

15.1 MORPHOLOGICAL REDUCTION

Morphology literally means ‘form-lore’, or knowledge of form. In the present case the knowledge of the form of the city is concerned: what is the essence of that form; does a certain logic in spatial composition apply, certain structuring principles? During the seventies, the interest taken in analysis of the form of the city and the wish to try and understand which compositional principles and spatial conditions and restrictions were underlying an existing part of the city or an urban architectural design witnessed new impulses. This was strongly related to growing criticism of functionalistic design philosophies that dominated urban architecture in the decades following WW II. The discovery that historic cities and parts of them often feature certain spatial characteristics relatively insensitive to changes in usage and significance through the years caused growing interest in the principles of composition underlying the spatial form of a part of the city – independent of functional, legal, social or economic considerations. The development of morphological analyses in the sixties and seventies that flourished in Southern European countries (Italy, France, Spain)<sup>a</sup> and in Northern America<sup>b</sup> was in the seventies and eighties to ‘Delft’ a source of inspiration to build a new foundation for urban design.

Several kinds of morphological analysis may be discerned; each of them with its own purpose and its own (drawing) technique. Especially the figure-ground analysis and formal plan analysis developed in Delft are mentioned here. These methods of analysis play an important rôle in the search for new urban compositional principles and in the debate on them. There are two important considerations; first, that morphological analysis is indispensable to the designer in order to be able to make statements on the position and significance of a building in a given spatial context. The second is that a morphological analysis usually does not lead to a clear conclusion that can be transformed directly to a design.

A common property of various kinds of morphological analyses is that they endeavour to provide an unambiguous explanation and/ or interpretation of the spatial structure of the city; the purpose or the aim of the analysis however may vary, resulting in differences in the ‘usefulness’ of the analysis for the design. Here, we make a distinction between:

- morphological analysis as a method for plan criticism,
- morphological analysis as a method for knowledge development and explanation of the origination of the form of the city,
- morphological analysis as an exploring preliminary study for formulation of the commission for the design.

Finally, a fourth category of analysis, important to urban architectural design:

- typological analysis as an exploration of the design toolbox.

15.2 PLAN CRITICISM

Figure-ground analyses

An important motivation for development of morphological analysis consisted in mounting dissatisfaction and criticism connected with the methods and products as they are employed in the modern building of cities. They were dominated by the intention to replace the morphology of the existing city by an entirely new one. However, the debate on the intentions and effects of modern urban architecture were still dominated, for the time being, by ideological motivation. The first generation morphological studies can be characterised as a quest for development of a ‘language’ enabling a way to discuss the effects of modern urban concepts and the significance of old, traditional city forms without deteriorating directly in ideological positioning.

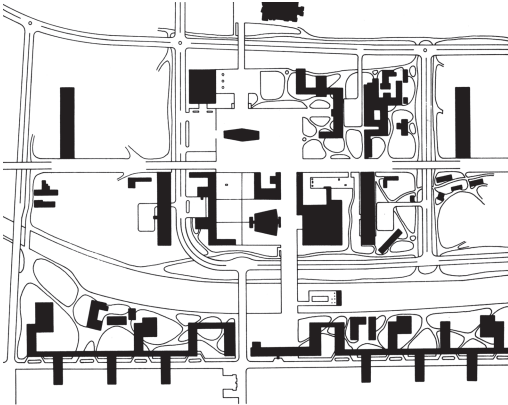
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a Intended here is the work of Muratori, Saverio (1959) *Studi per una operante storia urbana di Venezia*; Aymonino, C., M. Brusatin et al. (1966) *La Città di Padova, saggio di analisi urbana*; Rossi, A. (1982) *The architecture of the city* (Dutch translation: (2001) *De architectuur van de stad*) a.o. in Italy; Fortier, B. (1989) *La metropole imaginaire: un atlas de Paris*; Panerai, Ph., J.-Ch. Depaule et al. (1999) *Analyse Urbane (1980)* a.o. in France; Sola-Morales, M. de (1993) *Les Formes de Creixement Urbà* a.o. in Spain.

b Rowe, C. and F. Koetter (1978) *Collage City*; Moudon, A.V. (1986) *Built for change, neighbourhood architecture in San Francisco*.



98 Parma according to Rowe (1978)



99 Saint Die (Le Corbusier) according to Rowe (1978)

As a method of plan-criticism morphological analysis has as its objective to ask, by means of a drawing, the question whether any spatial structure in an urban project is there at all. The most explicit type of drawing developed for that purpose is the figure-ground analysis, introducing an essential aspect of the urban composition: the ratio between (built) mass and open space. The central question is which of the two components plays a figurative or form determining rôle in utilisation of the area. This method of analysis was developed by the American professor Colin Rowe; in first instance with the aim to differentiate fundamentally between the urban architecture of the 'Moderns' and traditional city forms preceding the twentieth century.<sup>a</sup> With this goal in mind Rowe compares the city maps on the same scale of two different cities: the inner city of Parma, result of a process of development during centuries; and the design of Le Corbusier for Saint Die. Rowe explains:

*"Thus, the one is almost all white, the other almost all black; the one is an accumulation of solids in largely unmanipulated void, the other an accumulation of voids in largely unmanipulated solid; and, in both cases, the fundamental ground promotes an entirely different category of figure - in the one OBJECT, in the other SPACE."*

Saint Die is primarily a composition of objects, while Parma is primarily a composition of spaces. Rowe claims that actually two different models are concerned, both with their roots in classical antiquity: the model of the acropolis (the object in space) and the model of the forum (space surrounded by mass, the urban interior).

The figure-ground analysis is important in order to address the relation between building and open space. When an analysis demonstrates that open space is the category determining form, giving form to buildings is largely subservient to the logic of the structure of the open spaces. The design of the structure and form of the open spaces primarily puts conditions to giving form to the buildings.

By means of his figure-ground drawings Rowe wants to show that this space concept has left modern urban architecture completely. Emphasis on the autonomous qualities of the building stands central. Position and shaping of the building will relate particularly to composition of the whole of object-like buildings. Rowe wrote with a purpose: as a polemic against modernistic urban architectural concepts propagating them as the only obvious ones.

### 15.3 KNOWLEDGE DEVELOPMENT AND EXPLANATION

Studying the development of the form of the city and of the factors responsible for origination of that form is not necessarily directly linked to the ambition to make a design. Central is the wish to understand the form of the city, to give a theoretical explanation of its growth, independent of notions like 'right' or 'bad', 'beautiful' or 'ugly', 'valuable' or 'uninteresting'.

However, the usefulness of these morphological analyses is that they offer a framework that ultimately enables value-judgements, that can trace conflicts between different kinds of spatial systems, and that provides to the designer the wherewithal for forming an opinion on spatial qualities and bottle-necks of the city. Important studies in this field have been conducted by Muratori, Panerai, Moudun and others.

#### *Amsterdam Urban Building*

The most complete example in The Netherlands of such a morphological analysis is the book by Casper van der Hoeven and Jos Louwe, *'Amsterdam Stedelijk Bouwwerk'*.<sup>b</sup> By now it has the status of a classical study. Conclusions concerning changes in the form of the city deemed desirable have not been drawn in the book at all, nor is there stimuli to a design. Nevertheless, the book should be regarded as obligatory literature for any designer who wants to do something in Amsterdam.

It is an example of a theoretical discourse where reduction drawings play the leading rôle. The original designs of most of the plans analysed were not available; and certainly not

a Rowe, C. and F. Koetter (1978) *Collage City*. See also: Trancik, R. (1986) *Finding lost space: theories of urban design*, p. 98 a.f.

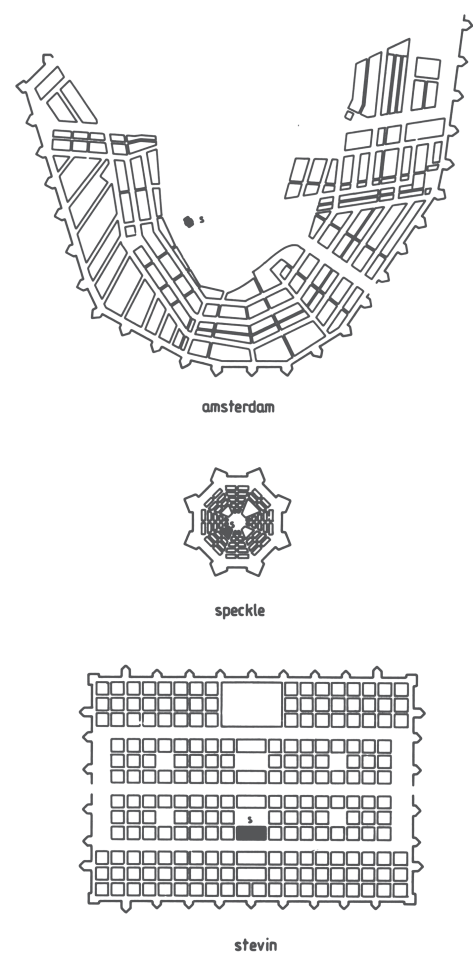
b See Hoeven, C. van der and J. Louwe (1985) *Amsterdam als stedelijk bouwwerk: een morfologische analyse*. Other important studies in this respect: Cusveller, S., R. Geurtsen et al. (1987) *Tilburg, wolstad in ombouw*; Geurtsen, R. (1988) *Locatie Delft Zuidpoort, stadsmorfologische atlas*; Hoog, M. de (1988) *De Pijp. Een morfologische studie met een accent op het stadsontwerp*.

the precise considerations that played a rôle in the originating of the historical designs. In the analyses it is tried to reconstruct those considerations.

An example is the analysis of Amsterdam's girdle of canals. In this analysis it is explained as a combination and adaptation of the ideal plans of the fortress building engineers Stevin and Speckle, spread out into a linear ribbon, in which several variants are possible leading to varying sizes of building blocks.

Another fine example of van der Hoeven and Louwe is their analysis of the Dapper neighbourhood. In six drawings they show what the principles were leading to the final spatial structure of this area. In the first drawing they show the basic principle: two rows of building blocks, mirrored at both sides of a central street. The second drawing demonstrates that it was necessary to introduce a torsion because of the shape of the plot available. According to the third drawing, a grouping of building blocks took place, causing two large ensembles of six building blocks and two smaller ensembles of four, respectively two building blocks. This grouping also leads to differentiation in the pattern of wider and more narrow streets. The fourth drawing shows that by narrowing the ground surface locally, and also by railways, triangular endings emerge. The fifth drawing shows introduction of some special elements, like a church and an oval square. Finally, the sixth drawing gives an idea of the basic structure of the neighbourhood.

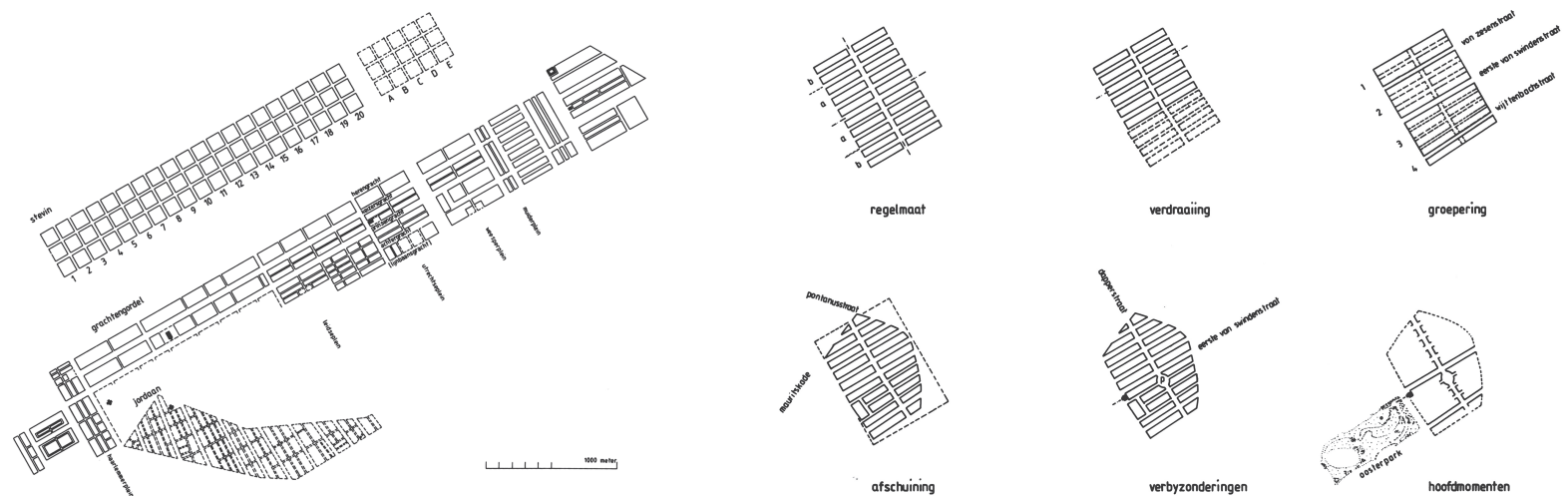
How could the authors make these drawings? Probably the analysis itself moved in the opposite direction: the beginning is to put a transparent sheet over the map and to make a drawing like number 6. Next, all special elements have been removed step by step, until the first drawing remained as the drawing of the basic principle: a double repetition of a series small building blocks. By the same token, the presentation of this series of drawings is a theory, that is to say a plausible sequence of steps leading to the final form.



100 Amsterdam versus the ideal plans of Speckle and Stevin. Fig. 100-104 from van der Hoeven and J. Louwe (1985).

101 The girdle of canals as a variant on Stevin

102 Dapper neighbourhood



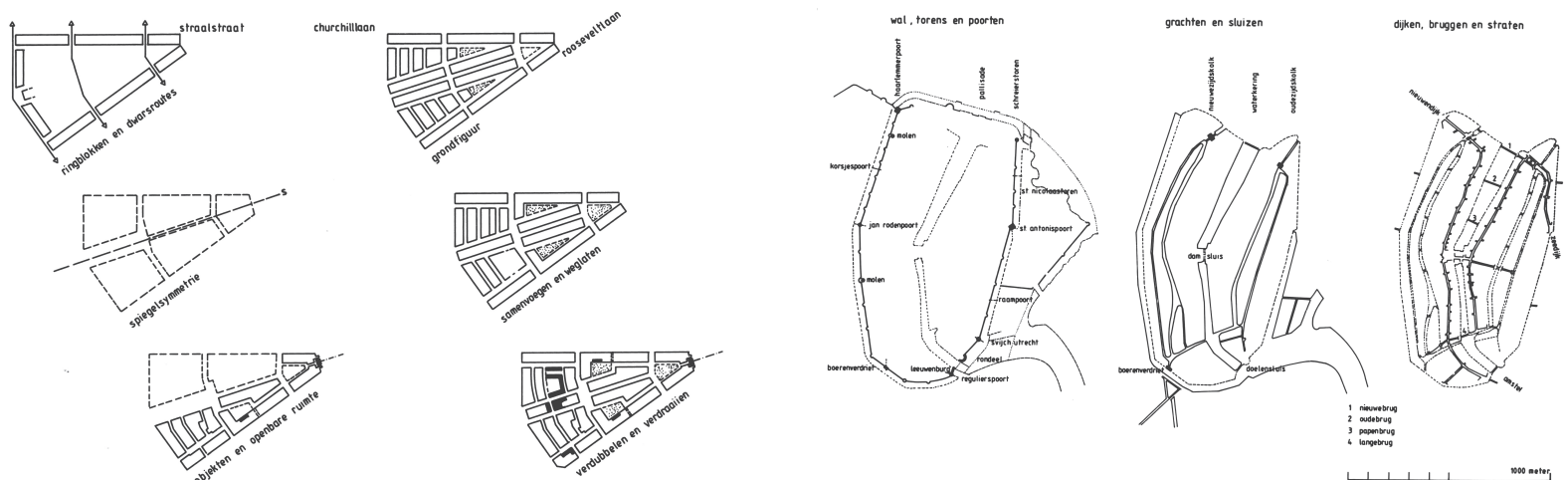
The method leading to such a drawn theoretical discourse is further described by van der Hoeven and Louwe in three separate processes; the informative, deductive and abstracting stages.

1. The informative stage concerns dating (collecting map material in chronological order), rubricating (putting the map material into the same scale and the same position), standardising (uniform rendering) and normalisation (omitting irrelevant co-incidences and exceptions). Although in this stage already various choices have to be made (which historical maps are relevant or not, which aspects are regarded as exceptions, etc.), the aim is to visualise as objectively and clearly as possible the developmental process of an area.
2. In the deductive stage studying and interpreting the factors that lead to the spatial composition are central. This stage concerns reconstructing (drawing the possible variants of a basic design and their transformations), deprogramming (cleansing the material from data pointing to legal or functional use), addition (of relevant parts outside of specific part of the plan in order to explain the position or orientation of certain parts), fragmentising (subdividing the drawing in parts and re-arranging them in a different inter-connection) and sequencing development (making a number of drawings of a subject with an increasing level of abstraction).
3. Finally, the abstracting stage. This comprises formulation of themes (a series of drawings with one theme per drawing), formalising (visualising which aspects of the spatial form are important: symmetries, orientations, lines of view, scale systems, etc.) and making diagrams (abstracting in such a way from the spatial plan that a schematic drawing with symbols results).

Together these three stages establish a method for analysing a plan area with precision as far as its formal characteristics are concerned. This does not entail that all drawings produced according to this method should also be displayed during presentation of a discourse. In that case it is important that one can restrict oneself to those drawings that support the discourse and render it. The sequence of drawings from the Dapper neighbourhood given here, for instance, is an example of a series of drawings from the deductive stage. In order to be able to make these drawings, the authors had first to make a number of drawings of the informative stage, that could not be displayed in order to make the discourse not too time-consuming. In the following series of drawings of a part of 'Plan Zuid' (between the Churchill and Roosevelt lanes and Staal's 'Wolkenkrabber') the authors have limited themselves to presentation of drawings from the abstracting stage, with mentioning themes – per drawing one theme – as well as formalising (indicating form aspects, lines of view, scale systems, etc.) and diagrams (high abstraction level of the drawing).

103 'Plan Zuid'

104 Medieval Amsterdam





### Form, use and structure

The methods of analysis described in the above give insight into factors and considerations which caused a specific form of a city. Van der Hoeven and Louwe's book analyses the various urban parts of Amsterdam from the medieval dam city up to and including the twentieth century city expansion *Algemeen UitbreidingsPlan* (AUP). During the historical stages different legends units play the leading rôle. The analyses of the medieval town relate to changing relationships between water and land: 'wallen', dikes, bridges, canals, sluices: establishing the most important elements determining form. The positioning of the buildings accommodates itself to these elements of the wet infrastructure.

From the seventeenth century onward a more rational form of city expansion emerges. Consciousness of the possibility to steer a form of building by allotting sites in a certain way is increasing continuously. In the drawings relating to the parts of the city originating from the seventeenth century more attention is also given to the relation between the structure of the system of public works, the urban 'islands' (that is to say the areas appropriate for allotting surfaces and building) and articulation of these islands. The direct relation between these three aspects (the system of public spaces, islands, and lots) manifests itself clearly as a factor determining form in the drawings. Separate drawings of the form and structure of the buildings are as yet hardly made in these sequences. There is also no need to: the structure and form of building in the city is from the 17th up to and including the 19th century a self-evident derivation from the structure and form of the lots.

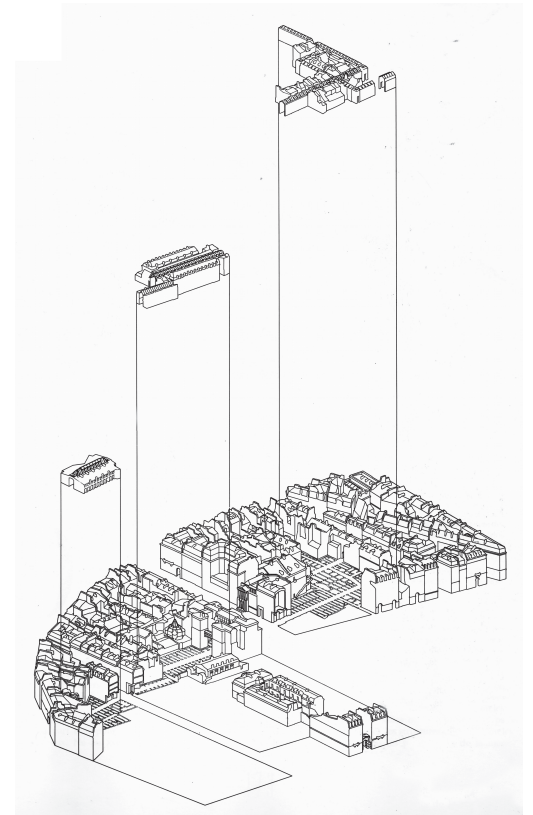
The spatial form of this city was determined in principle by an unambiguous form of use of space, characterised by a direct and unambiguous relation between the system of public spaces and lots made available. Exceptions that cannot be directly explained from this logic are usually caused by infrastructural elements of a higher scale level (dikes, water courses) or specific geomorphic conditions (e. g. differences in soil composition).

In short: the contrast between public and private largely co-incided with the one between space and mass. . The analytical drawings of the 17th and 19th centuries predominantly give information concerning organisation of the public and of the private domain. The buildings were drawn as a distinct category only if they served as specific accents in the urban landscape.

Also in South-European 'sources' of the analysis of the form of the city it is striking how strong the emphasis is on the almost hermetic relation between the structure of the articulation in lots and the structure of building. The brilliant analyses, for instance, by Bruno Fortier of various transformations of Paris during the 18th and 19th centuries<sup>a</sup> show again and again – regardless of the complexity of specific transformations – that the essence of each transformation can be explained from re-organisation of the articulation of an urban island (like in the case of many passages), of the structure of the public domain, or of both. The individual plot is the basic unity in each drawing.

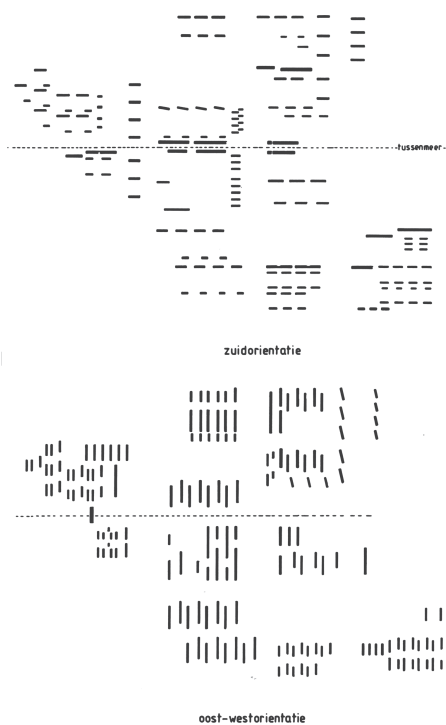
This way of drawing can not be used anymore in the analyses of the 20th century plans, since in the new urban architectural concepts the unambiguous relation between a piece of land and a building has ceased to be accepted. In the analyses of 'Plan Zuid' drawings of patterns of articulation fail to emerge for the simple reason that an articulation on the scale of the individual household does not exist anymore in 'Plan Zuid'. The individual building masses have undergone an increase of scale and co-incide with complete islands.

In the further expansion of the city of the AUP a relation between islands and building disappears as well. The unambiguous relation between public and private domain as cornerstone for the relation between space and mass that still existed in the city of the 19th century has vanished completely in the AUP.

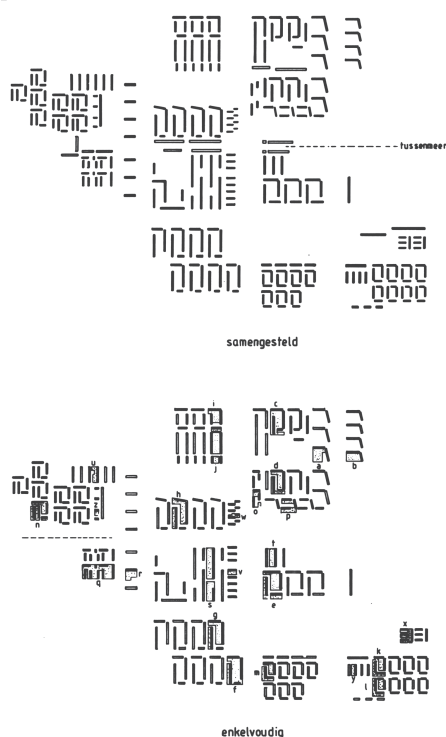


105 Paris: system of three passages (Panoramas, Jouffroy, Verdeau) according to Fortier (1989), city map (above) and decomposition (below).

a Fortier, B. (1989) *La metropole imaginaire: un atlas de Paris*.



106 Osdorp, south orientation (above) and east-west orientation (below).<sup>a</sup>



107 Osdorp, result (above), repeated components (below)

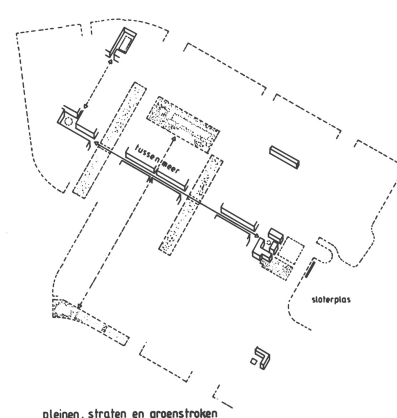
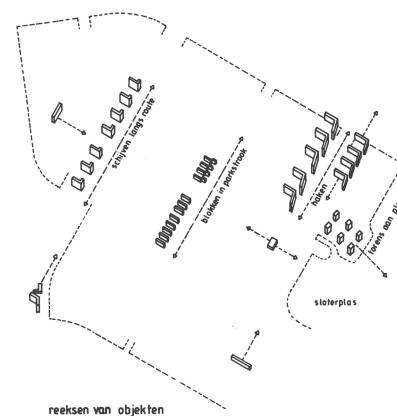
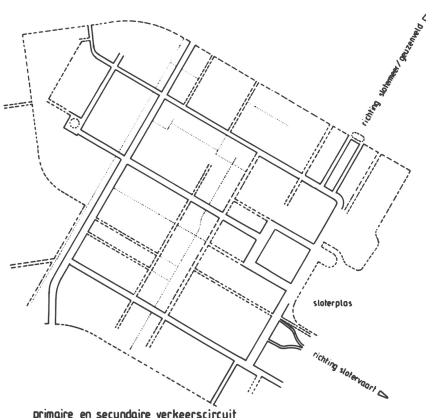
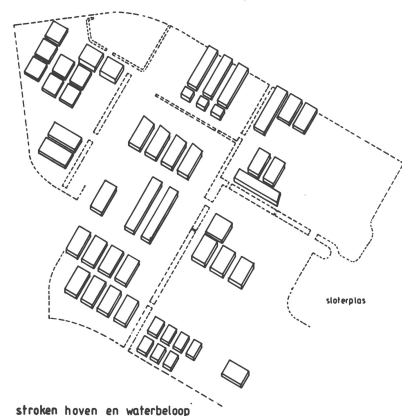
108 Osdorp

<sup>a</sup> Figure 106-108: Hoeven, C. van der and J. Louwe (1985) *Amsterdam als stedelijk bouwwerk: een morfologische analyse*.

The spatial composition of the Western Garden Towns has become a complex layered structure where different elements of the public domain (traffic structure, structure of vegetation, water structure) and the buildings represent different 'layers' in the design, which cannot be regarded anymore as directly derived from one another. For that reason one is forced to indicate these different layers in the analytical drawings. . The categories public and private domain, playing a leading rôle in the analyses of older parts of the city, are absent. With 20th century policy (the city administration as owner of all the land, land can only be leased) a condition came into existence allowing separation of the urban form and distinction between public and private. For the first time the building as a whole is being drawn, since the structure of the building can be explained from nothing else but by the building structure itself.

Formal plan analyses are a (deliberate) re-construction of a number of steps in the design and realisation process; with the purpose to provide a (theoretical) explanation for the final form of the city. However, explaining the design process does not automatically entail sanctification. On the contrary, this inventory of the original planning process makes it possible to put into debate the finally realised form and structure of the pattern built and the system of public spaces, or parts thereof.

Figure 107 shows the arrangements resulting from the putting together of the residences with an orientation towards the south and the east-west orientation from figure 106. Per type of arrangement one has been rendered with the adjacent green facilities in the form of fields and strokes. This 'demonstration card' is printed on the right half of the drawing. 'While sliding the arrangements together it is striking, that the arrangements with single repetitions are always bounded at one side by a special element. That might be a road, or a green ribbon, but also a residence. These buildings, not belonging to other arrangements, are this way put into a formal relation *vis-à-vis* the arrangements. Free-standing residences occur in Osdorp only on very special places. Examples are the two centres and the high-rise apartment buildings at the Sloterpas.'



Van der Hoeven and Louwe stop with their analysis where Rowe starts with his figure-ground analysis. Rowe is emphasising and criticising the ever increasing autonomy of the differentiation of building masses mutually as a foundation for modern urban architecture.

Rowe suggests that several principles of composition merely rest on various ideological and aesthetic norms (space central, or mass central, while the book of van der Hoeven and Louwe provides material showing that the changing aesthetics of the form of the city are related to a changing relationship between geo-morphological conditions, allotting sites and buildings structure.

#### 15.4 COMMISSION FORMULATION

Urban designers are often confronted by a situation frowned at by the authority giving the commission: something is amiss, a fundamental improvement of the spatial quality should be realised; but what should be done exactly, and how, is not clear. In short: it is up to the urban designer to formulate clearly what the commission precisely is, and in which way work could be done connected with it. With this the analysis gets a goal-directed character *vis-à-vis* the design. Morphological analyses are possible on each scale level. Three examples clarify this

##### *Rotterdam Urbanised Landscape*

In this analysis of Frits Palmboom emphasis is on the making of an inventory of the historic development of the urban landscape of Rotterdam.<sup>a</sup> The purely informative stage (editing different historic maps according to the same method of drawing and scale) is almost completely omitted in the final presentation; the drawings presented are almost all strongly interpretative. The book has a clearly different structure and purpose than van der Hoeven en Louwe's '*Amsterdam Stedelijk Bouwwerk*': the purpose is not to survey as objectively as possible the spatial form and its explanation, but much more eliciting a debate on spatial form and on putting on the agenda what the important urban architectural challenges are in the city.<sup>b</sup>

Palmboom makes a distinction between three types of developmental processes. Each of them has produced its own 'layer' and determined this way structure and form of the city:

- the dynamics of the delta that formed the geo-morphological stratum;
- the process of building dikes, gaining land from water, cultivation and urbanisation, resulting in a cultural landscape;
- the economics of transportation that produced in the transporting city of Rotterdam a rather autonomous 'traffic machine', right through and over existing structures.

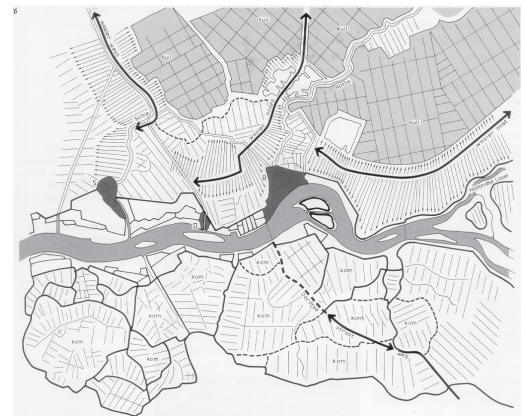
This layered structure resulted in a city featuring according to Palmboom two kinds of spatial characteristics:

- parts or long lines characterised by a rather unambiguous connection and continuity in the spatial structure, and
- knots where different layers or areas come into conflict.

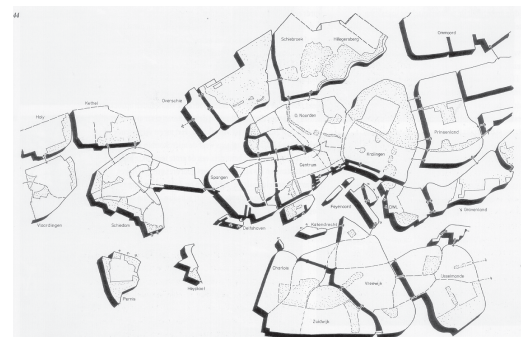
The drawings rendering this interpretation of the spatial characteristics of the city are considerably more 'expressionistic' than the severely geometric drawings of van der Hoeven en Louwe. They not only show certain spatial structures, but in particular the dynamics resulting from those spatial structures: the 'polder' structure of the clay area of the South of Rotterdam results especially in a structure of irregularly shaped sheets with an orientation and dynamics orientated towards the centre, while the 'long lines' on the right of the borders of the Maas river produce large, linear structures, meeting with borders of opposition on certain places. The result is an 'agglomeration of islands'.



109 The process of damming up, according to Palmboom (1987).



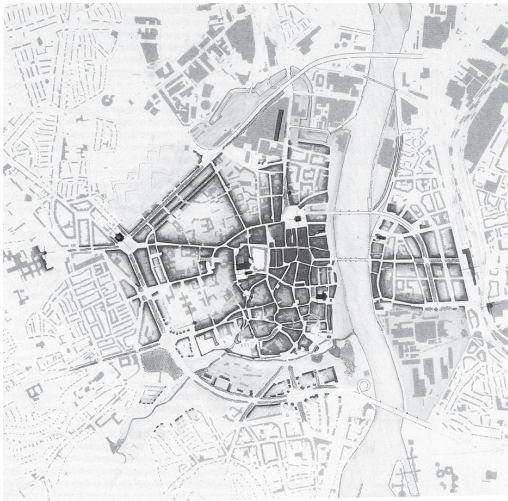
110 Articulation of polder land.



111 Rotterdam as an agglomeration of islands.

a Palmboom, F. (1987) *Rotterdam, verstedelijkt landschap*.  
b Hoeven, C. van der and J. Louwe (1985) *Amsterdam als stedelijk bouwwerk: een morfologische analyse*.





112 Maastricht according to Geurtsen: the elements decisive for the spatial image of the city

On the basis of these interpretations and observations several design commissions are formulated: the connected parts, lines and structures demand a consistent approach that might strengthen the (potentially present) coherence, while the zones of rupture and knots call for specific solutions, to be formulated one by one.

#### *Structural Vision Maastricht*

The structural vision Rein Geurtsen prepared in 1990 for Maastricht uses a method comparable to that of Palmboom, but gives a more detailed description of the areas where urban architectural intervention is needed; and of the type of intervention required in those areas; that is to say the commission.

An example is the drawing below. The important open spaces in this map are not automatically the most important traffic roads. Depicted are just those streets, squares, etc. that, according to the description, “are decisive for the national and international esteem for the city, to which lovers of Maastricht are particularly attached, and which determine the way in which a visitor will orient himself.”

The network of streets thus surveyed demonstrates a strong orientation towards the river, while its borders have been indicated as ‘problematic areas’ and are termed an important design commission. The borders have been made subservient increasingly to the throughput of car traffic in the decades following WW II. This caused loss of connection of the river border to the street pattern of the inner city. The drawing states that the design commission consists in restoring the traditional connection.

#### *Renewal The Hague – South West*

This graduation project of Paul Broekhuizen studies the morphology of The Hague. The spatial structure of the Hague has been determined historically by the structure of the ridges of the dunes, almost parallel to the line of the beach. Perpendicular to it several attempts were made to realise cross-connections and thoroughfares.

The cross-connections clash at various places with the structure of the ridges of the dunes; occasionally they have been completed only partially, or not at all. The morphological study focuses on tracing the most important problems and hiatuses in this double structure. The hiatuses are depicted in figure 115; particularly The Hague South West has a ‘blind spot’ when it comes to crossing structure.

Together with the observation that this part of the city has become marginal in socio-economic terms, the conclusion is that realising a cross-connection in the urban area is of importance for freeing it from isolation.

113 The Hague: the morphology of the ‘long lines’ parallel to the ridges of the dunes (fig. 113-117: P. Broekhuizen).

114 The morphology of the ‘long lines’ perpendicular to the ridges of the dunes

115 System of cross-connections in the infrastructure

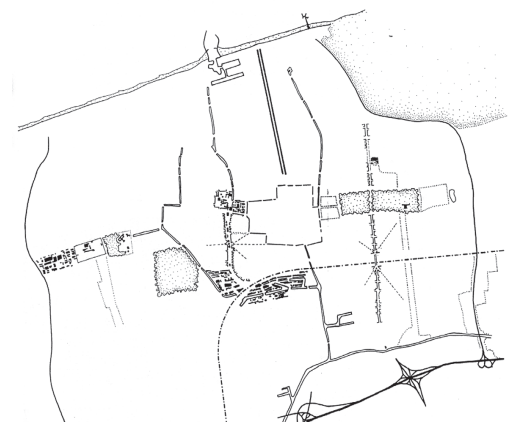
116 Decomposition-analysis

117 Plan configurations

Den Haag: de morfologie van de ‘lange lijnen’ parallel aan de strandwallen



Den Haag: de morfologie van de ‘lange lijnen’ haaks op de strandwallen





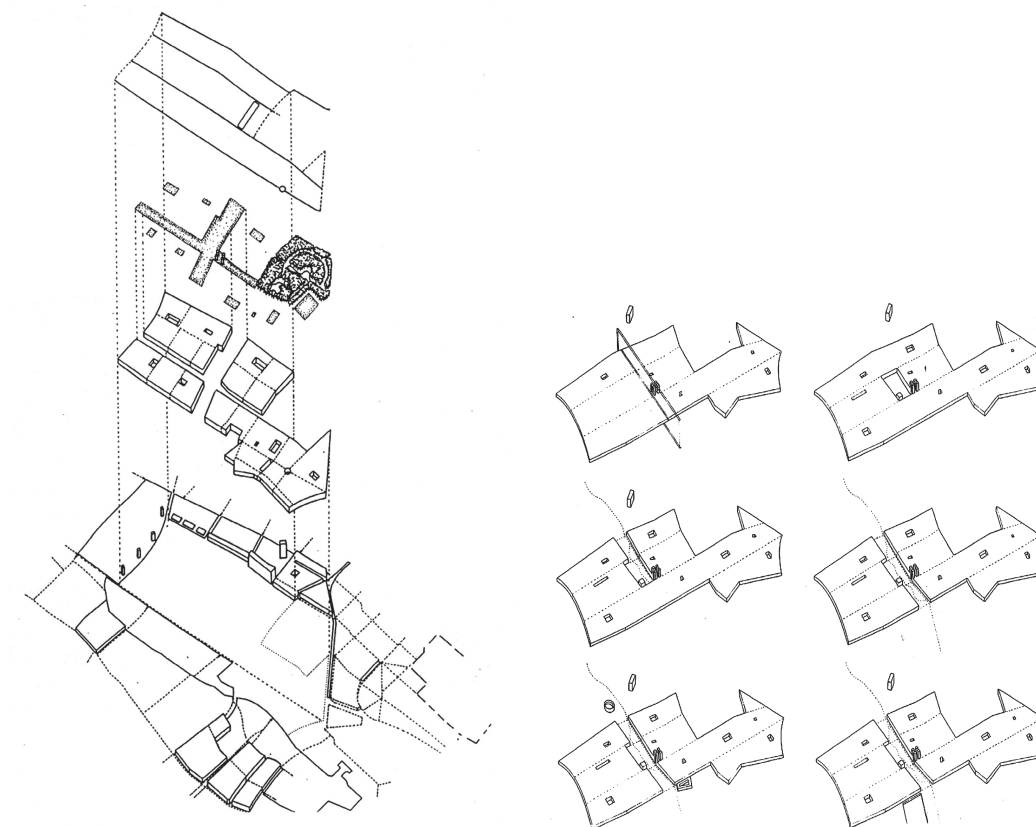
In principle an occasion for situating this cross-connection is already present: the 'Cartesian cross' of the Melis Stokelaan and the Dedemsvaartweg. This cross is characterised by a complex structure, sub-divided in its constituting parts in the drawing below. The last drawing demonstrates how starting from the axial cross a new cross-connection between the Melis Stokelaan and the coast could come into existence.

Characteristic for these analyses is that they arrive at a statement indicating what the challenge of the design in a certain place should be. The analyses themselves provide scant material for answering the questions how that design should be made, in terms of methods and tools. The next category of analysis is more fertile in that respect.

### 15.5 DESIGN TOOLBOX

As soon as the location and the commission have been decided upon, an investigation of the 'repertory' available is a logical first step. If the commission entails to realise somewhere a new cross-connection, traffic inter-change, an ensemble of buildings, or a new quay along the river connecting to the network of streets, a study of other comparable cases might be useful. What is intended is not so much collecting so-called 'reference images' that have become fashionable since the end of the eighties. These reference images rather serve the purpose to create consensus among the various parties during the planning process with regard to architectonic imaging.

In the case of the design repertory, typological analysis is intended here. This concerns the analysis of various variants of designs sharing a comparable intention who lead essentially to comparable spatial configurations. The aim is to reduce differences between the various configurations as much as possible to the most important essences. Maybe there are at first sight some twenty different variants of a type, but when we try to reduce each instance to the most important aspects of the spatial organisation, it may become clear ultimately that only two or three essentially differing variants of a specific type are concerned.



Such an analysis, leading to knowledge about a certain type, is called typological analysis. With such an analysis it can be decided whether it makes sense to use an existing variant of a type as a point of departure for the design, or to develop a wholly new variant. Let us present two examples.

#### *Border of the river Rotterdam South*

In this graduation project of Eveline van de Broek<sup>a</sup> the same type of morphological analysis is conducted as that of Palmboom and Geurtsen. She even arrives at the same kind of commission as Palmboom in 'Rotterdam Urbanised Landscape': the spot where the trajectory of the Dordtse Straatweg has been 'cut' by the building of the Maas harbour in the 19th century. Subsequently, this rupture has even been strengthened by the building of a high barrier against the water along the Maas harbour (Brielselaan).

Also because of the disappearance of harbour activities there, it is concluded that a new design for this spot is desirable and possible. The challenge exists in establishing a combination between:

- a new inter-connection with the route from the 'hinterland' (the Dordtse Straatweg) on the waterfront,
- a strengthening of the recreative quality of the waterfront,
- maintaining the defence against the water in the body of the dike, and
- maintaining the function of the Brielselaan as a thoroughfare.

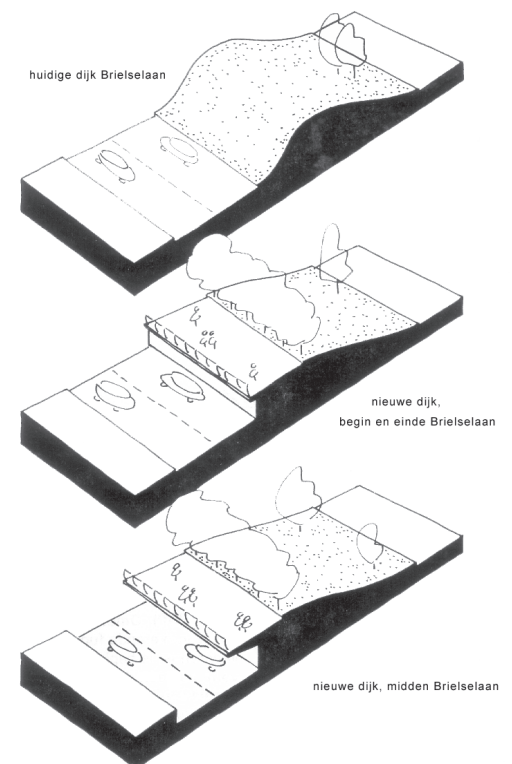
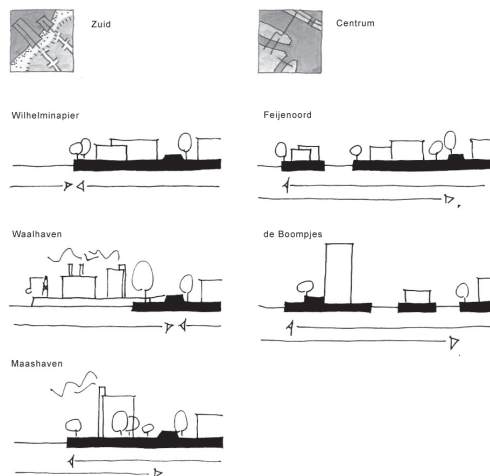
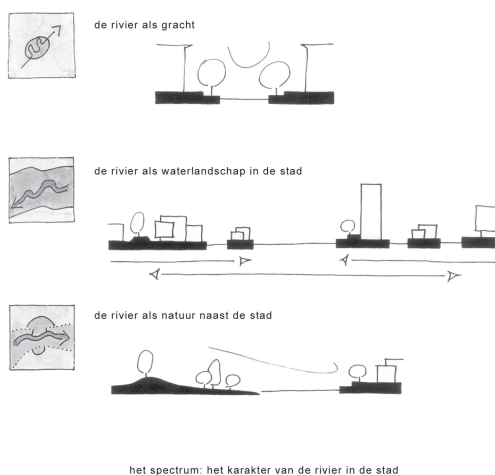
For this design commission a study was made of spatial situations with a comparable combination of aspects. Firstly, she studied to what extent the river landscape of Rotterdam has general characteristics also found frequently elsewhere, or a number of typical characteristics. A first comparative analysis resulted in a distinction between three fundamentally different urban river landscapes: next to the river as an inner waterway in the city ("the river as canal", with Haarlem and the river Spaarne for example) and the river as nature along the city (e. g. Deventer with the IJssel) Rotterdam emerged as a separate type, with "the river as a water landscape in the city".

a Broek, E. van den (1998) *Rotterdam aan de Maas, de rivier als centrale plek in de stad*.

118 Three types of relation between river and city according to van den Broek (1998)

119 Different variants of the type 'the river as a water landscape in the city'

120 Operation on the dike trajectory Brielselaan



This distinction is significant for the spatial furnishing of the zones along the water, where urban morphology and river landscape enter into ever changing relations.

Within the context of the Rotterdam variant of “the river as a water landscape in the city” next various partial variants are discerned; with the Brielselaan for one of them.

However, the situation of the Brielselaan – with the autonomous body of the dike – proves to be so specific, that all existing situations in the Rotterdam river landscape do not provide a solution. By the same token, a new variant of the Rotterdam type waterfront must be designed. The conclusion is that the design challenge exists in acknowledging the typical properties of the Rotterdam water landscape in the City, as well as in finding a solution for the specific position occupied by the zone at the Brielselaan in this water landscape.

Finally, the design provides a new profiling of the body of the dike, with a terrace extending over the motorway, resulting in new possibilities of usage for the zone as a whole.

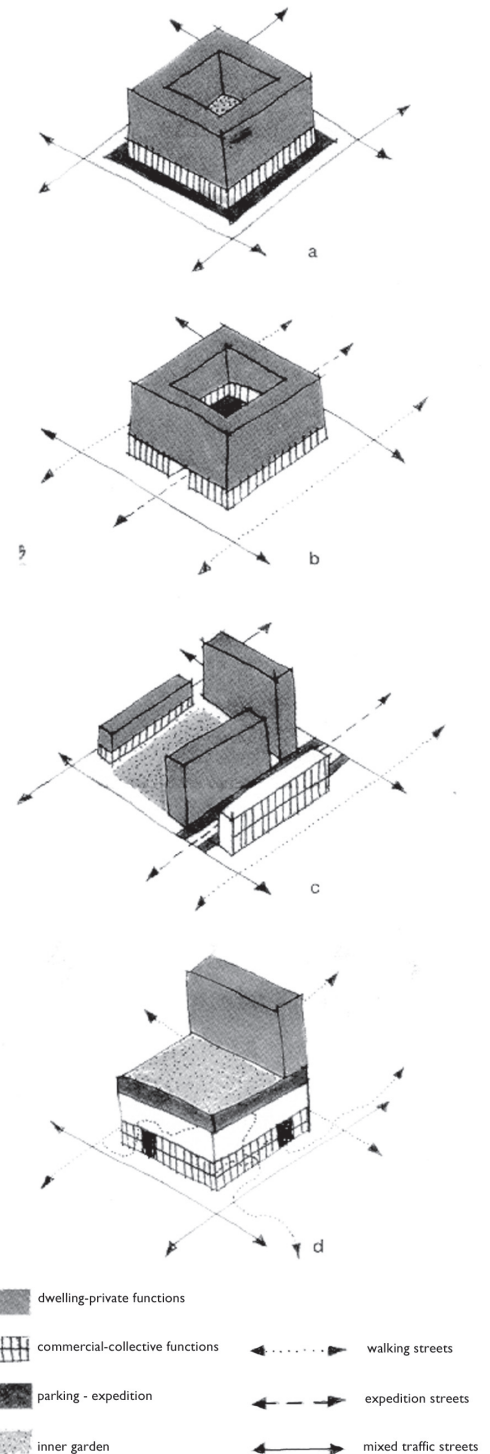
#### Urban Building Block Rotterdam

In this graduation project of Lyke Bijlsma a typological analysis is made of the development of the building block in the central area of Rotterdam. This analysis is centred around the question in which way commercial facilities (shops, etc.), private space (residences), collective space (shared gardens) and public space can be organised *vis-à-vis* one another in a new building block to be designed. The analysis is addressing the question which variants may be found in connection with the ratio between these units of legends. The analysis concludes that the whole repertory of building blocks in the inner city of Rotterdam may be simplified to three variants:

- the closed building block with gardens at the inside and shops on street level getting their products delivered from the public street;
- the urban inner court, where the inside of the building block is used as a space for expedition; the public street being freed from loading and unloading, but at the loss of collective green;
- the modern ensemble, with a differentiation of various kinds of open space with different functions.

In the fifties it was attempted with this variant to overcome the disadvantages of the closed building block (loading and unloading on the public street) and of the urban inner court (disappearance of the shared garden). Forty years later quite a lot of difficulties are linked to this variant, like the vulnerability of the collective garden because of its direct access from the public street, and the countless expedition streets, devouring a large part of public space and experienced as unpleasant and unsafe.

With these analyses the necessity of searching for a new configuration of commercial, private, collective and public space is put on the agenda: in the design a solution is ultimately only achieved by expanding from a flat surface into the third dimension.



#### transformation of the building block

- traditional building block
- Rotterdam building block, urban inner court
- opened-up Rotterdam building block (Lijnbaan model)
- layered city (proposed solution)

121 Typological analysis of building blocks according to Bijlsma

