

# New stage for the bay

By Brenda Goh

**By the time** you receive this magazine, Marina Bay will be well on its way to becoming a venue to hold major events in Singapore. And all because of a platform – the biggest floating performance stage in the world.

The structure made its debut at this year's National Day Parade, as the National Stadium, the usual venue for the event, is being pulled down. Since then, it has been used as the finishing point for the Singapore Bay Run, the biggest mass run here.

The platform and its 27,000-seat spectator stand was also the venue for last month's opening of WaterFest Singapore, six weeks of competitive and lifestyle events, and extreme sports, on land and water.

Setting the stage for all these events involved a complex exercise in design and engineering, and people from areas as diverse as shipbuilding and the military.

Their efforts over 13 months have resulted in a 120m long by 83m wide

platform – an area bigger than the old stadium field – and weighing a hefty 3,000 tonnes.

Considering that the platform floats on water, some may be surprised to learn that it is made of steel, and that this material was chosen as it is stable, strong, light-weight and able to float on the water's surface.

It can bear up to 1,070 tonnes. This is equivalent to the total weight of 9,000 people, 200 tonnes of stage props plus three 30-tonne military vehicles.

## All afloat

There are several floating stages in the world, including in Asia. Most are used for arts and music performances. Some major ones are located at:

- Lake Las Vegas Resort, US: Used for private functions and concerts.
- Chautauqua Lake, New York State, USA: World-class acts perform in the annual music festival here.
- Lake Constance, Austria: For performances in its Bregenz Festival.
- Henley, England: Stages events in the Worthersee Festival.



Many considerations were taken into account during the design phase. The Defence Science and Technology Agency, the platform's chief planner and developer, had to keep in mind not just its size and the load it could bear, but also make sure the structure can be relocated and reconfigured to meet the requirements of different events.

Hence, it is made up of smaller platforms of pontoons, each comprising hundreds of parts.

Two hundred pontoons were

envisioned, but a unique system of connectors allowed this number to be reduced to 15, which interlock like a jigsaw puzzle. They took a month to assemble.

SembCorp Marine's Mr Seow Tan Hong, whose company was involved in the building, told news agency CNA: "The major challenge was the design of the connectors. They had to be light but robust."

Six pylons fixed into the seabed act as the structure's foundation. They use heavy-duty rubber rollers to gently guide the stage up and down to keep it from being rocked by tides and currents. Three linkways, which connect the floating platform to the land, have special integrated joints to keep them steady.

The platform also had to be aesthetically pleasing to fit the scenic backdrop of the nearby belt of posh hotels, whose presence limited the height of the seating gallery. The existing structures and the area's developments plans capped the number of seats at 27,000.

The platform has been equipped with numerous innovative features, like an internal drainage system, cabling structures and lightening conductors.

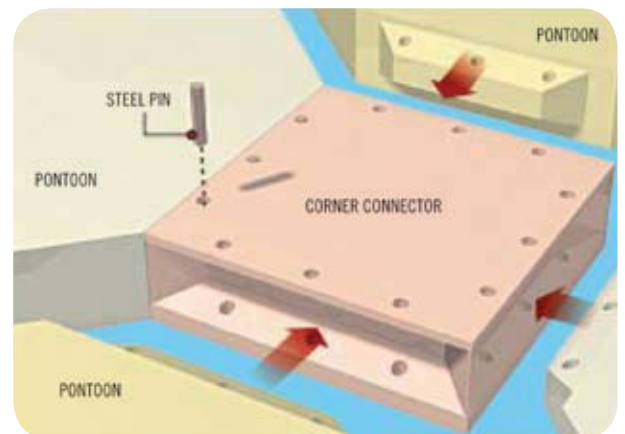
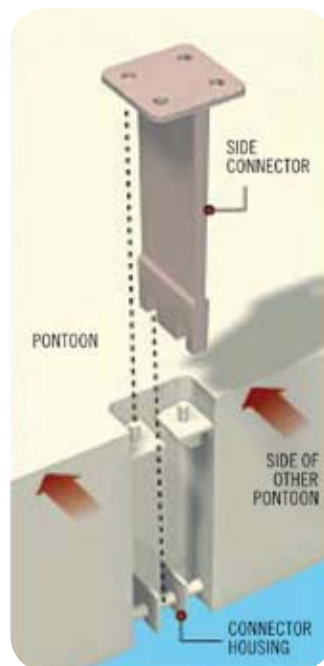
Though it has been built as an interim facility for events, there is every likelihood the platform, with its city skyline background, will become a permanent feature in the bay's landscape, which is rapidly developing.

The \$226 million dam which will turn the bay into an urban reservoir and a 42-storey high ferris wheel are being completed. A resort cum casino is slated to open in the area in 2009.

At the same time, work has begun on three planned gardens, which, come 2010, will encourage more land and water activities in the area. On the way too, are bridges, a promenade, an undersea tunnel for traffic, homes and office space.

National University of Singapore Assistant Professor Perry Yang, from the architecture department, told Voices that the bay's development is part of a global waterfront movement to revitalise cities, happening in such places as Sydney, London and Shanghai.

Commenting on the plans for the bay, he added: "In this context, Singapore is on the right track. It is testing a new Asian downtown model with cutting-edge planning ideas and approaches."



Source: SPH - The Straits Times

## Vital links

Just 15 pontoons were needed to make up the floating steel platform, thanks to the unique system of connectors joining the parts together. SembCorp Marine's Mr Seow Tan Hong noted the connectors' design was the big challenge, as "they had to be light but robust".