

# PROLOGIS Nieuwegein DC2BC

BREEAM CASE STUDY

22.07.2020





# Introduction

Sustainability has been integrated into the design, implementation and operation of the building. As a world leader in the development of industrial and logistics real estate, Prologis has a special social and economic responsibility. Therefore Prologis is a participant of the Dutch Green Building Council. Please read all relevant information in Prologis' latest Sustainability Report (<http://www.prologis.com/en/sustainability.html>). To measure and certify the sustainability performance of the building, Prologis will apply the Breeam-NL assessment method. Prologis aims to qualify the building at least with the BREEAM 'Excellent' rating BREEAM BRL 2014 v1.01. This case study outlines our approach to the sustainable development of this unique project.



# About the building

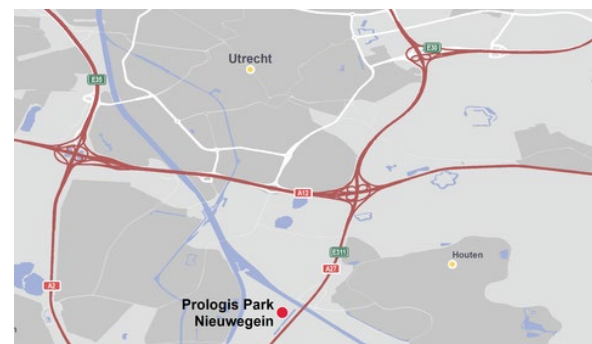
Prologis Park Nieuwegein enjoys an outstanding location near Utrecht, which is one of the fastest growing areas in the Netherlands in the economic hotspot area of Randstad with a population of 420,000. Because of its central location in the Netherlands and its great infrastructure network, the Utrecht area has become one of the primary logistics centres for national distribution centers customer.

The park is situated on the Het Klooster business park, which is home to large international logistics service providers, such as XPO and DHL. The new DC2 development at Prologis Park Nieuwegein is situated immediately off the ramp from the A27 and offers great visibility exposure from the A27 highway as well.

The first phase DC2 A was delivered in 2017 and a BREEAM 'Very Good' certification was achieved. The flexibility integrated in the design allowed further expansion of the building.

This case study refers to the second phase DC2 BC a build-to-suit for a Dutch retailer. With a footprint of approx. 57.650 m<sup>2</sup> (land), the site offers unique possibilities to accommodate future growth.

Therefor a tailor made solution was offered to individual requirements of the user. Within the design of Prologis Nieuwegein DC2 BC, the concepts of well-being, health, ecology, durability, quality, flexibility and appearance all play a decisive role.



## Area overview:

Total site	Unit BC
User area	33,476 sqm
Warehouse	29,828 sqm
Mezzanine	2,191 sqm
Office	1,457 sqm

# Project team

To achieve the Breeam Excellent rating, Nieuwegein DC2 BC will be carried out in conjunction with the following partners:

Developer:	Prologis
Architect:	Bronsvort Blaak Architecten
General contractor:	ASK Romein
BREEAM & WELL Building expert:	M3E
Ecologist:	ATKB
Area developer:	City of Nieuwegein
Electrical installation:	BRAS Elektrotechniek
Mechanical installation:	ZNI
Sprinkler installation:	Spie
Interior architect	Bronsvort Blaak Architecten
Customer:	HEMA / Ceva Logistics

## Approach

The dedicated Project Team has the ambition and drive to outperform the set level of sustainability and well-being. The Project Team recognizes creating a healthy and sustainable building being a joint-effort. The Project Team culture encourages to share new ideas and offers a platform to stimulate innovation.

Prologis has in-house Breeam Experts what allows us to consider the Breeam aspects in the preliminary stage of the project. The global expertise of Prologis with sustainability, is implemented in each stage of the project. This unique approach helps to reach high levels of sustainable performance from an idea to its exploitation. Sustainability will be a recurring topic on the agenda of customer, construction, site and toolbox meetings to involve all stakeholders throughout the project.

This will help the customer to integrate the Breeam requirements in the most efficient way.

To maintain the BREEAM rating and optimize the efficient operation of the building a handover is scheduled at completion in which the Customer, Logistics Provider, Facility Manager, Service Companies and the Prologis Property Manager are closely involved.

Special attention will be given to guide and support the customer with Breeam aspects that are subject to the tenant specific fit-out and future operation in order to secure the Breeam certification at project completion.

# Sustainability aspects

Although the building will be constructed as a 'built-to-suit' concept, for its first customer, the design of the building complies with the uniform European Prologis Specification. The generic set-up of the building can accommodate a wide variety of tenant-specific fit-outs with a normal and/or narrow-aisle racking configuration and multiple storage mezzanine floors. The possibility of installing a tailor-made-fit-out without needing significant adjustments to the building shell ensures future-proofing as the ultimate sustainability aspect. Furthermore, the following technical features will be implemented in the building design:

- High-grade insulated wall panels and a high-grade insulated roof system.
- Interior coating in bright white on the visible side of the roof and façade cladding to improve light reflection and with an easy-to-clean surface.
- Guaranteed air leakage rate of max.  $2.5 \text{ m}^3/(\text{m}^2\text{h})$  in the warehouse, proved by door blower test and thermographic survey.
- Steel roof structure prepared for the installation of solar panels on the entire roof surface.
- High-quality (above standard) running plate of dock levellers; 8/10 mm thick with insulation.
- Dock levellers with gap sealing to prevent drafts as well as the escape of warm air.

Dock shelters with bottom cushion for optimized energy efficiency.

- Dock envelop with flexible rubber sealing.
- Energy-saving mode for dock equipment control.
- High-grade insulated dock doors with a thickness of 67 mm, equipped with a thermoframe for a thermal break between frame and façade. Lip seals on both sides of the door and a double seal in the lintel area prevent heat and cold loss, with a thermal value of  $U=0.6 \text{ W}/(\text{m}^2\text{K})$ .
- Triple pane glazing in office façade.
- Energy-efficient LED lighting in the warehouse with dynamic DIM function and motion controls.
- Ventilation system in warehouse to supply fresh and filtered air to ensure indoor air quality.
- Energy-efficient LED lights in offices with dynamic DIM function via daylight reflection control.
- Energy-efficient LED lights in sanitary and technical rooms with motion control for energy savings.
- Energy-saving LED emergency lighting pictograms.
- Energy-saving outdoor LED lighting.





- Highly efficient floor heating in the offices.
- All-electric heat pump VRF cooling system and ventilation system with efficient energy recovery in the offices.
- Building management system for installations.
- Smart energy meters for monitoring and managing energy consumption.
- Leak detection of water connections.
- Sprinkler system equipped with additional cut-off valves for water savings during test runs.
- Low-maintenance concrete paving in the loading/unloading zone.

- Oil-water separator for rain water of truck court.
- Water-saving measures in sanitary rooms.
- Encouraging carpooling.
- Charging stations on-site for electric cars and bicycles.
- Ecological survey of location and nature-inclusive landscaping to support biodiversity.
- Solar panels at the roof.

During the construction process, various measures will be taken to reduce the impact on the environment, such as:

- The registration and reduction of the consumption of water and electricity.
- Waste management to reduce waste and to enhance recycling by a certified waste treatment facility.
- The commissioning of an ecologist to assess the environmental impact of the construction and to minimize it.



# Quality control

Along with the Breeam certification, the other measures that are used to control quality and assure sustainability are:

- Quality control of design and construction via external supervisor.
- Plan review and construction management of roofing system by Roof Management and the Roof Manager Web-based tool.
- Environmental management system in line with ISO14001.
- Environmental site assessment survey 'zero base line soil and groundwater investigation' at commencement of lease.
- External Breeam expert and assessor.
- Air-tight construction with blower test to guarantee air leakage rate of max  $2.5 \text{ m}^3/(\text{m}^2\text{h})$ .
- Thermographic survey to ensure building shell insulation.
- WELL Building Standard to assure a healthy, safe and pleasant working environment.
- Building site code of conduct: Bewuste Bouwers.
- FSC-wood certified project.



Energy consumption	
Expected electricity use by building (100% sustainably generated by solar panels):	15,6 kWh/m <sup>2</sup> BVO/jaar
Expected use of fossil fuels:	0,35 m <sup>3</sup> aeq/m <sup>2</sup> BVO/jaar
Expected use of sustainable resources in the office spaces:	33.2 kWh/m <sup>2</sup> GFA (43%)
Expected water consumption:	4,5 m <sup>3</sup> /person/year
Percentage of 'grey' water usage:	0%





# Key Breeam facts

The project team expects to achieve the following Breeam credits:

63%

Management

88%

Health

92%

Energy

67%

Transport

75%

Water

31%

Material

83%

Waste

55%

Land use and ecology

55%

Pollution

The project aims to perform well, with credits spread over the assessment criteria, as shown above. The precisely engineered foundation and building structure allow for the effective use of resources. In addition, the flexibility of the design and carefully chosen high-quality materials result in a future-proof building with low operational costs. Further, this project scores especially well in water,

Combined with the use of ISO 14001 and good waste management during construction this gives a high score. In the future a further reduction of the running costs will be achieved with solar panels on the roof structure. And last but not least the air quality is monitored real-time to for a healthy working environment.

## Breem credits

[illegible]



# Costs and benefits

Three types of costs – which are related to the Breeam process – can be differentiated in this project:

1. Costs concerning the BREEAM certification process itself
2. Cost of (energy-) reducing measures with a ROI
3. Additional investments in BREEAM credits that don't have a direct ROI

Examples of costs of the BREEAM certification process are the BREEAM expert and assessor, registration fees and the selection of a contractor capable of achieving the BREEAM credits.

Examples of energy-reducing measures are radiant ceiling panels, LED lighting and the solar panels.

Additional investments are made in ecological measures, water-loss prevention and energy monitoring of the building.

For Prologis, this translates into a more desirable building. Buildings built to the highest sustainability standards are more efficient to operate, reducing costs for tenants and encouraging extended occupancy. Over time, efficient buildings are better for customers, investors and communities.

## Creating Sustainable Value for Our Stakeholders

Our forward-looking approach to sustainable design, development and operations delivers long-term value for all of our stakeholders.



## Lessons learned and future plans

The building is an excellent reference of Prologis' current specification for all new developments in Benelux. The team has identified the following recommendations for the next project.

1. Some credits can only be achieved by starting early or with the help of the user and/or neighbors. Examples of this are consulting with the local community and future occupants. For future projects, the user should receive an information package to aid them in making choices that also lead to the BREEAM certification.
2. We have learned that it's feasible to create a surrounding that promotes biodiversity with expertise of an ecologist and a landscaping architect.
3. The WELL Building Standard offers a framework to consider well-being and health in a consistent way complementary to the Breeam method. This made it possible to achieve some Breeam credits that were previously not considered. It is useful to use Breeam because it already covers some WELL feature's.
4. For the next project a Circular building design with eco-friendly, bio-based, re-usable and re-cyclable will be further explored to lower the environmental footprint of our developments.

## Some final thoughts

For developers, contractors and architects, BREEAM has become the key inspiration to use the available resources in a more innovative, sustainable and efficient manner. Development projects with a BREEAM certification not only improve the quality of the environment for the people that work in them, but also result in more attractive investments for the long term property owner.



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