



B | S

BORNEO-SPORENBURG:
A STUDY OF TWO PENINSULAS



01 CONTEXT

pg. 03-13



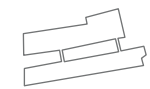
02 DESIGN / BUILT FORM

pg. 14-29



03 ASSESSMENT

pg. 30-37



04 SOURCES

pg. 38-39

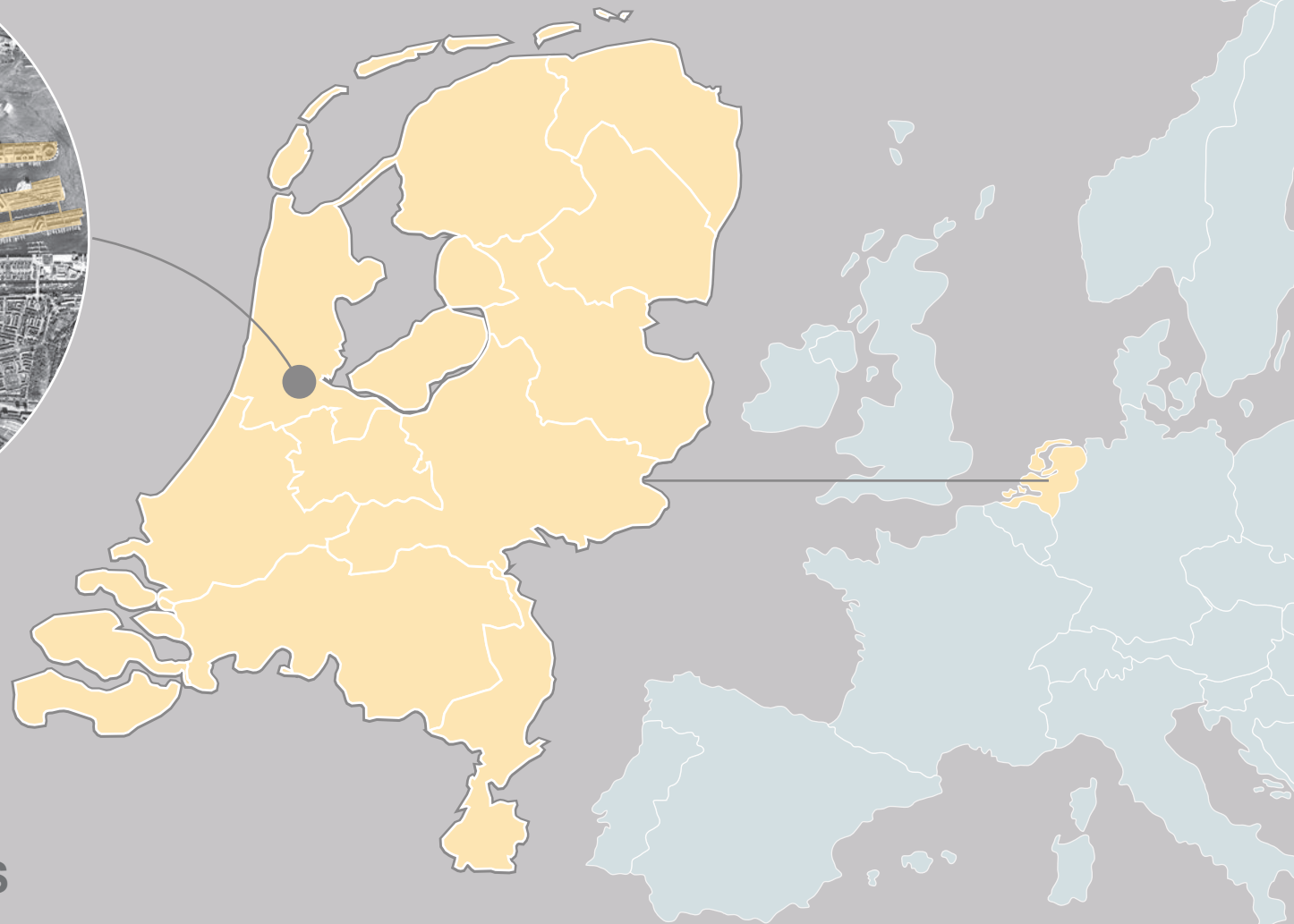
01

CONTEXT

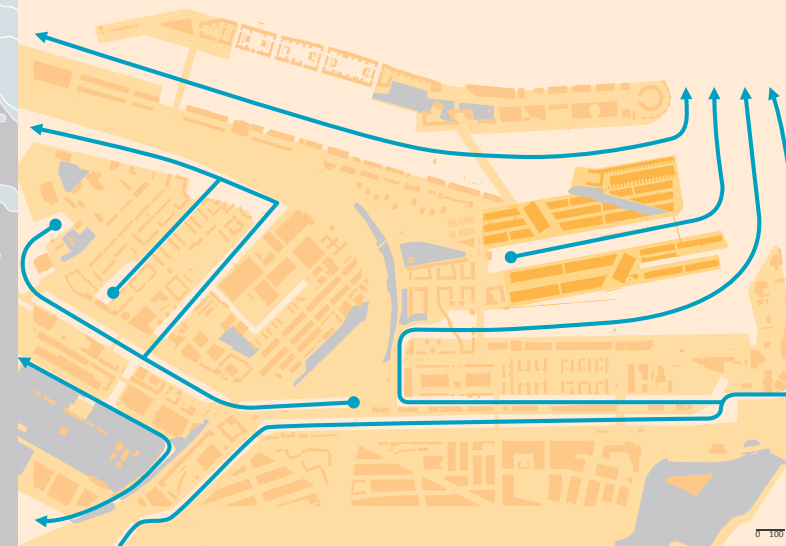
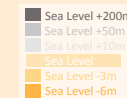
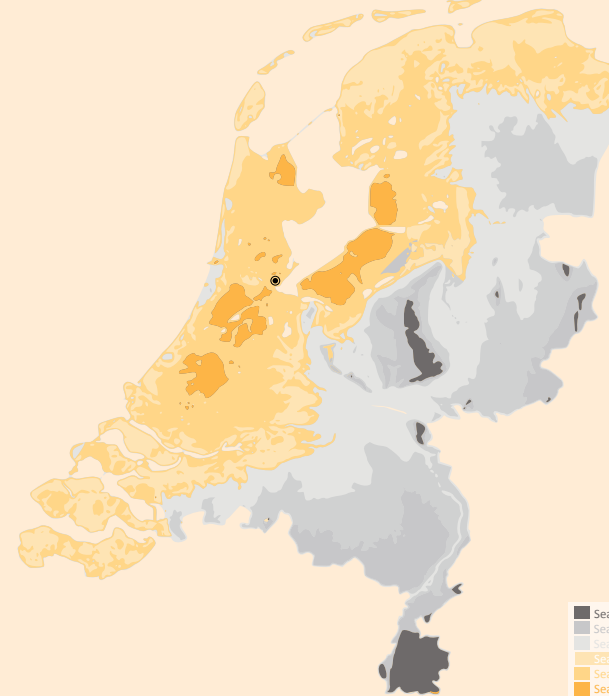




AMSTERDAM THE NETHERLANDS



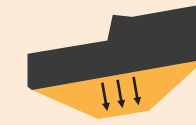
POLDERS



DELTA

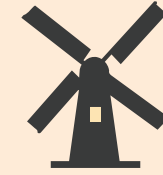
The Netherlands is a deltaic region, with cities growing from small cores outwards as they expanded.

As larger border walls encircled older moats, a concentric pattern of rivers formed through Amsterdam. These canals eased movement of goods to the ports.



LAND CLAMATION

Starting in the 1100s, Dutch farmers began damming and dyking the North Sea, and draining the landscape through rivers to find steadier, drier ground on which to build and farm.



WATER & WIND

Windmills were built to harness the strong gusts of the region for improved land draining. Over time, the displaced water resulted in the landscape sinking, and today over a quarter of the Netherlands is below sea level. Amsterdam is approximately at sea level, and as such continues to be serviced to some degree by canals.



HISTORICAL TIMELINE

1538

OLDEST RECORDED MAP

Painted by Cornelisz Antonisz, the pattern of the old city is still intact while the waterways are now paved.



1610

FIRST BIG EXPANSION MAP

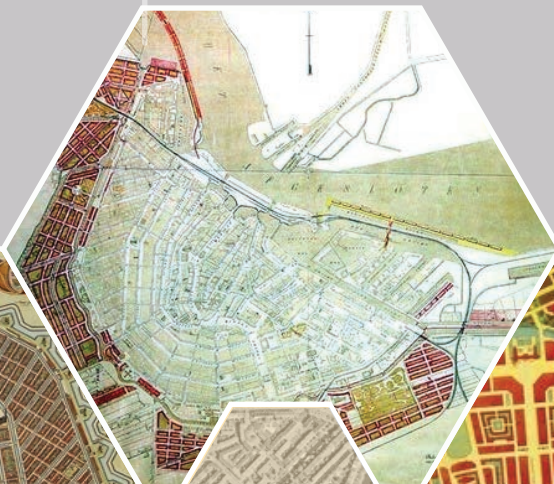
Expansion of the city pushed the defence wall outward 1km east and 1km west. The canal ring was built in two phases, starting in 1610 and then 1660.



1876

PLAN-KALFF

The city expanded concentrically outside of the canal in the late 19th century, according to the 1876 Plan-Kalff.



1922

PLAN ZUID (SOUTH)

The New South district, previously underdeveloped, was designed in the style of Amsterdam School between 1922-1927. However, it became clear that this method was too expensive to be deployed large scale.



1935

GENERAL EXTENSION PLAN

Formulated in 1935, a major house-building program was launched post WWII. The main characteristics are the residential districts of high, medium and low-rise buildings with green open space.



1969

THE BIJLMERMEER PLAN

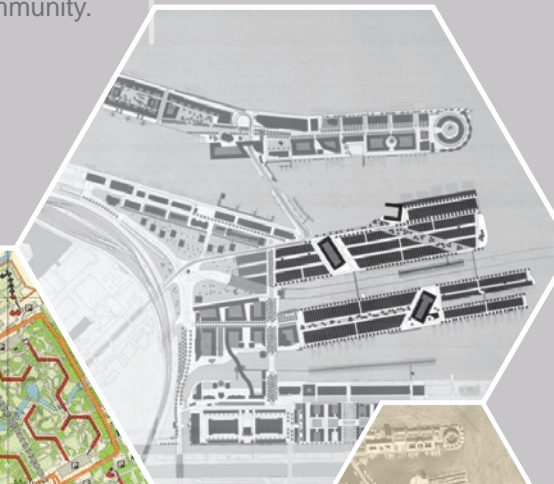
In an attempt to attract a suburban population the Bijlmermeer was designed with the urban design ideals of CIAM with tall flats in green space, raised roads and open areas. However, by the end of 1980s the Bijlmer was the set of controversial relationship of the district's spatial structure and criminality of the community.



1990
2000

KNSM-ISLAND, JAVA-ISLAND + IJURG

An emphasis on house-building continued throughout the 90's. The Bijlmer inspired new developments of high density along Amsterdam's canal resulting in the re-use of former industrial islands in Oostelijk Havengebied, KNSM Island, Java-Island, IJurg and Borneo Sporenburg.

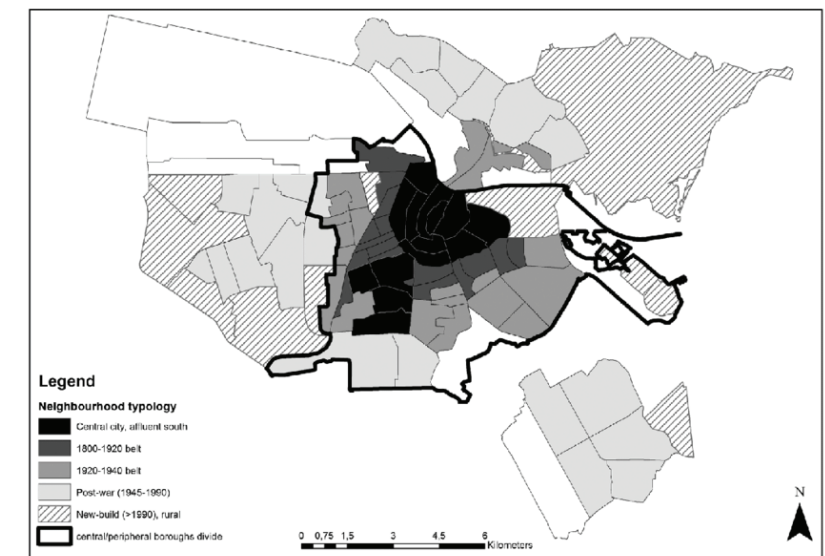




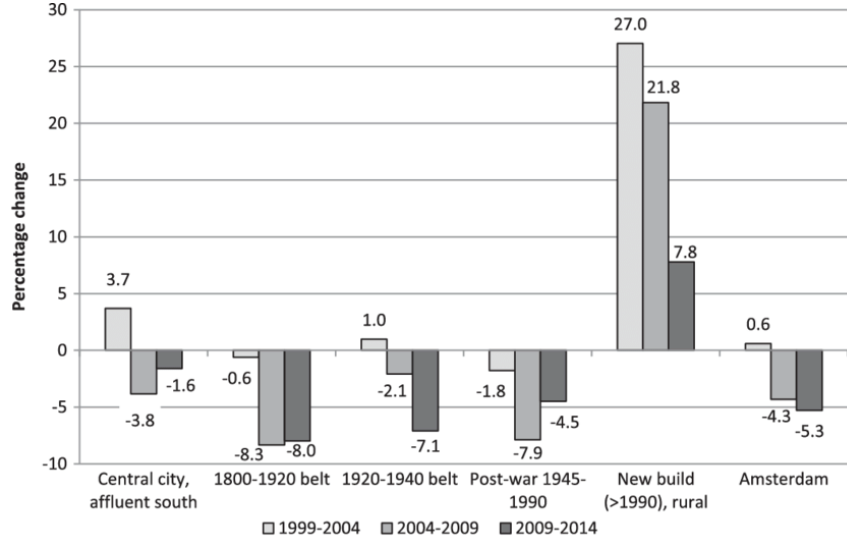
ECONOMY
 1990s - DUTCH GOVERNMENT GREW AT A RATE OF 2.8%
 2000 - UNEMPLOYMENT IN THE NETHERLANDS WAS THE LOWEST SINCE 1970s; NATIONS ECONOMY AVERAGED 4% GROWTH/YEAR.
 THE EXUBERANT URBANISTIC AND ARCHITECTURAL DIVERSITY OF THE NEW RESIDENTIAL DISTRICTS REVEAL THAT CONSTRUCTION TOOK PLACE IN AN INCREASINGLY LIBERAL AND MARKET-ORIENTED CLIMATE. CITIZENS BECAME PRIMARY HOUSING CONSUMERS.

HOUSING NEEDS:
 1990s AMSTERDAM

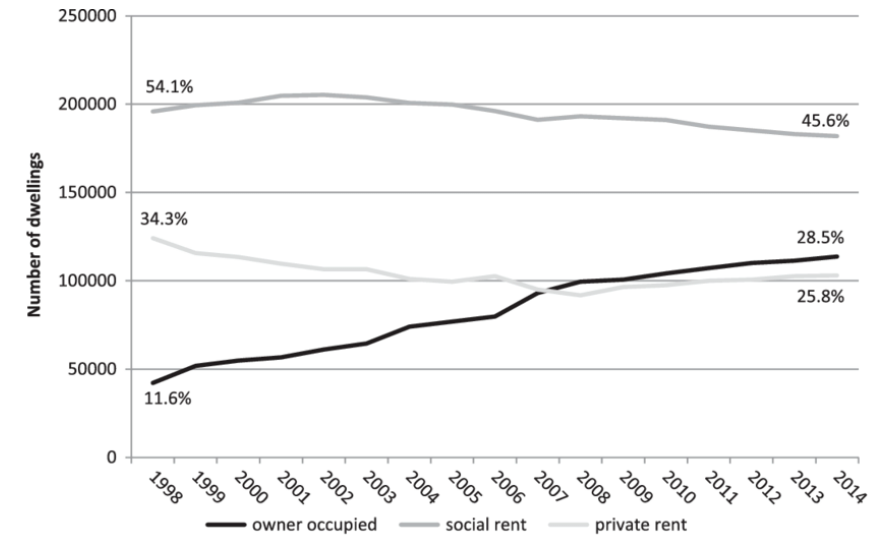
NEIGHBOURHOOD TYPOLOGY*



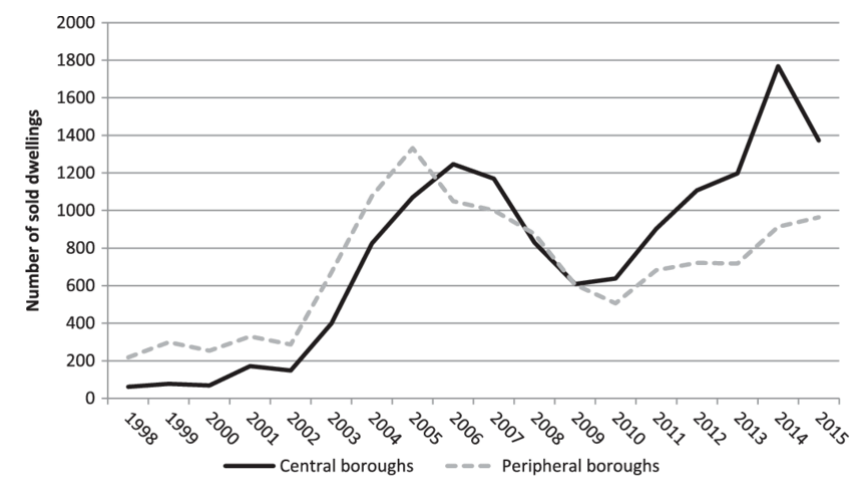
PERCENTAGE OF POPULATION CHANGE*



NUMBER OF DWELLINGS*



NUMBER OF SOLD DWELLINGS*



*IMAGE SOURCE https://www.researchgate.net/publication/311971645_State-led_Gentrification_and_the_Changing_Geography_of_Market-oriented_Housing_Policies

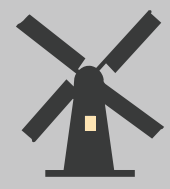
PROJECT TIMELINE

1989

Policy document created which proposed considering the Borneo and Sporenburg Islands as one are, to be developed together.



1992



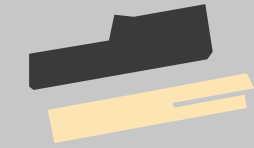
EASTERN DOCKLANDS AREA PROJECT GROUP

Development started
2150 dwellings proposed



NEW DEAL

New Deal launched into improving the quality of the whole area. To achieve this, they agreed that the profit from the development would be used for the benefit of the whole and be applied for public rental housing



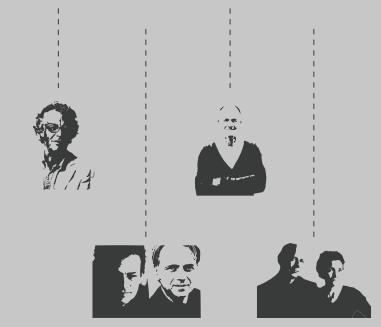
URBAN PLAN

1. Develop as two separate peninsulas
2. Clear market preference for single-family, suburban-style dwellings with direct access to the street. This is to differentiate B|S from Java Island; was being built at the same time.



DENSITY

Feasibility study was developed for the area with the goal of achieving 100 dwellings per hectre.

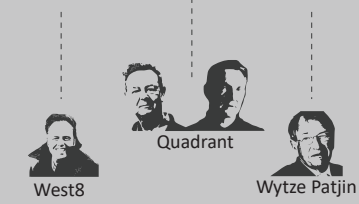


1993



COMPETITION

Three offices were considered for the master plan. West8 was ultimately commissioned for the project.



1995

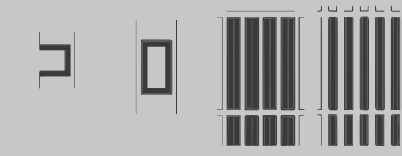


NEW DEAL

Growing complexity of the plan and higher construction costs created conflict between architects and builders and within New Deal. To get the project back on track, Auke Mulder mandated:

1. Width of dwellings limited to 4.2m
2. Limit the types of dwellings
3. Limit the number of architects participating

1996



TYOLOGY

New typology of three-storey, ground accessed houses in being strongly oriented to the private realm by incorporating patios and roof gardens.



POLDER MODEL

Consensus culture, where a partnership between the municipality, community and developer is made for the coordination of major housing projects



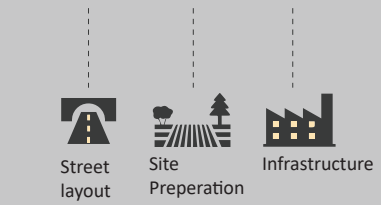
VINEX LOCATION

Policy by VROM; targeted towards massive new housing developments. Vinex locations aim to promote dense housing developments within the city to curb urban sprawl and protect open areas.

2000

FUNDING

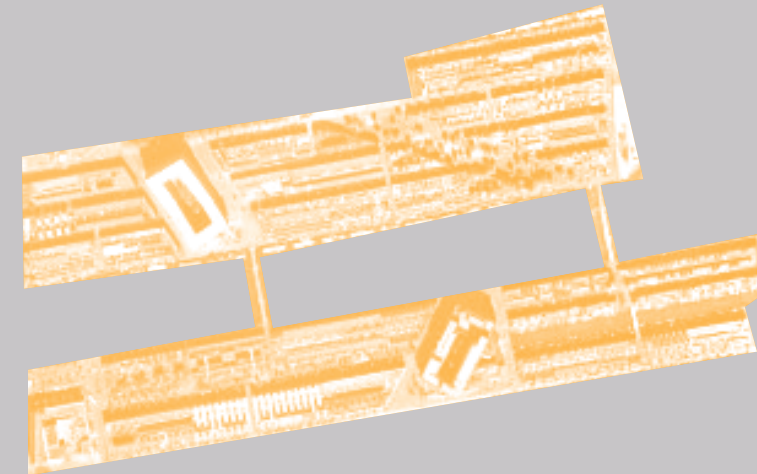
Amsterdam receives funding from National government with the condition of building 6000 dwellings by 1996.



02

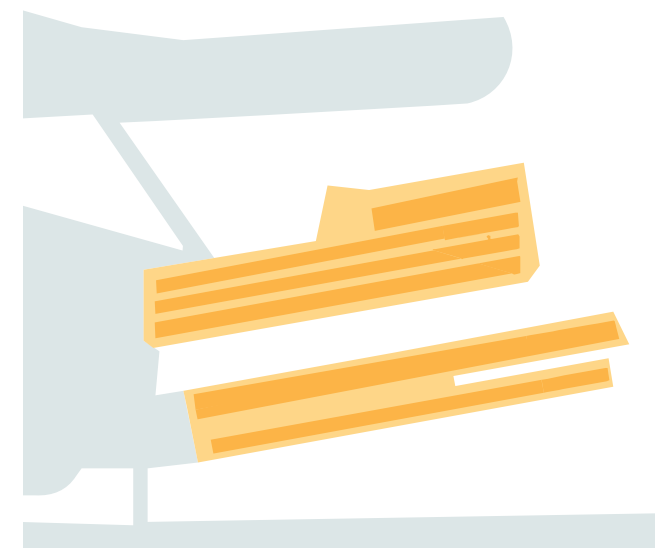
DESIGN /
BUILT FORM

THE
REDEVELOPMENT
OF THE
EASTERN
DOCKLANDS
OF
AMSTERDAM

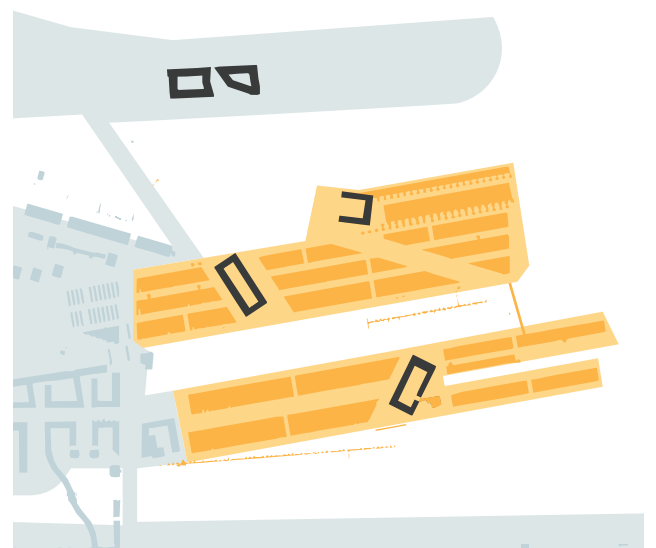




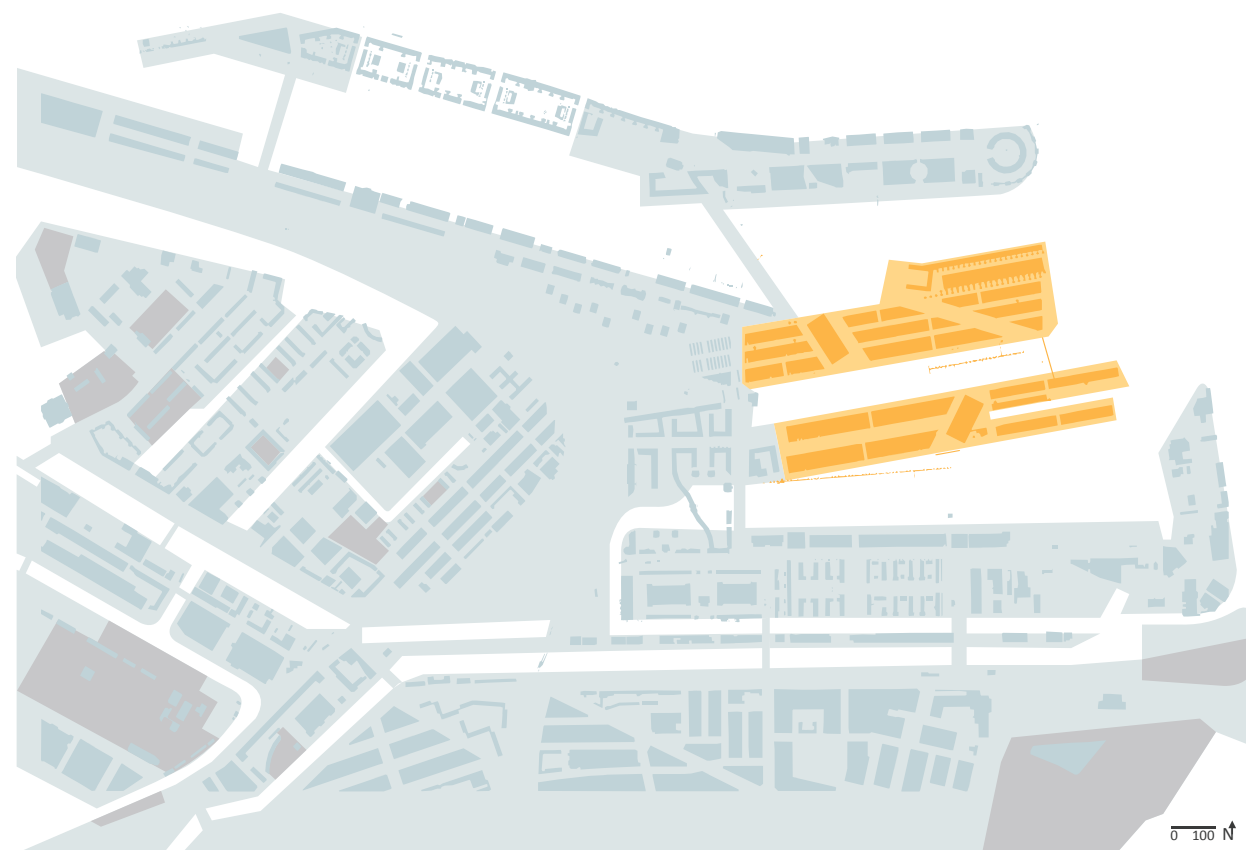
A. Development of two peninsulas, Borneo and Sporenburg, as one planning area



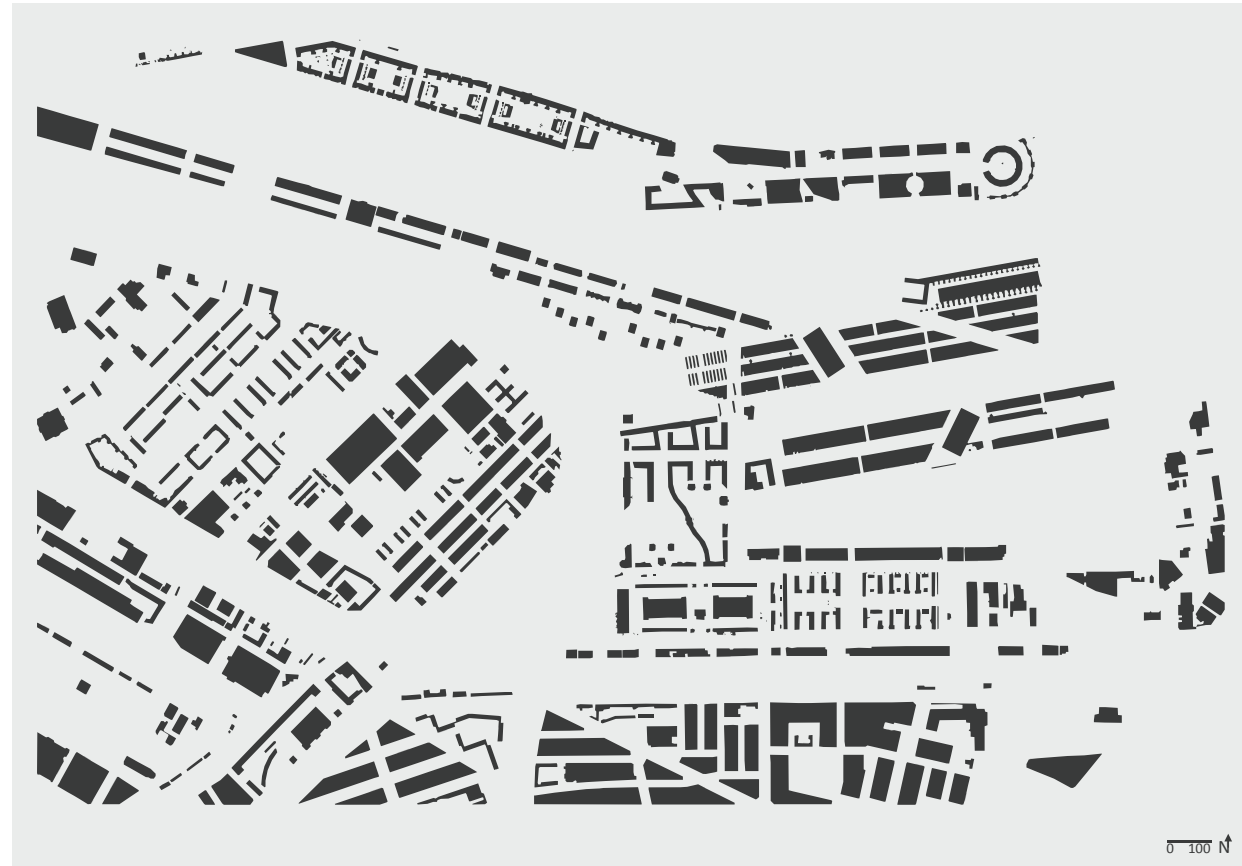
B. Linear single unit housing parcels. The fundamental unit of Borneo Sporenburg is the single-family row house.



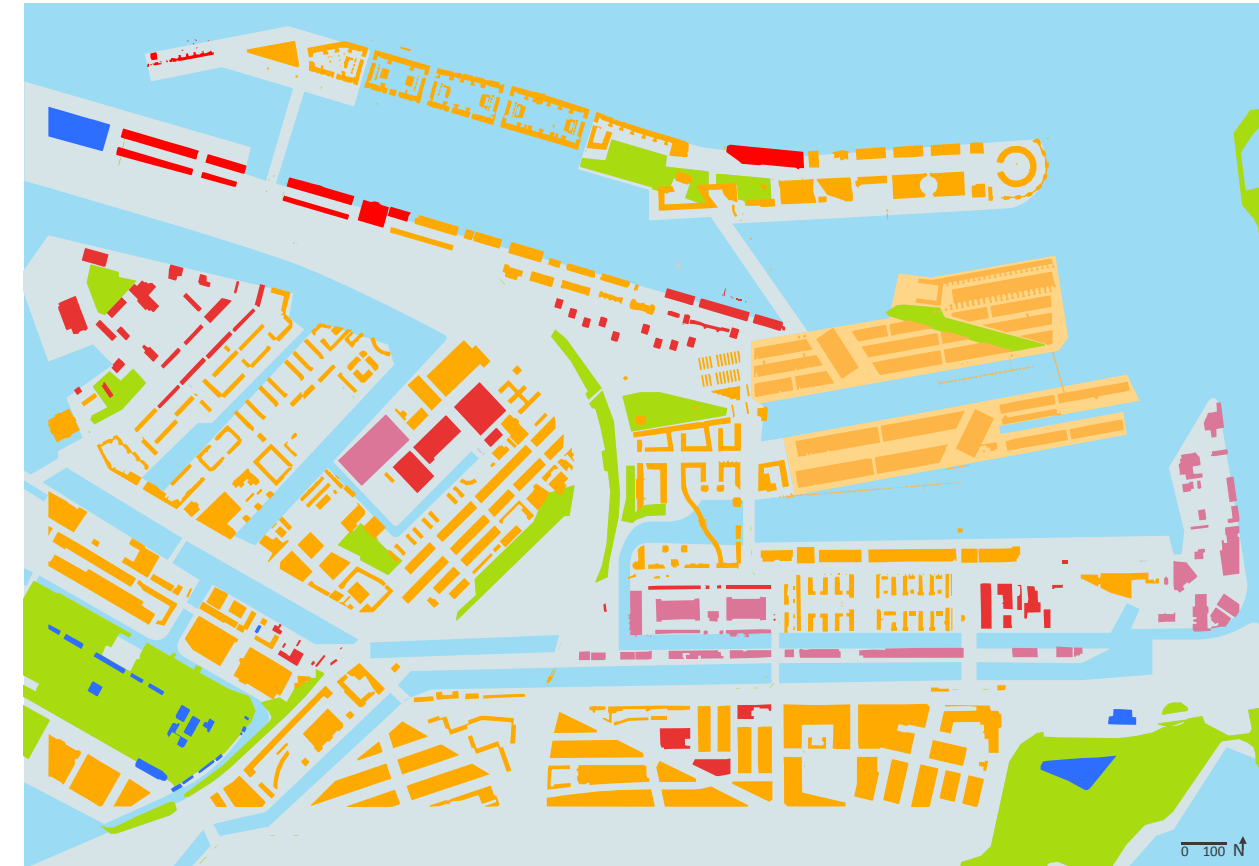
C. To avoid monotonous visual, building typologies repeat in parcels of 5-12. Dense apartment blocks break up the parcels of single unit homes and create diversity, movement and offer alternatives to patio house living style.



BORNEO-SPORENBURG: CONTEXT



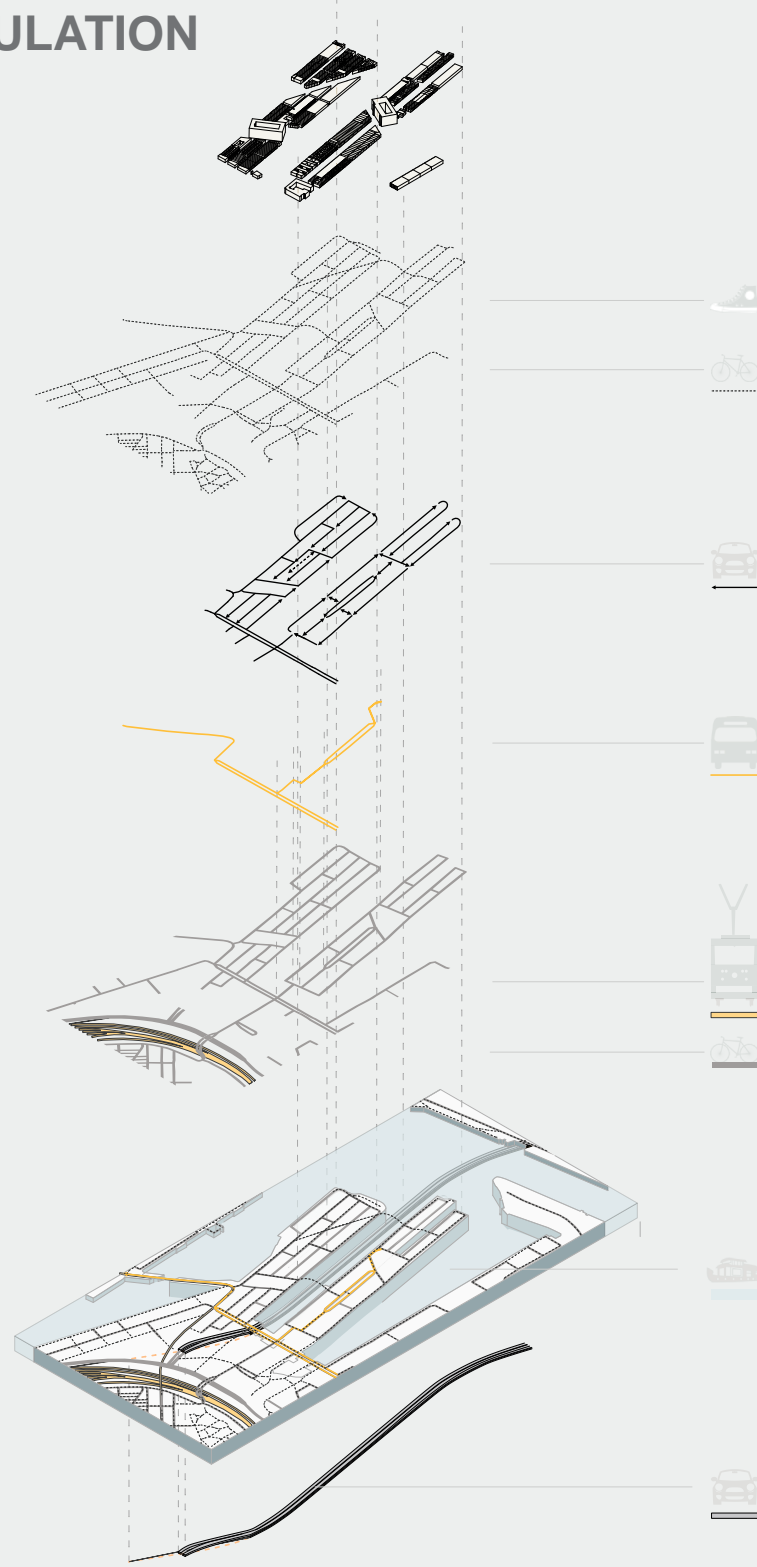
BORNEO-SPORENBURG: FIGURE GROUND MAP



BORNEO-SPORENBURG: LAND USE MAP

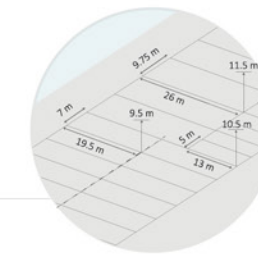
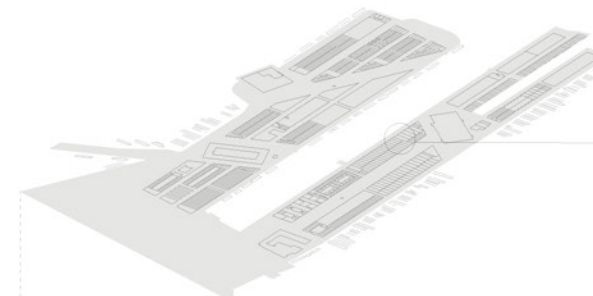
INFRASTRUCTURE AND CIRCULATION

BORNEO SPORENBURG CAN BE TRAVERSED ON FOOT, ON BICYCLE, BY CAR AND BY BUS, WITH ACCESS TO THE FRONT OF THE SITE BY TRAM, TRAIN AND SUBWAY. IT TAKES NO MORE THAN 20 MINUTES TO WALK FROM ONE SIDE TO THE OTHER.



KEY CONCEPTS

DENSITY



IS THIS "GOOD" DENSITY ?

Area in hectare : **26**

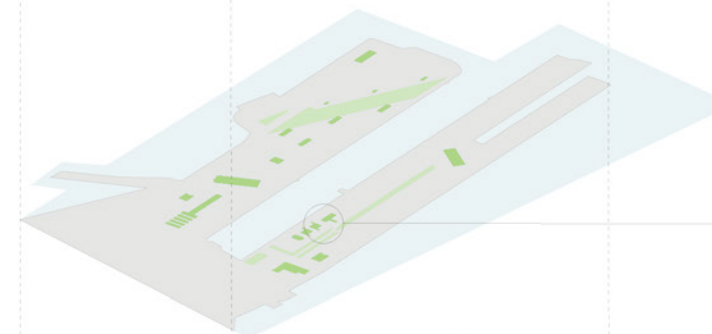
Inhabitants: **5408**

No. of Dwellings: **2217**

Population density: **208** people per ha.

Low rise. Narrow plots. Back to back houses.

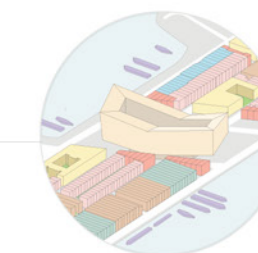
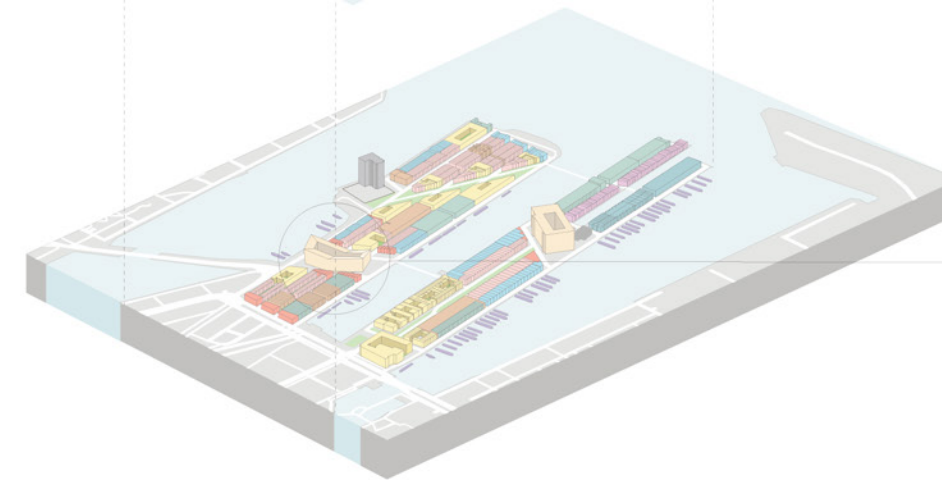
OPEN SPACES



"GREEN IS BLUE"

- Canal
- Hardscape Surfaces
- Public Green Spaces
- Private Shared Courtyards

VARIETY



TAXONOMY OF BUILDING TYPES

- A : Highrise apartments
- B : Courtyard Blocks
- C1 : Street frontage, back to back blocks.
- C2 : Side street frontage, row houses.
- C3 : Main street frontage, row houses.
- D1 : Canal Frontage, Back to back blocks.
- D2 : Canal frontage, row houses.
- D3 : Both sides canal, rowhouses.
- E : Condominium
- F : Free Parcels
- G : Houseboats

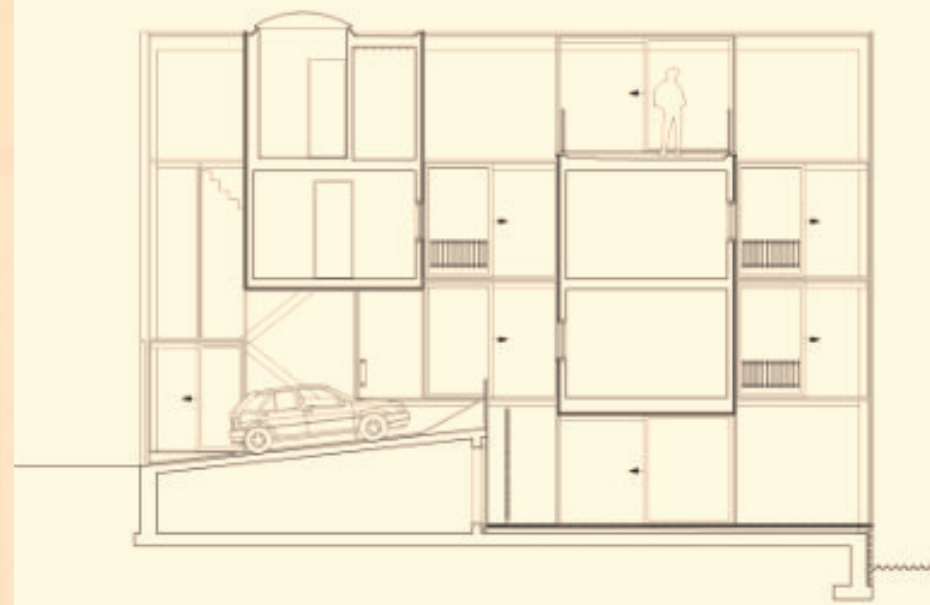


Back-to-back

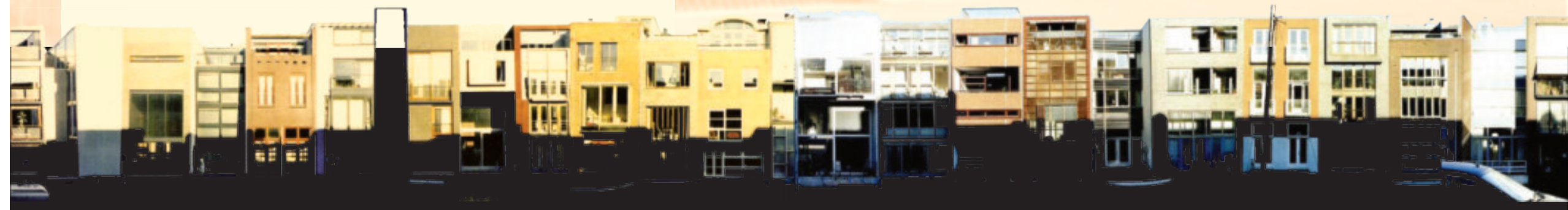


HOUSING

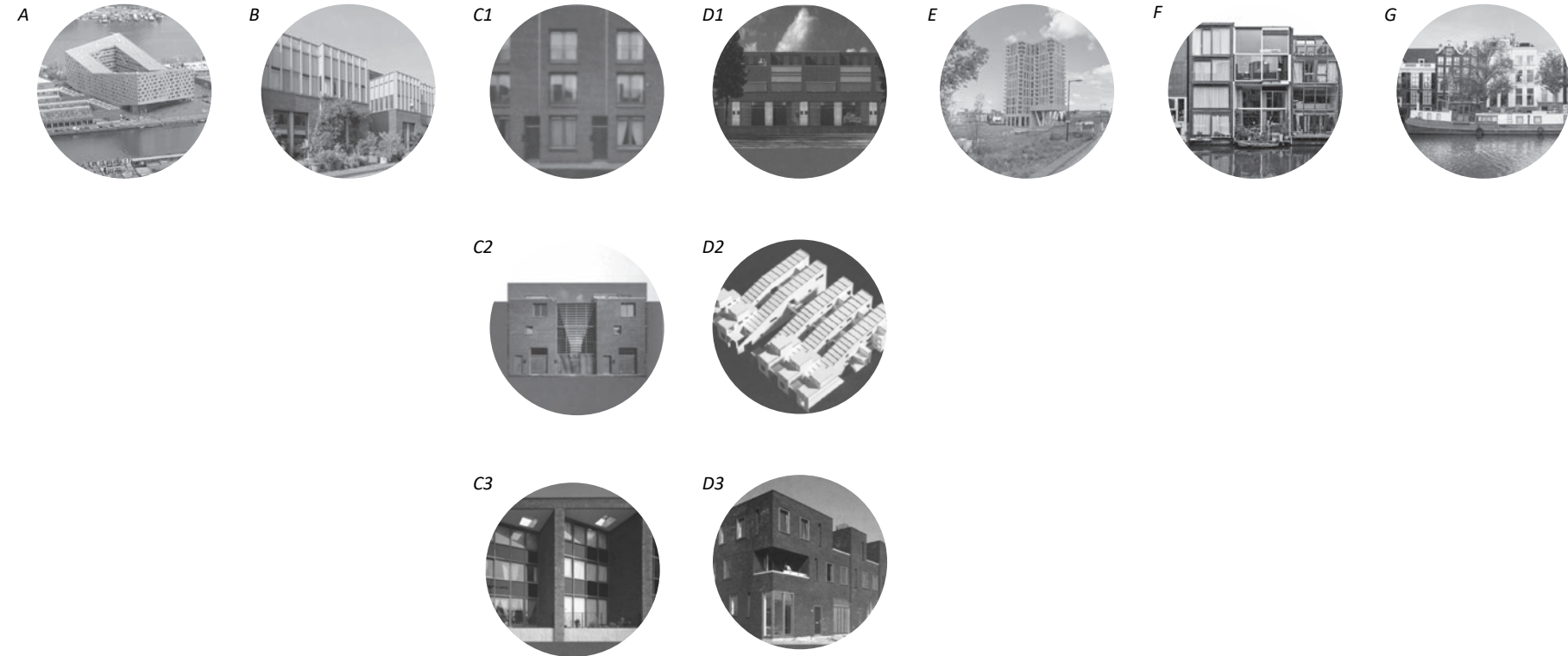
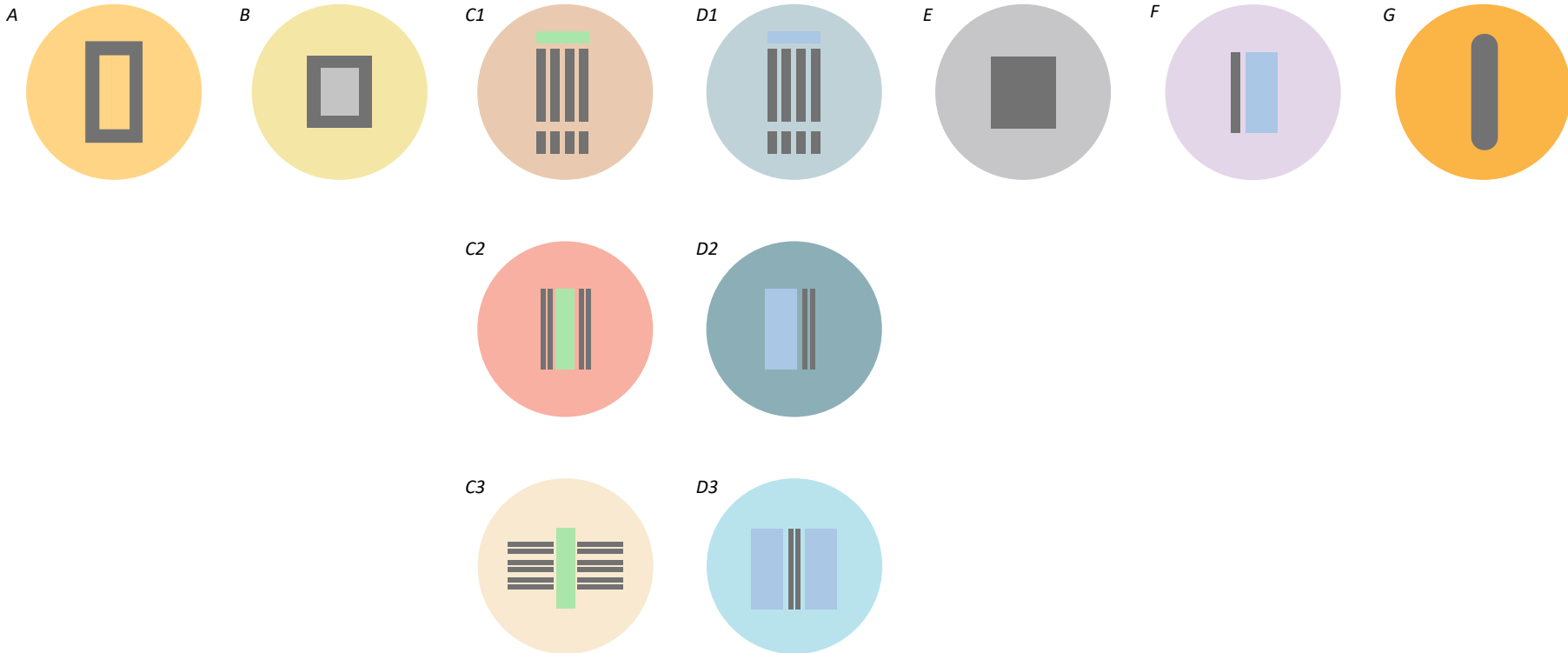
MULTIPLE ARCHITECTS
DESIGNED THE HOUSING
PLOTS TO ECHO THE CANAL
ARCHITECTURE FROM THE
JORDAAN DISTRICT.



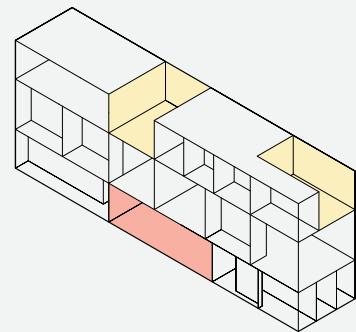
- Heren 5
- Kofter & Salman
- Erna van Sambeek
- Wim Kloosterboer
- Claus & Kaan
- Claus en Kaan
- Höhne & Rapp
- Arne van Herk
- Cees Christiaanse
- Liesbeth van der Pol
- Hans Tupker
- Marlies Röhrer
- Herman Zeinstra
- Van Berkel & Bos
- Willem Jan Neutelings
- DKV
- Xaveer de Geyter
- Willem Jan Neutelings OMA



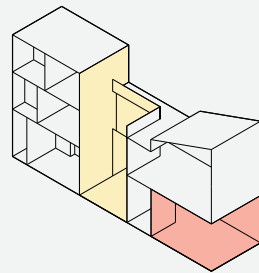
TAXONOMY OF BUILDING TYPES



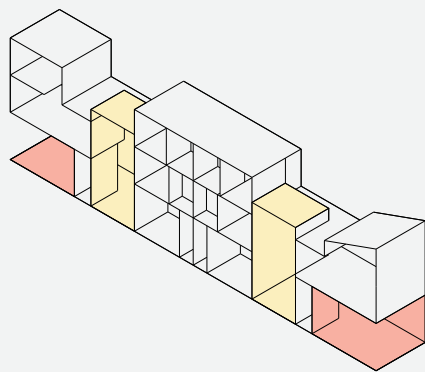
SERVING PLATTER OF TYPOLOGIES



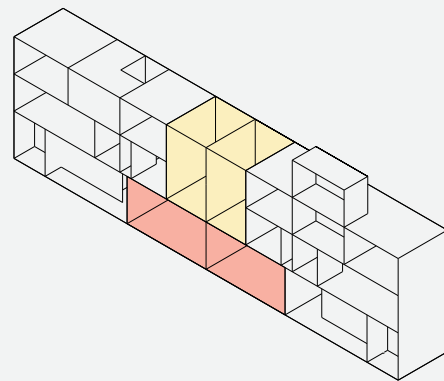
KEES CHRISTIAANSE ARCHITECTS



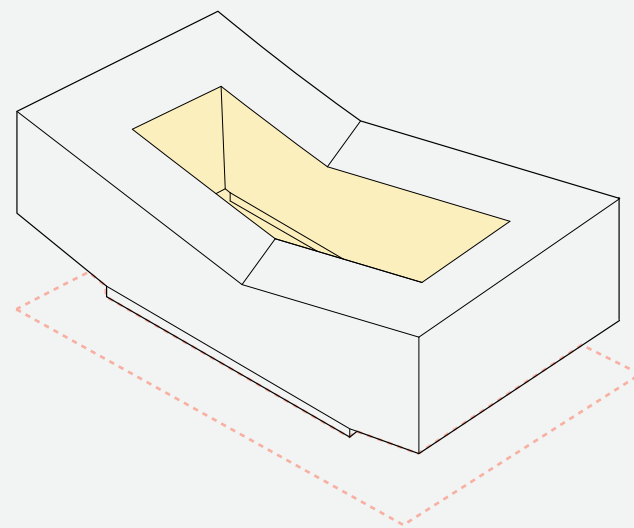
CLAUS EN KAAAN TYPOLOGY 1



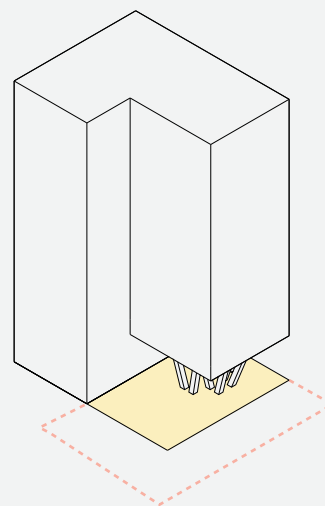
CLAUS EN KAAAN TYPOLOGY 1B



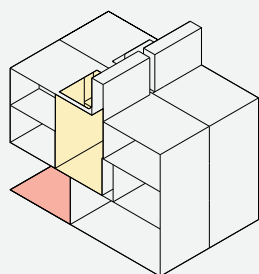
CLAUS EN KAAAN TYPOLOGY 2



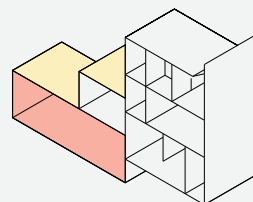
THE WHALE - TYPOLOGY A



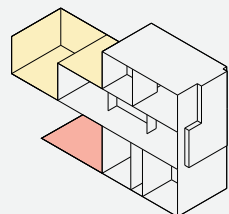
FOUNTAINHEAD - TYPOLOGY A



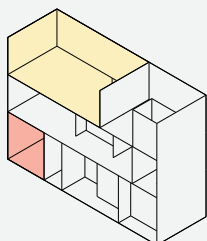
RUTH VISSER ARCHITECTEN TYPOLOGY 1



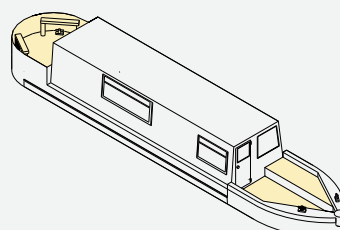
RUTH VISSER ARCHITECTEN TYPOLOGY 2



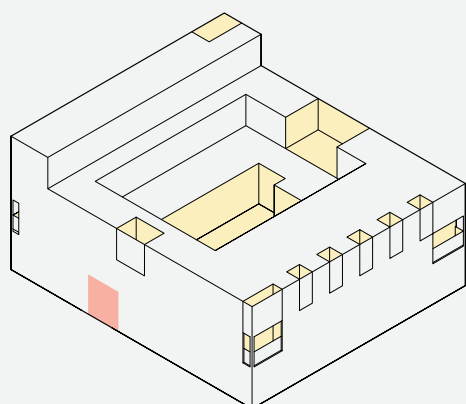
REMP T VAN DER DONK ARCHITECTEN



HEREN 5 ARCHITECTEN



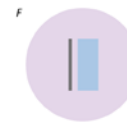
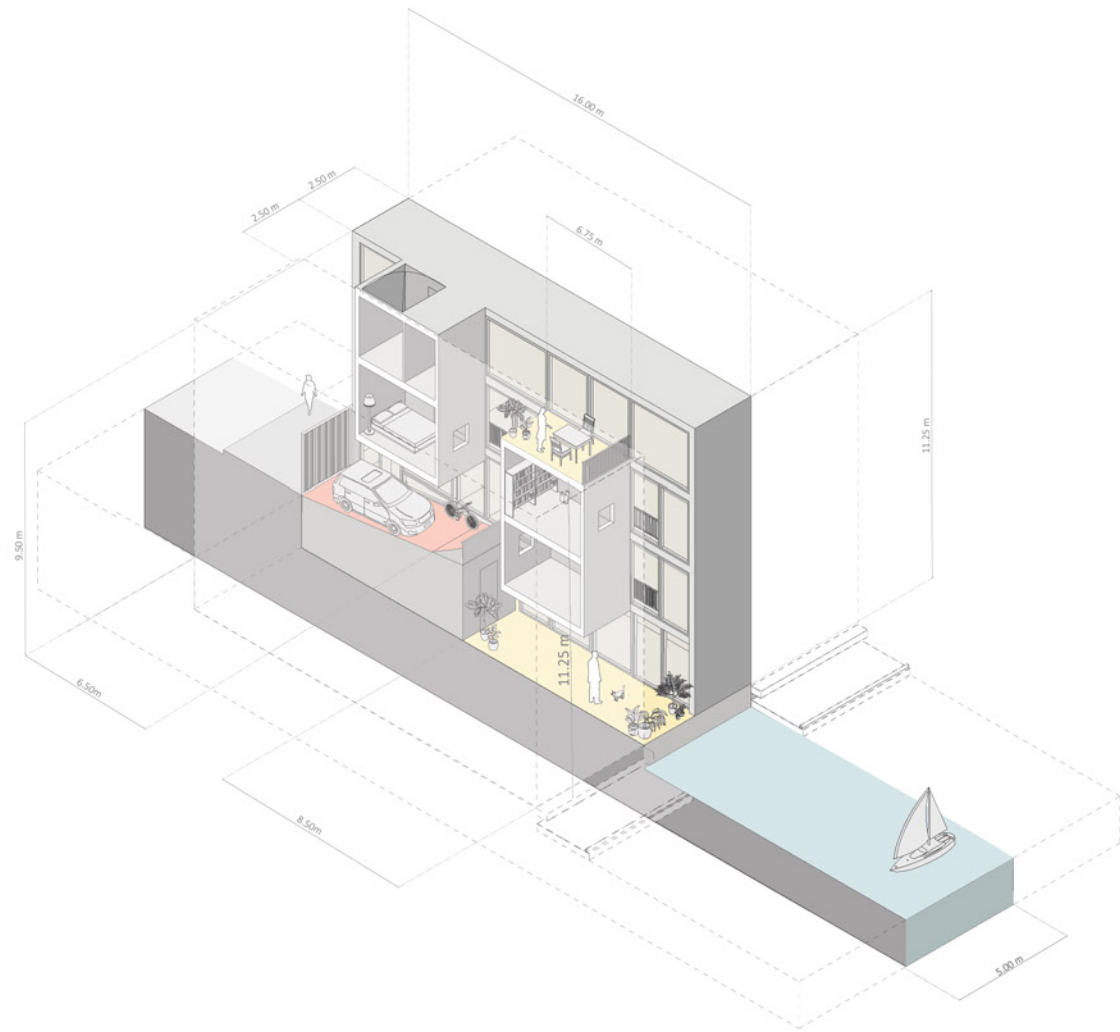
HOUSE-BOAT - TYPOLOGY F



COURTYARD HOUSE - TYPOLOGY B

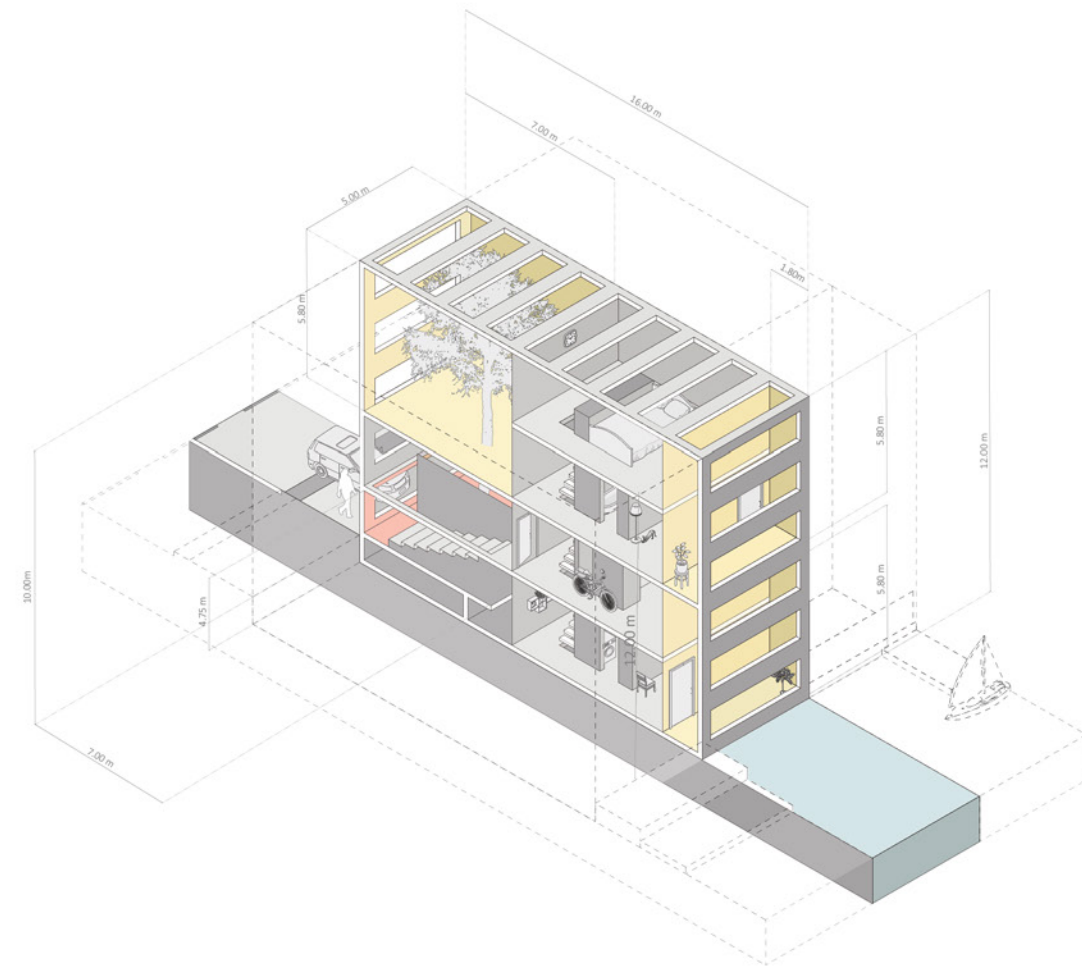
PARCEL STUDY 1

ARCHITECT: MVRDV
ADDRESS: 26 SCHEEPSTIMMERSTRAAT
DATE: 1999



PARCEL STUDY 2

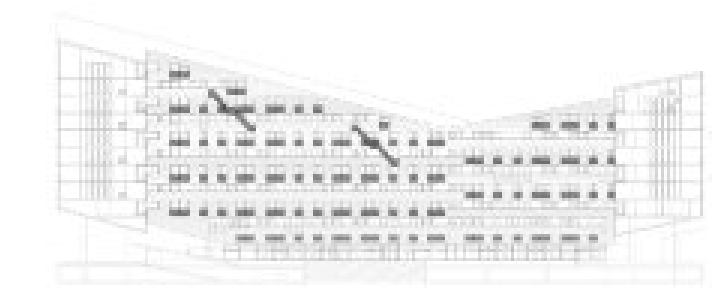
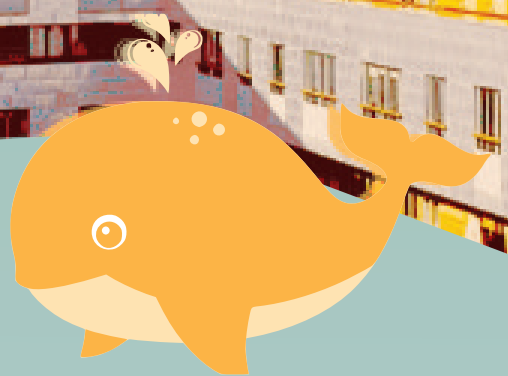
ARCHITECT: KOEN VAN VELSEN
ADDRESS: 120 SCHEEPSTIMMERSTRAAT
DATE: 1996-1999



the WHALE

THE WHALE

APARTMENT BLOCK
ARCHITECT: DE ARCHITEKTEN CIE.



PACMAN

APARTMENT BLOCK
ARCHITECT: KOEN VAN VELSEN



BRIDGES:

PYTHONBURG →

← LAGE BRIDGE

GREEN TO BLUE



WATER CULTURE

Floods have threatened the Netherlands for centuries, and humans in the region have accepted this unpredictability. Children are taught in school how to swim with their clothes on, and the harbour in the Eastern Docklands is usable for leisure swimming.

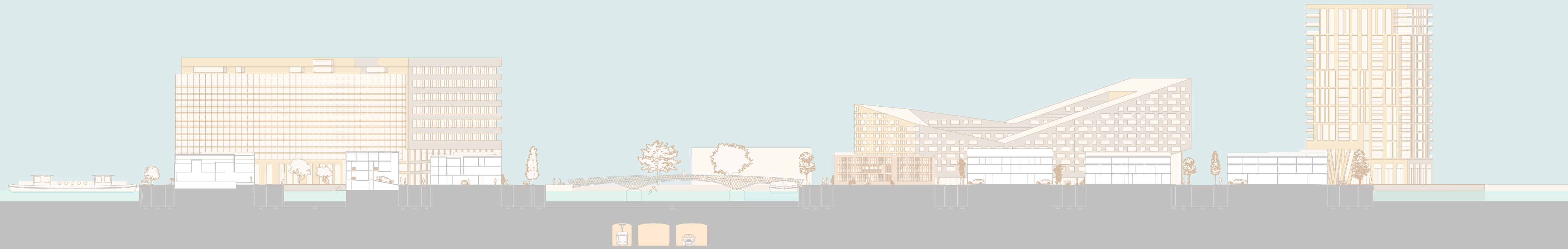
LIMITED NATURE

Due to the exceptionally high density required in the region, green space was challenging to implement effectively on the site. West 8 chose to argue that the port location of Borneo Sporenburg and its natural 'blue space' would provide a suitable stand-in for the parkland suitable for this density.

BRIDGE ART

Three bridges were installed on site to connect the 93m Railroad basin separating Borneo and Sporenburg, as well as the 25m port to alternatively access the mainland.

SECTION THROUGH BORNEO-SPORENBURG

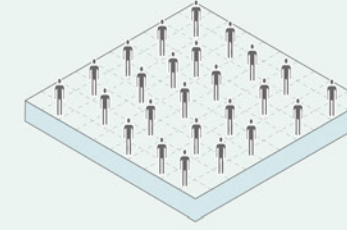


03

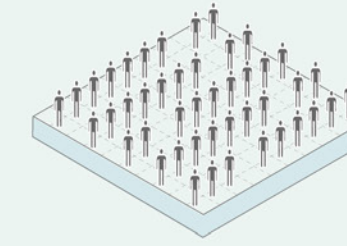
ASSESSMENT

DENSITY COMPARISON

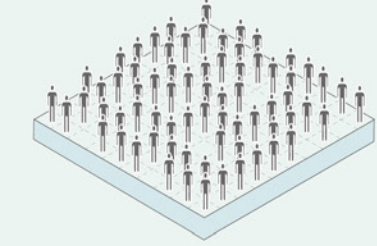
MISSISSAUGA
25 people per hectare



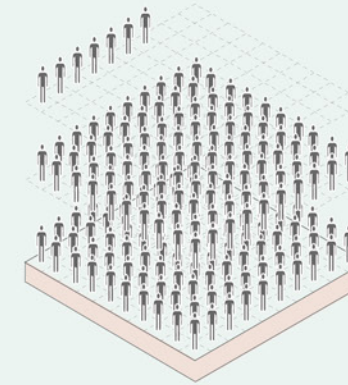
DOWNTOWN TORONTO
45 people per hectare



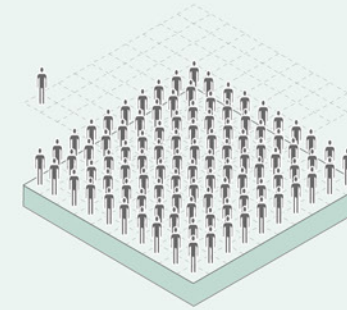
WESTON, TORONTO
72 people per hectare



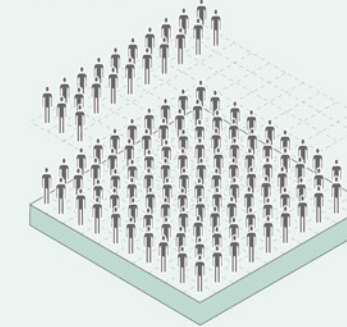
BORNEO SPORENBURG
208 people per hectare



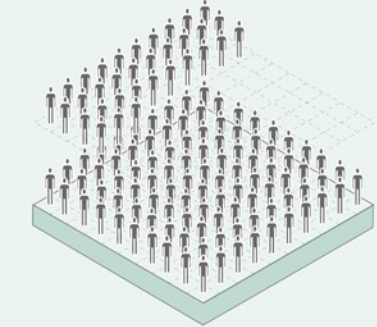
CENTRAL LONDON
101 people per hectare



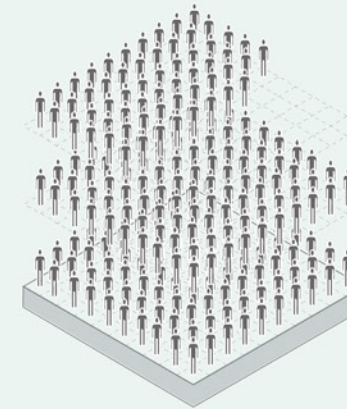
SINGAPORE
121 people per hectare



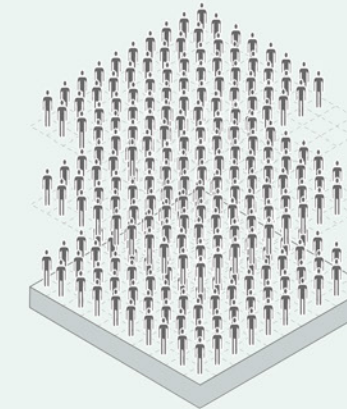
LAGOS
133 people per hectare



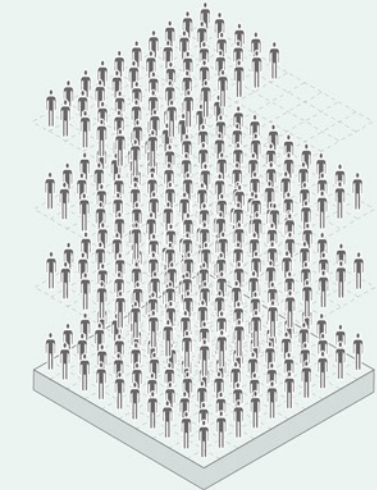
MANHATTAN, NYC
258 people per hectare



MUMBAI
278 people per hectare



HONG KONG
352 people per hectare

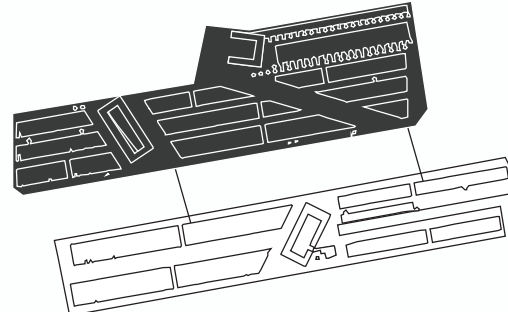


Borneo Sporenburg with 208 people per hectare is almost at Manhattan density, at a very human scale without resorting to sky scrapers or high rises. By setting a constraint on building height to 3 storeys for the most part - West 8 used narrow plots sizes, back to back rowhouses and just two large apartment blocks to achieve this.

Data Source: <http://www.atlasofurbanexpansion.org/>

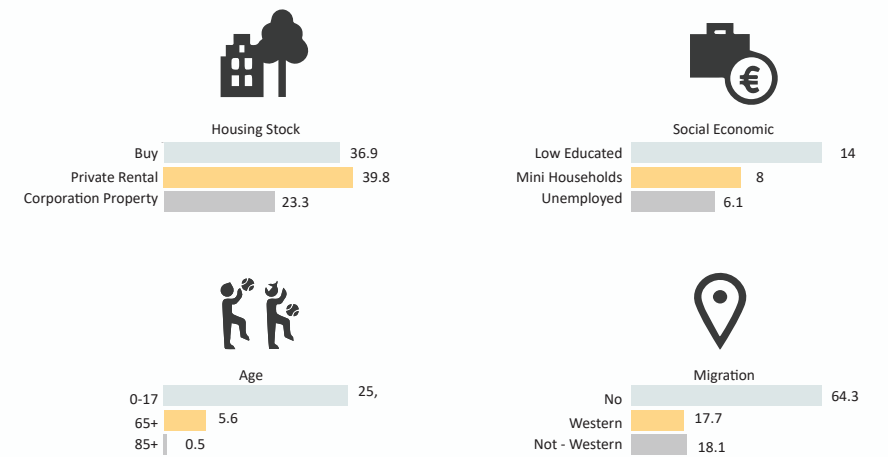
CURRENT DEMOGRAPHICS

Demographics



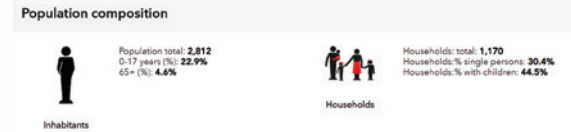
Sporenburg in numbers

- Inhabitants: 2,812
- Houses: 1,111
- Locations: 425
- Food stores: 1
- Working people: 630
- Schools PO: 1
- Surface of land: 14 hectares
- Population density: 20,747 inhabitants / km²



Development of Sporenburg

	2017	2018	2019	2020
Work				
Registered unemployment (%)	5.9%	5.7%	5.5%	5%
Assistance steps 1 and 2 (% 15-65)	2.2%	2.1%	1.9%	1.7%
Income				
Assistance (% 15-65)	2.5%	2.3%	2.2%	2%
Avg. disposable hh income	€6,000	€6,000	nb	nb
% Long term minimum households (120% WSM and little wealth)	4%	3%	nb	nb
Early on (%)	0.9%	1.4%	nb	nb
SHV (%)	0.9%	nb	nb	nb
Participation				
Education low (%)	18%	17%	nb	nb
Participation (%)	nb	nb	nb	nb
Volunteers (%)	nb	nb	nb	nb
Involvement of local residents (1-10)	7.6	nb	7.3	nb
Visits (sometimes) prayer house (%)	nb	nb	nb	nb



Development of Sporenburg

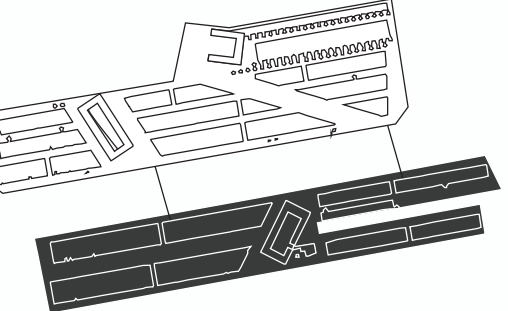
	2017	2018	2019	2020
Persons				
Population total	2,657	2,641	2,743	2,812
0-17 years (%)	26.6%	26.7%	24.1%	22.9%
65+ (%)	3.4%	3.8%	4.1%	4.6%
80+ (%)	0.2%	0.1%	0.2%	0.1%
Migration background: % non-western	14.4%	13.6%	14.2%	14.4%
New urbanites (%)	35.2%	34%	35%	34.1%
Households				
Households: total	1,031	1,031	1,120	1,170
Households: % of the couple with children	39.3%	39.2%	35.3%	34.4%
Households: % single-parent family	13.4%	12.6%	11%	10.2%
Households: % single persons	24%	26.3%	29.3%	30.4%



Development of Borneo

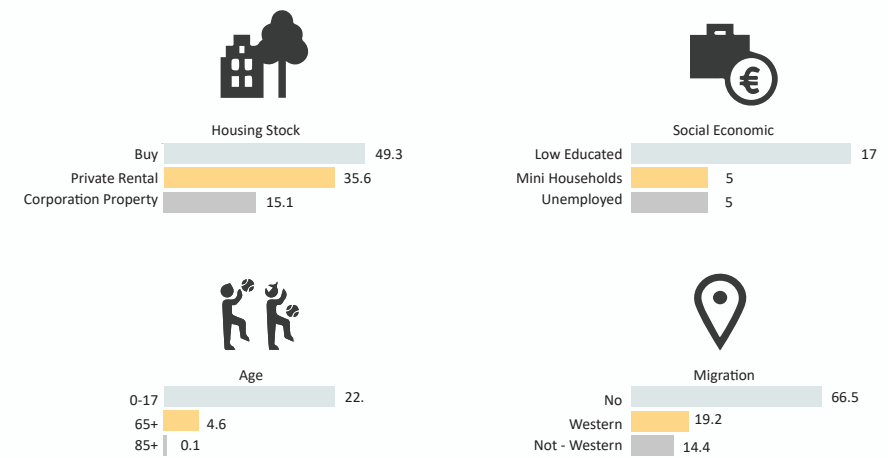
	2017	2018	2019	2020
Judge neighborhood				
Neighborhood: satisfaction with your own neighborhood (1-10)	6.2	nb	6.5	nb
Neighborhood: neighborhood development (1-10)	7.5	nb	7.5	nb
Neighborhood: % ahead	nb	nb	nb	nb
Living				
Those looking to move home (%)	nb	nb	nb	nb
Total mutation rate	12.7%	12.2%	12.5%	nb
Housing occupancy average	6.6	7.04	7.24	7.04
Satisfaction with your own home (1-10)	6.4	nb	6.1	nb
Housing stock				
Housing stock	1,106	1,107	1,107	1,106
Ownership ratio: % owner-occupied homes	34%	34.9%	36.9%	nb
Ownership ratio: % housing association homes	26.8%	23.4%	23.3%	nb
Living area: 0 - 40 m ²	nb	0.1%	0.1%	0.1%
Living area: > 40 m ²	66.9%	66.4%	66.4%	66.1%
House prices				
Rent: % social	nb	nb	nb	nb
Rent: % middle	nb	nb	nb	nb
WOZ value per m ²	4,146	4,395	4,901	nb

Demographics



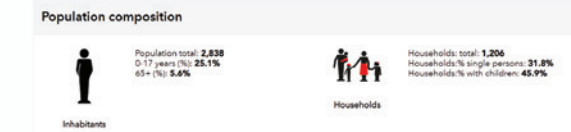
Borneo in numbers

- Inhabitants: 2,838
- Houses: 1,106
- Locations: 508
- Food stores: 0
- Working people: 632
- Schools PO: 1
- Surface of land: 12 hectares
- Population density: 23,933 inhabitants / km²



Development of Borneo

	2017	2018	2019	2020
Work				
Registered unemployment (%)	6.7%	7.4%	4.8%	6.1%
Assistance steps 1 and 2 (% 15-65)	2.1%	2.2%	2.2%	1.6%
Income				
Assistance (% 15-65)	2.5%	2.8%	2.5%	2.7%
Avg. disposable hh income	€4,200	€5,000	nb	nb
% Long term minimum households (120% WSM and little wealth)	6%	5%	nb	nb
Early on (%)	0.9%	1.8%	nb	nb
SHV (%)	1.5%	nb	nb	nb
Participation				
Education low (%)	15%	14%	nb	nb
Participation (%)	nb	nb	nb	nb
Volunteers (%)	nb	nb	nb	nb
Involvement of local residents (1-10)	7	nb	7.2	nb
Visits (sometimes) prayer house (%)	nb	nb	nb	nb



Development of Borneo

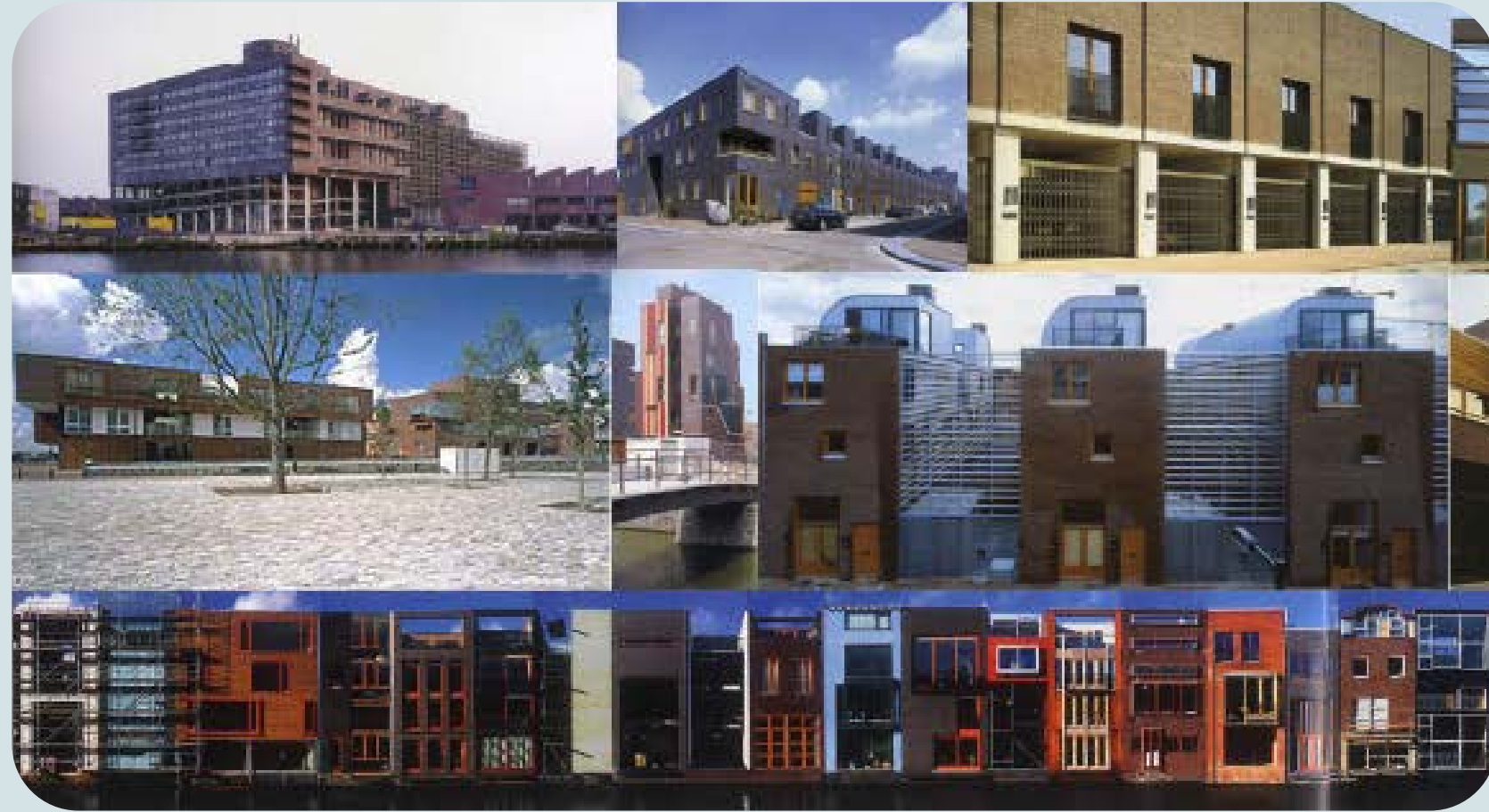
	2017	2018	2019	2020
Persons				
Population total	2,891	2,874	2,837	2,838
0-17 years (%)	26%	27.5%	26.3%	25.1%
65+ (%)	3.9%	4.2%	5.2%	5.6%
80+ (%)	0.2%	0.2%	0.4%	0.5%
Migration background: % non-western	16.1%	16%	17.8%	18.1%
New urbanites (%)	39%	38%	37.1%	35.5%
Households				
Households: total	1,222	1,215	1,195	1,206
Households: % of the couple with children	33.1%	33.5%	32.9%	32.8%
Households: % single-parent family	13.5%	12%	13.2%	13%
Households: % single persons	32.2%	31.5%	30.7%	31.8%



Development of Borneo

	2017	2018	2019	2020
Judge neighborhood				
Neighborhood: satisfaction with your own neighborhood (1-10)	6.2	nb	6.2	nb
Neighborhood: neighborhood development (1-10)	7.5	nb	7.5	nb
Neighborhood: % ahead	nb	nb	nb	nb
Living				
Those looking to move home (%)	nb	nb	nb	nb
Total mutation rate	12.7%	12.2%	12.5%	nb
Housing occupancy average	6.6	7.04	7.24	7.04
Satisfaction with your own home (1-10)	6.4	nb	6.1	nb
Housing stock				
Housing stock	1,106	1,107	1,107	1,106
Ownership ratio: % owner-occupied homes	34%	34.9%	36.9%	nb
Ownership ratio: % housing association homes	26.8%	23.4%	23.3%	nb
Living area: 0 - 40 m ²	nb	0.1%	0.1%	0.1%
Living area: > 40 m ²	66.9%	66.4%	66.4%	66.1%
House prices				
Rent: % social	nb	nb	nb	nb
Rent: % middle	nb	nb	nb	nb
WOZ value per m ²	4,146	4,395	4,901	nb

STRENGTHS OF THE PROJECT



- Versatility in design despite strict preconditions
- Strong distinction in different parts of the plan and successful mix of building typologies
- An important link in the long history of planning and development in Amsterdam - with careful references to the historic architecture of Jordaan and the canals.
- Engages the history of the site with choice to maintain the open harbor basins and referring to the design of the various historical allotment types
- Plurality. It sparked a broad architectural discussion in the Netherlands and gave many young designers the opportunity to carry out projects.

SHORTCOMINGS OF THE PROJECT



- Very limited soft-scaping and tree cover
- Little to no public spaces and amenities
- Promotes individualism over community
- Streets are not conducive for community hangouts
- The lack of mixed land use in the project contradicts its initial idea of limiting car usage - most residents use cars to reach areas of work or facilities outside the development.
- The Blue is Green idea for public spaces can be viewed as a convenient concept to allocate maximum land to housing, which was the main generator of money for the developers involved in the project and reflects the neoliberal market forces at play at the time.

IMPACT ON ARCHITECTURE AND URBANISM



NEUTELINGS
RIEDIJK
ARCHITECTS

WEST 8

OMA

MVRDV



KCAP
KCAP Architects&Planners

UNS
UNITED
NETWORK
STUDIO

Borneo Sporenburg was realized in a period in which the Dutch architecture experienced an important revival and was getting international attention under the umbrella term Superdutch. The Superdutch generation was heralded by the overwhelming success of Rem Koolhaas and comprised of firms such as West 8, MVRDV, Kees Christiaanse, Neutelings & Reidijk, Un Studio and Eric Van Egeraat.

After their early success with Borneo Sporenburg West 8 went on to design Schouwburgplein in Rotterdam (1996) produced several highly original bridges designs for bridges including the so-called "Reptile Bridge" proposal for a connection between Leidsche Rein and Utrecht, and the helical truss Vlaardingse Vaart Bridge in Vlaardingden, a finalist for the Dutch Design Awards in 2009. In the United States, West 8 gained a reputation for unorthodox design proposals, such as their proposal to fill in the World Trade Centre site and turn it into a pasture. They were finalists for the design of the new exterior for the New York Aquarium, and were part of the team of firms that won the design contest for an ambitious 40-acre (160,000 m2) park (including free bicycles) on the southern half of Governor's Island in New York.

West 8 (with DTAH) was awarded the commission of the Toronto Waterfront in 2006 where they reinterpreted the undulated wave designs of the Borneo Sporenburg bridges as multiple wave decks on the waterfront.



04

SOURCES

Kloosterman, Robert C. "Walls and Bridges: Knowledge Spillover between 'superdutch' Architectural Firms." *Journal of Economic Geography* 8, no. 4 (2008): 545-63. Accessed October 15, 2020. <http://www.jstor.org/stable/26161275>.

Maar, Birgitte de, and Luuk Kramer. 1999. *A sea of houses: the residences from New Deal on Borneo/Sporenburg = Een zee van huizen : de woningen van New Deal op Borneo/Sporenburg*. Bussum: THOTH.

<https://citybreaths.com/post/40011703127/amsterdam-morphology-a-history>

<https://www.arcam.nl/en/amsterdam-een-korte-geschiedenis/>

<https://failedarchitecture.com/the-story-behind-the-failure-revisioning-amsterdam-bijlmermeer/>

https://www.humanityinaction.org/knowledge_detail/the-bijlmer-a-dutch-approach-to-multiculturalism/

<https://architecturenow.co.nz/articles/from-polder-to-pavlova-paradise/>

https://repositorio.iscte-iul.pt/bitstream/10071/4930/1/MPacheco_TheUrbanCritiqueBorneoSporenburg.pdf

http://www.fao.org/fileadmin/templates/giahs/PDF/Dutch-Polder-System_2010.pdf

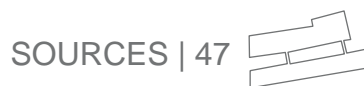
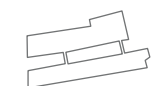
<https://www.nationsencyclopedia.com/economies/Europe/The-Netherlands-OVERVIEW-OF-ECONOMY.html#ixzz6amZejLt9>

<https://dutchreview.com/featured/dutch-history-construction-dutch-identity/>

<https://worldpopulationreview.com/world-cities/amsterdam-population>

http://ftp.ruimtelijkeplannen.amsterdam.nl/DRO/plannen/NL.IMRO.0363.M1512BPSTD-/NL.IMRO.0363.M1512BPSTD-VG03/b_NL.IMRO.0363.M1512BPSTD-VG03_5.pdf

<http://urbandesignstudio.net/assets/borneo-2.pdf>





MARKS | ALCOZAI | RAYNOR | SIRKAR