BULKHANDLING TECHNOLOGIES

CONVEYOR HEAD CHUTE DIVERTER

Custom Engineered Solutions

PROJECT SCOPE

Project:	Gold Mine, Western Australia
Material:	Gold Ore (Primary Crushed)
Equipment:	Belt Conveyor Head Chute
Capacity:	2,400 TPH
Scope:	Design and supply of new head chute
Aim:	Divert and split the discharge from belt conveyor to reduce stockpile segregation in storage hopper below.

As part of a project to improve the performance of a crushing and screening circuit, Bulk Handling Technologies (BHT) was commissioned to investigate the cause of uneven feeding and segregation in the material extracted by two screening belt feeders beneath a large storage hopper.

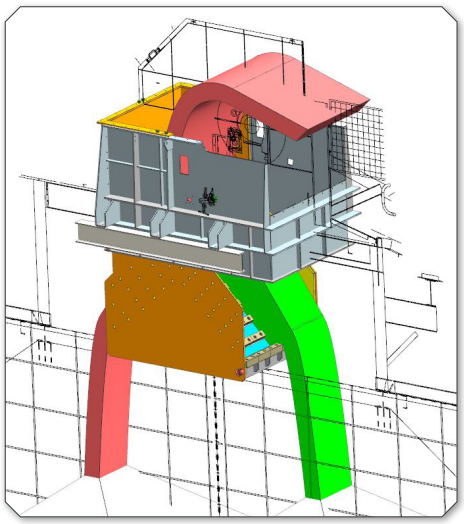
The uneven filling resulted in the discharge belt feeders operating at different speeds in an effort to try to maintain a uniform level in the hopper. This meant the screens downstream were not operating at equal capacity, with one screen operating at well below its design capability.

Additionally, the product segregation in the screen feed caused uneven distribution across the screen, resulting in uneven wear and reduced screening efficiency.

DESIGN CHALLENGES AND CONSIDERATIONS

The original design incorporated a standard head chute with a rock box and a single stream discharge, creating a slightly offset, single stockpile within the hopper as it filled. Due to the large variation in lump sizes, this resulted in typical 'stockpile segregation', with the fines congregating towards the centre and the larger lumps rolling down the sides of the stockpile towards the edge of the bin.

To more evenly fill the hopper, and reduce size segregation at the hopper discharge, the aim was to split the conveyor discharge into two equal streams to form two evenly distributed stockpiles, each located directly above a discharge feeder. The challenge was to engineer a solution which could fit within the constraints of the existing head chute, and incorporate features and materials to ensure long life, with separable, replaceable components.

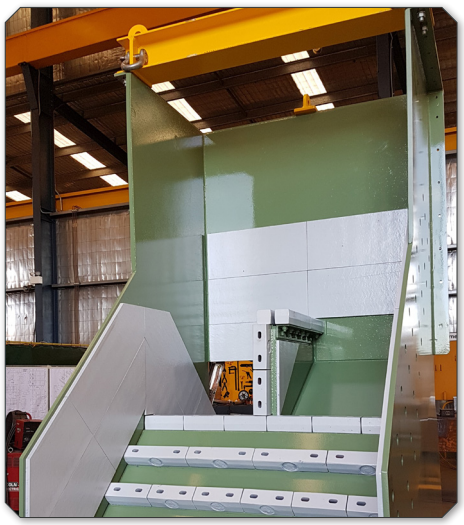


THE FINAL SOLUTION

Designed as a removable 'drop-in' wear item, the final design incorporated a new lower head chute assembly and included the following key features:

Wear Blocks:	Replaceable bolt-in abrasion resistant, white iron casting.
Wear Liners:	Mixture of Arcoplate 1600 and Bisalloy 400.

The new head chute was manufactured in Perth 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