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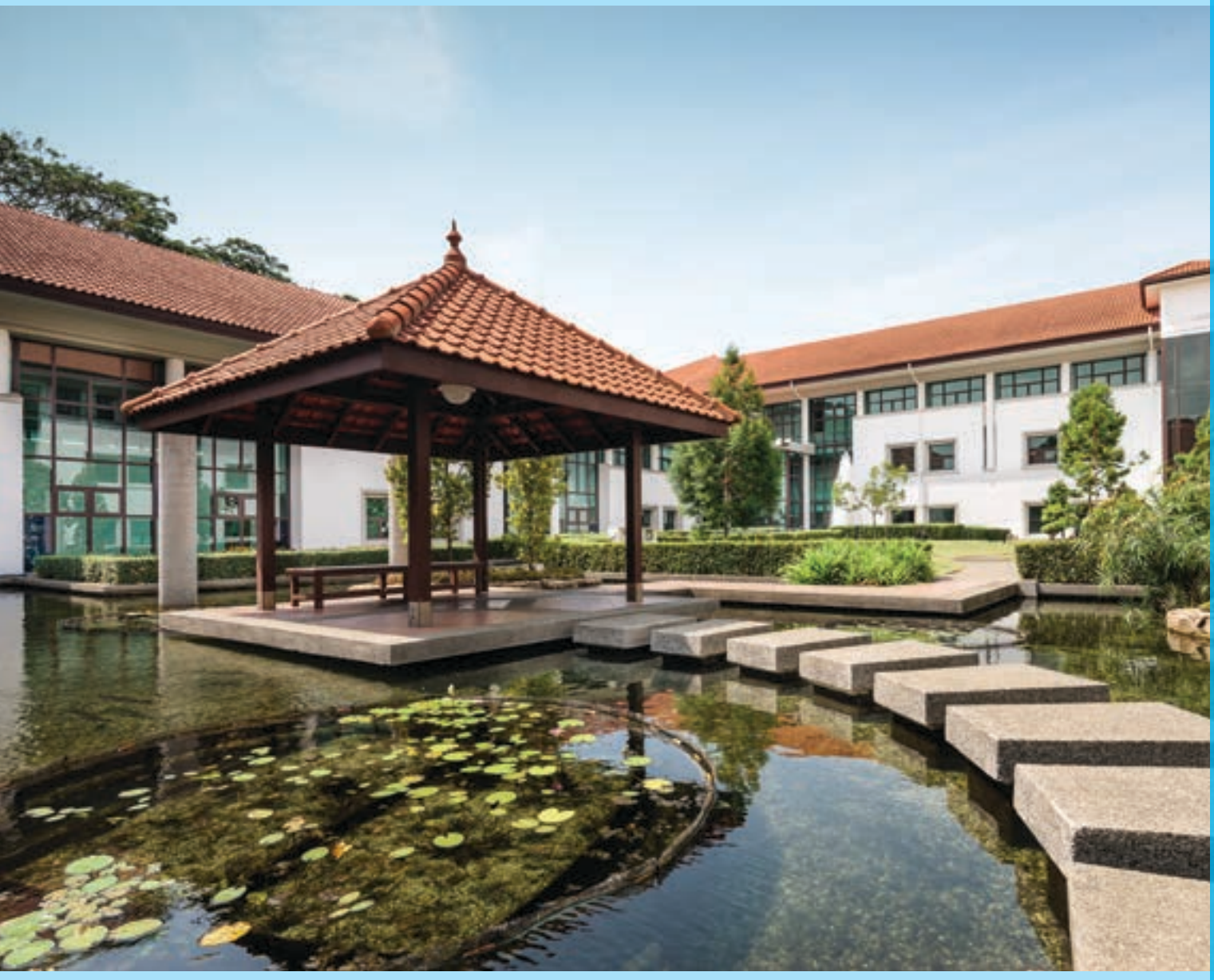
THE SINGAPORE ENGINEER

COVER STORY:

SUSTAINABILITY

Singapore Aviation Academy



FEATURES:

•Power Generation • Environmental Engineering • Chemical & Petrochemical Engineering

Singapore Aviation Academy

The facility received a Green Mark Platinum Award under the Existing Non-Residential Building category, at BCA AWARDS 2015.

Established in 1958, the Singapore Aviation Academy (SAA) is the internationally-recognised training arm of the Civil Aviation Authority of Singapore. It offers a wide range of operational and management programmes that benchmark international standards and best practices to meet the training needs of the global aviation community. SAA is an ICAO Regional Training Centre of Excellence, ICAO Aviation Security Training Centre, ICAO-endorsed Government Safety Inspector Training Centre and ICAO TRAINAIR PLUS Full Member.

Through its four specialised schools - School of Aviation Management, School of Aviation Safety & Security, School of Air Traffic Services and School of Airport Emergency Services - SAA has trained over 91,000 participants from 200 countries and territories, since 1958.

By consistently staying ahead of developments taking place in international civil aviation, SAA is able to develop new programmes not readily available elsewhere. SAA also offers degree and graduate diploma programmes through alliances with reputable national and overseas academic institutions.

The academy provides a forum for information-sharing and networking amongst managers and specialists in the international civil aviation community, by organising workshops, conferences and seminars, regularly. It also hosts numerous international meetings and conferences organised by international organisations such as ICAO, APEC and ACI.

PURPOSE-BUILT TRAINING COMPLEX

The Singapore Aviation Academy's US$50 million purpose-built training complex is designed to provide an ambience of comfort and tranquility conducive for training. It is equipped with a comprehensive range of facilities to create a unique total training environment. These include state-of-the-art audio-visual aids, customised training and conference facilities and realistic training simulators to meet immediate and long-term national and international training requirements.

ATS simulators

Among the many advanced training facilities at the academy is a 'virtual' Aerodrome Control Simulator with a 360° wrap-around screen with photo-realistic images and fully interactive systems. It is designed to train tower controllers to handle a variety of air traffic situations.

Complementing this is a 3rd generation training system that simulates Changi Airport's air traffic control system, LORADS III (Long Range Radar and Display System), which presents a paperless and highly automated environment; as well as incorporates technologies and innovative features that exploit advances in aircraft navigational accuracy and functionality, while enabling a significant increase in traffic handling capacity.

Fire simulators

A comprehensive range of fire simulators has been designed to fully train and test fire-fighting and safety skills of participants. The simulators are maintained at a dedicated fire training ground where participants undergo true-to-life simulated exercises involving undercarriage fires, internal aircraft fires, fires at fuel installations, a vertical fire wall and flashover fires.

Among the wide range of simulators under the School of Airport Emergency Services is the Foam Tender Driving Simulator. The motion platform simulator allows trainees to undergo hazardous driving situations in the safety of a virtual environment. A controlled-environment Breathing Apparatus (BA) Simulator is also used to provide rescue training in a realistic fire environment.

The newest addition to the range of simulators under the School of Airport Emergency Services is the Endless Ladder Simulator. With this, it enhances the Confined Space BA Simulator with more training scenarios such as climbing up ladders based on industrial settings and rescue operations.

The Endless Ladder Simulator comes with safety features that help to provide a realistic and safe environment for fire-fighters to train and improve their core muscles. It will also help to better understand the fitness competency of fire-fighters as the simulators will record the results of the training. Through this, trainees will be holistically prepared for all strenuous scenarios while utilising the BA set.

Other facilities

Participants have access to a comprehensive Resource Centre which houses documents on specialised aviation topics. Participants can also make use of the Multimedia Centre which is equipped with internet stations and audio-visual viewing terminals for online research.

Excellent recreational facilities are also available within SAA, such as a training cum swimming pool, gymnasium, as well as tennis, squash and badminton courts.

KEY GREEN FEATURES OF THE SAA COMPLEX

The building is expected to achieve an estimated energy savings of 148,048 kWh/yr and an estimated water savings of 4,536 m^3/yr.

The chiller plant system has been designed to achieve an efficiency of 0.65 kW/RT under a Guaranteed Energy Savings Programme (GESP) contract.

The building uses energy-efficient T5 and LED lightings for common lobbies, corridors and classrooms.

All lifts are equipped with variable voltage variable frequency motor drives and the sleep mode function.

Daylighting is maximised in the main lobby, common corridors and linkways.

Considerable greenery has been introduced, with a green plot ratio of 0.7, with trees, palms and shrubs on Level 1 around the compound and courtyard.

Water-saving fittings have been installed throughout the building which has been certified by PUB as a Water Efficient Building.

All classrooms will be integrated with the Intelligent Classroom System for monitoring and control of the indoor lighting and air-conditioning system.

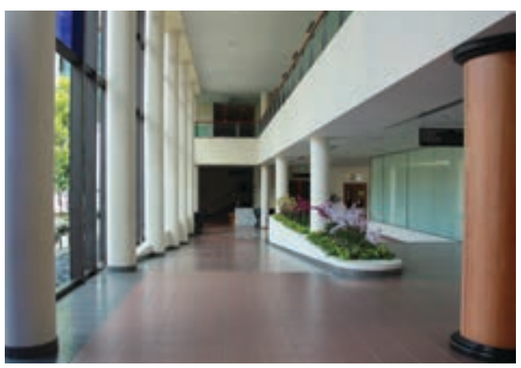
PROJECT CREDITS

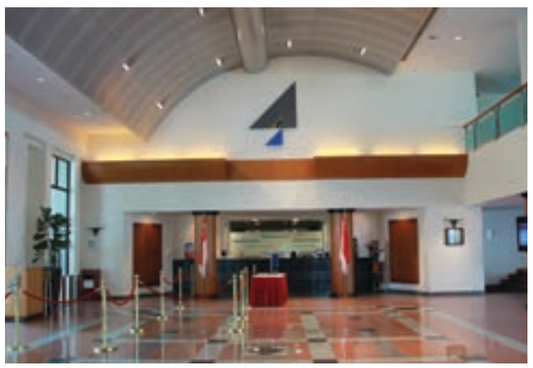
Building Owner
Civil Aviation Authority of Singapore

ESD / Green Consultant
Kaer Pte Ltd

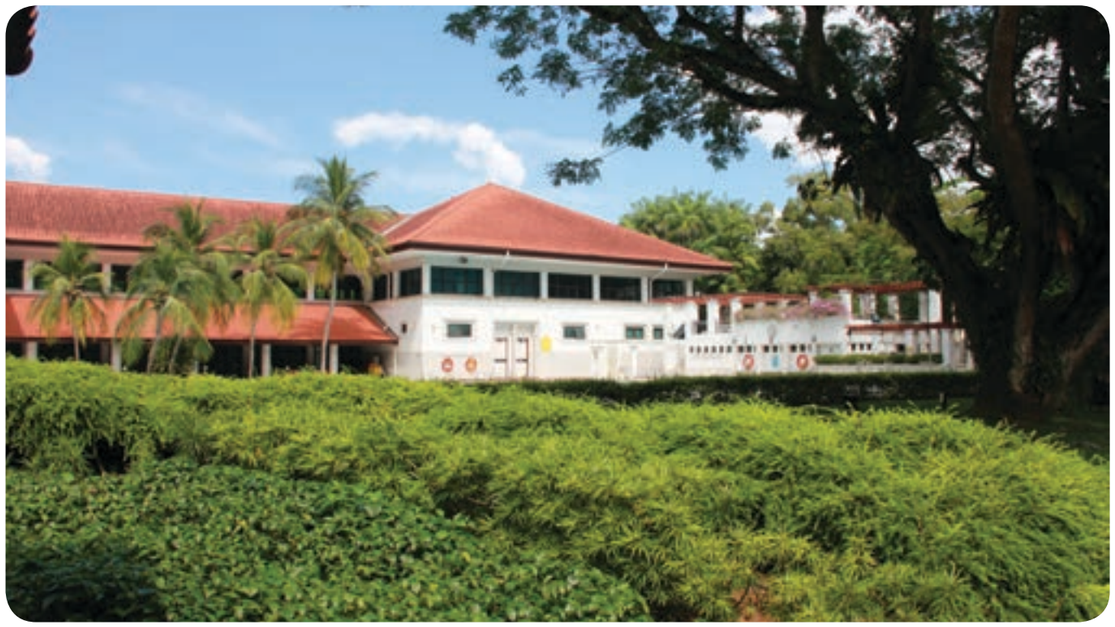
ESCO
Kaer Pte Ltd

All images by the Civil Aviation Authority of Singapore





Daylighting has been maximised in the corridors and in the main lobby of the SAA, thereby reducing energy consumption by artificial lighting.



Lush greenery enhances the tranquility of SAA's training environment.