



Aalto University
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Adaptable healthcare facilities through modular solutions

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Agenda

Motivation and Background

Methodology

Findings

Conclusions and future research

Motivation for research

Healthcare is changing rapidly:
facilities become outdated quickly

- health technology, care processes

Executing changes in hospital
environments is difficult: evacuation
and thorough retrofit projects

- Patient safety, high-tech spaces, compact
layout design

Projects are unique, complex and long
with questionable lifecycle value due to
continuous change



Background

Part of Aalto University's research project Healing and Modular Healthcare Facilities

Focus on retrofits of existing Finnish and Swedish hospital facilities

Researched problems and solutions similar elsewhere: an extrapolated and practical approach

Methodology

Employing the pragmatic philosophy of the Constructive Research Approach: general and scalable solutions

Literature review focused on open building, adaptability, modularity

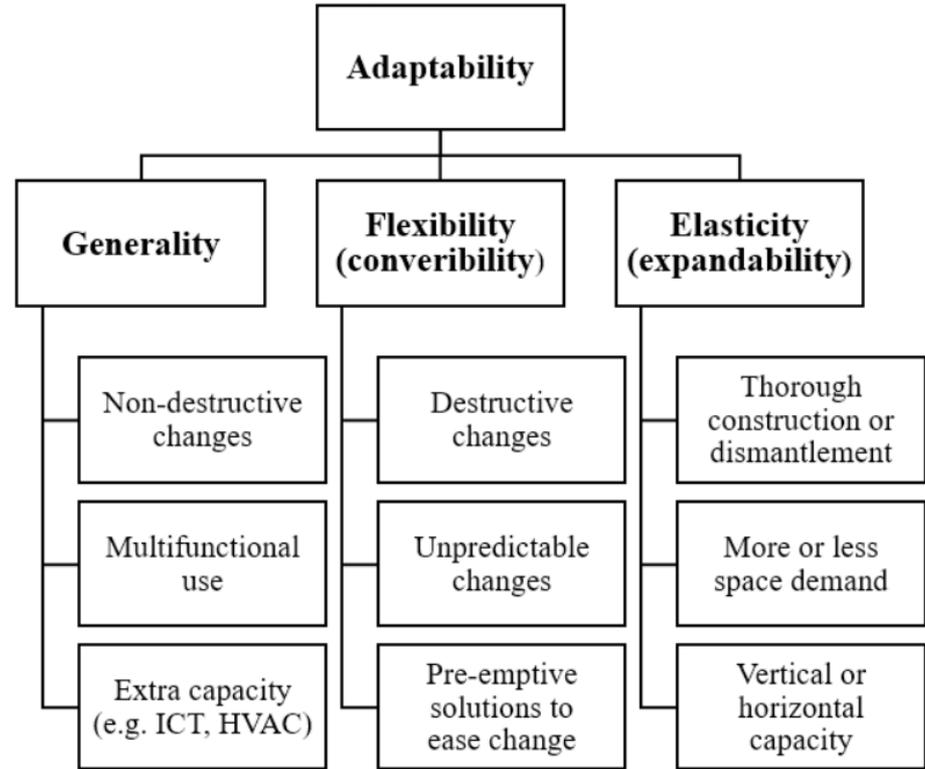
28 semi-structured interviews with architects, property managers, project managers, design coordinators in Finland and Sweden

- Interview themes incl.: hospital retrofit projects; the state of existing hospital facilities in general; adaptability (what, why and how?); means to improve the quality of projects

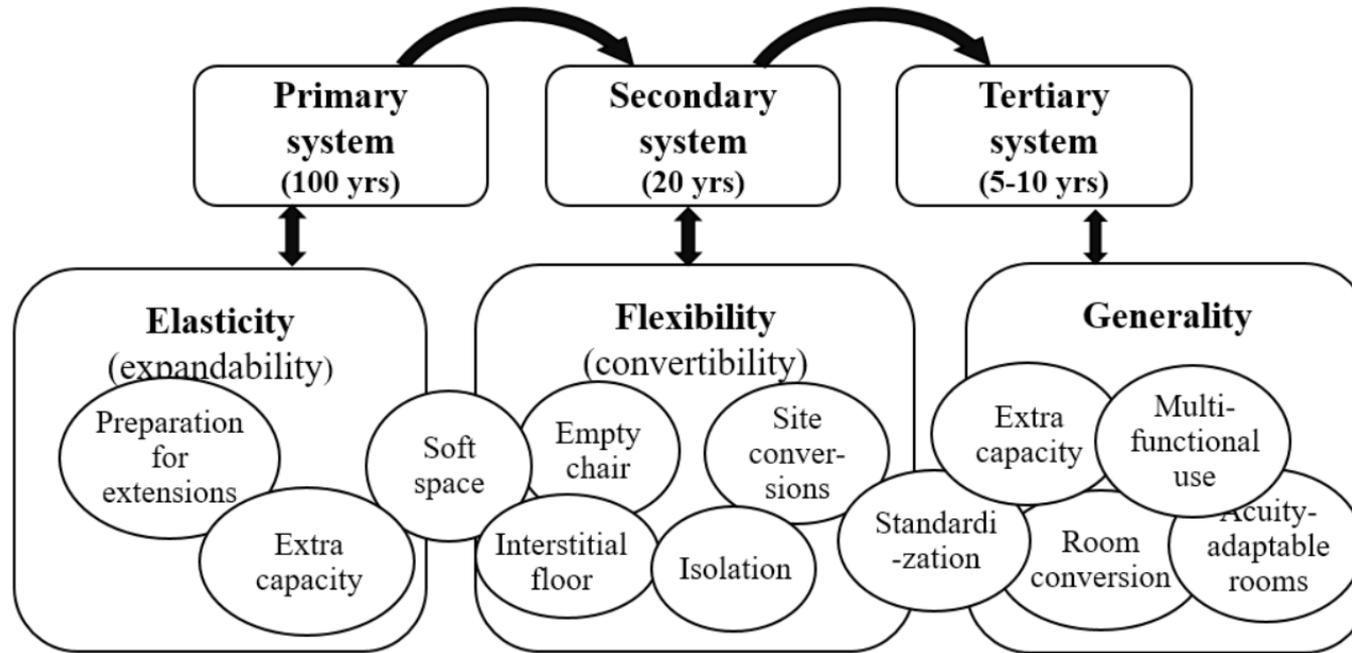
Adaptability is the most important design strategy

Operational efficiency may be maintained throughout the lifecycle using different adaptability strategies

Vague or non-existent definitions of adaptability obstruct its utilization



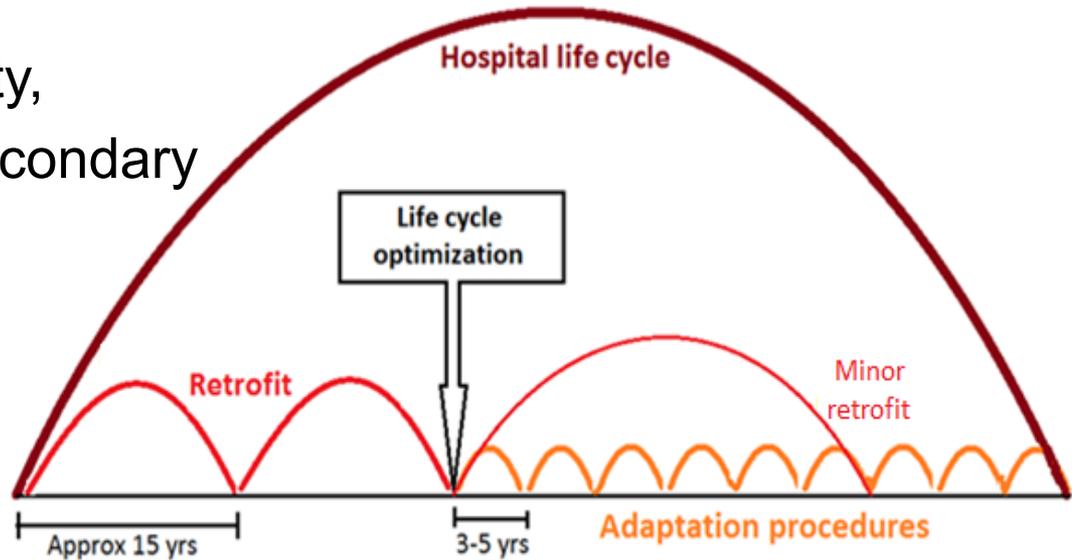
Connections between adaptability categories and open building system levels



Conclusions and recommendations

Initial investment costs in hospital construction, are secondary to operational efficiency, therefore focus should be on lifecycle costing

Investments in adaptability, especially towards the secondary system of open building, are worthwhile



Suggestions for future research

The cost of hospital operation: direct and indirect costs

- Comparing the cost of disturbance in operations vs. construction costs

A process for analysing the probability of change needs and potential in different spaces

- Service for creating a roadmap for adaptability

Thank you for your time!