

Bk7210 Urban analysis & design

Minor: Green Blue City 2013

Lecture 2

**Urban analysis
and design principles**

Evelien Brandes

Contents of this lecture

1. **Theory: Analysis of realized urban plans as the base for urban design** *slide 3-5*
2. **Scales of urban analysis and design: district and neighbourhood** *slide 6-10*
3. **The scale of the (city) district: structures and main elements** *slide 11-15*
4. **Principles on neighbourhood scale** *slide 16-28*
5. **Special focus elements** *slide 29-46*
6. **An example of urban design: Bovenkerk** *slide 47-60*
7. **Creative commons** *slide 61*

1. Some theories of urban plan making

Analysis of realized urban plans are the base for urban design

An urbanist is constantly going through a medium-switch from the real situation to the layout plan and from high level scale to detailed scale.

- for everyone the low scale is the scale one experiences
- studies of a lot of plans lead to a wide range of references (precedents)

Urban design forms are the framework for (landscape) architects

The urbanist has to have knowledge of building typologies and public spaces so the urban plan generates possibilities for architecture and landscape design.

An urban design does not need to be too complicated

It is about a plausible solution (to get actors- and public support)
Complicated solutions are often too expensive, so will be deleted in the process.

The urbanist also generates ideas about the assignment itself

What should be done to improve this spatial situation or
Where is the right location for the demanding function?
What is the right program (amount / types of functions) for this location?

Observing: city plan and reality



Relation public space and building typology



Building typology

standard building block
single housing

courtyard building,
collective buildings

free-standing buildings
collective buildings

Public space

Street profiles, squares, parks, waterfronts, routes, bridges

An urban plan is designed on the basis of public space, not from the build structures



2. Scales of urban design

- **Level of the city district (dutch: stadsdeel) / city scale**

- **Level of the district (dutch: wijk) / local scale**

- **Level of the neighbourhood (dutch: buurt) / detailed scale**

Scales of urban design

- Level of District

Main structure infrastructure,
car, bus + busstops, bike
green- and waterstructure
and public facilities

Vlekkenplan for neighbourhoods
Borders and total (i.e. 1.000 dwellings/
neighbourhood)

layout plan 1: 10.000 - 1: 5.000

- Level of Neighbourhood

layout plan: 1:2.000 a 1: 1.000
street and terrain profiles: 1: 500 - 200

neighbourhood profiles: 1: 1.000 - 1: 500

Parceling with buildings, streets, public green and shops/schools
As detailed plan, i.e. zoning plan (bestemmingsplan)

approximate 200 - 1000 dwellings >> front and back facades

the city district (dutch: stadsdeel), the district (dutch: wijk) and the neighbourhood (dutch: buurt)



LEGENDA

-  buildings high
-  buildings mid
-  buildings low
-  shops
-  industry high
-  industry low
-  public building
-  private grounds
-  park
-  paved public area
-  water
-  metro
-  tram
-  system border

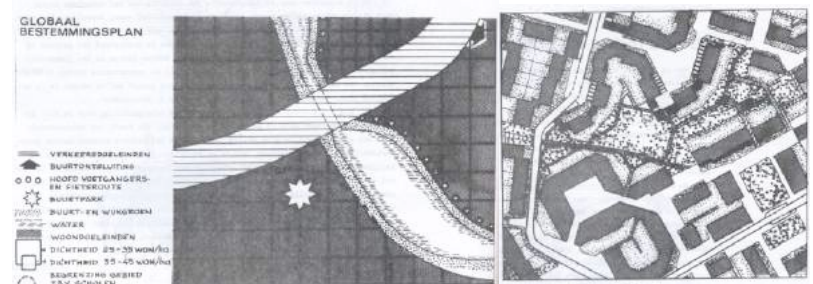
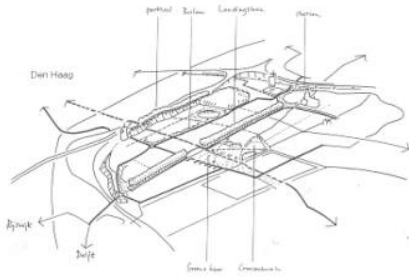




3. The scale of the (city) district

- **Showing the elementary, determined elements**
- **Green and water structure**
- **Entrance to the district, main roads, public transport, main bike lanes, parks, shopping centre, concentration of schools and other facilities**
-
- **Examples and scale of main elements, crucial details**
- **Borders and surroundings of the location**

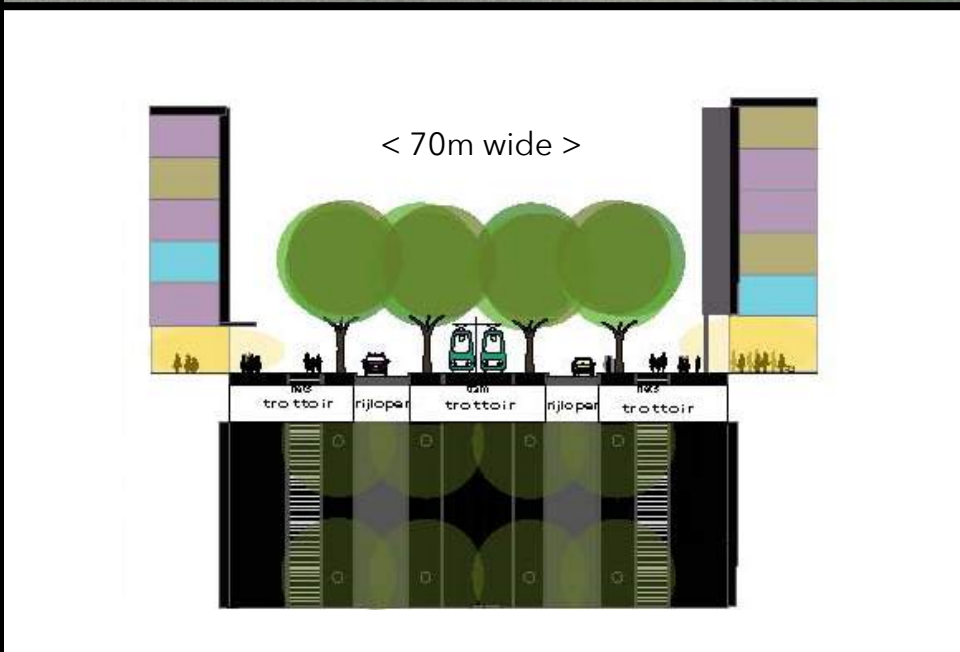
Design of the main structure Ypenburg



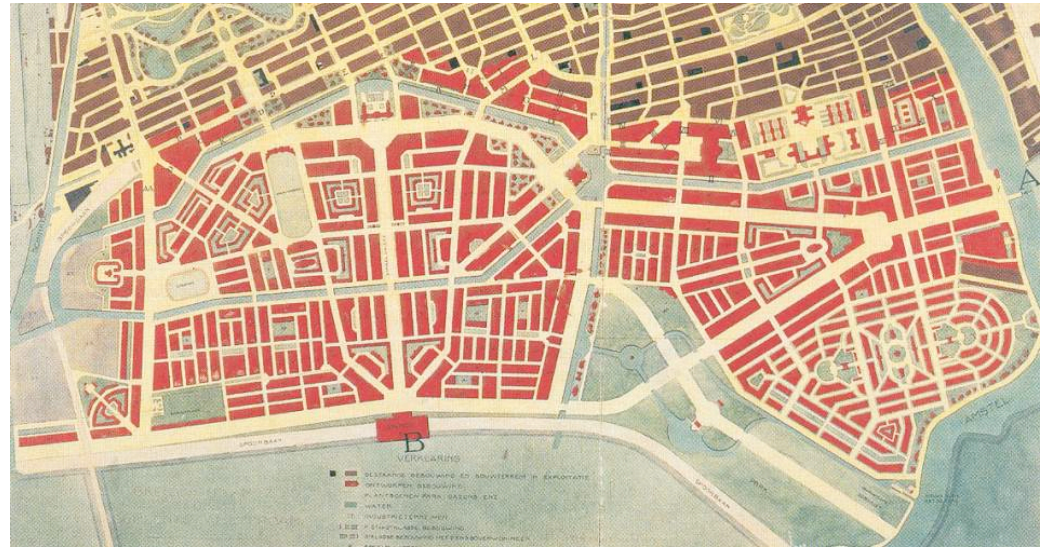
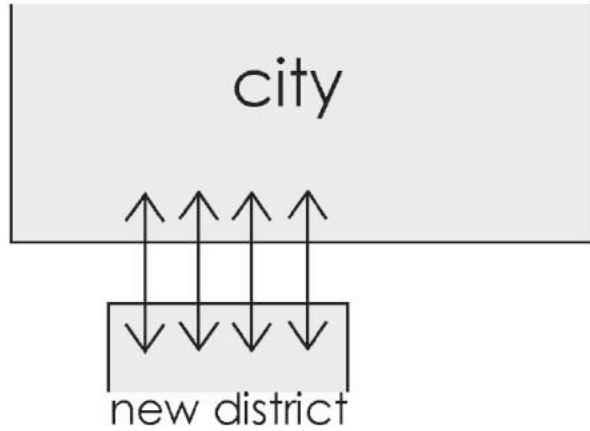
Elements on city or district level



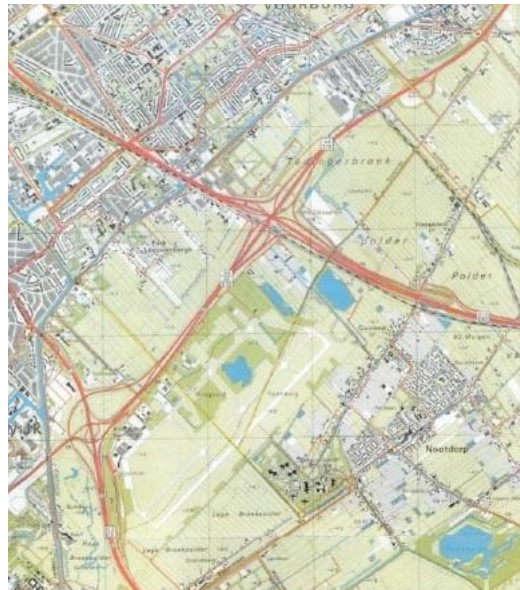
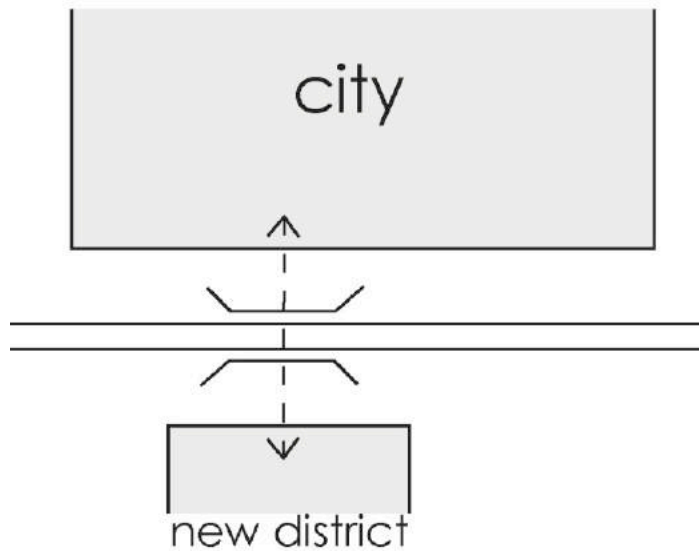
Main plan elements



Relation with the existing environment



Plan Amsterdam South
1930



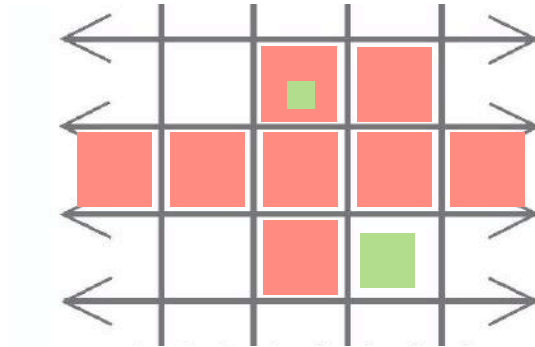
Location Vinex Ypenburg
1990

4. Urban design principles

- **Road patterns**
- **Relation main structure elements and neighbourhood patterns**
- **Building typologies: low-rise or high-rise, closed building block or open blocks; free-standing buildings**
- **Inner courts, public or private collective**

Principle of network solutions

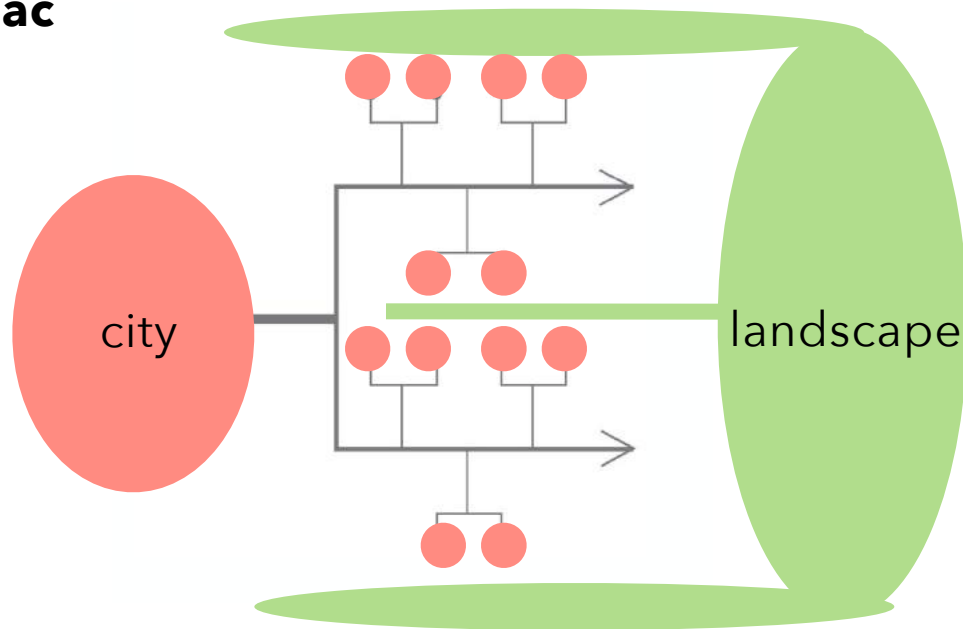
grid



continious
neutral
spread traffic

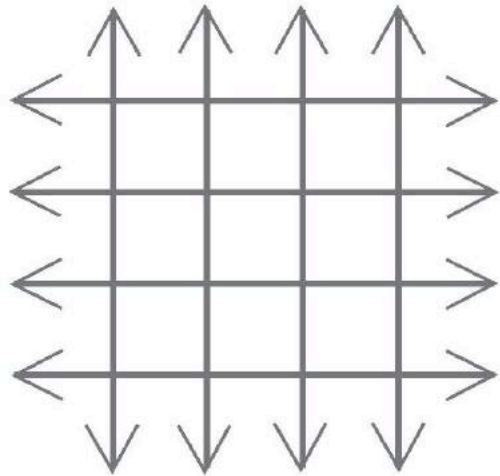
cul de sac

radburn
couliflower



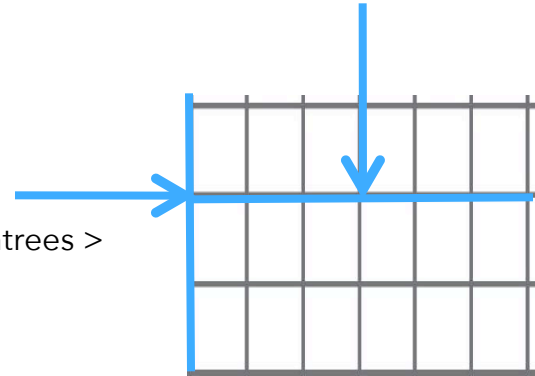
Branching / dead ended
A single entree
hierarchie
green paths without
(moterized) traffic

Gridstructure

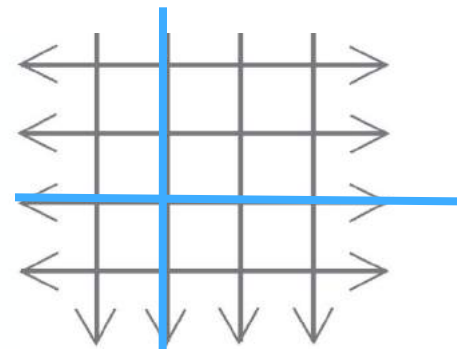


< basic principle

one or a few entrees >

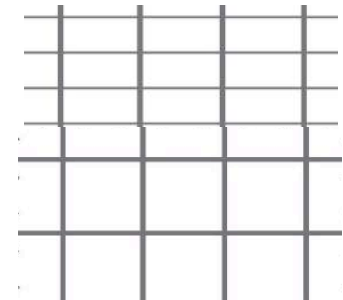
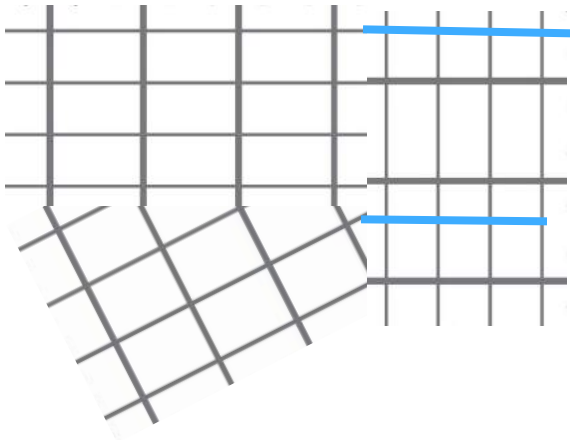


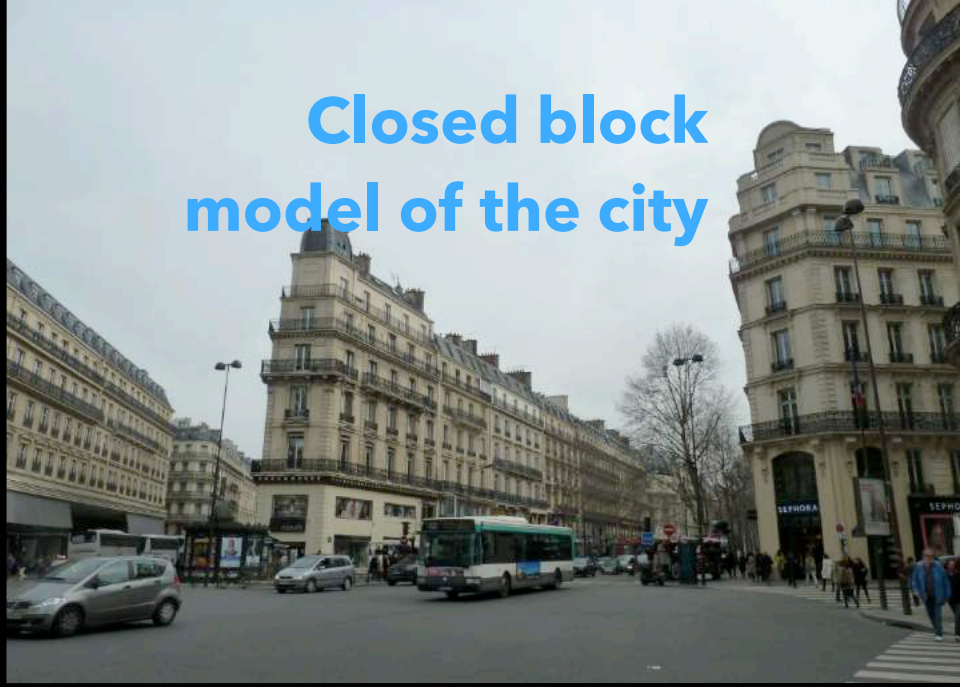
neutraal or hierarchical >



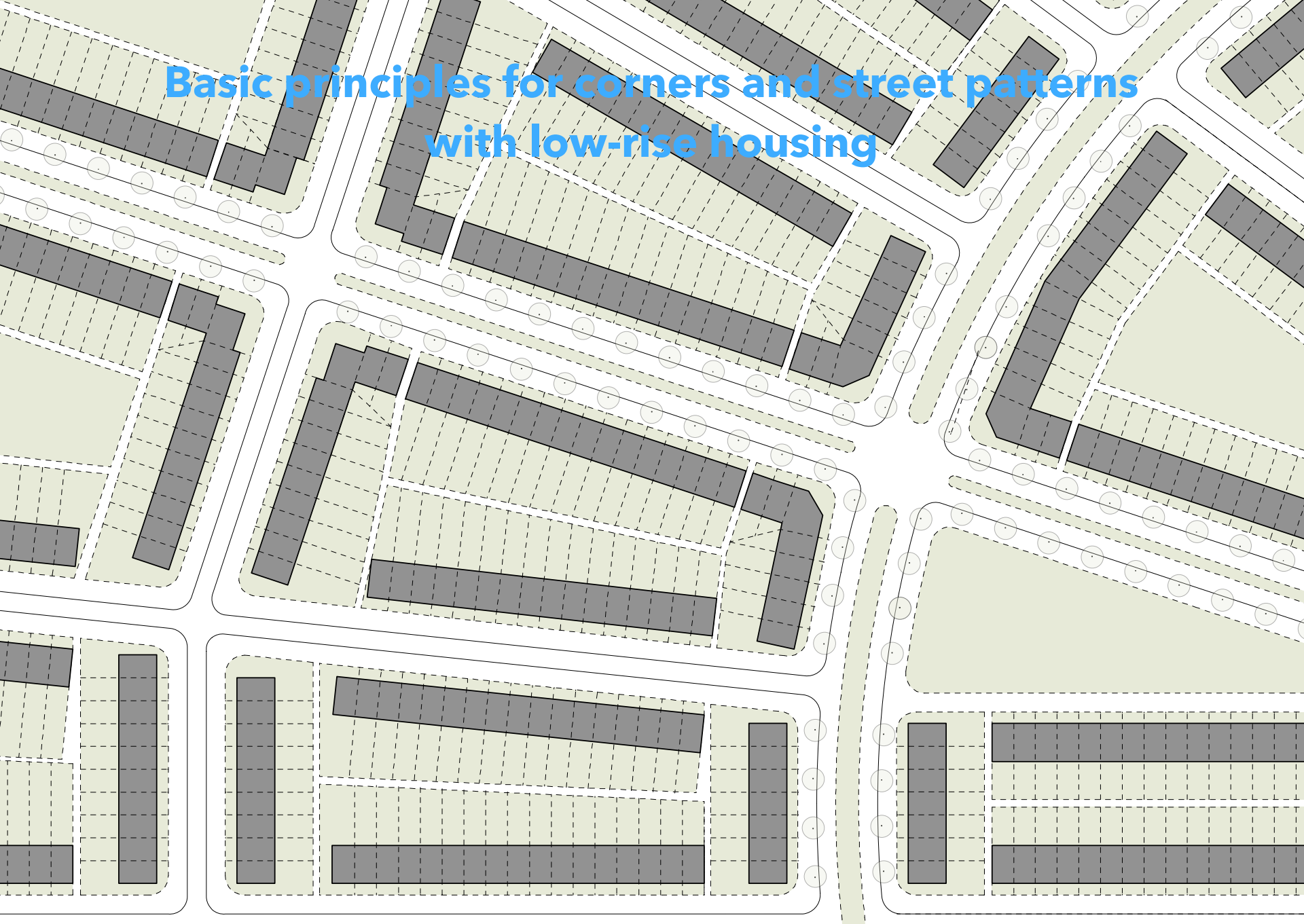
< directional variation

mash width variation >

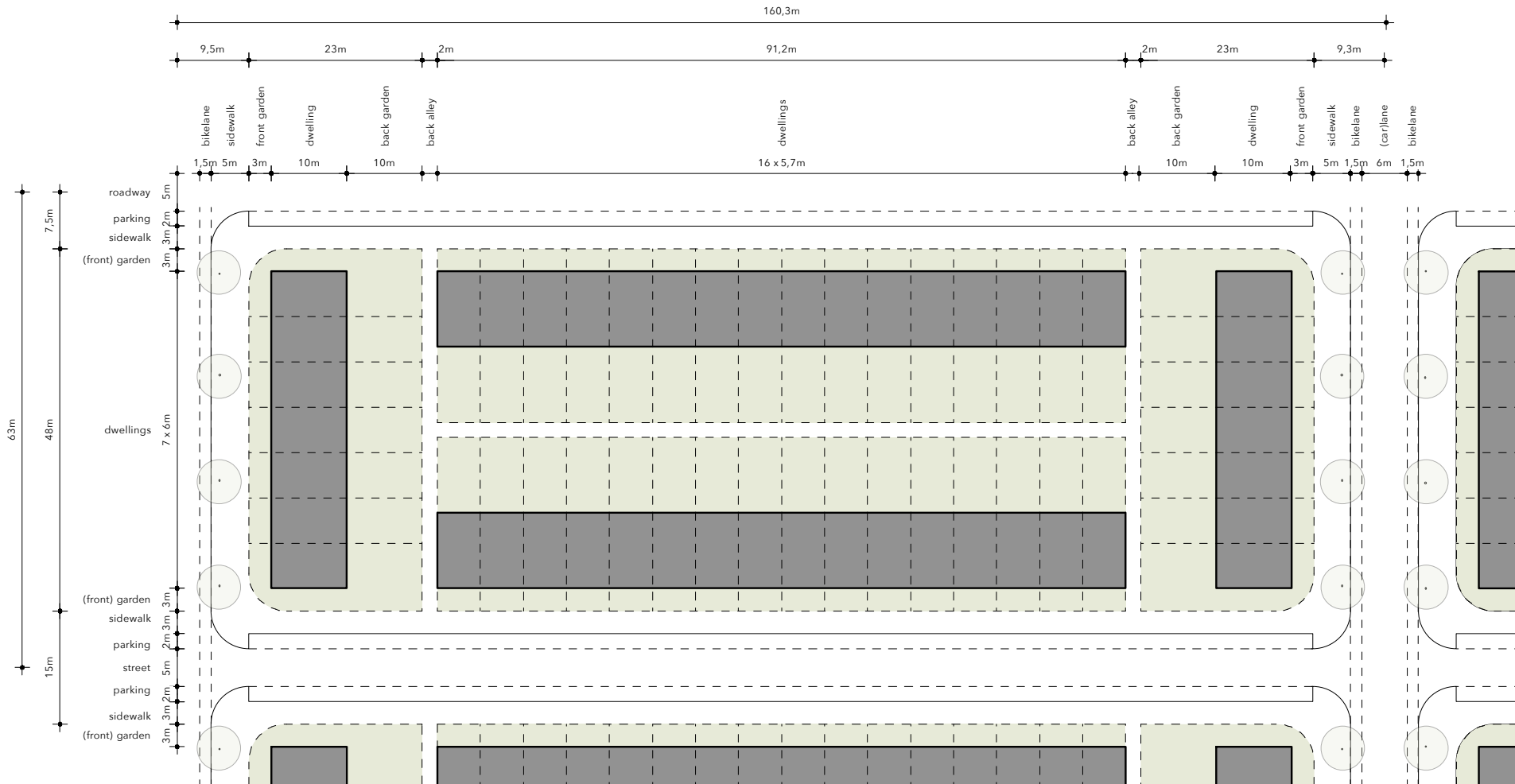




Basic principles for corners and street patterns with low-rise housing



Basic parcellation scheme for low-rise housing



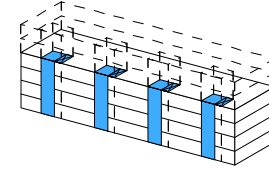
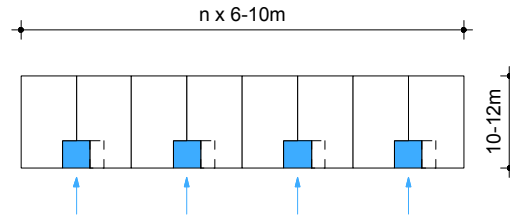
Dwellings / building block: 46
 Parking spaces: 58
 Area fabric unit*: 10080 m² (160mx63m)

46 dwellings / hectare netto
 to compare:
 standaard district density: 35 dw/ha

Open and closed apartment block typology

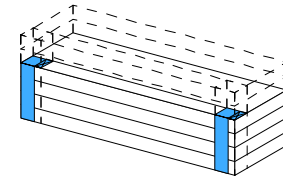
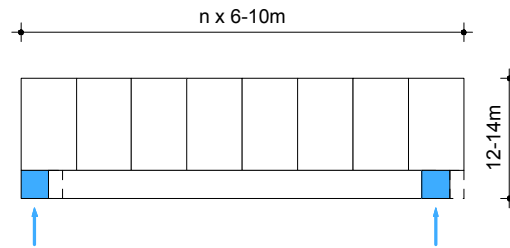
1. Porch apartment block (open)

- > strip alignment
- > access by vertical cores (porches)
- > 4-6 storeys (x 3m)
- > elevator is mandatory >12m



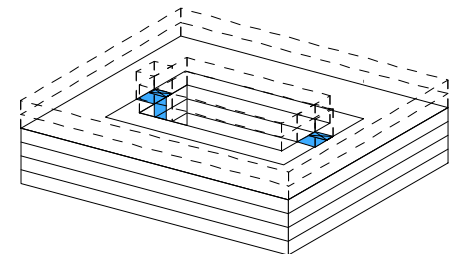
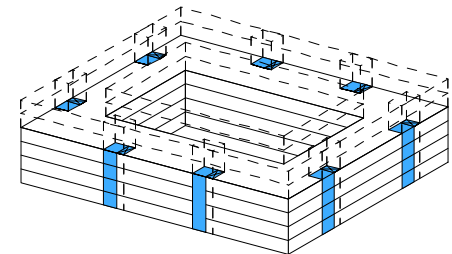
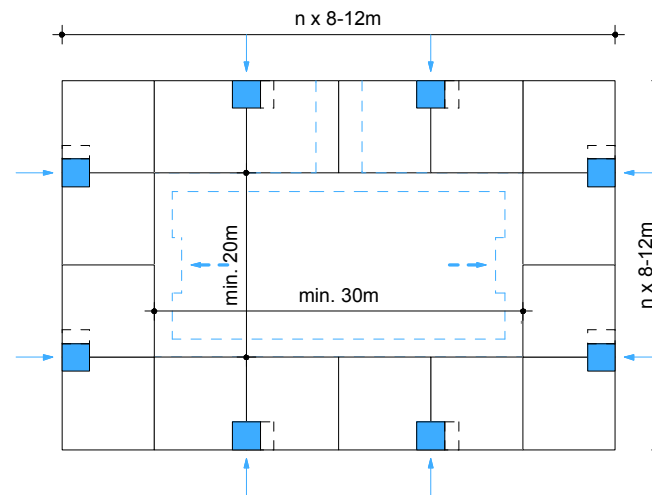
2. Gallery apartment block (open)

- > strip alignment
- > access by 2 corner cores + gallery
- > 4-6 storeys (x 3m)
- > elevator is mandatory >12m



3. Closed building block

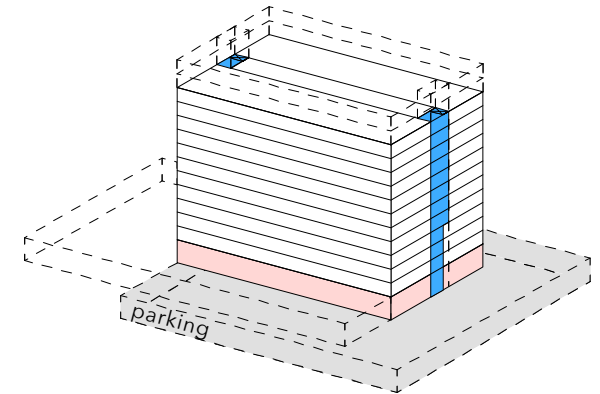
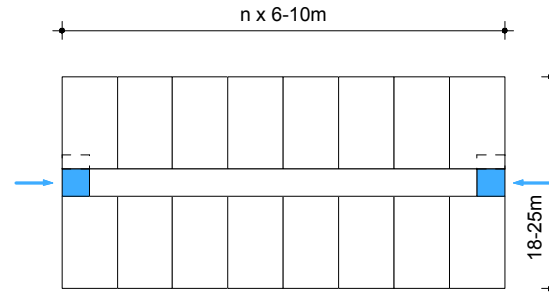
- > closed loop alignment
- > access porches and/or gallery
- > access from street and/or court
- > 4-6 storeys (x 3m)
- > elevator is mandatory >12m



Freestanding apartment block typology

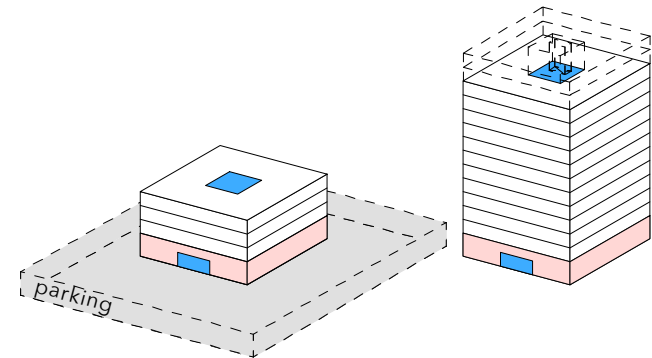
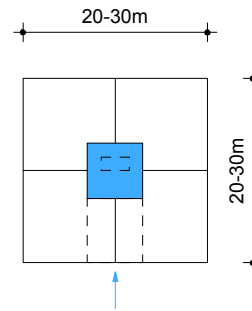
1. Apartment block or flat

- > double strip alignment
- > access by 2 corner cores + hallway
- > 4-10 storeys (x 3m)
- > elevator is mandatory >12m



2. Apartment tower/Urban villa

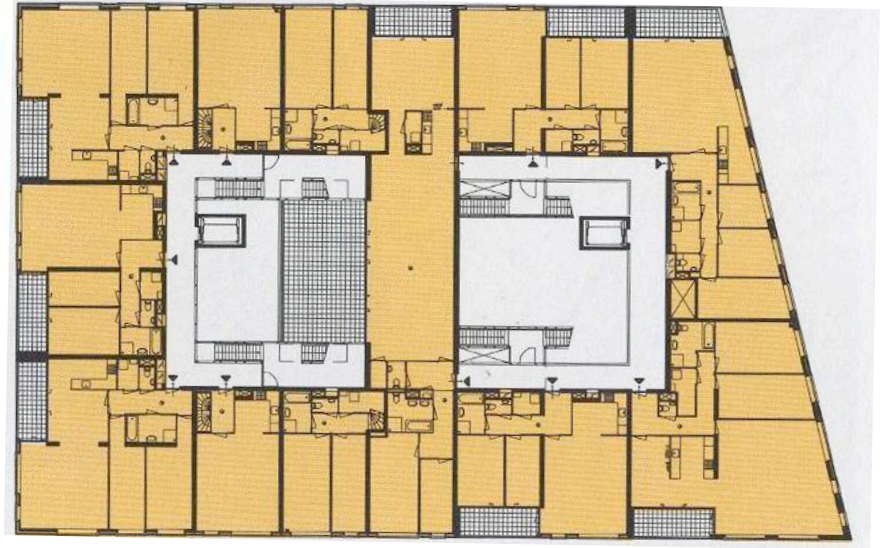
- > core alignment
- > access by central core
- > 1-4 apartments/storey
- > Urban villa <12m
- > Low tower: 4-12 storeys (x 3m)
- > Medium tower: 12-27 storeys (x 3m)
- > High tower: 27-n storeys (x 3m)
- example: Montevideo R'dam (150m)



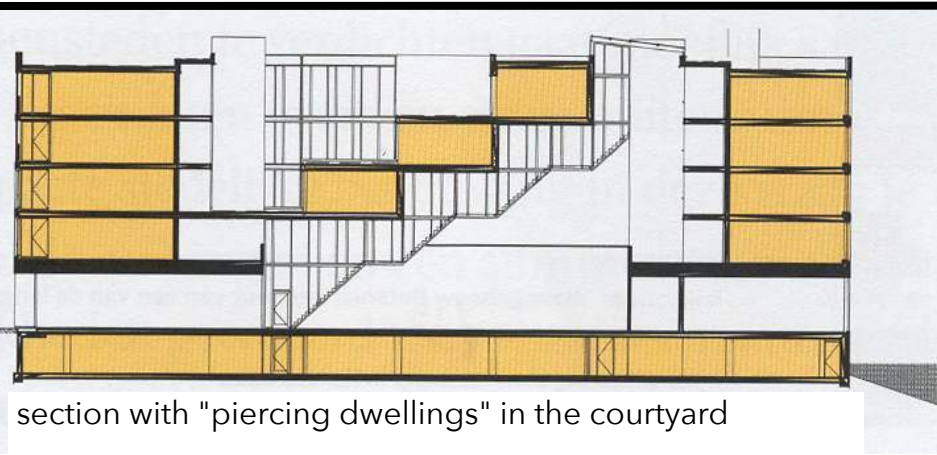
- > plinth can be higher (4-5m) and broader
often facilitates different function (communal, commercial, etc.)
- > underground parking preferable
- > distance between blocks >10m, due privacy and fire protection
- > preferable ratio high blocks to width streets/courtyards 1:2



Apartment block typology

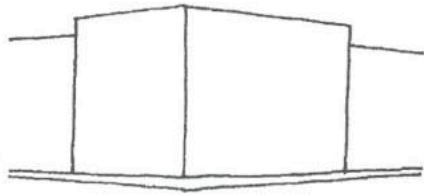


plan of thirth floor

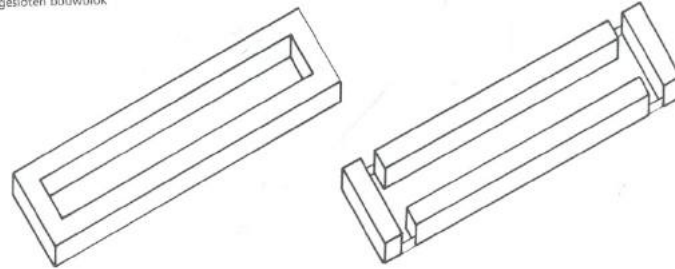


section with "piercing dwellings" in the courtyard

Corners of the low-rise housing

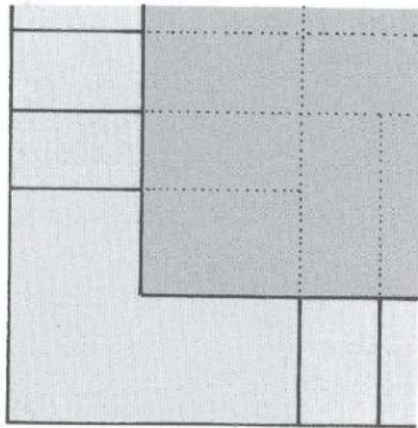
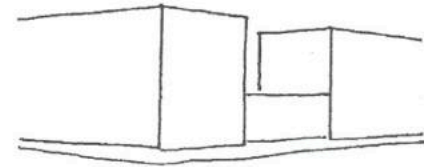


gesloten hoekvorm

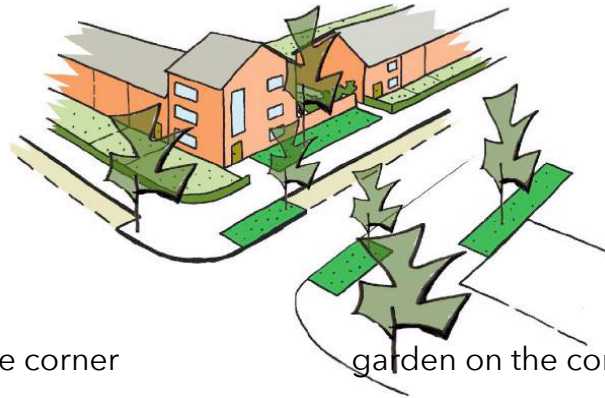


closed corner closed

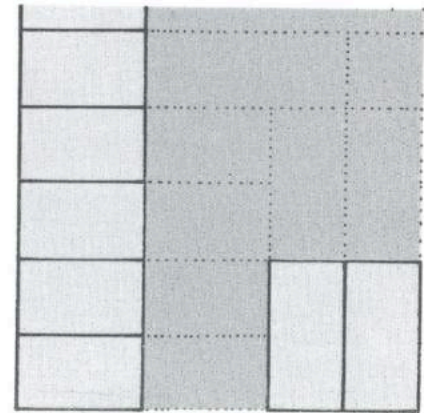
corner with garden



shop on the corner



garden on the corner



Closed corners in the city



Standard back gardens low-rise housing



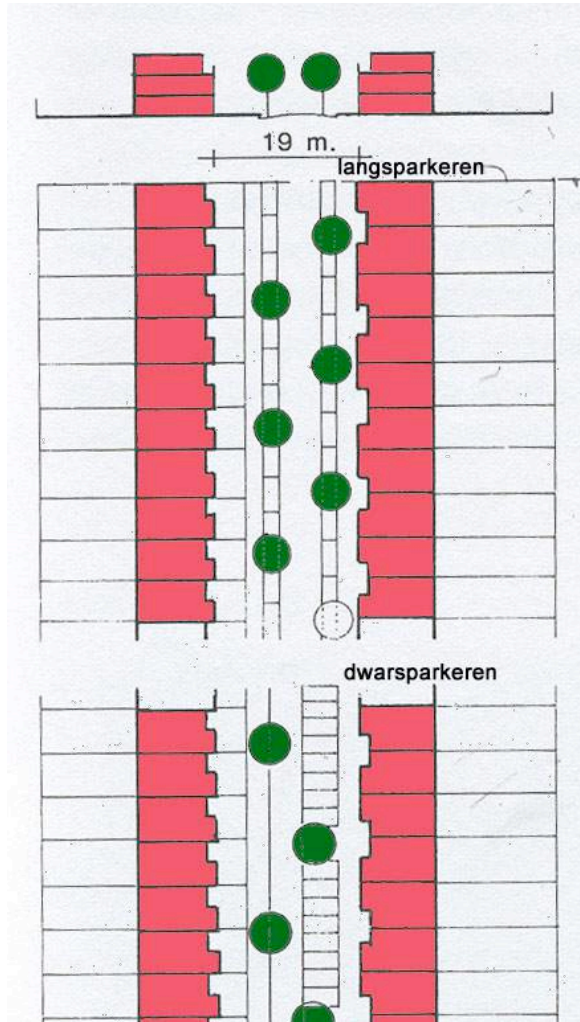
Possibilities with deep back gardens



5. Special focus elements

- **Straight lines or curving or angled ones**
- **Position of landmarks**
- **Parking in the open air or garage**
- **Neighbourhoods with water: singel or a canal**

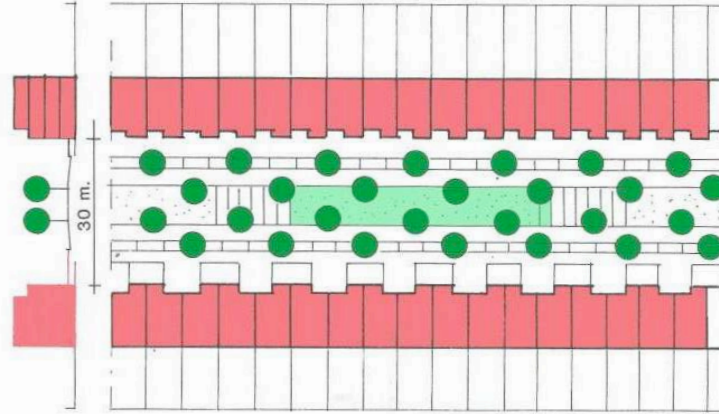
Residential street



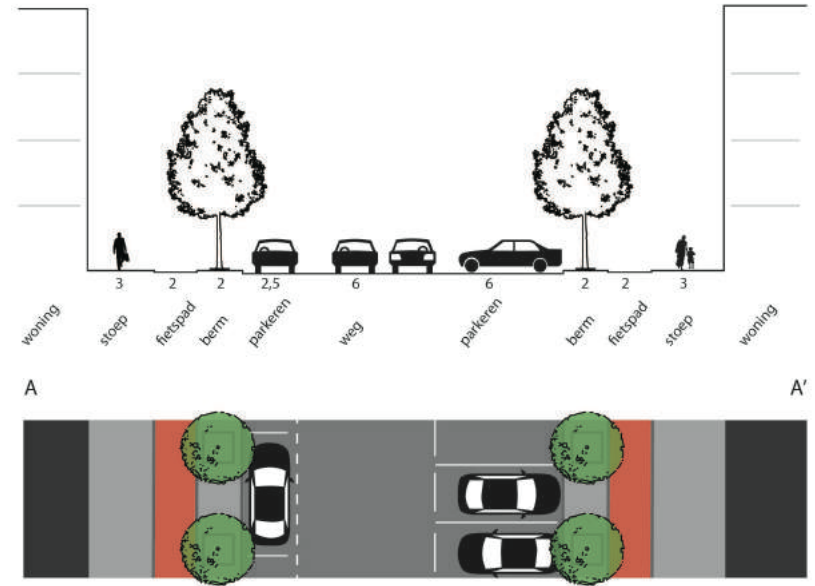
wide 16m
margin 12-20m



Lane



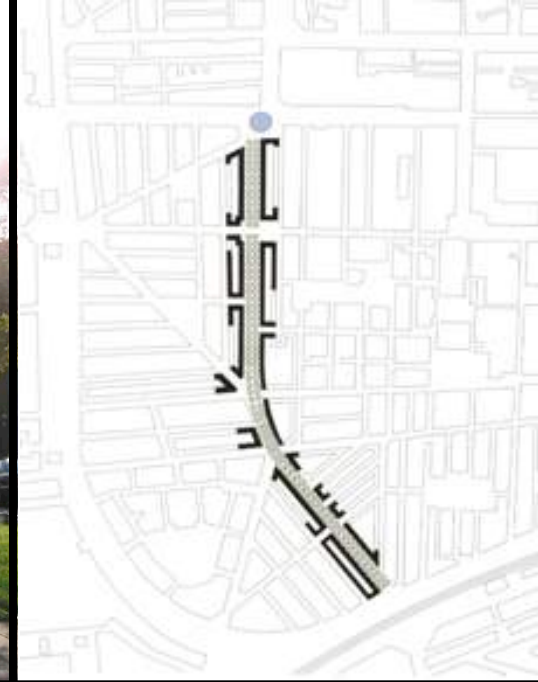
wide 22-30m
with median strip for parking or green

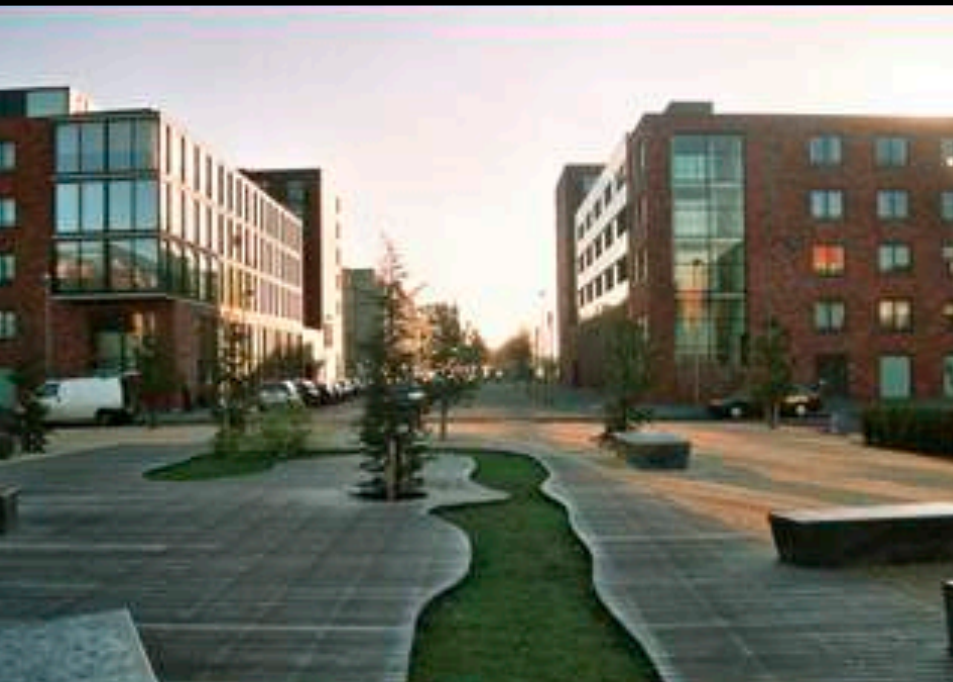


Traffic road

wide 30-40m

possibilities :
road for through traffic
double lanes
green or architectural unity

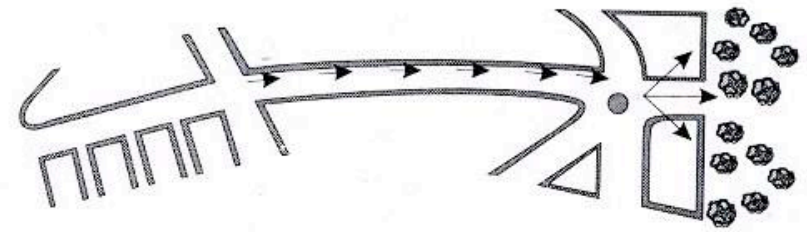




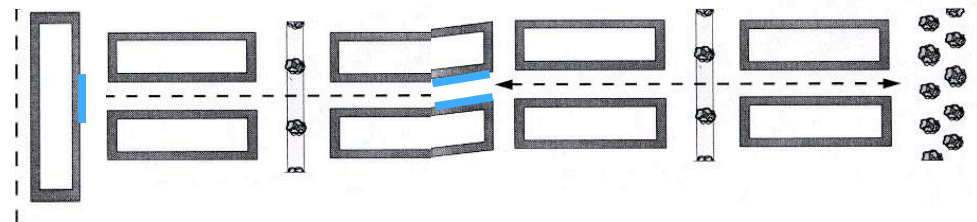
The square as unity



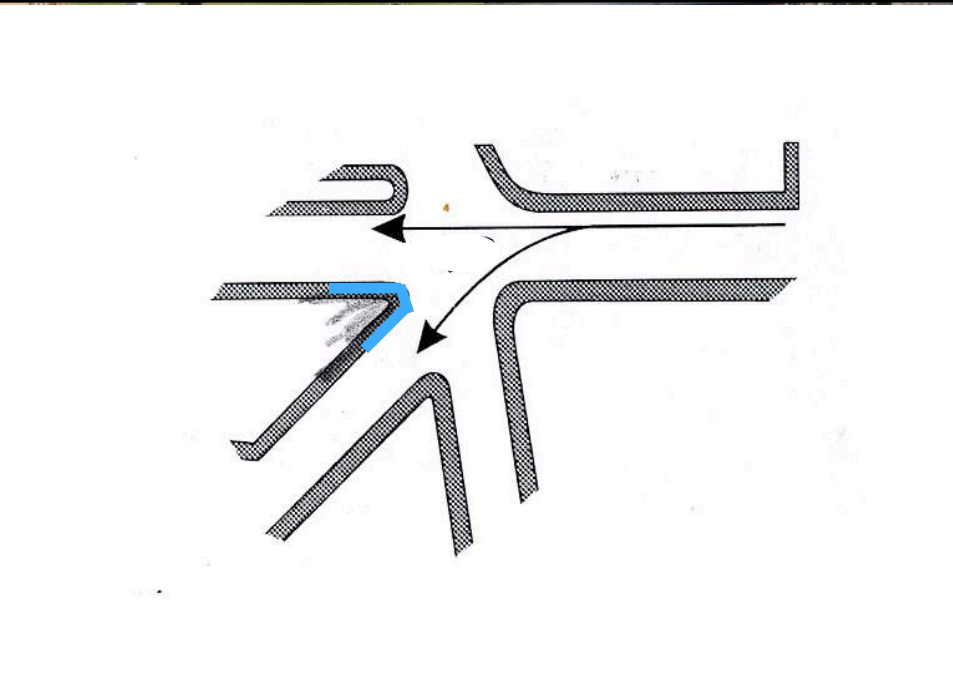
Curves and sight lines



very light curvature



sightline through continuing streets



Standard street and parking



Parking in the open air

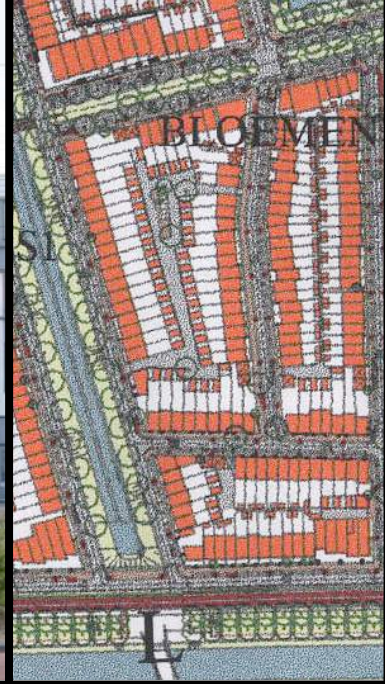


Ensemble as architectonic unity



Design of the public space





Diversity by building plot

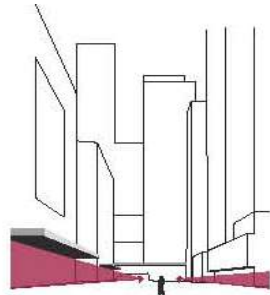




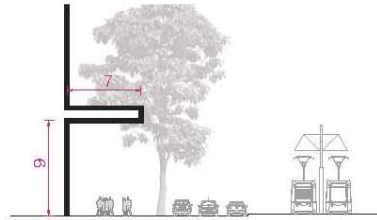
**Recent housing:
apartments and low rise**



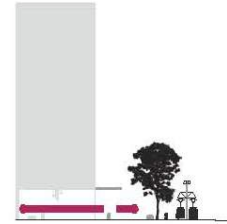
The plinth and relation between in- and outside



guidance in the street



Delftseplein



guidance in transition in-out



Relation with the water



Composition of apartment buildings





Aspects

Traffic system

system of roads, streets and squares, public transport and stops

Green

parks, playgrounds, embankments and treelines

Water

large outside water or surface water, lanes, lakes, wadi

Building block type

open or closed, inner area, public or collective courts >> dwelling "milieu" type
integration public facilities

Public utilities

garbage disposal, electricity buildings

Edges

quays, fields, central points or lines, spots and nodes.

6. Design example: Bovenkerk (2004)

- **Situation of the location**
- **Context, limitations by sewage utilities**
- **Concept plan**
- **Definitive plan**
- **Building typologies: low-rise or high-rise, closed building block or open blocks; freestanding buildings**

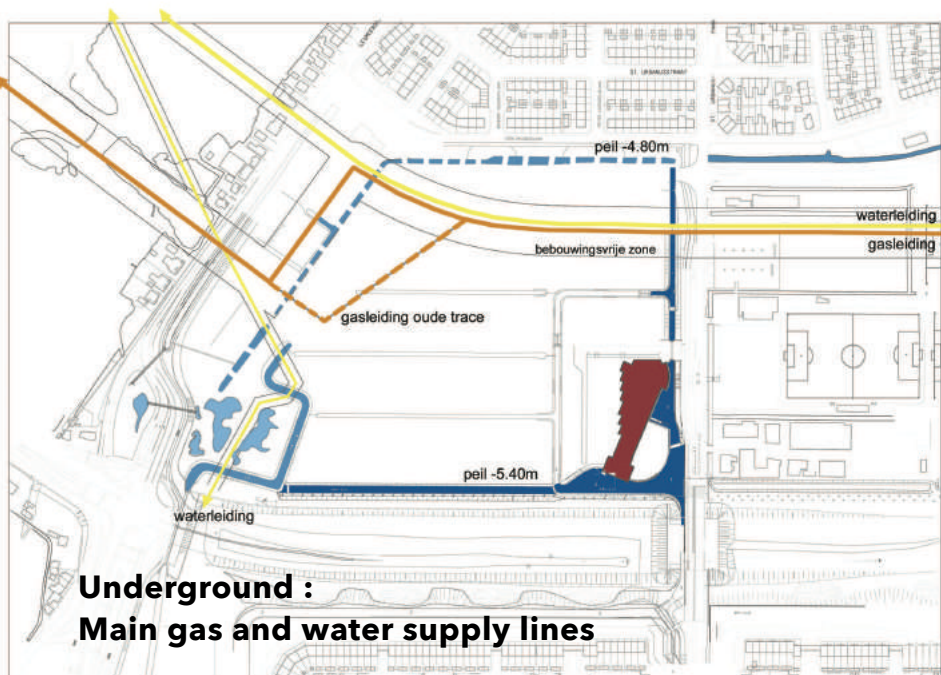
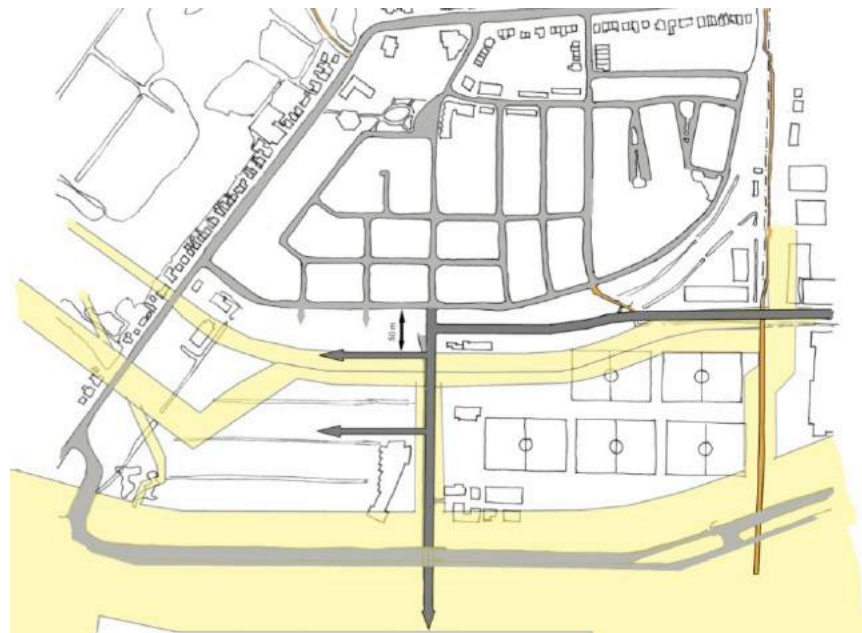
Situation Bovenkerk Zuid



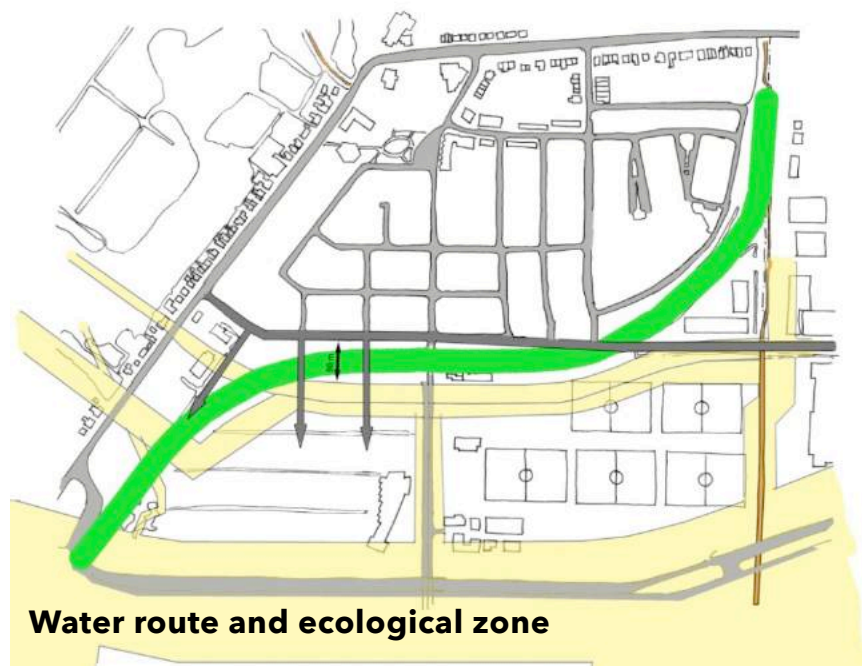
The design site used to be grassland, containing a road to Schiphol, which happened to be replaced by another road beyond it.



Some restraints from the context



**Underground :
Main gas and water supply lines**



Water route and ecological zone

Concept plan



concept
SCHAAL 1:3000

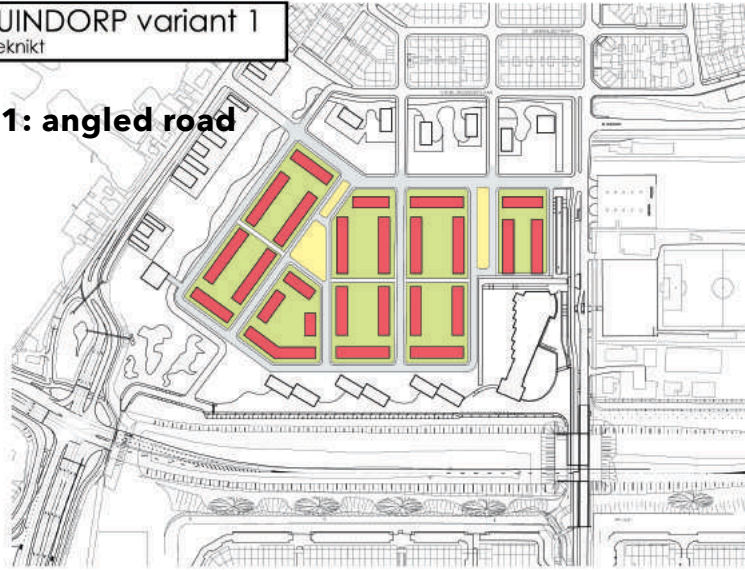


24-05-2004

Alternatives for discussion

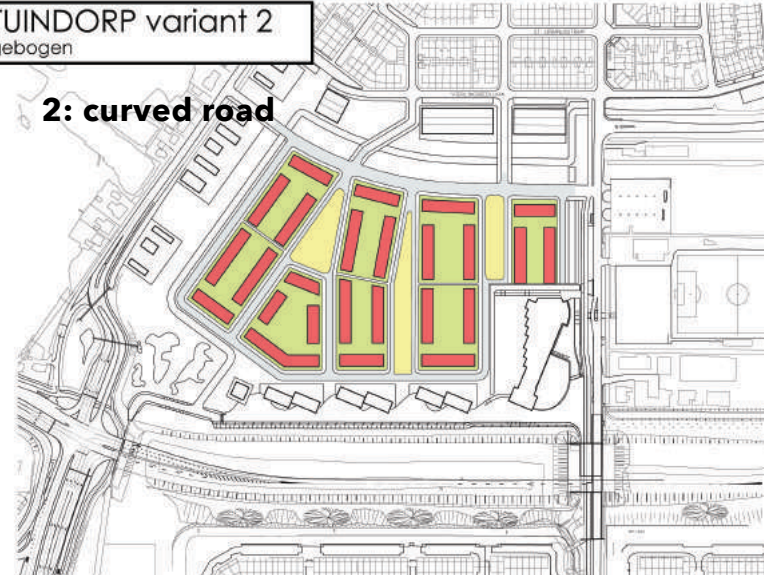
TUINDORP variant 1
geknipt

1: angled road

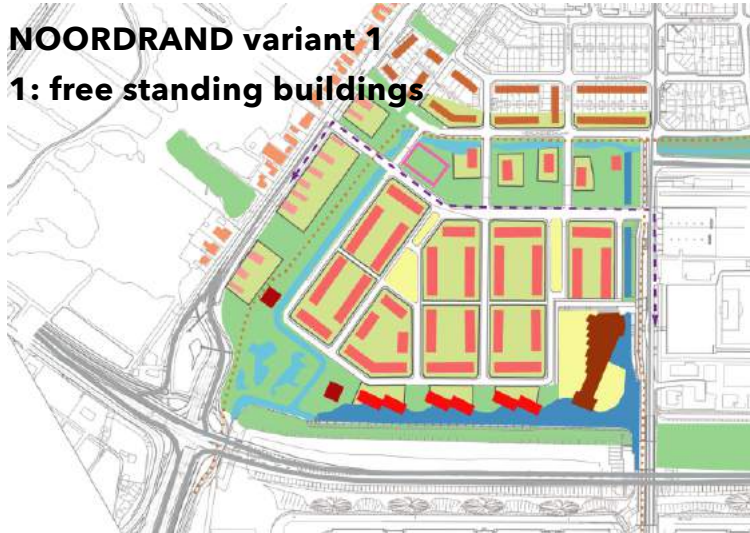


TUINDORP variant 2
gebogen

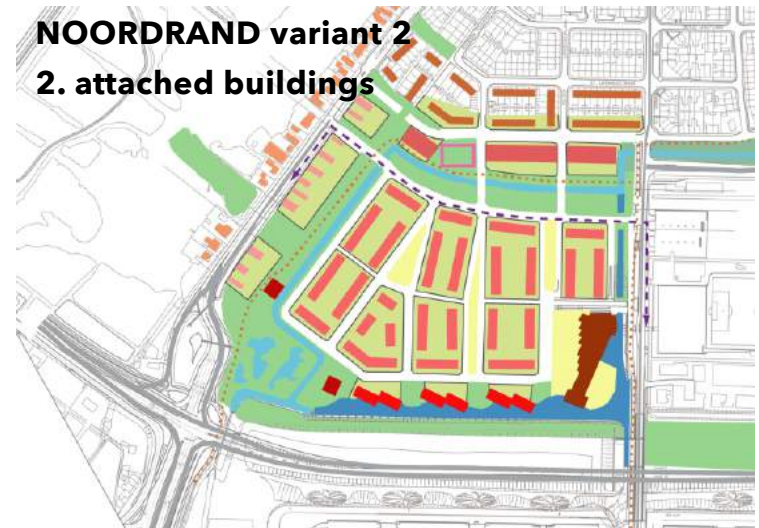
2: curved road



NOORDRAND variant 1
1: free standing buildings



NOORDRAND variant 2
2. attached buildings



Urban plan



parcelling plan
SCALE 1:3000

- LOW-RISE 2 LAYERS
- LOW-RISE 3 LAYERS
- BUILDINGS 3 LAYERS
- BUILDINGS 4 LAYERS
- BUILDINGS > 4 LAYERS
- EXISTING BUILDINGS
- SCHOOL
- FREE PARCELS
- PUBLIC GREEN
- SQUARE
- PARKING
- WATER



24-04-2004

Urban design drawing in CAD



parcelling plan
SCALE 1:3000

-  LOW-RISE 2 LAYERS
-  LOW-RISE 3 LAYERS
-  BUILDINGS 3 LAYERS
-  BUILDINGS 4 LAYERS
-  BUILDINGS > 4 LAYERS
-  EXCISTING BUILDINGS
-  SCHOOL
-  FREE PARCELS
-  PUBLIC GREEN
-  SQUARE
-  PARKING
-  WATER

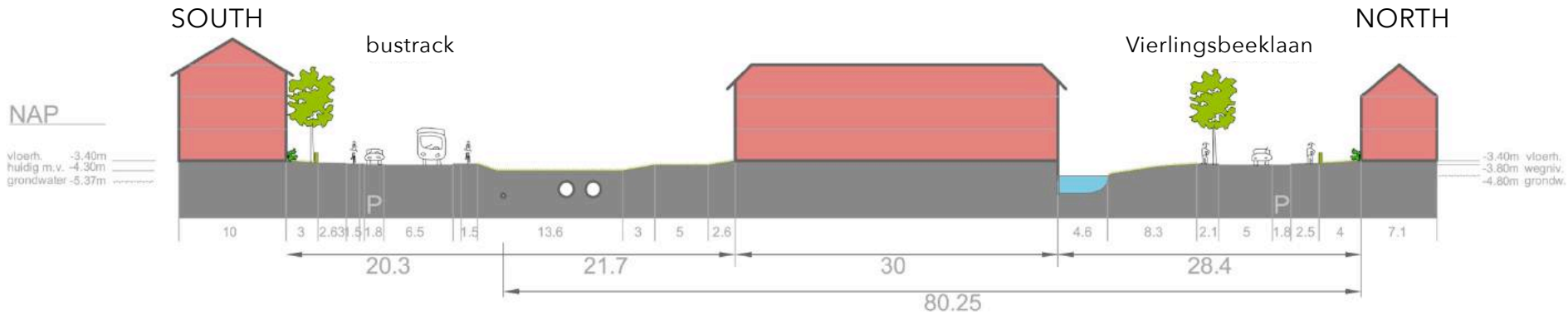


24-04-2004

Cross sections with short and long measures

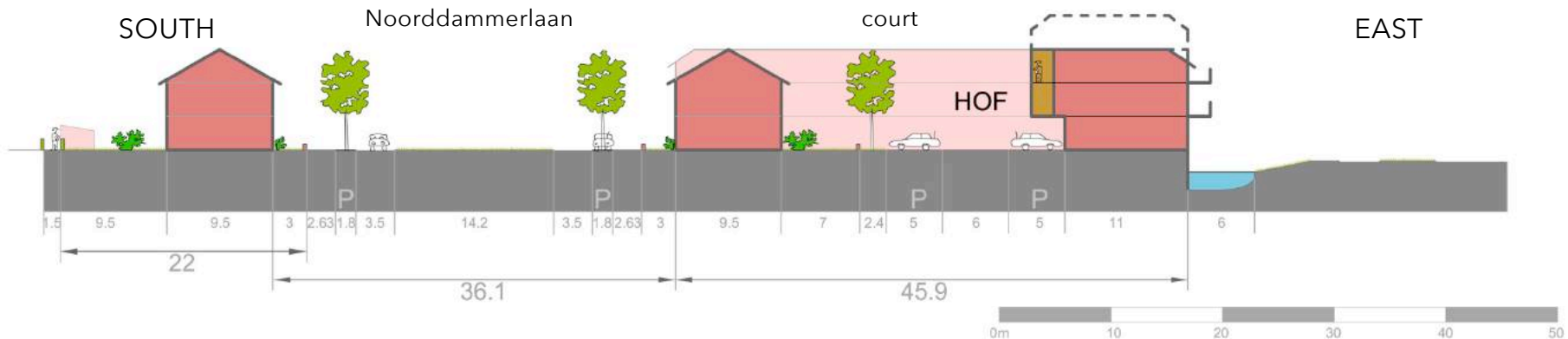
bustrack - Vierlingsbeeklaan

near apartments in green
section 1a

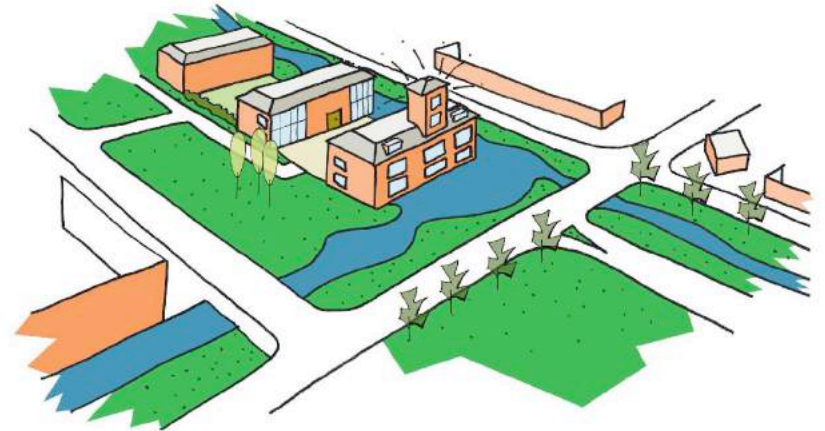
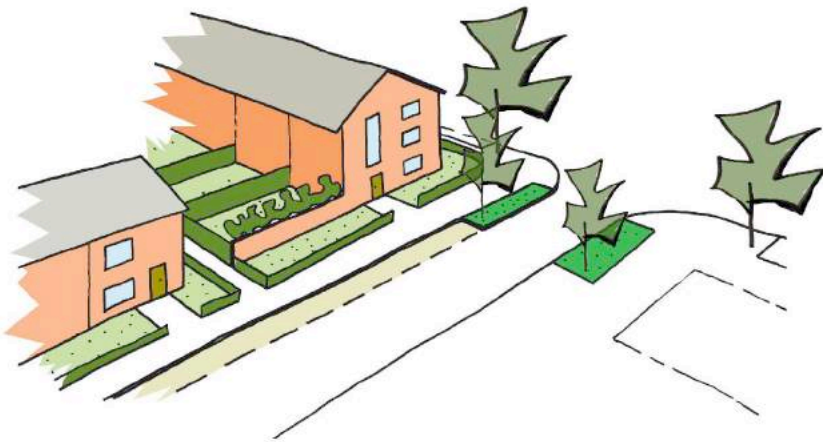


Noorddammerlaan - eastern edge

near senior apartments-court
section 2



Principles for corners and free standing buildings





Traditional housing curved rows

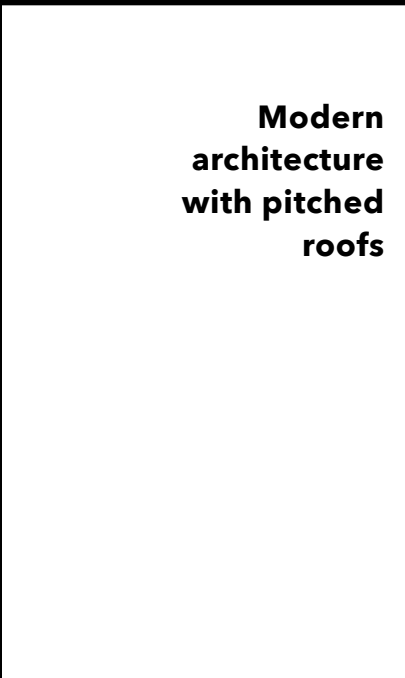


References for plan Bovenkerk

Modern dike housing



Thin residential tower



Modern architecture with pitched roofs



Curved road at one side realized with houses



Corner as a front



Corner as the entree of a residential street



Viewline realized



Creative commons

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- to make derivative works

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