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Aalto University
School of Arts, Design
and Architecture

STUDYING HOUSING AND DWELLING

Perspectives from Human-Centred Design Research

ARK-E4509 HOUSING DESIGN – RESEARCH AND PRACTISE

Dr. Antti Pirinen, Aalto ARTS, Department of Architecture

CASE 1

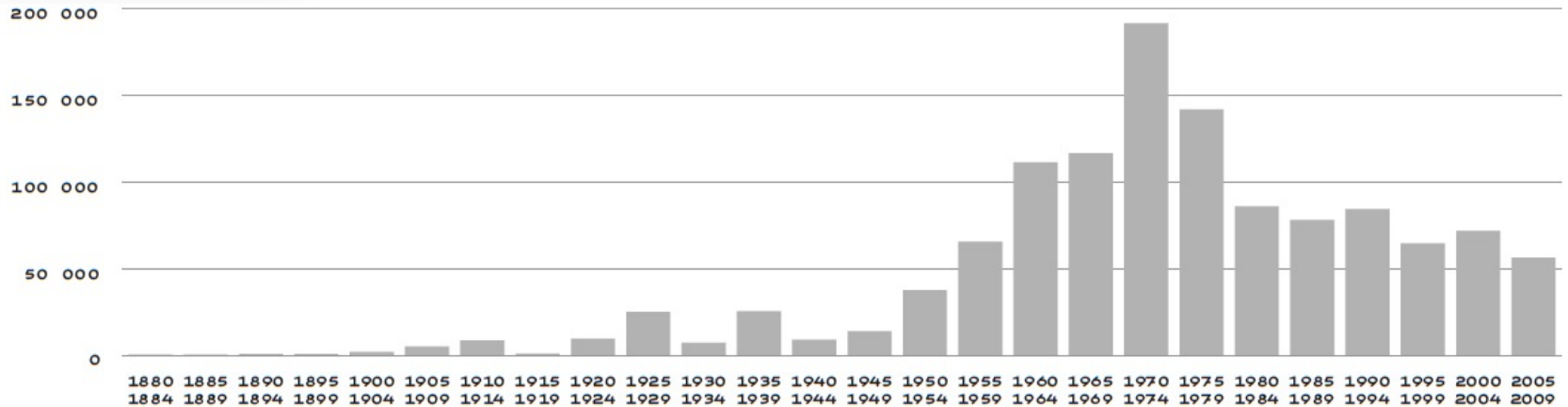
**DEVELOPING
THE RESEARCH
APPROACH**

*Studying Housing and Dwelling
as a Systemic Product*

MY DOCTORAL
THESIS



HISTORICAL BACKGROUND



	SOCIAL DIFFERENTIATION	STANDARDISATION	INDIVIDUALISM
	EARLY INDUSTRIAL HOUSING CIRCA 1880–1940 Dense “stone urbanism” 1880–1920 Classicism and functionalism 1920–1940	INDUSTRIAL HOUSING CIRCA 1940–1975 Pre-industrial modernism 1940–1960 Industrial rationalism 1960–1975	LATE INDUSTRIAL HOUSING FROM CIRCA 1975 First (pre-recession) phase 1975–1995 Second (post-recession) phase from 1995
Perception of the user (2, 3)	Traditional: member of a social class with predetermined needs	Normative: anonymous model inhabitant (nuclear family) who performs functions	Individualistic: autonomous consumer with subjective demands and preferences
Development of the dwelling (3, 4, 6)	Parallel refinement of socially and spatially segregated dwelling types such as the bourgeois apartment and workers’ housing	Establishment of the middle-class standard dwelling consisting of kitchen, living room and bedroom(s) as a norm	Partial questioning of the norm dwelling due to lifestyle changes, tendency for typological and contentual diversification
Discourses in housing (1, 3, 4, 7)	Social reform, education, housing for the underprivileged, healthiness and hygiene, stylistic and typological renewal	Type-planned dwellings, standardisation, rationalisation, industrialisation, efficiency, integrated systems, planning	Quality, diversity, flexibility, sustainability, regeneration, lifestyles, preferences, participatory design, partnerships

AN EMERGING
PHENOMENON

Koti kuten haluat

SATO PlusKoti



Pakkalanrinne

Asunto Oy Vantaan Vehka, Osuustie 8, 01510 Vantaa
Ennakkomarkkinoinnissa viihtyisiä SATO PlusKoteja kodikkaaksi kyläympäristöksi kehittyvällä Pakkalanrinteen alueella, kävelyetäisyydellä kauppakeskus Jumbon kattavista palveluista. Yhtiöön tulee 45 SATO PlusKotia, joista lähes jokaiseen olemme valmiiksi suunnitelleet useita erilaisia pohjavaihtoehtoja. Sekä tilasuunnittelussa että varustevalikoimassa olemme huomioineet myös senioreiden tarpeet.

Esimerkkihuoneistot ja alustavat hinnat:

1h+kt, 33,5 m ²	mh. 17 745 €, vh. 118 300 €
2h+k+s, 65,0 m ²	mh. 31 305 €, vh. 208 700 €
3h+k+s, 79,0 m ²	mh. 36 240 €, vh. 241 600 €
4h+k+s, 94,0 m ²	mh. 42 555 €, vh. 283 700 €

Vehkasta ostat oman kodin pienellä pääomalla. Kauppahinta on 15 % velattomasta hinnasta, siitä puolet maksetaan kaupanteossa ja loput kun kohde valmistuu. 35 % velattomasta hinnasta on lyhytaikaista lainaa, joka maksetaan viimeistään 2 kk:n kuluttua muutosta. Yhtiön rakennustyöt aloitetaan arviolta keväällä 2008 ja asunnot valmistuvat arviolta kesällä 2009.

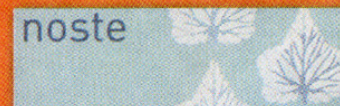
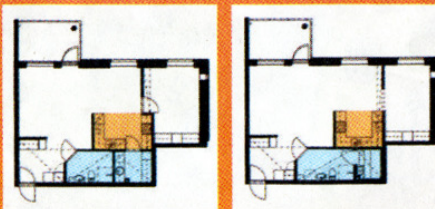
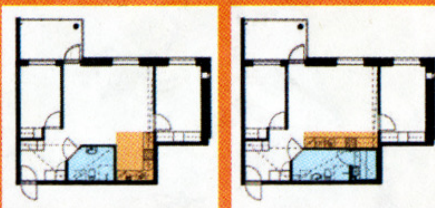
Valinnan varaa Vantaan Vehkassa

Valitse sopivin pohjaratkaisu

Valitse mieluisin sisustusmallisto

Vantaan Vehkan huoneistossa B25, 65,5 m², tarjolla on neljä erilaista huolella suunniteltua vaihtoehtoa.
Mh. 31 605 €, vh. 210 700 €.

Viimeisen, yksilöllisen silauksen SATO PlusKotiisi tarjoavat kolme upeaa sisustusmallistoa, Vantaan Vehkassa Lempi, Noste ja Villi.



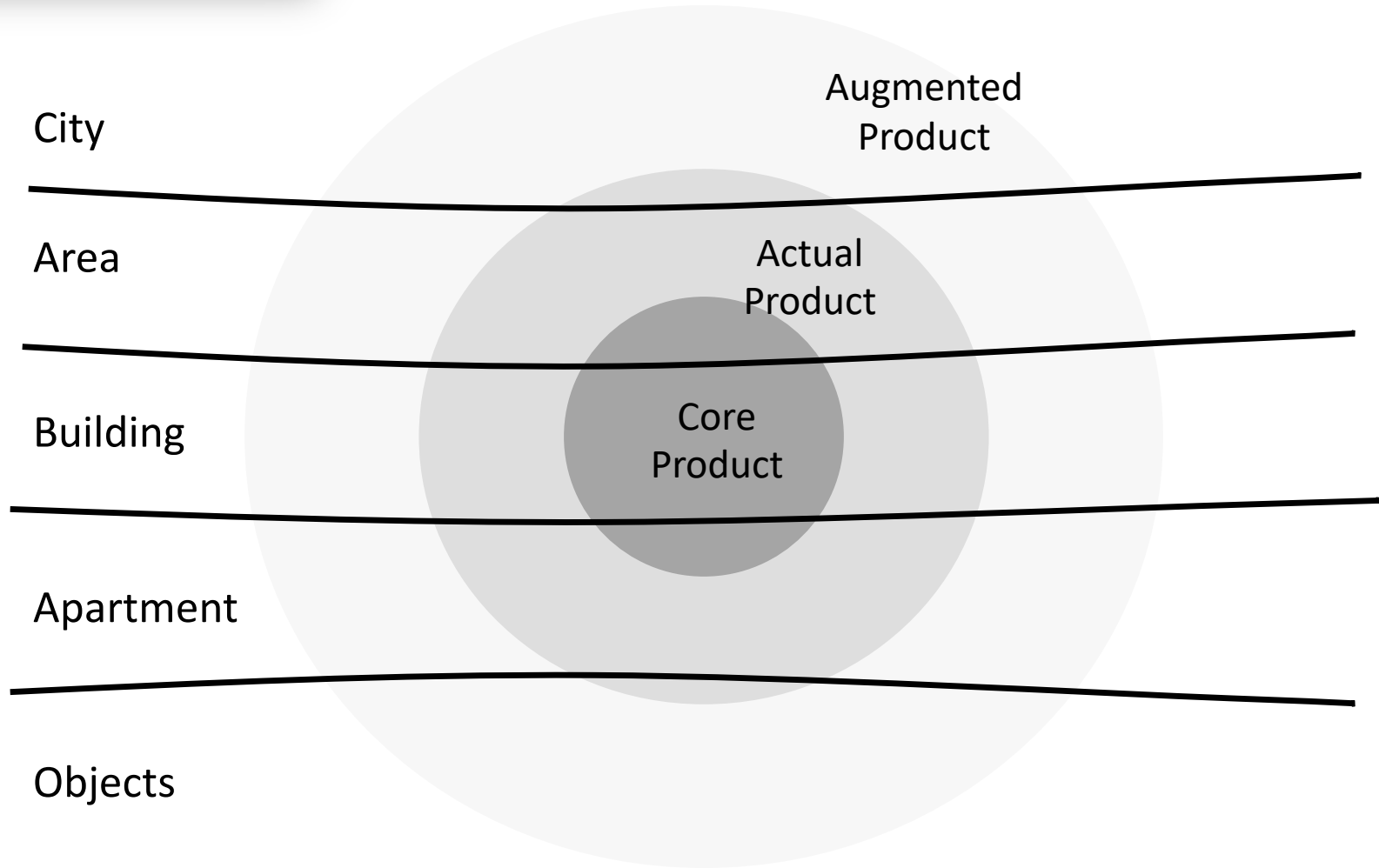
moor

**How to study housing
and dwelling as a
heterogeneous artefact
that extends beyond
built form and is
controlled by many
different actors?**

METHODOLOGICAL PREMISES

- Applying methods and approaches from (user-centred and collaborative) design studies to the field of housing
- **Approaching the urban dwelling as a systemically embedded, composite “product” rather than architectural space or place**
- **Analysis framework combining theories on the hierarchic structure of built environment (Habraken, Brand) with definitions of product in marketing studies and industrial design**
- Dwelling as bundle of designable material and immaterial properties that conjoin to provide value to the resident
- **Focus on the reciprocal relationship between housing and residents: residents as active and creative individuals with value-seeking strategies of their own (de Certeau, Hill, Shove)**
- Interest in the use phase of housing – the dwelling as a meeting point of the strategies of regulators, producers and residents
- Input to conceptual and strategic level housing design and residential product development

ANALYSIS FRAMEWORK



USER CONTROL

John Habraken,
Stewart Brand

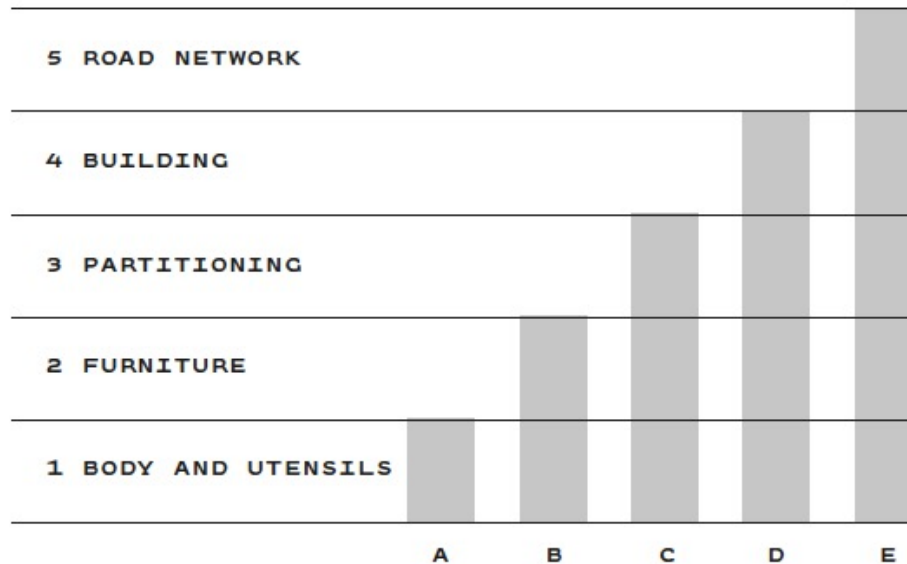


FIGURE 8 .
Levels of form in the built environment and the extent of user control in various modes of dwelling (Habraken 2000, 61). From the left:

- (A) hotel room,
- (B) rented flat,
- (C) owner-occupied flat,
- (D) freestanding urban or suburban single-family dwelling, and
- (E) private estate or farm.

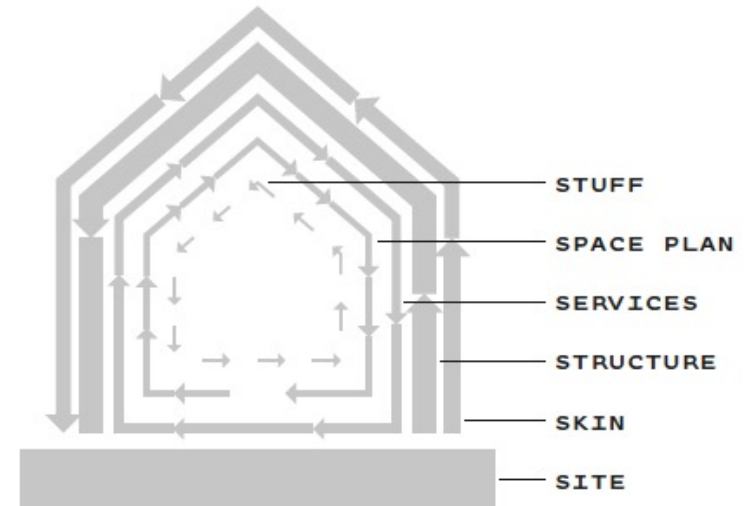


FIGURE 9 .
The pace layers of a building (Brand 1994): Site, structure, skin, services, space plan, and stuff. “Because of the different rates of change of its components, a building is always tearing itself apart”

DESIGN FOR
USER CONTROL



Architect Pia Ilonen, *Tila* housing, Arabianranta, Helsinki. Photo Stefan Bremer.

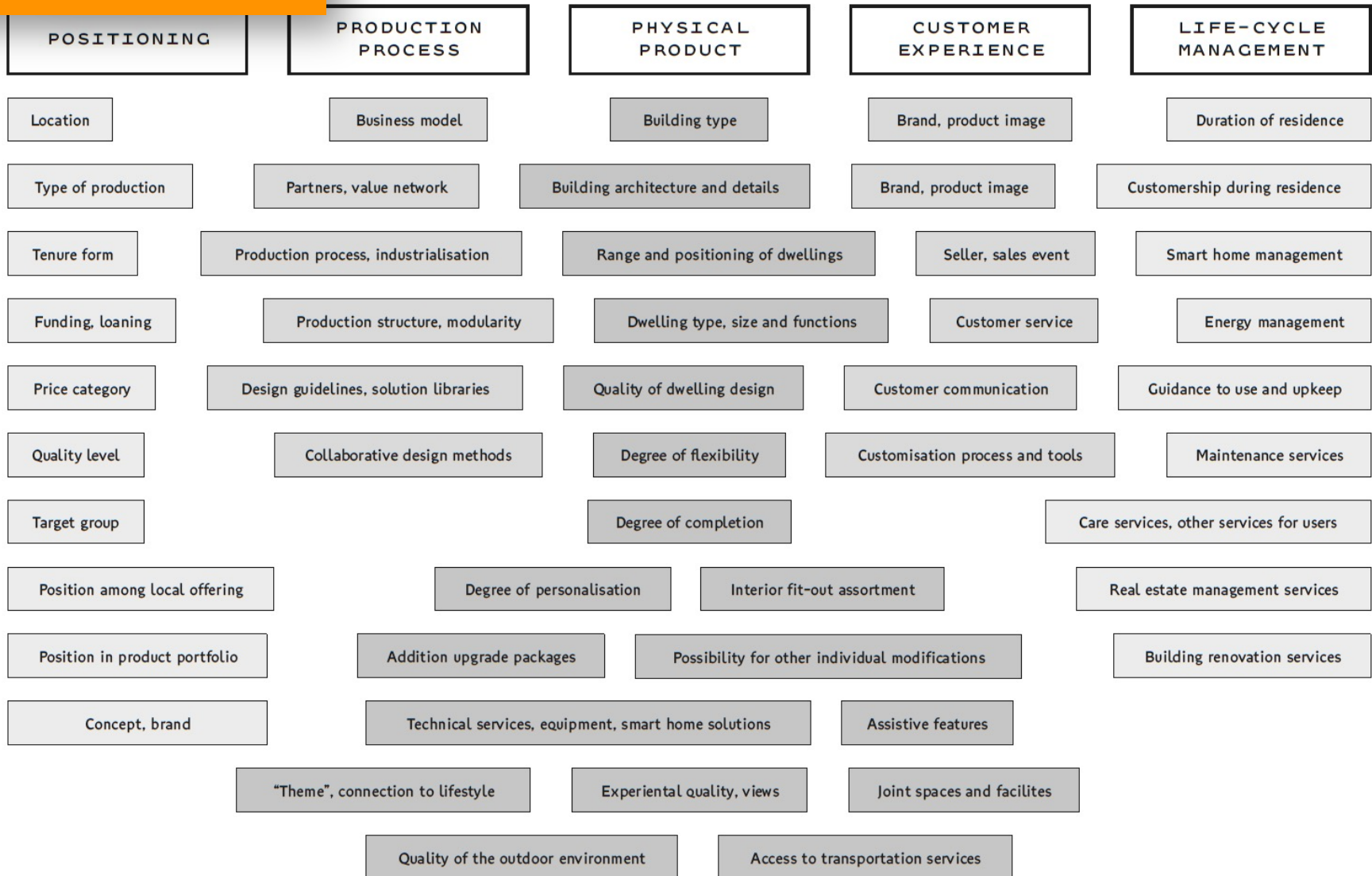
DESIGN FOR USER CONTROL



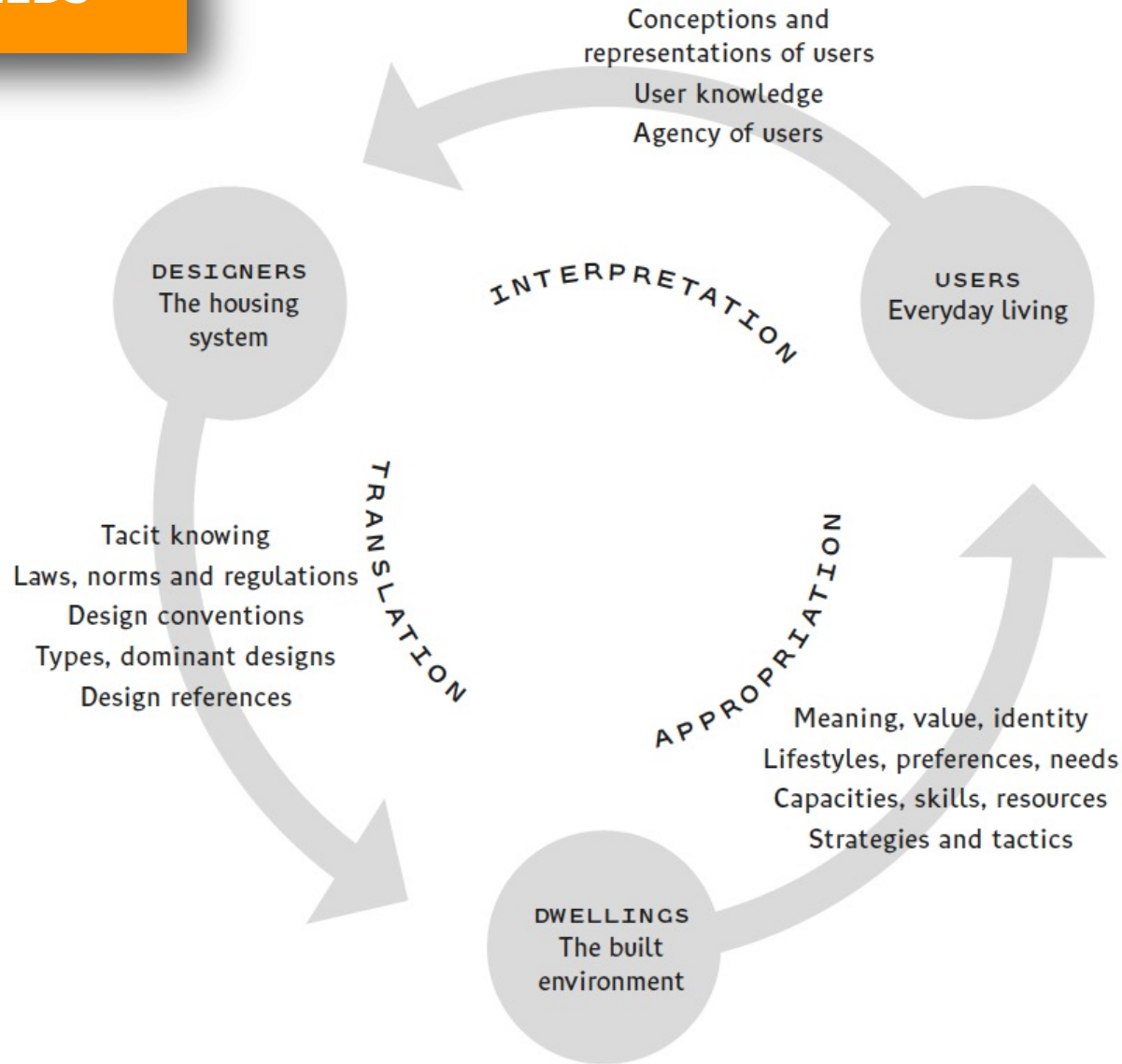
Architect Pia Ilonen, *Tila* housing, Arabianranta, Helsinki. Plan of the 3rd floor mezzanine as built by the residents.

- Commodification of housing and demand for qualitative diversity have led to the emergence of duplicable housing concepts and brands targeted at various resident segments
- **A housing concept is a novel, intentionally differentiated housing solution where the core idea is duplicable (Pirinen 2014)**
- **The housing concepts aim at offering the resident a clearly communicated set of benefits that meet their particular needs**
- **A housing concept provides a template from which multiple locally adapted housing projects can be derived**
- Commercial concepts typically rely on **technological innovation** such as mass customisation and aim at **extensive duplicability**
- User-initiated concepts seek to solve the **unmet residential needs** of a known group of people via local, **one-off housing projects**
- Resident-led housing innovation is risky, slow and requires special skills and commitment from the resident-developers

DESIGNABLE ELEMENTS



REALISATION OF USER NEEDS



CASE 2

COMPARATIVE RESEARCH

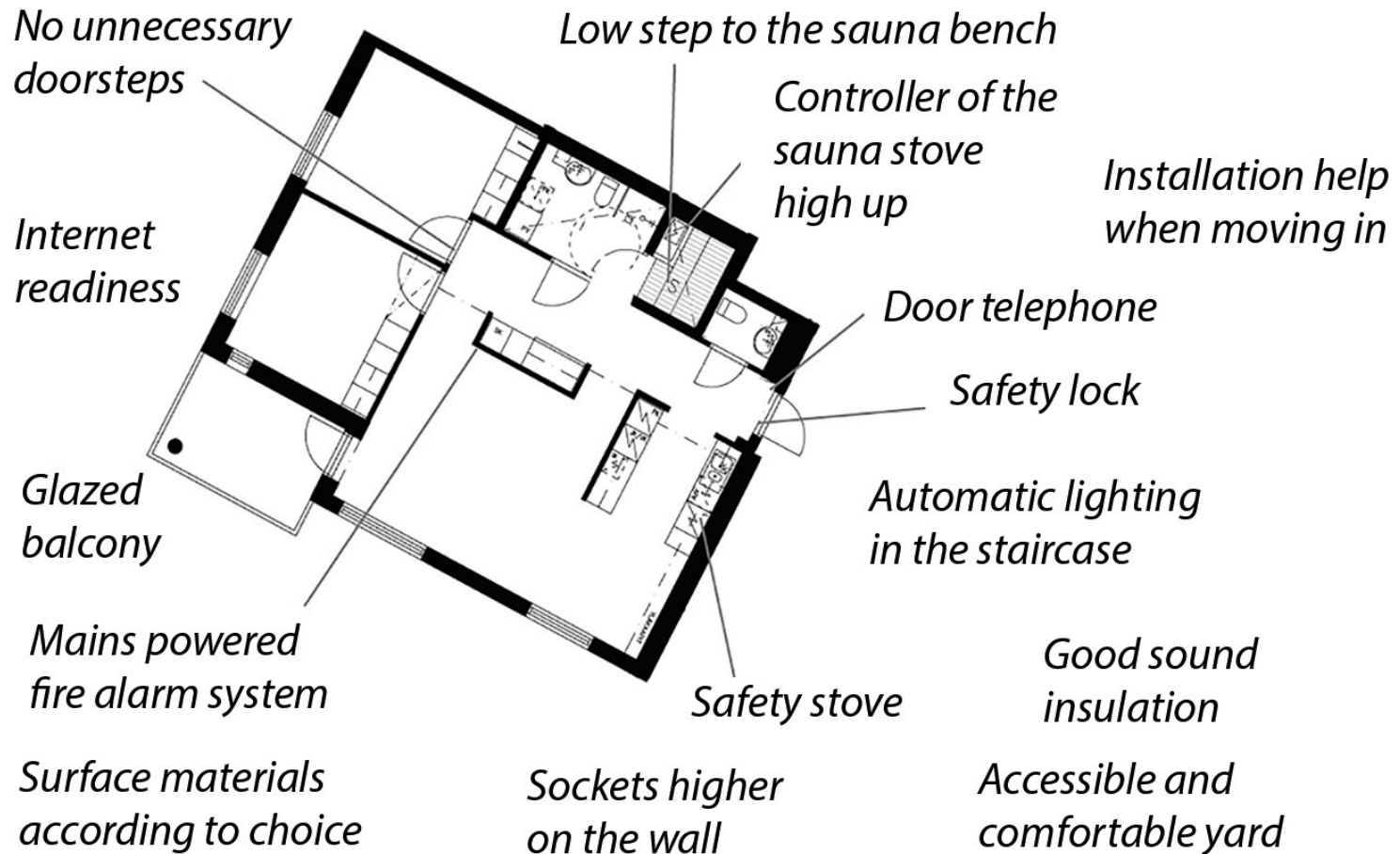
Housing Concepts For and By the Elderly

Elderly people are typically seen by the housing system as homogeneous and passive –housing provided for the elderly by experts

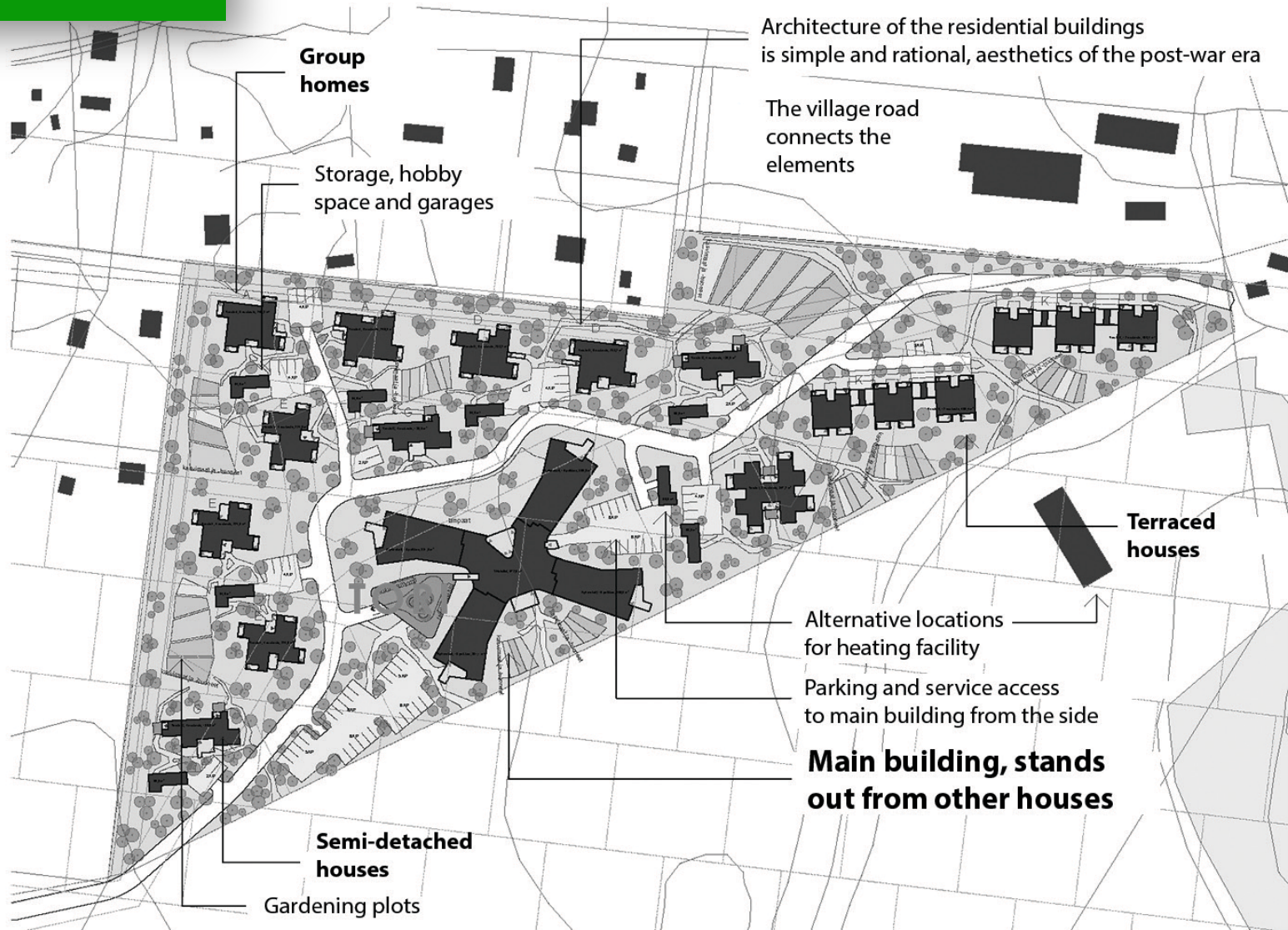
Upsurge in resident-initiated urban housing projects for seniors in Finland challenges this view – novelty in housing created by the elderly themselves, suggesting “ageing as a culture to inspire social innovation” (Yanki Lee)

What can be learned from comparing the resident-driven senior housing concepts (designed by the elderly) and the producer-driven concepts (designed for the elderly)?

CONCEPT 1 AKTIIVIKOTI

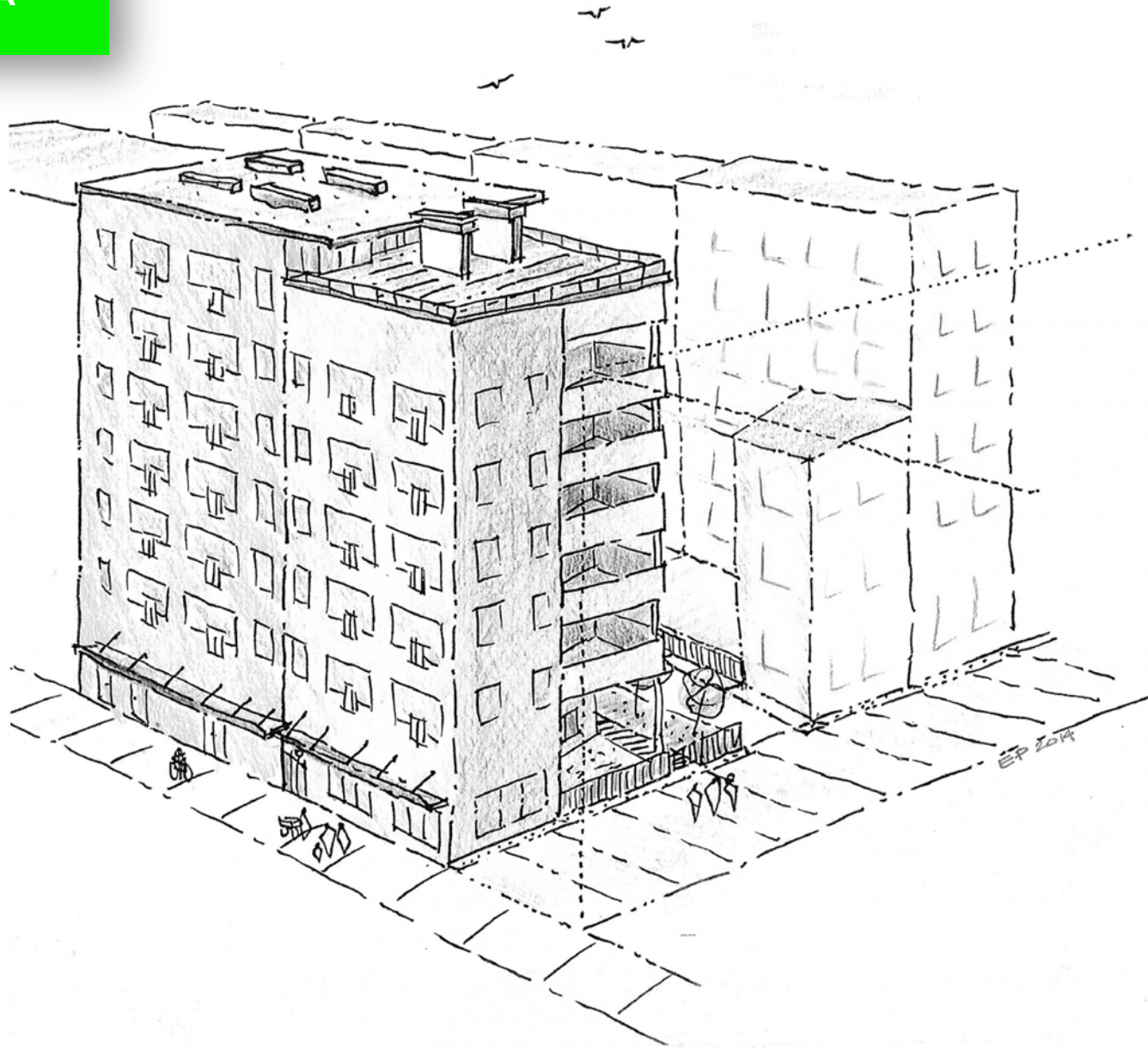


CONCEPT 2 VIRKKULA



An early design for the area concept of the Virkkula Senior Village. Architect Tero Wéman. Wéman 2013.

CONCEPT 3
ARS LONGA



Early design sketch for the *Ars Longa* house in Kalasatama, Helsinki. Architect Eric Pollock. Ornamon Senioritaloyhdistys ry 2014.

CONCEPT 4 LOPPUKIRI



Common spaces in the Loppukiri House in Arabianranta, Helsinki. Architect Kirsti Sivén 2006. Photographs by Antti Pirinen 2013.

COMPARISON OF THE CONCEPTS

	AKTIIVIKOTI	VIRKKULA	ARS LONGA	LOPPUKIRI
Target group	LIFE STAGE Empty nesters wanting easy living	LIFESTYLE, ABILITY LEVEL Active and social seniors preparing for the future	PROFESSIONAL IDENTITY Designer and artist seniors	VALUES, IDEOLOGY Seniors interested in a communal way of living
Promise or benefit	<i>I can live in a regular urban dwelling as long as possible despite the eventual deterioration of my physical ability</i>	<i>I can live the rest of my life in a comfortable, safe and socially active environment where I can easily get services based on my individual need</i>	<i>I can live together with old colleagues in a community where aesthetics and creativity are valued and where I can continue working</i>	<i>I do not need to spend my old age in loneliness and passivity</i>
Strategy for delivering the promise	ADDED FEATURES Assistive technical equipment, physical accessibility or readiness for modifications	CONCENTRATION A varied housing complex with mix of dwelling types and degrees of care provided by the same operator	SIMPLIFICATION, IDENTITY BUILDING Affordable rental flats with optimised, flexible common facilities; strong aesthetic identity	NEW OPERATIONAL MODEL Services provided by the residents themselves, common facilities

COMPARISON OF THE CONCEPTS

	AKTIIVIKOTI	VIRKKULA	ARS LONGA	LOPPUKIRI
Role of the resident	Passive, mere customer	Semi-active, mainly choosing among alternatives in the preset service offering	Dominant, defining the house attributes and acting as developer; bringing in design skills	Dominant, defining the attributes of the house and acting as developer
Relationship of the concept to architecture	Does not substantially determine architecture apart from accessibility requirements	A complete architectural concept with design principles for the area and locally variable building types	Determines the spatial programme of the building (dwellings and common spaces), also addresses cost requirements	Determines the spatial programme of the building (common spaces)
Initiator	A housing developer	A senior entrepreneur	A few elderly designers	Seniors interested in communal living
Source of innovation, external references	SPECIAL HOUSING Introducing features of assisted living into mainstream housing production	TRADITIONAL RURAL LIVING Modern interpretation of (idealised) village architecture to avoid institutional feeling	AVANT-GARDE DESIGN HERITAGE Professional experience and skills of the residents, avant-garde design as inspiration	SOCIAL INNOVATION Based on examples of communal senior living in Sweden and elsewhere

CONTRASTING DESIGN LOGICS

HOUSING CONCEPTS FOR THE ELDERLY RESIDENTS AS SUBJECTS OF DESIGN

Technological innovation,
differentiation in the market,
efficiency and savings

Value-neutral solutions;
emphasis on functional and
pragmatic issues in housing

Experts know what is needed
by the elderly and how to
provide it

Passive subjects without
design control, abstract
representatives of a target
group, consumers

Traditional expert design,
(design-driven innovation)

DRIVERS FOR INNOVATION

VALUE BASE

MINDSET

PERCEPTION OF THE USER

DESIGN MODE

HOUSING CONCEPTS BY THE ELDERLY RESIDENTS AS A DESIGN RESOURCE

Social innovation,
unmet residential needs, quest
for dignity in old age

Value-laden solutions; emphasis
on identity, lifestyle choices and
self-actualisation

The elderly are a design
resource with valuable skills and
knowledge

Active individuals endowed with
design power drawing on their
personal residential experiences
and needs

Co-design, user innovation,
experimental methods

CONCLUSIONS AND IMPLICATIONS

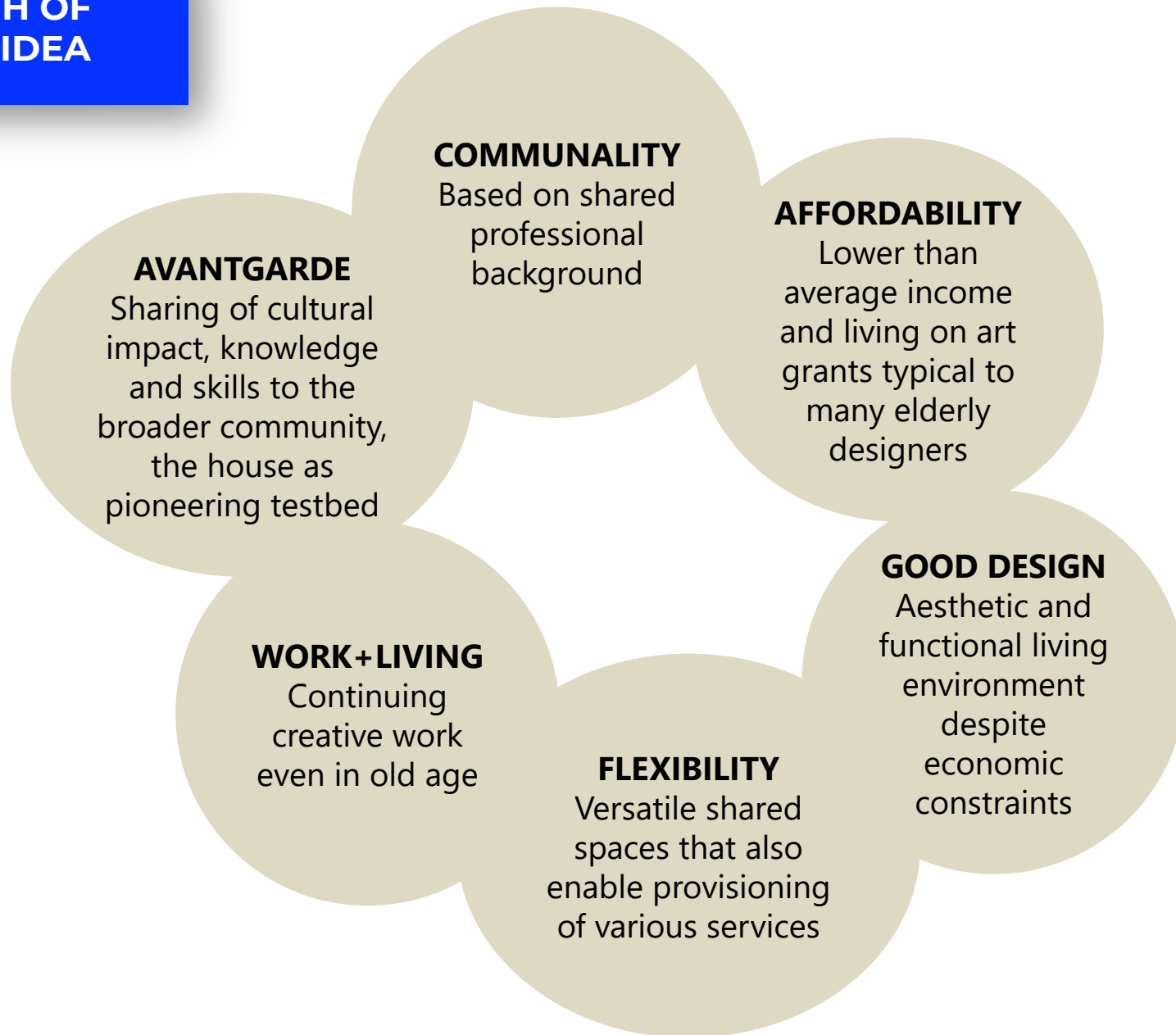
- A similar turn towards user-centredness and co-design than elsewhere in the design field can be recognised in housing
- **Elderly people as a potential design resource for the qualitative diversification of senior housing with in-depth experiential knowledge and capability to innovate (cf. von Hippel, Lee)**
- Laypeople undertaking concept level design and development activities aiming at duplicable housing solutions that ideally benefit broader markets of elderly residents
- Challenge to architects, developers and other professionals to build methods to better support user-driven residential development: requires new competences and skills
- **Need for better balancing of the elderly people's needs and the requirements of industrial housing production (mass customisation, co-configuration, joint building ventures as service)**

CASE 3

LONGITUDINAL RESEARCH

Following Ars Longa

BIRTH OF THE IDEA



Färdknäppen – a different kind of house



A film team from Cologne at work in Färdknäppen May 2013.

Färdknäppen is a house for people who have reached "the second part of life".

In other words it is not a house exclusively for elderly not an "ordinary" collective house

But then – what is it?

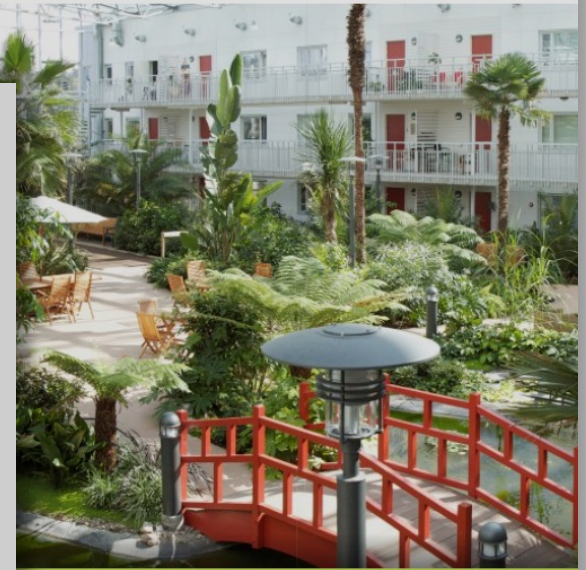
Färdknäppen is an apartment house, owned by a municipal housing company, located on the island Södermalm in Stockholm.

We who live here co-create a community in our daily lives together, which makes life easier and more fun when the "togetherness" of family life and working life diminishes as we grow older.

- We cook in groups that prepare shared meals on weekdays
- We take care of our house and garden ourselves
- We learn from one another while carrying out our daily chores



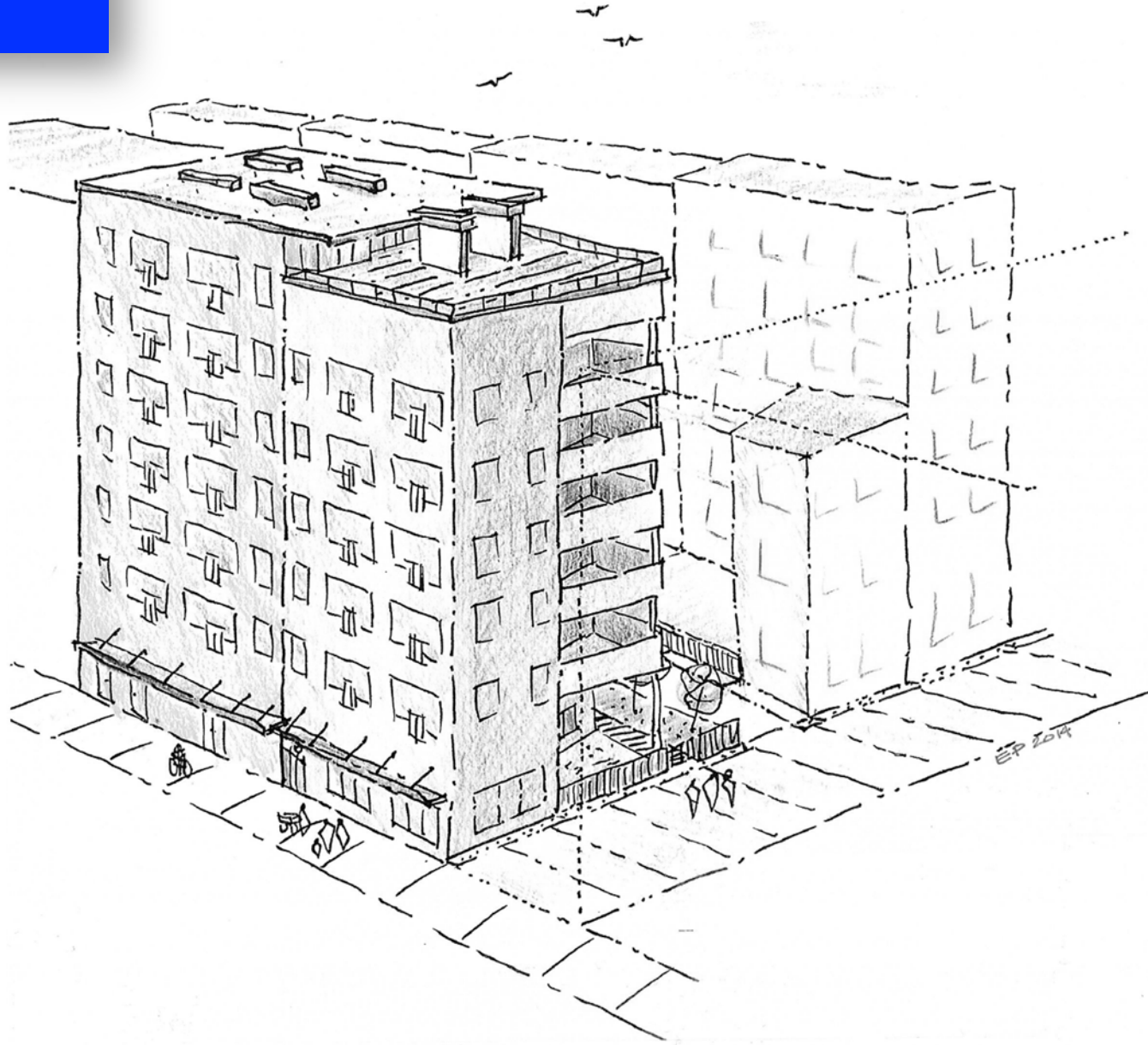
Gardening together May 2013. A new shed for bicycles is under construction.



Boendemiljö för dig som är 55+

Boendets grönaste seniorboenden och som gjort för dig som är 55+. Boendets miljö med medelhavsklimat och sköna upplevelser året runt.

ACQUISITION OF A PLOT



Early design sketch for the *Ars Longa* house in Kalasatama, Helsinki. Architect Eric Pollock. Ornamon Senioritaloyhdistys ry 2014.

SEEKING FOR
FUNDING



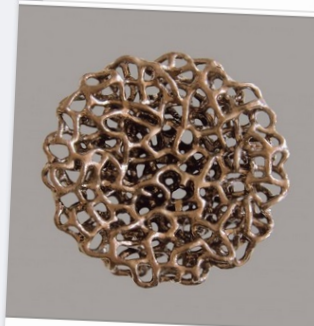
Ornamon Senioritaloyhdistys ry

21. joulukuuta 2018 · 🌐



Ars Longa -senioritalokampanjamme mesenaatti.me-sivulla jatkuu. Iiro A. Ahokas ja Jesse Pietilä ovat lahjoittaneet uudet teokset, ja lahjakortti Arelan liikkeeseen on myös uusi kampanjavastike.

<https://mesenaatti.me/campaign/?id=1030#single/view>



**CO-DESIGN
EFFORTS**



BUILDING DESIGN



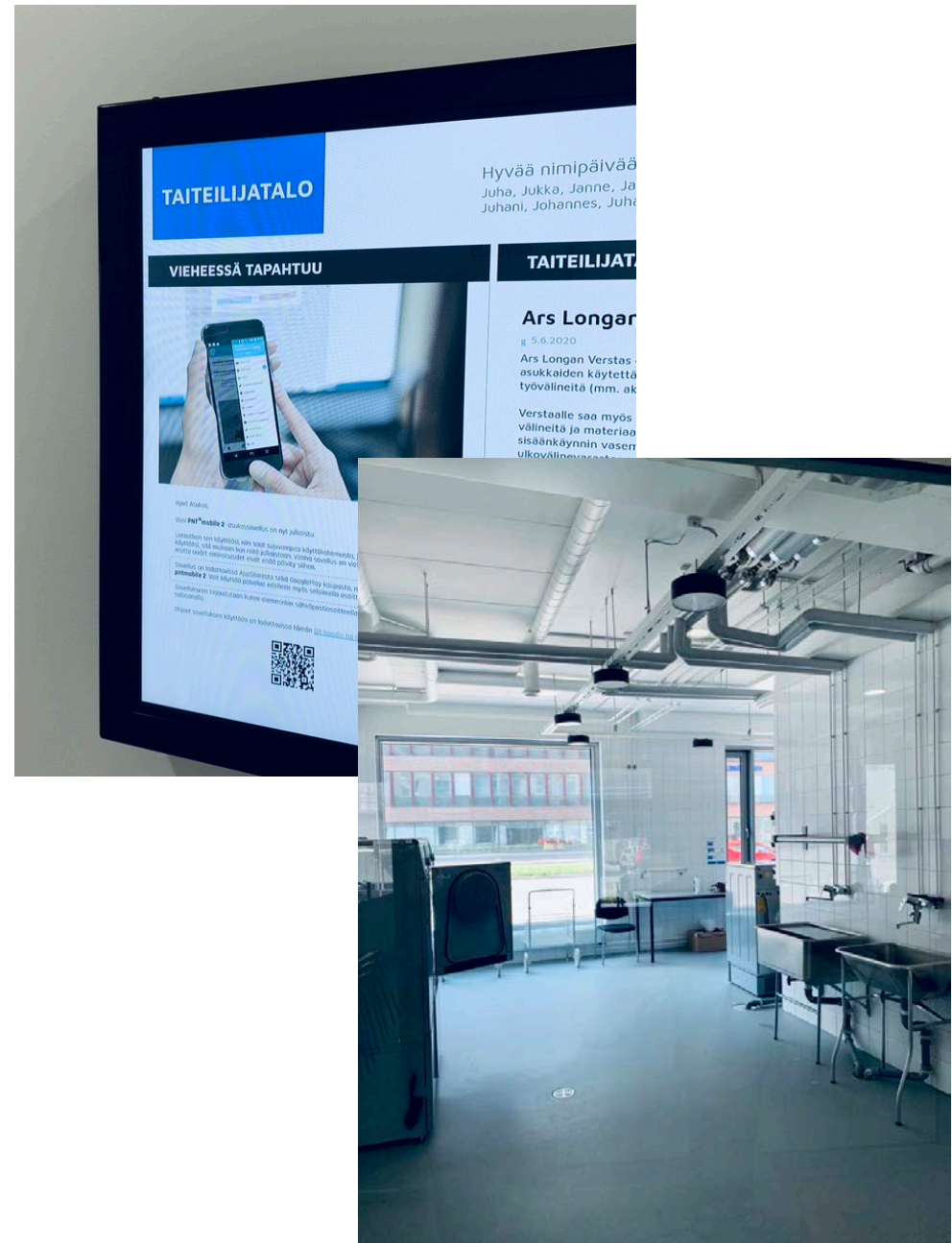
Building plans for the *Ars Longa* house in Kalasatama, Helsinki. Kristiina Hannunkari, Architects Hannunkari & Mäkipaja, 2016

**FINISHED BUILDING
IN EARLY 2020**



POST OCCUPANCY EVALUATION

- **Post Occupancy Evaluation (POE):**
The process of evaluating buildings in a systematic and rigorous manner after they have been built and occupied for some time (Wolfgang Preisler)
- Diagnostic tool that can be used for identifying problem areas in existing buildings, for co-improving the building, for testing prototypes/concepts and for developing further design guidance
- Observation, interviews and surveys to gather knowledge about the occupants' everyday experiences + monitoring of user behaviour, use of spaces and technical performance



- Example of resident-driven housing development by a group of elderly people, aiming to fill in a qualitative gap in the market
- **Joint design and development of the three adjacent apartment blocks as novel approach that made shared spaces economically viable**
- Managed to realise extensive shared spaces and facilities within the tight economic constraints of state-funded ARA production
- **Clever "moves" in building design as source of flexibility in use and going around the constraints, e.g., use of a space officially designated for bicycle storage as a gallery run by the residents**
- **Following the case revealed systems level barriers and enablers to resident-driven housing development in Finland**
- Urban planning and plot allocation policy by the city specifically targeting resident-driven and group construction as key enabler
- Main barriers were difficulties in obtaining private funding and systemic resistance to true resident impact in development and design

**Questions or
comments based on
the cases and
readings?**

Kiitos!