An Alternative Mode of Development
Affordable Housing with Living & Social Quality
Background Research

Chronological Research - Timeline of Amsterdam
Background Research

Urban Models of Amsterdam through Times

Pre-industrial Age

Industrial Age

Post-industrial Age

Social
Political
Economical
General

Amsterdam urban models done by: J. Delahaye, D. Gurecka, S. H. Ho

DSD - UA 2010-11 - Amsterdam Re'figured | Ho, Shahng Herng (Alfred)
Amsterdam North and the Surrounding from the South (Photo taken from Amsterdam from Above by Allard Jolles, 2005)
Background Research

Analysis and Urban Strategy of Amsterdam North

Amsterdam North analysis and urban strategy done by: D. Aumele, D. Gurecka, S. H. Ho
Background Research

Analysis and Urban Strategy of Amsterdam North - Private Public Partnership and Financial Mechanism of the ‘North Company’

Proposed Model of Private Public Relationship

Process of ‘North Company’ Development Mode

Sequence of financial mechanism

Legend compact:
- Commercial
- Residential
- Public
- Others
- Financial

Amsterdam North analysis and urban strategy done by: D. Aumele, D. Gurecka, S. H. Ho

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Research Question

Is a new mode of development necessary and possible for Amsterdam?
**Research Question**

**Precedent Studies - Existing Modes of Development**
Research Question

Precedent Studies - Existing Modes of Development - Commercial-driven Models - Precedent 1 & 2

Sources: (1) http://www.centrumamsterdamnoord.nl/; (2) http://www.noordwaarts.nl/; (3) http://www.zuidas.nl/en
**Research Question**

**Precedent Studies - Existing Modes of Development - Commercial-driven Models - Precedent 1 & 2**

- **Centrum Amsterdam Noord (CAN)**
  - Social Rent: 990 (30%)
  - Medium-priced Sale & Rent: 1320 (40%)
  - Expensive: 990 (30%)

  **Amsterdam North**
  - Owner-occupied houses: 16.3%
  - Number of rooms in average: 3.3
  - Property price in average: €166,000

  Sources: http://http://www.amsterdam-expats.info/districts/noord

- **Zuidas (South Axis) Amsterdam**
  - Houses: x 9744

  **By 2040**
  - Daily users: 200,000
  - Permanent residents: 25,000
  - Employees: 80,000
  - Students: 30,000

  Sources: http://www.zuidas.nl/en/facts-and-figures

Average size of unit = 125m²

Residential Units : Car Parks = 4 : 5
Research Question

Precedent Studies - Existing Modes of Development - Residential Projects - Precedent 3 & 4

Westerdokseiland (Western Docklands)

Residential: 77% 120,000 m²
Non-residential: 23% 92,000 m²

Houses: x 926 + 9,500 m²
P: > 573


Residential: 90%
Non-residential: 10%

Houses: x 8500

P.S.: Findings and their sources are in the following page.
Research Question

Precedent Studies - Existing Modes of Development - Residential Projects - Precedent 3 & 4

Westerdokseiland (Western Docklands)

Master plan by OD 265

Westerkaap I & II
- Gross floor area: 7,000 m²
- Investment: €94,000,000 - ex VAT

- Social housing: 98
- Free rental home: 50
- Budget home for sale: 47
- Free home for sale: 112

- Movement: 4,000 m²

- P: x 310

Westerdoks Island
- Gross floor area: 16,000 m²
- Construction cost: €15,820,000

- Movement: 3,000 m²

- P: x 366

La Grande Cour
- Gross floor area: 46,800 m²
- Investment: €80,000,000

- Government sponsored rental home: 80
- Middle and top range rental home: 23
- AMH private property: 30
- Owner-occupied home: 120

- Movement: 2,500 m²

- P: x 263

Sources:
Research Question

Precedent Studies - Existing Modes of Development - Summary - Programmes Composition and Ratio - Precedent 1, 2, 3 and 4

Centrum Amsterdam Noord (CAN)

<table>
<thead>
<tr>
<th>Programmes Composition and Ratio</th>
<th>Area</th>
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<tbody>
<tr>
<td>Existing Retail</td>
<td>35,000 m²</td>
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<tr>
<td>New Retail</td>
<td>30,000 m²</td>
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<tr>
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Zuidas (South Axis) Amsterdam

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<td>1,596,000 m²</td>
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<td>Services &amp; Amenities</td>
<td>1,380,000 m²</td>
</tr>
<tr>
<td>Residential Units</td>
<td>1,218,000 m²</td>
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Westerdokseiland (Western Docklands)

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Houses

x 3000

x 926

x 8500
Precedent Studies - Mixed-use Commercial Development - Urban Networks

Research Question

Centrum Amsterdam Noord (CAN)

Zuidas (South Axis) Amsterdam

Westerdokseiland

Eastern Docklands

Legends
- Planning scope
- Concerned building
- Surrounding building
- Metro / Train station
- Railway
- Primary Road / Highway
- Secondary Road
- Tertiary Road

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Research Question

Precedent Studies - Existing Modes of Development - Summary - Real Estate Values - Precedent 1, 2, 3 and 4
Problems and Opportunities

Needs and Mismatch (Netherlands)

Research question: Is a new mode of development necessary and possible for Amsterdam?

I. Need of Housing
- No less than 80,000 to 100,000 new houses are needed each year
- The housing supply has simply been insufficient
(from source (1))

II. Mismatch of the Demand and Supply of Housing in the Netherlands
- Every year the number of single-person households in Holland increases, growing faster than the overall population, and faster than the rate at which dwellings are constructed.
(from source (1))
- Oversupply of cheap housing
- Needs for social housing of better quality
(from source (2))

Sources:
(1) http://www.globalpropertyguide.com/Europe/Netherlands/Price-History
**Problems and Opportunities**

**Needs and Mismatch (Amsterdam North)**

**i) Needs**
The population of the Amsterdam North is expected to grow from 90,000 to 130,000.

**ii) Mismatch of Demand and Supply**
The size of the households is shrinking but the new houses are mostly the middle-size ones.

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### Source:
(1) [http://www.ingcommercialbanking.com/smartsite.shtml?id=21648&showdetail=1](http://www.ingcommercialbanking.com/smartsite.shtml?id=21648&showdetail=1)
(2) O+S, Amsterdam in cijfers 2008, origin of figures CBS 2007
(3) Stadsdelen in cijfers 2008, O+S, Amsterdam, 2008
(4) [http://www.funda.nl/buurtinfo/amsterdam/tuindorp-oostzaan/kenmerken/?ref=47667124](http://www.funda.nl/buurtinfo/amsterdam/tuindorp-oostzaan/kenmerken/?ref=47667124)

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**Size of Social Housing in Square Metres**

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Problems and Opportunities

Administrative Framework of the Housings in the Netherlands - Change of the Role of the Agency


Research by: D. Aumele, P. Balat, K. van Olphen, Y. Yang

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Problems and Opportunities

Financial Situation of the Social Housings in Amsterdam

Decrease in Value and Increase of Maintenance Cost

The real estate values of the districts with a high percentage of social housing has been decreasing dramatically, especially after the 2007 global financial crisis, when compared to other districts with less social housings.

The maintenance cost of the social housings has becoming a more significant part of the expenses for the housing companies.

Source:
Urban Framework

Site Context

Amsterdam North and the Surrounding from the South (Photo taken from Amsterdam from Above by Allard Jolles, 2005)
Tuindorp Oostzaan

Industrial area

NDSM

A centre for underground culture in Amsterdam offering facilities for individual artists, craftsmen and independent organizations.

Heavy industry
Ship yards and warehouses

Number of houses 4,585
Average house value (WOZ) €151,000
Population 10,330
Population density 6,256/km² 62.56/ha

Number of income recipients 7,300 (71%)
Avg. disposable income per recipient €15,300
Avg. disposable income general €11,800
Low incomes 47%
High incomes 8%
Urban Framework

Site Photos
Site Analysis - Metropolitan versus Local Scale - Non-residential Programmes

Legends:
- Companies
- Offices
- Retail
- Catering
- Social
- Leisure
- Storage and Unclear

Metropolitan

Local
Urban Framework

Site Analysis - Traffic Networks + Commercial Activities + Social Housings
**Urban Framework**

**Site Analysis - Density Research**

**Site Analysis - Home Density**

The home density indicates the number of homes per unit area of land. The ratio between a number of homes and a hectare (ha) of land is recommended for density calculation in the Netherlands (Handleiding bij de voorbereiding van uitbreidingsplannen, 1942). This measure is still widely used in town planning practice today.

Urban Framework

Site Analysis - Density Research

Built area : Fabric area = 1:4
Average number of floor: 2.5
Implementation

How could we turn these problems into opportunities while developing the city?

Strategies realized in a master plan with the focus on three aspects:
1. Traffic Networks
2. Landuse and Programmes
3. Density
Implementation

Focus on Three Aspects

Tool 1: Traffic Networks

Tool 2: Landuse and Programmes

Tool 3: Density
Implementation

Linking the Metropolitan and Local - urban strategy

Local scale

Metropolitan scale

Existing community (local scale)

New community (local scale)

becoming local scale
Implementation

Densification

Tuindorp Oostzaan

Phase 1

Phase 2

Phase 3

1.0 / 4.0
2.5 storeys

1.4 / 4.0
3 storeys

1.7 / 4.0
4.5 storeys

2.5 / 4.0
3 storeys
Implementation

Additional Requirements

Mix of Programmes
- enhancing the urban life of the surrounding neighbourhood
- attracting more people to the area

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Westerdockseiland (Western Docklands)

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<td>90%</td>
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<td>Non-residential</td>
<td>10%</td>
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</table>
Spatialization of these Strategies
Implementation

Master Plan - Accessibility and Connectivity

Legends:  
- Car parks  
- Public transport

1  2  3  4
Implementation

Master Plan - Ground Floor Conditions - Programmes and Layout

Commercial
- Shop
- Office
- Agency

[1827m²]

Public Programme
- Library
- Gallery
- Community centre
- Media centre
- Learning centre

[2888m²]

Flexible Unit
- Artist studio
- Dwelling
- Garage

[9297m²]
**Artist Units**
The strips of the open spaces are leased to artists, artist groups and non-profit organizations as showcases which evoke activities in the open areas.
Implementation

Master Plan - Overview
Implementation

Master Plan - Construction Sequences and Implications

Phase 3
- For rent and for sale
- Flexible units on the ground floor for different purposes

Phase 2
- For rent and for sale
- Generating capital by maximizing the waterfront line for living units
- Short stay housings in light weight structure on the roofs
- Opening of public programmes on the ground

Phase 1
- Temporary living units
- Landuses and programmes would be revised after Phase 2 or 3 was/were built
Implementation

Master Plan - From Urban Scale to Building Scale
Architectural Configuration

Orientation of the Building

Prevailing winds in summer

Prevailing winds in winter

Sun path diagram (Stereographic diagram)
Architectural Configuration

Spatial Arrangement of the Building

A common collective housing

Introducing atrium
- natural light
- cross ventilation

Building lifted
- draw in public space
- providing shaded area

Split floor
- enhance physical movement between floors
- foster communication between residents
Building Level

Number and ratio of different units

<table>
<thead>
<tr>
<th></th>
<th>Units for Rent and Sell</th>
<th>Short Stay Units</th>
</tr>
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<tbody>
<tr>
<td>Single person household</td>
<td>x6</td>
<td>x6</td>
</tr>
<tr>
<td>Two-person household</td>
<td>x4</td>
<td>x5</td>
</tr>
<tr>
<td>Multiple person household</td>
<td>x7</td>
<td>x5</td>
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= 20 (38%)

= 16 (30%)

= 17 (32%)

= 38 (72%)

= 15 (28%)

One and two-person households 29,546 = 67%
Families 14,553 = 33%

Single person household 2,241 = 44%
Two-person household without children 1,265 = 25%
Multiple person household with children 1,624 = 32%
Building Level

Single Person Household Units

50m² 1 bedroom

75m² 1 bedroom
Building Level

Two-person Household Units

100m²
2 bedrooms

100m²
2 bedrooms
Building Level

Two-person Household Units

100m²
2 bedrooms
Building Level

Multiple-person Household Units

130m²
3 bedrooms

130m²
3 bedrooms
Short Stay Living Units

- **25m²** Single household (Open plan)
- **38m²** Two-person household (Open plan)
- **50m²** Two-person household (Open plan)
Building Level

East Elevation
Building Level

South Elevation
Building Level

Sectional Perspective (Section AA')

Legends:
- Short stay housing
- For rent and sale
- Luxurious Flats
- Galleries or Studios
Building Level

Structure - Light Weight Construction for Short Stay Housing on the Roof
Building Level

Structure - Light Weight Construction for Short Stay Housing on the Roof