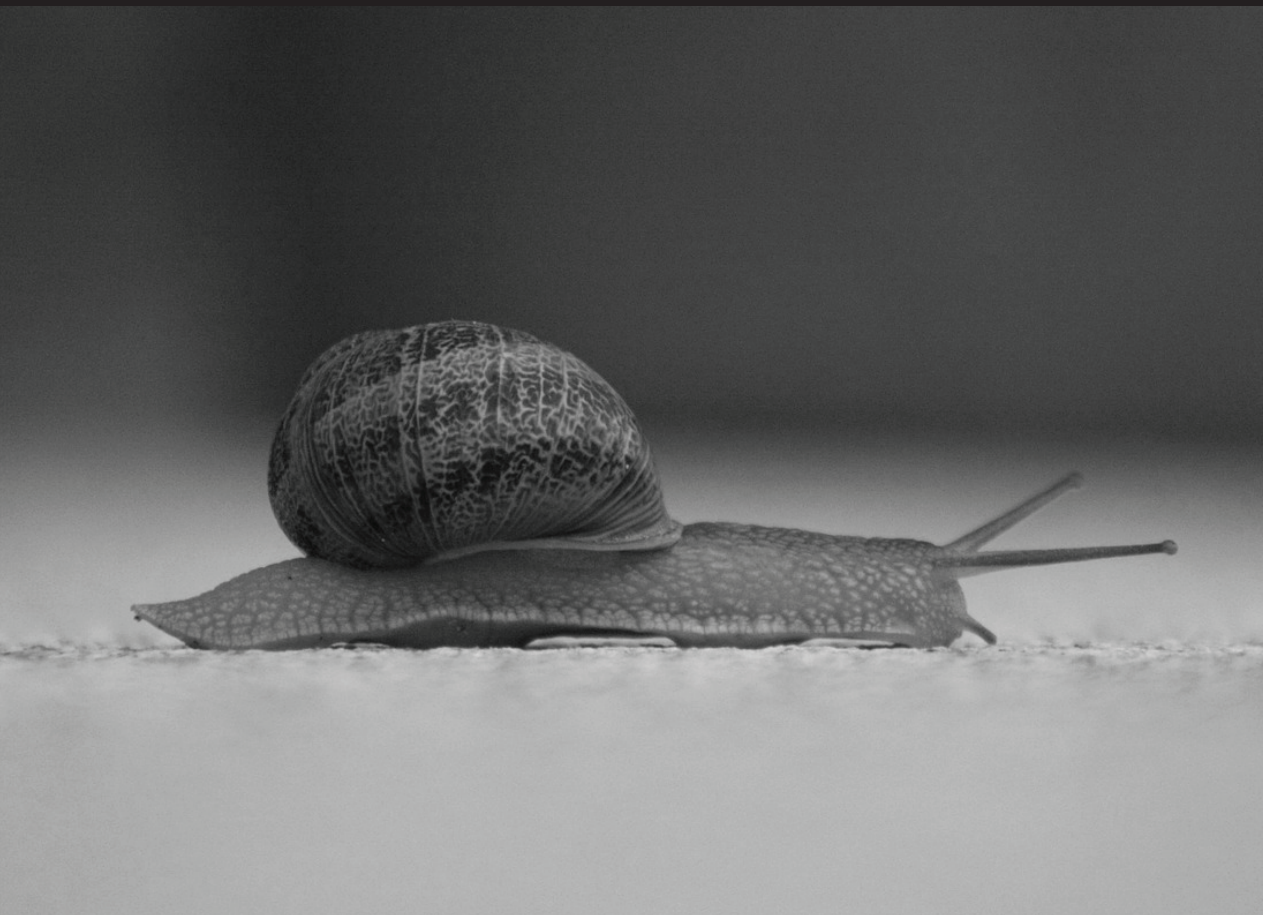


A vision of the Future of Modular Hospital Design: **Structure and Setting**

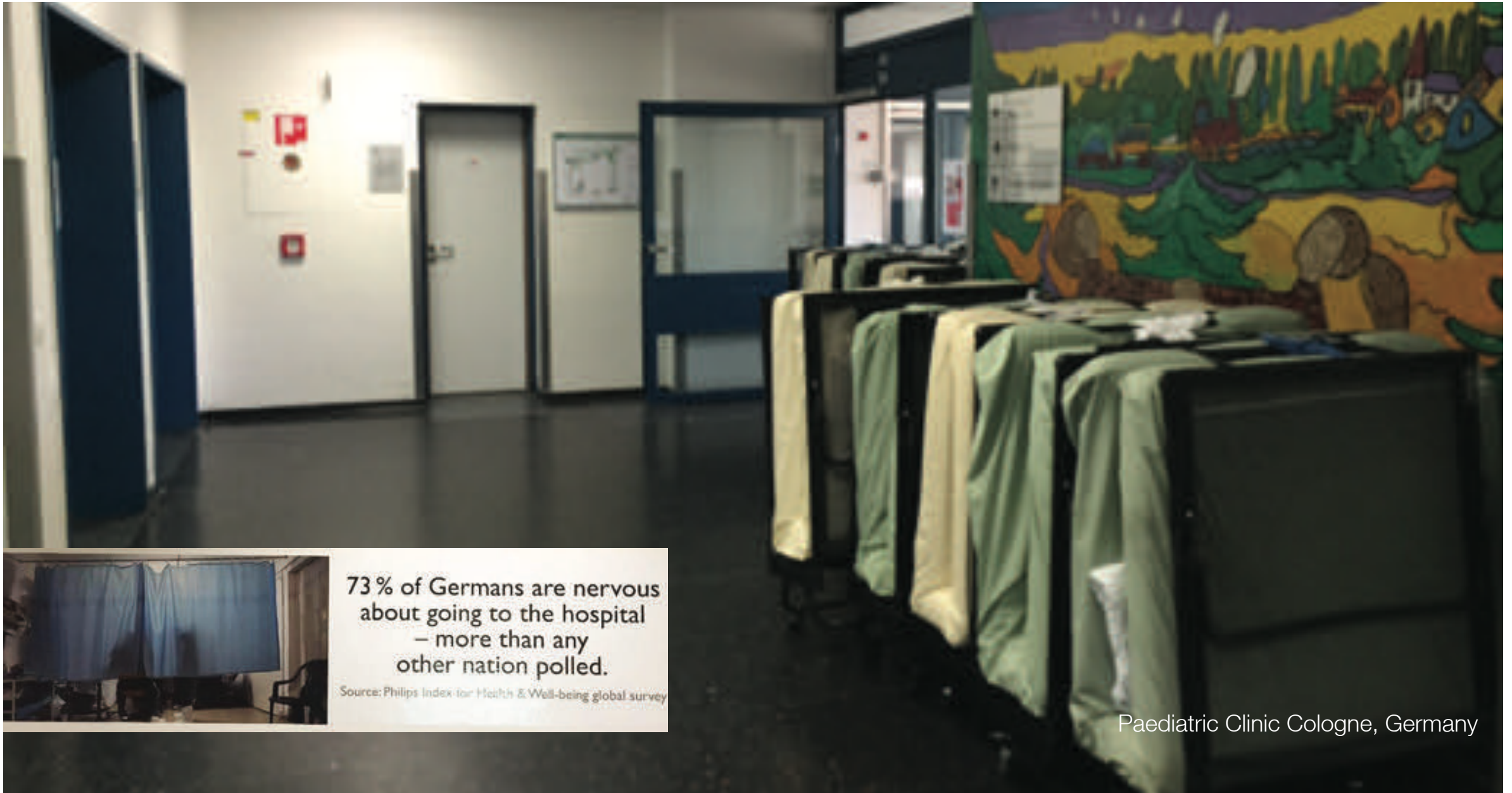
Edzard Schultz
Eva Henrich

Heinle, Wischer und Partner Architekten, Berlin





1960: healthcare processes were completely different as today!

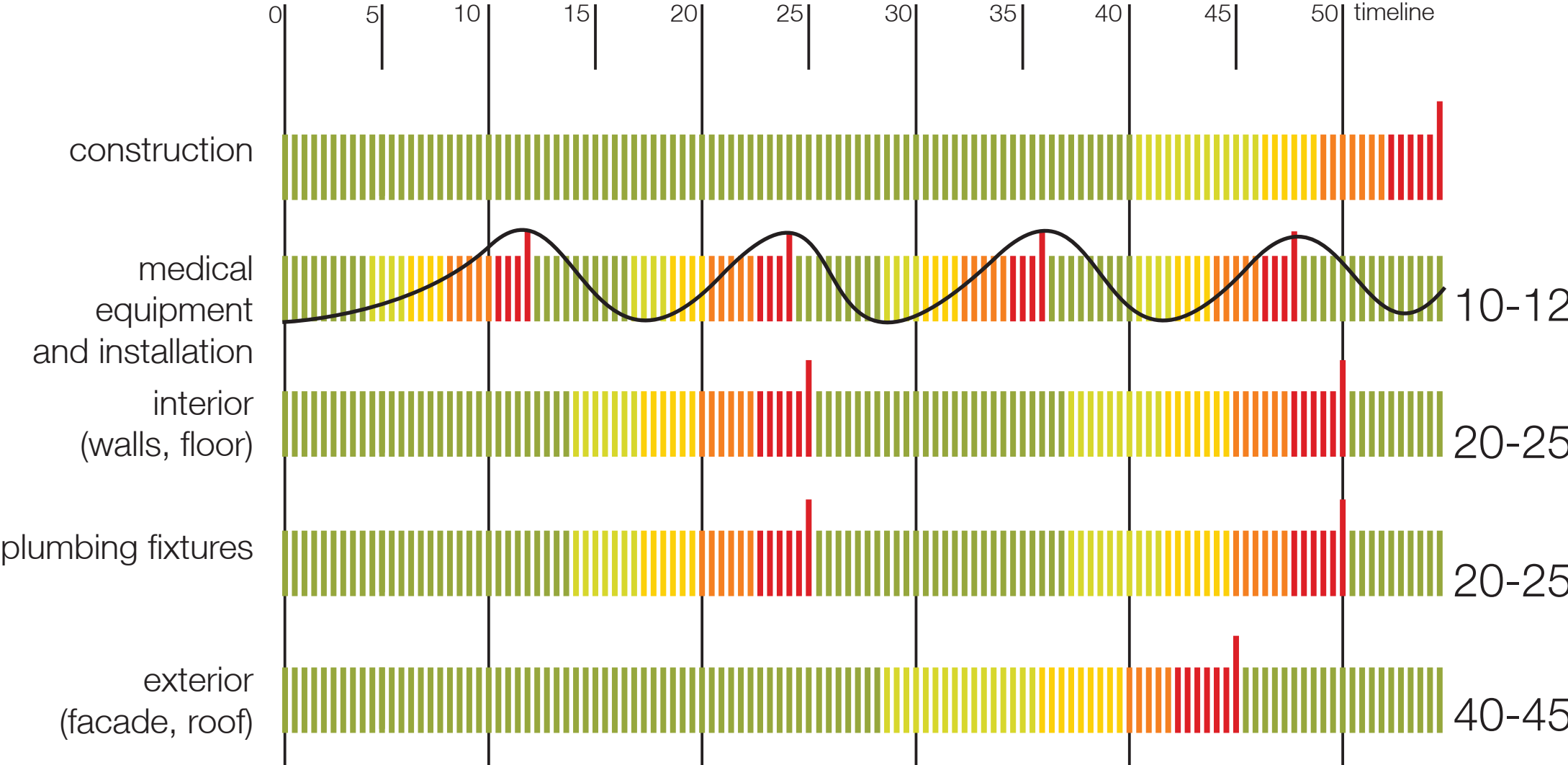


**73 % of Germans are nervous
about going to the hospital
– more than any
other nation polled.**

Source: Philips Index for Health & Well-being global survey

Paediatric Clinic Cologne, Germany

buildings and processes change over time



flexibility!

principles

customized programs



modular programs and structure

- flexibility
- adaptability
- interdisciplinarity

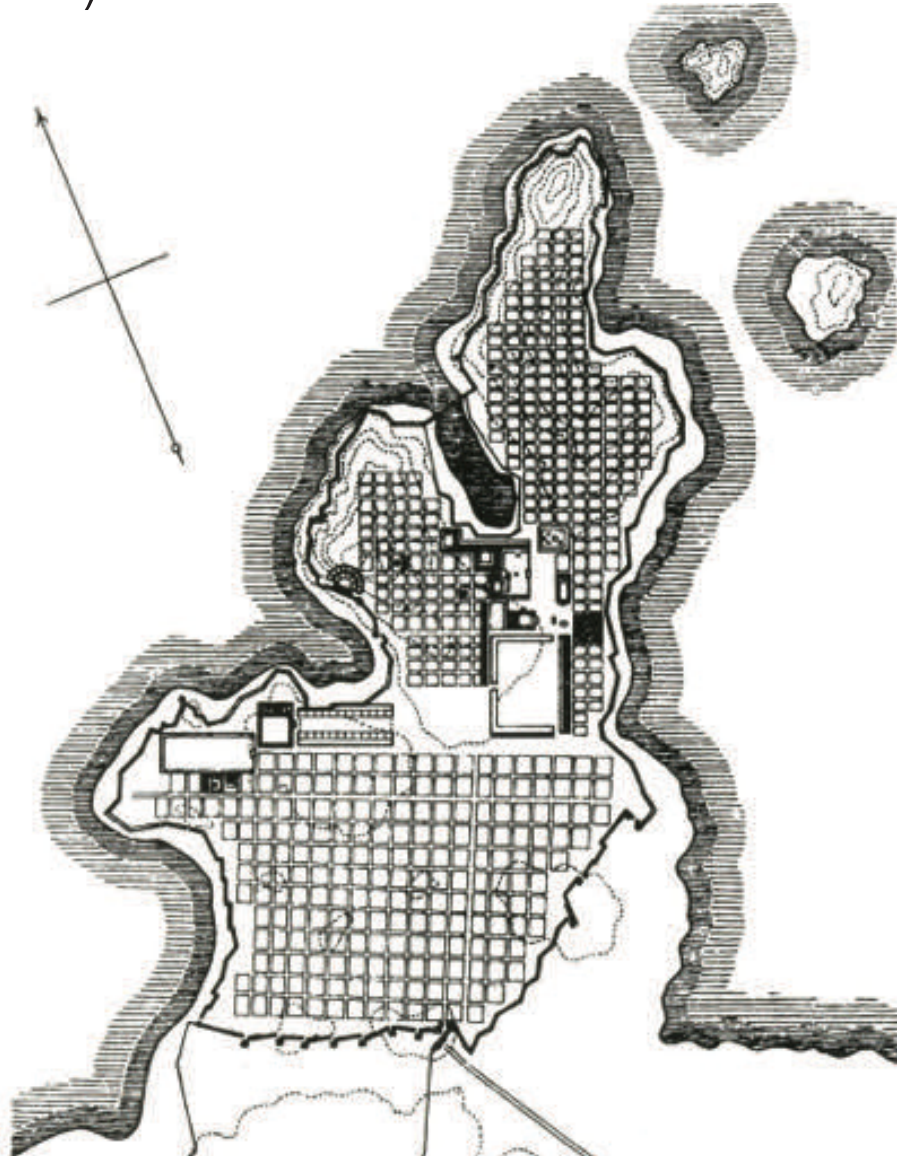
isolated facilities



integration and site specifics

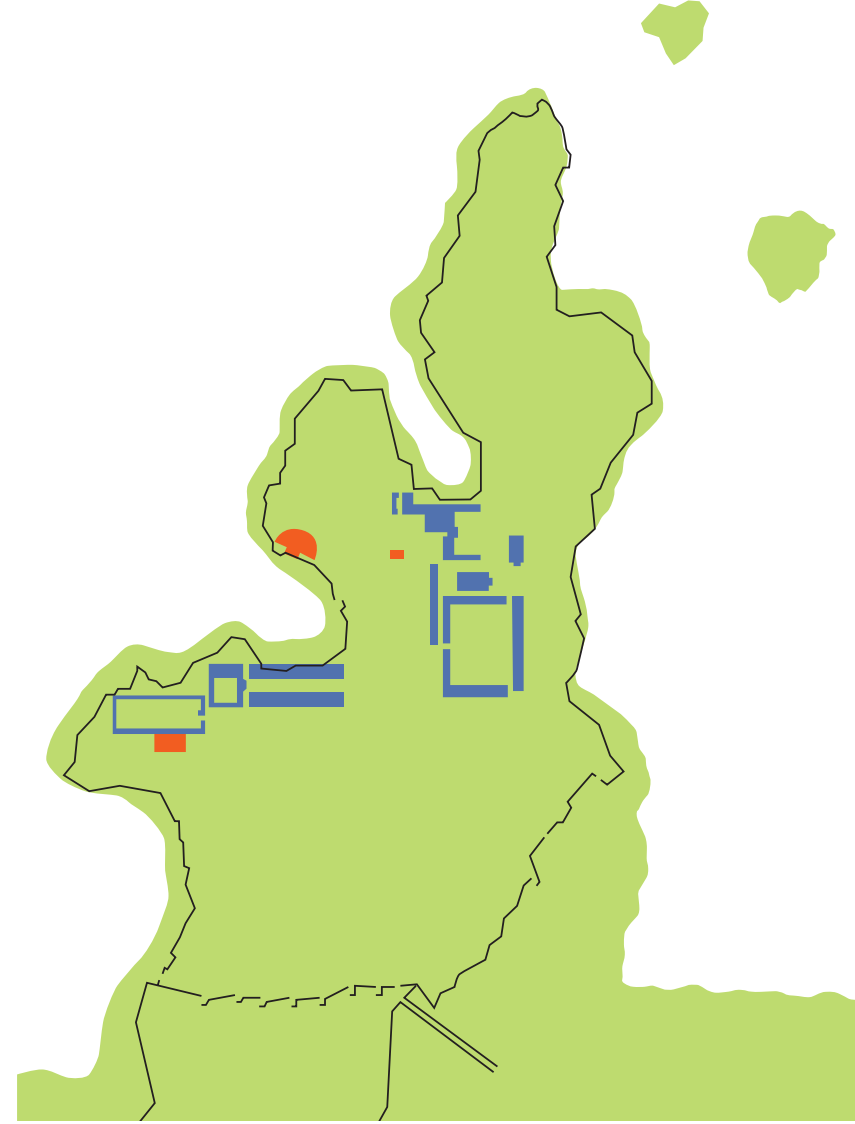
- topography
- neighborhood (context)
- accessibility (parking, transit)
- network
- orientation
- climate

Milet (Greece) 510 v.Chr





structure



setting

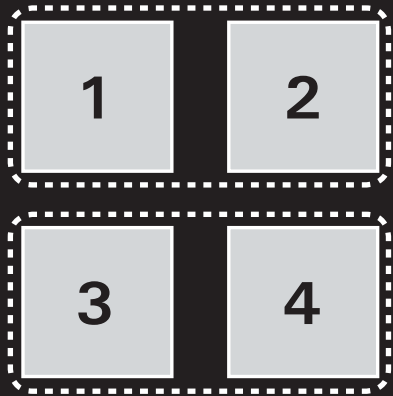


structure

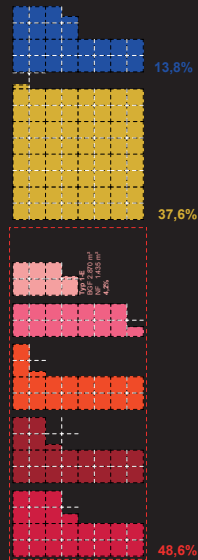
concept for a modular hospital...

structure

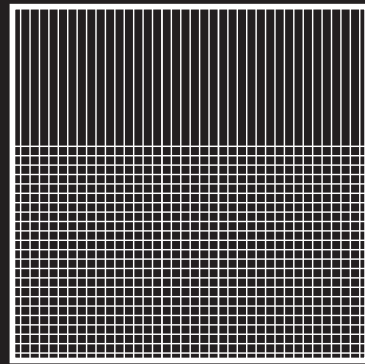
+ setting = modular hospital



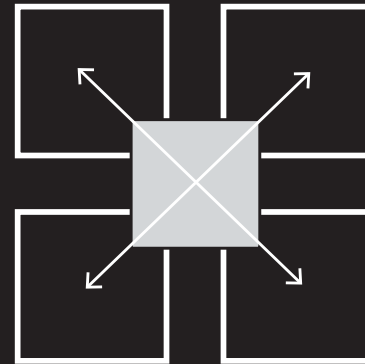
**process to
allow flexibility**



**modular
program**

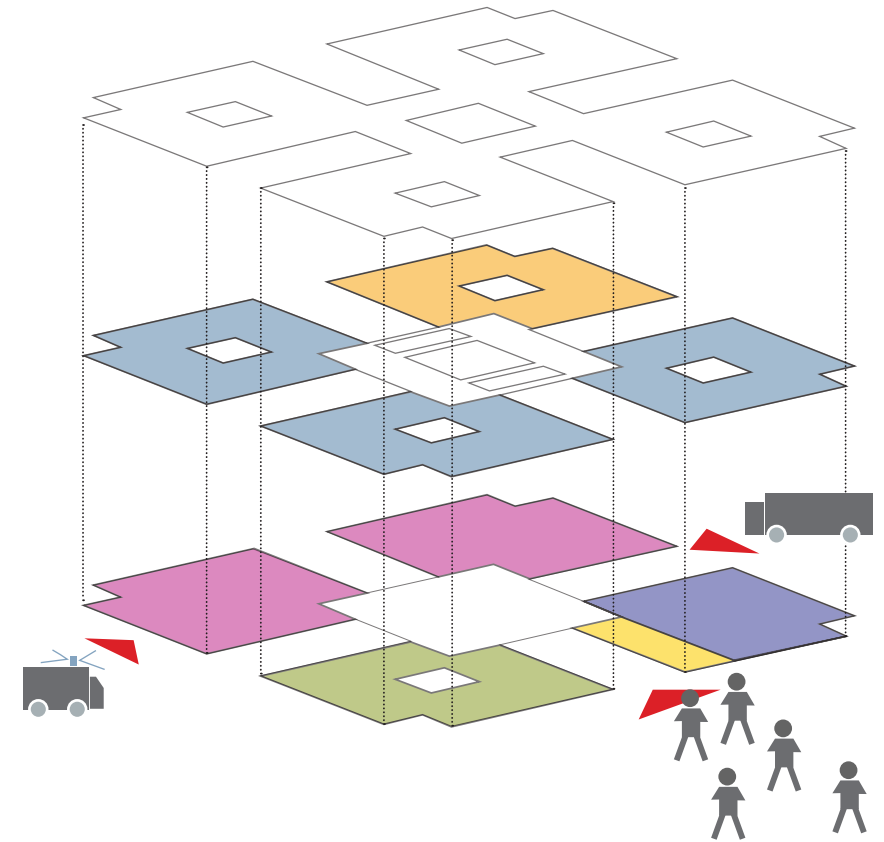


universal grid



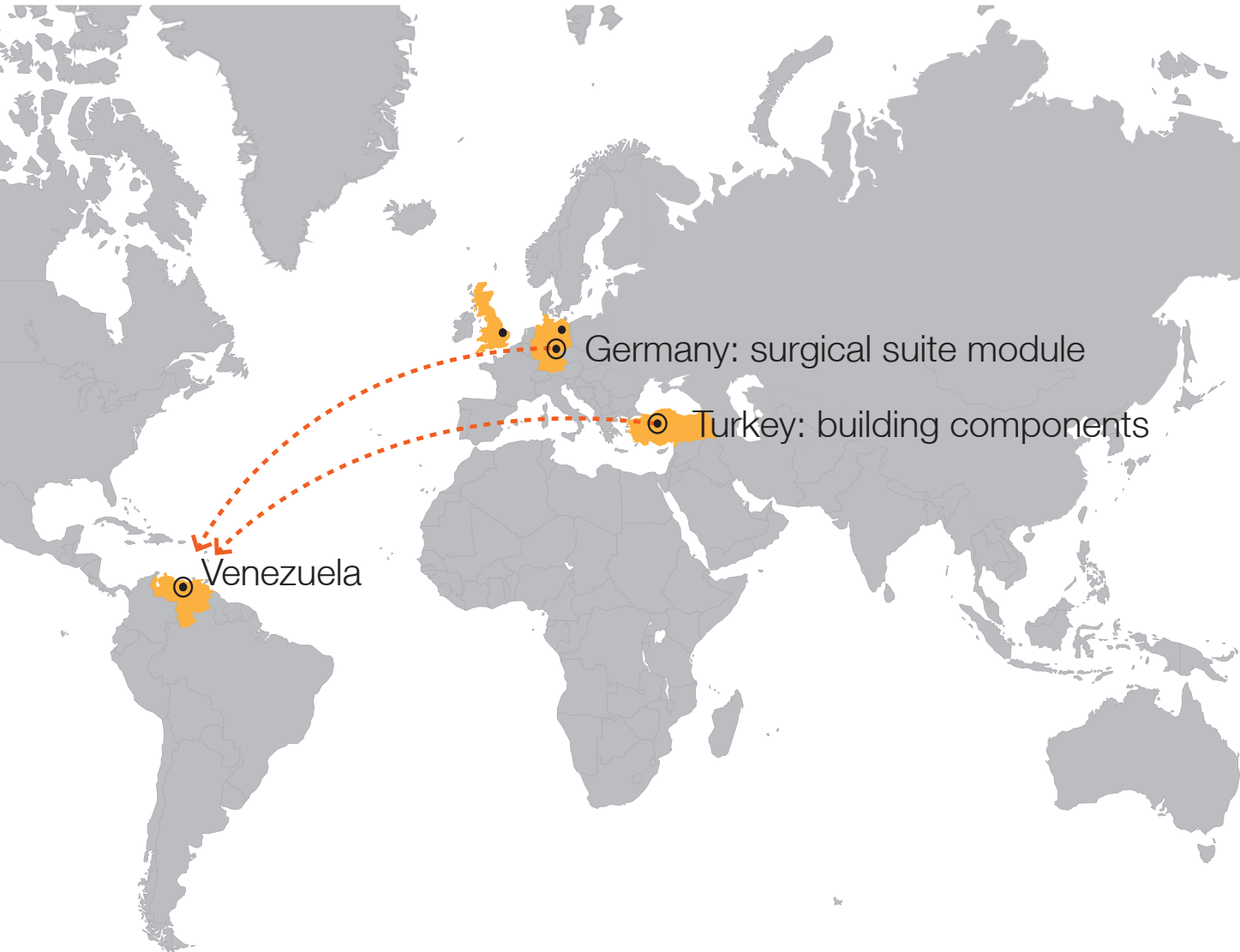
**central knots/
easy circulation
paths**

built example of a modular hospital



- administration
- inpatient care
- D&T and surgery
- cafe
- intensive care
- outpatient care

...prefabricated in Europe,
shipped in container over the ocean....




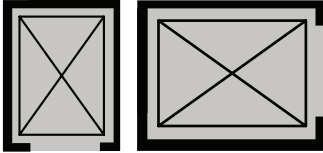
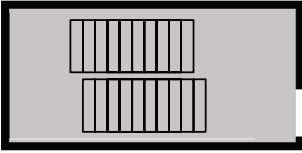


...and assembled in Venezuela



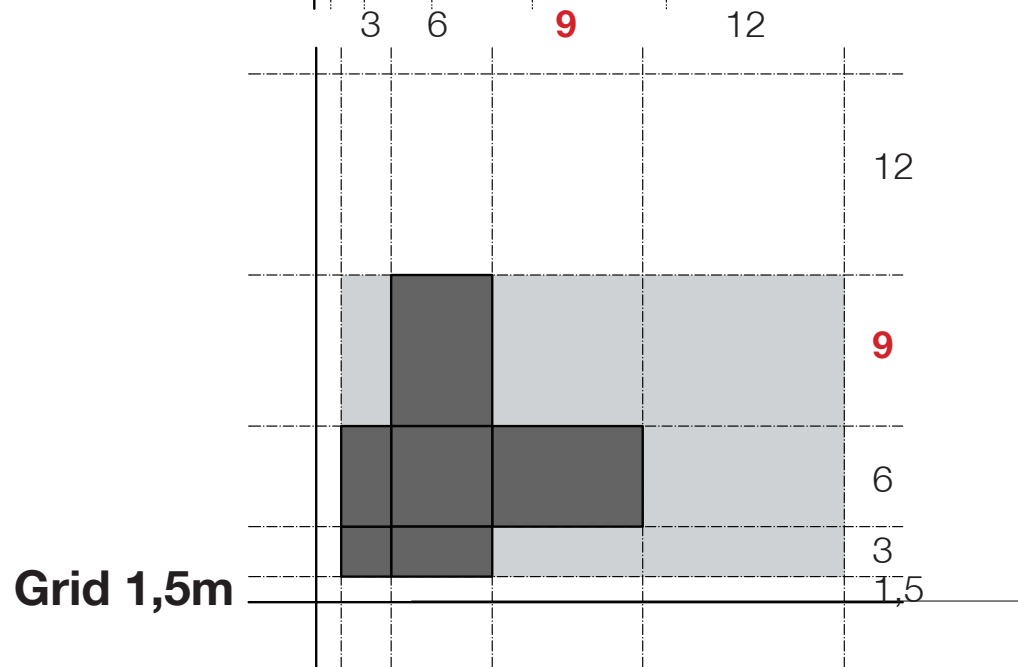
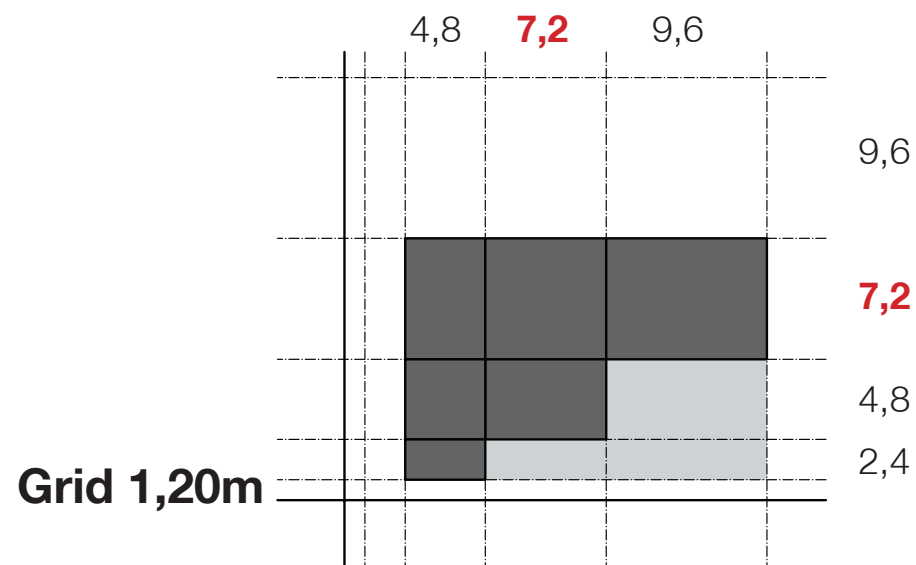
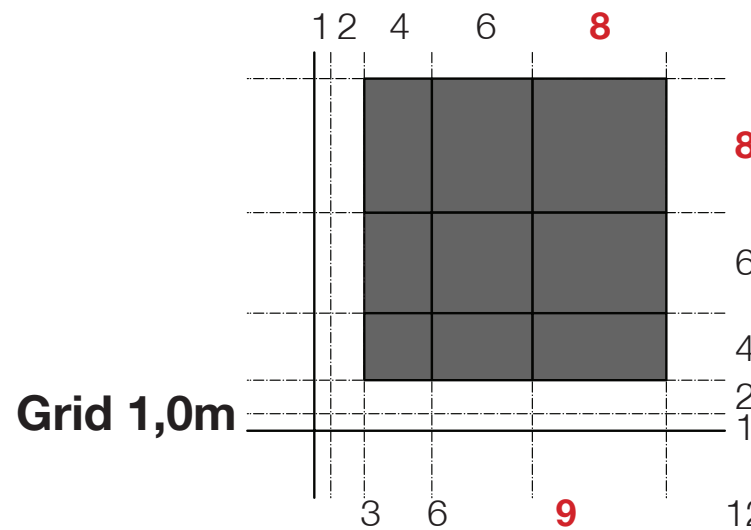
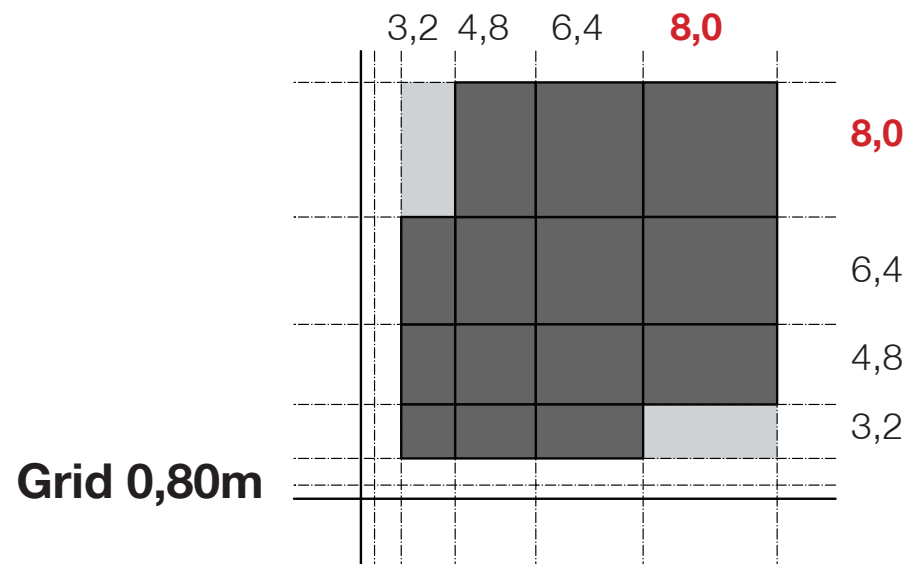


modular program and sizes

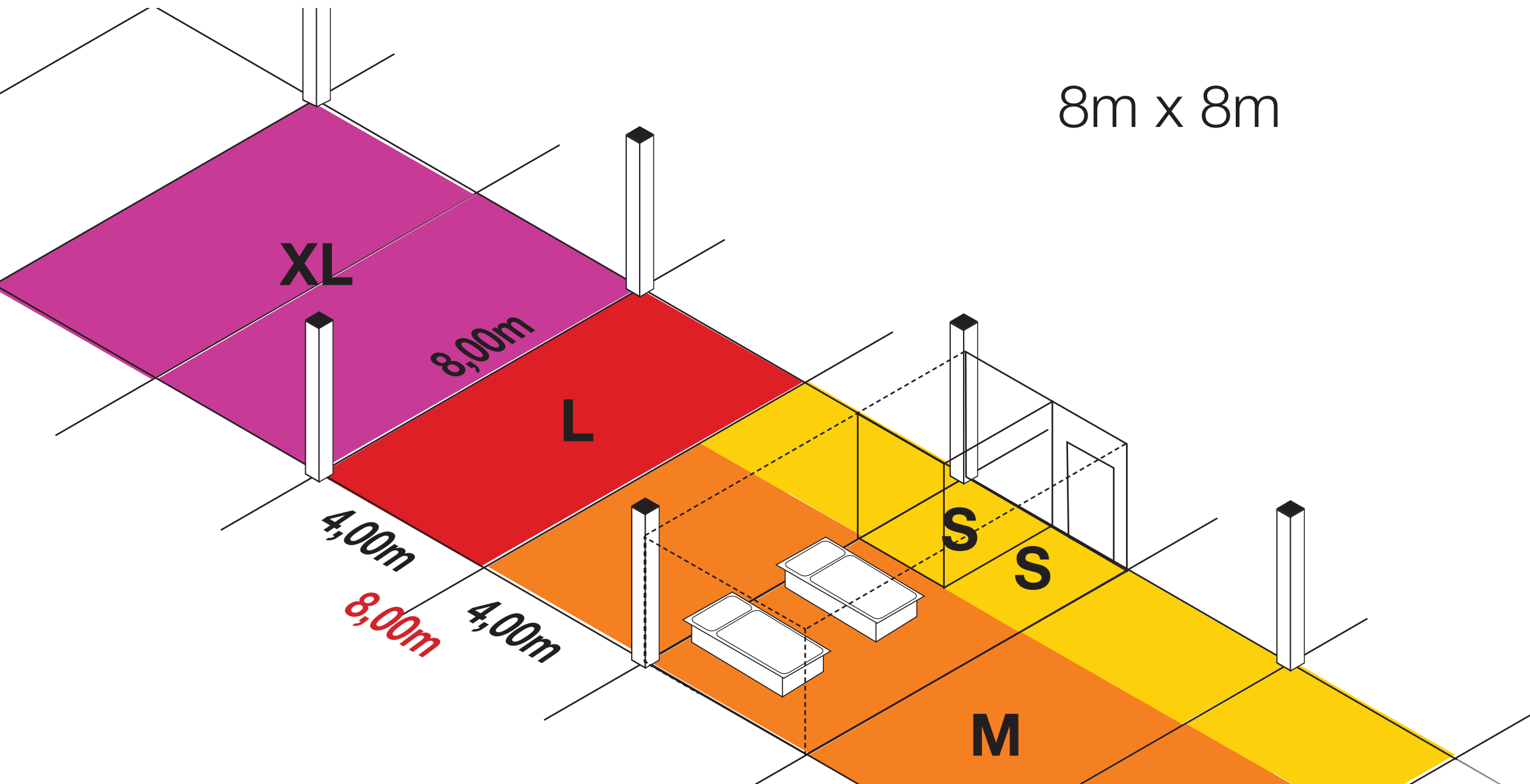
48-64m²

modular elements	8m ² S	16m ² M	32m ²	48-64m ² XL
rooms areas pods/units	restrooms storage IT housekeeping soiled utilities ...	exam consultation office clean workroom staff lounge ...	patient room nurse station family lounge conference equipment ...	OR x-ray MRI CT therapy ...
circulation				
MEP	 			

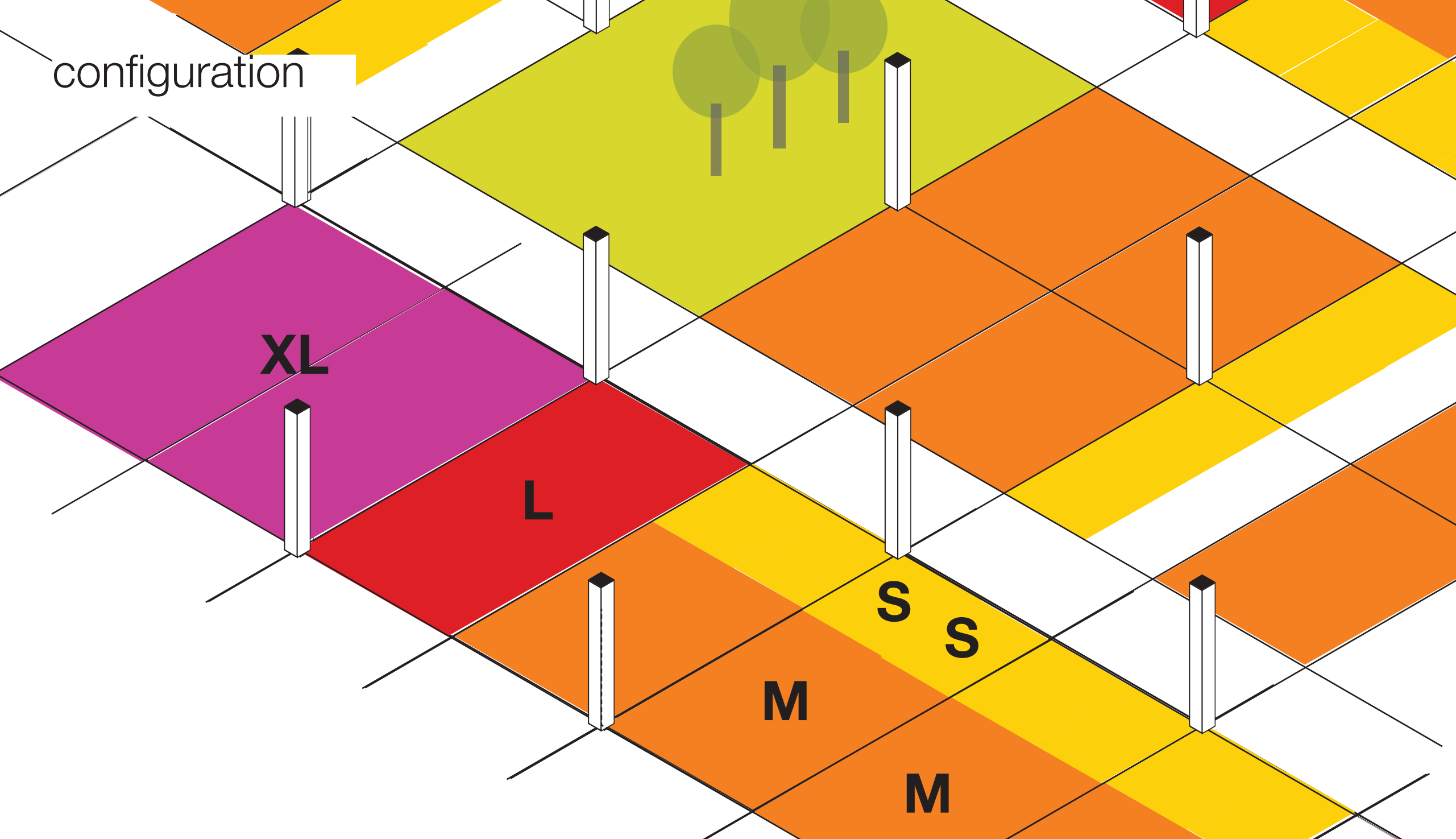
universal grid (structure and subdivision)



one system! $L=M+S$



configuration



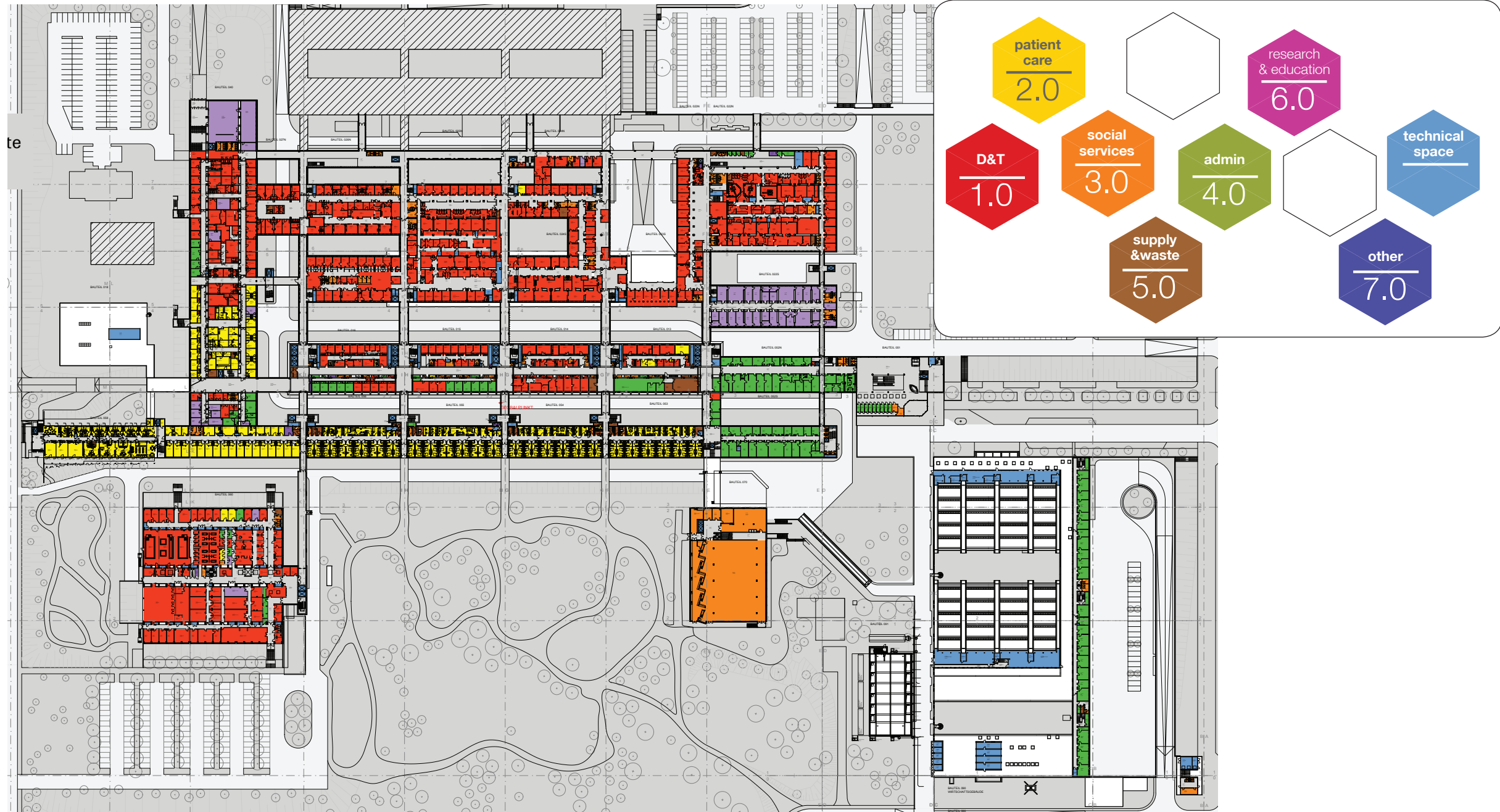
tools

the German DIN 13080*: functional areas

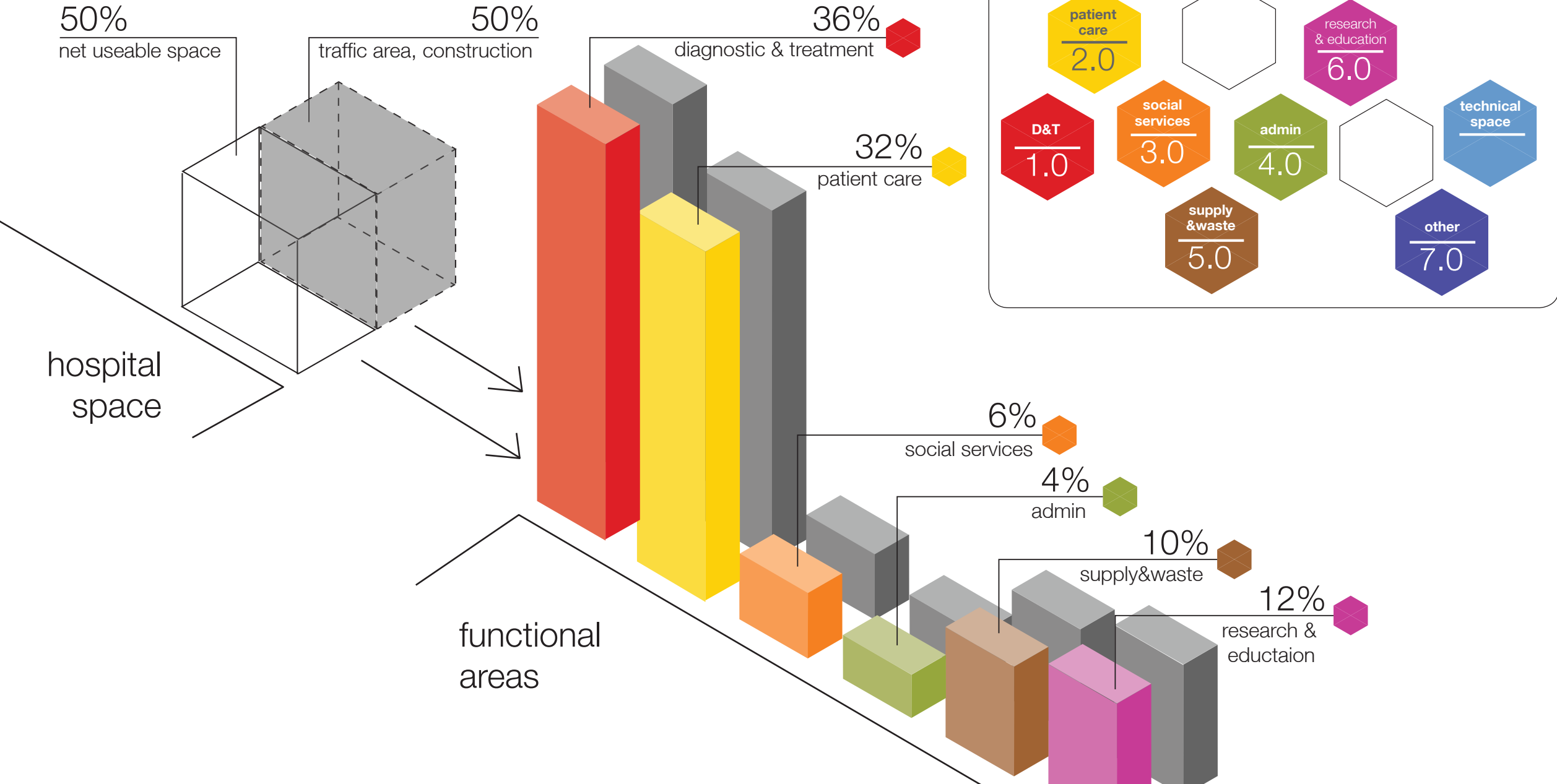


DIN= Deutsches Institut für Normung (German Institute for Standardization)

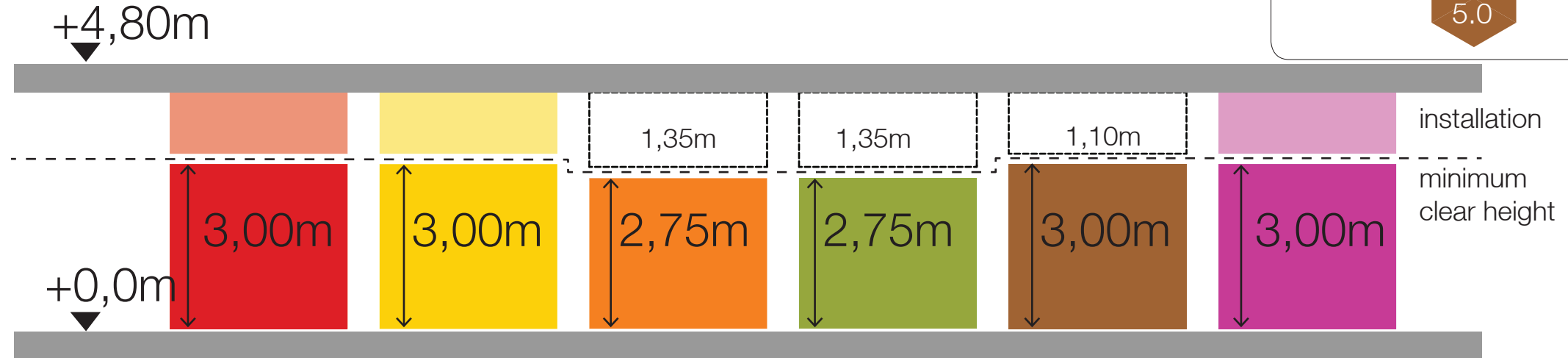
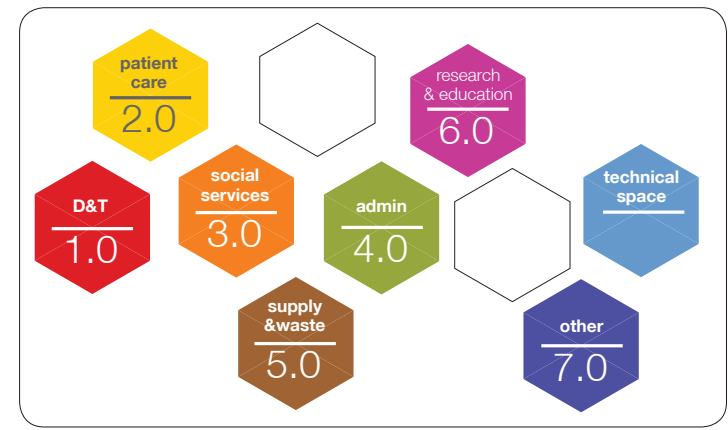
tools: the German DIN - sample layout



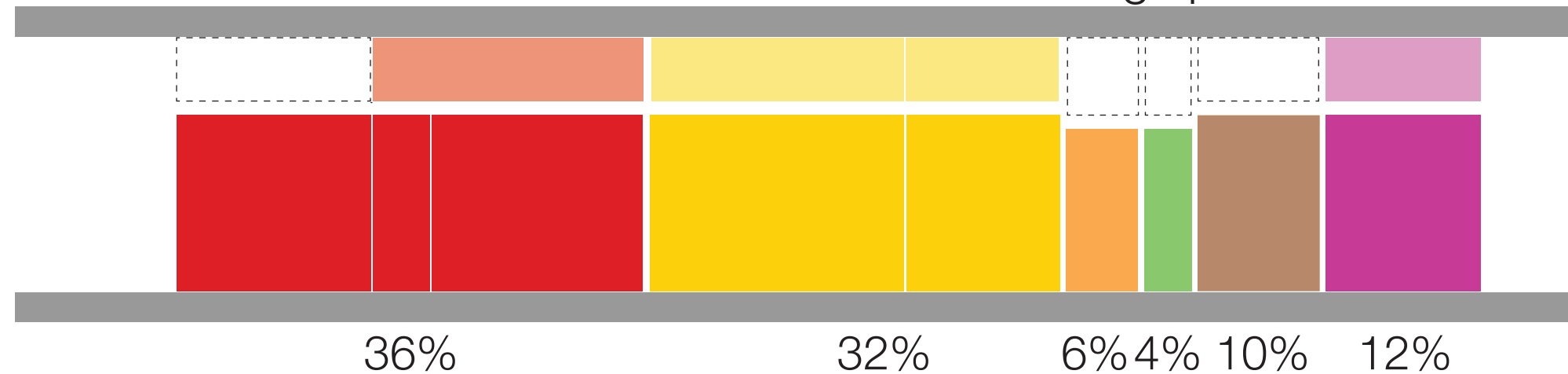
hospital space and departments



modular configuration: floor heights



savings potential





setting



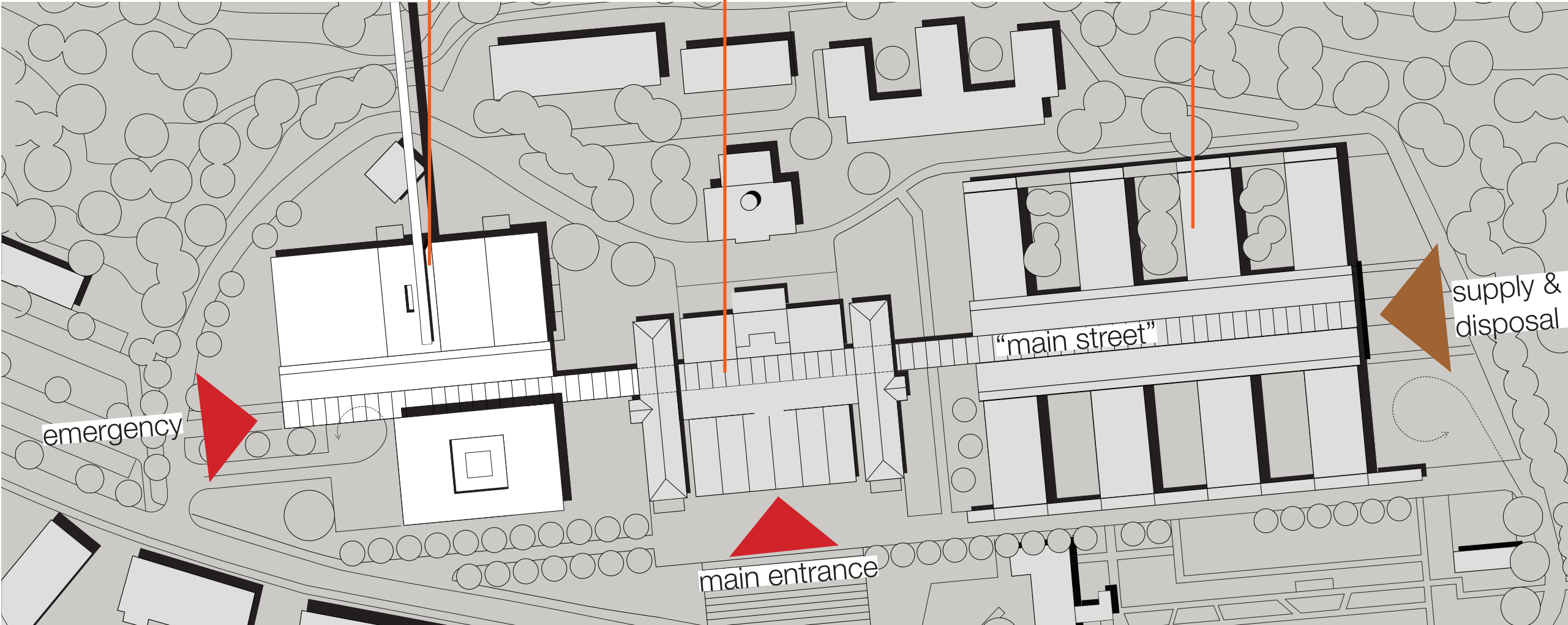
Palomar Medical Center, CA, USA

Community Hospital Brandenburg

diagnostic and treatment,
surgery, critical care

historic center
(administration, services)

inpatient care (upper level)
ambulatory care (ground level)
supply and disposal (basement)



emergency

main entrance

"main street"

supply & disposal

structure: historic center and connecting main street



Krankenhaus Brandenburg an der Havel, Germany



town square

main street

historic church

Fürstenberg an der Havel, Germany

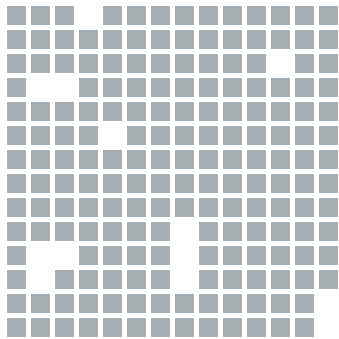
main street



hospital setting in Germany

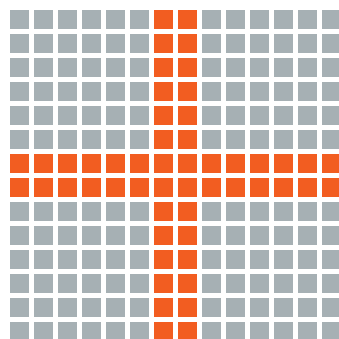
outside
the city:
„greenfield“

1950/1960



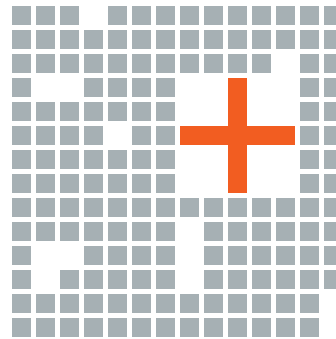
as a city:
„the
machine“

1960/1970



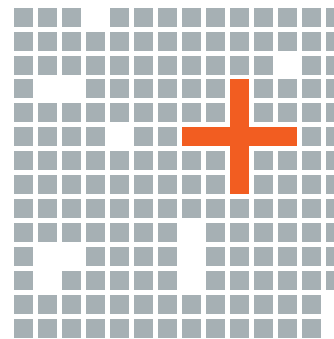
within
the city:
„solitaire“

1970/1980



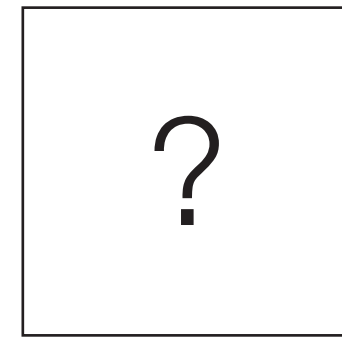
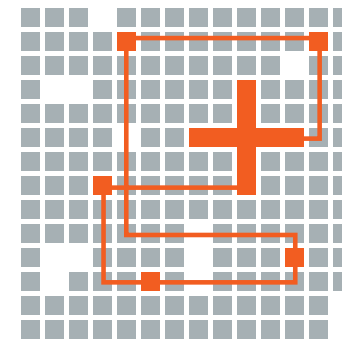
not isolated
anymore
„part of
the city“

since 1990



network of
health services:
„community
integration“

current task



hospital setting in Germany

outside
the city:
„greenfield“

as a city:
„the
machine“

within
the city:
„solitaire“

not isolated
anymore
„part of
the city“

network of
health services:
„community
integration“

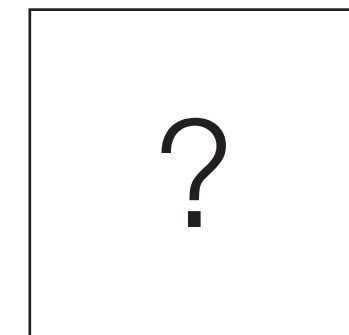
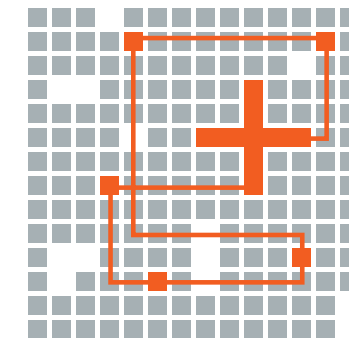
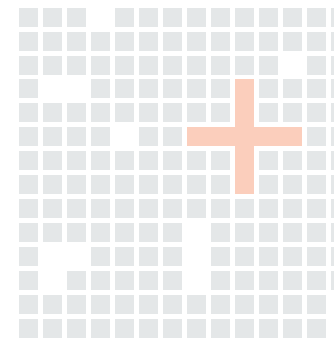
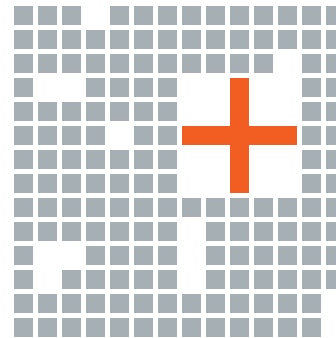
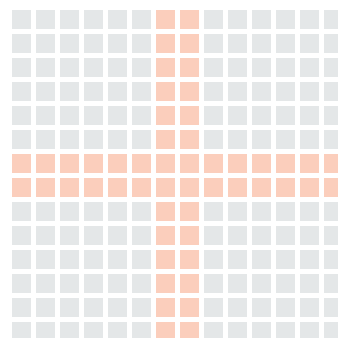
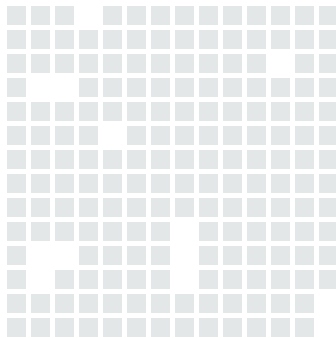
1950/1960

1960/1970

1970/1980

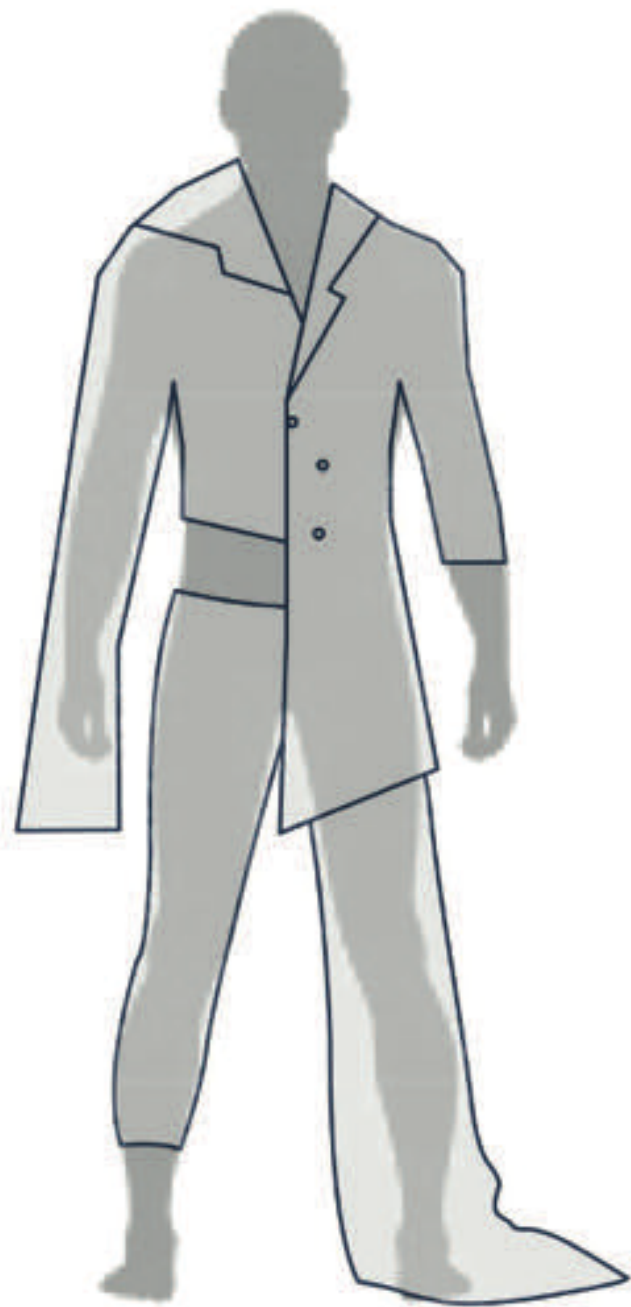
since 1990

current task



University Hospital Grosshadern, Munich: built 1967-77

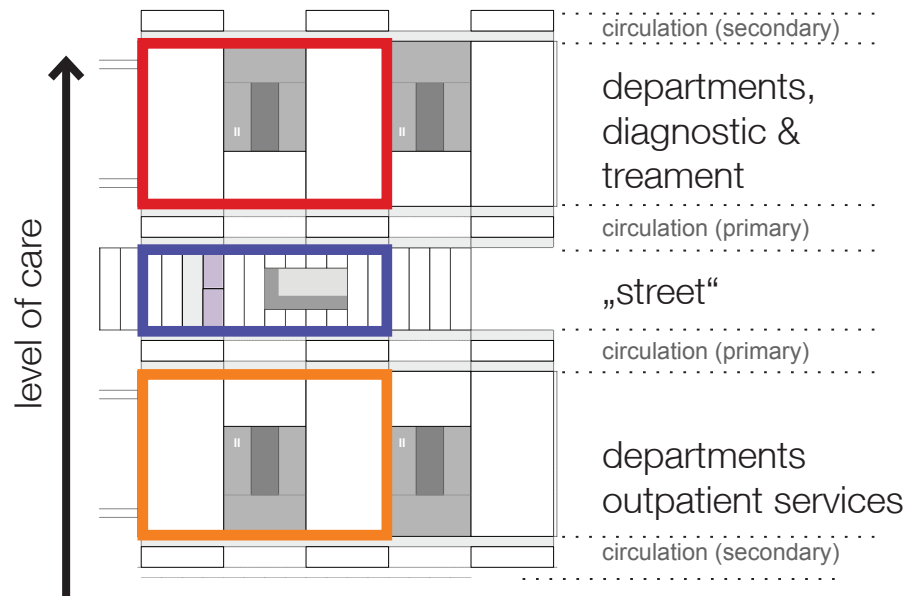




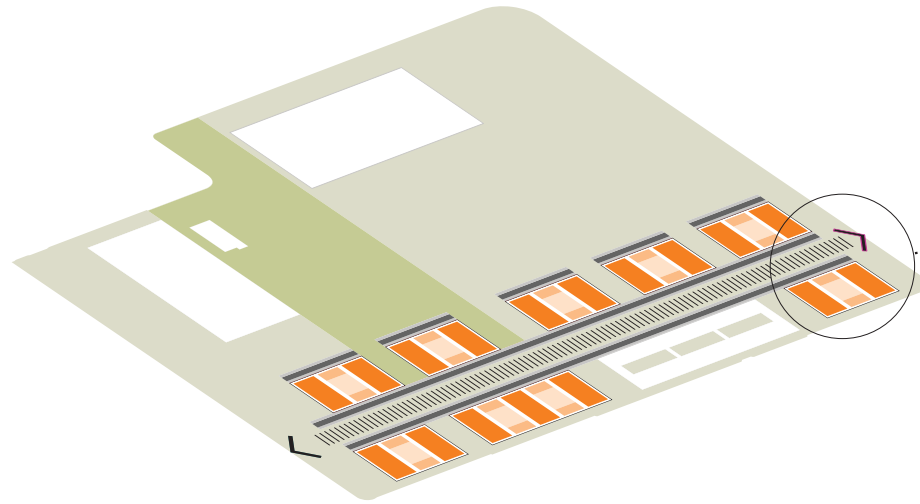
change of paradigm and process:

institution>	population
isolation>	cooperation, networking
inpatient>	outpatient
room program>	modular structures
disciplines (“kingdoms”)>	patient flow (interdisciplinary)
investment>	lifecycle cost
analog>	digital, new media
windowless>	daylight!

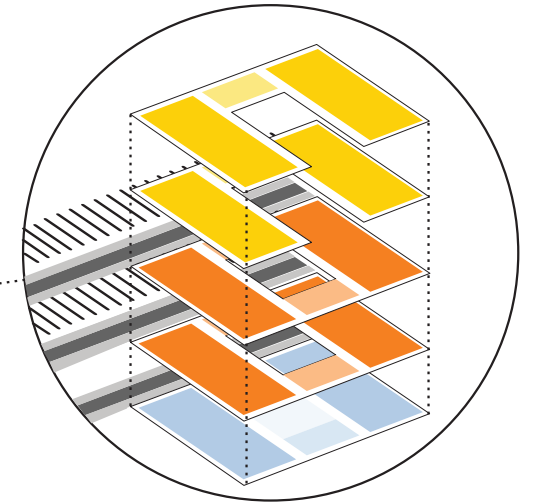
concept



process

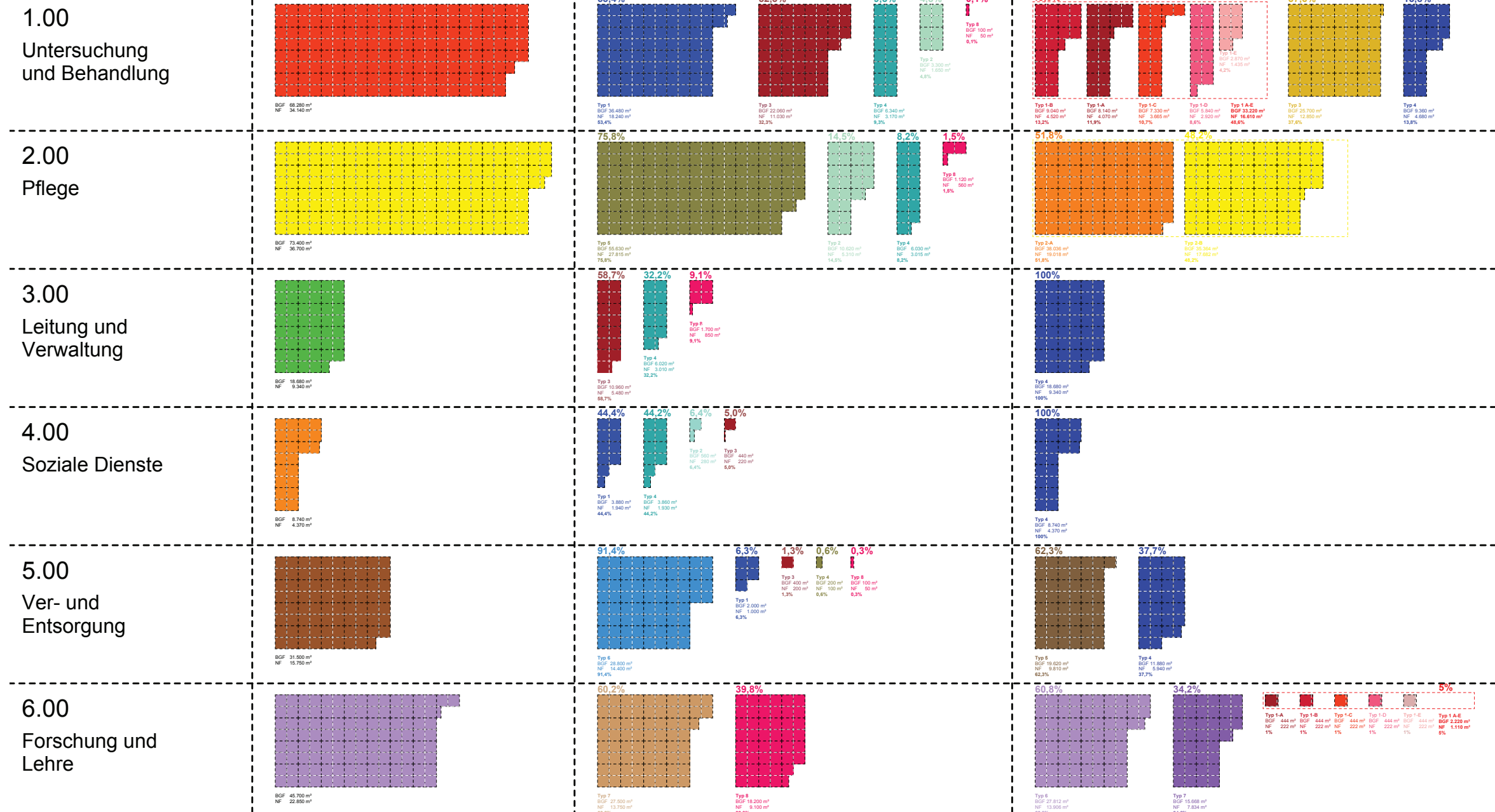


organisation of high performance medical centers



modular program

space matrix based on modular program



Masterplan

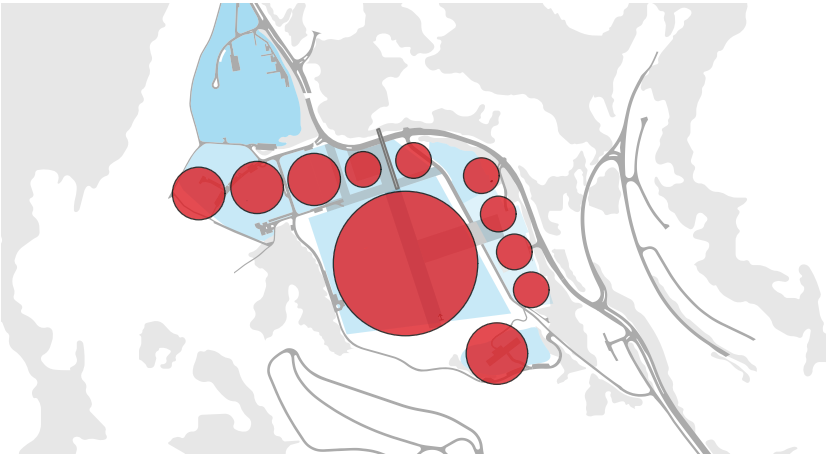
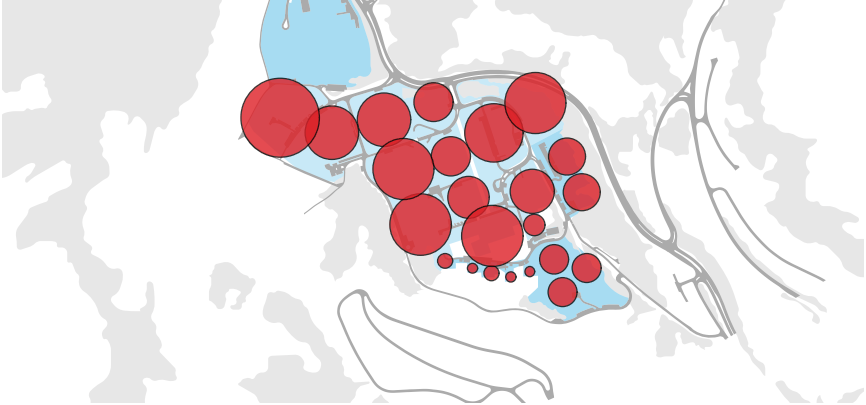




University Hospital Tuebingen



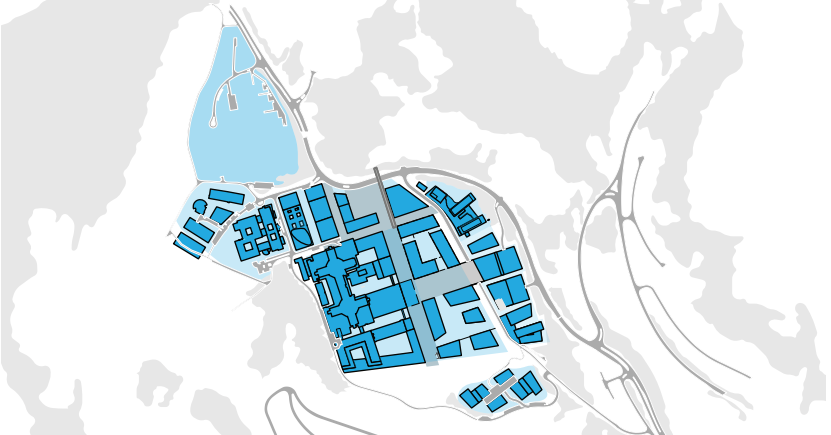
hierarchy



orientation/circulation



organization of buildings

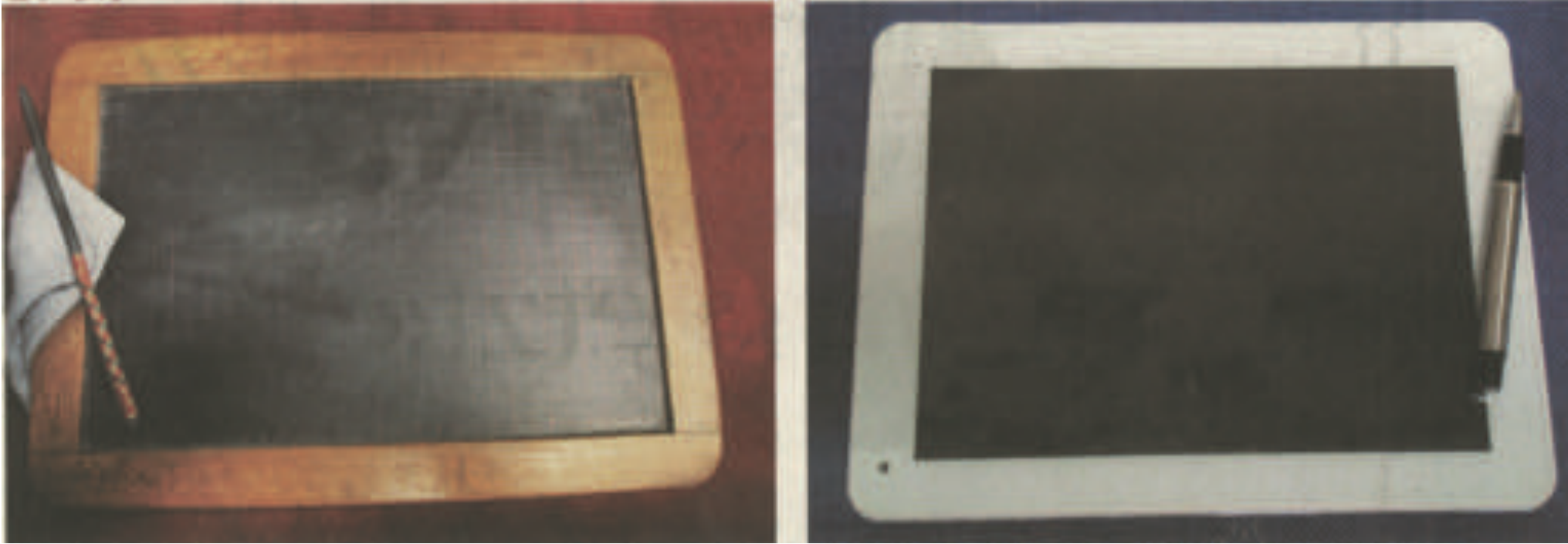


Masterplan





it's all about communication!



Eva Henrich
Edzard Schultz
Heinle, Wischer und Partner, Berlin, Germany
info@heinlewischerpartner.de