

HVAC design and engineering in Macau

Interview with Mr Armando Lopes Coutinho HVAC Designer of PAL Asiaconsult Ltd

Background

Back in the late 70s, PCG Portuguese Consulting Group was represented in Macau by two companies namely Profabril and Asiaconsult. The two engineering consulting firms have provided a wide range service to major projects in the realm of structural and architectural planning, electrical & mechanical design, infrastructure, sewage and drainage, large scale reclamation and construction management in the Macau region. The world famous Cotai Strip was planned by the group in early 1990's, which will be the epic center of 'Asia's Las Vegas.'

In the past few decades, the group has completed numerous projects for the local government including the Macau International Airport; design and planning for Nam Van; Nam Van Plaza, ETAR Sewage Treatment Plant; Guia Tunnel, World Trade Center, Jetfoil Ferry Terminal, Macau Legislative Council; Flor de Lotus Bridge; CEM Power Plant; the new Border Building and a number of private commercial and residential buildings.

In 2003, the group had taken up a number of projects for the Macau East-Asian Games 2005, including construction management for Macau Dome and IPM Sport Complex; engineering design for Shooting Range; mechanical engineering design for Taipa Stadium and car park; civil and e&m engineering design for the renovation of Macau Forum.

At present, operated under the name of PAL Asiaconsult Ltd, the company has 50 staffers,

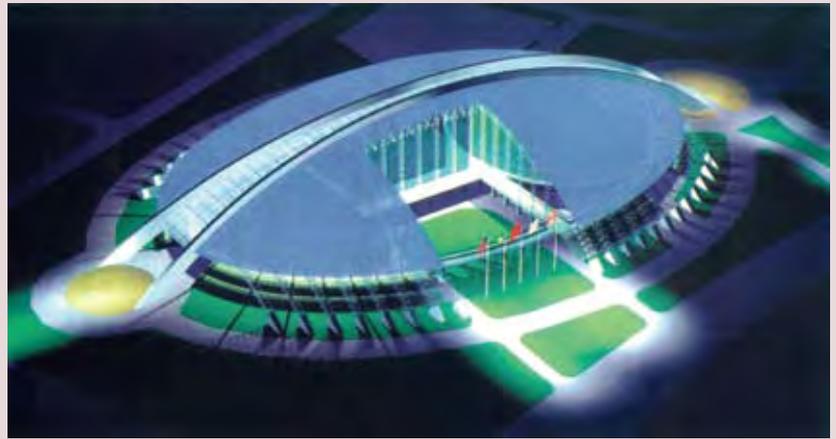
among which 30 of them are experienced engineers specialized in civil engineering, fire services, e&m, HVAC and plumbing etc. Currently, the company is involved in the design of the new ferry terminal at Cotai, two new hotels and a number of public facilities in Macau.

Although energy saving in HVAC is still not a norm in Macau, for a long time, the group advocates and consistently introduces innovative energy saving design in HVAC system in many projects. Special features and options to increase HVAC performance are being incorporated and presented to clients for their considerations. In recent years, the local government has taken a stride forward to promote building energy saving and solar systems for water heating are being applied to a number of public projects. HVAC systems, which consume more than half of the total power supply in many buildings should deserve a priority in energy saving. Actually, the technology and products are already available in the market. It is the duty of the HVAC industry, designers and users to be responsible for the endeavor.

Since the opening up of the concession of gambling license, Macau is in the spot light of the world. Mega projects such as the newly opened 3000-room Venetian Resort and Hotel, with a HVAC capacity of 40,000 tons, has incorporated a number of energy saving concepts.



澳門國際機場
Macau International Airport



2005澳門東亞運動會
Macau East-Asia Games 2005

The renovation of the Forum in 2003 was mainly focused on the e&m and HVAC systems. The traditional design which was done 15 years ago had become very inefficient. The new design saves energy and creates a more pleasant environment for the users.

Building Automation System (BAS) is significant in energy management. It is our fundamental policy to propose energy saving design to clients and equip the building properly to achieve sustainable development. In Macau, the common phenomenon is that most of the building management teams are not properly trained to ensure HVAC and related e&m systems are well maintained with high efficiency. Maintenance companies are paid just to solve problems when the equipment broke down.

Saving energy is especially important in Macau because the region has very limited power resources. The cost of electricity is more expensive in Macau than its neighboring cities in the Pearl River Delta region.

“The mentality of the people will change. Some owners begin to aware of energy saving concept. As consulting engineers, it is our duty to present energy saving design, supported by data to justify our clients’ investment and long term benefits,” said Mr Coutinho.

The local HVAC industry

At present, the local HVAC industry is much better than 10 years ago. There are more

fresh graduates from the university to join the profession. With more large-scale and complex projects under construction, young engineers have a better chance to participate in world-class projects. Their experience will be invaluable to the future of the local HVAC industry.

“These days, we still see many main contractors tend to work with HVAC sub-contractors from outside the region, such as Hong Kong. I am very confident that in about ten years time, when more advanced systems are replacing older equipment, the local HVAC engineers and sub-contractors will be ready to take up the challenge,” said Mr Coutinho, “Maintenance and servicing is also a very lucrative market for local companies.

Future outlook

There is no doubt that Macau needs to train up more HVAC professionals. The future is for the younger generation. Local HVAC professionals and associations are responsible to provide training courses and CPD (Continued Program of Development). The government can give more thought to possible formulation of a localized e&m standard. This is particular important for the local HVAC profession and industry to achieve steady growth and sustainable development.

Macau needs to train more local engineers to face the challenge of the future and the HVAC industry needs more ‘new blood’ to sustain growth.