

SYDNEY OPERA HOUSE

Location: Shores of Sydney Harbour

Contractor: Andersal Engineering Pty Ltd

Date: 1991-92

Surface Material: Engineering concrete

Product: DRY-TREAT 100N

The Sydney Opera House was completed in 1973 and has a required service life of over two hundred years. It is located on the shores of Sydney Harbour, adjacent to the city's central business district. The elements of the building are subject to both an aggressive urban and marine environment.

In 1991 a major up-grade and maintenance program was conducted by the Public Works Department of New South Wales, which included the use of a protective coating to much of the exposed reinforced concrete elements. That protective coating was DRY-TREAT 100N, a pure alkyl alkoxy silane.

Measures to protect the ribs of the exposed pre-cast concrete shells were required because there had been a slow build-up of salt contaminants, especially in the exposed concrete on the most northerly shell. In some areas chloride ions had penetrated up to 10mm from the surface.

A means to reduce the future rate of contamination and the risk of corrosion of the reinforcement also had to be found. It was important that the method used did not damage the glass which forms the main view area of the Opera House. Ove Arups, the original engineering designers of the Opera House, decided to use a penetrating sealer that would act as a long lasting barrier to water and water-borne salts and be vapour permeable. The concrete was pressure washed to remove the loose surface matter and allowed to dry. Two coats of DRY-TREAT 100N were then applied to the exposed concrete.

The final result was on-going protection that did not alter the appearance of the treated concrete in any way. Also, any over-spray of the DRY-TREAT 100N simply washed off and did not affect the massive glass viewing windows.

