



121 Exhibition
Street

November 2023



FYE 2023





MTIA HEALTH & SAFETY AWARDS

Purpose



Recognise the collective effort of relevant MTIA PO and their respective delivery partners to support the safe delivery of MTIP and improved health and safety performance outcomes



Identify and promote efforts of MTIA Delivery partners, including subcontractors, workers and other relevant parties to continue to explore and realise opportunities for continuous improvement in H&S systems, processes and technology



Enable the sharing and promotion of leading H&S practice activities across MTIA and with the broader construction industry that support and influence sustainable H&S improvements across the industry.



Encourage MTIA POs and delivery partners to broaden their focus and purposefully seek out and promote positive H&S practices and innovations



Utilise an existing MTIA-wide safety promotional initiative, the MTIA Leading Safety Practice (LSP) publications, for the purposes of the Awards Program application to expand the library of H&S publications.

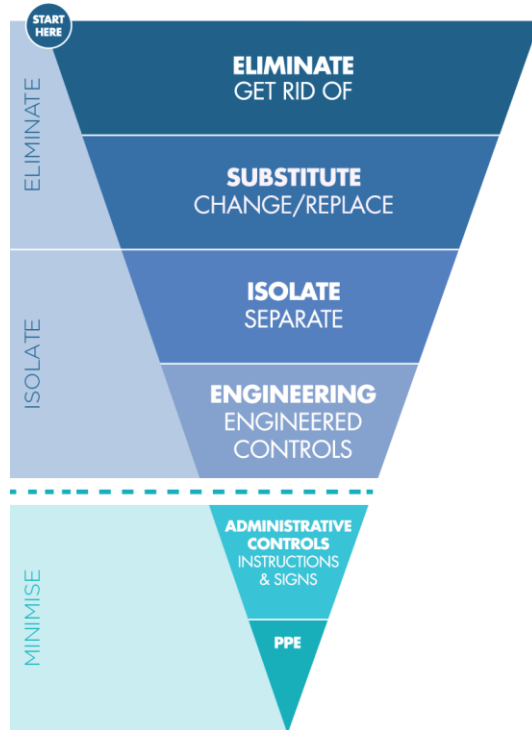


Acknowledge and celebrate the collective H&S contribution of the MTIA PO and their respective delivery partner



MTIA HEALTH & SAFETY AWARDS

Initiatives seek to



Common risks addressed

1. Working at heights



2. Working in and around mobile plant



3. Working with temporary works



4. Working with live services



5. Working near live traffic



6. Mobile cranes and lifting operations



7. Electrical work



Award Categories

MTIA CEO's
Health and Safety
**Delivery
Award**



CEO Delivery Safety Award

- ✓ A health and safety initiative, program or innovation that provides improved health and safety outcomes for project delivery.

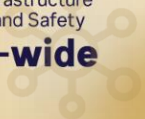
MTIA Director-General's
Health and Safety
**Innovation
Award**



Director-General Innovation Award

- ✓ A health and safety initiative, program or innovation that is future focused.

Major Transport Infrastructure
Authority's Health and Safety
**Program-wide
Award**



MTIA Program-wide Award

- ✓ A health and safety initiative, program or innovation that has potential for program wide adoption.

Scoring Criteria

- ✓ **Injury Prevention** - assessment against the Hierarchy of Control
 - High (Engineering/Substitution/Engineering) to Low (Administration/PPE)
- ✓ **Implementation Cost** - qualitative assessment
 - Perception that cost is commensurate with hazard it is controlling
- ✓ **Ease of Use and Utilisation** - simplicity of its use and re-use
 - Barriers such as complexity, specialist resource etc.
- ✓ **Degree of Innovation**
 - Use of existing technology in a new/novel way, new solution, add-on to existing solution
- ✓ **Leading Safety Practice publication**
 - Well written, use of visuals to assist understanding, clear case for benefit etc
- ✓ **Award specific scope**
 - Delivery Award, Innovation Award or Program-wide Award

MTIA HEALTH & SAFETY AWARDS

MTIA CEO's Health and Safety Delivery Award



Shortlist



LEADING SAFETY PRACTICE 001/2022/001

REDUCING PLANT OPERATING ZONE RISK USING TECHNOLOGY

The Step 3 remote E-Stop system replaces original E-Stops on mobile and fixed plant with the added functionality of remote activation.

The Step 3 remote E-Stop allows for remote activation and deactivation of the plant operating zone with a key, and also the capability to the extent of emergency change.

This employs a designated system to stand outside of the plant operating zone with a key, and also the capability to the extent of emergency change.

Thomas Safety Group 3 - remote E-Stop system installed on a concrete pump truck, better remote activation of the system ensuring control of safety risks.

The situation
Every year, serious incidents occur due to plant and people interaction across various scenarios and sites that interface with public areas. A common industry concern is the use of a single, often passive communication system to manage high risk hazards, such as confined or congested work areas, and the potential for human error. However, a common issue across many sites is the lack of a single, often passive communication system to manage high risk hazards, such as confined or congested work areas, and the potential for human error.

The solution
The Step 3 system is installed in place of the regular E-Stop and is designed to be used by the operator. This allows the operator to stop the machine from 10m away without the need for a single, often passive communication system to manage high risk hazards, such as confined or congested work areas, and the potential for human error. This system is designed to be used by the operator. This allows the operator to stop the machine from 10m away without the need for a single, often passive communication system to manage high risk hazards, such as confined or congested work areas, and the potential for human error.

Benefits and savings
When the Step 3 system is installed in place of the regular E-Stop and is designed to be used by the operator. This allows the operator to stop the machine from 10m away without the need for a single, often passive communication system to manage high risk hazards, such as confined or congested work areas, and the potential for human error. This system is designed to be used by the operator. This allows the operator to stop the machine from 10m away without the need for a single, often passive communication system to manage high risk hazards, such as confined or congested work areas, and the potential for human error.

Program Office: MTIA
Project Manager: MTIA
Client: MTIA
Project Lead: MTIA

Lead: MTIA
Client: MTIA
Project Lead: MTIA

LEADING SAFETY PRACTICE 002 / 2022 / 0003

DELIVERY TRUCK INSPECTION CAMERAS

Ensuring delivery truck loads are evenly distributed within the trailer and trailer body through inspection cameras.

Using the CXTM Mobile Real System the project team has been able to ensure delivery truck loads are evenly distributed within the trailer and trailer body through inspection cameras.

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The situation
The project team has been able to ensure delivery truck loads are evenly distributed within the trailer and trailer body through inspection cameras.

The solution
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Benefits and savings
The project team has been able to ensure delivery truck loads are evenly distributed within the trailer and trailer body through inspection cameras.

Program Office: MTIA
Project Manager: MTIA
Client: MTIA
Project Lead: MTIA

Lead: MTIA
Client: MTIA
Project Lead: MTIA

LEADING SAFETY PRACTICE 003/2022/002

T-LOK STEEL WEDGE PIERCE - SAFETY BARRIER

The T-Lok Steel Wedge Piece is placed in between individual T-Lok M808 concrete barriers, and greatly increases the workable construction area behind barriers in congested locations.

On the Melbourne City West Road Tunnel Project, the T-Lok Steel Wedge Piece is placed in between individual T-Lok M808 concrete barriers, and greatly increases the workable construction area behind barriers in congested locations.

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Benefits and savings
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Program Office: MTIA
Project Manager: MTIA
Client: MTIA
Project Lead: MTIA

Lead: MTIA
Client: MTIA
Project Lead: MTIA

LEADING SAFETY PRACTICE 004 / 2022/003

HAND ARM VIBRATION AWARENESS AND ELIMINATION

Increasing knowledge of hand arm vibration and the implementation of remote operation to eliminate exposure.

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The solution
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Benefits and savings
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Program Office: MTIA
Project Manager: MTIA
Client: MTIA
Project Lead: MTIA

Lead: MTIA
Client: MTIA
Project Lead: MTIA

LEADING SAFETY PRACTICE 005 / 2022/001

REDUCING COST BY COLLABORATION AT PROJECT INTERFACES

Three projects with 3 Principal Contractors working collaboratively to deliver a collective Safety Culture program, realised reduced costs and a collaborative team environment.

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Program Office: MTIA
Project Manager: MTIA
Client: MTIA
Project Lead: MTIA

Lead: MTIA
Client: MTIA
Project Lead: MTIA

LEADING SAFETY PRACTICE 006 / 2022/002

SAFER HANDLING OF GEOFABRIC ON WEST GATE TUNNEL PROJECT

A safer process for rolling out 2 layers of geofabric and geo grid simultaneously was developed by workers on the West Gate Tunnel Project.

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The solution
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Benefits and savings
The project team has been able to ensure delivery truck loads are evenly distributed within the trailer and trailer body through inspection cameras.

Program Office: MTIA
Project Manager: MTIA
Client: MTIA
Project Lead: MTIA

Lead: MTIA
Client: MTIA
Project Lead: MTIA



MTIA HEALTH & SAFETY AWARDS

MTIA CEO's
Health and Safety
**Delivery
Award**



High Commendation



Major Road Projects Victoria Seymour Whyte Constructions – Keep Ballarat Moving

LEADING SAFETY PRACTICE 0060/27022023

REDUCING PLANT OPERATING ZONE RISK USING TECHNOLOGY



The Stop It remote E-Stop system replaces original E-Stops on mobile and fixed plant with the added functionality of remote activation.

The Stop It remote E-stop allows for remote activation and resetting via a remote button with a range of up to 100 meters.

This enables a designated spotter to stand outside of the plant operating zone with a fob and stop the machine in the event of imminent danger.



Thompson Safety Stop It - remote E-Stop system installed on a project excavator (left). Spotter's remote activation of E-Stop system simulating control of traffic (right).

The situation

Every year, serious incidents occur due to plant and people interaction across enclosed work sites and sites that interface with public areas.

A common industry control is the use of a spotter under positive communication strategies to manage high risk hazards, such as overhead or underground services and plant / people interfaces.

However, in serious events where every second counts, positive communication methods can result in delayed or undeliverable communications between operator and spotter.

An alternative to positive communications are E-Stops, which are installed on mobile to allow immediate deactivation of the plant. However, the location of the E-Stop on mobile plant requires a person to enter the plant operating zone to activate.



Scan QR Code to
watch video of
Stop It in action

The solution

The Stop It system is installed in place of the regular E-Stop and adds remote functionality to plant and equipment. This allows authorised spotters to stop the machine from up to 100 meters away without delays that are sometimes caused by radio chatter and communication difficulties.

This design eliminates the need for the spotter to enter the operating zone of plant and equipment. The Stop It system is a simple, cost effective device that is easily fitted in place of the regular E-Stop for a wide range of plant and equipment.

The trial implementation of Stop It deemed the device as effective in the following circumstances:

- When height and slew restrictors are not available or deemed ineffective on mobile plant
- Where spotters are required to maintain large exclusion zones from plant and equipment
- When safe exclusion zones cannot be maintained
- Low cost and (often) direct replacement installation with minimal down time required.

Benefits and learnings

- When fitted to a wheeled excavator there is residual inertia movement after the machine is shut down. This did not diminish the benefits of the device and when fitted to tracked excavators, shut down occurred with minimal movement from inertia.
- Low cost: \$896.90 ex GST, plus \$20 freight. Often direct replacement installation with minimal down time required.
- Installation is simple and can be done by an Auto Electrician.
- Easy to fit and transfer to other plant and swap back to original set ups.
- Retains manual function of the E-Stop with no impact to plant/equipment insurances and warranties.
- Frequencies are interchangeable, and fob's can be upgraded to include multiple equipment (up to 5).
- Multiple fobs can be applied to one wireless e-stop unit.
- Eliminates lag in response times caused by congested radio channels and/or communication difficulties.

Highly
Commended

Program Office: MRPV
Work Package: Keep Ballarat Moving
Principal Contractor: Seymour Whyte Constructions

Solution Vendor: Thompson Safety Pty Ltd
Contact: Mike Thompson
0407 877 878





MTIA HEALTH & SAFETY AWARDS

MTIA CEO's
Health and Safety
**Delivery
Award**



Winner



North East Link Program WeBuild – Spark (Central Package)

LEADING SAFETY PRACTICE 0076/27062023

HAND ARM VIBRATION AWARENESS AND ELIMINATION



Increasing knowledge of hand arm vibration and the implementation of remote equipment to eliminate exposure.

Spark developed a significant hygiene monitoring program to quantify anticipated health hazards, focusing on higher risk exposure groups.

Workers undertaking manual pile breakback with jack hammers were identified as high risk and a focus placed on considering risk controls to reduce a range of health hazards including Hand Arm Vibration (HAV).



The traditional method of manual concrete breaking exposing workers to significant levels of hand arm vibration (left), the use of mechanical aid that eliminates any hand arm vibration (right).

The Situation

The solution was in focusing on elimination which came in the form of a remote-controlled unit that completely eliminated the HAV and the physical exertion hazard to the operator. The team monitored hand arm vibration during pile breakback, trialling the effectiveness of different tools and methods to reduce or eliminate worker HAV.

The team identified that different manual breakers provide different levels of HAV to the operator. Additionally limitations were identified with each of the different types of manual breakers and the time that it took for the operator to meet their allowable limit of HAV was wide spread (in some instances as little as 1.5 hours of an 8 hour shift).

The Solution

The solution was in focusing on elimination which came in the form of a remote-controlled unit that completely eliminated the HAV and the physical exertion hazard to the operator.

The Brok unit is a revolutionary solution for eliminating the health hazards of HAV and physical exertion in the task of manual breaking. Commonly used for pile breakback, the unit allows operators to control the concrete breaking process from a safe distance using a remote control. By removing the need for direct operator involvement, it effectively eliminates the transmission of HAV to the worker's hands and arms.

Additionally, the unit handles the heavy lifting and breaking tasks, reducing physical strain and minimizing the risk of musculoskeletal injuries.

The unit's precise control capabilities enable efficient and accurate breaking, enhancing productivity while eliminating the need for manual effort.

Benefits and learnings

The limited knowledge in the industry regarding HAV has highlighted the need for better understanding and awareness of this health hazard.

The available tools for reducing HAV levels during manual breaking of piles have their limitations, resulting in workers being exposed to high levels of HAV.

By focusing on increasing awareness and collecting data on HAV exposure, it has become evident that what was once perceived as a task for a single worker in a shift may actually require the involvement of four workers.

The remote controlled unit emerged as a valuable solution, aligning with the hierarchy of control by aiming for elimination of HAV exposure. This innovative tool completely eliminates HAV exposure for the worker, providing a safer and healthier work environment.

Furthermore, adopting mechanical means, for concrete breaking has proven to be more economical than relying on manual labor, providing additional benefits in terms of cost-effectiveness.



Program Office: North East Link Program
Work Package: Spark (Central Package, North East Link Project,
Pile Breakback)
Principal Contractor: WeBuild

Solution Vendor: Brok
Contact: John Naoum
(Health and Safety Operations, Systems & Assurance Manager)
0417 751 815



MTIA HEALTH & SAFETY AWARDS

MTIA Director-General's Health and Safety Innovation Award

Shortlist

MAJOR TRANSPORT INFRASTRUCTURE AUTHORITY

VICTORIA'S BIG BUILD

LEADING SAFETY PRACTICE 0001/2020002

CUSTOM PRECAST PANEL LIFTING FORKLIFT

Development of a custom plant attachment to allow lifting of precast panels within space constraints.

The Situation
The client required a forklift to lift precast panels for the construction of a new building. The forklift was to be used in a confined space and had to be able to lift the panels to a height of 10m.

The Solution
A custom precast panel lifting forklift was developed. The forklift was designed to lift the panels to a height of 10m and to be able to operate in a confined space.

Benefits and Learnings
The custom precast panel lifting forklift was designed to lift the panels to a height of 10m and to be able to operate in a confined space. This allowed the client to complete the project on time and within budget.

Project Officer: Mark Taylor, Project Manager
Work Package: Custom Precast Panel Lifting Forklift
Principal Contractor: [Name]
Project Leader: [Name]

LEADING SAFETY PRACTICE 0001/2020003

VULNERABLE ROAD USER PROTECTION SYSTEM

An AI camera-based solution to reduce the risk of injuries and accidents arising from interactions between heavy vehicles, plant equipment, and vulnerable road users.

The Situation
The client required a solution to reduce the risk of injuries and accidents arising from interactions between heavy vehicles, plant equipment, and vulnerable road users.

The Solution
An AI camera-based solution was developed. The solution was designed to detect vulnerable road users and to take action to prevent accidents.

Benefits and Learnings
The AI camera-based solution was designed to detect vulnerable road users and to take action to prevent accidents. This allowed the client to reduce the risk of injuries and accidents.

Project Officer: Mark Taylor, Project Manager
Work Package: Vulnerable Road User Protection System
Principal Contractor: [Name]
Project Leader: [Name]

LEADING SAFETY PRACTICE 0001/2020004

USING DIGITAL REHEARSALS TO PRACTICE CRITICAL RISK ACTIVITIES

4D Technology was used for a major lift during a rail and road construction. Multiple simulations conducted in the planning stage to identify challenges, reduce risk, and improve delivery methods.

The Situation
The client required a solution to reduce the risk of injuries and accidents arising from a major lift during a rail and road construction.

The Solution
4D Technology was used to create a simulation of the lift operation. The simulation was used to identify challenges and to improve delivery methods.

Benefits and Learnings
4D Technology was used to create a simulation of the lift operation. The simulation was used to identify challenges and to improve delivery methods. This allowed the client to reduce the risk of injuries and accidents.

Project Officer: Mark Taylor, Project Manager
Work Package: Using Digital Rehearsals to Practice Critical Risk Activities
Principal Contractor: [Name]
Project Leader: [Name]

LEADING SAFETY PRACTICE 0001/2020005

IMPROVING OCCUPATION VISUALISATION AND COMMUNICATION WITH AUGMENTED REALITY

See what you can't see, see the future, empower users and more importantly improved understanding.

The Situation
The client required a solution to improve occupation visualisation and communication with augmented reality.

The Solution
An augmented reality application was developed. The application was used to improve occupation visualisation and communication.

Benefits and Learnings
An augmented reality application was developed. The application was used to improve occupation visualisation and communication. This allowed the client to improve occupation visualisation and communication.

Project Officer: Mark Taylor, Project Manager
Work Package: Improving Occupation Visualisation and Communication with Augmented Reality
Principal Contractor: [Name]
Project Leader: [Name]

LEADING SAFETY PRACTICE 0001/2020006

SAFER METHODS FOR PLACING STEEL PORTALS AND GIRDER

CRIMA implemented improved steel portal methods that streamlined the manual handling of steel plates during splicing and the need to access a restricted space within portals.

The Situation
The client required a solution to reduce the risk of injuries and accidents arising from the manual handling of steel plates during splicing.

The Solution
CRIMA implemented improved steel portal methods. The methods were designed to streamline the manual handling of steel plates during splicing.

Benefits and Learnings
CRIMA implemented improved steel portal methods. The methods were designed to streamline the manual handling of steel plates during splicing. This allowed the client to reduce the risk of injuries and accidents.

Project Officer: Mark Taylor, Project Manager
Work Package: Safer Methods for Placing Steel Portals and Girders
Principal Contractor: [Name]
Project Leader: [Name]

LEADING SAFETY PRACTICE 0001/2020007

ACCURATE PLANNING AND INSTALLATION OF GIRDER

The combination of sophisticated software applications and lifting innovations were used for the first time on a project globally to accurately plan and install steel girders.

The Situation
The client required a solution to accurately plan and install steel girders.

The Solution
A combination of sophisticated software applications and lifting innovations was used. The solution was designed to accurately plan and install steel girders.

Benefits and Learnings
A combination of sophisticated software applications and lifting innovations was used. The solution was designed to accurately plan and install steel girders. This allowed the client to accurately plan and install steel girders.

Project Officer: Mark Taylor, Project Manager
Work Package: Accurate Planning and Installation of Girder
Principal Contractor: [Name]
Project Leader: [Name]



MTIA HEALTH & SAFETY AWARDS

MTIA Director-General's
Health and Safety

**Innovation
Award**



High Commendation



West Gate Tunnel Project CPB – John Holland

LEADING SAFETY PRACTICE 0087/30062023

ACCURATE PLANNING AND INSTALLATION OF GIRDERS



The combination of sophisticated software applications and lifting innovations were used for the first time on a project globally to accurately plan and install steel girders.

The combination of sophisticated software applications and lifting methods were successfully used to accurately plan and install steel girders. The high accuracy achieved during planning eliminated both the need to bring the load back to the ground, reducing rework and the need for workers to be located close to the load.



Live survey monitoring during installation of steel girder

The Situation

Construction required 465 main beam lifts, including single girder, on-ground combined/spliced girders and steel portals, ranging in weight between 3 and 500 tonnes. These included complex lifts constrained by water, road or rail, with limited access and time constraints due to occupation periods.

During high complexity steel girder installations, on ground steel rectification and rigging adjustments can be required in order to compensate for variables such as thermal changes and differences between design and actual weight measurements within fabrication tolerances. If the girders do not line up, the girder must be grounded again, and the rigging length manually adjusted.

Standard methodology exposes surveyors and riggers to potential safety risks, due to required physical proximity to the suspended load and during any on ground rework.

The Solution

Models of each girder were developed using 3D Finite Element Analysis (3D FEA) software. During fabrication, weight data and surveyed deflections were fed into the model for calibration. CPB/JH provided calibrated load cells to the steel girder and portal fabricators to obtain measured weights and centres of gravity and eliminate uncertainty when planning the lifts.

The accuracy of modelling resulted in only very minor adjustments needing to be made during the lift to line up the girder angle with the previously installed girder splice face. This allowed for SynchroHoist rigging equipment to be used which adjusts the rigging length mid-air. Magnetic prisms were pre attached to the girders before lifting and SpatialAnalysr software used by the survey team to monitor the lift in real time.

Benefits and learnings

This process has been successfully used on girders and portals. The accuracy enabled the girder to remain secure for the entirety of the lift through to final load release.

The survey team monitored lifts from a safe distance. Adjustments of rigging using the SynchroHoist eliminated the safety risks associated with surveyors, riggers and other workers in proximity to a suspended load and during any on ground rework.

The requirement to work in tight restricted spaces around the installed girder was minimised by knowing the exact installation requirements. Teams could focus on specific areas, eliminating delays associated with rework during occupations.

Cost Benefit

The estimated cost to resolve a girder not fitting into position is approximately \$350,000.

This method eliminated the need to perform a series of pre-shift checks, taking 3 to 4 hours, which generally requires an extra shift.

Total saving estimated at approximately \$11 M.

Highly
Commended

Program Office: West Gate Tunnel Project
Work Package: East Zone
Principal Contractor: CPB/JH

Solution Vendor: 3D FEA software, SpatialAnalysr (SA) software, SynchroHoist
Contact: Cain Ewin
0419 868 895
cain.ewin@wgtc.com.au





MTIA HEALTH & SAFETY AWARDS

MTIA Director-General's
Health and Safety

**Innovation
Award**



Winner



Major Road Projects Victoria BMD Constructions

LEADING SAFETY PRACTICE 0061/27022023

USING DIGITAL REHEARSALS TO PRACTICE CRITICAL RISK ACTIVITIES



4D Technology was used for a major lift during a rail and road occupation. Multiple simulations conducted in the planning stage to identify challenges, reduce risk and improve delivery methods.

4D modelling was developed to allow delivery teams to visually sequence works and understand how the planned activities fit within the time and geographical constraints of the site while also assessing and addressing safety risk.

Simulations were presented to the workers to communicate the method and safety controls, allowing those performing the work an opportunity to provide input and raise concerns prior to commencement, in a manner that also reduced language and educational barriers.



Detail down to each person's position and step by step activity sequencing was achieved using the technology. The digital simulation images versus delivery photos provide an insight into the accuracy of the program (left to right).

The Situation

The Barwon Heads Road Upgrade, Work Package 2 (BHRUZ2) required a bridge erection over rail. This required a short occupation of both the rail corridor and Barwon Heads Road.

Detailed planning was required to ensure the work was uninterrupted, and that the work could be conducted safely by all participants.

Standard practice for this involves a written method statement and drawings, which is used to communicate the construction methods. A Safe Work Method Statement's (SWMS) is developed to minimise and manage the inherent safety risk. These 'method statements' are the key communication tool regarding how the activity will be constructed safely.

However, industry experience highlights that many construction workers struggle with understanding the written form of communication, e.g. English as second language, varying levels of literacy.

The Solution

The benefits and learnings of the LSP 0003/22052020-Improving Occupation Visualisation With 4D Models was reviewed for understanding of 4D model opportunities and what more it could be used for:

On BHRUZ 4D modelling was implemented for:

- specific high-risk activities (Working at heights-Installation of Beams)
- the planning stages of the works and enabling identification of specific details like the size of Elevated Work Platforms (EWP) to be procured
- identification and preparing of suitable areas for where the beams could be stored and transported
- works prestart to enable all workers to understand the programming of the works and allow for feedback on any issues, hazards etc that were not initially identified. This method of communication also assisted those workers that had reading or language difficulties.



Scan QR Code to watch video of Barwon Heads Road Upgrade, Work Package 2 - Beams Installation Digital Rehearsal

Benefits and learnings

4D presentations help workers understand high-risk activities before they occur, leading to better hazard identification, feedback and ultimately improved safety controls.

Benefits of using 4D presentations:

- effective in visually presenting a high-risk activity to work crews
- presenting in group training or induction session allows workers to visually understand where their work fits into overall activities
- high level of feedback compared to a written SWMS eliciting conversations with issues, proposed method and safety controls
- aid visual communication and help workers with limited English or literacy skills comprehend work method statements and SWMS
- demonstration of consultation with workers.

During occupation, there were no stoppages and finished 2 days ahead of schedule. Modelling and refining cost \$52K and took 8 weeks. Costs per day during the closure was around \$100K, by preventing half a day of delay the investment in paid for itself.



MAJOR

Program Office: Major Road Projects Victoria
Work Package: Barwon Heads Road Upgrade Work Pack 2

Principal Contractor: BMD Constructions
Solution Vendor: Bentley Synchro 4D
Contact: Andrew Easdale (BMD Senior Project Manager)
0437 568 835



MTIA HEALTH & SAFETY AWARDS

Major Transport Infrastructure
Authority's Health and Safety
**Program-wide
Award**



Shortlist



LEADING SAFETY PRACTICE 1001 / 2020/2021

AMOSS UPLIFTS FOR LIGHT TOWERS

The Western Program Alliance (WPRA) is increasing light tower safety by installing Automatic Mast Operating Safety System (AMOSS) lifts on mobile light towers that automatically lower the mast before the unit can move.

The Situation
Existing mobile light towers rely on the driver's safety judgement, vehicle movement, and communication with the site and other vehicles. By automatically lowering the mast before the unit can move off, or handover completed, the opportunity for human error is reduced.

The Solution
AMOSS reduced by addressing human factors and vehicle movement. Large modern construction sites require extensive light towers to illuminate the work areas. Additionally, light towers are often used in areas where they are not intended to be used, which can result in injury or death.

Benefits and learnings
However, or significantly reduced, the risk of injury or death. By automatically lowering the mast before the unit can move off, or handover completed, the opportunity for human error is reduced. The system is designed to be used in areas where it is not intended to be used, which can result in injury or death.

Program Office: LTPP - Western Program Alliance
Work Package: Light Towers and Light Towers

Principal Contractor: McDonald David Limited
Contact: david.mcdonald@mcDonaldDavid.com.au

Team: LTPP, Western Program Alliance, McDonald David Limited, Light Towers and Light Towers

LEADING SAFETY PRACTICE 1002 / 2020/2021

IMPROVING PEDESTRIAN MANAGEMENT WITH RED CARPET TREATMENT

Honcho Boss Main (The) Carpet provides visible, safe, resistant temporary pathways for pedestrians to identify and navigate construction site safety.

The Situation
On the Honcho Boss Main project, pedestrian management was a key challenge. The project involved the construction of a new road and the relocation of existing infrastructure. The project was a complex and high-risk project, with a large number of pedestrians and vehicles on site.

The Solution
The Honcho Boss Main project was a complex and high-risk project, with a large number of pedestrians and vehicles on site. The project involved the construction of a new road and the relocation of existing infrastructure. The project was a complex and high-risk project, with a large number of pedestrians and vehicles on site.

Benefits and learnings
The Honcho Boss Main project was a complex and high-risk project, with a large number of pedestrians and vehicles on site. The project involved the construction of a new road and the relocation of existing infrastructure. The project was a complex and high-risk project, with a large number of pedestrians and vehicles on site.

Program Office: Major Road Projects
Work Package: Road Safety and Pedestrian Safety

Principal Contractor: Honcho Boss Main
Contact: david.mcdonald@mcDonaldDavid.com.au

Team: LTPP, Western Program Alliance, McDonald David Limited, Light Towers and Light Towers

LEADING SAFETY PRACTICE 1003 / 2020/2021

TRISIGN - REMOTE-CONTROLLED MULTI-MESSAGE TRAFFIC MANAGEMENT SIGN

Trisign reduces traffic safety risks by providing remote controlled multi-message traffic signage.

The Situation
The Trisign is a new generation of traffic management sign. It is a multi-message sign that can be controlled remotely. It is a multi-message sign that can be controlled remotely. It is a multi-message sign that can be controlled remotely.

The Solution
The Trisign is a new generation of traffic management sign. It is a multi-message sign that can be controlled remotely. It is a multi-message sign that can be controlled remotely. It is a multi-message sign that can be controlled remotely.

Benefits and learnings
The Trisign is a new generation of traffic management sign. It is a multi-message sign that can be controlled remotely. It is a multi-message sign that can be controlled remotely. It is a multi-message sign that can be controlled remotely.

Program Office: LTPP - Western Program Alliance
Work Package: Light Towers and Light Towers

Principal Contractor: McDonald David Limited
Contact: david.mcdonald@mcDonaldDavid.com.au

Team: LTPP, Western Program Alliance, McDonald David Limited, Light Towers and Light Towers

LEADING SAFETY PRACTICE 1004 / 2020/2021

INCREASED KNOWLEDGE RETENTION THROUGH INNOVATIVE INDUCTION METHODS

Spark has developed an induction delivery format which has a much greater knowledge retention for inductees.

The Situation
Spark developed a program and guide that was designed to increase knowledge retention for inductees. The program was a multi-message sign that can be controlled remotely. It is a multi-message sign that can be controlled remotely. It is a multi-message sign that can be controlled remotely.

The Solution
The Trisign is a new generation of traffic management sign. It is a multi-message sign that can be controlled remotely. It is a multi-message sign that can be controlled remotely. It is a multi-message sign that can be controlled remotely.

Benefits and learnings
The Trisign is a new generation of traffic management sign. It is a multi-message sign that can be controlled remotely. It is a multi-message sign that can be controlled remotely. It is a multi-message sign that can be controlled remotely.

Program Office: Major Road Projects
Work Package: Road Safety and Pedestrian Safety

Principal Contractor: Honcho Boss Main
Contact: david.mcdonald@mcDonaldDavid.com.au

Team: LTPP, Western Program Alliance, McDonald David Limited, Light Towers and Light Towers

LEADING SAFETY PRACTICE 1005 / 2020/2021

EFFECTIVE PRESTAIR COMMUNICATIONS

The Western Program Alliance (WPRA) developed Effective Communications Sessions (ECS) for presenters to increase engagement and transfer knowledge within the primary method of daily communication on the site.

The Situation
The Western Program Alliance (WPRA) developed Effective Communications Sessions (ECS) for presenters to increase engagement and transfer knowledge within the primary method of daily communication on the site. The project was a complex and high-risk project, with a large number of pedestrians and vehicles on site.

The Solution
The Honcho Boss Main project was a complex and high-risk project, with a large number of pedestrians and vehicles on site. The project involved the construction of a new road and the relocation of existing infrastructure. The project was a complex and high-risk project, with a large number of pedestrians and vehicles on site.

Benefits and learnings
The Honcho Boss Main project was a complex and high-risk project, with a large number of pedestrians and vehicles on site. The project involved the construction of a new road and the relocation of existing infrastructure. The project was a complex and high-risk project, with a large number of pedestrians and vehicles on site.

Program Office: LTPP - Western Program Alliance
Work Package: Light Towers and Light Towers

Principal Contractor: McDonald David Limited
Contact: david.mcdonald@mcDonaldDavid.com.au

Team: LTPP, Western Program Alliance, McDonald David Limited, Light Towers and Light Towers

LEADING SAFETY PRACTICE 1006 / 2020/2021

SAFE INSTALLATION OF INTERLOCKING PIN FOR WATER BARRIERS

A tool designed to install steel interlocking pins into plastic barriers while keeping workers' hands safe from potential harm.

The Situation
A tool designed to install steel interlocking pins into plastic barriers while keeping workers' hands safe from potential harm. The project was a complex and high-risk project, with a large number of pedestrians and vehicles on site.

The Solution
The Honcho Boss Main project was a complex and high-risk project, with a large number of pedestrians and vehicles on site. The project involved the construction of a new road and the relocation of existing infrastructure. The project was a complex and high-risk project, with a large number of pedestrians and vehicles on site.

Benefits and learnings
The Honcho Boss Main project was a complex and high-risk project, with a large number of pedestrians and vehicles on site. The project involved the construction of a new road and the relocation of existing infrastructure. The project was a complex and high-risk project, with a large number of pedestrians and vehicles on site.

Program Office: Major Road Projects
Work Package: Road Safety and Pedestrian Safety

Principal Contractor: Honcho Boss Main
Contact: david.mcdonald@mcDonaldDavid.com.au

Team: LTPP, Western Program Alliance, McDonald David Limited, Light Towers and Light Towers



MTIA HEALTH & SAFETY AWARDS

Major Transport Infrastructure
Authority's Health and Safety

**Program-wide
Award**



High Commendation



Major Road Projects Victoria McConnell Dowell / Seymour Whyte – Healesville Koo-Wee Rup Road Upgrade

LEADING SAFETY PRACTICE 0055 / 23012023

TRISIGN – REMOTE-CONTROLLED MULTI- MESSAGE TRAFFIC MANAGEMENT SIGN



TriSign reduces traffic safety risks by providing remote controlled multi-message traffic signage

On the Healesville Koo Wee Rup Upgrade project, traditional traffic management signs have been replaced with Trisigns, which can transition to three different sign faces by remote control.

This reduces traffic related safety risks to workers and the travelling public by reducing the need to manually change traffic sign faces at the start and end of shifts.



The Trisign transitioning from one pre-determined sign face to another (QR code provides enactment)

The Situation

Healesville-Koo Wee Rup Rd is a two-lane, dual direction single carriageway road carrying over 20,000 vehicles per day. It is high speed (currently 80km/h, reduced from 100km/h due to safety concerns), with no median separation and very narrow (or nil) shoulders.

To manage traffic on this road, traffic controllers from the Healesville Koo Wee Rup Upgrade project would enter this dangerous environment daily to set up and pack up multi-message frame signs at the beginning and end of shifts. This requires the use of either a Truck Mounted Attenuator (TMA) and/or a shadow vehicle, crawling up the 10km long alignment. This resulted in the exposure of traffic controllers to traffic related safety risks and traffic disruption for the travelling public.

As a result, the project decided a fresh approach was required to limit the exposure of traffic controllers to live traffic.

The Solution

The Trisign is a next-generation multi-message frame sign for traffic management. The Trisigns replicate a traditional 1200x1000mm multi-message frame sign, with each Trisign unit able to incorporate 3 pre-determined sign face arrangements.

The Trisigns can be operated remotely via an Android tablet app to display the desired arrangement. This allows traffic controllers to be positioned away from the live traffic flow and eliminates the associated risks during traffic management sign changes. Sign face changes are powered by a solar panel atop each unit and occur in a matter of seconds.

On the Healesville Koo Wee Rup Rd Project over 45 Trisign units have been installed as part of the project's long term Traffic Guidance Scheme design process. The Trisigns are installed at regular intervals and pole-mounted for improved visibility.

The Trisign positions and signfaces were determined as part of the standard Traffic Guidance Scheme design process. Each signage change is recorded and timestamped providing a verifiable record of which signage arrangement was in place at any point in time.

Benefits and learnings

Site safety

- Improved worker safety by reducing the need for traffic controllers to maintain and change signage on road.
- Improved driver safety by reducing interactions with traffic management crews during setup.
- Reduced traffic controller fatigue and recovery time.

Productivity

- Reduced traffic delays.
- Improved setup and pack down time (by up to 70 %), increasing site productivity and/or achieving reduced time under traffic control.
- Reduced traffic controller demands.
- Reduced cost of setup, i.e., less need for TMAs, advanced warning vehicles, traffic management crews, etc. (cost savings of approx \$1200-1500 per shift).

Quality and consistency

- Signs less likely to be disrupted by passing traffic as they are mounted on posts.
- Has wide application potential across sites with traffic management requirements and associated risks.



Program Office: MRPV

Work Package: Program F – Healesville Koo Wee Rup Rd

Principal Contractor: McConnell Dowell / Seymour Whyte

Solution vendor: Safetek Solutions

Contact: David Hardy

MRPV – Area Safety Manager



Level Crossing Removal Project – Western Program Alliance McConnell Dowell – Cranbourne Line Upgrade

MTIA HEALTH & SAFETY AWARDS

Major Transport Infrastructure
Authority's Health and Safety
**Program-wide
Award**



Winner



LEADING SAFETY PRACTICE 0051/24/12/2022

AMOS UPLIFTS FOR LIGHT TOWERS



The Western Program Alliance (WPA) is increasing light tower safety by installing Automatic Mast Operating Safety System (AMOS) Uplifts on mobile light towers that automatically lower the mast before the unit can be moved.

Equipping mobile light towers with the AMOSS Uplifts engineering control mitigates risks associated with the unit's raised mast.

By automatically lowering the mast when a unit's key is turned off, or handbrake disengaged, the operation is simplified and the opportunity for human error reduced.

Demonstration of light tower hand brake interlock at Cranbourne Line Upgrade.



Scan QR code for Video of interlocked operation

The Situation

Mobile light towers are an essential part of night-based construction works. Large modern construction sites require numerous light towers in close proximity to illuminate the works effectively. Additionally, light towers need to be mobile to illuminate works as they move around site.

Whilst invaluable during the night shift, the inverse can be the case during the day where mobile light towers can be seen as a nuisance.

These competing operational requirements result in different attitudes and behaviours, and sometimes, serious incidents. There have been several instances of lighting tower incidents where individuals have a lapse of concentration and drive off with a light tower mast still elevated, resulting in contact and damage to overhead structures such as bridges or overhead powerlines and a risk of a serious injury.

The Solution

WPA realised by addressing human factors involved in mobile light tower operations, they could reduce related incidents. Consequently, WPA implemented an initiative to equip LED mobile light towers with AMOSS Uplifts; the first of its kind in Australia.

The AMOSS Uplifts introduces a fail-safe mechanism, whereby the light tower mast is automatically lowered when the unit's key is turned off or the handbrake is disengaged. Lowering the mast drops the unit's centre of gravity, removing potential human factors and incident radius. This reduces incidents involving:

- Incorrect towing
- Impact of wind
- Mast raised longer than is needed
- Not level and subsidence
- Park Brake failure
- Incorrect unit orientation
- Outrigger failure
- Operator error or inattention.

Benefits and learnings

Eliminates, or significantly reduces, the cause of light tower incidents by automatically lowering the mast when the key is switched off, or the hand brake is disengaged, simplifying the operation and reducing room for human error.

Lowering the mast lowers the unit's centre of gravity and potential incident radius.

Easily installed on existing handbrake systems by a qualified fitter or mechanic.

The system has a cost of \$1200 per light tower plus the cost of install and fits most popular makes of light towers.

The system is tamper proof so the safety function cannot be turned off.



MTIA/2022

Program Office: LKRP – Western Program Alliance
Work Package: Cranbourne Line Upgrade

Principal Contractor: McConnell Dowell
Contact: GregEvangelakos@wpalliance.com.au



MTIA HEALTH & SAFETY AWARDS

Thank you all for participating.

Congratulations once again to the award winners and highly commended!

MTIA CEO's
Health and Safety
**Delivery
Award**



**North East Link Program
WeBuild**

Spark (Central Package)

"Hand arm vibration awareness and elimination"



**Major Road Projects Victoria
Seymour Whyte Constructions**

Keep Ballarat moving

"Reducing plant operating zone risk using technology"

MTIA Director-General's
Health and Safety
**Innovation
Award**



**Major Roads Projects Victoria
BMD Constructions**

Barwon Heads Road Upgrade Work Package 2

"Using digital rehearsals to practice critical risk activities"



**West Gate Tunnel Project
CPB – John Holland**

East Zone

"Accurate planning and installation of girders"

MTIA Board's
Health and Safety
**Program-wide
Award**



**Level Crossing Removal Project
Western Program Alliance
McConnell Dowell**

Keep Ballarat Moving

"AMOSS Uplifts for light towers"



**Major Road Projects Victoria
McConnell Dowell / Seymour Whyte**

Healesville Koo-Wee Rup Road Upgrade

"TriSign – Remote controlled multi-message traffic management sign"