' housing, such as Agneta Park, sought to dignify the worker inhabitants by making it appear that they lived in villas. Yet for this objective of monumentalizing the workers' dwellings, eclectic detailing was out of the question as was a literal approach to monumentalization based upon scale enlargement alone. For Berlage, the authentic representation of working class values lay in the aesthetic implications of standardization.

Furthermore, this development towards the redefinition of the symbolic content of architecture must be considered in relationship to the changing nature of the architects' clients. The clientèle had originally been private, wealthy individuals or royalty, but following the passage of the Housing Act the clientèle increasingly became various government bodies, associations and cooperatives. In earlier centuries an architectural language had evolved which assumed an unspoken 'cultural contract' between client and architect. Inherent in this language was the idea that certain forms could produce beauty, and that this beauty was simultaneously reflecting certain values. In this tradition, but now dealing with more abstract, universalized clients, architects had to invent for the new building type a language that could also serve as 'cultural contract' between themselves and those who would live in the dwellings.

The intention to create an appropriate symbolic expression of the worker's dwelling also coincided with the presence of Expressionism in Holland. Even the rational Berlage shared the expressionists high regard for the psychological meaning of architecture, as evidenced by the nature of his interest in workers' housing. Berlage's
attempt to identify representative and metaphorical content in housing certainly was related to such buildings as his hunting lodge in Hoenderloo (1914-1920) for the Kröller-Müllers, or the houses in Park Meerwijk in Bergen by the Amsterdam School architects Staal and Kropholler. 18

Expressionism and the Amsterdam School

The housing designed by architects of the Amsterdam School (a term first used by the architect and critic Jan Gratama in 1916) is historically significant not only because of individual creativity and the power of the new architectural forms [31-38]. As a meeting point of the various forces of social commitment, artistic individualism, and symbolism described above, the Amsterdam School housing represented more positive change and innovation than its critics recognized.

The importance of the Amsterdam School architecture does not lie solely in the individual talent that its architects exercised. A. Keppler, as director of Amsterdam's municipal housing agency since 1915, innovated by hiring architects to design the great number of dwellings to be built within the boundaries of Berlage's 1915 expansion plan. Although both the layout, which determined much of the collective imagery, as well as the unit plans, were established before the architects' involvement, the use of architects in any capacity for large-scale housing projects was much unlike past practice. In the nineteenth century the speculating building contractor had exercised almost complete control over the dwelling environment. The use of an architect for the first Amsterdam dwellings built under the 1902 Housing Act, by the cooperative Rochdale, was cited as a 'unique event' on the occasion of the association's fiftieth anniversary. 19 Especially remarkable was the concern Keppler and other housing officials had for the quality of aesthetics in the midst of the severe housing shortage after World War I.

In some respects the Amsterdam School housing was a celebration of the architects' involvement with housing, and any tendency to overdesign resulted from a desire to treat workers' dwellings as artistically as possible. The significance of this was recognized by Huib Hoste, the Belgian architect, who, in 1915, shortly after Architectura et Amicitia's exhibition of De Klerk's work, wrote:

> he has felt that a housing block could be artistic as... let us say a town hall.... I want all who build in Amsterdam to see how... workers' dwellings can be the subject of monumental solutions. 20

Gratama felt that the monumentality achieved by the Amsterdam School architects was a desired feature, obtained by means of the intellect and which is based on principles of truth and construction. 21

He was implying that Amsterdam School housing was consistent with Berlagian principles, but he also noted that the monumentality was integrated with purely personal intentions. But despite these personal intentions, the monumentality characteristic of the housing of De Klerk and others underscored its urban quality. Bruno Taut, one of the few architects or critics who maintained a positive interest in the architecture of the Amsterdam School, recognized the most important source of this urban monumentality:

> it would appear as though the sole essential quality lay in collectivity. 22

Yet one of the paradoxes of the Amsterdam School housing was the presence of both continuous, collective form, and an imagery which dignified the individual. The latter imagery relied upon illusion:

> The twenty-two centimeters of the façade wall must achieve the miracle, must bring deliverance from that which man unconsciously fears - the piling up of houses in a way that kills all illusion, and the inexorable human levelling process that accompanies this. 23

Gratama recognized such illusion in De Klerk's Spaarndammerplantsoen housing [31-32]: Yet the essence of this construction, a monotonous row of similar, ordinary
Although De Klerk was allowed to freely design the street façades, he had very little control over the rear façades, which were determined by the building contractors. As 'façade architecture', De Klerk's housing was attacked by Oud, Merkelbach and others, who criticized the inconsistent orientation, the chaos of the space within the blocks, and the mediocre dwelling plans. These characteristics, however, resulted from the circumstances of the commission and from general tradition – reinforced by Berlage – more than from De Klerk's willful neglect. But for the attack on romantic, creative individuality, De Klerk was a most appropriate figure.

In housing built somewhat later on the Therese Schwartzeplein and Henriette Ronnerplein [36-37] in Amsterdam, De Klerk situated six dwellings under one roof and formed an articulated series: middle-class dwellings appeared to be villas. This effect echoed the similar illusion of scale which had been made at Agneta Park. Such illusions, however, underscored the positive associations which workers were beginning to have with their new homes. The wife of a worker wrote after De Klerk's death in 1923:

He has passed away, this man who has built our homes. How can we wives of workers thank this sturdy worker for what he has done for our men and children? Is it not glorious to come home after a tiring day to a house built for pure joy and domestic happiness? Is it not true that each stone calls out to you: come all you workers and rest in your house which has been built especially for you. Isn't the Spaarndammerplein like a fairy tale which you have dreamt about when you were a child because it did not exist then? But De Klerk, if he had only lived longer, would have even tried to realize this vision for our children.
Housing association 'Eigen Haard'
Amsterdam
Zaanstraat/Oostzaanstraat
1917-20
M. de Klerk

In this portion of the Spaarndammerbuurt De Klerk overcame the difficulties of a triangular site by the use of arbitrary visual devices. These romantic elements not only served to give this housing a unique character, but also constituted an attempt to give some architectural dignity to the inside of the block as well as to the street side.
These two projects illustrate the range of differences which occurred within the Amsterdam School group. Wijdeveld’s housing uses pronounced repetition as a significant feature of the upper stories, where movement and power are suggested, whereas the street level is developed at a more interrupted, domestic pace.

Perhaps because his context was a square, not a street, and because it was earlier, De Klerk sought a more romantic image with the chimneys and slanting roofs suggesting a village metaphor. More significantly, as at Agneta Park in Delft, or Snoeck van Loosen Park in Enkhuizen, a scale enlargement occurred in which De Klerk attempted to have groups of six dwellings interpreted as a group of connected villas. This approach can be understood as an attempt to give a certain value to the dwelling beyond that of mere physical shelter.

The square in front of De Klerk’s housing and the communal garden at the rear provided a spaciousness which was generally not appreciated by critics of the Amsterdam School.
However, despite the propensity to dignify workers' housing through formalistic means, the Amsterdam School architects 'did not engage in the attempt to symbolize general or absolute principles through the use of architectural form'. Thus it was the other heirs of the Berlage tradition who attempted to unite a world view with a glorified, dignified workers' housing.

The Nieuwe Zakelijkheid

Creating an image of housing characterized by monumental forms and collective planning did not necessarily mean that the cultural value of the dwelling had been transformed. The very concept of monumentality was subject to different interpretations in which other factors would play an important role. Oud wrote in the first issue of De Stijl that there was a place and need for a monumental style in The Netherlands, and he believed that architecture, as well as painting, was moving in the direction of the universal and monumental:

In this it follows the line set by the Berlage School and is opposed in principle to the Amsterdam School, in which the monumental has been corrupted into what is essentially decadent.

Yet Oud and the Amsterdam School architects shared a common heritage in Berlage and Sitte. What distinguished Oud from the Amsterdam School approach is that he sought universal means for expressing the collectivity of urban dwellings:

In sharp contrast to the old street picture, therefore, in which the houses are arbitrarily grouped together, the modern street picture will be dominated by building blocks in which the houses will be placed in a rhythmic arrangement of planes and masses.

Oud's work as city architect of Rotterdam through 1923 revealed more of a general similarity with the city planning principles practised in Amsterdam than is generally recognized. But for Oud, the continued redefinition of the cultural value of the dwelling required the ideological commitment to technology and continuous space that was alien to the basically non-ideological work of the Amsterdam School. The theme of considering a dwelling more than a simple shelter as formulated by Berlage thus found somewhat of a dead end in the Amsterdam School. Others, however, went on to continue what he had started. In a draft of a letter ultimately intended for the Nederlandsch Instituut voor Volkshuisvesting en Stedebouw, Van Tijen wrote Merkelbach in 1930 that CIAM (Congrès Internationaux d'Architecture Moderne) considers itself as one of the representatives in Holland of the contemporary philosophy which is being defined as the Nieuwe Zakelijkheid. In regard to housing, this means that its members are entrusted with the practical realization of elevating housing above the level of only material provision and to take it to the level of a new culture...

For Van Tijen, as for Berlage, this was possible only through the collaboration of the contemporary spiritual, social, and technical forces. Despite their rejection of both individualism and decoration, the Nieuwe Zakelijkheid architects continued the search for a means to symbolize dignity in workers' housing. The traditionally stressed dichotomy between expressionism and rationalism may be useful for differentiating between styles of building, but it does not give proper consideration to the motivations of the rationalist tradition to symbolize socialism and the new technology.
9. The garden city tradition

Ebenezer Howard’s *A Peaceful Path Towards Real Reform* of 1898 marked the beginning of a new conceptualization about housing in England, and its impact was significant on Dutch housing. However, differences between the Dutch and English situations led to a dilution of Howard’s ideas in The Netherlands. Holland escaped the first wave of serious urban decay brought about by the industrial revolution such as England had experienced, and this explains why a person such as William Morris was not to be found there. If lacking a Morris, who combined social-utopianism with anti-technology views, the Dutch also lacked a Howard, and by the time of the appearance of his book the major reform efforts were directed towards the passage of the newly proposed Housing Act. Basically accepting the city and town as the context for improvements, the 1902 Housing Act was regarded in Holland as a cure for the cities’ ills, whereas in England worse conditions and a stronger utopian tradition directed reform efforts towards forming alternatives to the city.

Not only was the utopian tradition not as pronounced in Holland as in England, but the Dutch did little to develop the essence of Howard’s ideas. Rather, the Dutch contribution lay more in the extrapolation of certain garden city notions in the physical sense and integrating these into local conditions. In Holland and Germany, unlike England, the garden city concepts eventually conflicted with other ideological concepts about the city, but the resulting synthesis enjoyed a more widespread influence than Howard’s original ideas.

The garden city ideas were interpreted in The Netherlands in the context of planning for and building city extensions. Although it is now easy to recognize that Sitte’s city planning principles derived from aesthetic considerations and Howard’s from social ones, the two traditions were not considered to be mutually exclusive. The German-Austrian style of city planning was very strong in The Netherlands, and every application of the garden city ideas reflected Sitte’s influence. Not only Holland but other continental countries used Howard’s ideas as departure points for city expansion rather than for the creation of self-sufficient communities. Especially in Holland, there was not enough available land for the creation of independent garden cities at the scale envisioned by Howard.

Introduction of the tuinstad idea

The exact ways in which the garden city ideas became known in The Netherlands remain somewhat obscured. The architect D. de Clerq gave an illustrated lecture about garden cities in the winter of 1904-05 to the *Maatschappij tot nut van ‘t algemeen*, but the first reference to garden cities in the standard Dutch architectural journals was in July of 1905 in *Architectura*. Here the Frenchman G.B. Lévy was mentioned, but not Howard or Unwin, and there was only passing reference to the fact that garden city developments in England were already being planned. Lévy, in his *La Cité Jardin*, published in 1904, was already contributing to the misinterpretation of Howard’s ideas. The following August at the *Internationaal Congres over het Woningvraagstuk* in Liège, Belgium, there was manifest conflict between the defenders of the English type of one-family house and the defenders of the German blocks of workers’ dwellings. One Dutch observer, J. Bruinwold Riedel, concluded that it already seemed impossible to demand the establishment of a garden city for such cities as Berlin.

If antagonisms to the garden city idea were more apparent on the continent than in England, Riedel’s introduction of Howard’s ideas to The Netherlands did little to support the purity of Howard’s social vision. Riedel had been in England in 1905, and signed the preface of his book, *Tuinsteden*, in January 1906. In this book, which is quite restrained and not very polemical, the first Dutch translations of Howard’s
magnet diagram, garden city diagram, and garden city center were presented. A German translation of Howard’s work did not appear until 1907.

While Riedel was general secretary of the Maatschappij tot nut van ’t algemeen, he made repeated efforts to lecture about the garden city idea to local chapters with D. de Clerq. After 1907 the lectures were met with repeated apathy; few were interested in the subject of garden cities. Riedel was a promoter of the apprentice system, extramural education, and workers’ gardens, and the latter especially stimulated his interest in garden cities. In 1905, his book Arbeiderstuinen (Workers’ Gardens) had been published, and he considered his Tuinsteden a revision and reworking of it. He described workers’ gardens as ‘instruments of precaution’, and noted the significance of workers’ gardens for health, prosperity, morality, sense of family, prevention of idleness and addiction to drink.

Riedel transferred his belief that workers’ gardens formed the basis for a ‘useful attitude of the working man’ intact to his notion of the garden city idea.

Riedel outlined the theories of Theodor Fritsch, who two years before Howard’s milestone book wrote Die Stadt der Zukunft, but this work was not well known in The Netherlands before Riedel’s description of it. However, in 1923 Zwiers described Fritsch’s work ‘as important as Howard’s’, but this was only theoretically true. Riedel’s lack of commitment to the utopian visions of Howard or Fritsch is exemplified by his describing the settlements at Blaricum and Bussum as too isolated from society, and the ideas of Fritsch as too social-democratic.

In other ways Riedel’s book contributed significantly to the mutation of Howard’s ideas, despite the fact that he did note the difference between garden city and garden suburb. He failed to draw proper distinctions between Agneta Park and Port Sunlight, which he praised highly, but an even greater confusion was evident in his explanation of city growth. Believing that there was a natural movement of the city towards the hinterland he thought the garden city would have a future if it stays as close as possible to the natural movement which I pointed out, i.e., the heart of the city to the outskirts and the outskirts of the city to the hinterland.

By 1912 Fockema Andreae could describe a garden city as ‘het leven buiten’, that is, living in the country. Feenstra, an architect from Arnhem, further qualified the Dutch understanding of the concept by writing, it is almost impossible to speak of a (pure) garden city. He proposed that the terms ‘tuindorp’ and ‘tuinstadtsbevouwing’ (garden village and garden city planning) be used exclusively in the Dutch application of the idea of the garden city.

Even more than the relative lack of a utopian tradition in Holland, the scarcity of dry, buildable land – especially in the densely populated west – was a factor contributing to the relatively slight interest in the pure form of Howard’s ideas. Many felt that the geographical qualities of the country prohibited large-scale projects because of the very high cost of infrastructure such as roads and sewers, the latter being particularly expensive because of the flatness of the land. Indeed, any application of the principles of lower building density and more green space per dwelling was directly linked to the efficiency with which buildable land could be prepared, which still remained very costly.

Romanticism

The romantic landscape tradition in the fine arts had been less pronounced in The Netherlands than in England, but the various Dutch defenses of the garden city ideas were nevertheless quite romantic and anti-urban. For Riedel in 1905 the increasing disadvantages of the large cities were growing more apparent:

High taxes, expensive dwellings, high costs of the care for the poor, medical service, education, etc., on the one hand; gadabout ways, reduced enjoyment of life, agitation, nervousness, over-exertion, cynicism as results of the departure from
nature and the simple, natural way of living on the other hand. What will cure us from the hypertrophy of the city? What else than a return to the land. Riedel's view of the garden city appears to be more like upper-class escapism than the alternative to the industrial city envisioned by Howard.

A romanticizing of Dutch village life also played a role in rationalizing the garden city idea. Such romanticism was fueled by people of all political persuasions ranging from Granpré Molière to the socialist Henri Polak. Feenstra, as well as Howard, regarded garden cities as a combination of the good in a city and a village, where the latter offered space, perception of nature's most beautiful forms, and light and air. The garden cities were very early considered beneficial for health; studies of Port Sunlight showing the correlation between the health of children and the environment they lived in were known in The Netherlands by 1912, if not earlier. The garden city evoked the image of the healthy life, and was paralleled by such groups as the Socialistische Jeugdorganisatie (Socialistic Youth Organization) in the emphasis on the countryside and bodily health.

Paternalism

One of Howard's objectives had been to avoid the occurrence of paternalism such as found at earlier factory settlements. However, the industrialists who used the garden city ideas after 1898 permeated them with a moral imperative which was perfectly suited to their expectations of worker obedience. Similar ethical expectations continued in housing built following the peaking of the garden city ideas in The Netherlands in 1922.

Riedel had helped establish this approach by referring to a garden city in part as a social circle in which the principles of honor and solidarity are applied. He was not stressing the co-operative features in Howard's model. In 1912 Fockema Andreae observed a moral element in the movement which encompassed the incentives for the maintenance of gardens; the need to preserve bodily health, which often included the forbidding of alcoholic drink; and perhaps most importantly, the making of participation a moral obligation. In their inheritance of some of these attitudes the functionalists continued to believe that environments influenced the spiritual state of mind as well as bodily health.

The paternalism which accompanied much of the garden city ideology was especially present in the attempts to apply garden city concepts in newly industrialized areas. This phenomenon existed in the garden village Het Lansink in Hengelo [28], in Philipsdorp in Eindhoven [39-41], and in Heyplaat in Rotterdam [42-44], but was even more pronounced in the southern province of Limburg, where the coal mining industry burgeoned after 1900. In the State coal mine area, two building associations, Ons Limburg and Tijdig (founded in 1911 and 1913 respectively), initially looked to the English garden city ideas as models for their own developments. Under their sponsorship the architect Jan Stuyt (1864-1932) went on a study trip to England where Letchworth commanded most of his interest. In 1914 Stuyt developed a plan for a garden city for an area between an existing and a projected coal mine. The plan was based on Letchworth, and included 1,000 dwellings for mine workers, and 400 dwellings for officials, managers, and others. This unrealized plan has been regarded as anti-urban and an attempt to preserve the social hierarchies of the pre-industrial period.

Utopia and self-sufficiency

The utopian attempts to create garden city-type settlements were doomed to complete failure in The Netherlands, perhaps because of their almost purely escapist nature. Frederik van Eeden (1860-1932), inspired by Thoreau, founded 'Walden' at
Philipsdorp continued the tradition begun by Regout, Van Marken and other industrialists of providing housing for their workers. However, Philipsdorp had neither the coherent purpose of Van Marken nor Heyplaat's diversity of community facilities, and the garden city ideas were only peripherally involved. This housing received government subsidies under the 1902 Housing Act despite the fact that it was built by a private corporation.

Most of the employees first housed in these dwellings had just moved from rural environments, and the persistence of the individual house motif at the rear of the dwellings is notable. Here the dichotomy between front and rear is extreme; there are no front gardens, but the rear gardens were quite large for their time.
This is a garden village more by default than by ideology, because the great distance between central Rotterdam and the dry dock facility necessitated the building of nearby housing. As in other planning of this time, the influence of Sitte and Unwin is evident. The degree to which communal facilities were provided was quite extensive, but all were within the context of the company's moralistic paternalism. The company was able to use funds provided by the 1902 Housing Act.
Bussum in 1898 as a means to give form to his vision of a community with 'purified spiritual content'. However, Walden was able to attract the interest of only one architect, William Bauer, although Wijdeveld is also known to have been an admirer of Van Eeden. Van Eeden's influence was realized more strongly through De Pionnier, a journal which appeared under his editorial direction between 1902 and 1912 as the organ of the Vereeniging Gemeenschappelijk Grondbezit (Communal Property Ownership Association), which he founded in 1901. The periodical eventually served simultaneously as the mouthpiece for the Nederlandsche Tuinstadbeweging (Dutch Garden City Movement).

Other utopian features of garden city ideas found a more detached and academic application in De Bazel's plan for an International World Capital outside of The Hague in 1905. This plan, which bore some resemblances to Howard's diagram, also derived from a long tradition of centralized, radial planning developed especially in the baroque period. Berlage adopted the idea almost literally in his expansion plan for The Hague in 1908, and in this case the kinship to Howard's diagram was even more pronounced.

The notion of the independence of a garden city from old town centers - which was essential to Howard's conception - had more validity before 1920 than now appears from the urban development which has filled in the spaces between the garden city areas and old city edges. However, the idea of self-sufficiency continued to be somewhat alien to the Dutch, whether in the forms presented by Howard or later by Le Corbusier. The founders of Vreewijk [45-49] considered it to be a detached suburb, but by 1921 its major architect, Granpré Molière, viewed it as an integral part of an expanding Rotterdam. At that time he wrote that Vreewijk 'has not been a garden village and that also would have been wrong.'

Where the garden city areas did preserve some sense of independence from city centers it was due to natural phenomena such as separation by bodies of water. Such cases were the separations between Heyplaat and central Rotterdam or between Oostzaan and Nieuwendam garden villages areas and central Amsterdam. All fell within municipal authority, and in the case of the annexation of the village Watergraafsmear by Amsterdam in 1921 a definite tendency of the large municipalities to control their outlying areas can be observed. However, the vision of an independent garden city such as that implied by De Bazel and Berlage persisted as late as 1929 when Amsterdam councilman Miranda revived Riedel's 1906 proposal to establish a garden city in Het Gooi to the east of Amsterdam. Miranda, however, saw it as no more than a suburb belonging to Amsterdam, with the two connected by railroad. Riedel had anticipated the objections of the majority of Amsterdam's Garden City Committee: public acceptance and acquisition of land were too difficult.

H.P. Berlage

Berlage, whose work is generally regarded as being soundly urbanistic and even antithetical to garden city principles, was by no means unaffected by the movement, and he contributed significantly to the belief that the garden city ideas could be used in city expansions. As early as 1900-1905 there were recurring garden city elements in Berlage's series of expansion plans for Amsterdam South, and although by 1915 the revised plan had become distinctly more urban, some garden city rationalizations were still present. Both Berlage and A. Keppler, director of the Municipal Housing Agency in Amsterdam, had important contacts with England and therefore both played important roles as interpreters of the garden city ideas. Berlage was chosen by the directors of the Eerste Rotterdamsche Tuindorp in the middle of 1913, and by November he had completed the first-phase plan of Vreewijk, although not until 1916 was the project approved by the municipal council. In the plan, Berlage exploited the existence of drainage ditches by enlarging some of them to form major linear stretches of water. The streets are slightly bent, which indicates his propensity for closed views, but the openness and low density were unprecedented for Rotterdam, except for Heyplaat.
Garden village Vreewijk

NV Maatschappij voor Volkshuisvesting
Vreewijk
Rotterdam
1916-19, 1933
H.P. Berlage (initial plan)
De Roos and Overeynder (architecture)
Granpré Molière, Verhagen and Kok
(architecture and expansion
plan)

The first initiatives in 1913 were for the building of a self-standing garden suburb, but by 1921 Granpré Molière considered Vreewijk an integral part of Rotterdam's expansion.

Berlage's planning had a greater tendency toward closure and was less geometrically rigorous than Granpré Molière's expansion. Trying to make a dwelling whose price could compete with the Rotterdam alcove dwelling still being built, Granpré Molière also adhered to a strict north-south orientation of the housing rows.

Vreewijk is far from the social ideals of Howard, and reflects the dilution of the garden city program in The Netherlands. Here garden city became synonymous with one-family housing at low density in close contact with 'nature'. As inorganic as it may be in its lack of variety of urban functions, Vreewijk was well-regarded by many de 8 and Opbouw architects.
Labeled ‘boerenvondingarchitectuur’ (‘farmers’ housing architecture’) by Van Loghem in 1930, Vreewijk for some was the ideological converse of an architecture which ethically was obliged to celebrate communality, the workers’ movement, and the new technology. However, Vreewijk no less than Nieuwe Zakelijkheid housing should be considered as a manifestation of transcendent values; both directions had high symbolic content.
It is very likely that Berlage already had a copy of Raymond Unwin's *Town Planning in Practice* by this time, for he probably had met Unwin at the 1906 International Congress of Architects in London, even if he did not participate in Unwin's workshop on 'The Planning and Laying-out of Streets and Open Spaces'.

Certainly by 1918 Berlage was well acquainted with Unwin's work, for not only did he use some of Unwin's illustrations in his pamphlet, *Normalisatie in Woningbouw*, but Berlage's planning of the Transvaalbuurt in Amsterdam at this time indicates an obvious attempt to apply site planning devices tried earlier at Hampstead Garden Suburb [50-52].

That Berlage had more than just sympathy for the garden city ideas is evidenced certainly by his selection for the work in Vreewijk, and shortly later as chairman of the jury for the competition for a garden city area sponsored by the *Sociaal-Technische Vereeniging van Demokratische Ingenieurs en Architecten*. But what is more remarkable is that he included the winning entry of the competition [30] in the 1915 expansion plan for Amsterdam South. He wrote in explanation:

South of the Trompstraat, between the Amstel and Ferdinand Bolstraat, a Garden City was designed, with a surface area of ± 57 ha. The designer was of the opinion that at present the garden city movement is progressing rapidly, and thus such a quarter should not be lacking in the extension plan South of the municipality Amsterdam. As a basis for his design he took the design of Mr. Repko, which was honored with the highest praise at the just recently held competition . . . . The designer had the permission from Mr. Repko to apply his design. Thus Berlage indicated what he later called an *arbeiders tuinstad-wijk* [32] (workers' garden city area) in a plan that basically was urban and defended by Berlage as such. He somewhat reconciled the extremes by stating that he wished to see the principles of standardization proposed at the February 1918 Housing Congress in Amsterdam applied to this area. However, it is clear that even in his mind the garden city idea had become associated with open, low-density planning and that such garden city areas could be part of the most urban of city fabrics. For Berlage and others the garden city idea had come to mean the inclusion of minimal amounts of green spaces, and the competition jury which he chaired in 1915 rejected one submission on the basis that the whole plan has less the character of a garden city area because the construction is predominantly 'closed'.

It is possible that Berlage was influenced by Keppler to include Repko's design in the 1915 extension plan, since Keppler had served with Berlage on the jury as its secretary. Keppler was a close friend of Barry Parker, Unwin's partner, and through him was well acquainted with English garden city experiences. It was basically due to Keppler's initiatives that the four garden suburbs of Amsterdam (Blauwe Zand, Nieuwendam, Oostzaan [90], and Watergraafsmeer [96-98]) were built, although Riedel had already advocated a garden suburb north of the IJ in his 1906 book.

**Polarization and critique**

It was because Howard's ideas had not been applied in their pure form that the garden city movement came to be criticized so much. As early as 1912 Fockema Andreae recognized the disadvantage of physical separateness resulting from additional commuting time to and from work which would require the transfer of the traditional noontime warm meal to the evening. He also foresaw the possible resistance to the garden city ideas from advocates of the Dutch municipal system. Municipal independence and pride might resent the establishment of nearby garden cities if the new settlements had a large number of poor inhabitants.

These recognitions of the weakness of the garden city ideas were mild precursors to the criticisms that were to grow after the First World War. Already by the completion of the first phase of Vreewijk the garden city idea had become synonymous with the one-family house, which was often rejected as bourgeois in the atmosphere of socialism's increasing popularity. As the strength of the *De Stijl* ideology grew in
Holland, the romantic bias of the garden city aesthetics became increasingly evident. Furthermore, the ideological rejection of the garden city idea by some radical Dutch architects was stimulated by political developments in Germany.

The garden city ideas were popular in Germany following the First World War because many of the goals were consistent with the German government's policy of rural resettlement. Re-agrarianization was widely viewed as the only saviour of the nation's economy, and the hope for rural, self-supporting communities was shared by both radicals and conservatives. Many shared a widespread pessimism about technology and cities, whereas in The Netherlands the war had not engendered a rejection of urban values.

Through the 1920s the Dutch critique of garden cities continued on functional grounds. In 1928 Duiker wrote that one of the great disadvantages of the garden city is precisely its great size. A few years later the de 8 and Opbouw architects proposed organic dwelling areas which should be situated in the body of the city, in the residential district, and not, as is usual, somewhere at the edge of the city which is difficult to reach. Nevertheless, the Dutch architects were very aware of the increasingly conservative basis of the Germans' belief in rural resettlement. When the National Socialists built a response to the Weissenhof Siedlung (Stuttgart, 1927) at Ramersdorf that was very reminiscent of the English garden city areas in its physical form, the garden city became clearly identifiable with right-wing politics. The transformation of J.B. van Loghem's initial sympathy with garden city ideas of the early 1920s to his later work and 1930 comment labeling Vreewijk 'boerenwoning architectuur' ('farmers' housing architecture') characterized the radical critique.

Yet the success of Vreewijk illustrated that the polarity resulted from the political symbolism of an architectural style as well as from any recognition of functional weaknesses. For instance, Oud's Kiefhoek shares with Vreewijk the idea of low-rise, one-family row-housing, where each family controls a piece of land outside the dwelling [48, 110].

Influence

The Dutch preference for low-rise dwellings enhanced the influential role which the garden city ideas played in the 1920s and 1930s. The concept of open bebouwing (open planning), the availability of some exterior territory for every family, the bringing of the dwelling in closer contact with nature and the newly recognized symbiosis between dwelling and communal facilities are all indebted to garden city ideas. Furthermore, the garden city extensions were important among a variety of factors causing an increase in the scale of projects, with the result that more time had to be given to determining the position of the dwelling in space than had previously been the case. This increase in the magnitude of commissions also forced the designers to think in terms of repeated dwelling units, for the garden city movement was inseparable from the idea of model, or prototype dwelling, despite Howard's wish for architectural variety. The mass-production experiments at Watergraafsmeer and Berlage's use of Unwin's work to defend standardization illustrate this combination.

The garden city ideals significantly influenced the development of Hilversum under Dudok's leadership, but the bridge between the garden city ideal and Nieuwe Zakelijkheid is more noteworthy. Ernst May, director of the municipal housing program in Frankfurt between 1927 and 1933 acknowledged that the period during which he worked for Unwin (about 1910) laid 'the foundation on which the whole of my work is based'. May's influence extended to many Dutch architects, but especially to Stam and Merkelbach since they had worked in Frankfurt. Another Nieuwe Zakelijkheid architect, Duiker, associated his 1930 proposal in Hoogbouw [132-135] with 'a garden city on a great scale', and one can sense the same position of Van Loghem with respect to his high-rise dwelling tower entry.
[136] in the 1934 Competition for Inexpensive Workers' Dwellings. *De 8* and *Opbouw* architects indicated their indebtedness to the garden city type areas built within The Netherlands in their 1932 proposal, 'De Organische Woonwijk in Open Bebouwing':

Garden villages such as Nieuwendam and Oostzaan certainly show the striving for as complete possible provision of the dwelling area with green space, play facilities, stores, club premises, etc. Although Vreewijk was described as 'a quantity of well-grouped houses and buildings' rather than having organic properties, it was admired by these architects because of its preciseness in orientation, its simplicity, its humane quality, and its fineness... and open way of planning.

**Preliminary tendencies to spatial openness**

Despite the importance of the garden city movement's contribution to the new spatial conception of openness, it is important to realize that the increasing use of open planning was widespread and not confined to any specific ideological position. In this respect, the spatial conception of De Stijl was the most extreme manifestation of a general tendency which had its roots in widely diffused ideas about outdoor activity, hygiene, and a sense of the acceleration of change. In a deep psychological sense the concept of openness relates to the final emergence from medieval values that the ending of the First World War was thought to represent.

Within The Netherlands the Housing Act had not itself required any particular spatial organization, but numerous building regulations enacted by the municipalities pushed tentatively towards more open residential space. Distances between the backs and fronts of dwellings were specified with the belief that density and public health were related. More significant was a proposal by a commission of the Amsterdam Housing Council which recommended in 1909 that the ends of closed blocks not be built up in order to create public gardens in the inner spaces.

A critical influence upon architects’ tentative open planning was Raymond Unwin, whose *Nothing Gained by Overcrowding* appeared in 1903 and the more important *Town Planning in Practice* in 1909. One site plan sketch in the latter seems to have directly influenced De Bazel's 1914 housing at Bussum, where the basic site planning created closed, roughly square spaces. In this project the corner units of the super block were omitted, resulting in a partial flow of space between front and rear.

Hampstead Garden Suburb, plans of which were published in *Town Planning in Practice* was the prototype for a project in Hoorn of 1917. This U-shaped space was referred to as an 'open hofbouw' and was considered to be one of the first applications of this planning type to workers' housing. There was no apparent concern that the open end be oriented south for maximum sun, but the type is clearly a precedent for semi-open, southerly oriented blocks such as J.H. van den Broek's Vroesenlaan dwellings of 1932 in Rotterdam. However, unlike later applications of the U-shaped block, which reduced the differences between front and rear, the entrances to the Hoorn dwellings relate to an entrance court which reflected the English collegiate examples which inspired Unwin. The space behind the dwellings has retained the traditional freedom compared to the control exercised over the front.

Berlage, whose contact with Unwin is more certain than that of other Dutch professionals with the exception of A. Keppler, used the one-sided open block in the Transvaalbuurt housing of 1919 in Amsterdam, on which Versteeg and Gratama were collaborators. The result seems to be only a provisional experiment which lacked the confidence of Unwin. The open side faces north, and no attempt was made to use the layout system on a larger scale in which case its advantages could be exploited more fully. In this housing, as in De Bazel's Bussum project, the corner units have been omitted, although the sense of closure is strongly present since the end planes of the houses at right angles to each other were carried across the voided corner. This wall is punctured at the corner to serve as an entrance not to a
Raymond Unwin's influence on Berlage was evident earlier in the South Expansion Plan, but here the reference to Unwin's work is more explicit. Similar to the Dutch application of the garden city ideas in general, Unwin's ideas were applied in a more urban context than they had been in England. For Berlage this project represented a movement away from the belief in the continuity of the street wall and towards more open planning. Like Unwin, Berlage recognized the problem of the corner dwellings, but they were omitted here in order to accentuate a space at the street intersection.

'Town Planning in Practice'
(London, 1909)
Raymond Unwin
communal garden, but a simple passage-way between the back lots. That all the corners of the project were not handled in this way indicates that the voided corner resulted in part from wanting to create a counterbalancing urban space against the space in front of the school not far away on the Kraaipanstraat.

The corner treatment of blocks on the Koekoeksstraat in Amsterdam North one year later by the same architects is further evidence that the aesthetics of the street intersection was the primary consideration. Here the corner dwelling units have not been omitted, and there is no diagonal axis to the rear space. However, the four blocks of the intersection are diagonally sliced away in order to give a sense of continuous treatment among the four blocks fronting on the intersection.

One of the main lessons to be learned from Town Planning in Practice was that housing layout could be manipulated to form spaces. Much of Unwin's work and theory had developed in reaction to the rigid monotony of the English bylaw row housing, and all of his site planning seems to attempt to modulate rows of housing to avoid monotony. Berlage and other Amsterdam planners showed sympathy for this approach, which can best be observed in the kinds of spaces formed in the area of the Henriette Ronnerplein [36-37] and the Therese Schwartzplein in Amsterdam South. Here the configuration of the closed housing block was manipulated in order to create an accentuating exterior space. Most important here is that the block was not taken for granted, and the spatial effect was relatively open for its time. This new boldness in manipulating whole rows of dwellings, deriving from Sitte as well as from Unwin, was an important preliminary step before the more ideologically motivated open planning of the Nieuwe Zakelijkheid architects.
10. Collectivity and communal space

The transformation of the closed building block with a cluttered enclosed space to the closed building block with a communal garden, is an important development towards the new spatial conception of the 1920s. It was not only the garden, the contact with nature, that was meaningful: enclosed communal space could assume forms other than a garden. Although the Nieuwe Zakelijkheid architects later rejected closure, which at first was an important component of a space's communal quality, the attempt to symbolize the communal continued as a major concern even in the context of the strokenbouw, a freestanding block of dwellings in a long row. Similarly, what began as efforts to control the exterior space outside the dwelling within the closed block developed into a more generic concern for exterior residential space.

The influence of hygiene

It has been mentioned in the discussion of Camillo Sitte how Berlage was particularly intrigued with the idea of an enclosed garden within a building block being accessible by two or more portals. Berlage had no commissions which enabled him to specifically carry out this idea, although the 1908 Expansion Plan for The Hague pointed in this direction.

The earliest specific proposal for interior communal space in workers' dwellings came from a subcommittee of the Amsterdam Housing Council in 1909. This commission had studied the dwelling conditions of the newer parts of Amsterdam and had concentrated a large part of its report on a condemnation of the cupboard bed and alcove. Yet its conclusions and recommendations, based upon the conviction that natural light and ventilation were necessary for a hygienic dwelling, developed far beyond the problem of the dwelling plans:

If the northern and southern end of the building blocks (of course by designing as much as possible with this orientation) were not built up or provided with through passages, then these inner courts would become accessible oases amidst the crowdedness of the big city for every pedestrian. These oases would have great significance both as 'city lungs' and as recreation places for children, old people, and adults after work.

These ideas formed the basis for J.E. van der Pek's housing for the cooperative housing association Rochdale in 1912 [53-54].

The commission also proposed that the distance between the rear building lines be increased over the standard practice, and that these 'city lungs' be land owned by the city. Although such a juxtaposition of public space and the private dwelling's rear exposure would have represented a radical break from tradition, the tendency of the commission to view the land as public is explainable. Beginning in the last decade of the nineteenth century Amsterdam had begun to acquire and maintain ownership of the land irregardless of whether an association or a private speculator built on it. Under this system of erfpacht, the city maintained ownership of the land, which was leased to those who built on it. By 1909, when the commission issued its report, the erfpacht system of land ownership was being quite widely practised. The 'city lungs' concept at this time enjoyed widespread use, but its application to the interior of a dwelling block was unique. Thus, in contrast to later provisions of communal garden space adjacent to dwellings, there was a relative lack of ideology, but a very strong sense of nineteenth-century hygienic concerns.
Including one of the first communal gardens for workers' housing in The Netherlands, this project contained the seeds of a new approach to residential space. Based on a 1909 study commission's recommendation, the short ends of the block do not contain dwellings. As a result, the prototype of the strokenbouw was approached here well in advance of the functionalist ideology of the 1920s and 1930s. The communal space embodied the communal spirit of the housing association, which sponsored concerts and other public events within the garden.
The hofje tradition

The above illustration points out that it would be incorrect to suggest that the communal garden movement was only an extension of the hofje tradition. However, as a morphological prototype, the hofje was an important example of enclosed communal space. One illustration of the continued relevance of the physical conception of the hofje is found in 'De Architecten en de Woningbouw' ('Architects and Housing') written by M.J. Meijers for Bouwkundig Weekblad in 1917. In one instalment of the series, entitled 'Hofbouw', the author made an association between the true hof and workers' housing. Illustrating a plan of the well-known Begijnhof on the Spui in Amsterdam, as well as mentioning the Begijnhof in Delft, Meijers wrote, these kind of spacious courts give a certain idea of the direction in which the volkswoningbouw must go.

But Meijers distinguished between the original form of hof and what he suggested, since he thought the courts were too narrow and that one entrance was inadequate. He was careful to distinguish the hof from the dwelling block, to which he devoted another article in the series. The distinguishing feature, he wrote, was one of scale and the fact that housing in the hof form had entrances on the space, whereas the housing block typically had the entrances on the street.

A number of housing projects built by 1917 with Housing Act financing were used by Meijers to illustrate his article. He cited Verschuerwijk, built in Arnhem in 1911-12 as the first application of the hof idea to modern housing. Here the row houses conformed in the conventional manner to the street pattern, but the short dimension between street center lines was 125 meters. Thus three rows of housing and a school were placed within the super-block. Although the four corners of the block were unbuild, entrance to the center space was provided by three portals in the outer ring of row dwellings. Meijers noted the total elimination of traffic from the interior space, and that it was free from wind and dirt. On the point of the school's separation from vehicles he was quite vehement: without any trouble from traffic the most tranquil place one can himself imagine.

This attitude formed the basis for the author's admiration of the other examples he presented which included, among others, the Zaanhof [55-57] in the Spaarndammerbuurt in Amsterdam. Here the site plan was developed by the Municipal Housing Agency, established in 1915, and different architects designed the inner and outer rings. Unlike the Arnhem hof, vehicles can reach the interior through two breaks in the building mass, but there are separate pedestrian portals punctured in the mass. Walenkamp's architecture of the interior is distinctly medievalist, which, together with the closed nature of the space, recalls the security of a medieval castle's defensible space.

The plan for the Zaanhof seems to have been made at about the same time that Berlage completed the 1915 version of the South extension plan. In this plan Berlage indicated four blocks similar to the Zaanhof and Verschuerwijk type. Meijers did not mention the Berlage plan, but certainly reflected the functional aspects of Sitte's influence on Berlage's work in his summary of why he would like to see this building type more widely applied:

Especially people with young children will have a preference to live in a closed court, especially if it is not too small, within which the children can play peacefully without any danger. A play area within the enclosing mass of such a court is situated far more favorably than those which are situated on open 'squares', exposed to the full brunt of the weather in our unattractive climate.

Communal garden prototype

Although the housing associations authorized to build dwellings under the 1902 Housing Act continued to erect completely enclosed blocks similar to those built by the nineteenth-century speculators, their conception of the interior space was com-
Housing association 'Het Westen'
Amsterdam
Zaanhof
1919
H.J.M. Walskamp

The layout of this area was designed by the municipal housing agency, and is remarkable for the scale of the planning idea as well as the separation of vehicular and pedestrian traffic. Applying Sittesque-Berlagian principles of closure and penetration of the surrounding mass by portals, the architect nevertheless attempted to give expression to the individual 'house'. The plan's medieval motifs of defense are reflected in the architectural language.
pletely different. The speculators' only involvement with the inhabitants after the
housing was built was to collect the rent, but the associations were intimately tied to
their projects. A sense of pride in their cooperative work and a desire to realize the
hygienic advantages that had been indicated in the Amsterdam Housing Council's
Report of 1909 formed the basic motivations to create the first communal garden
within a housing block [53-54].

Van der Pek, who had been a member of the study commission in 1909, was hired
by the cooperative association Rochdale, and the initiatives for a communal garden
within a new housing block in the 'Indische' neighborhood were taken mutually by
this architect and the idealistic association he served. The design was unable to in­
corporate all of the principles that had been set forth in 1909; the block was oriented
east-west rather than north-south, and the interior garden was not intended to be a
public park, but rather under the care of the association. Unlike the enclosing mass
surrounding some other communal gardens that followed it, the Rochdale block
was not built continuously on all four sides, but rather at the short ends there was an
entry between two small gatehouses which gave access to the communal space. The
ground floor residents still had a small amount of space for their own use, but it was
reduced to about two meters from the rear building line. The rest of the space was
laid out with a formal garden.

The opening of the garden in May of 1912 was an event of city-wide importance
which attracted a good deal of public attention. The early intense use of the space
was public in nature, and included concerts given by a workers' orchestra and chorus
association to which outsiders were invited, but the frequency of such occasions
eventually decreased.

Front and back: Tuinwijk Zuid, Haarlem

The architect J.B. van Loghem (1881-1940) designed two housing projects in 1917
that were very similar to the four blocks which Berlage had indicated in his 1915 ex­
pansion plan for Amsterdam South, discussed above. The first of these, a 'garden
area for officials', indicated five separate communal gardens, two of which were like
the type Berlage had designed. The other three blocks had communal spaces at the
rear of the houses. The next project, known as Huis ter Cleef, which was the name of
the association that employed Van Loghem, was more unified, with one communal
garden within a double row of housing. However, similar to Brinkman's Spangen in
Rotterdam, the housing also intruded into the space, breaking it up and thus form­
ing more complex relationships between the small and large scales.

The use of the communal garden, inspired by the ideas of Ebenezer Howard and
Berlage as well as by the traditional hofje, persisted in Van Loghem's next work
which was executed [58-62]. The layout of the streets in Tuinwijk Zuid had been pre­
viously established, and the large block depth allowed space for a communal garden
behind the dwellings. These dwellings were one-family, middle-class row houses, but
they anticipated a number of new approaches to multi-family housing. Van Loghem
succeeded in creating a communal space that did not derive its validity from the en­
closure of mass, but rather from the relationship of the dwelling units to the space.
The service spaces such as kitchen and storage were placed on the street side with the
result that there are liveable spaces across the whole width of the back side of the
dwelling, on the communal garden side. This was a complete inversion of the tradi­
tional values of the 'mooie kamer' – the living room on the street, kitchen at the rear.
But having given so much emphasis to the rear of the house, Van Loghem handled
the transition from the private to the communal space by a slight level change be­
tween the back garden and the communal garden. Here a much more effective symbiosis was achieved between the two realms, and it lacks the arbitrariness of the
fences between the private gardens and the communal gardens in Oud's Rotterdam
blocks.

Also significant for future developments was the architectural equalization of
front and rear. A common reaction when Tuinwijk Zuid was completed in 1922 was
This middle class housing was the first realization of Van Loghem's attempts to design communal gardens within housing blocks. His desire arose both from the influence of Sitte through Berlage as well as from socialistic principles.

The depth of the space between the streets was already established, and thus the communal garden is quite spacious. It is the generator of the unit plans, which have a concentration of services on the street side in order to provide completely usable living space on the garden side. The polarization in the internal planning does not exclude a high degree of living flexibility.
that one could not distinguish between the architectural treatments of the street side and the communal garden side. The beauty of this solution is that a functional dichotomy between front and rear was maintained, although by reversing the traditional placing of functions Van Loghem gave a special dignity to the rear of the dwellings. Unlike the equalization of space that so occupied architects shortly later, this did not reduce the territorial freedom of the inhabitants but stimulated it.

In and out: Spangen, Rotterdam

Michiel Brinkman (1873-1925) designed a unique housing project for the municipality of Rotterdam which was completed in 1921 [63-74]. Here the traditional closed building block has been used as the context for an inversion between inside and outside. The basic housing module consists of two flats above each other, both with their entrances on the inside of the block. Above these are two duplex units, side by side, whose entries are off a continuous gallery. This gallery is connected by a number of stairways and freight elevators to the street two floors below. Most importantly, the gallery is on the inside of the block.

Despite the interest in this project in recent years, there has been no successful attempt to trace the source of the idea. Since Brinkman wrote very little about his work, this search is difficult, and in any case involves some degree of speculation. However, in Bouwkundig Weekblad there appeared an article in 1907 that might have been the source of the Spangen concept. M.P. de Clerq proposed a solution to the fire and ventilation problem that was common in most housing of the time. Citing the difficulty of through-ventilating an apartment by opening its door onto a communal stair, he proposed a ‘rear gallery’ within the building block, which would be connected to the ground by a masonry stairway, mentioned for its fire safety. Although motivated by the hygienic and safety features, the concept also had a social dimension:

Each dwelling has a private front door, coming out onto such a rear gallery, which is certainly appreciated by all the inhabitants because it makes living much freer and more agreeable than with neighbors living above and below and sharing the same staircase . . . . these galleries are to be thought of as streets . . . .

He then proposed to remove all the little gardens to make a free space for the rear galleries where such buildings as a reading room, meeting facility, kindergarten, sewing and knitting school(!) could be erected. The remaining space would be a children’s play area:

The adults will then have the possibility to relax in an agreeable and desirable way, without having to go to cafes, inns, or wine-houses . . . . while the children do not always have to play on the street where the danger for accidents is increasing with the greater number of electric trams and other means of transportation. There is much in the Spangen block which seems to be a realization of what De Clerq described, although it lacks such diverse facilities. The interior of Spangen is a mixture of the old tradition and new ideals in regard to the disposition of communal space. The ground floor units have tiny gardens, yet there are also small fragments of space which belong functionally as well as visually to the whole. There is a bath- and wash-house (no longer serving these uses) at the geometrical center of the block which was given a different architectural treatment than the surrounding dwellings. Enhanced by this focus and the continuity of the wide gallery which belongs to the whole and to each individual, the enclosed space has a feeling of powerful territory which speaks the essence of interior. Here, hierarchies were both believed in and exploited to create a multi-valent architecture where closure and openness, large and small, vertical and horizontal, communal and private, are in constant dialogue.

Both the formal treatment of the mass as well as the associations of activity that occur within the space evoke Spangen as a large metaphor of the house of our daydreams, with corners, and garrets and places that cannot be forgotten. The space is complex but derived from a simple language. The sense of community within the interior is thus not overstated by the entry portals, which in other projects are some-
Municipal housing Spangen
Rotterdam
1919-21
M. Brinkman

Brinkman, with the close collaboration of housing director Plate, created a unique and very important housing block. This achievement was within the principles of closure and continuity of mass expressed by Berlage and Sitte.

The success of Spangen is due in part to the richness of the contradictions and inversions that have been created. A street is in the air; the inside of the block is 'outside' of the dwelling; on one axis the plan is symmetrical, but the space is always perceived as rich and complex; monumentality is present, yet intimacy prevails; the 'street walls' are planar, but this is contradicted at one end of the block where the gallery is revealed to the street; formally closed, space still seems continuous; not all dwellings are equal, but there is something deeply shared by all of them.
The gallery idea as used here also creates a richness based upon contradiction. It is both inside and outside, both front and back, both the most generalized element (circulation) and the most personal (flower boxes). Wide enough (2.20-3.30 meters) to accommodate delivery carts, it serves as a communal balcony, or an outdoor living room. For all ages, the space in front (rear) of the dwelling supports more functions than just circulation. The simultaneous personal territorialization and communal use of the same space for movement are highly unusual.

When the idea of the gallery was used again, in the Bergpolder high-rise flats (1934), only the circulation function was retained, and because of this the gallery was reduced to just another technical aspect of the building.
Much of the interior space of the block is divided into tiny, sometimes triangular gardens for the ground floor units. But the 'presence' of the gallery above is so strong that the gardens are uncluttered and well-maintained. Somewhat equalizing the degree of amenity between the gallery level and the ground level, these small divisions of the ground space add successfully to the dialogue between the whole and the part. This dialogue of opposites characterizes almost every aspect of Spangen.

The vertical elements of the circulation system - the stairs connecting the gallery to the ground level - are very underexpressed compared to the almost constructivist gallery. The maintenance problems in the stairways reflect that unlike the gallery, no personal territorialization of these spaces occurs.
Partly because the usual front doors are lacking, the 'street wall' on three of four of the block's exterior sides is particularly somber. However, Brinkman contradicted this rule by revealing the gallery to the street at two corners, and by bringing it into complete view along the fourth side. Here fragments of all of the project's significant ideas give the block an external identity in the quite anonymous surroundings.

With its emphasis on entry to the dwellings from the interior and a façade quality of massiveness on the exterior, Spangen combined some of the psychological implications of the medieval castle with the Dutch hofje.
times emphasized to symbolize something that is not there. Yet the image of communality which Brinkman achieved required more than a monumental entrance and a formal garden: dialogue with individuality is required to make the communal features readable and valid. This is achieved by the fact that every unit has a front door onto the space, except those at one end of the block. Here the gallery is revealed to the street; on the other three sides the block is somber and cold.

Whatever importance one may find in the gallery idea itself, this does not reveal the full importance of Spangen. Most significant is that a sense of place was created, a place with dignity achieved not by aesthetic laws but by the juxtaposition of opposites. But unlike the communal gardens at the center of closed blocks, Spangen's interior is a remarkable blend of public and private territory.

**J.J.P. Oud**

Brinkman's Spangen block showed that a municipality could have the same capacity for innovation as a housing association. Much of the spirit of the cooperative associations was paralleled by a deeply felt sense of municipal identity and pride, which was manifest when the municipalities built dwellings with Housing Act loans. Oud's housing in Rotterdam not only shows that innovation did not have to occur under the sponsorship of a private client, but also exemplifies the transformation in the means of symbolizing a sense of communality.

Oud's first housing blocks after he became city architect of Rotterdam, Spangen I and V [75-79], were larger than the normal closed blocks because each was designated to contain a school within its interior space. Thus only portions of the spaces enclosed within these blocks are communal gardens, and there is unfortunate conflict between the school grounds and the private gardens of the first floor residents. The inconsistencies in these blocks resulted from the fact that Oud designed only a portion of each of them. In Oud's next Spangen block, 19 Spangen IX of 1919 [80-82], there was a much more deliberate and consistent attempt to create a communal garden, although the ground floor dwellings still have their own gardens as in the Rochdale example in Amsterdam. Oud's Tusschendijken blocks [83-85] were based upon this last block in Spangen.

It is interesting to observe the simultaneous development in Oud's housing of a decreasing amount of enclosed communal space and an increasing use of an architectural style which was intended to express the contemporary value of communality. The sense of communal space was still present in Oud Mathenesse [86-89], but it was more of the traditional village type, and only the stylistic breakthroughs signified something new. The Hoek van Holland dwellings of 1924 [99-105] are less notable for their definition of space than for their material quality. On the street side, the image of the whole is created by the continuity of mass and surface, which dominate any spatial articulation at the scale of the individual dwellings. However, behind them, Oud handled the transition between the public park and the garden of the lower dwellings in much the same way as he had done in the Tusschendijken blocks. Shortly later, at Kiefhoek [106-111] the budget and building program made the inclusion of communal space difficult with the exception of the children's playground.

The differences in spatial language between Kiefhoek and Oud's closed blocks occur both at the material architectural level and at the perceptual level which employs spatial qualities to suggest potential activity. The enclosed communal gardens defined a group and allowable behavior by that group in a more arbitrary manner than Kiefhoek. At Kiefhoek aesthetic devices such as the continuity of the upper-level bedroom windows enhance the legibility of the group. The closed blocks tried to forge an equality among the residents that was not necessarily there, and in contrast, the true sense of the communal in Kiefhoek is realized through an appreciation that all the residents share an equal relationship with the streets and private gardens. In both cases the symbolic is present, but the spatial unity of each example realized the concept of communality in completely different ways.
Oud's first executed housing after beginning to work as Rotterdam city architect shows the large difference between his Scheveningen beach housing project and what he was able to achieve in practice. Having come under the influence of Camillo Sitte's ideas while working for Fischer in Munich in 1911, Oud closely followed Berlage's 1892 interpretation of Sitte's ideas: closed block, interior garden, continuous mass along the street broken only by entrances to the rear space. However, Oud went further than Berlage in his use of planar simplicity.

Oud continued the tradition of giving the ground floor dwellers their own entry doors on the street. However, in other ways the individual expression of each family living unit is suppressed; only simple modulation of the fenestration rhythm is present here.

The plans are quite simple but do not yet have the systematization which Oud achieved in his later work. The kitchen has a direct relationship with the living-dining room, whereas in contemporary practice the entry hall would separate the two. The balconies are work spaces, accessible only through the kitchens. Most significantly, unlike much private sector housing in Rotterdam until 1937, there are no alcove sleeping areas.
The housing block shown here is one of two, both of which were larger than normal in order to accommodate schools within their interior spaces. Although part of the interior is a communal garden, the school grounds conflict abruptly with some of the private gardens belonging to the ground floor dwellings. One cause of the lack of unity and consistency is that Oud designed only a portion of each of the blocks – the housing in the adjacent photograph was not designed by Oud.
This third block of Oud's housing is very similar to the better-known Tusschendijken blocks which shortly followed. The street wall and closed block morphology are still evident, but due to the influence of Wright and the ideas of neo-plasticism there is a more dynamic expression at the corner and above the doorways. This has little functional significance here, but foreshadows Oud's conception of spatial openness and continuity implied through the treatment of mass.

Most significant in the project is that Oud has moved the living rooms to the interior of the block, which is similar to what Van Loghem was doing at the same time at Tuinwijk Zuid in Haarlem. The continuous horizontal balcony has become an important feature of the interior not only because of its unifying aspect, but because the upper living rooms have adjacent exterior spaces. The balcony becomes a buffer between the private and the communal spaces, which increases the validity of both. Yet despite the presence of the communal garden there is a strong dominance of the interior space by the private gardens and sheds belonging to the ground floor dwellings.
Municipal housing Tusschendijken
Rotterdam
1920-23
J.J.P. Oud

Still applying the closed block system, Oud continued to elaborate upon the communal space designed earlier for his Spangen blocks. Here, the ground floor units still have territorial rights to a portion of the exterior space, but now without the sheds. The balconies are more integrated into the whole building fabric than was contemporary practice in Amsterdam. Two duplex units horizontally adjacent above two flats were also used by Brinkman in his Spangen block; however, Oud's unit planning had not reached the simplicity and consistency of his later work.

It was during this project that Oud left the De Stijl group (1921).
Oud's site planning here is more open than in the earlier blocks, but there is still a strong sense of centralized enclosure. The triangular site imposed restrictions in this respect, but Oud seems to have designed for deliberate picturesque effects which strengthen the metaphor if not the reality of the village image. Yet the whiteness (stucco), horizontal continuity and projection show the degree of freedom from the norms. A criticism of the handling of the street-dwelling continuum must take into account the severe economic restrictions of this semi-permanent housing intended to last twenty-five years.
Symbolism of collectivity

The designing of communal gardens in the center of closed housing blocks has been described as originating in views about hygiene, but it should now be clear that this also had symbolic content for architects and their clients. In many cases the original intention of making the interior space available for recreation, etc., occurred less in the 1920s and 1930s than earlier, and often the communal gardens were described solely in terms of their decorative effect. But this was not the only impetus to create a visual statement of the collective.

The traditional village imagery was for some the means to evoke the idea of a group, and this was the basic disposition of Oud at Oud Mathenesse in Rotterdam as well as of De Klerk.20 In the garden village areas, the traditional village imagery was also employed, and this approach governed even when non-traditional forms and building methods were used, as at Watergraafsmeer. Thus, in regard to village imagery, two themes were present: first, romantic allusion through the use of architectural form, second, romantic allusion through the formation of space. In the latter, the medievalism derived through Unwin and Sitte was the main ingredient.

The symbolism of the collective through the use of architectural form is intertwined in all architectural traditions, but within the context of the popularity of socialist ideas in Holland this tradition became reinforced and reinterpreted in a number of ways. Entrances to communal spaces illustrate this. Berlage had described the use of portals as entrances to communal gardens in closed blocks in his interpretation of Sitte in 1892, and these gradually became significant architectural elements, often possessing expressionist qualities. Van Loghem made use of two small towers on either side of the portals to the communal gardens at Tuinwijk Zuid (1919-1922) to advertise the idea of entrance, which seems to be an idea he borrowed from Kropfoller’s expressionist house in Park Meerwijk in Bergen.21 However the idea of the portal entrance continued to be applied even after its use no longer became necessary with more open planning. Thus at Tuindorp Oostzaan a large portal marks the entrance to the major symbolic center, the Zonneplein. On a smaller scale the motif is present throughout the project [90], where there seems to be an attempt to preserve the sense of collectivity through forms and spaces despite the fact that the planning had become more open than earlier.

The Nieuwe Zakelijkheid architects inherited not only Berlage’s belief in the use of repetition in symbolizing social equality, but also much of the tradition of the symbolic value of entrances, although the motivations were not so obvious as in expressionist architecture. This tendency can be found in their treatment of stairways, such as at the city-scale of the Bergpolder flats [141], or in the more repeated, smaller-scale expression of the glass-enclosed stairways of Van den Broek’s Vroesenlaan apartments [122]. These were no less symbolic than the entrance towers of Van Loghem; only the language had changed.
The portal is a very old architectural element in the Netherlands, and it was frequently used at the entrances of hofjes. When Berlage introduced Sitte’s ideas in 1892, he prescribed the use of portals for the entryways to gardens in the interiors of closed housing blocks. From about 1905 this idea was widely used, and was especially popular because continuity of mass and visual closure could be maintained, while the necessities of circulation could be accommodated. Gradually portals were used to differentiate between vehicular and pedestrian access.

In these three projects a similar motif is used in plans which are progressively more open. At Tuinwijk Zuid the communal spaces are not as completely enclosed as at Spangen, while at Tuindorp Oostzaan more of the same residential street lies beyond the portal. The continuous mass over a street was used later in Nieuwe Zakelijkheid architecture, such as Merkelbach’s and Karsten’s Landlust, 1935-38.
11. Standardization

The year of the first publication of *De Stijl*, 1917, was the worst year in the Dutch housing industry since the Housing Act had gone into effect fifteen years earlier. Only 5,000 new dwellings were built in 1917 compared with 25,000 in 1906 and 1912. Although almost all of these were built privately, by 1912 the amount of Housing Act dwelling construction was increasing, while the role of the private sector fell off rapidly.¹

The decade prior to 1917 had been one of tentative achievement in the creation of workers' housing, with new ideas more predominant than quantity of construction. The garden city movement, the first uses of communal gardens, and the attempts of De Klerk to find a modern expression for workers' housing were the key developments. Although the decade has been noted for the basic conservatism of Dutch architects,² Berlage's ideas about architecture as a social art remained a constant influence. This decade, however, formed the important gestation period for the ideas that crystallized beginning with the first issue of *De Stijl* in October of 1917.

The first few issues of *De Stijl* were, for the most part, filled with Mondriaan's explanation of neo-plasticism, described as following the growing abstraction of life. Although rarely explicitly stated by Mondriaan, it is implicit in all of his arguments that he viewed neo-plasticism as an aesthetic of the new age of the machine:

In all fields life grows increasingly abstract while it remains real. More and more the machine displaces natural power.³

Shortly later, in January 1918, 'Art and Machine' by J.J.P. Oud appeared in *De Stijl*, and here one finds a much more cogent statement about the relationship between the arts and the machine:

For the modern artist the future line of development must lead inevitably to the machine, although at first the tendency will be to regard this as heresy. Not only because the machine can give more determinate plastic expression than the hand, but also from the social point of view, from the economic standpoint, the machine is the best means of manufacturing products which will be of more benefit to the community than the art products of the present time, which really only reach the wealthy individual.⁴

When Oud related the machine to architecture, it was specifically to Frank Lloyd Wright's achievement of plastic expression. It is important to realize that at this time - January 1918 - those associated with *De Stijl* had not yet made a coherent statement about mass production applied specifically to housing. The arguments about technology which later unfolded in *De Stijl* thus should be regarded not only as occurring under the influence of Wright and the Futurists, but also under the pressures of the large shortage of housing. Furthermore, the optimism for the role technology could play in the future was not confined to *De Stijl*.

Berlage and 'Normalisatie'

In the atmosphere of the severe dwelling shortage, the *Nationale Woningraad* (National Housing Council), which had been formed in 1913, sponsored a Housing Congress in Amsterdam in February of 1918. At the Congress the engineer J. van der Waerden presented a proposal for standardization in the housing industry. He called for the application of a limited number of floor plans (nine, based on various family types) using standardized dimensions and building elements as much as possible. He also called for the establishment of a central body to control the distribution of building materials and labor.

Berlage made a brief statement at the Congress in support of the proposal, and shortly later he was able to elaborate his views at The Hague Society for Trade, Industry and Social Affairs. Berlage's position in regard to technology in architecture
De Stijl was not the only focus in 1918 where technology provided a basis of hope for the future. There are various examples in *Wendingen* where a futurist tendency can be found, although inconsistently. In the housing crisis year of 1918 within neutral Holland there was widespread optimism concerning the application of technical processes and products for the solving of housing problems.

**Private sector housing**

Amsterdam

Bos en Lommerweg

1934

It is interesting to observe to what extent technology had affected the dwelling by 1934. In this middle class example the provision of central heating and hot water were its selling points: 'Central heating and hot water supply - daily, continuous hot water, only with us'.

But it was not just technical improvements which were stressed to the public. For the same housing, storage in the basement, a communal garden, and play areas were advertised. All these goals of the functionalist program occur here in a much more traditional architecture.
up to this point seems somewhat ambiguous, although he had used ferro-concrete as early as 1911 for a house in Santpoort. The expression of the truss structure of the Stock Exchange had been an important breakthrough, and although an admirer of Morris, Berlage did not share his conservative views about technology. However, De Klerk had pointed out in 1916 that Berlage had not grasped what characterizes modern times: the sparkingly new, the sensationally shocking, the impressively commanding aspects of mechanical technology which continuously surprise us today. At least he has not shown that he grasped the essential quality of modernity. For example, one might expect that Berlage would have excelled in building with reinforced concrete, but he has used that brand new product uncharacteristically, as a hidden, auxiliary material, just like every other Dutch architect.  

It was this statement that sparked the beginning of Oud's defense of Berlage and his criticism of De Klerk's architecture, but it nevertheless shows that Berlage should be regarded as a transitional figure with respect to technical developments in architecture up to then.

Thus Berlage's defense of standardization in 1918 can be considered as a new departure in his own thinking, but more importantly, it probably influenced Oud. In addition to its influence, Berlage's defense of standardization is important in its own right because of the integration of social and aesthetic arguments.

Berlage was first careful to qualify that the standardization proposal was not simply directed towards the creation of emergency dwellings, but was a condition which should apply in normal circumstances. He then established that the reason for using standardization was the need of more dwellings, a view which slightly echoes Oud's point in 'Art and Machine': the machine is the best means of manufacturing products which are of benefit to the community. Mass production is the umbrella concept under which Berlage placed standardization:

> And whether we desire to use that word or not, the dwelling production must become mass production; that will thus mean that it must be possible to build very quickly and in addition very cheaply.

He made passing reference to progress in other countries in the area of housing standardization, with a particular mention of the seriousness of the effort in France, but it is not sure if he knew of the Domino project (1914) of Le Corbusier. Rather than citing the contemporary examples of mass production, Berlage used a more cautious approach, divided into two main arguments. Opposition to the standardization proposal had come from both workers and architects, and Berlage had a separate argument for each:

> The workers, and now I come to the essence of the opposition, see the feared monotony of endless rows of the same houses to really be an attack on their personality, on their freedom, on their humanity; through this sort of habitation, one becomes quite a herd of animals, treated slavishly, not freely.

As we have seen earlier, the symbolic qualities of standardization and repetition were used to counter this argument. This, however, was the weakest point of his position, since he was asking the worker and the intellectual architect to share the same assumptions about the symbolic meaning of repetition. Nevertheless, the idea that mass production was a realization of socialist ideals gained widespread acceptance.

The architects' objections to the standardization proposal of Van der Waerden had been equally vehement:

> the architects also see in this an attack on their personality, on their artistry, on the freedom of their creation.

Berlage's reasoning addressed to the architects can be regarded as more successful than that addressed to the workers, for he built his arguments in the context of the classical education of his fellow professionals. First, he related mass production to the rationalism for which he was so respected:

> the mass product itself brings objectivity to the fore.

In this theme the proximity of his relationship with De Stijl can be seen:

> as chance would have it, especially in regard to the arts, regularity which is objective stylization is primary, and irregularity which is personal stylization is secon-
Although this statement reveals a departure from the ideas of Sitte, who had defended irregularity and asymmetry, Berlage based much of his argument on Sittesque principles.

It has been mentioned that Berlage interpreted the ideas of Sitte to Dutch architects in 1892, and in Berlage's subsequent expansion plans he specifically realized Sittesque principles. In the explanation of the 1915 Expansion Plan for Amsterdam South, Berlage associated the large, continuous building block with mass production:

The character of the construction has totally changed. The construction of dwellings has become mass production work, even for the well-to-do middle class. Berlage then elaborated upon the aesthetic aspects of the large building block, and to do this he employed the technique of Sitte in the use of historical examples. However, it was also the technique of Raymond Unwin, who had been influenced by Sitte, and many of the illustrations accompanying the text were reproductions from Town Planning in Practice.

Citing Carthaginian and Roman street plans, Berlage pointed out a tendency towards regularity, which implied the same in the architecture since street plan and dwelling plan were assumed simultaneously. Berlage viewed such standardization as part of a continuous historical process, and he used examples from all periods of history to illustrate the example of 'a building block with the same dwellings'. Using Sitte again, he argued,

the modern city planning strives toward the individualizing of the city view, not towards that of each house. Not this, but the rhythmical stringing of houses, the 'blockfront' forms the spatial element of the modern city architecture. Here is the key to Berlage's relating mass construction to the idea of the building block:

repetition of the same motif is a primary aesthetic function.

It was thus through rhythm and repetition that Berlage believed unity, and therefore beauty, could be achieved. He countered the architects' and workers' fear of monotony by stating

but the monotony does not have to exist, because we admire just those building complexes from an earlier time which are put together in an ingenious series, or grouped in the same unity.

But Berlage went further than historicism in justifying standardization by joining the concept to the core of his view of architecture:

Indeed, it is not any different than the ordering of rhythm, just a stringing together of the same unity, on which essentially the whole of ornament is based, on which the germ of each style is based, and finally, on which the whole of architecture is based.

Thus Berlage was trying to show architects that there was a need for their involvement in the design of standardized housing, and he appealed not only to their social commitment, but to the traditional values of designers in the profession. The argument epitomizes the sense in which Berlage was the bridge between the old and new. But the true irony is that whereas he used aesthetic arguments to justify the use of mass production in housing, those architects of the 1920s and 1930s who began to build according to this idea often denied any aesthetic motivations at all. Rather, in the span of two decades after 1918, a conscious attempt was made to reject aesthetic motivations. Nevertheless, Berlage's argument formed one of the rationalizations, however subconscious, of Nieuwe Zakelijkheid housing.

Concrete village: Watergraafsmeer, Amsterdam

Although Oud's dwellings at Hoek van Holland and Kiefoek may be regarded among the most significant developments of prototypical dwelling plans, more advanced technical innovations occurred in a project which had less influence on most Nieuwe Zakelijkheid architects. Under Keppler's initiative, in 1921 Amsterdam's
Of the various construction systems employed at 'Betondorp' (concrete village), the one used by Greiner was the most sophisticated. Architecturally, this portion of Watergraafsmeer shows a richness which resulted from the combination of the Amsterdam School's free spirit and the limits of the rationalized construction techniques. The residents' use of the outdoor space suggests a way of life consistent with garden city ideals, but incompatible with De Stijl's vision of universal space or the Nieuwe Zakelijkheid's ethic of hygiene.
housing office invited proposals for the construction of 600 housing units using alternative, inexpensive construction methods. The housing shortage had become severe, and the situation was aggravated by a rapidly increasing price of bricks, the traditional building material.

The site where a few of the experimental construction systems were applied was Watergraafsmeer, originally independent from Amsterdam, but annexed to it in 1921. Plans for the expansion of this community which dated back to 1907 were similar to the romantic curvilinear plan of Agneta Park. Eventually, the English garden cities provided the models for the site planning which the use of systems building did not significantly alter.

About fifty building contractors submitted plans, and ultimately ten were selected for implementation. D. Greiner designed with the most sophisticated and visionary system, which was based upon the prefabricated exterior wall[96-98]. These full-story panels of approximately twelve square meters were made on the construction site, and consisted of an outer layer of concrete, a layer of insulation, and an interior layer of lightweight concrete. Greiner's creativity within the constraints of a building system showed the permeating influence of the Amsterdam School. The resulting formalism, however pleasing, may be one reason why this project did not become canonical in the eyes of Nieuwe Zakelijkheid architects. Although the Watergraafsmeer experiments were marked by the deep commitment of Keppler to the ideas of mass production, opposition to these experiments came from both the national government and the conservative brick industry.

J.J.P. Oud and De Stijl

In the same way that Oud shared with Berlage many of the same ideas about mass, dwelling and the street, his arguments in 'Architecture and Standardization with Mass Construction' echoed much of Berlage's thinking. This article, written in February and March of 1918, appeared in De Stijl the following May. Oud attempted to show how the principles of mass construction could be consistent with his view of neo-plasticism at the time. Oud believed that mass production, specifically, the standard types that had been proposed at the Housing Congress, would create a sense of measure and proportion to the city image. He described the role of architect as director, whose work is the art of proportions:

it will always prove possible to create contrasts of proportions by grouping of masses, doors, windows, etc., or complete houses which will lead to beauty.

In one sense, this article marked the beginning of a conflict between Oud and the neo-plastic principles. He began by writing that architecture's development was defined not only by spiritual influences but also by social and technical influences, and he closed by writing:

he who feels the need will be able to give rein to his desire for aesthetical excesses in the private house.

In 1921, the year that Oud left the De Stijl group, he wrote:

I await a style-defining crystallization of form through the standardization of building elements, yet the mass-produced house seems too difficult to organize into collective assemblies.

Whatever success Oud had achieved in the making of a collective assembly in the Strandboulevard project of 1917 was difficult to apply in his own built work, which through 1921 still showed a close affinity to Berlage's principles. Oud's suspicions about where De Stijl was going in 1921 were confirmed in Van Doesburg's 'Towards A Plastic Architecture' of 1924:

the new architecture has destroyed both monotonous repetition and the rigid similarity of two halves, the mirror image, symmetry. It does not recognize repetition in time, the street wall, or standardization.

It was mainly on this basis that Oud, and later Merkelbach and others, recognized that De Stijl and the social situation were at odds. The aesthetic described by Van Doesburg was for the one-family house, e.g., Rietveld's Schröder house in Utrecht,
Almost classical in the use of symmetry, the conjunction of free elements with pure, rigid ones was aesthetically revolutionary. However, what is to be admired most in the project is the high level of amenity in the dwelling itself; the upper units have balconies at front and back. However, with no attic, the storage space has become very limited.

Unlike earlier housing, the group is stressed more than the individual dwelling, but the low brick wall re-establishes a subterritory based on the family unit. Every dwelling has a door on the street. However, Oud, rather than the residents, controlled the definition of space in front of the dwellings.
An entirely different architectural vocabulary behind the dwellings emphasizes the functional differences between front and rear. The juxtaposition of private garden and shed against a communal space is reminiscent of the Spangen and Tusschendijken blocks. Here, however, because the gardens border a public open space, the junction has required stronger resolution. The degree of modification of the rear space outside the dwelling by the residents is considerably less here than in the Kieifhoek housing.
and neo-plasticism subsequently proved to conflict with an approach to housing based on mass production, consistency of orientation, and above all, housing produced at reasonable cost. Symmetry, repetition, and standardization are to be found in varying degrees in all of Oud's work, and although these are sometimes defined as classicist elements of his architecture, they were logical consequences of the housing he designed as well as representing a basic agreement with the principles that Berlage put forth in 1918.

The problem of the prototype

Although mass production in housing could be justified by aesthetics, any cost savings achieved meant more to the worker in his daily life. But the notion of standardization in housing has many meanings, and it is important to differentiate between standardization of the process and the parts on the one hand, and the whole dwelling on the other. The conception of a 'universal human archetype' had evolved from the progressive-socialist tradition of Owen and Fourier, and under the influence of socialist thought in The Netherlands the idea of equality was possibly associated with this. Furthermore, the nineteenth-century legacy had provided a confidence in science's ability to facilitate the creation of an ideal environment for human existence. This mode of a priori thought characterized much of the development of ideas about housing in the twentieth century. With the important contribution that Dutch architects made to CIAM, through which Die Wohnung für das Existenzminimum (The minimum existence dwelling) became a basic conceptual approach, it is useful to look more closely at the meaning of standardization with respect to the plan of the dwelling itself.

The notion of ideal typologies is very old in architecture, and can be found in the Greek efforts to perfect the temple, or Renaissance experiments with ideal town forms; the nineteenth-century stylistic meanderings were also a search for norms. More important in the nineteenth century were the first 'prototype' dwellings which Prince Albert of England sponsored at the Great Exhibition of 1851. This idea was imitated at every major international exhibition which followed. In general, model dwellings were usually presented with paternal overtones, such as Napoleon III's efforts to construct forty-one 'model' buildings in Paris. Although such a creator of a model as Howard had argued against standardization and in favor of architectural variety, the garden city movement turned out to be one vehicle through which a 'perfect dwelling' was sought.

The dwelling shortage and the fact that rents and building costs had been rising proportionately to incomes in the fifty years prior to World War I added a hard reality to the problem of defining what a minimum was. Although the 1902 Dutch Housing Act did not in itself set out specifically to establish an ideal type, it stimulated much interest in The Netherlands in the search for a prototypical solution. In 1908 the Maatschappij tot Bevordering der Bouwkunst held a competition for a block of four attached workers' dwellings in order to attract more attention to the housing problem and in order to obtain good, useful types of simple workers' dwellings; the technical literature hardly supplies this information at all. The competition was especially motivated by the desire of this professional society to see more architects and fewer speculators involved in the design and building of housing. Yet although the competition brief also expressed a hope for a more 'architectural character' in housing, when being judged, firstly and mainly, attention has to be paid to a practical plan, maximum light, air and comfort in minimum space, and only afterwards must the aesthetic value of the design be taken into consideration. Another competition, for the design of a workers' garden city area, sponsored by the Sociaal-Technische Vereeniging van Demokratische Ingenieurs en Architecten in 1915, also required unit plans with the submissions, and a few of the entries illustrated serious attempts to design a prototypical, minimum dwelling. One of the de-
signs, by A. Pet, anticipated the unit plans of Oud’s Kieihoeck [113-114]. This compe-
tition and the garden city projects built before the war made it clear that the impetus
to consider dwellings in groups stimulated the idea of a repeatable type.

The crisis of 1918 and the proposal of Van der Waerden at the Housing Congress
in February marked a point when the idea of the minimum dwelling began to gain
wide currency. For each of the dwelling types he identified, an approximate floor
area was specified, and Berlage shortly later noted that progress towards unified so-
olutions had already been made:

In the worker’s dwelling, at least concerning the plan divisions, there already can
be observed a certain type, a certain unity concerning its conception.28

In 1906 and 1907 the Maatschappij tot Bevordering der Bouwkunst had sought fi-
nancial aid from the government for its competition, but being twice refused, had
used its own funds. However, official interest in the development of prototypical
dwelling plans grew with the advent of the post-war housing crisis. In 1920 the gov-
ernment issued the so-called ‘Album’29 which was an example of fifty plan types
within a volume range of 225 to 300 cubic meters per dwelling. The book was quite
controversial,30 especially because of the very small dimensions of the rooms. Ac-
companying the Album was a circular where the 300-cubic meter volume was speci-
fied as the maximum size dwelling that could qualify for subsidy. The circular speci-
fied that

under worker’s dwelling is understood a dwelling with not more than five rooms,
three of which are bedrooms and one a kitchen. At least two of the three bed-
rooms must offer space for two spacious beds.31

This was one of the first in a long and still present tradition of the government’s at-
tempt to define the minimum dwelling.

A number of architects and other professionals had been unhappy with the archi-
tectural content of the projects chosen for illustration in the Album, and thus Ar-
beiders Woningen in Nederland appeared as a counterexample. Berlage, one of the
editors, admired the unity of the plan types, which he attributed to the economic ne-
cessity of compactness. He described this compactness as an important quality of
style.32

L. Zwiers’ Kleine Woningen (1923) marked a further attempt to define the mini-
imum dwelling, which he broke down into minimum dimensions and characteristics
each room. However, here too, existing models were indicated rather than a new,
purified standard. Oud’s Hoek van Holland dwellings [99-100] designed the follow-
ning year represented the most systematic planning approach by that time, and from
the 1925 Kiefhoek design [113] one can accurately speak of a minimum dwelling
prototype.

The belief in the viability of a prototype marked another point of divergence be-
tween De Stijl and the later functionalists. Van Doesburg claimed that De Stijl re-
jected a priori thought and that

the new architectural method does not recognize any self-contained type, any ba-
sic form.33

Although the de 8 manifesto of 1927 reflected a similar attitude, the Nieuwe
Zakelijkheid architects reached a remarkable degree of uniformity in the ap-
proaches indicated in their entries to the Competition for Inexpensive Workers’
Dwellings of 1934. The second meeting of CIAM in 1929 in Frankfurt had dealt with
Die Wohnung für das Existenzminimum and collaboration among architects was
becoming increasingly commonplace, but what else can explain the high degree of
uniformity in housing solutions in the 1930s?

Muthesius had as early as 1914 juxtaposed the desirability of types and standards
against architectural creations as products of individual talent. Although De Stijl re-
jected this duality, the Dutch functionalists repudiated individualism in a way that
was consistent with the seeking and acceptance of prototypical solutions. The
Nieuwe Zakelijkheid architects used the scientific method in the sense that
problems were analyzed and solved in the context of stated goals, but in retrospect
the set of goals seems to have only dealt with hygiene, technology, and economics
- areas in which statistics and abstractions of people were thought to suffice.
Municipal housing Kieboek
Rotterdam
1925-29
J.J.P. Oud

Adjusting to a site with many demands, Oud applied and improved upon aspects of Oud Mathenesse and Hoek van Holland, but balconies were not possible within the economically stringent program. The variety of interruptions in the system of the repeated dwelling unit tend to eliminate the possibility of monotony.

Although full spatial enclosure of the residential block is no longer present, the site plan's tendency to closure reflects its transitional nature with respect to future developments.

The legibility of an individual dwelling has become almost completely suppressed except as necessitated by doors, ventilation grills and breaks in the pipe railing or hedge, which mediates between the dwellings and the street.
Kieftoek has many similarities with garden city-type housing in terms of the potential of human personalization of space; the ideologies of De Stijl and Nieuwe Zakelijkheid have prevented this from being recognized. The polarization against garden city ideas which began at about the time when Oud began designing Kieftoek (1925) was very much fueled by the image of garden city dwellings as traditional housing, yet many of the garden city ideas and goals of the functionalists were the same.

Oud’s aesthetic intent here seems to have been to equalize the expression of front and rear, but the unit plans and the disposition of space have created a basic polarity; the actions of the inhabitants have reinforced this duality. On the rear side the residents have restored an expression of the individual dwelling that originally was very suppressed in the architectural language.
Despite all the well-known and obvious contrasts between Amsterdam School architecture and that of its critic Oud, it is important to realize their common source in Berlage. Both of these projects exemplify similar attitudes about the continuity of mass and the planarity of the wall. But Oud’s corner solution is more graceful, less obtrusive, and meaningful in the context of the repeating row house. De Klerk’s disposition was to solve uniquely for each situation, whereas Oud was seeking a prototypical solution.

Private sector housing
Amsterdam
Meerhuizenplein
1921-22
M. de Klerk
Municipal housing Kieboek
Rotterdam
1925-29
J.J.P. Oud

The similarity of these plans is striking, and serves as a reminder of the functional assumptions with which Oud was working. The 1915 competition was one of many manifestations of the attempt to define a minimum dwelling unit that took place within the garden city movement. However, Oud's plan reflects a much more thorough consideration of the whole in which a true balance of the parts was reached. The Kieboek dwellings are tiny, especially considering that they were intended for large families, and storage space is particularly inadequate.

Competition for the design of a garden city area
sponsored by the Sociaal-Technische Vereeniging van Demokratische Ingenieurs en Architecten 1915
'Licht en Lucht'
A. Pet, second prize

The *Nieuwe Zakelijkheid* architects devoted much thoughtful creativity towards the designing of an ideal unit plan with proper orientation, light, technical facilities, balcony, etc., but the conceptualization of how people could interact beyond the dwelling seems to have been lacking. This should not be considered a dismissal of the successes of the 1934 Expansion Plan for Amsterdam, but rather, a recognition of the weaknesses of the urban vision which had so emphasized the interior of a dwelling. In spite of all the attempts to define an ideal solution, none was produced:

The various points of this new architectural compass – social, hygienic, economic, technological, and aesthetic – have so far rarely if ever been integrated into any one 'solution'. Perhaps one difficulty was an occasional tendency to think that there could be any final or complete solution. Perhaps on the other hand there has been a certain weakness for *expertise*: sun-and-air specialists, standardization specialists, experts in modern spatial aesthetic, and so on.34
In order to understand developments in housing ideas between 1927 and the beginning of the Second World War, an analysis must go further than a chronological evaluation of ideas about the dwelling. It is necessary to observe some more general trends in which personalities and groups rather than housing itself are important. In this respect this chapter can be considered to be an interlude in which an attempt is made to clarify the context of developments.

De 8

The year 1927 must be considered the watershed of the period 1900-40, because it is the year when the new ideas about housing suddenly went public. This occurred at the Weissenhof Siedlung at Stuttgart, where Oud and Stam had designed housing, along with Mies van der Rohe, Le Corbusier and others. If on the one hand the exhibition speeded the acceptance of the new ideas of the open plan, clean white surfaces, large windows and a technically equipped kitchen, on the other hand it probably accelerated the process of polarization in Germany that had already been taking place between the National Socialists and the left-wing architects. Although the political polarization which was occurring in Germany was not nearly so pronounced in The Netherlands, the same year marked the beginning of a period of conflict which continued to the 1950s.

B. Merkelbach (1901-61) played a critical role in developments after 1927. He had studied in the early 1920s at the Kunstnijverheidsschool in Haarlem, where the Amsterdam School architects Vorkink and Blaauw were among his teachers. In 1926 Merkelbach collaborated with Van Loghem at the same time that Van Loghem was making plans to go to the Soviet Union, and it is likely that this period was an important one in the formation of Merkelbach's ideas about architecture and society. Merkelbach never came under the direct influence of Berlage, but Van Loghem and Berlage shared many of the same political and social views; both were members of the Bond van revolutionair-socialistische intellectueelen (Association of revolutionary socialist intellectuals).

Merkelbach stayed a while in Van Loghem's office after Van Loghem had left for the Soviet Union, and then went to Frankfurt, where he worked for Mart Stam for nine months. There Merkelbach was influenced by Stam's critique of De Stijl, as well as by the progressive atmosphere of the Frankfurt housing program. Merkelbach was not only radicalized by his contact with Stam and E. May, but also developed an interest in German housing that did not subside after he returned home to Holland. It was in Frankfurt that Merkelbach most likely formulated the idea of forming a group of Dutch architects, whose main purpose would be to counteract the influence of the Amsterdam School. Karsten, Merkelbach's school friend who became his associate in 1929, has attributed to the Amsterdam School the reason why The Netherlands began to lag behind Germany in the application of new ideas about the dwelling, and most likely Merkelbach shared this view.

When Merkelbach returned from Frankfurt in 1927 he contacted some of his old school friends, Groenewegen, Karsten, Van de Pauwert, and shortly later the manifesto of the new group de 8 appeared in i 10, a new magazine which stood for an integration of all the arts. Based on Merkelbach's belief that the architect should deal primarily with social problems and not aesthetics, the manifesto had a distinctly negative polemical tone:

*De 8 is non-aesthetic.*

*De 8 affirms although it does not exclude the possibility of building in a beautiful style, for the time being it would be better to build ugly and functionally than to put up show-piece façades which hide bad interior plans.*
These statements indicate the contradictions and similarities between de 8 and De Stijl. On the one hand the manifesto was similar to Oud's critique of the Amsterdam School; he had written in 1918 that

for the development of an architectural style a good (in the sense of purely technological and practical) house is more important than a beautiful house. Merkelbach's later criticisms of the Amsterdam School were often directed against attributes of the housing which were beyond the control of the architects. His objections were as much an indictment of the planning principles of Berlage as they were of the architecture itself, but Berlage was not held responsible in the various polemics that began appearing against the Amsterdam School housing in 1932 in De 8 en Opbouw. The attack on the Amsterdam School had more than negative motivations; it was a foil for the development of a more rational approach to housing.

Also, in claiming that de 8 was non-aesthetic, the manifesto was implicitly critical of De Stijl:

De 8 wishes to be rational in the true sense, in other words, everything must be made subordinate to the requirements of the commission. De 8 is non-cubist. The thrust of De Stijl had been towards an exclusive rather than an inclusive system of architectural form; it was basically an aesthetic movement, and Oud's resignation in 1921 can be viewed as a transitional point between De Stijl and the 1927 de 8 manifesto. Mondriaan and Oud had both cited the sources of cubism in De Stijl, and the cubistic nature of the beginning of a De Stijl architecture had been manifest in Oud's Scheveningen beach housing project of 1917. However, the manifesto did not explicitly state which present-day architectural forms it was the 'critical reaction' against. Despite these pronouncements, de 8 did not condemn De Stijl outright, although deep personal antagonisms apparently existed between Merkelbach and Rietveld.

In retrospect, it is clear that the conscious rejection of aesthetics in 1927 was a continuation of Berlage's development away from eclecticism, but more importantly, de 8 wanted real, immediate positive results, and this applied especially to housing. When Boeken, Duiker, and Wiebenga joined de 8 in 1926, its commitment to new ideas became even stronger.

Union with Opbouw

De 8, however, was not the only organized group of architects which took strong positions for new ideas in housing. The group Opbouw had been formed as early as 1920 in Rotterdam, but its initial aims were much less ideological and goal oriented than they later became. Kromhout had attempted to reform the Rotterdam association Bouwkunst en Vriendschap, but his attempts were futile. He then took the initiative to form a group in Rotterdam somewhat modeled on the Bond van Nederlandsche Architecten (founded in 1908), which had represented a purer form of professional society in the past since it did not include manufacturers of building products and contractors, as had earlier groups. Opbouw's membership was diverse and included such contrasting architects as Van der Vlugt (a former student of Kromhout's) and Granpré Molière, and later Oud, Stam, Van Eesteren and Van Tijen. However, not until Stam's short return from Frankfurt in 1926 and the beginning of Van Loghem's association with the group in 1927 did it become radicalized to the degree of de 8.

The formation of CIAM in 1928 at La Sarraz, in which Berlage, Rietveld and Stam took part, as well as the spreading influence of the traditionalist views of Granpré Molière, helped to draw the interests of the two groups increasingly together. Beginning with the CIAM meeting in Brussels in 1930 the two groups were in close communication. Van Tijen and Merkelbach were in frequent contact during their collaboration on the layout for the 'Indische' neighborhood in Amsterdam and in their participation in the Zonnewecommissie. The joint preparation of the proposal 'De Organische Woonwijk in Open Bebouwing' (Open planning in the organic residential area) was the final and strongest factor that led to the collaboration of the two
groups in the publication of the bimonthly magazine *De 8 en Opbouw*, which first appeared in January, 1932.

Within the five-year period between the 1927 manifesto of *de 8* and the beginning of the magazine, the polemic battle for the new architecture had become sharper, but many of its ideas more concretely realized, especially in Switzerland and Germany. The magazine thus served a very crucial role in the dissemination of information about housing in these two countries. The publication of the Neubühl housing project, which probably was the most influential of the practical realizations of the new ideas, along with articles about the housing in Frankfurt, exemplify the nature of *De 8 en Opbouw*’s propagandist role.
13. The new conception of space

More than any other factor, the attempt in The Netherlands to produce a dwelling that met certain hygienic standards led to an approach to housing whose influence not only created a new aesthetic, but also a new spatial conception. It must be stressed that the Nieuwe Zakelijkheid architects' focus on dwelling orientation was not new, but rather represented the cumulative results of years of concern about hygiene and the physical environment. Their position with regard to flexibility within the dwelling, however, can be regarded as a more original contribution.

Orientation and light

It has been observed earlier that one of the factors that produced reform efforts in the nineteenth century to improve the housing environment was the realization that health was greatly affected by one's physical environment. This was not a sudden discovery, but rather resulted from a gradual acceptance of increasingly scientific medical opinion and from the elementary use of statistics which correlated high infant mortality rates with bad dwelling conditions. The single most important belief was that sunlight and fresh air were necessary to combat tuberculosis. This conviction, widely expressed in much of Europe in the 1890s, found various responses ranging from Tony Garnier's Cité Industrielle (beginning 1901) to the practical but also visionary Dutch Housing Act of 1902. In The Netherlands, reform based on a concern for hygiene did not end with the enactment of the Housing Act, but significantly influenced planning as well as aesthetics through the 1930s. This concern for health - cleanliness, light, and air - permeated both radical and conservative efforts to improve housing.

However much the recognition of the need of sunlight in dwellings influenced the Housing Act, this legislation did not go so far as to specify the necessity of proper orientation. Raymond Unwin's Cottage Plans and Common Sense (1907) seems to have just preceded similar views held by the Dutch:

The essential thing is that every house should turn its face to the sun, whence comes light, sweetness and health. The direction of roads and the fronting to streets are details which must be made to fall with this condition, or give way to it.1

It is not clear when this publication was first known in The Netherlands, but by 1909 the idea of north-south orientation of building blocks was being considered in official circles in Amsterdam. In that year the Amsterdam Housing Council established a commission to investigate housing in the newer parts of Amsterdam, and its report for the most part was a condemnation of the alcove dwelling:

Someone who is in the fresh air continually, who receives the beneficial effects of the sun, will have a much higher immunity against sickness than the person who has to live in stuffy, badly illuminated rooms.2

The committee understood very well that alcove sleeping quarters were not the only source of the problem. We have seen earlier how this report proposed the idea of public gardens within building blocks with the short ends unbuilt. The suggestions were even more specific:

With the laying out of streets we have been extremely unfortunate. Nearly the whole expansion has been done in such a way that the main orientation goes from west to east... while a direction approximately south-north must be considered the most desirable. The north and south sides should not be built, as happens in England and which is important for air circulation.3

This seems to be a preliminary vision of the strokenbouw. However, the commission acknowledged the difficulties of implementation in a city such as Amsterdam, and believed the demands of light and air could be more easily met in a garden city area.
This proved to be the case. The garden village *Het Lansink* (1911) in Hengelo was the first example in The Netherlands where there was a conscious orientation of groups of dwellings in north-south rows. Following *Het Lansink* the development towards north-south oriented streets became commonplace, but the major expansion plans designed under the requirements of the 1902 Housing Act showed little attempt to avoid the east-west streets such as those of the Amsterdam neighborhood which had been criticized by the 1909 study commission. Berlage's 1913 plan for Vreewijk tended to adhere roughly to north-south alignment of the streets, but this idea had been of little influence in his plans for The Hague or Amsterdam. The later portions of Vreewijk planned by Granpré Molière embodied a rigid north-south orientation of the streets—a feature later admired by *de 8* and Opbouw architects.

The slowness with which the idea of a site plan based on orientation developed can be explained by the strength of the Sitte-Berlage tradition. They had given strength to a site-planning approach which emphasized closure. However, it was not just aesthetics which played a role, for with a few exceptions, throughout the architectural profession in the 1920s there was a belief that closed space had a social meaning in terms of community and basic forms of social interactions. Vreewijk was the exception, for in other garden city areas such as Oostzaan (1922-24), Nieuwendam (1921-25) and Watergraafsmeer (1923-28) in Amsterdam the planning was more directed towards the creation of a centralized, village-type space. In the attempt to give a focus to such a space, a one-directional planning system would have been unsuccessful.

In Zwiers' 1923 *Kleine Woningen*, in some ways a proto-functionalist book, there was a recommendation that living rooms be as much as possible on the sun side, with kitchens and other service spaces ideally not on the sun side of dwellings. A general recommendation for the streets was that they be oriented between north-east and north-west. The delay between theory and practice in the construction of north-south housing rows may be partially explained by the decline after 1921 of the market role played by municipalities and associations in supplying housing. These two means, and not the private sector, were almost always the context for experiments. It was in various German cities where municipal socialism was strong that housing sited according to orientation was first broadly applied.

The interest of the Dutch in the *strokenbouw* idea, which grew with their participation in CIAM, must be regarded as a confirmation of earlier Dutch developments as well as a manifestation of the admiration for German and Swiss housing projects. In 1930, at the initiative of Merkelbach and other *de 8* architects, the Zoncommissie was formed in Amsterdam in order to study the significance of sunlight for health and the manner in which housing and city planning should take any conclusions into account. Merkelbach and Van Tijen were by this time proponents of the *strokenbouw*, but they felt the hygienic importance of the sun had not yet been scientifically shown. However, the results of the commission's work, which sporadically continued to 1946, were of a general nature. 'The more sun the better' was the basic conclusion, but true scientific method was never used in the study of the problem.

In 1932, the same year that Merkelbach began attacking the north, south, east, and west orientations of the Amsterdam School housing, the influence of CIAM began to be strongly felt in Holland. The Dutch, of course, played an important role in purifying the *strokenbouw* idea, but the internationalization of the goals gave extra momentum to their efforts. Thus, in 1932 *de 8* and Opbouw jointly prepared the exhibition and proposal, 'De Organische Woonwijk in Open Bebouwing', which was basically a recapitulation of the contents of *Rationelle Bebauungsweisen*, published in 1931 as the results of the third CIAM meeting (1930) in Brussels. The proposal, directed to the *Nederlandsch Instituut voor Volkshuisvesting en Stedebouw*, included a fairly detailed analysis of dwelling orientation, both east-west with living rooms on the south, and north-south, which was preferred.

The Competition for Inexpensive Workers' Dwellings in 1934 was the major confirmation of the direction of developments before the first Dutch *strokenbouw* was built in Amsterdam a few years later. All the award-winning schemes were four-story north-south rows. The uniformity of the solutions reflected not only that the
winning competitors had collaborated before the competition to determine the basic character of their submissions,9 but also the extent to which the orientation issue dominated the approach to site planning.

The first Dutch *strokenbouw*, Landlust [146-149], completed in Amsterdam-West in 1937, represented more than simply an acceptance of the validity of north-south site planning for housing. At the initiative of Merkelbach and Karsten, the area’s first plan, which had indicated the traditional closed block, was redesigned to become rows running north-east, south-west. The significance of this victory over the closed block and inadequate orientation to sun was regarded by Merkelbach as a beginning of a new phase in the development of housing. In that Landlust anticipated much of the character of post-World War II housing in Holland, Merkelbach was correct. However, the more historical view taken by Van Tijen that Landlust epitomized a period of ideas already passed is equally accurate.10

**Universal space**

The example of Landlust illustrates the usual delay between the formulation of a new architectural conception and its realization. Similarly, in the case of universal space, or continuous space, the Dutch developed in *De Stijl* the most advanced theoretical positions in Europe before there were pure realizations. However, as has been explained earlier, there were other influences on the formation of modern spatial ideals. With respect to housing, these ideals, which stressed continuity, openness and universality, resulted in the freestanding block of dwellings.

All of the various efforts to give dignity to the rear façades of dwellings contributed to the realization of the universality of space. De Klerk’s romantic, but ingenious housing on the Spaarndammerplantsoen in Amsterdam showed his interest in exploring the visual character of the rear of a block of dwellings. Despite this beginning, Merkelbach criticized the Amsterdam School architects for failing to design the rear façades of dwelling blocks. The communal garden movement, however, was more important in that it suggested functions for the interiors of housing blocks.

Berlage’s association of democratic socialism with equality in housing also helped to lay the groundwork for regarding space as universal. As interest in north-south planning grew, it was realized that only dwellings on one side of a street were optimally oriented. The solution to this inequality was the repetition of the same dwelling unit oriented in the same direction. In such a case all spaces between the rows have identical edge conditions, i.e., rear sides facing front sides. Combined with the effort to make the front and rear aesthetically indistinguishable, as Oud had done at Kiefhoek (although there the plan and the disposition of space mitigated against such equalization), the result is an environment without polarities, contradictions, or variety. The strength of the ideological position in favor of spatial openness and universality, although deriving from the most innovative of Dutch thought, adversely affected housing produced well after the Second World War.

**Flexibility**

Continuous, open space was not only epitomized by the freestanding block of dwellings or *strokenbouw*. With the conceptualization of time as an architectural dimension, flexible space brought new aesthetic theories closer to functional needs. In the small, traditional Dutch dwelling, multi-functional space had been a necessity. Whether in the one-room farm house, or the back-to-back dwellings of the cities, the minimal living area required the preparation of food, eating, sleeping and socializing in a single space. Even with an increase of the typical dwelling size following the enactment of the Housing Act, continuing economic restrictions placed a premium on the optimal utilization of available space. This economic limitation and the increasing recognition of the diverse spatial needs within a family resulted in the valuable Dutch contribution of flexible space.
Schröder house
Utrecht
Prins Hendrikklaan
1924
G.Th. Rietveld
T. Schröder-Schräder

This single-family house not only realized the new spatial conception characterized in De Stijl polemics, but also suggested new approaches for the planning of workers' housing. On the upper floor, movable partitions provide the means for easily modifying the degree of privacy and spatial openness.

upper level plan, closed

upper level plan, open
Private sector housing
Utrecht
Erasmuslaan
1930-31
G.Th. Rietveld

Although recognizing that these were not workers' dwellings, Merkelbach juxtaposed them with some Amsterdam School housing in the first issue of De Stijl en Opbouw in 1932.

Lacking the compactness and planning purity of, for example, Kielboek, this housing was one of the strongest manifestations of the continuity between inside and outside, internal flexibility, use of new technology, and a free-standing spatial quality. This is as far as the use of glass in Dutch housing went before the Second World War.
Nineteenth century villas, especially in The Hague, often had a sliding door between the sitting room and the 'mooie kamer'. Although this feature was regarded as bourgeois by progressive Dutch architects in the early twentieth century, by the 1930s the movable partition had become a standard element in many housing schemes for workers. But the principle of flexibility was, for the first time, most strongly manifest in a single-family house.

The Rietveld-Schröder house in Utrecht of 1924, best known for being an architectural realization of neo-plastic principles, has planning features which usually have been demeaned or overlooked. On the second floor a multiple use of sliding partitions created the potential for a number of spatial variations [115-116]. Here was what one admirer has called the 'first cybernetic house plan'.

As the purest realization of De Stijl thought in architecture, the Rietveld-Schröder house enabled Van Doesburg to express more cogently the principles of flexibility in 1924:

The new architecture is open. The whole consists of a single space, which is subdivided according to functional requirements. This subdivision is effected by means of separating planes (interior) or sheltering planes (exterior).

The former, which separate the various functional spaces from one another, may be mobile, i.e., the separating planes may be replaced by movable screens or slabs (under which category the doors may also be included).

It took almost a decade before the ideas about flexibility contained in the Rietveld-Schröder house and Van Doesburg's statement were realized in workers' housing. Rietveld's middle-class housing [117-119] on the Erasmuslaan in Utrecht completed in 1931 had used movable partitions, but the use of this type of flexibility in the 1932 Vroesenlaan apartments [120-125] designed by J.H. van den Broek specifically addressed the need to efficiently utilize space in workers' housing. The dwellings are zoned with a sensitivity to the variety of need; the parents' sleeping area when open during the day is a play area for younger children, while the bedroom for the older children serves during the day as a sitting and work room. Even when all the partitions are closed, each of the four major spaces has a direct connection to a hallway, off of which are the bath and WC.

Flexibility achieved by the use of movable partitions was also employed in the 1934 Bergpolder flats of Brinkman, Van der Vlugt, and van Tijen. In each of the small dwellings a pair of sliding doorways separates the living-dining area from a bedroom. This allows the functional and perceptual increase in the size of the daytime living area. The resultant space with its long dimension parallel to the windows on the balcony side is extremely pleasant.

By 1934 the principle of spatial flexibility had become widely popular among Nieuwe Zakelijkheid architects. A number of submissions to the 1934 Competition for Inexpensive Workers' Dwellings indicated movable elements in the plans. The principle was continually justified by the rational analysis which attempted to plot the variety of uses in a home by various family members throughout the day. Yet however much the flexible dwelling embodied the spirit of Nieuwe Zakelijkheid, it was also a manifestation of the aesthetic concern for spatial continuity.
Housing association 'Eendracht'
Rotterdam (Blijdorp)
Vroesenlaan
1931-34
J.H. van den Broek

A U-shaped plan with a communal garden open to the south, storage in a basement, a glass-enclosed common staircase, and sliding partitions in the dwellings made this project an important assimilation of a number of ideas.

The street is as much 'wall' as in Amsterdam School housing but here this quality is a logical result of the orientation of the dwellings to the interior communal space.

As a result of the accommodation of storage space in the half-cellar, the raising of the building by half a story has made the lowest dwellings more equal to the upper ones. Without the private gardens or sheds of the ground floor units, the communal garden has become more ample and controlled than in Oud's early fully enclosed blocks in Rotterdam. Including a small school, the communal space reflects the nature of the client, a housing association, as much as it does the architect's ideas.

The space under the dwellings is not the free-flowing space among the *pilotis* of Le Corbusier, but rather, it creates use and control problems. The unauthorized are told to stay out of the communal space by signs and by fences. Much area is lost in the resolution of the juncture between building and center space.
14. Spatial openness: high-rise

High-rise construction is, for the most part, an imported building type in The Netherlands because of a combination of factors including weak soil conditions, relatively late industrialization, and the fact that high-rise construction developed from the forms of economic organizations and pressures that were peculiar to Chicago and New York. The indication in projects and the use in practice of multi-story building with elevators for dwellings were a response to developments outside of Holland, especially in France, Germany, and the United States. However, a very significant contribution of the Dutch is to be found in the proposals of Wijdeveld and Duiker and the realization of the Bergpolder flats in Rotterdam in 1934.

This examination of the development of the ideas about high-rise dwellings will consider a number of ideas discussed earlier concerned with technology, relationship of the dwelling to nature, and the symbolic value of an architectural type. Furthermore, this subject allows an interesting look at the romantic origins of some functionalist ideas.

The image of America

Interest in American skyscraper construction existed throughout Europe even as early as the last decades of the nineteenth century, and the Dutch professional journals and general circulation newspapers had little but steady coverage of the newest or highest of the American marvels. Not until the 1920s, however, did many architects travel to the States from Europe, and until then the illustrative material was also relatively limited. Berlage was the strongest Dutch link to America even before he visited there in 1911.

In July of 1906, one of Louis Sullivan's former employees, William Gray Purcell, visited Berlage in Amsterdam. He recalled from his discussions with Berlage about Sullivan and Wright that 'Berlage was well-informed about both these men, and was conversant with their architectural philosophy'. Later, in 1911, Berlage was in the company of Purcell in Chicago, and they spent one evening together with Sullivan. Although Berlage's lecturing and publicizing his trip upon his return to Europe was intended to inform Europeans that there was more happening in American architecture than the skyscraper, his sympathy for Sullivan influenced not only his own architecture (e.g. Holland House, London, 1914), but also that of his fellow architects. But whereas Berlage's admiration for Sullivan was passed on to others in the form of sensitizing them to the aesthetic problem of giving a high building a proper expression of verticality, Berlage never embraced the idea of high-rise dwellings. Wright's influence through Berlage was much more significant for European architecture. Yet it was much more than the aesthetic aspects of high buildings that interested Europeans, for they very early criticized the lack of spatial planning in the construction of the American towers. Furthermore, although the earliest European schemes indicating high-rise towers can be considered indebted to American examples, the building type had a very different symbolic content than it did in the American context.

Romantic socialism

In September of 1919, a very remarkable project was published in Wendingen by the magazine's founder and editor, H.Th. Wijdeveld. The design depicted the reconstruction of Amsterdam's Vondelpark, and included not only the Groote Volkstheater, various association buildings, open air theaters, sport halls, etc., but also skyscrapers up to thirty stories tall, freestanding in the park. This project was
Vondelpark project
Amsterdam
1919
H.Th. Wijdeveld

This is a very significant design because it is the first known Dutch project indicating freestanding towers in a park. It precedes Le Corbusier's 'A Contemporary City for 3 Million Inhabitants' by three years, but a direct connection has not been proven yet. The project's rectilinearity and scale enlargement were Wijdeveld's responses to the new age of the automobile.

Wijdeveld's idealistic and romantic disposition established much of the mood in which interest in high-rise dwellings later developed. Duiker, although attempting to proceed from a purely rational basis in Hoogbouw (1927-30), was probably influenced by Wijdeveld's project and the Wendingen issue on high-rise buildings.

'Wendingen' cover
1923 No. 3
High-rise building issue
significant not only because of its movement away from nineteenth-century English-style garden planning towards a full use of rectilinear planning principles, but also because it preceded Le Corbusier's 1921-22 'A Contemporary City for Three Million Inhabitants' as well as the later Plan Voisin for Paris. What were the sources of this revolutionary image?

Wijdeveld (b. 1885) had not been formally trained as an architect, but rather had begun working at a very early age in various architects' offices in Holland and abroad. These included the office of P.J.H. Cuypers between 1899 and 1905, where Wijdeveld came into contact with the ideas of Ruskin and Morris, whose observations about the decadence of modern society particularly impressed him. In Cuypers' office, Wijdeveld developed an interest in the idea of architecture as culture, and through the office he made the acquaintance of De Bazel and Lauweriks, who had already left Cuypers' office in 1895 as a result of their association with the theosophical movement. Wijdeveld's contact with Lauweriks continued later through their joint work on *Wendingen*. In 1905 Wijdeveld went to England, where he deepened his knowledge of and respect for the Arts and Crafts movement. Wijdeveld was also an admirer of the writer and idealist, Frederik van Eeden, whose utopian community Walden in Het Gooi exerted considerable influence at the beginning of the century. Thus continuously woven through the elements of Wijdeveld's intellectual background were visions of a new world order.

In this intellectual milieu of Morris, theosophy, and his own personal vision of the future, it is not surprising to find that Wijdeveld's 1915 *Architektonische Fantasie* competition submission indicated a city of towers in which the dominant building was crowned by a crucifix. The expressionist qualities of Wijdeveld's thinking were immediately manifest in the first issue of *Wendingen*, which appeared in January of 1918. By the end of that year he had been to Berlin where he made the acquaintance of Mendelsohn and Behne. Through his continuing contact with Berlin architects, Wijdeveld no doubt eventually became familiar with Bruno Taut's *Die Stadtkrone*.

The Vondelpark project was an intuitive solution to city growth, and its qualities as a symbol of a new order were more evident than a sense of its being viable architecture. In a short text that accompanied the publication of the project in September of 1919 one can come closer to understanding how the tower imagery was related to the social conception:

The greatest force lies in, and the most beautiful expectations derive from the big centers of the modern society, and the millions of workers in the growth of these central points will not allow their ideals to be realized outside of their community.

What Wijdeveld projected was an image in which architecture was used to symbolize his vision of future society.

The quasi-futurist quality of Wijdeveld's project indicates that he was on more common ground with *De Stijl* ideas than one might normally assume. There had been a Futurist exhibition in Rotterdam in 1913 and all or part of the 1912 Paris exhibition was also in The Hague, but Wijdeveld's work on the Vondelpark project was well in progress before an illustration of Sant'Elia's *Casa a gradinate* of 1914 was published in *De Stijl* in August 1919. Sant'Elia's images influenced more directly the work of Mart Stam (e.g. Königsberg Competition, 1922), and Wijdeveld strangely chose not to illustrate Sant'Elia's work in the 1923 issue of *Wendingen*, which was devoted to high-rise buildings. Thus, although Marinetti had brought Van Doesburg's attention to the work of Sant'Elia in 1917, it is possible that Wijdeveld's first drawings in 1919 of the Vondelpark scheme existed without his knowledge of the Sant'Elia work.

Yet the elements of Futurist thought in Wijdeveld's commentary on the project are evident, and it should be remembered that slightly earlier Jan Wils had equated Wright with the Futurists. Wijdeveld wrote:

The city will have to give way to the 'modern' movements, and what remains of former times unavoidably has to make room for the demands of a new time of economics and mechanization. The heartbeat of the cities throbs faster and the
blood courses more quickly through the veins which have to widen themselves to develop along with the growth of the traffic into beautiful lines in the metropoli-

tan body.14

Propagation of the image

During 1919 and 1920 Wijdeveld further developed the ideas first indicated in the Vondelpark project to apply to the whole of Amsterdam. His ideal plan for Amster-
dam [27] preserved the core as a historic center, which was surrounded by a ring with a width of eight kilometers.15 Radiating from the center were linear zones which contained towers, and very large areas of green open space separated the radial zones from each other. But more influential than this project was the third issue of Wendingen in 1923 on 'Skyscrapers as a solution for the office and housing problem'. This issue was a collection of images more than an analysis of the subject and represented the diversity and non-systematic thrust of Wendingen. Various American skyscrapers were featured prominently, along with selections of entries for the Chicago Tribune, Friedrichstrasse, and Königsberg competitions. Surprisingly, among a number of Dutch entries that were reproduced from the Chicago Tribune competition, that of Duiker – far superior to the others – was omitted. Thus the Wendingen high-rise issue was not polemic in the sense of justifying a new aesthetic, but rather reflected the diversity and large degree of interest throughout Europe in high build-
ing.

One can best understand the intention of Wijdeveld in producing this issue by realizing the symbolic content that skyscrapers had for him:

In the symbol of the 'skyscrapers', which the capital magnates, Trusts and Banks in America are building, already lies for us, simultaneously with the convulsive movement of the period of capitalistic splendor, the forerunner of that other life, which is on its way.16

This spirit was also graphically represented on the cover [129] which depicted a high building radiating light and power in a manner strikingly similar to Feininger's cover of the 1919 Bauhaus manifesto. Yet despite all of the romantic and symbolic content of the image, this issue of Wendingen probably stimulated Duiker's interest in a rational analysis of the idea of high-rise dwellings for workers.17

Further argument about the romantic bias underlying Wijdeveld’s designs of high-rise projects throughout the rest of his career is found in one contemporary opinion about his 1929-30 Working Community at Loosdrecht. The project indicated a tower on a lake designed in a formal idiom consistent with de 8 and Opbouw projects of the time. Van Loghem published the project in his Bouwen in 1932, and considered it a contribution to an artistic and cultural renewal. However, Van Loghem also observed that Wijdeveld and his financial supporters were avoiding reality because the architecture was not based on the social context. Van Loghem wrote that

the working community can only yield results when big groups actively take part in the struggle for the new as well as the full life.18

Van Loghem thus recognized what characterized most of Wijdeveld’s high-rise projects: an idealism that produced very compelling images of the future, but which images were valid only when the social meaning of the new architecture was understood.

Wijdeveld’s projects contained a vagueness which Van Loghem and others later attempted to develop more specifically to counteract what Van Loghem called 'the obsolete building process which is destroying city and country land'. For Van Loghem, only a social awareness of this process could give validity to the working community. Wijdeveld’s contribution formed the groundwork of a futuristic city image whose towers reflected broad social values; the comprehensiveness of the image was later developed by others who attempted to apply the concept of high-rise dwellings to achieve advantages for the whole city. In this way Wijdeveld contributed both to giving the high-rise tower a symbolic content different from that of the
Americans, and to showing, however vaguely, the use of high building for the preservation of nature within the city.

Aesthetic applications

Before examining how the functionalists concerned themselves with high-rise dwellings, it is necessary to point out that the rationalist ideology was not the only development from the romantic and futuristic images of Wijdeveld. In Amsterdam, the first application of high-rise construction to housing revealed the kinds of intersections that could occur between ideas of the nineteenth and twentieth centuries; the first wolkenkrabber (skyscraper) was brought into existence by basically aesthetic motivations.

In December of 1925 the Amsterdam city councilmen Gulden and Boissevain made a motion which proposed that, 'where building of more than four stories is desired on aesthetic grounds', the building height regulation should be altered. This desire to create 'aesthetic points of visual emphasis' perhaps can be traced back to Sitte and Unwin, whose ideas had very much influenced the character of Berlage's expansion plans for Amsterdam South. The motion clearly bore little relationship to the housing needs of the city, and thus, under the influence of the democratsocialists among the mayor and councilmen, a revised proposal was issued:

In the interest of housing people it must in general be thought undesirable to bring more dwellings above each other than is required in article 98 of the building regulations. . . . There is no objection to allow an exception to the idea expressed above in regard to a limited number of areas for those cases in which it is desirable from the point of view of stadsschoon (attractiveness of the city).

In January of 1929 the motion was accepted, but was limited in application to only three areas of Amsterdam, including the Daniël Willinkplein (now Victorieplein), a focus point that had been indicated consistently on the various expansion plans of Amsterdam South by Berlage. Berlage had not specifically indicated a high-rise building at this point, but had obviously intended a monumental building. Large-scale buildings had been indicated at major points throughout the expansion plan; these had the purpose of providing a focus for each neighborhood, one of the principles of Unwin's 1909 Town Planning in Practice.

J.F. Staal who, like Dudok, fused rational and expressionist elements in his work, was the architect for the twelve-story tower of middle class dwellings completed in 1932 [130-131]. Originally intended to be taller, the tower's orientation was a direct response to the directional axis of Berlage's street plan, with the result that half of the dwellings are on the northern side of the tower. The building has two major vertical elements: a glass-enclosed staircase and a large flue stack. Both of these are major features of the cityscape, but also serve to reduce the monolithic nature of the tower. Yet despite the dichotomy between front and back of the tower, its symmetrical plan, and use of vertical service elements as expressive features – all qualities which to some extent are found in Duiker's Hoogbouw project of 1930 – Staal's Victorieplein tower was criticized on numerous occasions by Duiker. He was particularly critical of the provision of two elevators for twenty-four dwellings, two per floor; he cynically joked that the residents needed a lift for each foot. In Duiker's work lies the transition from the romance of Wijdeveld's work to one of the essences of the Nieuwe Zakelijkheid attitude. Duiker's approach was put forth concisely in his criticism of the Amsterdam wolkenkrabber:

For here the architects have offended against almost all economic rules. If one wants to install central provisions within reach of the working class, the first requirement should be to define carefully in which way construction can be done as economically as possible.
The first Amsterdam wolkenkrabber (skyscraper) originated in the desire to give an aesthetic emphasis to the cityscape of Berlage's 1915 Amsterdam South extension plan, which had indicated this site as a major intersection. Whereas Duiker's towers have liveable space oriented exclusively to the south, a principle influencing the disposition of mass and space, Staal's dwellings (as seen in this view to the west) derive their orientation from the view along the directional axis of Berlage's plan. Duiker on repeated occasions criticized the construction of this building, which he felt 'offended against almost all economic rules', especially because it had two elevators for 24 dwellings, two dwellings per floor.

1. Living room
2. Bedroom
3. Kitchen
4. Bathroom
5. Balcony
6. WC
Rationalization

The analytical work of Duiker and Wiebenga between 1927 and 1930 published in *Hoogbouw* [132-135] stands in strong contrast to the aesthetic motivations discussed above, but here also there were sources which were far from analytical. Not only had the *Wendingen* issue on skyscrapers stimulated Duiker, but he was also very much within the tradition of Berlage and Oud, who were especially conscious of the potentially symbolic character of workers' housing. Discussing the poor spatial relationships among the American skyscrapers, Duiker wrote that these shortcomings do not prevent the skyscrapers from making a tremendous impression, and as such they come very close to a culture, even if they are unable to reach this completely.\(^\text{23}\)

The basis for the image that was so appealing to Duiker was the aggregation of diverse communal facilities in one building. In 1889 Berlage had given a lecture in which he stated a position on central heating which anticipated Duiker's opinions about central provisions for dwellings. Berlage said that central heating points to a great revolution in the whole of social life, of a life by all for all. There is one great domestic hearth. The great building stands there, in the middle of the city; its chimney is high as a tower. Do you know what happens there, within those factory walls? A gigantic fire glows there, sending its warmth even to the extreme corners of the city; it is like the heart in the human body.\(^\text{24}\)

The major contribution of the *Hoogbouw* project was the attempt through building economies to provide a great variety of facilities within the rents that workers were able to pay. As such, the proposed dwellings represented a higher standard than anything which had been previously designed or built. For Duiker, high-rise dwellings afforded the opportunity to radically raise housing standards:

| Central collective provisions alone may put living onto a higher level which can never be reached in individual housing.\(^\text{25}\) |

Although Duiker was relatively apolitical compared to other *Nieuwe Zakelijkheid* architects, his image of the 'collective' living in high-rise dwellings was extremely compelling. The arguments in *Hoogbouw* were for the most part technical, but the political polarization which had occurred in Germany by 1933 influenced Duiker to present his position more strongly and in more political terms. Thus in 1933 he wrote that social democracy should oppose

| the placing of large and small houses adjacent to each other with separate large and small gardens . . . . Cries of distress at the first appearance of high building planning that each laborer should own his own little house with its own little garden in order to be happy, should be considered as totally bourgeois.\(^\text{26}\) |

This statement should not be seen as a total rejection of the qualities of the garden city; the indebtedness of Duiker and other functionalists to the garden city movement has been pointed out earlier. The irony of the influence is especially evident in Duiker's case, but also reveals the problems that resulted in the Dutch modification of Howard's principles. Duiker disliked the bourgeois qualities, the extra time required for commuting to work and the reduced ability to apply the advantages of modern technology, but in his defense of high-rise dwellings he repeatedly mentioned

| the needs of light and airiness which are the advantages of the garden city.\(^\text{27}\) |

Yet in regard to the qualities of airiness and openness that could be achieved with a series of high-rise blocks or towers, Duiker never went to the point of creating a completely homogeneous site plan as others (such as Van Loghem) later did. In contrast to the American practice he always conceived of the dwelling blocks in groups, and space was always defined, basically open without losing some sense of closure. This is evident in the *Nirwana* flats of 1927-29 in The Hague which were designed with Wiebenga as five blocks, square in plan and connected at the corners [137-139]; only one of the blocks was built [140]. The site plan of the group of towers in the *Hoogbouw* project also indicated a tendency to define space with a center. The four-armed, twelve-story blocks of *Hoogbouw* show the same commitment to southern orientation as the *strokenbouw*, and in this respect the *Hoogbouw* dwellings were an
Although the *Hoogbouw* project had a very different economic context than the Amsterdam *wolkenkrabber*, both had common origins in the work of Berlage, Wijdeveld, and Le Corbusier. Wijdeveld stimulated Duiker's interest in high-rise through his 1919 Vondelpark project and the 1923 issue of *Wendingen* on high-rise buildings, but Berlage's rationalism and social commitment to housing form a more important foundation for Duiker's analytical work in *Hoogbouw*. Through analysis of building technology and the economies of scale Duiker hoped to show that well-ventilated, naturally lighted and relatively spacious housing could be made available to all.
Both Duiker and Van Loghem became major proponents of high-rise dwellings towards the ends of their careers. They were influenced by aspects of the garden city ideals: Duiker emphasized the direct contact with nature found next to each building in the Hoogbouw project, and wrote that the open planning could be described 'as a garden city area on a large scale'. Van Loghem had been more closely associated with an actual garden city-type project at Watergraafsmeer in Amsterdam in 1922-23, but he later saw high-rise dwellings as the only solution for maintaining open space within cities.

Duiker's and Wiebenga's design is derived especially from orientation considerations, and is in this respect an improvement over Le Corbusier's 'Plan Voisin' and 'Contemporary City for 3 Million Inhabitants'. Van Loghem especially admired Le Corbusier, but carried his work no further in this scheme, which was rejected by the jury because it was too expensive and had inadequate corner dwellings.
Private sector housing
Nirwana flats
The Hague
Benoordenhoutseweg
1927-30
J. Duiker
J.G. Wiebenga

Based on a suggestion by Wiebenga that speculative service apartments, such as he had seen in the United States, would be marketable in The Netherlands, this project was a relative failure. Originally intended to be five structures connected by a continuous balcony, only one was built and the continuous balcony was lost to the need for more storage for the smaller units. The building has a heaviness which is contrary to the original intention.

Duiker, unlike others who designed high-rise projects soon thereafter, defined and partially enclosed space with the buildings, which he always considered in organized groups.
improvement over the inconsistent orientation that characterized Le Corbusier's cross-shaped towers.

Characteristics of high-rise construction had other attractions for Duiker which illustrate that his interests focused on means as well as ends. As his Zonnestraal sanatorium and open air school show, concern for hygiene motivated many aspects of the new architecture, and many of the technical, centralized aspects of the Hoogbouw dwellings were directed to hygienic ends. But Duiker and many other Europeans were also eager to improve upon the American skyscraper, which if not crowned with a pediment, at least had not reached a level of honest expression that had been achieved in some low buildings in Europe. High-rise construction gave an opportunity for the application of the modern techniques of structural analysis, and Duiker especially had a particular fascination with the idea that economy of means created the financial advantage by which increased amenity could be achieved. There was also present a fascination with pure structure and new materials, and highrise buildings were viewed to particularly demand these. Richard Neutra's Amerika, which appeared at the same time as Hoogbouw, epitomized this view by showing numerous examples of high buildings during construction, i.e., in their structural nudity.28

The Hoogbouw analytical method may be regarded as more significant in Holland than the actual housing suggested, and certainly its importance in regard to the provision of central facilities for workers' dwellings was not limited high-rise examples. Although it gave support to Gropius's position in the defense of high-rise dwellings, further studies of the dwelling problem within The Netherlands would indicate that high-rise dwellings was an idea not yet fully acceptable.

Rejection: Commissie voor den Hoogen Bouw

In response to the original proposals that led to the building of J.F. Staal's wolkenkrabber in Amsterdam South, some more socially-minded councilmen suggested that there was a need to further investigate the question of high-rise dwellings, and thus the Commissie voor den Hoogen Bouw was established in 1929. The commission included a variety of professionals involved with housing, among whom were D. Hudig, who had founded the Nederlandsch Instituut voor Volkshuisvesting en Stedebouw; H. van der Kaa, Chief Public Health Inspector of Housing; L. van der Pek-Went, who had been a student of Octavia Hill and was acting as a member of the municipal health commission of Amsterdam; and the engineer J.G. Wiebenga.

Wiebenga, even before the committee conducted any business, was clearly the major protagonist for high-rise dwellings, and he was also the member of the commission closest to the spirit of the Nieuwe Zakelijkheid. He had, according to one source, consulted with Mies van der Rohe about the suitability of a concrete frame structure for the latter's 1920-21 project for a glass skyscraper.29 A year later Wiebenga had sought out the collaboration of Van der Vlugt for his Technical Trades School in Groningen, and he had been a major collaborator with Van der Vlugt on the Van Nelle factory after Brinkman's death in 1925.30 Between 1923 and 1926 Wiebenga was in the United States where he worked on large civil engineering projects. This experience played an important role in his work with Duiker on the Nirwana flats in The Hague and Hoogbouw, and of course these latter two involvements affected his position within the high-rise commission.

The commission's investigation first focused on the question of the relative importance of high-rise dwellings within the general housing problem, how far below 6.00 per week the rent could be brought, and what specific living demands the high-rise dwellings must fulfill. However, the mayor and city council members continued to serve as the commission's conscience; they visited it at one point to emphasize that the purpose of the commission was to address itself to workers' dwellings. Later it was urged that the investigation not be limited to the above points, and thus at the installation of the commission in April of 1929 further areas of inquiry were enumerated:
a. whether an apartment in a high building of six-ten stories could form a decent home for a worker;
b. the effect of building an area of high buildings on city planning matters;
c. the effect of high buildings on land prices;
d. traffic responsibilities in such an area of high buildings;
e. appropriate construction techniques;
f. hygienic advantages and disadvantages of high-rise dwellings;
g. economic pros and cons of high-rise dwellings.

In the December 1932 draft of the commission's report, it was observed that there was a widespread duality in the basic approaches to the housing problems in The Netherlands and abroad. One was the one-family house in a garden-city or garden city-type area, the other a high 'stadsbouw' with centralized facilities and a system of parks between buildings. Recognizing this duality, the commission regarded itself as complementing the earlier work of the municipal commission which had studied the applicability of the garden city idea to Amsterdam.

The commission felt itself burdened by a lack of examples to which its points of inquiry could be addressed, and thus was required to turn to unexecuted plans as sources. The Paris and Vienna five-to-seven-story dwellings were not considered good examples because they did not have elevators. Staal's wolkenkrabber and the Nirwana flats, both found to be expensive, were not considered proper study cases because they had not been built for workers. Duiker and Wiebenga lectured to the commission, and probably presented the arguments of Hoogbouw, which was available to the members by 1930. Duiker and Wiebenga also reported on their trip to the garden village Floréal near Brussels where workers' dwellings had been built in high structures.

The report concluded that it would be an illusion that land costs per dwelling would decrease with high-rise dwellings, especially if the existing levels of density were maintained. Thus one could reap cost savings only through economy of construction. The commission was careful to separate the technical and social sides of the question. It was concluded that there was no reason that high-rise construction could not provide a good dwelling from the point of view of unit plans and natural light. However, the majority of the commission believed that from a social point of view high-rise dwellings for workers' families were undesirable.

Dependence on elevators was particularly stressed in the reasoning underlying this conclusion. It was believed that elevators would create difficulties for families with children and make it more difficult for the housewife to be served by the various door-to-door suppliers that were common in Holland. Finally there was a warning concerning

the unquestionable disadvantage of putting together more families than which is usually done in one building. These social concerns, combined with the belief of the commission's majority that high-rise construction would make the rents higher and not lower, resulted in the conclusion that high-rise dwellings for workers should not be built.

The report, however, should not be considered as solely reactionary and as simply supporting low density, low-rise construction. In a statement which foreshadowed some aspects of the 1934 Expansion Plan, some members of the commission observed that

notwithstanding the quality of the one-family house, cities which build only this type of dwelling would become too dispersed with too large distances ... a municipality must fulfill the wishes of the inhabitants, and must take into account in its expansion plans both high and low buildings.

This minority disagreed with the majority because it felt that not enough good information had been obtained to warrant the continued application of the four-story limit. Hudig, and not surprisingly Wiebenga, refused to sign the commission's report. Wiebenga felt that the conclusions had not been based on reasonable cost estimates; he was in basic disagreement with the majority position that the objections against assembling many families in one building could not be eliminated.

The Commissie voor den Hoogen Bouw has been dealt with here rather exten-
sively because it illustrates one of the various kinds of conflicts that occurred be­tween Nieuwe Zakelijkheid ideas and the more institutionalized, politically con serv­ative bodies which reacted to new ideas rather than created them. Yet the po­larization was nowhere as deep as in Germany by this time. The commission’s rejec­tion of high-rise dwellings for workers was as marked by the lack of ideology as the defense of high-rise dwellings by Duiker and others was marked by the full employ­ment of all ideological argument that they could muster.

The existence of such a commission at the municipal level to investigate such a far­reaching and difficult question should also be regarded as significant. This commis­sion and the Zonnecommissie, which had been active simultaneously, were valuable contributors to the process of raising the level of municipal-level city planning to the relative sophistication of Van Lohuizen’s and Van Eesteren’s 1934 Expansion Plan for Amsterdam.

The Bergpolder Flats, Rotterdam

The Commissie voor den Hoogen Bouw concluded its study two years before it was able to have a concrete example of the possibilities of high-rise dwellings built under the Housing Act for workers, for in 1933-34 the Bergpolder flats designed by J. Brinkman, L.C. van der Vlugt, and W. van Tijen were being constructed in Rotter­dam [141-143]. Built on land acquired from the city by the association, Volkswon­ingbouw Rotterdam, these dwellings were built with the requirement that the maxi­mum possible open space be preserved, and that there be not more than seventy-two dwelling units. However, in this case, unlike that of Amsterdam, there was no re­striction on the building height. Yet because the Bergpolder block was an adaptation to a pre-existing site condition, it really formed only a fragment of a more compre­hensive image in which repeated use of high buildings yielded large-scale city plan­ning advantages.

Despite the fact that the Bergpolder was a portion of a more comprehensive vi­sion of the city, its construction was significant for a number of reasons. First, it showed that it was possible to build dwellings with elevator access in high buildings for a price that workers could afford. Had this been realized earlier than 1934, it is possible that more of its type would have been built. As a prototype the Bergpolder preceded Le Corbusier’s Unités, but as a frame of reference it is useful to point out that between 1930 and 1932 Le Corbusier’s Clarté block in Geneva and Swiss stu­dent hostel in Paris were being built. Although these two examples were not inten­ded for workers’ families and had much more liberal budgets, their construction illustrates that neither the morphology of the long rectangular block with elevator access nor the use of prefabrication and design rationalization in order to speed con­struction were totally new to the housing field.

The success of the Bergpolder in producing dwellings that rented between f. 6.16 and f. 7.35 per week has in retrospect been felt by many to have been a mixed bless­ing. Although the Bergpolder contained only one dwelling type (slightly less than 50 square meters) and was intended specifically for small young families, its success and the lower cost of elevators after World War II led to a widespread use of its type for families with children despite all the pre-war conclusions to the contrary. Ironically, if one visits the building today, he will find a high percentage of old people living there, some of whom are seriously inconvenienced by the fact that the elevator never stops on level with the access gallery, but either half a flight of stairs up or down. At the time, of course, this feature saved considerably on the cost of the elevator instal­lation because it only had to stop at every other intermediate stair landing.

The access gallery idea applied to dwellings was not new, and Van Tijen specifi­cally acknowledged M. Brinkman’s Spangen (1919) as the source of the idea. Here is an example of the kind of metamorphosis which could occur from one unified ty­pology to a fragmentary one. Similar to the Dutch transformations of garden city ideals, physical features belonging to a broad social conception were interpreted in a purely physical sense. This transformation was particularly characterized by the
The design projects of the 1930s which indicated high-rise dwellings usually showed a number of towers or slabs, rather than a single one. This was a result of conceiving the advantages of high-rise in terms of the whole urban context, not just local site conditions. The Bergpolder was thus a fragment of a larger and more monumental vision which to a great extent was based upon the belief that mass production could solve contemporary housing needs.
multiple application of ideas removed from their original context, a process affected by the climate of optimism in regard to mass production. But in the Bergpolder, multiple use of the gallery is not sufficient to give it validity; here there is no personal territorialization of the space in front of the dwelling as occurs in Spangen.

When built, the Bergpolder was the purest example of Nieuwe Zakelijkheid housing in Holland. Not only was some factory prefabrication used, but the whole architectural image embodied the cooperative nature of the design process and the suppression of individualism. In this respect Van Tijen wrote in 1934 that precisely because this building is not the result of one personal thought but because it is a combination of many wishes, efforts, desires, possibilities and impossibilities, it has obtained a living character of its own. Although one might trace any symbolic qualities of the Bergpolder back to Wijdeveld's romantic imagery, the symbolic level of the architectural language occurs more on the grounds of Oud's article, 'Kunst en Machine' of 1917. Although the architects tried to suppress the domination of parts over the whole, the 'glass-shingle' enclosed stairway is as expressive as the staircase of Staal's wolkenkrabber in Amsterdam. However, in the Bergpolder the idea of the communality of the stair is less forced and more the product of the deeper conviction that lies behind all of the technical imagery.

The 1934 Competition for inexpensive workers' dwellings

This competition has already been analyzed with respect to its significance for strokenbouw, but it is necessary to return to it again since a number of competitors used the occasion to further develop ideas about high-rise dwellings.

The range of entries which indicated high-rise dwellings fell into three basic types: gallery megastructure, point block towers, and multiple applications of the Bergpolder type. Zwaagstra's fifteen-story megastructure, an unimportant entry except for its inclusion of the whole competition program in one structure, was rejected because it did not allow adequate admission of sunlight to the dwellings and because it was thought to be too costly. These Were the criteria which most consistently eliminated projects from consideration for awards.

Van Loghem's sixteen-story towers project did not go conceptually further than the 1922 projects of Perret and Le Corbusier; it too was rejected because it was too expensive, but also because the way of building implies that all dwellings are corner dwellings, which results in an unsuitable dwelling type. In this competition, Van Loghem showed that he had moved significantly away from his interest in garden city ideas (e.g. Tuinwijk Zuid in Haarlem and Watergraafsmeer in Amsterdam) not only because of the onset of political conflict, but also because he feared that four-story construction would be applied endlessly, eliminating the natural landscape. Van Loghem's article accompanying the presentation of selected entries reflected not only his earlier fascination with aspects of the garden city, but also his particular admiration for Le Corbusier, who had lectured in Holland in 1932, a year before the competition opened:

It will be evident that through the construction of very high dwelling complexes at a great distance from each other the love of the beauty of nature will grow... the high dwelling complexes bring the inhabitants in contact with the expansiveness of our space and give them the possibility to make use collectively of the large free areas between the dwellings.

The Bergpolder made a strong impression especially on G. Versteeg and J.H. van den Broek, who indicated multiple applications of the Bergpolder-type in their entries. Versteeg's buildings were thought by the jury to be too close together, while Van den Broek's was the only scheme among those awarded prizes which showed high-rise dwellings. Most significant in Van den Broek's entry was the mixture of building heights which was to be commonly applied after the Second World War. Both of these entries made it clear that high-rise dwellings were thought
Van den Broek’s competition entry was unique at the time for its indication of a mixture of dwelling type and height. However, in 1933 Merkelbach had written to members of de 8 and Opbouw to urge the collaboration on one or more submissions. As a result of meetings in Amsterdam three possible approaches were formulated for the entries: one-family dwellings with high-rise, four-story dwellings with high-rise, and four-story dwellings alone. The jury felt that none of the entries had solved the problem of designing good and inexpensive workers’ dwellings, but Van den Broek’s was one of four awarded a prize.
of in multiples in order to realize large-scale planning advantages.

As it has been noted earlier, the competition was a confirmation of the tendency towards the four-story strokenbouw. The jury concluded that the financial advantages expected by the contestants are really non-existent when the actual computations are examined because of the more expensive construction costs and higher costs of central facilities, especially elevators. Thus high-rise buildings for the housing of normal workers' families is not advised. 41

Thus the jury was not convinced by the example of the recently-completed Bergpolder dwellings. However, resulting from the unfulfilled desire of the Commissie voor den Hoogen Bouw to see specific plans, a subcommission did not question the basic premise that workers' families should live in high-rise dwellings, but rather investigated the various types of high-rise dwellings and the specific application of elevators. Using the costs of roads and orientation of dwellings as the chief evaluative criteria, this subcommission concluded that when high-rise dwellings were built the gallery access-type would have to be used. 42 Construction of Dutch housing since World War II has often followed this line of reasoning.

Final rejection before the war

Unlike the cases discussed above, the Commissie voor de Goedkoope Woning (Commission for the Inexpensive Dwelling), was not sponsored by a municipality but by the Nationale Woningraad (National Housing Council) and the Nederlandsch Instituut voor Volkshuisvesting en Stedebouw. The conclusion of the commission, which was active between the end of 1934 and the spring of 1936, was even more negative than those of the preceding high-rise commission and the competition jury:

For workers' dwellings no higher building is allowable than four stories. The climbing of more stairs and the more intensive use of stairs in buildings consisting of more than four stories will harm the livability of such buildings in an impermissible manner, while the compensation for these difficulties by the addition of elevators is not financially possible. 43

These conservative responses to proposals for a new mode of housing did not reflect a direct affinity with the garden city movement or national socialism, but rather were based upon deeply rooted traditional preferences for low-rise housing. Such preferences underlie Kiefhoek's successes and the Bergpolder's weaknesses. Unfortunately, these projects were not conceived as experiments, and the opportunity for sociology to provide a stronger imperative for developments after World War II was never exploited. 44
Housing associations ‘Landlust’
‘Het Westen’
‘Labor’
‘Algemene Woningbouwvereniging’
Amsterdam
Willem de Zwijgerlaan
1935-38
B. Merkelbach and C.J.F. Karsten
P. Vorkink
G. Versteeg

At the initiative of Merkelbach and Karsten, the proposed layout for this portion of the western extension was changed from a closed to an open plan. Unlike developments in the 1920s, this was an application of a type developed earlier in Germany, the Zeilenbau or Dutch strokenbouw. Under the influence of CIAM, the project represented further internationalization of attempts to solve housing problems.

The reasons given for opening the blocks: ‘better availability of sunlight for the dwelling’ and ‘limiting of the traffic to the traffic of the quarter itself’ had become general functionalist programmatic statements by 1930.
Here, as in Van den Broek's Blijdorp housing in Rotterdam of 1932, all traces of the residents' permanent territorialization of the inner garden space are gone. However, Landlust has a greater degree of spatial homogeneity in which spatial qualities are not differentiated by the architecture but only by the functional differences between front and back.
15. Conclusion

By 1940, neither had Rotterdam frozen, nor had Amsterdam burned – the metaphorical destruction feared by Mendelsohn in 1923. As this investigation has attempted to show, both passionate expressionism and slow but sure rational progress characterized the housing built in both cities. Rotterdam may have lacked what is called an Expressionist architecture, but the rational tradition in housing which evolved there was intertwined with beliefs in the symbolic meaning of housing. In Amsterdam, various investigative commissions, official interest in the garden city movement, and rational planning experiments co-existed with the exoticism of the Amsterdam School. A decline of the influence of expressionism led to the climate of so-called rationalism, most evident in the 1934 expansion plan and the building of the first Dutch strokenbouw in 1937 [146-149].

Yet to assert that there was a reconciliation between ‘vision’ and ‘analytic objectivity’, as Mendelsohn hoped for, is wrong. In the work of Dudok or Staal one may find the integration of formal aspects of the expressionist and rationalist themes, but the nature of this integration did not address major concerns of housing. In Dutch housing since World War II the two traditions have been strongly independent from each other, or unhappily juxtaposed – but rarely united in one piece of architecture.

As we have seen, some aspects of expressionist beliefs did become integrated with the rational tradition. This occurred especially through Berlage, whose influence permeated so many aspects of Dutch housing. Berlage, and later the Nieuwe Zakelijkheid architects, believed that the workers’ dwelling could symbolize cultural values. Early expressionism in housing was often confined to iconographic symbolism, whereas the Nieuwe Zakelijkheid architects sought to symbolize universal values – because they believed in them. Furthermore, the rationalists came to believe that housing could change society and not merely reflect it.

Ironically, the influence of democratic socialism and what was almost a cult of hygiene resulted in a homogeneous housing environment where the potential for user impact on the space was restricted. From Agneta Park through Landlust, housing professionals had an increasing desire to control more and more of the housing environment in order to remove it from disliked or unknown forces. This development is reflected in the changes between the anarchy of the interior of a nineteenth-century closed housing block and the limitation and control present in the Landlust environment. Although between 1900 and 1940 the concerns of housing and city planning merged, Landlust illustrates the difficulty architects had in dealing with the increased scale of housing projects – a problem even more present today.

However, we cannot judge this period by any one project. The value of these years lies in the diversity and the contradictions, and to have expected a synthesis would have been to expect too much. Rather than providing universal truths about the way people should live, as the Nieuwe Zakelijkheid was prone to do, the period can inform us that it is the variety of approaches which gives validity to the environment as a whole and human choice in particular.

Mendelsohn’s perception of the Amsterdam-Rotterdam dichotomy has helped to draw our attention to the polemics and dialectical nature of developments between the two World Wars. However, interest in these conflicts – as essential as they were for improved housing – has tended to hide the importance of developments between 1900 and 1917. Occurring in this period were the critical beginnings, which developed from the needs of hygiene as well as from the new strength and self-esteem of the working class: the rise in the importance of housing cooperatives, the growth of municipal housing departments, the first communal gardens for workers’ housing, and the early expressionist efforts to dignify workers’ housing. Since the objectives of the well-lighted, clean, open, and flexible dwelling had their origins earlier than the radical polemics of the 1920s might lead one to believe, the obtaining of consistently formulated goals was the struggle, not the setting of them.
It is now clear, also, that Mendelsohn's contrasting of Rotterdam and Amsterdam was an oversimplification. Similar to Berlage's axiom, much of the high quality of Dutch housing lay in the diverse streams within a unified culture.
Notes

1. Introduction
   (pages 13-14)


2. The pre-industrial period
   (pages 15-18)

2. Burke, p.156.
4. For example, W. Kromhout in Arbeiders Woningen in Nederland (Rotterdam, 1921), p.xiv, speaks of beautiful 'afgeslotenheid' in his discussion of city and village expansion.
7. Ibid. This is the major thrust of Rasmussen's argument.
10. Lambert, p.182.

3. Industrialization and Urbanization
   (pages 19-20)

2. I.J. Brugmans, De arbeidende klasse in Nederland in de 19e eeuw, 1813-1870 (Utrecht, 1973). This is a useful standard study of the period.
5. Brugmans, p.77.
6. Lambert, p.277; see also Hengelo'sche Bouwvereniging, Tuinders Het Lansink (Hengelo, no date).
7. Lambert, p.262.
8. Bauer, Modern Housing, p.11.

4. Housing production before 1900
   (pages 21-26)

8. Bauer, p.33: 'The slums were ordinarily the most profitable branch of real estate.'
12. Lambert, p.256.
17. Willemsen, p.15.
21. M.J.L. van Ellemest (at the time chairman of the Nederlandisch Instituut voor Volkshuisvesting en Siedelbouw) wrote that Agnetapark was the first Dutch example of housing which illustrated that space-forming was the task of the architect. He also wrote, 'here was clearly expressed that good social housing means good architecture.' See 'De woningbouwvereenigingen en de architectuur', Beier Wonen (Amsterdam, 1938), p.69.
23. F.M. Wilbaut (1859-1936), who was the Amsterdam city councilman in charge of housing between 1914 and 1927, was a personal friend of the Van Markens.

5. Dwelling conditions before 1900
   (pages 27-32)

1. There is a great deal of literature in Dutch about this subject, only a small part of which is cited here.
3. See for instance the dwellings of garden village Het Lansink, Hengelo, designed in 1910 by Karel Muller.
6. The Housing Act of 1902 (pages 33-41)

1. Other contemporary legislation included the Health Act and the Employers' Liability Act, which, with the Housing Act, were brought into existence within four years of each other. See 50 Jaar Woningwet, 1902-52 (Alphen aan den Rijn, 1952), p.1.

2. Bauer, Modern Housing, pp.78-79. She also notes (p.22) that there was a relationship of nineteenth-century health standards to concern for national defense: 'There was much thought throughout Europe in the eighties on the actual cost to governments of premature deaths, notably at an International Conference on the Value of Human Life, held at The Hague in 1884.'


7. Ibid., p.72.

8. Ibid., p.72.


10. Ibid., p.71.


12. Nycolaas, pp.16-17.


15. Nederlandsch Instituut voor Volksvleugening en Stedebouw, De Woningwet 1902-29 (Amsterdam, 1930), ch.1.

16. Ibid., p.284.

17. 30 Jaar Woningwet, p.75.


21. In 1918 emergency legislation was passed which provided for the building of semi-permanent dwellings with 90 percent state and 10 percent municipal financing.

22. ... none of these countries, with the possible exception of Holland, has yet made up the mere quantitative shortage which existed in 1918.' Bauer, p.120. The cited figures are from 50 Jaar Woningwet.

7. The influence of Camillo Sitte (pages 42-45)

1. Sitte's importance, however, was more appreciated by those closer to the time of his influence. See for example, D. Hudig, 'Stedebouw', De Sociëtistische Gids, X (January 1925), pp.63-64.


4. Ibid., p.123.

5. Ibid., p.126.

6. Ibid., p.126.


9. Ibid., p.911.


13. Ibid., p.10.

14. J. Duiker, 'Bockbespreking', De 8 en Opbouw, 3, No.6 (1932), p.61. This is a review of the CIAM publication, Rationalle Bauordnungswesen (Frankfurt, 1931).

8. New role for the architect (pages 46-53)

1. P. Singelenberg, H. P. Berlage (Utrecht, 1972), p.8. See the entire chapter, 'Gottfried Semper and His Influence', pp.8-22, upon which this discussion is based.


4. Ibid., p.4.


6. H.P. Berlage, Normalisatie in Woningbouw (Rotterdam, 1918), p.44.


8. Berlage, Normalisatie in Woningbouw, p.44.


15. Ibid., pp.39-40.

16. Ibid., pp.31-32.

17. Walter L. Creese, writing about the English garden cities, says, 'The conviction that the surroundings of the lower classes deserved any aesthetic treatment at all was revolutionary.' The Search for Environment: The Garden City Before and After (New Haven, 1966), p.137.

9. The garden city tradition (pages 54-66)

1. Re-issued as Garden Cities of Tomorrow in 1902.


12. Riedel, Tuinsteden, p.75.


15. Riedel, p.72.


17. Feenstra, p.53.


23. None of Bauer’s drawings at the Documentatie Centrum voor de Bouwkunst, Amsterdam, relate to Walden or garden city ideas in general.


27. Riedel, p.85.


29. See Freek Sieboom, ‘Vreewijk’, in Project Rotterdam, unpublished manuscript (Utrecht, 1972), p.10. There has been some confusion in The Netherlands about Berlage’s role in Vreewijk, due in all probability to the fact that Dr. H.P. Berlage en zijn werk (1916) does not mention the Vreewijk project. See Granpré Mollière, ‘Dr. H.P. Berlage en de Stedenbouw’, H.P. Berlage 21 Februari 1856 - 12 Augustus 1934, a memorial published by Bouwkundig Weekblad - Architectura. The omission of Berlage’s name with a portion of his Vreewijk plan in Arbeiderswoningen in Nederland, (Rotterdam, 1921) is especially curious.


32. H.P. Berlage, Normalisatie in Woningbouw, p.45.


34. Creese, The Search for Environment, p.301.

35. Fockema Andreae, De Hedendaagse Siedenbouw, p.103.

36. The one-family house and the garden city concept were originally distinguishable, and districts of one-family houses were built without any expressed commitments to garden city principles. During World War I, for instance, the soaring prices of piles stimulated low construction (e.g., the Bloemhof, Rotterdam) since the available land could only support one or two story construction without piles. See R. Blijstra, Rotterdam, stad in beweging (Amsterdam, 1965), p.19.


38. De 8 en Opbouw, De Organische Woonwijk in Open Bedrijven (Amsterdam, 1932), p.11.

10. Collectivity and communal space (pages 67-85)

5. M. de Klerk, in Bouwkundig Weekblad, 36, No.46 (1916), p.331. This was written on the occasion of Berlage's sixtieth birthday.
6. De Clerq, having just seen Berlage's office building for Wm. H. Muller & Co. London, published in Dr. H. P. Berlage en zijn werk (Rotterdam, 1916), p.26. De Clerq had been too technical and utilitarian to be able to influence architecture. Oud wrote to Bouwkundig Weekblad two days after De Klerk's comments appeared, and was critical that De Klerk did not acknowledge the importance of Berlage's architecture. For a full explanation of this conflict, see S. Frank, 'Michel de Klerk', pp.247-257.
7. To be certain of the direct influence, it would have to be shown that Oud was present at Berlage's lecture in The Hague, because Normalisatie in Woningbouw was published after Oud's article about the Housing Congress in De Stijl, I, No.7 (May 1918) was written in February-March.
10. Ibid., p.25.
11. Ibid., p.36.
12. Ibid., p.28.
15. Ibid., p.38.
16. Ibid., p.42.
17. Ibid., p.34.
18. For a more complete discussion of this project see P.K.A. Pennink and W.J. Bruyn, 'Het Betondorp', Forum, 19, No.5/6 (1965-66).
19. J.J.P. Oud, 'Bouwkunst en normalisatie bij den massabouw', De Stijl, I, No.7 (May 1918), p.79.
20. Ibid., p.79.
24. Bauer, Modern Housing, p.79.
25. Bauer, p.119: "... a dwelling of "minimum decency" in 1920 was very much more expensive relative to income than a dwelling of "minimum decency" in 1800, without involving any appreciable net increase in real living standards."
27. Ibid., p.7.
31. Quoted in Prak, "Zeventig jaar woningwet", p.34.
33. Theo van Doesburg, "Tot een beeldende architectuur", De Stijl, VI, No.6/7 (1924), p.81.
34. Bauer, Modern Housing, pp.199-200.

12. Ideology: ends and means
(pages 101-103)
2. J. van de Beek and G. Smienk, "Ir. J.B. van Langhem", p.32.
3. ABC, No.1 (1926), p.1. Stam rejected the aesthetic interest in composition that he found in common among the Stockholer City Hall, the Stuttgart train station, and the 1922 design of a house for Léonce Rosenberg by Van Doesburg and Van Eesteren. These were published with an X through their photographs.
4. Rebel, p.7.
5. I, 10, 1, No.3 (1927), p.126.
6. J.J.P. Oud, "Bouwkunst en normalisatie bij den massabouw", p.78.
7. Conveyed to the author by J.B. Bakema, Rotterdam.
8. De Eerste Opbouw, 3, No.1 (1932), pp.23-30. Catherine Bauer, in Modern Housing, p.149, wrote that "Neubühl near Zürich is probably the most thoroughly successful and attractive modern community in Europe."

13. The new conception of space
(pages 104-111)
2. Amsterdamse Woningraad, Rapport over de Bouwinvestering in de Nieuwe Stad te Amsterdam, pp.11-12.
3. Amsterdamse Woningraad, 1922.
5. Zwiens, Kleine Woningen, pp.89, 97.
8. See, for example, Duiker's submission (No.53) in Nationale Bebouwingsweergave, pp.127.
10. Geoffroy Broadbent, 'Meaning into Architecture', in Charles Jencks and George Baird, eds., Meaning in Architecture, p.72. Broadbent stresses how most critics have addressed themselves to the formal properties of this house.

14. Spatial openness: high-rise
(pages 112-130)
2. Eaton, p.231: Berlage 'was a good deal more attracted to Sullivan than he was to Wright.'
3. Both critics and supporters of high-rise dwellings in Europe shared their criticism that American high building was not used for the advantages of the city as a whole. Unwin repeated his common criticism of the problems of high-rise high density areas during a speech in Amsterdam in 1922. Duiker, although recognizing the technical significance of the American towers, felt that architectural unity had not been reached because a spatial conception was lacking. Raymond Unwin, Eenige Siedebouwkundige Problemen, Part III of the City Planning series of the Nederlandse Architectuur, p.17 and J. Duiker, Hoogbouw (Rotterdam, 1930), p.11.
4. There is some suspicion in Holland that Le Corbusier was directly influenced by Wijdeveld's project. In a phone conversation which this author had with Wijdeveld on 1 June 1974, he said that he had mailed Le Corbusier copies of this project along with the slightly later (1919-20) expansion plan of Amsterdam which had also indicated freestanding towers in open parks. Wijdeveld thought he had done this around 1920, but this must be more certainly pinned down. Fanelli (p.97) notes that Wijdeveld and Ozenfant in Paris in 1920.
6. Wijdeveld especially emphasized the idea of Morris when last he authored the sources of the Vondelpark project. For further understanding of the impact of Ruskin and Morris on Wijdeveld, see H. W. van Tijen, Illusties van de Komende Schoonheid, Architectura, No.83 (1915), p.267.
7. P.J.H. Cuypers as well as Berlage 'gave great momentum to the idea of architecture as culture', Fanelli, p.345.
10. Catherine Bauer's 1934 remark about a rational element in Wijdeveld's projects seems inaccurate: "Not until Wijdeveld and Le Corbusier and other post-war architects did anyone really analyze the multiple dwelling to see what its potential virtues and real economies, if any, might be." Bauer, Modern Housing, p.56.
12. Tummers (p.305) writes that the project may have been influenced by Bruno Taut's 'Architektur Programm' of 1918, which called for the building of 'volkshuizen'. See 'Programme und Manifeste', nr.1 Bauwelt Fundamente (Berlin, 1964).
15. The concentric and radiating nature of the plan should be compared to De Bazel's plan for a World Capital, 1905, The Hague, where principles of theosophy influenced the planning conception.
16. Wendingen, No.3 (1923), p.3.
17. This connection was pointed out by D. van Woerkom of the Documentatie Centrum voor de Bouwkunst, Amsterdam. This opinion is supported by the fact that many of the same illustrations used by Duiker in Hoogbouw had appeared in the high-rise issue of Wendingen in 1923.
18. J.B. van Loghem, Bouwen (Amsterdam, 1932), p.46.
23. Duiker, Hoogbouw, pp.11-12.
25. J. Duiker in Het Volk, January 1933.
26. Ibid.
27. Duiker, Hoogbouw, p.20.
29. Jelles and Albert, Duiker, pp.1, 2. 'Collaboration with Wiebenga who was a civil engineer seems to have cleared the construction with reinforced concrete.' The caption under the illustration of the glass skyscraper in the 1923 Wendingen issue on high-rise reads, 'Mies van der Rohe, Holland'.
31. This and the following information about the investigation is contained in Rapport van de Commissie voor den Hoogen Bouw.
32. Ibid., pp.15-16.
33. Ibid., p.17.
34. See Alfred Roth, The New Architecture (Zürich, 1946), pp.91-104 for a technical description of the Bergpolder dwellings and a comparison with the Plaslaan high-rise block.
35. In 1934 an industrial worker earned f. 23.50 net per week. Frak, 'Zeventig jaar woningwet', p.41.
37. Ibid., p.47.
42. Subcommittee of the Jury of the Inexpensive Workers' Dwellings Competition, Rapport van het onderzoek van de plannen voor hoogen bouw, unpublished manuscript (Amsterdam, 1937), p.3.
44. A similar point has been made with respect to the innovations at Watergraafsmeer in 1924. P.K.A. Pennink and W.J. Bruyn, 'Het Betondorp', p.7.
Un fortunately, there is little written in English about Dutch architecture as a whole, let alone specifically about housing. However, because of housing's key role in the development of twentieth century architecture in Holland, some attempts to evaluate housing progress have been made in general studies. R. Blijstra's *Dutch Architecture After 1900* (Amsterdam, 1966) and *Town Planning in The Netherlands Since 1900* (Amsterdam, 1964) are only sketchy outlines, but contain a number of helpful Dutch insights. The pamphlets in the series *Art and Architecture in The Netherlands* (Amsterdam, 1960s) about Merkelbach, Rietveld, Van Eesteren, Van der Vlugt, and others are not particularly scholarly, and serve especially to point out the need for further research and documentation about a number of key figures.

During the past five years there has been increasing interest among Dutch architects and historians about their own architecture, but until very recently foreign interpretations have enjoyed more influence. Giovanni Fanelli's book, *Architettura moderna in Olanda* (Florence, 1968), with a short English summary, contains a useful chronological bibliography as well as biographical information about major Dutch architects, and despite some errors is one of the most useful books summarizing Dutch architecture in the period 1900-1940. Reyner Banham has focused on two major aspects of Dutch architecture, the Amsterdam School and *De Stijl* in his *Theory and Design in the First Machine Age* (New York, 1960, 1970), although much of his commentary needs to be closely scrutinized with actual housing projects in mind.

Henry Russell Hitchcock, one of the first critics to recognize the importance of Oud, has on various occasions written about Dutch architecture, in portions of *Modern Architecture, Romanticism and Integration* (New York, 1929), *The International Style: Architecture Since 1922* (with Philip Johnson, New York, 1932) and *Architecture, Nineteenth and Twentieth Centuries* (Baltimore, 1958, 1968). It is unfortunate that Hitchcock's early interest in Oud has not stimulated others to more thoroughly document and analyze the work of this key architect. Gideon's chapter in *Space, Time and Architecture* (Cambridge, Mass., 1941, 1967) on Berlage's planning in Amsterdam is a useful contribution, although the full context of Berlage's work was not sufficiently explained. Other English language materials about Dutch architecture often focus on Expressionism, for example, the chapters about the Amsterdam School in Dennis Sharp's *Modern Architecture and Expressionism* (New York, 1966) and Wolfgang Pehnt's excellent *Expressionist Architecture* (London, 1973). In addition to Hitchcock and Gideon, the standard works of Benevelo, Collins, Jencks, Whittick, and Zevi should be consulted for an overview of the relationships between Dutch and other European developments.

The few English language monographs on Dutch subjects and personalities, including Theodore Brown's *The Work of G. Rietveld, Architect* (Utrecht, 1958), H.L.C. Jaffé's *De Stijl 1917-1931* (Amsterdam, 1956), and P. Singelenberg's *H. P. Berlage: Idea and Style* (Utrecht, 1972) are important focused studies, but do not address very many housing issues. Written material in English about Dutch housing in particular is even scarcer than commentary on individuals. Catherine Bauer's *Modern Housing* (Boston, 1934) still is the best background work about European housing. Other interesting but less useful books in English with chapters on Dutch housing are Edith Elmer Wood's *Housing Progress in Western Europe* (New York, 1923) and Elizabeth Denby's *Europe Re-housed* (London, 1930). More recently, Roger Sherwood has made an exhibition and catalogue on *Modern Housing Prototypes* (1971), in which several Dutch examples receive attention.

Among the most important writings on Dutch housing, unfortunately not translated into English, are portions of the exhibition catalogue *Bouwen '20-'40* (Eindhoven, 1971) and the various articles about the 1902 Housing Act by R. Geurtsen, J. Nycolaas and N. Luning Prak in numbers 9, 10, and 11 of the periodical *Plan* (1972). A series of useful drawings showing Dutch housing development has been compiled.

The most basic specific references in Dutch about housing are *Beter Wonen* (Amsterdam, 1938) and *50 Jaar Woningwet* (Alphen a/d Rijn, 1952). Especially useful for their illustrative material are *Arbeiders Woningen in Nederland* (Rotterdam, 1921); J.H.W. Leliman, *Het Stadswoonhuis in Nederland gedurende de laatste 25 jaren* (The Hague, 1924); and the series *Moderne Bouwkunst in Nederland* (Rotterdam, 1930s). Three specific sources deserve much wider attention outside of Holland than they have received: H.P. Berlage, *Normalisatie in Woningbouw* (Rotterdam, 1918); J. Duiker, *Hoogbouw* (Rotterdam, 1930); and F. Ottenhof, ed., *Goedkoope Arbeiderswoningen* (Rotterdam, 1936).

The various Dutch periodicals, whether radical or conservative, theoretical or technical, have provided diverse and important information about housing. Among these are *Architectura, Bouwkundig Weekblad, Het Bouwbedrijf, Tijdschrift voor Volkshuisvesting en Stedebouw,* and *De 8 en Opbouw.* The more widely-known periodicals *Wendingen* and *De Stijl,* while having less material addressed specifically to housing than the others, are basic historical sources. Current Dutch periodicals, such as *Forum, Ons Amsterdam, Plan,* and *Wonen TA/BK* continue to publish numerous articles about pre-1940 housing, to which social and political analyses are frequently applied.
Index

Numbers in *italics* refer to page numbers on which illustrations are located; projects are referenced by the city in which they are located as well as by the name of the architect. When important and of special interest, notes are referenced by first indicating the page on which the note appears, followed by the chapter to which it belongs, and the number of the note. Thus 138(14) indicates page 138, chapter 14, note 44.

Agneta Park. see Delft

Ainsworth, T., 21

Alcove sleeping area, 28, 30, 32, 36-38, 67, 80, 104

Amsterdam

Blauwe Zand, 62

bad housing conditions, 16, 28, 29, 31-32, 69, 90, 105, 116

building regulations, 33, 36, 116

burgher housing, 16, 18, 48

Expansion Plan of 1866, 38

Expansion Plan of 1915, 36, 38, 42, 43, 49, 59, 62, 69, 90, 105, 116

Expansion Plan of 1934, 38, 41, 96, 100, 123-124, 131

Expressionism, 131. See also Amsterdam School

high-rise construction, 116, 117, 122-123

housing associations, 22, 23, 24, 29, 30, 37, 38, 49, 50-52, 68, 70, 71, 129-130

Housing Congress of 1918. see Housing Congress (1918)

Housing Council, 64, 67, 71, 104

Indischebuurt, 71, 103

Landlust, 86, 106, 129-130, 131

municipal housing. See Nieuwendam, Oostzaan, Transvaalbuurt and Watergraafsmeer

Nieuwendam, 59, 62, 64, 105

Oostzaan, 59, 62, 64, 85, 86, 105

Open-air school, 122

Plan for the Year 2000, 39, 115

private sector housing, 52, 88, 99, 117

Spaarndammerbuurt, 41, 49, 50-51, 69, 106

Transvaalbuurt, 62, 64, 65

Vondelpark, 112, 113, 114-115, 119

Watergraafsmeer, 59, 62-63, 85, 97, 92, 105, 120, 126, 138(14)

Zaanhof, 69, 70


*Archiectura et Amictia*, 49

Arnhem, 20, 22, 23, 38, 69, 133(4)

Arts and Crafts movement, 114

Baanders, H. A. J., 58, 134(7)

Bachelard, Gaston, 30, 32

Bakema, J. B., 9, 136(10)

back-to-back dwelling, 28, 29, 32, 106

Baroque, 18, 39, 42

basement dwellings, 28

Bauer, W., 59

Bauhaus, 115

Bazel, K. P. C. de, 39, 57, 59, 64, 114, 137(14)

bedstede (cupboard bed), 28, 29, 30, 37, 67

Behme, A., 114

Belgium, 19, 54

Bergen 49, 85

Bergpolder. See Rotterdam

Berlage, H. P.

Amsterdam Beurs, 89

*Arbeiders Woningen in Nederland* (1921), 96

Expansion Plan for The Hague. See The Hague, Expansion Plan

Expansion Plan for Amsterdam South. See Amsterdam, Expansion Plan of 1915

as a founder of CIAM, 103

garden cities, 59-62, 43, 135(9)

Berlage, as a planner of Vreewijk

*Gedanken über Stil* (1905), 46

housing projects, 64, 65, 66

influence of Camillo Sitte on, 17, 42-44, 66-67, 69-70, 72, 80, 85-86, 90, 105, 116

influence of Raymond Unwin on, 64, 65, 66

influence on followers, 13-14, 44, 46, 53, 59, 89, 99, 131, 136(11)

NORMALISATIE in Woningbouw (1918), 46-48, 62-63, 87, 89-90, 136(11)

as a planner of Vreewijk, 59, 60, 62, 105, 135(9)

*Schoonheid in Samenleving* (1919), 47

socialistic beliefs, 46-48, 87, 101, 106

trip to United States, 112

Berlin, 54, 114; Friedrichstrasse Competition 115

Blauw, C. J., 101

Blaricum, 55

Boeken, A., 103

Boeijinga, B. T., 86

*Bond van Nederlands Architecten*, 103

*Bond van revolutionair-socialistische intellectuelen*, 101

Boureville (England), 24

Bouwmaatschappij tot verkrijging van eigen woningen, 24. See also Delft, Agneta Park

Brinkman, J. 109, 122, 124, 125

Brinkman, M., 45, 71, 74, 75-78, 79, 83, 86, 124, 136(10)


Broek, J. H. van den, 64, 85, 109, 110-111, 126, 127, 130

Brussels, 103, 105, 123

building regulations, 28, 33-34, 36, 64, 116

Bussum, 64; Walden, 55-56, 59, 135(9)

Chicago, 112

Chicago Tribune Competition, 115

Clerq, D. de, 54-55

Clerq, M. P. de, 74

Commissie voor de Goedkope Woning, 128

Commissie voor de Hoogena Woningbouw, 122-124, 128


Competition for Inexpensive Workers' Dwellings, 64, 96, 105, 120, 126, 127, 128

Congrès Internationaux d'Architecture Moderne (CIAM), 45, 53, 95-96, 103, 105

Crédit Mobilier, 21

Cubism, 103
cupboard bed. see bedstede

cuppers, J. P. H., 114, 137(14)

de 5, 60, 63-64, 96, 101-103, 105, 115, 127

De 8 en Opbouw, 102-103, 108

Delft, Agneta Park, 24, 25-26, 48, 50, 52, 55, 92, 131, 133(4)

Begijnhof, 69

Delftse School, 17

141
Wijdeveld, H. T., 39, 46, 52, 59, 112, 113, 114-116, 119, 126, 137(14)4-5, 137(14)8
Willem I, King, 19
Wils, J., 114
windows, 17, 101
wolkenkrabber, 116, 117, 122-123, 126
Woningwet. see Housing Act of 1902
World War I, 47, 64
Wright, F. L., 82, 87, 112, 114, 135(8)20

Zeilenbau, 129. See also strokenbouw
Zocher, J. D., 24, 25-26
Zonnecommissie, 103, 105
Zurich, 46, 137(12)8
Zwiers, L., 96, 105