



## *Crushed Ore Bin Installation*

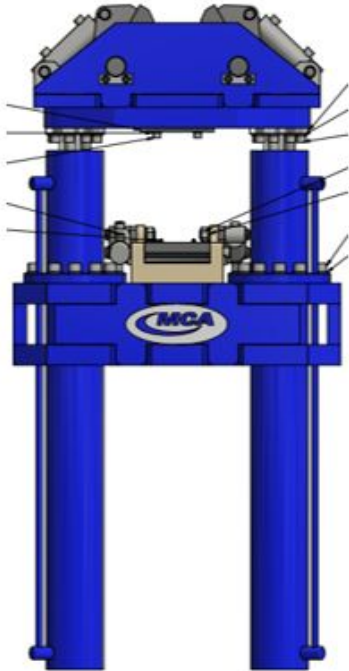
ABOVE OR BELOW GROUND. MCA  
DELIVERS.

# Purpose

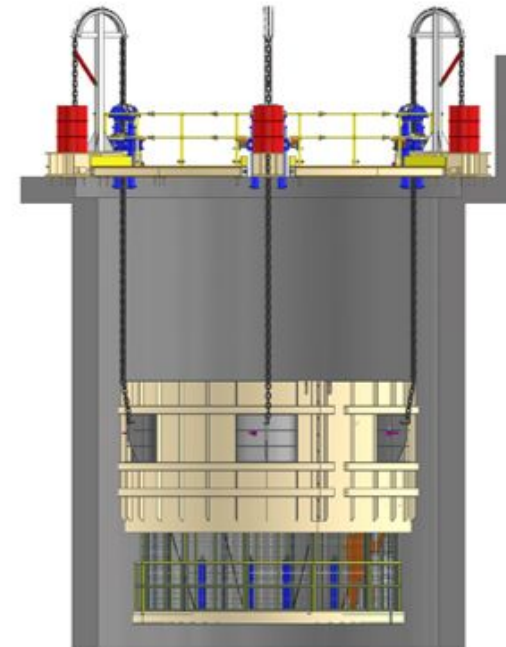
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## **This presentation intends to showcase:**

The effectiveness and reliability of MCA's Chain Jack engineering solution to COB installation

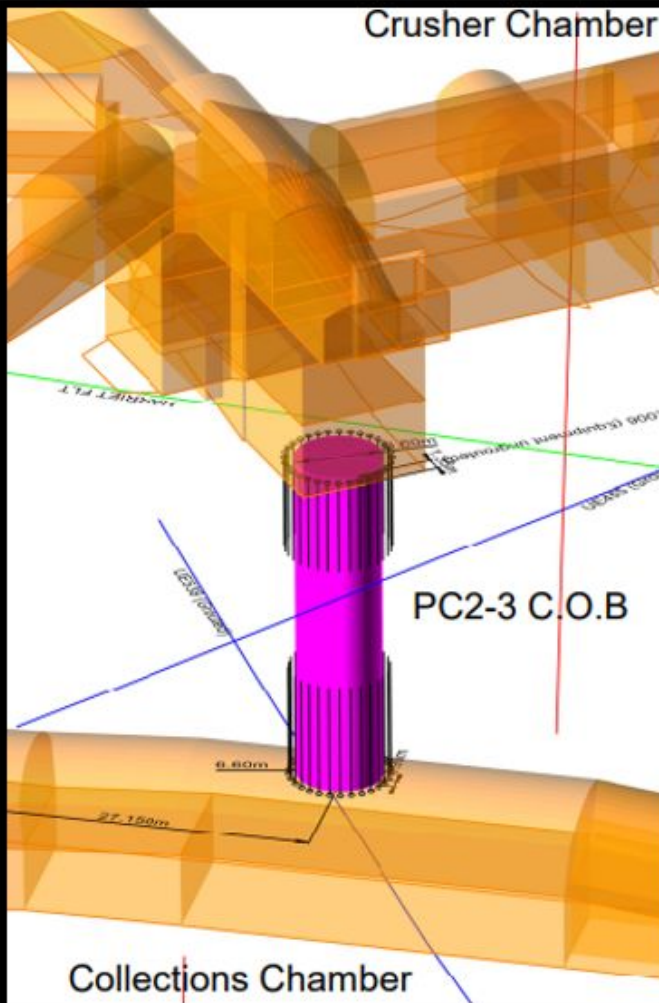


The efficiency and reliability of MCA Engineering to install and implement this solution





## CADIA EXPANSION PROJECT- COB Can and Rail Mat Installation



MCA was Engaged by Newcrest to install COB Can and Rail Mats into an excavated shaft between an *Ore Crushing Station* and a *Collection Conveyor* as part of the Scope of Facilities in the Cadia Expansion Project.

This excavation was approximately **32 m** deep and **6.6 m** in diameter.

Installed into this excavation was approximately **85 tonnes** of COB Cans and **162 tonnes** of Rail Mat Liners

# Project Summary

## Project Requirements

### Specialised and Engineered Installation Equipment:

- Operation and Maintenance Manuals
- Design Calculations, Documents and Drawings
- Factory Acceptance Testing of Lifting/Lowering Mechanism

### Underground Works:

- Labor, Supervision and Equipment for all construction and installation
- Install chairing structure, hydraulic power pack, jacking system and chain drums
- Assemble and install Can sections
- Scribe underside of bin brow for Shotcrete plug
- Oversee concrete placement to backfill annulus
- Clean up and demobilisation from site

## Project Outcomes



### SAFETY

- ZERO Incidents



### PERFORMANCE

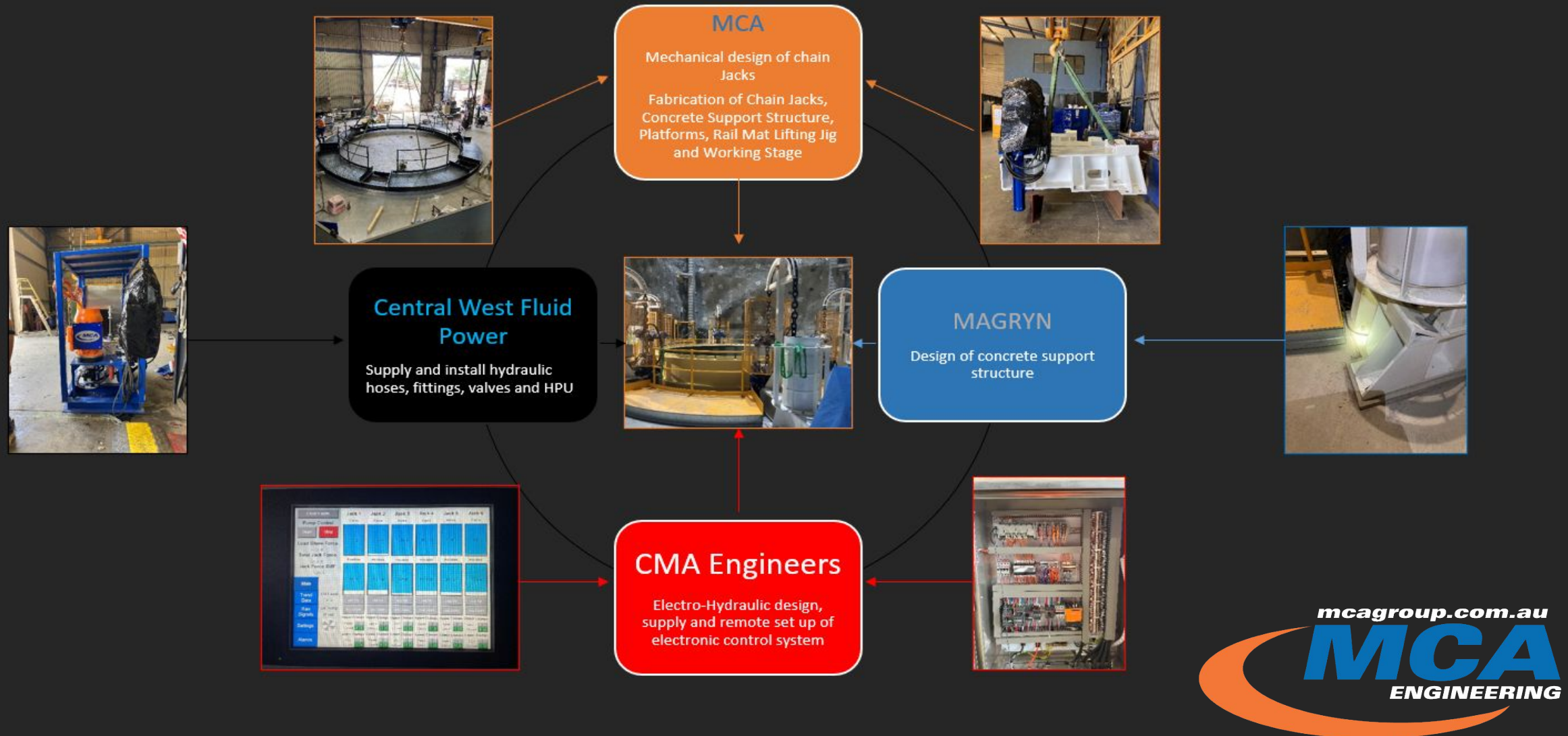
- 48 Shifts to complete with average of 6 personnel
- ZERO Jacking System Faults



### CONFORMANCE

- Complete alignment with As-Constructed Drawings dimensions and specification's
- Complete conformance with client testing and pre-commissioning requirements

# Design and Fabrication

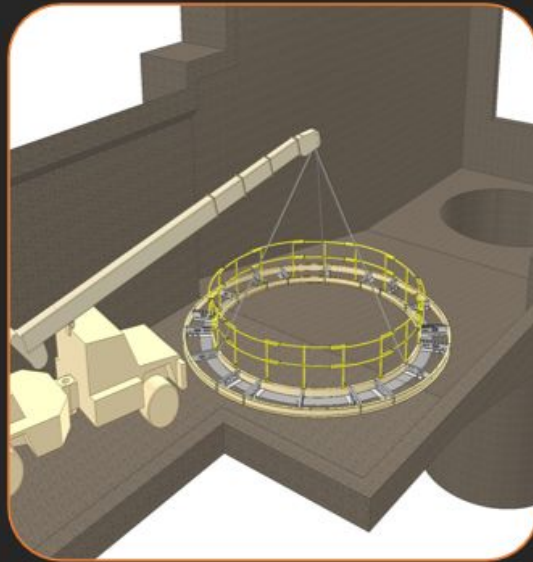




# Installation Process - 1. Walkway Ring



Transported Blow Surface



Lifted via Franna Crane onto position over shaft

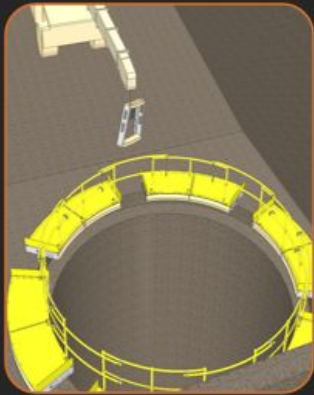


Anchored into position around shaft



# Installation Process - 2. Jacking Beams

Changed out Walkway  
Spaces for Drill Templates



Drilled and Installed Bolts  
3.5 m deep

Installed Jacks and Jack  
beams onto position over  
shaft



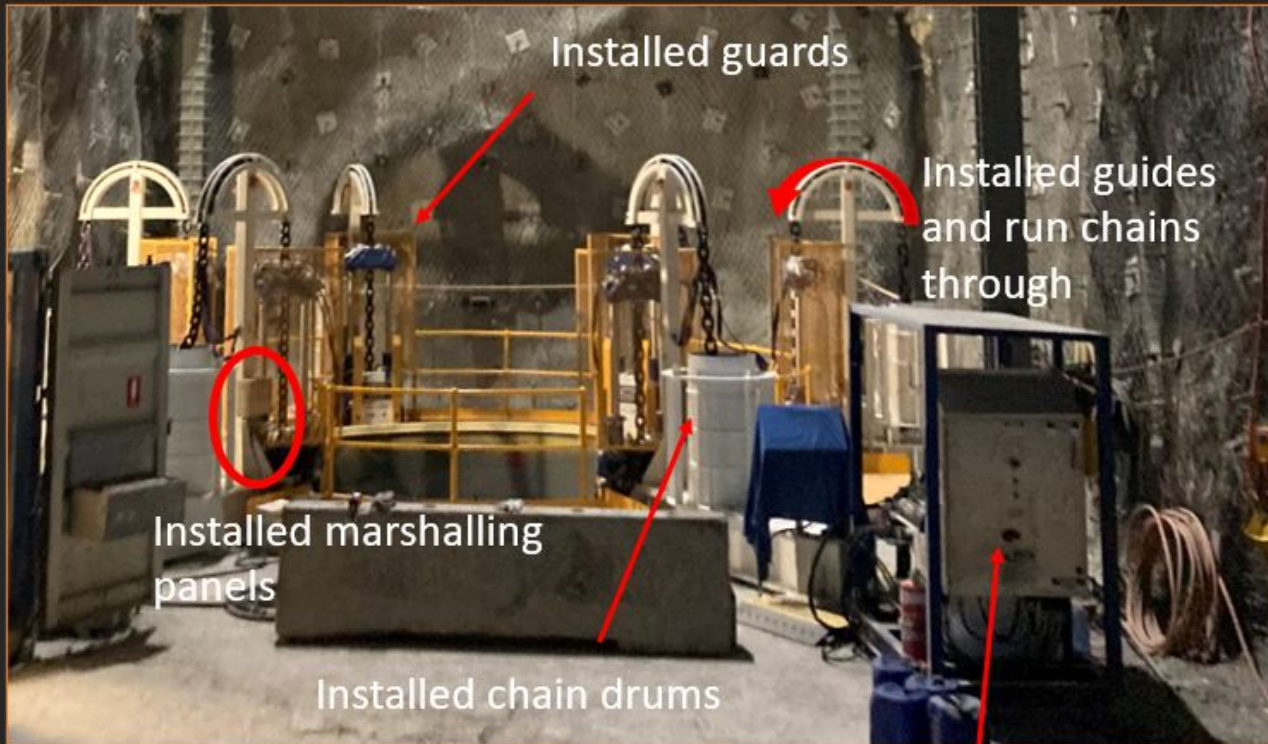
Pull tested anchor bolts to  
22 tonnes for 15 minutes

Grouted Jack Beam Plates





## Installation Process - 3. Finalised Hydraulic System Installation



Installed HPU and set up  
system cabling



Set up hydraulic hosing

Installed walkway plates



## Installation Process - 4. Transported, Assembled and Installed Cans



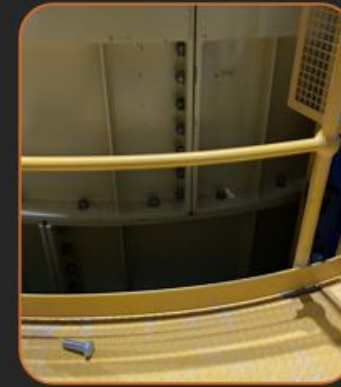
Transported Cans Below Surface



Assembled below ground



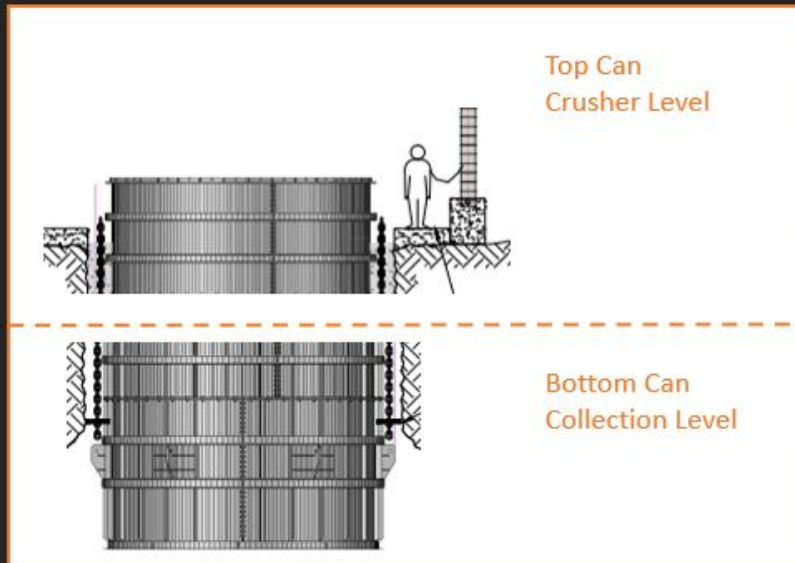
Lifted into position in shaft



Bolted onto top flange of previous Cans



Repeated until all 12 Cans were installed



# Installation Process - 5. Backfill Anulus



Installed scribing mesh



Created plug with 90 cubic meters of shotcrete

Backfilled anulus





# Installation Process - 6. Rail Mats

- Transported Rail Mats to Collection Level
- Set them up onto cradles



Repeated until all 300 Rail Mats were installed

- Attached 5 Rail Mats onto lifting gig
- Hoisted up gig with Crane at the top of the shaft
- Attached Mats to inside diameter of Cans by J bolts and welding nuts

# Timeline

Rail Mats Backfill Cans Hydraulic System Jacking Beams Walk Way Ring Mobilisation											
DATE:	9/01/2022	10/01/2022	11/01/2022	12/01/2022	13/01/2022	14/01/2022	15/01/2022	16/01/2022	17/01/2022	18/01/2022	
Rail Mats Backfill Cans Hydraulic System Jacking Beams Walk Way Ring Mobilisation											
DATE:	19/01/2022	20/01/2022	21/01/2022	22/01/2022	23/01/2022	24/01/2022	25/01/2022	26/01/2022	27/01/2022	28/01/2022	
Rail Mats Backfill Cans Hydraulic System Jacking Beams Walk Way Ring Mobilisation											
DATE:	29/01/2022	30/01/2022	31/01/2022	1/02/2022	2/02/2022	3/02/2022	4/02/2022	5/02/2022	6/02/2022	7/02/2022	
Rail Mats Backfill Cans Hydraulic System Jacking Beams Walk Way Ring Mobilisation											
DATE:	8/02/2022	9/02/2022	10/02/2022	11/02/2022	12/02/2022	13/02/2022					



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