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## Volume 13, Issue 4/2011 - Healthy Hospitals

### Green Hospitals

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**Green hospitals are to be energy saving, resource conserving, environmentally friendly, health supporting, efficient, and strategically managed. However, does sustainable building turn healthcare buildings into efficient, future-proof structures of lasting value?**

It is now possible to design economic and at the same time sustainable healthcare buildings at reasonable cost. The term sustainability does not only stand for environmental friendliness but also for structural quality and energy efficiency. When talking about sustainability, many people think mainly about renewable energy sources and good thermal insulation. However, the efficient use of energy, water, and other resources is only one aspect of a comprehensive, integrated concept. When assessing the sustainability of buildings, it is also important to consider the factors of protecting the health of the building users, improving the productivity of the employees, and reducing waste, environmental pollution, and the use of resources.

Sustainable healthcare buildings are characterised by their future-oriented planning tailored to suit specific needs and considering the requirements of several generations. Flexible structures enable an efficient, demand-driven area management optimising work and process flows. Staff members enjoy a better work environment and patients a more comfortable environment for recovery and convalescence. Intelligent lighting and ventilation concepts, the reduction of environmental stress factors, barrier-free movement, and a connection with nature are only some contributing factors.

#### Green Building Certifications

"Green Building" certifications in accordance with international standards assess buildings based on different factors. As a result, a building's sustainability is shown as a whole and evaluated on an internationally acknowledged scale. A Green Building certification for a healthcare building is far more than a mere image booster. It offers effective and efficient tools for a consistent and elaborate structuring of planning and realisation processes as basis for an economic and sustainable operation.

Green building certifications encompass the following areas:

#### Life Cycle:

- Improved creation of value during construction/operation/use
- Easy to clean and maintain
- Optimised service levels
- Adapted operational cycles

#### Ecology and Energy:

- Energy efficiency
- Area usage
- Low primary energy consumption
- Use of renewable energies

#### Indoor Environmental Quality:

- Use of low-emission materials
- Less radiation
- Daylight in rooms
- Environmental management
- Thermal comfort

#### Materials and Resources:

- Use of renewable resources
- Reuse of recoverable materials/ resources
- Waste avoidance
- Use of process water and rain water
- Avoidance of hazardous materials

#### User Comfort:

- Acoustical and visual comfort
- Indoor hygiene
- Barrier-free
- Thermal comfort both in summer and winter
- Possibility for a change of use

- Safety Influence of the user

#### **Sustainable Location:**

- Traffic connections- public transport
- Orientation of the building
- Energy supply, utilities and infrastructure
- Situation/image of the surrounding area
- Location with regard to other facilities/local amenities

#### **Pilot Project of Green Hospital in Germany**

ARCADIS Deutschland is responsible for the entire Project management and Green Hospital Certification of two new Green Hospitals in Germany. The New Hospital of Schaumburger Land, a 437 bed Hospital, invest 130 million euro is a complete new hospital on a green field site. The construction will start in May 2012 and the Hospital will go into operation at the end of 2014.

The extension of the Diakonissen Hospital in Speyer is an example of a green hospital with a new construction on a existing building. The construction starts in 2011 and will be finished in 2014. Both hospitals will be certified to DGNB (German society of sustainable buildings) certification. The goal of both projects is to reach silver with no additional costs. Both hospitals will be built with subsidies from the local government.

#### **Good and Well Founded Arguments for Green Hospitals:**

- Higher quality of buildings;
- Greater marketing potential;
- Consideration of the life cycle;
- Instrument of company communication;
- Documented commitment to sustainability;
- Protection of the health of both users and patients;
- Protection of the environment and the community; and
- Prevention of illnesses caused by environmental pollution.

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**Figure 3.** Pilot project of Green Hospital in Germany: Diakonissen Stiftungs- Hospital, Speyer, Architect: a-sh architects, Ludwigshafen, Germany, Green Hospital Certification ARCADIS Deutschland GmbH

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