WORLD WIDE WEAVE

LEED Gold for "green court" in Brazil

Metallic mesh for environmentally friendly buildings

Brazil is not only gearing up for two major sporting events – the 2014 FIFA World Cup and the 2016 Olympic Games. The country is also preparing itself for the future in terms of environmental protection. As such, the planners of the sporting venues were given the task of creating ecologically sustainable "green buildings". However, the first public building in Brazil to receive gold is a courthouse, the "Tribunal de Justiça do Distrito Federal e dos Territórios" (TJDFT), which was awarded the much coveted LEED Gold Certification (Leadership in Energy and Environmental Design). After considering many sustainable materials for the facade, the Brazilian architect Siegbert Zanettini ultimately decided on stainless steel mesh from the leading international technical weaving operation GKD – GEBR. KUFFERATH AG.

Brazil, the fifth largest country in the world, is legendary for its architectural highlights. The capital city Brasilia was constructed in around 1,000 days between 1956 and 1960 based on a design by Oscar Niemeyer. The centre of this massive retort city has been a world heritage site since 1987 and some 3.5 million people today live in the artificially created metropolis. Breathtakingly futuristic buildings made of concrete, glass and steel shape the face of the city. And just like the country's other cities, the concept of sustainable building is now also starting to take hold in Brasilia. The infrastructure and stadiums to be constructed for the 2014 World Cup are regulated by a strict agenda of sustainability. Given Brazil's tropical to subtropical climate, the booming construction industry also recognises the

vast ecological and economic potential of resource-saving, energy-efficient buildings in the office, hotel and residential construction sector. A sudden increase in LEED certification inquires and awards – with Brazil currently holding 4th place worldwide – serve to effectively underline this.

Greatest possible sustainability as an important planning requirement

As per the wishes of the construction manager, the Tribunal de Justiça do Distrito Federal e dos Territórios (TJDFT) also had to meet this requirement. For certification to LEED, the U.S. Green Building Council uses strict international criteria to evaluate the sustainability of the land development, measures for saving water and securing energy efficiency, the material selection, as well as the quality of the interior decor and degree of innovation offered by the design. The city commissioned Brazilian architect Siegbert Zanettini, who had already received multiple awards for his sustainable projects, to design the ecologically ambitious courthouse. He drew up plans for a 6,200 square metre, five-storey office building with a sophisticated steel-glass construction. Perhaps the most striking design feature is a signal red centre column with two slightly offset building wings. The left-hand wing was given landscaped terraces on each storey along its entire length to break up the puristic appearance and help improve the air quality. These green areas provide shade for the respective storey below – and are supported in this vein by a centrally aligned solar protection screen made of stainless steel mesh that hangs vertically. On the building section that branches off to the right from the central column, Zanettini replaced the complex terrace/roof design with full-surface metallic mesh cladding from GKD. This material guarantees natural air circulation here, while also providing protection from direct sunlight. As such, it minimises the thermal load on the internal rooms and therefore also the costs associated with air conditioning. The woven skin visually underlines the transparent

effortlessness of the architecture, reflecting the light and colours of the surrounding area to create a pleasant and welcoming environment. The textile structure of the metallic skin also grants unrestricted outward views from inside the building.

Metallic mesh optimises ecological lifecycle

Siegbert Zanettini chose stainless steel mesh from GKD – GEBR. KUFFERATH AG, as he was already familiar with this material from various projects outside Brazil. A total of sixteen OMEGA 1520 elements – each 13.80 metres long and 3.20 metres wide – were used in construction of the TJDFT. These panels were attached using the *Fusiomesh* bonding technique developed by GKD. As an alternative to the tried and tested attachment method using round profiles and eyebolts, this approach underlines the sophisticated look of the building. This application of metallic mesh as solar protection, the first of its kind in Brazil, and the landscaped terrace roofs fulfilled the LEED criterion for "Innovative Design". The maintenance-free nature, wind and weather resistance, natural ventilation and daylight permeability of the woven texture had a positive effect on the energy efficiency assessment of the material used. Zanettini's design also stipulated that 20% of the building materials used in construction of the TJDFT should be made from recycled material. The woven wire mesh, which was produced almost entirely from recycled stainless steel, and the recycling of this stainless steel at the end of its above-average service life were therefore further key factors that the architect was keen to exploit in optimising the building's ecological lifecycle.

Environmental protection starts with planning

Zanettini already paid great attention to working in harmony with nature when developing the site for the building. As such, some 75% of the excavated

earth and building material waste was re-used. The wood for the interior partition walls comes from proven sustainable forests. All paints and glues used were tested by an independent laboratory to confirm that they were ecologically safe and emission-free – in particular with regard to volatile organic compounds (VOCs). In addition to this, around 40% of the materials used in constructing the building were ordered from the local region to avoid any unnecessary transportation, additional costs and environmental impact. The installation of water-saving sanitary facilities, as well as the re-use of waste and rain water for cleaning and landscaping also catered to the sophisticated evaluation criteria for saving water resources.

All of these efforts paid off, and the "green courthouse" was handed over for its intended use in 2011. It is the first public construction project to receive LEED Gold Certification for its active climate control facade and built-in sustainability.

6,632 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,

WORLD WIDE WEAVE

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

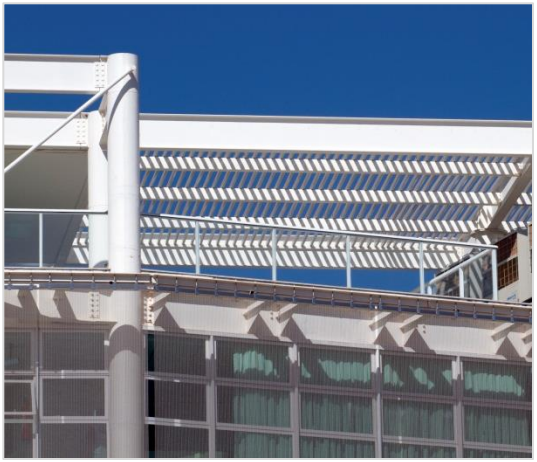
Please send a reprint to:
impetus.PR
Ursula Herrling-Tusch
Charlottenburger Allee 27-29
D-52068 Aachen
Tel.: +49 (0) 241 / 189 25-10
Fax: +49 (0) 241 / 189 25-29
E-Mail: herrling-tusch@impetus-pr.de

LEED Gold for "green court" in Brazil: Metallic mesh for environmentally friendly buildings

Picture 1: The courthouse „Tribunal de Justica do Distrito Federal e dos Territórios" (TJDFT) in Brazil.

Picture 2: The Brazilian architect Siegbert Zanettini decided on stainless steel mesh from GKD for the sustainable facade.

Picture 3: The material guarantees natural air circulation here, while also providing protection from direct sunlight.



Picture 4: The panels were attached using the Fusiomesh bonding technique developed by GKD.

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

impetus.PR
Agency for Corporate Communications GmbH

Ursula Herrling-Tusch
Charlottenburger Allee 27-29
D-52068 Aachen
Tel: +49 [0] 241 / 1 89 25-10
Fax: +49 [0] 241 / 1 89 25-29
E-Mail: herrling-tusch@impetus-pr.de