Malacca Son et Lumiere

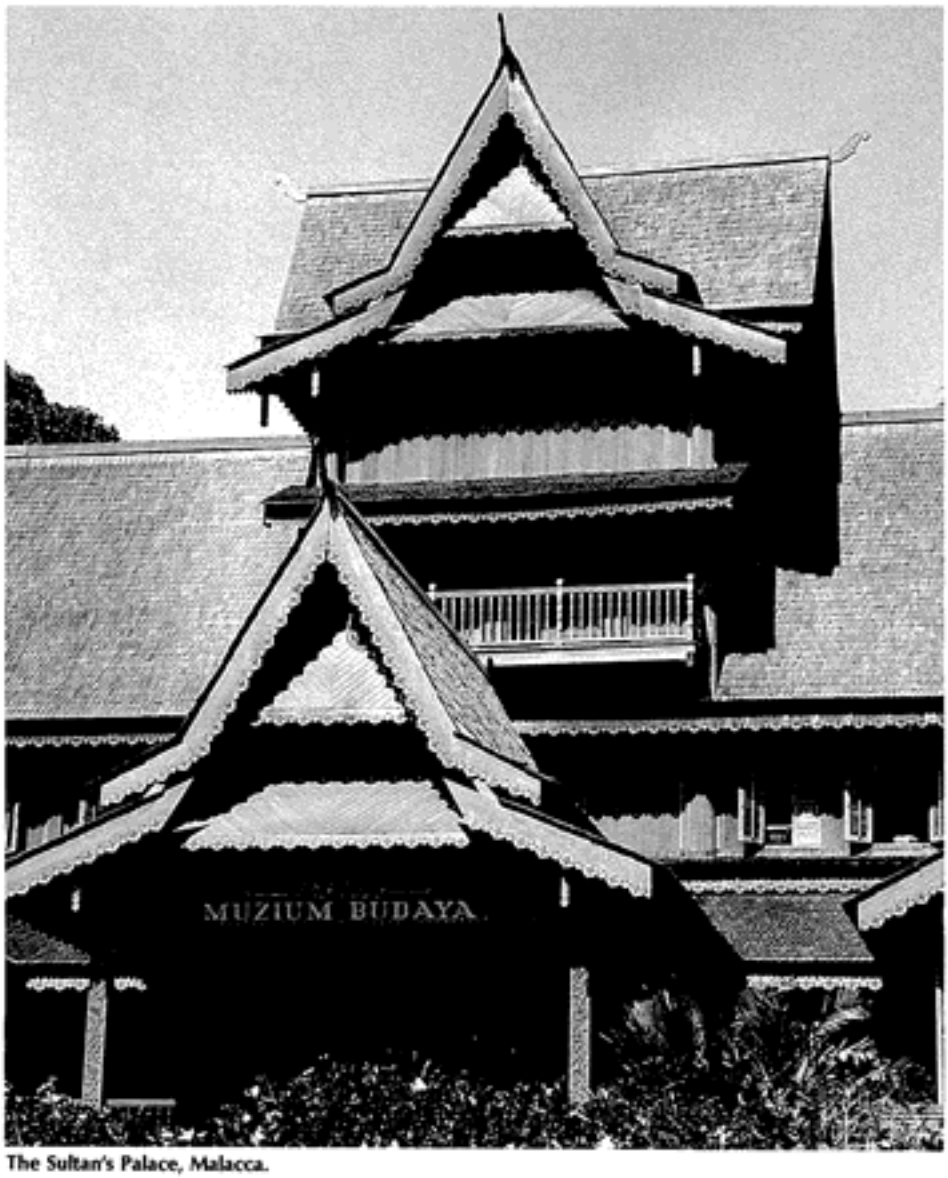
Bob Halsey, Xanthe Parkin and Derek Gilbert of Glantre Engineering describe their involvement in a spectacular Philips presentation.

Many of the world's principal historic tourist attractions are equipped with son et lumiere presentations furnished by Philips on a turnkey basis that includes all production and artistic services. Philips are undisputed leaders in this specialised field and have provided permanent installations at venues ranging from the Pyramids at Giza, the Red Fort Delhi and the Acropolis in Athens to the Pyramids of Teotihuacan in Mexico. Malacca in Malaysia can now be added to this distinguished list. Mention the name to most people, and they may recall from their school-day geography lessons the Malacca Straits or Malacca canes. But they would be hard-pressed to conjure up the exact location or importance of this once thriving trading post. Malacca is in fact sited on the west coast of the Malaysian peninsular, half way between the ports of Penang and Singapore, with which it was once united as the British Straits Settlements.

Malacca today is a relaxed town whose nautical and economic pre-eminence has sadly declined with the silting of its river and the rise of Singapore in the 19th Century. Although small vessels still ply the Straits to trade with Indonesia in charcoal, Malacca's future is felt to lie in the promotion of its historical importance as a means to attract tourists to Malaysia. And this government-sponsored tourist campaign is being spearheaded with the imminent opening of the Malacca 'Sound and Light Spectacular' - an open-air son et lumiere presentation that charts the growth of Malaysia by reference to historical monuments and buildings at the site.

The son et lumiere, recently installed by Philips Malaysia as main contractor, with support from Philips Projects Centre (PPC) of the Netherlands and Glantre Engineering Ltd, is an hour-long show presented each evening in English and Bahasa Malaysia. A Japanese version is expected to be added later this year in an attempt to attract more tourists from that country, and it is hoped that the show will convert many day-trippers into overnight visitors to Malacca, whose quality hotels presently have low occupancy levels. The £1.2 million project took nearly two years of negotiation before the go-ahead was given and the ground broken in May 1988.

Philips Malaysia's turnkey contract covered complete artistic and production services as well as supply and installation of lighting and sound equipment, electrical distribution and considerable civil engineering works including the construction of a control room and equipment building. Site management, building and electrical installation design and supervision of local civil and electrical subcontractors at the site was provided for Philips by Glantre Engineering Ltd, who worked closely with the client, the State Government of Malacca and their Public Works Department, to have the installation completed for the December 1988 deadline. Despite independence 31 years ago, the Malaysian government still operates on the British colonial model, along with its formality and bureaucracy. Many of the local engineers had been trained at United Kingdom universities or polytechnics and are of high calibre; however the decision-making process and protocols within the client organisation were such that considerable courtesy and patience was essential for a successful and harmonious implementation of the project. English is also spoken extensively in Malaysia so that Philips' decision to use a British site team was an inspired move.



The Sultan's Palace, Malacca.

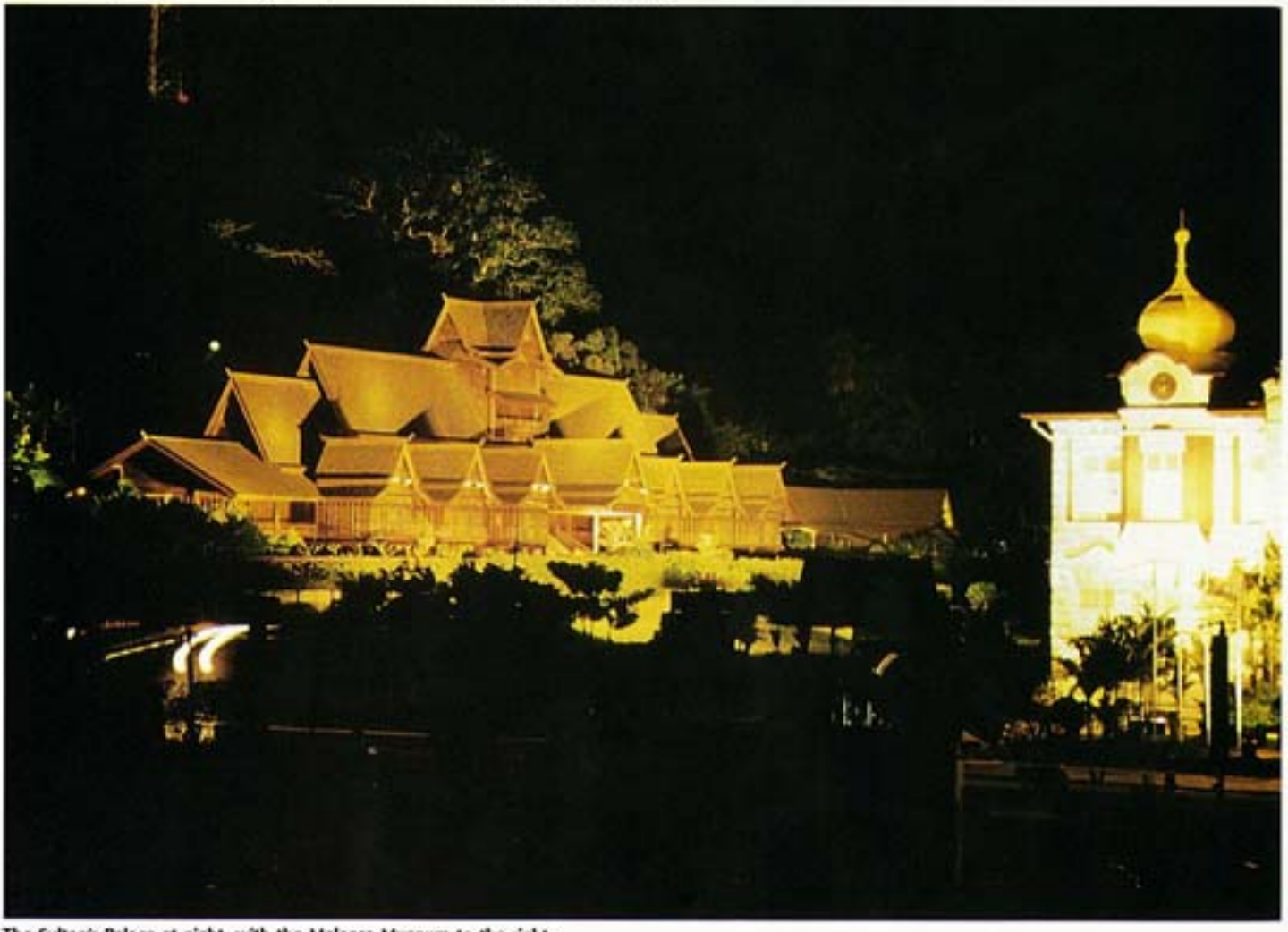
The lighting scheme was designed by Philips' Bram Koebrugge, whose work has won several international awards, and who was recently involved in floodlighting design for the Tower Bridge in London. In Malaysia, Bram has used 101 different lighting circuits incorporating 500 luminaires over the power range of 60 to 2,000 watts for both floodlighting and special effects lighting.

While the majority of the luminaires are from Philips' standard outdoor floodlighting product range, additional equipment including Pani BP/2 optical effects projectors is also used where appropriate. Many of the floodlights are used with high temperature colour glass filters with rings to eliminate peripheral white spill light. One of the key parameters in achieving successful lighting design for son et lumiere is to produce theatrical-type lighting effects using industrial-type luminaires. Fortunately nowadays the range of long life coloured glass filters is much wider than it used to be, and includes some very acceptable tints as well as saturated colours.

Floodlighting luminaires mounted at ground level are all housed in green-painted steel enclosures with wire guards over their apertures and fixed on to concrete bases. From the beginning, these became known as 'dog-cages' to all and sundry! From past experience provision of such enclosure has been found necessary to prevent tampering, theft of fittings and accessories and vandalism.

Careful beam control was needed due to the buildings dating from vastly varying periods and the chronological nature of the script. Spill light too had to be eliminated, particularly to avoid illuminating an unfortunately located telecommunications tower

Luminaire 'dog-cages' in the foreground; bullock-powered tourist transport behind.



The Sultan's Palace at night, with the Malacca Museum to the right.

as well as to placate the present Governor of Malacca who quite naturally did not appreciate his bedroom window being brightly lit up from the outside!

The special effects incorporated in the programme include a sea-effect which gives the visual impression of waves rolling on to the beach at the original shore-line prior to land reclamation, bomb and machine-gun flashes to represent fighting during the Second World War, and a flame-effect around the Palace to represent its destruction in 1511.

A major power distribution installation is provided involving much underground cable trenching including road crossings. Several kilometres of armoured multicore power cables is employed with conductor sizes ranging from 2.5 to 25sq mm, and there are weatherproof local distribution pillars for each lighting circuit.

Dimmers comprise 36 20A Strand Permus modules fitted in two racks. Each of the 101 circuits may be patched to a pre-designated dimmer by a contactor controlled from pulses originating on the show's magnetic master tape. In this way, dimmer capacity can be efficiently utilised and there are precautions to prevent overloading.

The sound system includes six 100W outdoor column loudspeakers and four 50W effects loudspeakers surrounding the audience, who sit in a covered stand accommodating 500. The show is run from an Otari eight track reel-to-reel tape recorder using a system devised by Anton Thellier of Philips ELA division. Five tracks are used for sound effects while the remaining three provide lighting level, fade speed and contactor control data. A second Otari tape recorder and duplicate show tape are provided for standby purposes.

Operation of the show is simplicity itself, and only requires the start-up of the tape recorder. Servicing has also been kept to a minimum by, wherever possible, using maintenance-free equipment. Lamp-checking is carried out using a separate test tape which gives the maintenance engineer time to walk around the site from circuit to circuit as they are sequentially illuminated.

The control equipment is housed in a purpose-built air-conditioned building which also includes a 200KVA Volvo engine diesel generator with automatic mains failure start-up for use in the event of power-failure. The generator, distribution switchboard, pillars and mimic panel were all custom built by Scorpio Electrics Ltd of Worthing. The building was designed with particular attention paid to the ambient conditions required by the electronic equipment and the very high levels of rainfall in the tropics. It is divided into control room (housing the tape recorder and control racks), switchgear and dimmer room, generator room, spare parts store, washroom and toilet. A halon gas fire-suppression system is included to provide protection to the equipment. The building was constructed on open ground behind the Malacca Museum; in colonial days this grassed area served an important function as the cricket pitch for the Malacca Cricket Club - the MCC?

The artistic direction has been undertaken for Philips by Emile de Harven, internationally renowned for son et lumiere production. Emile's first task was to adapt the script produced by the government-appointed writer into a dramatic production using local actors and actresses. Initial recording was performed at Rediffusion's studios in Kuala Lumpur, while subsequent mixing, editing and recording of music and sound effects took place at

Another view of the Sultan's Palace.

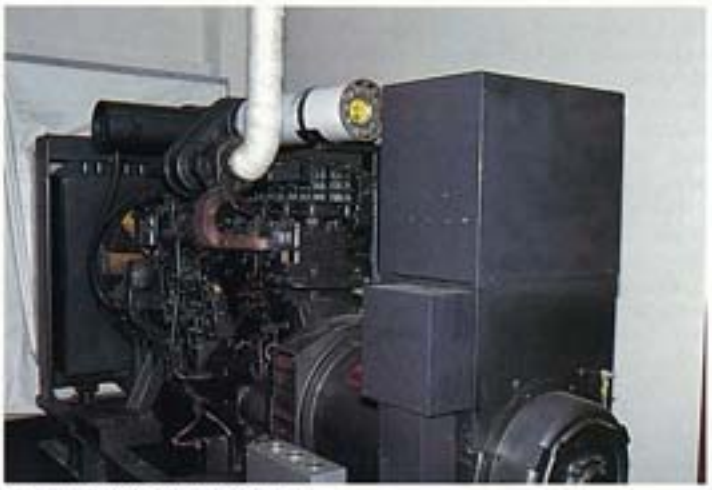
Bob Halsey beside the floodlighting bank for Sultan's Palace. In colonial days the field behind was used by the Malacca Cricket Club!

Audience seating stand under construction on reclaimed land. The road in the foreground is closed to traffic during son et lumiere performances.

The Formosa Gate.

Sultan's Palace with Formosa Gate to left.

Control equipment racks with two Otari multi-track tape machines (duty and standby), UPS and halon gas cylinder.



The standby diesel generating set.

Wissalord studios in Holland. Cueing, synchronisation and lighting programming were completed at the Malacca site.

The location chosen for South East Asia's first permanent son et lumiere installation is ideal because of the close proximity of many historical buildings and monuments as well as being the site where Malaysia's independance was officialy announced by the country's first prime minister, Tunku Abdul Rahman.

The central subject of the show is the beautifully reconstructed replica of the original Sultan's Palace, a representation of the period of the Sultanate before invasion by western trading nations intent on colonisation. In the centre foreground is the Formosa Gate, a solid 16th Century structure flanked by cannons, which is all that remains of the walled fortress of Malacca built by the Portuguese after their capture of the town in 1511. High on the hill behind the Gate is the ruined church of St. Paul which spans the time of the Portuguese and the later Dutch colonists who conquered Malacca in order to safeguard the passage of their valuable cargoes from the spice islands of Indonesia en route to Europe.

The Dutch period is also represented by a typical colonial building to the far left of the site. Between this building and the Formosa Gate stands the Bastion house, formerly the Dunlop building and representing the more recent British colonial period. The right side of the site is occupied by a museum dedicated to Malaysian Independance, formerly the British Club as well as the Astakka temple. Additionally, the site is fortunate in possessing a number of prominent trees which when lit provide an excellent backdrop to the historical buildings.

The nature of the site gave rise to numerous problems for the project management team. Considerable administrative effort had to be expended on numerous non-engineering matters ranging from negotiating relocation of market stalls to arranging temporary closure of public roads. Tree lopping and surgery also demanded much attention, the sun, rain and fertile soil causing many trees and bushes to have grown prolifically since the original design had been undertaken eighteen months previously. One urgent phone call back to Glantre's Reading office resulted in hasty purchase of a book on forestry! Other publications in regular use by the site team covered diverse subjects from building regulations to quantity surveying.

Around the site, tourists were often more interested in the cable trench excavations than they were in the monuments, and they found the protective housings for the luminaires to be ideal resting points as they climbed St. Paul's hill under the hot tropical sun. The massive bullocks used to haul the tourist wagons were equally interested in the goings-on, and on more than one occasion made their own special contribution to premature backfilling of the cable trenches. During commissioning of the project, it was necessary to undertake the trial runs very late at night in order to avoid disruptive lighting from car headlights, and to minimise the numbers of curious onlookers who could have been given a wrong impression of the finished product. Three weeks were needed for the lighting and sound programming to be refined .

A major consideration for the design team was the tropical weather. Although experiencing a constant year-round temperature of about 28°C, Malaysia is a country affected by monsoon conditions, and even in the driest months it has a heavy rainfall. The high humidity coupled with the corrosive atmosphere caused by Malacca's coastal location, meant that wherever possible stainless steel fixings and adequate equipment ventilation were a necessity to prevent rusting and internal condensation that could lead to short-circuit faults. Wildlife too played its role. Quite apart from the afore-mentioned bullocks, snakes were encountered, while the frequent heavy rain storms would flush out rats from the drains. Numerous lizards attempted to create new homes in the luminaire housings and distribution pillars. Most hostile however, were the numerous warrior ants who, as the lighting designer will testify, can bite most painfully.

For both the Philips management team (headed by Will van Bragt assisted by Lee Hing) and for the Glantre site team, working on the project proved to be both a stimulating and rewarding experience. The coastal resort environment was much appreciated by all, and provided a real treat for those whose earlier overseas site experience had largely been gained during the construction booms of the past decade in the rather less relaxing surroundings of the Middle East and Africa. Outside working hours, there was time to fit in sightseeing, tennis, sunbathing, swimming and barbecues - and for one, the odd hunting trip in the jungle.

The project was successfully completed on time and to critical acclaim; the audience levels during the early months will be closely monitored by other South East Asian tourism ministries who are contemplating similar projects.

LIGHTING+SOUND International

FEBRUARY 1989

Frankfurt Music Fair 89
L+SI reports from the Messe Halls