



## FACTSHEET BUILDING UNILEVER FOODS INNOVATION CENTRE WAGENINGEN

Unilever's energy-neutral Foods Innovation Centre, rated "Outstanding" by the Dutch BREEAM assessment body for environmental performance, is one of the most sustainable multifunctional buildings in the world. Its open plan design and the building's strategic location at Wageningen University provide for an optimal degree of interaction between Unilever and the various external parties with whom it will be working in the city's food ecosystem. The facility functions as an interaction and collaboration hub for Unilever's nutritionists, researchers and students from Wageningen University & Research (WUR), and local start-ups and knowledge institutes involved in food-related innovation. Cross-fertilisation between these parties is set to be further stimulated by the fact that a major part of the facility is open to the general public. All of this is reflected in the centre's design, which is based on the desire to facilitate knowledge sharing and the free flow of ideas.

In realising this building, Unilever, Dura Vermeer Bouw Hengelo, Paul de Ruiter Architects, DWA and Fokkema & Partners Architecten challenged themselves to push the boundaries of sustainability and innovation as far as they could. Their aim? To create a building that conveyed and gave physical form to Unilever's sustainability ambitions, values and standards. This fact sheet provides key details about the Unilever Foods Innovation Centre.

### Overview

The Foods Innovation Centre consists of a Pilot Plant, a Food & Customer Experience area and two floors of offices and laboratories. The pilot plant is a mini-factory for the small-scale production of new products. It leads directly to the Food & Customer Experience area, with test kitchens in which experiments with innovative ingredients will take place every day with the aim of creating new food products. Staff members, food experts, students and members of the public will be able to sample the results of these experiments and share their views here or in the concept store. A light-filled atrium with a skylight and a wide wooden staircase links the ground floor with Unilever's offices and laboratories. An underground car park immediately beneath the building and covering an area the size of its footprint provides staff parking for both Unilever and Wageningen University employees.

### BREEAM-NL "Outstanding" certification and energy neutrality

The highly collaborative and integrated approach to this project's realisation ultimately resulted in a multifunctional energy-neutral building that boasts the world's highest sustainability rating. The Dutch Green Building Council, responsible for BREEAM assessments in the Netherlands, rated the Unilever Foods Innovation Centre's design phase "Outstanding", awarding it 91% on the basis of the most up-to-date criteria for assessing environmental performance (2014 v2B).

The building was assessed on the basis of the New Build and Renovation bespoke criteria for Unilever 2014 v2B by a BREEAM-NL assessor on behalf of DWA and Dura Vermeer Bouw Hengelo B.V.. The Dutch Green Building Council expects the BREEAM-NL Outstanding certificate to be delivered in March or April 2020.

Earlier this year, the new centre also netted two prestigious BREEAM awards at the 2019 presentation ceremony in London: the Global Design Award in the Commercial Projects category and the Global Public Award.

### Health, flexibility, energy consumption, material selection and circularity

Considerations for health, flexibility, energy consumption, material selection and circularity were the cornerstones on which this facility was built. Below is an elaboration of how these considerations have been translated into the design and execution of the building.

## Health

The building and its grounds are rich in biodiversity and easy to navigate. The facility further supports the health and well-being of its users through the carefully calibrated admission of natural light, the generous views of outdoor greenery, and the building's air quality, acoustics and ergonomics. The building's inviting and conveniently situated staircases also spur people to move about the building and interact with their fellow occupants. The building's operational provisions and systems includes:

- A ventilation system that ionises and thereby improves air quality in the building by minimizing the spread of bacteria, viruses and fungi in an energy-efficient manner.
- Multi-sensors that measure radiant temperature rather than air temperature. This allows for more precise regulation, with beneficial effects on energy consumption and thermal comfort.
- Climate ceilings, which allow cooling and heating in a comfortable and energy-efficient manner, and allow rooms to be rearranged without compromising air circulation.
- The provision of a wide variety of healthy foods to promote a healthy diet.

## Flexibility

Sustainable buildings must be flexible, adaptable and expandable. Internal reorganisation (of offices, meeting rooms, laboratories/kitchens, etc.) can place a significant strain on a building's systems. The facility's design anticipates this as follows:

- Ceiling heights are designed to accommodate a wide variety of functions, such that new ones, be they offices or laboratories, can be created without affecting the building's systems.
- In the transitional areas between the laboratory/kitchen and the offices, 20% of the floor space can be repurposed without placing any strain on cooling, heating, ventilation or other systems.
- Building elements are designed to be disassembled, to allow for re-use in other buildings when no longer required in this one.
- The internal structure is separate from the shell, which allows for reorganisations without the need for drastic measures.

## Energy consumption

The Unilever Foods Innovation Centre is an energy-neutral building that supplies all its own energy. Its compact design ensures that energy loss is kept to a minimum. Furthermore, various measures have been taken to make the building's functions as energy-efficient as possible.

- The facility is equipped with an underground, seasonal thermal energy system for long-term energy storage. This means that, among other things, any surplus hot water from the building is stored underground in the summer, until required in the winter. Conversely, any surplus cold water is stored in the winter months to cool the building in the summer.
- Distinctive awnings and a skylight with built-in solar cells prevent overheating and minimizes energy consumption. The facades have been designed and comprehensively tested for comfort, admission of natural light, permission of views and energy savings.
- The roof is a sea of 1,550 solar panels. Solar cells embedded in the glass panels are designed to both generate energy and provide a heat shield.
- All glass surfaces, blank façades, floors and the roof are highly insulated, which minimizes energy consumption while facilitating thermal comfort.
- The atrium plays an essential role in natural climate control. In addition, the glass roof ensures that daylight reaches all corners of the building.
- Presence detectors ensure that no more electricity is used than is necessary.



## Material selection and circularity

All building materials were selected on the basis of their source and degree of circularity.

- The building's volume is optimised to achieve the largest possible volume with as little material as possible.
- Concrete building parts have a high percentage (up to 30%) of recycled aggregates, such as rubble and concrete granules.
- All wood in the building is FSC certified.
- 95% of the interior consists of recycled parts, including furniture and kitchen appliances from Unilever's former R&D facilities. Recycled wood panels, marine plastic sheets and PET felt are used as wall finishes and in custom-made furniture.
- The custom-made furniture is designed according to the principles of minimum waste, whereby modular elements are created according to the standard dimensions of sheet materials. Old kitchen unit hulls have been used to build new coffee corners.

## Project details

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| Total floor area:                                   | 40,850m <sup>2</sup> (including underground car park)  |
| Project description:                                | Offices, laboratories, demonstration and test kitchens, restaurant, pilot plant and car park |
| Start of design:                                    | Autumn 2016  |
| Project completion:                                 | 2019   |
| Architect:  | Paul de Ruiter Architects  |
| Developer and construction company:                 | Dura Vermeer Bouw Hengelo  |
| Interior architect:                                 | Fokkema & Partners Architecten   |
| Landscape architect:                                | Atelier LOOSvanVLIET   |
| Building services engineering:                      | DWA  |
| Structural Engineering and Fire Safety Engineering: | DGMR   |
| Construction consultant:                            | Lucassen Bouwconstructies  |
| Project management:                                 | Arcadis  |
| Systems integration:                                | Hollander Techniek   |
| Laboratory planning:                                | Dr Heinekamp   |
| Pilot plant consultant:                             | D&S Process Solutions  |
| Customer experience consultant:                     | Sandenburg Concept Creation  |
| BREEAM consultant:                                  | DWA & MAT25  |
| Photography:  | Ossip van Duivenbode   |

## About Dura Vermeer

Dura Vermeer Bouw Hengelo is part of the Dura Vermeer Group. This construction company works across the Netherlands and, with turnover of more than 1.1 billion and around 2,500 employees, is a leading name in the Dutch building market. Dura Vermeer primarily focuses on development, engineering, construction and maintenance, as well as renovation projects in both construction and infrastructure. We work exclusively in the Netherlands and have almost 160 years of experience and expertise. Our clients increasingly call for high-quality and sustainable solutions and facilities for quality of life, accommodation, work, recreation, mobility and safety/security, and this is what we offer. We collaborate closely with clients, contractors and others involved in the construction process in adopting a customer-oriented, reliable and inventive approach to construction, based on our brand values.



### **About Paul de Ruiter Architects**

Paul de Ruiter Architects are world leaders in the practice of sustainable architecture and boast a portfolio of sustainability-certified energy-neutral buildings unrivalled anywhere in the Netherlands. Its buildings are designed to generate energy not only in a technical sense, but also in human terms. The practice considers the merits of health and the elements of well-being that stimulate productivity alongside quantifiable factors such as daylight optimization, and uses these to form the basis of its approach to designing intelligent sustainable buildings. The approach enables it to produce buildings that share certain distinguishing factors, among which is a pleasant indoor climate that promotes mental stimulation and facilitates interaction among its users. Its portfolio includes residential buildings, hotels, office buildings, educational buildings, public buildings, laboratories, theatres and infrastructural works. For more information, visit: [www.paulderuiter.nl](http://www.paulderuiter.nl)

### **About DWA**

DWA feels responsible for the world around us. Our consultants continue to devise smart, sustainable solutions for the buildings and areas of tomorrow. Strategic issues are part of our daily routine. We uncouple entire housing estates from the gas distribution network, we design energy-efficient, comfortable offices in which people are more productive, and we reduce CO<sup>2</sup> emissions. Our engineers make the Netherlands sustainable. We don't waste time talking, we get on with it. [www.dwa.nl](http://www.dwa.nl)

### **About Fokkema & Partners Architecten**

Fokkema & Partners Architecten creates its innovative, identity-rich and future-proof interior designs around the end user. Since its foundation in 1995, the agency has designed the working environment of more than 100,000 people, in close collaboration with clients from local and national government agencies, multinationals, high-end service providers, start-ups and educational institutions, among others. Driven by unbridled curiosity and creativity, the agency develops sustainable solutions that contribute to health and well-being of its projects' end users. It works from the inside out, using its spatial experience to seek the perfect communion of materials, interiors and surroundings. The result is inspiring interiors, coherent renovations, striking transformations and entirely new designs, all surprisingly self-evident only after the fact.

### **About Unilever**

Unilever is one of the world's leading suppliers of Beauty & Personal Care, Home Care, and Foods & Refreshment products with sales in over 190 countries and reaching 2.5 billion consumers a day. It has 155,000 employees and generated sales of €51 billion in 2018. Over half (60%) of the company's footprint is in developing and emerging markets. Unilever has around 400 brands found in homes all over the world, including Dove, Knorr, Dirt Is Good, Rexona, Hellmann's, Lipton, Wall's, Lux, Magnum, Axe, Sunsilk and Surf.

Unilever's Sustainable Living Plan (USLP) underpins the company's strategy and commits to:

- Helping more than a billion people take action to improve their health and well-being by 2020.
- Halving the environmental impact of our products by 2030.
- Enhancing the livelihoods of millions of people by 2020.

The USLP creates value by driving growth and trust, eliminating costs and reducing risks. In 2018, the company's Sustainable Living Brands grew 69% faster than the rest of the business, compared to 46% in 2017.



PAUL DE RUITER ARCHITECTS

Since 2010 we have been taking action through the Unilever Sustainable Living Plan to help more than a billion people improve their health and well-being, halve our environmental footprint and enhance the livelihoods of millions of people as we grow our business. We have already made significant progress and continue to expand our ambition – most recently committing to ensure 100% of our plastic packaging is fully reusable, recyclable or compostable by 2025. While there is still more to do, we are proud to have been recognised in 2019 as a leader in the Dow Jones Sustainability Index, and as the top ranked company in the GlobeScan/SustainAbility Global Corporate Sustainability Leaders survey, since 2011.

For more information about Unilever and its brands, please visit [www.unilever.com](http://www.unilever.com).

For more information on the USLP: [www.unilever.com/sustainable-living/](http://www.unilever.com/sustainable-living/)