



240 tonnes of Asbestos removed



80,000 m² contaminated site on the Queensland State Government's Environmental Management Register



Demolition of two 60,000 m² warehouses using low emission excavators.

ACACIA RIDGE BUSINESS PARK REDEVELOPMENT

JULY 2024 - DECEMBER 2025

ESR

\$8.4M (AUD)

Engaged by client ESR delivering a light industrial redevelopment at the Acacia Ridge Business Park, DEMEX completed a comprehensive enabling works program of hazardous materials (hazmat) removal, demolition, and associated civil works demonstrating industry leading environmental performance and recycling.

A second package for the development secured by DEMEX, 40 Fox Road is an 80,000 m² contaminated site on the Queensland State Government's Environmental Management Register (EMR). Formerly operating as Brisbane's Holden manufacturing facility, the site was characterised by high levels of asbestos. Stringent EMR regulatory requirements and ESR's tenancy contract binding them to meet 6 Star Green Star rating standards in construction prompted innovative thinking and methodology.

Encompassing demolition of two large industrial sheds and all external hardstand pavement, the project also included a comprehensive civil package of bulk earthworks, drainage, stormwater, sewer, and water main installations, and construction of a 350 metre retaining wall.

Applying lessons learned from Stage 1 and deploying unique fit for purpose equipment, DEMEX processed, recycled and reused concrete onsite, saving approximately \$1.1 M in material supply costs. Reduced time for removal of hardstand reflected in reduced fuel and water consumption, fewer emissions, and improved equipment and workforce resourcing .

PROJECT METHODOLOGY

Works began with asbestos removal, including LDB and four kilometres of lagged steam pipes. DEMEX developed and implemented an innovative in situ wrapping method for 2.5 metre sections of 150 mm – 200 mm steel pipe. Using an elevated work platform (EWP) and a telehandler, sections were oxy cut at joints to prevent contamination, safely lowered, and disposed of in line with regulations. Following removal of asbestos materials, windows, awnings, and saw cut roofing, the two warehouses spanning 60,000 m² were demolished using low emission excavators.

DEMEX then removed 40,000 m² of mastic contaminated hardstand presenting the most complex asbestos risk. DEMEX's research identified the Badger Breaker® the only machine of its kind in the southern hemisphere to be an environmentally sustainable and efficient solution. After a successful 40 metre trial, the 200 mm thick concrete with SG2.4 and SL82 mesh was rubblised efficiently. The Badger's unique operation, using a self-propelled multi-head breaker carrying hammers up to 793 kg, meant a vehicle lane's width could be rubblised effectively in a single pass of the site's full length.

This method enabled the recycling of 40,000 tonnes of concrete and 930 tonnes of steel. With continuous air monitoring and dust suppression in place, production reached 5,000 m² per day.

Unique rubblising technology enabling 100% onsite recycling of 40,000m² concrete saving client \$1.1 M.

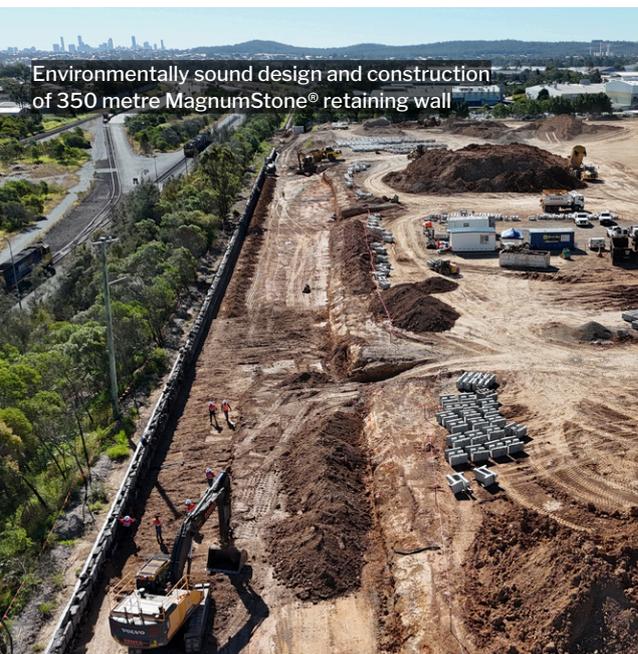


BADGER BREAKER®

1701 tonnes of heavy gauge and 930 tonnes of light gauge scrap steel recycled



Environmentally sound design and construction of 350 metre MagnumStone® retaining wall



The 350 metre retaining wall design/construction based on MagnumStone® Mechanically Stabilised Earth (MSE) strengthened the project's environmental credentials. A large, hollow core, concrete blocking system, MagnumStone® has a lighter, environmentally beneficial construction protecting against soil erosion, while supporting heavy or active loads above. Use of MSE (Mechanically Stabilised Earth) select fill for the retaining wall highlighted the benefits of innovation to achieve project environmental and sustainability rating outcomes. Onsite processing of material to stringent specifications assured quality of construction.

ENVIRONMENTAL AND RECYCLING OUTCOMES

- Reduced fuel and water consumption when compared to the conventional method of an excavator and rock breaker
- Badger Breaker® produced a superior reusable construction material. A crusher established onsite processed aggregate materials directly from demolished concrete, including crusher dust and 5mm, 10mm, 20mm, 45-75mm, and 75-minus aggregates. This resulted in substantial client savings of \$1.1 M based on import of equivalent virgin materials (including haulage costs).
- 95% recycling of all materials that could be recycled positioning ESR to achieve a 6 Star Green Star rating for the site.

PROJECT CHALLENGES

- The project faced logistical challenges as a result of bordering active Queensland Rail lines and logistics businesses operating 24/7. This tight operational environment necessitated meticulous planning and coordination of vehicle / machine movements to ensure safety and minimize disruption.
- Removal of substantial underground structures, including tunnels and foundations up to 200 mm thick and 8 metres deep, required careful excavation, particularly as civil works proceeded parallel to existing high voltage (HV) services inground.
- Project schedule was impacted by 129 wet weather working days. Despite this causing program delays, time savings were realised through deployment of the Badger for demolition of concrete hardstand.

SITE AREA	80,000 M ²
CONCRETE RECYCLED	40,000 M ²
SCRAP STEEL RECYCLED	930 TONNES

