Dwelling with Interactive In-between Space

P4 Presentation

AR3AD131 Dwelling Graduation Studio: Dutch Housing (2014-2015)
Studio tutors: Birgit Jürgenhake; Paul Kuitenbrouwer; Pierre Jennen
Xiaoyu Yuan | 4329074
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Content

Theme Research
Concept
Site Research
Design
Structural System
Facade and materials
Housing design
Climate System
Conclusion
Theme Research

Concept

Site Research

Design

Structural System

Facade and materials

Housing design

Climate System

Conclusion
Problem Statement

Owing to the quickening pace of life, especially in big cities such as Amsterdam, the communicate between people is gradually decrease compared to the past.

The buildings can be more or less influence people’s behavior patterns, and then change this situation.
So the topic of outdoor public, communal or collective spaces are often being brought up by architects, but always being created wrong.

Either it is too small to accommodate any activities or too big that it does not bring people together at all.
As Jan Gehl said in Life between buildings,

“The courtyards built in modern buildings are very often dead. They are intended to be private open spaces for people to use - but they end up unused full of gravel and abstract sculptures.”
‘What outdoor space and spatial elements can foster the positive communication between the residents of a dwelling complex?’
OUTDOOR SPATIAL ELEMENTS

Stair Seats

Public Outdoor Room
- roof
- tangent path
- columns
- seats

Outdoor Room
- Sky
- Hedge
- Common rooms

An outdoor space becomes a spatial outdoor room when it is well enclosed with walls of the building, walls of foliage, columns, trellis, and sky.

Having so much enclosure round it. It takes on the feeling of a room.

OUTDOOR SPATIAL ELEMENTS

Arcades

With openings into the building

The edge of the ceiling shouldn’t be too high

Connecting up building to one another

Building Edge

Inside

Inside

Realm

Outside

Outside

From edge to realm

Walls should wave in and out

Roof could extend over to create little places for benches, posters.

Seat Spots

In cool climates, choose them to face the sun, and to be protected from the wind; in hot climates, put them in shade and open to summer breezes. In both cases, place them to face activities.

COMMUNICATION BETWEEN RESIDENTS

Seeing

The social field within one can see others and perceive that they are people at distance vision - 0 to 100m. At approximately 100 meters figures that can be seen from far become human individuals but not recognisable.

At a distance of between 70 and 100 meters, it begins to be possible to determine with reasonable certainty a person’s sex, approximate age, and what that person is doing. At this distance it is often possible to recognise people one knows well on the basis of their clothing and the way they walk.

At a distance of approximately 30 meters, facial features, hairstyle, and age can be seen and people met only infrequently can be recognised. When the distance is reduced to 20 to 25 meters, most people can perceive relatively clearly the feelings and moods of others.

At distances of 1 to 3 meters, at which normal conversations usually take place, the experience involves the degree of detail, necessary for meaningful human contact.

Sitting

Choosing between sitting in a private backyard or in a semi-private front yard with a view of the street, people will often choose the front of the house where there is more to see.

A choice of seats in sun or shade can make all the difference in a place’s success, depending on its climate and location. Allowing people to sit near a playground or within view of other activities is also crucial.

COMMUNICATION BETWEEN RESIDENTS

Walking

Physical distance is the same. But the experienced distance is different. A walking network with alternating street spaces and small squares often will have the psychological effect of making the walking distances seem shorter.

Whenever people walk, they prefer direct routes and short-cuts. Only very great obstacles, like dangerous traffic, extensive barriers, and scTon seem to be able to interrupt this pattern.

When walking routes are placed at the edge of an open space, pedestrians may enjoy the best of both worlds: closeness, intensity, and detail on one side; on the other side, a fine view of the entire open space.

Walking routes placed in the middle of a space most often provide neither detail nor expanse of view.

Standing

the edge effect

Popular zones for staying are found along the facades in a space or in the transitional zone between one space and the next, where it is possible to view both spaces at the same time. Activities grow from the edge toward the middle.

To be partly hidden in half shade while at the same time having a fine view of the space-halfshade space will attract people to linger and to observe while remaining unobserved. Protection is provided, but there is still a good view.

If spaces are desolate and empty - without benches, columns, plants, trees, and so forth - and if the facades lack interesting details-niches, holes, gateways, stairs, and so on - it can be very difficult to find places to stop.

Theme Research

Concept

Site Research

Design

Structural System

Facade and materials

Housing design

Climate System

Conclusion
The in-between space defined by architectural elements

The in-between space defined by non-architectural elements

There is a **strong demand** of users for the in-between space
How are you!

Good morning!

Hi!

Good morning!

Hi!

Good morning!

Pr
In-between
Pu
In-between
Pr

≈10 m

Wind (can see)

Wind (can't see)

≈10 m
Theme Research

Concept

Site Research

Design

Structural System

Facade and materials

Housing design

Climate System

Conclusion
about SUN
about COMPOSITION
about ACCESSIBILITY
Theme Research

Concept

Site Research

**Design**

Structural System

Facade and materials

Housing design

Climate System

Conclusion
Part 1: Plans/ Elevations/ Sections

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Xiaoyu Yuan 4329074
Spatial Domains

- Private space
- Common space
- Public space
Circulations

PATH TO COURTYARD

PATH TO COURTYARD

PATH TO COURTYARD
Part 1: Plans/ Elevations/ Sections

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接地线图

Ground Floor Plan
First Floor Plan - “Inner Street”
Part 1: Plans/ Elevations/ Sections

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Sections
Interactive In-between Space
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Concept

Site Research

Design

**Structural System**

Facade and materials

Housing design

Climate System

Conclusion
Concrete foundation
Steel columns and concrete shear wall
Concrete floor
Steel beams (Castellated beam, HEA 450 processed)
Solid-wood-panel party walls
Concrete floor, wood finishes
Facades (Glass, wood, fiber cement boards and recycled-aluminum)
Concrete shear wall
640 mm castellated beam (HEA 450 processed)
Building Unit Construction

10 mm floor covering
50 mm heating screed
separating layer
20 mm impact-sound insulation
320mm LIGNATUR surface element (LFE) with fill 50 kg/m²

10 mm floor covering
50 mm heating screed
separating layer
20 mm impact-sound insulation
320mm LIGNATUR box element (LKE) with fill 50 kg/m²
Solid-wood-panel party wall, double-sided, insulated:
100/60 mm frame
30 mm lumber-core plywood between 100 mm thermal insulation sandwiched
Building Unit Construction

Steel shoe bracket

60/220 mm wood keels
Building Unit Construction

220 mm rigid thermal insulation
Building Unit Construction

30/50 mm timber battens
20/50 mm timber counterbattens
recycled-aluminum rainscreen

15 mm certainteed fiber cement lap siding
50/20 mm timber battens
50/20 mm timber counterbattens
Building Unit Construction

Wooden stair treads
Steel Beam
Theme Research

Concept

Site Research

Design

Structural System

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Housing design

Climate System

Conclusion
Elevation facing to inner street
Elevation facing to courtyard and street
References
Theme Research

Concept

Site Research

Design

Structural System

Facade and materials

**Housing design**

Climate System

Conclusion
Apartment A&B
House A, B, C
Theme Research
Concept
Site Research
Design
Structural System
Facade and materials
Housing design

Climate System

Conclusion
Ground source heat pump for heating and hot water - Heating
Ground source heat pump for heating and hot water - Cooling
Natural Ventilation

North

Natural wind

South

Natural wind

Part 1: Plans/ Elevations/ Sections

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Heat Exchanger System + Intake/Exhaust Mechanical Ventilation

Part 1: Plans/Elevations/Sections

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Heated fresh air intake

Warm waste air exhaust

Cold Fresh air intake

Cooled waste air exhaust
Greywater Recovery System + Heat Exchanger System

- Warm waste water out
- Heated fresh water in
- Cooled waste water out
- Grey water treated in
- Cold fresh water in
Greywater Recovery System + Heat Exchanger System
Distribution of Heat Pump/Controls & Septic Tank/Sand Filter
Conclusion
Thank you for your time!