GKD: Metal mesh encapsulates gateway to the Campus Melaten

New Teaching and Training Center in the Aachener Bio-Medical Engineering Cluster

With 16 research clusters, one of the largest technology-oriented research landscapes in Europe is being created on the RWTH Aachen Campus. The distinguishing feature of the Bio-Medical Engineering Cluster, which can be seen from great distances, is the new CT^2 Center for Teaching and Training of the Medical Faculty of the RWTH Aachen University. As the first investor-financed building in this Cluster, it marks another milestone. In a Europe-wide investor selection process, Frauenrath group of companies, Heinsberg, and the architects from slapa oberholz pszczulny | sop architects, Dusseldorf, won the order with their distinctive concept. They designed the building as a standalone construction that is flooded with light and takes on the role of a gateway to the Campus Melaten thanks to its shape and prominent position. Two of the façades are clad with 1,900 square meters of OMEGA 1520 metal mesh from GKD – Gebr. Kufferath AG.

As an elite center of learning, RWTH Aachen University is one of the state's flagship institutions in higher education. Around 44,500 students, 550 professors, and almost ten times as many research associates help secure the reputation of the RWTH as an internationally renowned university – above all for technical and medical degree programs. Founded in 1870, the university's campuses are spread across the city. With an unprecedented Excellence Initiative, RWTH Aachen University has been expanding its reputation as one of the world's leading technical universities since 2009.

The RWTH Aachen Campus consists of the Campus Central – with the historic main building and the distinctive Super C meeting center in the shadow of the cathedral and city hall –, Campus Melaten and Campus West. The result is a campus that integrates into urban life. On a total area of 800,000 square meters, 16 research clusters are being built successively to answer future questions arising from the challenges of megatrends. Six of these clusters are already in the course of implementation. These include the Bio-Medical Engineering Cluster in the direct vicinity of University Hospital Aachen. This consists of four centers, each of which is dedicated to a specific field. In these operating units, academics from the Faculties of Medicine, Mechanical Engineering, Electrical Engineering, Mathematics and Natural Sciences collaborate with experts from industry on methods and products that are set to revolutionize both diagnosis and therapy.

Visually seamless façade

The CT^2 Center for Teaching and Training is the first investor-financed building in the Bio-Medical Engineering Cluster. The seven-storey building was constructed with an investment volume of around €20 million. By networking theory and clinical practice the building offers state-of-the-art training opportunities for students of Medicine, Dentistry, and Biomedical Engineering. It also sets new standards in the further training of physicians and medical personnel, as well as the testing of medical equipment. The aim here was for the CT^2 to also reflect this function in terms of its architectural design. The architects from sop designed a cube on the slightly sloping terrain that resembles an inverted "U" thanks to its fully glazed upper façades and thereby has the appearance of a gigantic gateway to the campus located behind it. This impression is underlined by the projecting exposed concrete of the side walls which serves to frame the frontal façade. The lateral façades with ribbon windows along their length are spanned by a shimmering

skin made of metallic mesh that creates a visually seamless surface. At the same time, the spaces located behind it remain visible thanks to the transparency of the metal fabric. This shell comprises twelve panels of OMEGA 1520 stainless steel mesh – each measuring 29.5 meters long by 5.4 meters wide. There were several reasons behind the decision to go with the woven membrane. These include the fact that the metallic skin underlines the building's high-tech aspirations and lends the field of biomedical technology both a contemporary and appropriate face. Interacting with the glass façades, it facilitates communication between the interior and exterior. The attachment type is also in keeping with the philosophy of design purism. In line with the patented Fusiomesh NG system, the upper and lower edge of the stainless steel mesh is embedded in a special adhesive between two flat profiles and thereby bonded. Clamping forks ensure that the mesh can be perfectly aligned and handle the requisite static preload based on the anticipated wind and impact loads. The panels are attached to a continuous steel profile in a way that makes them visible at the bottom. At the top edge of the building, on the other hand, the material is bent over backward, so that only a fine edge of the mesh can be seen here. To reduce horizontal movement and the shearing forces at a façade height of 29.5 meters, seven stainless steel tubes run horizontally behind the mesh as intermediate attachment levels. The mesh is then attached to these tubes from the outside with wire clamps that are invisible once fitted. GKD not only manufactured and assembled the mesh for this project, but also took care of the installation.

Efficient contribution to sustainability

Beside the special aesthetics of the metallic membrane, its functional properties were the key reasons for its selection. For example, the stainless steel shell serves as solar protection that reduces the surface temperature of

the façade. Yet despite this, the open mesh structure still allows unrestricted natural daylight into the rooms, as well as clear outward views. As such, it not only contributes to improving the building's energy balance, but also makes it a more pleasant place to spend time and thereby helps boost employee performance. Since stainless steel can be fully recycled at the end of its useful life, the membrane also supports the sophisticated sustainability concept of the new building. The openness and interaction already visible from outside continue consistently into the atrium housed inside the building that is flooded with light. Numerous bridges and wide galleries allow a wide range of visual connections with all floors. The guiding principle of communication and interdisciplinary collaboration then becomes a reality that can be experienced throughout the entire building. Further highlights include a multifunctional auditorium that can house 400 people, as well as a demonstration operating theater equipped with the latest technologies. As and when necessary, these two functional rooms can be combined with the foyer in the basement to create an end-to-end event area which can, for example, be used for symposia. When operated at maximum capacity, the building can then host up to 1,200 guests. Its shimmering stainless steel mesh façade allows the gateway to the future to be seen from great distances.

7.091 characters incl. spaces

Building contractor:	Frauenrath group of companies, Heinsberg
Architect:	slapa oberholz pszczulny | sop architekten, Düsseldorf
Start of construction:	2016
Completion:	2018
Mesh type:	OMEGA 1520
Mesh manufacturer:	GKD – Gebr. Kufferath AG
Attachment:	Fusiomesh NG
Total mesh area:	1,900 m^2

GKD – WORLD WIDE WEAVE

As a privately owned technical weaver, GKD - Gebr. Kufferath AG is the world market leader in metal, synthetic and spiral mesh solutions. Four independent business divisions bundle their expertise under one roof: Industrial Mesh (woven metal mesh and filter solutions), Process Belts (belts made of mesh and spirals), Architectural meshes (façades, safety and interior design made of metal fabrics) and Mediamesh® (Transparent media façades). With its headquarter in Germany and five other facilities in the US, South Africa, China, India and Chile – as well as its branches in France, Spain, Dubai and worldwide representatives, GKD is close to markets anywhere in the world.

For more information:
GKD – GEBR. KUFFERATH AG
Metallweberstraße 46
D-52353 Düren
Tel.: +49 (0) 2421 / 803-0
Fax: +49 (0) 2421 / 803-211
E-Mail: metalfabrics@gkd.de
www.gkd.de

Please send a reprint to:
impetus.PR
Ursula Herrling-Tusch
Charlottenburger Allee 27-29
D-52068 Aachen
Tel.: +49 (0) 241 / 189 25-10
Fax: +49 (0) 241 / 189 25-29
E-Mail: herrling-tusch@impetus-pr.de