LEADING SAFETY PRACTICE 0082 / 30062023

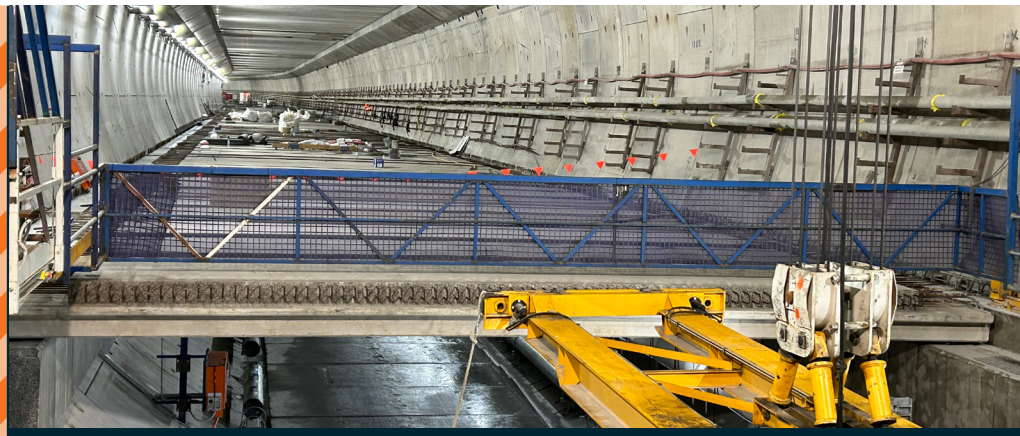
CONTINUOUS EDGE PROTECTION TRAVELLING HANDRAIL SYSTEM

MAJOR TRANSPORT INFRASTRUCTURE AUTHORITY

The travelling handrail system installed on the Plank Installation Gantry provides continuous edge protection for the open edge created during road deck installation

The travelling handrail system is installed on the Plank Installation Gantry. When the gantry relocates in preparation for the next installation, the handrail system moves maintaining continuous edge protection.

The system provides continous edge protection for personnel on the road deck during plank installation.



The travelling handrail moves with the gantry following installation of each road deck plank

The Situation

The process of installing road deck precast planks results in a sequence of unprotected edges as each plank is butted up to the next. On the West Gate Tunnel Project, there will be 2548 precast planks installed to complete the construction of both tunnels. Each movement of the gantry exposes personnel to a potential 3.7 metre fall, if left unprotected.

Workers accessing the road deck level prior to the completion of road deck plank installation were previously protected from the live edge by temporary barriers. However, this required scaffolders to sequentially construct and dismantle temporary barriers as the road deck installation progressed, requiring scaffolders to work in fall restraint, due to the live edge.

The Solution

While seeking a more efficient method that did not expose personnel to the live edge, a member of one of the maintenance team suggested the concept of a travelling handrail system for the Plank Installation Gantry . The idea was subsequently designed, built, installed and trialled in collaboration between the engineering and maintenance teams.

The travelling handrail is a fixed extension fitted to the existing gantry structure. The handrail system provides a physical barrier and moves with the gantry when it is relocated in preparation for the next plank installation, maintaining a continuous barrier to the live edge. This solution eliminates the need for scaffolders to be exposed to a live edge as they dismantle and reassemble temporary barriers, in line with the road plank installation progress.

Benefits and learnings

The travelling handrail system is an engineering control and provides effective continuous edge protection for workers accessing road decks.

The handrail system has eliminated the requirement for more than 2500 temporary barriers to be erected or dismantled, reducing the risks to scaffolders associated with working at heights and manual handling.

The elimination of temporary barriers results in approximately 3-hour time savings per installation, due to scaffolding teams no longer erecting and dismantling the scaffold edge protection.

As such, approximately 7500 hours is saved through this engineering solution.

MTIA0000

Program Office: West Gate Tunnel Project
Work Package: Tunnel Zone
Principal Contractor: CPBJH
Solution vendor: N/A

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