

Robotic concrete crushing nil debris to landfill

Brighton Community Meeting Hall - Concrete Removal Reaches New Heights

- Tracked Diamond Sawing
- Robotic Concrete Crushing
- Steel and Concrete Separated for Recycling
- Nil debris to landfill
- Light weight plant to meet weight loading restrictions

Project Duration: 3 weeks

Project Overview

The Christian Outreach Centre in Brighton required a meeting area to be formed on the third floor of their 1960s style concrete-framed building. They identified an unused storage room as the ideal location - and decided to build a new roof and remove the original concrete roof slab to provide the required headroom.

Project Methodology

The project required TCC to remove a 21m x 16m area through the existing roof slab, which also meant taking out three 800mm x 400mm wide-span reinforced concrete beams. Working on a floorslab with a weight restriction of 2 tons, TCC created a methodology that would remove debris on a continuous basis.

The third floor location meant that plant had to be craned through a



Demolition robot crushes reinforced concrete beam into rubble to form opening in floor slab

large third floor window at the start and end of the job.

Using a tracked diamond saw, TCC slowly and progressively cut around the perimeter of the roof slab, with the concrete then systematically broken up by a robotic crusher. Debris was cleared as work progressed, using a propane-powered skid loader and chute system.

Key Performance Criteria

A key requirement of the project was to remove the roof slab area without any damage to the remaining structure. As is standard before starting work, TCC drew up a risk assessment and method statement, which took account of the enclosed area and the selected electric and propane powered plant. A water suppressed saw and the damping down of crushing activity minimised dust.

Outcomes

The project was completed to specification within the three week



Robotic crusher breaks concrete structure to form opening without vibration and disruption to building occupiers



Brokk robot crushes large opening in roofslab to increase headroom of room

schedule of works. In addition, TCC separated steel to send to scrap and concrete for recycling. Nil debris was sent to landfill - a clear environmental benefit.

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