



The construction site is classified as a “Green Site,” with sustainable solutions at all stages.

A green hospital

The Stockholm County Council is on the absolute cutting edge when it comes to high-level environmental requirements, and right from the start the goal was to create one of the world’s most sustainable university hospitals. Skanska is building and certifying the New Karolinska Solna according to the Swedish third-party certification Miljöbyggnad and aiming for Gold.

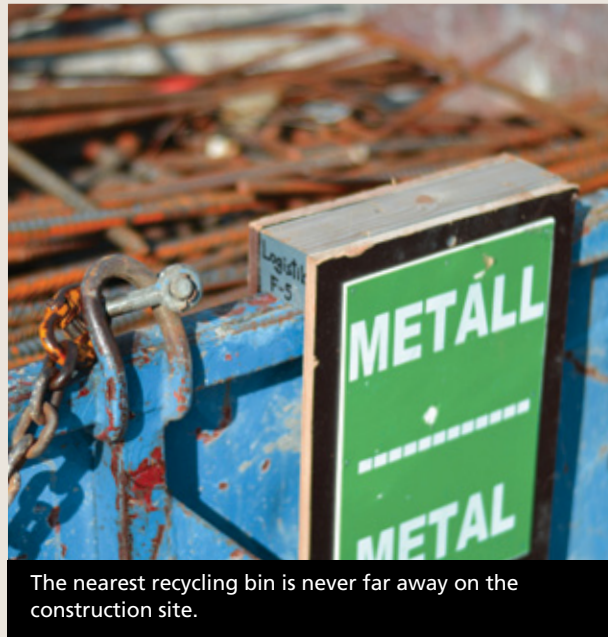
But Skanska has decided to go even further than that. Once it is complete, NKS will also be one of the first hospitals in Europe to meet the tough environmental requirements for the international LEED Gold certification in line with Skanska’s ambition to become the world’s greenest construction company. The actual construction site is also classified according to Skanska’s own “Green Site” system, whose purpose is to create a greener worksite during construction.

Environmental thinking at all levels

The County Council’s environmental requirements for the project include eight strategic areas: energy efficiency, climate-neutral solutions, environmental impact, indoor climate, third-party certification, transport, waste management and materials management. Most projects usually focus on just a few of these areas, but NKS will be covering all of them.

This means specifications for nearly everything. From transportation – where the demands include choice of fuel, coordinated goods delivery, fuel-efficient driving and the like – to the selection of materials – such that the materials used must be low-consumption during construction and during the entire lifetime of the hospital.

Materials must also be tried and tested and based on renewable or recyclable raw materials. For this reason, all materials in the buildings are approved and documented according to the Swedish environmental evaluation of building products (Byggvarubedömningen). During construction, as much as possible is re-used, sorted and recycled. The goal is to send zero building materials to landfills by 2015.



The nearest recycling bin is never far away on the construction site.



The concrete plant established on the construction site provides the project with concrete and reduces the number of trips by a total of 20,000.

Environmentally friendly operations

Operation of the hospital must also live up to high environmental standards, from the detail level to overarching operations as a whole.

Energy will be supplied through a combination of district heating and cooling, a dedicated large geothermal plant and recycled energy from ventilation exhaust. The geothermal plant alone will satisfy 65 percent of the hospital’s demand for heating and cooling. As a result, the need for purchased energy will be 40 percent below the maximum in building norms for purchased energy, and the electricity used in the new hospital will come from renewable energy

sources to the greatest extent possible. Another interesting detail is the use of green roofs, which insulate against cold and retain surface water, while adding green space to the site.

Good conditions for green traffic

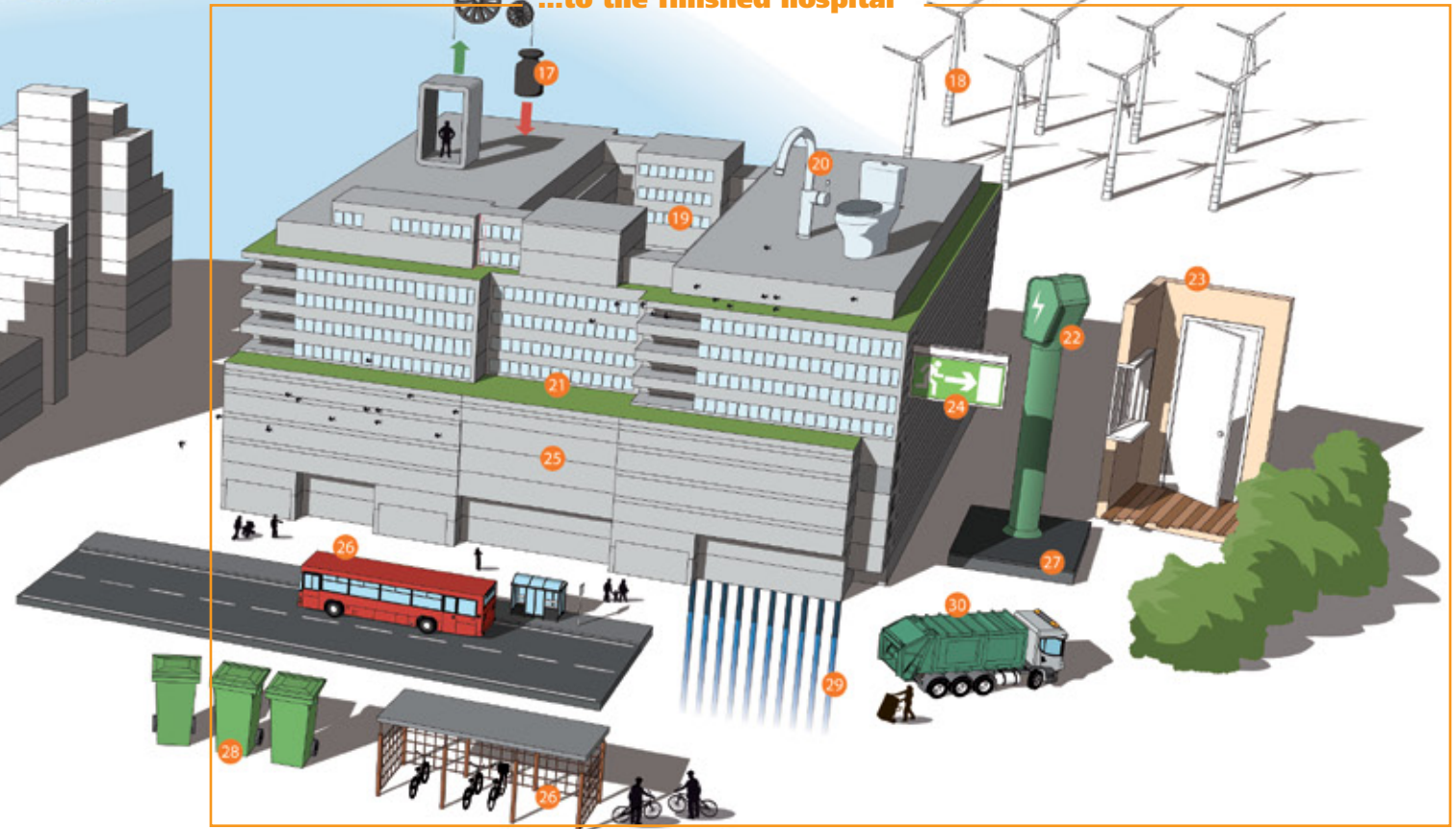
Environmental thinking also applies to traffic to and from the hospital. For example, bicyclists will have many good possibilities, including bicycle rooms for staff. In addition, 10 percent of all parking spaces will be equipped with charging stations for electric cars.

Environmental thinking

During construction...



...to the finished hospital



- 1 Cranes that are frequency controlled instead of friction-controlled to save energy.
- 2 The sediment unit treats water from the construction site before it is released.
- 3 The on-site concrete plant will reduce the number of trips by 20,000 the first three years.
- 4 A watertight foundation helps reduce the risk of radon inside the buildings.
- 5 Skanska's and subcontractors' heavy machinery and vehicle operators are trained in ecodriving. The equipment meets Euro II standards for exhausts at a minimum, heavy vehicles fulfill requirements for Stockholm "environmental zone." Fuel consists of 6.5% renewable raw materials.
- 6 Correct storage and documentation of chemicals on the building site reduce the risk of spills and improper handling.
- 7 Ecolabeled ingredients for break rooms and conference rooms.
- 8 Mercury-free low-energy bulbs, timer-controlled to reduce energy consumption.
- 9 Heat pumps in the cabins save energy.
- 10 Only ecolabeled kitchen, hygiene and cleaning chemicals are used.
- 11 Staff bicycles and information on public transport to promote public transportation to and from the workplace.
- 12 All waste is weighed on-site for tracking. Many modules, such as bathrooms, are pre-fabricated to reduce waste.
- 13 Environmental engineers provide support in project planning, purchasing and production. Skanska also uses electronic drawings, which saves paper.
- 14 Deliveries planned carefully to reduce impact on local traffic and reduce exhaust emissions.
- 15 One goal is to increase the percentage of building waste that can be recycled. The goal is to send 0% to landfills.
- 16 Certification under LEED, "Sweden's Miljöbyggnad" and Skanska's "green leaf" for a green construction site.
- 17 Elevators recycle energy when they are going down.
- 18 Purchased electricity must consist of at least 20% renewable energy from wind power.
- 19 High air quality and occupant-adapted airflow.
- 20 Water-saving taps and toilets. The taps are specially manufactured and contain less lead.
- 21 Green roofs provide biological diversity and collect water.
- 22 Charging stations for electric cars are provided at 10% of all parking spaces.
- 23 All materials assessed under the Swedish environmental evaluation of building products (Byggarvbedömningen). Priority given to locally produced, recycled and low-emission materials, as well as FSC-certified wood.
- 24 Energy-efficient LED lighting in public areas and emergency exit signage.
- 25 Energy-efficient windows and façade cladding. Transmission of daylight via atriums.
- 26 Close access to public transport. Bicycle racks and bicycle rooms to promote bicycle use.
- 27 Environmentally friendly asphalt in parking garage in which part of the bitumen has been replaced by wax, which is renewable.
- 28 Sorting of waste into more than 30 fractions.
- 29 Geothermal energy plant, heating and cooling storage in drill holes more than 220 meters deep.
- 30 All food waste is collected and sent to the Stockholm County Council's biogas plant. The hospital's main kitchen will have several food waste grinders to help produce biogas for the County's buses and cars.

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