What ?

"Design Dialogues" is a framework with a design driven co-design approach, developed at the Department of Architecture at Chalmers University of Technology, Sweden. Its goal is to address the need for integrating user perspectives in order to reach innovative solutions in the design process.

The basic concept is to use design methodology and test scenarios and models to handle the complex commissionsin Healthcare. It is in an iterative work process with identification and evaluation of needs and development of solutions in parallel.

Design Dialogues was adapted to practical and commercial use by Sweco Architects. Since the method was launched in 2004, it has been used in over 100 projects with developers and clients in both the public and private sector. Healthcare projects has been a major application. Some of the completed projects have been scientifically evaluated concerning both the design process and the clinical outcomes.

How ?

Crucial decisions about the design of healthcare facilities are made in the early phases of the design process. The initial phase of a project can be characterized as a conceptual phase in which stakeholders meet to discuss ideas and requirements concerning use of spatial solutions and functions. This phase also gives an opportunity to thoroughly review how the existing work is being done and how the facilities are used in relationship to this, thus enabling a discussion on how work and facilities interact. This in turn enables innovation. Ideas about new innovative care models are thereby integrated with facility design development. User needs, as well as the healthcare organization's strategic plan, must at this stage also be identified and properly articulated to be able to support an efficient design process. Furthermore, involvement of healthcare professionals in the design process is essential for integrating knowledge of the care processes into the design. When possible, representatives from patients and families should also participate. As the initial phase greatly influences the design of the finished facilities and its end results, it also impacts the organization's ability to affect future clinical outcomes.

Why ?

To support and enable integration and innovation, a conscious design approach is needed where healthcare future visions, requirements and spatial solutions can develop in parallel.

Who?

An active collaboration between clients, users, other stakeholders and architects.

Design Driven Co-design of Healthcare Architecture

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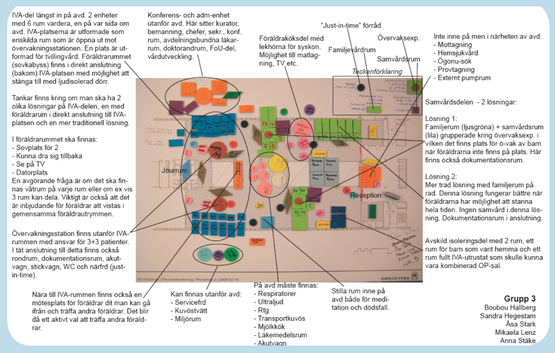
Design Dialogue Process

WORKSHOP 1

Develop ideas about future care operations, flows and requirements of spatial relationship by using "quality images". The images were mounted on cardboard and diagrams were mounted on larger cartons. The aim with this tool is to encourage visionary thinking and leave the "room list" level.
It is also to stimulate internal dialogue and thereby create a common basis for further work.

WORKSHOP 2

Inspirational material from other newly built neonatal units in Sweden and internationally.
Design game - the task was to build the future neonatal ward at Karolinska Huddinge. The participants were divided into three multi-professional groups with representatives from different competencies, roles and professions. The rules was to build a conceptual outline draft of their new neonatal unit



WORKSHOP 3

Workshop with parents.
The aim was to capture the views and ideas from parents of former patients in the neonatal unit. It was also important to communicate the planning process and thereby create legitimacy.
Results were in-depth knowledge of the priorities among the parent group. It also formulated valuable ideas that could be incorporated in the planning. Based on the proposals from the workshop group and input from the parents, the architects made 2 alternative schematic layouts.

WORKSHOP 4

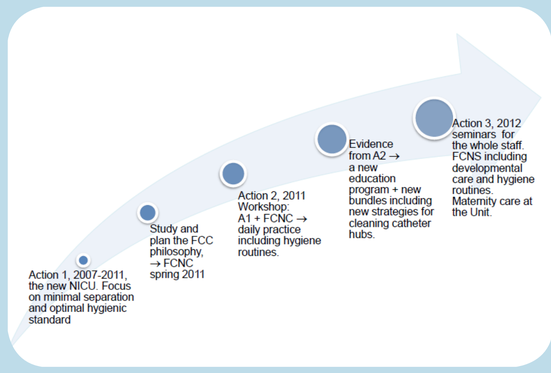
Schematic layouts based on the design games and parent input where presented for the workshop group.
Evaluated the layouts through a "hands-on" exercise - scissors, glue and paper in the same colour codes as the schematic layouts.
The result was commented and processed layout sketches.
Consensus where established on selecting one of the alternatives, with certain adjustments, for continued work.

WORKSHOP 5

Synthesis proposal was visualized as a large format plan and as an interactive 3D model. Scale figures and plastic game pieces where used to built and illustrate a number of scenarios, envisioned by the group.
The digital model was used for deepen the understanding for f ex sightlines, access to daylight etc. A number of points were discovered where corrections were required. Among them mirroring the NICU-unit.

Developing process of care philosophy

The developing process of the new philosophy of care where conducted according to the principles of action research and included theoretical review of the literature, two separate workshops, group-reflections and seminars about practical application of the Family Centered Neonatal Care.



Outcome

An evaluation of the process and intervention studies after two years in use has been done.

- The process, care environment and the procedures of the mothers' maternity care were found to be very important to minimize the separation between the infants and the parents.
- Implementation of new family-centered care philosophy was hence facilitated and mother-infant separation due to postpartum (after delivery) care was significantly reduced, from 82% to 18%.
- A high proportion of parents stated that they were allowed to participate more in the baby's care after the intervention.
- Furthermore, no transmission of multi-resistant bacteria between patients as well as reduced nosocomial infection has been found.
- Family Centred Care and NICU-design providing parents to stay 24/7 have an impact on:
  - Infant health in terms of length of stay, reduced rick for moderate-severe BPD, reduced infection rate.
  - Mother anxiety and sense of being competent as a parent.
  - Breastfeeding, both at discharge and at 3 months of corrected age.

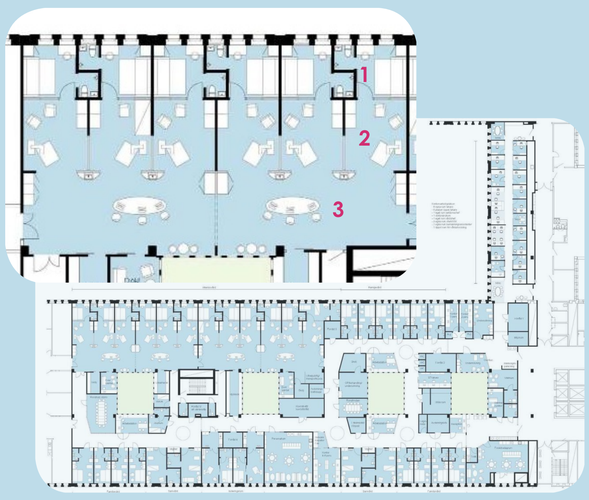
Karolinska Institutet

Length of stay in hospital

Adjusted for: gestational age at birth[A], non-Swedish-speaking background[A,B], setting[A,B]

	Family care n = 183	Standard care n = 182	difference days
All infants [A], mean	27.4	32.8	**-5.3** (p= .05)
By gestational age [B]			
24 – 29 w, mean	56.6	66.7	**-10.1** (p= .02)
30 – 34 w, mean	19.2	23.6	-4.4 (p= .16)
35 – 36 w, mean	6.4	7.9	-1.4 (p= .39)

Result



Final and built layout Neonatal Medicine
at Karolinska University Hospital
Site: Huddinge, Sweden
Client: Locum AB
Architect: Sweco Architects

Parents room 1
NICU 2
Supervision 3

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