Sheikh Zayed Bin Sultan Al Nahyan Mosque
Abu Dhabi | United Arab Emirates | 2008

The British lighting design company Speirs & Major Associates was entrusted with the lighting design for all front-of-house areas of the Sheikh Zayed Bin Sultan Al Nahyan Mosque or simply the Grand Mosque of Abu Dhabi, a true religious icon in the United Arab Emirates.

The brief for the Sheikh Zayed Bin Sultan Al Nahyan Mosque, Exterior was to tell a story after dark using light that was respectful and dignified, and to create a symbolic light icon. The inspiration was the moon, with wisps of cloud moving across its face. The Islamic religious calendar is based upon the lunar calendar and the phases of the moon. The building changes subtly across the lunar cycle, becoming bathed in cool white light at the full moon. There are then seven subtle color shifts every two evenings from white to the deep blue that signifies no moon. The viewer is never able to perceive the building changing from one color to the next. Islamic prayers are always made facing Mecca and the lighting designers wished to respect and reinforce this directionality. The projected cloud direction is always from Mecca, slowly wrapping around the domes and minarets and drifting across the facades. This was achieved using external quality profile projectors with motorized gobo wheels. This simple idea of movement was an immense technical challenge requiring construction of a 3D CAD model to aid locating and focusing each fixture (over 1200 units), ensuring the coverage was correct and the directionality of the texture was achieved. The control system was specially developed and required considerable programming.
skills. Each projector was equipped with custom edge framing to avoid light spill past the domes and facades. All domes are carefully, fully lit, unlike a majority of domes in the region where the upper-third are dark. Crucial in terms of visual appearance that columns and building facades were grounded, in-ground uplights are also integrated into the color shift. Custom designed, internally accessible totems house fixtures away from the building, ensuring easy maintenance. Maintainability was a crucial issue for the designers. The luminaire developed for this project includes fault reporting. In the event of a lamp, data or motor failure, the system provides daily maintenance reports. Long-life metal halide luminaires were used wherever possible to keep power consumption down. Only two lamp types were used in the exterior lighting of the Sheikh Zayed Bin Sultan Al Nahyan Mosque.

This is a lighting project that speaks of respect, dignity and character, underwritten by a creative technical approach on a massive scale.

The result is that the building appears to emit light and glow with a natural luminance. Each of the 34 constantly lit domes within the arcade have separate calligraphy inscriptions from the Koran. The illuminated halo effect around the curved surface proved complex to conceal.
Lighting accentuates marble panels and mosaic, glass mosaic and carved gypsum panels and calligraphy. Each material lit with an appropriate lighting technique revealing texture and natural veining of material. The Qibla is a unique art piece with fibre optic channels and lit harness enhancing the design. Lighting brings the wall to life; materials are no longer physical but part of a symbolic luminous panel. Fibre channels illuminate a gold curtain behind the 99 names of Allah, edge glow fibres reveal organic forms of vine-leaves and fronds.

Constraints included complexity of architectural and interior design plus installation speed. Coordination was solved on site through drawings. Many interior areas are predominately artificially lit, therefore lighting is an integral part of the appearance of the building.