

Herman Teirlinck Building T&T



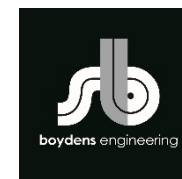
Short description of the project



- Beginning date: construction started in April 2015 and the hand-over is planned in May 2017
- An office building, located in the center of Brussels, for approximately 2.000 civil servants from the Flemish Government.

It incorporates:

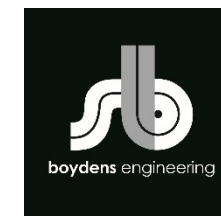
- 2 underground parking levels with the main technical installations
 - A ground floor with an inside pedestrian street that gives access to the restaurant, auditoria and gardens in the 2 big atria.
 - The 1st floor is organized around and integrated in the atria and consists of meeting and training rooms of about 3.000m².
 - From the first floor up there are 12 floors of modern offices with lots of daylight and high thermal comfort levels. The different floors are organized following the principles of the new way of working.
 - The 13th floor hosts the ministers offices and cabinet.
 - The 14th floor is a technical floor with a big terrace overlooking Brussels.
- The Flemish Government organized a DBFM competition and assigned Extensa as the developer of the project after their project proposal. The project design team consisting of the architect Neutelings Riedijk Architecten (Rotterdam, the Netherlands), boydens engineering for the building services engineering & the energy design and Ney&Partners for the structural engineering.
 - The Herman Teirlinck building will be the largest Passive Building in Belgium, when it opens in 2017. It will be heated by geothermal heat pumps and applies passive geothermal cooling and adiabatic cooling supported by heat pumps. The latter is integrated in all air handling units to condition the offices and meeting rooms during the summer season.



Technical details – (you can use 2 slides for this part)



- Refrigerant: R407C main HPs – R410a for HPs in AHUs
- COP: 4,78 main HPs (only heating) – 5,2 for HPs in AHUs (only cooling)
- Heat source: main HPs geothermal (ground water source, 4 duplets)
- Operating temperatures: primary 11/6°C – secondary 40-45°C
- Is it part of a smart grid: no, but the amount of building integrated storage on the T&T site, where the building is located, is relevant and significant to consider a smart grid pilot implementation in this large urban development with mixed functionalities.
- How are the heat pumps integrated: all base load heating will be supplied by the heat pumps combined with TABS (thermally activated building systems) as the emission system. During very cold days, gas boilers will take care of the peak load that is mainly created by the adiabatic humidification in the air handling units.
- How does it integrate with other renewable technologies: the main heat pumps, connected to the geothermal system, are only used for heating. The geothermal system provides a big chunk of the cooling load during the summer, thanks to the high cooling temperatures that are appropriate for the TABS system (18-21°C) and the chilled ceilings (17-20°C) on the first floor. The cooling of the air happens through adiabatic (or indirect evaporative) cooling using rainwater in the intermediate seasons and will be supported by high efficiency heat pumps when the outside temperatures are higher and when dehumidification is needed for the meeting rooms



Multiplication potential

- GEOTABS, the combination of heat pumps, GEOthermal energy and Thermally Activated Building Systems, is a proven concept that guarantees the highest efficiency for buildings in European climates.
- The combination of heat pumps in GEOTABS and heat pumps integrated in air handling units using adiabatic cooling, is surely reproducible on other sites.
- The storage and demand shift potential of the building integrated emission system (TABS) can be a crucial interactive component in future smart grid technology

