Neonatal department at Central Hospital in Karlstad

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Building Type : Public or private hospital
Construction Year : 2013
Delivery year : 2013
Address 1 - street : Rosenborgsgatan 2 652 30 KARLSTAD, Sweden
Climate zone : [Dfb] Humid Continental Mild Summer, Wet All Year

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Net Floor Area : 1 250 m^2 Other
Construction/refurbishment cost : 6 100 000 €
Number of Bed : 13 Bed
Cost/m2 : 4880 €/m^2

General information

The projects aim was to build a new department forpremature infants.

The project aims to measure the amount of chemicals that are been reduced through conscious choices and at what cost and a prestudy for the new hospital building?

See more details about this project

http://www.construction21.org/manager/data/sources/users/14996/docsmiljovanligt-materal-englag.pdf

Stakeholders

Stakeholders

Function : Others
County of Värmland

Anette Andersson annette.andersson@liv.se

http://www.liv.se/
owner of the building and also the user of the building

Function : Environmental consultancy
Henric Ernstson Konsult

http://www.ernstson.com/

Function : Contractor

Byggdialog AB

http://www.byggdialog.se/
main contractor

Function : Designer
KLARA arkitekter AB

http://www.klara.se/
architect

Function : Others
Imtech, Skanska, Goodtech

Plumbing and Building automation, Ventilation, Electricians

Function : Other consultancy agency
KVE, EBAB, VVSPlan

Design plumbing, ventilation, electric

Function : Others

Function : Others
SundaHus

http://www.sundahus.se/
SundaHus Miljödata is a tool for property owners to ensure that conscious choices are made on the materials in their buildings.

Function : Others

Function : Others

Contracting method

Other methods

If you had to do it again?

Modify the medical equipment so that it does´t need to be any static dissipative
floors in the building.

Building users opinion

The people working are very satisfyed, they have had a lot of visits from other hospitals. The goal have been that the newborn child shall not be separated from parents during the hospital stay and all parents should be offered a room directly adjacent to the point of care and that no contagion of multiresistant bacteria shall be possible. Due to the architecture it is possible for the parent to stay close and also to get a room close to the outside and the inside of the clinic.

Energy

Energy consumption

Primary energy need : 102,00 kWhpe/m^2.year
Primary energy need for standard building : 198,00 kWhpe/m^2.year
Calculation method : Other
Initial consumption : 183,00 kWhpe/m^2.year

Envelope performance

Envelope U-Value : 0,23 $W.m^{-2}.K^{-1}$
More information :
referers to the new parts in the buildings.

Indicator : EN 13829 - n50 » (en 1/h-1)
Air Tightness Value : 0,50

More information

The standard consumption are based on mean consumptions in similar hospital-buildings in Sweden.

Real final energy consumption

Real final energy consumption/m2 : 102,00 kWhfe/m^2.year

Year of the real energy consumption :2 014

Renewables & systems

Systems

Heating system :
- Urban network
- Geothermal heat pump
- Water radiator
- VAV System

Hot water system :
- Urban network
- Heat pump

Cooling system :
- Reversible heat pump
- Geothermal heat pump
- Chilled Beam

Ventilation system :
- Free-cooling

Renewable systems :
- Heat pump (geothermal)

All electricity that are bought comes from wind and hydropower.

Environment

Urban environment

The area on which the hospital is located area completely urbanized, There are public transports to the hospital and is fully served by sewerage, mains electricity, mains drinking water and so on.
Green space : 1 000,00

Products

Product

Outcome of environmentally conscious material choices at a neonatal department in the main hospital i Karlstad

Product category :
Landstinget in Värmland has long acted consciously to choose and regulate the “best” environmentally friendly products in construction. In its buildings Landstinget does not wish to build in material which it subsequently may have to sanitize or retrofit later or which might cause illness. By controlling the selec- tion of materials and managing output, risks and pro- blems can be minimized reducing later stage impact to the environment.
What impact in terms of reduced unwanted chemi- cal presence does Landstingsfasigheter in Värmland achieve through their work and at what increased expenditure?

The difference between building with environmental or without environmental requirements but with the same functional requirements is in the present case estimated to 201249 SEK. The total cost for the con- struction was 59,229 thousand SEK, the subsequent increase in building environmentally consciously was 0.33% of the total budget, excluding equipment for this project. At the sime time there was a reduction of through active environmetal choices approximately 800 kg (787-915 kg) of phthalates have not been released and that the benefit to the environment is not insignificant. In ad- dition, we know that we did not have to use 1598kg PVC plastic by choosing a different superior plastic.

All premature infants in care in the region will directly benefit through reduced exposure to chemicals at the same time as the entrepreneurs will learn to think on the environment in other projects.

Costs

Construction and exploitation costs

Total cost of the building :6 400 000 €

Health and comfort

Indoor Air quality

All products used in construction must be checked against Landstingsfastigheter's overall environmental guidelines through the chemical database, SundaHus. Additionally this database, besides containing classifications of different chemicals by current applicable law and recognition, contains a filter which can sort out those chemicals Landstingsfasigheter in Värmland wishes to reduce or phase out entirely according to its environmental guidelines.
Some of the demands that Landstingsfastigheter have are
* Limitation of VOC (Volatile Organic Compounds)
* Limitations / restricted use only after demands / of PVC
* Limitations of a bunch of chemical substances that have or are suspected to have negative effects (The County Council work based on the precautionary principle and research on chemicals and exposure.)

Comfort

Health & comfort : The goal has been that the newborn child shall not be separated from parents during the hospital stay. All parents should be offered room directly adjacent to the point of care and that
no contagion of multiresistant bacteria shall bee posible. Due to the corridor utside the rooms it is possible get a relation between indoor and outdoor environment and the variation of the nature´s cycles. The indoor thermal comfort are extremely important in this care.
Acoustic comfort : Acoustic comfort are calculated in the project SS25268:2007 klass C.

Contest

Reasons for participating in the competition(s)

The current project concerns mainly conversion of an existing building. The total cost of the project with environmental claims is 0.33% higher than it otherwise would have been. The conscious choice of materials has reduced the amount of phthalates with 800 kg and the amount of PVC with more than 1,600 kg. The selected materials have not reduced the quality or function in relation to any other material.

Building candidate in the category

Health & Comfort

Green Building Solutions Awards 2015
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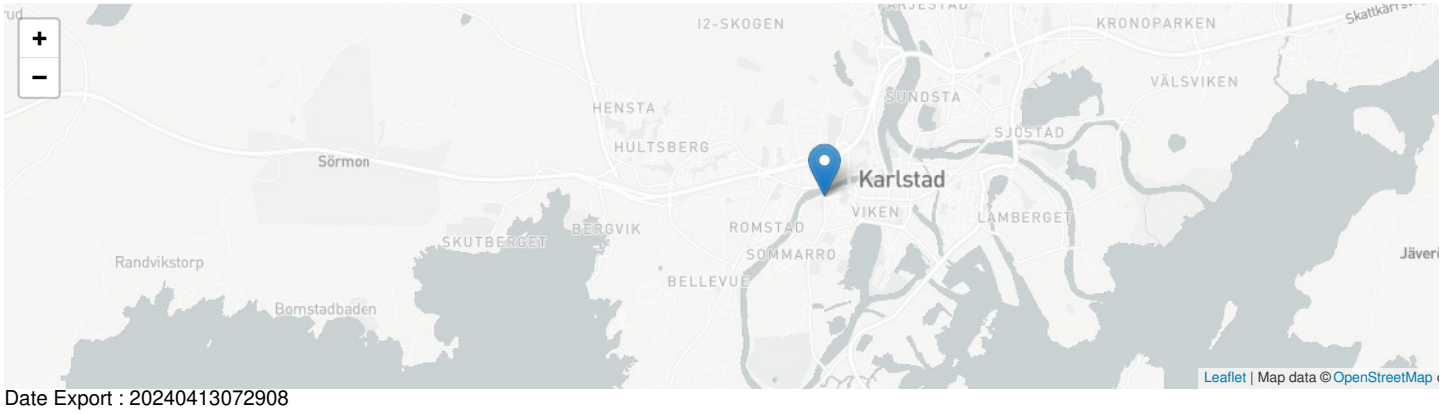

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