Responsive Suburbia

dwelling + working in IJburg

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Goal

My goal is to design a new type of collective dwelling suited for contemporary living, which incorporates responsive design on sociological, economical, and environmental levels. The objective is to investigate in a new typology (from dwelling scale to urban scale) which could be appropriated as a positive example for living collectively.
COMPONENT CATALOGUE FOR BUILDING YOUR OWN HOME

DETAIL
THE SITE
Steigereiland
Steigereiland's typologies

- Row
- Floating communal
- Infill / plot
- Free standing
- Tower
Steigereiland functions

- nursery
- catering
- elementary school
- social functions
- leisure
- retail / commercial
- business
- office
LACK OF ACTIVITY!
PROBLEM STATEMENT
Problem Statement

The island of IJburg is a new, monofunctional residential area lacking connection with the city of Amsterdam.

Research Question

How can the working + dwelling typology be re-evaluated in order to reinvigorate a neighbourhood into a well-functioning, sustainable community?
rethinking the work + live typology

typical work + live scenario in IJburg. introvert situation

add light production to neighbourhood fabric in order to revitalize it
DWELLING + WORKING
Since live work is still a relatively new concept, the definitions imposed by the real estate market are extremely influential. The diagrams here attempt to graphically evaluate common words and phrases appearing in the market descriptions. It is possible to conclude from the data that certain features are more attractive than others when considering design decisions and spatial layouts within live work units.
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**Recurring Themes**
- Financial Benefits
- Materials/Features
- Lifestyle Benefits

**Financial Benefits**
- Affordable
- Deduct work from taxes
- Expense reduction
- Eco-friendly at low cost

**Business & Personal Needs**
- Old warehouse
- Artists
- Storefront

**Location**
- Downtown living
- Walkability
- Shorter commutes

**Materials/Features**
- Exposed brick
- High ceilings
- Separate entrances
- Hardwood floors

**Layout Flexibility**

**Customization**
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Market Definition

Customization

Business & Personal needs

Old warehouse

Artists

Storefront

One mortgage

Deduct work from taxes

Affordable

Expense reduction

Eco-friendly at low cost

Layout flexibility

Hardwood floors

Separate entrances

High ceilings

Exposed brick

Reoccurring Themes

Financial Benefits

Materials/Features

Lifestyle Benefits

Since live work is still a relatively new concept, the definitions imposed by the real estate market are extremely influential. The diagrams here attempt to graphically evaluate common words and phrases appearing in the market descriptions. It is possible to conclude from this that certain features are more attractive than others when considering design decisions and spatial layouts within live work units.
The 4 most common types of live/work:

1. Studio loft
2. Home office
3. Ground floor workspace
4. Community
1. Studio loft
2. Home office
3. Ground floor workspace
4. Community
1. Studio loft
2. Home office
3. Ground floor workspace
4. Community
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4. Community
1. Studio loft
2. Home office
3. Ground floor workspace
4. Community

419.1.1 Limitations.
The following shall apply to all live/work areas:

1. The live/work unit is permitted to be a maximum of 279 m²;

2. The nonresidential area is permitted to be a maximum of 50% of the area of each live/work unit;

3. The nonresidential area function shall be limited to the first or main floor only of the live/work unit; and

4. A maximum of 5 nonresidential workers or employees are allowed to occupy the nonresidential area at any one time.
THEME
theme research: “responsive dwelling”
responsive dwelling case studies

Next 21

Nemausus

Quinta Monroy
“mat-building can be said to epitomize the anonymous collective; where the functions come to enrich the fabric, and the individual gains new freedoms of action through a new shuffled order, based on interconnection, close knit patterns of association and possibilities for growth, diminution and change” - A. Smithson
THE DESIGN
context
programmatic boundaries

71 dwellings

activity strip
the infill
Responsive Suburbia
zoning of housing project

10,000 m²

78m

129m
3x3x3
carve 1: main street
carve 2: secondary streets, defining blocks
carve 3: courtyards
stage 1 situation, (minimal SAR)
dwelling type A
dwelling type B
stage 2,3,4: additions, the infills
underground parking
non-residential functions
the activity strip
ADDITIONS / GROWTH
‘incremental’ housing
‘incremental’ case study: Quinta Monroy
incremental growth of type A
zoning, extension rules
HOW WILL IT BE BUILT?
cross laminated timber construction
the structural grid
THE ENSEMBLE
responsive facade
shopfront customization; openings
THE DWELLING
A (x 38)
90 - 216m²
UPDATE

climate design

exhaust from WC and kitchen

heating
ventilation
water supply

radiator
kitchen
radiant floor heating
B (x 33)
108 - 162m²
Gaulhofer triple glazed tilt and slide wooden window

CLT partition wall

underground parking

75mm cast in-situ polished concrete floor
incorporating under floor heating and cooling, waterproof membrane, 100mm rigid insulation, 130mm concrete slab

5mm white render coat, Fermacell HC reinforcing mesh, light plaster render, 125mm Fermacell HD Building Board, 140mm Ecobatt insulation with ECOSE timber battens every 578mm, 900mm KLH 3-layer panel finish coat (white wax)

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white steel stair

triple-glazed wood-frame facade

6mm Marley Eternit fibre cement slate cladding, fixed with treated sw battens and counterbattens, 140mm Ecobatt with ECOSE, timber battens every 578mm, 900mm KLH panel

wooden deckign on top of soffit drainage layer: gravel polymer bitumen seal 140mm Ecobatt insulation (pressure-resistant) moisture barrier: bitumen aluminium 125mm KLH floor / roof panel

wooden canopy and sun shading

wooden canopy and sun shading

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1. **soffit construction of dwelling type B:**
   - wooden decking, drainage layer (gravel)
   - polymer bitumen seal, 140mm Ecobatt insul.
   - MB: bitumen aluminum, 125mm KLH panel

2. **exterior (back) facade:**
   - 5mm white render coat, Fermacell HC reinforcing mesh, light plaster render, 125mm Fermacell HD Building Board, 140mm Ecobatt insulation with ECOSE timber battens every 578mm-900mm KLH 3-layer panel

3. **suspended floor construction:**
   - 18mm plywood, 100mm insulation with timber beams, room for HVAC and MEP services, 125mm KLH floor panel

4. **ground floor slab (without parking below):**
   - 75mm cast in-situ polished concrete floor incorporating under floor heating and cooling, waterproof membrane, 100mm rigid insulation, 300mm concrete slab
Detail E

5 party wall construction:
900mm KLH wall panel, 25mm gypsum board for fireproofing, 160mm Ecobatt insulation with Ecose, 25mm gypsum board, 900mm KLH wall panel
materiality

house within a house (type A)

suspended living room (type A)

contemporary wooden windows

exposed timber walls and ceiling

white steel staircase

fibre cement slate cladding (front)

white wax finish on timber

courtyard: private / communal

ground level concrete floors
Reflection

The goal of the thesis research was to design a new type of collective dwelling suited for 21st century living, which incorporates responsive design on sociological, economical, and environmental levels.

This new typology could be appropriated as a positive example for living collectively. Overall, *Responsive Suburbia* is a healthy model for designing blank development sites like IJ Burg, for example.