



WORLD WIDE WEAVE

Kunsthalle Mannheim museum of modern and contemporary art:

Metal fabric as the interface between the inside and outside world

The Kunsthalle Mannheim museum of modern and contemporary art was opened at the end of 2017 by Federal President Frank-Walter Steinmeier. As Germany's largest new museum building, it is a prime example of both civic commitment and architectural skill. The private patrons initiative – with SAP founder Hans-Werner Hektor alone donating EUR 50 million – was what made the bold design at Friedrichsplatz possible. Based on the concept developed by the architects von Gerkan, Marg and Partners, a *city within the city* was created here, which reinterprets classic museum architecture while honoring Mannheim's historical city layout. The composition of room-forming cubes is visually connected by a sophisticated façade made of bronze-colored stainless steel fabric from GKD – Gebr. Kufferath AG (GKD). The translucent shell creates a subtle dialog between the inside and outside world. At the same time, the masterfully varying transparency of the fabric translates the scale of the building, creating a balanced sense of near and far.

Following a construction period of around two and half years, the museum ensemble comprising the Billing Building from 1907, the connecting Athene Wing, and the new Kunsthalle museum building – named the *Hektor Building* after the main benefactor – presents itself as an inviting whole. The Kunsthalle museum building replaces the rather dilapidated Mitzlaff Building, an extension constructed in 1983. The new building, developed by gmp as



the winner of a two-stage architecture competition, respects the art nouveau architecture of the old building through its consciously reduced language. The architects created a monolithic, seamless concrete structure for the prominent location which fits in harmoniously with the development at Friedrichplatz and blends with the historic building. Their concept of transforming the museum into a *city within the city* comprises 13 cubes of different heights and widths that are offset from one another. As a tribute to Mannheim's chessboard city layout, sometimes also referred to as the city of squares, a network of open and closed rooms was created with alternating perspectives depending on the location of the viewer. Seven of these cubes are grouped around the heart of the new Kunsthalle Mannheim, the 22-meter-high open atrium that boasts an area of 700 square meters. The cubes are connected to one another via galleries, terraces, and bridges. These guide visitors around the space and then back to their starting point in the atrium. The museum's visitor experience thereby reflects the dynamics and architecture of a city. A total of three exhibition levels offer new presentation opportunities, including the full-height *city window* on the first floor, which offers an impressive view of the water tower. The atrium, which is covered by a glass roof and therefore flooded with light, grants fascinating views in all directions. Even without an admission ticket, visitors can enter the building, immerse themselves in its atmosphere, and take a few minutes out to enjoy a coffee. The feeling of wide open space and cosmopolitanism stimulate a sense of curiosity among visitors to explore the other rooms. At the same time, the window-like façade creates a sense of togetherness between the city and the museum, ensuring that everyone feels at ease.

Woven work of art

This feeling is underlined by the stainless steel fabric façade cladding. It unites the real urban environment with its artistic counterpart and allows the



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city and museum visitors to come together and participate in one another's lives. To this end, the architects went with a significantly higher degree of transparency for the fabric in front of the large-format glazed surfaces than for that cladding the fiber cement panels in front of the cubes. This varying degree of transparency preserves the effect of the architectural concept, regardless of the viewing distance. Despite the colossal dimensions of the building's structure and façade, the woven skin loses nothing of its textile effect even from a distance. This was made possible by the fabric design developed by GKD especially for this project, which acts like a work of art in its own right. The company wove stainless steel wires and tubes of two different diameters – 3 mm and 25 mm – into four-wire warp wire groups made of untreated stainless steel. The key here was to use weaving techniques to completely balance out the varying stress ratios in the fabric due to the differences in wire thickness, so that the façade would withstand the strict static requirements caused by wind and snow. However, the exceptional fabric design also had to face another challenge: to replicate the precisely stipulated color tone of the woven skin chosen, itself selected following a lengthy decision-making process. Despite the various metal mesh components employed, including cables, wires, tubes, and tube side closures, its homogeneity needed to be guaranteed across the entire surface. GKD's many years of experience with coating technologies and their effects on buildings proved invaluable here. For example, the wires were coated in a continuous process, while the tubes were painted together with the closures in a spraying process and all then interwoven with the untreated warp wire groups.

A total of 72 panels, each measuring around 20 meters in length and 3.26 meters in width, were used to create the sophisticated skin which lends the Kunsthalle its versatile face. With the discreet brilliance of the warm bronze



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tone, the finished fabric reflects the color of the sandstone used in neighboring buildings. The large, stainless steel fabric façade measures over 4,600 square meters and changes its appearance throughout the day, in all weather conditions, from near or far. During daylight hours, it reflects the sunlight and its surroundings with the water tower and urban life. In the evening, it employs an intelligent lighting concept from below which transforms the Kunsthalle into the illuminated focal point of Mannheim's most elegant square. The transparent façade grants unobstructed views of the city and the water tower from inside the museum. At the same time, it offers passers-by inviting insights into what goes on inside the museum. The metal fabric façade thereby establishes a connection between the city and the museum, which effortlessly succeeds in striking a perfect balance between reduced design language and desired emotionality.

6.603 characters incl. spaces

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,



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Spain, Dubai and worldwide representatives, GKD is close to markets anywhere in the world.

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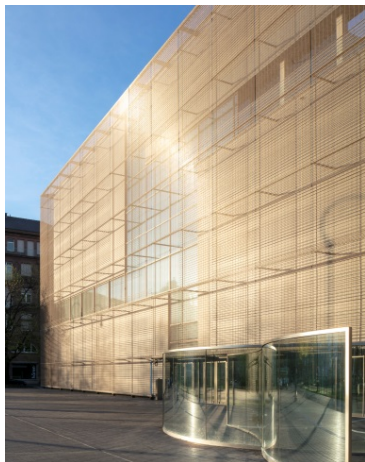
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Picture 1: A shell made of bronze-colored stainless steel fabric from GKD characterizes the new façade of the Kunsthalle Mannheim.



Picture 2: The varying transparency of the fabric from GKD translates the scale of the building, creating a balanced sense of near and far.



Picture 3-4: The fabric design developed by GKD especially for the Kunsthalle Mannheim made of bronze-colored cables, wires and tubes builds a sophisticated membran in front of the huge building.



Picture 5: The fabric reflects the color of the sandstone used in neighboring buildings.

Picture 1-12 © GKD/Constantin Meyer

Picture 13 © GKD

Picture 14-15 © Kunsthalle Mannheim/Rainer Diehl

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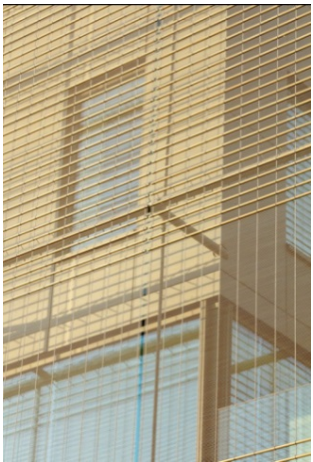
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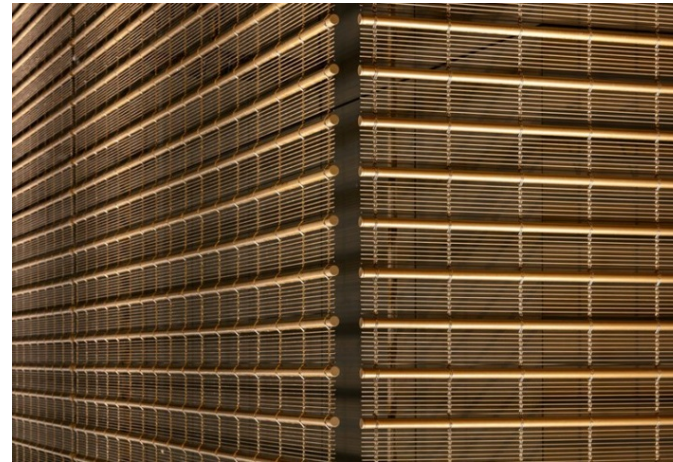


Picture 6-8: The stainless steel fabric from GKD shows a significantly higher degree of transparency in front of the large-format glazed surfaces than in front of the fiber cement panels.

Picture 1-12 © GKD/Constantin Meyer

Picture 13 © GKD

Picture 14-15 © Kunsthalle Mannheim/Rainer Diehl



Picture 9-10: GKD wove stainless steel wires and tubes of 3 mm and 25 mm into four-wire warp wire groups made of untreated stainless steel.

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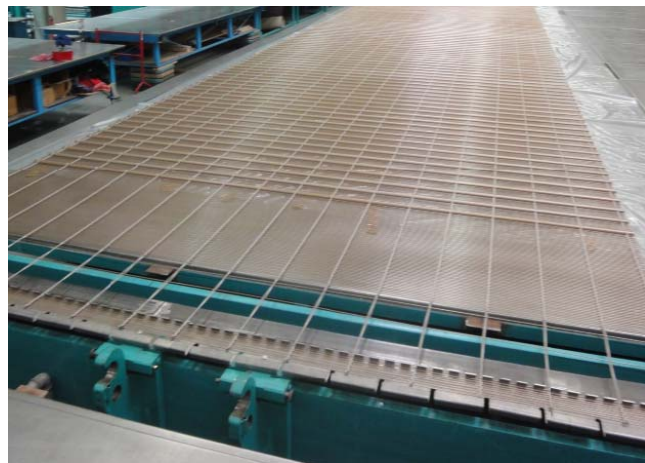
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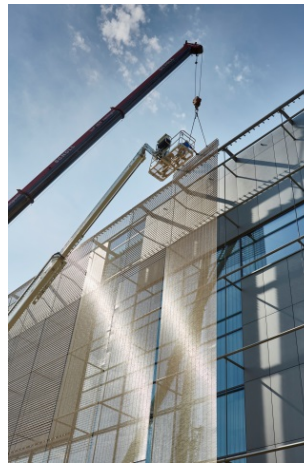
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Picture 11-12: In the evening an intelligent lighting concept illuminates the Kunsthalle from below.



Picture 13: After weaving, the fabric was prestressed at GKD.



Picture 14-15: The installation of the GKD-fabric-panels measuring around 20 meters in length and 3.3 meters in width was precision work.



Picture 1-12 © GKD/Constantin Meyer

Picture 13 © GKD

Picture 14-15 © Kunsthalle Mannheim/Rainer Diehl

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