

Kaistrasse 1–3 Düsseldorf

Location

Kaistraße, Düsseldorf, Germany

Built

GFA: 28,000 m² Site area: 3,159 m²



Kaistrasse 1: A Green Design for Düsseldorf's Harbor

A staggered, high-rise complex creates much public space and achieves a balance between transparency and robustness and is exemplary in terms of sustainability and mobility. The high-rise building at Kaistrasse 1 in Düsseldorf is visually separated into four distinct parts, replicating the rhythm of the horizontal and vertical buildings of the port. The staggered layout of the proposed construction diagonally across the site – together with the listed Kaispeicher warehouse – creates lively plazas and opens up pedestrian routes to Handelshafen. Whilst the materials of the structural elements contain references to historic buildings, the building envelope with its highly transparent double façade provides generous views out of and into the building. With the high-rise form ranging between ten and eighteen stories, with a maximum height of more than 72 meters, the high-rise forms the end point of the row of buildings between Zollhof and Kaistrasse. In order to create as much public space as possible, ingenhoven associates designed the building with a very compact footprint. The architectural concept is based on the contrast between different materials and the balance between transparency and robustness: the concrete frames—reminiscent of the robust materials of the warehouse and production buildings at the port—enclose glazed cubes

that suggest lightness and create a link between the interior and exterior. The external wall slabs are linked at the top enclosing the respective frame above the roof gardens and in this way not only create the frame for the greening of the roof, in addition to surfaces for photovoltaic cells and vertical wind turbines. The horizontal bracing of the high-rise is achieved through the interior building cores in combination of the wall slabs. The construction is based on flat horizontal slabs that create the generous interior floor spaces. The design emphasizes the importance of quality public space: the first two floors are recessed and thereby increase the size of the pedestrian areas as well as the adjoining plazas on both sides. The main entrances are located at the northern and southern ends of the building, whilst access to the underground parking is from Zollhof Street, which means that the quality of the public space is unaffected. These public spaces benefit from cafés, retail shops, and exhibition areas at street level, with the nine to seventeen stories above intended to accommodate offices. The space per standard floor can be flexibly divided into 400-square-meter functional units, which can either be used individually or combined, to form a unit of around 1,600 square meters. The roof gardens and roof terraces are laid out to create attractive outside spaces and aesthetically top off the buildings. The building's diagonal arrangement not only takes into consideration the urban context and pedestrian routes, but also makes optimum use of solar radiation. This arrangement creates two important benefits: a sunlit plaza at Franziusstrasse from midday until the evening and an additional plaza to the south-east of the building with sunlight from early morning until the afternoon. The latter creates a link with the public area in front of the monument and defines a generous new urban space. Both plazas provide easy access to the eateries at street level as well as opportunities to enjoy the outdoors. The staggered layout of the building not only ensures that the sun reaches the forecourt and stairs of the existing building on the one side, but also provides spatial and visual links to the port on the other. True to the supergreen® philosophy, ingenhoven associates aim for the Gold standard under the LEED certification scheme for this project. To achieve this aim, optimized energy conservation systems, intelligent building control, and water-saving devices will be employed. In accordance with the cradle-to-cradle model and the endeavor to make the building itself a store of raw materials, the connections between building materials—both between entire parts of the building and between individual building components—are intended to be such that they can be

dismantled again. This means that when the building is to be deconstructed again the building materials can be sorted by type and returned to the material cycle without waste. Modern mobility concepts are promoted through the provision of bicycle racks, showers, lockers, and electric charging points in the floors underground. The microclimate is improved by landscaped areas around the building, by planting on the roofs, and by a titanium-dioxide coating of façade components.

Awards, Nominations

Team

Team ingenhoven associates

Christoph Ingenhoven, Rudolf Jonas, Martin Reuter, Nils Lindhorst, Melik Kekec, Peter Pistorius, Stefan Boenicke, Thanh Dang, Yulia Grantovskikh, Marius Magnus Riepe, Florian Winands, Risa Kagami, Martin Trawinski, Pavlos Antoniou, Simon Klösger, Tim-Frederic Schulze, Dariusz Szczygielski

Client

MOMENI Group + Black Horse Investments

Structural engineering and façade consultants

Werner Sobek Group GmbH

M&E and sustainability consultants

ingenieurbüro hausladen gmbh

Fire safety consultants

BPK Fire Safety Consultants GmbH & Co. KG, Düsseldorf

Mobility consultants

LINDSCHULTE + KLOPPE Düsseldorf

Cradle-to-cradle consultants

Michael Braungart, EPEA, Hamburg