

Total Efficiency in practice: Abu Dhabi Investment Council Headquarters

Client: Abu Dhabi Investment Council | **Project:** Abu Dhabi Investment Council Headquarters, Abu Dhabi, UAE |
Project team: Project Managers – Mace, Lead Consultant – Aedas, Structural & MEP Engineers – Arup, Engineer of Record – Diar Consult, Contractor – Al Futtaim Carillion | **Sector:** Offices | **Services:** Cost Management and Specification Consulting |
Start Date: 2008 | **Completion Date:** 2011

CHALLENGES

Incorporating sustainable design to achieve a specified LEED rating within project budget.

Delivering panoramic views of the Abu Dhabi mangroves through the use of a mostly glazed façade, whilst maintaining building energy efficiencies.

Sourcing sustainable building materials locally.

SOLUTIONS

Priced design options to determine achievable ways to meet the specified LEED target.

Implemented whole life cost modelling to identify the best value whole life solution - whole life costs include capital, replacement, operation and maintenance costs.

Applied computer modelling to assess energy performance of the building and identify energy efficient measures.

Worked as part of the design team to optimise façade energy performance using in-house façade expertise.

Used local market knowledge to procure LEED certified materials from local suppliers.

RESULTS

Design incorporates sustainable elements to satisfy LEED rating target.

Sustainable elements include reduced lighting levels, efficient landscaping, high performance glazing, grey water system for irrigation and solar collectors for domestic hot water.

Contractor is contractually obliged to reduce pollution during construction.

Design incorporates a unique mechanical façade shading system called 'Mashrabiya' which adjusts to the sun to ensure minimum solar gain, whilst maintaining lighting levels and views of the mangroves.

Energy savings are estimated to be:

- 35% reduction in cooling loads
- 15% reduction in electrical loads
- 50% reduction in water consumption

REFLECTIONS

Whole life cost modelling enabled the design team to make fully informed decisions and identify an appropriate whole life value solution.

Comparing capital costs with longterm energy savings enabled cost effective sustainable measures to be selected and informed the potential return on investment.

A detailed understanding of local product availability is valuable for sourcing sustainable materials within budget.



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