



Project example

**Are the treatment rooms
in the new hospital
really sufficient?**

**You won't know the answer
until you've simulated it.**



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The project at a glance

Industry

Healthcare / New hospital construction (Lörrach Central Hospital)

Task

Capacity planning for the central emergency department and the elective centers in the new building

Key steps

Mapping of patient pathways, process times and room occupancy based on actual floor plans

Goal

A solid basis for area and equipment planning and staffing needs

3 things that keep planning teams up at night

01 Service portfolio uncertain

Given population trends and new technologies, it is difficult to predict with certainty which medical services will be in demand in the future.

02 Skepticism regarding divided areas

Several departments feared bottlenecks due to shared spaces in the elective centers.

03 Capacity without experience

For a completely new hospital network, it is hardly possible to derive the necessary space, technology, and staff from ongoing operations.

This is how the model was built

Methodology: Dynamic process simulation instead of static average values

Patient pathways: Complete routes from registration to discharge mapped.

Process times: Registration, triage, examination, diagnostics, treatment, transport

Variability: Minimum, maximum and random distributions instead of average values

Comparison: Different scenarios contrasted within minutes

What the simulation showed

Registration: Understaffed reception identified as the actual bottleneck, not room capacity.

Personnel solution: An additional temporary position solved the problem.

Emergency room: Capacity for the central emergency room in the new building confirmed

Elective centers: Sufficient space has been demonstrated for the planned number of patients.

Planning security: A transparent basis for decisions by the hospital operator.

What every hospital planning needs before construction begins

Hospital planning without simulation is planning based on suspicion.

Are the planned areas really sufficient for later operation?

Where will unexpected bottlenecks arise in the planned operation?

Is saying no at the right time more advantageous than saying yes at the wrong time?



Simulation · Virtual commissioning · Digital twin

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