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Wolfgang Sunder Julia Moellmann **Oliver Zeise** Lukas Adrian Jurk





## The Patient Room Planning, Design, Layout

## Wolfgang Sunder Julia Moellmann Oliver Zeise

Lukas Adrian Jurk

Birkhäuser

Basel

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## Südspidol

## New campus hospital

While the Südspidol employs a repeating same-handed room module arranged in rows to form a large structure, it interlocks them in such a way that each room is individually legible. This floor plan principle is a first hint of the importance accorded to the wellbeing of each patient in the design of the patient rooms.

#### Architects

ARGE Health Team Vienna Albert Wimmer ZT GmbH Architects Collective GmbH

Client Centre Hospitalier Emile Mayrisch

Location Esch-sur-Alzette, Luxembourg

Completion 2026

\_ \_ \_

Beds per floor 90

Net area, single room 20.5 m<sup>2</sup> + 4.3 m<sup>2</sup> bathroom



The Südspidol Hospital in Esch-sur-Alzette in Luxembourg is designed as a new health campus. The architects responded to the need for a central facility with optimised medical processes and minimised travel distances with a series of distinct, individually differentiated building structures. Their design aims to address both the needs of the patient as well as facilitate the complex medical processes within a high-efficiency hospital.

The signature elements of the 59,380 m<sup>2</sup> hospital complex are three triangular buildings with gently curving rounded edges that through their appearance soften the hard precision of clinical processes. Although the three buildings are interconnected, each building has its own patient rooms and can therefore function as an independent unit. Instead of confronting staff, patients and visitors with a megastructure, the design aims to be relatable at a human scale. Rather than endless ward corridors, the curved building shape allows the creation of more legible circulation spaces. The entrances and nurses' stations at the nodal points divide the wards into more manageable sections and serve as open and pleasant waiting and meeting areas for staff and visitors alike.

The approx. 550 patient rooms (of which about 80 % are singlebed rooms) are arranged along the façades. Their floor plan with the bathroom offset to one side enables them to interlock with one another to form broad sweeping rows around the perimeter of each building and tighter rings around the almost circular inner courtyard.

The geometry of the floor plan was developed according to the principles of Evidence-based Design and focuses on the safety and wellbeing of the patient. On the one hand, nursing staff have an unimpeded view of the patient from the door, and on the other hand, patients have a good view of the world outside without having to turn their head. The bathroom is located immediately to the right of the bed, the short distance minimising the risk of falls, especially for elderly patients and patients with multiple clinical conditions. At the same time, the large sliding bathroom door maximises autonomy and accessibility. Additional fixed fittings in the room have been avoided to minimise obstructions and improve ergonomics for caregivers when caring for the patient.

The use of a same-handed modular room design, i.e. with an identical floor plan, makes it possible to improve the efficiency of care processes and standardise procedures so that fewer errors can occur. A large multimedia screen on the wall opposite the bed can be used to watch TV or surf on the internet but also as a monitor for discussing treatments and diagnoses with one's doctor during visits. The three buildings will be embedded in a park-like landscape and complemented by green inner courtyards and green roofs.





1 Site plan, 1:20,000

2 View of the complex embedded in the surrounding landscape

3 Ward floor plan, 1:750









- 4 Waiting area near the nurses' station
- 5 Floor plan of the patient rooms, 1:100
- 6 Patient room
- 7 Inner courtyard with communal areas

## Paediatric Clinic Freiburg University Hospital

## New clinic building

Little attention is devoted to the space opposite a bed and all too often patients are left to look at a blank wall. Not so in the Paediatric Clinic in Freiburg where seating and play areas have been created in the patient rooms. This seemingly self-evident solution is an ice-breaker when rooming-in and also an incentive for patients to get out of bed.

#### Architects

ARGE Health Team Vienna Albert Wimmer ZT GmbH Architects Collective GmbH

Client State of Baden-Württemberg

Location Freiburg, Germany

Completion

2023

Beds per floor 69

Net area, single room 20.5 m<sup>2</sup> + 4 m<sup>2</sup> bathroom

Net area, two-bed room 26.5 m<sup>2</sup> + 4 m<sup>2</sup> bathroom



The new clinic for children and adolescents is situated in the grounds of Freiburg's University Hospital and unites the paediatric facilities and institutes that were previously dispersed across different buildings. The placement and figure of the building allows the landscape to flow around the building and into the five green inner courtyards. New gardens and adventure zones will be created in the existing park to meet the different needs of children and young people.

The design of the patient rooms elevates patient well-being to its central principle, creating a safe and welcoming environment tailored to the specific requirements of the "parent-and-child patient". This term reflects the importance of the family for the recovery of the young patients, and the concept therefore also considers the health of the parents. As such, the need for close personal interaction between the children and their parents influences the spatial design of the patient rooms.

The patient rooms have one or two beds and are clearly zoned into different areas. The seating area near the window creates space for sitting and communication while the permanent rooming-in area is designed as a niche in which the young patients can play together with relatives and visitors. In the two-bed rooms, this area extends across the entire wall opposite the beds so that the patients always have an interesting view from their beds.

Immediately behind the entrance door is a work area for nursing that picks up the diagonal of the bathroom wall and directs incoming people straight towards the patient as soon as they enter the room. The entrances to the rooms are offset in niches from the ward corridor, creating a small buffer zone and "address" for each room.

The colour scheme and materials as well as the choice of motifs take into account the wide age range of the patients from young children to young adults. A series of different images were developed that pick up and adapt motifs from the local Black Forest region, which are used to denote the different rooms.

Particular attention was given to ways in which patients can personalise their rooms to create a family-friendly environment and promote recovery. Various magnetic and writeable surfaces can be used by the patients to make the room their own. In addition, communal play areas in the wards encourage mobility and personal development and promote interaction between the patients, helping them to make new friends.





1 Site plan, 1:20,000

2 The paediatric clinic and its outdoor areas

3 Ward floor plan, 1:750













- 4 Nurses' station with a view of the room entrances (left)
- 5 Library
- 6 Main corridor along the inner courtyards
- 7 Floor plans of the patient rooms, 1:100
- 8 Two-bed room
- 9 Single room with writing desk

# BIRKHAUSER

## ARCHITECTURE FOR HEALTHCARE



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#### Wolfgang Sunder, Julia Moellmann, Oliver Zeise, Lukas Adrian Jurk

## The Patient Room Planning, Design, Layout

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The patient room is the smallest cell of the hospital organism. Its layout determines the structure of the ward and is therefore a decisive factor for the entire building. Many requirements have to be met. The patient's sense of well-being can be positively influenced by the design: homely materials, an attractive view and sufficient privacy are important objectives. Equally important are the working conditions for the staff, especially short distances and an efficient care routine. Finally, even the risk of infection can be reduced by a conscientiously planned room layout. This comprehensive and scientifically grounded publication provides a systematic overview of the design task patient room and shows exemplary solutions: both typologically and in selected case studies.

Wolfgang Sunder, Julia Moellmann, Oliver Zeise, Lukas Adrian Jurk Technical University Braunschweig

- Floor plan analyses of 24 international patient rooms
- > Documentation of the prototype of an infection-preventive patient room, developed at TU Braunschweig in cooperation with Charité Berlin
- > Of interest to architects and medical professionals alike

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