UNStudio

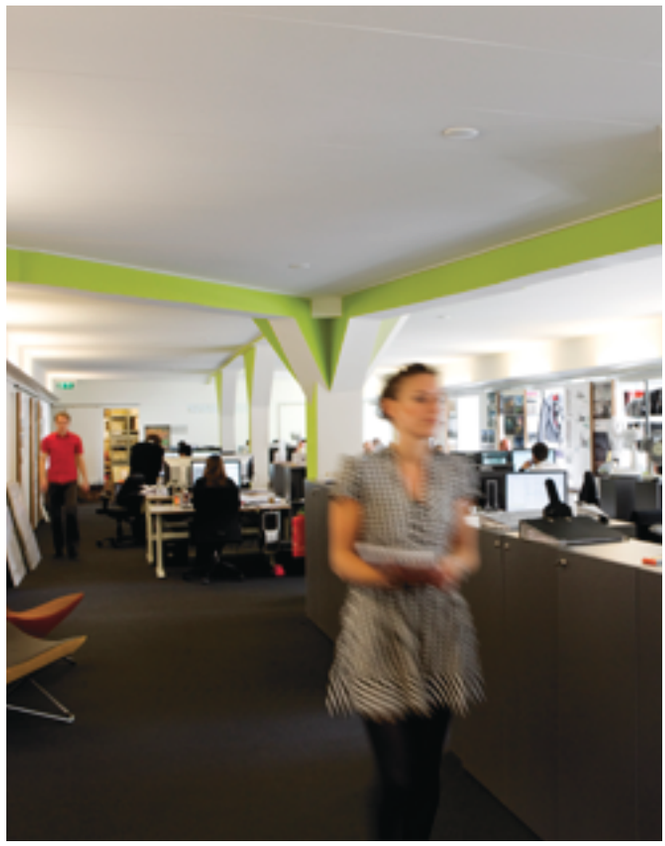
Background

UNStudio

UNStudio, founded in 1988 by Ben van Berkel and Caroline Bos, is a Dutch architectural design studio specializing in architecture, urban development and infrastructural projects. The name, UNStudio, stands for United Network Studio, referring to the collaborative nature of the practice. UNStudio has continually expanded its capabilities through prolonged collaboration with an extended network of international consultants, partners, and advisors across the globe. This network, combined with our centrally located offices in Amsterdam and Shanghai, enables us to work efficiently anywhere in the world.

With already over seventy projects in Asia, Europe, and North America, the studio continues to expand its global presence with recent commissions in among others China, South-Korea, Taiwan, Italy, Germany and the USA. The office has worked internationally since its inception and has produced a wide range of work ranging from public buildings, infrastructure, offices, residential, products, to urban masterplans. Pivotal UNStudio projects within these fields include the Mercedes-Benz museum in Stuttgart (Germany), the large scale mixed-use project Raffles City in Hangzhou (China), the luxurious department store Galleria Centercity in Seoul (Korea), private family house VilLA NM in Upstate New York (USA), the Agora theatre in Lelystad (The Netherlands) and the Erasmus Bridge in Rotterdam (The Netherlands).

In 2007 UNStudio was named Architect of the Year 2006-2007. In that same year Ben van Berkel received the Charles Jencks Award, while a year later the Mercedes-Benz Museum won the German Hugo-Häring Preis. In 2011 Ben van Berkel was appointed the Kenzo Tange Chair at the Harvard University Graduate School of Design.



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Centre for Virtual Engineering

Stuttgart, Germany, 2006-2012

Project information
Research laboratory
Client
Fraunhofer-Gesellschaft
Location
Fraunhofer Campus, Nobelstrasse 12, 70569 Stuttgart
Program
Research laboratory and offices
Scale

GFA	5.782 m^2
Building volume	27.221 m^3
Site	2.440 m^2
Building height	20.70 m

Accreditation
Gold Certification for sustainable design of the DGNB - 'Deutsche Gesellschaft für Nachhaltiges Bauen' (German Sustainable Building Council)
Status
Built
UNStudio
Ben van Berkel, Harm Wassink with Florian Heinzelmann, Tobias Wallisser, Marc Herschel, Kristoph Nowak and Christiane Reuther, Aleksandra Apolinarska, Marc Hoppermann, Moritz Reichartz, Norman Hack, Marcin Koltunski, Peter Irmscher
ASPlan
Horst Ermel, Leopold Horinek, Lutz Weber, Stefan Hausladen, Jürgen Bär, Gunawan Bestari, Joachim Deis, Bernd Hasse, Marlene Hertzler, Michael Kapouranis, Vladislav Litz, Thomas Thrun
Advisors
BKSI: Structural Engineering
Rentschler und Riedesser: Mechanical Engineering
IB Müller & Bleher: Electric Engineering
Gänssle + Hehr: Landscape Architect
Brüssau Bauphysik: Accoustics, Energy ENEV, Building Simulation
Halfkann + Kirchner: Fire Safety Advisor
Vermessung Hils: Topographical Survey
Dr. Alexander Szichta: Geological survey
KOP Real Estate Solutions: DGNB
IDF Global: Renderings

Centre for Virtual Engineering

Stuttgart, Germany, 2006-2012

Located on the research campus of the Fraunhofer IAO in Stuttgart Vaihingen, the Centre for Virtual Engineering (ZVE) specializes in the investigation of different multidisciplinary work flows. UNStudio's design for the Centre applies its research into the potential to expand contemporary understandings of new working environments and affect a design approach that creates working environments which stimulate communication, experimentation and creativity through a new type of office building.

The diagrammatic approach employed combines the laboratory and research functions with the public exhibition areas and a scenographic routing of the visitors into an open and communicative building concept. The different working areas are distributed with regard to the needs of the employees.

UNStudio worked in collaboration with ASPlan from Kaiserslautern on the architectural services for the Centre. An exceptional level of sustainability was a key consideration from the outset and upon completion the building was awarded a Gold certification by the German Sustainable Building Council (DGNB).

Centre for Virtual Engineering

Stuttgart, Germany, 2006-2012

Following an intense phase of programme analysis all the various parts of the programme were implemented into the spatial organisation of the building. Working areas merge into each other, promoting interdisciplinary work practices. The scenographic visitors routing is an essential element of the design, for which the brightly coloured stairs serve as a guiding line. Colour is used both in the facade and interior to distinguish the various programmatic elements, such as offices or laboratories.

The building structure partially consists of bubble deck ceilings, providing both an economical alternative to concrete ceilings and reduction in weight, allowing for column free spaces. The main structure consists of four main cores. The ceilings span between these cores and the columns within the facade area, thereby providing column free spaces. Enhanced technical elements are integrated into the structure: concrete core activation, false floors and the arrangement of sprinkler tubes within the false floors minimises the amount of visible installations. The air supply to the deeper areas also occurs partly through air channels within the false floor. Air extraction occurs within the shafts.

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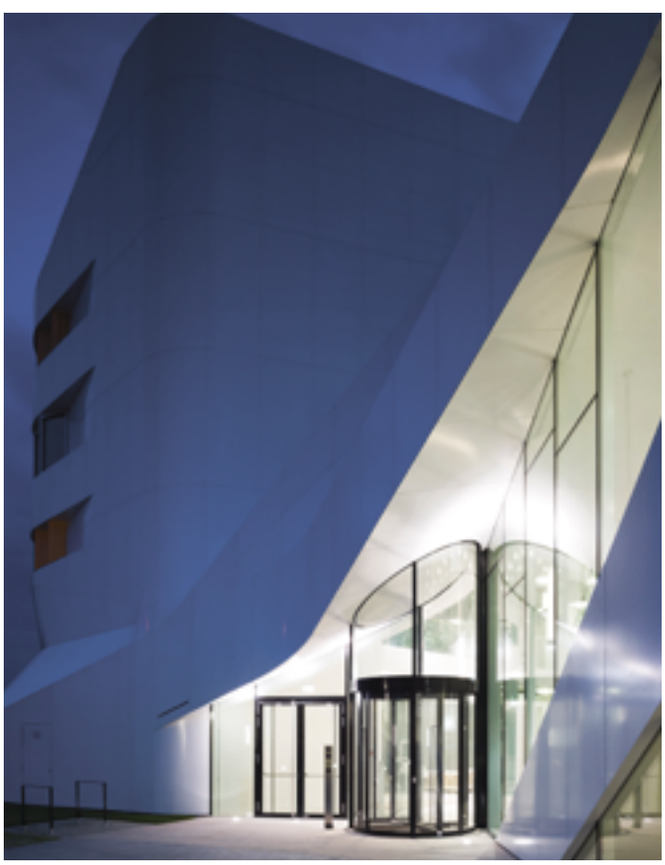

The plot has been used to its maximum in terms of development potential, with the building land treated in an economical way. The public infrastructure and the creation of sealed surfaces is reduced to the necessary amount only. The flat roof areas provide green roofs and serve for the storage of rain water. Access to the building is barrier free. Low maintenance, separable, and recyclable materials have been used for the skeleton as well as for the interior and facade construction. The ceilings are used for cooling with concrete core activation by water, with ground probes and a sprinkler tank serving as storage.

A compact shape with an optimized building envelope was designed during the initial stages of the project. The rounded shape provides a 7% smaller contour than that of a rectangular form of the same area. This also results in a better facade area to volume ratio. The amount of glass facade is only 32%. All spaces along the facade can be ventilated directly by operable window elements. Ceilings without any lintels make it possible for daylight to reflect deep into the spaces, which are additionally supported by daylight lamellas while the sun screens are down. All installations are located within accessible shafts.