Cleaning hospitals on drafting tables
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How to ensure cleanliness in high technology healthcare environments with respect to architecture, building services systems, medical activity and medical equipment.

Clothing systems, design, medical equipment and ventilations systems must be defined early during the construction process.

1. Operating room with equipment
2. Clothing systems
3. Operating room with Laminar (unidirectional) air flow systems.

BACKGROUND
• In Sweden healthcare associated injuries costs 9 milliard SEK /year and 40 % are healthcare associated infections, HCAI.
• Secure of cleanliness in high technology healthcare environment is necessary to reduce HCAI.
• There are always changes regarding prerequisites and technical details during the construction process. The changes affect the conditions for a clean healthcare environment.

METHODS
Methods:
• Analyze relationship between ventilation, architecture and medical activity in 3 high technology health care projects in Sweden.
• Analyze technical documents from initial design to operation and maintenance regarding cleanliness.
• Semi-structured individual interviews
• Qualitative research.

OBSERVATIONS
• So far no interviewed persons have worked with a well-defined programmed for cleanness. But they are familiar with cfu/m3 (colony forming units per cubikmeter air).
• The sinks location in the healthcare environment have an influence of how often the staff wash theirs hands.
• Interaction between ventilation, surgical clothing system and activities is recognized as problematic.
• Developer and builders do not understand the medical conditions and vice verse.

AIM
• To create an understanding of how important it is to put cleanliness on high priority to owner, medical activity, project developers, architecture, installations managers.
• The result may be used to provide guidelines for design requirements of high technological health care environments.

TAKE HOME MESSAGE
How can we, designers, developers and builders, together develop and build healthcare environments to reduce HCAI ?

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