Atlas

The pre-eminent icon of a sustainable TU/e Campus

Photographer: Bart van Overbeeke
THE ARCHITECTURE OF ATLAS BUILDS ON THE EXISTING QUALITIES OF THE ORIGINAL BUILDING AND THE GREEN CAMPUS.
Atlas (the former Hoofdgebouw) is located on the green campus of Eindhoven University of Technology. The iconic building was designed in the 1960s by architect Samuel van Embden, who gave it the atmosphere of industry and a factory. Now, fifty-five years later, it has been transformed to be the most sustainable educational building of this era. This makes Atlas a showpiece for TU/e. It oozes science and innovation and shows what TU/e stands for. Lavish attention has been devoted to climate, view, daylight illumination, air quality and acoustics. Atlas is a sustainable and healthy building in which its users can work and study pleasantly and comfortably.
/ THE RED BINDING ELEMENT
The spatial nature of the central entrance hall has been restored, while its function has been fleshed out campus-wide as reception, a food court and access to teaching and meeting rooms. The new, connecting, conspicuous red stairway, spiraling lengthwise through the building, invites access to the superstructure. To make room for this stairway a large rectangle has been sawn out of the vault of the hall.

/ THE DESIGN: BACK TO THE BASIS
In the renovation process, the original building of Van Embden has been taken as a guideline for the new design by Team RSVP. Closed rooms and long corridors have made way for an open building in which the different rooms are visually interconnected.

/ SMART, GLASS FAÇADE
Atlas has a smart, glass façade (curtain wall) which preserves the existing façade structure as much as possible. Depending on the weather, the floor-to-ceiling parallel opening windows move outward at night in order to cool the building and purify the air. Thanks to complete circulation of air in the room there is a natural ventilation. While the windows are opened automatically at night, they can also be operated individually in the daytime. They are fitted with triple solar-control glazing with interior blinds. This creates optimal light and heat conditions for users.
TU/e has the ambition to reduce its energy consumption by 30% in 2020. The renovation of the Hoofdgebouw is the greatest ‘green’ project of TU/e and is in line with this ambition. As a result of the sustainable renovation the CO2 emission of the building will drop by some 80%, whereas the number of ‘occupants’ will be more than doubled. The ambition level before the renovation was to obtain sustainability certificate BREEAM Excellent (Greencalc 4.0 label A+). The construction of Atlas is sustainable in the (re)use of technology, energy and materials, which made it clear even during the design stage that the design qualified for BREEAM Outstanding, the highest BREEAM category that can be achieved.

Reduction of CO2 emission

Atlas is the fifth building on the TU/e Campus without a gas connection, because it is heated completely by means of HCS (heat and cold storage). This system cools buildings in summer and heats them in winter. Atlas also uses solar panels on roofs within the campus, generating a guaranteed 500 megawatt hour per year. This covers most of the building-related power consumption.

Once Atlas is connected to the HCS, the TU/e gas consumption in the period from 2002 to 2020 will have decreased by 75%, which together with the solar panels accounts for a reduction of CO2 emission by 60%.
Atlas is a smart building with Smart Energysaving Lighting (SEL), with daylight-dependent lamps, whose standard setting is at a relatively low level. If desired, the LED lighting can be regulated individually. Users can download an App for this, which allows them to set the lighting intensity as they wish. The data released via the sensors does not impinge on privacy. It is in accordance with the European privacy legislation (GDPR). SEL yields a substantial annual lighting energy saving of 40-60%.

Living lab
A building as a testing ground. That is how the Intelligent Light Institute (ILI), an institute which researches new applications of intelligent light, wants to use Atlas as a ‘living lab’. In this laboratory it is researched, for example, how light may be used to push back a winter depression. In addition, the stairwells and the roof are used for research into building materials, solar panels and other building components.
For employees there are different types of workplaces and plenty of facilities that are shared. Employees can work there in open areas or flexible workplaces, but can also work in concentration in secluded areas. Furthermore, it is perfectly possible to work together, to consult, and to meet informally. The working environment is interwoven with the teaching and research environment.

**The occupants**

Atlas is a lively and inspiring place to study together, to learn, to teach, to research, to cooperate, to meet and discover. A place where occupants and visitors alike will soon feel at home. Its new occupants are the Departments of Industrial Design and Industrial Engineering & Innovation Sciences, the Executive Board, eight supporting services of TU/e, the Eindhoven School of Education, the Strategic Areas, Innovation Lab, Fundraising and the University Club. And of course, Atlas provides educational facilities for TU/e as a whole.
The realization of Atlas is the work of a large number of committed people.

**Design**
Total Engineer Team RSVP
(Team V Architectuur BV, Valstar Simonis BV,
Van Rossum Raadgevende Ingenieurs BV,
Peutz BV, BKS Schagen)

**Asbestos and demolition**
Dusseldorp Infra, Sloop en Milieutechniek B.V.

**Contractor**
Renovatie en bouw Van Wijnen Zuid B.V.

**Terrain design**
MTD Landschapsarchitecten

**Project organisation TU/e**
Steering Committee Campus 2020
Project team Atlas
Real Estate Management

**Support TU/e**
Information Management & Services
Internal Affairs
Financial and Economic Affairs Service
Communication Expertise Center
Department of Industrial Engineering & Innovation Sciences
Department of Industrial Design
General Affairs

## Colophon

**Contact**
Real Estate Management TU/e
DHSecretariaat@tue.nl
Tel. +31 (0)40 247 27 75

**Text**
drs. j – tekst & communicatie
Real Estate Management TU/e
Communication Expertise Center TU/e

**Design**
ECHT Marketingcommunicatie

**Photography**
Norbert van Onna
Bart van Overbeeke
Zwartlicht

**Translation**
Benjamin Ruijsemaars

**Printing**
Drukkerij De Croon Van Heerbeek B.V.