

## GOLD ORE FINES HOPPER Bulk Material Storage

### PROJECT SCOPE

Project:	Gold Mine, Western Australia
Material:	Gold Ore Fines
Equipment:	Belt Feeder and Fines Hopper
Capacity:	92 m <sup>3</sup> Live Volume
Scope:	Design of a mass flow FEL feed hopper
Aim:	To re-design the hopper to achieve reliable mass flow and uniform extraction of ore along the full length of the hopper using the existing belt feeder.

As part of a wider review of hoppers and chutes aimed at improving material flow and increasing wear life, Bulk Handling Technologies was commissioned to re-design a new Fines Hopper as the existing hopper was experiencing build-up and bridging, resulting in downtime and disruptions to production.

Fed by front-end loader, the Fines Hopper is located adjacent to a fines stockpile and is used regularly to supplement the grinding and screening circuit when the primary feed is not at full capacity.

### DESIGN CHALLENGES AND CONSIDERATIONS

Site observations showed extensive build-up on side walls, preferential feeding from the rear of the hopper and bridging across the outlet. This resulted in reduced live storage volume, impairment to loader operations and regular shut-downs to allow operators to manually clear the build-up.

Specialist material testing of a representative sample was carried out and based on these results, critical hopper geometry, wall liner materials and head load conditions for the belt feeder were established. A review of the belt feeder design was also carried out to determine the pull-out forces, discharge bed height and wall divergence angles required to ensure uniform, mass flow discharge from the hopper along its entire length.

One of the challenges was to ensure the proposed new hopper design was able to fit on the existing support structure and interface with the existing belt feeder.

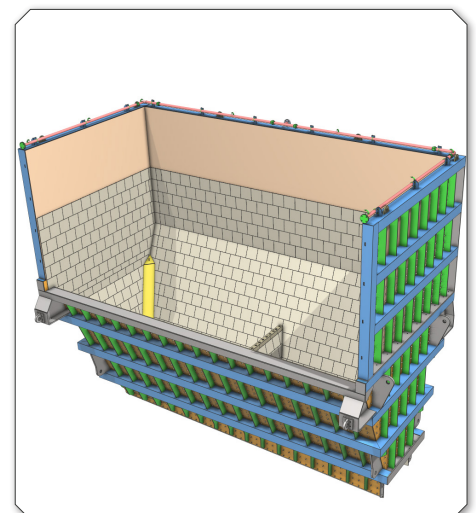
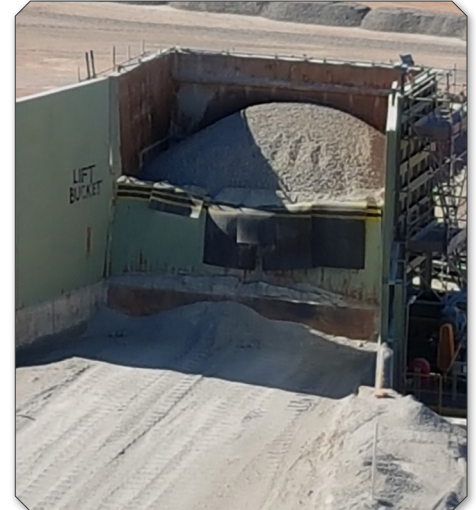
### THE FINAL SOLUTION

Designed and installed within a tight timeframe, the final design incorporated hungry boards, a dust suppression spray system and provision for a future grizzly screen.

The following key features were incorporated into the design:

Wear Liners:	Polished Arcoplate, bolted replaceable tiles
Baffles:	Single, offset central baffle to encourage uniform draw down
Wall Angles:	Minimum of 70 degree wall angles, incorporating bolted replaceable corner baffles

The hopper was manufactured in Kalgoorlie and transported to site where it was installed and successfully commissioned.



For more information on this project, or any other enquiries, contact us + 61 (0)8 9332 3454 or [sales@bhtgroup.com.au](mailto:sales@bhtgroup.com.au)