



WORLD WIDE WEAVE

A balance between nostalgia and modernism

Woven mesh windows for the Iron Mosque in Putrajaya

Wicked tongues compare Putrajaya, the ultra-modern administrative centre in the southwest of Malaysia, to a Disneyland for civil servants. The planned city for 90,000 inhabitants was created in 1995 about 30 km south of the capital Kuala Lumpur. The sprawling satellite city, named after the first Prime Minister of the country, Tunku Abdul Rahman Putra, forges nature and technology into great forms of architectural expression. It is no coincidence that the last word *jaya* means perfection. The approach in Putrajaya is reflected in prime examples of Malaysian Islamic prestigious buildings, scenic parks, artificial lakes and waterways. Following an unspoken master plan the city combines both historic and national structural styles with ultra-modern materials. In addition to the Istana Melawati royal palace and the 68-metre high, pillar-shaped Millennium Monument, the Putra Mosque, with its 116-metre high minaret - the highest in the whole of Southeast Asia - ranks as one of the must-see tourist sights. However the Tuanku Mizan Zainal Abidin Mosque is the prominent landmark in the new seat of government. Built right next to the Millennium Monument at Putra Lake, the sacred building known colloquially as the *Iron Mosque* proclaims the presence and strength of Islam. The unique cooling system, which rendered air-conditioning and fans superfluous thanks to GKD's Escal stainless steel mesh, lends the building its special atmospheric quality. What's more, the semi-transparent spiral mesh provides worshippers with reliable protection from the sun and rain.



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Fabric windows

With the completion of the second main mosque in Putrajaya, the Tuanku Mizan Zainal Abidin Mosque, located just two kilometres from the Putra Mosque, the city gained a new landmark. Larger, more modern and considerably different from the usual design, the *Iron Mosque* sets contemporary standards. It owes its name to a structure 70% of which is made from steel. The aim of the planners and contractors was for the building to characterise three design principles: simplicity, airiness and transparency. A good five years after the start of construction in April 2005, the finished mosque is now a potent symbol of religious identity. A modern interpretation of Islamic architecture, its 24m-high facade characterises a purist steel structure with typical geometric ornamentation. The rectangular openings of the meandering structure are visually connected by a filigree facade made from 4,300 m² of stainless steel spiral mesh. Each mesh element is 7.70 m wide and up to 8.30 m long. Three of these elements each were joined together on site, with the result that they rise with the height of the facade and windows in an optically seamless manner. Secured almost invisibly using hook bolts, they express the building contractors' desire for simplicity, transparency and an openness to dialogue. Depending on where you are standing and where the light is falling, the fabric mantle has a semi-transparent/opaque or a metallic, shimmering or even a monochrome, light-grey appearance. Projecting shadowy outlines, they reflect mankind and nature in its environment, distinctively conveying to the outside world the harmony of co-existence, which is also represented inside the mosque by the common prayer. At night purposefully staged lighting brings the transparency to life in a burst of illumination.



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Natural air-conditioning

In addition to this symbolic appearance, the robust, maintenance-free mesh also fulfils extremely complex technical functions. The plans of architect Nik Arshad Nik Mohammed made provision for natural air-conditioning in the main prayer hall, which offers space for 20,000 worshippers. In his draft he did away with glass windows and developed the idea of a mesh skin acting as a protective membrane. The prevailing tropical climate in Malaysia with high temperatures all year round and heavy rainfall in spring and autumn proved a particular challenge in terms of finding a suitable material: the Escale 7x1 spiral mesh from GKD - Gebr. Kufferath AG - met the high demands for both transparency and technology at the same time. Corrosion and heat-proof, easy to maintain, non-flammable and resistant to mechanical influences, the stainless steel mesh was chosen primarily for its almost unlimited service life and low life-cycle costs. However, what was crucial in terms of its use was the laminating effect of the mesh, thereby protecting against drafts while at the same time letting the cooling wind penetrate the whole building as a pleasantly even flow. In this way comfortable, natural air-conditioning which renders the use of air-conditioning systems and fans superfluous, is created throughout the mosque. Due to the window openings spread across the whole height of the facade, the mesh is proving an effective means of protection against sun and rain. At the same time the transparent woven structure, together with the soft radiance of daylight, underlines the meditative atmosphere in the mosque.

Contemporary identity

In any culture designing places of worship is one of the most challenging tasks in architecture. Combining the aesthetic with spirituality transforms them into socially relevant buildings. Mosques, unlike Christian churches,



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are not a house of God, rather they are multifunctional meeting places with no standard formal canon. The only essential element for worshippers is the Qibla, a wall of prayer which faces the precise direction of Mecca. The sacrality of the building comes into being through the common prayer. As a place of prayer, learning and teaching, the Iron Mosque in Putrajaya combines traditional religiousness with a contemporary sense of identity. With its own design vocabulary and functional aesthetic it is already considered a masterpiece in the balance between nostalgia and modernism.

5.944 characters incl. spaces

GKD – WORLD WIDE WEAVE

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Picture 1: A prominent landmark in Putrajaya, the new Malaysian seat of government, is the Tuanku Mizan Zainal Abidin Mosque.



Picture 2: The mosque owes its name "Iron Mosque" to a structure 70% of which is made from steel.

Pictures 1-7 © GKD / Kumpulan Senireka Sdn Bhd



Picture 3 & 4: The unique cooling system, which rendered air-conditioning and fans superfluous thanks to GKD's Escale stainless steel mesh, lends the building its special atmospheric quality.



Picture 5: The semitransparent spiral mesh protects the worshippers effectively against sun and rain.

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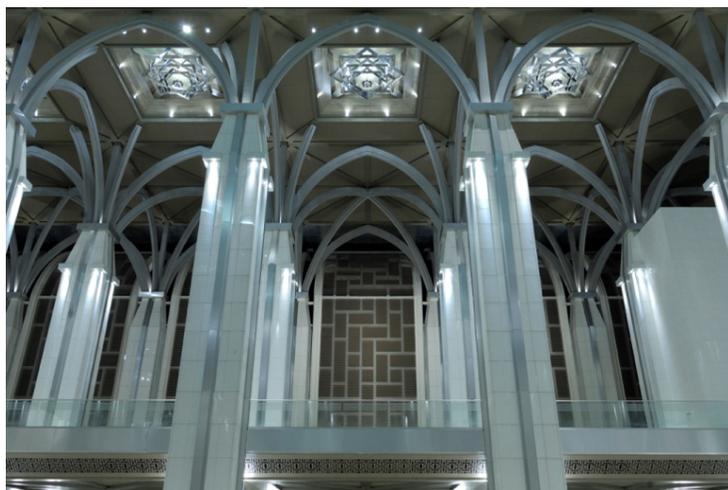
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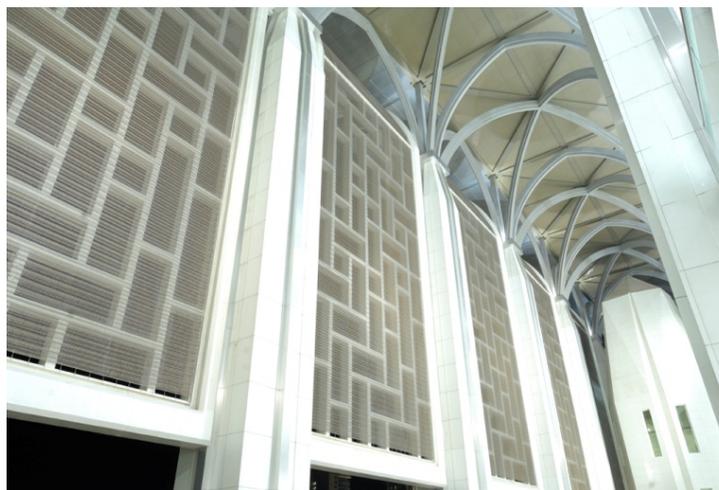


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Picture 6: The laminating effect of the mesh protects against drafts while at the same time letting the cooling wind penetrate the whole building as a pleasantly even flow.



Picture 7: The transparent woven structure underlines the meditative atmosphere in the mosque.

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