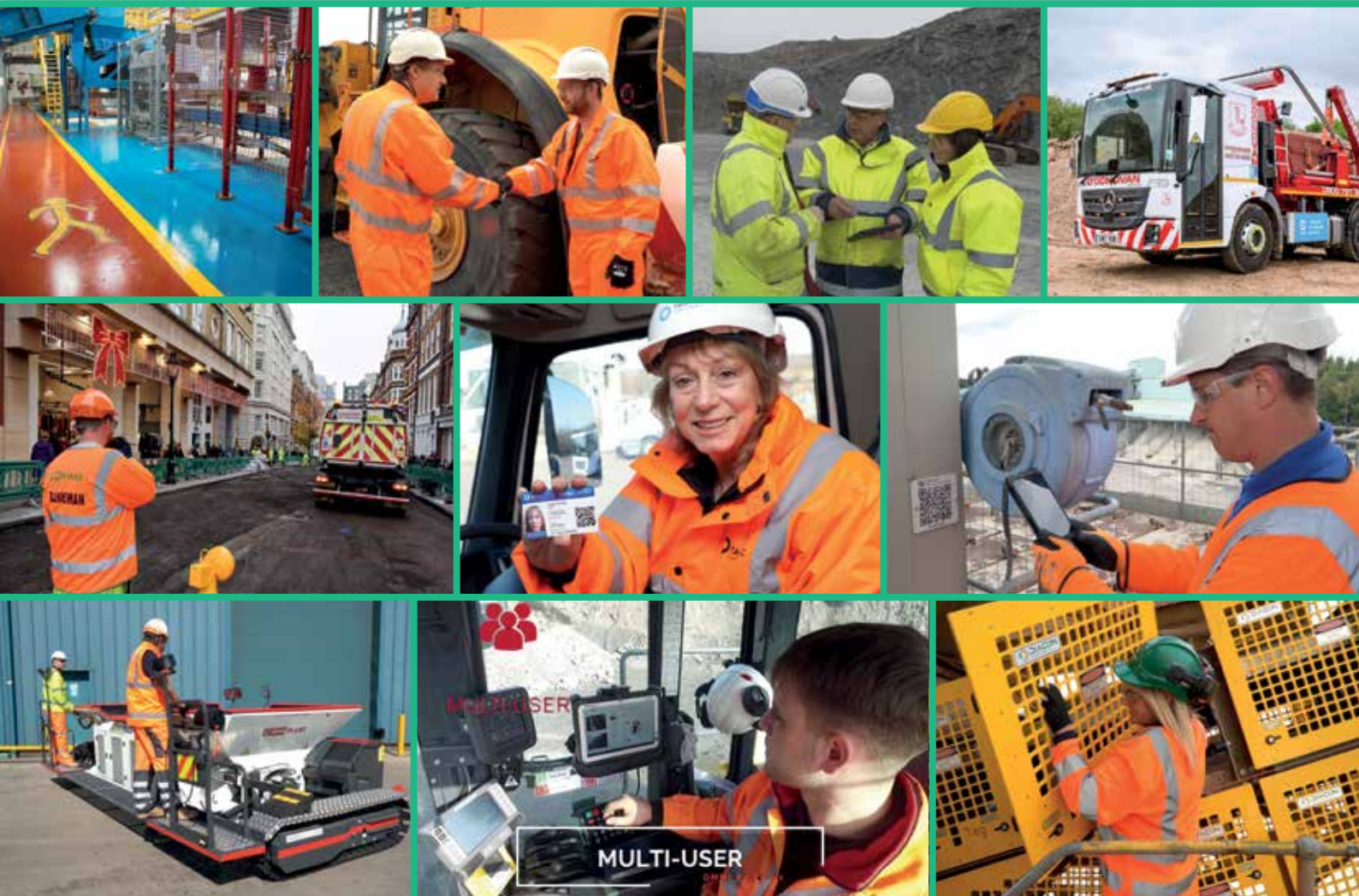


Sharing good practice 2019/20

WAYS TO MAKE YOUR WORKPLACE HEALTHIER AND SAFER
- ELIMINATING 'THE FATAL 6'



**ENTRIES FROM THE
MPA HEALTH AND SAFETY AWARDS**





Service Information

Mobile On-Site Chest X-Ray Service for Employees Exposed to Respirable Crystalline Silica

Industrial Diagnostics Company Ltd offer a **mobile, on-site chest X-ray (CXR) Health Surveillance service.**

The service **fully aligns** employers with the recent updated guidance from the Health and Safety Executive (HSE) thus enabling them to demonstrate **best practice.**

The service delivers **state of the art mobile digital radiography (DR)** which generates the high resolution images necessary, capable of detecting the very earliest signs of lung disease.

All chest X-rays are viewed and reported from high resolution diagnostic monitors and are reported against the ILO pneumoconiosis classification scale.

By including exposed employees in a chest X-ray program, early cases of Silicosis will be identified and referred to an Occupational Lung Disease specialist for ongoing medical advice. **This will improve an employee's prognosis and enable effective management of the employee's future exposure to RCS as early as possible.**

Furthermore, all and any other abnormalities identified from the chest X-ray will be referred on to an appropriate medical professional for advice. Early diagnosis of conditions identified by chest X-ray will provide clear **benefits to the health and life expectancy** of employees.

Industry groups such as the **Mineral Products Association (MPA)** recommend entry into a chest X-ray program for employees exposed to 75% or above the Workplace Exposure Limit (WEL).

Service Features:

- **An on-site service delivered from client premises. Up to 30 employees can be seen per day**
- **Brand new digital imaging technology**
- **Extremely low dose of radiation (equivalent to less than one short flight)**
- **10-minute appointment times reduces lost production costs by minimising time away from work**
- **Consent obtained from employees willing to allow their chest X-rays to be fully anonymised and used for research into Occupational Lung Disease**
- **Logistics allow small sites to share the service**

For further information or to discuss service requirements, please contact us on imaging@industrial-diagnostics.com or via the contact details shown below:

v1-1



PELTOR™
Protection & Communication

3M Hearing Solutions

Hearing Protection and Situational Awareness

3M™ PELTOR™ Electronic Earplug, EEP-100 EU

3M™ PELTOR™ Electronic Earplug, EEP-100 EU, can help users protect their hearing, but also helps improve situational awareness and face-to-face communication.



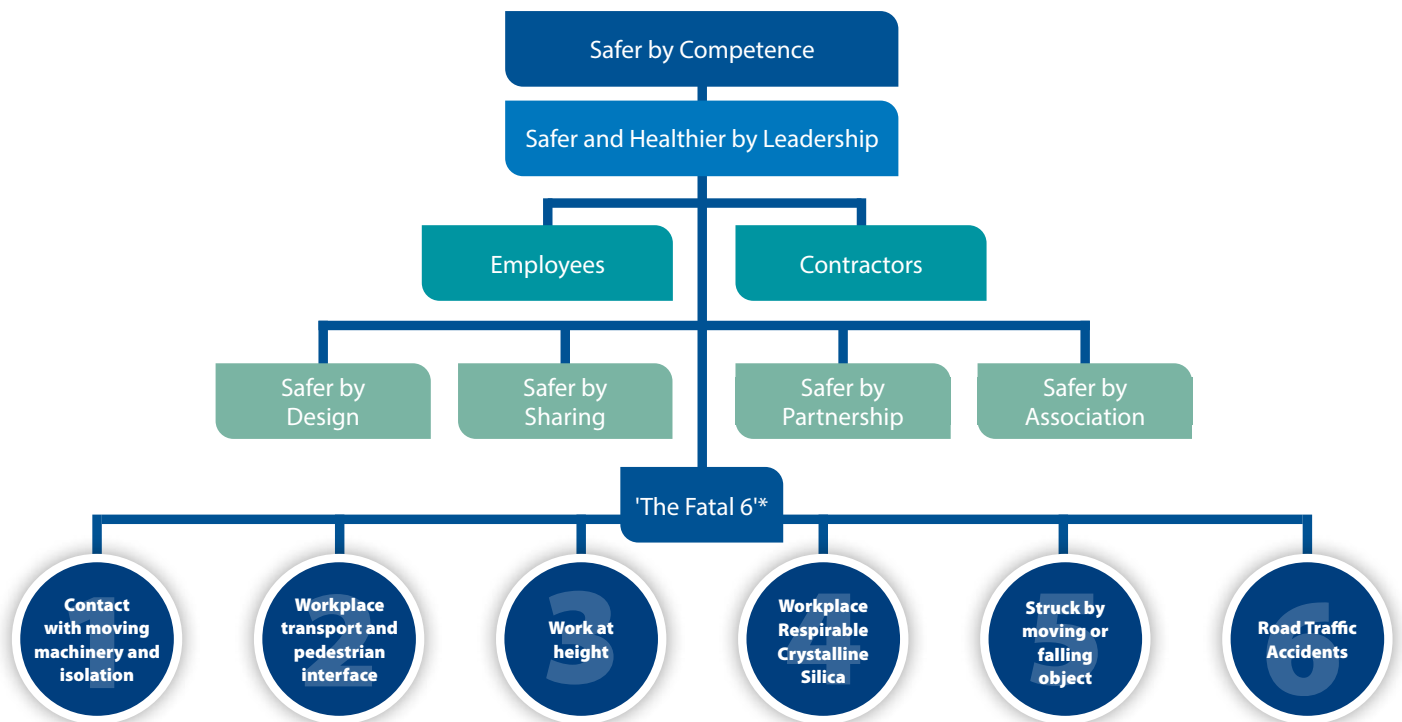
[3M.co.uk/EEP-100](https://www.3m.co.uk/EEP-100)

Achieving Zero Harm

Working with MPA to improve Health and Safety in 2020

Zero Harm will only be achieved when everyone in the industry is working with Health & Safety as their top priority. MPA facilitates a number of initiatives and services to help its members achieve this. Please review these and consider how you would like to utilise or support them in 2020.

MPA's 'Safer by initiatives'



* High consequence hazards

Safer by Competence

- Work with MPQC to enhance skills in the sector
- Utilise the driver's/contractors passport system
- Share the MPA safety resources within your company



Safer and Healthier by Leadership

- Work with MPA to support the 'Helping Great Britain work well' Strategy
- Sign up to the 'MPA Pledge' and commit your organisation to achieving Zero Harm
- Attend MPA Safer and Healthier by Leadership courses
- Submit your safety statistics in a timely and accurate manner
- Champion the use of 'Mates in Mind' www.matesinmind.org
- Champion RCS initiatives and MPA's health surveillance programmes
- Submit your Nepsi data
- Champion Vulnerable Road User and Driver Training initiatives



Supporting MPA Health and Safety Initiatives

Safer by Partnership – Contractors

- Support the MPA Contractor's Charter
- Utilise MPA's Contractor Safety Forums
- Embed MPA (Avetta's) contractor's database

www.avetta.com



- Incorporate the MPQC-SPA Competence Map to enhance contractor skills
- Utilise MPQC's Contractor Safety Passports

Safer by Association

- For smaller members and organisations without specialist personnel, trial the H&S site evaluation and improvement tools

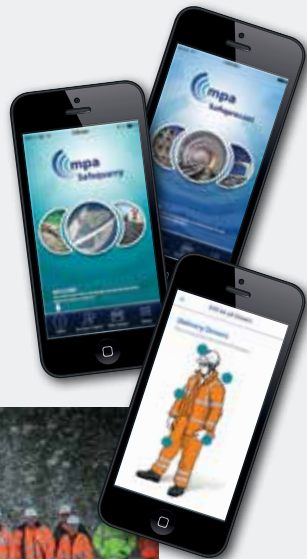
Safer by Sharing

- Sign up to Safequarry.com or Safeprecast.com and share the safety alerts

www.safequarry.com

www.safeprecast.com

- Sign up to the Safequarry, Safeprecast and Driver's Apps
- Support and attend MPA's Safer by Sharing Days



- Submit entries to the MPA and British Precast Health and Safety Awards, then share the resulting Best Practice Guide
- Send your incident alerts, toolbox talks and other info to MPA
- Utilise QNJAC H&S guidelines and other guidance via safequarry



Safer by Design

- Ensure new mobile plant complies with Safer by Design guidance

www.safequarry.com/Safer_by_design.aspx



- Review how existing plant compares with Safer by Design guidance

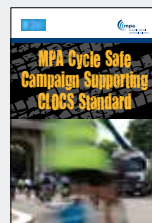
'The Fatal 6'

Support 'The Fatal 6' initiative by reviewing and acting on these high consequence hazards within your organisation:

- ① Contact with moving machinery and isolation
- ② Workplace transport and pedestrian interface
- ③ Work at height
- ④ Workplace Respirable Crystalline Silica
- ⑤ Struck by moving or falling object
- ⑥ Road Traffic Accidents

Public Safety

- Support MPA's Stay Safe campaign and review your public safety risk assessments for active and disused sites. Review the RoSPA inland water safety document
- MPA Cycle Safe – support or host a cycle safety event
- Support the CLOCs and FORs initiatives



Foreword



The theme of the 2019 MPA Health and Safety Conference was 'Clearer, Simpler, Smarter'. The 'Sharing good practice' guide 2019/20 is an exemplar of this. The entries demonstrate some simple but innovative ways of eliminating hazards in the workplace or clever solutions to problems achieved by individuals working together with a clarity of purpose, to make their work environment safer.

The industry's agreement to focus its energies and resources on 'The Fatal 6', those areas which generate most of the high consequence hazards in our business, reflect a strategy that is clear and simple. A high proportion of the entries included in this guide are mitigating hazards associated with one of 'The Fatal 6' themes. In several of the entries a serious incident was the genesis for the innovation described.

Many of the innovative solutions and new processes highlighted in this publication can be adapted or applied to a wide range of other organisations. They will make a material difference to the safety, health and wellbeing of everyone working within the mineral products industry.

I urge you to share this publication with your colleagues.

Nigel Jackson, Chief Executive

Looking forward

As a result of the disruption created by COVID-19, MPA decided to defer the H&S Awards for 2020. However, the time has been used to review and update the process for organisations submitting entries. This autumn, we will be launching a new series of forms for submissions to the MPA H&S Awards. The process has been updated based on feedback from both members and judges. It has been designed to make it easier to submit entries and provide greater clarity and relevance for all those involved.

I look forward to the H&S Awards in 2021 when hopefully, we will see increased levels of entries reflecting both the extended period between events and a more efficient process.

'The Fatal 6'

Support 'The Fatal 6' initiative by reviewing and acting on these high consequence hazards within your organisation:

- 1 Contact with moving machinery and isolation
- 2 Workplace transport and pedestrian interface
- 3 Work at height
- 4 Workplace Respirable Crystalline Silica
- 5 Struck by moving or falling object
- 6 Road Traffic Accidents

Sponsors

MPA would like to thank the suppliers to the industry who have sponsored both our awards ceremony and this publication. The main sponsor was the Industrial Diagnostics Company (IDC). Individual sections show the companies which have sponsored them.



Lead sponsor



The Sir Frank Davies Trophy for companies with less than 1000 employees: **Winner – O'Donovan Waste Disposal Ltd.** Trophy sponsored by 3M
The John Crabbe Trophy for outstanding performance in Health & Safety: **Winner – Tarmac.** Trophy sponsored by Avetta

140 entries from 25 companies – MPA members, contractors and suppliers:

AG (Acheson & Glover)
Aggregate Industries UK Ltd
Brett Group
Brilliant Ideas Ltd
Cemex UK
Colas Ltd
Day Group

F M Conway
F P McCann
Finning UK & Ireland
Forterra Building Products
GRS Bagging
Grundon Sand & Gravel Ltd
Hanson

Lhoist
Mansfield Sand Co Ltd
Marshalls
Martin Engineering Ltd &
Singleton Birch Ltd
Myers Group
O'Donovan Waste Disposal Ltd

Quinn Building Products
Roche Manufacturing Ltd
Stanton Bonna Concrete Ltd
Tarmac
Terex

Introduction

This Guide summarises the best ideas and innovations from the MPA's Health and Safety Awards 2019.

This Guide is a compilation of solutions that MPA companies, contractors and suppliers have applied to minimise and, where possible, eliminate health and safety risks arising from their daily operations in the mineral products industry. The ideas and innovative approaches are often very simple and inexpensive, they can be applied to a range of common industry problems. Organisations of all sizes will find entries within this publication that will be relevant to their own activities.

Please ensure that this Guide is shared with colleagues at all levels within your company. Electronic versions are downloadable from the Safequarry and Safeprecast websites. The digital versions include embedded links to short videos that show the innovation or new process in action and interviews with site operators talking about the benefits that have been realised.

This publication epitomises the industry's belief that we will all be **'Safer by Sharing'**.



How to use this Guide

It is hoped that by reviewing this Guide, particularly those sections relating to your main area of work, you will recognise solutions that could either be implemented within your own workplace or will generate an idea for an alternative solution.

The Guide has been divided into eight sections to reflect the categories used in the MPA Awards. They focus on those areas that have the most impact on improving health and safety in the workplace. We have indicated which entries were prize winners, and which have video clips available. To help you locate entries relating to a certain subject, we have provided a keyword index. If you would like more information on an entry than is available via Safequarry and Safeprecast websites, please send an email to info@safequarry.com or info@safeprecast.com. Please quote the entry number, which is located immediately to the left of the entry title.

Where an entry shows the video symbol, the video can be viewed via the Safequarry and Safeprecast websites or the Mineral Products Association YouTube channel.

The blue circles with numbers highlight that this entry illustrates a way of mitigating a high consequence hazard associated with 'The Fatal 6'. The number in the circle reflects which theme it is related to.

The sharing of best practice is crucial in helping the industry to achieve Zero Harm.

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1366 **Contractor management & active supervision**



Tarmac > Ravelrig Quarry **1 2 3 4**

DESCRIPTION

Statistics show that contractors are four times more likely to have an accident than an employee.

Ravelrig quarry site team take great pride in maintaining a safe working environment for all. The team recognised that contractor management could be enhanced by improving communications between Tarmac employees and contractors. A goal was set to achieve 'Best Practice' in contractor management and active supervision.

A wide range of initiatives were introduced to enhance the relationships with contractors through collaboration.

These included:

- Recording both positive and negative feedback and getting them to 'buy in' to new safety initiatives and improvements
- Leading by example encouraged the contractors to adopt the same standards as employees
- All employees assisted in the control and monitoring of contractors acting as 'One team'
- The management team carrying out contractor task audits.

The checks during the task audit could cover a wide range of policies such as the application of LOTOTO, the suitability of the tools they were using, risk assessments and permits to work. The audit forms provide excellent evidence on the levels of monitoring and supervision being applied during the contractor's work activities. The Tarmac supervisor and contractor sign the task audit report to acknowledge the findings and, where necessary, agree on corrective actions going forward.

The administration of the audit was made easier by an iAuditor App developed by the assistant quarry manager. It enables the contractor task audits to be completed using the App which was installed on the company maintenance tablet for use on site. The App also enabled hard copies of the audit reports to be downloaded and filed for reference.

Tarmac's 'Safety On Line (SOL)' system was used to record near hits, unsafe acts and unsafe conditions. It was also used to record engagements and communications with the contractors. The corrective actions resulting from the contractor task audits were also added to the system. The initiative of adding pictures to the task audits forms provided excellent additional evidence of good practice being carried out by the contractors.

BENEFITS

- A reduction in the number of near hits logged against contractors
- Zero accidents recorded on-site
- Contractors now have all relevant documentation to undertake tasks

- Employees and contractors working together to achieve safer working environment
- Initiatives reflect Tarmac's values
 - **'Collaborative'** – The site team and contractors work together to ensure that everyone remains safe
 - **'Ambitious'** – Effective use of electronic media developed through staff initiative
 - **'Proud'** – The site team are committed to maintaining their good practice of contractor management
 - System was shared across Tarmac as a demonstration of good practice when engaging with and supervising contractors



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1309 Management of delivery tankers on site

Aggregate Industries UK > Sheffield Asphalt

DESCRIPTION

Sheffield Asphalt plant is a large site with high volumes of wagon movements. The liveried AI wagons are quite easy to control and see as they are always in full view of either the plant or weighbridge.

However, AI had an issue with the daily deliveries of consumables such as filler, fibre and fuel. These were delivered by external tankers whose drivers were not necessarily familiar with the site and procedures. The delivery points for these tankers are also out of view of the site staff.

In the event of a fire or emergency, it was possible that these tanker drivers could be overlooked when the alarm was raised, and the AI staff congregated at the assembly point. A robust system of registration on site was required that would enable AI to easily identify which tanker drivers were on site.

It was decided to use a swipe card system for these drivers, it was the same system that AI used for registering its own employees on site.

BENEFITS

- AI would know who was on site at all times
- AI could identify tanker drivers on site in an emergency
- Utilised existing system
- Safer site management



Download the free MPA Apps

MPA Safequarry App

MPA Safeprecast App

MPA Driver's App



All the videos highlighted in this guide can be watched on your mobile devices using the Apps or via the MPA YouTube channel www.youtube.com/MineralProducts1

For info call MPA +44 (0)20 7963 8000 www.safequarry.com

For info e-mail info@britishprecast.org or call +44 (0)116 232 5170 www.safeprecast.com



1384 **OMNI by Terex revolutionises crushing and screening**



Terex GB > Dungannon > Co. Tyrone > N. Ireland

2 3 4



DESCRIPTION

The equipment used to crush and screen rock is located in busy and challenging environments with many potential hazards. Typically, an excavator operator will be responsible for managing several different tasks, clearing the stockpiles, loading the dump trucks and supervising the multiple machines involved in the crushing and screening process. The process control available to the operator is limited and his views of the material flow are often restricted. He is exposed to a range of hazards undertaking these tasks. In particular, he is exposed to the risk of slips, trips, falls or being hit by other vehicles when accessing and egressing his cab or operating the controls of the crushing and screening equipment.

To minimise the exposure to these hazards and improve the efficiency of the operation, Terex has developed OMNI. It is a new, first-of-its kind innovation that connects and integrates the operator, the machines and the site. The system enables the operator to control all the activities associated with the crushing and screening operation from the comfort and safety of his excavator cabin. This innovation has significantly reduced the risk of injury.

A tablet-based interface is located in the cabin of the excavator alongside the operator. It is connected via Wi-Fi to the crushing and screening equipment. The interface enables the operator to control the equipment using integrated information relayed on the tablet dashboard and from remote, multiple camera views. The cameras provide critical views such as material transition points and chamber inlets for each machine. The system enables the operator to make immediate and real-time decisions to maximise the efficiency of the operation. For example, the operator could pause the entire material flow of the machine train when any issues arise or change settings to keep material specification in check.

Additionally, OMNI by Terex provides alerts that indicate when someone on the ground is making process adjustments and the ability to offer read-only access to other personnel on the jobsite (such as the wheel loader operator), enhancing their safety through the remote view of the operation.

The feedback from test sites is that this system will completely revolutionise the safety and efficiency of the crushing and

screening jobsite. A video demonstration and testimonial from RJT Excavations can be viewed on <https://vimeo.com/329759484>.

BENEFITS

- Simplifies the operation of crushing and screening equipment
- Keeps the operator in control at all times
- Increased visibility through live-camera views
- Ability to intervene immediately without leaving the cab
- Reduced risk of slip, trips and falls
- Reduced direct contact with heavy duty crushing equipment at ground level
- Reduced exposure to dust and other moving equipment
- Improved functionality of equipment and safety for operator
- Decisions based on real-time information and improved efficiency
- Transferable to other applications of heavy equipment
- Feedback from initial test sites very positive.



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1304 Arc flash safety initiatives

Aggregate Industries > Cauldon Cement Plant

1



DESCRIPTION

A risk analysis at Cauldon Cement Plant highlighted that a high-risk task was the opening and closing of High Voltage (HV) circuit breakers. Almost all these units at Cauldon could only be opened or closed using the switch on the front of the circuit breaker.

It was recognised that this exposed operators to the risk of serious injury in the event of an arc flash incident, this risk had to be minimised. A simple and low-cost solution was designed and implemented by the team at Cauldon. The objective was to devise a system that would allow the operator to be outside the substation or circa 13 metres away from the circuit breaker when opening or closing it.

A socket was installed and connected to each HV circuit breaker. Each switchboard was provided with an umbilical with a pendant. The pendant could be connected to the sockets on the circuit breakers. The system allows the circuit breakers to be switched

‘remotely’ from outside the substation.

BENEFITS

- Removes people from area of risk when opening/closing HV circuit breakers
- Reduces potential risk of significant injury
- Reduces risk of fire
- Low cost solution that can be replicated.



1370 Dust suppression

Tarmac Building Products Ltd > Croxden DSM

4



DESCRIPTION

Tarmac Building Product’s dry silo mortar (DSM) business was having significant issues with the amount of dust produced in the working environment. Dust monitoring results showed levels of dust in excess of worker exposure limits. In certain areas of plants, it was possible to actively see dust plumes and a covering of dust on floors, walls and equipment.

A company engineer was tasked with identifying a suitable dust suppression system that would reduce the risk of occupational ill health and create a better and safer work environment across the 5 plants operated. Various options were researched including vacuum systems, local dust extraction systems and fine mist sprays.

It was decided that the fine mist spray option provided the best solution when taking all factors into consideration. This included the potential for legionella with the mist-based system.

Croxden DSM was selected as the trial site because it had the most severe issues with dust. The engineer worked with the site managers and operatives to identify the problem areas. The team worked with a specialist contractor to design a mist/spray system that would work within the site requirements.

The solution consisted of a water pump pressurised to 70 bar which atomised the water to a fine mist. The mist was sprayed through a polyurethane piping system stretching hundreds of metres across the plant to the affected areas. The risk of water borne bacteria was minimised by introducing UV lamps and a water chlorination system.

The installation was completed to schedule and budget. The system was an immediate success. The only addition to the system, following a trial period, was an internal, bulk water container to provide a back-up water supply if required.

BENEFITS

- A better and safer working environment for all
- A reduction in dust levels of 80%
- Need to wear respiratory protection removed in most areas
- Similar system planned for remaining 4 sites
- Team involvement enhanced safety culture at site



1305 **Light weight plastic guards****Aggregate Industries > Bardon Hill** **1****Before****After****DESCRIPTION**

Aggregate Industries' sand and gravel quarry at Newbold produces in excess of one million tonnes per annum. The main conveyor from the surge pile, that feeds material to the processing plant, has a high capacity belt. It is subjected to very high wear around the tail end drum which is in constant need of routine maintenance.

The guards are regularly removed to gain access for planned maintenance activities such as changing idlers, replacing barge boards and skirts, cleaning, replacing bearings and pulleys and replacing the conveyor belt.

The original guards were manufactured of steel and held in place by numerous bolts. Removal and re-fitting of these heavy guards was time consuming and labour intensive. The hazards associated with these panels were related to the manual handling of heavy and awkward sections, trapping and pinching of fingers, slips and trips over removed guard panels on walkways.

The decision was taken to trial the Diacon, quick release, plastic guard system supplied by MES International Limited. The system was installed and incorporates the following features:

1. The guard panels do not require a frame construction
2. Panel weight is marked clearly on each guard section
3. Lightweight panels are very easy to remove
4. Panels are 100% corrosion free, no need to paint
5. Panels have long life UV protection (10 years plus)
6. Panels easily configurable to fit most applications
7. Panels have a mount using drop on hook and hang system – panels can be stored on handrails when removed
8. The bolts securing the panels are fully encapsulated and retained in the plastic guarding system (No more missing bolts)
9. Guards can be designed to accommodate associated activities e.g. remote greasing and trip wire controls
10. The panels have sound deadening qualities

BENEFITS

- Maintenance significantly easier and more efficient
- Operators can remove a panel without assistance – reduced resource requirement
- Reduction in downtime and lost production
- Short payback on investment due to savings
- New system popular with operators
- Reduced manual handling hazards
- Meets UK standards on manual handling
- Reduced risk of slips, trips and falls
- Reduced risk of injury whilst working with panels – trapping and pinching
- A safer work environment



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1333 Bottom opening skip

Marshalls PLC > Marshalls Landscape Products > Sandy Works

2 4 5



DESCRIPTION

At Marshalls' Sandy Lane concrete facilities the waste such as rejected concrete blocks, unused concrete and aggregates is taken to holding bays for reprocessing. The waste products are placed in skips and transported around the site by forklift trucks.



Before

The original waste skips used on the site were hinged. This allowed the body of the skip to tip forwards discharging the contents of the skip into the waste bay. The driver would raise the skip on its forks and then pull a release handle allowing the skip to tip under gravity. Once the waste had been released, the driver would exit the cab and pull the skip back to the level, engaging the release handle which prevents the skip body from tipping.

The tipping body skip presented numerous hazards:

- Slips and trips when exiting forklift truck to activate the release handle.
- Slips and trips walking over the waste in the waste bay
- Strains from the manual effort required to activate the release handle under load
- Exposure to the airborne dust from the discharged waste
- Driver exposed to elevated load when re-setting the skip onto the level
- Potential manual handling, crushing and impact injuries from the moving body of the skip

The Marshalls' Sandy Works team engaged with a local fabrication firm, P. H. Engineering Services Ltd, to find a better solution for the waste handling. They designed a square bodied, robust skip that employed a strong hinge at its base. The hinge allowed the whole base surface of the skip to rotate, effectively creating a door to release the waste products.

The skip is transported by picking it up with a forklift truck from the base. When in the area where the contents are to be discharged, the forklift truck places the skip on the ground, withdraws the forks from the base and then aligns the forks with two lifting points at the top of the skip. The forks are then raised lifting the skip upwards and allowing the hinged base of the skip to open discharging the contents. The driver then lowers the skip whilst gradually reversing, allowing the base to close. The skip is then picked up from the base for transporting back to the production facility.

BENEFITS

- The skip can accept all granular and block wastes
- Forklift driver remains in cab – reduced risk of slips trips and falls
- Reduced exposure to dust
- Reduced risk manual handling injuries and crush injuries
- Bottom opening skips can be made to suit the capacity of the forklift trucks
- Modular design that can be integrated across the business





1380 Bulk bag splitting hopper

GRS Bagging **2 5**



Before

DESCRIPTION

At GRS Bagging, there was a frequent requirement to empty one bulk bag of material into another. This could be for a multitude of different reasons; the product was in the wrong bag, the bag was damaged, the wrong supplier bag had been used.

This activity traditionally involved the use of 2 forklift trucks and 3 operators. One forklift would be supporting an empty bag. The second forklift would raise the bulk bag of product to be emptied and manoeuvre until it was positioned directly above the empty bag. Once the two forklifts were in place, an operator would put his arm under the suspended top bag and slice the bottom open. This would allow the materials to flow directly into the empty bag below. This was a hazardous task and had resulted in cutting injuries from the use of knives, trapping of arms and fingers between the forks, the potential for the operator to be hit by falling product and the operator, who was on-foot, working in close proximity to the two forklifts.

To mitigate these risks, GRS Bagging introduced a specially design hopper. The operator suspends an empty bag on some forks which are located underneath the hopper. The forklift then picks up and raises the full bag which is to be discharged into this new bag. He lowers the full bag into the top of the hopper onto a splitting device located on the inside. The blades on the splitter break open the bag allowing the material to fall freely into the bag waiting below. He can then pick up and remove the newly filled bag from the bottom of the hopper.

BENEFITS

- Eliminates injuries from cutting operation
- Eliminates risks of trapping on forks
- Operators no longer needs to work in close proximity to forklift
- Operation only requires 1 forklift and is now a 2 man task
- Hopper will be used on 19 other GRS Bagging sites across the UK



After



1382 Gulley grab lifting accessory

Stanton Bonna Concrete Ltd **2 3**



DESCRIPTION

Stanton Bonna Concrete Ltd were concerned about the inherent risks associated with the unloading of gullies from the trailer at the customer's site. An operator had to climb onto the trailer and

either attach a sling or position the gully so that forks could be inserted into the spouts. Both methods involve high-risk activities such as working at height, manual handling of heavy products, and the interaction between vehicles and pedestrians.

These risks were mitigated by developing a new lifting accessory working alongside a manufacturer. The grab enabled a gully to be offloaded directly from the trailer bed solely using an excavator.

BENEFITS

- Operator no longer needs to access trailer – working at height
- Reduced manual handling
- No interaction between pedestrian and vehicle
- More secure handling of gullies – avoiding breakages and potential injury
- Improved efficiency and speed of unloading
- Grab device could be used on other sites

visit www.safequarry.com for more details or email: info@safequarry.com



1383 New RAPID batching plant and concrete delivery system

Stanton Bonna Concrete

3



DESCRIPTION

When designing a new batching plant Stanton Bonna Concrete made the safety of employees operating and maintaining the plant a top priority. To achieve this, they ensured that during the initial planning phase all the potential risks associated with the plant were reviewed. The hierarchy of control was considered for each risk and an appropriate solution agreed and built into the design. The controls were designed to be an integral part of the plant. It took into consideration:

- The need to access 'danger zones' on the plant to perform certain actions and the need to ensure sufficient safeguards were in place and being used.
- Minimising the potential of a fall from height when working on elevated platforms. Moving between different levels was also considered
- Designing out vertical ladders. All access is by stairs with landings, vertical ladders are not permitted
- A maintenance platform for bucket skips. This incorporates safety gates to secure the platform and wash out chute whilst personnel are working on it. The safety gates have position indication switches that prevent the bucket being moved whilst they are closed unless in a maintenance setting

- RAPID mixers - Access lids are provided around the mixer for easy access to the interior of the mixer for cleaning and maintenance. Hydraulic struts aid opening and hold the lids open. An inspection hatch is provided in the mixer casing, with hinged lids and wire mesh inside. This provides visual inspection of the mix consistency whilst preventing access.
- RAPID batching plant platforms allows for maximum access for maintenance and cleaning, on 4 levels, maintenance; mixer; weigh hopper; and aggregate rotary conveyor; access to all levels is by stairs.
- Mixer and bucket skip access is controlled by a Castell interlock system with controls to ensure effective isolation.

Whilst the implementation of the control measures increased the final cost of the project by approximately 10%, they have significantly reduced the potential risks that operators will be exposed to.

BENEFITS

- A safer environment for all
- Less chance of accidents and incidents and their associated costs
- A more efficient plant
- Reduced downtime when completing maintenance tasks
- Enhanced company reputation
- Enhanced morale of employees
- Reinforced safety culture of company



'The Fatal 6'

At the request of MPA Council and Board, the MPA Health & Safety Committee looked back at the fatal incidents over the last decade, identifying 6 high consequence hazards, 'The Fatal 6' have been the main cause of fatalities over that period. MPA and its members have agreed that they will focus their resources on tackling the issues associated with 'The Fatal 6'.

1
Contact
with moving
machinery and
isolation

2
Workplace
transport and
pedestrian
interface

3
Work at
height

4
Workplace
Respirable
Crystalline
Silica

5
Struck by
moving or
falling
object

6
Road Traffic
Accidents

A working group involving MPA members has been established for each theme. They will develop industry best practice and guidance, raise awareness and develop useable tools for reducing risk.

The new Guidance and other resources will be accessible via www.safequarry.com and from other channels





1259 'Quinn Safety Hub'

Quinn Building Products > Derrylin > Northern Ireland

- 1 2 3 4 5 6



DESCRIPTION

Quinn Building Products, as part of Quinn Industrial Holdings, has developed a new state of the art digital health and safety management solution as a major part of its Safer by Competence policy. The system provides a cloud-based, centralised health and safety management solution which is fully integrated for all Quinn divisions.

The project required significant financial and resource investment, collaboration with stakeholders in all Quinn divisions and the involvement of many external contractors. The outcome of this work, which took over 12 months to complete, was the 'Quinn Safety Hub'. The Hub consists of four modules that focus on the management of incidents, audits, training and contractors.

- Feed all records into a centralised reporting system
- Provide all information in real time, thus providing up to the minute information on the progress of investigations and recommended actions
- Provide evidence of competency
- Schedule and complete audits and inspections
- Track the performance of KPIs set for each Division

The development of the Hub promotes and encourages a culture of accountability and continuous improvement. It enhances the ability to monitor the progress and resolution of issues as they arise in real-time.

The Hub includes a mobile App enabling the use of tablets or mobile phones to report incidents and hazards, complete audits, inspections and investigations and raise actions on site.

Traceability and accountability are achieved for each action raised by assigning it to an individual, giving responsibility to follow through, complete and close out the action.



1 & 2 - Health & Safety Management – Incidents and Audits

The Hub uses 'Effective' and 'Learn Up On' training management software, with the functionality to:

- Report and investigate, incidents, near misses, hazards and positive observations throughout the organisation





1259

Quinn Safety Hub - *continued*

Quinn Building Products > Derrylin > Northern Ireland

1 2 3 4 5 6



3. Training

The Hub allows for the complete management of all training. Part of the Hub development included the integration of 'Learn Upon' training management software to create a uniquely tailored system.

The Hub provides:

- Delivery of online video-based training, including inductions and toolbox talks.
- Easy identification of employee and contractor current training status using a traffic light system
- Alerts for managers in advance of training expiry, allowing them to schedule training in line with operational needs.
- The ability to ensure compliance

4. Contractors

The contractor module enables the company to:

- Efficiently manage contractors. All contractor information is now in one central place: insurance, employee training records, health and safety documentation, etc.
- Always ensure compliance and traceability
- Provide a self-serve option for contractors, who receive direct notifications and access to upload their own information and documentation
- Deliver induction training online via videos prior to contractors' arrival on site.

Hub Promotion

The launch of the Safety Hub was heavily promoted externally through a news release, video promotion and social media campaign, and internally through the newsletter, intranet and face to face communications and internal training workshops. A video was used to emphasise the significance of the development and to add to the promotion of a safety-first culture. The visibility of the internal campaign has helped raise awareness of the importance of making health and safety a priority for every individual in the company.

BENEFITS

- An enhancement to our PDCA (Plan – Do – Check – Adjust) approach to risk management
- Improved compliance, as a result of better reporting and rigid compliance controls
- Assisted with the implementation and certification to OHSAS 18001 and ISO 45001 Health and Safety Management Systems
- Real-time reporting and visibility
- Traceability and accountability
- Interactive contractor management
- Full training management
- Removal of time-consuming paper-based reports, documentation and audits
- Central location and ease of retrieval for all safety and training information during internal and external audits
- Evaluation of both divisional and overall company performance using KPIs
- 2018 accidents and incidents greatly reduced overall versus pre-Hub figures (2016):
 - AIR down 41%
 - Reportable (3 Day +) injuries down 46%
 - Lost time injuries down 42%
- Auditors involved in certification have commented on its positive impact
- HSENI's Ken Logan, MBE, described the system as "a fantastic management tool for the senior managers within the company".
- Other organisations across UK have requested information about the system
- Enhanced safety culture throughout Quinns
- A safer working environment for all.



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1280 'Safety Savvy' roll out

CEMEX UK Ltd > National

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DESCRIPTION

In 2018, CEMEX UK was looking at ways to help every individual to become motivated about safety. The goal was for individuals to examine their behaviours in relation to safety, not just at work, but in all walks of life and recognise that safety is about 'You' wherever you are, whatever you do.

CEMEX UK developed its 'Safety Savvy' campaign and training based on a book by Andrew Sharman & Dr Tim Marsh - 'Safety Savvy'.

10 volunteers, from around the country, went on a week-long 'train the trainer' programme. Exploring the best methods of communicating difficult subjects with potentially severe consequences.

A dynamic half-day training course was designed to raise awareness of how our personal behaviour influences the health and safety culture in our business. It looked at:

- How to **reduce reliance on luck** and **stay safe all day, every day**
- The **Organizational, Social and Personal** factors that influence safety
- **Say Something!** – the importance and impact of speaking up for safety
- **Living, Loving, Laughing & Giving** – the four keys to personal wellbeing
- **Making it personal** – your commitment to being **Safety Savvy**

The training is around a 4-hour safety discussion involving no more than 15 participants, this ensures a high level of participation from those involved. The participants are encouraged to tell stories about their own experiences and feeling, a very different approach to more traditionally based health and safety presentations than many participants were more familiar with. This approach helped participants to become very engaged.

The rollout of 'Safety Savvy' has taken place in 33 locations around the UK, reaching over 2,400 Cemex employees and contractors. Around 9,720 hours of safety savvy training has been completed across the UK. This will be an on-going programme.

BENEFITS

- 82% of the business has engaged with Safety Savvy
- The 12th month rolling employee LTI frequency rate has reduced from 0.5 to 0.2
- Total number of LTIs in the 12 months reduced from 7 to 2
- Safety Savvy recognised as having made a significant positive effect.
- Positive feedback from participants
- Individuals have better understanding how they can affect an improvement in H&S
- Individuals have more confidence to "say something" or intervene in relation to H&S
- Demonstrates CEMEX's commitment to H&S and the achievement of zero harm
- Improved safety culture across the business.
- The employee's perception about the programme is summarised by this quote "A different approach really shakes things up, 'Safety Savvy' created a buzz and got people talking and thinking about safety".





1302 eToTs Online Training

Aggregate Industries > Bardon Hill Quarry

2 6



DESCRIPTION

Aggregate Industries utilises a very large fleet to deliver the wide range of products that the company produces. The fleet includes 500+ franchised and regular hauliers, 1000+ trucks and 1,500+ drivers. The vehicles and drivers are deployed across 200 sites. Aggregate Industries also works with over 1,000 external hauliers responsible for around a further 5,000 drivers.

Aggregate Industries has always provided good quality haulier training, which was administered via established toolbox talks sessions or by attaching the training material to an email. However, there were a number of issues with the delivery of these talks:

- Poor or inconsistent cascade of information from the haulier to the driver
- No measure of the coverage of the training
- No record of training kept for individual drivers
- No check of understanding at the end of each talk
- Significant concerns as to the awareness of evolving health and safety protocol amongst the workforce

To overcome these issues, the company has developed an online e-learning platform – Time Out to Talk Safety (eToTs). This training programme compliments any existing training that hauliers undertake with their drivers and does not require any special software or equipment.

The Google form-based training system is sent as a link to the haulier, which is then easily cascaded to the drivers, and can be accessed on desktop, tablet or phone. Alternatively, drivers can scan a QR code on eToTs posters located around Aggregate Industries' sites to access the training material.

Aggregate Industries is able to monitor whether all drivers are taking safety seriously and encourage hauliers who are poorly represented to embrace the training and better adopt a culture of safety. Checks can be made to ensure it isn't always the same haulier drivers completing the training, and the same ones avoiding it.

Each time a driver successfully completes one of our eToTs training sessions, they receive a certificate of completion which can be

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used as part of the driver's Continuing Professional Development (CPD) and could be used to support section D4 Professional Development on the haulier's next FORS Audit.

Drivers are required to achieve a score of 80% in order to receive the certificate – if this score is not met, the driver is required to take the test again, ensuring their total understanding of the topic in question.

As scoring is broken down by question, those questions that are frequently answered incorrectly can be identified. This enables the future eToTs tests to be modified to address problem areas. The system provides summaries for regions and business areas that have completed the training. The logistics team can therefore identify areas that may need further guidance.

Since their introduction in September of 2018, Aggregate Industries has issued 3 eToTs and over 2,300 passes have been awarded. Ultimately, the aim is to have eToTs training targets rolled out to all its hauliers to instil a culture of adopting the latest health and safety standards.

Aggregate Industries plans to increase the number of eToTs available. It will also roll them out to Aggregate Industries incorporated companies that utilise haulage services, such as London Concrete.

To see an example of the training, please follow the link below:

<https://docs.google.com/a/aggregate.com/forms/d/1BVywYu21jWW-nyHIKMBer3ZiDHWGxMIYcPfJU2V>

BENEFITS

- Easily accessible course for drivers and hauliers
- Consistent delivery of material
- Progress can be accurately monitored and followed up
- Feedback enables the courses to be improved or updated
- Better trained and safer workforce.





1270 FORS Gold operator

O'Donovan Waste Disposal Ltd > Markfield Road

2 6



DESCRIPTION

O'Donovan works continuously to ensure it is an exemplar for hauliers, recognised for its commitment to road safety, employee training, industry best practice and the safety of all road users. This has been achieved through the application of a wide range of initiatives and the strong leadership.

Vehicle adaption

O'Donovan was the first independent waste company to achieve the Fleet Operator Recognition Scheme (FORS) Gold Standard accreditation which it has now held for eight years in a row. O'Donovan exceeds the recommended best practice of FORS by including the following safety enhancements on its the entire fleet.

- Nearside blind spot side sensors
- Reversing cameras
- Nearside CCTV cameras
- Forward Facing CCTV Cameras
- Audible left turn alarms
- Enhanced side impact bars
- Fresnel lenses (as well as Class V and VI mirrors)

The management team has played a key role in developing innovations in the industry working through CLOCS. It has helped in the redesign of lorry cabs to improve driver vision and introduction of glazed lorry passenger doors. O'Donovan was the first company in the UK to add the Mercedes-Benz Econic skip-loaders to its fleet, encouraging others in the industry to follow. It now has the largest direct-vision, low-entry fleet for an independent, waste haulier in London.

CheckedSafe

O'Donovan introduced the CheckedSafe app which is used by all drivers when carrying out daily walk-around checks. During the inspection drivers can log information with the click of a button. The information can be viewed by others in real-time. The information is used by the transport team to speed up the process of fleet maintenance. The App records the GPS coordinates, the duration of the check, any detailed notes added by the driver, pictures of any defects and the actions taken to correct them.

Operational management system

O'Donovan's bespoke operational management system monitors driving behaviour in 'real-time' and enables transport managers to communicate with the entire fleet immediately, via a digital two-way radio. Allocation of work is managed meticulously as traffic updates come in. HGVs follow routes with the least congestion and will cause the least disruption including avoiding cycle-hotspots and routes that have schools at peak times. The system allows managers to track individual driver's locations and flags driving styles such as sudden braking, harsh cornering and idling, allowing further training needs to be identified quickly.



Training

With a high-level multi-lingual training policy underpinning its commitment to employee's professional and personal development, education is considered an essential component for motivating and upskilling staff, whilst maintaining and delivering high-quality services in the safest possible way.

O'Donovan headquarters is a certified training centre, approved by JAUPT (DCPC) and British Safety Council (BSC), making multi-lingual training accessible to all staff. It is shared with fellow waste companies in a bid to encourage others in the waste sector to adopt best practice. Drivers handbooks are published in multiple languages and there are five multi-lingual mentors on hand to assist with questions and ensure understanding.



1168 FORS Gold operator - continued

O'Donovan Waste Disposal Ltd > Markfield Road



A new addition to the training syllabus is 'Security and counter terrorism' which aims to better focus a driver's attention to personal and vehicle security. It helps drivers recognise the potential threat of terrorism; specifically, theft of vehicles or loads and the use of vehicles as weapons.

Several drivers are qualified in RHA in-cab training, equipping them with the skills to carry out in-house driving assessments to support and mentor staff, covering fuel economy, reducing accidental damage.

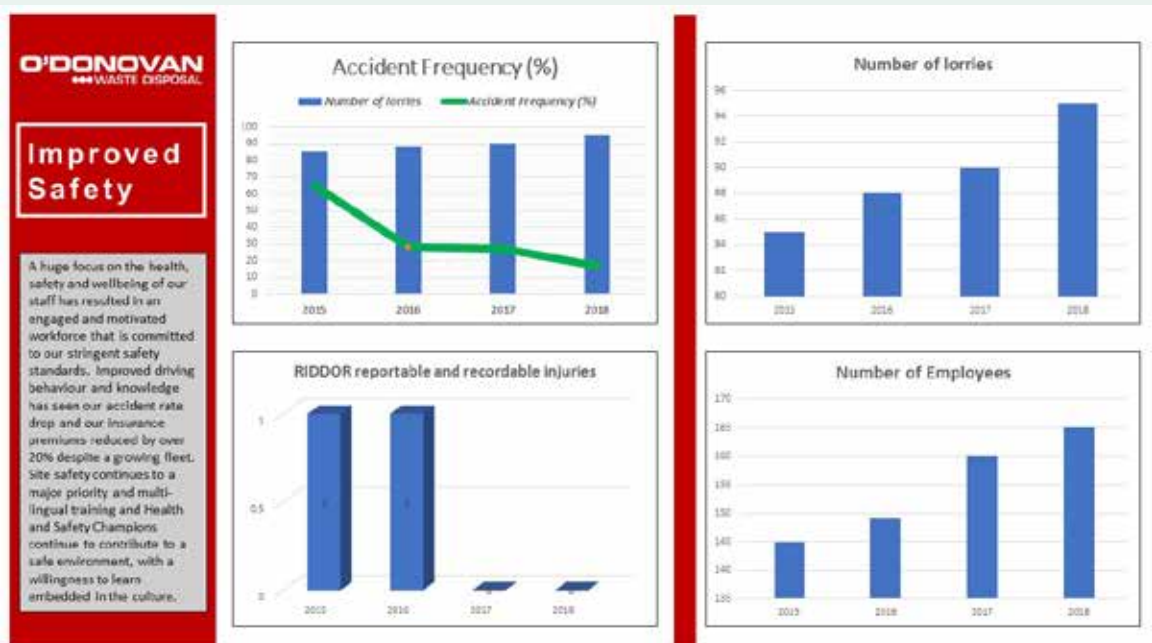
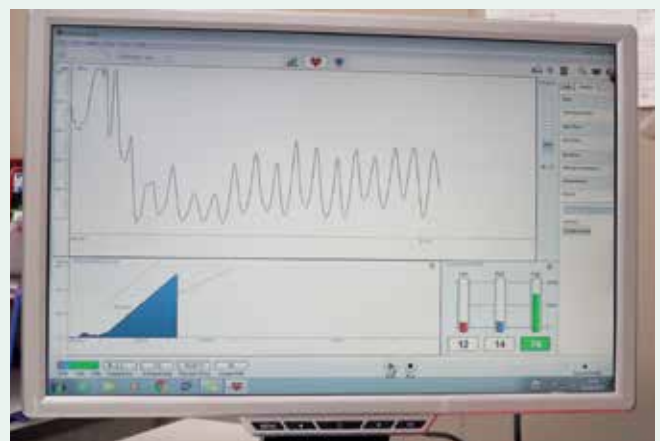
To sit alongside their comprehensive PDP's and classroom-based training curriculum, drivers also take part in Safer Urban Driving courses. Drivers cycle on London's roads with an instructor, getting in close proximity to HGVs and buses. This gives them practical, first-hand experience of the challenges cyclists face and helps them to better anticipate and understand the behaviour of other road users, especially cyclist, when they are driving.

Improved driving behaviour backed up with anti-idling campaigns and DCPC courses like Lo-City Driving has resulted in safer driving and better fuel efficiency.

BENEFITS

First dedicated waste company to achieve ISO39001 certification from BSI – May 2018

- Insurance premiums reduced by 20%
- Accidents reduced by 22%
- Fuel efficiency has increased by 26%
- Carbon emissions reduced per kilometre travelled by 19.5%
- Enhanced sustainability credentials
- Recognition as an industry leader
- Skilled workforce with commitment to safety
- More efficient business with significant operational savings
- Reduced road risk for all





1258 **POD truck cleaning project**

Marshalls > Marshalls Premier Mortars and Screeds

3 4 5



Before

DESCRIPTION

The internal cleaning of Marshall's gravity fed mortar delivery trucks known as PODs was a difficult and unpleasant task. Dried mortar needed to be removed on a regular basis from the internal walls using an electrical breaker. The hazards associated with this activity included difficult access and egress, working at height, confined space working, exposure to dust and chemicals, and the possibility of being struck by falling material. In the event of an accident, extracting an injured individual from inside the POD vehicle was difficult.



After

Following 2 incidents in 2017, involving material falling from the walls during cleaning, this practice was stopped.

A solution was needed to either eliminate the need for a person to enter and clean the POD or reduce the number of times the cleaning is completed and make the cleaning process less hazardous.

In addition, it was recognised that the design of the POD truck paddles was inefficient. As they were not close fitting enough to the compartment body, this potentially resulted in around 1m³ of wasted mortar sticking to the side walls and floor with each delivery. An improvement in paddle design would minimise the amount of mortar being left in the compartment when deliveries were made and reduce the amount that needed to be cleaned off.

Marshall's solution comprised of two elements:

- A flexible scraper that contacted the walls was added to paddles; this significantly reduced the amount of mortar left sticking to the sides. All POD vehicles have had a standardised version of this modification installed.
- An adjustable pressure washer was fitted with turbo nozzles. The POD vehicle is moved alongside a gantry, an operator using the pressure washer is then able to clean the POD vehicles from above. The nozzle can be rotated to enable the operator to clean the nearside of the vehicle without it being re-positioned.

The new system was installed at all operational sites. A new preventative cleaning practice was issued that included vehicle daily check sheets for both logistics and operational staff to complete.

In the event of a need to enter the vehicles, a solution was devised and implemented at several key sites, using a Davit Arm and rescue



system. Confined Space training was carried out at these key sites. A video demonstrating the cleaning process was produced as a training and reference aid.

BENEFITS

- Reduced working at height risk
- Reduced hazards associated with access and egress
- Reduced risk from falling objects
- Reduced exposure to dust and chemicals
- Reduced exposure to HAVs
- Reduced need for confined space working
- Safer system for confined space working and rescue
- Increased volume of delivery to customers
- Reduced waste and cleaning
- More efficient and safer operation.





1372 Tarmac 'OneCard' - electronic drivers' passport

Tilbury Tarmac > Halecombe Quarry **2** **6**



and remote staff to quickly identify drivers as the named and approved person who holds the required permits and qualifications.

The 'OneCard', with a driver photo and unique I.D number, also prevents fraud and the risk of duplication. The system allows the instant awarding of a competency and the uploading of evidence which is time and date stamped. A simpler, smarter, safer system that represents a major step forward for Tarmac's management of drivers.

BENEFITS

- Allows real time checks of driver competency at site
- More efficient, accurate data entry and easily accessible records
- Ensures drivers qualifications and training up to date
- Ensures driver's site inductions are up to date
- Popular with weighbridge operators

DESCRIPTION

Tarmac has introduced innovative smartcard technology to change the way it manages and supports drivers in the construction industry. The card system provides maximum assurance of the safety and competency of all drivers either entering Tarmac's sites or being dispatched along the supply chain.

The 'OneCard' is scanned at site entry or exit points. The reader is provided with a real time data check and has visibility of an individual driver's competence together with any mandatory induction criteria. An example of this would be highlighting whether the driver had been to the site before, whether their induction had expired and whether all their required competencies were in date.

Tarmac have circa 11,000 drivers of which 95% are third party contractors. The number of mostly paper-based records held on these drivers is huge. Checking, maintaining and accessing this information was becoming a significant challenge for Tarmac. The new system allows both static

- Popular with drivers – less paper and easy to use
- Popular with management
- Potentially industry changing innovation
- Useful to customers and supply chain partners
- Potential to facilitate industrywide data sharing on drivers.



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1279 Mobile plant audio shut off

CEMEX Materials > Willington Quarry 2

DESCRIPTION

The cabs of modern mobile plant are fitted with a range of electronic safety devices such as reversing aids, weigh loaders, communication and audio entertainment equipment. Most of this equipment includes some form of audible notification or warning system. The proliferation of equipment has increased the possibility of an operator becoming confused, missing an audible alarm or notification. Should this occur, the risk of a collision or incident involving the mobile plant would be increased.

At Cemex's Willington Quarry the team looked at what could be done to reduce any distracting noise and maximise the effect of the audible warnings from reversing alarms.

This was achieved by linking the in-cab entertainment mute control to the Sensor vision reversing aid on the mobile plant. The modification mutes the entertainment system in the cab when the proximity reverse alarm sounds. The only sounds emitted in the cab are that of the in-cab reverse alarm drawing the full attention of the operator to the potential danger. The entertainment system is restored to normal levels once the machine is out of the danger radius of the Sensor vision or changes direction of travel.



BENEFITS

- Minimises risk of driver not hearing reversing alarm
- Reduced risks of collision on site
- Simple modification carried out by an auto electrical engineer
- Does not negatively affect any other safety systems
- Now standard on all Cemex's loading shovels in the Midlands area
- System could be easily adopted for other plant.



Driver's Handbook



The Handbook is a tool for working drivers to help them understand and manage the risks that they face and create when driving and operating vehicles for work. It will help people make safer choices about the way they drive and behave around vehicles.



Download your FREE copy from www.safequarry.com or www.safeprecast.com



1352 RCS reduction

Hanson Aggregates **4**



DESCRIPTION

One of the key health and safety priorities for Hanson is the effective management of RCS. A cross divisional working group was set up to focus on RCS reduction, they worked with RCS Steer Company, a specialist in this area. Over an 18 month period, they developed a comprehensive set of procedures to assist managers with the control systems to reduce exposure to RCS. The holistic approach adopted included investment in engineering solutions, training, occupational health monitoring and live real-time RCS monitoring.

Engineer Controls

Hanson invested £3 million as part of its programme to reduce RCS exposure, this included the following investments:

- Installation of clean side/dirty side changing facilities
- Upgraded welfare facilities
- Installation of boot cleaners
- Installation of PPE/overall cleaning vacuum pods
- Personal air flow masks
- Processing plant misting and foaming systems
- Plant encapsulation and mobile plant mini vacuum cleaners
- Installing misting / foaming systems in primary crusher buildings
- Elimination of the potential exposure of RCS during the overall cleaning collection service by bagging all dirty overalls in dissolvable bags.

Training and Development

The majority of Hanson's managers and supervisors have been trained in the industry recognised MPQC Management of RCS, and all employees received internal awareness training.

Occupational Health Monitoring

750 employees were given a chest X-Ray. Identification of silicosis at an early stage significantly improves the prognosis for employees. In addition to detecting silicosis, 105 cases of other abnormalities were identified from the chest X-ray and were referred on to an appropriate medical professional for advice.

Live RCS Monitoring

Following the installation of the engineering controls and the evidence from the occupational health services, Hanson felt reasonably confident that the management controls for RCS were relatively effective.

However, RCS Steer Co, were concerned that the existing monitoring of the RCS levels was very retrospective, based on analysis of exposure over an extended period, the analysis of which often adding further delay. To effectively monitor actual exposure to RCS, a better monitoring standard was required.

In 2018, Hanson engaged in a trial of the world's first 'real time' Respirable Crystalline Silica monitoring device designed, patented and manufactured by Trolex Ltd.

The live RCS monitoring enables personnel to establish the levels of airborne RCS within a building prior to entering. Individuals can therefore determine the level of risk control required prior to entry or any tasks being completed.

The system also assists with the evolution of the engineering controls installed across the business, for example the misting/foaming systems. Very accurate information can be gathered about the effectiveness of the control measures put in place.

BENEFITS

- Significantly enhanced control of RCS
- High level of employee awareness of RCS
- Early identification of health issues through X-Ray programme
- Real time data enables impact of investment to be accurately measured
- Management able to quickly identify and rectify any RCS black spots
- Employees know RCS levels in real time - can select appropriate PPE before entry
- Providing gold standard for industry
- Improved health and wellbeing for all employees



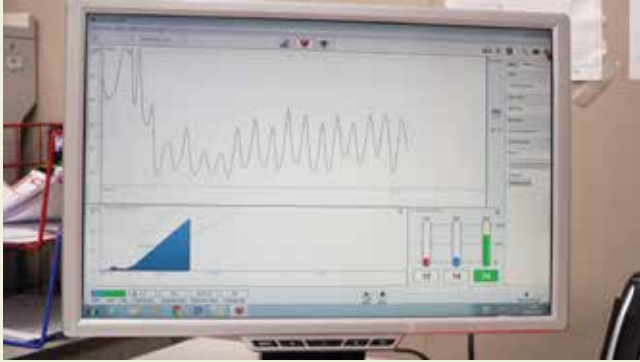
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1272 'Dynamo Welfare Project'

O'Donovan Waste Disposal Limited > Markfield House

6



DESCRIPTION

'Safety above and beyond' is O'Donovan's pioneering ongoing strategy to drive safer standards across its operations and the wider industry. The health, safety and wellbeing of its staff, customers and the wider community, is paramount and the business ensures this ethos is embedded in all company activity.

A crucial element of the strategy is the inclusion of a strong stance on supporting mental health and wellbeing. The aim is to assist staff in maintaining positive mental health and, where required, to deal more effectively with any personal or work-related problems they may face as well as learning self-awareness tools to help manage negative emotions including stress.

As a waste business operating in the construction and demolition sector, O'Donovan values its staff as its biggest asset. Results from recent industry surveys revealed 55% of workers had experienced mental health issues. This reinforced the management decision to encompass the well-being focus of their 'Above and Beyond' safety strategy – an action that needs to be prioritised in the supply chain.

The confidential wellbeing support programme is called 'Dynamo' and is believed to be the first of its kind in the waste sector. O'Donovan took a totally innovative approach and introduced a ground-breaking interactive training module that provides staff with simple and effective techniques to alter their stress reactions - allowing them to take control of uncomfortable situations that affect them. Examples of potentially stressful situations they may encounter on a day to day basis include traffic jams, public-transport journeys, dealing with demanding people or even conflict. Any of these situations could trigger stress or anxiety.

The training module helps them to take charge of life's challenges by using a number of exercises like breathing control or situation awareness. A skill that will be useful in every aspect of daily life.

The pioneering training gives the employees the tools to:

- Take control of their reactions
- Manage the effect of energy draining situations that occur
- Train themselves to sustain consistent reactions
- Balance and take a step back to assess interactions
- Improve their communication – both listening and speaking when feeling challenged

The training takes place in small groups of circa six employees and includes demonstrating to them the effect that stress has on their heartbeat. Through the education and training employees have learnt how to identify when they are experiencing (or about to experience) a negative or adverse reaction to a situation. It has given them the tools to minimise the impact it has on them and empowered them to respond in a positive and constructive way.

Monitoring and assessment of the ongoing strategy and its implementation have been vital to the success of the training. An assessment tool was introduced before and after training.

BENEFITS

- Training has been well received by employees
- A 32 % reduction in organisational daily stress (from 61% to 29%)
- A 15% decrease in absenteeism
- A reduction in incidents
- Safer drivers
- Reinforces O'Donovan's commitment to 'Safety above and beyond'
- Improved health and wellbeing for all
- Provides industry leadership





1264 First Person on Scene (FPOS) – training level 3

Marshall's PLC > Cromwell Saws **6**



DESCRIPTION

The first aid risk assessment carried out for remote quarry workers at Marshall's sites, determined that the existing first aid at work qualification was not suitable for operatives. The following risks were identified:



1. Location of the quarries and their proximity to local A&E
2. Excessive response times by the emergency services
3. The operatives' ability to deal with major trauma incidents
4. The nature of hazard and risks present at these sites
5. The type of injuries that potentially could occur
6. The means of contacting the local emergency services by land-line telephone or mobile
7. Inadequate planning for the management of emergencies

To address these risks, it was agreed to organise a "First Person on Scene (FPOS) Level 3 Training Course in Emergency First Aid and Trauma Management". This course would give operatives the skill, knowledge and confidence to deal with major incidents should they arise.

The training course covered scene management, resuscitation, catastrophic bleeding, pelvic splinting, C-spine immobilisation and many other first aid topics. The course is a mixture of practical assessments and theory-based study. It is supervised by a trainer with over 20 years' experience as a senior officer and instructor within the Ambulance Service. To complement the training, each delegate was issued with a First Aid rucksack which included such items as oxygen, and defibrillators, each kit cost in excess £1,900.

36 operatives attended the intensive, 4-day course, they represented 84% of Marshall's employees engaged in quarrying activities.

BENEFITS

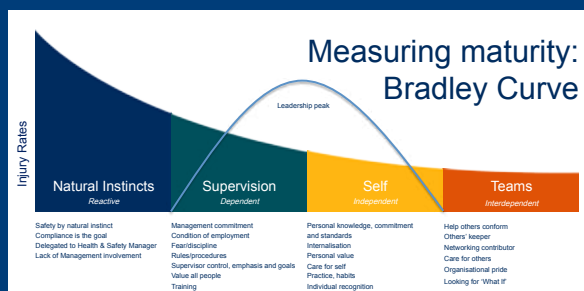
- Operatives enthusiastic and enjoyed participation
- Operatives now have the skills to deal with serious incidents
- Operatives can manage incident until the emergency services attend
- Reduced potential consequences of an incident at a remote site
- Increased the confidence within the team
- Increased the morale for those who work remotely
- A safer environment for all

Safer and Healthier by Leadership



MPA is running a series of workshops at different locations throughout the UK in 2020, contact Ian Gibson at ian.gibson@mineralproducts.org for more details.

A programme that will help leaders to understand how leadership behaviours influences their organisation's development. Also to analyse their business, to develop their strategies and inspire their workforce to achieve 'Zero Harm'.





1379 Worker engagement

Tarmac

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DESCRIPTION

Standards of safety in Tarmac Building Products were both inconsistent and lacking in areas. This was reflected in a high number of accidents and incidents across the business. A step change was required. The division had the worst safety record in Tarmac 4 years in a row.

In January 2018, every operational member of staff in the business was invited to participate in a safety stand down to discuss how this situation could be improved. The feedback was that the business needed better worker involvement. Working groups and leadership teams were set up to reflect on this and identified the following initiatives to be delivered.

What Good Looks Like (WGLL)

Engaging with sites, best standard practices were identified and placed in a booklet which was distributed throughout the business, this set new standards for the division. To measure sites against these standards, cross business groups consisting of directors, regional operations managers and site managers were set up to visit sites. The group's role was to engage with all the operational staff at the site and to determine the standards achieved and what further improvements could be made. Sites were awarded a status of red, amber, bronze, silver, or gold to reflect its position. All 42 sites were visited during the year and every single member of staff involved. This process continues today.

Reward and Recognition

A system was set up on our intranet allowing every employee to make submissions on behalf of their colleagues. Submissions could be made for either individuals or groups of people. The objective was to identify who had gone above and beyond what was normal in terms of safety or who had identified an initiative that improved safety. The reward was linked to the bronze, silver, or gold awards. A monetary gift was made to the successful nominees who were



also recognised in the monthly safety e-magazine and the division's intranet. 55 individuals have been recognized so far with contributions reducing manual handling, confined space and work at height risks.

WhatsApp Best Practice Sharing Group

To promote best practice around the business, a WhatsApp group has been set up with posting enabled from every site and every manager of the business. To date, hundreds of best in class photos and ideas have been shared giving fantastic cross-collaboration across all product lines.

Regular Workshops/Conferences

A set of regular workshops and conferences have been set up where leaders of the business visit different sites to present and discuss safety initiatives and strategies. Additionally, site managers and supervisors participate in both on and off-site conferences, holding workshops to discuss improving specific areas of safety. The learnings points from the workshops are then promoted throughout the business.

BENEFITS

- Tarmac's Building Products division achieved the best safety record in Tarmac over the last 2 years – reflecting a significant change in everyone's attitudes to safety
- Created an interdependent safety culture through all levels of the organisation
- Overall WGLL statuses of sites has improved
- Reduction in LTI's and recordable incidents
- Reduction in high potential learning events
- Effective sharing and adoption across the business of best practice
- Workforce is rewarded for their positive contributions
- High level of engagement and pride in achievements
- All levels working together to achieve a safer environment

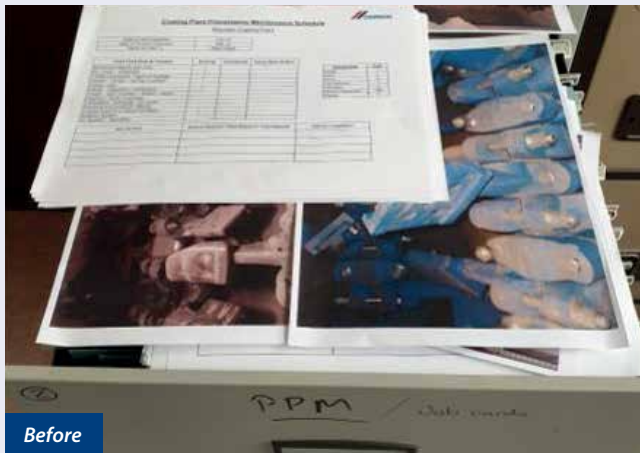




1288

Digital revolution in maintenance reporting

CEMEX UK > Stourton Coating Plant



Before

DESCRIPTION

An annual engagement survey at CEMEX highlighted the need to significantly improve the maintenance records and reporting system. The paper-based system created a lot of duplication and inefficiency. Managers and assistants were spending too much time filling in, checking and then filing reports. Downtime requests for maintenance were being lost or not communicated to everyone in the supply chain who needed to be informed.

A small team was set up in the asphalt team to review this. They developed an in-house solution that enabled real time reporting of defects on plant and the work carried out to rectify them. Every piece of machinery was labelled with a unique bar code. This enabled an operator to simply identify the item of plant by reading the bar code and then call up appropriate information on a mobile device. He is then able to complete simple reports inputting data such as the date, time, issues identified, checks completed, work undertaken and, if relevant, take photos. This information is stored in the cloud.

The whole system has been automated and paper reporting made redundant. Downtime can now be requested through an online form; this updates a calendar which can be viewed by all parts of the business. The downtime request is sent to the operations manager for approval. The system then notifies all parties that the request has been accepted or declined.

BENEFITS:

- Consistent formats of employee reports and filing
- QR codes ensure all relevant data connected to individual plant items
- Data capture easily achieved, recovered and interrogated.
- Information is stored forever in easily retrieved digital records
- Photo's stored alongside other information (A picture saves a thousand words)
- Information easily shared between sites

- Easy for managers to progress and close out maintenance tasks
- Downtime requests managed efficiently with online form
- Real time reporting facilitating rapid action on key issues
- Ability to view downtime of other plants / areas.
- Planning of plant downtime can be based on other plants status.
- Monthly reports created and emailed
- Anyone with a mobile device can use the system.
- No paper required
- User friendly
 - Further phases of development planned
 - Automatically reporting defects to external contractors
 - Contractors reporting work carried out on site.
 - Assist contractors with invoice requirements.
 - Contractor checks logging.
 - PPM Scheme logging work that's been done at the time it's been done





1268 PPE selection flowcharts

Aggregate Industries > Newark > Express Asphalt



4 5

DESCRIPTION

The management team at Express Asphalt in Newark were concerned that analysis of incidents had identified that, the injuries incurred might have been either avoided or their severity reduced if the injured party had been wearing the correct PPE.



In particular, a recent spell of eye injuries, revealed that workers had been carrying out a task above head height and had some object or debris make contact with their eyes. They were wearing standard safety glasses rather than sealed safety glasses or goggles which would have prevented the eye contact.

To help improve PPE selection one of the managers designed a 'PPE Selection Flowchart' that could be used to aid people in selecting the appropriate items of PPE for the specific task they were about to undertake. The flowchart is designed to prompt thought during

the risk assessment and method statement process. Once all the risks have been identified and, as part of implementation of control measures, the PPE selection flowchart could be used as a tool to guide the operator in the selection of the appropriate PPE.

The draft PPE flowchart was reviewed by managers and all the operators, they provided feedback on how it might be improved. This process was used to create a suite of PPE flowcharts. The charts use images and help the user follow a process of elimination to select the most appropriate item of PPE to protect them whilst undertaking the task.

The flowcharts are easily accessible, for example they are placed on the health and safety board where most of the risk assessments and method statements are written. There are also laminated copies in the risk assessment folders.

BENEFITS

- Positive feedback from all levels
- Simple and largely pictorial design makes easy to use
- Easy to use in site inductions
- Less chance of operator or contractor selecting inappropriate PPE

1287 Safe system of work review, format and booklet

CEMEX Materials > Braintree Logistics



2 6

DESCRIPTION

The safe systems of work (SSOW) and risk assessments used by Cemex's logistics operation were lengthy, wordy documents. Whilst they were very detailed and covered all the relevant points, they were not very user friendly in terms of being simple and effective for the drivers to refer too.



During an annual review in 2018, representatives from the logistics team including drivers, the operations and the H&S managers commented that the SSOWs needed to be reviewed to increase their impact on the operation.

A small team of drivers, supervisors and operations managers met and decided to introduce pictures to compliment the SSOW. The SSOWs were divided up

and small groups spent time undertaking the activity whilst taking pictures of each step of the task. Once the first drafts were developed, a step by step practical approach was put into place using several different drivers until the final correct method of work was agreed.

A pictorial SSOW booklet was produced and given to every driver to keep in their vehicles, ensuring that they have an immediate reference point for every SSOW when required.

BENEFITS

- Very positive feedback from the drivers
- Easier to follow SSOWs
- Reduced chance that tasks will be undertaken incorrectly
- Employee involvement in key health and safety issues
- Reduced risk of injury





1323 AG's 'Good Catch' scheme: Empowering workers to proactively create a safer working environment



AG (Acheson & Glover) > Company wide

DESCRIPTION

In 2016, AG introduced a company-wide hazard reporting programme 'Good Catch' as part of a wider strategic initiative developed at Board level, it aimed to empower staff to take greater responsibility for on-site safety.

This initiative was introduced because it was believed that stronger communication channels were needed between managers and site-workers. AG wanted to create a culture across its six sites where staff felt empowered to highlight and implement changes where safety could be improved, there was scope for a more efficient operation, or a more environmentally friendly alternative could be progressed.

The 'Good Catch' scheme was initiated through a roadshow at all AG sites, along with poster campaigns and 'toolbox talks' to explain the benefits. The health and safety manager worked with the site managers to promote the scheme. The scheme was reinforced with regular e-zine updates that highlighted and recognised safe behaviours. The briefings ensured that all employees were aware of the new scheme and were motivated to get involved from the outset.

'Good Catch' boxes and information leaflets were placed at each site and a positive behavioural reward system was established for individuals and teams. Employees would fill out 'Good Catch' cards which included both the safety hazard and a suggested innovative solution. The site manager would discuss the issue with the member of staff and importantly, a date would be agreed for the solution to be actioned by, to ensure employees knew that their concerns would be dealt with in a timely manner.

To increase staff recognition, each month safe behaviour recommendations, or 'Good Catches' were recognised through vouchers awarded to individuals. At the end of each quarter, fish and chips were offered to the site team who closed out and actioned the most 'Good Catches'.

All levels of staff got involved in the scheme; maintenance staff, plant operators, mobile plant drivers and office staff were among the many different types of roles where 'Good Catches' were identified. The 'Good Catches' submitted are discussed at individual site committee meetings to allow for additional ideas and feedback on the close out of the issues. These meetings also allow for sharing them across sites.

The programme surpassed key behavioural performance indicators set by the Board to increase the number of hazards reported and reduce the most prominent causes of incidents. There was a dramatic reduction in some incidents due to the implementation of suggested improvements to housekeeping and guarding.

BENEFITS:

- Slips, trips and falls incidents reduced from 52% to 23% of all incidents in 2018
- Incidents involving moving machinery parts reduced from 25% to 11% of all incidents in 2018
- Greater employee awareness of the dangers in their environment
- Greater individual responsibility for safety
- An 80% increase in hazard reporting
- A safer environment for all



Before and after: Gregor MacGregor in the AG Dungannon site implementing his improvement to a working at height.





1355 Bespoke moveable stop signs

Hanson Aggregates > Needingworth Quarry **2**

DESCRIPTION

At Hanson Aggregates' Needingworth quarry the stock yard can change on a daily basis, with stocks moving, depleting and or being added too. The loading shovel operators were constantly exiting their machines to move, recover or even find the old stockpile identification signs. The signs were often lost within the retreating



stockpile or were run over by the vehicles being loaded. When this occurred, it created potential slip, trip or fall hazards and could damage transport on the site.

The traditional signpost, which was fixed into an old metal drum filled with concrete, was always found to be unmovable, due to the uncertainty of the weight distribution, the manual handling issues and the dangers of sharp edges from metal fatigue.

The shovel drivers suggested a new design at a weekly meeting. This idea was followed up with a local fabricator and a prototype created. The first model was not sturdy enough and fell over in high winds. The second version was created in the on-site workshop and was found to be very successful, this bespoke "movable stock sign" then went into full production.

The sign can be lifted and placed into position by using a unique design that matches the measurements of the loading shovel buckets. It is picked up by placing the top lip of the loading shovel

bucket in a bespoke notch welded to the upright and the bottom lip of the bucket into the lower angle of the bottom part of the base cross.

The numerical signs were cut from flat steel and painted to match the site QA docket. The signs were placed on to the upright of a steel cross base.

BENEFITS

- Clear marking of stockpiles
- Drivers no longer having to exit shovel to move signs
- Reduced risk of slips, trips and falls for drivers
- Removal of hazards created by old signs
- Removal of manual handling hazard
- Sign being used for other purposes, directions, marking car parks
- Collection wagons know where they need to go
- Reduction in waiting time due to improved efficiency





1390 Reversing differently, innovative critical safety thinking

FM Conway **2**



DESCRIPTION

In 2018, FM Conway's analysis of 53,000 near miss reports identified that the control of sweeper reversing manoeuvres was an issue. One high potential near miss involved a sweeper reversing into a parked HGV tipper lorry, narrowly missing an operative standing at the rear of the vehicle. The incident, which was captured on a video, showed how closely the operative was to a potentially fatal injury.

Several control measures were already in place on Conway's sweepers such as a white reversing beeper, reversing cameras, recording cameras, 5 and 2 blue lights (exclusion zones lights), proximity radar and reversing vehicle assistance. However, despite these control measures, the near miss analysis demonstrated there were still serious incidents occurring.

Conway uses sweepers across its core highways services, but especially for its surfacing division. Although sweepers typically move at slow speeds in this environment, the nature of surfacing works often means that large numbers of construction personnel are required to operate in close proximity to machinery and on-site obstacles, raising the risk of accidents. A sweeper will typically spend 50% of its time in reverse gear whilst on surfacing works.

Minimising this hazard became a priority for FM Conway and a range of new initiatives were introduced including;

■ Auto-stop technology

The business commissioned Safety Systems Ltd (ISS) to develop a bespoke auto-stop reverse radar system to work in conjunction with the CAM system on the vehicles. Using sensor technology, the system automatically applies the vehicle's brakes when an object comes within four metres of the vehicle, coming to a complete and controlled stop. This innovative system complements the existing suite of safety measures already in place.

Importantly, the system is designed to support drivers as a critical risk control measure, and not to replace focus on supervision, training, and positional safety. The new system enables the business

to track how often the technology is deployed, meaning that we can identify the need for further training to ensure that safe practices become fully embedded across our teams.

■ Stand down day & sweeper permit

A health and safety stand down day was held for its surfacing division where the high potential near miss film was shown and discussed. Emphasis was placed on the importance of ensuring that all the risk controls were implemented, to raise awareness of the hazards and to challenge their risk perceptions relating to sweepers. A new sweeper permit was introduced at the stand down day. The sweeper permit is to be completed by sweeper drivers and supervisors before works commence. The permit was introduced as an additional safety control measure.

■ On-site measures

A direct radio contact between the sweeper driver and reversing vehicle assistant was introduced as an additional safety measure. An exclusion zone marked with yellow cones and flashing beacons was also introduced on site to identify the area that is required to be swept. Once installed, the sweeper can only sweep within this area. No other operatives are allowed within the exclusion zone, but if someone does enter the driver must stop immediately or the reversing assistant is to say 'stop, stop, stop' over the radio.

To ensure the implementation of these new measures the business increased the number of safety site visits. Checks were made to ensure the updated RAMS and permit to sweep with additional controls were all in place across all contracts.

BENEFITS

- Raised awareness of hazards associated with sweepers/reversing
- Complimentary safety measures in place both technical and behavioural
- Technology has been applied to all Conway's sweepers
- No vehicle high potential reversing incidents on sweepers for 9 months
- A safer work environment for all
- Information is being shared with industry



visit www.safequarry.com for more details or email: info@safequarry.com



1265 'KS12-16 Extendachip' – a revolution in pre-coated chipping spreader design



Aggregate Industries **6**



Image from the '50s

DESCRIPTION

Aggregate Industries identified that the operation of pre-coated chippers on HRA surfacing was a high risk operation. Following a review of incidents and near miss reports it was decided that a radical review of the chipper design was required. Although there had been some small improvements, their basic design had not changed since the 50's.

Operatives and fitters from AI's Southern Regional business worked with Pavemac's design team. They reviewed the issues with the existing chipping plants and used their experience to help identify the hazards that needed to be designed out and areas where operational efficiency required improvement. The outcome was a new chipper, the 'KS12-16 Extendachip' which incorporates the following innovations and improvements:

1. Automated calibration using dashboard controls
2. Electronically controlled hydraulic gates: pre-selected spread rates at the touch of a button
3. A unique ability to extend; accommodating carriageway widths ranging from 12ft-16ft (3.65m-4.87m)
4. 300mm minimum width of spread
5. Increased hopper capacity for greater shift tonnages
6. Fixed hopper with lower load height
7. Increased fuel tank capacity (40l/18l); less down time for refueling
8. Fully 'Fail Safe' hydraulic drive chain with tracks rather than wheels
9. Removes the need for additional specialist plant for harder to reach or uneven ground
10. Uniquely provides basic telemetry showing idle time and hours worked
11. Tier 4 engine for more efficient operation and reduced CO₂

BENEFITS

- A significant reduction in incidents and near misses
- 33% reduction in personnel needed to operate chipper
- Safer to operate – operator platform removes risk of slips, trips and falls
- Hydraulic drive train delivers 'fail safe' operation – brake release is hydraulic
- Operates on inclines with zero risk of uncontrolled movement
- Hopper height reduced by 50% - better all-round visibility for operator
- Improved stability with lower centre of gravity
- Fixed hopper removes risk of trapped hands or fingers
- Improved stability on uneven ground, improved braking and elimination of forward-roll
- Automatic engine cut-off and braking should lanyard connection between operator and chipper be broken
- Automatic braking when in neutral
- Engagement of staff in process enhances safety culture





1275 Batch heater barrel upgrade

Midland Quarry Products > Quadratec Cliffe Hill Quarry



DESCRIPTION

MQP's asphalt batching plant at Cliffe Hill Quarry has twin barrels. Historically MQP would replace the lifter liners in both barrels every 6 months and the actual lifters roughly every 2-3 years.

However, following the introduction of RAP and an increase in the operating temperatures in the barrels, the wear rate increased. The liners were requiring replacement every 3 months and the actual lifters every 12 – 18 months – effectively doubling the wear rate.

The enhanced wear rate was doubling the amount of maintenance required in each barrel, increasing confined space work, burning and welding, manual handling, plant downtime and cost.

MQP decided to review what could be done to reduce the wear.

Working with a contract maintenance company, it was decided to trial the use of stainless steel, lifters, liners and bolts in one of the barrels. This replaced the traditional mild steel components. The new stainless steel parts were installed during a Christmas holiday shut down and then monitored on a monthly basis. After 12 months they still looked like new!

The first barrel has been operating for over 18 months and is still not showing any signs of wear, no maintenance has been required on the inside of the barrel.

The cost of per barrel of manufacturing and installing the stainless steel lifters and liners is £15,000. This approximately equals the costs of using and replacing the mild steel lifters and liners over a 12 to 18-month period. However, this figure does not include all the operational efficiencies and the health and safety benefits. MQP is still waiting to find out what the actual life span for the new lifters and liners will be. The second barrel has now been converted.



BENEFITS

- Reduced need for confined space work
- Reduced burning, welding and manual handling
- Reduction in downtime for maintenance
- Improved efficiency of plant in operation
- Reduced contamination issues as the barrel is completely emptying
- No residues as the lifters staying in great condition
- Maintenance team available for alternative work

1278 Confined space entry elimination batch heater drum

Midland Quarry Products > Ettingshall Asphalt



DESCRIPTION

A redesign of the batch heater drum at MQP's Ettingshall Asphalt Plant has been implemented to make the access and egress to the inside of the drum safer when essential fabrication or maintenance work was required.

Access to the batch heater drum had previously only been possible via the drum spigot plate and was therefore classified as a confined space. To eliminate this hazard, the front plate of the batch heater drum was redesigned so the complete front plate could be lifted, pivoted and safely secured to allow "walk in access" to the drum. This modification eliminated the confined space classification.

BENEFITS

- More efficient maintenance
- Reduced downtime

- Reduced hazards associated with access and egress
- Eliminated confined space working
- Any emergency rescue from drum will be significantly easier.



Before



After

visit www.safequarry.com for more details or email: info@safequarry.com

Title	Video link	Page number	Entry number	'The Fatal 6'	Asphalt & coated stone	Quarry, recycling and waste	Ready mix & mortar	Concrete & precast	Cement & lime	Contracting	Transport and delivery	Marine	Company wide	Contractors	Dust and fumes	Maintenance	Guarding & isolation	Mobile plant	Hazards & incidents	Risk Assessments	Safer processing	Induction & training	Manual handling & storage & HAVs	PPE and emergency equipment	Working at height & confined spaces	Traffic management and pedestrian safety	Mobile technology, videos, camera, radio	Health and wellbeing	
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Management of delivery tankers on site		7	1309		●																								
OMNI by Terex revolutionises crushing and screening	●	8	1384	2, 3, 4	●										●			●					●						
Arc flash safety initiatives	●	9	1304	1				●								●	●												
Dust suppression	●	9	1370	4		●									●									●					
Light weight plastic guards	●	10	1305	1	●											●	●						●						
Bottom opening skip	●	11	1333	2, 4, 5			●								●			●					●			●			
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Quinn safety hub	●	15	1259	All									●	●					●			●							
'Safety Savvy' roll out	●	17	1280	All									●	●								●							●
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Safe System of work review, format and booklet		29	1287	2, 6						●						●													
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Batch heater barrel upgrade		34	1275		●											●									●				
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Health and Safety Working Groups

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Lindsey Downes	Singleton Birch Ltd
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