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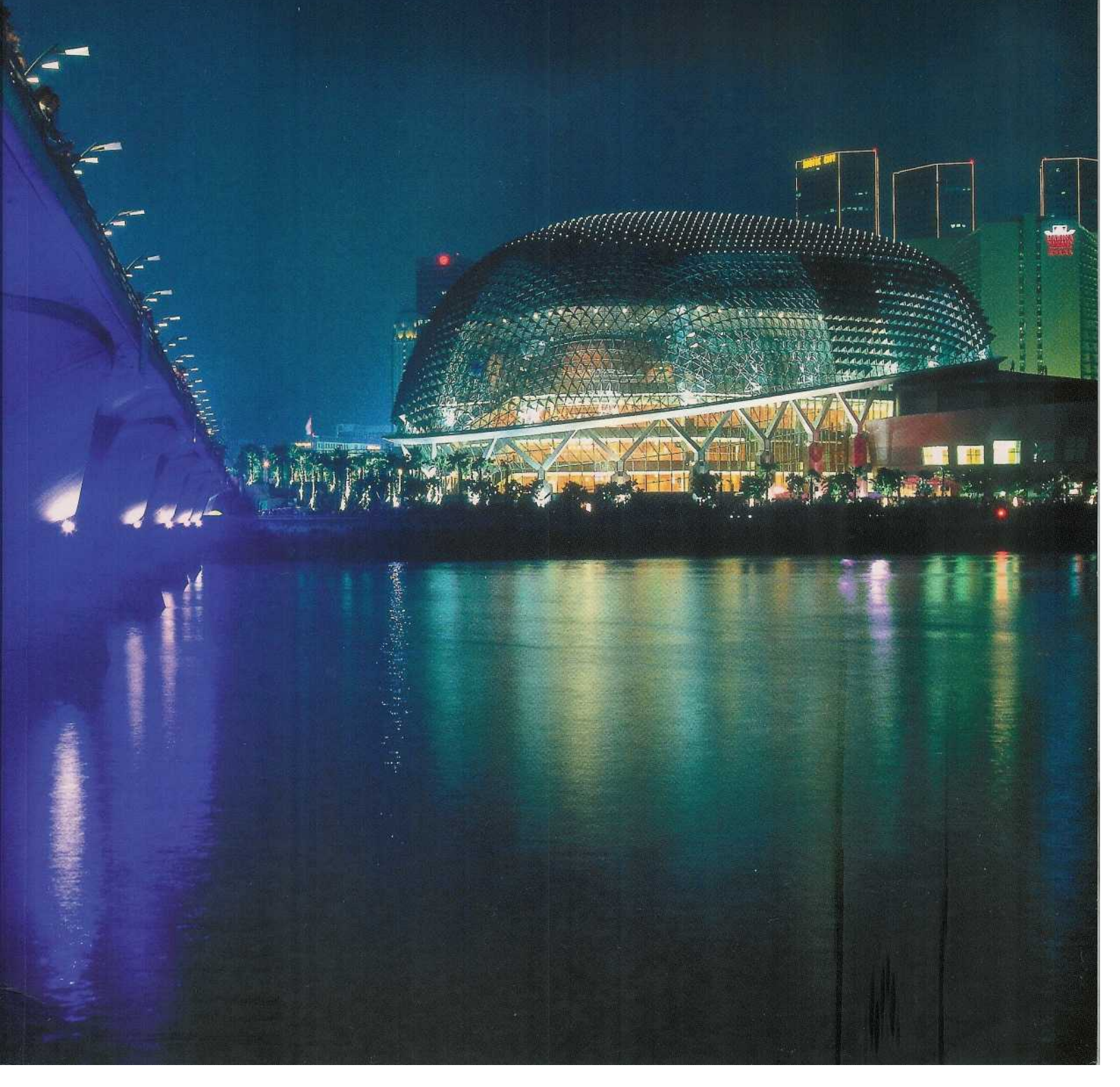
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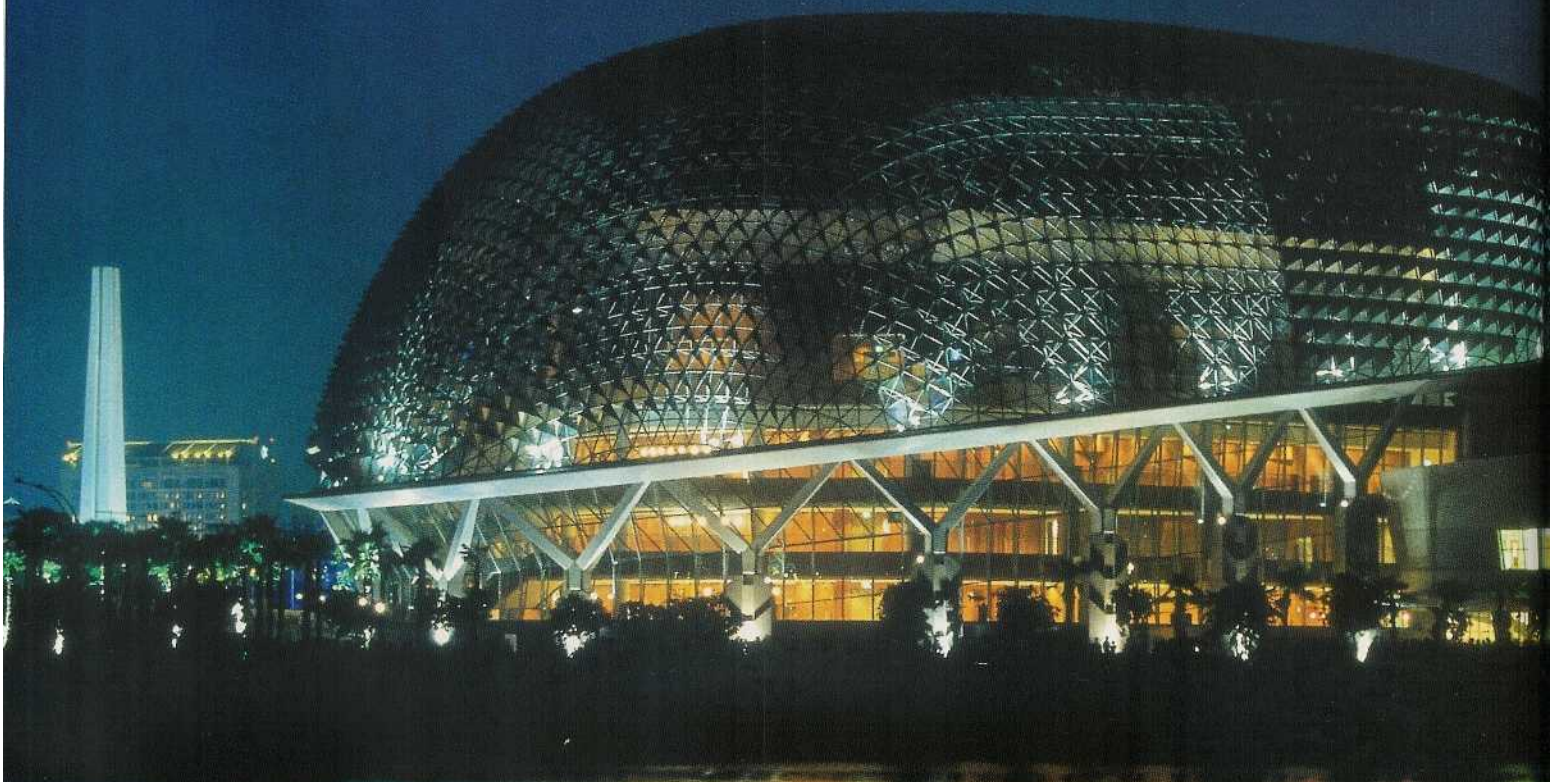
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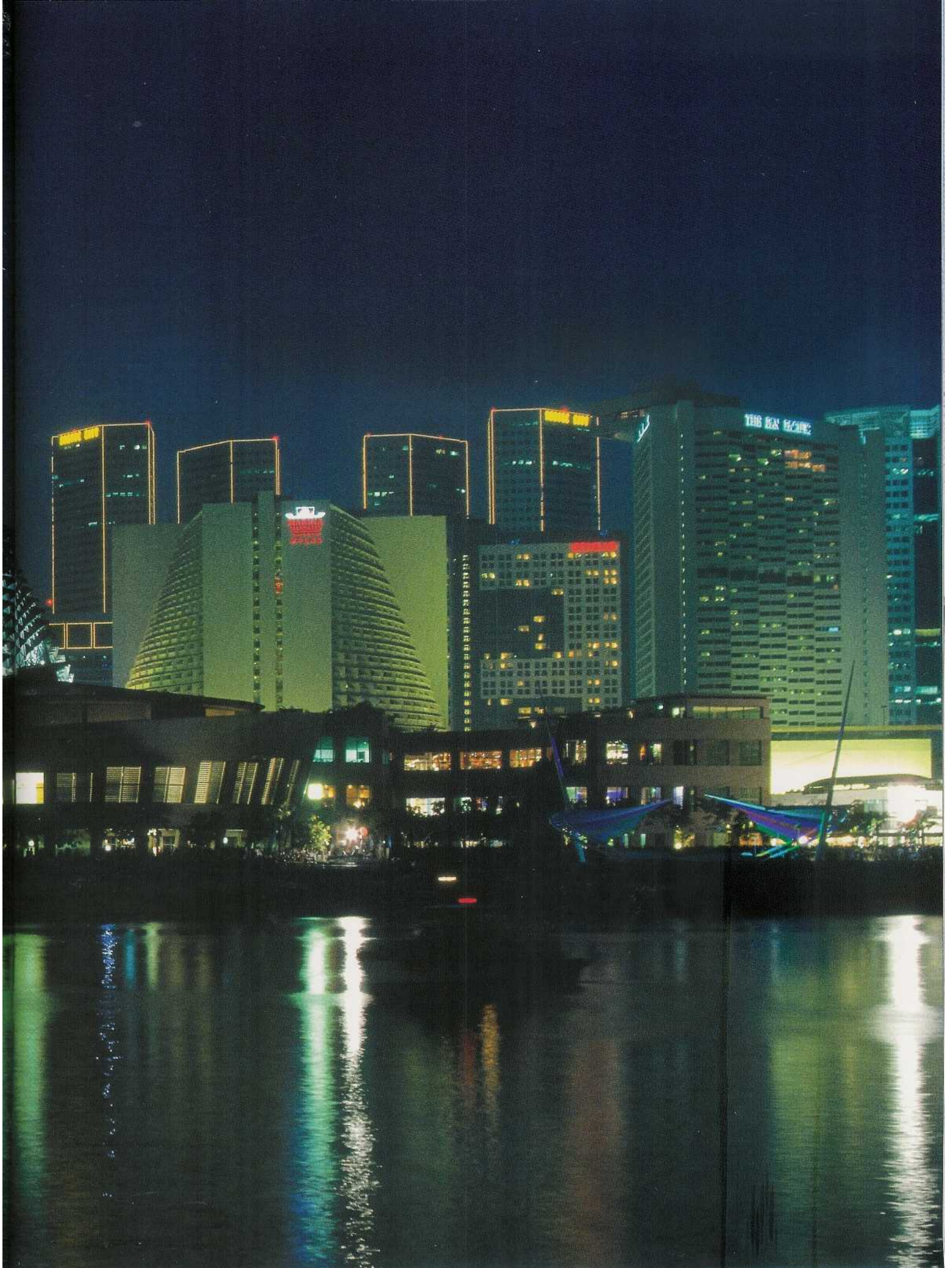
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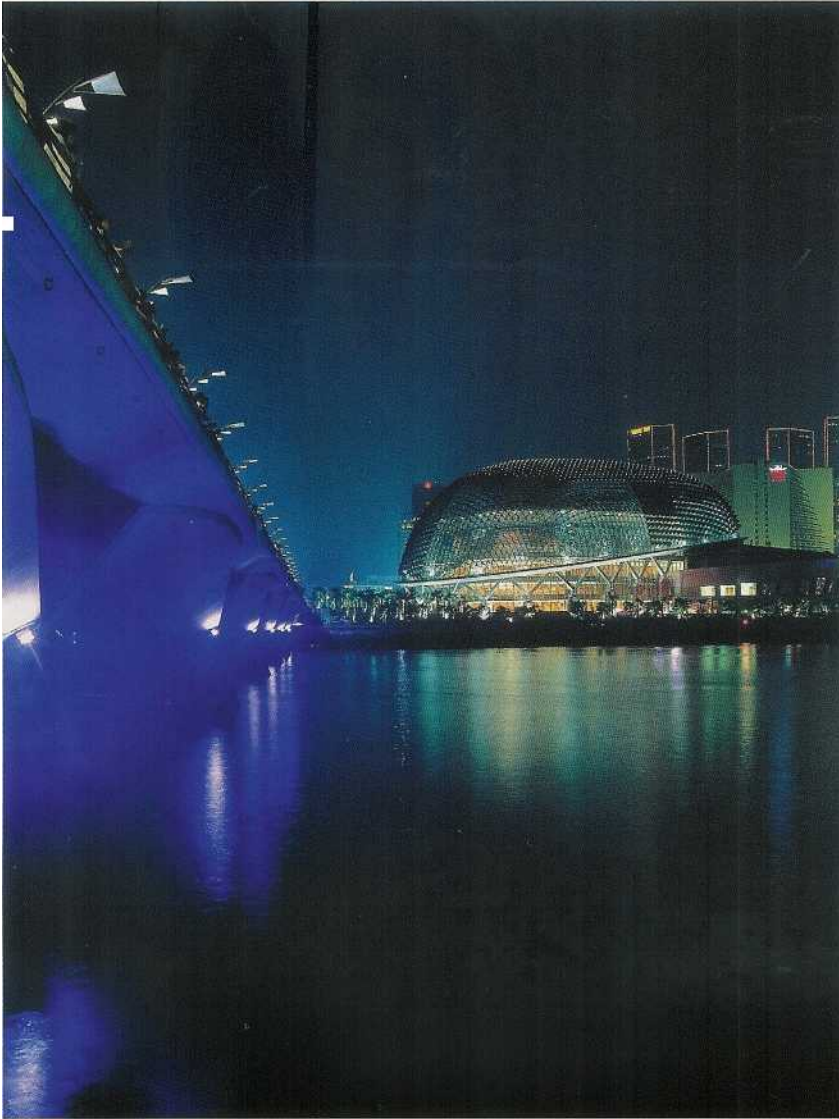


Performance art

The locals liken it to a pair of durian fruits, or the eyes of a fly.
Call it what you will, the Esplanade – Theatres on the Bay
is a striking addition to the architecture and
cultural life of Singapore



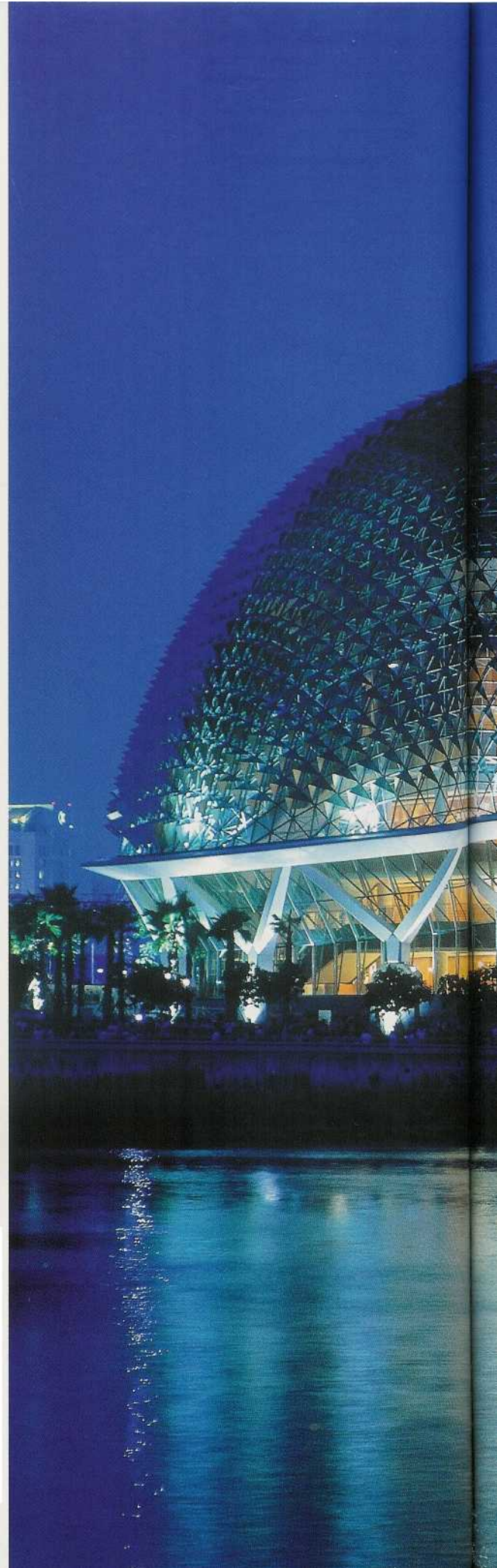




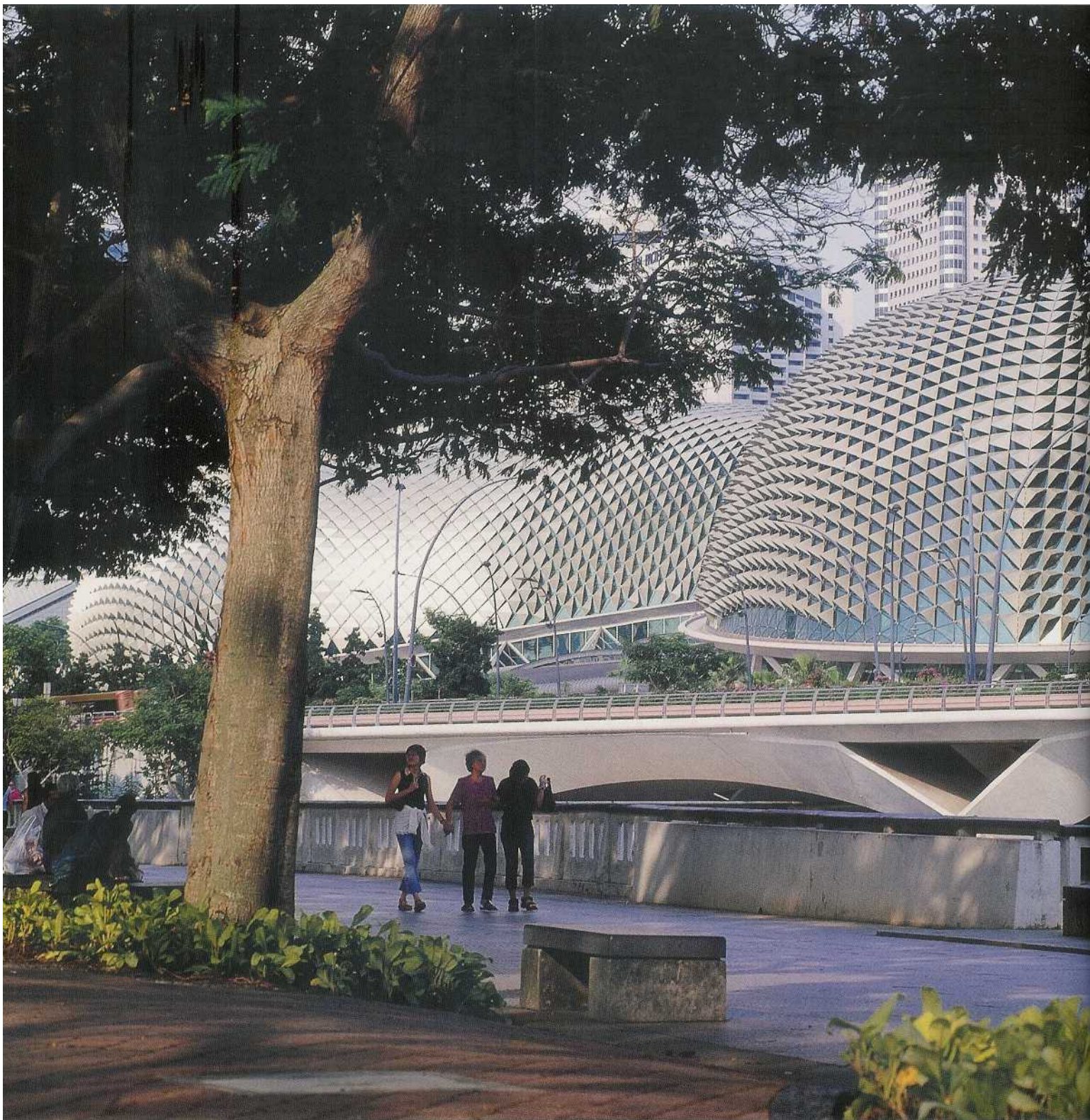
Preceding pages and these pages: The glistening domes of the Esplanade - Theatres on the Bay are a notable addition to Singapore's nocturnal landscape. Encasing the main concert hall and theatre, the domes are fully glazed, then covered in a complex sunshading system that gives them their characteristic spiky appearance. They also take on a lantern-like glow at night.

It is hard to miss: two giant, organic forms rising by Singapore's Marina Bay, glittering in the day and glowing at night. The Esplanade - Theatres on the Bay, 10 years in the making, has been one of Singapore's largest and most controversial public works projects, and seems set to be one of the most talked-about buildings in Asia and beyond in years to come.

The building's signature structures are two glazed domes, encapsulating an 1600-seat concert hall. The building's somewhat spiky texture are literally thousands of sunshades, set at carefully defined







Above: The cladding system for the domes was designed using specialist software. The structural elements of the space-frame supporting the system were fabricated using computer-driven machinery, so assembling them was like using a giant Lego set, says architect Vikas Gore.

Facing page, top: Extensive glazing was employed to create a sense of openness.

angles to minimise solar heat gain and maximise views from the interior towards the Singapore CBD and the Padang.

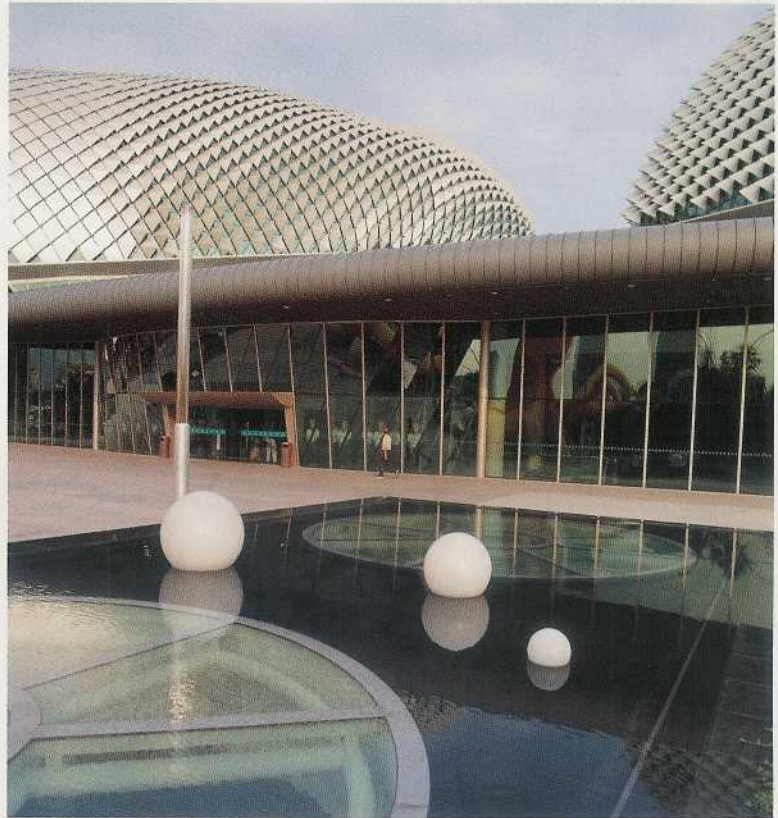
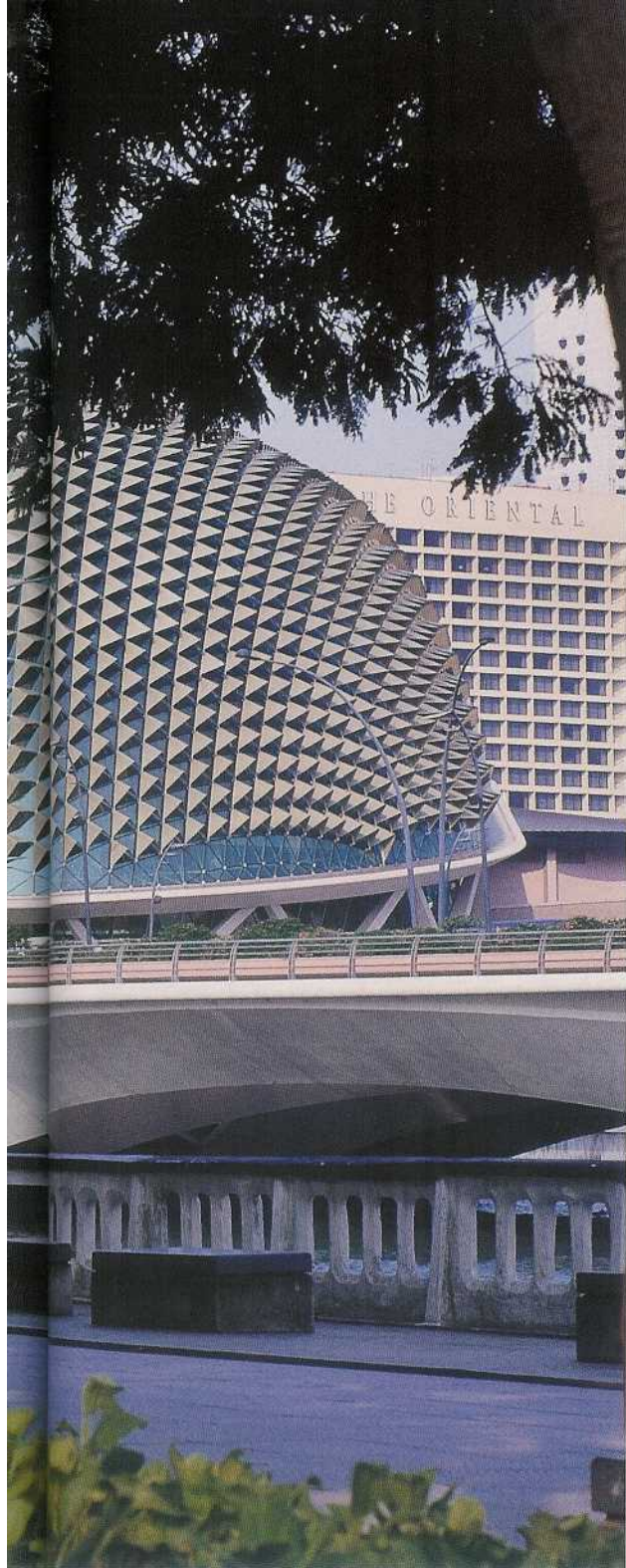
Project director Vikas Gore, of DP Architects, says the eye-catching dome shapes came about through the design team's desire to make the major performance venues visually identifiable.

"All too often in the design of a large performing arts facility, the performance venues tend to get lost in the paraphernalia of attendant spaces that surround them," says Gore. "We were determined that this would not be the case with the Esplanade, so each of the main venues was placed

under a distinct and identifiable enclosure."

Gore says the steering committee's desire to make the centre feel accessible to a wide sector of the public was translated architecturally into a high degree of transparency between the street and the theatre foyers.

"However, we were naturally conscious of the fact that we were on a tight, city-centre site, at a location just one degree north of the equator, designing for an audience with very contemporary expectations," he says. "The option of naturally ventilated open foyers with wide overhangs was therefore not open to us, and we were aware that a



convincing form of sunshading would be required for the expanse of glazing we had in mind."

The design team saw this need for a shading solution as an opportunity to make the cladding system identifiably Asian and tropical. The result was inspired by natural sources and art forms, from sunflowers and fish scales to traditional Southeast Asian screens and woven wall mats, in keeping with the original design intent set out by Koh Scow Chuan, a senior director at DP.

The shape and layout of the individual double-glazed sunshades, arranged in folded rhombic panels in four-sided modules over a curved



Above: On the Marina Bay side, the complex opens up to a courtyard lined by restaurants and retail outlets. The building's granite base provides a visually solid anchor to the airy domes. This side of the complex overlooks downtown Singapore, with spectacular views at night.

Left: On the bank of Marina Bay is an outdoor performance space.



Above: The interiors of the public spaces feature stone imported from Italy, South America and Asia.

Right: Ample natural light without excessive heat gain, as well as spectacular views of downtown Singapore, are afforded by the glazed domes. In addition to the main concert hall and theatre, the complex also includes the smaller recital and theatre studios.

form, was defined by computer modelling.

"Fortunately, software to model such surfaces in a predictable, user-friendly and interactive manner became available only a short while before the system was designed," says Gore. "The contractor who built the shells was also heavily computerised, and could use the CAD information to develop their own fabrication data."

The structural elements were manufactured on computer-controlled machines and the components assembled on site rather like a very elaborate Lego set, Gore says.

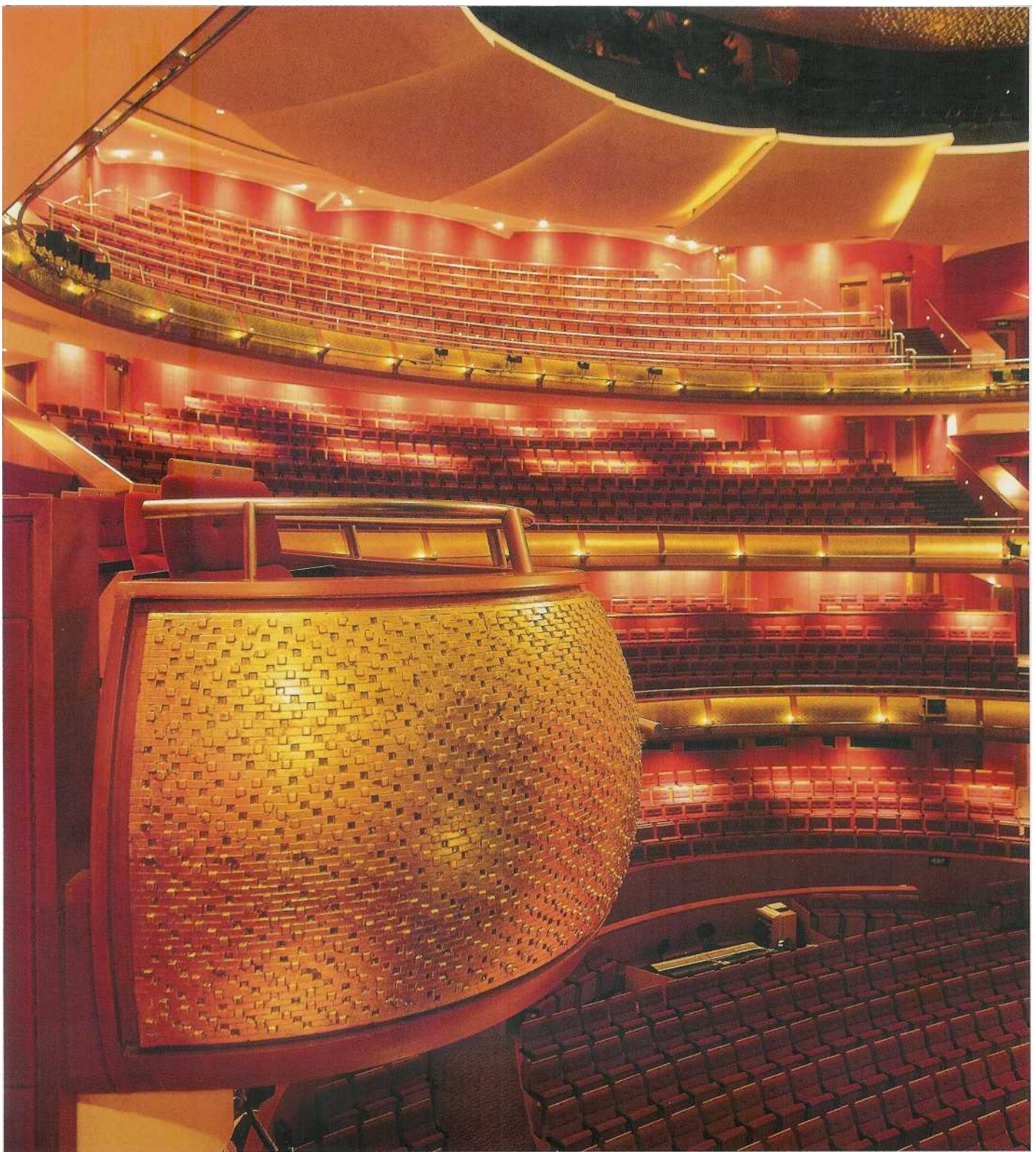
The airy domes of the performance spaces

are anchored to the ground by a three-storeyed stone-clad base, which contains restaurants and shops opening out onto Marina Bay. The interiors of the public spaces, including the main and theatre foyers, are clad in natural, neutral materials.

"We wanted a more natural look for the base of the building, both inside and out, hence the choice of warm, earthy colours for the stones and finishes," says Gore.

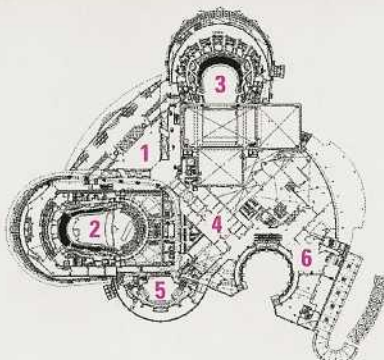
Because of a lack of resources in Singapore, granite was sourced from India, South America and Asia. The sandstone that dominates the main entry concourse is from Italy.





Above: Red and gold tones in the lyric theatre create a warm, rich atmosphere. The stage has an adjustable proscenium arch, two ancillary stages and a 30m-high fly tower. The orchestra pit can fit up to 95 musicians, or be raised to accommodate 200 additional seats.

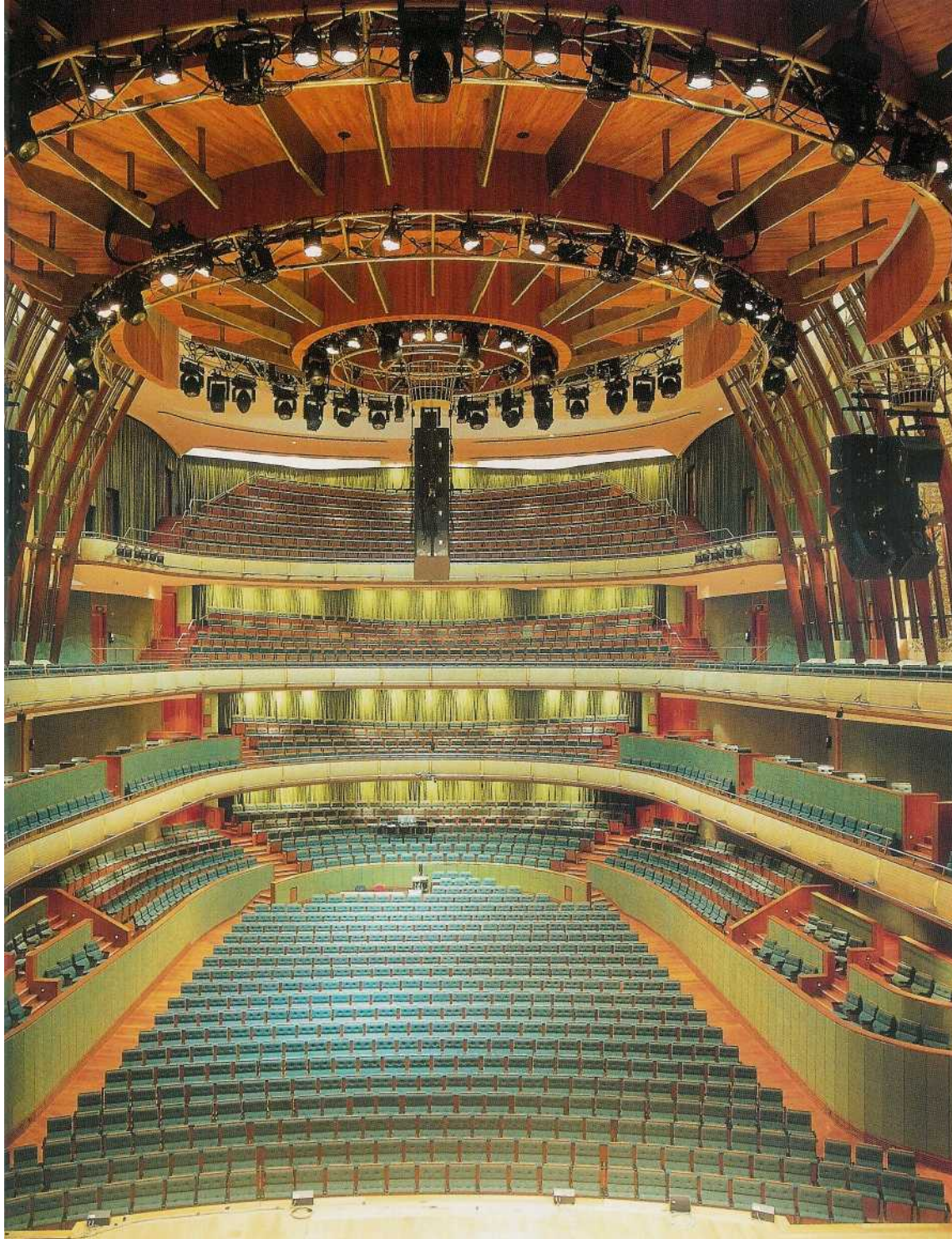
Legend for plan: 1 entry concourse, 2 concert hall, 3 lyric theatre, 4 shops, 5 recital studio, 6 restaurants.



Once inside the domes, the interiors of the lyric theatre and concert hall are completely enclosed. While they feature similar architectural detailing, their colour schemes are markedly different.

"The concert hall was intended to be elegant and restful, so we used relatively quiet blue-green tones offset by the sandstone-like finishes and wood," says the architect. "The theatre was designed to be an intense, rich and exuberant experience - hence the strong reds and golds that some have said wouldn't look out of place in a well-appointed bordello."

The design team worked closely with acoustic



Location: Esplanade-Theatres on the Bay, Singapore
Architect: DP Architects (Singapore)/Michael Wilford & Partners (UK)
Interior designer: DP Architects and DP Design
Cladding consultants: Atelier One, Atelier Ten
Civil, mechanical and electrical engineering: PWD Consultants
Quantity surveyor: PWD Consultants
Acoustic consultant: Artec Consultants
Fire consultant: Building Research Establishment
Theatre planning consultant: Theatre Projects Consultants
Landscaping: ACLA
Main contractor: Penta-Ocean Construction
Interior fitout contractor: Naa'im Holdings
Cladding: Aluminium sunshade panels from Mero Asia Pacific
Roofing: Titanium zinc from BHP Steel Building Products
Facade: Granite from Masonry Services
Window/door joinery: Tacam Steel
Hardware: Architectural Building Supplies
Auditorium balconies: Angsara Builders
Ceilings: Gypsum plaster, timber, gypsum-reinforced concrete from Naa'im Holdings
Paints: SKK
Tiling: Ceramic from Sinbor
Air conditioning: MAE Engineering
Theatre seating: Furni-Sys, Ezcaray
Security system: TJ Systems
Signage: Weng Lee Neonlite & Signcrafts
Lifts and escalators: Otis Elevator Company
Toilets and sanitary fittings: Inhwa Marketing

Photography by Tim Nolan

consultants Artec to define the shape and proportion of each performance space. These consultants also specified the density, porosity and bumpiness of the finishes and materials used in these areas.

Naturally enough, the Esplanade has been the subject of considerable interest and debate.

"The controversy, such that it was, seems to be receding as more and more people come to appreciate the design over time," says Gore. "Some controversy is always good for a project like this, because it generates interest. Also, if you push the envelope and do an unusual design, controversy comes with the territory."



Above: The 1600-seat concert hall is designed primarily for musical performances, but can also be used to host speeches, company functions and multimedia shows. The acoustics can be altered by using the operable concrete walls of the large reverberation chambers, a three-part canopy and sound-absorbent curtains.

Left: The concert hall also features a large pipe organ.