



# Bridge Deck Waterproofing

## Eliminator® Product in Action

### Durrat Al Bahrain Bridges

**Client:** KINGDOM OF BAHRAIN GOVERNMENT AND KUWAIT FINANCE HOUSE (BAHRAIN)

**Consultant:** WS ATKINS

**Main Contractor:** NASS – MURRAY & ROBERTS JV

**Authorised Contractor:** ORBIS INTERNATIONAL ASSOCIATES



The resort of Durrat Al Bahrain is named after the most perfect pearl and has been designed to be a model city resort and provide a modern, opulent lifestyle. Located on the south coast of Bahrain, across a stretch of reclaimed desert and sea, the resort will be just 35 minutes from Manama on the proposed new, dual carriage highway.

Jointly owned by the Kingdom of Bahrain Government and Kuwait Finance House (Bahrain), Durrat Al Bahrain incorporates both the highest quality materials available and modern design principles and sets a new standard for urban development in the Kingdom.

The stunning design has been provided by WS Atkins, the internationally renowned engineering design and consultancy firm. The project is the vision of Tom Wright, WS Atkins Director of Architecture who is the designer of other globally recognised

projects such as the Burj Al Arab, the 7-star hotel in Dubai.

The design of the 20sq.km. seaside city resort incorporates 13 different islands with over 2,000 villas, more than 3,000 apartments, luxury hotels, restaurants, promenades, shopping centres, spas as well as a planned marina and golf course among its many sports facilities.

It is envisaged the luxury development will evolve according to the city's needs and wants and become the country's largest city resort and a landmark project that will position Bahrain as a premier tourist destination.

To succeed the project also required the construction of 13 bridges, with a total of 58,000m<sup>2</sup> of bridge decks and service trenches requiring effective long-term protection from corrosion in the harsh marine environment.

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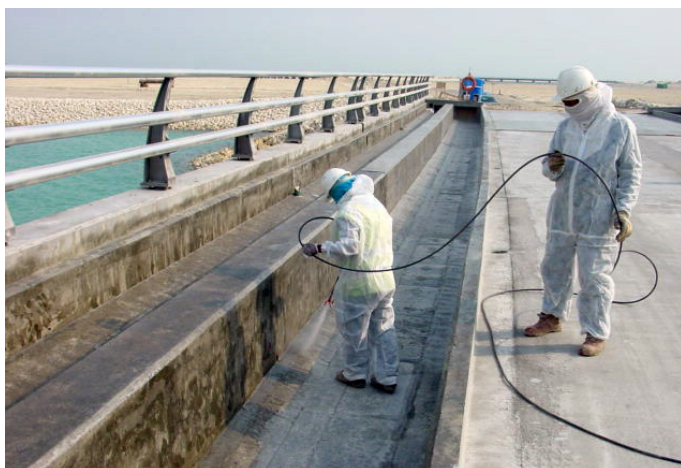
After a technical and commercial appraisal of the competing systems Main Contractor, Nass-Murray & Roberts JV, chose the Eliminator, spray applied methyl Methacrylate (MMA) resin based system from Stirling Lloyd.

The contract to apply the system, which consisted of a primer, 2mm of **Eliminator** membrane and a tack coat, which would provide a tenacious bond to the asphaltic surfacing on the deck sections, was awarded to Orbis International of Adliya, Bahrain.

Once on site, several of the advantages offered by the **Eliminator** system came to the fore. The service trenches offered the challenge of upstands and parapets which would have been a major problem for traditional sheet systems but presented no issues for the liquid, spray-applied **Eliminator** system. **Eliminator** cures to form a seamless membrane and it's thixotropic nature enables the membrane to follow the profile of any detail and ensure a fully-bonded waterproofing system at all times.



3 days. Once the storms stopped, the previously applied membrane and primer were simply blown dry and application re-commenced with no requirement for special treatment at the day joints. This would not have been the case for all polyurethane, polyurea, polyester and epoxy systems for which any delay requires time consuming re-priming and abrading of the membrane and primer before spraying can begin.



Application of the waterproofing through the Bahraini summer with it's high levels of humidity could have caused application problems for moisture sensitive systems, but the high tolerance of MMA resins, which offer the widest weather window of application, meant application was unaffected and helped Orbis International to keep ahead of the scheduled programme.

Selection of the **Eliminator** system also allowed the Main Contractor to be more flexible with his programme. There is no critical overcoating time with the **Eliminator** system, as the MMA system's chemistry ensures a full chemical bond between laps, days and even weeks later. This advantage was admirably demonstrated when heavy rainstorms postponed work for



These features together with the inherent speed of application of the **Eliminator** system, based on its ease of application and it's rapid cure which enables the next phase of the work to begin in under an hour, meant Orbis International were able to hand-over structures months ahead of programme.

This ease and speed of application of **Eliminator** together with its UV resistance, excellent ageing properties and unparalleled track record of success in protecting major structures around the globe meant that not only is the vision of the Durrat Al Bahrain closer to reality than otherwise would be the case, but that the investment in the structures on this prestigious project will be protected for the duration of their design life.