

BATTLE McCARTHY ©

Consulting Engineers & Landscape Architects



PROJECT:

SIDC Headquarters, Kuala Lumpur

CLIENT:

Securities Commission

ARCHITECTS:

Hijjas Kasturi Architect

BM SERVICES:

Structural, Environmental & Building Services Design

VALUE:

£45million

DESIGN BRIEF

The client is the Securities Commission for the KL stock market. The Client called for a state-of-the-art office building that reflected the culture of the country and met the highest standards in office design.



London UK Office
T: +44 (0)20 7440 8282
F: +44 (0)20 7440 8292
E: admin@battlemccarthy.com
www.battlemccarthy.com

DESIGN INITIATIVES/ACTIONS UNDERTAKEN

Among the innovative and energy-efficient features of the Commission building are the double-glazed thermal flue façade, atrium glass roof, energy-saving light fittings and underfloor air-conditioning system.

The thermal flue façade is a double-glazed façade with a 1.2 m air gap that serves as a multi-purpose maintenance walkway, ventilated air gap and an acoustic buffer zone. The walkway is installed with fixed louvered panels to provide horizontal solar shading to the offices.

The overhanging roof structure shades the building from direct sunlight. Automatic roller blinds are equipped with solar sensors, which adjust position to strike a balance between solar heat gain and natural daylight for comfort and energy efficiency.

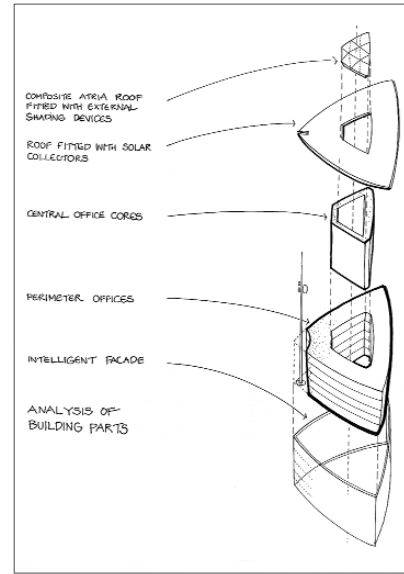
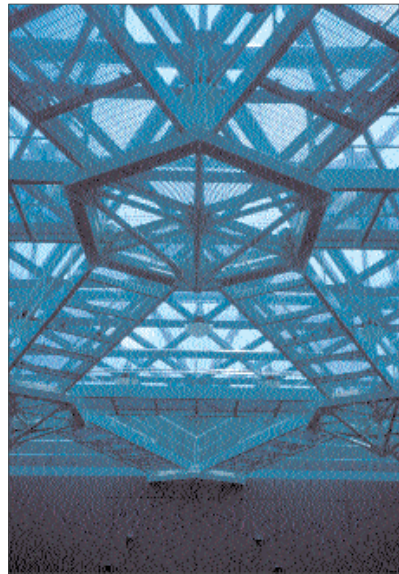
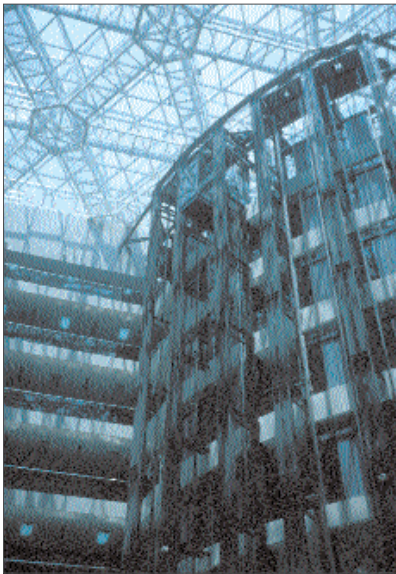
The use of quality glass, thermal flue, roof overhangs, fixed vertical and horizontal louvers, as well as automatic roller blinds have contributed to the excellent overall thermal transfer value (OTTV) of 35W/sq.m as compared to 45W/sq.m in conventional glass buildings.

Battle McCarthy's Environmental Engineering Designs for the Securities Commission headquarters in Kuala Lumpur have received an energy award from the Association of Southeast Asian Nations (ASEAN).

The Securities Commission building was judged the most energy efficient new building at the ASEAN Energy Awards for Energy Efficient Buildings (AEA) 2001. The building met the stringent pre-qualification criteria and won the regional award in the category of new and existing buildings. Battle McCarthy worked with Malaysian-based Architects, Hijjas Kasturi, to design the innovative headquarters. The client's design brief was to develop a top-class, intelligent building. The design team developed a design that responded to the environment in order to maximise comfort and energy efficiency.

AWARDS

ASEAN Energy Award	2001
Malaysian Engineering Council Award	1999



Atrium Roof

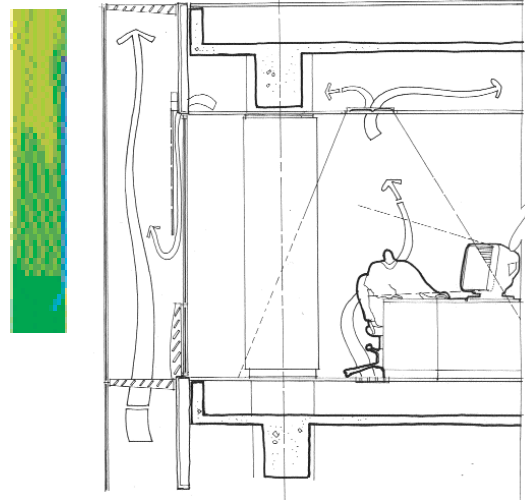
ATRIUM DESIGN

Inside the building, a spacious atrium acts as an internal courtyard that allows natural light to be filtered from its glass roof. Hence, daylight penetration into the office space is maximised from both sides of the office contributing to the energy efficiency objectives.

Surrounding the building footprint is a double-storey moat hardscape plaza bringing natural daylight to the basement floors that lie below the entrance ground floor.

The SIDC building is the first in Malaysia to use a ductless air-conditioning system, which has a raised floor plenum and ceiling plenum for the supply and return of air. Such a system allows for energy savings of up to 15 per cent.

Additionally, for the atrium area, a low-level displacement air-conditioning system was adopted whereby cold air is discharged at the ground level and re-circulated on the floor above. As a result, only the occupied zone is air-conditioned while hot air is allowed to stratify in the upper non-occupied zone. Thermostat-controlled fans are placed on top of the atrium to "bleed off" the hot air. Up to 40 per cent of energy saving may be accomplished from this system as compared to the conventional system widely used to air-condition similar atriums.



Study using Computational Fluid Dynamics to model the facade's ventilation patterns. Office air conditioning system deals with internal heat gains created by people and equipment. The facade system has been analysed to optimise its performance with external thermal and solar conditions.

