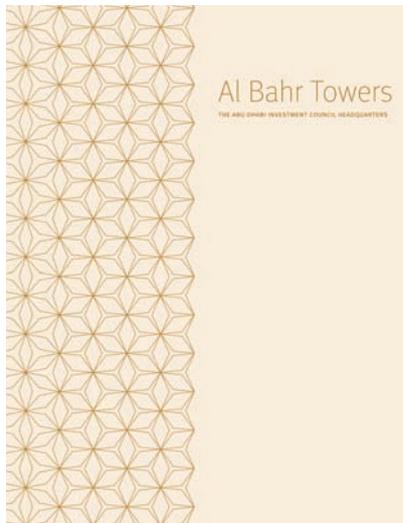


Review



Founder partner of Buro Happold, Terry Ealey, takes a look at an architectural title that describes a project showcasing an innovating solar energy control system.

Al Bahr Towers: The Abu Dhabi Investment Council Headquarters



Author: Peter Oborn

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This book tells the story of the design and construction of the landmark Al Bahr Towers in Abu Dhabi; the twin tower development for the Abu Dhabi Investment Council, who occupy one of the towers as their headquarters. The two nearly identical towers have a cactus-like appearance, with floor plates having a complex plan geometry formed by six circular arcs, and each floor plate varies in size. This is an example of design and construction of complex geometrical forms being made possible by software such as Gehry Technologies' much used programs. The use of such geometrical software, together with engineering analysis software, makes it widely possible throughout the construction industry, to refine and rework geometrically complex designs to a high degree of accuracy in a relatively short time. The Al Bahr Towers project is a notable example of an increasing desire to take advantage of computer technology to produce unusual and interesting forms, involving complex geometry. However, what makes this project different is the incorporation of a dynamic solar energy control system on the facade of the buildings. This sun shade system is the outer part of the facade system and comprises 1049 parasols on each

tower, with each triangular shaped parasol individually opened or closed by electrically powered actuators; the degree of opening depending on the time of day and season, increasing or decreasing shading to the glazed curtain wall system behind them. It is the parasols, together with the geometry of the towers, which give the buildings a cactus-like appearance. This is not only a novel dynamic sun shading system of parasols, but because of the geometry of the buildings, the parasol geometry varies, and the geometry for one parasol unit is not used more than six times on a tower.

This is an architectural book, with the description of the design and construction of the towers written by Edward Denison, of the architectural design practice Aedas. The book includes two opening chapters by Edwin

Heathcote, Architectural Correspondent of the Financial Times, and Eric Orsmy of the Institute of Ismaeli Studies in London. These opening chapters provide an interesting background to Islamic architecture, with a view of how the Al Bahr Towers relate to Islamic architectural tradition.

Engineers will be particularly interested in the dynamic sun shading system. The section on the sun shading would have benefitted from some technical editing, but the system is described, and this is, after all, an architectural book.

Innovative construction such as the dynamic sun shading system cannot be undertaken without the support of the client, who has to be prepared to undertake the maintenance responsibilities and risk implied by a previously untried system.



Terry Ealey

Terry Ealey is a founder partner of Buro Happold, now retired from the practice. He has worked extensively on building and civil engineering projects in the Middle East, most particularly in Kuwait and Saudi Arabia.