

DK_Aarhus_Det Nye Universitetshospital

Image 01:

The green areas between the buildings
©C.F. Møller Danmark A/S



Image 02:

Illustration of the project
©C.F. Møller Danmark A/S



Image 03:

Example of a atrium
©C.F. Møller Danmark A/S



Building Specifications

Address	Herredsvej 163, 162-166, 8200 Aarhus, Denmark
Building Category	Hospital
Year of Construction	Will be finished in 2019
Special Qualities	Pioneer project for the development of "Healing Architecture" in the hospital service.
Location	56° northern latitude, 10° eastern longitude, placed in suburban area. The surroundings are built-up with other office and production facilities in south and west. The buildings are free exposed for wind coming from west.
Climate	Cfb (warm temperate climate, moist with adequate precipitation in all months and no dry season, warm summer with the warmest month below 22°C)

Vent. Cooling Site Design Elements (Solar Site Design and Wind Exposure Design, Evaporative Effects from Plants or Water)

The trees in the green areas limit the amount of sun and wind the building is exposed to.

Vent. Cooling Architectural Design Elements (Form, Morphology, Envelope, Construction &Material)

Form: The entire project (both the old part, Skejby, and the new part) is formed as a small city with green areas in between the buildings. The new part consists of buildings with ranging from 4 to 18 floors.

Morphology: Complex solution depending on each particular part of the building complex. The floor area of the new part is 250.000 m², which gives a total area of the new and old parts of 410.000 m²

Envelope: The buildings consist of large window sections. Some of the buildings contain atriums

Construction: Heavy mass construction

Vent. Cooling Technical Components (Airflow Guiding Components, Airflow Enhancing Components, Passive Cooling Components)

Air Flow Enhancing: Stack natural ventilation because of the atriums

Passive Cooling Components: Phase changing materials to facilitate the night cooling are used in some parts of the building complex

IEA EBC Annex 62 Ventilative Cooling

Actuators, Sensors and Control Strategies
<p>Chain actuators operate façade windows and roof openings, the automated windows are running synchronic in each zone, room sensors for temperature and CO2</p> <p>Manually controllable automated windows are installed in rooms for patients</p> <p>Weather station measuring temperature, humidity, CO2, wind and solar irradiation located on the rooftop</p> <p>Motorlink™ technology is used together with a CTS building management system</p>
Building Energy Systems (Heating, Ventilation, Cooling, Electricity)
<p>Hybrid ventilation is implemented in the building complex</p> <p>The building makes use of waste heat that is recovered by a rotating heat exchanger</p> <p>District heating is connected to the building, and heat pumps are used as well</p> <p>Absorption cooling, solar cells and solar thermal collector systems are widely used</p>
Building Ownership and Building Facility Management Structures
<p>Region Midtjylland is the owner.</p> <p>Architect: C.F. Møller Danmark A/S</p>
Aknowledgements
<p>n/a</p>
<p>Datasheet Source: WindowMaster A/S, C.F. Møller Danmark A/S © 2/2 All images and copyrights belong to the original owners and are reproduced for the purpose of training and education only</p>