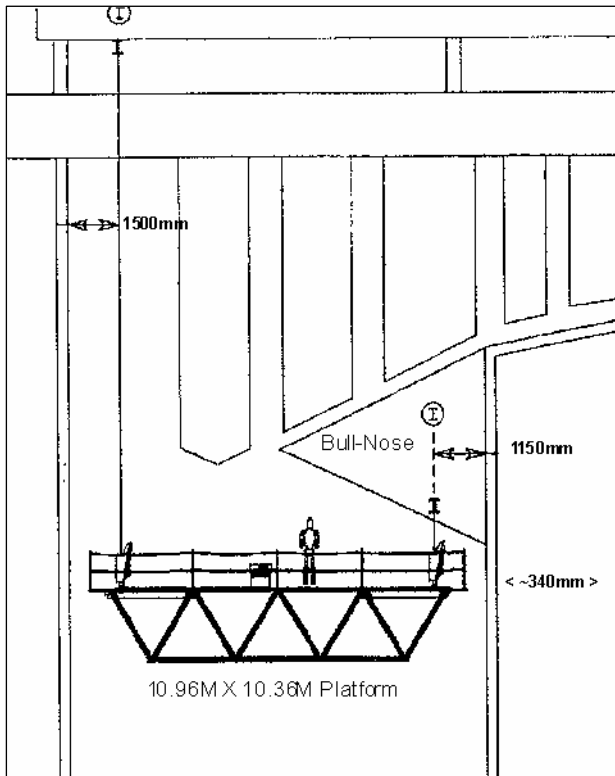


Power Station Boiler Access (Edenderry Power Plant)

Boiler Access Platform

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All conventional fossil fuel-fired power stations rely on large boilers to generate steam required to drive the generators.

These boilers must be regularly cleaned and serviced in order to keep efficiency level high.

For assisting with the internal maintenance ALPS offered and have supplied and installed an alternative to "bird-cage" scaffolding.

The boiler chamber shown is some 12M X 11M in plan with the boiler "roof" some 40M up from the floor.

The power station engineers required a rapid and efficient access method to enable the walls, bull nose and hanging super-heater pipes to be sand-blasted, inspected and repaired where necessary.

Work to the floor of the boiler was also required at the same time.

The previous year conventional scaffolding had been used for accessing the boiler chamber, this proving time-consuming, disruptive and very costly.

ALPS were chosen to design, install, thoroughly examine and hand-over a modular alloy space-frame access platform that could be installed quickly and would enable all works to be carried out safely and efficiently.

The only opening into the boiler chamber was a 580mm dia' access hatch near the base of the boiler through which all components for the ~132M sq. suspended access platform must pass.



580mm opening into boiler



2.44M structural alloy cord



128 cords construct the platform

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Boiler Access Platform

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The access platform chosen was ALPS proven pinned space-frame system comprising of 2.44M alloy-cords, steel-nodes and high-tensile pins; The decking-panels, perimeter protection, lifting & safety equipment are quickly added.



The lifting-cord is fitted to the node



The space-frame is assembled



typical lower node and cord



The suspended platform is quickly assembled by 6 operatives and is ready for lifting in 2 shifts (12 man-days)

The platform is powered vertically using a small portable hydraulic power pack. Digital strain-gauges are installed in order to confirm the weight of the platform, also to test the upper suspension locations and monitor platform loadings.

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Boiler Access Platform

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The platform is raised and lowered using 4 X 3200Te powered hoists, each double reeved to generate a combined lifting capacity of 25.6Te; the self weight of the platform is 6.5Te.



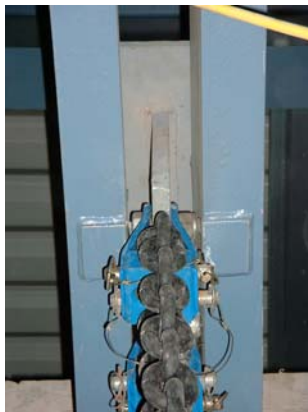
^ 3200Kg Hoist and secondary safety devise

Each hoist is double reeved for a 6400Kg lift >



The chosen suspension method was to make small slots between the pipes in the boiler roof to enable the 16mm suspension chains & ropes and to pass through.

Existing large steel beams above the boiler roof were used for primary support. Each hoist termination was protected by a secondary safety termination



Left: Anchor location above "Attic"



Right: Anchor location in "Bull-Nose"

The platform was rated for a capacity of 5Te when travelling vertically and 10Te when static (Parked under the under the bull-nose)

A small quantity of scaffolding was used to gain access from the suspended platform below the bull nose up to the super-heaters, walls and roof of the boiler.

The platform was removed from the boiler in its entirety by 4 operatives in one shift



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