The Leon van Gelder College is a public secondary school for education. The building was designed by the architect Thomas Rau, and it was constructed in 2004 and completed the beginning of 2005. It was built keeping in mind the sustainability and innovations of energy efficient, they wanted that this was one of the lowest power consumption of all the schools in Groningen. The heating system of the building is working with a heat pump combined with concrete core activation which should provide a smooth and pleasant heated or cooled building, and the construction us composed of a column structure in combination with a monolithic floor.

This building has different types of facade with curtain wall and with profiled steel plate with an insulation of glass wool or rock wool.

The first idea when O2G2 thought about built this school, they wanted to built the lowest power consumption in the city of Groningen, but it was just the opposite, one of the most expensive school in terms of energy consumption O2G2, therefore it doesn’t fulfill the required standards for the sustainability rules and normative of the buildings and the goals for the original project.

It was built as energy efficient building as a goal, but is exactly the opposite.

Comfort Problems with:
- Drafts
- Heating system
- Heating loses
- Bad insulation

In addition, there is a hole (Vide) that was supposed to be close for have more space. We close it with glass floor and steel structure.

WHAT ARE THE FACTORS RESPONSIBLE OF THE HIGH ENERGY CONSUMPTION AND DISCOMFORT OF THE LEON VAN GELDER SCHOOL?

• Thermal isolation in the envelope
• Heat loss by infiltration in winter
• Orientation of the building
• Allow entry sun in winter
• Use of the heating and cooling systems
• Temperature inside the building
• Ventilation
• Humidity
• Filtration and air cleaning
• Airvelocity
• Heat transfer
• Sound proofing
• Acoustic conditioning

CONCEPT AND USE

ENERGY PERFORMANCE CERTIFICATE

We can determine that the condition of the energy efficient at the building is not the best. It should reach at least the A level, as the goal it was built.