



WORLD WIDE WEAVE

## **Haute couture made from metallic mesh**

### **Golden robe for the Grand Théâtre des Cordeliers**

In the south-west of France, 80 kilometres north-east of Toulouse, lies Albi, also known as *la ville rouge* derived from its characteristic brick buildings. The picturesque old town with its famous cathedral of Sainte-Cécile now offers yet another attraction: As part of an extensive urban regeneration project, French star architect Dominique Perrault has built the Grand Théâtre des Cordeliers at the fringe of the historic town centre. Besides a 900-seat theatre and an experimental hall with a further 250 seats, the 30,000 square metre complex also houses a cinema with eight screens, an underground car park, restaurants, administration and congress rooms. The dominating element of this construction is the Grand Théâtre, whose three-dimensional façade of gold-coloured anodised aluminium mesh has become a new landmark of the picturesque town. During the day, the semi-transparent golden skin encloses the compact, plain building like an inflated sail. At night, when the building is lit from the inside, it takes on a mystical appearance. The spectacular construction of the woven membrane was made possible by specially developed Escale spiral mesh manufactured by the world's leading technical weaving operation, GKD – Gebr. Kufferath AG.

The small town of Albi in the Midi-Pyrénées region of France with its rich historical and cultural heritage is a well-kept secret. In 2010, UNESCO added the episcopal quarter at the heart of the historic town centre with the fortified Sainte-Cécile cathedral, the bishop's Palais de la Berbie and the church of Saint-Salvi to the list of World Heritage Sites. Art fans will delight in a visit to

the museum of Henri de Toulouse-Lautrec, the town's most famous son, since almost a third of his life's work is on display here. Culinary delicacies of the town, which has just 50,000 inhabitants, include fine cheeses, black truffles and exquisite wine. Now, the Cordelier district at the end of Avenue Charles de Gaulle also includes the town's Grand Théâtre with yet another treat for the senses. Based on a design by Dominique Perrault, an interconnected cultural and congress centre was built that links part of the new town with its historical core. The woven skin of the Grand Théâtre, which in the sunshine casts a golden light on the red brick architecture typical of the region, is clearly visible from as far away as the gentle hills surrounding Albi. Viewed up close, the simple geometry of the structure with its shimmering shell blends in organically with the surrounding buildings. A golden glass façade with a sophisticated grid construction opens up onto the square in front of the theatre. Inside, the copper-coloured sun protection glass combined with the characteristic yellow bricks which are also typical of the region cast a warm light. The basement houses an eight-screen cinema covering 7,800 square metres and an underground car park which takes up a further 12,800 square metres. From the light-flooded, ground-level entrance hall, two sweeping stairways lead up to theatre balconies, rehearsal stage and offices on the floors above. A roof garden restaurant with hanging gardens puts the town of Albi with its picturesque surrounding landscape at visitors' feet. However, the Grand Théâtre is given its distinctive character by the golden shell made from semi-transparent aluminium mesh which encircles the whole building. Its concave shape softens the purist austerity of the angular structure and gives it an appearance of lightness which, according to Perrault, creates an almost poetic effect in combination with the sun. On the long side facing towards the square, the arched, cut-off building shell is reminiscent of an open stage curtain.



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### **An architectural vision brought to life**

Perrault's spectacular design proposal posed a number of seemingly unsolvable challenges for GKD. Throughout its almost 20-year partnership with the world renowned architect known for his sophisticated designs, the company always succeeded in bringing his architectural visions to life by coming up with innovative solutions. In response to Perrault's precisely drafted opposing curves and the different heights of the mesh shell, GKD therefore produced a customised version of the Escale type spiral mesh with a spacing of 150 x 20 millimetres. Manufacturing and assembling each customised length spiral – of which there were 4,835 in total – was a feat of production. From a total of 36 panels each measuring 10.50 x 7.30 metres – none of which included a right angle – GKD formed the 4,800 square metre large, three-dimensional curved veil. The golden colour of the anodised aluminium mesh was also specially adapted to the colour of the stone façades in the historic town centre of Albi, in accordance with precise instructions from Perrault. The arched and at the same time concave edge design of the woven shell posed a further challenge for GKD. For this, the angled longitudinal sides and bottom edges were fixed to the substructure with additional side supports. Stainless steel cables were inserted into the mesh for this special attachment.

### **Masterful functionality**

The visual impact of a compact structure viewed through a woven veil which is typical of Perrault subtly connects the interior of the Grand Théâtre in Albi with the exterior, while at the same time separating it. With its reflection of light, sun and movement, the shell cut like a flared dress enters into a continual dialogue with the surroundings. As with all of Perrault's designs, for which he re-interprets the possibilities of GKD metallic mesh again and again, the functional properties were deciding factors in addition to the



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unusual appearance of the metallic skin. The semi-transparent, all-encompassing skin efficiently filters the sunlight entering the building and thus plays a temperature-regulating function. Nevertheless, thanks to its open area of 37 per cent, the mesh allows maximum possible use to be made of daylight. The construction also serves as effective protection from rain and wind in the often harsh climate of the Midi-Pyrénées.

Like with his first major project using GKD metal mesh, the Bibliothèque Nationale de France in Paris in the early 1990s, Perrault also uses the expressive power of the woven texture in the interior of the Grand Théâtre. 375 square metres of Escale 5x1 made from anodised aluminium sheets in a light gold shade pick up on the dominating colour of the bricks typical of the region which have been used on the floor, walls and roof. A total of 16 panels each measuring 6x4 metres play with the incident light to create a warm, shimmering skin. In the design for the Grand Théâtre des Cordeliers, Perrault has once again manifested his philosophy of closely intertwining his architecture with the surroundings. For him, the textile shell of the theatre is the metaphor of a creative work with a tailor-made robe and is thus haute couture for the Grand Théâtre des Cordeliers in the truest sense of the words.

7.083 characters incl. spaces

#### **GKD – GEBR. KUFFERATH AG**

The owner-run technical weaver GKD – GEBR. KUFFERATH AG is the global market leader for metal and plastic woven solutions. Under the umbrella of GKD – WORLD WIDE WEAVE the company combines four independent business units: SOLID WEAVE (industrial meshes), WEAVE IN MOTION (process belt meshes), CREATIVE WEAVE (architectural meshes)



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and COMPACT FILTRATION (compact filter systems). With its seven plants – including the headquarters in Germany and other facilities in the US, Great Britain, South Africa, China, India and Chile – as well as its branches in France, Spain, Dubai, Qatar and worldwide representatives, GKD is never far from its customers.

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Picture 1: New attraction for Albi: The three-dimensional façade of the Grand Théâtre des Cordeliers of gold-coloured anodised aluminium mesh by GKD.



Picture 2: The spectacular construction of the woven membrane was made possible by specially developed Escalé spiral mesh by GKD.



Picture 3: At night, when the building is lit from the inside, the semi-transparent skin takes on a mystical appearance.



Picture 4: The concave shape of GKD's mesh shell softens the purist austerity of the angular structure and gives it an appearance of lightness.

Picture 1-4 © GKD/Vincent Boutin

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