The Architect of Modern Makkah

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Mahmoud Bodo Rasch is the Founder of SL Rasch GmbH Special and Lightweight Structures. He studied architecture at the University of Stuttgart and was guest lecturer at the University of Texas, at Austin. Amongst numerous projects world-wide, his best known in Saudi Arabia include the umbrellas in the piazza of the Prophet's ﷺ Holy Mosque in Madinah, the world's largest Tent City in Mina, and the Makkah Clock Tower – the world's biggest.

Firstly, we cannot separate Makkah, Jeddah and Madinah, since their lives depend on each other. They are the one cultural and religious highlight of Saudi Arabia, and ultimately its raison d'être.

The great change of the city of Makkah started in the 1950s when the Grand Mosque was rebuilt on the destruction of the old mosque that was in parts 600 to 800 years old. And with its destruction came the destruction – and innovation – of the entire city. Since then Makkah has essentially been a continuous construction site, and today there is not a single house left from the old town, with the exception of the Kaaba.

I initially came to Makkah in 1974, mainly to study the Hajj and its tent cities. I had learned of them from the Saudi architect Sami Angawi, whom I met in Austin, Texas, where we both were studying architecture. I was fascinated by the last glimpses of the medieval town and its surroundings, and felt a deep sympathy for the pilgrims from all over the world and their hosts, the Makkawis, who graced me with great hospitality. After six years of studies I returned and wrote my thesis on those tent cities, which is still valid, even though I would want to rewrite it after thirty years of experience.

During my six pilgrimages and numerous visits to the Holy Mosques I learned a lot about Islam and Muslims, and slowly I started to understand some of the Quran, realising what an enlightening book it was. I also learned about the tolerance and openness to sciences and higher truth in Islamic culture as well as its incompatibilities with some modern movements.

After my return I started my own office and several years later, through my contacts with the builders of the new mosques, I became involved in an area that lay in my specialty: lightweight structures. Though no big project resulted from this experience initially, I found myself firmly within the circle of those that were changing the environment in Makkah and Madinah. My first challenge came about two years later with the sliding domes for the new extension of Madinah, a project on which I worked with Dr Kamal Ismail and learned from him proportion and ornamentation in the latter Islamic period. The success of this project got me an entry to the first big umbrella project in the Haswa, the two courts of the historic mosque in Madinah. For this project we could engage the most sophisticated technology of that time for a convertible shading roof that was for us and others a glimpse into another world. After completing this in 1992 we started to work on a large ensemble of umbrellas for the Piazza around the mosque, but it would take more than twelve years to make a reality. In the meantime we had finished other projects in Malaysia, Egypt and USA, but nothing that came close to the splendor of the Madinah projects.

In 2009 we witnessed the building of giant skyscrapers in Makkah, a development which I was already concerned about when I wrote my thesis twenty years earlier. I was asked to design something special for the top of the tallest tower overlooking the Haram. It was a difficult predicament for me, but then came the idea of a clock tower, which for me was the opportunity to give the tower some substance and meaning.

After starting with a 25m diameter clock, we were asked to make it bigger and bigger and finally we had to stop at 43m because any more would exceed the maximum weight the tower could take. We introduced the concept of a time-centre, giving "Makkah Time" to the entire Muslim world whilst still being part of the Universal Time Coordinated (UTC) administered by the Bureau of the Meter Convention in Paris, which monitors the world's time-centres. This required the introduction of Caesium Standards, often also called atomic clocks, that would produce a highly precise time signal with a deviation of a second only in three million years, a necessary requirement for the communication, navigation and other technical matters. This time-centre, together with a lunar observation centre, are designed to help Muslims worldwide to calculate prayer times and the start of the months. With all these things in mind, the Tower Clock was designed and built within a period of five years and has been in operation since 2010.

Other features of the Tower Clock are a crescent on top, with a 25m diameter, and five stories of rooms and offices on the inside, as well as an astronomy exhibition that brings together the findings of modern science with the traditional teachings of Muslim scientists, demonstrating the fact that there are no real contradictions between science and the Islamic tradition. F