Lvl 1, 83 Longueville Road
PO Box 4075
Lane Cove, Sydney
NSW 1595 Australia

t +61 2 9420 8610
f +61 2 9420 8650
info@decotec.com.au
www.decotec.com.au

HINZE DAM STAGE 3 PROJECT
Spillway Bridge Deconstruction

OVERVIEW OF PROJECT

With a rapidly growing population and widespread drought, the pressure on water supply continues to increase. The Hinze Dam Stage 3 project has been identified as a priority to increase the dam's water storage capacity and delay the release of floodwaters onto the floodplains. This will reduce downstream flood levels and decrease the number of properties vulnerable to flooding.

For this to be fulfilled the Hinze Dam spillway and embankment wall will be raised 15 meters which will consecutively double the capacity of the dam.

STAGE 2 SPILLWAY BRIDGE

The existing stage 2 spillway bridge consists of 4 spans totalling 85m long. Each span is made up of 15 prestressed beams totalling 9m wide. The largest of these spans (span 3) contains beams weighing 32tonnes each. The bridge is situated over the Hinze Dam Spillway and serves as the local traffic access across the dam.

ISO 4801:2001
ISO 9001:2000
ISO 14001:2004

DecoTEC Pty Limited
ACN 107 887 598
A TEC Group Company

PROBLEM

The stage 3 upgrade scope includes raising the spillway and embankment by 15 metres therefore requiring the existing bridge to be removed to make way for construction of the new spillway and bridge.

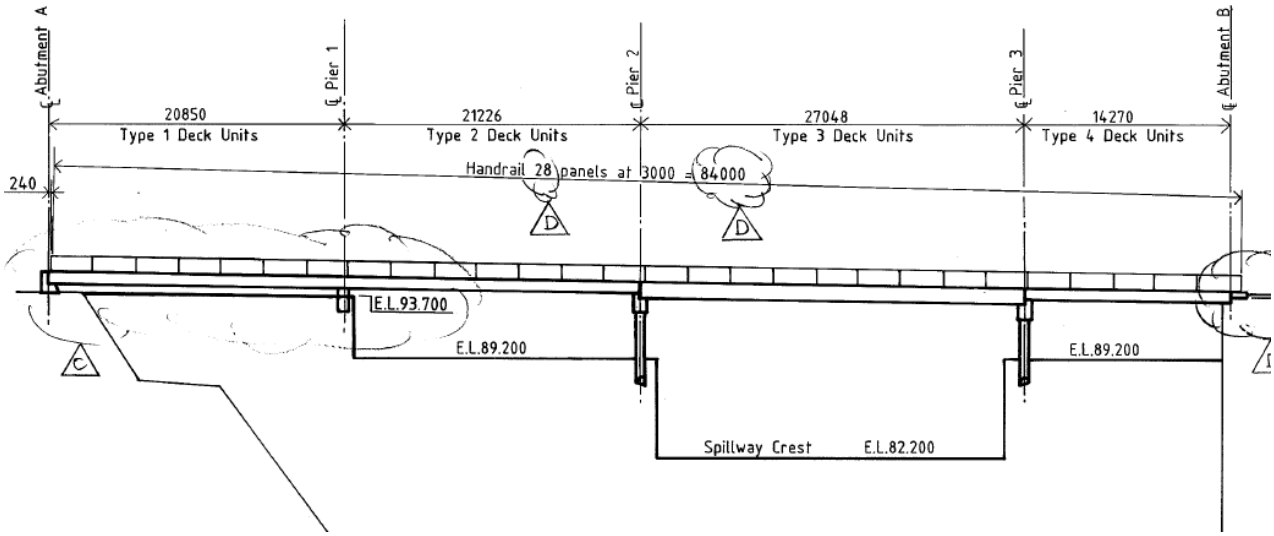

Figure 1 – Stage 2 Spillway Bridge to be Removed

SOLUTION

DecoTEC have had past experience in similar projects and were called upon to carry out the required works. A number of elements had to be addressed before and during these works were conducted. The following photos and illustrations will explain how DecoTEC overcame these hurdles.

1. RELEASE BEAMS FROM HEADSTOCK

Each of the 60 beams were fastened to the headstock/abutment at either end via grouted vertical bolts. These bolts were positioned beneath the road/path slab and were located via coring an oversized hole. The nut was then removed and replaced with a 25T hydraulic jacking device which pulled the bolt from the head stock. This process was repeated for all 120 connections.

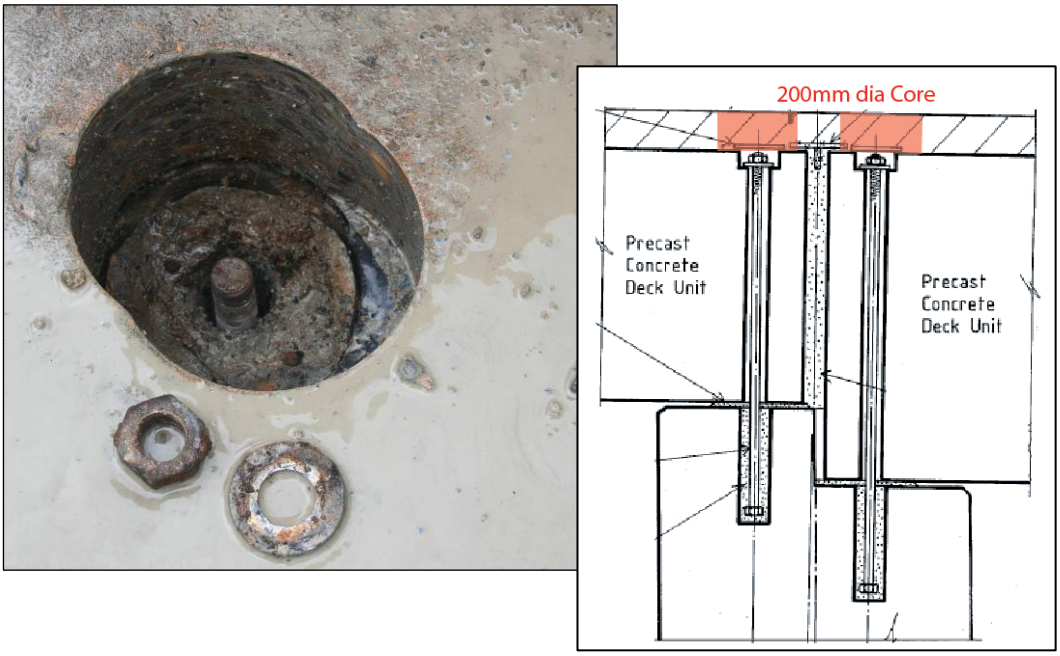

Figure 2 – Beam to Pier/Abutment Connection

2. SEPARATE BEAMS

Each span of 15 beams were tied together by means of a topping slab doweled into the beam joins. 2 Steps were required to ensure total separation of the beams prior to lifting

a. Floor saw cut to depth of topping slab (250mm) over each beam joint
b. Core drill 2 by 200mm & 48mm diameter holes at this joint for hydraulic splitter access, explained further in step three.

Figure 3 – Sawing and Coring Preparing Bridge for Separation

3. REMOVE BRIDGE BEAMS

Each beam was then required to be hydraulically pushed 100mm from the adjacent beam to ensure total separation was achieved whilst providing space for rigging gear. All DecoTEC operators and riggers were required to be trained in 'working at heights' due to access restrictions.

DecoTEC provided a fully qualified demolition supervisor to supervise this stage of the process to ensure the task was conducted safely and efficiently.

Figure 4 – Splitting and Removing Bridge Beams