WORLD WIDE WEAVE

A perfect relationship

Coloured mesh and architecture

Since ancient times, the concept of colour has played a prominent role in architecture. At the start of the 20th century, artists and architects like Paul Klee or Le Corbusier then recognised the importance of colour as an interior design element, something which remains to this day. However, the use or intentional non-use of colour in architecture is subject to fashion and trends, influenced by social and political effects. Over the last few years, the use of colour for facades and interior spaces has once again been gaining ground. New technologies and materials are allowing previously unknown design possibilities to be tapped. The increased awareness of and sensitivity to the importance of nature is also providing further stimulus in this regard. With functionality that has been proven in many pioneering projects, the metallic mesh produced by GKD – GEBR. KUFFERATH AG is making a contribution to accentuated expression in modern building culture with its colour textures.

Colour allows buildings to be framed, just like theatrical stage settings, as it creates identity, reduces visual size, allows core values to shine and thereby lends otherwise functional architecture an emotional dimension. At the same time, it assumes responsibility for harmonious co-existence of man and architecture. It establishes relationships between buildings and their environment, aligns them with one another and acts as an intermediary between users, nature and artificially created space. These are characteristics that make colour a congenial partner to metallic mesh in the field of architecture, whose aesthetic success story has essentially been

written by the dialogue between its textile structure and its surroundings. Available in transparent or opaque form, the material either becomes one with the landscape or reflects the building's context, depending on the incidence of light. Metallic mesh combines these versatile and flexible aesthetics with a large number of functional deployment options. Whether used as sun protection, for visual screening, as reliable fall guard protection or as a platform for corporate messages, it demonstrates its value thanks to its framing effect on the indoor environment, virtually endless durability and ease of maintenance. Interacting with colour, the textile structure extends its expression options to a whole new level.

Groundbreaking: non-ferrous metal wires

GKD was quick to exploit the potential of coloured mesh and implement design ideas with bronze, copper and brass wire. One of the first projects of this kind was the backdrop behind the altar in the Church of the Sacred Heart in Munich, Germany, which was created at the end of the 1990s. When developing the church that is flooded with light, the architects Allmann Sattler Wappner selected a special fabric made of tombac. A golden veil made of this special brass alloy with high copper content dresses the glazed front of the church. In its centre, multi-layer mesh forms a space-defining, subtly reinforced cross that lends the interior of the church its metaphysical intensity. The warm colour of woven non-ferrous metal has lost nothing of its appeal or attraction to this day. Indeed, the facades of the Gare de Limoges Bénédictins in France, which are clad in Omega copper mesh, or the multi-layer wall cladding made of backlit Mandarin bronze metallic mesh at the Taku gourmet meeting point in Cologne, Germany, serve to underline this. The architects Wandel Hoefer Lorch + Hirsch used a golden net, constructed from a special version of Escale spiral mesh, to cover the roof and facades of the synagogue in Munich, Germany. In their architectural concept, they made

intentional use of the patina that forms on the bronze metallic mesh over many years due to weather-based oxidation. HPP Architekten selected Omega 1540 stainless steel mesh with bronze weft wire for the wall and ceiling covering of the Tonhalle Concert Hall in Dusseldorf, Germany. By choosing this material, they succeeded in honouring and replicating the historic wooden colour of the imposing cupola with new, multifunctional material. The Chapel of St. Lawrence in Vantaa, Finland, received the European Copper in Architecture Award in 2010 for its Baltic bronze metallic mesh cladding. Architect Avanto Arkkitehdit designed ceilings, walls and glass facades using this mesh and then had it patinated green by artist Pertti Kukkonen in a complex process. Providing contrast to the sleek white walls, he thereby created the look of a historic copper facade that blends in harmoniously with the neighbouring medieval church. Mesh panels, fitted on either side of the glass facade, serve as solar protection and convert the light striking the building into soft shimmers that sensitively underline the atmosphere in the church. The buildings that have most recently been created using Mandarin bronze metallic mesh are in Frankfurt and Hamburg, Germany. In the seven-storey atrium at the Hilton Frankfurt Airport Hotel, the interior architects from JOI-Design created two large-format, golden ceiling wings that appear to hover above the reception area. At the Empire Riverside Hotel in Hamburg, Germany, British architect David Chipperfield used the fine mesh to design the cocktail bar. The interior walls of *20up*, which are fully clad in the material, create a striking contrast to the matt black synthetic stone floor.

Magic: anodised aluminium mesh

GKD soon extended its range of coloured meshes to include anodised aluminium wire. This mesh type has proven particularly effective for applications that require a low volume weight. With its Licorne solar

protection mesh, for example, GKD uses a particularly corrosion resistant aluminium alloy that can also permanently withstand harsh weather conditions. Dominique Perrault used golden anodised special aluminium mesh to give the towers of the European Court of Justice in Luxembourg their unmistakable appearance. The zigzag folded mesh, which is fitted in golden frames between the windows, lends the two 100-metre high towers visual depth and creates fascinating light accents at all times of the day and night. The Australian architects K2LD encapsulated a private residence in Singapore in Alu 6010 golden anodised mesh. This allowed a shimmering golden box to be created as a confident response to the extroverted colour schemes used within the city. For the facade cladding of the Beijing Opera House, the wires for the Xinghai special aluminium mesh were anodised in two different shades of gold and then woven together in a random pattern using a special process. This imposing design combines representative elegance with a fall guard protection function. Coloured mesh is also opening up new potential applications for acoustic ceilings. The innovative CMP mesh made of rigid aluminium honeycomb base plates with a surface layer of Alu 6010 golden anodised aluminium sets standards in the King of England ministerial building in Stuttgart, Germany. zsp architekten gave the top floor, which was converted to create a conference room, a truly regal atmosphere with a monolithic-style ceiling created from this material. An acoustic fleece, which is integrated into the CMP mesh, also provides excellent room acoustics that are fit for a king.

Colour-intensive: coated wire

With wire coating, GKD ultimately succeeded in lending its entire spectrum of stainless steel meshes colour textures for architectural deployments. In intensive cooperation with a coating specialist, GKD developed a special continuous process for coating flat and round stainless steel wire. During this

continuous process, the high-grade coating and a special satin layer are applied and then heated to create a powerful bond. This technique allows any quantity of wire to be permanently colour-coated, so GKD can create woven panels up to 8 metres in width and virtually unlimited length without any colour deviations. Alongside the Escale spiral mesh, this process can also be used to permanently coat the Lamelle, Lago, Kiwi, Omega, Baltic, Ocean, Tigris and Sambesi cable meshes, providing a high quality finish that shines and is both weather-resistant and UV-resistant. All corresponding durability tests in the lab and real-world conditions with multi-year exposure to harsh weather have been passed with distinction. Thanks to their industrial and virtually residue-free coating, the wires are environmentally friendly and free of pollutants as per RoHS.[1] Available in six stylish colours, coated spiral and cable meshes bring genuine colour into the world of modern architecture. Alongside black and white, they are also available as standard in blue, red, green and gold. Custom colours, i.e. any RAL colour, are also available to anyone ordering large quantities. With cable mesh, the uncoated silver cables create soft reflective accents.

The architects Murat and Melkan Tabanlioglu designed the shell of the Tripoli International Convention Center in Libya with Kiwi coated stainless steel mesh. They used over 500 rhombus-shaped and trapezoidal panels to create a seemingly random pattern of bronze-coloured round wire. During the day, this shell protects users from the power of the sun and also prevents those outside the building from looking in. At night, the interior lighting shines through the intricate texture and transforms it into a mysterious reflection of the surrounding nature. In Singapore, the architects from Peridian Landscape Architecture designed a cocoon-like observation tower in the

[1] Editor's note: RoHS is a European directive that is short for Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

revitalised Yishun Town recreational area using Escale 7x1 stainless steel mesh that had been partially coated in green. In Budapest, the architects from Atomic Design Kft transformed the facade of the Gold Museum into a visual business card. The Omega metallic mesh with bronze-coloured weft wire that they selected creates a high-contrast shell for the old masonry and also serves as effective solar protection. In the Austrian city of St. Pölten, Escale mesh that has been coated in green is also used as an innovative orientation system. The architects from the Hofmeister Group chose Omega 1520 stainless steel mesh with white-coated weft wire when designing the facade of the Kematen/Ybbs Technology Centre (TCI) in Austria. As a continuous band, the mesh encapsulates the upper part of the dominant building and renders it virtually invisible despite its size. The most recent project employing coloured stainless steel mesh is the famous Ecole Polytechnique Fédérale (EPFL) in Lausanne, Switzerland. Architect Dominique Perrault decided to go with an expressive colour concept when redesigning the former library to create a central meeting place. For the cladding of the cafeteria, he selected Escale 7x1 black-coated stainless steel spiral mesh. Mounted in large frames that can be moved by hand, it also serves as powerful solar and burglary protection.

Harmonious: interaction of form and colour

With coloured metallic mesh, a new generation of the textile building material has taken the world of architecture by storm. Design and interplay of colours enter into a new alliance, creating freedom for new ideas and concepts. The various coloured meshes lend buildings an unmistakable identity, both internally and externally, and give up nothing to the monochrome elegance of stainless steel in terms of stability and sustainability. Having courage to use colour is therefore not just the new postulate in the world of fashion. The field

of architecture is also wearing colours and thereby allowing completely new design visions to become reality.

11,658 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, Spain, Dubai and worldwide representatives, GKD is close to markets anywhere in the world.

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A perfect relationship: Coloured mesh and architecture – Non-ferrous metal wires

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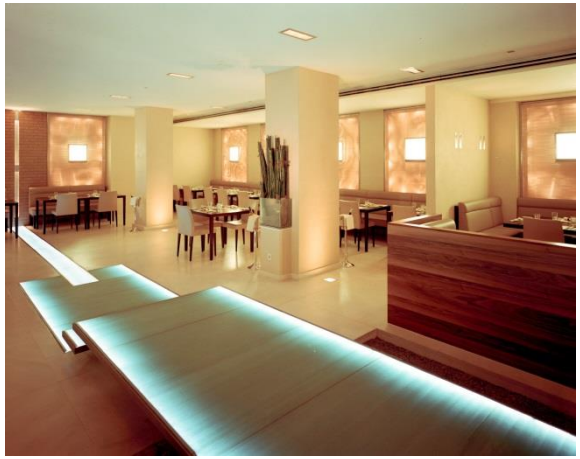
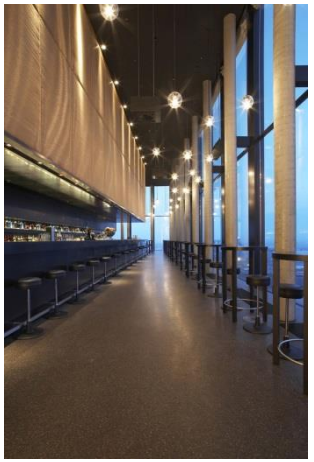
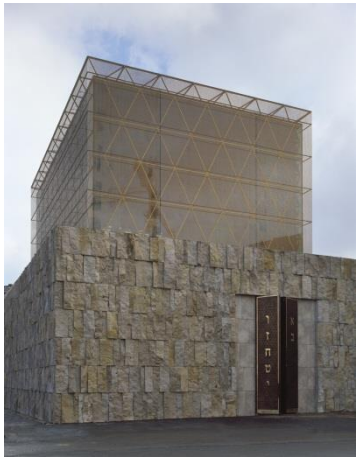


Picture 1: Multi-layer wall cladding made of backlit Mandarin bronze metallic mesh at the “Taku” gourmet meeting point in Cologne.



Picture 2: Wall cladding in "Mandarin" bronze metallic mesh in the cocktail bar *20up* of the Empire Riverside Hotel in Hamburg.



Picture 3: Escale bronze mesh clads the synagogue in Munich in a golden veil.

Picture 4: Two large-format, golden ceiling wings made from Mandarin bronze metallic mesh appear above the reception area at the Hilton Frankfurt Airport Hotel.

Picture 5: The special mesh type tombac dresses the backdrop behind the altar in the Church of the Sacred Heart in Munich.

We will be happy to send you the desired images in printable resolution by e-mail.

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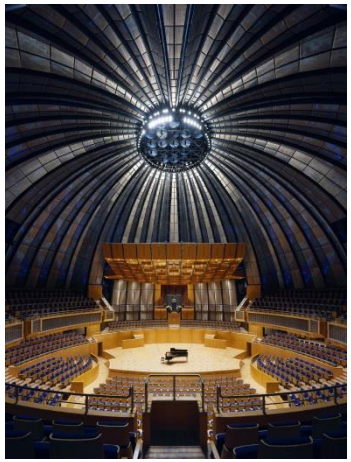
A perfect relationship: Coloured mesh and architecture – Non-ferrous metal wires

Picture 6: Patinated in green colour, bronze mesh of the type Baltic covers the Chapel of St. Lawrence in Vantaa, Finnland.



Picture 7:The stainless steel type Omega 1540 and bronze wire mesh clad the wall and ceiling of the concert hall in Düsseldorf.

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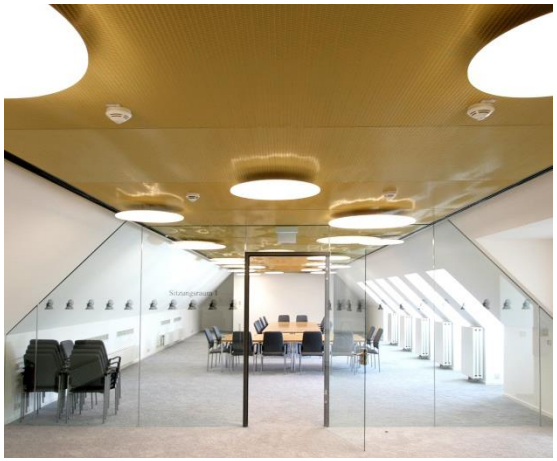
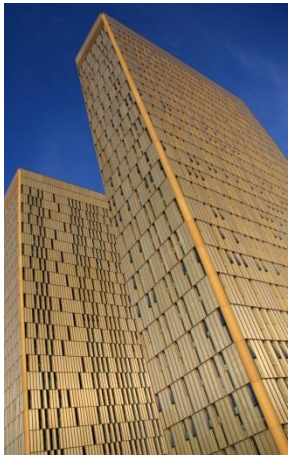
A perfect relationship: Coloured mesh and architecture – Anodized aluminium mesh

Picture 8: A private residence in Singapore – the Golden Box – is encapsulated in Alu 6010 golden anodised mesh.

Picture 9: The facade of the Beijing Opera House is clad in Xinghai, a special blended mesh with aluminium weft and stainless steel warp anodised in two gold tones.



Picture 10: A golden anodised acoustic ceiling, made of the aluminium mesh type ALU 6010 gives the department “King of England” a royal feel that befits the history of the building.



Picture 11: A golden anodised special aluminium mesh gives the towers of the European Court of Justice in Luxembourg a shimmering appearance.

Picture 8 © GKD/ K2LD Architects
Picture 9 © GKD/ Meng
Picture 10 © GKD/ Holtkötter
Picture 11 © GKD/ Holtkötter

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A perfect relationship: Coloured mesh and architecture – Coated wire

WORLD WIDE WEAVE

Picture 12: White coated stainless steel mesh type Omega 1520 surrounds the upper facade of the technology centre IFE (TCI) in Kematen/Ybbs, Austria.

Picture 13: The semitransparent cladding made from stainless steel mesh of the Escale 7x1 type with partial green coating gives the Yishun Pond observation tower in Singapore a particular natural look.

Picture 14: Escale 7x1 black-coated stainless steel spiral mesh is used to clad the cafeteria of the famous Ecole Polytechnique Fédérale (EPFL) in Lausanne, Switzerland.

Picture 15: The shell of the Tripoli International Convention Center in Libya is made from bronze-coated stainless steel mesh type Kiwi.

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Picture 13 © GKD
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Picture 15 © GKD/ Cemal Emden

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