



The Beak Lift

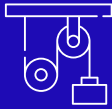
20-tonne architectural feature installed at elevation

Heavy Lifting - Taichung, Taiwan

DATA AT A GLANCE

Structure Height:	150 m
Elevation of Installation:	143 m
Weight of Beak:	20 tonnes
No. of Connection Points:	7

Bespoke Lift Engineering



Custom lifting system engineered to control vertical and lateral forces on a tapered structure.

Safety By Design



Dedicated platforms and access systems installed ahead of the lift to enable safe fixation at elevation.

Architectural Landmark



Transforming industrial infrastructure into a skyline landmark.

Project Overview

As part of the Taichung Combined Cycle Power Plant project in Taiwan, BEC was engaged by CTCL Corporation to design, fabricate and install a three-dimensional architectural beak for the environmental compliance stacks, transforming the painted geometric façade into a striking landmark visible across the Taichung skyline.

A bespoke lifting methodology was developed to safely position the assembly at elevation while achieving the precise alignment required by the architectural design.

Challenges

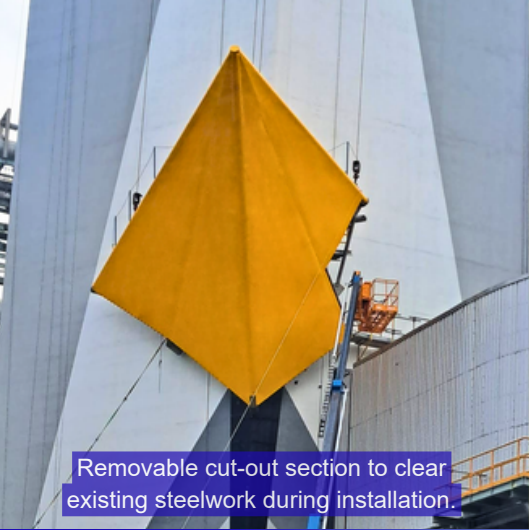
The installation combined multiple engineering and access challenges into a single lift operation.

Restricted Access: Existing pipework and steelwork below the installation point prevented the use of a conventional lifting approach.

Complex Geometry: The 14-metre-wide V-shaped assembly required precise fabrication, rigging, and load control to maintain alignment during lifting.

Installation at Elevation: Extensive temporary access systems were required to enable safe installation on a 150-metre chimney within an operating power station environment.

Guided Lift on a Tapered Stack: The beak assembly required a bespoke wheel-guided lifting system to maintain controlled contact with the chimney face as it travelled up the tapering windshield.



Removable cut-out section to clear existing steelwork during installation.



Pre-installed platforms and access points enabled safe fixation at elevation.



Custom lifting methodology enabled controlled positioning.

Owner

Taiwan Power Company

Client

CTCI Corporation

Completion Date

June, 2026



Balanced Engineering & Construction Pte Ltd

Detail of work by BEC

BEC engineered a purpose-built solution to each constraint.

Hybrid Lifting System: BEC developed a bespoke lifting arrangement combining strand jacks and chain blocks to manage both vertical lifting loads and lateral forces. The system provided precise control of the beak assembly throughout the installation, enabling safe movement and positioning against the tapered windshield.

Purpose-Built Assembly Design: The structure was engineered with removable sections to safely navigate existing infrastructure during the lift.

Guided Installation System: A custom wheel-guided arrangement maintained alignment and controlled movement against the chimney face throughout the installation.

Access & Final Integration: Temporary access systems, safety infrastructure, and precision field-fitting enabled safe installation and final alignment at elevation.

The BEC Impact

The BEC team developed the complete constructability solution, integrating specialist access, temporary works, bespoke lifting equipment, precision fabrication and installation sequencing into a single coordinated methodology, enabling safe installation of a 14-metre-wide, 20-tonne architectural feature at 143 metres while overcoming complex access constraints, existing structures and the tapered hexagonal profile of the chimney.

The result demonstrates the value of engaging a contractor capable of solving complex engineering challenges, not simply executing drawings.

For Taipower, the outcome is a 150-metre industrial chimney now visible and recognisable across the Taichung skyline.



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