

DUPLEX HOUSING IN SLOTERMEER

CASE ROLAND HOLSTBUURT

Thesis plan & Research Report



 TU Delft

 MIT
MODIFICATIE INTERVENTIE TRANSFORMATIE

Thesis plan & Research report
Duplex housing in Sloterveer
Case Roland Holstbuurt

Graduation Studio Transforming neighborhoods
Technical University Delft, Faculty of Architecture

Delft, 19 April 2013

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*Figure 1 on title page: Roland Holstbuurt Sloterveer Amsterdam, view on courtyard Leopoldstraat 1950-1965
(via online Archive Amsterdam Beeldbank figure code 10009A005144, accessed on 10-10-2012)*

Colophon:

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INTRODUCTION

This report forms the research and thesis plan of my graduation project of the master Architecture at the Technical University of Delft within the section of ®MIT (Modification, Intervention, Transformation).

Personal motivation

Studying architecture for several years after obtaining my degree Bachelor of Built Environment and working aside as a roofer I have obtained a wide view in the attitude and craftsmanship of the disciplines involved in the erection, maintenance and modification of buildings. My bachelor graduation project, Energy neutral monuments – case Fogelsanghstate, was my first confrontation between sustainability, continuity and change, and culture, tradition and preservation, which in first instance were perceived as classing fields of demands. This duality, and perception of sustainability in terms of performances on energy and materials, was the first step in the alternation of my perception of the built environment and sustainability. Except perceiving it as the valorization of science and influences of socio cultural motives concerning a program I became interested in the power of devotion of the urban tissue and the buildings.

Which, I believe, is the primary concern and power of the built heritage.

Current society is highly dynamic characterized by consumption, individualism, heterogeneity, emancipation, telematics, mobility and pluriformity on which the built environment has to respond on the one hand. On the other hand the importance of the existing fabric being subject to devotion and as a carrier of tradition and history grows mutually. In which I believe finding continuity based on the DNA of what is, is a highly sustainable method. The intermingling of continuity and change is one of the primary concerns of the ®MIT faculty.

Since the economic crisis slowly seems to transform into a stable condition professions within the field of the built environment, like architects, are faced with new challenges. The financial conditions of involved stakeholders sets pressure on one-dimensional 'demolishment and built new' assignments in which the practice shifts towards modifying, intervening and transforming in the existing building stock. About two third of the architectural practice in The Netherlands nowadays is concerned with the change and

continuity of the existing building stock¹. One of the biggest assignments are the city expansions erected in the rebuilt period after the second world war, which since the nineties cope with complex social issues and degeneration. The economic crisis put restructuring developments for these areas, based on large investments for regeneration by demolition and building the new, on hold, which possibly results in further degeneration.

The Msc3 studio Transforming Neighborhoods by the chair of Restoration, Modification, Intervention and Transformation (®MIT) deals with these complex social issues and degeneration processes of post war areas. The current studio is the fourth graduation track which is concerned with these postwar housing areas. The current one is focused on the postwar expansion of Amsterdam. Previous studios studied also postwar areas in The Hague and Rotterdam. Thorough research based design with the awareness of cultural historical significance in order to discover degraded housing areas as potential heritage is at the primary concern for regeneration.

¹ Website RMIT organization via <http://www.bk.tudelft.nl/over-faculteit/afdelingen/rmit-en-mediastudies/rmit/organisatie/>, accessed on 20-10-2012

Project introduction

The Western Garden Cities of Amsterdam built in the rebuilt period after the Second World War, which is one of the biggest extension plans in the Netherlands erected, faces complex social issues and degeneration. Other large expansion plans are for example The Hague South West and Rotterdam South. Current restructuring developments are put on hold due to the new economic situation and corporations have generally minimalized their activities into management and maintenance.² Sloterveer, as being one of these areas, erected as one of the first parts of the General Expansion Plan (AUP, Algemeen Uitbreidingsplan) is mostly retained by the urban renewal period in which even a large part is recently declared as heritage, called the Van Eesteren Museum. Plans were made to regenerate the area by means of large scale demolition and building new housing estate, in which this could foresee in a more differentiated housing stock as one of the key arguments to solve further degeneration.³

² *Stadsdeel Nieuw-West bewonerskrant mei 2011, via www.nieuwwest.amsterdam.nl/publish/pages/378409/nieuwwest_bewonerskrant_sloterveer_4_mei.pdf (accessed on 20-10-2012)*

³ *Timár (2009)*

One part of the stock seen as problematic by several stakeholders like the housing corporation and the municipality, is the duplex housing, which forms about twenty percent of the number of dwellings in Sloterveer. Several enclaves are conducted as duplexed ground-bound single family housing in courtyard configurations. In time of erection these were meant as a temporary solution to overcome the housing shortage. After ten years the duplex dwellings would be simplexed which until this day in general did not occur. Over time, due to the filtering down process, their position on the housing market changed. Nowadays, therefore these areas are mainly characterized by small and degenerated typologies with relatively cheap rents and inhabitants with low financial potential. There is an high mutation rate in change of tenants⁴. One of these neighborhoods, the case study for the graduation assignment, is the Roland Holstbuurt. It represents the typical abstract of the development of duplex housing in a post war urban setting through time.

This graduation project tries to find an answer on how to deal with these areas by means of architectural solutions. In the first quarter thorough research on the duplex strategy and

⁴ *Timár (2009)*

the Roland Holstbuurt since the erection to the initial future plans, on urban, architectural and technical scale is elaborated. After this initial research weaknesses, strengths, opportunities and threats are drawn in order to derive design objectives and principles for the further design driven research in the second quarter of the graduation studio.

Report structure

This report, containing the thesis plan and the research and analysis of the first quarter of the graduation studio, has primarily two parts. The first forms the graduation outline and the second forms the actual research which is conducted as input for further design research the upcoming quarter.

In the graduation outline the aims of the project, the approach for the research and analysis and the redesign, and the societal and scientific relevance are explained. In this the problem statement and the research question are defined as well as the preliminary goals for redesign. In the second part, the actual research and analysis of the first period is handled in depth consisting out of two main parts which combines a thematic analysis on the theme with a situational analysis on the case. On which conclusions are drawn as input for the second phase of the graduation studio.

OUTLINE GRADUATION ASSIGNMENT

AIMS OF THE PROJECT

Problem statement

Before, during and after World war II the government was highly concerned with social housing and its quality on the one hand and provide in the quantity on the other. After the war the duplex housing principle was emerged and elaborated as sustainable short term strategy to solve the housing shortage. Although in time the shortage in social housing was highly underestimated and the principle was therefore erected under false perspectives. The context of the housing after the war was the movement in which the garden city principals, de 'wijkgedachte' and most important 'Het Nieuwe Bouwen', light, air and space where important parameters in which standard housing typologies were developed. In which quality seemed to be the primary concern and secondarily the quantity problem.

Most duplex houses where never simplexed because the conditions after ten years on the housing market where different than anticipated on. Nowadays, after passing the 'fifty years' boundary, most duplex housing still exist. Over time its position on the housing market altered due to the filtering down

progress for which it obtained a different position on the housing market. The typologies are outdated, the technical state is poor, but the rents have become relatively cheap. Over time it attracted therefor people from lower income groups and small households with low economic potential or people for a short stay like students. The mutation rate is therefore relatively high. Except for the technical and spatial deprivation of the stock these neighborhoods are facing multiple problems on the sociocultural and socio-economic level which partly has to do with the characteristics of the inhabitants.

Since the economic crisis put the renewal period on hold the housing corporation postponed the plans of phased demolition and building new typologies, which mainly characterizes the future of the areas with duplex housing. Aiming on diversification in typologies and intensification of housing, in which the hierarchy of the initial urban tissue of the stamp configurations seems to be neglected. Since the future looks different it means that on the physical level the stock will debrief more and thereby probably catalyzes the existing problems on sociocultural and socio-economical level.

Although these areas are considered to be of cultural historical value representing well the principals of het 'Nieuwe Bouwen' en the Western Garden Cities, the performances of the infill of the principle scales of typology towards the green courtyards towards the neighborhood as a whole, does not seem to meet temporary demands. In which there are discrepancies between these layers instead it synergizes each other. Outdated typologies, indistinctive green island and a monotonous repetition of housing ensembles at first glance.

Simplexing the housing, as initially was meant to happen, in which it would become a neighborhood with single family housing, is nowadays considered by the housing corporation to be not feasible on economic grounds, considering the housing stock as one fold. Ignoring the probable potential of the layering of typology to allotment to urban tissue as well as the possible cultural historical values it gained over time which probably could add extended value.

One of these areas which represents well the generic problems of post war neighborhoods with horizontal split duplex housing in a courtyard configuration is the case study, the Roland Holstbuurt in Sloterveer, Amsterdam.



Figure 2 Roland Holstbuurt typical entrance yard, 2008
(www.google.nl/maps, accessed on 12-10-2012)



Figure 3 Roland Holstbuurt typical back façade, 2008
(www.google.nl/maps, accessed on 12-10-2012)



Figure 4 Roland Holstbuurt typical front facades, 2008
(www.google.nl/maps, accessed on 12-10-2012)



Figure 5 Satellite view Roland Holstbuurt, 2008 (www.google.nl/maps, accessed on 12-10-2012)

Research question

During the first research and analysis of the duplex housing principles and the case study on which the problem definition was drawn a research question was developed. Formulating the research question, the actual research was emerged within an highly iterative process in time. Primarily the theme duplex housing and the location, The Roland Holstbuurt, where clear. Although, during research and the question to be answered new findings altered the direction as well as the initial question resulting in a final research question as formulated below.

Research question:

*How can postwar **duplex housing neighborhoods in a courtyard configuration**, like the Roland Holstbuurt, be **improved** by means of a **toolbox for phased revitalization**?*

The question, although it focusses on a principle method for redesign, relies on the merits of duplex housing neighborhoods, in search for potential of the DNA, which could give direction to a suitable program for gradual revitalization in which the current inhabitants are not neglected. Initially these are the duplex

housing principle and its execution. The used terms and its context are defined as following:

Definitions:

Merits Duplex strategy: The duplex strategy, splitting a single family house into two houses for a short period concerns an architectural and time-based strategy in one to overcome the housing shortage problem. The architectural strategy concerns the typological configuration of the floor plans and its connection with the surrounding, in which transformability of the floor plan is of primary concern.

Duplex housing neighborhoods in courtyard configuration:

The neighborhood is physically defined by the spatial boundaries of the configuration of the sum of stamp allotments with duplex housing in which it is considered to be a whole according the initial principals of 'Het Nieuwe Bouwen', in which these areas are erected, including its current inhabitants.

Improvement duplex housing neighborhoods:

The improvement of duplex housing neighborhoods is defined by the conclusions drawn upon the first part of the research phase on duplex housing neighborhoods in which the problems of these areas become clear and defined as well as their potentials as input for

the second phase of research by design regarding the toolbox for phased development.

Toolbox for phased development:

Revitalization in which is emphasized on the decoupling of the sojourn levels of the *principal built up of the neighborhood* which are in general living environment (urban tissue), living ensemble (carrier) and dwelling (interior) in which these are considered to be independent levels which can have their own cycles of change and improvement. By decoupling these fields other forms of revitalization above a traditional manner of design and execution becomes possible, in which the more mutual change is the primary advantage. In which a more consumer based approach is possible in which the revitalization of the stock can be catalyzed by micro urbanism interventions.

Principle built up: The principle built up is defined by the layers which form the DNA of such areas which are initially: living environment (neighborhood-courtyard), living ensemble (courtyard-transition) and dwelling (transition-typology).

Sub questions research phase Q1& Q2:

In order to answer the research question the following sub questions are formulated .

Subquestions Q1 (research for design):

Main sub question: What are the merits of the duplex principle elaborated in Sloterveer and more specific the case the Roland Holstbuurt?

Duplex housing principles:

- What is the duplex principle and why was it elaborated? And why is the simplex strategy in general after ten years not conducted?
- What were the characteristics of duplex housing typologies and its relation to urban configurations?
- What was the social and economic characteristics of the initial inhabitants?
- How was the principle evaluated in time of erection?

Duplex housing in practice:

- How was duplex housing elaborated in Sloterveer as part of the Western Garden cities and to what extent is their position changed over time?
- What are the generics of these areas concerning urbanism, architecture and

technique? And how is this altered over time?

- What were characteristics of the inhabitants and what are these nowadays?
- What were the initial future plans of these neighborhoods?

The Case Roland Holstbuurt:

- How did the architect in the Roland Holstbuurt elaborate the duplex principle?
- What were the distinctive characteristics on urban architectural and technical level and how did this alter over time?
- What is the socio-economic status of the current inhabitants?
- What are the initial future plans for the neighborhood?

Subquestions Q2 (design for research):

Main sub question: What are the possibilities of duplex housing neighborhoods for phased and consumer based revitalization by decoupling the sojourn elements?

The sub questions for the second phase of design for research will be fully defined during the second period.

Redesign objective

The initial research was focused on the understanding of the duplex principle and derive the 'DNA' of the case study in which the research and analysis was safe of a specific design direction with an actual idea of program. As derived from this initial research a deviation could be made on three scales of layers in generic terms of courtyard configurations of duplex housing. Bottom-up: typology and transition (dwelling), transition and courtyard (living ensemble), and courtyard and neighborhood (living environment). These are initially hierarchal in scale, drawn upon the merits of the principle functioning of these areas, its 'genius loci'. As result of the first research the discrepancies between the program elaborated through the typology and its inhabitants and the program of the courtyards became clear in which the several transition zones play an important role.

Regarding the economic new situation and the initial research the main objective is to develop an architectural strategy generic for improvement of existing neighborhoods with ground bound duplex housing horizontal split in courtyard configurations in which the Roland Holstbuurt is the case study.

The goal is to improve the living quality of such areas through urban and architectural spatial solutions and the distinctive characters of such areas. This by continuation and extrapolation of the quality, the infill, of the layering of the 'DNA' of the place.

Concerning the economic conditions and the current inhabitants this could be done through a time based strategy in which the area can change mutually in which the typology and its inhabitants, the transitions and the program of the collective yards can be altered in order to make this layering more strong, interactive and distinctive.

Of importance is especially the strategy for revitalization regarding its current image and the economic situation. By decoupling the layers of dwelling and transition (dwelling/interior), transition and courtyard (living ensemble/carrier) and neighborhood and transition (living environment/urban tissue), gradual revitalization becomes possible. Which gives the advantage to create a positive future perspective with potential to overcome the bad image which it has nowadays. An ongoing design and execution process which probable could catalyzes its own revitalization. Although, with regard to the second phase of design for

research possibilities for gradual change on the sojourn scales should be investigated.

Although, with regard to the program, this should be drawn up on the merits and potentials of the place and in which it should not be understood as classing demands, but in which a synergizing effect should be generated, which would be de ideal effect for sustainable continuation of such areas.

APPROACH OF RESEARCH & REDESIGN

Research methodology

Abstract methodology quarter one

In order to answer the research question the initial research is considered and conducted as being twofold: situational research on the case study and thematic research on the theme duplex housing. Parallel, the problem and the question to answer were elaborated. In first instance a very intuitive process in which research, problem and question are highly intermingled. During the process all these fields become mutually more defined and finally frozen. This way of process is illustrated in figure 6. In general my process is top-down combined with deductive reasoning. Which is reflected throughout the research. Although this is represented through the elaboration and communication in fact it is an highly continuous intuitive shifting on all scales, an iterative process, with continues reflection. Furthermore the wanted an available information in the research also steers the processing and direction.

Specified methodology quarter one

The first step was intuitive, feeling a discrepancies of duplex housing and its surroundings after a visit at the case study in the introduction in practice. For which the case and theme where defined.

The first step in the research was to understand the theory of the duplex principle thoroughly and thereby its architectural dimension. This is researched by literature and archive studies. Chronological situational research started for the case study for which moreover general literature study for the urban level and research and analysis by site visits and archive photos was conducted. During research the correlation between these two initial fields became more intermingled and defined. And therefore the direction of the research.

With regard to these two domains to determine the distinctive characteristics of the Roland Holstbuurt it was of high importance to understand the generic principles of the set-up of these areas in correlation with the theme. Therefore a comparison research of areas with similar characteristics was conducted in order to get a better understanding of generic principals on the one hand and the distinctive

characteristics of the Roland Holstbuurt on the other hand. Basically this was done by literature study to understand the context, and mapping and field research to understand the current situations on generics and specifics.

This enabled getting a good understanding of the duplex principle, the elaboration and its generic context and the distinctive characters of the Roland Holstbuurt and its urban context. On which adequate strengths, weaknesses, opportunities an threads could be drawn for the second phase of research and design. The abstract of the conducted research is illustrated in figure 7.

Top-down deductive processing

Intuitive Scout Define

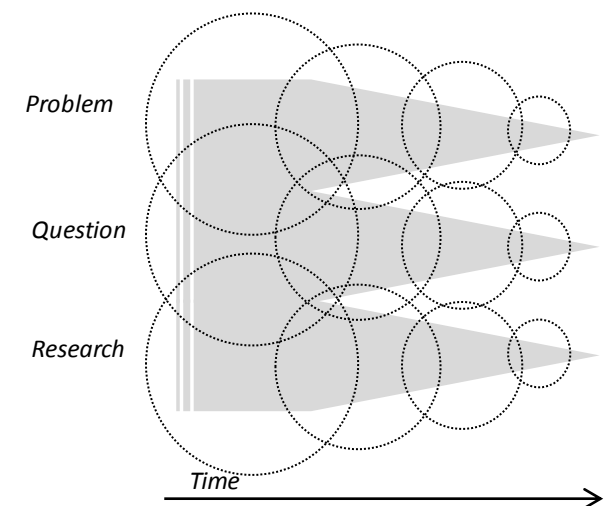


Figure 6: Abstract methodology of research Q1 (author 2012)

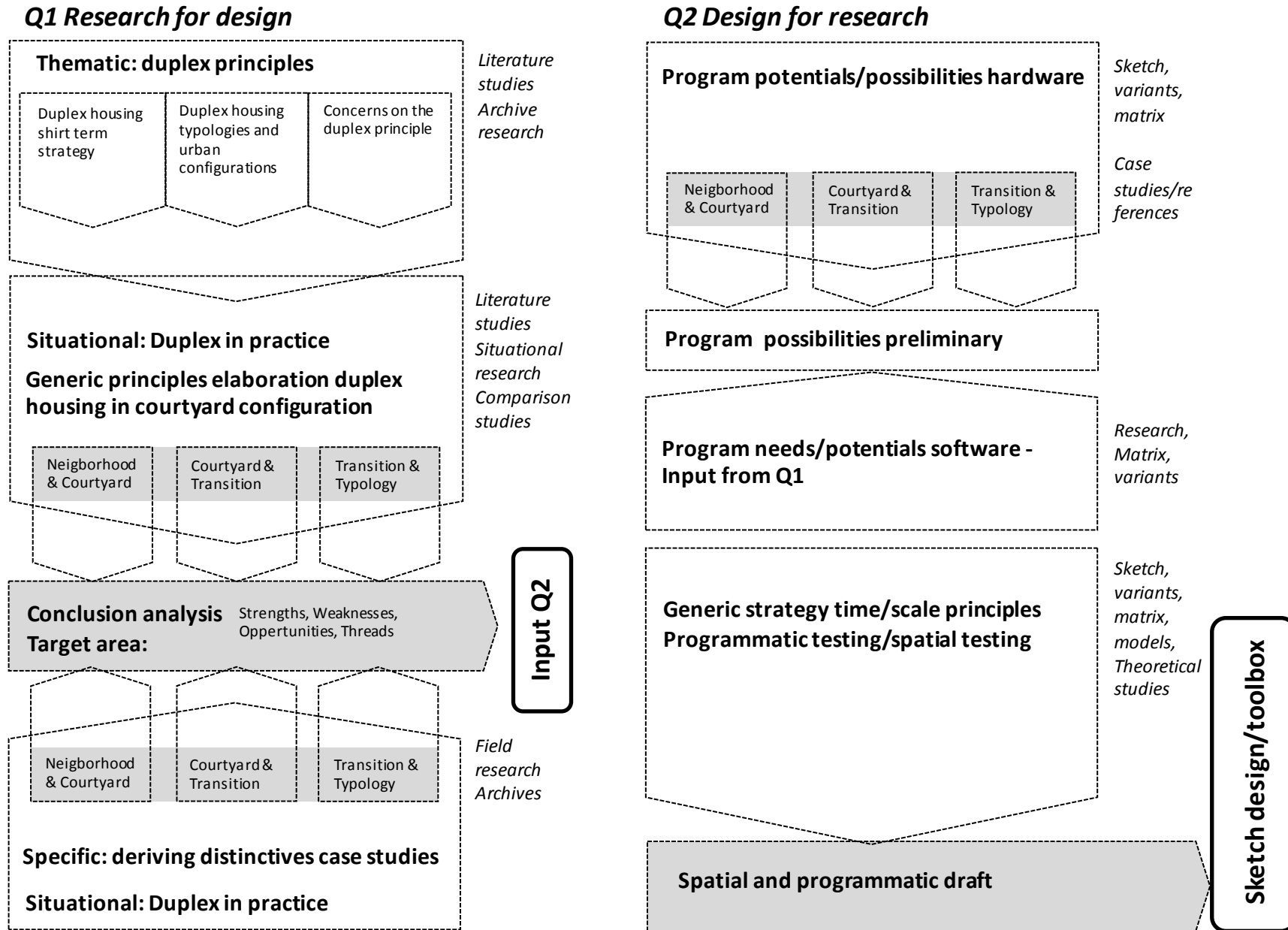


Figure 7: Research to design an design to research abstract quarter one and two graduation project (author 2012)

Design methodology

Abstract methodology quarter two

Initially the design assignment tries to provide architectural spatial solutions in extrapolation on the initial conducted research. The second stage of design research will focus on the possibilities for phased change of duplex housing neighborhoods. First the possibilities of the existing hardware, the urban fabric and the buildings to foresee in programmatic needs should be researched on the levels of urban tissue, carrier and interior. Secondly the possibility how this could foresee in phased change – in which these three layers can be altered individually. These two fields then should be combined into one time based architectural strategy.

In this, the aspects are intermingled and will become more defined and finally frozen at the end of the design to research phase. This way of processing is in abstract highly the same as the processing of the initial research phase as illustrated in figure 6. Top down processing guided by inductive reasoning will decide which methods will be used for adequately processing information.

Specified methodology quarter two

The actual research and design methodology is illustrated in figure 7.

In the second phase on the one hand a programmatic draft should be made for the wished diversification on the level of housing typologies, the courtyard and the neighborhood.

Secondly it should be investigated to what extend individual change of the typology can foresee in the desired program and to what extend it can be reached by collective change expanding the carrier of the housing ensembles.

By using a matrix it will enable the design research to draw potentials of the existing stock on the one hand and the wanted program, as external parameter on the other hand. Thereby several solutions on the diverse scales can be easily compared and therefore validated. The research matrix more defined with conditions and focal points is illustrated in figure 7b.

Hardware - Possibilities

- 1 - Interior individual house
- 2 - Carrier living ensemble
- 3 - Living environment

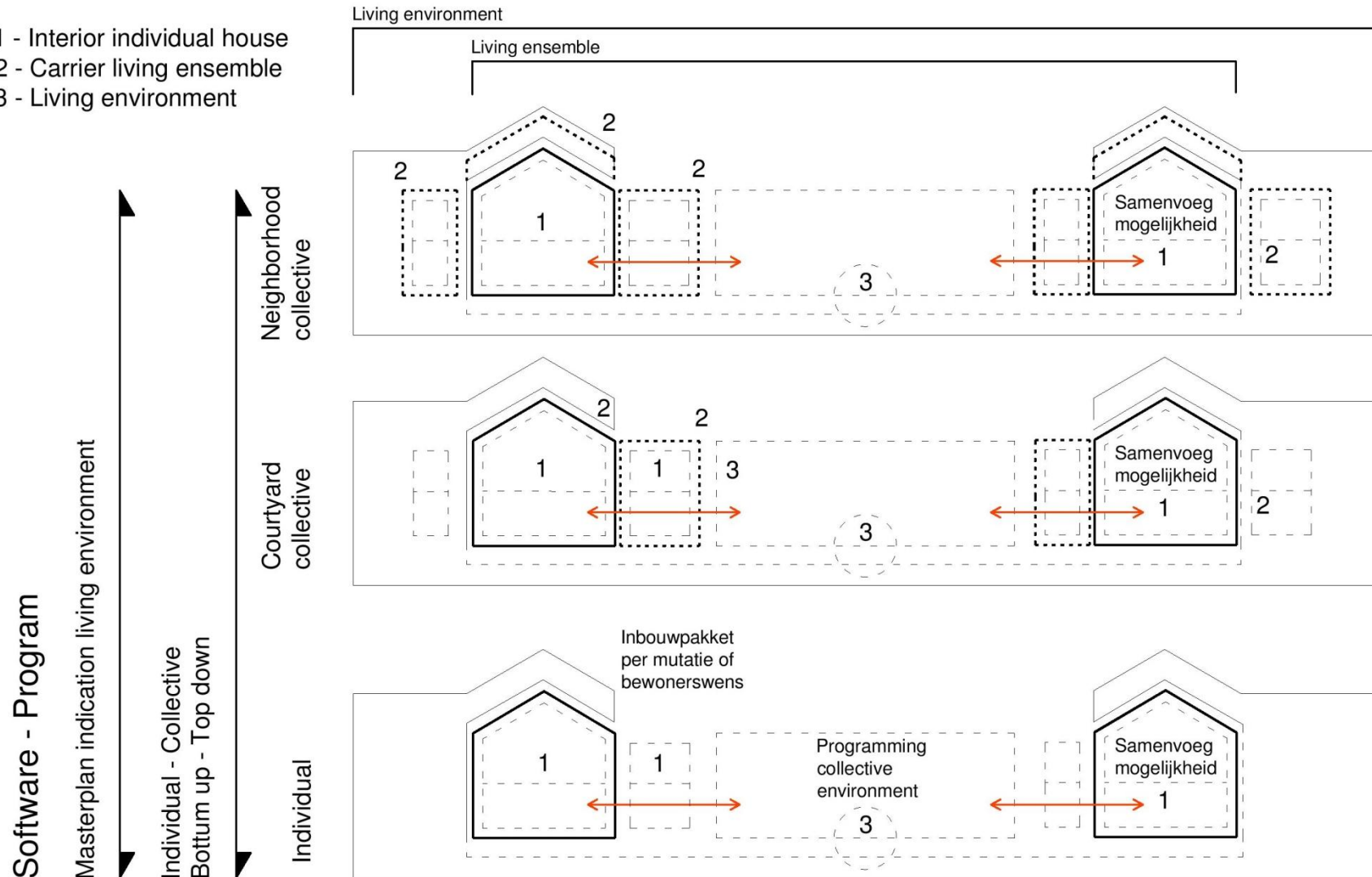


Figure 7b: Research matrix - design to research methodology (author 2013)

RELEVANCE

Scientific relevance

The conducted research and design approach and goal in first instance adds information on the body of knowledge about postwar housing in the Netherlands on the subject of duplex housing principles and its elaboration in generic.

Secondly it adds more specific information about the case study, The Roland Holstbuurt, an elaboration of a post war housing neighborhood of vertical split duplex housing in courtyard configurations.

Regarding duplex housing as part of post-war housing little research is done on the principle itself, an architectural time based strategy, and its merits on architectural scale in relation to the urban scale. In the first research phase these relationships are investigated.

Except the investigation on the principles and merits of the duplex housing and the case study, the intended approach for redesign and the redesign goals can be beneficial as reference for areas with equal characteristics.

This, since research seeks for time based architectural strategies to revitalize duplex housing neighborhoods by means of phased change, probably with advantages regarding the current economic circumstances, with a consumer based approach.

Societal relevance

The social relevance lies primarily in the fact it's concerned with the current social problems of duplex housing neighborhoods in a courtyard configuration with horizontal split duplex housing. In which the intended approach for 'redesign' is bottom-up and consumer based and therefore strongly related to the current inhabitants. Inhabitants which in general have an economical poor position for which it is for a large part the reason to rent a duplex house since these rents are relatively low.

Thereby the urban an architectural fabric is subject to devotion and can be considered as valuable, especially for the elderly people which form a relative big part of inhabitants in such neighborhoods. The research and design approach therefore is especially concentrated on the potentials of the existing neighborhoods.

Furthermore, by defining a plan for revitalization aiming on gradual change the image of such neighborhoods will be altered since future perspectives come in sight. In which it becomes possible to make a housing career within the neighborhood or even dwelling. Which therefore also support the social sustainability of such neighborhoods.

Although, ethical problems can arise when altering the stock in which it could not be beneficial for all current inhabitants. Since it is aiming on bettering the situation for the majority and moreover bettering the potential of the area. Since any intervention could probably mean an upgrade of the area this influences the economical strata which could finally lead to higher rents.

PLANNING

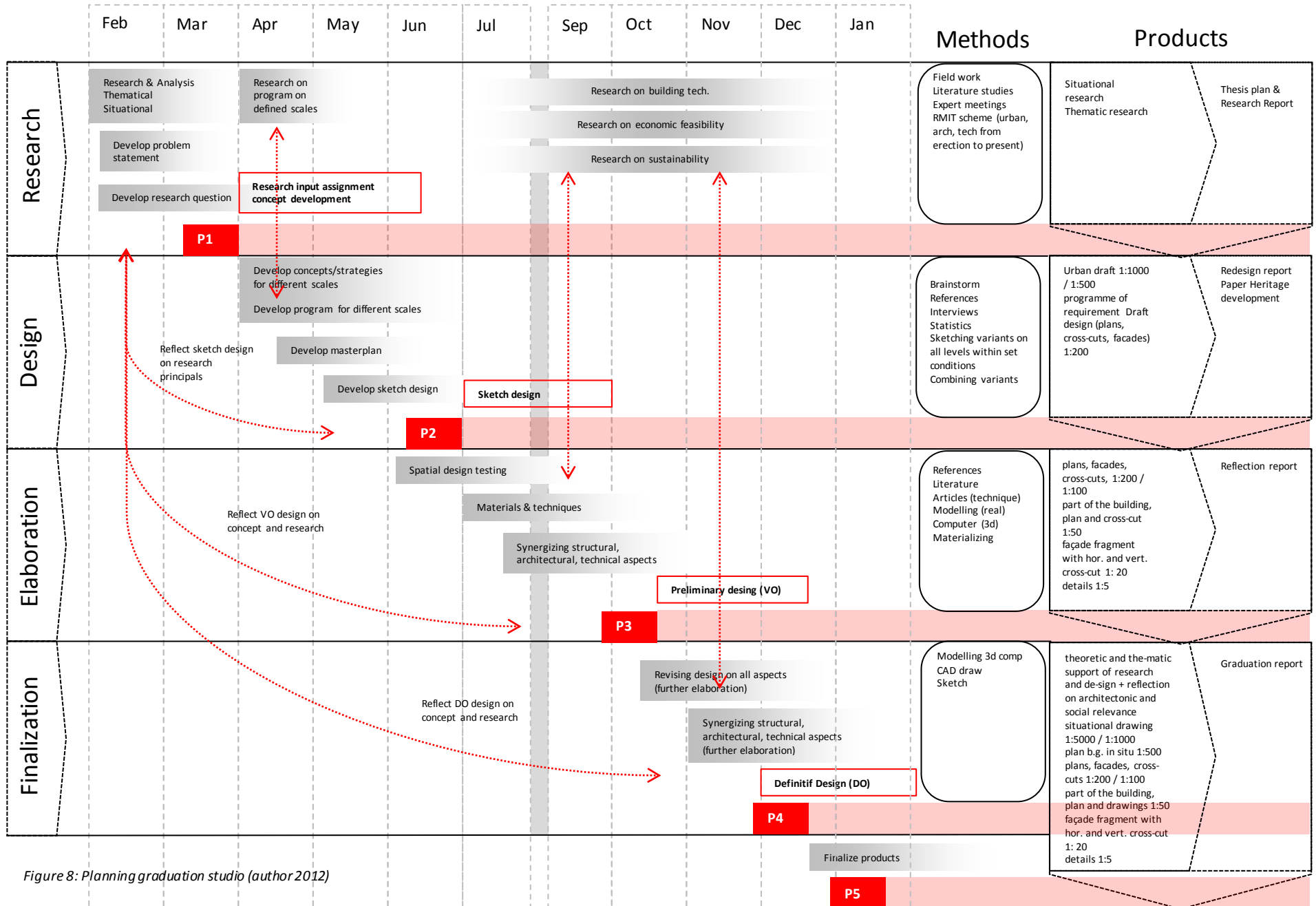


Figure 8: Planning graduation studio (author 2012)

RESEARCH & ANALYSIS

Research structure

In order to have a clear view and interpretation of the duplex housing principles and its elaboration in the case study Roland Holstbuurt the following research is threefold.

The first chapter '*Duplex housing principles*' is concerned with the erection of the principle and its context, the development of the architectural component of the strategy, typologies and urban configurations and finally the discussion on the sustainability in time of development. Finally sub conclusions are drawn as in input for further research.

The second chapter, '*Duplex housing in practice*' is concerned with the urban context of the Western Garden Cities in which the principles of the urban fabric are investigated and described in sub chapter *Principles of the Western Garden Cities and Slotemeer*. For which sub conclusions are drawn as input for the next paragraph.

Upon this three neighborhoods with duplex housing horizontal split in a courtyard configuration in Slotemeer Amsterdam, including the case study the Roland Hostbuurt, are compared in sub chapter '*Duplex housing in*

Slotemeer'. In order to derive the generic built up and generic changes over time of these areas. As well as the understanding of the initial future plans. Upon which sub conclusions are drawn as input for the next paragraph.

In the paragraph '*The case Roland Holstbuurt*', the distinctive characters on urban, architectural and technical level are further investigated to get a clear understanding of the distinctive DNA apart from the generic DNA of duplex housing in courtyard configurations. On which sub conclusions are drawn.

In the third and final chapter '*Conclusions & reflection*' conclusions are drawn for the total research in relation to the research question in which strengths, weaknesses, opportunities and threats are formulated as input for the research in the second quarter.

The structure of the research is illustrated in figure 9.

Structure first research stage period 1

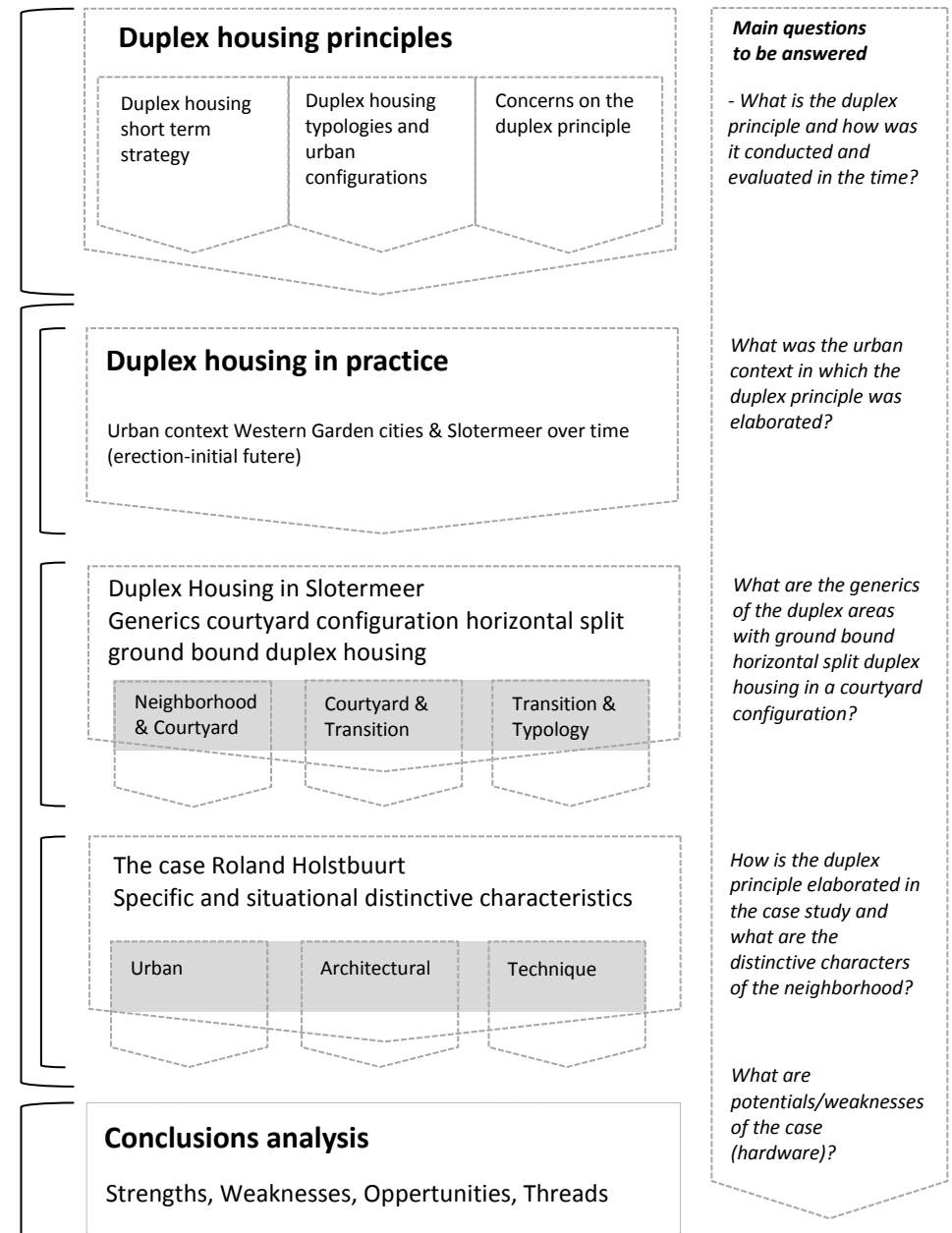


Figure 9: Structure research Q1 (author 2012)

DUPLEX HOUSING PRINCIPLES

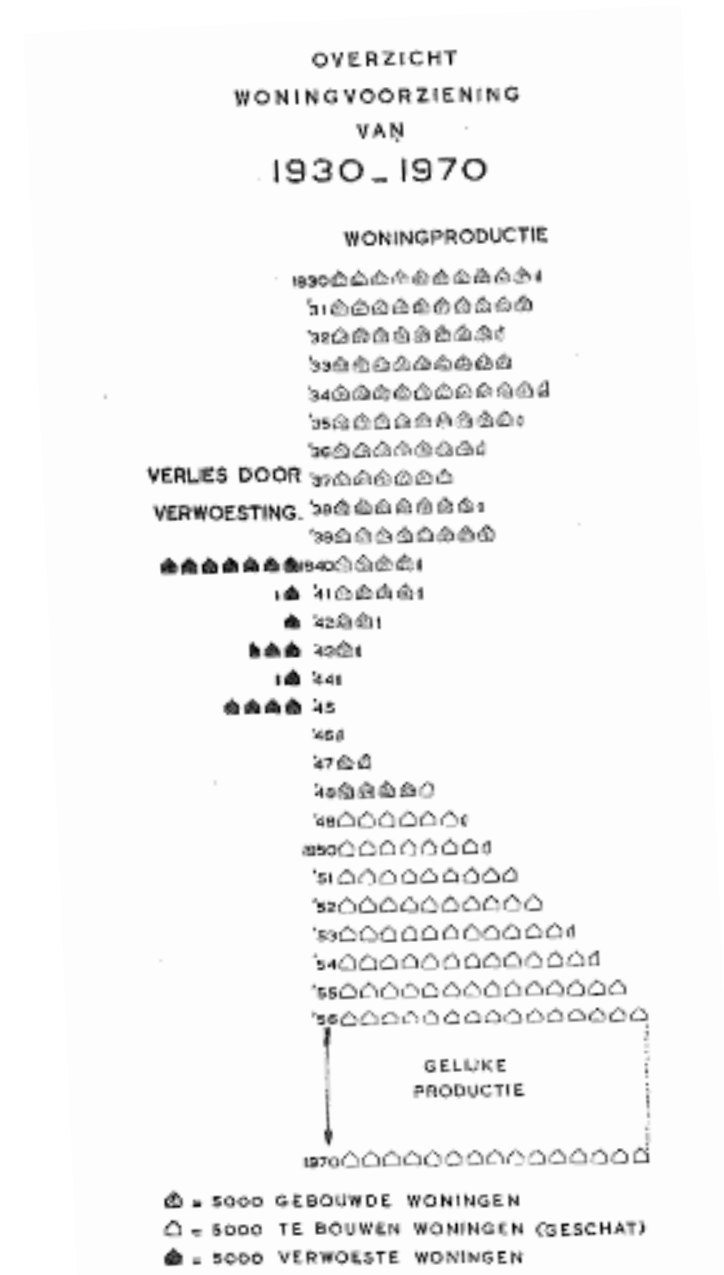


Figure 10: The illustration shows in 1948 the housing shortage was understated and it was expected that the housing shortage would be solved in 1956

(Bouwkundig weekblad 1948, p. 313)

Duplex housing short term strategy

The Ministry of Reconstruction and Housing (Ministerie van Wederopbouw en Volkshuisvesting) faced the problem of the housing shortage after the end of the second world war. Before the war the number of dwellings were 2,1 million of which 86 thousand were demolished by the bombardments as well as the stripping of wood to make fire in the winter of 1944 during the war. The population number in 1940 was approximately 8,8 million, grown to 12,1 million in 1963 mainly caused by the baby-boom.¹ The first years after the war policy was based on the prognoses of growth of inhabitants in The Netherlands, demolished buildings and population counts. They assumed that the statistical shortage could and would be solved around 1956 as represented in figure 10.²

In order to adequately respond, organize and handle the situation several advising organizations were consulted. One of these organizations was the 'Kerngroep', also called the 'Studie groep Woningbouw', founded by

¹ S.Mulder, J.Schilt (1993) p.15

² Bouwkundig weekblad, 1948, p. 313

the association of Dutch Architects (BNA, Bond van Nederlandsche Architecten). The Kerngroep main figures were ir. W. van Teijen, prof.ir. J.H. van den Broek, ir. C. de Cler, ir. J.A. Kuiper en B. Merkelbach. They were concerned with architectural strategies to contribute in solving the housing shortage. Serial production, standardization and minimum measurements for dwellings for different kinds of households belonged to their core activities.³

In 1946 the group advised the ministry of reconstruction and housing by means of the 'Nota van den Nederlandschen Architecten over den na-oorlogschen Woningbouw' in which the general parameters of a 'good dwelling' were defined. Due to the great and durable ambitions, solutions like temporary housing were no real options since it would not provide in 'good housing' as addressed in the nota. Already before in 1945, several parties, the Nederlandsch Instituut voor Volkshuisvesting en Stedebouw, Nationale Woningraad, Algemeene Bond van Woningbouwverenigingen and the Architecten-Studiegroep voor Woningarchitectuur addressed a preliminary report, 'adres over de woningnood' to the cabinet in which they argued heavy critics

³ Zuithoff, Y. (2006) p.7

towards emergency housing for economic and social reasons.⁴ Although, this kind of housing was initially built on a small scale. Normal dwellings with a good quality should have priority in which the typology and space should not be influenced by measure for economic savings. At most on the added values like bathroom tiles or sanitary in general. Cost reductions were already obtained through the studies on typologies and space and profound co-operation between the involved stakeholders.⁵ By means of standardization and normalization. Thereby emergency housing wouldn't gain notable savings on labor nor material costs.⁶

Regenerating the livability of the Netherlands was the focal point above maximizing housing production. On the basis of 'Voorschriften en Wenken 1951, aangaande de eisen voor de inrichting van een woning', the Kerngroep concludes the following which illustrates the previous thought:

'een woning en haar directe omgeving moeten zodanig zijn dat al datgene, wat daarin voor een gezonde geestelijke en materiele

⁴ Bosma, K., Wagenaar, C. (1995) p. 238

⁵ Zuithoff, Y. (2006) p.8

⁶ Bosma, K., Wagenaar, C. (1995) p. 238

*ontplooiing van het individu, gezin en gemeenschap onmisbaar is, daarbinnen ook geboden kan worden*⁷

The 'Voorschriften en Wenken voor het ontwerpen van woningen 1951' describes the technical demands and minimum requirements regarding space and room types for each target group (this is a continuation of the 'Voorlopige Wenken 1947' which also describes general topics like design, gardens and typology configurations). For each target group different needs and requirements were formulated for the housing typologies:

'voor het individu voldoende gelegenheid, zowel tot geestelijke als lichamelijke activiteit als tot rust en bezinning. Speciaal voor de huisvrouwen mogelijkheid tot het vermijden van onnodig geestdodend huiselijk sleurwerk. Voor het gezin gelegenheid tot intiem en waardig samenzijn, tot wederzijdse vorming en beïnvloeding. Voor de gemeenschap ongezochte gelegenheden tot natuurlijk, vrijwillig contact tussen straat, buurt en wijkgenoten. Gelegenheid tot deelname aan

⁷ Bouwkundig Weekblad 1948, nummer 37 Het Woningcongres 1948 en de Architecten, p. 301 via Zuithoff, Y. (2006) p.8

*gemeenschappelijk spel, aan verenigings-, cultureel en kerkelijk leven.*⁸

The objective of the government to drastically improve the living quality of the building environment were guaranteed by these principals. Although the qualitative parameters were set, the production problem maintained for which no innovative architectural strategy was yet brought to bear. Emergency housing was still built in the first years after the war.⁹ Scarcity of materials, discontinuity in policy and a underestimated shortage in dwellings were the main causes. Except the discontinuity in policy they believed that due to maximized production this could harm the economic consistent growth. And thereby the restructuring of infrastructure was of an greater priority for industrialization and the trade business. Therefore, the government was seeking for new solutions in order to solve the quantity problem. In 1948 PvdA minister J. in 't Veld introduced and erected the duplex solution. Which was developed and propagated by the government in co-operation with the Kerngroep Woningarchitectuur.¹⁰ Figure 11 is

⁸ Zuithoff, Y. (2006) p.9

⁹ Bosma, K., Wagenaar, C. (1995) p. 242-244

¹⁰ Bosma, K., Wagenaar, C. (1995) p. 244

an informing illustration as part of this propaganda.¹¹

The duplex principle, splitting an one-single family house into two temporarily houses was regarded as a sustainable solution in the long run. A normal house would be split for ten years and inhabited by two families. After ten years, when the housing shortage should and would be solved, the dwelling would be simplexed inhabiting just one family, as the dwelling initially was ment for. De split dwelling could almost meet the demands that were set by the government and a temporary residential permit was given in order to household two families. This solution, since only half of the dwellings were needed for the same amount of households, was seen as an important step to deal with the aspected temporary housing shortage.

¹¹ Voorlichting over duplexwoningen, 1949 via S.Mulder,J.Schilt (1993) p. 30, 31

"KIJK", ZECT KARELTJE

"DAAR IN DE STRAAT CAAN ZE
DUPLIXWONINGEN
BOUWEN -WEET U NIET WAT
DAT ZIJN ? WEL, EIGENLIJK
ZIJN DAT GEWONE HUIZEN,
PRECIES ZOALS DAT HUIS,
WAAR IK VROEGER WOONDE"



BENEDEN VOÓR WAS DE
HUISKAMER. DAT WAS DE
GROOTSTE KAMER IN ONS HUIS



EN WIJ ATEN ACHTER,
IN EEN KAMER, DIE
WAT KLEINER WAS



BOVEN WAS DE
KAMER WAAR VADER
EN MOEDER SLIEPEN



EN IN EEN TWEEDE
SLAAPKAMER SLIEPEN
IK EN MIJN BROERTJE



BOVEN WAS ER OOK EEN
KAMERTJE VOOR TANTE
ALS ZE KWAM LOGEREN



EN EEN BADKAMERTJE MET
NET GEHOEFT TE KLĪDEN
UIT- EN AAN

ER ZIJN HEEL WAT MENSEN DIE
EEN VAN DIE NIEUWE HUIZEN
ZOUWEN WILLEN -HEBBEN
VERKISTENEN KWAM ER EEN
MUNTHEER KIJKEN MET ZIJN



VROUW EN ZIJN VIJF KINDEREN
DIE ZOUWEN ER NATUURLĪK
PRACHTIC IN PASSES
MAAR NIET IEDEREEN HEEFT
VIJF KINDEREN.



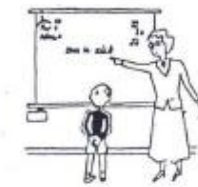
30 ZIJN ER BIJVOORBEELD JAN
EN TO. DIE WILLEN GRAAC TROUWEN
MAAR ZE HEBBEN NATUURLĪK
GEEN KANS OP EEN HEEL HUIS



DIE MUNTHEER EN MEVROUW
UIT INDIE MET HUN LIEVE
ENIGE DOCHTERTJE AL EVENMAN



OM EN OMA ZOEKEN MI DE KINDEREN
GROEF ZIJN EEN RUSTIC HUISJE
ZONDER INWONNEN EN VOOR MIEN
IS EEN HEEL HUIS OOK AL TE GROEF



OM MAAR NIET TE SPREKEN VAN
ONZE SCHOOLJUFFROUW, DIE ZO
GRAAC ALLEEN WIL WONEN, DIE
HEEFT IMMER'S GEEN SCHĪN VAN
KANS



ZOLANG ER ZO WERK HUIZEN
ZIJN ZULLEN ER VAST WEL
TWEE GEZINNEN IN EEN ION
HUIS ACHTEN



MAAR IK HEB GEHOORD DAT
SAMENDEN MET EEN KEUKEN
EN EEN W.C. WEL EENS RUIZE
CEEFT

WEET U WAT IK NU CEZIEN HEB ?



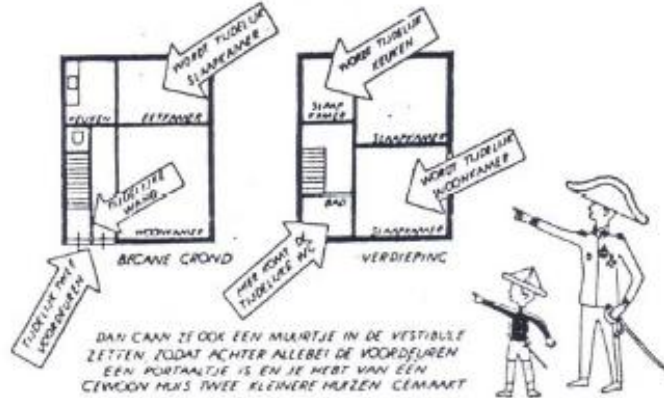
ZE MAKEN VAN HET KLEINE
KAMERTJE BOVEN ZOLANC
EEN EENVOUDIGE TWEDE
KEUKEN



OOK MAKEN ZE ZOLANC TWEE VOORDEUREN
DAN HOEF JE JE NIET TE VERGISSEN MET DE BEL
EN DE BRIEFBUS EN IEDEREEN KAN ZELF
ZECEN HOE LAAT HIJ ZIJN DEUR OP HET NACHT-
SLOT WAL DOEN



EN IN HET BADKAMERTJE KOMT
NAAST DE DOUCHE ZOLANC EEN
TWEDE WC



DAN KAN ZE OOK EEN MUURTJE IN DE VESTIBULE
ZETTEN ZODAT ACHTER ALLEBEI DE VOORDEUREN
EEN PORTAALTJE IS EN JE HEBT VAN EEN
CEWOON HUIS TWEE KLEINERE HUZEN GEMAAKT

ZO'N HUIS NOEMT ONZE MINISTER VAN WEDEROPBOUW EN VOLKSHUISVESTING NU EEN
"DUPLEXWONING"



EN ALS IK OVER EEN JAAR OF TIEN
GROOT GEWORDEN BEN, DAN ZIJN
ER WEER MEER HUZEN



DAN GAAT EEN VAN DE
TWECE CEZINNEN UIT DE
DUPLEXWONING WEG



HET TWECE KEUKENTJE
WORDT WEER SLAAPKAMERTJE
VOOR TANTE



EN DE TWELCE BUITENDEUP
VERKOOP JE EN HET CAT
MAAK JE DICHT



EN ALS DAN OOK HET MUURTJE IN DE VESTIBULE WECCEBROKEN IS, DAN WORDT
DE DUPLEXWONING WEER EEN HEEL CEWOON HEEL HUIS
EENVOUDIG EIGENLIJK, HE ?

Figure 11: Informing sheet about duplex housing by the Dutch Government in 1949 (S. Mulder, J. Schilt (1993) p. 30, 31)

Principals of typologies and urban configurations

The development of the duplex typologies were based on standardized typologies of 'normal' housing which formed the basis to start with. In consequence, the studies done are implicit with the urban conditions and the ideas of light, air and space underlying the normal typologies. From typology to urban context a logical sequence can be derived, in which the way of splitting, the kind of entrance and the relation with the direct surrounding and the urban allotment are standing in a triangular relationship. An overview of the relationships is illustrated in a matrix as shown in figure 13. The development of the typology types and the urban configuration possibilities will be handled more in depth in this paragraph.

In 1949 the Kerngroep explored the possibilities of the duplex dwelling further by study and design. For which in 1948 the Kerngroep Woningarchitectuur in co-operation with the direction of the Ministry of 'Volkshuisvesting en Stedebouw' erected a design competition regarding duplex housing. The goal of the competition was to explore which practical ideas there were concerning the architectural strata in duplex housing typologies. If it would

gain good design solutions it would be published in order to give these ideas general awareness.¹² In 1949 in the magazine '*Bouwkundig Weekblad*' fruitful solutions generated by the competition were published. The temporality of the dwellings was an important factor which meant that the principle starting point was a standard single family house. The duplexed typology should therefore be capable to be easily transformed into a simplexed dwelling. Not only for the urban context, but also for the countryside typologies were developed. In 1949 an article was published which illustrates the principle typology solutions and differences concerning apartments and ground bound dwellings.¹³ In the research how to transform a standard dwelling, as described in the '*voorlopige wenken voor het ontwerpen van eengezinshuizen*' into a duplexed one, the following five points were at general concern among the architects:

- Obtaining a bigger sleeping accommodation in the temporary house on the ground floor;
- The provision of the need for storage space for both the temporary housing;

- The good separation of the two entrances;
- Providing a sufficiently large living room for the temporary home on the first floor;
- The particular features of the rural duplex dwellings.¹⁴

Several solutions were thought of either concerning the ground bound typology or the apartment type. The basic typology for ground bound dwellings which had a volume of approximately 260 and maximum 290 m³ which was mend for family housing, had a living room and kitchen on the ground floor and three sleeping rooms on the first floor.¹⁵ They could be split horizontal or vertical. The horizontal split seemed to be most fruitful for duplex housing which came with different solutions. Creating two bedrooms for each dwelling was hard to establish. The suite type was the most easy typology to split. (see figure 12a-f). Although, splitting the living room on the ground floor resulted into two small and long rooms which weren't suitable enough as illustrated in figure 12c.

¹² *Bouwkundig Weekblad* 1949 Nummer 39, p. 421

¹³ *Tijdschrift voor Volkshuisvesting en stedebouw*, 1949, p. 118 – 123

¹⁴ *Bouwkundig weekblad*, 1949, p. 422

¹⁵ *Tijdschrift voor Volkshuisvesting en stedebouw*, 1949, p. 118-119

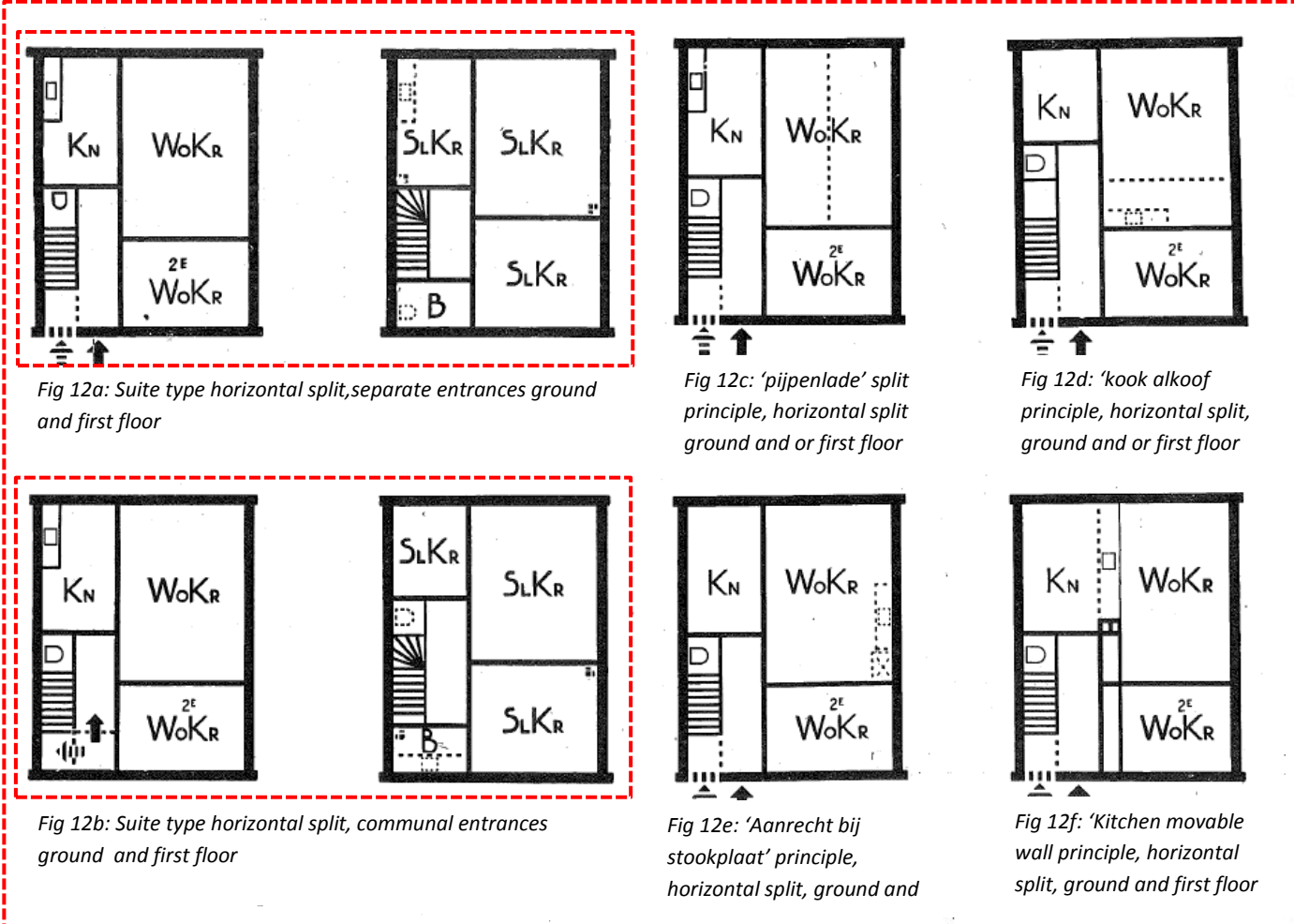


Fig 12a: Suite type horizontal split, separate entrances ground and first floor

Fig 12c: 'pijnlade' split principle, horizontal split ground and or first floor

Fig 12d: 'kook alkoof' principle, horizontal split, ground and or first floor

Fig 12b: Suite type horizontal split, communal entrances ground and first floor

Fig 12e: 'Aanrecht bij stookplaat' principle, horizontal split, ground and

Fig 12f: 'Kitchen movable wall principle, horizontal split, ground and first floor

Fig 12g: Double duplex, ground and first floor

Fig 12h: Duplex vertical split ground and first floor

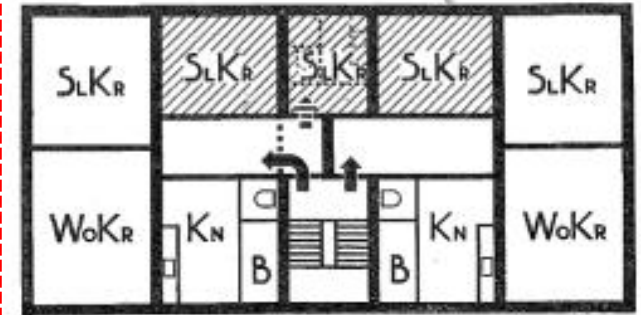


Fig. 12i: Apartment, semi-duplex

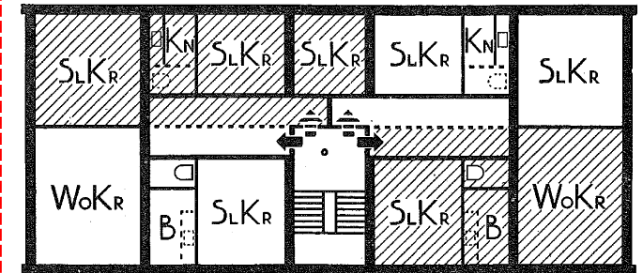


Fig. 12j: Apartment, duplex rug-aan-rug

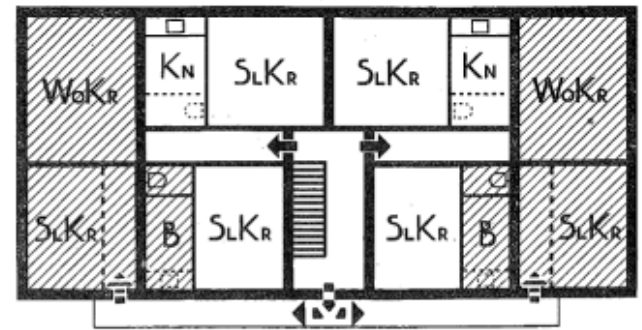
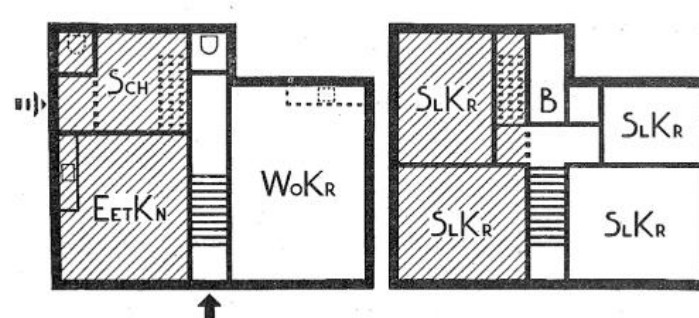


Fig. 12k Apartment, duplex arm-in-arm

Alternatives were thought of by combining kitchen and living room (see figure 12d-f). Figure 12f shows a typology with the kitchen on ground floor in duplexed form on the living room side. When simplexed, only the wall behind the kitchen block had to be set on the other side and the temporarily sleeping room would become the kitchen again.

Conditions on the countryside were different in which a vertical split dwelling was preferred, since a good relationship with the garden should be established.¹⁶ Since on the countryside the urban context was different and it was more common to build to attached single dwellings it gave the opportunity to locate the entrances on the sides. Figure 12g shows a vertical split typology for the countryside with the entrance on the side. Figure 12h shows the vertical split typology. Even another typology principle called 'het omvattende type' was a possible solution on the countryside which divided the single dwelling into two unequal dwellings. One was meant for one or two persons and the other for a normal family. To foresee in enough storage space the solution was either to build a shed detached or attached or to divide the cellar

¹⁶ *Tijdschrift voor Volkshuisvesting en stedenbouw, 1949, p. 121*

temporarily in two. Although sheds were not preferred in an urban setting since it would harm the architectural urban feel. For the transition either two separate doors or a portal were the basic solutions. Although two front doors were preferred, the solution of one front door was easier to transform.¹⁷ Since this solution, when simplexing, only concerned demolishing a contemporary inside separation wall.

Except ground bound typologies, duplex variants for standard apartment typologies were developed. In comparison to ground bound housing, the measures to be taken for apartments were significantly bigger. When simplexing by far more demolition and repair measures had to be done. Which therefore illustrates why the ground bound typology as duplex dwelling was by far most popular.

The normal apartments in a configuration of two around one staircase could not be split in four duplex apartments, but only in three. And one could therefore not truly speak of a duplex typology, but a semi-duplex typology as illustrated in figure 12i.

¹⁷ *Tijdschrift voor Volkshuisvesting en stedenbouw, 1949, p. 118 – 123*

Two considerably large apartments with large measure between the load bearing walls was necessary in order to create from two houses temporarily four. In which still a lot of space would be lost due to corridors. Such a type is the 'rug-aan-rug type' as illustrated in figure 12j. An extra objection is a poor sun orientation. Another type based on two large apartments was the 'arm-in-arm-type' as illustrated in figure 12k. Which additional costs entailed by the necessity of long platforms to connect the apartments on the sides.

A third variant which emanates from one apartment per floor and in duplex form two, takes many objections of the two aforementioned variants away. Although, none of the variants was ideal, in which the general negative aspect was the size of the simplexed apartments. For which one could argue if these apartments even at all would be simplexed after ten years.¹⁸

From typology to urban context a logical sequence can be derived. Since most of the duplex dwellings were built as part of the urban expansion plans, mainly the urban spatial rules of 'het nieuwe bouwen', which is explained

¹⁸ *Tijdschrift voor Volkshuisvesting en stedenbouw, 1949, p. 123*

more in depth in chapter '*Duplex housing in practice*' influenced the typology starting principles which were implicit in the ordinary typologies for which the duplex principle was elaborated. For the countryside therefore there were more possibilities regarding enclosure and irregularity in the building envelope than in an urban context. As explained in the first alinea the possible solutions can be explained in a threefold system of typology, transition and urban configuration.

Since duplex typologies were based on 'normal' typologies in which they would transform again after ten years, the transition zone, the relation of the back and fronts, should therefore basically be the same. Which depended on the urban configuration. In this the parameters were garden and balcony, entrance, and orientation. Regarding the duplex dwelling it therefore should be built up with the gardens and entrances as well as sleeping and living rooms on the same side as it would be in the simplexed form. In the urban setting all urban configurations in principle had the garden on the one side and the entrances on the other. Back and front were clear. As well as for the opened-up perimeter block as the modern stripe or courtyard allotment. On the countryside it was possible to have it

intermingled which therefore enables other duplex typologies like the vertical split ones.

In the normal typology, as well as for the apartment as the ground bounded dwellings, orientation towards the sun was of high importance. Mainly this meant that the living rooms should be orientated towards the south and the sleeping rooms towards the north with the garden or balcony as extension of the living room or kitchen. Regarding the several duplex typologies especially the apartment types did not meet these requirements. For example the 'rug-aan-rug' type orientated each dwelling to one side. Only the ground bound typology was capable to almost fully meet good orientation and transition as it would have in simplexed form. And therefore is another reason why this was the most popular duplex typology. Although, the ground bounded duplex typology meet the demands of transition and orientation, in all variants the zoning of the rooms can be considered to be not totally ideal. In duplex form on the entrance side, sleeping rooms are situated. When simplexed, the sleeping room on the ground floor, in all cases, would transform into a living room as it initially was supposed to be. This means that the front facade during the day was less active or without 'eyes'. Since on the first floor for all

variants also sleeping rooms were located on this side. Although for one variant as illustrated in figure 12b the temporarily kitchen on the first floor was allocated on this side.

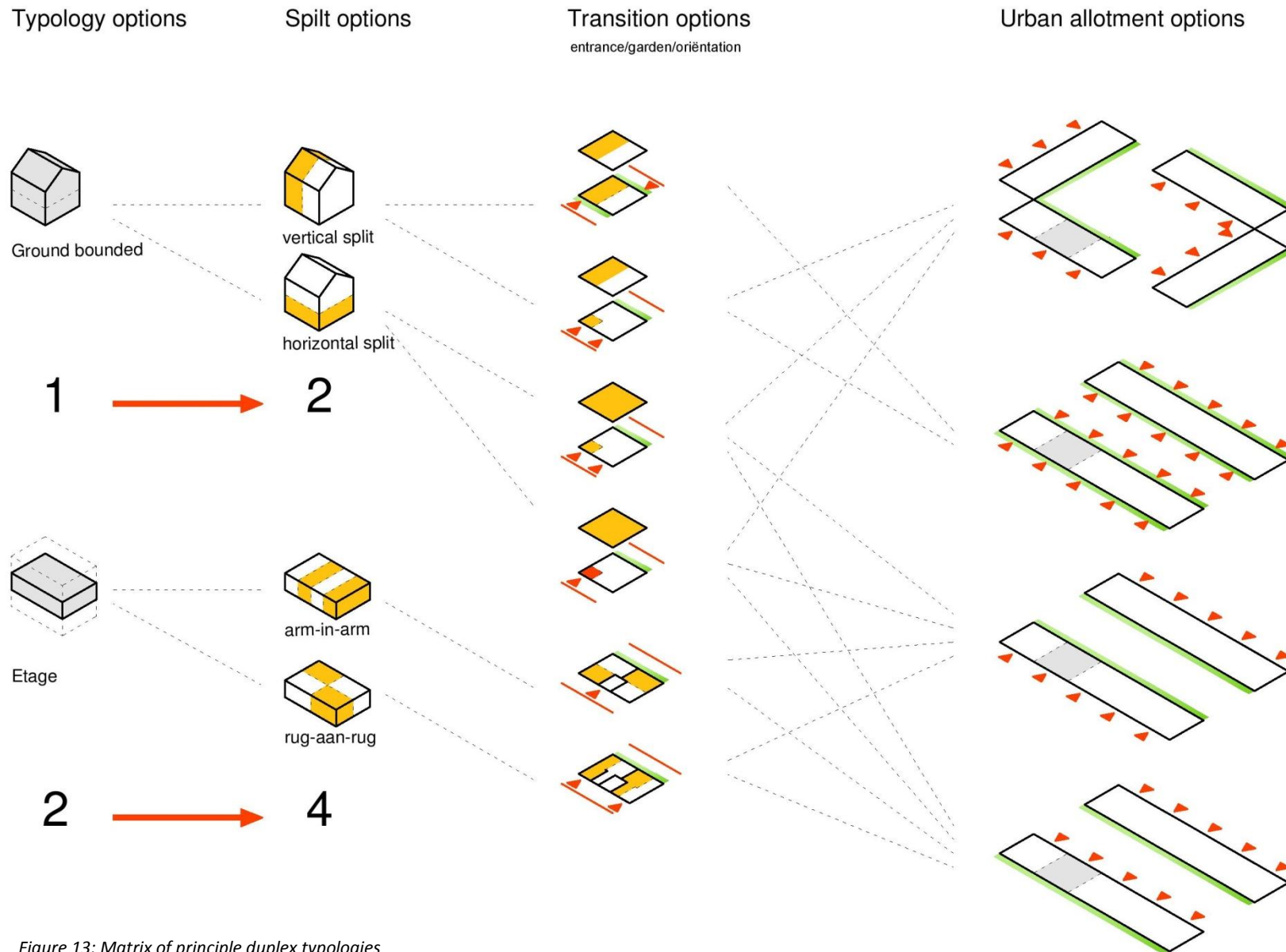


Figure 13: Matrix of principle duplex typologies into urban configuration (author 2012)

Concerns on the sustainability of the duplex principle

In 1948, when the duplex principle was initiated the government believed that the housing shortage eventually would come to an end in approximately 1957¹⁹. In this regard the duplex principle indeed would be contemporary as it was meant. But hidden problems, such as forced living together, which is difficult to measure, were not included in the previous prognoses. The actual deficit was therefore greater than originally assumed and became public enemy number one in 1955.²⁰ Partly because of this it is plausible to argue that the simplexing of duplex housing after the expiration of the ten-year limit would be difficult.

At the time of the duplex solution, which in a very short time developed from idea to elaboration, already a fierce debate raged about the actual sustainability of duplex housing.

It is evident that the housing shortage statistically indeed reduced by the duplex housing, which in the context of the developments to overcome the housing shortage was a sustainable method. Although, due to the continuous underestimation of the housing shortage this would turn out differently.

In several leading journals in that time therefore a fierce debate between supporters and opponents of the duplex housing arised. In the article *'Splitsing van Woningen'* by Ir. A. F. Bakhoven fierce criticism regarding duplex housing is pointed out in five points which represent the general criticisms of the opponents of the principle end '40s begin '50ths:

'Als dan zullen de volgende moeilijkheden zich voordoen:

1e. de noodzakelijkheid van aanbouw van nieuwe woningen, groot genoeg om de inmiddels groter geworden gezinnen te herbergen, waarmee, indien het grote aantallen betreft, vele jaren gemoeid zullen zijn;
2e. de verplaatsing van gezinnen uit abnormaal kleine woningen naar grote woningen, hetgeen voor die gezinnen betekent; huurverhoging,

verhuiskosten en aanzienlijke onkosten voor inrichten van de nieuwe woning;
3e. de kosten van verbouwing en het opknappen van de woning, met groot risico voor de huiseigenaar, dat de samengevoegde woningen moeilijk verhuurbaar zijn tegen een hogere huur, omdat de overbevolking en het lage woningpeil op het gehele complex een stempel van minderwaardigheid zal hebben gedrukt, waardoor dit voor beter-gepositieerde arbeiders en middenstanders al heel onaantrekkelijk zal zijn;'²¹

In reply proponents emphasize particularly on the necessity of the temporal solution to overcome the housing crisis for which other strategies are not available.²² To avoid splitting will not occur, emphasized is on the continuous presence of stimulus to split. The rent of the two separated houses together must be at least 150% of the rent of the individual dwelling. One the one hand to ensure that residents will not become familiar with a low rent which in the course of time may become an obstacle in switching to a normal house. In addition, the additional rental income must be used for the cost of simplexing and the higher cost of

¹⁹ *Bouwkundig weekblad 1949, p. 313*

²⁰ *Bosma, K., Wagenaar, C. (1995) p. 244*

²¹ *Tijdschrift voor Volkshuisvesting en Stedebouw, 1949, p. 5*

²² *Bouwkundig weekblad 1948, p. 318*

maintenance.²³ Furthermore, as much as possible the duplex housing should be based on a normal standard house of 260 m³ and in lesser degree of 290 m³. And certainly not bigger in order to guarantee the primitiveness of the temporary split dwelling since this would ensure the stimulus to want to have a normal dwelling. The measures to be taken should be as simple as possible so that transformation costs of duplex to simplex will be minimal.²⁴

It is, therefore, on the one hand the case to keep the duplexed housing primitive in order to keep the need to split and on the other hand to keep it humane. These contradicting demands is which characterizes the discussion on the elaboration of duplex housing.

Besides the discussion of duplex housing in itself, in the assumption of its application, the discussion about the distribution of duplex housing in neighborhoods is also at concern. A large complex of duplex housing as well as large complex of single family housing were not preferred because of psychological motives. And therefore a responsible division of types should be made, as well as before as after

²³ Tijdschrift voor Volkshuisvesting en Stedebouw 1949, p.116-117

²⁴ Tijdschrift voor Volkshuisvesting en Stedebouw 1949, p.117-118

simplexing.²⁵ The scale which it is concerned with is not clearly defined, although it is plausible the scale of at least one row or stamp, since this was the smallest measurement in urban configuration.

It is precisely the following citation which can be seen as an essay with a great predictive power with regard to the elaboration of built duplex houses:

'Het is dan ook geen overdreven pessimisme als men aanneemt dat de duplex-woningen minstens 20 jaar bewoond zullen blijven. Het is zelfs de vraag of men ooit van deze woningen afkomt. De ervaring, opgedaan met semi-permanente woningen, gebouwd na de vorige wereldoorlog, geeft te denken. Het is dan ook, juist in verband met de vermoedelijk zeer lange duur van het gebruik, niet overdreven van een nieuwe woningellende te spreken, welke door de duplex-woningen zal worden veroorzaakt.'
De schrijver in „Bouw" merkt aan het eind van zijn artikel op, dat gesplitste woningen het eigendom moeten zijn van woningbouwverenigingen of gemeenten, „daar particulieren minder geneigd zullen zijn over te gaan tot het inrichten van het gebouw voor bewoning door één gezin, daar dit gepaard

²⁵ Tijdschrift voor Volkshuisvesting en Stedebouw, p. 118

*gaat met een mindere huuropbrengst en een extra uitgaaf". In deze zin ligt een erkenning van de juistheid van vele der door mij genoemde bezwaren. Doch hier dreigt een ander gevaar, n.l. dat woningbouwverenigingen en gemeenten aan het eind van de rit, indien althans hiervan sprake mocht zijn, blijven zitten met een volkomen gedeprecieerd woningbezit, gelegen in een door overbevolking en verwaarlozing gedeprecieerde buurt.'*²⁶

²⁶ Tijdschrift voor Volkshuisvesting en Stedebouw, 1949, p. 6

Duplex housing in Amsterdam

All over the Netherlands duplex dwellings were built during the first phase of the rebuild period after the war, to cope with the housing shortage. As well as part of large scale urban expansion plans as on the countryside as illustrated in figure 14.²⁷

In the outlined developments of the housing shortage after the war a part of the ground-bound family housing in Amsterdam was elaborated as duplex housing. In total 1685 duplex dwellings were built as part of the rebuilt period, all as horizontal split ground bound typology. These were all built between 1950 and 1954.²⁸

Why all duplex houses were horizontal split ground-bound dwellings can partly be explained due to the fact this typology was easily to simplex. Thereby partly due to the urban context of the Western Garden cities in which the ideas of 'Het Nieuwe Bouwen' influenced the urban allotments of housing

²⁷ Voorlichting Ministerie van Wederopbouw en Volkshuisvesting 1948, via Zuithoff (2006) p. 19

²⁸ Tijdschrift voor volkshuisvesting en stedenbouw 1957, p. 47

which is further explained in the chapter '*Duplex housing in practice.*'

The total amount of duplex housing in Amsterdam could accommodate about 3700 families. The municipality had published an article about duplex housing in Amsterdam in 1957. In this the households which inhabited the duplex dwellings were investigated.

The number of couples without children already showed a decreasing tendency, while the number of couples with one child showed minor fluctuations and the number of families with two children considerably increased. The average occupancy of duplex housing was 2.18 persons which already increased to 2,58 persons in 1955. The average occupancy of housing in the city was 3,58 persons. Per room the occupancy of duplex housing was 1,19 and for 'normal' housing 1,02.

Noteworthy is that it appears that the first residential occupancy was not significantly higher than in 'normal' dwellings. And especially families without children took their residence here. With the increasing housing shortage, which was underestimated, is herein, although based over a short period of time, the occupancy increases.

Thereby the reasons to move out the duplex dwelling were analyzed in the report. The wish for a bigger house was the main reason.²⁹

²⁹ Tijdschrift voor volkshuisvesting en stedenbouw 1957, p. 47

List distribution duplex dwellings in places in The Netherlands

Groningen

Groningen, Oude Pekela,

Friesland

Bolsward, Heerenveen

Drenthe

Assen, Coevorden, Emmen

Overijssel

Almelo, Diepenveen, Enschede, Goor, Gramsbergen,
Haaksbergen, Hengelo, Kampen, Losser, Oldenzaal,
Ommen, Raalte, Steenwijk, Zutphen, Zwolle

Gelderland

Apeldoorn, Bemmelen, Culemborg, Doesburg, Ede Elst,
Gendringen, Groesbeek, Haaften, Hummel-Keppel,
Nijkerk, Rheden, Wageningen, Warnsveld, Winterswijk

Utrecht

Breukelen

Noord-Holland

Aalsmeer, Alkmaar, Amsterdam, Assendelft, Bergen,
Beverwijk, Castricum, Den Helder, Enkhuizen,
Haarlemmermeer, Heemskerk, Hoorn, Krommenie,
Medemblik, Obdam, Velzen, Weesp, Zaandam

Zuid-Holland

Berg Ambacht, 's Gravenhage, Katwijk, Ridderkerk,
Rotterdam

Zeeland

Axel, Duivendijke, Middelburg, Vlissingen

Noord-Brabant

Boxtel, Goirle, Dongen, Helmond, 's Hertogenbosch
Klundert, Oss, Roosendaal, Tilburg, Willemstad
Limburg, Maasdriel, Roermond, Sittard, Tegelen

Figure 14 Distribution duplex dwellings in The
Netherlands (Voorlichting Ministerie van
Wederopbouw en Volkshuisvesting 1949, p.7)

Sub conclusions duplex principles

According to the findings in the literature, little research has been done into the reasons for the failure of not simplexing the duplex stock. Based on the discussions in the journals, assumptions can be made. Undoubtedly, it is not due to a singular motive or problem. A combination of changes in development and conditions in the housing market, the economic condition, and social psychological appreciation turned duplex housing into housing with attractive cheap rents. Which lead to the unduplexed situation of nowadays.

In literature and articles in the time of erection the duplex principle is mainly concerned with the typology. In this regard the urban context was implicit in the normal typology. Nevertheless there is no connection drawn between the possible program differences due to the duplexing for the direct urban surrounding, for which one could state this was not regarded as it would make a real difference in that time, since the inhabitants of such neighborhoods did not significantly differ from the inhabitants within not splitted

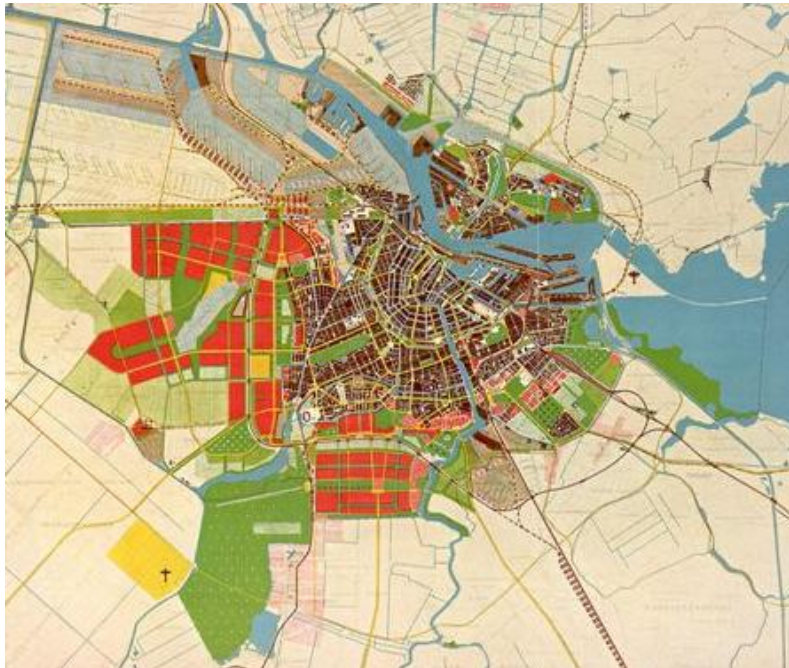
neighborhoods. Nowadays it seemingly does which is further researched in the chapter *Duplex housing in practice – Duplex housing in Sloterveer*.

In the concerns on the duplex principle it is pointed out that, although it seemed to be an topic of no real importance since in the erection time they believed de duplex housing would be simplext after ten years, the deviation of duplex housing over the several areas was crucial since otherwise social problems could emerge more easily. The duplex housing neighborhoods would not only attract small household but moreover also be regarded as depreciated neighborhoods with a depreciated stock characterized by overpopulation. In the actual case this became to an high extend the actual situation, except overpopulation, which is further researched in the chapter *Duplex housing in practice – Duplex housing in Sloterveer*.

In Amsterdam there are several neighborhoods with duplex housing elaborated. That all duplex housing is conducted as horizontal split ground-bound duplex housing is logically since this typology was the easiest to simplex and thereby all were developed within the same

urban context of the Western Garden Cities within the allotment principals of 'Het Nieuwe Bouwen.' Which is further explained and explored in the second chapter '*Duplex housing in practice.*'

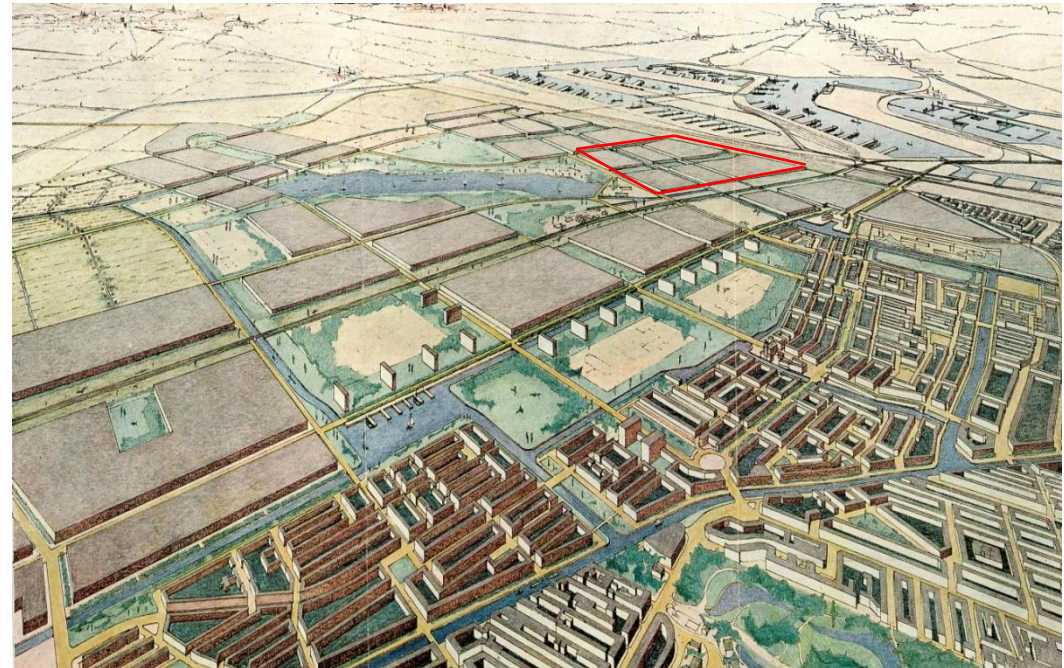
DUPLEX HOUSING IN PRACTICE



General Extension Plan 1935 (AUP, Algemeen Uitbreidingsplan 1935)

The picture illustrates the in 1939 presented general extension plan of Amsterdam in which the red areas indicates the expansion areas. Sloterveer is situated north of the western extension parts above the lake Sloterveer.

Figure 15 (Abrahamse J.E., e.a., p 44 , edited by author)



Artist impression birds eye view extension plans

The picture perspective is looking from the south-east in which the lake Sloterveer is visible just above the middle. Sloterveer is indicated by the red line.

Figure 16 (Abrahamse e.a., p 44 , edited by author)

The Western Garden Cities & Sloterveer

Principals of the urban fabric

The General Expansion Plan

In Amsterdam in the late twenties the general expansion plan (Algemeen Uitbreidings Plan, AUP) was developed. Led by urbanist Van Eesteren the plan was presented in 1934 as illustrated in figure 15 and 16. It reflects the main issues of allocation of labor areas, green zones and roads. The idea and goal was a complete defined city expansion which they envisioned. Geuzenveld Sloterveer is part of this plan. Sloterveer was erected as one of the first parts in the early fifties.¹ The erection of the AUP marks the transition of the traditional street patterns with perimeter blocks towards the modern green city with open configurations of housing strips. Which obtained fame all over the world.²

Urban planners recalled on two systems, either a central compact city or decentralized city.

¹ Heusden, M.I. (1995) p.16

² De Hoog, M (2007) p. 7

Since surveys proved, which was exemplary such was used to develop urban extension plans, the inhabitant growth of the municipality of Amsterdam till the year 2000 could be solved with urban extensions. Thereby the housing neighborhoods would be located near employment centers and the core city. In which the main advantages of the Garden City principals, independent character, increased openness and single family housing, could be realized with the profits of the demographical situation nearby the city. In which on the contrary a satellite city would become relatively more isolated. The new employment areas where projected near the harbors in the north and the south-east of the city. The housing areas where Bos en Lommer, Westlandgracht, Overtoomseveld, Geuzenveld, Sloterveer, Slotervaart, Osdorp and Buitenveldert.³

The Garden City

The garden city principals influenced the AUP, which mainly is elaborated through the main urban structure of green, water and roads. Ebenezer Howard, founder of the Garden City thought, described in his book *'Garden cities of tomorrow'* of 1902, his conception of future cities. It tried to combine the advantages of the village and the city which resulted in the garden

³ De Hoog, M (2007), p. 22

city. Three of the main principals where the creation of a city on the country site, layering of street order in accordance with the buildings and a harmonic deviation of the population. In figure 18 the principals are illustrated by a conceptual diagram elaborated in the context of an fictive urban expansion plan.⁴ The main structures of green, water and roads in the AUP refers to these ideas. In this the green not only connects the several districts but also arranges it hierarchically. The green layering thereby has multiple layered functions. In the AUP the importance of green is explicated by van Eesteren:

*'Er kan niet genoeg op gewezen worden, hoe groot de waarde van zulk diep doordringende park- of groenstroken voor de toekomstige stad zal blijken te zijn. Het gevoel van openheid, de samenhang tusschen land en stad is zoowel uit psychisch als hygienisch opzicht noodzakelijk om de bewoonbaarheid van de stad, die anders maar al te zeer tot een eindelooze huizenzee uitgroeit, te bevorderen.'*⁵

Although the AUP is influenced by the garden city principals one could argue if the qualities of the garden city are really elaborated in the

⁴ Heusden, M.I. (1995) p.16

⁵ AUP, nota 1934, p.106, via Heusden, M.I. (1995) p.26

expansion plan which is erected, witnessing a statement of Van Eesteren in 1934:

‘Maar ja, het is een stad met veel groen en als je daar vrede mee hebt, dat er veel tuintjes zijn, dat het daarom tuinstad heet, nou daar ga je toch geen herrie over maken?’⁶

The elaboration of the extension plan shows differences with the original AUP. The initial qualities of the green are not totally elaborated. Although it is in quantity, it is not in the quality as connecting layer through the several scales and its recreational character. In the elaboration, green parts were used for buildings which would fit well in a green setting. The water network had originally three functions: water storage, transport and esthetic beauty for the townscape. In this only water as storage is fully enabled.⁷

Het Nieuwe Bouwen

In the AUP the thoughts of ‘Het Nieuwe Bouwen’ are significantly more uniform elaborated. The architecture according to ‘Het Nieuwe Bouwen’ should primarily focus on

⁶ Van Eesteren, presentation AUP 1934 quoted, via Heusden, M.I. (1995) p.30

⁷ Heusden, M.I. (1995) p.34

functionality. De function of the built environment therefore highly determines its shape. Separation of functions and enough light, air and space were the themes of importance. In the AUP this is elaborated through several aspects:

- In the configurations of the building stripes
- Orientation of dwellings towards sun; open configurations
- Deviation of roads hierarchal
- Deviation of functions hierarchal
- Self-surveying neighborhoods, related to the ‘wijkgedachte’
- The organic whole; logical place of housing and functions of general interest, in which the green should penetrate into the neighborhoods upon all public spaces
- Modern neighborhood is a set of configurations arranged, enclosed and penetrated by an hierarchical structure of roads and green.⁸

Although, regarding the housing and its allotments there are discrepancies between the elaborated and the initial plan. In Sloterveer and Geuzeveuld the aim was low rise housing

⁸ Heusden, M.I. (1995) p.34

while in the elaborated plan only 30% was elaborated as ground bound single family housing while 70% was the target. This 30% also includes all duplex housing which all is elaborated as horizontal split ground bound single family housing.

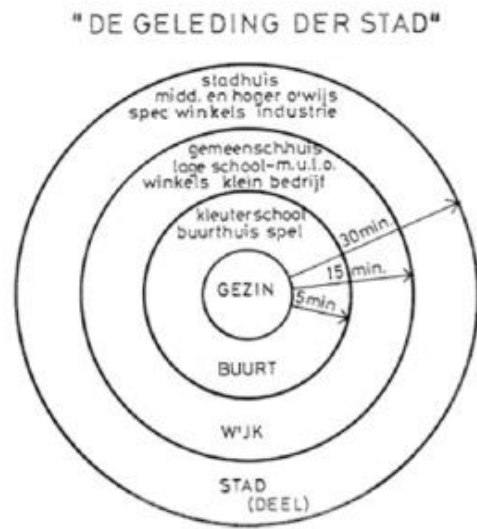


Figure 17 De geleding der stad, via <http://www.bestaanwoningbouw.nl/gebied-buurt-of-wijk/> (accessed on 20-10-2012)

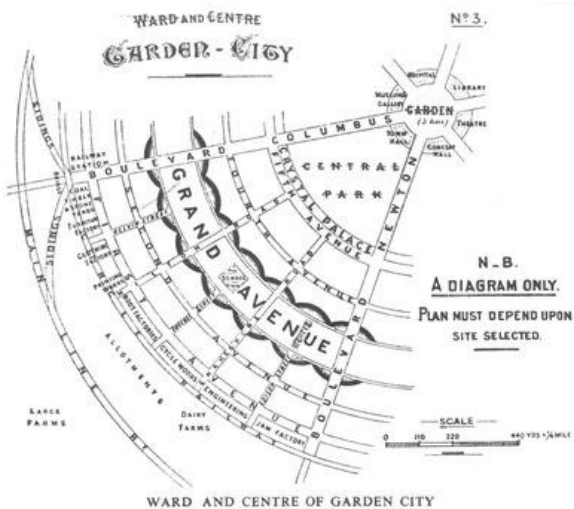


Figure 18 Ward and Centre, Garden City, (via <http://www.library.cornell.edu/Reps/DOCS/howard.htm>, accessed on 20-10-2012)

Neighborhood (buurt):
Interwoven by green and roads

2000-4000 inhabitants,
5 minutes radius

District (wijk) Slotermeer:
interwoven by green and roads

self-supplying in the daily needs

15 minutes radius,
approximately 20.000 inhabitants

District /decentral city (wijk) Slotermeer – Geuzeveld:

interwoven by green and roads self-supplying in the daily needs

Everything reachable within 15-30 minutes

City expansion parts (stadsdelen) AUP:

Several city parts interwoven through green, water and roads which are fully self-surveying

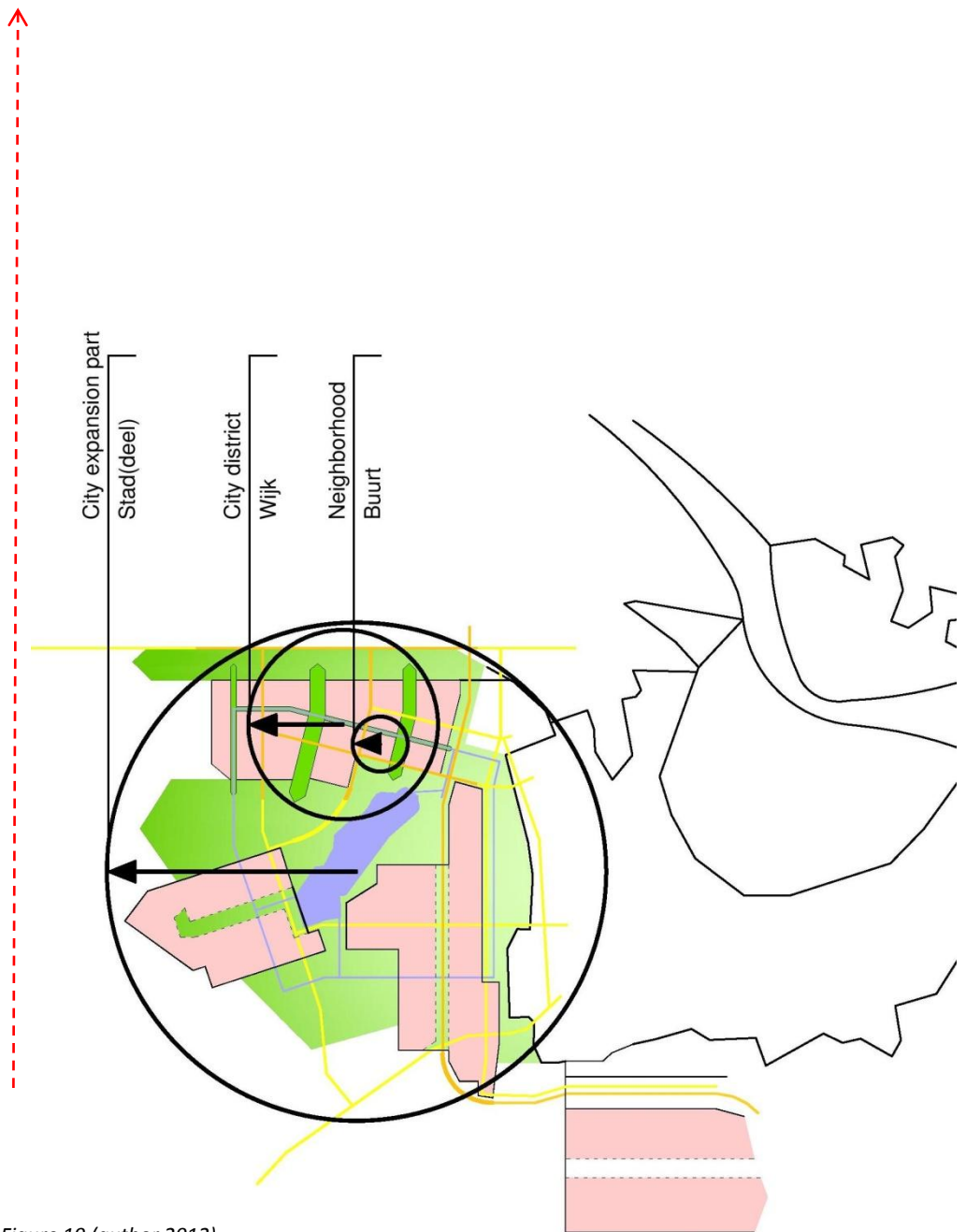
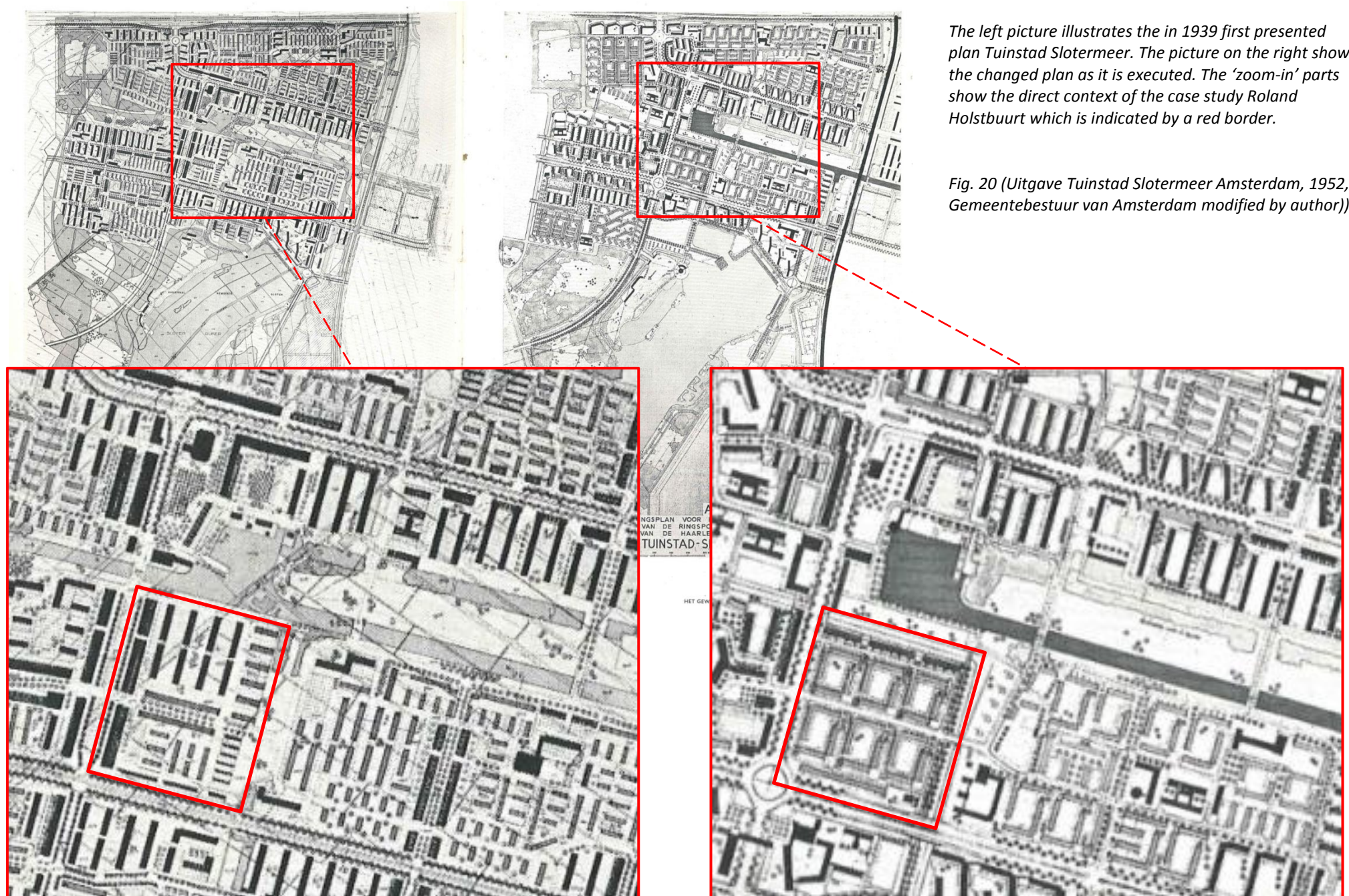
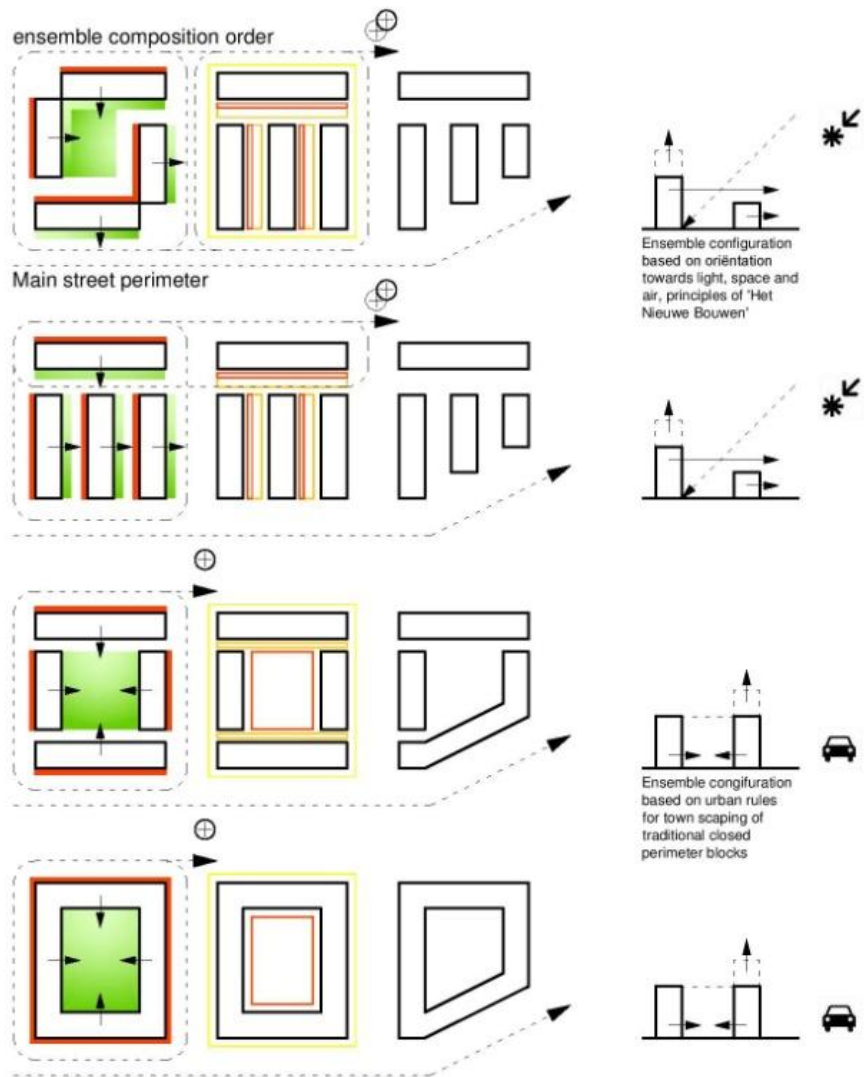


Figure 19 (author 2012)



The left picture illustrates the in 1939 first presented plan Tuinstad Slotervaart. The picture on the right shows the changed plan as it is executed. The 'zoom-in' parts show the direct context of the case study Roland Holstbuurt which is indicated by a red border.

Fig. 20 (Uitgave Tuinstad Slotervaart Amsterdam, 1952, Gemeentebestuur van Amsterdam modified by author))



From perimeter block to stripes

Figure 19 (author 2012)



Configuration of allotment and stamps in Sloterveer

Figure 20 (Vos, A., p. 20, edited by author)

From closed perimeter block to stripes

For the perception of the built environment and thus the living pleasure the configuration of the housing is important. In which the allotment is in relation to the order of the street pattern. The traditional closed block was before the war already fiercely discussed which led to experiments with more open configurations. Which for example was the case in Bos- en Lommer as transition zone between the old and new city. Supporters of the modern movement in architecture were the ones who principally fought for the open allotments. In which particularly stripe configurations.

Basically row housing was the allotment of housing in which the front sides were facing each other as well as the backsides as residue of the broken closed perimeter block.

In the intended stripe configurations the front sides are facing backsides. In which orientation of the back side towards the sun is possible for all housing. Light, air and space is the primary focus. Opponents of such allotments argued that it would not give a desired space for seclusion, orientation would not be clear due to the intermingling of front and backsides to the same streets as well as the wind would get free reign.

In addition drying laundry would be visible from the public road.⁹

Since the subdivision of single rows as illustrated in the original AUP was experienced as too monotonous and serially for which it became the not intended sum of the same stripes, during the war experimented was with new configurations.¹⁰ Figure 19 illustrates the development of the urban block. The neighborhood as a whole and the housing allotment were seen as interacting parts. The housing units were not an infill of a district retrospectively nor was the district the sum of the individual housing units. A thought, which had a major impact on this is the neighborhood concept (*wijkgedachte*).

De wijkgedachte

In 1946 the book *De stad der Toekomst, de Toekomst der stad* by Ir. A. Bos e.a. was published which can be seen as the Dutch manifest of the neighborhood concept. It was an urban and sociocultural study about the growing city communities according the subtitle of the book. The described program in this book gained almost universal validity after the war for postwar housing expansions which

⁹ Boer, de, N, Lambert, D. (1987) p. 22 -24

¹⁰ Boer, de, N, Lambert, D. (1987) p. 24

matched the idealism directly after the war. The essence of the neighborhood concept and layering of the city can be illustrated by the following points:

- The housing encloses the smallest inner circle around the individual;
- The area (*buurt*) is entirely personal;
- The neighborhood (*wijk*) is what the residents still experience as clear, understandable and familiar;
- The district is more of organizational significance and the city district dominates this all: Interesting as not familiar and trusted environment.

However, the neighborhood idea was mainly elaborated as pragmatic interpretation. There was general skepticism regarding the social-related themes. The residential area in this was seen as it was technically an attractive and feasible unity. Since in a reasonable time a completed district could be realized with a full range of everyday facilities. But also within such an approach a variety of housing created in different living environments could be elaborated.

Planner G.J. van de Berg in this regards says about the implementation of the neighborhood concept:

*'Ruimtelijk is dan ook een doelbewuste geleding van groeiende steden en dorpen in dergelijke eenheden het positieve erfdeel van de romantische wijkgedachte'*¹¹

Prompted by the neighborhood concept arose the courtyard configuration and the idea of the larger assemblies and parts. In figure 18 the change of the allotments in the initial plan and the conducted plan in Sloterveer are clearly visible. Van Eesteren said about this new allotments in the magazine *Forum* (1952):

"De woningen zijn het grondmateriaal, de materie, welke moet worden samengevoegd tot stedenbouwkundige vormen. De gerichte strook is de eerste primitieve samenvoeging. Herhaling van stroken kan worden gerhythmiseerd door geleding, welke ontstaat door na een aantal herhalingen een afstand tussen twee stroken groter te maken dan de vorige. Stroken kunnen worden samengevoegd tot een grondvorm, b.v. een L. Twee grondvormen kunnen een motief vormen, welk motief, groter van formaat zijnde dan de strook, minder malen behoeft te

¹¹ G.J. van de Berg quoted in Boer, de, N, Lambert, D. (1987) p. 29

*worden herhaald bij een gelijk blijvend aantal woningen en dus minder snel tot monotonie leidt."*¹²

Both apartments as well as ground-bound housing is configured according these new principals for allotment. In the case of the duplex housing this is all configured according the principals of stripe allotment, in which the front and backsides are alternating oriented towards the streets. Which is also the case in the courtyard configuration. The first area built up in the courtyard allotment is the neighborhood Jeruzalem in Amsterdam, which is conducted as duplex housing ground-bound horizontal split.¹³

In figure 18 this diversity in allotments and stamps and configurations in Sloterveer which is still the same nowadays is illustrated.¹⁴ Sloterveer represents the ideal way of allotments how Van Eesteren envisioned this and still kept close to the human scale. In which the repeatable unit, a composition of building blocks, repeating and reflecting determined the urban fabric. For an interesting rhythmic whole. Which prompted by the economy associated

¹² Blom, A, e.a. (2004) p.36

¹³ Blom, A, e.a. (2004) p. 37

¹⁴ Vos, A. (1996) p.11

with terms as scaling up, build cheaper, and even the crane paths, changed into standardized stamps.¹⁵ Resulting in the transition from a rhythmic whole with differentiations into a monotonous repetition like the urban extension Osdorp built as one of the last parts of the AUP.¹⁶

¹⁵ Blom, A, e.a. (2004) p.37

¹⁶ Vos, A. (1996) p.12



The classical manner of the aesthetic townscape within Sloterveer and partly Geuzeveld

Figure 21, A. Vos (1996) p. 13, edited by author (2012)



Interpretation of the Western Garden Cities as 'Schotse Ruit'

Figure 22, Vos, A (1996) p.12, edited by author (2012)

Changes over time

Initially the expansion plans functioned well. Logically, since the war was just over and most people were in first instance already happy with having a house.¹⁷ But over time, due to the filtering down principles, the quality and concurrence position of the stock devaluates. Due to the change of society due to socio-economic and socio-cultural trends the Western Garden Cities over time functioned less as it originally was intended to function. Thereby the occupancy changed. In which the developments in Sloterveer En Geuzeveld are typical. Within a decade, these districts already were less intensively occupied. Increase is until approximately 1960 where it remains standing at 56,000 inhabitants. Until 1985 there was continuous decrease towards a total 34,000 inhabitants. After this it slowly increased to 36,000 inhabitants in 1994. Decrease is due to the shrinking size of households. The slight increase is due to a migration surplus of young people and an influx of young households with many children, mainly from Turkey and Morocco.¹⁸ Substantial problems are deep into the eighties not experienced. Early eighties, the housing stock is already somewhat outdated.

¹⁷ Boer, de, N, Lambert, D. (1987)

¹⁸ Heusden, M.I., van (1995)

For which the housing market turns into a market with relative monotonous supply of housing. In the time there were no needs to improve the stock for which there was an integral policy. The housing corporations saw especially the degeneration of the physical and technical parameters of the stock for which housing corporations started renovation and modification processes all among the stock. In which in general there was not spent attention to the architectural aspects of the stock. Typically herein is that entire blocks built of masonry which are encased by a package of insulation and stucco, and the replacement of wooden windows with new plastic frames. In which often the fine composition and stratification is lost.

Begin nineties the first cracks appeared in the garden cities. On which the first restructuring phase was elaborated. Both socio-economic issues as well as spatial shortcomings were noted. The position of the stock was altered and had become one of the cheapest on the social housing market in the region¹⁹. In 1995 the *nota Parkstad* was presented which can be considered as the first step to durable regeneration of the Western Garden Cities. In this document the characteristics of the garden

¹⁹ Vos, A (1995) p. 2

cities are described as well as the elements which should be preserved and which can be changed.²⁰ In this the urban structure and principles are mainly rated as highly valuable. The hierarchy of the green and water structure as well as the roads in combination with the diverse urban configurations of the allotment. Although, due to non cooperation between the several stakeholders developments and revitalising elaborated fragmented and concerned often exclusively stamps or blocks. During the nineties due to cooperation between several stakeholders the restructuring became in that sense more sustainable due to the approach of areas in favour of the stamp scale.

In the article *Van Tuinstad naar Parkstad* by A. Vos the principle of the 'Schotse Ruit' is introduced which reflects to a certain extent the way of restructuring in the renewal period. In this the water, green and traffic structure and allotment of the buildings on the one hand is seen as autonomous parts being interesting and on the other hand in the coherence between the elements. This ambiguity is seen as interesting in which between the rules of these systems the fields are on itself and therefore interchangeable in terms of infill.

²⁰ Vos, A (1996) p. 2

Which is called the principle of the Schotse Ruit as illustrated in figure 22. And therefore the author considered the AUP as erected despite the changes in the plan since the plan was meant to describe these rules and was a plan which described only the main allocation of functions and its hierarchy. Although, within the classical interpretation of this system the author describes the stratification of the townscape within this principle as another order. For example incidental axes, mirroring, and marking points, long blocks, and repetitions are elaborated in order to create specific relationships which was of high importance for the image of the Western Garden cities. The quality therefore relies in this ambiguity between the classical manner and de Schotse Ruit as illustrated in figure 21 and 22.²¹

In Sloterveer this classical manner of aesthetic city design is in particular on a small scale, small coherent fragments. While in Osdorp this is illustrated by the grand gesture inspired by the far-reaching rationalization.²²

Although, according to this interpretation, one of the concerns with the policy of the renewal

period and its execution is the fact that renewal of the public space on the one hand and the buildings on the other hand are developed without a good correlation regarding its DNA, its delicate layering between the *de schotse ruit* and *het stadgezicht*, because they are split organizational, while this is one of the main characteristics and values of the expansion plan. This development was even enhanced due to large investments in improving the stock while little money is spent on the public space.²³ Which resulted in the elaboration of blocks with totally different concepts regarding public and private gradients and even sometimes, which illustrates this development in its extends, the perimeter block was reintroduced.

In the approximately fifty years the Western Garden cities exist, a lot has changed. Initially the Western Garden cities were located near the city. Nowadays the demographical position is moreover within the city due to the development of the Western Harbor, Schiphol, The South-axes, and Teleport and the new ringroad, Schiphollijn en de Ringlijn as well as further expansion of housing neighborhoods like Geuzenveld-West, Nieuw Sloten en de Aker.²⁴

For Sloterveer plans were made for structural renewal, but only a few were conducted. Since this was all planned for the near future and the economic crisis put developments on hold.²⁵ In the 'Herziening richting Parkstad 2015', for Sloterveer residential environments are defined for different areas. Within the city district Nieuw-West in analogy with the principle of the Schotse Ruit. With the aim to ensure variety and avoid monotony. In which the three environments are: urban ground bounded, green urban, and urban mixed. But besides residential environments, edges and walls were indicated along the streets of a higher order connecting the neighborhoods, in order to strengthen this through the urban morphology. Thereby to enable further centralization of public functions.²⁶ This is illustrated in figure 23.

Since the renewal plans are not elaborated and are put on hold, Sloterveer is still a district of the Western Garden Cities which is the mostly preserved. Sloterveer has been evaluated by architectural historians commissioned by the

²¹ Vos, A. (1995) p.

²² Vos, A. (1995) p.12

²³ De Hoog, M (2007) p. 6,7

²⁴ Vos, A (1995) p.2

²⁵ Stadsdeel Nieuw-West bewonerskrant mei 2011, via www.nieuwwest.amsterdam.nl/publish/pages/378409/nieuw_west_bewonerskrant_sloterveer_4_mei.pdf (accessed on 20-10-2012)

²⁶ Timár, A (2009)

municipality as the most authentic city garden like expansion part of the Western Garden cities reflecting the ideas of Van Eesteren. This becomes clear on the chart of values of the municipality in which the rankings in this area are the highest on urban, architectural parameters in relation to the other districts.²⁷ Thereby, a part of Sloterveer is nowadays a museum, the Van Eesteren museum and therefore a protected area. Although this is only a fragmented part of Sloterveer which is the outcome due to policy and therefore should not be interpreted as the area which only has heritage value. Since this is highly based on the merits of the urban tissue one could argue if it should not be an area defined by political defined borders, but borders drawn of the urban tissue and therefore approximately Sloterveer as a whole.

Although, socio-economic problems and a decayed building stock are nowadays still the primary concerns. The renewal period was put on hold for which these problems probably will continue to exist unless other strategies to cope with this mix of problems will be developed.

²⁷ *Presentatie Cultuurhistorie AUP deel 2, Stadsdeel West, via www.raadsinformatienieuwwest.nl/Vergaderingen/Thema-avond/2012/18-april/19:30/presentatie-cultuurhistorie-AUP-deel-2.pdf (2012)*

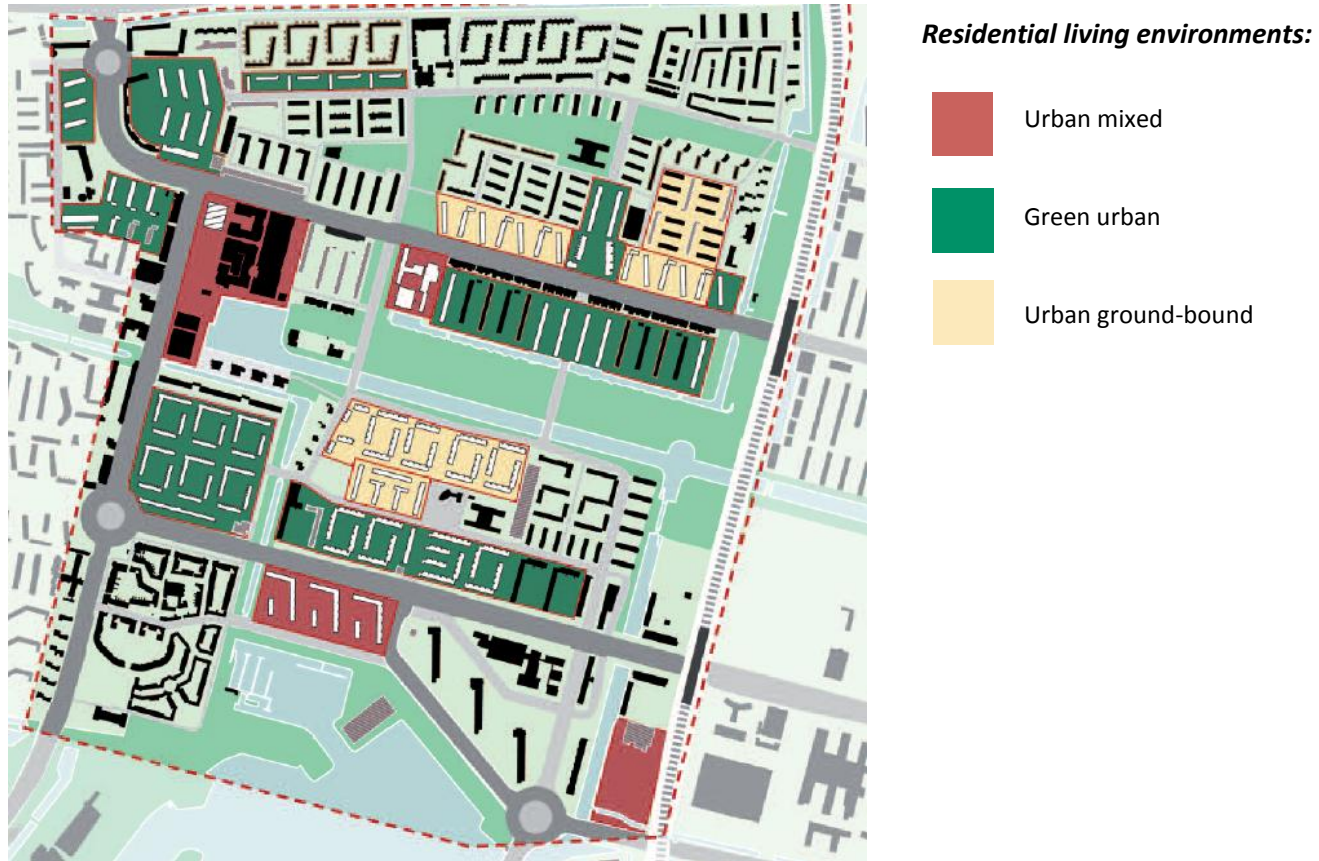


Figure 23 Vernieuwingsplan Sloterveer 2010 (Tamár, 2009, edited by author 2012)

Sub conclusions The Western Garden Cities & Sloterveer

The Western Garden Cities can be seen as the elaboration of a modern postwar city expansion plan in which ideas of garden city, the *wijkgedachte* and *Het Nieuwe Bouwen* are intermingled and interpreted in a practical manner. The erected plan shows differences concerning these thoughts with the initial general expansion plan in which the main elements are preserved. Although due to the housing shortage the percentage of ground bound housing actually built is lower than envisioned. Nowadays the main structure and hierarchy of green and allotment are still visible, although the renewal period altered parts of the plan, especially on stamp level, in which often the original relationship of the hierarchy of public and private, streets and green are neglected. It is especially this discrepancy between attention for the stock and the urban public space. While the urban structure is in general appreciated in most developments it seems to be neglected.

Nowadays social and economic conditions are changed for the area. On the one hand the

spread of program over the districts which became more centered and on the other hand the inhabitants, multicultural and in general below the average potential social-economical. But also due to the change of demographics the extension is changed into a more central area of the city. In which it therefore strengthens the feel of a village in a city moreover within the core of the housing neighborhoods.

In Sloterveer, being part of the Western Garden Cities and considered to be the best representation of van Eesteren thoughts, is almost not altered due to the renewal period. The van Eesterenmuseum being a part of Sloterveer illustrates and tries to preserve this. Nevertheless the van Eesteren museum boundaries are drawn with a great extend due to politic economic motives, for which it is a fragmented area. And one could argue if the line should not be drawn along the edges of Sloterveer.

In Sloterveer a part is conducted as ground bound housing of which a great part originally was erected as duplex housing. Not spread mutually over the stock but allocated to specific areas. Since these areas in general have not been changed by the renewal period or before these areas have become moreover

representable areas of intimate villages in a city which was one of the primary concerns of the AUP in the first place.

Although these areas are preserved, socio economic problems as well as decay of the stock are still at concern and will probably continue and even increase if new strategies and interventions more suitable to the economic present situation will not be conducted.



Within Sloterveer there are four main areas with ground duplex housing of which three are elaborated in the urban courtyard configuration. The part in the Van Eesteren museum is a mix between duplex ground bound dwellings and single family ground-bound housing in which the stripe allotment is common.

(Tamár, 2010)

Type housing	Number	Percentage
Single-family housing	1.200	15
Duplex housing	1.650	21
Appartments (without elevator)	3.600	45
Appartments (with elevator)	1.500	19
Total	7.950	100

(Tamár, 2010)



Figure 24 satellite pictures duplex housing Sloterveer 2008 (www.google.nl/maps, accessed on 12-10-2012)

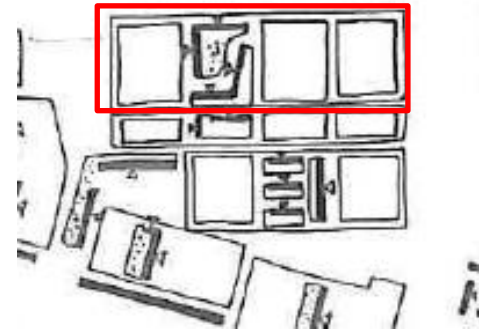
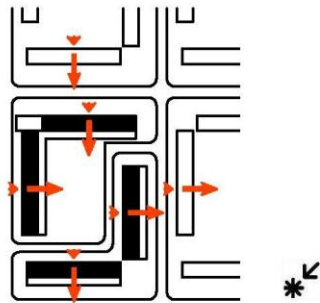


Figure 25a, (Vos, A 1996, p.16 edited by author 2012)

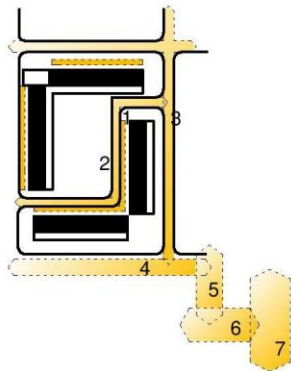


Figure 25b, satellite pictures duplex housing in courtyard configuration Sloterveer 2008 (www.google.nl/maps, accessed on 12-10-2012)



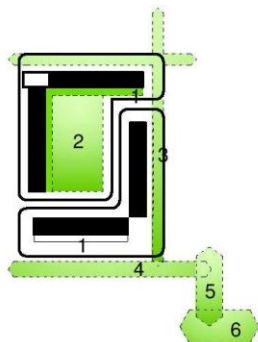
Allotment:

- Dwellings orientated southwest wards towards sun



Streets hierarchy:

1. private transition zone
2. pavement
3. living street
4. Neighborhood street
5. District street
6. City street
7. Auto way



Green hierarchy:

1. Private garden
2. Communal courtyard
3. Green strip
4. Park strip
5. Park
6. landscape

Figure 26a (author 2012)



Duplex housing ground bounded adjacent to streets of an high order (respectively Wijkweg and Stadslaan)



Figure 26b satellite pictures duplex housing in courtyard configuration Slotemeer 2008 edited by author(www.google.nl/maps, accessed on 12-10-2012)

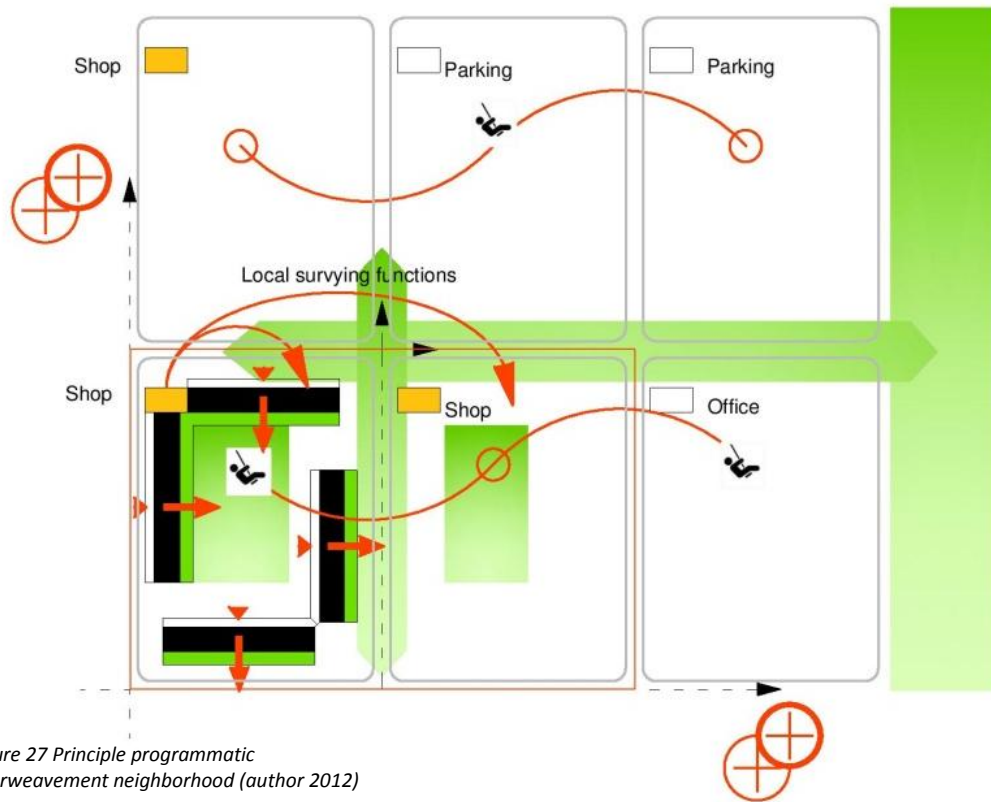
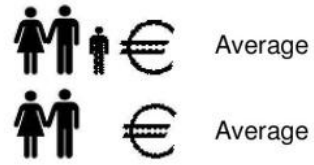


Figure 27 Principle programmatic interweavement neighborhood (author 2012)

Initial functioning neighborhood:

Local serving/commercial functions katalyzing social cohesion in neighborhood

Different infill of courtyards in which several had a clear usable interior (playing elements, resting places)

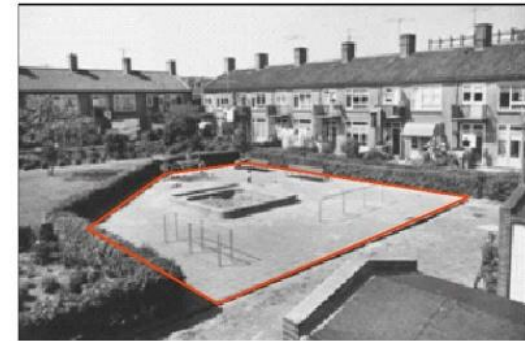


Figure 28 pictures Roland Holstbuurt mid '60s (online Amsterdam Archive, via www.amsterdam.beeldbank.nl (accessed 10-10-2012))

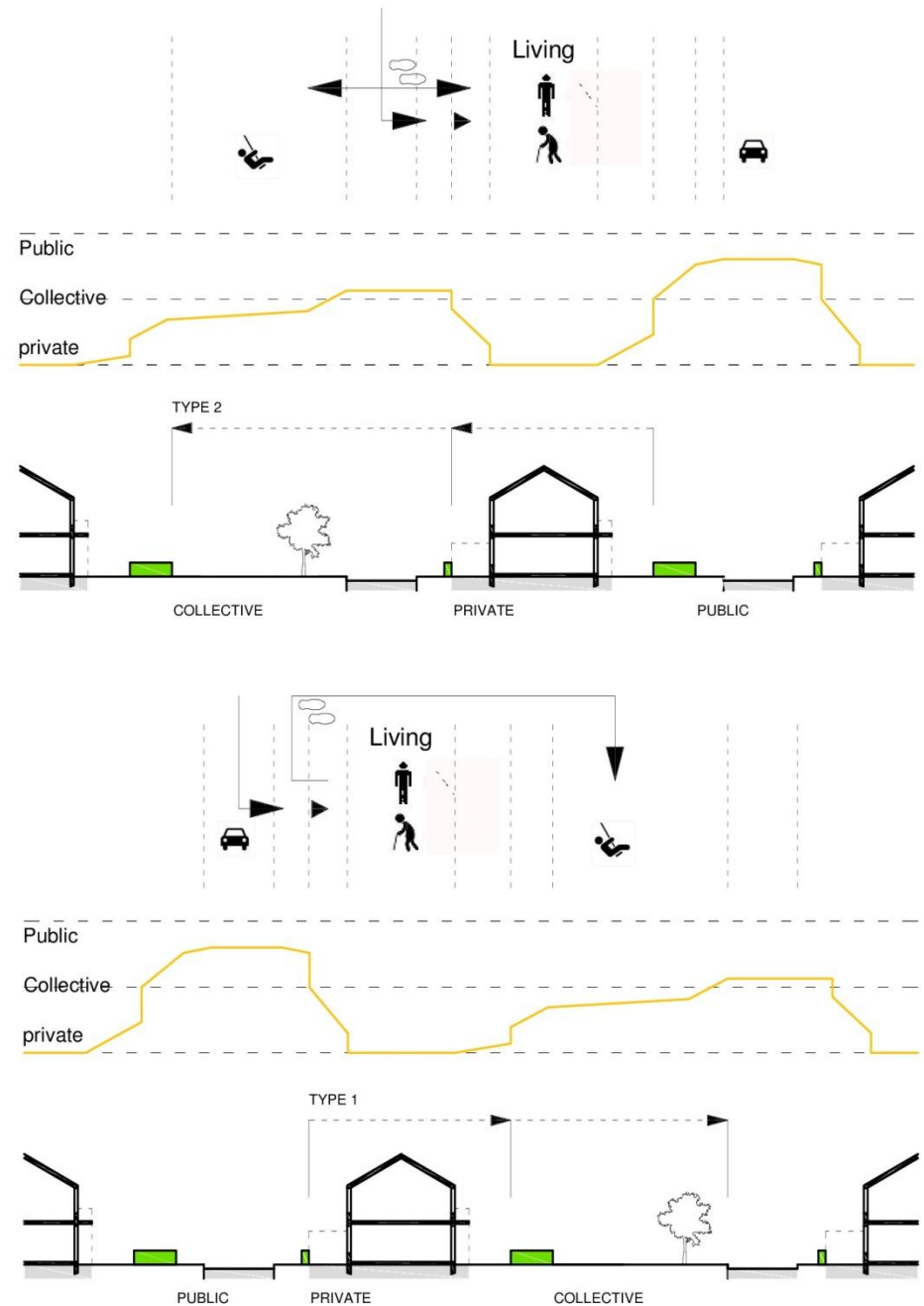
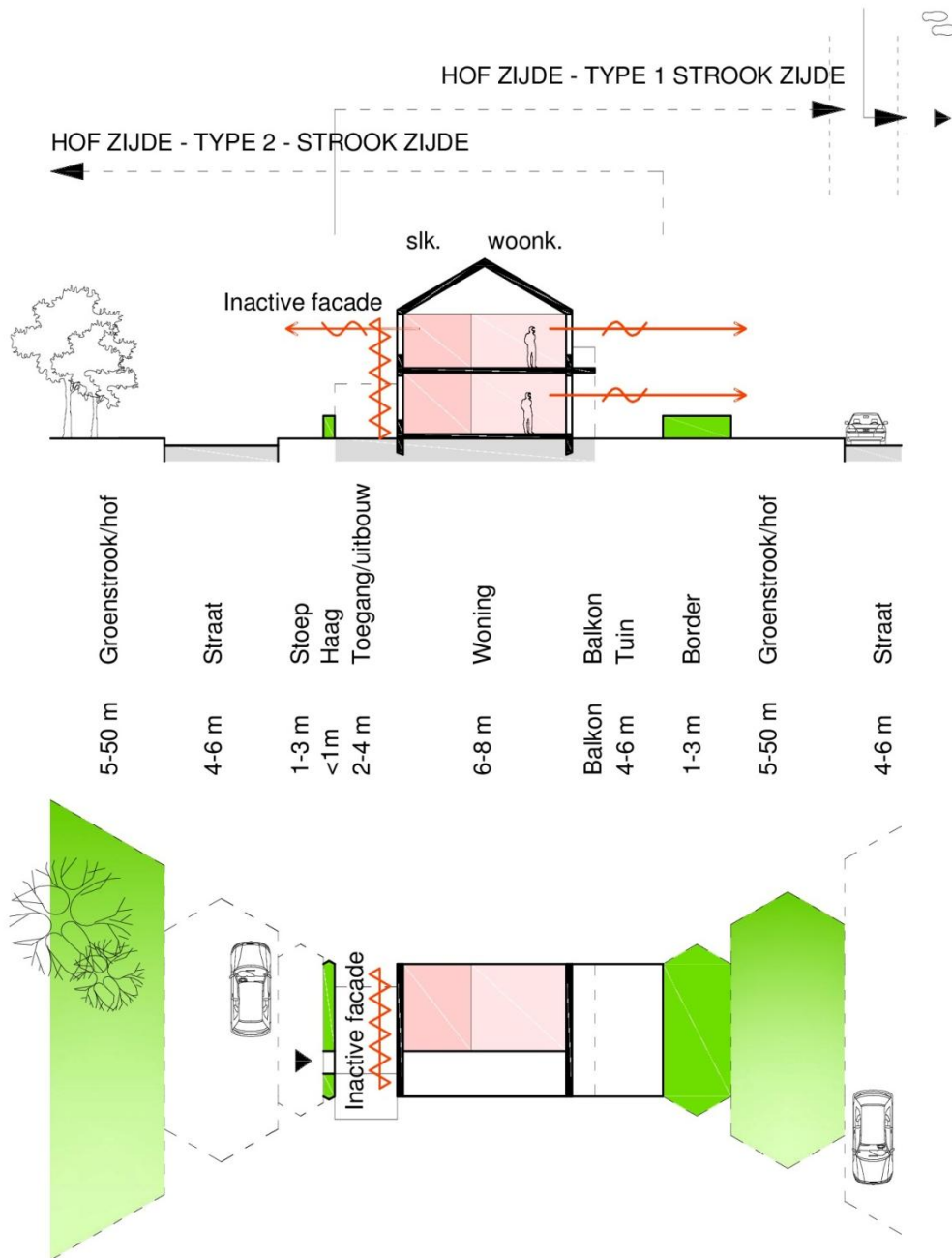


Figure 28 (author 2012)

Facades duplex housing in courtyard configuration Sloterveer



Front and back facade Roland Holstbuurt



Front and back facade Couperusbuurt



Front and back facade Anton Struikbuurt

Figure 29a-f (via Amsterdam Archive, via www.amsterdam.beeldbank.nl (accessed 10-10-2012))

DUPLEX HOUSING IN SLOTERMEER

Generics of duplex housing in courtyard configuration

In Slotermeer several neighborhoods with ground bounded duplex housing were built. 21% of the total amount of houses is built as duplex housing which are 1650 houses. The four areas which form an agglomeration of duplex housing are the Roland Holstbuurt, the Anton Struikbuurt, the Couperusbuurt and a part of the Van Eesterenbuurt North as illustrated in figure 24. The four area's follow principal rules derived from principals of urban structuring by the modern movement of 'Het nieuwe bouwen' in which light, air and space was of high importance, elaborated in the erection period, as described in the previous sub chapter *Principles of the Western Garden cities and Slotermeer*. In which Slotermeer can be regarded as one of the districts of the Western Garden cities which is seen as the most representable as elaboration of the ideas of van Eesteren. Three of the four areas with duplex housing are arranged within a courtyard configuration, respectively the Roland Holstbuurt, Couperusbuurt and the Anton

Struikbuurt. The duplex housing in de part of the van Eesteren museum is mainly arranged in combination with normal ground bound housing in several configurations of strips.

Urban and architectural context

The three neighborhoods with courtyard configurations all can be characterized as neighborhoods with this as main characteristic although they are all part of a bigger stamp configuration as illustrated in figure 25a and b. The urban configurations follow the principals of the main elements of allotment, green and streets as illustrated in 26a and b. Although slight variations within these principals where possible. For example the stretching of the blocks in the Anton Struikbuurt which gives varying perspectives. The Roland Holsbuurt is the most isolated. This due to adjacent elements of roads an green of an high order. The Anton Struikbuurt and the Couperusbuurt are not entangled as the Roland Holstbuurt is, in which de coupling of the elements is more nuanced.

Furthermore, since these neighborhoods would be simplexed after ten years, except for the typology, there are no differences between the set-up of courtyard configured neighborhoods with duplex housing and the set-up of the

courtyard configured neighborhoods with single family ground-bound housing.

Since the housing in courtyard configuration where al being erected in the first stage of the rebuilt period after the Second World War, in the time span of the 1950-1954, in which experimenting with industrialized buildings was not that common, they are all built by traditional manners and for some elements nontraditional techniques. Which is in general for Slotermeer as a whole as illustrated in figure 31 which illustrates pictures of buildings nowadays in which this is still visible. Typical is the usage of masonry as well as the pitched roofs. Thereby the detailing was very sober since it was erected in a time of scarcity in materials.

Neighborhood and courtyard configuration

On neighborhood level, functions which should serve the neighborhood were decentralized spread over these areas witnessing the practical elaboration of the 'wijkgedachte'. Programmatic connection between the blocks through local surveying functions as well as the enclosed yards.

The courtyard configuration as assembly of two strokes rectangular to each other entailed a

corner, for which new infill's were thought of since housing in the corner mostly could not meet the demands of a good sun orientation. Typical corner solutions are illustrated in figure 30. Therefore the northern corners of the courtyard configurations mostly were used for commercial or service functions as illustrated in figure 27. For example a grocer. But also the northern corners were used for garages which one could rent. In occasional situations the corner is left open. For example in the Couperusbuurt one of the northern corners is left open, because here there is a level difference with the adjacent local road and no decent solution for accommodating a function could be made. The southern corners, however, were not used for special functions but often left open. In the Roland Holstbuurt de corner is totally open in which the two strokes are not connected. In the Anton Struikbuurt the corner is closed within the perimeter of the two rows, just one story high, so sunlight and wind could still penetrate into the court. In the Couperusbuurt the corners usually are left open in which the rows of housing are subtle linked by ancillary functions of the adjacent dwellings.

A second element that the district programmatically interwove were the green spaces in the courts in which play elements and

resting places were included. Not every court had such elements. These were spread amongst the courts. Within the Roland Holstbuurt for example, three of the six courts contained play elements and resting places as illustrated in figure 27.

Transition and Typology

In the three neighborhoods the duplex housing, which is vertical split, are in principal the same, and most popular typology for duplex housing since these were regarded to be the easiest to transform back into a single family housing. The standard duplexed dwelling follows the principals of the simplexed form how to fit in the urban context. In this the deviation is as illustrated in figure 28. In which there are two types regarding its orientation. The first type is faced with the garden towards the yard and 'leefstraat' while the other is faced with the garden towards a greenstrip and 'buurtweg'.

First of all the transition towards the typology was of importance. On the one side the communal entrances are located which therefore is used by both households. These sides are orientated towards the north west sides. On this side behind the facades in duplex form mainly sleeping rooms and sometimes a kitchen on the first floor is located. This means

that on this side the activity behind the facades is poor in daytime, since the living rooms are situated on the southeast side. While in simplexed form the façade would become more active since the bedroom on the ground floor would be connected with the living room. On the other hand on this side in all the cases sheds are placed for storage which separates the transition zones of the dwellings. The back facade contains the private outdoor space. This space is bordered by a green strip. Which initially consisted of low shrubs in which there was visual contact with the street or the courtyard.

Typical corner solutions within courtyard configurations



South-West corner outside Roland Holstbuurt



South-West corner outside Anton Struikbuurt



South-West corner outside Couperusbuurt



South-West corner inside Roland Holstbuurt



South-West corner inside Anton Struikbuurt



South-West corner inside Couperusbuurt



North-East corner outside Roland Holstbuurt



North-East corner outside Anton Struikbuurt



North-East corner outside Couperusbuurt

*Figure 30 pictures 2008
edited by
author(www.google.nl/maps, accessed on
12-10-2012)*

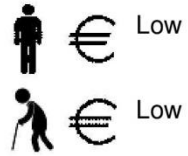
Expression architecture and material in Slotermeer



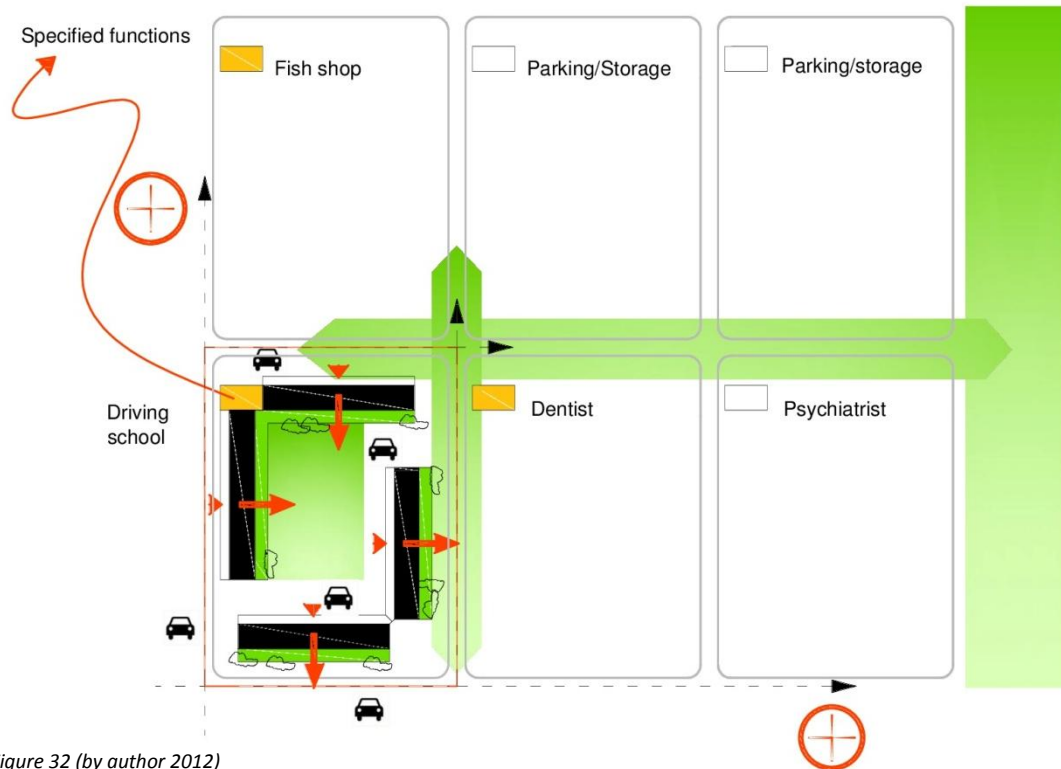
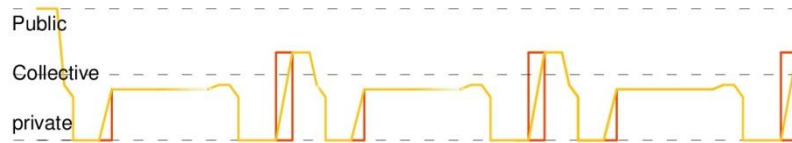
Characteristics

- Traditional building techniques most common
- masonry
- pitched roofs
- window framing seperate and combined in bigger framing as facade element
- White most common color for window framing (after renovation period)

Figure 31 satellite pictures via google.nl/maps modified by author 2012)



High fluctuation rate of tenants!



Current functioning neighborhood:

Functions corners specialised not local serving for which it does not contribute to social cohesion neighborhood

No connection through differentiated infills courtyard

Infills courtyard autonomous green areas with no clear purpose for use

Increased parking pressure in living streets

Increased barriers along garden sides for which loss of social control



Figure 32 (by author 2012)

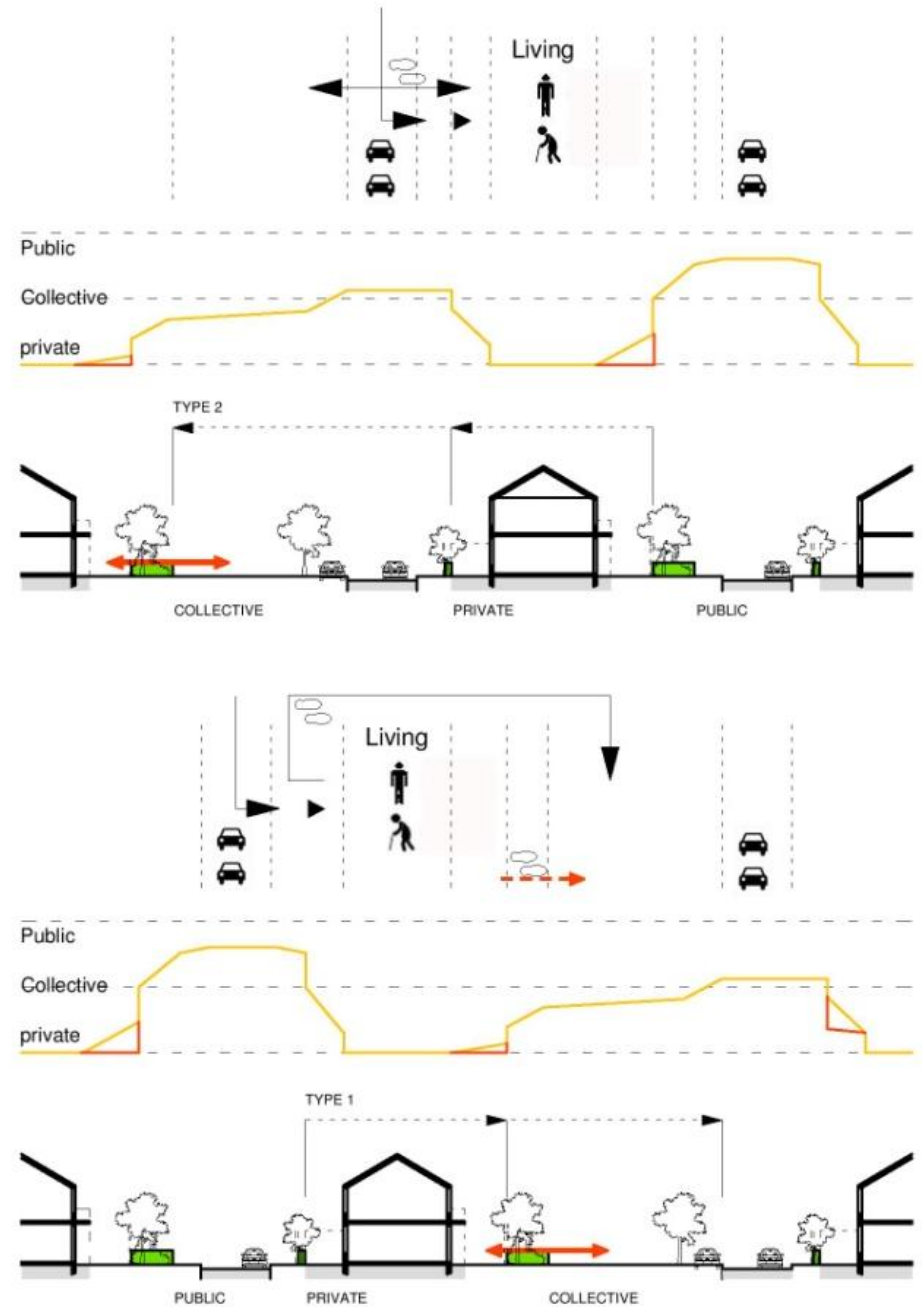
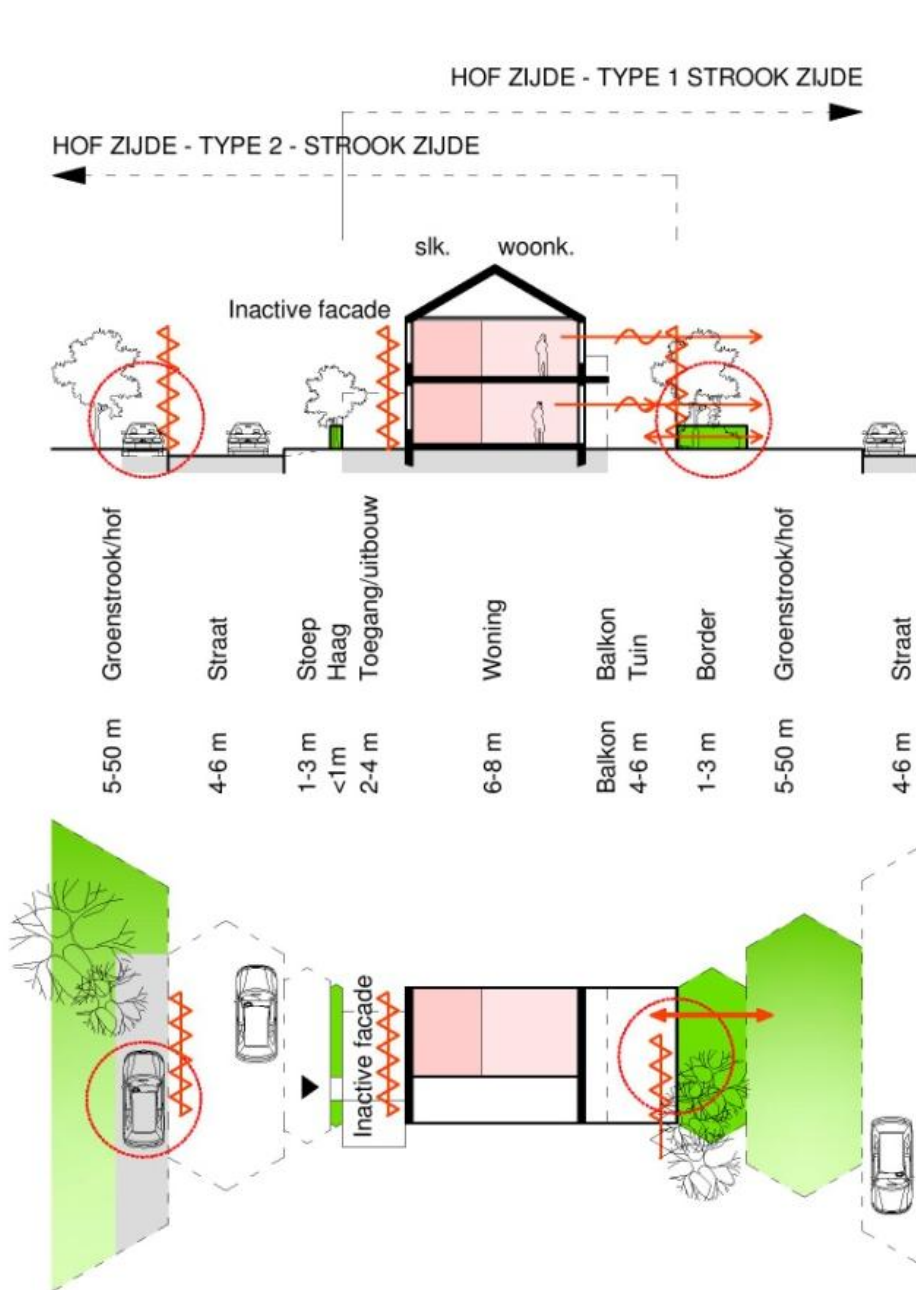


Figure 33 (author 2012)



Figure 34 pictures via
google.nl/maps modified by
author 2012)

Program collective green spaces Sloterveer

- Duplex housing ground bound
 - Courtyards enclosure of green

- Ground bound housing / apartments
 - Courtyards enclosure of green
 - Courtyards with playground
 - Courtyards with 'achterpad'



- Two courtyards with playground
- Two courtyards green
- One courtyard with achterpad; direct access to the yard

- Two courtyards with playground

Figure 35 pictures via google.nl/maps modified by author 2012)

Changes over time

Urban and architectural context

The changes over time in the three neighborhoods are in abstract the same and follow the general tendencies in Sloterveer as described in the previous chapter *The Western Garden Cities & Sloterveer*. Relatively low income groups and diversity in cultural backgrounds, decayed building stock and relatively much socio-economic problems according to the housing cooperation¹. For the duplex areas more specific in general the inhabitants can be characterized in two main parts. One the hand relatively much autochthonous inhabitants who often already lived there since the erection on the one hand and small immigrant households with diverse cultural backgrounds and low socio-economic potential. In which a large group of the inhabitants see the duplex house as temporary solution, since the mutation rates of tenants is relatively high. People who are attracted by the low rents and take the small house for granted.²

The original physical structure of the neighborhoods is still identical. Although the

¹ Tamár (2010)

² Tamár (2010)

infill of allotment, green and streets have changed. The increased advent of cars after the fifties till now influenced the livability of the place. Since the Couperusbuurt and the Roland Holstbuurt are directly situated next to main streets, in hierarchy respectively a 'stadslaan' and 'autoweg'.

Due to the renovation period the appearances of the dwellings changed, mainly in little modifications in which the change of original wooden window frames into plastic ones is the most typical (also illustrated in figure 31). Nevertheless, the buildings are on the level of architecture and building type regarded as contributing to the garden city characteristics and the urban configurations according the sheet of values of cultural history of the AUP. In which the areas are valued between average and high as part of Sloterveer as illustrated more detailed in figure 38.³

As part of the restructuring plans of Sloterveer for each regarded neighborhood restructuring plans were made, in which the central theme for the Roland Holstbuurt as well as the

³ *Presentatie Cultuurhistorie AUP deel 2, Stadsdeel West, via www.raadsinformatienieuwwest.nl/Vergaderingen/Them-a-avond/2012/18-april/19:30/presentatie-cultuurhistorie-AUP-deel-2.pdf (2012)*

Couperusbuurt is the phased demolition of the stock and replacement by new buildings. In order to come to a better supply of ground-bound family housing and intensification of land. Thereby, due there position adjacent to main roads, on these sides an intensification is seen as desirable. In contrary, in the Anton Struikbuurt, which is surrounded by roads (buurtwegen) lower in hierarchy, the restructuring plan does only foresee in renovation of the duplex dwellings in which in the near further possibilities to simplex are investigated. At the moment the plans for the Roland Holstbuurt as well as the Couperusbuurt are put on hold and corporations shifted their policy into socially grounded activities in order to at least ensure social problems will not increase.⁴

Neighborhood and courtyard configuration

The original programmatic interconnectedness in the neighborhoods disappeared. The corners are often overgrown by trees and bushes or put close by probably illegal appropriation of land. Prompted by the general trend of centralization of functions the northern corners operate usually less than before as social catalyzer. In

⁴ Tamár (2010)

Roland Holstbuurt one can find particular specialty shops. Which are not specifically surveying the neighborhood for which it does not strengthen the social cohesion as initially was envisioned. (see figure 32 and 33)

Also the intertwining of the courts is lost. In all considered courts play elements and resting places are no longer present. Although all yards differences in the way of interpretation in terms of vegetation, this does not change the monotony and equality that characterizes it. A third aspect which plays at neighborhood level but especially altered the character of the courts significantly, is the increased parking pressure. The parking pressure since the late fifties has increased dramatically which therefore moreover determines the appearance of the streets⁵. In the Roland Holstbuurt, for example, cars are standing across in the parking spots along the northside of the northern blocks, as unwritten rule, so more parking spots become available.

When the infill of the green yards in duplex neighborhoods are compared with courtyard configurations with single-family houses in Sloterveer it is striking that there are concrete infill's in the form of playgrounds as illustrated

in figure 35. This has to do with the fact that the occupancy in general has a low percentage of families with children in duplex neighborhoods. At the time of erection when the duplex dwellings were occupied by more families, there was, as mentioned, the same kind of infill, with play elements distributed over the courtyards.

Courtyard and transitions

The principles of parcel has an ambiguous relationship with the yards as result which does not seem to meet nowadays standards. Because programmatic linkages disappeared but the access principles to the courtyards and houses have remained the same. When residents may wish to use the enclosed green area they have to walk around which can be retrieved as unnatural. The western and southern houses with gardens and balconies are oriented to the local roads. However, the residents of this street can only directly enter the enclosed courtyard since their entrance is on this side. In the courts there is also an increased parking pressure which acts as a barrier between the green field and the eastern and southern homes making visibility on the green field indistinct.

Transition and Typology

The entrance sides, since these side are still collective space, remained the most open over time, although, in general they have altered due to personal taste of the inhabitants for which the tightness of the row as a whole has been lost. On the front facade the bedrooms and sometimes on the first floor a kitchen is situated, making it a relatively dead facades compared with the simplex variant, since then the bedroom on the ground floor would be part of the living room. The rear of the houses, where balconies and gardens are situated, the low secretion by low growing bushes changed. On the one hand due to the sprawl of greenery and on the other hand by visual delineation of the outer areas by fences.

⁵ Blom, A, e.a. (2004) p. 36

Roland Holstbuurt

Changes over time:

- Little improved and change materialisation
- Filtering down process, changed market position, middle income households over time low income households

Current:

Problems:

- Degenerated housing stock
- Social problems huge

Inhabitants:

- Elderly people (van het eerste uur)

Validation values by municipality:

General ensemble/neighborhood: Order 3 (on scale 1-4)

Subvalues (scale 1-5):

- Building type: 4
- Architecture: 4
- Contribution to Garden City character: 4
- Urban configuration: 3

Initial future plans

Milieu in urban layout: Green Urban

Strategy: Complete demolition and build new, phased top down.

Antonie Struikbuurt

Changes over time:

- Little improved and change materialisation
- Filtering down process, changed market position, middle income households over time low income households

Current:

Problems:

- Degenerated housing stock
- Social problems average

Inhabitants:

- Relatively much elderly people (in relation to Sloterveer in general)

Validation values by municipality:

General ensemble/neighborhood: Order 2 (on scale 1-4)

Subvalues (scale 1-5):

- Building type: 4
- Architecture: 4
- Contribution to Garden City character: 4
- Urban configuration: 4

Initial future plans:

Milieu: No indication

Strategy: Renovation and simplex part of the stock, bottom up development

Couperusbuurt

Changes over time:

- Little improved and change materialisation
- Filtering down process, changed market position, middle income households over time low income households

Current:

Problems:

- Degenerated housing stock
- Social problems average

Inhabitants:

- Elderly people (van het eerste uur)

Validation values by municipality:

General ensemble/neighborhood: Order 2 (on scale 1-4)

Subvalues (scale 1-5):

- Building type: 4
- Architecture: 4
- Contribution to Garden City character: 5
- Urban configuration: 5

Initial future plans:

Milieu: Green urban/urban ground bound

Strategy: Partly demolition and build new (of which all the duplex dwellings) and partly renovation

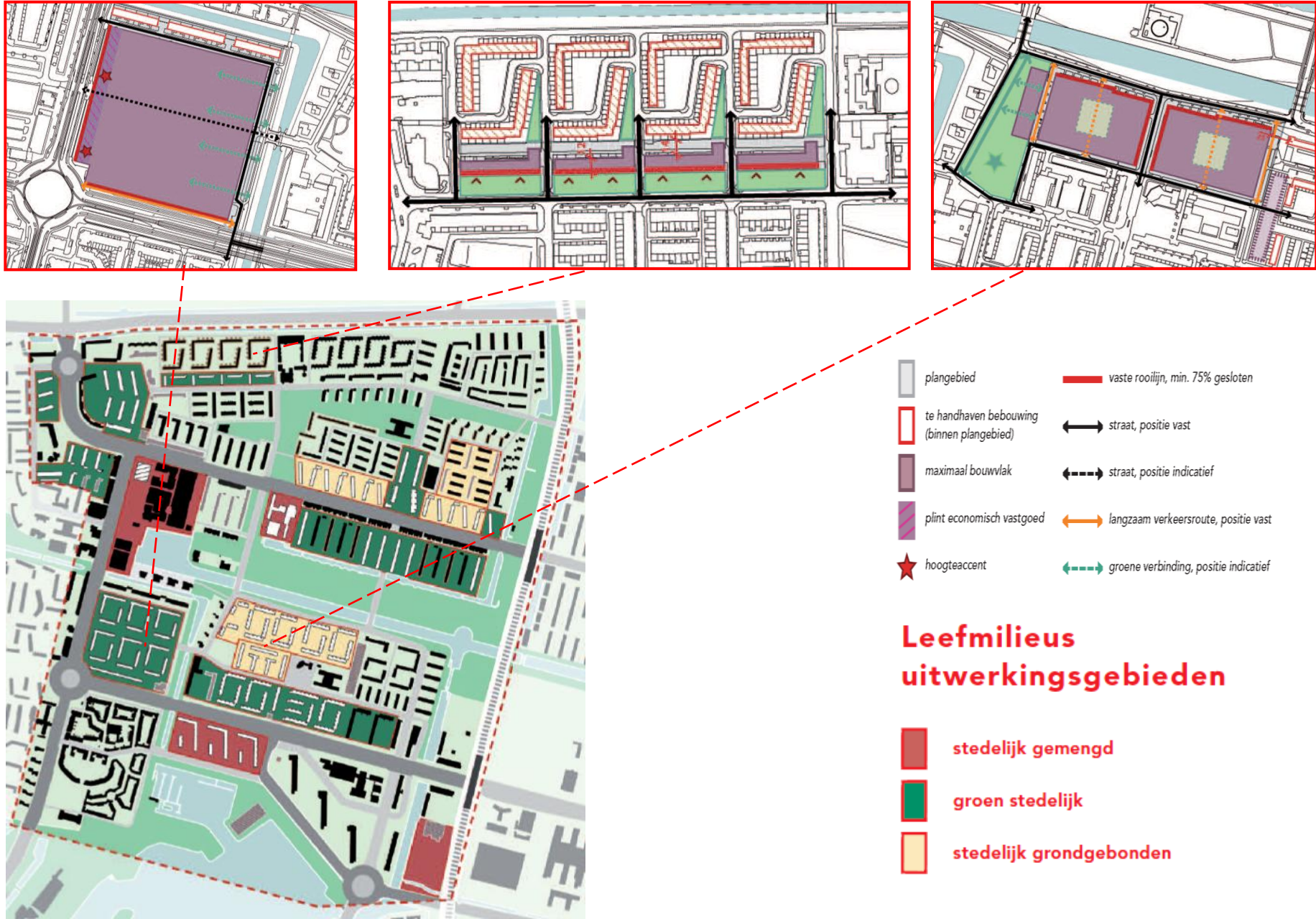


Figure 37 via Tamar (2010) (edited by author 2012)

Sub Conclusions duplex housing in Sloterveer

The principles of the original subdivision and the hierarchy between plots, roads and green is structurally unchanged. However, the original implementation of program through the different layers is lost.

Initially the inhabitants of the duplex housing courtyards where small autochthonous families in which it by means of lifestyles did not diverge as much from the inhabitants of normal ground-bound housing as illustrated in the sub chapter *Duplex Housing in Amsterdam* in the chapter *Duplex housing principles*. Nowadays, the neighborhoods are characterized by elderly people as well as people from a low socio-economic strata, in which a part see the home as temporary, for which the mutation rate is relatively high.

Today, the courts especially seem to be a serial repetition of uniform clusters while they were meant to be different through program; i.e. interweaving of the clusters. Infill of the courts as well as the functions in the corners of the courtyard allotment do not contribute anymore to programmatically interweave the neighborhood to catalyze social cohesion. The

corners operate more specifically with a greater range than only serving the neighborhood and the courts are limited to the block.

Between programs, the courts, allotment and transitions are today discrepancies. The allotment around the court should in this respect not be seen as houses around a courtyard like a traditional block. The orientation of the houses with entrance to the garden side have their living area and garden on the other side of the house orientated outwards de block. And for the northern and eastern dwellings exact opposite. This means that the houses with garden oriented to the court have to walk around the block in order to reach the courtyard.

On top of this the green barriers initially where low, guaranteeing visual contact. Nowadays this barrier changed in a more fragmented stroke in which sometimes the barrier is still open and sometimes closed by green or fences. But also increased parking pressure puts its stamp on the layout of the streets on the one hand but more over on the streets in the courts, making the green field even more visually separated from the southern and eastern homes.

The duplex housing in general is outdated in size, which they were considered to be fundamentally. But also in terms of technical conditions which therefore makes simplexing complicated. Since by doing so it should meet present regulations and demands for which many modifications should be done. Compared with the normal ground-dwelling it should be noted that the front façade with the entrance of the duplex houses are relatively inactive since on these sides sleeping rooms are situated and incidentally a kitchen on the first floor. For the houses on the south and east side this is an additional barrier between the courtyard and the dwelling.

THE CASE ROLAND HOLSTBUURT

The Roland Holstbuurt was part D of the plan 'Sloten' which is erected in the early fifties as part of Sloterveer. Commissioned by the housing corporation Eigen Haard 195 ground bound houses of which 192 were duplex dwellings, 3 stores, six garages and one office with work space, were built. Ir. J.W. Dinger was the responsible architect of the plan. The plan included 195 parcels and 387 families.¹

The urban context

The Roland Holstbuurt, is built up in a courtyard configuration following the generic urban programmatic and spatial urban principles explained in the previous chapter *Duplex housing in Sloterveer*, which has not been altered over time.

The Roland Holstbuurt is relatively isolated due to the fact it is bordered by roads of an order higher than the surrounding area. Which means on the westside it is enclosed by an autoway with increased traffic use over time as well as on the south border. Although, while on the south border it is

enclosed by a building strip, while on the west it is open. Thereby, the south route is of the first order, a so called 'autoweg wijk-verbinder', and on the west a 'buurtweg' with commercial activities. Especially on the west side this puts pressure towards the location. (figure 38)

On the north and south the area is enclosed by adjacent parallel building stripes. On the south side a strip of ground bound housing which encloses the neighborhood from the auto route, but low enough to guarantee light, air and space. On the corner a church is built which, according to the practical deviation of the wijkgedachte had a bigger range for use then only the Roland Holstbuurt and therefore sticks a bit out of the continuing perimeter of the ensemble so it can be seen from a distance.

On the north side the area is enclosed by an four story high apartment building strip with portico enclosure. This build up is characteristic since this could be higher in accordance with the principle of a good orientation towards the sun. The total built environment is on the west and south side enclosed by an auto way which connects the city districts. Along the north and west side the plan is connected to a green strip combined with the water structure which on

her turn is connected with parks an order higher in hierarchy. Scaling down it penetrates the neighborhood.

Following the pragmatical execution of the 'wijkgedachte' the corners were filled in with shops, offices and parking garages pragmatically. Logically along the main axes the public functions were located while the corners in the more quiet zones were used for parking.

According to a survey of the housing corporation Eigen Haard the inhabitants value the quietness of the neighborhood within the courtyards as well as they appreciate the shopping facilities nearby like plein '40-'45. The quality of the dwellings is appreciated differently. A huge part of the people is older than 75 years; of which the most still want to live as long as possible in the neighborhood. There are also people from other age groups; relatively young people. They often have the house chosen for its availability and low price and take the technical imperfections into the bargain. However, there are also people who experience these defects. There are also increasing problems between different lifestyles of the residents and

¹ Static Archive file number: 10099, district Nieuw West municipality of Amsterdam, Building permit 1952

problems regarding safety, nuisance and management.²

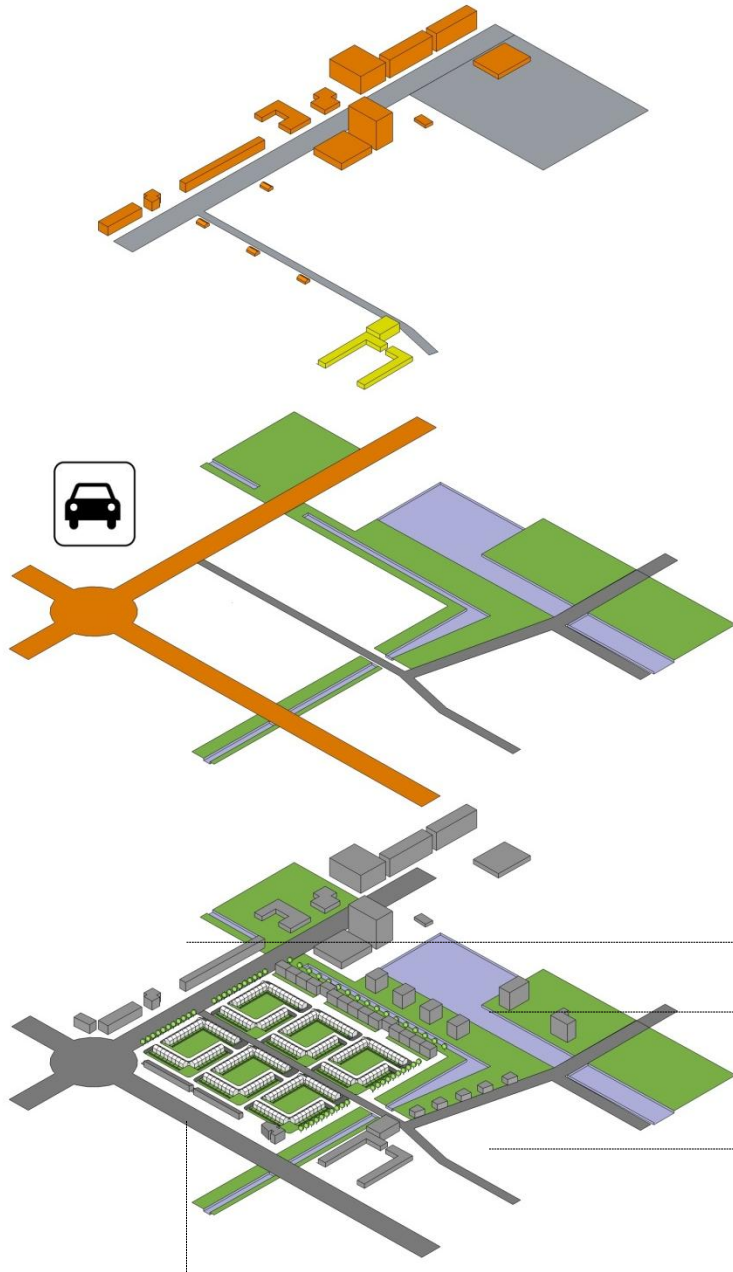
Before the economic crisis put developments for Sloterveer on hold, restructuring plans were made for Sloterveer South in which the focal points were the Roland Holstbuurt as well as the Couperusbuurt as described in the previous chapter.

Regarding the duplex housing the corporation Eigen Haard states that the investments to renovate the dwellings to nowadays standards is too expensive. The corporation does not see reason to start demolition and restructuring process on a short notice, since the dwellings still can be used for a couple of years. But then it is needed to invest in the liveability of the neighborhood. For this, investing in liveability now, and phased demolition and building new buildings they see the ideal solution.³ This development is put on hold for at least till the year 2020. In the mean time focused is on social programmes as well as maintenance and management.⁴

² Timár (2009)

³ Timár (2009)

⁴ *Stadsdeel Nieuw-West bewonerskrant mei 2011, via www.nieuwwest.amsterdam.nl/publish/pages/378409/nieuwwest_bewonerskrant_sloterveer_4_mei.pdf (accessed on 20-10-2012)*



*Continuation of public functions along the western autoway
Centralization of public functions in which Plein '40/'45 is the core and nearby*

Entanglement of street and green of an high order in which the autoway puts pressure towards the neighborhood



West side



North side



East side



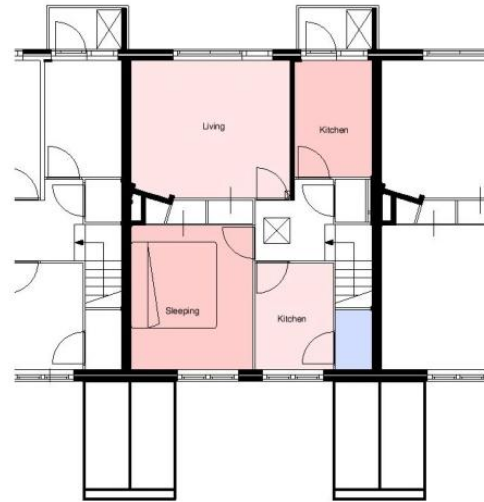
South side

Fig 38a Isometric urban situation

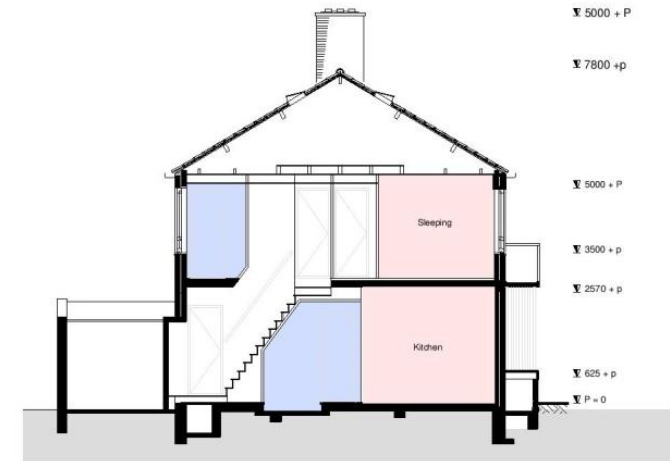
Figure 38b xa-d (streetview pictures 2008 (via www.google.nl/maps accessed 10-01-2013)



Ground floor



First floor



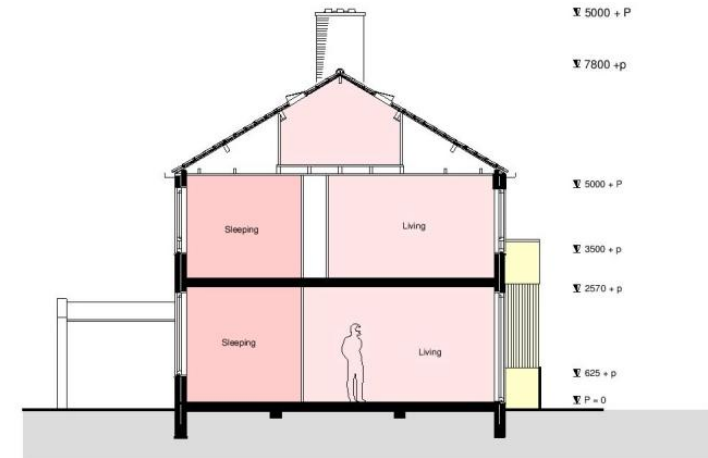
Cross section



Front facade



Back facade



Cross section

Fig 39a Drawings initial situation (by author 2013)

Architecture & Technique

The duplex houses were built in mainly traditional manners with partly modern techniques. Built in the early fifties it was in line with tendencies of material use and structure when experimental construction design was in here first phase as described in the previous chapter *Duplex housing in Sloterveer*. Therefore within Sloterveer the traditional building technologies and little experimentation with modern ones is common. In this regard the architectonic expression in Sloterveer is mainly characterized by pitched roofs and facades of maisonary which is still visible nowadays as illustrated in chapter *Duplex housing in Sloterveer*. Although modern system building methods and architecture can also be found in Sloterveer which for example are the Airey dwellings in the Van Eesteren Museum.

The typologies for housing were basically all the same in which it formed a uniform whole as a strip, a strip combined a courtyard ensemble. Though, the typology could be mirrored along its own front-back axes, for which the rows on this aspect varies as well as the corner connection. This logical deviation was different for the corner buildings.

Following the pragmatical execution of the 'wijkgedachte' the corners were filled in with different functions which was literally translated pragmatically in the design of the façade. For, which, although each corner building followed principal rules of the building envelope, material usage and coherence in architectural expression, are all slightly different on window framing composition and openness.

Architectural expression

Initially the architectonic expression of the housing was sober and minimal, due to the scarcity of materials, but delicate.

Initially, the housing stripes were not only designed as only one typology several times repeated, but also regarded as an whole. Oversized chimneys in correlation with the brick facades of the sheds made the strip an interesting composition in which, by means of these elements, vertical lines were introduced downscaling the uniformity and horizontality of the stripe as illustrated in figure 39 (a.e. in the Anton Struikbuurt even alternating chimney lengths were used to reach such an effect).

A second element was the usage of a simple colorset regarding window framing, the

balconies and side facades of the sheds as well as the special functions in the corner. The corner buildings were painted white as well as the sides of the sheds indicating the publicness or collectiveness. The window framing was painted white in which all the rotating parts were painted beige, in which too the balconies, indicating the more private areas.

Over time the overall expression changed by renovation measurements, in which the initial delicacy is lost.

Due to the altering of elements like colors, window framing and the chimneys, the composition on block level as well as the individual dwelling changed.

Especially lowering the chimneys takes away the verticality of the composition which it had in the original execution. Thereby, due to the alterations made by inhabitants in the transition zone, due to the effect of appropriation, like adding fences or coloring the facades, this fragmentation, due to flattening of the architectural expression on the block scale, is even enhanced.

Thereby the ceramic coffering tiles on the blind facades of the sheds, which are out of tone since it does not correlate to the modest and scale expression it initially embodied, and the

fact the masonry blind facades of the sheds are painted with a newly introduced color, its new expression sets the sheds apart from the dwelling while initially expressing an integral whole.

The clear alignment of the window framing and its color layering are gone. The wooden windows have been replaced by plastic windows. Although the measurement of the profiles have been maintained there are changes in the composition due to ventilation grilles and change of rotating elements into fixed framings as illustrated. Which flattens the architectonic expression on dwelling scale.

This does not only influence the appearance of the façade but also the possibilities for use. In this regard the opening doors to the garden changed the relationship with the garden in which the garden has become more excluded as being able to be an extension of the living area spatiously during 'summertimes'.

Technique, material and building physics

The facades and separation walls of the dwellings in the Roland Holstbuurt are built up with masonry in which both the facades as well as the housing separation walls are load bearing as illustrated in figure 40. The span is

5,7 meters, which was large for which not yet feasible floorsystems were on the market to reach such span. For this, extra load bearing walls were placed which also divides the servicing spaces, hallway and stairs, and the living space, which is common for housing built between 1946-1966.⁵ Due to the fact in simplex form on the first floor a load bearing wall was partly not desirable a steel profile, normal profile 22, nowadays referred to be similar to the standardized IPE-220 profile, is used as load bearing structure for the floor above. This guarantees the changeability of the floorplans when simplexing.

The ground floor as well as first floor is made out of reinforced concrete. A combination of traditional 'in situ' concrete as well as prefab systems is used. On ground floor it is totally in situ reinforced concrete, in which there are a few cutouts and height difference. For example the shower floor is lowered. Typical for the time is the integrality of elements as concrete monolith, since none of the several elements was decoupled, like for example the shed floor or cupboard put. The first floor, is a combination of the cusveller floor, an prefab system, which was an experimental floor system in that time and used in the fifties

begin sixties, and in situ prefab concrete.⁶ The cusveller system, which was an half prefab system categorized as ribbon floor system, exists out of concrete hollow elements, for which such floors were lighter, material saving, and regarded as performing well on sound insulation performances. Which of course was therefore beneficial for using in duplex housing.

Since the shortage of materials, the first floor, which consists of purlins and rafters, was minimally dressed and the usable space under the hood was minimal. Although in contrast, two skylights were placed in the traditional hood, since the loft was used as drying room. The roof is built up fully traditionally which consists of purlins and rafters with roof decking, shelf parts, battens and the improved dutch tile (VH-pan: verbeterde Hollandsche pan).

Regarding the façade openings begin '50ties the usage of reinforced concrete support beams above the wall openings became popular, which is used in the dwellings in the Roland Holstbuurt. This became popular, since

⁵ Ministerie van VROM (2004), P. 52

⁶ Cusveller vloersysteem via http://www.joostdevree.nl/bouwkunde2/cusveller_vloer.htm (accessed on 28-03-2013)

then bigger spans where possible, it was less labor-intensive, and thereby the above lintel of window framing would be relieved, for which smaller measurements of the wooden windows became possible.⁷

Where material scarcity was fully reflected is in the gutter of the drainpipe of the sheds. The gutter does not run over the entire length but only the minimum necessary length covering the barn doors.

Initially homes were reasonably well equipped, especially with the knowledge that the houses would be simple. Both properties possessed a shower, which was not standard for normal homes, let alone duplex housing. The dwellings were designed within the desired performances regarding the building physics and installation technique.

The dwellings were designed within the desired performances regarding the building physics and installation technique. The façade wall was built up out of masonry with a small air cavity. Which in general was introduced since a stone wall offered a limited moisture resistance. The outer layer was thus particularly

functioning as a rainscreen.⁸ Ventilation was enabled by draining and heating by means of a coal stove. (figure 41)

Regarding the dwellings no structural changes have been done. Though, on the level of material and installations several changes were made.

Changes over time

Due to the renovation period of the eighties, as described in the second sub paragraph *architectural expression* functional technical parts of the dwellings have been changed, which are mainly the chimneys which are shortened, the wooden window framing which has been replaced by plastic ones and the use of colors. Regarding use and comfort main changes have been made in the way of heating and ventilating. The coal stove was replaced by a gas fire. Ventilation became more controlled due to ventilation grilles and thereby additional ventilation for the kitchen was enabled.

Nowadays by mutation improvements are done for improving comfort regarding installation technique. Per household the gas fire is replaced by a central heating system. In which the living room is not anymore heated from the

middle, but from the façade sides creating better comfort, as well as additional heating in the sanitary.

Nowadays, based on visual inspection, the preliminary construction seems to be in order. Performances on the parameters on the levels of acoustics, energetics, and detailing regarding nowadays standards have changed drastically. The performances on these parameters are low. None additional insulation for warmth and or cold, none for noise have been made. Regarding energetic problems especially the thermal bridges caused by the typical way of building are problematic.

The typical problems of the small spans and optimized floorplans in combination with the building technique and detailing (thermal bridges) causes a big problem for the feasibility for renovation measurements in correlation with the benefits for improvement on usable surfaces, which is in general for one-single family housing built between 1945-1965.⁹ Since for example additional layers on the inside decrease the usable space which already was fully marginalized in time of erection.

⁷ Archidat (2012) p. 25

⁸ Archidat (2012) p.24

⁹ Ministerie van VROM (2004), P. 52

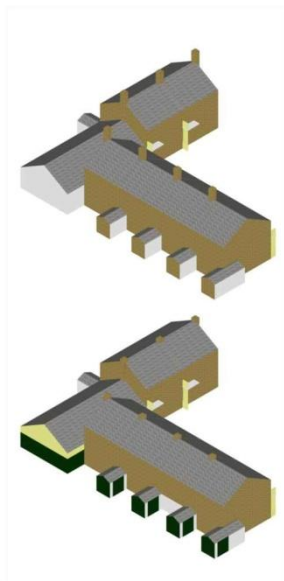
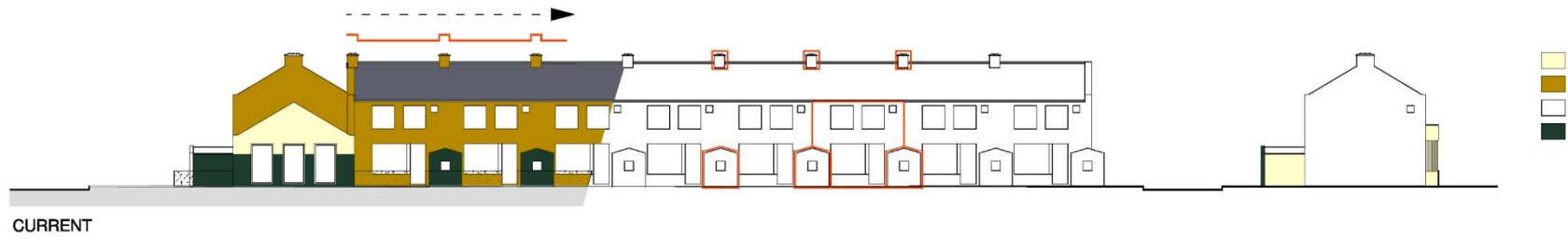
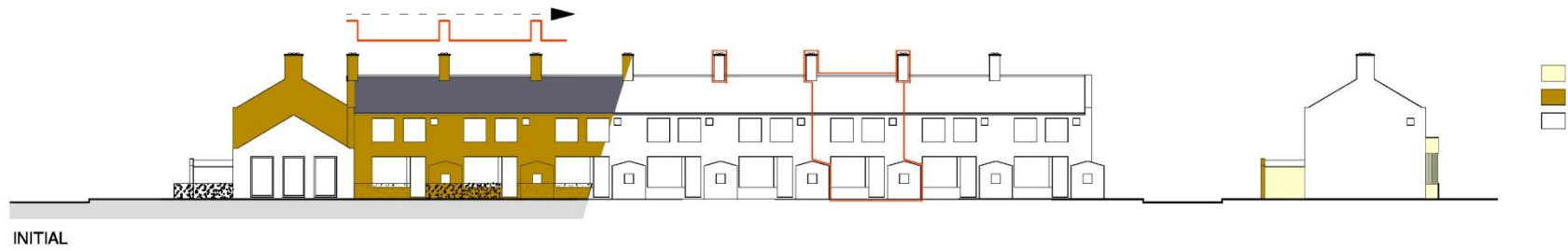
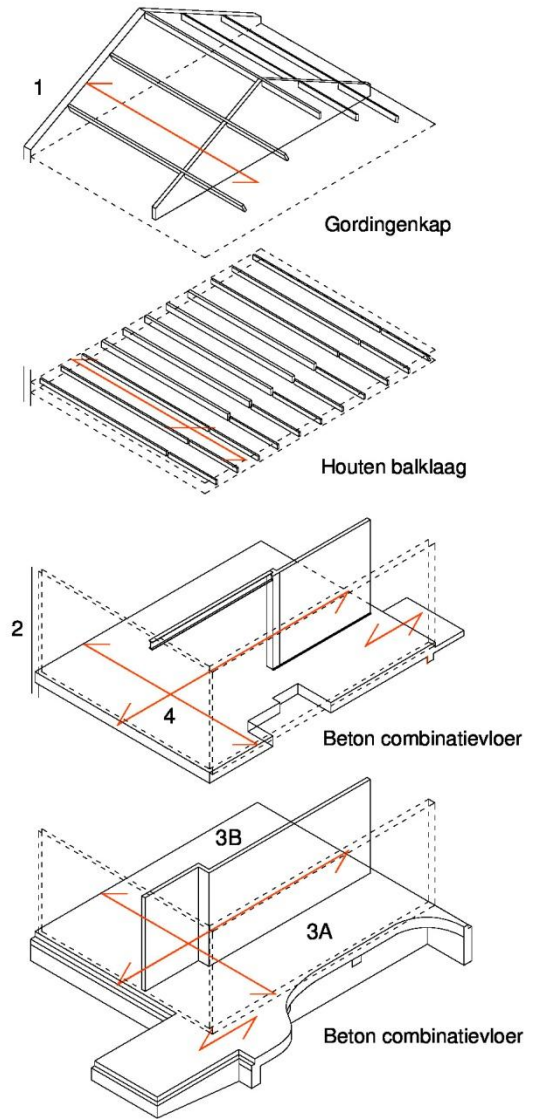
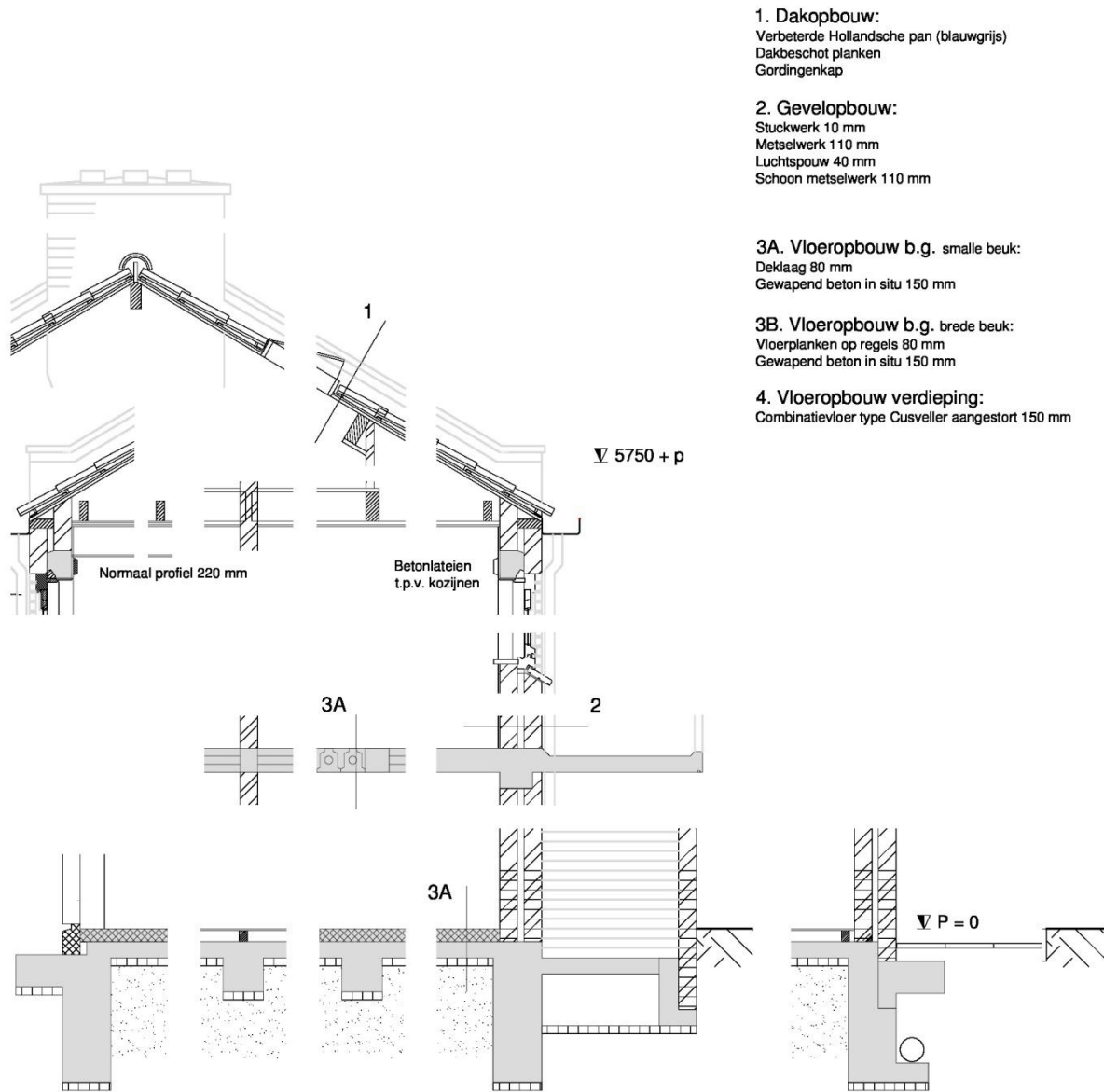
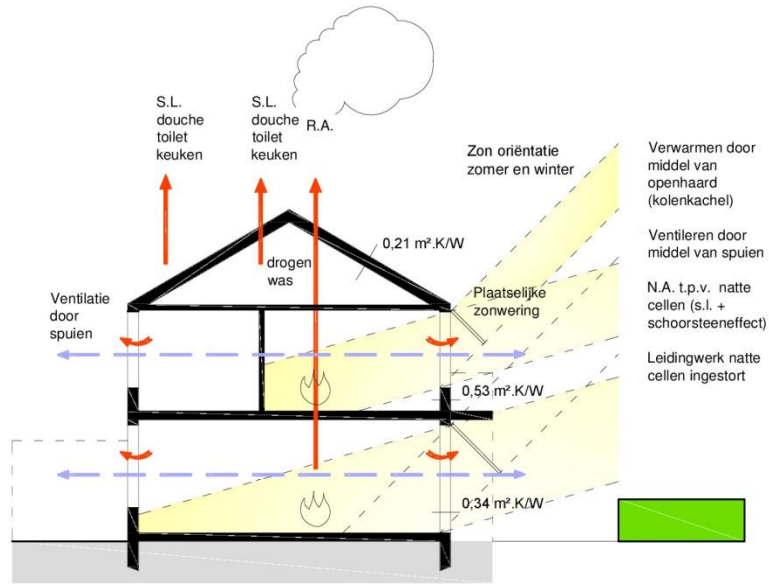


Figure 39 (by author)

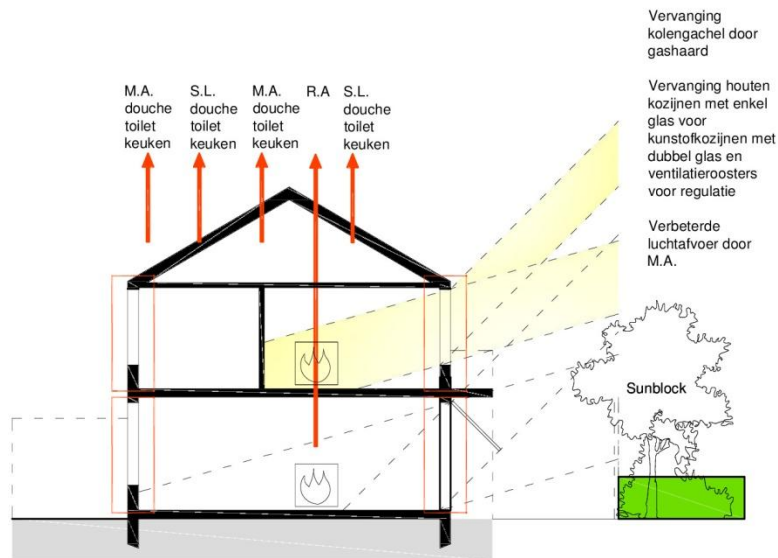


Principle built up construction

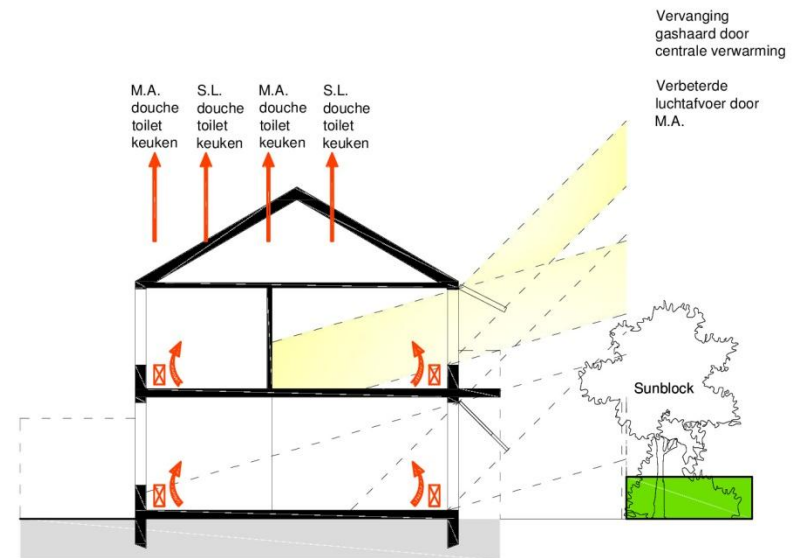
Figure 40 (by author)



Initial situation



Renovation situation - current situation



Current situation after new renovation

Figure 41 (by author)

Sub Conclusions Roland Holstbuurt

The Roland Holstbuurt as part of Sloterveer is erected following the principals of the western garden city, based on the theories of 'het nieuwe bouwen' elaborated within stamps of the courtyard configuration containing almost only duplex housing.

The neighborhood faces the same generic problems of duplex housing configurations conducted in Sloterveer on the level of the interweavement of program elaborated through the yards and de functions in correlation with de transition zones and the dwellings. Though, the neighborhood is enclosed by streets and green of an high hierarchy for which it sets pressure towards the neighborhood regarding the increased car traffic on the west, for which in the masterplan the area is marked as 'mixed urban' and on the westside commercial activities and height accents would be desirable.

Regarding the duplex housing the architecture is sober and minimal and affected over time, in which the expression of the block has flattened which is enhanced by the fragmentation of the transition zones due appropriation. Identifiable

distinctive architectural characteristics are mainly the balconies and its connection with the coal cupboard on the ground floor. The overall value of distinctive architectural values is poor. Although the side as the sum of urban principals, architecture and technique very well represent typical matters on each level and therefore can be suggested to be a representable part of the Western Garden cities as it was meant.

The typical problems of the small spans and optimized floorplans in combination with the building technique and detailing causes problems regarding feasibility for renovation measurements in correlation with the benefits for improvement on usable surfaces, regarding the typology as onefold.

Conclusions

The research was focused on the duplex principle on the one hand and the elaboration in Sloterveer and more specific the case Roland Holstbuurt on the other hand. In this initially the duplex housing principle is investigated in time of erection which was developed and elaborated in a very short time. upon this the elaboration of duplex housing in Sloterveer and more specific the Roland Holstbuurt was investigated. For each chapter sub conclusions were drawn to be able to answer the research question for the initial research phase: *What are the merits of duplex housing neighborhoods in Sloterveer?* Which is described in the following paragraph.

Merits of duplex housing neighborhoods

Duplex housing with regards to the urban allotment was not perceived significantly different in terms of characteristics of tenants in time of erection then neighborhoods with single family housing, for which it was little concerned with the urban programmatic deviation of such housing through neighborhoods, since the population in time of erection was more homogeneous then nowadays. And thereby the stock would be simplexed within ten years to become a

neighborhood with single family housing again. Opponents of de duplex principle stated these neighborhoods could become depreciated neighborhoods with a poor social economic situation. Nowadays, this has become to an high extend reality. Since the population changed, which is moreover characterized by heterogeneity and individualism, and the occupancy rate became lower, the difference between inhabitants of duplexed and simplexed areas have grown. Especially in neighborhoods with duplex housing on the one hand there are relatively much elderly people and on the other hand young people for whom in general the house is considered to be temporary, attracted by the cheap rents, for which mutation rates are high in these areas. Due to the concentration of duplex housing in which the smallest concentration in Sloterveer is 192 houses, it can be assumed socio-economic problems catalyzes itself, due to saturation. The high fluctuation rate enhances this degeneration, since this does not enhance care, ownership nor responsibility towards the neighborhood.

Though, duplex housing neighborhoods strongly embodies the fundamental principles of the Western Garden Cities. They have become moreover representable areas of intimate villages in a city which was one of the

primary concerns of the AUP. Especially the courtyard configuration which is a typical feature of post war housing in Amsterdam. Although, this counts for single family housing, since duplex was not a goal, but a temporary necessity, except the duplex typology, it is the same. Regarding ground bound housing, only 30% is built as such, including the duplex housing, while the aim was 70%.

Research and analysis reveals discrepancies between duplex typologies and its living environment nowadays. It is especially the relationship between the structural layers which have been altered over time on infill and program. The original implementation of program through the courts and commercial functions, connecting the several blocks stimulating social cohesion is gone. While in similar neighborhoods with ground bound housing, inhabiting moreover families, resting places and play elements can be found. Thereby in such neighborhoods the garden sides are better functioning and maintained due to a greater extend of appropriation. Thereby, on typology level, the floorplan in relation towards the transition is not ideal, since sleeping rooms are situated on this side, which leads to an inactive façade. The blocks nowadays operate moreover as individual

islands inhabiting another indistinctive green island.

With the main problems as well as generics of the built up of duplex housing neighborhoods in courtyards, the case Roland Holstbuurt was further researched. The Roland Holstbuurt is relatively isolated and autonomous, in which the autoway on the west sets pressure towards the neighborhood, for which in the masterplan this neighborhood is marked as mixed urban, aiming on intensification in building mass and commercial functions on the west border.

Built within the first rebuilt period the duplex housing is characterized by masonry and pitched roofs, with marginal and sober, but delicate detailing. Due to the renovation period the architectural expression changed in which its expression flattened due to changed color use, different window framing and shortening of the expressive chimneys. Changes based on purely technical reasons. The different appropriations of the private garden, from fenced to open, revealing different ways of use, but fragmentizing the clarity of the transition zones, even enhances this flattened architectural expression of the block.

Regarding the typology, typical problems of the small spans and optimized floorplans in combination with the building technique and

detailing causes problems regarding feasibility for renovation measurements regarding energetics in correlation with improvement of usable surfaces, regarding the typology as onefold.

Conditions and design direction

Although duplex housing neighborhoods in courtyard allotments are well preserved and still reflecting the quality of the initial plan, a village like neighborhood within the city, due to the economic situation, renewal plans, characterized by phased demolition and building the new, are put on hold. Which is the case for the Roland Holstbuurt. Socio-economic problems as well as decay of the stock are still at concern and will probably continue and even increase if new strategies and interventions more suitable to the economic present situation will not be conducted.

Therefore, the aim of the design direction focuses on phased change of these neighborhoods, which is the primary concern in developing architectural solutions for the revitalization of areas like the case the Roland Holstbuurt. In which it aims to provide in positive future perspective to coop with the bad image.

This by means of gradual diversification of the stock, in which mutual change and the possibility of making a housing career would be desirable, to overcome the high fluctuation rate and enhance the appropriation and identification with the neighborhood. In which programming the collective courts as usable spaces could enhance social cohesion.

Since the research is concerned with the merits of the elaboration of the duplex principle and its urban configuration, the swot matrix, figure 44, is based on the one hand on the principals of such areas for the case study in the form of weaknesses and strengths. Micro urbanism and bottom up development is at the primary concern in developing architectural solutions for the continuation of areas like the Roland Holstbuurt, in which regard the opportunities and threats are drawn.

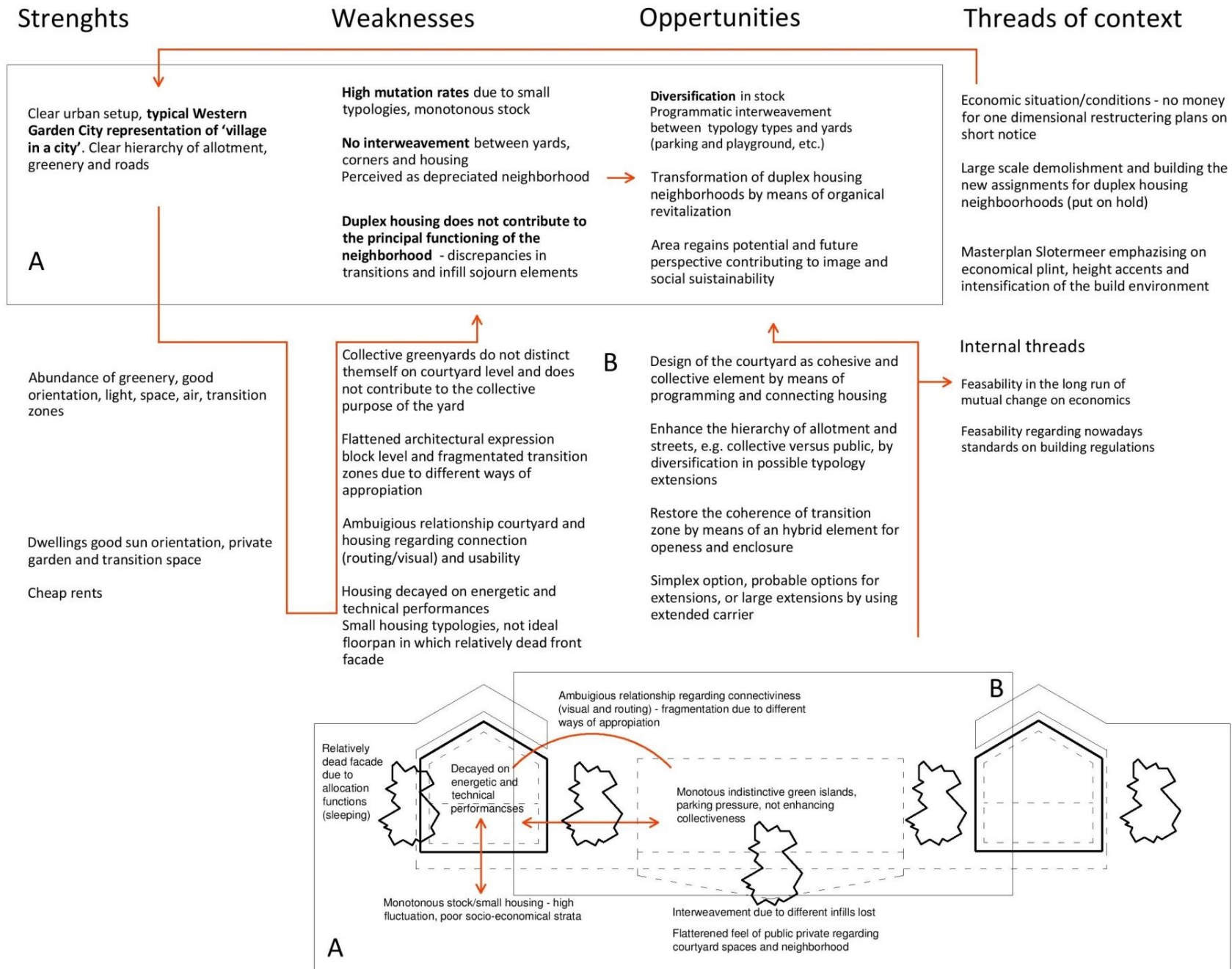


Fig 44 Matrix Swot

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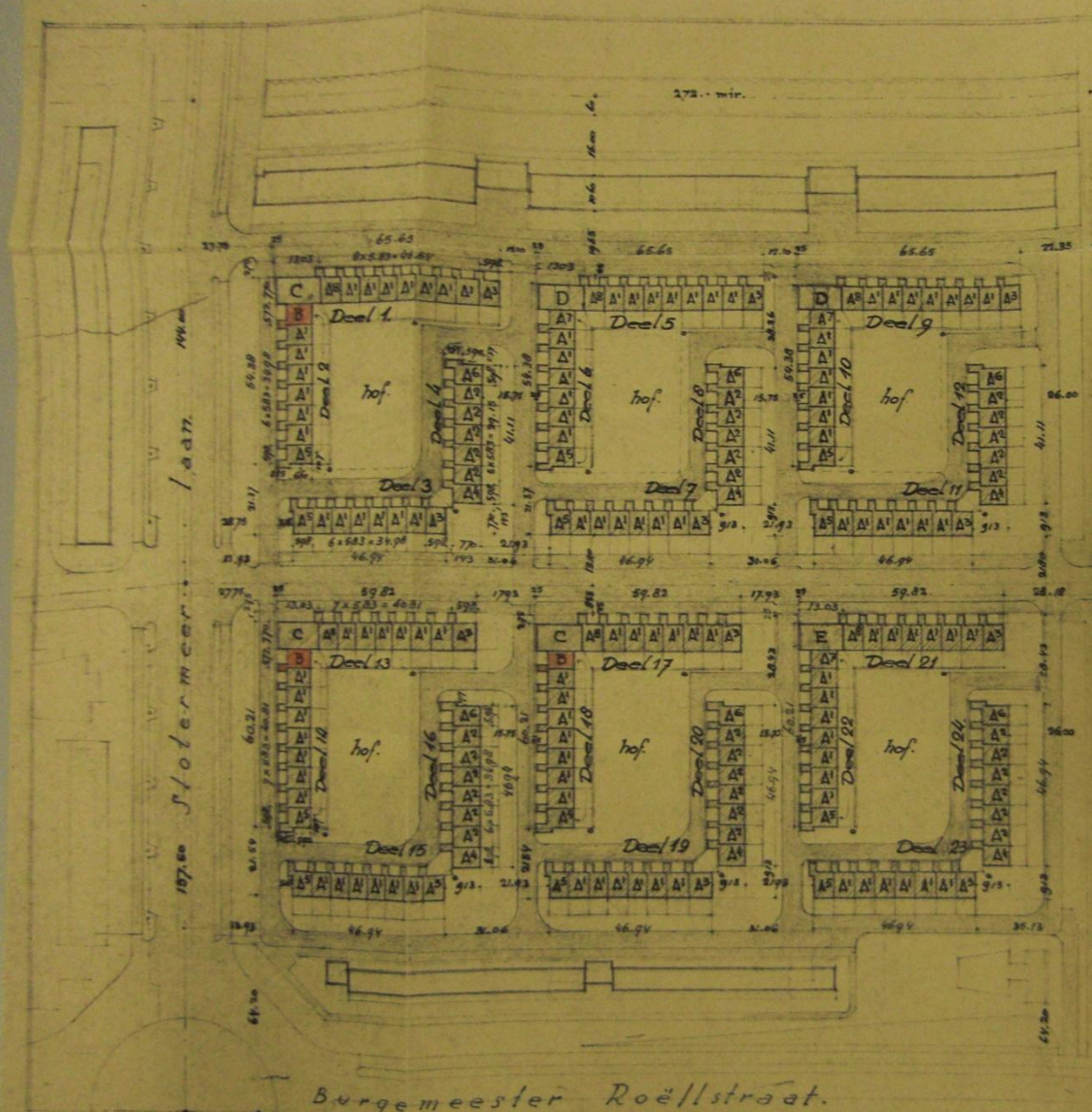
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***Beeldbank Gemeente Amsterdam
Stadsarchief, via***
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Appendix

- Drawings building permit Roland Holstbuurt 1952 Situation
- Drawings building permit Roland Holstbuurt 1952 Facades
- Drawings building permit Roland Holstbuurt 1952 Floorplan ground floor
- Drawings building permit Roland Holstbuurt 1952 Floorplan first floor and section
- Drawings building permit Roland Holstbuurt 1952 Details



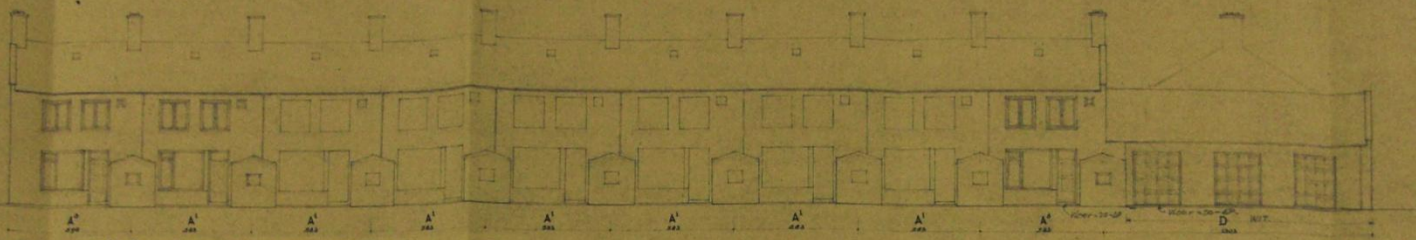
Woningstaat.

aanl. m ²	woning type	aantal bedden	bestemming
144	A ¹	7	duplexwoning
33	A ²	7	" "
12	A ³	7	" "
6	A ⁴	7	" "
12	A ⁵	7	" "
6	A ⁶	7	" "
3	A ⁷	7	" "
6	A ⁸	7	" "
3	B	7	eéngesinswoning.
195	percelen, voorlopig voor 387 gezinnen.		
3	C	-	winkel.
2	D	-	elk 3 garages
1	E	-	kantoor met werkplaats
201	eenheden.		

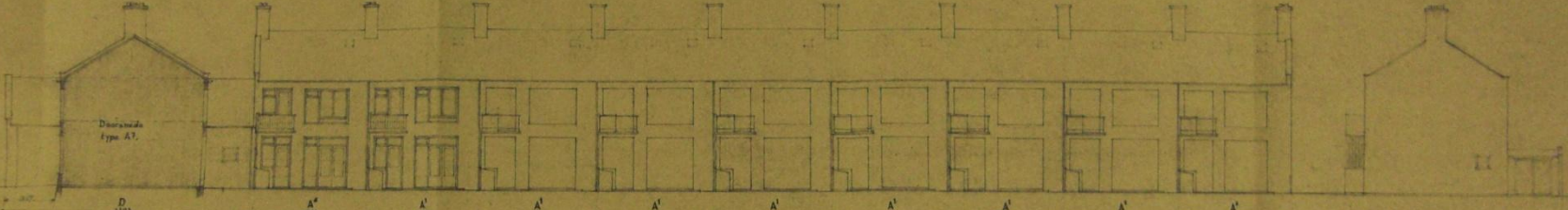
Woningbouwvereniging „Eigen Haard“ datum 18.12.52
 paraaf: *J. W. Dinger*
 Plan voor het bouwen van 195 woningen waarvan 192 duplexwoningen, 3 winkels, 6 garages en 1 kantoor met werkpl. op terreinen in Deel D van de Tuinstad Slotermeer Amsterdam West.
 Schaal 1:1000
 Architect: Ir. J. W. Dinger, Amsterdam.
 Tekening 1
 2058 M 52

Burgemeester Roellstraat.

Behoort bij de beschikking van Burgemeester van Wekerom van Amsterdam van 22.11.52
 2058 M 52
 456/49 M
 De Directeur van de Gemeente van Amsterdam

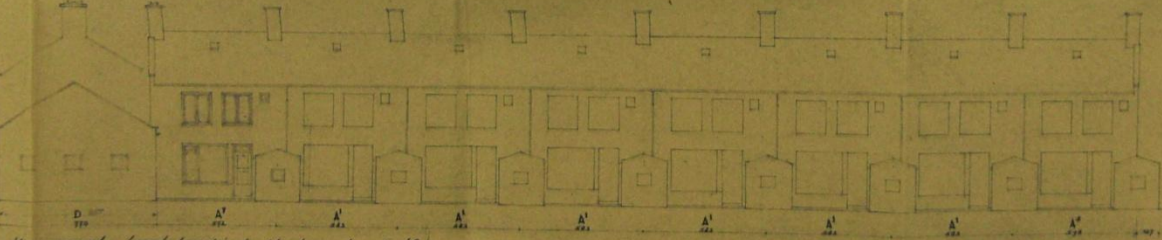


Voorgevel. (gelokend is de Noordgevel van deel 5)



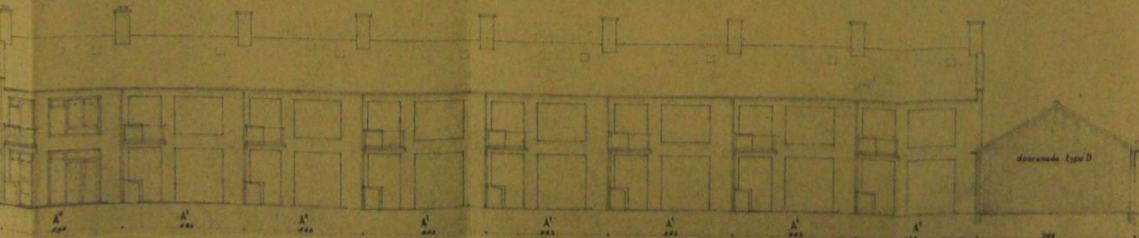
Achtergevel. (gelokend is de Zuidgevel van deel 5 en 9)

Zijgevel type A*



Voorgevel. (gelokend is de Westgevel van deel 6)

Zijgevel type A*

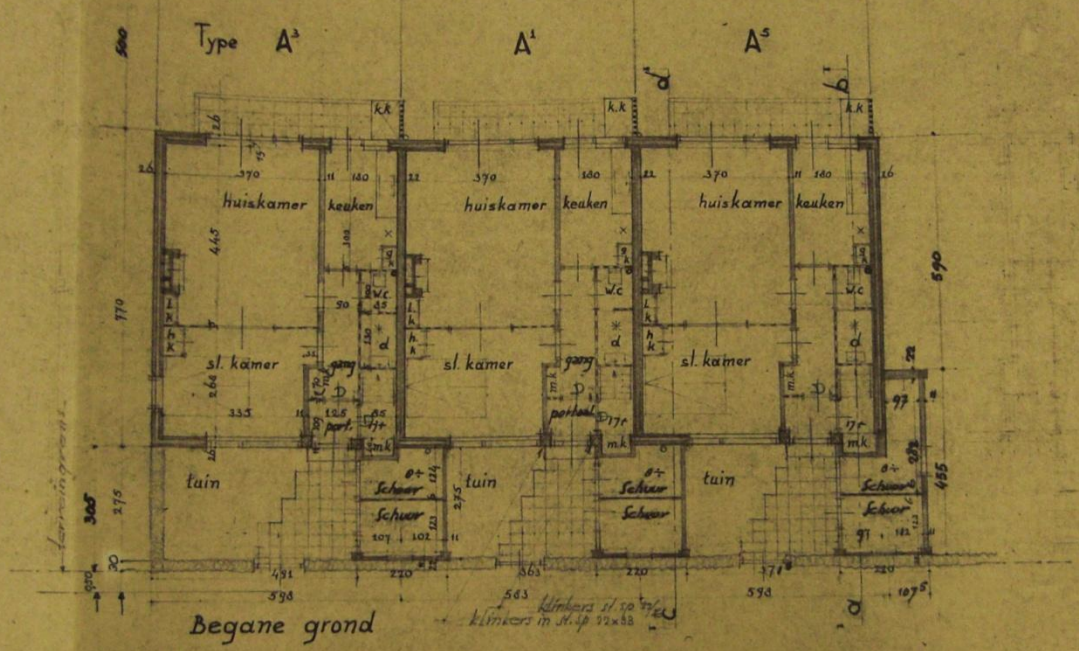


Achtergevel. (gelokend is de Oostgevel van deel 6)

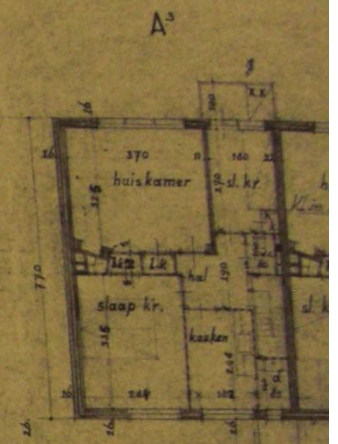
Woningbouwvereniging „Eigen Haard“
 Plan voor het bouwen van 193 woningen (waaronder 192 duplex woningen), 3 winkels, 6 garages en kinderspeelplaats op terrein in Deel II van de Tuinstad Slotervaart Amsterdam West.
 Gevels van de Typen A*, A', A'', A' en D.
 Architect Ir. J. W. Dinger, Amsterdam.

Schaal 1:100
 4
 tekoning

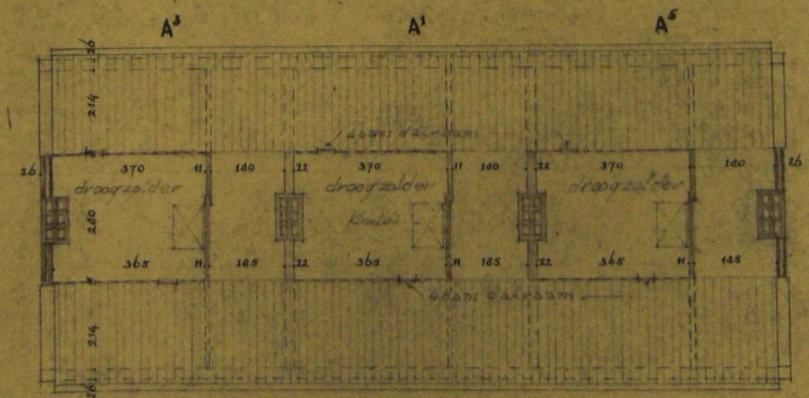
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Begane grond

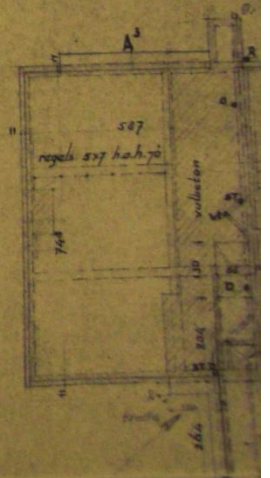


Verdieping

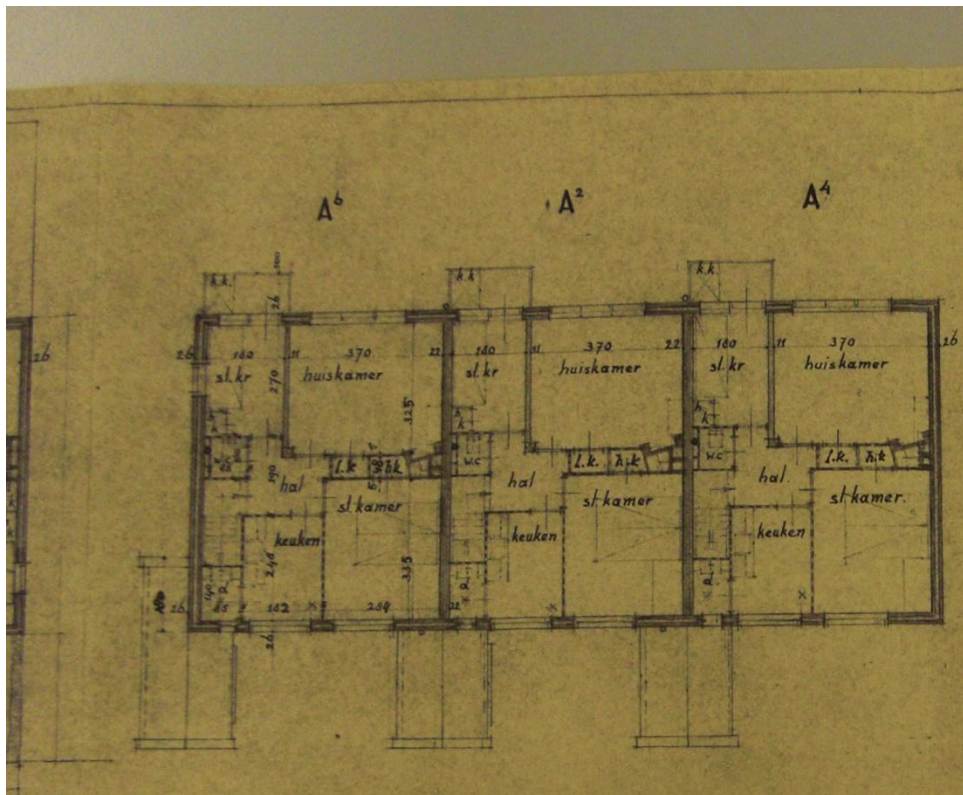


Zolderplan

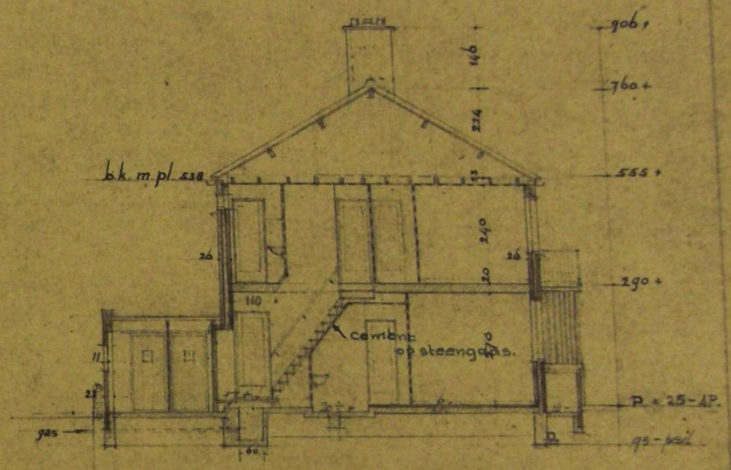
Aansluitingen:
 Gas: alle typen A + B, C en E.
 Electra: 2 stuks per deel.
 Water: 1 stuks per deel +
 de typen C en E elk 1 en.
 typen D elk 3 stuks.
 Bovendien totaal 6 stuks voor
 de tuinbesproeiing.



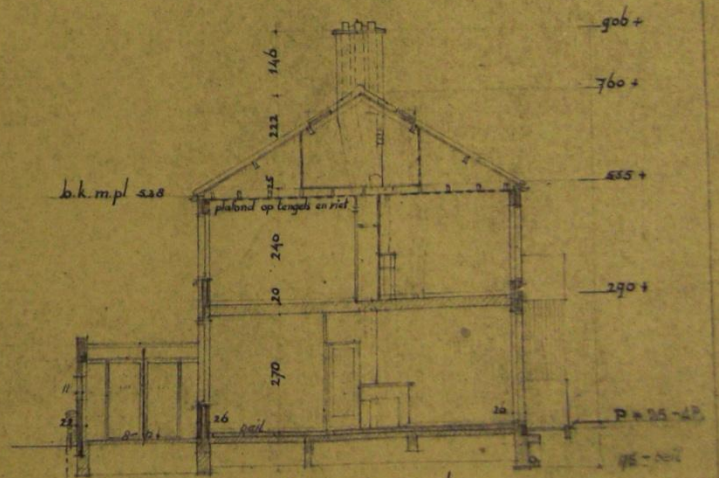
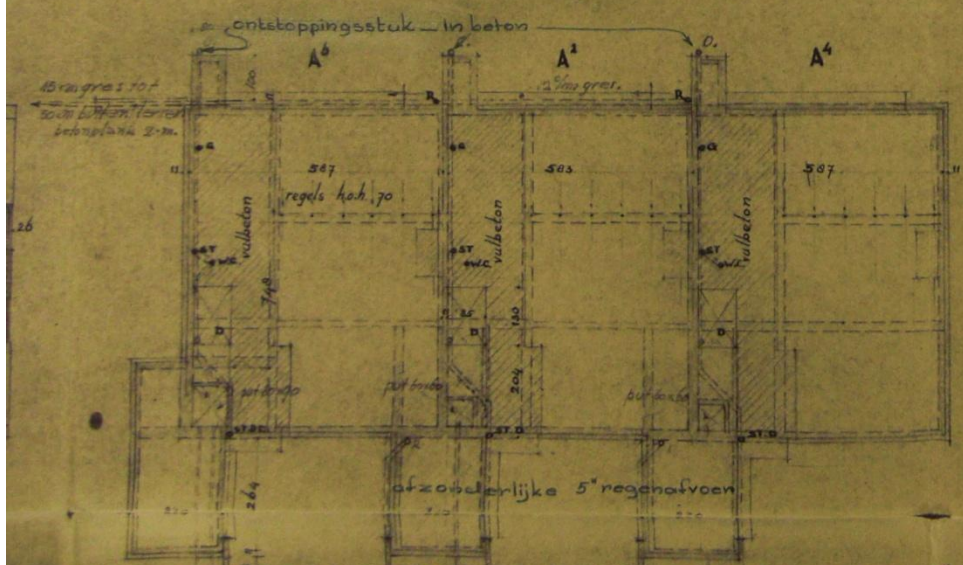
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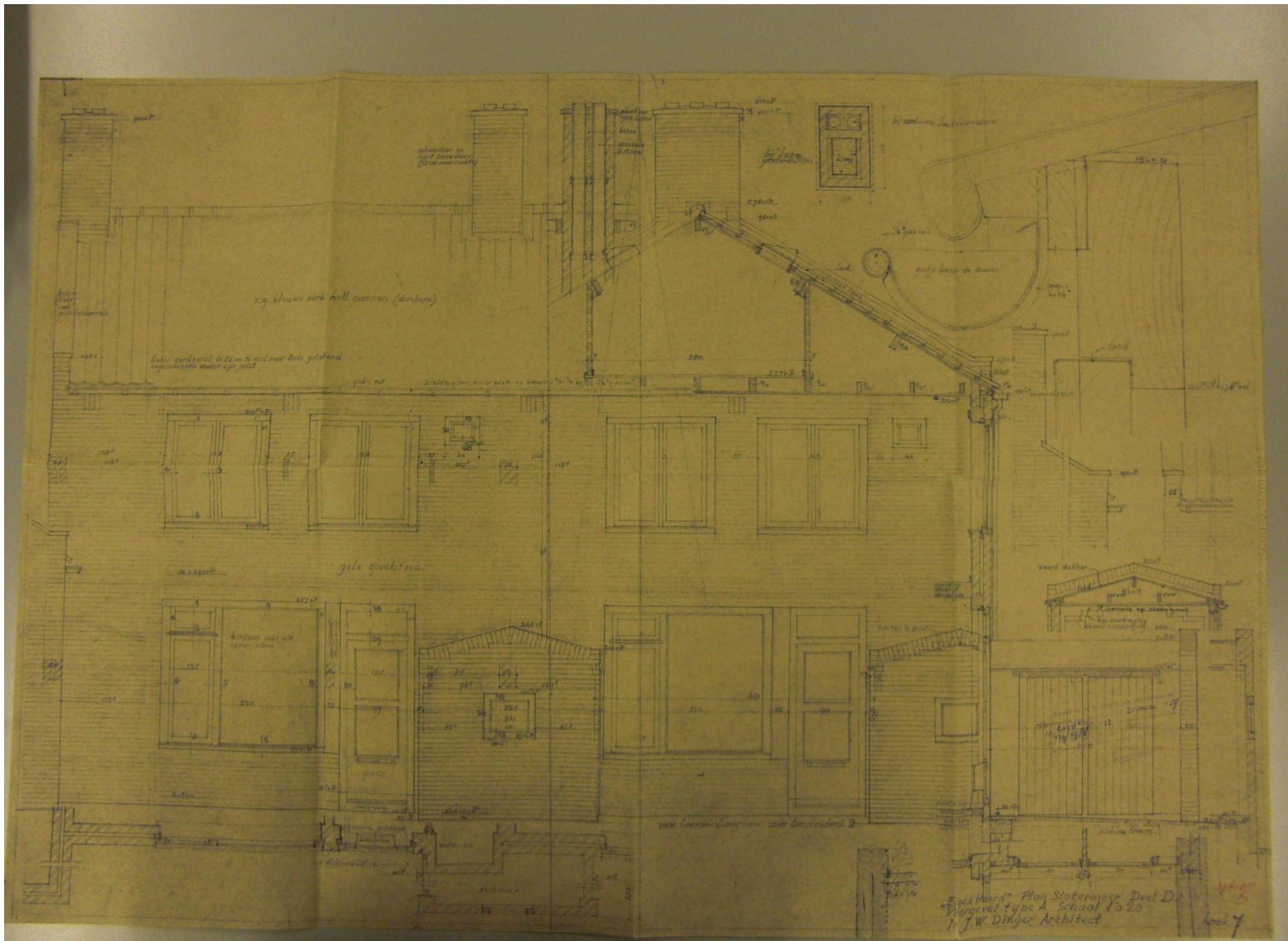
Verdieping



Doorsnede a-b.



Doorsnede c-d.



Eschward - Plan Staterijge Deel D
Vloerplan type A. School No 20
J. W. Dinger Architect

1917
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