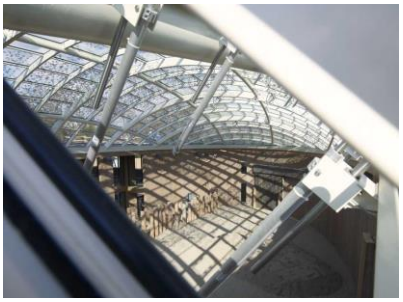
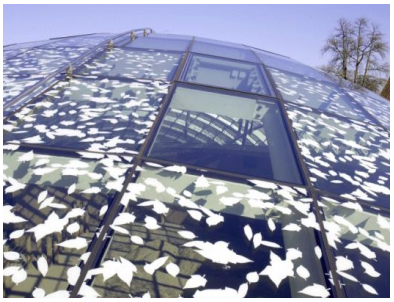
DK_Frederiksberg_Elefanthus

Image 01: Inside one of the stable ©Nigel Young_Foster + Partners	**Image 02:** View of the roof openings ©Nigel Young_Foster + Partners	**Image 03:** Skylight windows external solar shading ©Nigel Young_Foster + Partners
		

Building Specifications

Address	Roskildevej 32, 2000 Frederiksberg, Denmark
Building Category	Zoo
Year of Construction	2008
Special Qualities	n/a
Location	56° northern latitude, 13° eastern longitude. Located in urban area surrounded by trees and other buildings inside the zoo.
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 building is sheltered from the wind by a wall to north and buildings and trees in the remaining directions.

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

Form: Two oval-shaped buildings interconnected with a small rectangular building
Morphology: The two oval-shaped buildings consist of stable areas for the elephants. The rectangular building is used as an area for the audience. The total interior floor area for the elephants is 1.360m2 and 950m2 for the audience
Envelope: The oval-shaped buildings consist of roof made of glass
Construction: Heavy mass building. Concrete walls and glazed ceiling

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

Natural ventilation is by stack ventilation through parallel windows in the ceiling. Mechanical ventilation with heat recovery is used during the cold days, which also can secure the right humidity level for the elephants. External solar shading on some of the windows (stickers in form of leafs) is glued to the windows.

Actuators, Sensors and Control Strategies

Linear actuators operate roof windows.

Room temperature, humidity and CO2 sensors for each zone.

Weather station measuring wind speed/direction, rain, temperature and humidity was set on the rooftop.

The building uses NV Advance^{TM} control system to control the natural and mechanical ventilation.

Building Energy Systems (Heating, Ventilation, Cooling, Electricity)

Hybrid ventilation and mechanical ventilation with heat recovery in the stables.

The building is connected to district heating and heated up by radiant underfloor heating.

Information about electrical systems is not available.

Building Ownership and Building Facility Management Structures

The owner, Copenhagen Zoo, uses the building.

Acknowledgements

n/a

Datasheet Source:
WindowMaster A/S