

# Case Study

## Integrated Access & Lifting System for Liner Replacement in Confined Vertical Structure

Kuwait

### DATA AT A GLANCE

<b>Structure Height:</b>	192 m
<b>Internal Diameter:</b>	4.3 m
<b>Platform Diameter:</b>	4.1 m
<b>Liner Plate Weight:</b>	200 kg

### Engineered Access



Custom-designed circular platform integrated with overhead rail and lifting system.

### Safety Excellence



Zero LTI achieved, with two team members recognised for outstanding safety performance.

### Efficient Execution



On-schedule delivery through coordinated access, lifting, and installation under constrained conditions.

## Project Overview

BEC developed and delivered an engineered access and lifting solution to support liner plate replacement works inside a large-diameter emissions control structure at the Al-Zour South Power and Water Distillation Station.

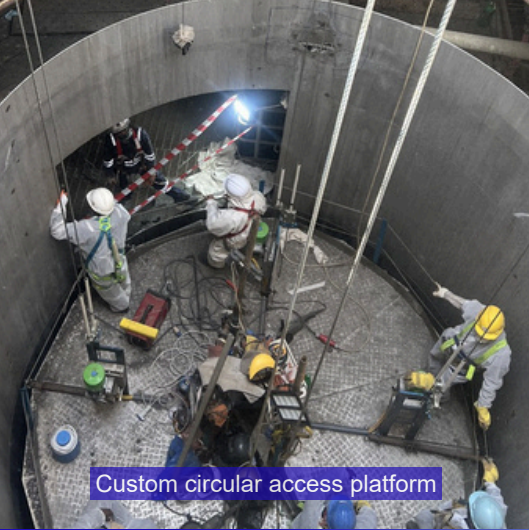
The works were executed within a confined cylindrical geometry, at height, requiring precise coordination of access, lifting, and installation activities.

Rather than treating access and lifting as separate challenges, both were integrated into a single engineered system designed to improve control, reduce manual handling, and support safe, efficient execution.

## Challenges

The project combined access, lifting, and environmental constraints rarely encountered together.

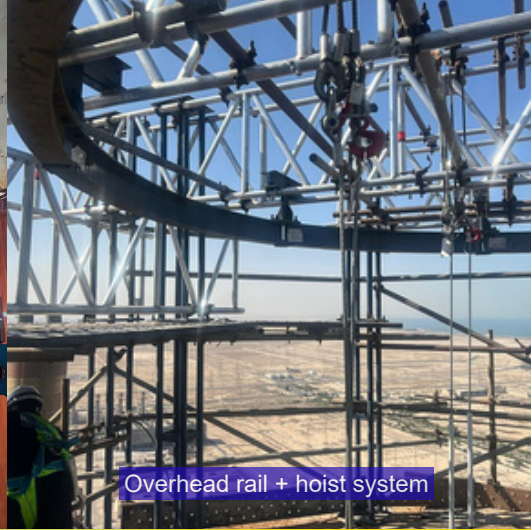
- Confined vertical workspace with limited access
- Ambient temperatures reaching up to 50°C
- Simultaneous access, lifting, and installation constraints
- Heightened regional security conditions



Custom circular access platform



Liner plate installation



Overhead rail + hoist system

**Owner**

Ministry of Electricity and Water and Renewable Energy (Kuwait)

**Client**

STS Kuwait

**Completion Date**

March, 2026

**BEFORE**

**AFTER**



## Detail of work by BEC

BEC developed an integrated access and handling solution for execution within a constrained circular structure.

- Custom circular platform for continuous access
- Integrated overhead rail + hoist system for controlled lifting
- Structured, repeatable installation sequence
- Reduced manual handling through engineered workflow

As part of the works, the concrete windshield underwent cleaning and repainting to restore surface condition and maintain long-term durability.

## The BEC Advantage

Delivered an engineered access solution for liner replacement works, reducing manual handling and achieving zero lost-time injuries across the project. Key outcomes included:

- Improved safety through reduced manual handling
- Controlled lifting and installation
- Efficient execution within confined geometry
- Maintained progress under challenging conditions
- Restoration and protection of the external structure through surface treatment works

The integration of access and lifting systems enabled a more efficient and disciplined approach to execution, demonstrating the value of engineered solutions in complex industrial environments.



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