

SiteZone Proximity Warning

SiteZone Safety | M1 16-13 SMP – 16/02/2020

Introduction

Working with plant is one of the highest risks of workplace injury in the Highways Sector and to support the expectations of the Safe Working with Plant Common Intent Document and Raising the Bar 3 Plant Person Interface the Costain Galliford Try (CGT) M1 J13-16 SMP Scheme adopted the SiteZone Proximity Warning Systems to further enhance and reinforce segregation requirements. These developments include the patent pending **SmartBubble Technology** and the **SiteZone Dumper Advance system** for forward tipping dumpers

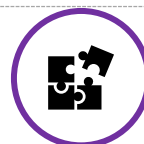


Overview

The deployment of the SiteZone Proximity Warning System (PWS) on the M1 Junction 16-13 (T3) Smart Motorways Project (SMP) is the largest deployment of proximity warning of this kind in the world. To date **over 2,000 personnel tags** have been issued, **over 350 installations** completed and since the start of the scheme in June 2018 **more than 6 million man-hours of work** have been protected. SiteZone PWS is designed to complement best practice in respect of the **Plant–Person Interface**.

The system has proved to be flexible and capable of meeting the application-specific needs of a major scheme of this type. The tag-based SiteZone PWS has numerous benefits when compared to other technologies. During the project, several enhancements and new product variants have been made to improve the efficacy of the system in the Highways and SMP environment.

“The workforce see the great benefit of using the technology for improving plant-person interface safety”
Graham Pickett, Senior Works Superintendent, Costain



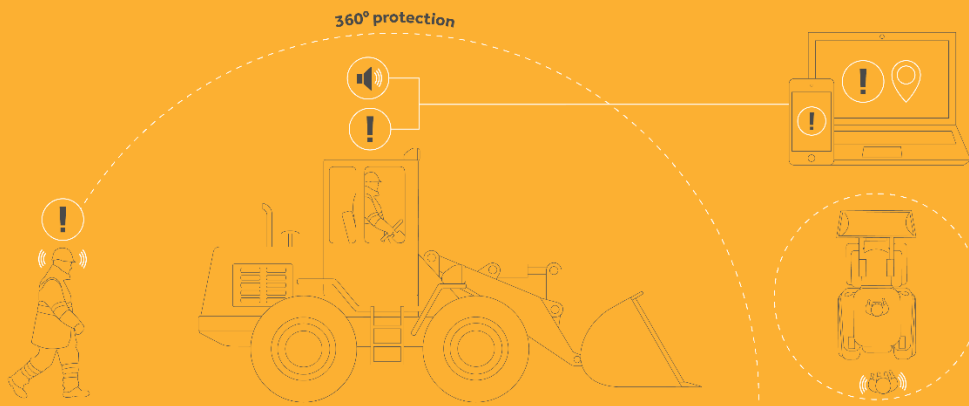
Challenges

The delivery of a universal Plant–Person Interface (PPI) technology presented a range of challenges, including:

- Implementation of a single technology that would meet the needs of all vehicles and tasks
- Minimisation of alerts when pedestrians not at risk reducing the potential for complacency
- Improving personnel behaviour in respect of Plant-Person Interface
- Logistics and commercial viability of supporting a scheme of this size e.g. multiple contractors
- Minimising equipment downtime was also a factor
- Provision of adequate training and support material to operators and pedestrians on site
- Deployment of the system on such a wide base required for easy management of personnel

“The product is easy for machine operators to use. We have a lot of plant coming on and off the job from different subcontractors but SiteZone engineers ensure the equipment is installed and operational when we need it”

Noel Barry, Plant Coordinator, Flannery Plant Hire – M1



"SiteZone has helped increase my awareness of when pedestrians are too close to my machine. Having SiteZone helps me keep my mind on the task knowing if anybody comes into my exclusion zone I'll be warned and can take the necessary action"

Seamus Walsh, Plant Operator
Flannery



Action Taken

There were several actions taken to ensure that the SiteZone Proximity Warning System could meet all of the requirements of the scheme

- Work with the principal contractor and contractors to understand the mobile plant task requirements and applications.
- Development of new variants of the proximity warning system to meet specific project needs. E.g. SiteZone Dumper Advance
- Optimised zoning for each vehicle/applications
- Introduction of limiter technology to prevent tag carrying personnel in service/support vehicles from being detected by plant fitted with the system
- Trials of patent-pending [SmartBubble](#) technology to reduce alarms when the plant was in a safe state e.g. Deadman's handle engaged or vehicle stationary
- The introduction of the SiteZone EasyFit system which can be installed and operational in as little as 40 minutes, reducing downtime.
- Provision of a dedicated resource to support the use of the SiteZone system.
- A full inspection of all equipment used carried out periodically by SiteZone engineers. Commercially SiteZone PWS was made available to hire or purchase with a flat pricing structure was introduced.
- Provision of full training and understanding of the product system for all workers

- A [video](#) was produced to help communicate the use of the SiteZone system at induction
- The video was all made available via a QR code on literature and equipment.
- Bespoke literature was produced, and SiteZone attended a safety stand-down with a major plant hirer which covered plant safety and how this was complemented by the SiteZone system. Each attendee was issued with instructional product literature.
- The size of the project and the potential number of personnel tags required meant that the issuing and maintenance of tags had to be as simple as possible
- The use of [Data-Driven Performance Improvement](#) was explored on the project



Results

Since the start of the scheme, approximately 6 million man-hours have been worked safely using SiteZone PWS

- Over 2,000 personnel tags have been issued and approximately 350 machine installations have been completed.
- During the scheme time, additional product developments have been made to enhance the performance of the product in the SMP environment.
- Standard processes and product configurations have been developed which provides a template for the deployment of tag-based proximity warning systems on schemes of this type

"People Plant interface is one of the main hazards within the works we carry out at PMUK and in the Civil Industry in general. While our objective here at PMUK is to eliminate hazards where possible, it is inevitable within the industry that people and plant will be working in close proximity, it is the nature of the works. Site Zone has benefited us here at PMUK while on the M1 Junction 13-16 project by complimenting existing risk controls and safe systems of work by adding in an extra control. A control that both alerts the pedestrian that they are within the working area of the machine and alerting the operator that a pedestrian has entered the work zone. An impressive piece of kit and easily installed on site." **Barry Wilson, Site Agent - Paul Mulcair UK Ltd**