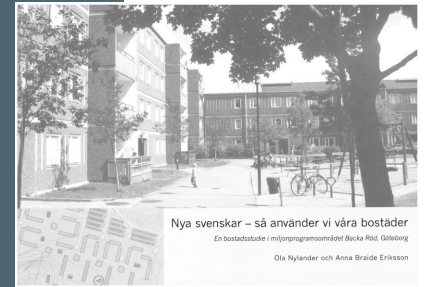
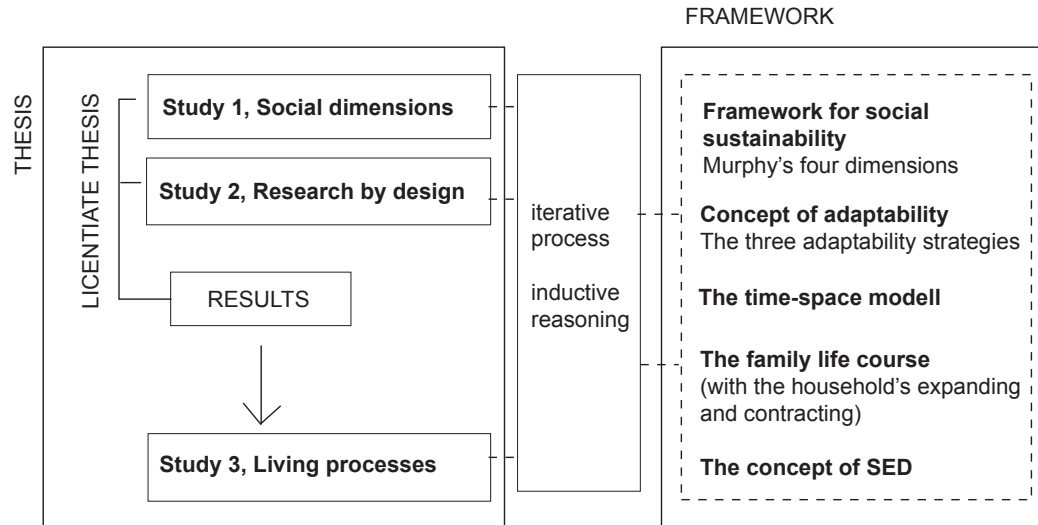


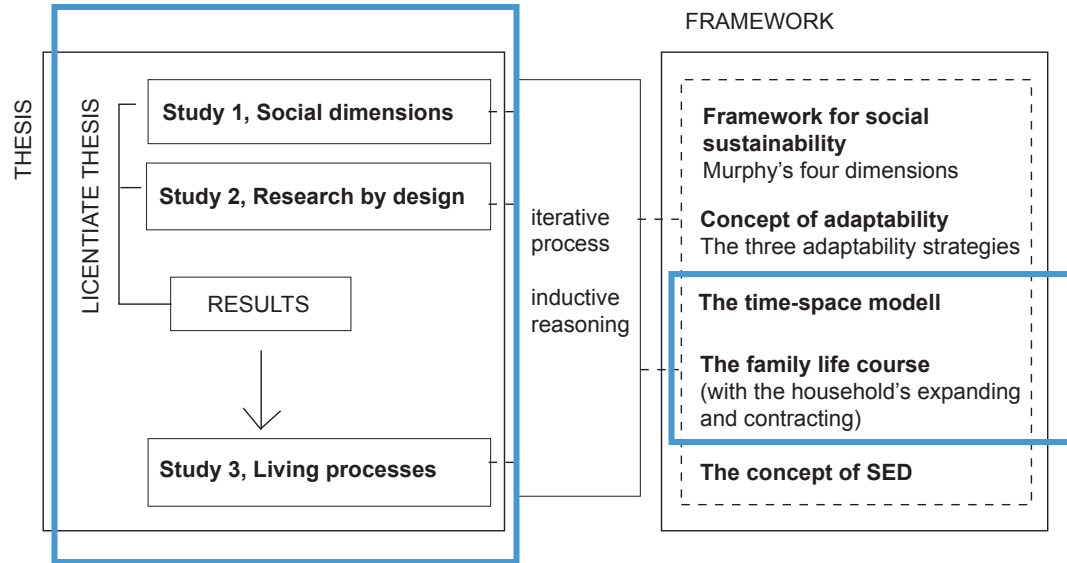
The research by design method and the design for life course spatial adaptability

ANNA BRAIDE











Adaptable space

- The need to adapt to the changing needs for individuals as they grow old or less physically able.
- To respond to the changing constitution of a family as it grows and then contracts

(Schneider & Till, 2007, *Flexible Housing*)

The family life course

The sequence of periods in life during which there are children living in the home, growing up, and eventually leaving the home.



CHALMERS

SOCIAL DIMENSIONS (study 1)

How can residential usability correspond to residential requests and needs, and affect social sustainability dimensions?



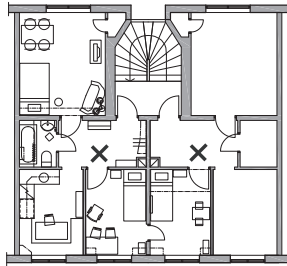
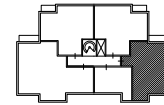
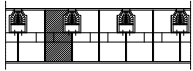
Social qualities: the equity dimension, the participation dimension, the social cohesion dimension, the awareness of sustainability dimension

(Murphy, 2012, The social pillar of sustainable development: A literature review and framework for policy analysis)

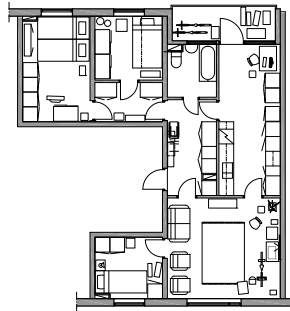
Adaptable space concept: generality, flexibility and elasticity

Social dimensions (study 1)

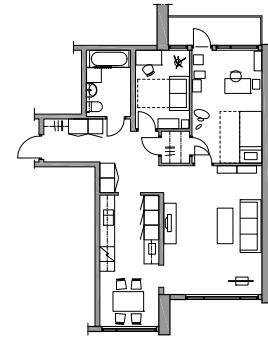
Three examples of living situations, *diverse household types*. Interviews of households in their homes and furnished floor plans illustrating their living situations and the use of their apartment space.



SHARED CUSTODY HOUSEHOLD



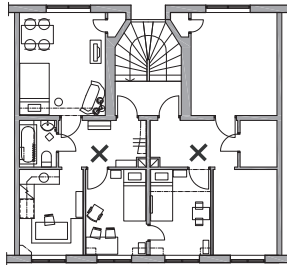
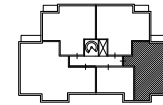
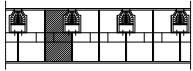
LARGE FAMILY HOUSEHOLD



SINGLE PARENT HOUSEHOLD

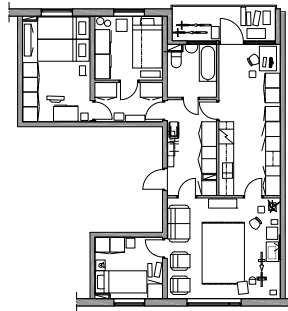
Social dimensions (study 1)

Three examples of living situations, *diverse household types*. Interviews of households in their homes and furnished floor plans illustrating their living situations and the use of their apartment space.

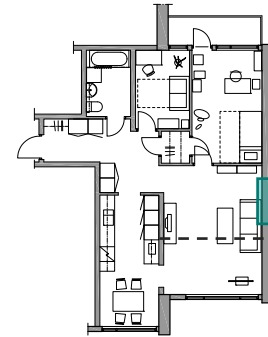


Elasticity

SHARED CUSTODY HOUSEHOLD



LARGE FAMILY HOUSEHOLD



Flexibility

SINGLE PARENT HOUSEHOLD



Social qualities: *the equity dimension, the participation dimension, the social cohesion dimension, the awareness of sustainability dimension*

(Murphy, 2012, The social pillar of sustainable development: A literature review and framework for policy analysis)

Adaptable space: *generality, flexibility, elasticity*



CHALMERS

RESEARCH BY DESIGN (study 2)

how can social sustainability become a salient component in the work with residential floor plan design?

A STUDENT DESIGN PROJECT: A MULTI FAMILY RESIDENTIAL BUILDING

Preconditions:

The plot with surroundings constitute a precondition for the building.

To address both social, environmental and economic sustainability perspectives in the design of the multi family residential building:

social sustainability

-The apartments' room configuration and room sizes shall have the capacity to function for different spatial needs and for diverse household types.

-All apartments shall supply qualitative indoor and outdoor space for the residents.

-The apartment shall enable one flexible room – to create one extra room.

Describe the living situation where a household choose to stay and not move despite changed living conditions:

Starting position: Two parents, three children

Changed situation: children move out, the grandmother moves in or the parents have a tenant.

Environmental sustainability

-Apply a holistic perspective on the building's frame and envelope to develop ecologically sustainable design solutions. Motivate your solutions, and explain the reduced environmental impact and the benefits of your design.

-Innovative ideas

Economic sustainability

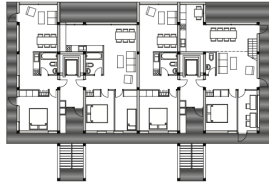
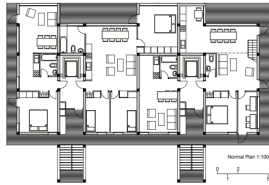
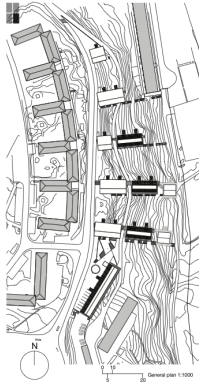
-Well planned apartment space: affordability for the resident.

-Well planned building space: stairwell and service space – reasonable space.

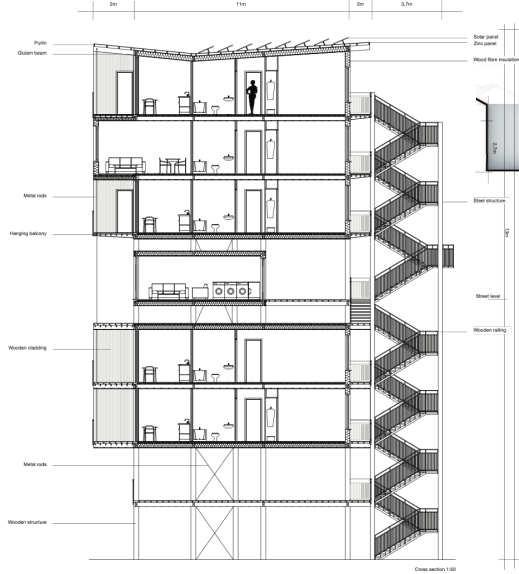
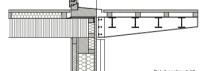
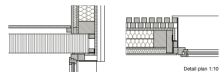
-Profitability for the developer.

Research by design (study 2)

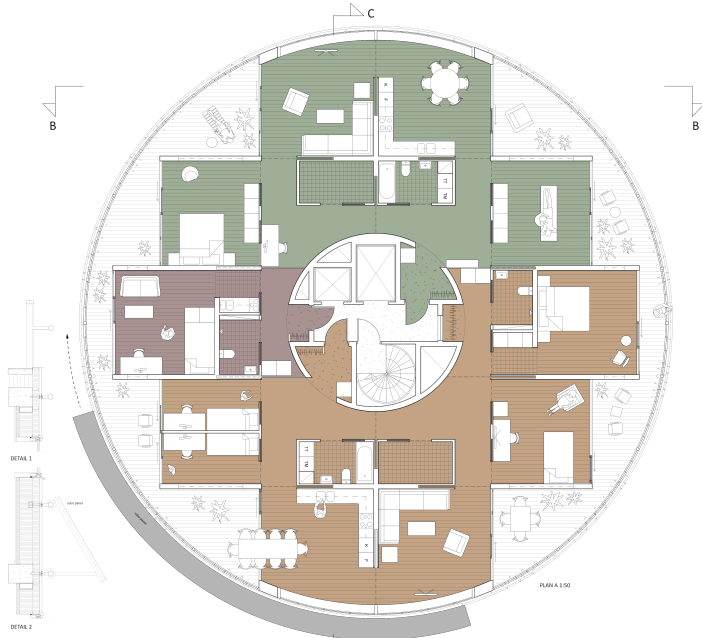
Studentprojekt
Paul Balay, Lambert Lampereur



Floors
The design of the flat is inspired by the old-fashioned terrace houses that you can find in a flat, close to the center, with living spaces and bathroom and not, kitchen and bedroom.
The spaces are organized around a central core with a central staircase that leads to the living area, kitchen, and bedroom.
The living area is facing the north, with a window overlooking the terrace.
The living areas are facing the south. They dispose of their own entrance to the terrace and a window overlooking the street.
The bathroom is in the center of the flat and can be reached by the main hallway and can be reached in time.



Research by design (study 2)



OUR FIVE-TIME OBSERVATIONAL STUDY

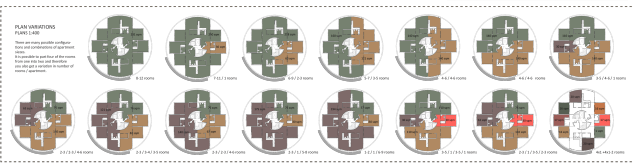
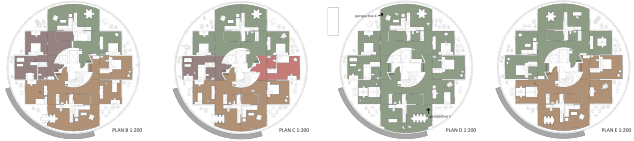
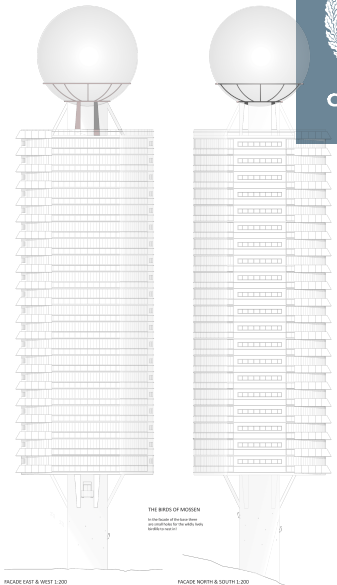
PLAN A 2021
 • Floor area: 1000 m²
 • 4 types of spaces with 10 different uses for multiple hours.
 • The space is divided into 10 different zones.
 • 1000 m² of space, 1000 m² of space to help with the building's energy consumption and to help with the building's energy consumption.

PLAN B 2021
 • Floor area: 1000 m²
 • 4 types of spaces with 10 different uses for multiple hours.
 • The space is divided into 10 different zones.
 • 1000 m² of space, 1000 m² of space to help with the building's energy consumption and to help with the building's energy consumption.

PLAN C 2021
 • Floor area: 1000 m²
 • 4 types of spaces with 10 different uses for multiple hours.
 • The space is divided into 10 different zones.
 • 1000 m² of space, 1000 m² of space to help with the building's energy consumption and to help with the building's energy consumption.

PLAN D 2021
 • Floor area: 1000 m²
 • 4 types of spaces with 10 different uses for multiple hours.
 • The space is divided into 10 different zones.
 • 1000 m² of space, 1000 m² of space to help with the building's energy consumption and to help with the building's energy consumption.

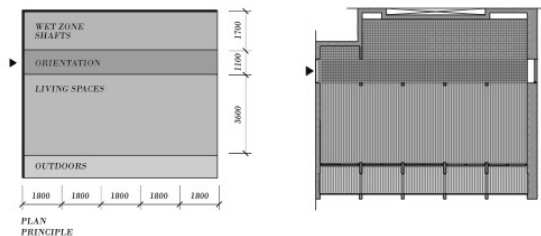
PLAN E 2021
 • Floor area: 1000 m²
 • 4 types of spaces with 10 different uses for multiple hours.
 • The space is divided into 10 different zones.
 • 1000 m² of space, 1000 m² of space to help with the building's energy consumption and to help with the building's energy consumption.



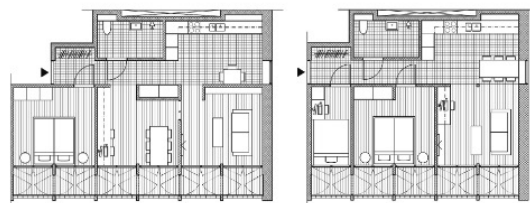
JOSEFIN KARLSSON, BENJAMIN GILLNER, ÅSA LANDAHL



CHALMERS



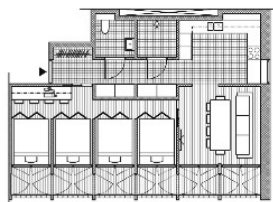
PLAN PRINCIPLE



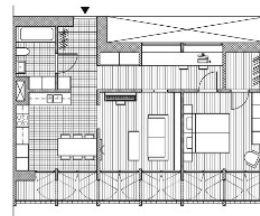
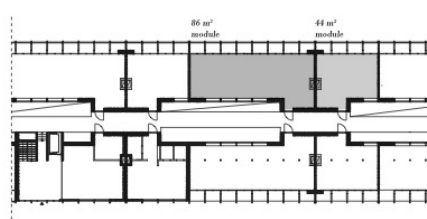
Apartment for couple working from home MODULE OF 67 m²

Apartment for couple with teenagers MODULE OF 57 m²

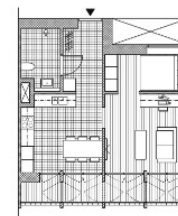
PLANS 1:100



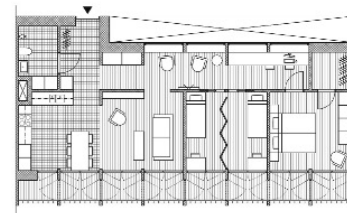
Apartment for 4 students MODULE OF 67 m²



Apartment for couple working from home MODULE OF 65 m²



Apartment for one person MODULE OF 44 m²



Apartment for couple with two children MODULE OF 86 m²

HANNA JAKOBSSON
Housing in Gullhöden, Göteborg, spring 2013

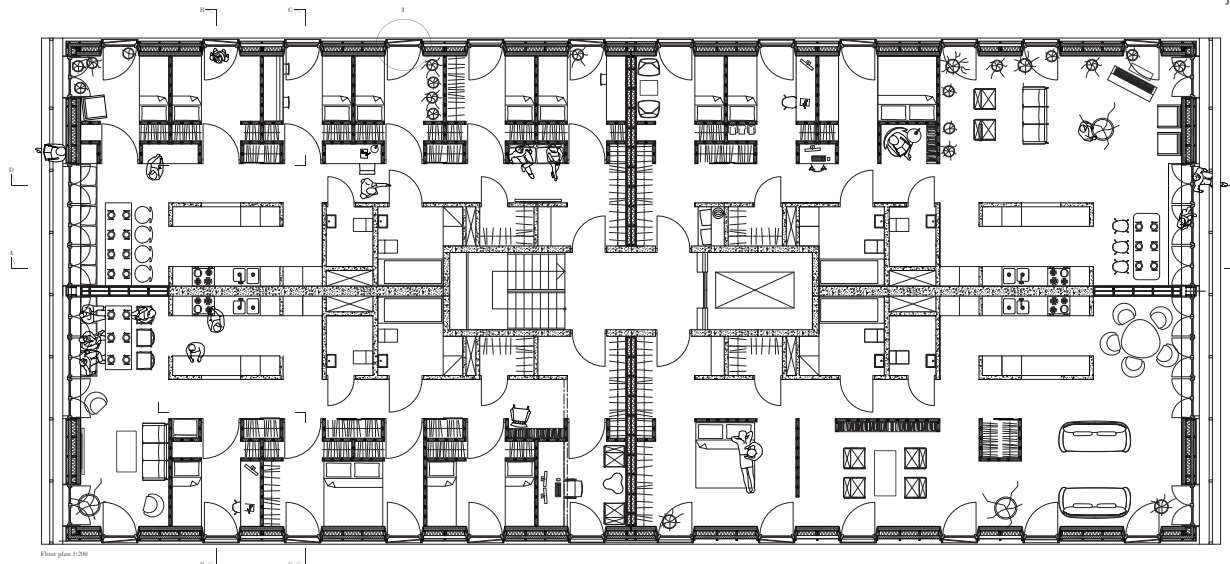
Research by design (study 2)

THOUGHTS ON LIVING

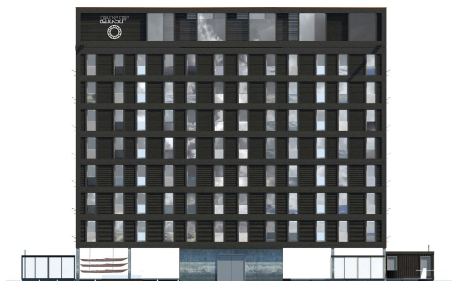
JOHAN A.ZETTERHOLM
JONAS TJÄDER



CHALMERS



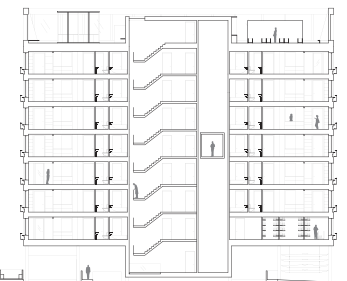
Floor plan 1:200



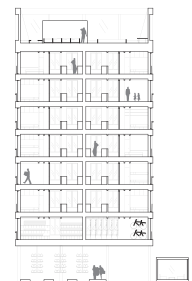
FASADE WEST 1:200



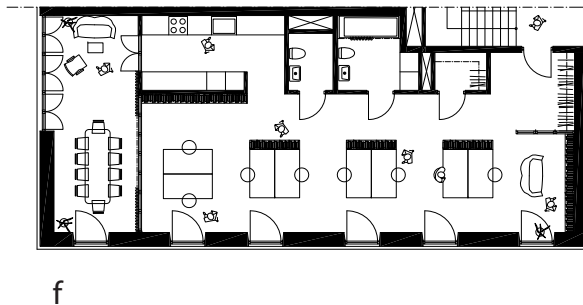
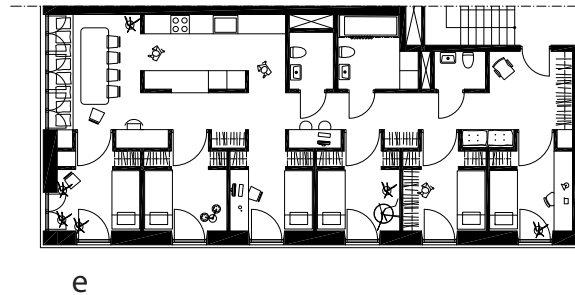
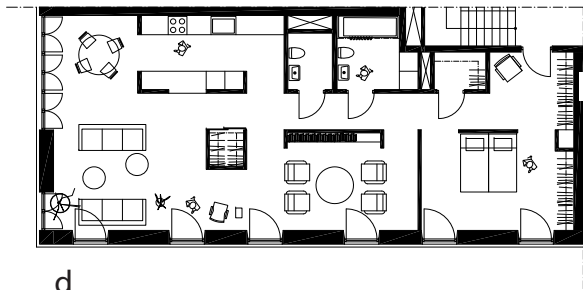
FASADE SOUTH 1:200



SECTION A-A 1:200

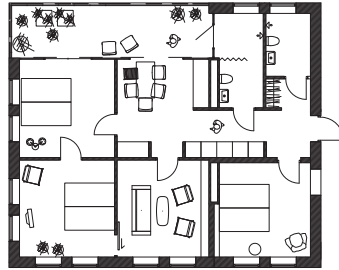


SECTION B-B 1:200

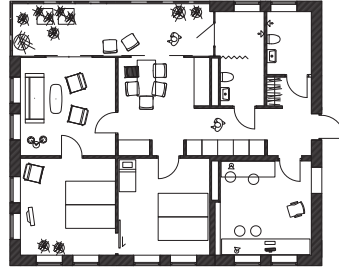


JONAS TJÄDER, JOHAN ZETTERHOLM

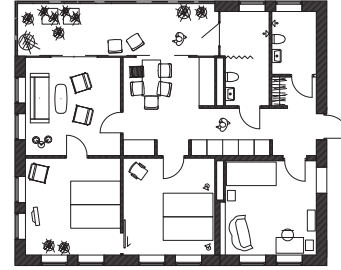
Time-space model



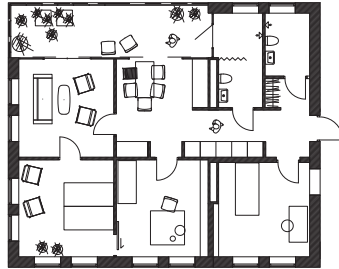
a



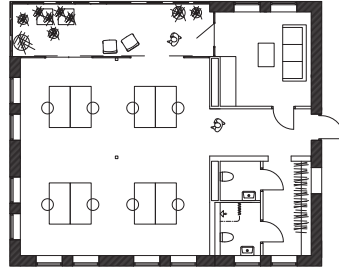
b



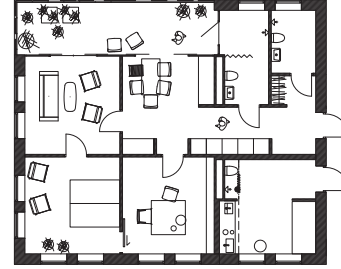
c



d



e



f

YLVA FRID, SOFIA WEND



LIVING PROCESSES (study 3)

how can adaptable apartments support a household's need for living space over a longer time span?

ADAPTABLE SPACE – UNDERSTANDING THE EMPLOYMENT OF SPACE IN THE HOME AS A PROCESS IN TIME

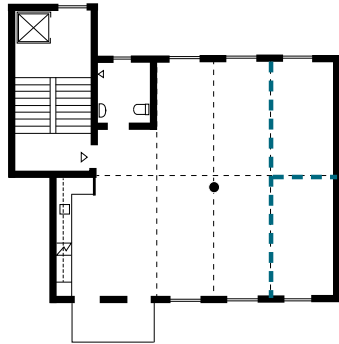
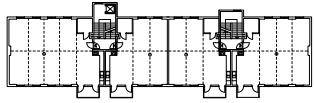
- The time-space model
- The three concepts of adaptable space:
Generality, Flexibility, Elasticity
- Social dimensions linked to spatial qualities.

ADAPTABLE SPACE – UNDERSTANDING THE EMPLOYMENT OF SPACE IN THE HOME AS A PROCESS IN TIME

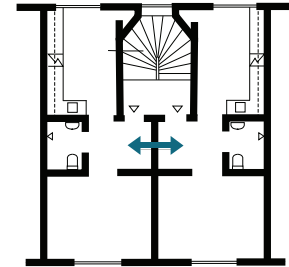
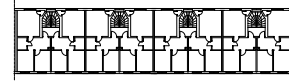
- The time-space model
- The three concepts of adaptable space:
Generality, Flexibility, Elasticity
- Social dimensions linked to spatial qualities.

- Studies of housing research and the question of adaptable space in the home.

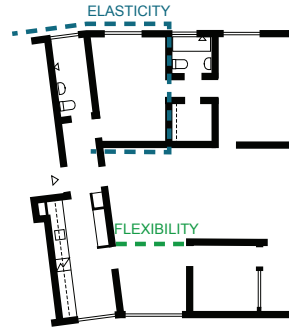
The family life course situation



EXPERIMENTHuset



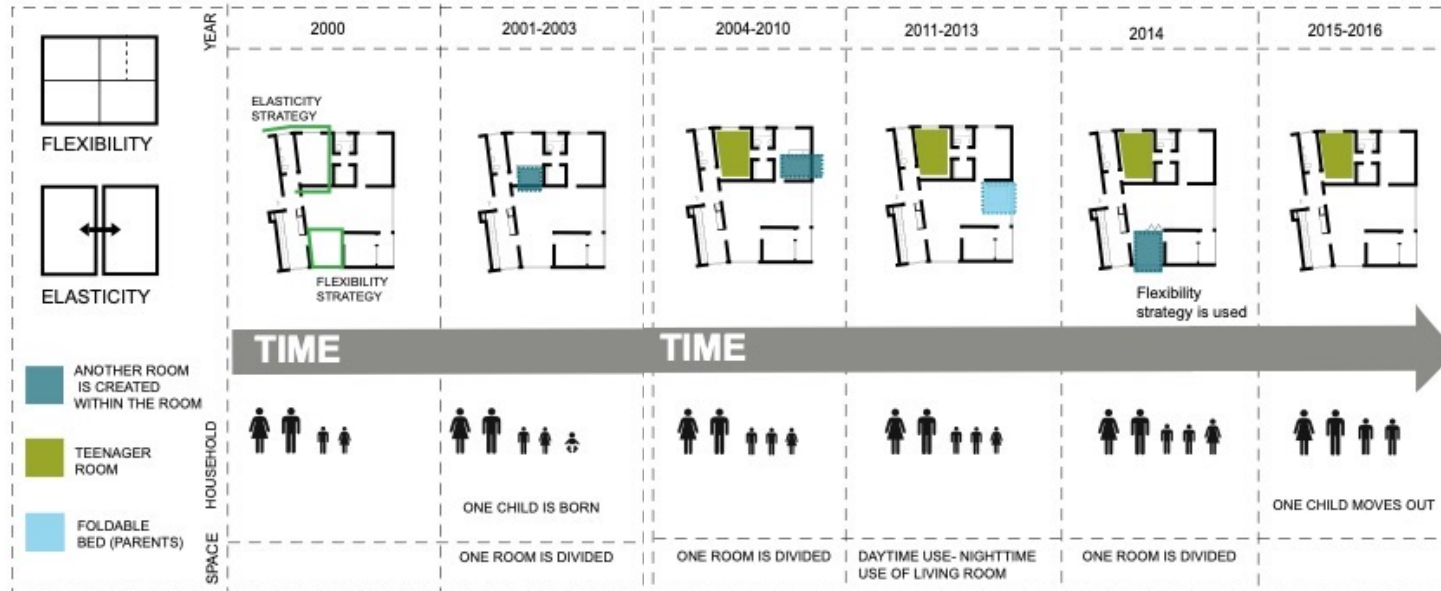
LANDSHÖVDINGEHuset



ADDITIONSHuset

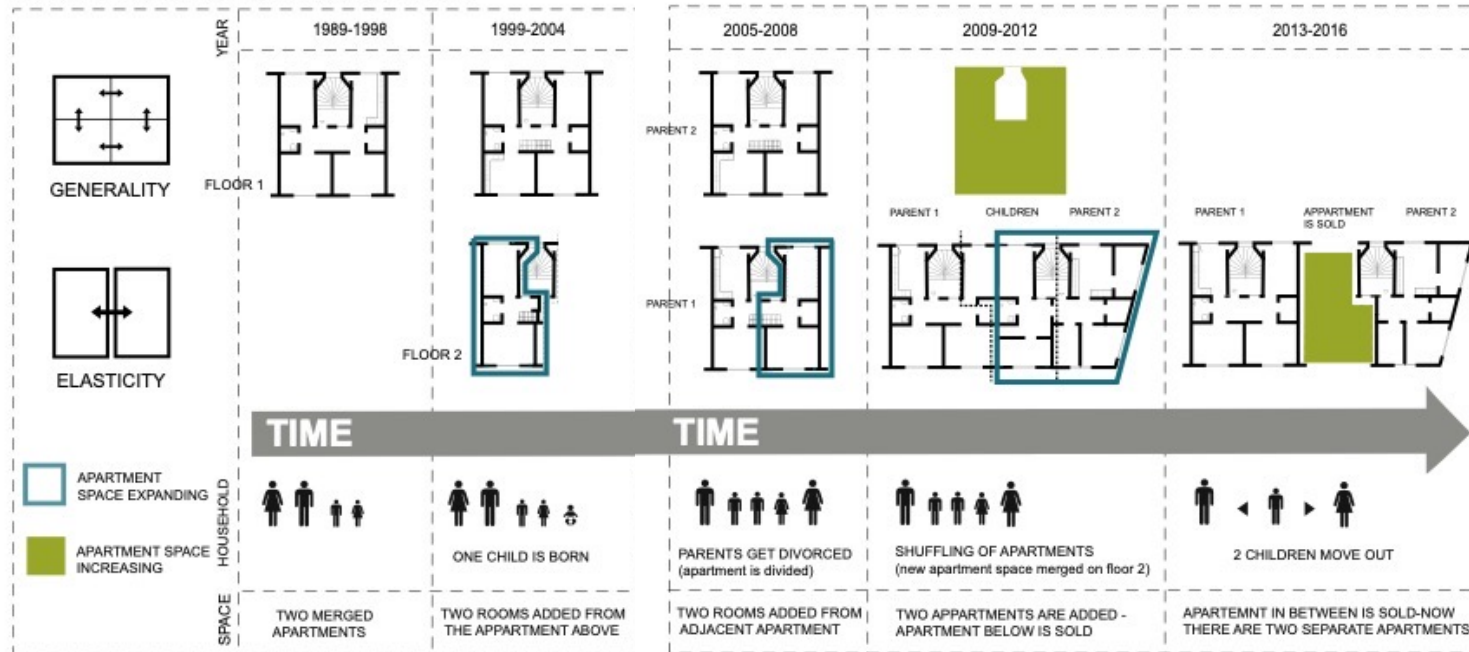
ADDITIONSHUSET, SPATIAL DIAGRAM, FLEXIBILITY AND ELASTICITY

Size of apartment: 98 m². Time in the apartment: 16 years



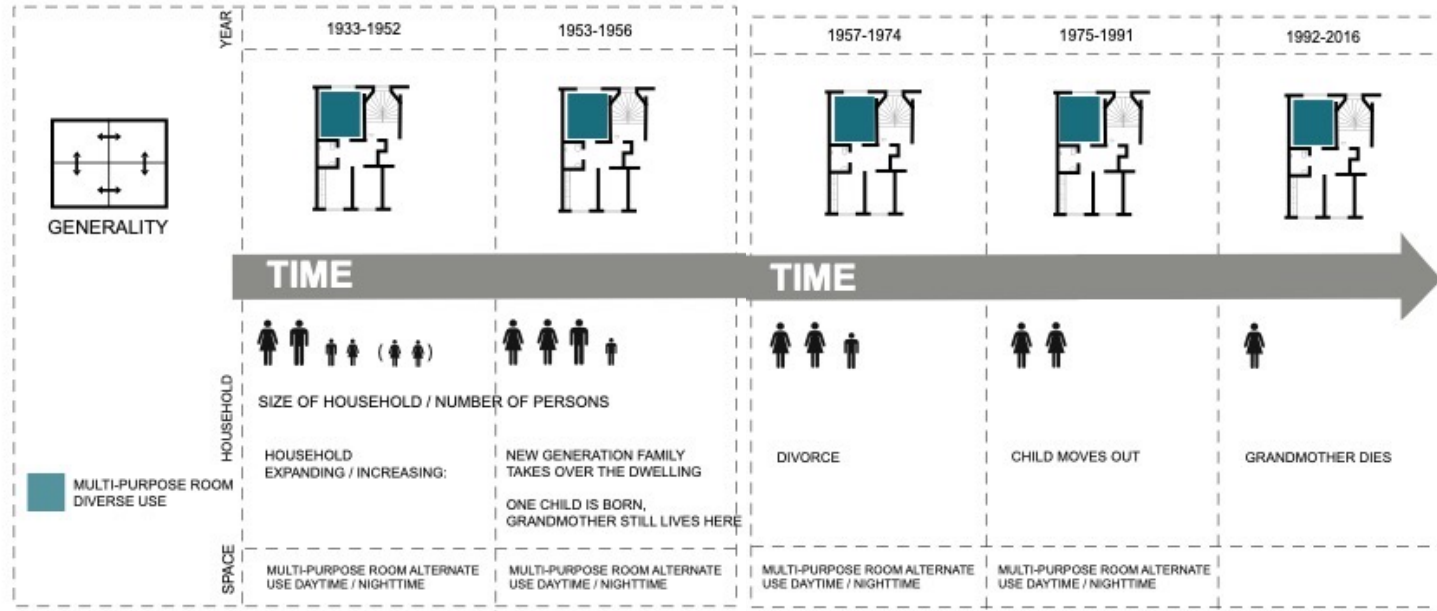
LANDSHÖVDINGEHUSET, SPATIAL DIAGRAM, GENERALITY AND ELASTICITY

Size of apartment: varies. Time in the apartment: 27 years



LANDSHÖVDINGEHUSET SPATIAL DIAGRAM, GENERALITY

Size of apartment 44 m², time in the apartment 83 years.





ADAPTABLE SPACE

Generality, Flexibility, Elasticity

SOCIAL DIMENSIONS

THE REASONS FOR STAYING

The family life course situation

THE HOUSEHOLD EMPOWERMENT AND
COMMUNITY QUALITIES

THE COMMUNITY OF CREATIVE
DWELLING AND ONE DOWNSIDE

Further research 2019-2021

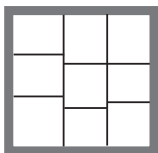
Funded by the Swedish National Board of Housing, Building and Planning, and is directed towards the Swedish housing context.

The research deepens the results from the dissertation (Braide, 2019) on the topic of adaptable dwelling space and social qualities. The goal is to contribute to increase social qualities in living situations and contribute to a more sustainable dwelling stock.

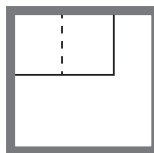
In what way can design strategies for adaptable apartment space contribute to attractive apartments, and be easy to employ for the resident in regard to affordability and physical arrangements?

A selection of existing design strategies for adaptable apartment space are investigated.

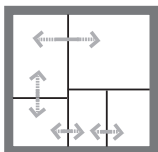
Six design strategies for adaptable apartment space



MULTIPURPOSE ROOM



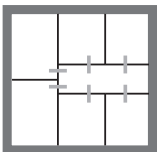
THE FLEXIBLE ROOM



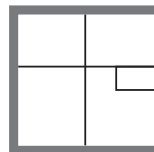
LINKED ROOM



THE AUTONOMOUS ROOM



PARALLEL ROOM



CHAMBER



CHALMERS

THANK YOU