

## Sustainable cooling solutions:

# “All-in-one” solution for heating, cooling and hot water in BREEAM certified new office buildings

### CATEGORY:

Thermal Comfort

### THE CONTEXT:

With heating and cooling consuming roughly half of the total energy in Europe, the upgrade of heating and cooling systems has been identified as a top priority to achieve the European climate and energy goals. It also offers a major opportunity to improve the indoor air quality in buildings which has a major impact on the well-being and the productivity of people living and working in buildings. The BREEAM certification is one of the leading sustainability assessment methods for masterplanning projects, infrastructure and buildings. It recognises and reflects the value in higher performing assets across the built environment's lifecycle, including the measurable energy consumption in the building.

### SUSTAINABLE COOLING SOLUTION:

- Four business units of offices spread over three floors in the distribution centre DCAM Amsterdam Park in the Port of Amsterdam.
- Full integration of cooling and heating with a monobloc air to water heat pump running with R-32 refrigerant and indoor climate systems in the form of underfloor heating and fan coils units. Coupled with a heat recovery system to recover the heat from the cooling system to provide hot water.
- Controlled by the Center Smart Energy Controller, a building automation system that allows for remote monitoring of temperature and power and gives the user insight into energy consumption.



### BENEFITS:

- The combination of system integration and energy-saving, sustainable solutions ultimately led to the BREEAM certification, recognizing the building's climate friendly performance.
- The “all-in-one” solution providing heating, cooling and hot water makes sure that the big heating and cooling loads in the building are met under all circumstances with minimal energy consumption.
- The air to water heat pump technology used for cooling, heating and hot water supply benefits from the Dutch government's subsidy for energy efficient heating and cooling technologies. The end-user therefore sees the total cost of ownership reduced right from the start and throughout the system's lifecycle thanks to reduced energy bills.

**TAGS:**

- Energy efficiency
- Synergies with heating
- Heat recovery
- Building Automation and Control
- Heat pumps
- Refrigerants

**GENERAL INFORMATION**

**NAME OF THE COMPANY:** LG Electronics



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**HYPERLINK TO LEARN MORE ABOUT THE SUSTAINABLE COOLING SOLUTION:**

<https://www.lgklimaat.nl/referenties/catalogus/34/index.html>

<https://youtu.be/IBxUh9QxwC0>