SBD Lab

(Liege University - (ULiege / ULg))

Building energy performance simulation model for a nearly zero-energy nursing home in Belgium

Version 1.0

Safi, Taha; Amaripadath, Deepak; Rahif, Ramin; Attia, Shady, 2023, "Building energy performance simulation model for a nearly zero-energy nursing home in Belgium", https://doi.org/10.7910/DVN/JSZRNT, Harvard Dataverse, V1

Description

A building energy performance simulation model for a nearly zero-energy nursing home in Kain, Belgium, is developed using DesignBuilder and EnergyPlus. The building is located in Kain (50°38'12.04"N, 3°22'50.47"E, 193m), part of the city of Tournai in Belgium, which has a mild oceanic climate. The total area is 8000 m². This building includes 114 rooms on the first and second floors, while most services are distributed on the ground floor. The building's heating and cooling system is based on air-water heat pumps. Four heat pumps are installed on the roof of the building working in pairs in series. These pumps are powered by a Toyota internal combustion gas engine with an output of 80 kW. (2023-11-01)

Subject

Engineering

Keyword

Passive house, Energy simulation of buildings, Thermal comfort, Extreme heat event

Related Publication

Safi, Taha, 2023, Evaluation de confort thermique et de résilience estival face au changement climatique: un cas d'étude de maison de soin en Wallonie. Master's thesis, Liege University, Belgium.

During the modeling stage in the DesignBuilder v7.0.1 software, the properties of the different building elements are introduced while constructing the numerical model. The dynamic calculation code EnergyPlus v.9.6.0 was used for the thermal simulation. Grasshopper file for Rhino 6 software

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