

HEALTH-PROMOTIVE BUILDING DESIGN

Researching and Designing Buildings for Health Promotive Healthcare



By: **Elke Miedema** - Division of Architectural Theory & Method, Chalmers University of Technology

For: **European Network of Health Promotive Healthcare**

Date: 13th October 2020





Professional Background

Elke Miedema BBe, MSc, Lic, PhD

2007 - BBe - Building & Construction Engineering

2012 - MSc - Architecture

2017 - Lic - Architecture

2020 - PhD - in Architecture

HEALTH-PROMOTIVE BUILDING DESIGN

Researching and Designing
Buildings for Health Promotive Healthcare

PLANNING

- Core concepts
- Healing and Evidence-Based Design
- PhD Research
- Directives for the HPH networks and practitioners
- Current projects



Main concepts

- Health promotion
- Settings & the built environment
- Health promotive settings
- Health promotive hospitals and healthcare

Health promotion

*'...the process of **enabling** people to increase control over and to improve their **health**'*

(WHO, 1986A)



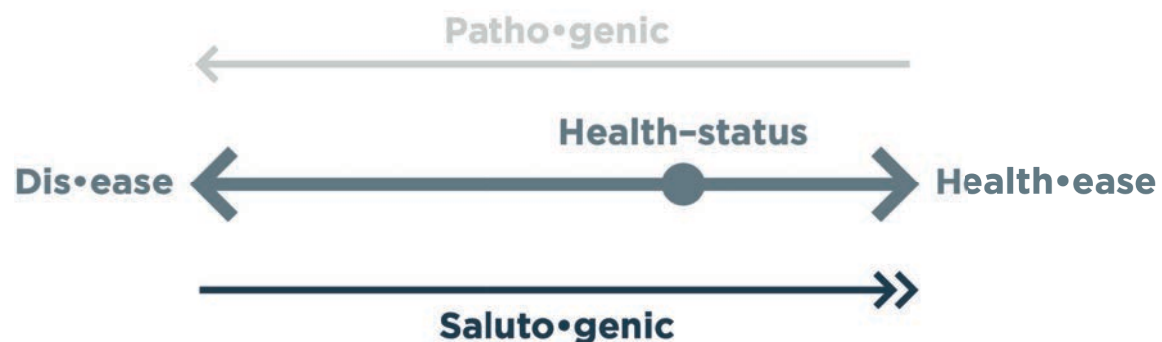
Health promotion criteria

- Holistic view of health



Health promotion criteria

- Holistic view of health
- Socio-cultural perspective



Health promotion criteria

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- Socio-cultural perspective
- Salutogenic orientation



Health promotion criteria

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- Equity and social justice



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- Holistic view of health
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- Participation by individuals and communities



Health promotion criteria

- Holistic view of health
- Socio-cultural perspective
- Salutogenic orientation
- Equity and social justice
- Participation by individuals and communities
- Intersectional collaboration



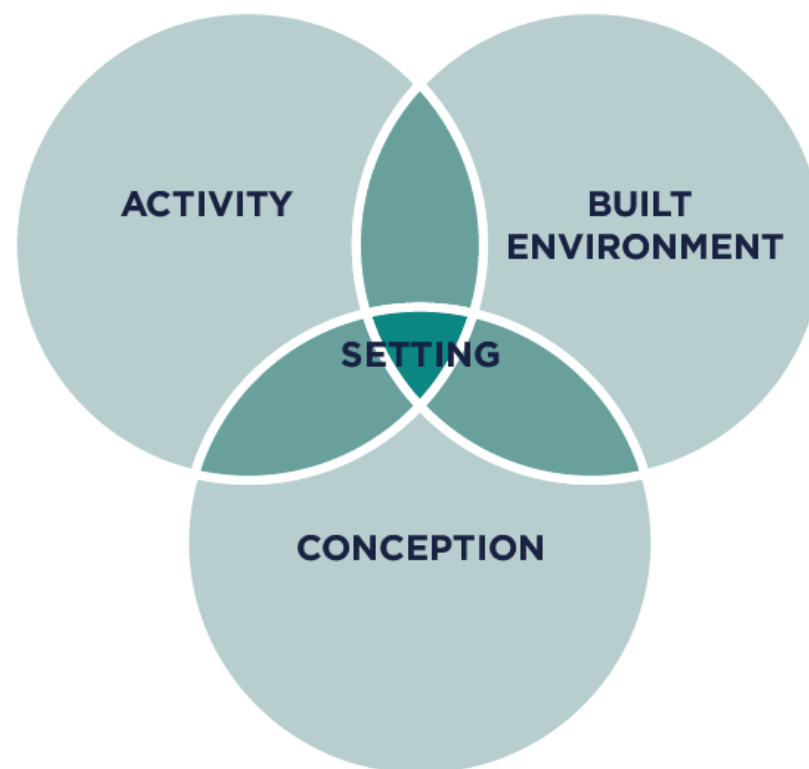
CHALMERS
UNIVERSITY OF TECHNOLOGY

Health promotive settings

(Built) Environment



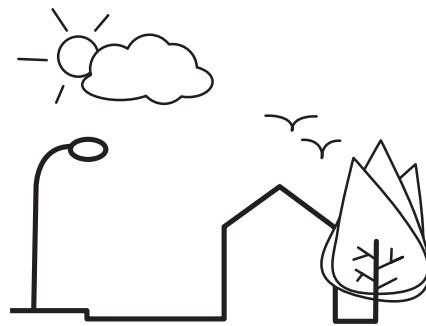
SETTING



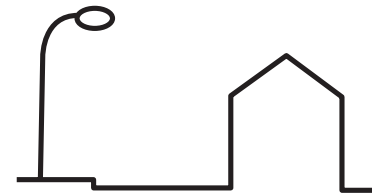
(Built) Environment



SETTING



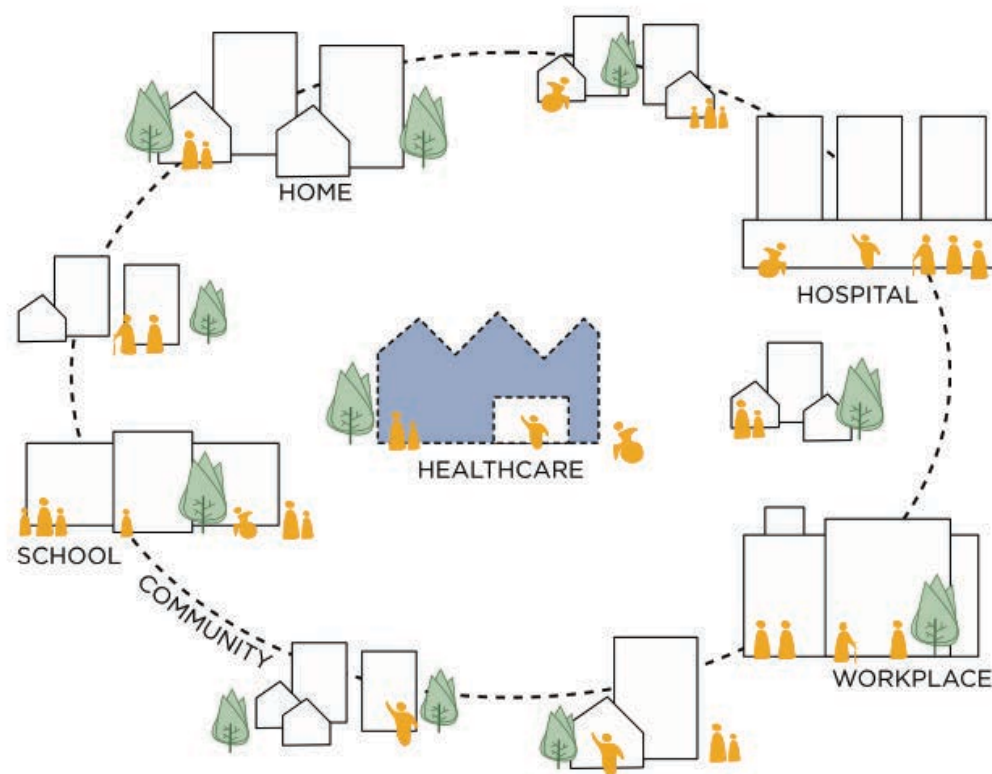
PHYSICAL ENVIRONMENT



BUILT ENVIRONMENT

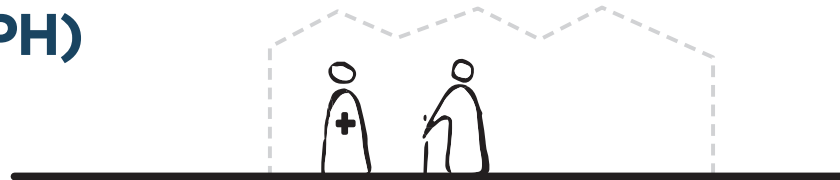


BUILDING DESIGN



Health promotive settings

Health Promotive Hospitals & Healthcare services (HPH)

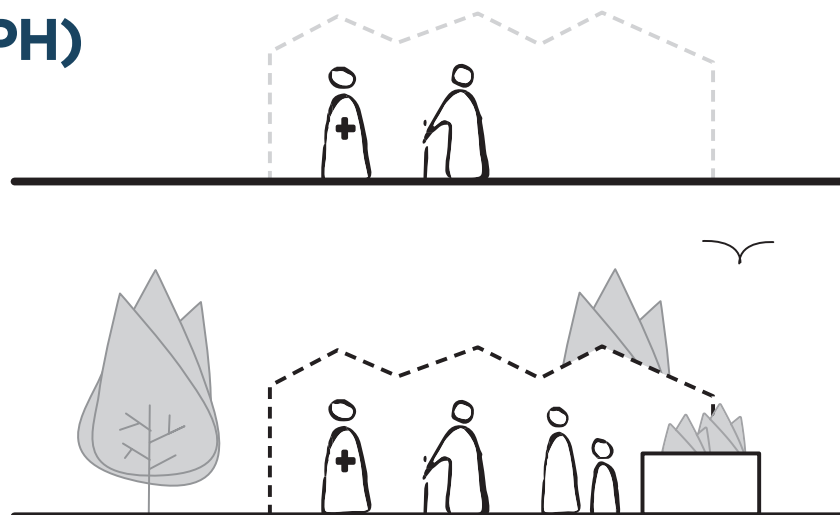


TRADITIONAL HOSPITAL

- treatment of **disease**



Health Promotive Hospitals & Healthcare services (HPH)



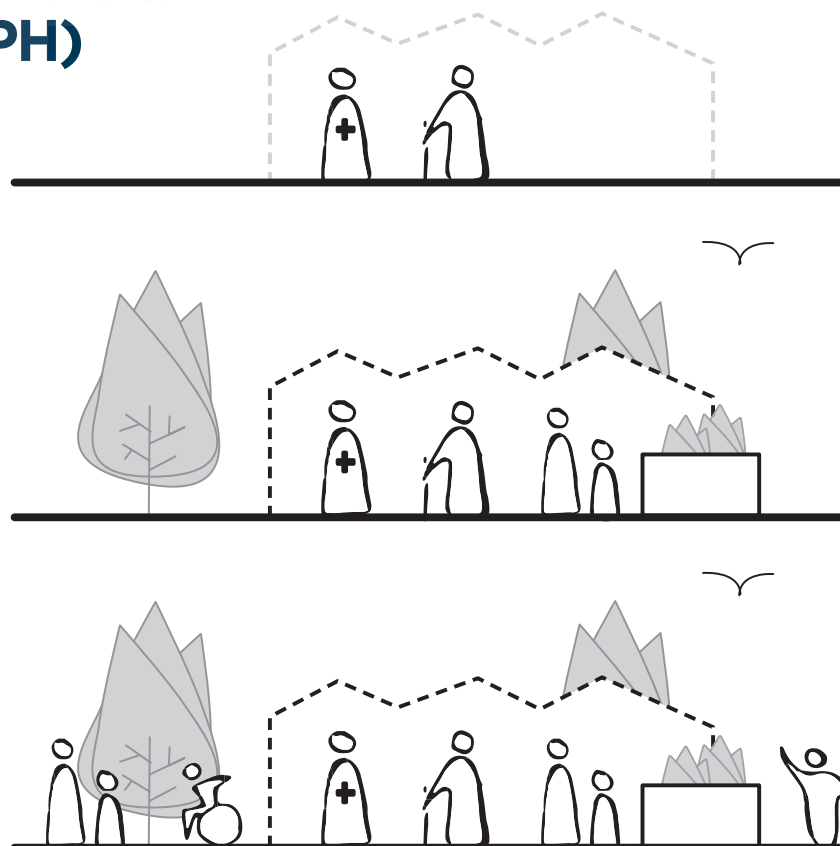
TRADITIONAL HOSPITAL

- treatment of **disease**

HEALTHY HOSPITAL

- treatment of **patients**
- protection health of all building users (i.e. patients, staff and visitors)
- protect the natural environment

Health Promotive Hospitals & Healthcare services (HPH)



TRADITIONAL HOSPITAL

- treatment of **disease**

HEALTHY HOSPITAL

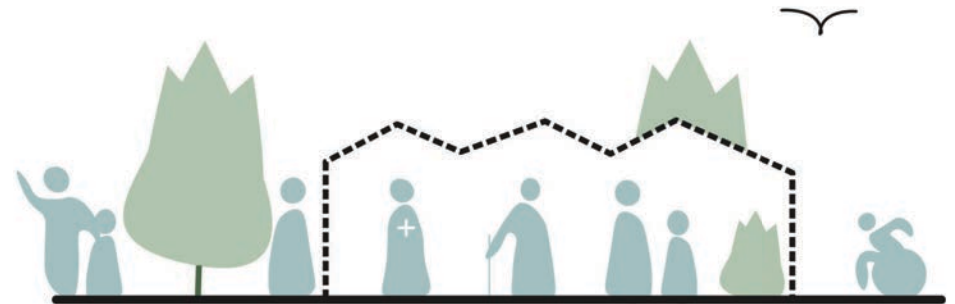
- treatment of **patients**
- protection health of all building users (i.e. patients, staff and visitors)
- protect the natural environment

HEALTH-PROMOTIVE HOSPITAL

- health of all building users (i.e. patients, staff, visitors)
- health of natural environment
- **community** health development

Health promotive (built) environment

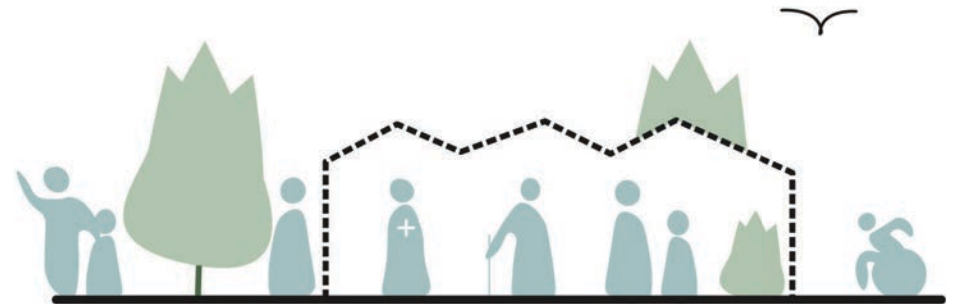
*'The **physical environment** of hospital buildings should support, maintain and improve the healing process'.*



Health promotive (built) environment

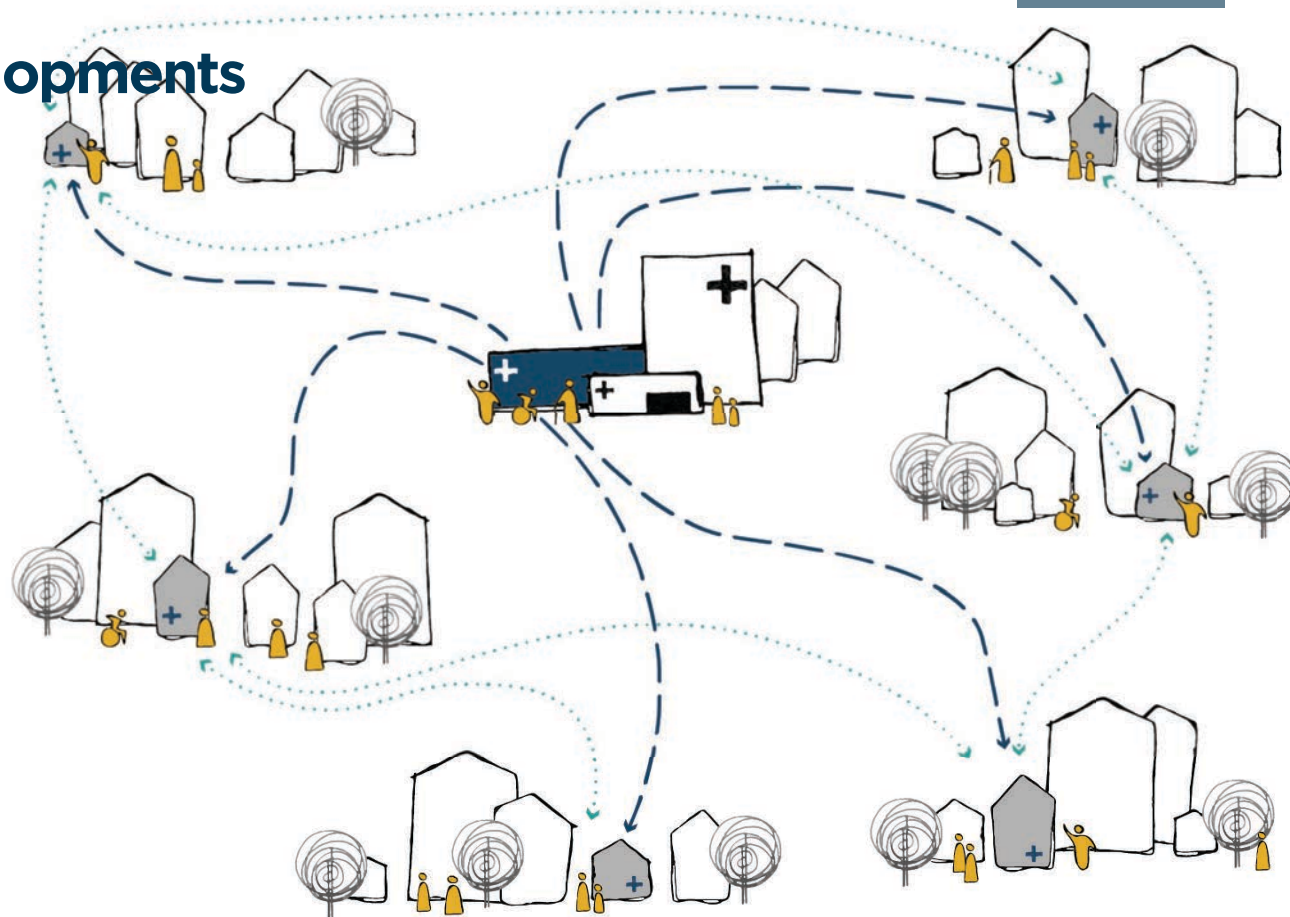
*'The **physical environment** of hospital buildings should support, maintain and improve the healing process'.*

*'Develops itself into a **health promoting physical environment**'*



Societal & healthcare developments

New demands for healthcare buildings



WAGENAAR, (2006); CARTHEY, CHOW, JUNG, & MILLS (2011); MELIN, (2012)

Healing & Evidence-Based Design (EBD)







AACHEN UNIVERSITY HOSPITAL



Healing Environments

A view from a window



"I love nature."



Healing Environments

A view from a window

- less pain medication
- faster recovery
- fewer complications



"I love nature."



Healing Environments



Healing Environments

Building design features

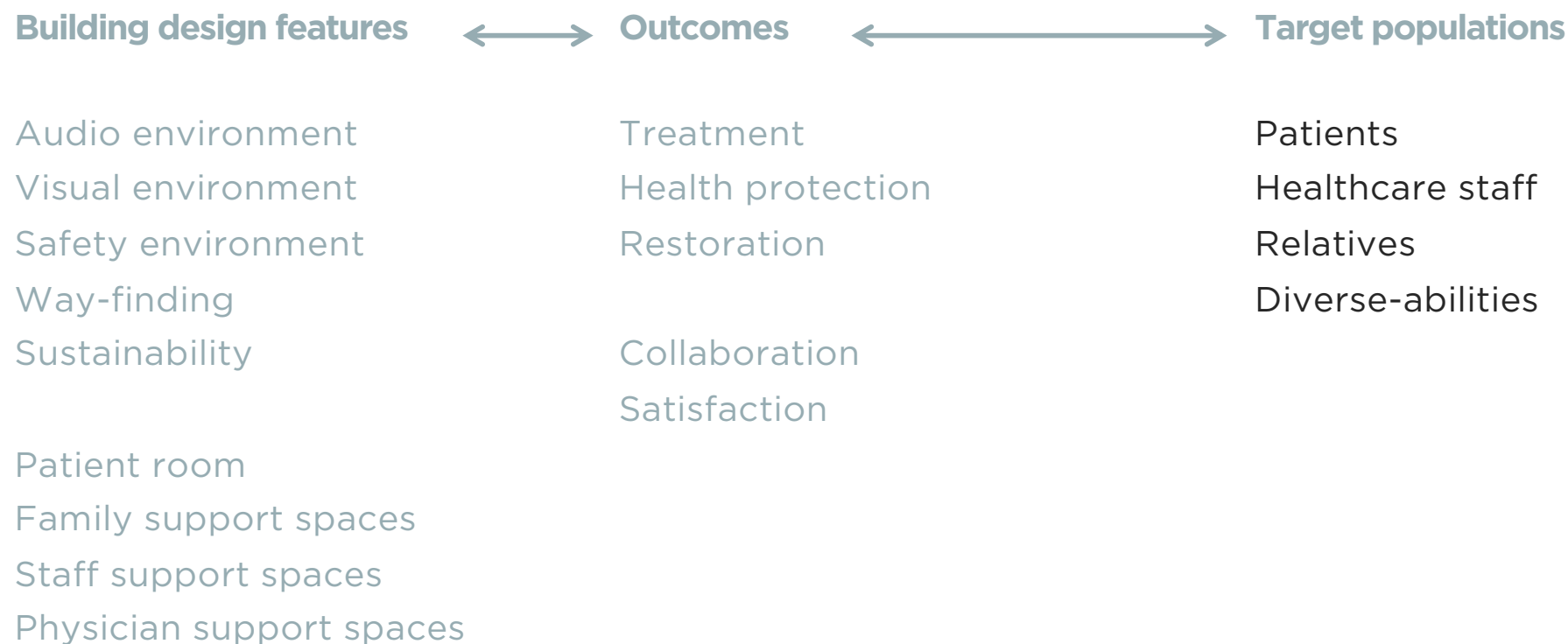
Audio environment	(noise, privacy, ..)
Visual environment	(views on art, nature, ..)
Safety environment	(sanitation, handrails..)
Way-finding	(layout, signage, ..)
Sustainability	(resource use, ..)
Patient room	(single/multi patient room, ..)
Family support spaces	(group seating, visitor bed, ..)
Staff support spaces	(ceiling lifts, ...)
Physician support spaces	(lighting, ...)



Healing Environments



Healing Environments



Healing Environments

Building design features ↔ **Outcomes** ↔ **Target populations**

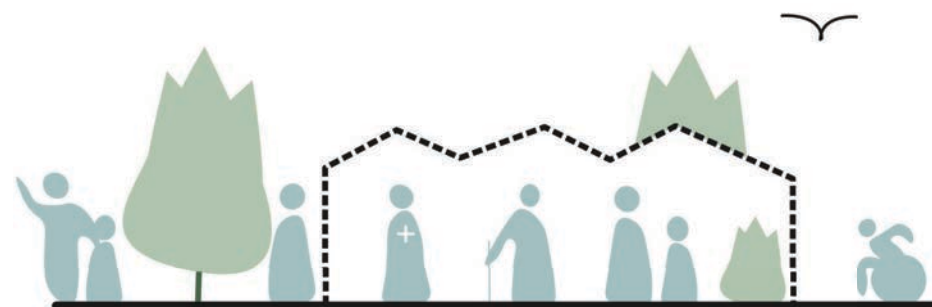
Audio environment
Visual environment
Safety environment
Way-finding
Sustainability

Treatment
Health protection
Restoration

Collaboration
Satisfaction

Patients
Healthcare staff
Relatives
Diverse-abilities

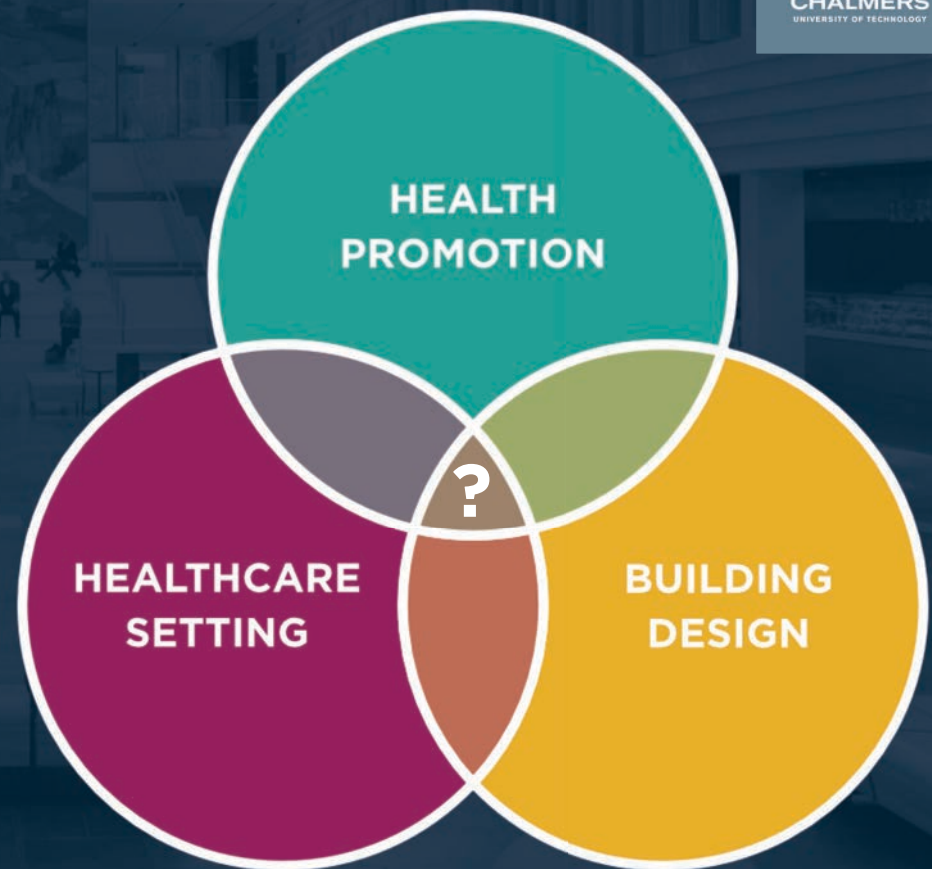
Patient room
Family support spaces
Staff support spaces
Physician support spaces



ULRICH, R. S., BERRY, L. L., QUAN, X., & PARISH, J. T. (2010)

PhD research

Aim: Exploring **health promotion** in **healthcare settings** from a **building design perspective**.





**Literature
perspective**



**Building design
practice perspective**



**HPH network
perspective**



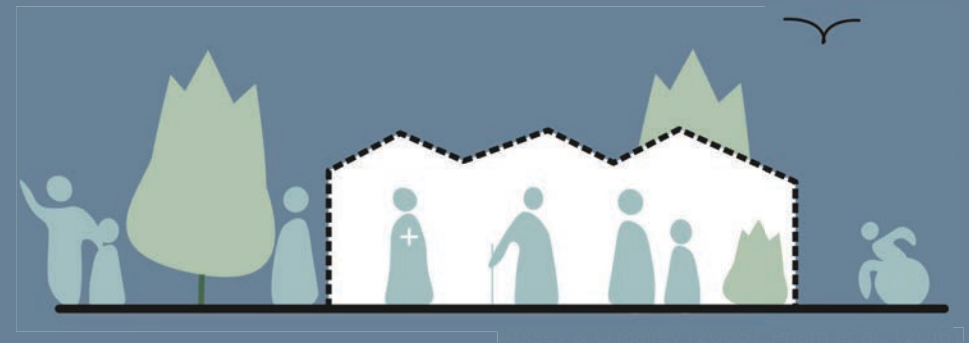
**HPH organisation
perspective**





1. Literature - scoping review

Health promotion, Healthcare & Building design



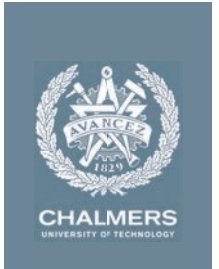


Findings

Study 1

Different HPH perspectives

- Healthy behavior
- Health equity
- Salutogenic



Findings

Study 1

Different HPH perspectives

- **Healthy behavior** – health & active design
- **Health equity** – inclusive, child friendly, age friendly design
- **Salutogenic** – restorative, stress reduction,



Health promotive building design?

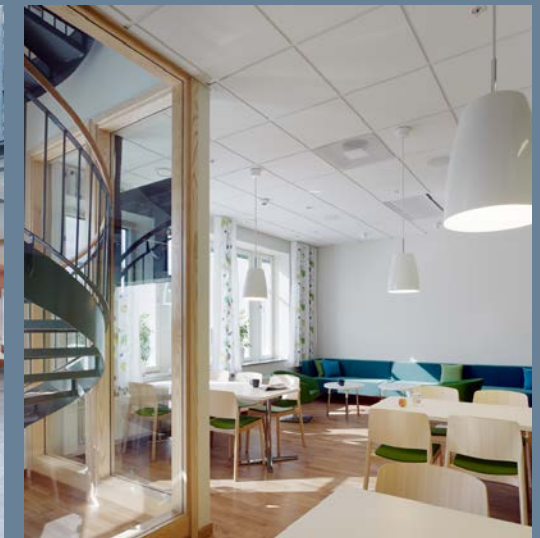
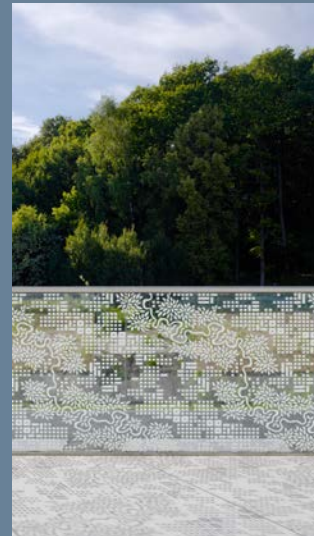


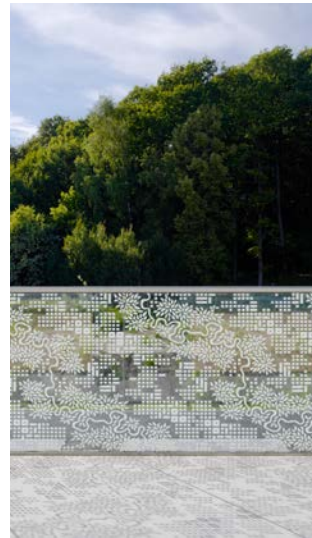


2. Building design practice

Setting & sample

Angered Närsjukhus, Gothenburg, Sweden
in August 2015





Angered Närsjukhus

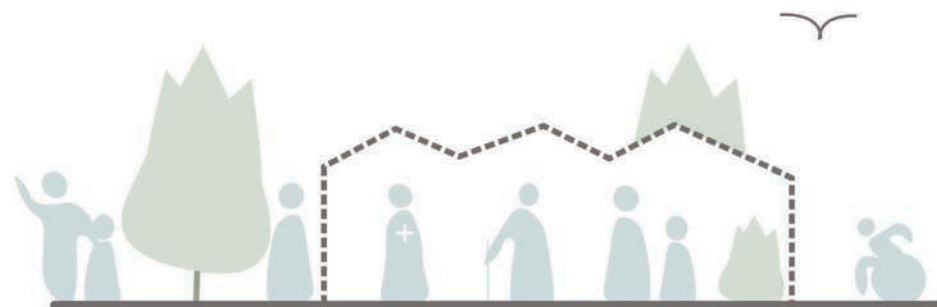


Findings

2. The built environment in HPH

Building design for health promotion

- Accommodate HPH activities

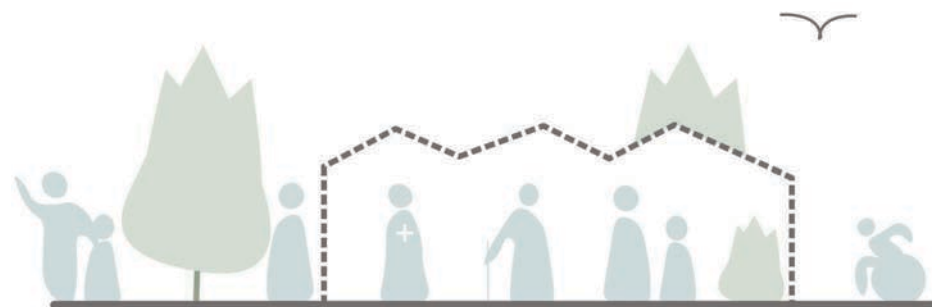


Findings

2. The built environment in HPH

Building design for health promotion

- Accommodate HPH activities
- Support HPH processes

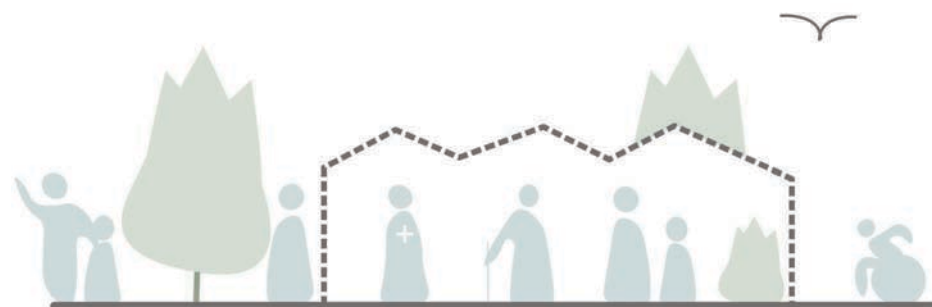


Findings

2. The built environment in HPH

Building design for health promotion

- Accommodate HPH activities
- Support HPH processes
- Symbolise HPH values

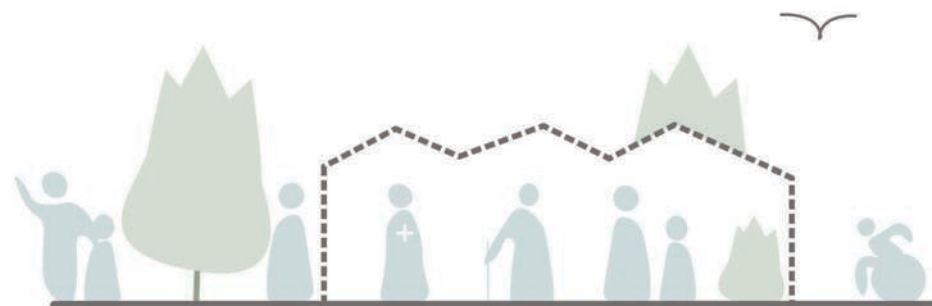


Findings

2. The built environment in HPH

Building design for health promotion

- Accommodate HPH activities
 - Support HPH processes
 - Symbolise HPH values
-
- Participatory design process





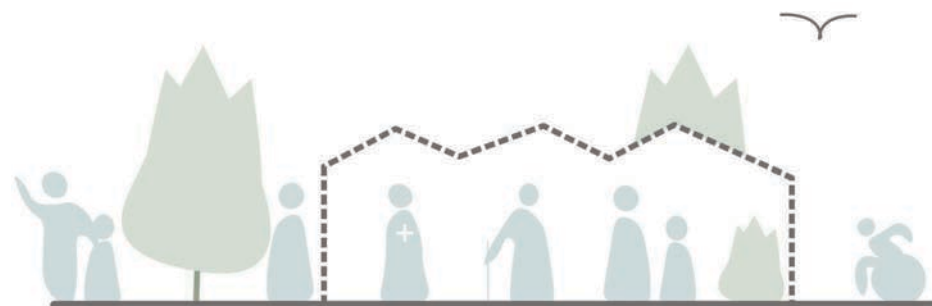
3. Swedish HPH network



Findings

2. The built environment in HPH

Adressed in Swedish HPH network & organisation

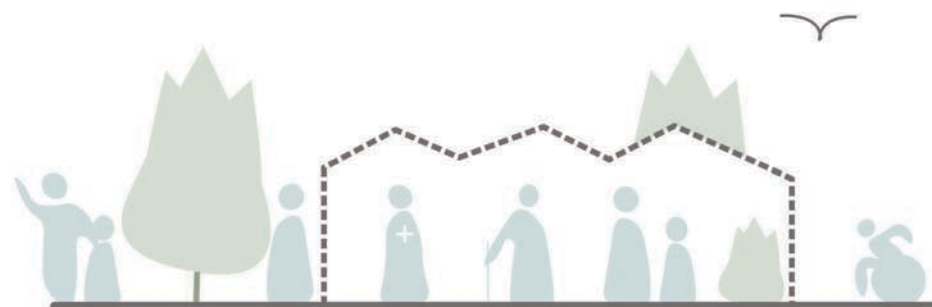


Findings

2. The built environment in HPH

Adressed in Swedish HPH network & organisation

- Not explicit in the HPH strategies
- Not in the HPH work groups



Findings

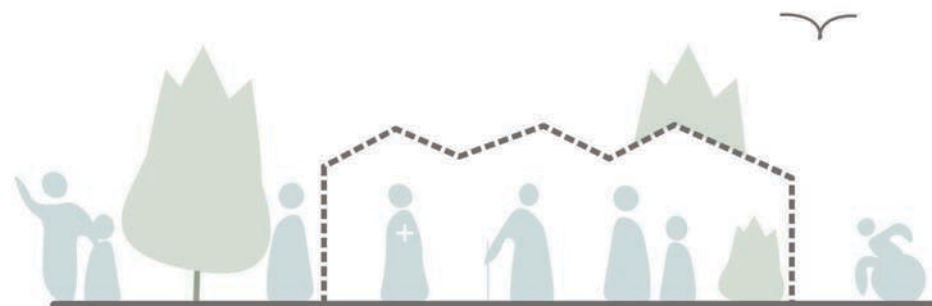
2. The built environment in HPH

Adressed in Swedish HPH network & organisation

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Theme group

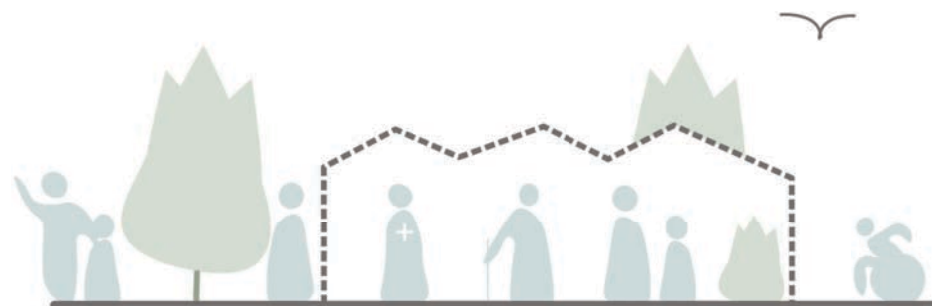
- Too much information
- Not focused on health promotive outcomes



Findings

2. The built environment in HPH

Built environment / physical environment / setting?

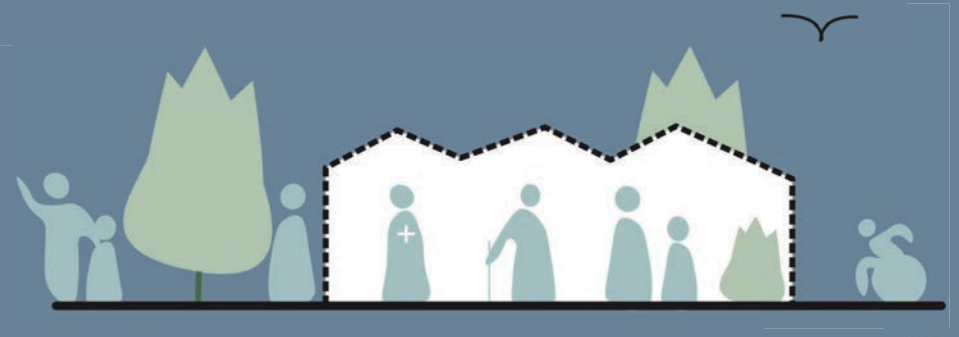




4. Swedish HPH organization

Setting & sample

HPH organisations
- main region representative

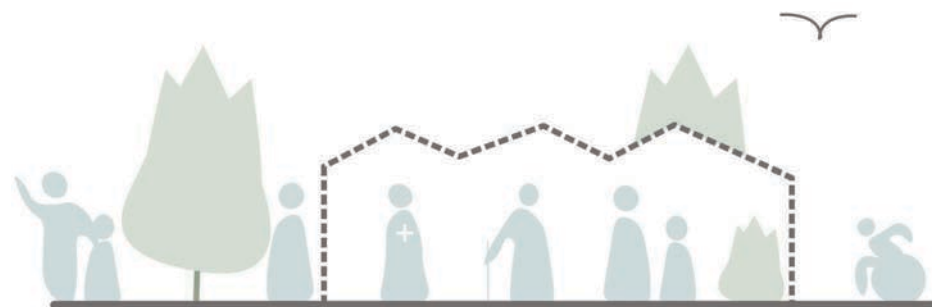


Findings

Swedish HPH organization

Little knowledge of the HPH standards

- Not promote in the Swedish Network.



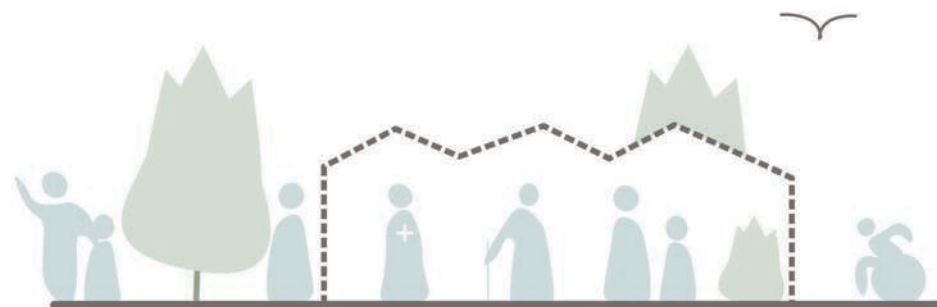
Findings

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- Not promote in the Swedish Network.

The HPH standards should:
Pay attention to practical
implementation in the context

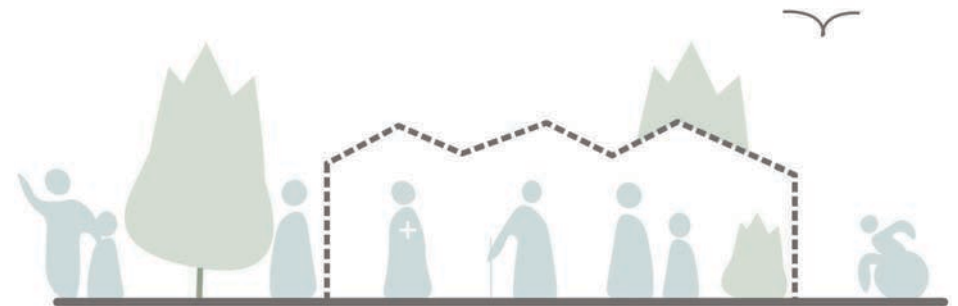


Findings

Swedish HPH organization

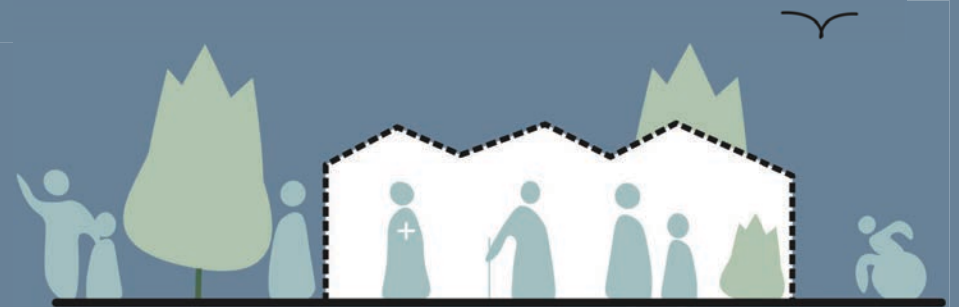
Limited knowledge on role of built environment

- Openly say they have limited knowledge
- Involvement in building design project not utilized for HPH





Combined Findings





Findings

Defining health promotion

- 4 definitions found



Findings

Health promotion is:

*'a process devoted to empowering (vulnerable) **individuals and communities** to take control over the **factors** that **positively** influence their **health and quality of life** including their social, natural and **built environment**'.*

Findings

Diverse perspectives

- wellbeing
- healthy behaviours
- health equity
- empowerment

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- cure
- restoration
- illness prevention
- health protection

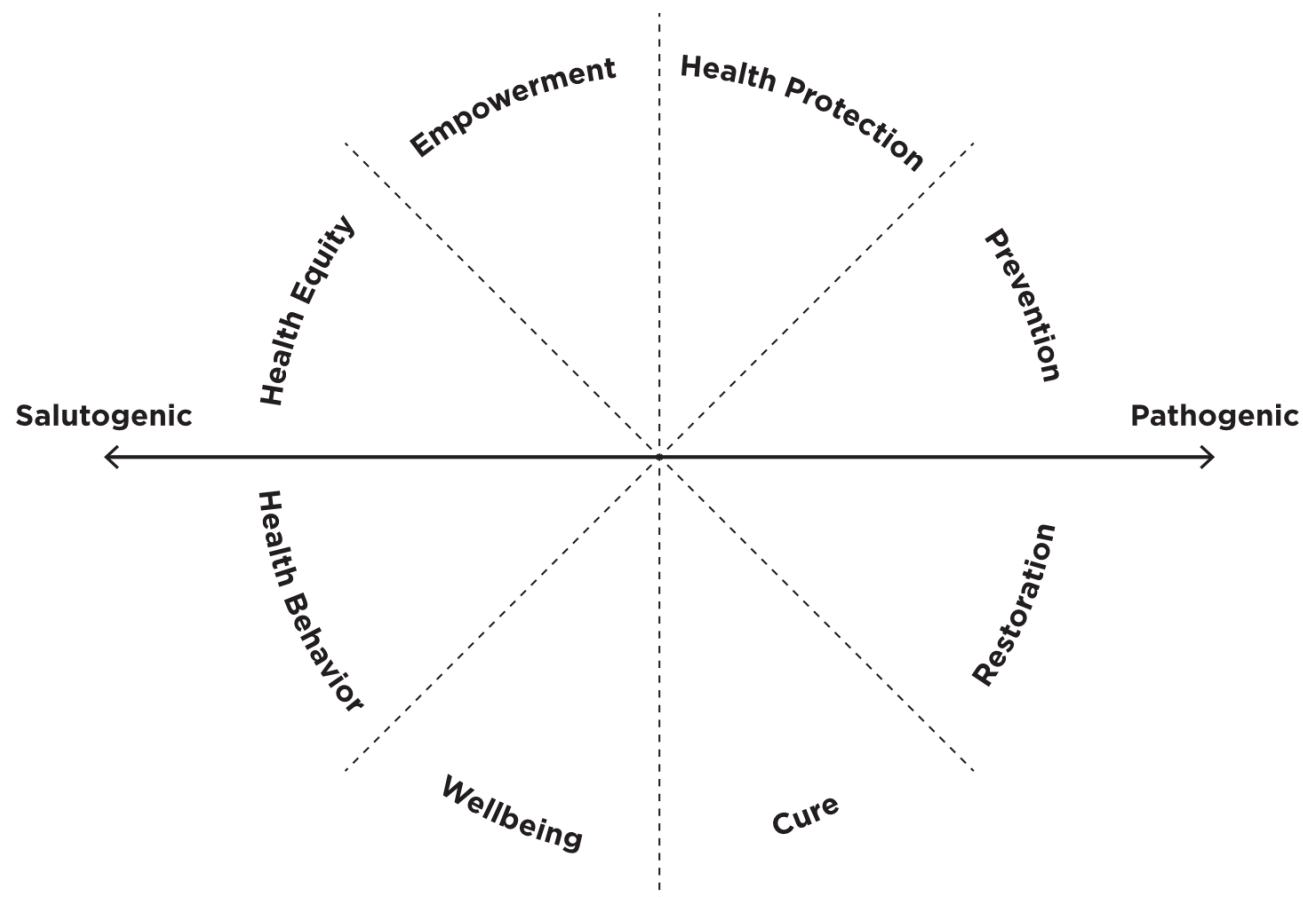
Findings

Diverse perspectives

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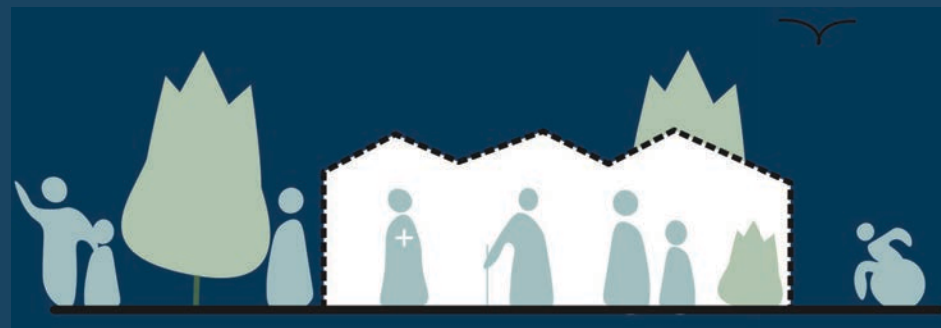
Findings

Diverse target populations

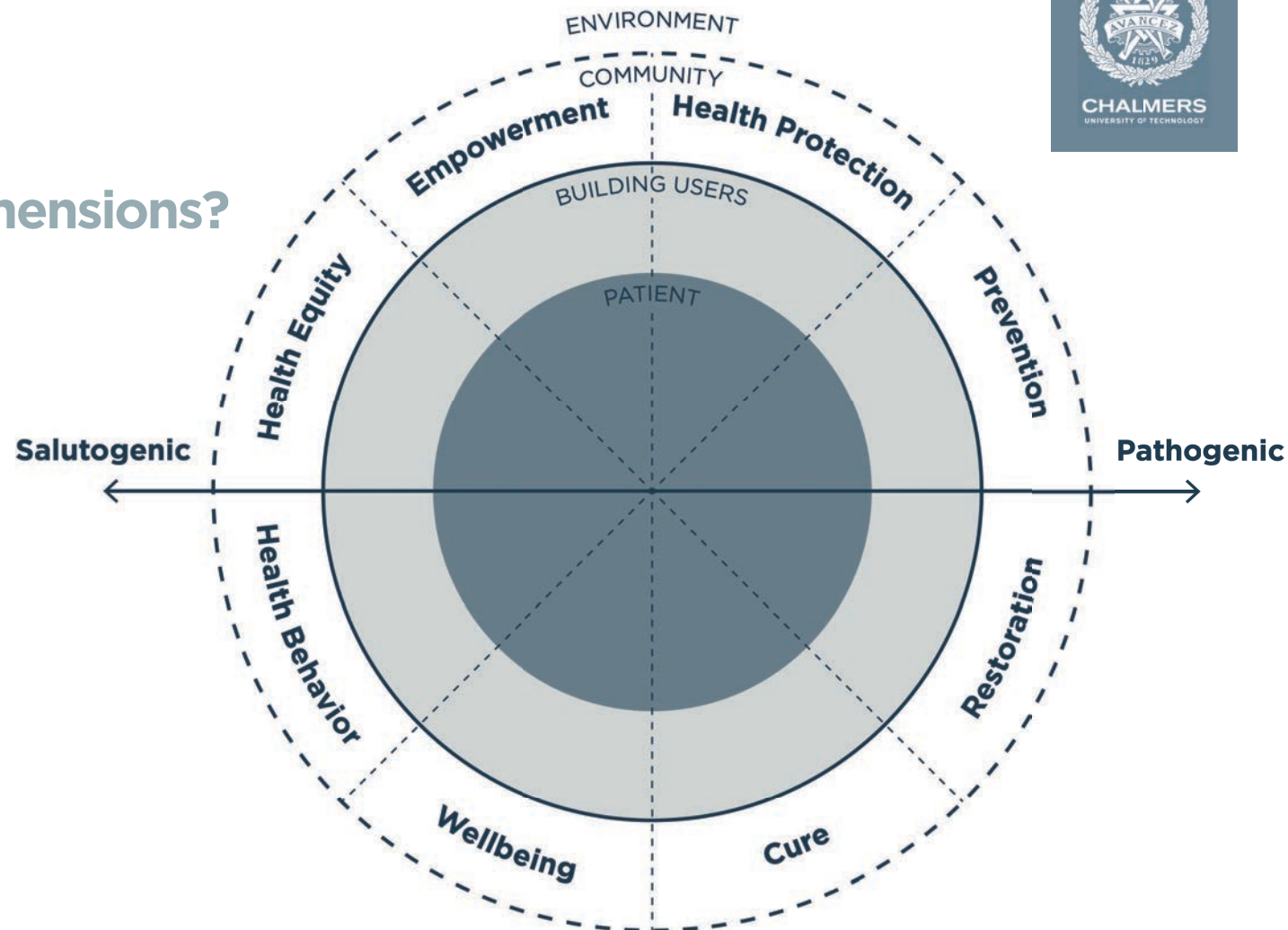
- Patient
- Staff
- Relatives
- People with diverse-abilities
- Local populations
- (Management)

‘Some politicians wanted a normal hospital, but the idea [of Angered Hospital] disappears without a focus on the community’

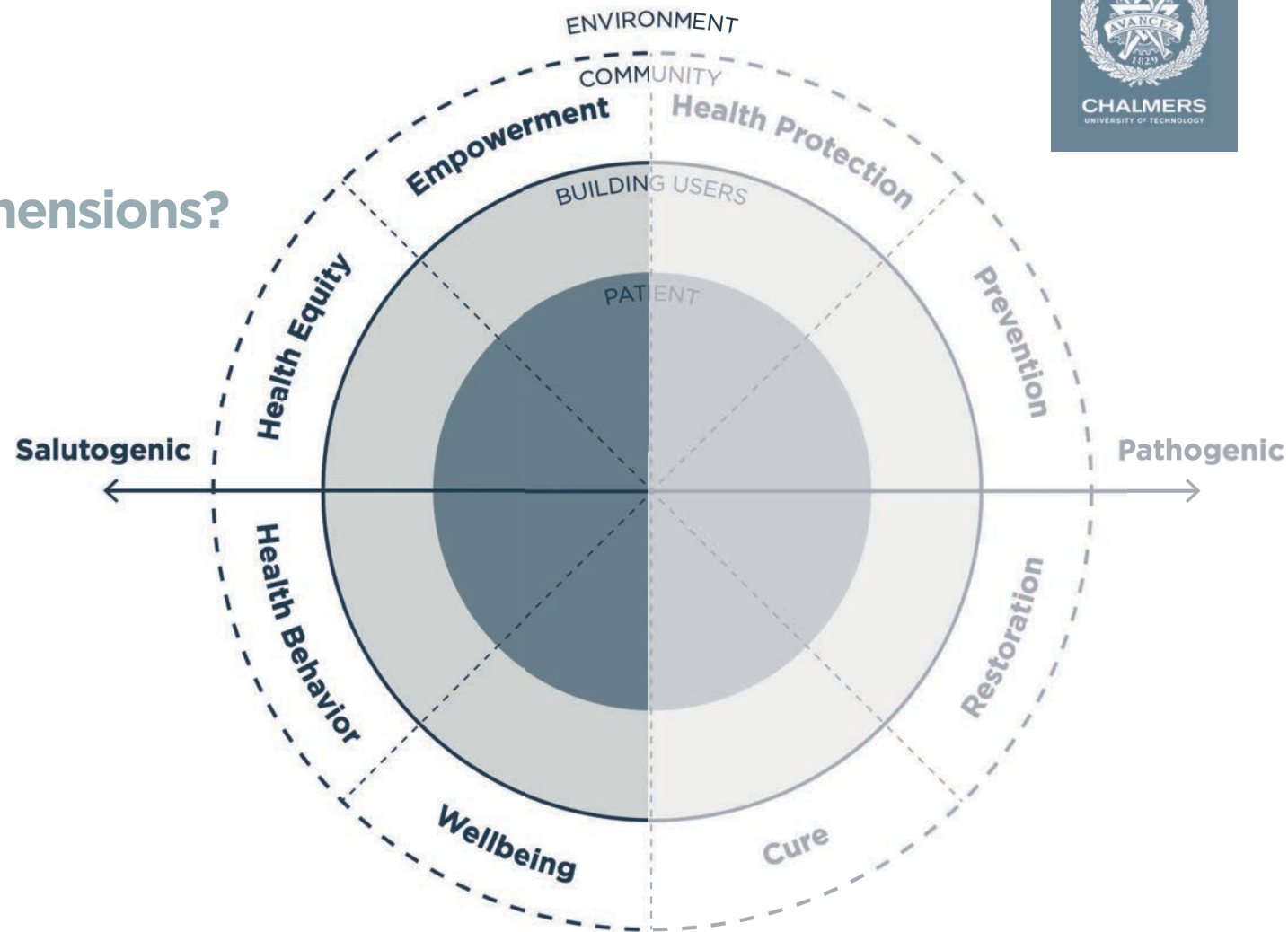
– participant study 2



Health promotion dimensions?



Health promotion dimensions?

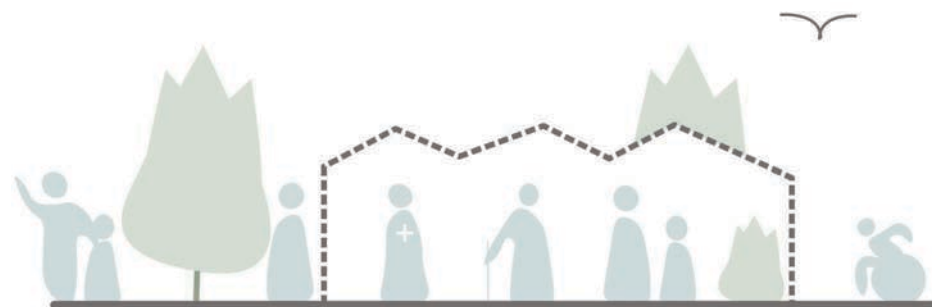


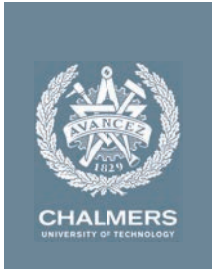
What can we learn?

Health-Promotive Building Design

Places for HPH interventions

- Patient environment
- Staff environment
- Healthcare environment
- Supportive environment
- Circulation environment
- Outdoor environment





What can we learn?

Health-Promotive Building Design

Design strategies

- Implementing research
- Involving diverse stakeholders
- Developing supportive documentation
- Considering the environmental impact



'Big hospital are always under construction, and we are building completely new [departments; it] would be natural for [health promotion professionals] to be involved'

– INFORMANT FROM THE SWEDISH HPH NETWORK.



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Specific Directives for the HPH networks and practitioners

HPH Building Design



Implications

Recommendations

- Debate, propose clarify definitions
- Incorporate built environment in HPH strategies
- Pay attention to Salutogenic, communities, vulnerable populations
- Focus on trans-disciplinary collaboration
- Discuss, select & share knowledge



Implications

Recommendations

- Debate, propose clarify definitions
- Incorporate built environment in HPH strategies
- Pay attention to Salutogenic, communities, vulnerable populations
- Focus on trans-disciplinary collaboration
- Discuss, select & share knowledge

Research

- Other regions
- Evaluation of interventions
- Health promotive research methods



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Current projects



Current Projects

Precedent Analysis



AARHUS UNIVERISTY HOSPITAL,
AARHUS,DK



ERASMUS MC,
ROTTERDAM, NL



NEW KAROLINSKA SOLNA,
STOCKHOLM, SE



ST. OLAV HOSPITAL,
TRONDHEIM, NO

Current Projects

SSO Observations tool

SSO Projects Admin

Variable

direct sunlight reach

☐ n/a
 ☐ no
 ☐ yes

ceiling light

☐ dim
 ☐ off
 ☐ on

individual light use

☐ desk lamp
 ☐ localised lighting
 ☐ none

background noise

☐ high
 ☐ low
 ☐ medium
 ☐ none

door position

☐ ajar
 ☐ closed
 ☐ n/a
 ☐ open

window position

☐ closed
 ☐ n/a
 ☐ open

blinds/curtains position

☐ closed
 ☐ n/a
 ☐ open

General

individual light use

☐ bed light
 ☐ desk lamp
 ☐ localised lighting
 ☐ none

general light on in empty room

☐ n/a
 ☐ no
 ☐ yes

Clothing

Users

Users: types of users

☐ medical staff (doctors)
 ☐ none
 ☐ nursing staff
 ☐ other
 ☐ patient
 ☐ visitor(s)

Save checkpoint Skip checkpoint



Current Projects

HPH design Tools



‘There is new research [on HPH] all the time, and we really need to be looking into that when we are building new buildings’

– INFORMANT FROM THE SWEDISH HPH NETWORK.

HEALTH-PROMOTIVE BUILDING DESIGN

exploring perspectives on building design for
health promotion in healthcare settings

Thank you!

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