



# Structures

## Integritank® Product in Action

### City Of Dreams, Macau, China



**Client:** MELCO CROWN ENTERTAINMENT  
**Main Contractor:** LEIGHTON, CHINA STATE, JOHN HOLLAND JOINT VENTURE  
**Authorised Contractor:** ASTEL (MACAO) LTD.



from the concrete and further enhancing the adhesion of the subsequent membrane. Once the primer had cured the **Integritank** membrane was then spray applied to 95,000m<sup>2</sup> of the basement and podium in two colour contrasting coats. This quality control measure was backed up by wet film thickness tests carried out throughout application which helped ensure that the required 2mm thickness was achieved. Once the final, second coat had cured the membrane was electrically integrity tested to confirm the integrity of the system and that it was 100% effective.

### Dancing Water Theatre Kept Afloat

As in Las Vegas, visitors to City of Dreams will be able to experience extravagant shows, one of which is 'The House of Dancing Water', which will be a permanent feature of the site. The show takes place in one of the largest commercial pools in the world, which holds approximately 14,000m<sup>3</sup> of water. For this area Leigh & Orange required the waterproofing to be not only effective, but also to have a black finish so as to accentuate the depth of the pool and a resilient surface so that it was scratch-proof.



City of Dreams, the Las Vegas of the East, is located in Macau, China. The site, which contains three glamorous hotels, 200 shops and 39,000m<sup>2</sup> of gaming space, sits on a multi-storey podium deck. To protect the development against water ingress the architects, Leigh & Orange, required a waterproofing solution that would not only be effective but would also be able to cope with the complex detailing, numerous day joints and on-site challenges to be encountered. Consequently they selected Stirling Lloyd's Integritank, MMA resin based system, which could easily meet all these requirements.

### Basement & Podium Waterproofing

Prior to application of the waterproofing system the substrate was prepared using a combination of shot blasting and water jetting techniques. Tensile adhesion tests were then taken to confirm that the required bond strength of membrane to substrate of 1MPa would be achieved. Once these had been completed the substrate was then sealed with Stirling Lloyd's PA1 primer, to ensure that there would be no outgassing

Ref. PIA\_Inte019(1E).pdf  
Available from [stirlinglloyd.com](http://stirlinglloyd.com)



**STIRLING LLOYD UK & WORLD WIDE**  
Stirling Lloyd Polychem Ltd.  
Union Bank . King Street . Knutsford  
Cheshire . WA16 6EF . UK  
Tel: +44 (0) 1565 633111  
Fax: +44 (0) 1565 633555  
Email: [info@stirlinglloyd.com](mailto:info@stirlinglloyd.com)

**STIRLING LLOYD NORTH AMERICA**  
Stirling Lloyd Products Inc.  
152 Rockwell Road . Building A  
Newington . CT 06111 . USA  
Tel: +1 860-666-5008  
Fax: +1 860-666-5106  
Email: [northamerica@stirlinglloyd.com](mailto:northamerica@stirlinglloyd.com)



[www.stirlinglloyd.com](http://www.stirlinglloyd.com)

### Day Joints, Details & Other On Site Challenges

On such a large site the waterproofing work was phased. In fact the programme meant the Integritank had to be installed over a two year period with consequently numerous day joints created. As **Integritank** does not have a critical overcoating time and bonds to itself irrespective of the time between applications its use meant this potential issue was overcome.

This long build schedule also meant the Integritank membrane was often left exposed for extended periods. The systems resistance to ponding water and UV as well as its robustness meant that this exposure as well as site traffic from following trades posed no issues for the Integritank system.

In addition **Integritank's** thixotropic nature and liquid spray application allowed the complex details and numerous upstands on the site to be easily accommodated, with these areas being effectively protected quickly and easily.



### Conclusion

The choice of **Integritank** removed the gamble from the waterproofing of this prestigious development. It enabled an extended, potentially difficult waterproofing contract to be successfully completed and has given the City of Dreams a waterproofing system which will provide a long service life and effective protection for many years to come.