

## Kö-Bogen II Düsseldorf



Location  
Düsseldorf, Germany

Built  
Under construction

International competition 2014, 1st prize

GFA retail building: 41,370 m<sup>2</sup>  
GFA underground parking garage: 23,000 m<sup>2</sup>

**supergreen®**

## Sustainability is a commitment— Eight kilometers of hornbeam hedges for a supergreen®-project

Carrying out the building construction and the civil engineering at the same time is not just unusual, it also demands top performance in terms of construction technology. This is required to make it possible for the completion of the shell construction above ground (topping out) and the insertion of the base plate at a depth of 17 meters below ground (groundbreaking) to coincide. Both the topping out celebration and the groundbreaking ceremony are on time, and

The two-part commercial and office building, Kö-Bogen II, is being built at Gustaf-Gründgens-Platz in the direct vicinity of the two architectural icons of the Dreischeibenhaus and the Düsseldorf Theater. With its variations in height, the new building by ingenhoven architects reflects the neighboring buildings and provides an open view to the listed standalone buildings and the Hofgarten park behind. The roofs and facades of the ensemble feature extensive planting with hornbeam hedges and grass, thus creating a new green heart

in Düsseldorf's inner city. Creating sustainable architecture is a self-commitment for ingenhoven architects. As a consequence of this, Kö-Bogen II already received the highest award level DGNB Platinum as a pre-certificate.

## A new building type is created

The unique design of the two-part ensemble is a direct response to the surrounding urban fabric. With its 42,000 square meters of gross floor area, the building provides space for various functions such as retail, gastronomy, offices, and local recreation. In combination with a smaller triangular building, the five-story trapeze-shaped main building forms a valley-type situation. For the first time since the demolition of the former "Tausendfüßler" overpass, the view has been opened up to the Dreischeibenhaus and the theater. The new development will emphasize this and provide an appropriate setting for these post-war icons. Coming from Königsallee or Berliner Allee via Schadowstrasse, the two buildings of the new development—with their sloping facades—create a dynamic through-passage that opens the view towards the theater. The facade of the main building also slants towards the theater, a gesture of deference to the listed building. In order to do justice to the overall urban design situation, the design of Kö-Bogen II deliberately avoids a classical block-edged development such as that along the Schadowstrasse shopping street. In addition, the idea of green architecture has been applied systematically, thus distinguishing the development from conventional architectural solutions.

## Eight kilometers of hornbeam hedges—truly supergreen®!

Kö-Bogen II extends the greenery of the adjoining Hofgarten park into the inner city. The facades of the main building and the sloping roof at a height of 27 meters are all planted. The profuse facade vegetation provides natural cooling, reduces the inner city heat effect, and helps to clean and humidify the air. Likewise, much planting has been applied to the walk-on sloping roof of the second triangular building that rises towards the Dreischeibenhaus to a height of ten meters and includes gastronomic functions; with its turfed surface, it invites passers-by to rest, take the sun, and relax. From Gustaf-Gründgens-Platz the main building looks like a virtual "vertical park" with eight kilometers of hornbeam hedges, the leaves of which take on different hues throughout the year. The design of the green facades and roof in cooperation with the Werner Sobek Group is based on

detailed expert reports on suitable planting and local conditions. The selection of an optimal greening system and hornbeam as a suitable plant species made it necessary to consider the potential for planting in the context of the building and to ensure that the system would be serviceable. After all, a competently devised development and maintenance concept is essential for the sustainability of the system.

Whereas the greening on the roof of Kö-Bogen II was carried out in the conventional way with plant plugs in beds, a purpose-designed greening system involving horizontally arranged containers was developed for the north- and west-facing facades. These are firmly attached to the respective facade using a construction designed for the purpose.

To fit in with the schedule, preparation of the hedge elements of the facade was started in 2016 by a tree nursery; they will be delivered to the building site in the autumn of 2019, by which time they will have a fully established root system.

#### Considering the city as a whole

The concept for the design of Kö-Bogen II also includes the re-design of Gustaf-Gründgens-Platz. Originally, this had simply been created as the “concrete lid” of the underground parking garage below—an open space without any amenity quality and without any social benefit. In 1992, Christoph Ingenhoven for the first time presented his idea of a comprehensive “repair of the city”. This led to the Kö-Bogen project which, in several building phases, was aimed at the revitalization of an urban space that, until 2013, was dominated by an overpass. Finally, the opportunity that came about when the “Tausendfüßler” overpass was replaced with an underground tunnel can be made use of: a direct link between Joachim-Erwin-Platz (formerly Jan-Wellem-Platz) and Gustaf-Gründgens-Platz. In 2014, ingenhoven architects were the winners of an international urban design competition for the partial Kö-Bogen II project. This is the successful conclusion of an urban renewal project in Düsseldorf, which ingenhoven architects have focused on for years, producing studies, town planning designs, and building projects.

The re-design of Gustaf-Gründgens-Platz means no less than this area of the inner city becoming reconciled with itself. The point is to consider the city as a whole rather than to produce a historic reconstruction of the previous road layout.

The previously closed lid of Gustaf-Gründgens-Platz will now be given fresh vitality with the help of tree islands, seating, eateries, and an innovative lighting concept.

## A top performance in terms of construction technology

The commercial and office building also includes a five-story underground parking garage with 670 spaces. The so-called cut-and-cover method makes it possible to complete the complex construction project in just under three years. After the demolition of the existing underground parking garage, a 17-meter-deep pit with a diaphragm wall was excavated. 98 primary columns placed in the diaphragm wall barrettes guarantee that construction can take place upwards and downwards at the same time. In 2017, these loadbearing elements were given their first structurally effective cover beneath which four parking levels are created to replace the previous three-story underground parking garage. At the same time, the building above ground proceeded above the concrete deck. In 2018, a second cover with a structurally bracing function was inserted, beneath which is the lowest parking level. The cut-and-cover method is a means of achieving an enormous improvement in efficiency—the method was the only way both groundbreaking and topping out could be celebrated at the same time. The scheduled opening of Kö-Bogen II in the spring of 2020 is assured.

## Awards, Nominations

2016

MIPIM Architectural Review Future Projects Award - Mixed-Use, recognition

## Team

Client

Düsseldorf Schadowstraße 50/52 GmbH & Co. KG

Architect

ingenhoven architects, Düsseldorf

Team ingenhoven architects

Christoph Ingenhoven, Peter Jan van Ouwkerk, Cem Uzman, Mehmet Congara, Ben Dieckmann, Patrick Esser, Vanessa Garcia Carnicero, Yulia Grantovskikh, Tomoko Goi, Olga Hartmann, Jakob Hense, Melike Islek, Fabrice-Noel Köhler, Christian Monning, Daniel Pehl, Andres Pena Gomez, Peter Pistorius, Lukas Reichel, Jürgen Schreyer, Susana Somoza Parada, Jonas Unger, Nicolas Witsch

Project management

AIP Bauregie GmbH

Structural design

Schüßler-Plan Ingenieurgesellschaft mbH, Düsseldorf

Town Planning

Heinz Jahnen Pflüger Town planners and architects partnership, Aachen

Geotechnical consultancy

ICG (Ingenieur Consult Geotechnik) Düsseldorf GmbH & Co. KG

Facade design – green facades and green roofs

ingenhoven architects with Werner Sobek Stuttgart AG

Phytotechnology / special building greening

Prof. Dr. K.-H. Strauch, Beuth University of Applied Sciences, Berlin, Faculty: Life Sciences and Technology