



AT THE BORDER: BETWEEN RESEARCH AND PRACTICE

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SWEDEN



white











WRL
WhiteResearchLab

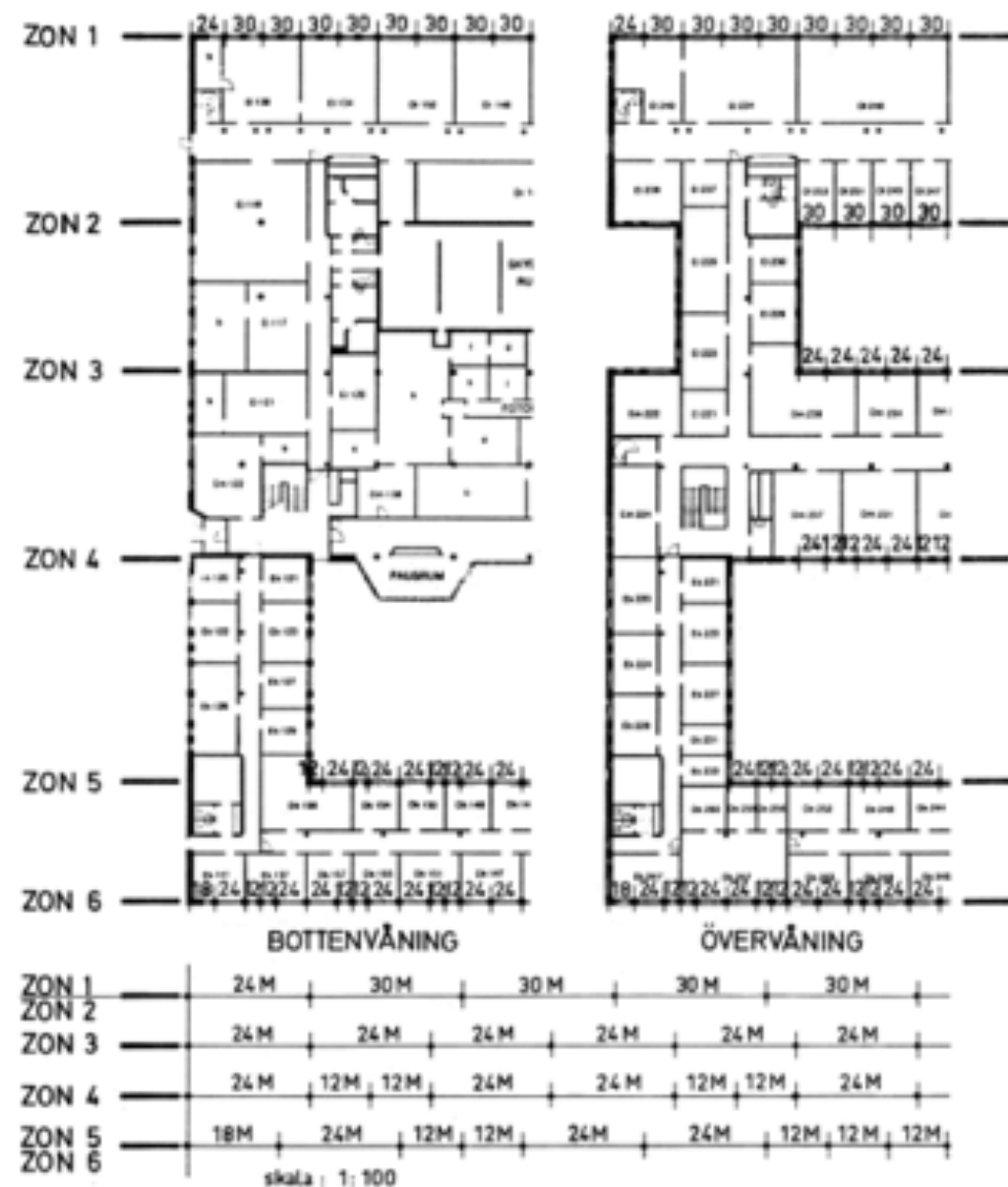
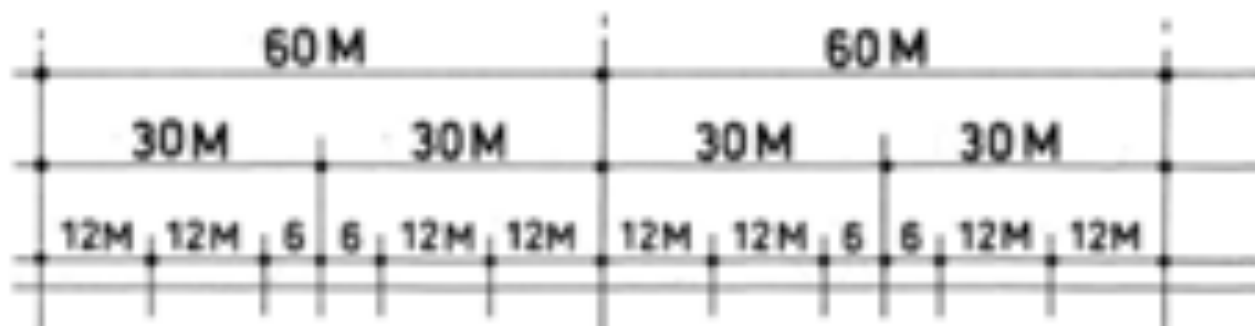
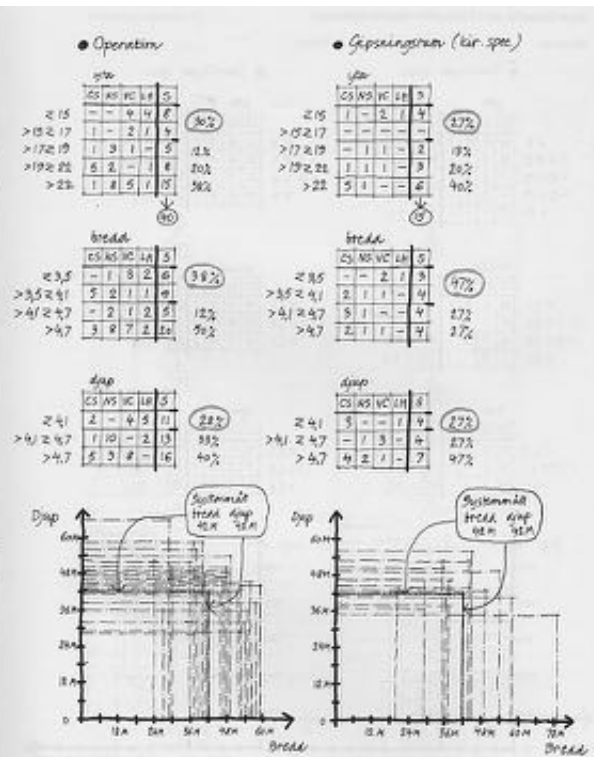
Decentralized tax financed healthcare
21 regions and county councils

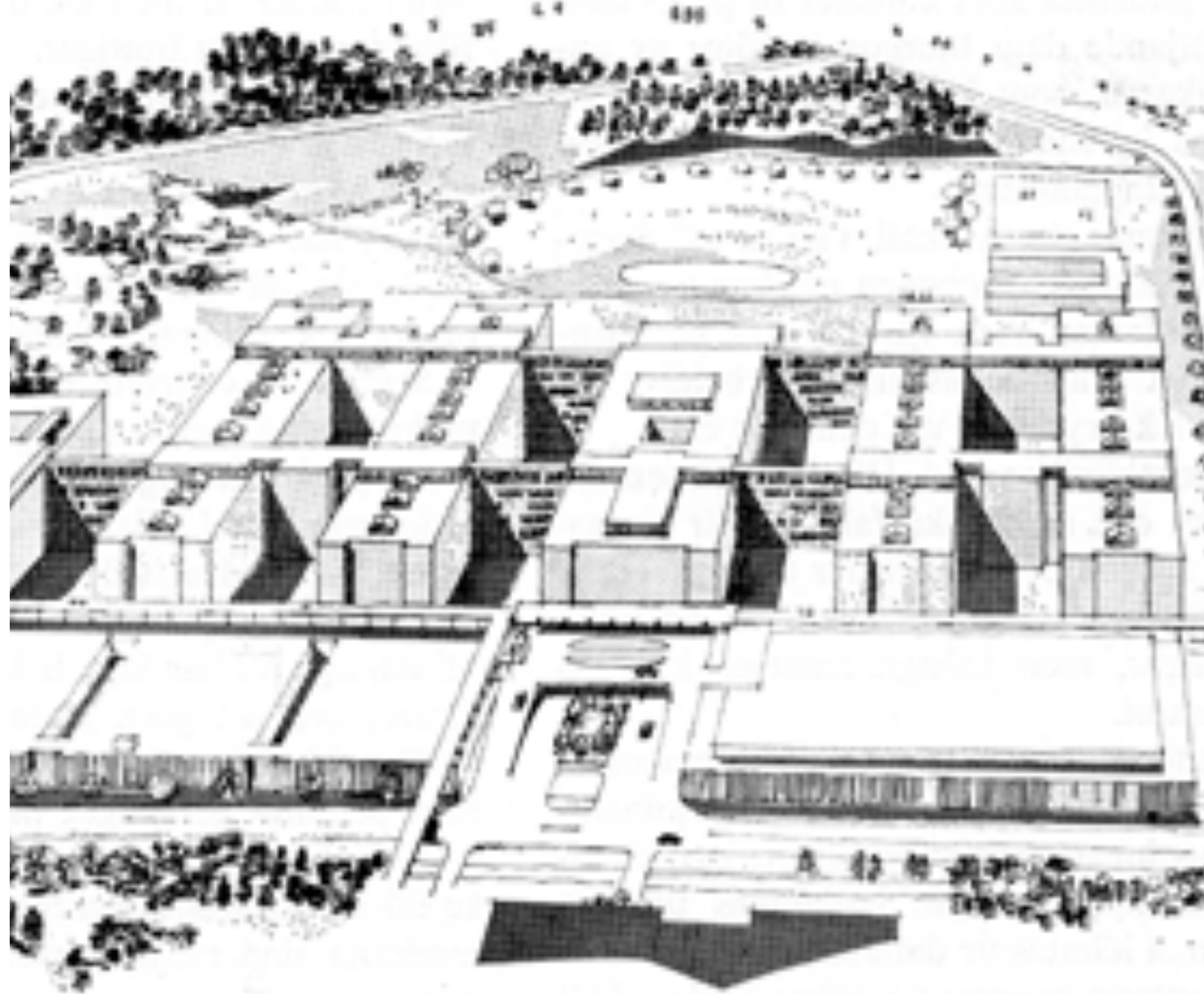


Spri

råd 5.16 april 1973

MÅTTREKOMMENDATIONER
för rum inom sjukvårdsanläggningar





Architecture research

"The discussion on post-modernism as well as post-structuralism were highly influential on the development of architectural theory."

(Woyseth & Nilsson 2011)

Healthcare building
design



Decentralization
Unique solutions

Forum

vårdbyggnad



CHALMERS

CVA – Centre for Healthcare Architecture





KUNSKAPSBYGGANDE INOM PTS
kring bygg, drift och förvaltning av sjukvårdslokaler



PROGRAM FÖR TEKNISK STANDARD

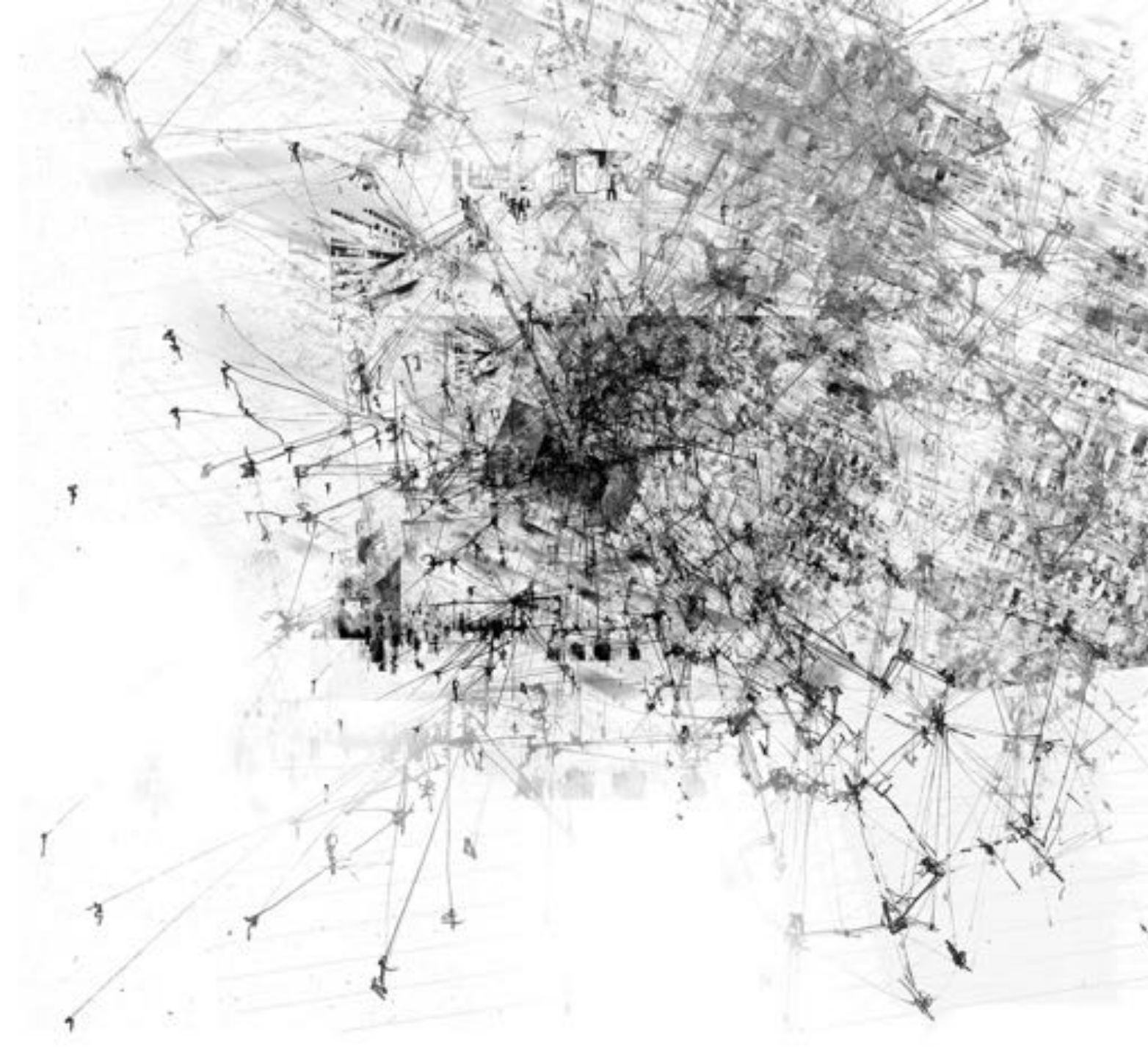




Concept programs



FUTURE PROOFING APPROACHES IN HEALTHCARE BUILDINGS



design process 10-20 years



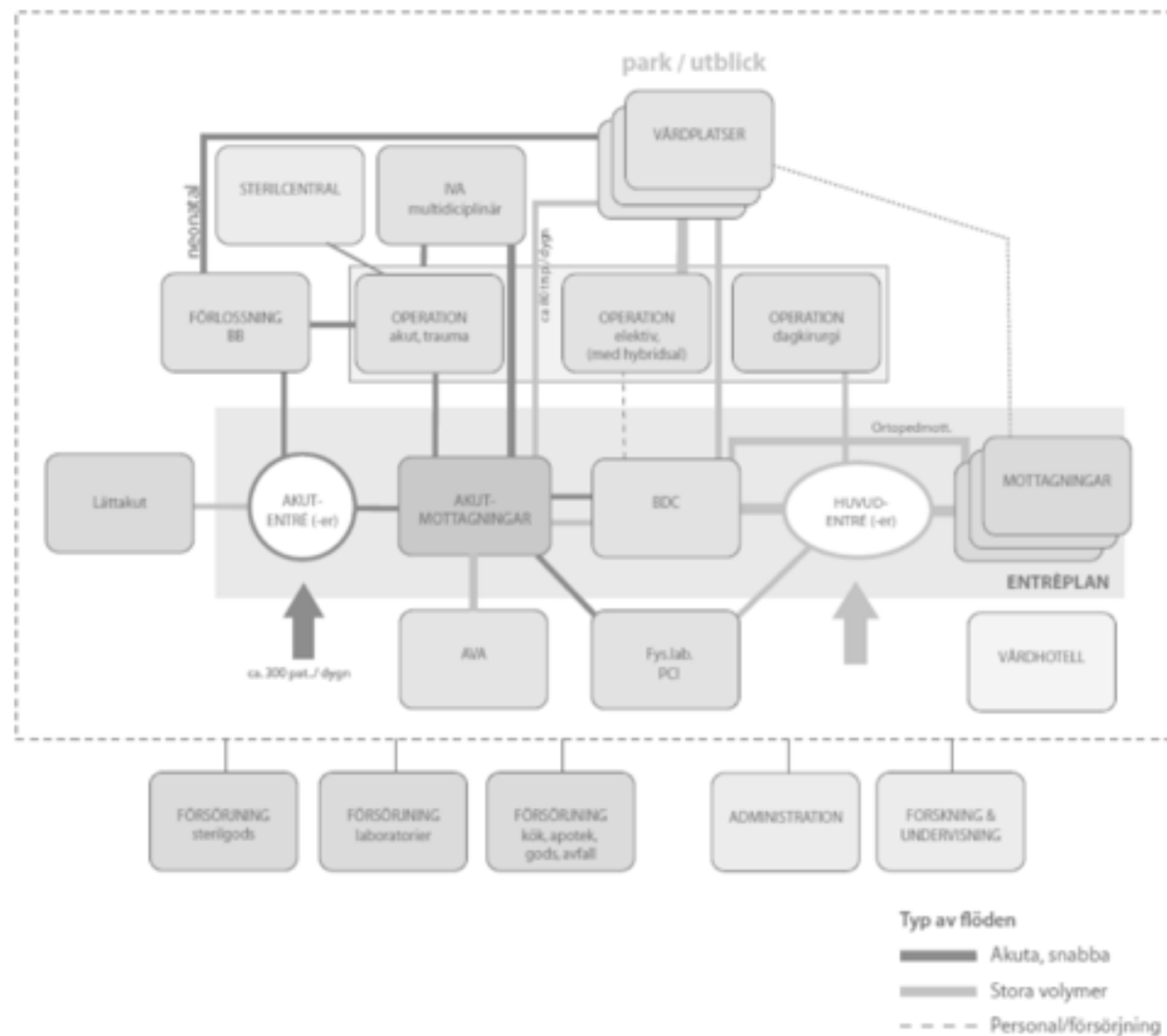
Latour, Bruno, and Albena, Yaneva. "Give me a gun and I will make all buildings move: An ANT's view of architecture." *Explorations in architecture: Teaching, design, research* (2008): 80-89.

Utvärtes-Afdelningen



Invärtes-Afdelningen



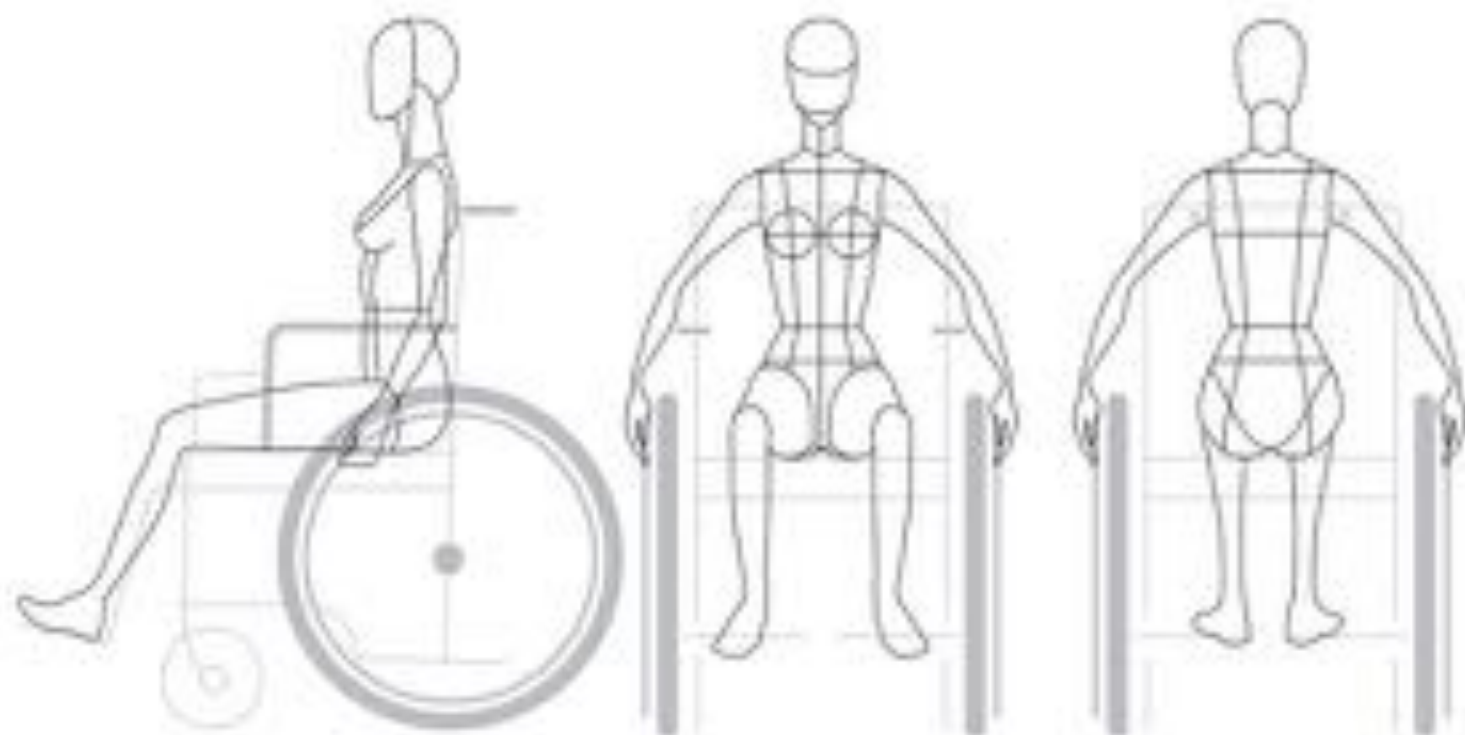












www.pretatemplate.com

EKSO 2020

EKSO 2020 is a concept robotic suit for 2020. It is designed for paraplegic person or wheelchair users who lost freedom to journey for their life. This exoskeleton helps people to make active motions beyond the wheelchairs.

For the better than current exoskeleton, EKSO 2020 was designed with automatic remote-controlled system for easier and faster application system.





"flexibility and generality"



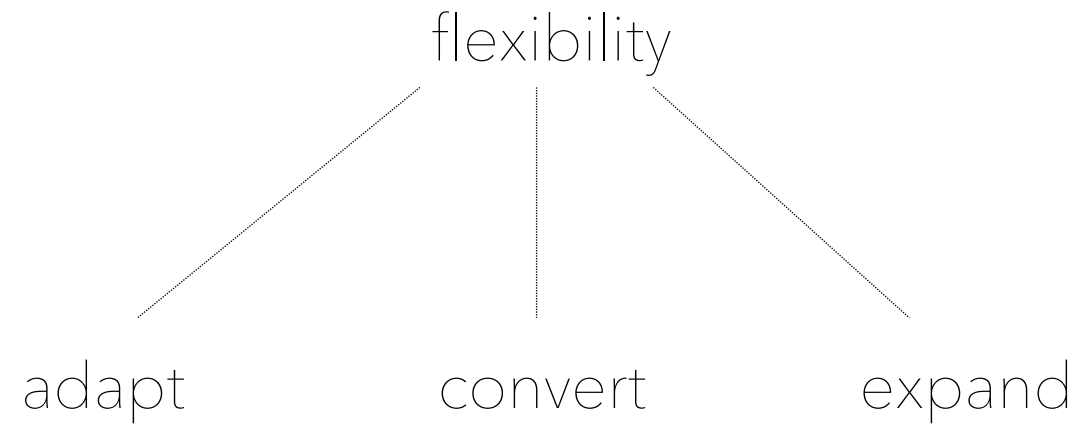
is it possible to define
flexibility?

- a literature review

flexibility in four different hospital projects



Olsson, Nils OE, and Geir K. Hansen. "Identification of critical factors affecting flexibility in hospital construction projects." *HERD: Health Environments Research & Design Journal* 3.2 (2010): 30-47.



Pati, Debajyoti, Tom Harvey, and Carolyn Cason. "Inpatient unit flexibility design characteristics of a successful flexible unit." *Environment and Behavior* 40.2 (2008): 205-232.

flexibility

DIVIDABLE
MODULAR **ALTERABLE**
ADAPTABLE **EXTENDIBLE**
DISMOUNTABLE **EXCHANGEABLE**
UNIVERSAL **DISCONNECTABLE**
MULTIFUNCTIONAL
PARTITIONABLE **EXPANDABLE**
REARRANGABLE **SHAPEABLE**
COMBINING **MOVABLE**
ZONEABLE **EJECTABLE**

partitionability

adaptability

extendibility

multifunctionality

Shahu, Rashmi, Ashok K. Pundir, and L. Ganapathy. "Development of Tool for Measuring Flexibility of Building Construction Projects." *EuroEconomica* 2 (31) (2012): 136-145



de Haan, Johannes, et al. "Framing flexibility: Theorising and data mining to develop a useful definition of flexibility and related concepts." *Futures* 43.9 (2011): 923-933.



vs.
adaptability
change along



flexibility – new appearance
after change

vs.



robustness – same appearance
after change



is it possible to define
flexibility?



NO!

?

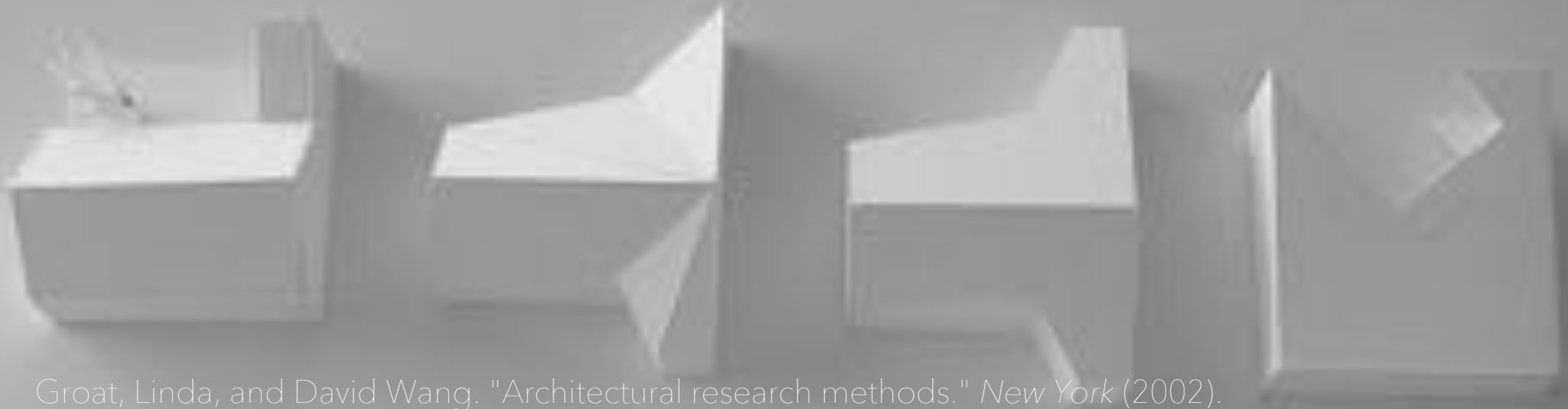
future proofing

terminology

- adaptable
- flexibility
- robustness
- universal
- etc...

From flexibility to where can change occur?

1. change can occur in the design process
 - team, concept, costumer



Groat, Linda, and David Wang. "Architectural research methods." *New York* (2002).

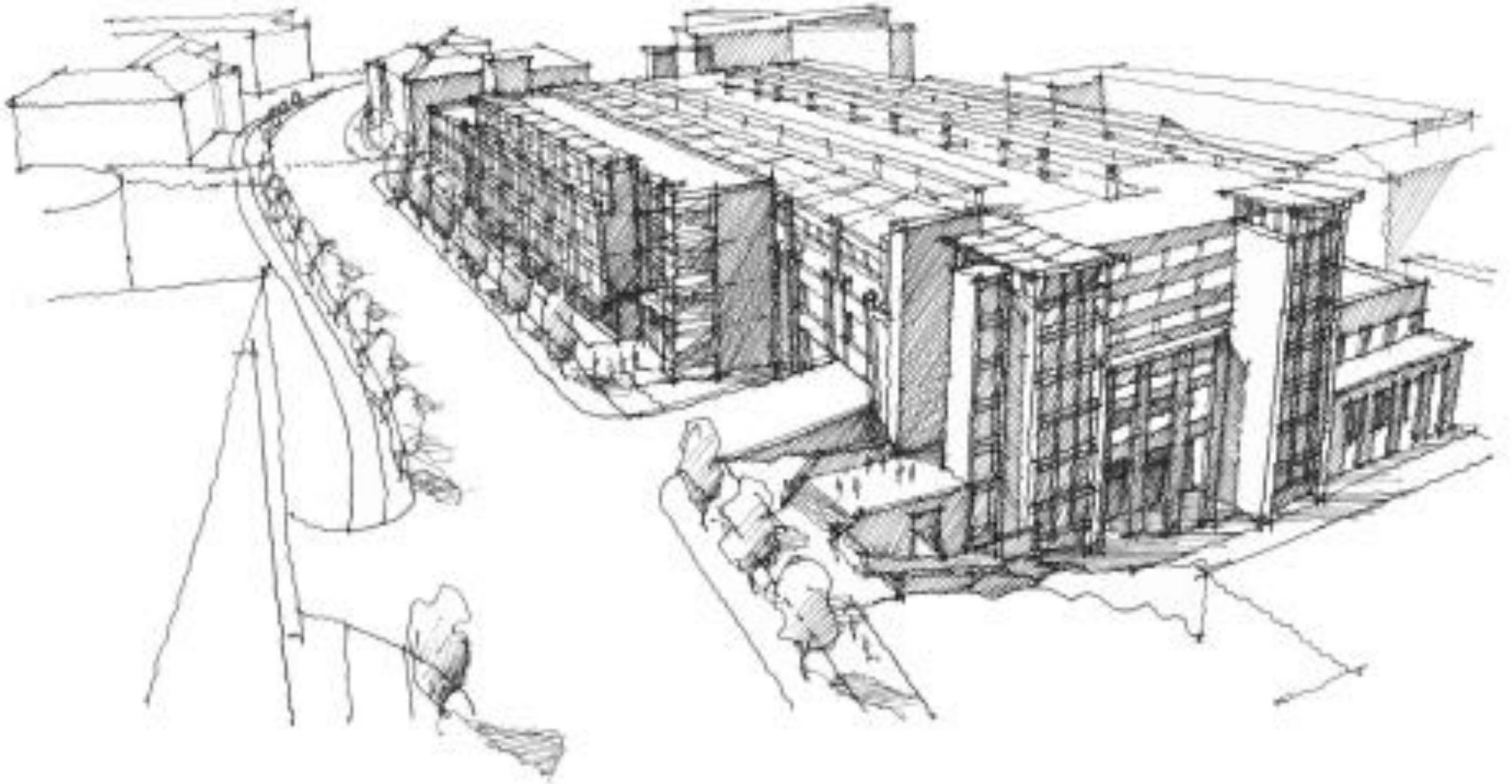


2. change can occur in the building process

VOLUME-FLEXIBILITY
MACHINE-FLEXIBILITY
EXPANSION-FLEXIBILITY
PRODUCT-FLEXIBILITY
PRODUCTION-FLEXIBILITY
PROCESS-FLEXIBILITY
ROUTING-FLEXIBILITY

Gupta, Yash P., and Sameer Goyal. "Flexibility of manufacturing systems: concepts and measurements." *European journal of operational research* 43.2 (1989): 119-135.

3. change can occur in the physical characteristics





City



Building



Wing

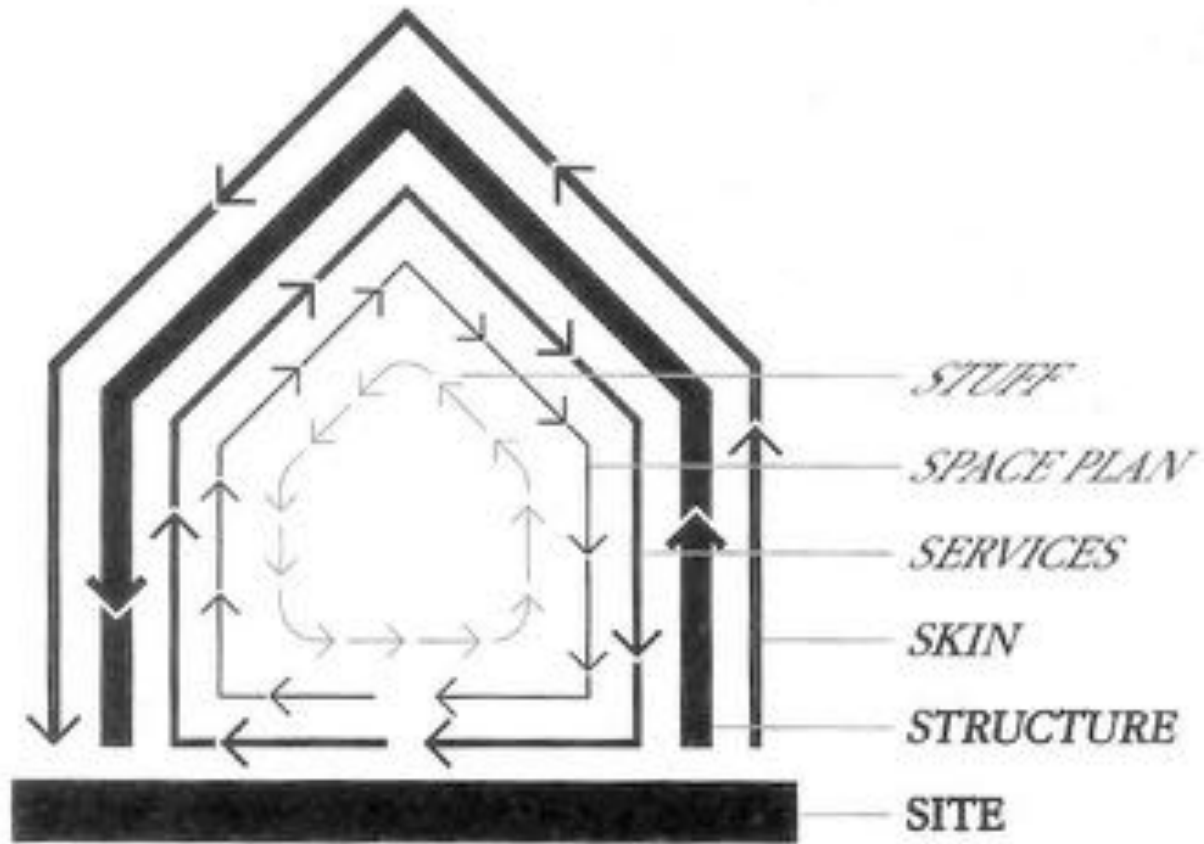


Floor



Unit

Geraedts, Rob P. "Design for Change; Flexibility Key Performance Indicators." *1st International Conference on Industrialised, Integrated, Intelligent Construction (I3CON)*. 2008.



Brand, Stewart. *How buildings learn: What happens after they're built*. Penguin, 1995.

4. change can occur in the organisation / flow of a building



patients

season variations

outbreaks

emerging infections

from daily care to isolated care

/Dr Peter Lanbeck

Specialist in infectious diseases

staff

department collaborations

team constellations

workloads

scheduling

sick leave/parental leave



?

future proofing



Tack!

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