

Manjung 4, Malaysia



Key facts about the plant

- 1x1000 MW ultra-supercritical coal fired power plant
- Owner: TNB Janamanjung Sdn Bhd
- Contractor: Mudajaya Corporation



MUDAJAYA CORPORATION BHD

Key facts about the chimney

- Completed in 2014
- Concrete chimney
- Bottom conical to top cylindrical shape
- H 200m
- Outer $\varnothing = 20.1\text{m}$ (bottom), 15.1m (top)
- 1 carbon steel liner, $\varnothing = 8,300\text{mm}$ with borosilicate protection

Located in Manjung, Perak State, approximately 207km Northeast of Kuala Lumpur, this power plant is the first 1,000 MW ultra-supercritical coal fired power plant in South-East Asia. It is the extension of the previous Manjung coal power plant (3x700MW) that went to operation in 2004.

The plant is owned by TNB Janamanjung Sdn Bhd, a subsidiary of Malaysia's state-controlled power generation, transmission, and distribution company Tenaga Nasional Bhd (TNB).

In this power plant, FERBECK has been awarded an EPC contract of a 200 meter-high-concrete chimney by Mudajaya Corporation.

FERBECK will be involved in Manjung 5 concrete chimney and silo project in 2015*.



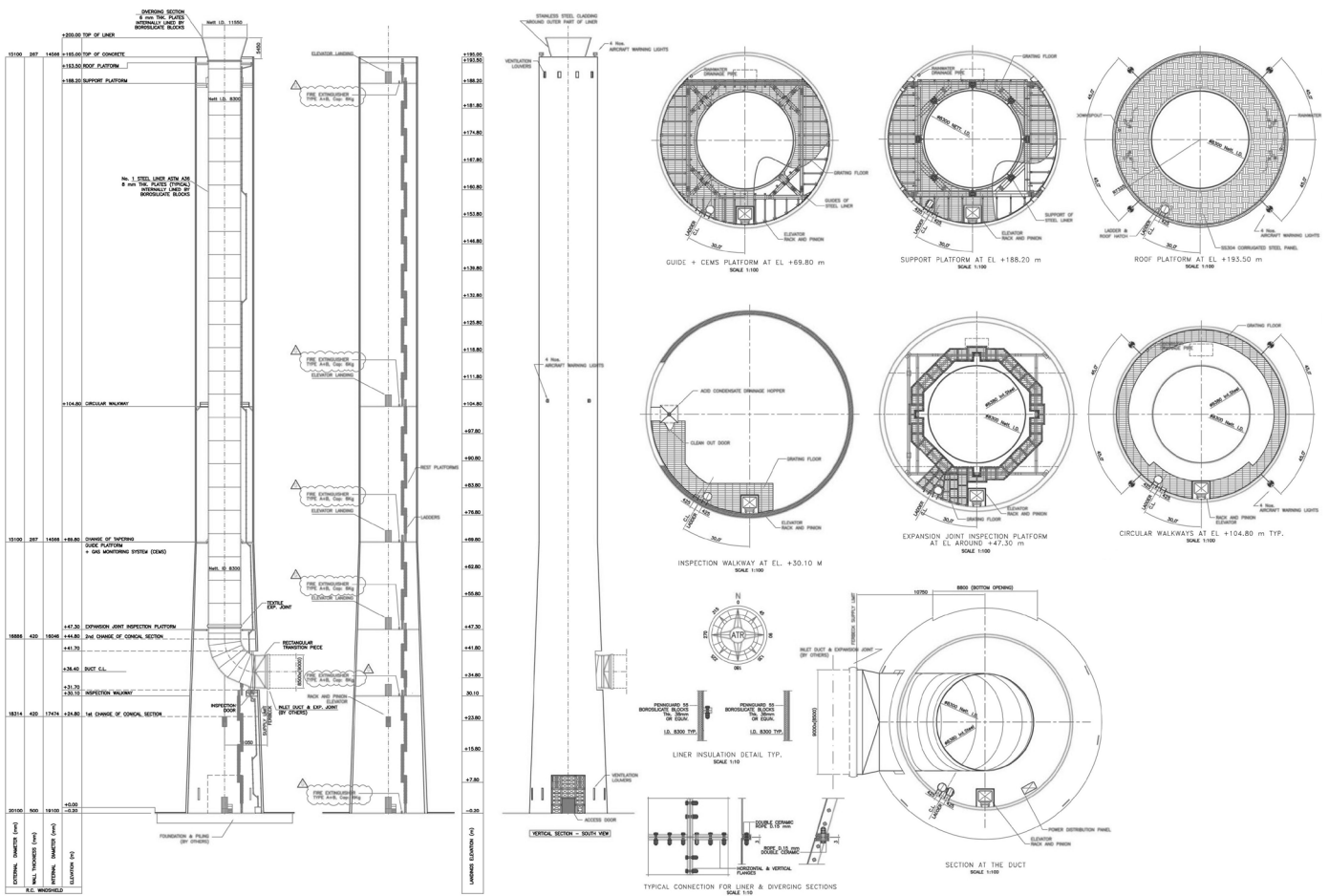
* see Manjung 5 concrete chimney and concrete silo project reports



Concrete chimney

FERBECK's scope of work includes:

- foundation
- concrete shell
- outer shell coat
- steel platforms and walkways
- borosilicate as internal protection
- all other steel elements (doors, windows...)
- access lift ladders
- electric system (lighting, inner power supply, aircraft signalization lamps...)
- lightning protection system



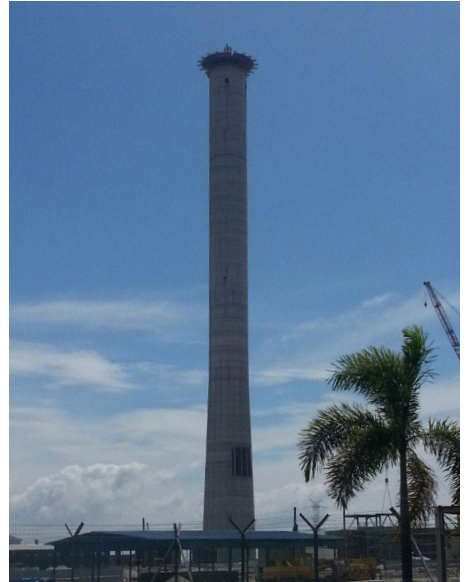
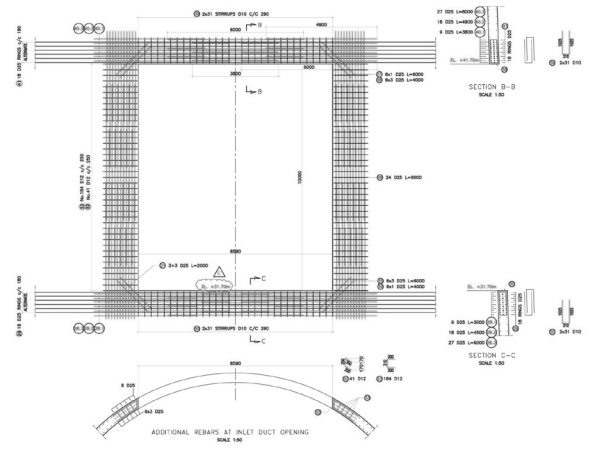
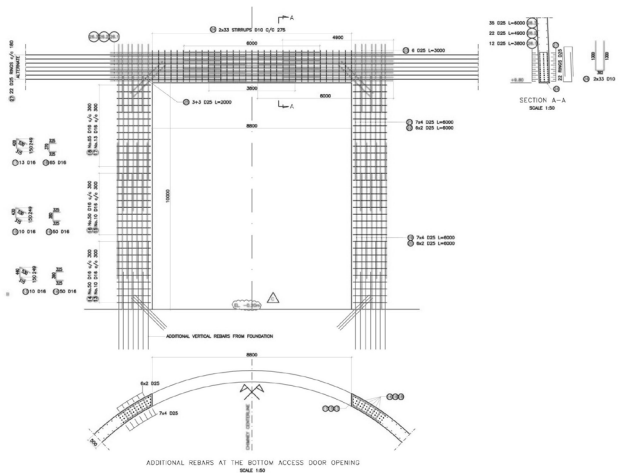


Concrete shell

The outer concrete shell is made of 2,950 m³ of concrete with and 350 tons of steel reinforcement the following size:

- h 200m
- 20.1m (bottom), 15.1m (top) of external diameter

The casting is performed with a slipform operating 24/7.

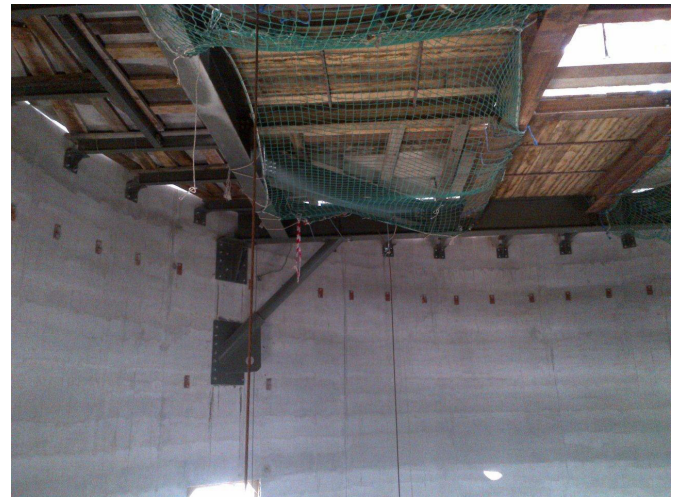




Platforms

4 platforms and 2 walkways are installed inside the structure:

- roof platform at EL.+193.5m
- support platform at EL.+188.2m
- AWL maintenance circular walkway at EL.+104.8m
- guide platform and CEMS at EL.+69.8m
- expansion joint inspection platform at EL.+47.3m
- inspection walkway at EL.+30.1m

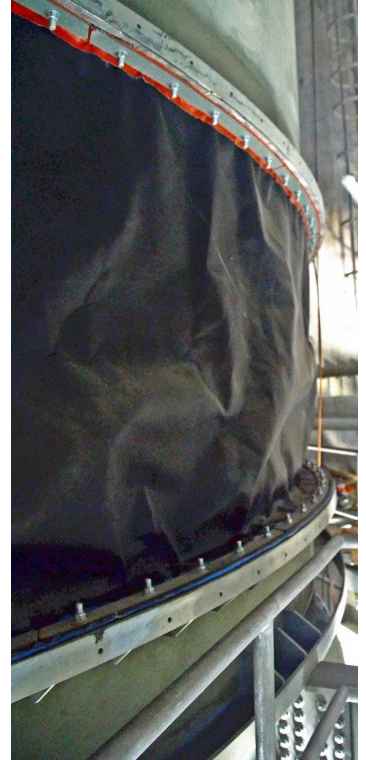




Liner

The steel liner diameter is 8,300mm until EL.+194.5m. To optimize the natural draft in the liner, a divergent exit is installed, expanding the diameter from 8,300mm to 11,550mm.

This diverging section is one of the most challenging part of the installation; due to a last minute revision of draft data when the steel liner was already installed, the bolted panels are assembled at top.





Overview of the plant

