



Photo: Nickl & Partner Architekten

“A good
design makes
working easier”

Interview with Professor Hans Nickl, Nickl & Partner
Architekten, Munich, on hospital design and healthcare
staff satisfaction

Evidence-based design (EBD) uses research data to optimize surgery and patient rooms, improve lighting and air quality, reduce noise and walking distance, promote infection prevention and incorporate patients and staff needs. Therefore, EBD of hospitals could significantly improve outcomes and make patient and staff environments healthier (1).

1. Professor Nickl, could you briefly outline aspects of hospital design that influence workflow?

This question is not so easy to answer. Design can have an impact on workflow, but that is not a given. The organization of the hospital is always paramount, such as long distances – in short, the general organization of the ground plan. If these criteria are met, then design can make working easier.

2. In your opinion, what are the most important aspects of a good hospital facility?

Light, short, clear paths and no "dark holes", but also the correct allocation of equipment rooms etc. to allow staff easy access to equipment and not leave them searching around in corridors. There should be sufficient space for the healthcare personal, and the technical infrastructure of the hospital should be easier to handle.

3. To what extent does workplace design in a hospital affect the health and well-being of staff?

For us hospital planners it is important to create a preferably pleasant workplace for hospital staff. Short walking distances are crucial here, as is the atmosphere: Many facilities still have long dark corridors where the lights are on 24 hours a day. This does not create a positive atmosphere, employees simply do not feel comfortable there. A problem with many hospitals is also that the work as such is difficult for structural reasons; a wrong corridor width is just one of many criteria. This leads to staff feeling ill at ease, a feeling that is clearly connected to the architecture. If the atmosphere is good, working for hospital staff is much easier. We must not forget that

the real capital of a hospital is its staff. Therefore, employees should be provided with the most comfortable workplace, not least so that they remain with their employer. One example: 20 years ago we set up a house with the lowest fluctuation rate in Bavaria, situated in the district of Miesbach at the foothills of the Alps. Among other things, this house had optimal lighting, short walking distances and clearly-structured operating facilities.

4. So far, little data has been collected on hospital design and employee satisfaction. Does it need more investigation in the future?

The evaluation is indeed a problem in this field, this has not been undertaken properly in recent years, neither in old nor in new facilities. Only very small subprojects were carried out, but general statements such as "a path length should not extend 30 meters" are currently not justified in literature. In this respect, there is still need for a comprehensive evaluation.

5. According to studies, the shortage of healthcare staff will continue to increase (2,3). Do you think structural changes can increase the attractiveness of the hospital workplace as such?

On the positive side, many hospitals are already well-equipped with regard to technical devices and generally have a very good development of technical infrastructure. Many facilities also have employee-friendly technical equipment such as patientlifters or clear and well-designed monitoring devices. By contrast, incorrect mappings of devices are very time consuming in everyday worklife, making it harder or impossible to quickly locate something. And another im-

portant aspect is the communication of hospital staff with each other – I still see scope for huge improvements in this area, which would also facilitate workflow. Where do I meet which colleagues, how is it coordinated? These are all aspects of an attractive workplace.

6. Where do you still see a need for optimization in the hospital?

In a hospital, communication within the team is very important and needs to be addressed much more in the future. I am fairly confident that this will make some problems easier to solve, and that it will also result in fewer staff problems in the future. In addition, hospitals of the future will have robots – they will have to have them, actually. In my view, there is no alternative to this modernization in some areas of the facility. It would permit the automation of subprocesses, ideally leaving staff with more time for the individual patient.

7. In your opinion, what influence does digitization have on hospital design and workflows?

From my perspective, the digitization of hospitals will inevitably lead to a change of the entire structure and consequently improve structural inadequacies. The present overburdening of emergency rooms is just one example of many: in the future, preliminary diagnostics performed from a distance will allow a better and quicker assessment of a patient's situation and urgency and thereby improve the current – occasionally precarious – situation.

Sources:

- 1 O'Callaghan N, Dee A, Philip RK. Evidence-based design for neonatal units: a systematic review. *Matern Health Neonatol Perinatol*. 2019;5:6.
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