



DEMEX
Demolition | Excavation | Remediation

VARSITY LAKES TO BURLEIGH, M1 UPGRADE

CLIENT: SEYMOUR WHYTE
CONTRACT VALUE: \$0.3 M

As part of the M1 upgrade project that included widening of lanes in both directions, DEMEX undertook bridge demolition works as a subcontractor to the project principal, Seymour Whyte on the Varsity Lake to Burleigh section of the project. Demolition of the existing vehicle bridge commenced after construction of the new bridge was underway. Project works were conducted while the multi-lane motorway remained operational, with both day and night works conducted to minimise traffic disruption. The bridge was constructed predominantly of steel, concrete, and polystyrene, with the latter representing a challenge as the disturbance of polystyrene needed to be minimised due to the high traffic environment.

PROJECT HIGHLIGHTS

- Method to deconstruct deck allowed for program to be completed four days early.
- Innovative protection screen that prevented fly rock from entering live motorway.
- Method for managing polystyrene prevented environmental incidents.

PROJECT METHODOLOGY

In terms of method, mechanical demolition was used to deconstruct the bridge. A series of plunge cut saw cuts were administered to separate the bridge deck into three equal sections approximately six bridge deck units wide. The plunge cuts were cut to a depth sufficient to disengage the mac-alloy bars in the deck units, allowing the demolition to occur with relative ease.



**Completed
ahead of
schedule**

Bridge Demolition

- 30 tonne Excavator
- 50 tonne excavator
- 23 tonne excavator

100%
Local business



As the bridge was constructed with a polystyrene filled deck, the project team was acutely aware of the risk of contamination and accordingly, significant slurry control measures, including geofabricated liners and wet vacs were implemented at the deck level to prevent the occurrence of any environmental incidents. Due to the higher than normal winds in the project work zone – the bridge structure was 6 metres in height - dust suppression was undertaken for the duration of the project to minimise airborne dust and polystyrene movement. This allowed labourers to collect polystyrene that fell to the ground and minimised movement via wind.

In addition to management of the polystyrene, other project challenges included the project program and the project's location in close proximity to a live multi-lane motorway. DEMEX was allocated 12 days to complete the project, however, due to careful planning and seamless execution, the team completed the works in just eight days, allowing the project works that followed to commence earlier than scheduled. The team adopted an innovative solution to prevent fly rock from entering the motorway through the use of unimesh screens which were bolted and chemical anchored to the headstock of the new bridge.

