heinlewischer

Project report – Structure located
Edzard Schultz, Architect

Hospital Engineering Trends 2025, Regensburg, 24–25 June 2025

Operating room

Master plan

First step

Patient room

Hybrid

New layout

Facade

Insight

heinlewischer

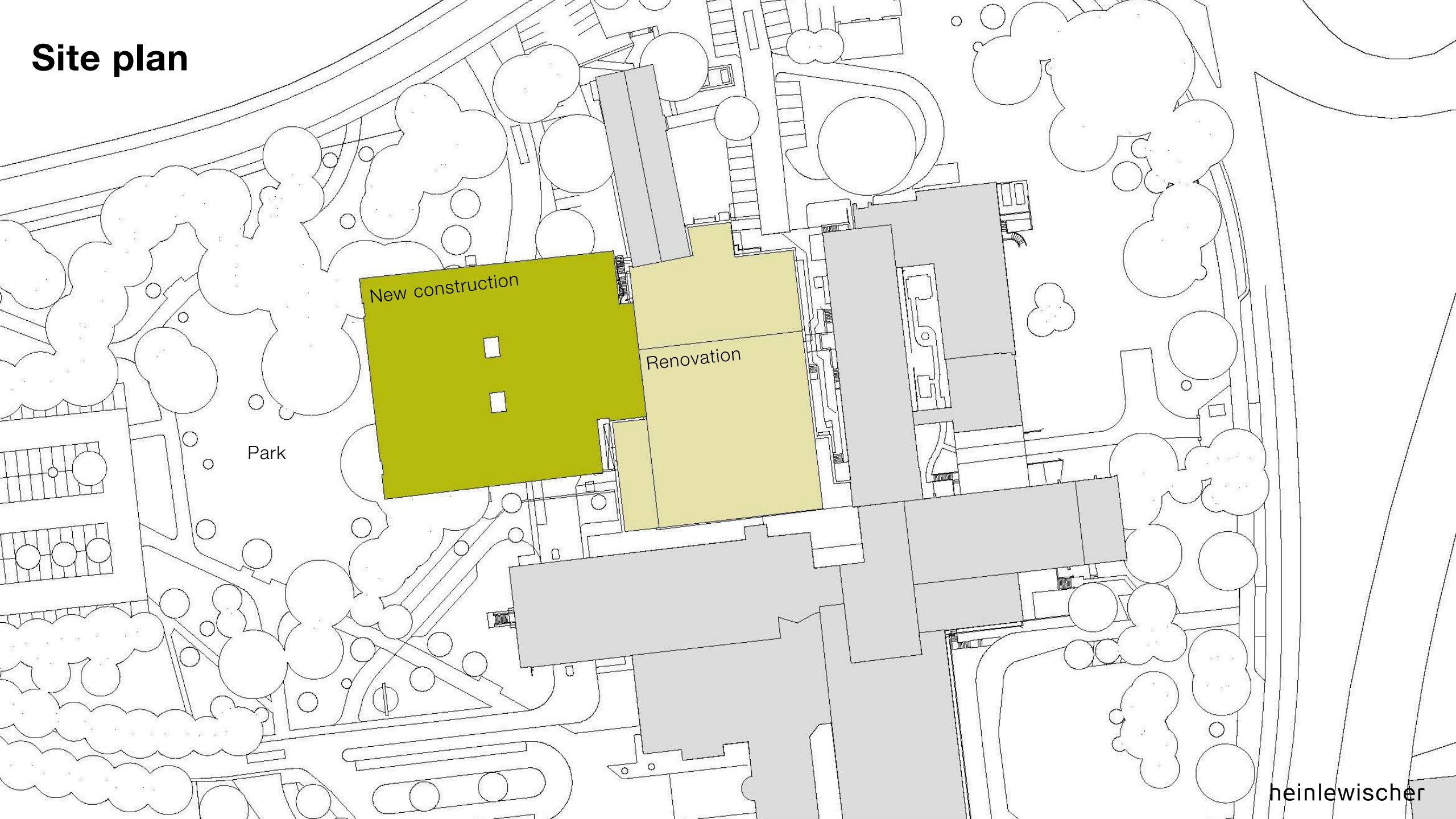
Operating room

Dortmund Hospital, North Clinic Centre

New construction, renovation and conversion of central operating room

heinlewischer

Site plan

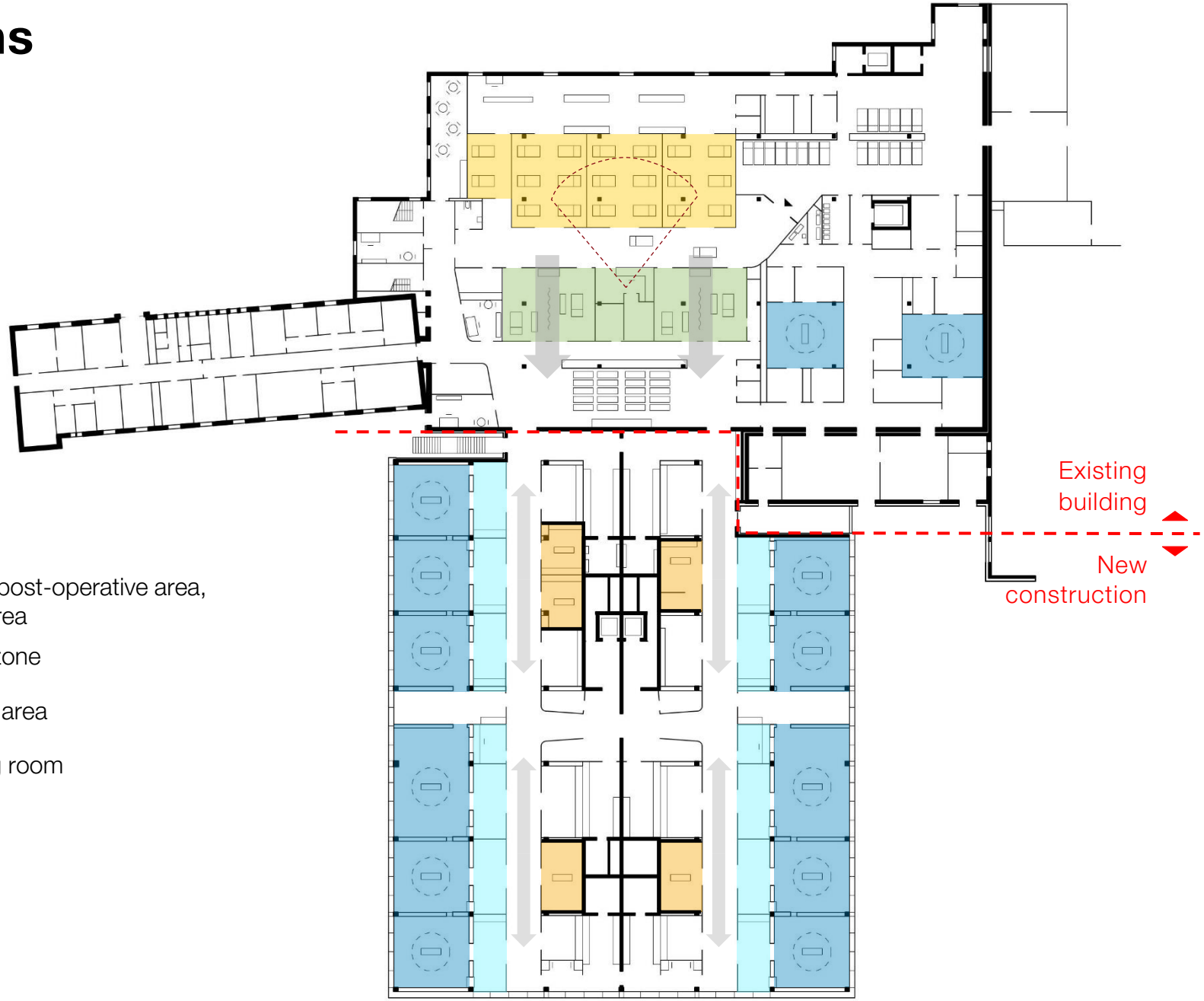


heinlewischer

The new building in the park

heinlewischer

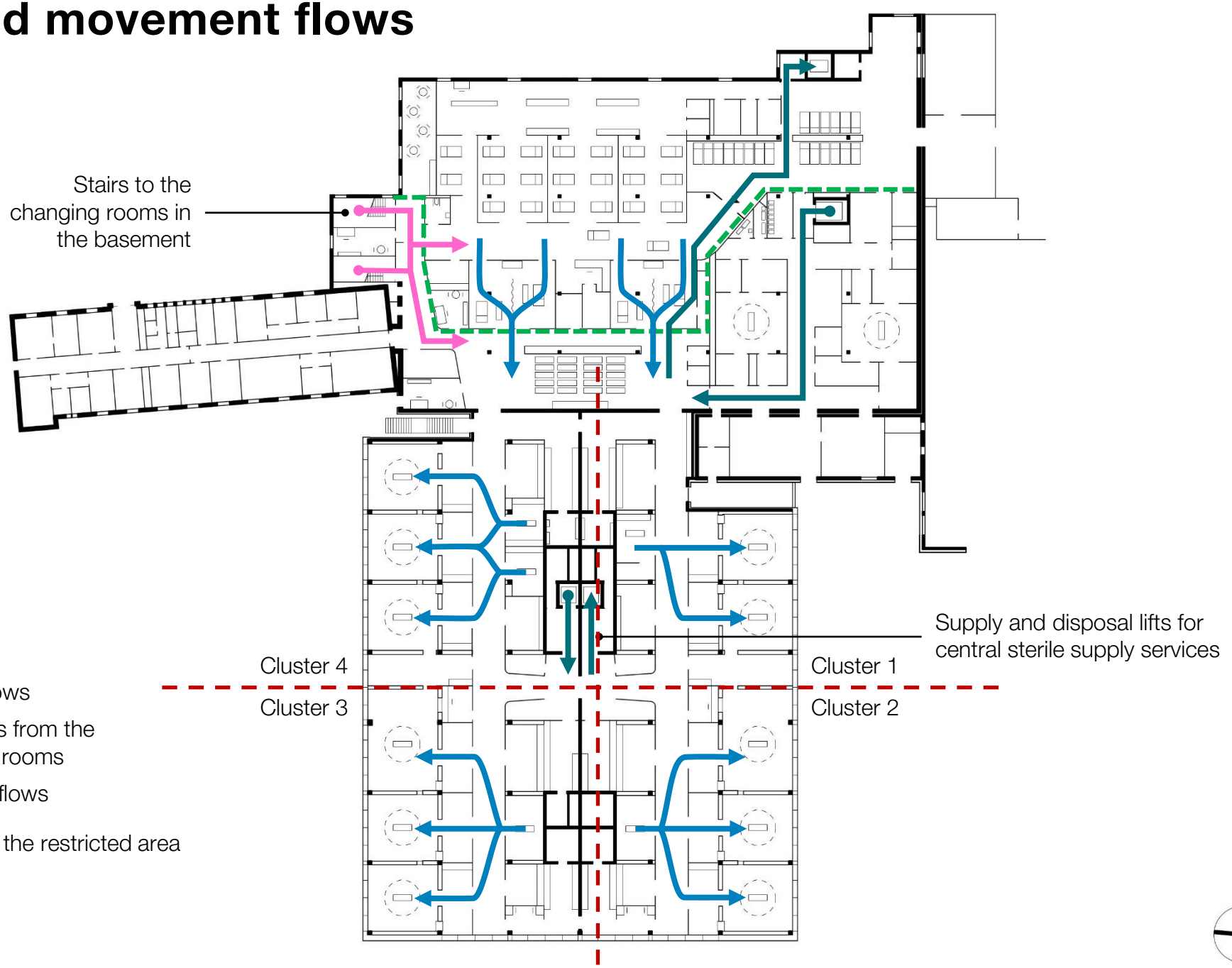
Functions



- Pre- and post-operative area, holding area
- Transfer zone
- Induction area
- Operating room
- Pre-zone

heinlewischer

Clusters and movement flows

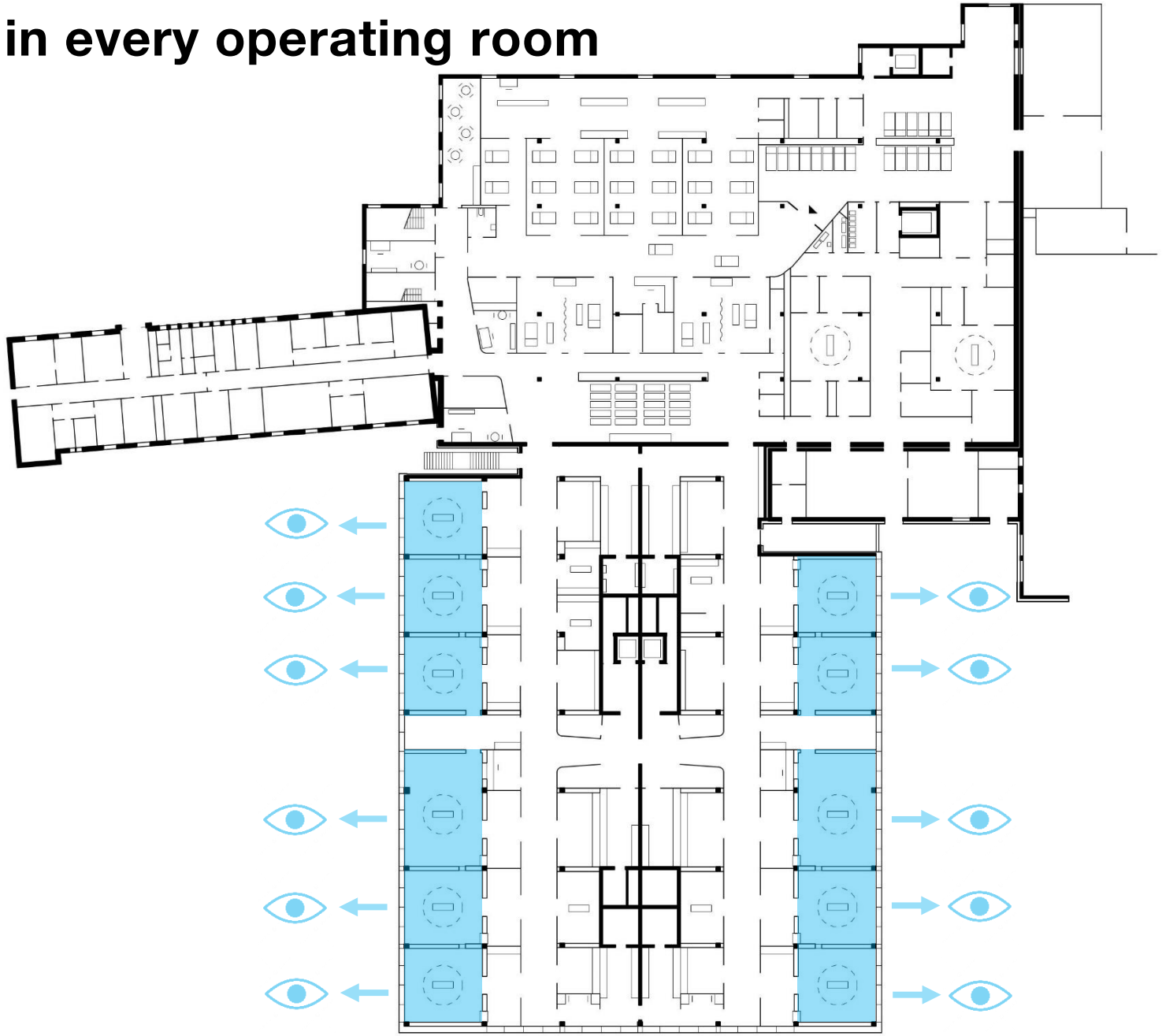


heinlewischer

Pre-operating area of the operating rooms

heinlewischer

Daylight in every operating room



heinlewischer


Operating room with natural light
heinlewischer

Recovery room

heinlewischer

Open structures

heinlewischer

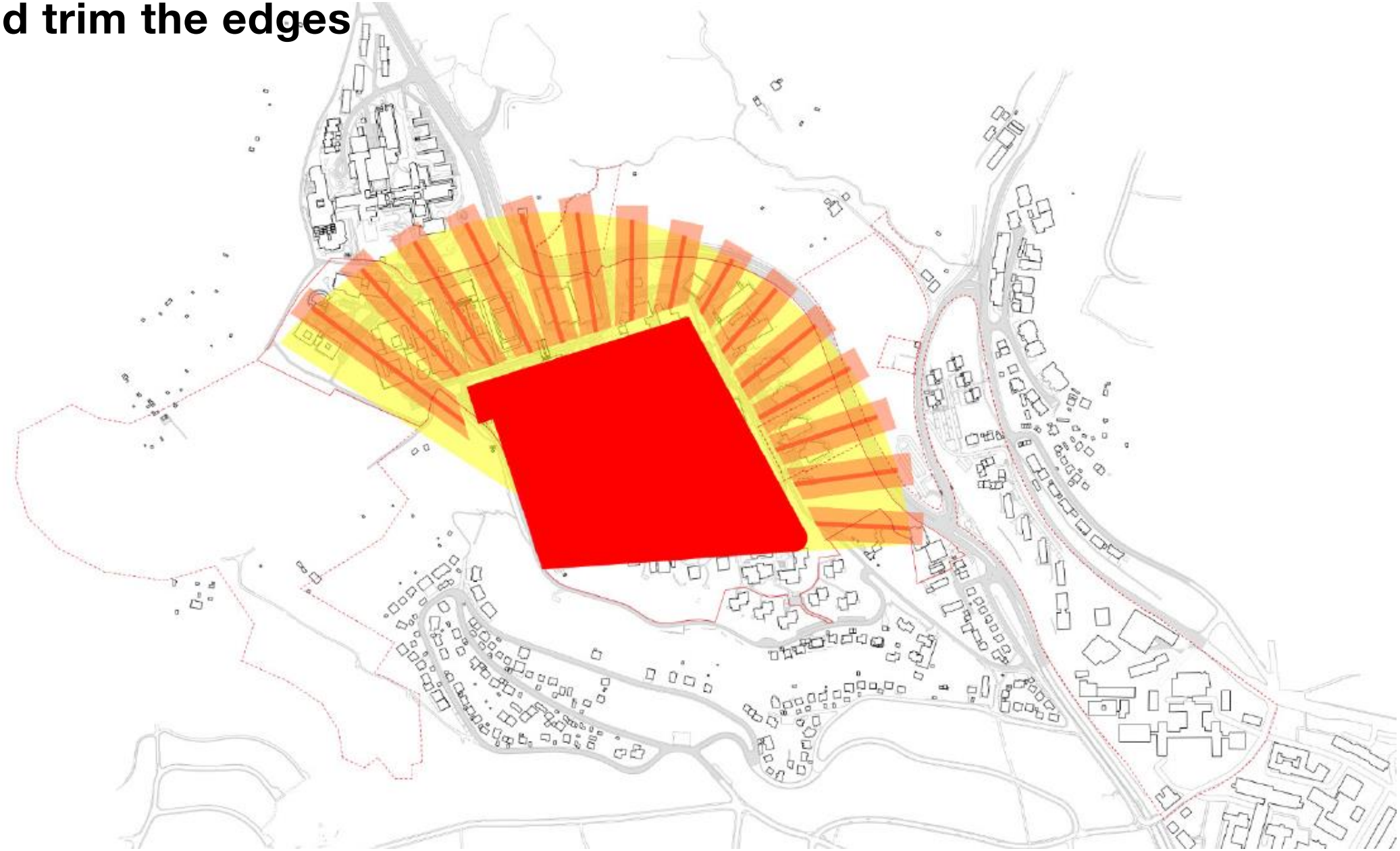
Master plan

Tübingen University Hospital

Master planning and overall urban development concept

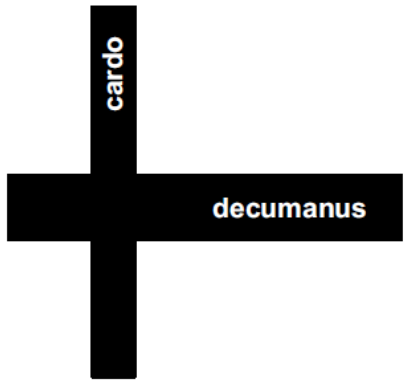
heinlewischer

Compact and trim the edges

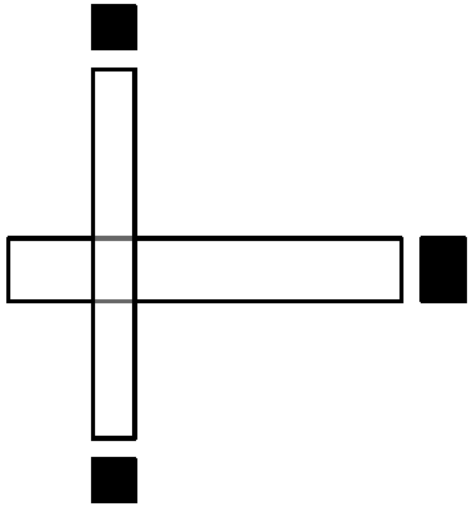


Guiding principles

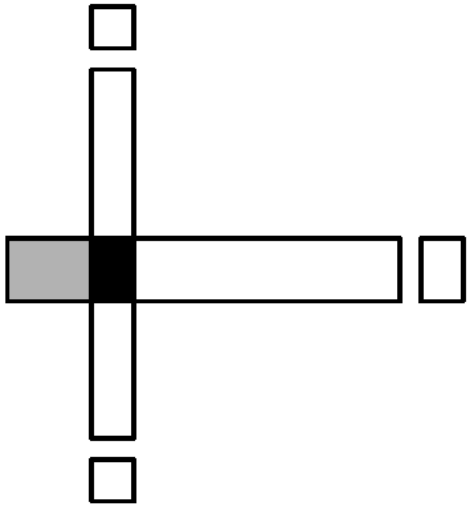
Castrum



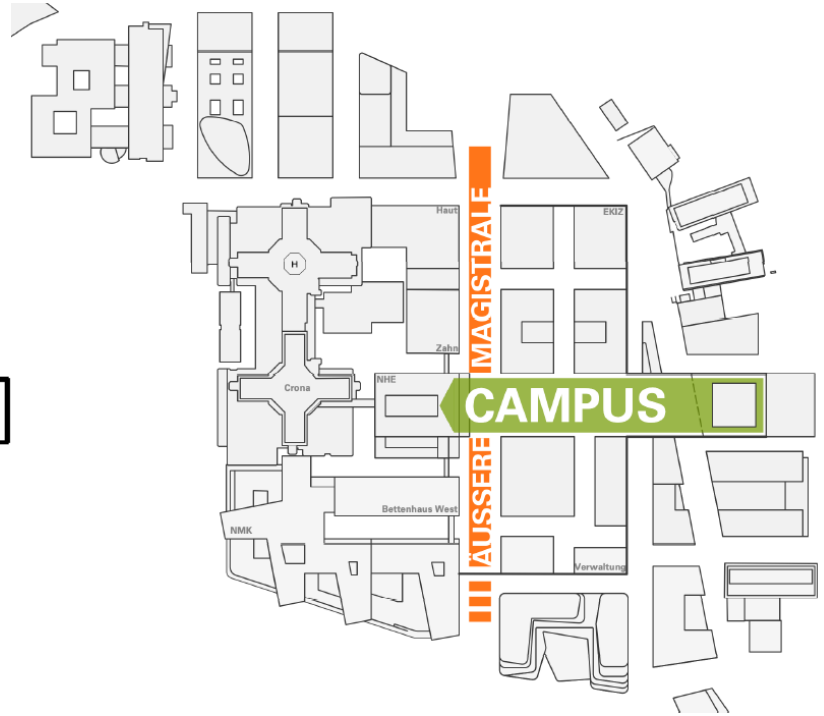
Entrances



Centre



Outdoor facilities



Castrum (Latin):
Roman military camp divided into four equal parts by two main streets running perpendicular to each other (Cardo and Decumanus).

Campus
– the green centre
– park-like character

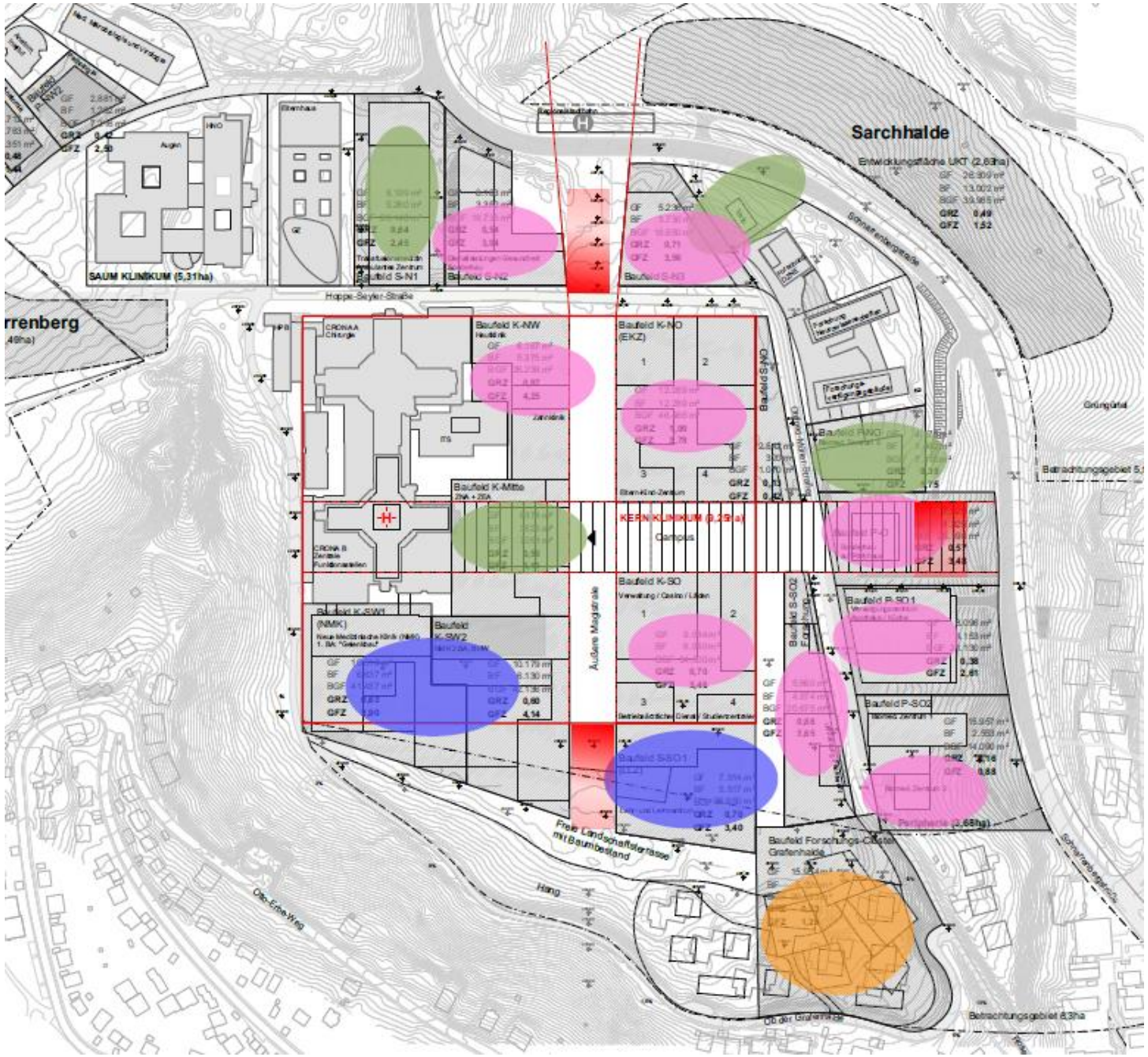
Outer Magistrale
– boulevard
– urban character

Site plan


Oberer Schnarrenberg
Entwicklungsfläche UKT
Sarchhalde
Entwicklungsfläche UKT
Kern-Klinikum
GELENKBAU
Unterer Schnarrenberg
Ob der Grafenhalde

Individual measures

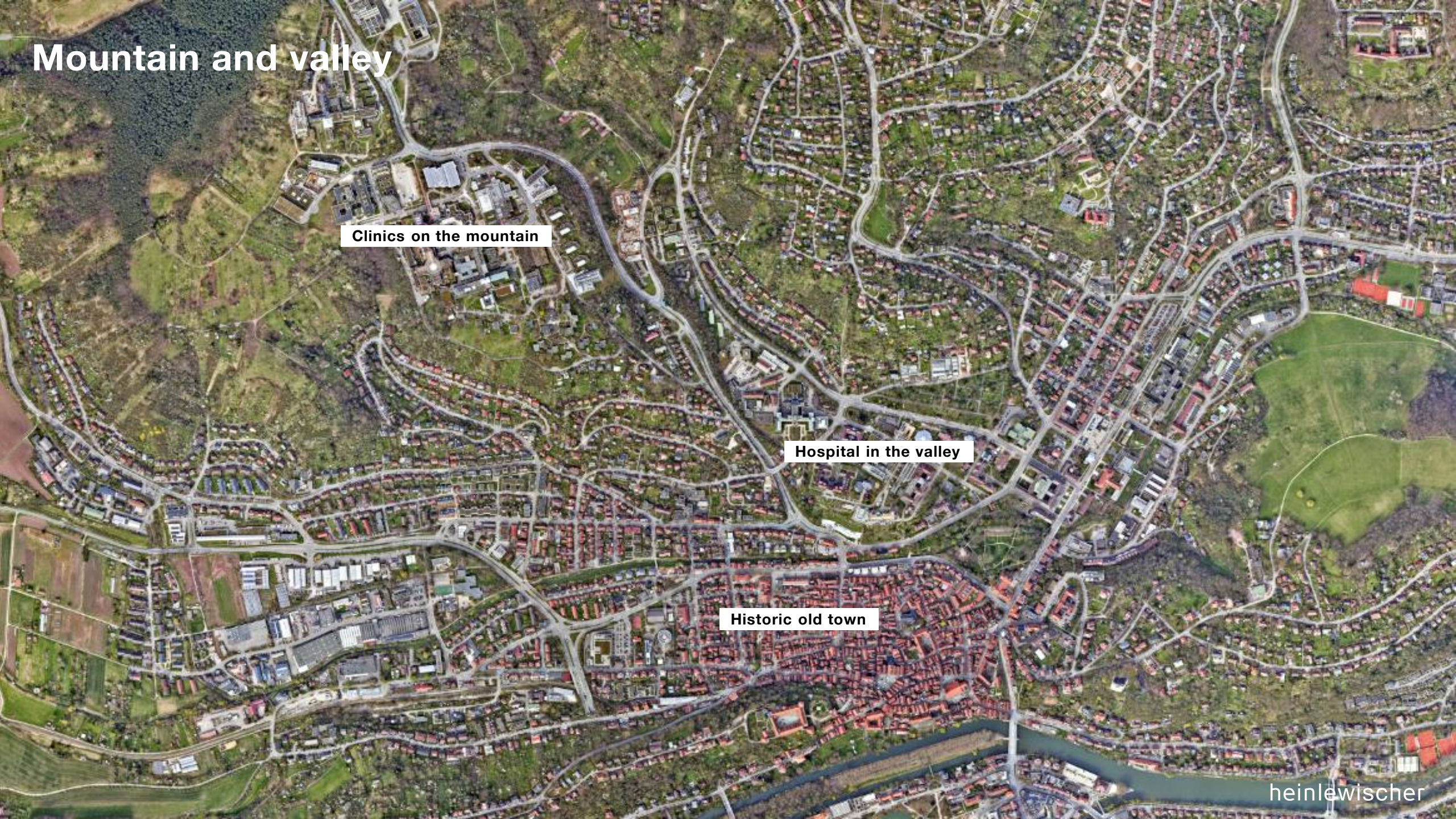
- in planning (after competition)
- feasibility studies
- concept studies
- entrances



Aerial view

heinlewischer

Mountain and valley



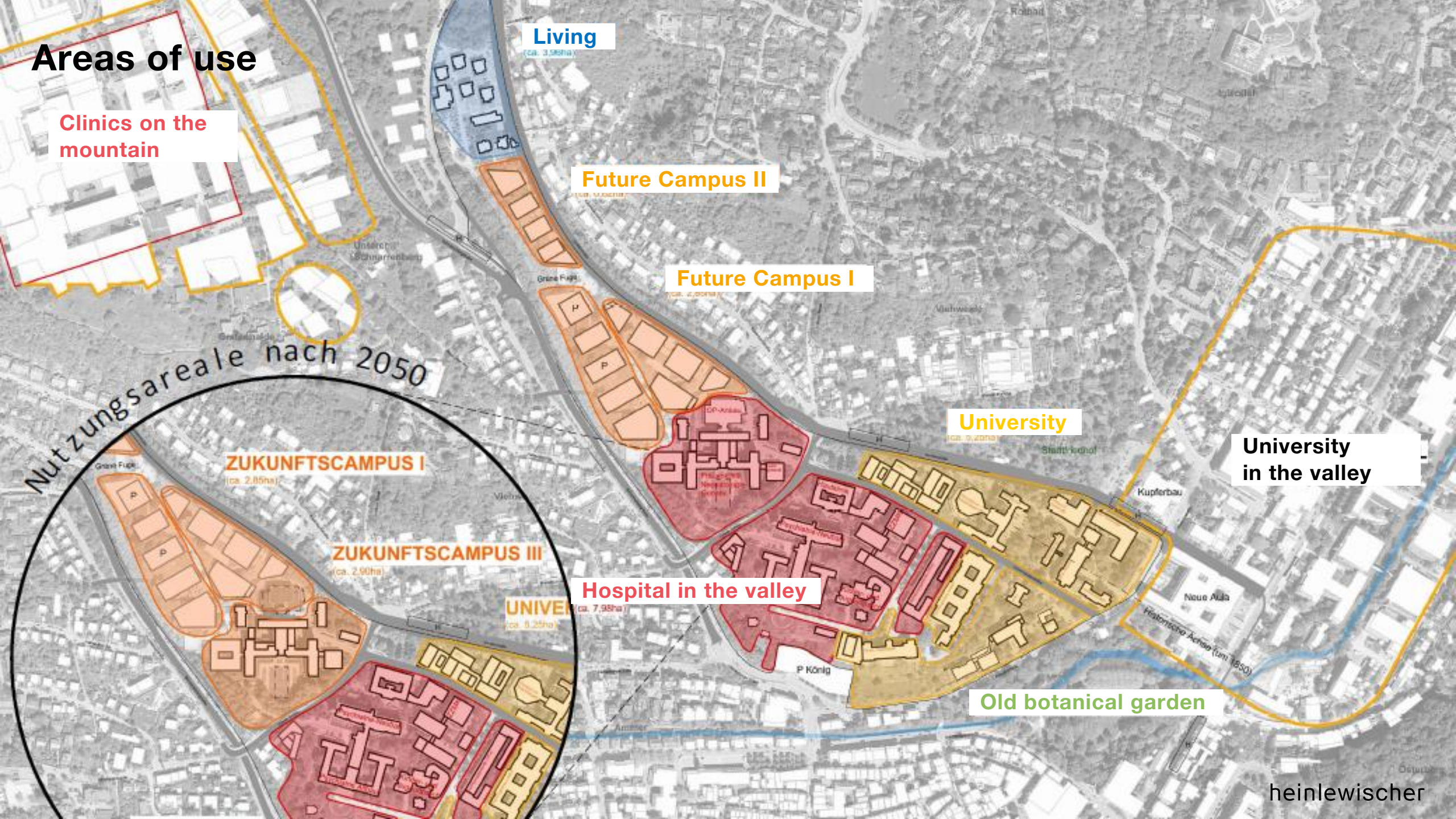
heinlewischer

Hospital in the valley – historic facades

heinlewischer

Site plan

heinlewischer


Areas of use
Clinics on the mountain
Living
Future Campus II
Future Campus I
University
University in the valley
Hospital in the valley
Old botanical garden
Nutzungsareale nach 2050
ZUKUNFTSCAMPUS I
ZUKUNFTSCAMPUS III
heinlewischer

Visualisation

heinlewischer

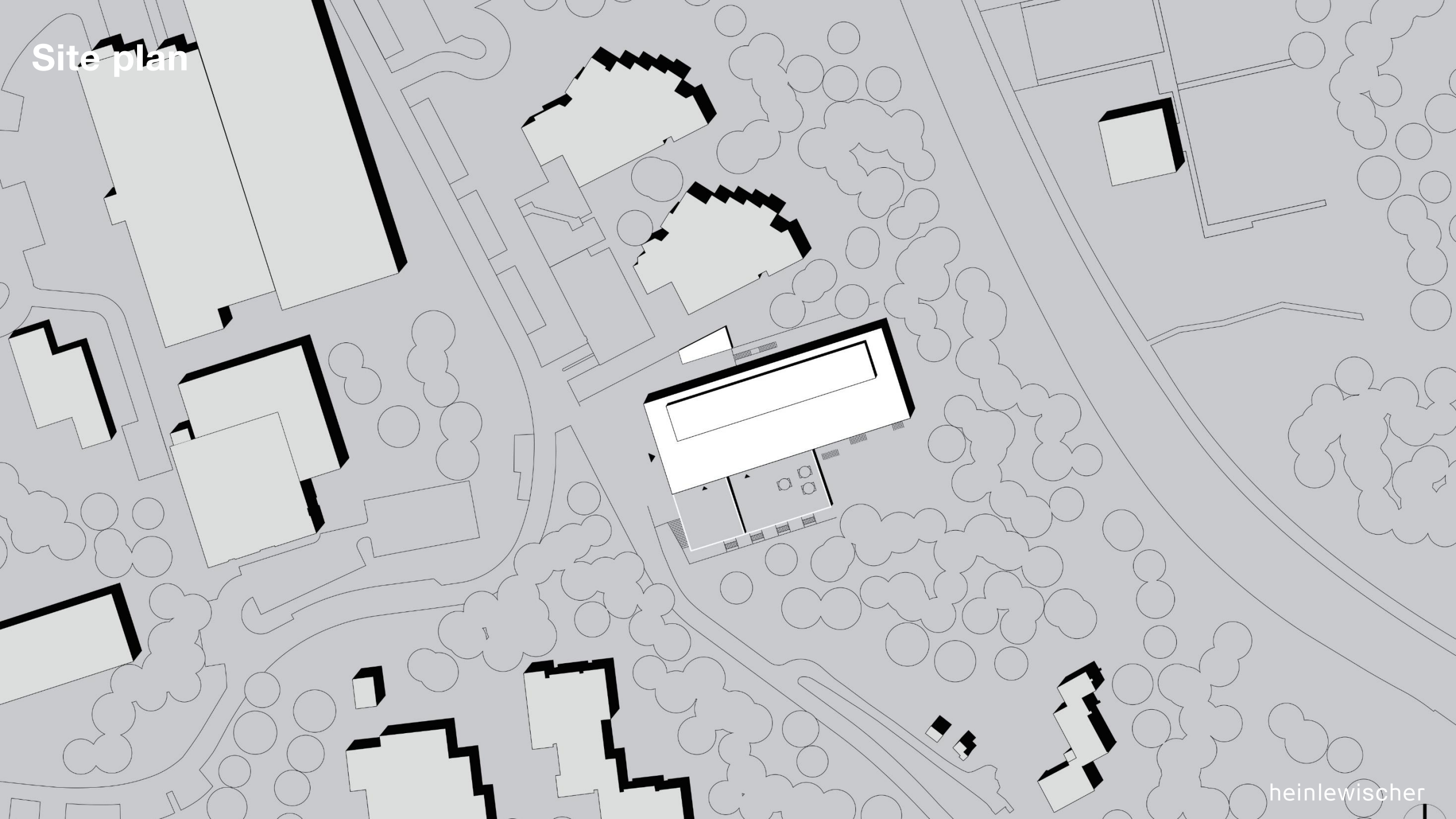
First step

Tübingen University Hospital

M3 Research Centre – Malignancy Metabolome Microbiome

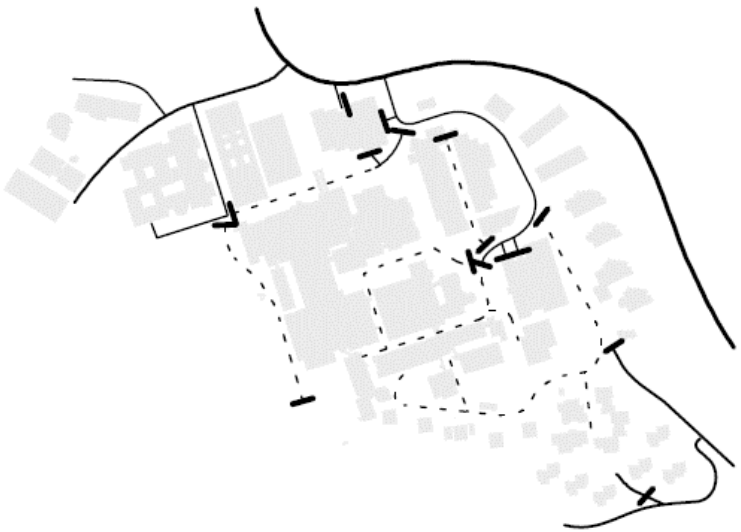
heinlewischer

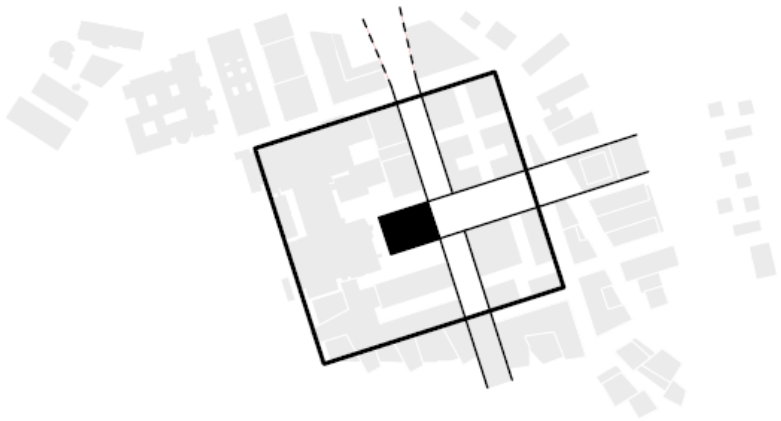
Site plan

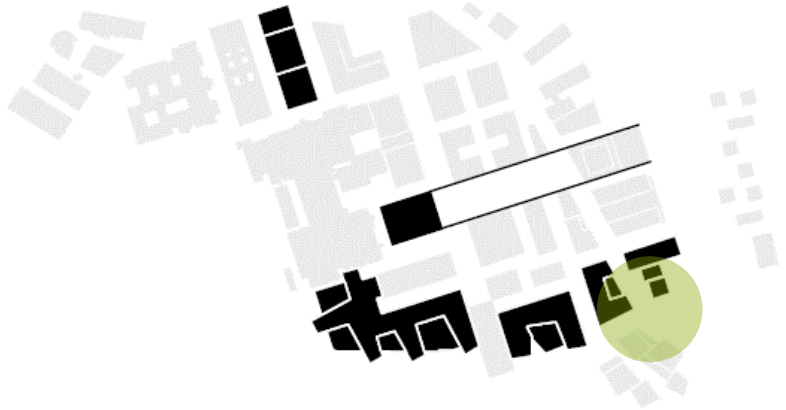


heinlewischer

From master plan to building

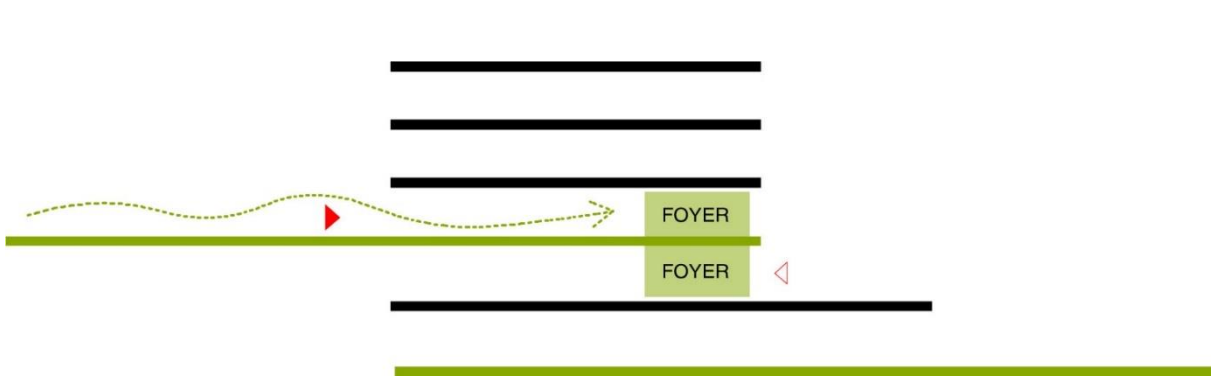


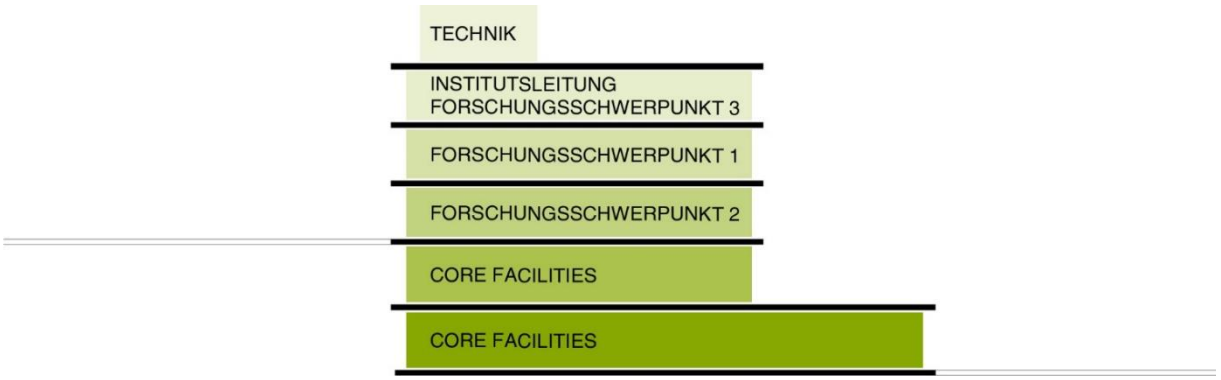




existing buildings → master plan → construction projects:
first step
new M3 building

Topography and usage



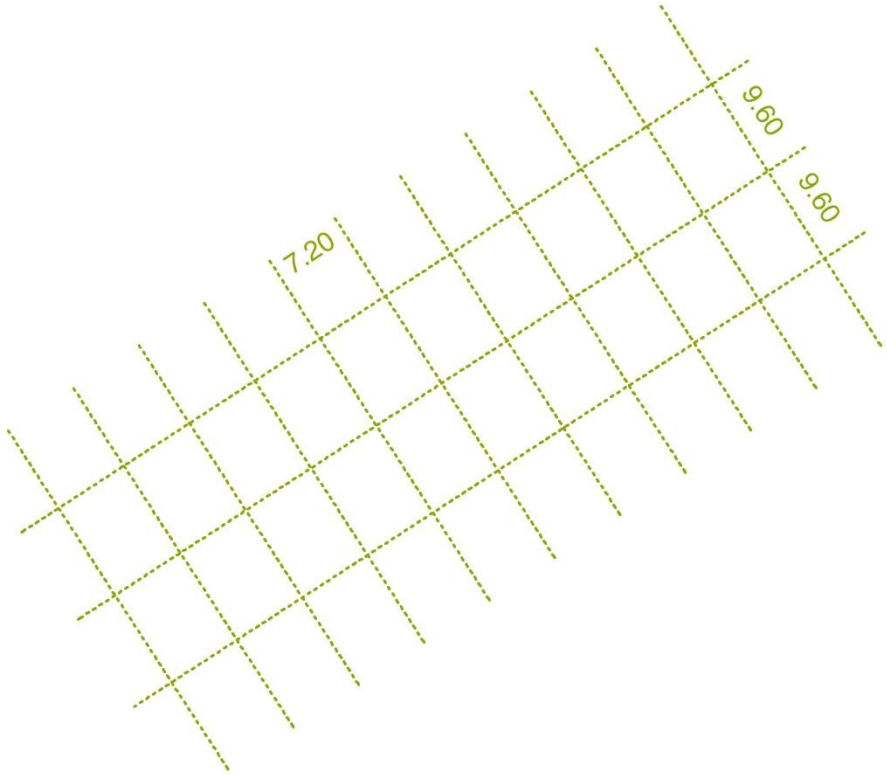


Layers

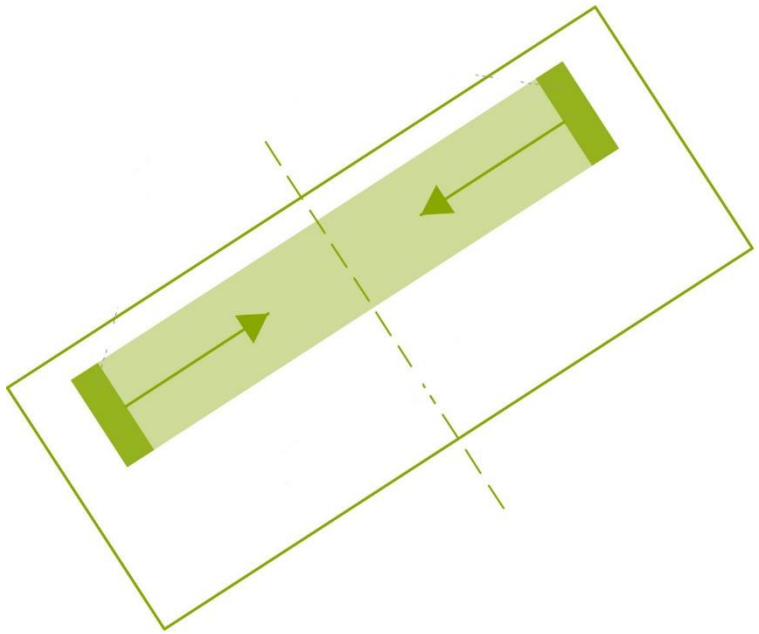
heinlewischer

Concept

guiding principle



supporting structure

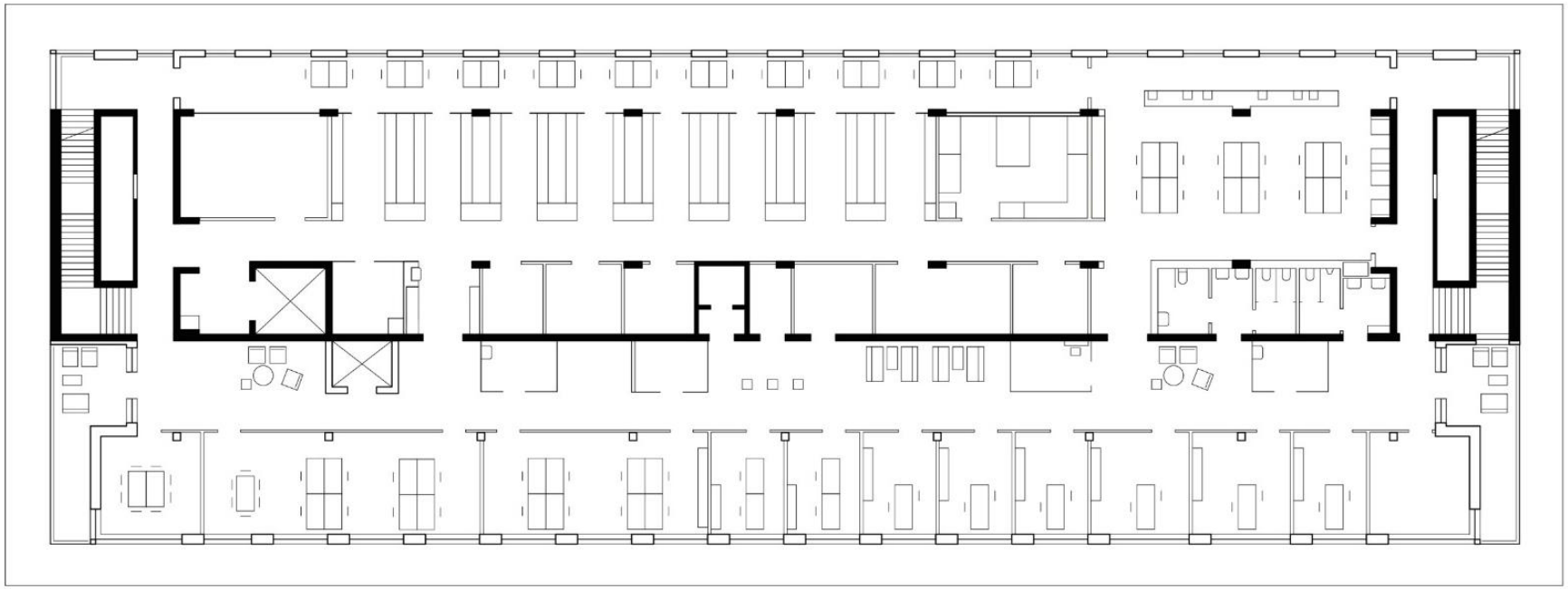


technical concept

Development of the levels on the slope

heinlewischer

Floor plan first floor



heinlewischer

Communication zone and offices

heinlewischer

On the hill

Laboratory

heinlewischer

Writing desks by the window

heinlewischer

Shading, maintenance, cleaning

heinlewischer

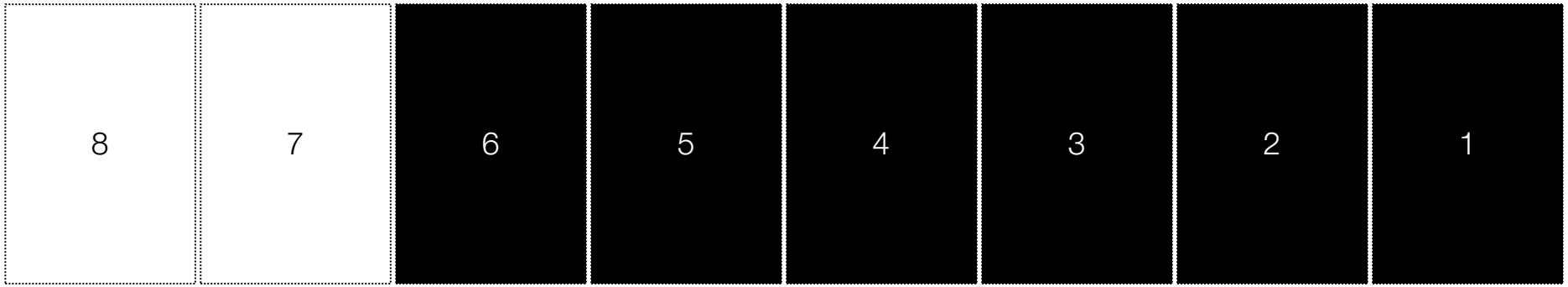
Patient room

The health district in Ammerland

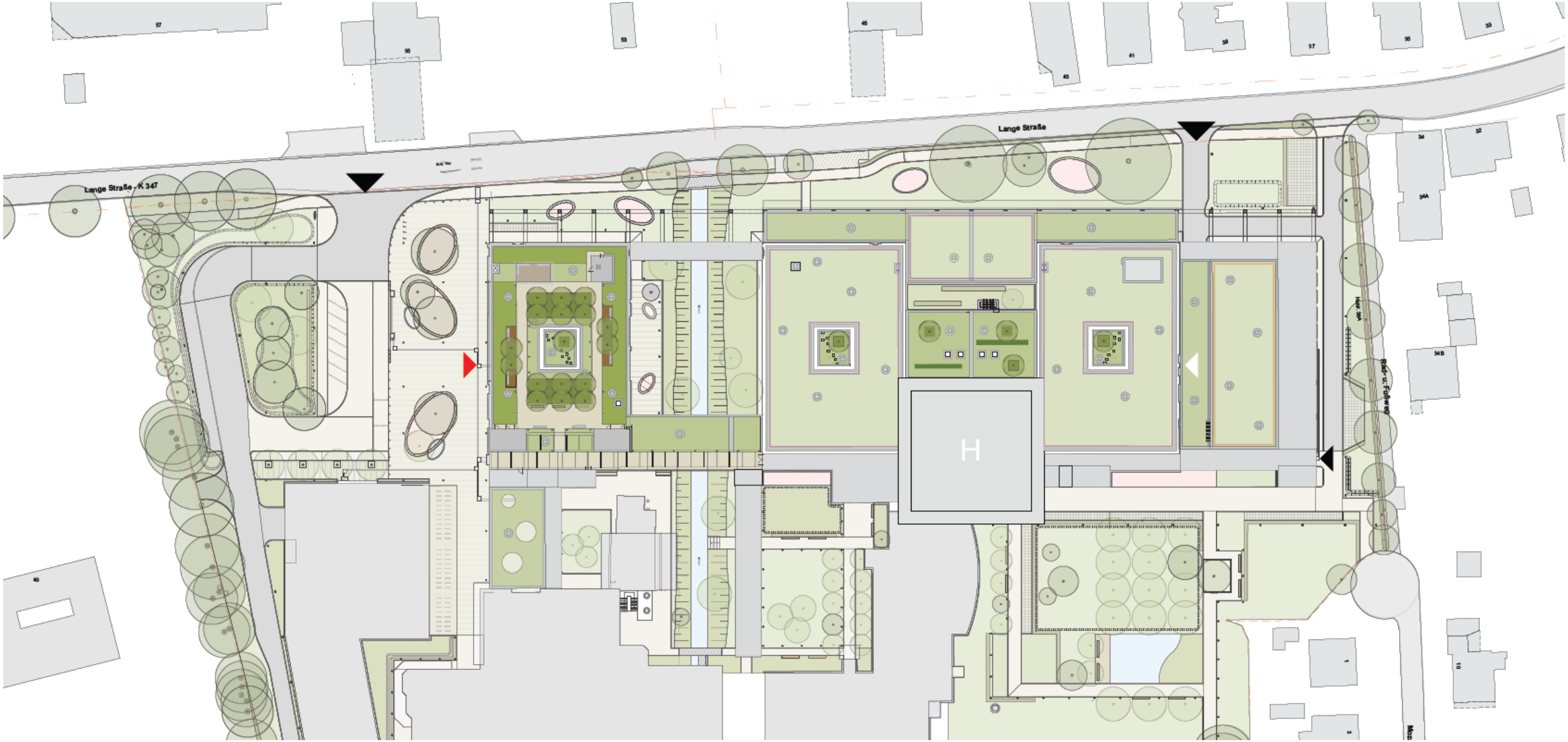
Westerstede Clinic Centre

heinlewischer

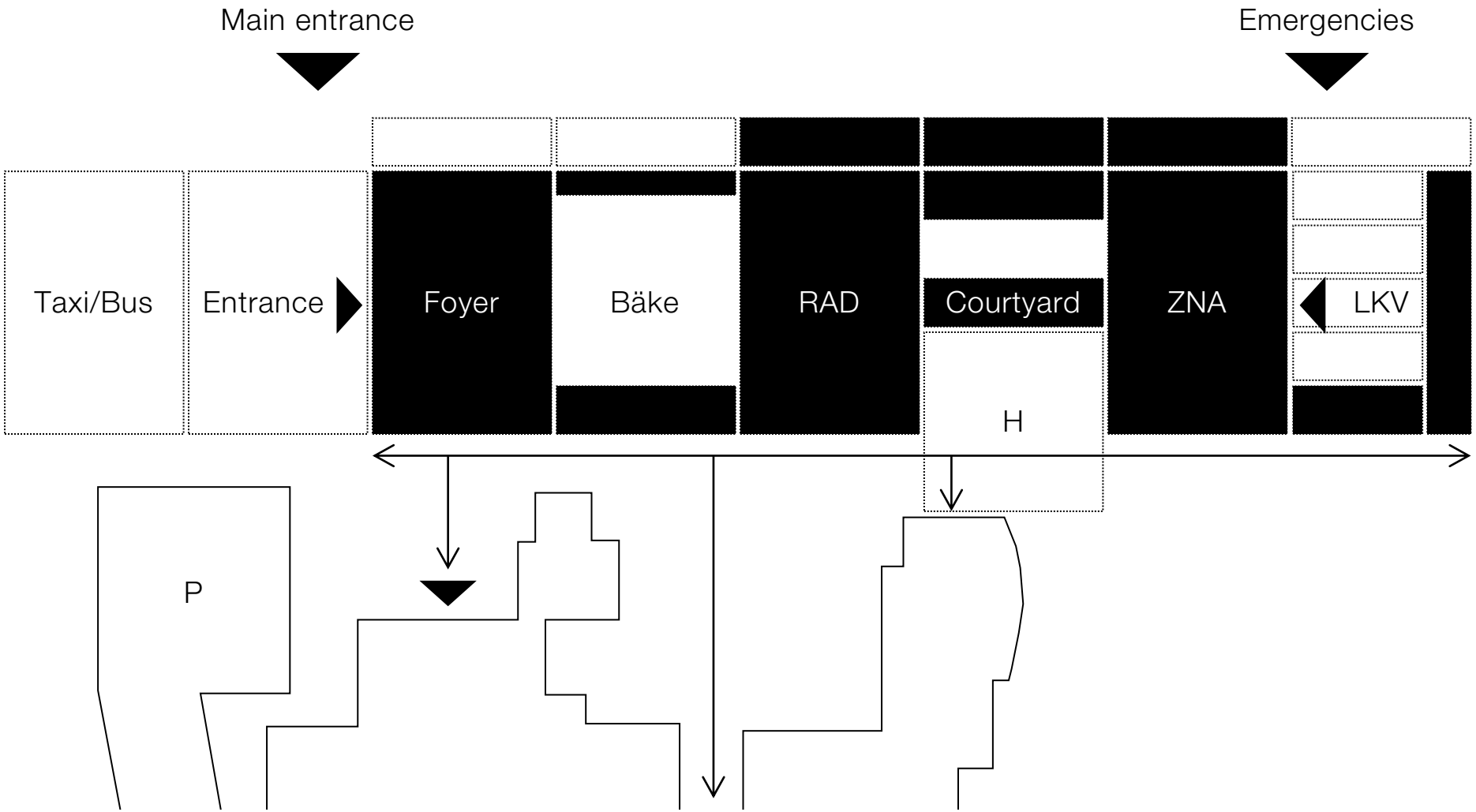
Moduls



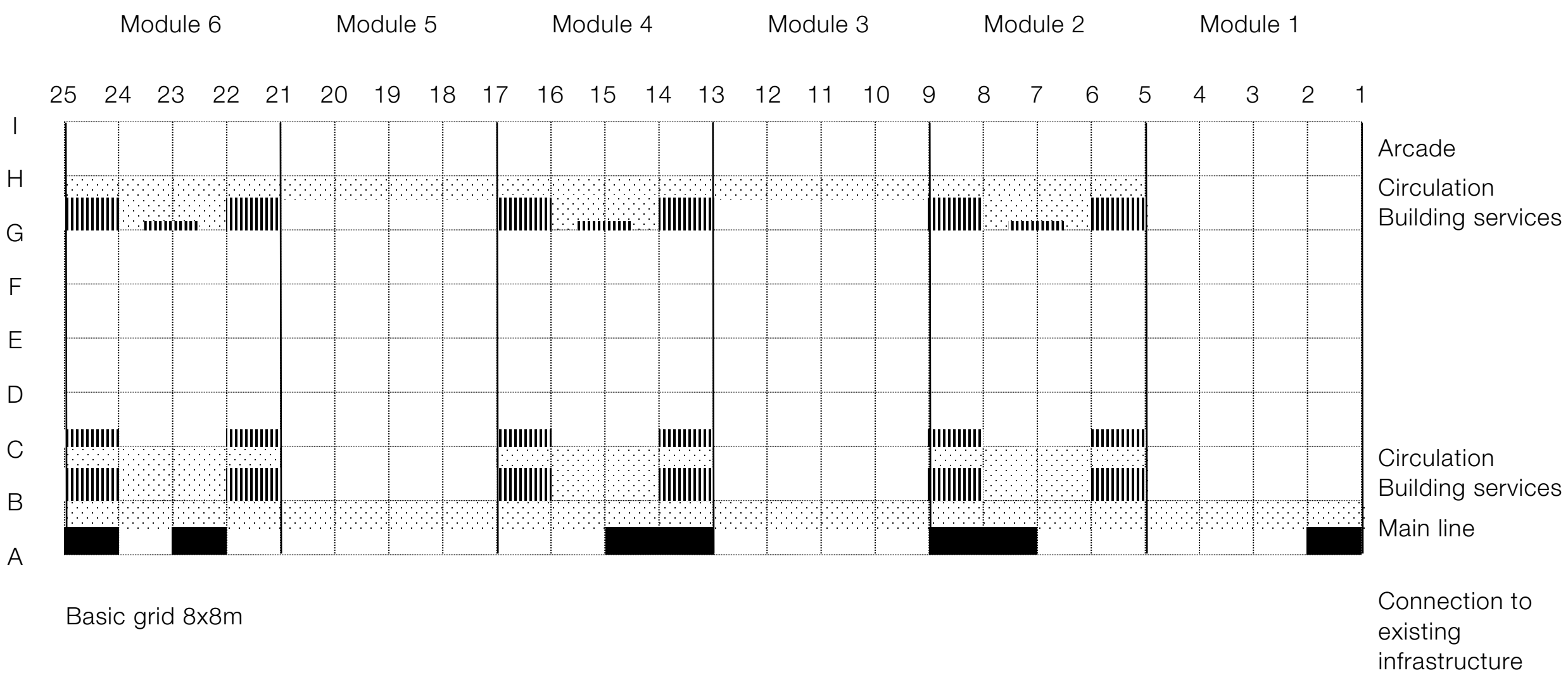
Site plan



Clusters


Main entrance
Emergencies
Taxi/Bus
Entrance
Foyer
Bäke
RAD
Courtyard
ZNA
LKV
H
P

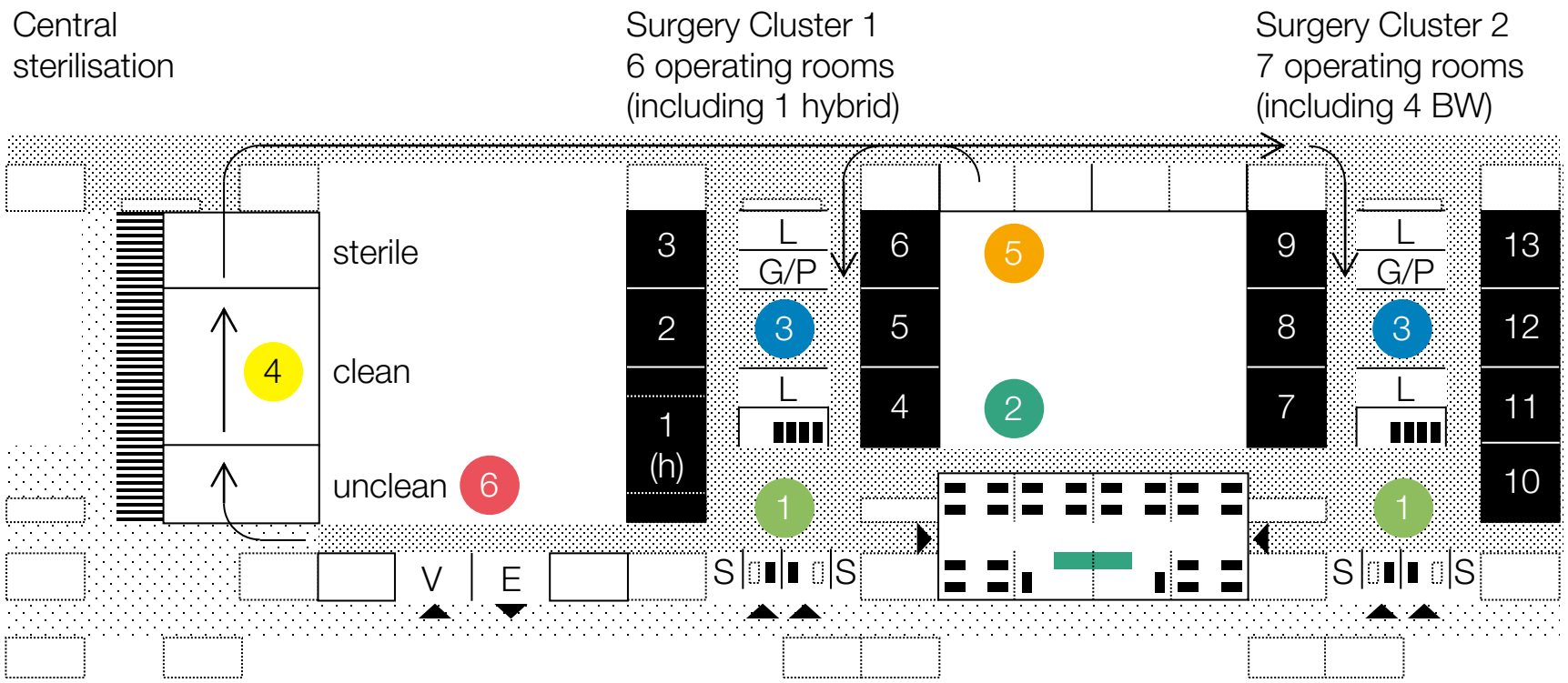
Structure


Module 6
Module 5
Module 4
Module 3
Module 2
Module 1
25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
I
H
G
F
E
D
C
B
A
Arcade
Circulation
Building services
Circulation
Building services
Main line
Basic grid 8x8m
Connection to
existing
infrastructure

Aerial view

heinlewischer

Function chart for operating rooms



1 Airlock areas
(per cluster)
- 2 transfer airlocks
- 1 patient airlock
- 1 special room/airlock

2 Holding/recovery area
- 'Green holding'
- flexible allocation of white/green areas possible

2 Central discharge points

4 Central sterilisation

5 Sterile goods storage

6 Supply/disposal locks

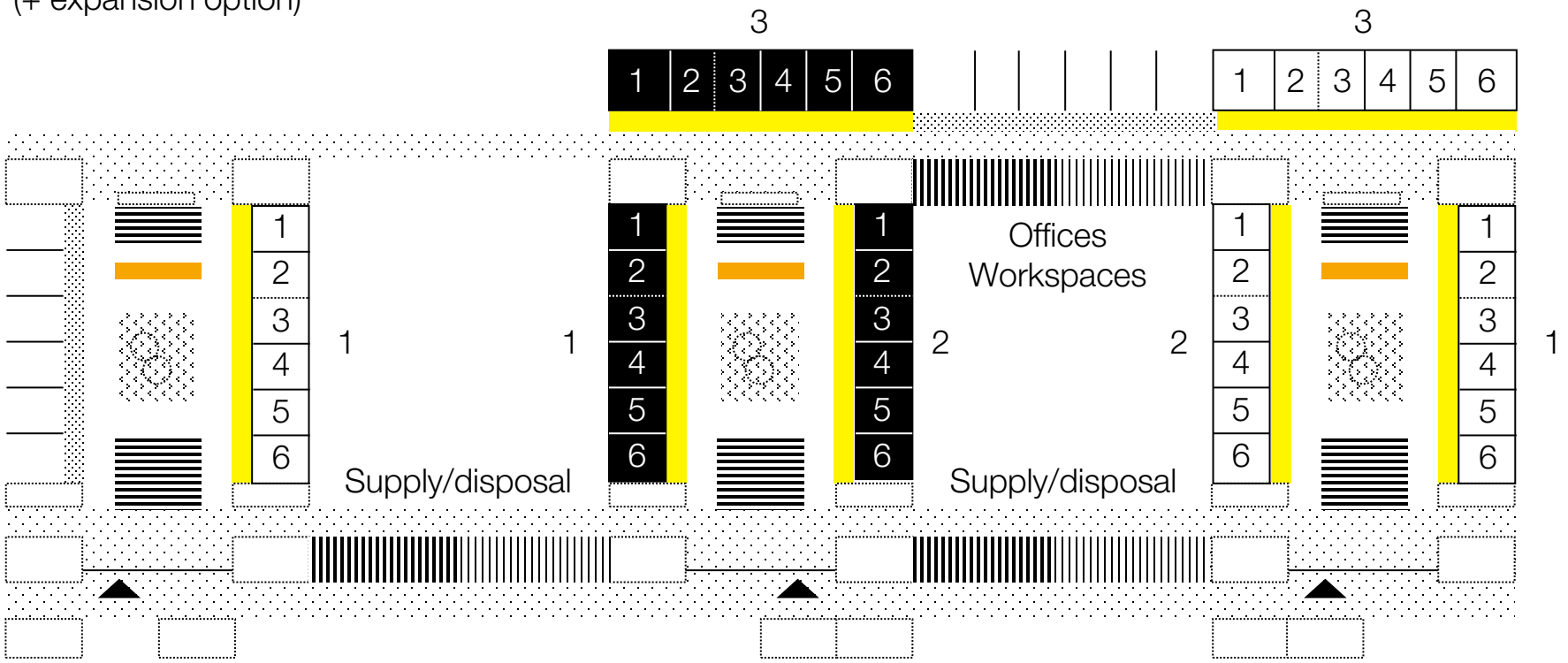
Principle of intensive care

Station 3
6 beds
1 care group
(+ expansion option)

Station 2
18 beds
3 care groups

On-call service

Station 1
18 beds
3 care groups



Care groups (each)
- 4 single rooms
- 1 double room
  (size of 1 double room = 2 single rooms)

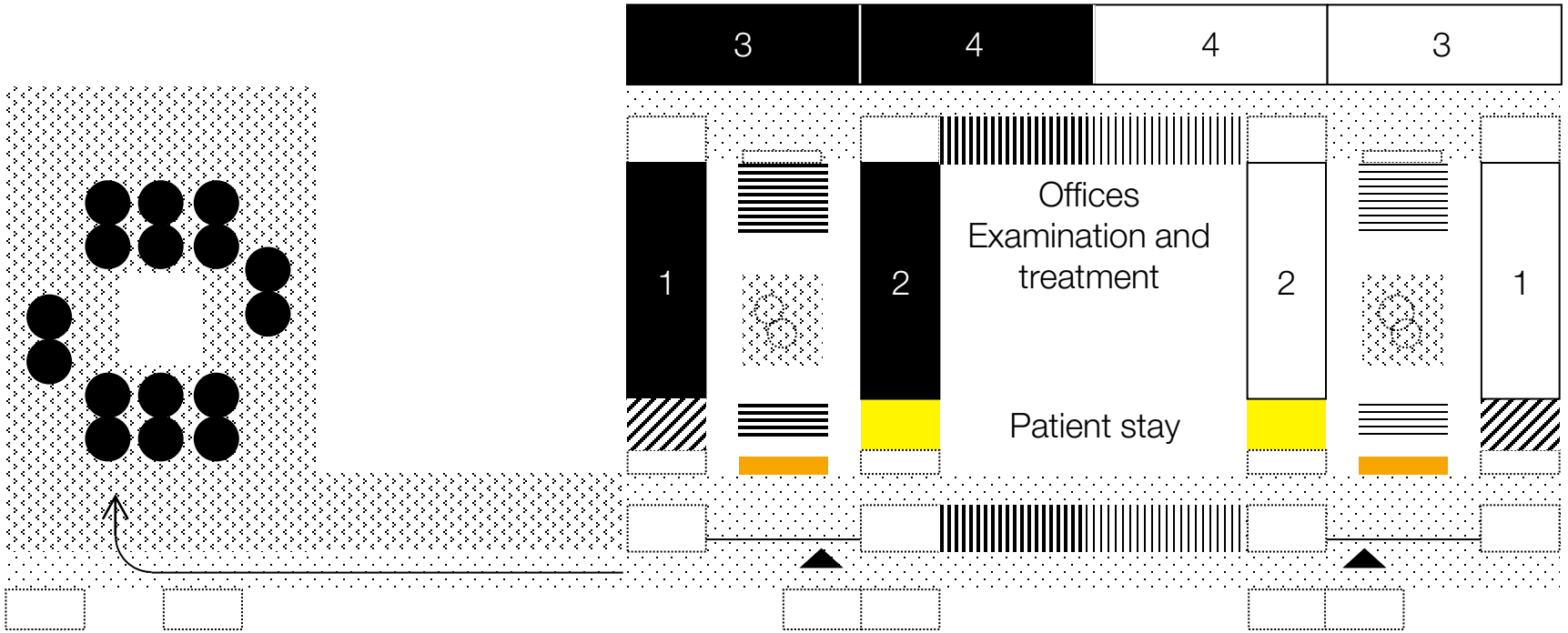
Upstream working, observation and lock zone

General care principle (ring care, overflow station)

Patient
garden
(4th floor)

Station 1
44 beds
4 care groups

Station 2
44 beds
4 care groups



Patient room general care

Patient room

heinlewischer

Hybrid

Vivantes Neukölln Hospital, Berlin

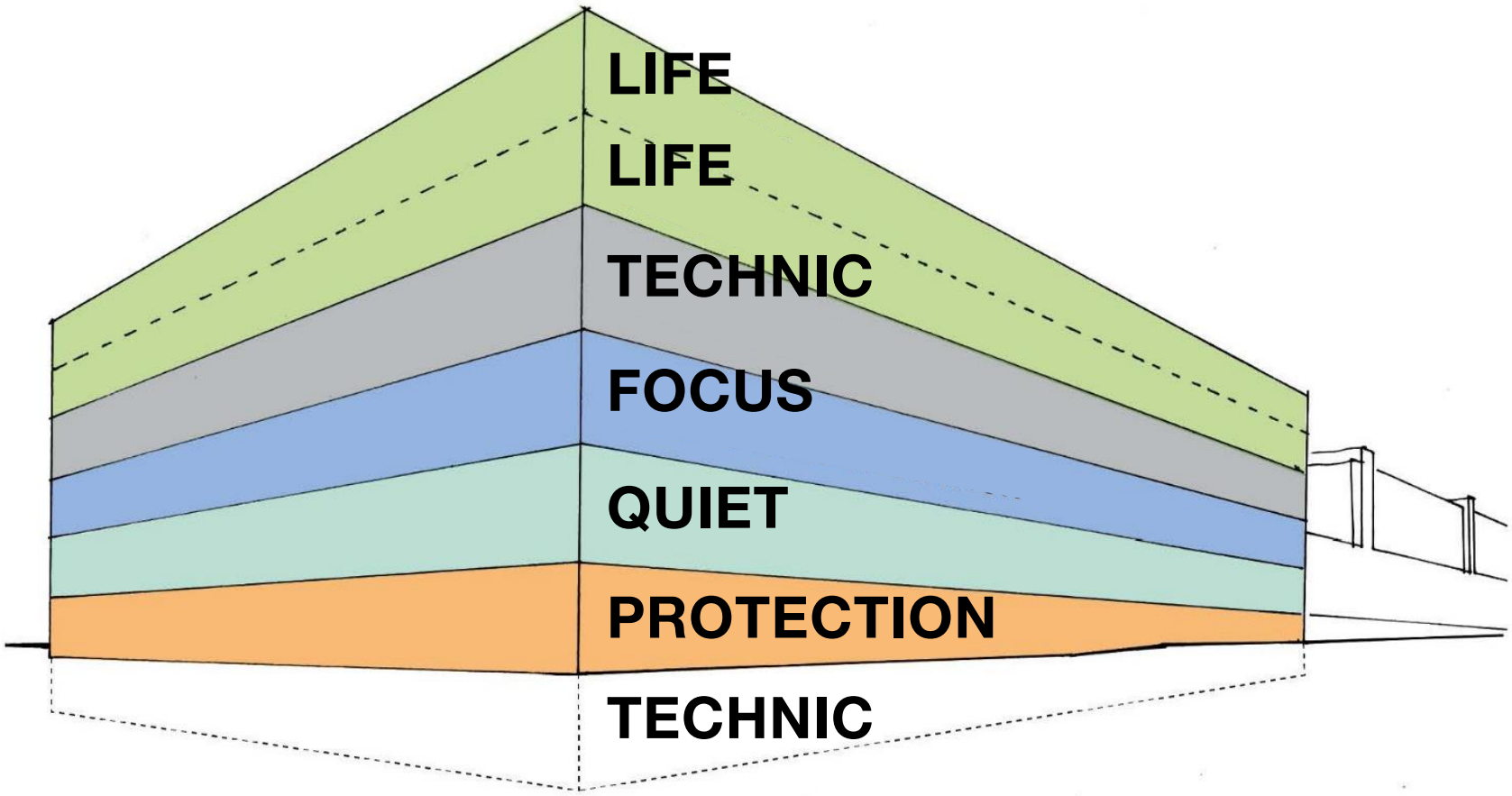
New construction „Nordkopf“

Site plan

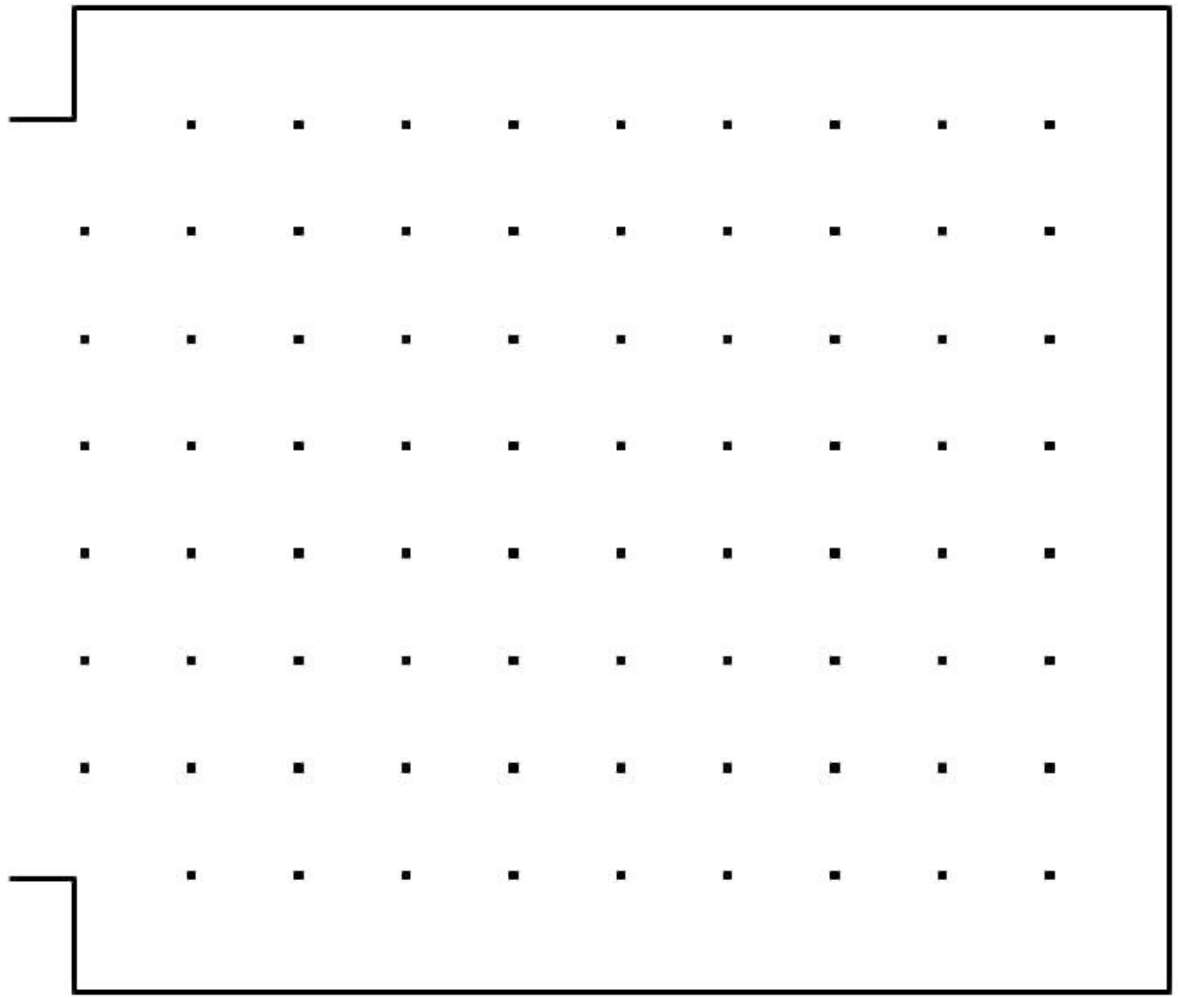
heinlewischer

The new building as a hybrid structure

General care
General care
Building services
Operating centre
Endo / Intervention / ITC
Emergency room
Building services

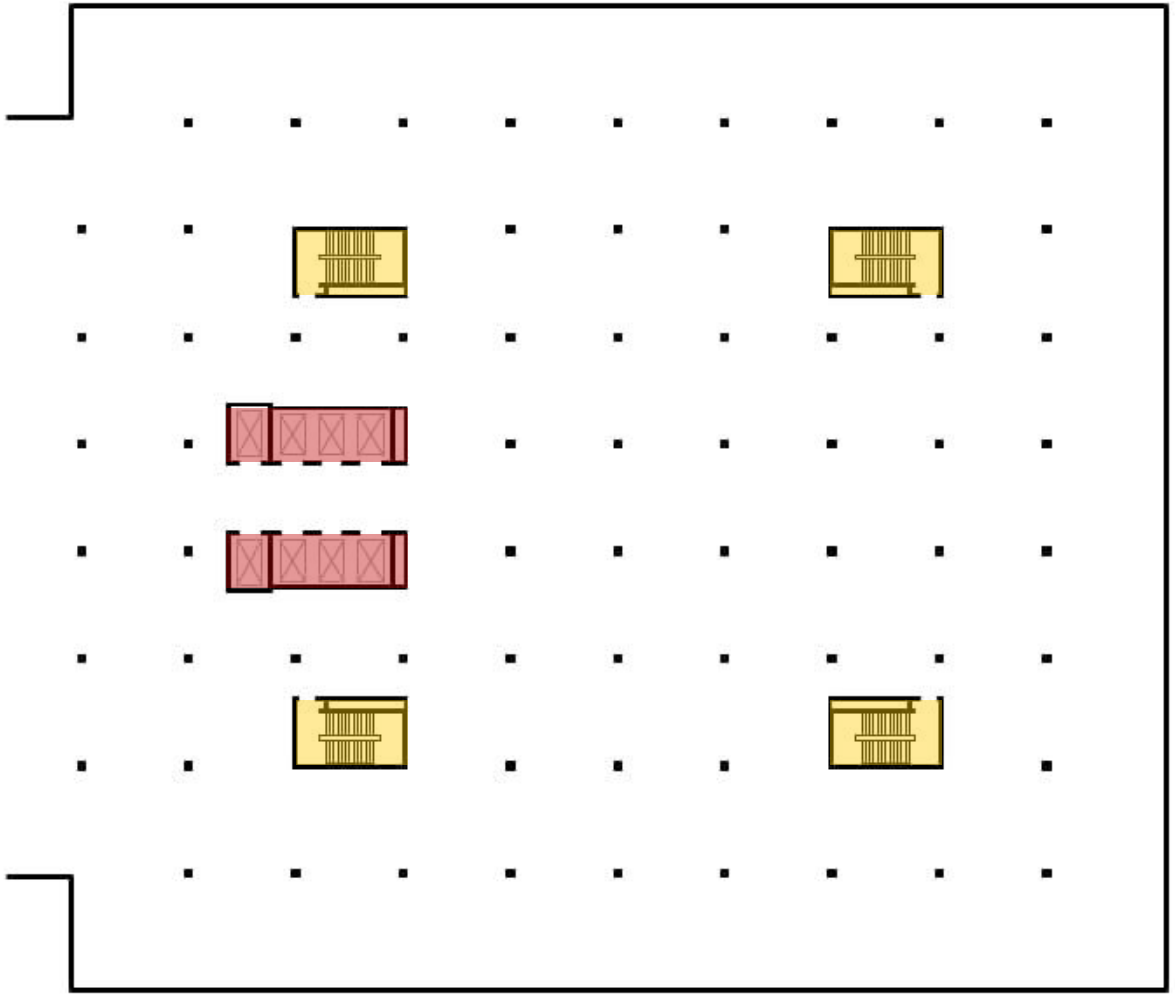


Structural order – construction



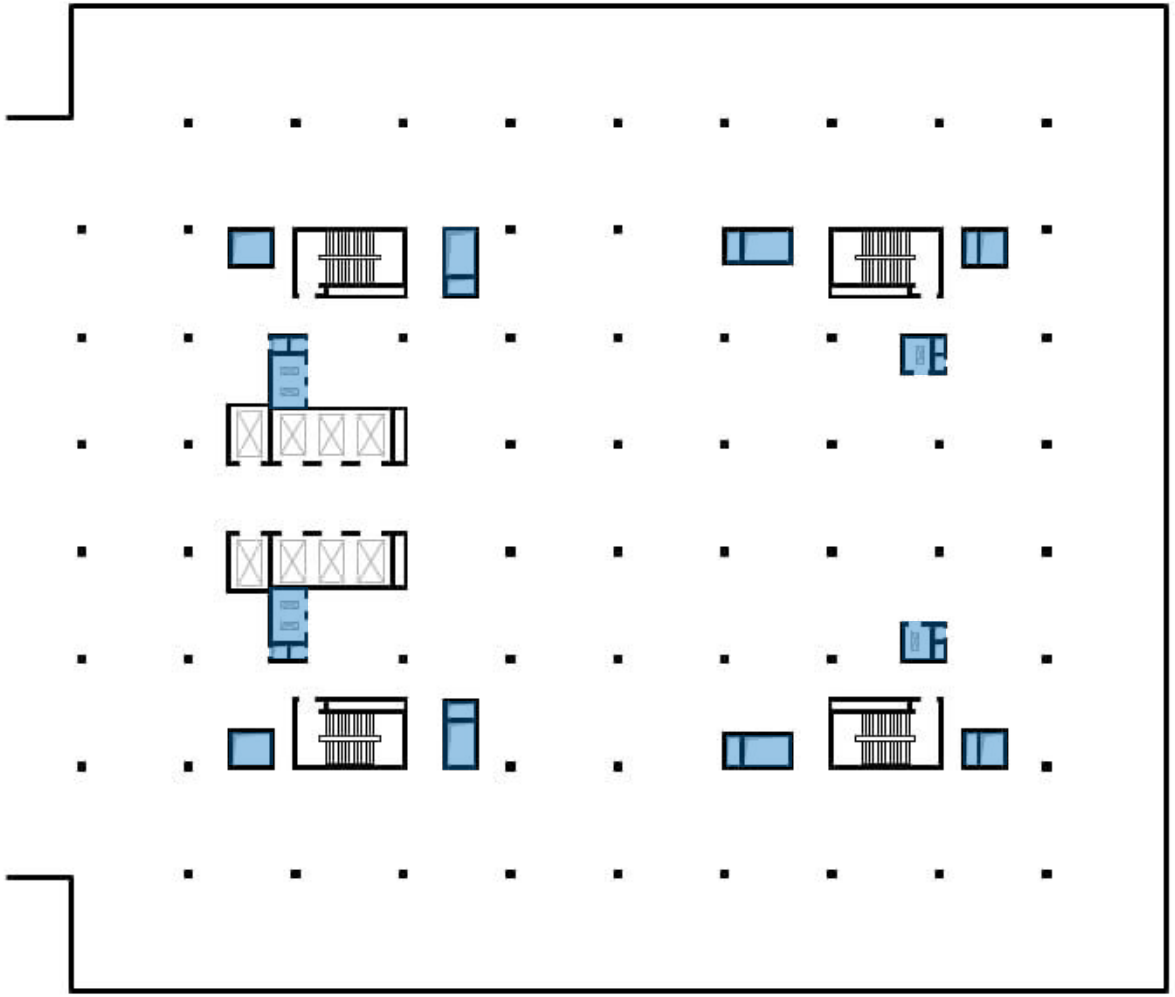
– **construction grid 7.80 x 7.80 m**

Structural order – circulation cores



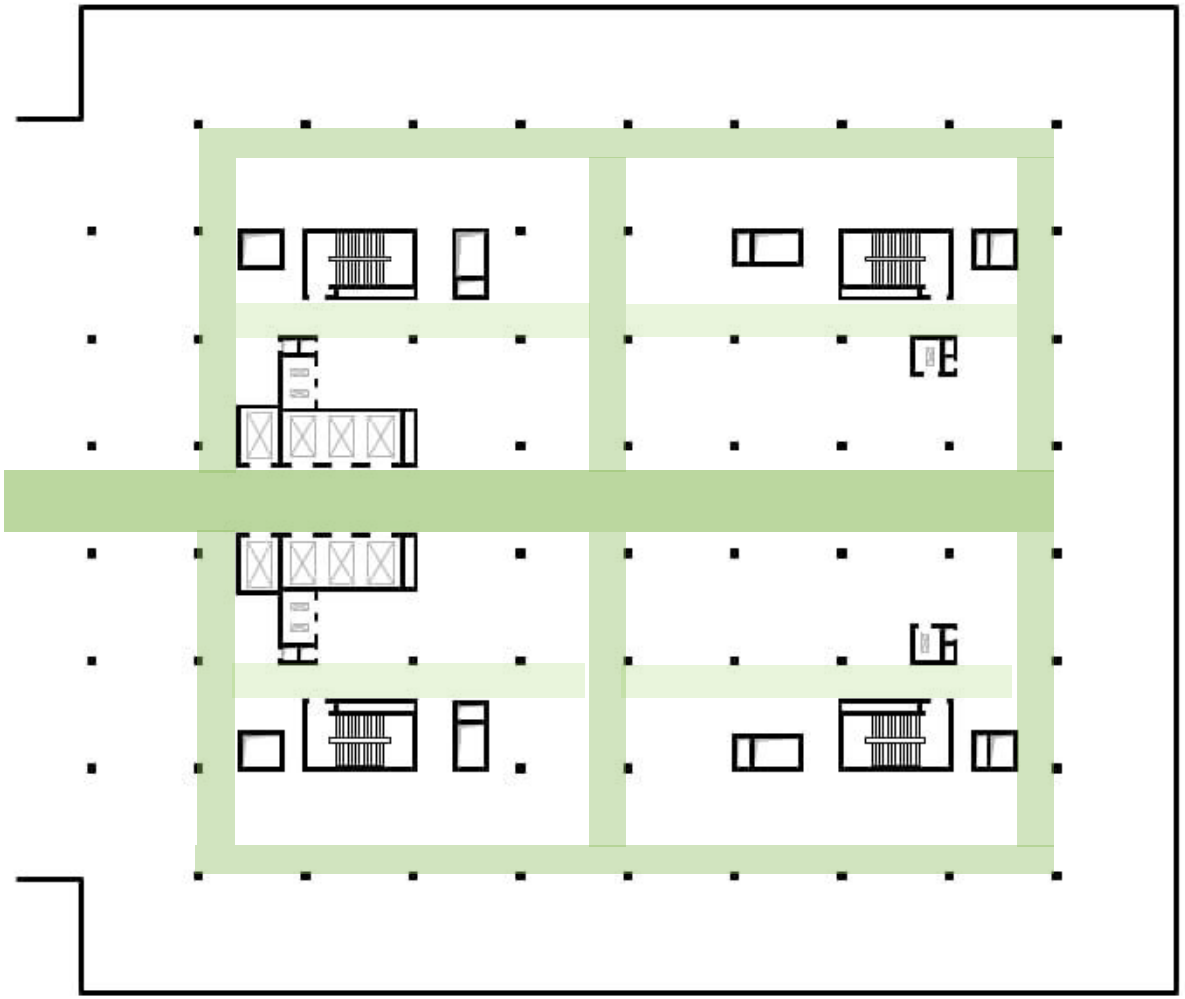
– construction grid 7.80 x 7.80 m
– **circulation cores**

Structural order – technical building equipment



– construction grid 7.80 x 7.80 m
– circulation cores
– **building services shafts**

Structural order – circulation



– construction grid 7.80 x 7.80 m
– circulation cores
– building services shafts
– **circulation in stages**

May 2025

heinlewischer

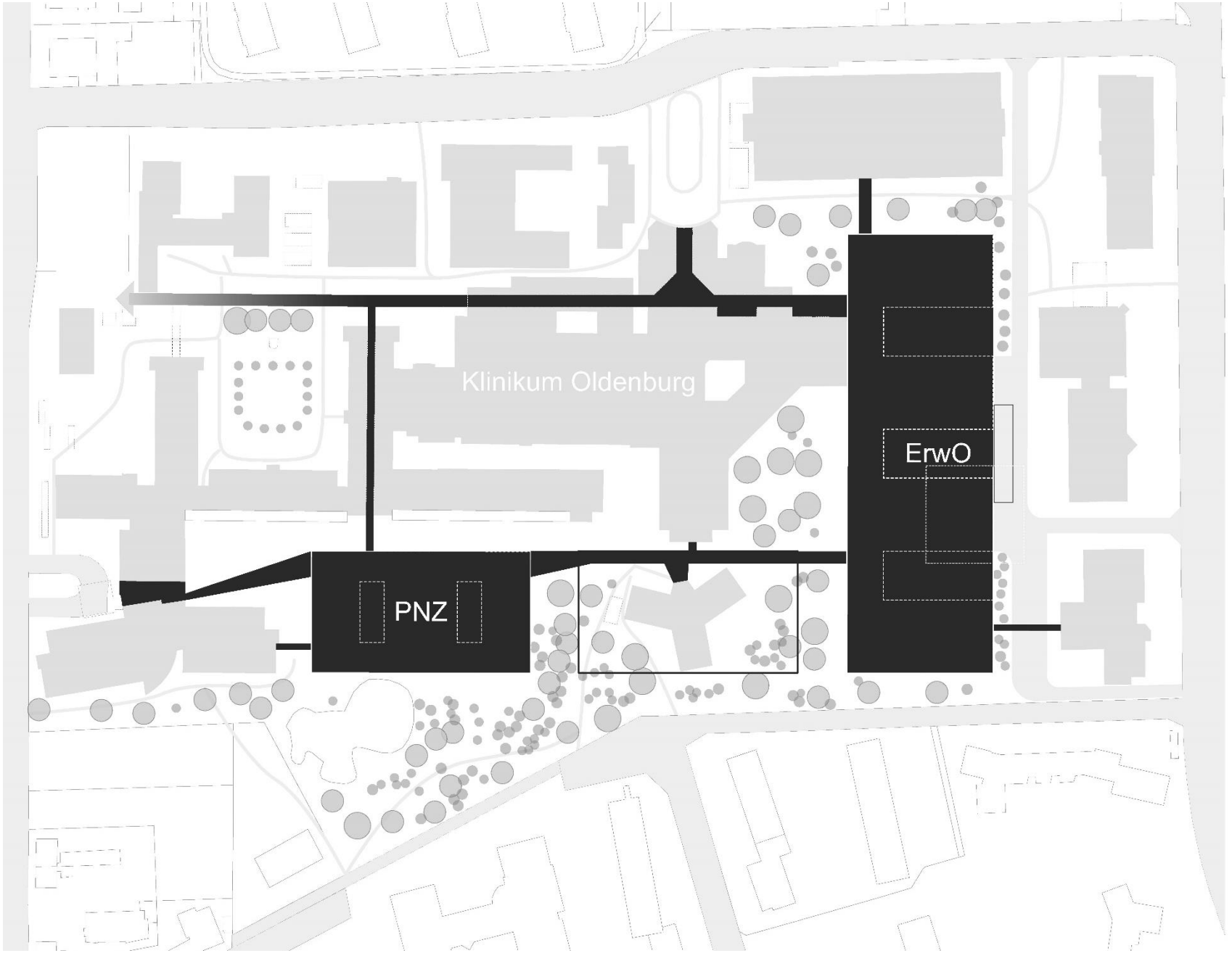
New layout

Oldenburg Hospital

Restructuring of the hospital complex

heinlewischer

Site plan



Perinatal centre

heinlewischer

Heart and emergency centre

heinlewischer

Patient profile: Ms Keller

– 82 years old, widowed, lives alone, her son also lives in Oldenburg.
– She fell in the kitchen and her neighbour called the emergency services.
– She has bruises and is in pain after a hard blow to the head.

Journey through the emergency room

1 The emergency services bring her to the emergency room.
2 She is taken to an X-ray room for assessment.
3 She has a CT scan of her head.
4 She returns to the U/B room to wait for her results.
5 Her son arrives at the main entrance of the hospital.
6 He follows the guidance system to the control centre and is directed to her room by the staff.
7 She has only minor injuries and is taken home by her son.

Patient profile: Nikita

– Mrs Agarwal's husband is away on business.
– Nikita has various symptoms and it is unclear what is wrong with her.
– Nikita is stressed; she feels uncomfortable being around adult patients.

Journey through the emergency room

1 They arrive at the emergency room entrance.
2 They register and wait.
3 They go to the quieter U/B room at the back to get away from the older patients.
4 Mrs Agarwal goes to the café to get a snack for both of them while the nurse stays with Nikita.
5 She returns to the U/B room.
6 Nikita is admitted to the children's hospital because it cannot be determined what exactly is causing the symptoms.

Patient profile: Mr Dubois

– 32 years old, athletic and married.
– His wife brings him to the emergency room after he experiences breathing difficulties during training.
– He has various symptoms that are difficult to determine due to his age and health.

Journey through the emergency room

1 They arrive at the emergency room entrance.
2 They register and wait.
3 They go to an examination room.
4 He receives a CT scan.
5 He returns to the U/B room for further examination.
6 He has a heart attack and his vital functions fail. He is taken to a trauma room for stabilisation.
7 He is immediately taken to the cardiac catheterisation laboratory for surgery.
8 He is admitted to the intensive care unit for recovery and monitoring.

Under construction

heinlewischer

Facade

University Hospital Essen

Children's Hospital and Nuclear Medicine with Radiochemistry

heinlewischer

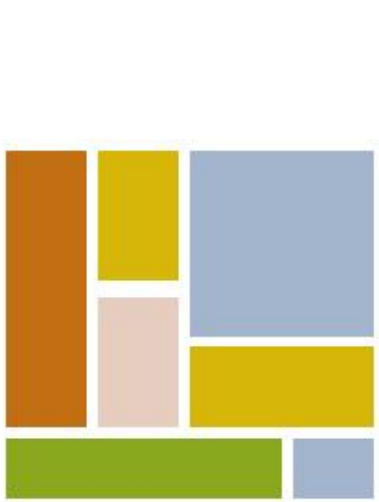
Site plan

heinlewischer

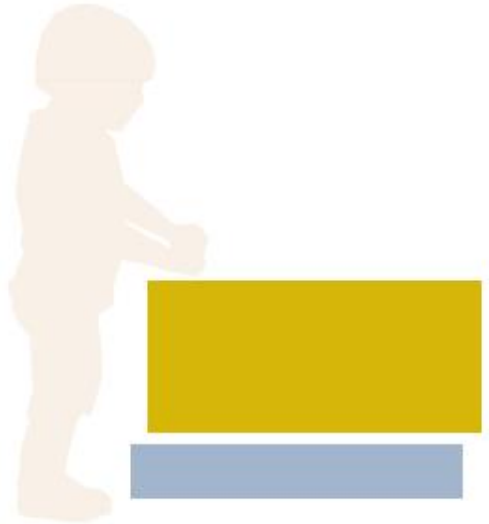
Model in the architecture competition

heinlewischer

Overall concept



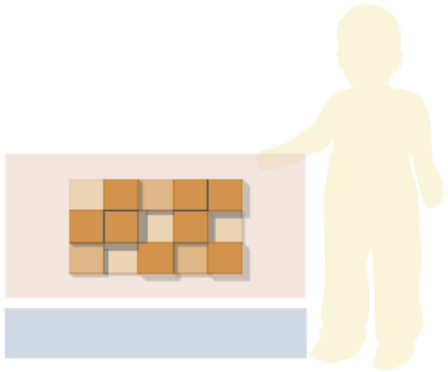
construction kit



stack

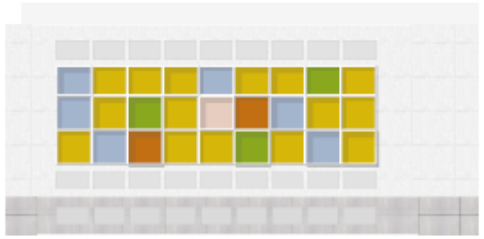
cut out

insert



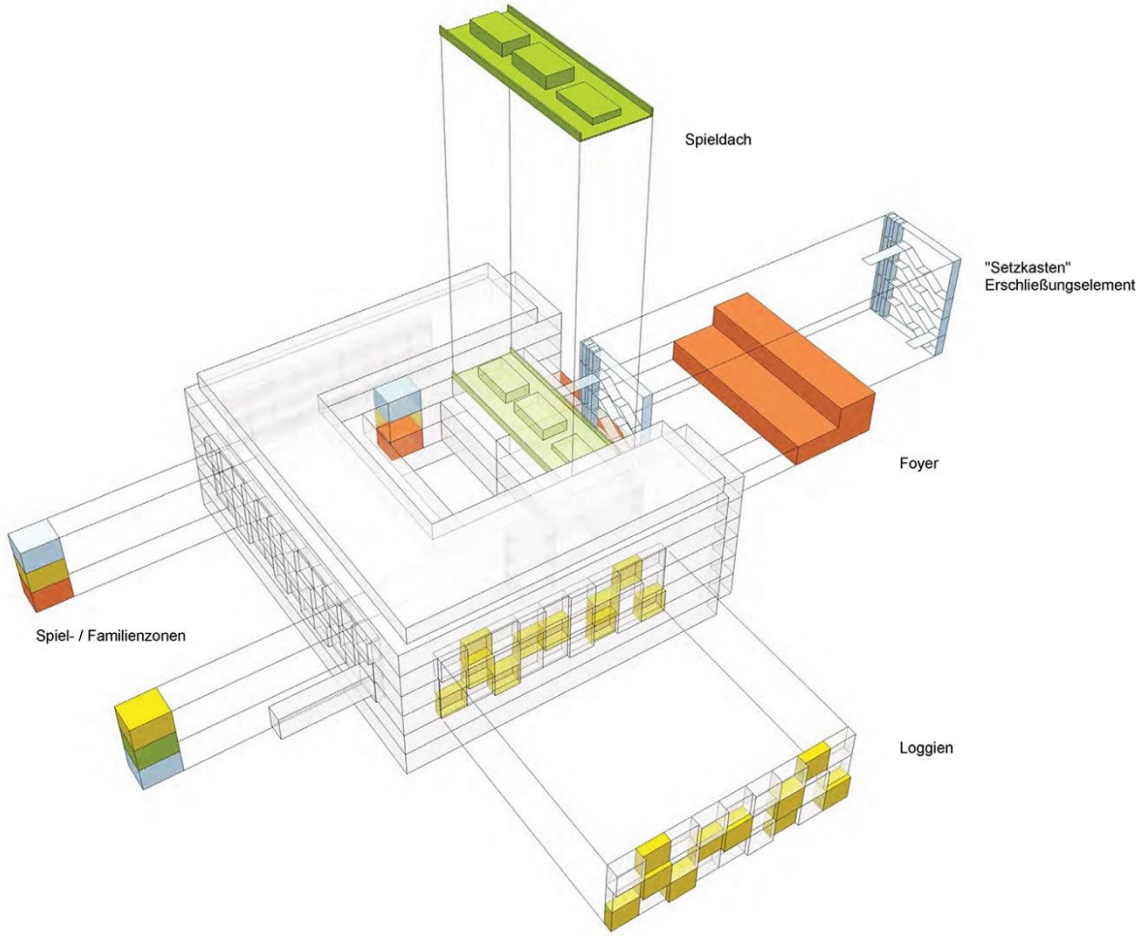
stick and push

paint

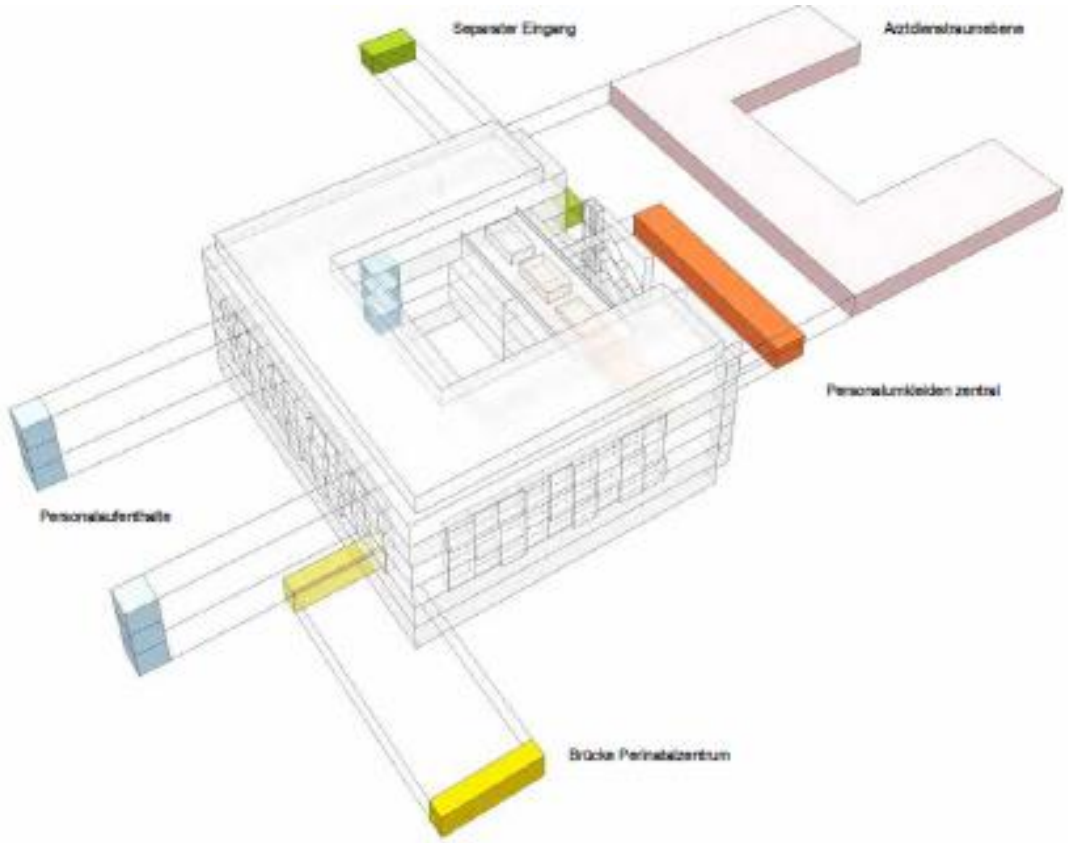


Childrens clinic

Stack, stick, push



Children's world



Hospital staff world

Interior concept

Patient room

Playroom

The facade

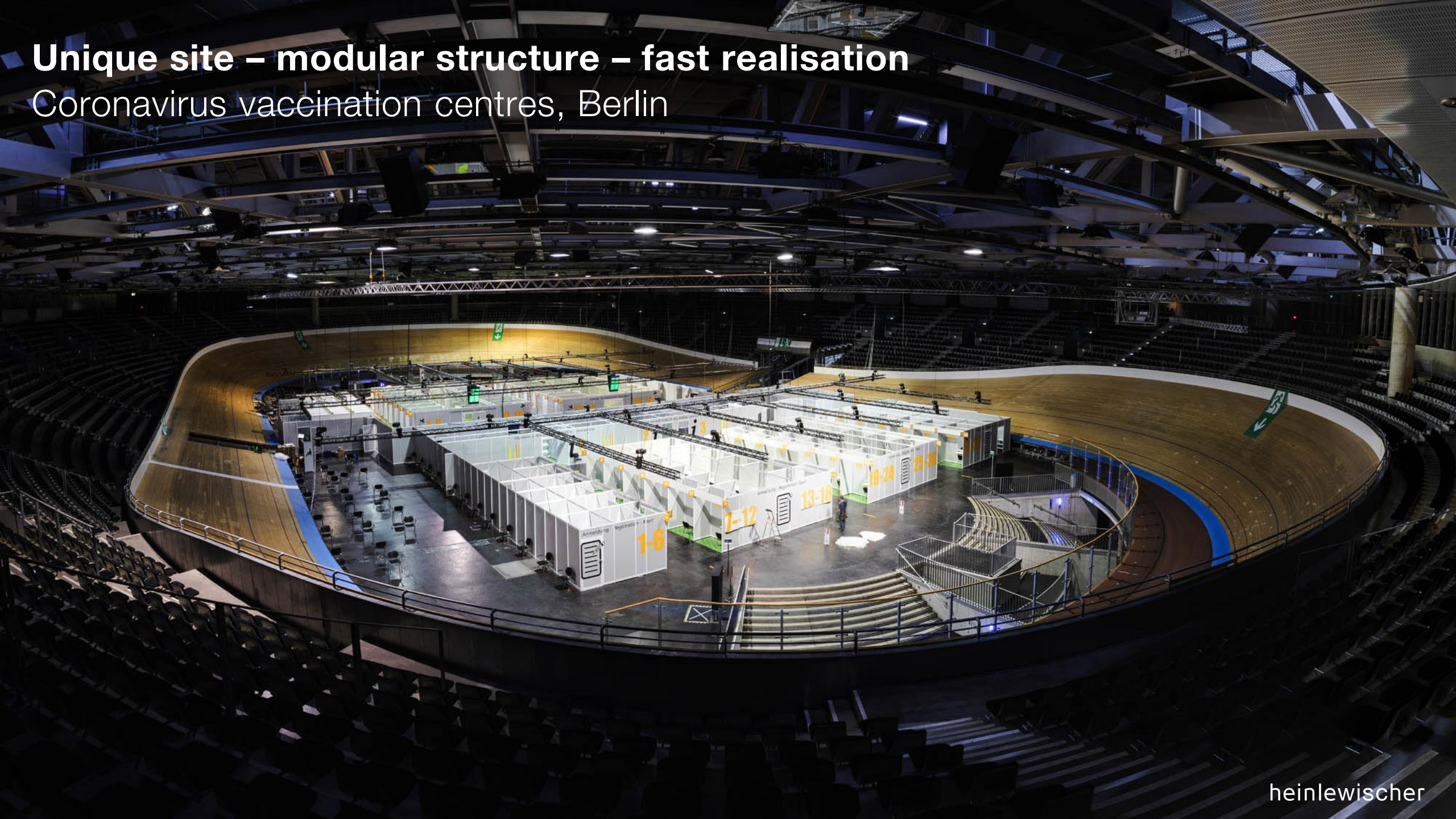
heinlewischer

Nearly finished

Insight

Unique site – modular structure – fast realisation

Coronavirus vaccination centres, Berlin



heinlewischer

Key theses ‘Design methodology’

Holistic design approach
– function, design and operational organisation in the sensitive context of a hospital

Structural and communicative synthesis
– goal: durable, efficient and people-friendly hospital architecture

Integration as a principle
– thinking of architecture, structure, technology and communication as a unified whole

Early decisions shape quality
– sustainability begins in the initial design phases

Operating room

Master plan

First step

Patient room

Hybrid

New layout

Facade

Insight

heinlewischer