

Tradition meets Scientific Excellence

SL RASCH GMBH
STUTT GART, GERMANY



Mustafa Rasch (CEO)

SL Rasch is one of the most innovative architecture & engineering companies specialised in movable structures and lightweight architecture. Our interdisciplinary team in Stuttgart is composed of architects, structural-, and mechanical engineers and computer experts, complemented by specialists in ornamental design, project management and visual communication.



Jürgen Bradatsch (CTO)

SL Rasch offers comprehensive Architectural Design and Engineering services, from general consultancy, structural analysis, and advanced simulations, such as CFD / FSI, to detailed design and supervision of manufacturing and installation. In 2011 SL Rasch built the biggest clock tower in the World, Located at the Abraj Al Bait Towers in Makkah. "The Royal Clock Tower", an engineering masterpiece, holds over 30 world records. 35 times larger than Big Ben and finished in over 98 million glass mosaic tiles with 24-carat gold leaf.

At night, over two million LEDs illuminate the clock tower making it legible from a distance of over eight kilometres. To illuminate the

King Abdullah Centre for Crescent Observation and Astronomy



world's biggest clock was an unprecedented technical and logistical challenge. Research and engineering alone took about five years. The interior of the Royal Clock Tower is fitted with an exhibition on the Islamic calendar and the science of time. Besides the research institute, 12 atomic clocks provide a time signal which feeds into the UTC and creates the Makkah Time Zone.



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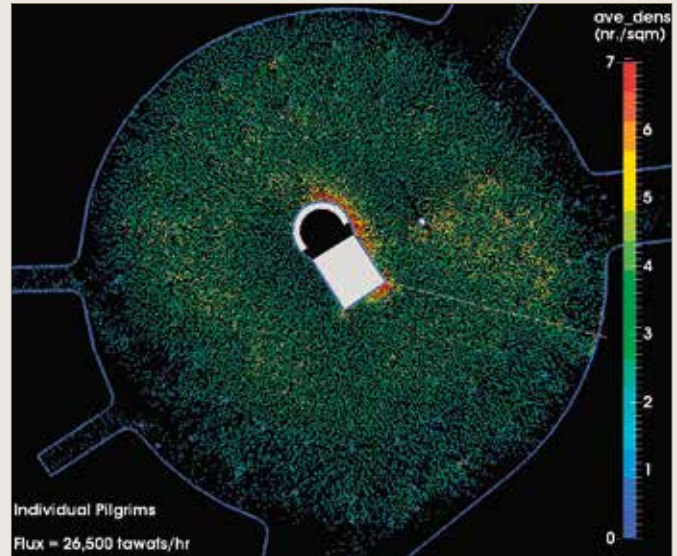
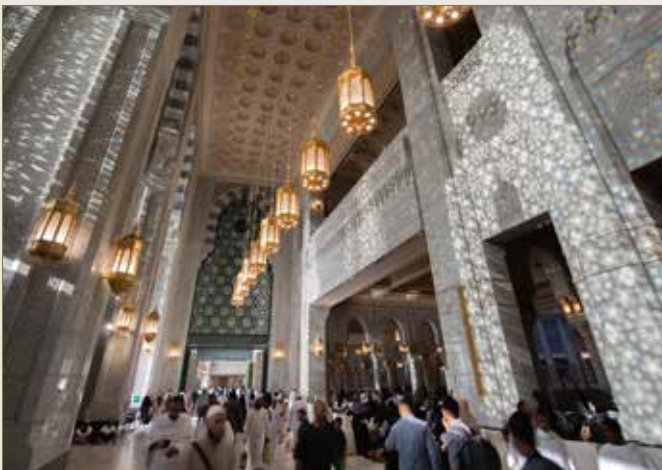
250 umbrellas, 26m x 26m, equipped with a specially developed lighting system, illuminating the piazza area without glare, and custom-made evaporative cooling fans, form a convertible roof of 150,000 m², providing climatic comfort for 300,000 pilgrims at the Prophets Mosque in Madinah. An unprecedented and innovative lightweight solution in an urban scale that forms a space with its very own character, between the Mosque and the city – magnificent but never monumental.



Our team works on a wide range of building structures which are designed combining traditional Islamic art and architecture with the latest technology and state-of-the-art materials. At the Masjid Al Haram Mosque in Makkah, some of these highly advanced structures are currently being installed, such as the large Window Screens, Movable and Fixed Domes & Skylights, and the large-scale convertible umbrellas.

Our work in the Kingdom of Saudi Arabia always has been one of the biggest challenges for our team here at SL Rasch, but at the same time the most exciting, interesting and of course honourable works have been completed here.

Window screens like Mashrabya, Jali or Mushabak are traditional elements in Islamic architecture



To ensure the comfort and safety of large groups of people, validated simulation methods are available at SL Rasch. The expertise of Pedestrian Flow and Climate Simulation have been validated and proven in highly complex, sensitive events like the Hajj in Makkah, KSA. Advanced analysis methods are used for all design steps, to achieve the best integrated solutions within technical, economical and aesthetical constraints. **13**

