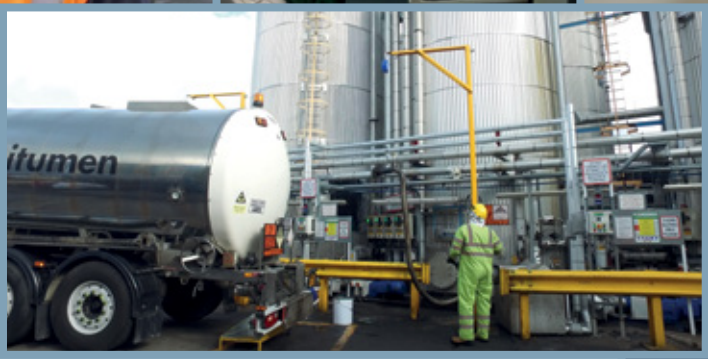
mpa
essential materials
sustainable solutions

Sharing good practice 2016/17

WAYS TO MAKE YOUR WORKPLACE HEALTHIER AND SAFER



ENTRIES FROM THE
MPA HEALTH AND SAFETY AWARDS

Health & Safety
Awards

INDUSTRIAL DIAGNOSTICS COMPANY

Service Information

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

Industrial Diagnostics Company Ltd. are pleased to announce the launch of 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 40 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 Nickie Percival on imaging@industrial-diagnostics.com or via the contact details shown below:

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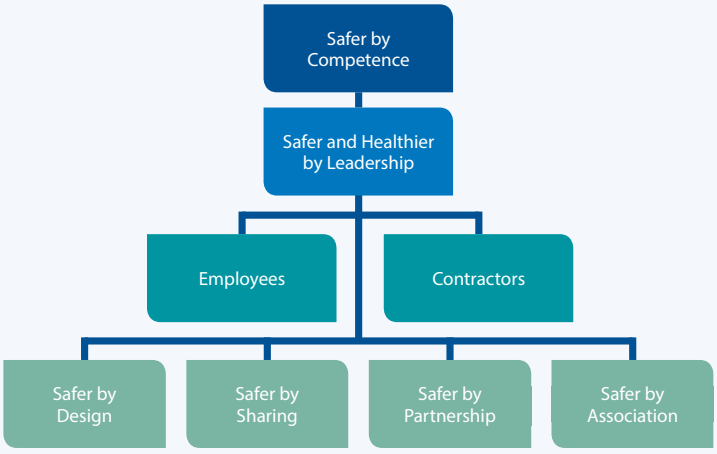
MPA Health and Safety

MPA and its members are committed to making the Mineral Products industry safer and healthier – ensuring that everyone working on or visiting our sites goes home safely every day.

Achieving Zero Harm is the number one priority for the Mineral Products industry.

CEOs and other representatives from MPA's members restate their pledge to achieve Zero Harm at MPA's 2016 Health and Safety Conference and Awards

MPA's Safer by initiatives



Safer by Competence

To help achieve Zero Harm, the MPA has devised a framework to deliver demonstrable personal competence across the industry. This comprises a series of initiatives and targets encompassing employees and contractors across all products and services within the MPA's membership.

Safer by Design

Voluntary guidance addressing the design vacuum that exists between many Manufacturers and Users of mobile plant.

Safer by Sharing

MPA Seminars giving H&S guidance to members by sharing good practice; Peer-to-peer assistance facilitated by MPA.

Safer by Partnership

Package of measures focused on contractor safety.

Safer by Association

Site H&S evaluation & improvement tool for non-specialists.

Safer and Healthier by Leadership

ON VIDEO

An initiative highlighting the role of leadership in improving health and safety performance.

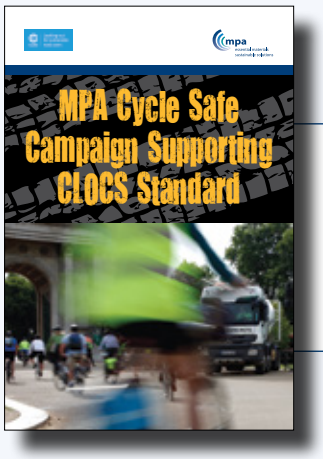
Supporting MPA Health and Safety Initiatives

Driver's Handbook

New guidance to help keep drivers and vulnerable road users safe – launched in 2016.

Safequarry and Safeprecast websites and Apps

Providing instant access to key health and safety information for all sectors in the mineral products industry.

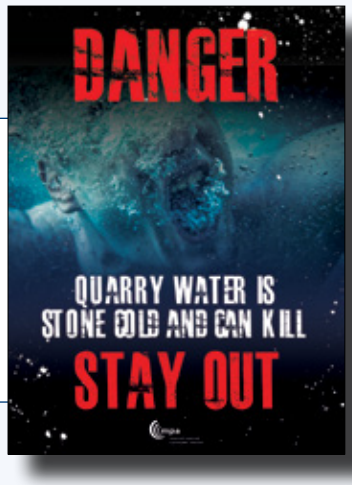


Cycle Safe

Ongoing campaign to educate and raise awareness of drivers and cyclists to help keep them safe on the roads.

Stay Safe

Ongoing campaign to educate members of the public about potential hazards associated with active and former quarries – in particular open water safety.



Health and Safety Conference and Awards

Celebrating and sharing innovations that help make our workplace safer and healthier.

Avetta

Contractors database

An industry wide database to ensure that the contractors that serve our industry are appropriately trained and qualified to work safely on our sites.

Respirable Crystalline Silica

MPA partner IDC to deliver mobile chest X-ray programme in 2017.

IDC INDUSTRIAL DIAGNOSTICS COMPANY

Industry Working Groups

Member working groups to agree policy and drive change on key health and safety issues.

- Asphalt & Contract Surfacing
- Bitumen
- Cement
- Leadership & Workforce Engagement
- Lime
- Marine
- Occupational Health
- Performance Statistics
- Safer by Partnership
- Transport

Foreword

This publication epitomises MPA's 'Safer by Sharing' ethos by communicating some of the best health and safety initiatives developed by MPA members in 2016.

Many of the entries highlighted demonstrate how members have begun to improve the health and wellbeing of their employees, the key theme of MPA's Health and Safety Conference and Awards in 2015. It is also encouraging to see members beginning to address mental health issues more seriously and the MPA will do more in this area in the coming years.

In 2016, the theme for the Conference was 'Inspirational and Effective Leadership' and focussed on a range of experts discussing the vital role of leaders in creating an organisation's health and safety culture. To mark this, leaders and senior managers within our membership reaffirmed their pledge to achieving Zero Harm. MPA also launched its 'Safer and Healthier by Leadership' programme and I would now urge CEO's both to participate in the programme and to involve their senior management teams. Board Directors of MPA have agreed to do so. The industry will need exceptional collective leadership to achieve our goal of Zero Harm.

This Guide enables us all to benefit from the ideas of our colleagues in other companies, our contractors and suppliers. The majority of the winning innovations were initiated by operatives or cross-functional teams working together to address specific issues in their workplace. The results are ingenious engineering solutions or new ways of working that have helped to change people's behaviour. Part of a leader's role will be to facilitate an open and trusting environment in which these types of initiatives and behaviours flourish.

The ideas featured in the Guide can often be easily applied or adapted to your own organisation. Alternatively, they may provide the inspiration for some other change. Please share this publication with your colleagues at all levels and discuss how to make your workplace healthier and safer. Do not miss the opportunity to view the associated videos either via the Safequarry and Safeprecast Apps or their related websites.

No single organisation can enable the industry to achieve Zero Harm but just one could prevent it. This singular target really does have the power to bind all companies together with a common aim, the most precious of all, the elimination of harm.

Nigel Jackson, Chief Executive

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.

IDC INDUSTRIAL DIAGNOSTICS COMPANY

Lead sponsor

John Crabbe Memorial Trophy for Outstanding Excellence in Health and Safety – Lhoist UK.

Trophy sponsored by Brigade

BRIGADE

Sir Frank Davies Trophy for companies with less than 1000 employees – Hills Quarry Products.

Trophy sponsored by Avetta

Avetta

Entries from 38 companies – MPA members, contractors and suppliers:

Acheson & Glover
Aggregate Industries
Banner Contracts (Halnaby) Ltd
Breedon Aggregates
Brett Group
British Lime Association
Celsa Steel Services UK
CEMEX UK
Chepstow Plant International
Colas Ltd
Creagh Concrete Product Ltd
Day Aggregates
EPC-UK plc
Finning UK & Ireland Ltd
FM Conway Ltd
Forterra plc
FP McCann
Hanson UK
Hargreaves Logistics
Hutton Stone Cox
John Wainwright and Co Ltd
Kerneos Ltd
Lagan Cement
Longley Concrete
Marshalls PLC
Mentor Training Solutions
Midland Quarry Products
O'Donovan Waste Disposal
Patersons Quarries
Sibelco
Singleton Birch Limited
Stanton Bonna Concrete Ltd
Sterling Services Ltd
Supreme Concrete Ltd
Tarmac
United Asphalt Ltd

Introduction

This Guide summarises the best ideas and innovations from the MPA's Health and Safety Awards 2016.

Some of the entries are flagged to show that there is a video available – the videos can be viewed via the Safequarry and Safeprecast websites or their Apps (see back cover for more information). In addition to this year's entries, awards from previous years can also be accessed. The websites also feature a database of incident alerts, toolbox talks and the latest on the industry's hot topics. By registering on the site, you will receive email alerts when new items are added and an 'information basket' where you can store those that most interest you.

The resources are ideal for training purposes and for Continuing Professional Development (CPD). We hope that organisations of all sizes working within the mineral products industry will find them useful and accessible. To ensure that your browsing on the websites is recorded for CPD purposes, you need to log in every time that you access the websites.

Download the Safequarry or Safeprecast Apps to your mobile device to have instant access wherever you are to industry guidance and other key health and safety information.

How to use this Guide

Health & Safety Awards '17

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 often be applied to a range of common industry problems.

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.

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

Contents

MENTOR for a safer workforce

Contractors' Safety sponsor

881

Traffic management access gates

Colas Ltd

AWARD WINNER

ON VIDEO

DESCRIPTION

During overnight roadworks, a Colas traffic management operative was injured whilst manning a works access point on a full road closure. He was closing a plastic pedestrian barrier, when he was injured by a road user who hit the barrier as they attempted to gain access.

Following this incident, Colas developed an innovative 'Traffic Management Access Gate'. The gate enables remote operation of access points. The portable barrier is powered by an electric motor with an integrated battery power source. The barrier can be operated remotely from distances of up to 200m. The system is portable, robust, weighs only 80kg and no single item weighing more than 25kg. Whilst lightweight, the heavy duty appearance of the two inch tubular aluminium boom provides a clear message to road users that the site is closed. The system can be set up and operational within 90 seconds of arrival on site.

Two access gates are commonly deployed at each access point, providing an 'airlock' arrangement, where the first gate is opened and closed behind the works vehicle before the second gate is opened. This technique ensures that the risk of an unauthorized vehicle entering site is reduced. Operatives no longer need to be on foot around the works access point, as the gate is operated by remote control from a safe distance, away from live traffic and passing road users.

BENEFITS

- Greatly reduced exposure to traffic in high risk environment
- A 75% reduction in instances of encroachments into work zones and interactions with members of the public
- Universally positive feedback from operatives and contractors
- Reduced potential for confrontation with members of the public
- The system is well designed and easy to erect.

840

Pipe Pusher

Stanton Bonna Concrete Ltd

RUNNER UP

ON VIDEO

DESCRIPTION

In 2015, staff at Stanton Bonna Concrete Ltd (SBC) read an article in a newsletter about a tragic accident within the construction industry. A contractor's employee was killed whilst jointing a pipe when the wooden buffer, which was being used to push the pipe, broke and hit him on the head. SBC had seen similar methods being used for jointing concrete pipes on some of their client's construction sites.

This tragic event provided the idea from which the 'Pipe Pusher' was conceived, a tool that would eliminate the use of a wooden buffer to joint pipes. An initial design was created in-house and finance was obtained to build a prototype. This prototype was used to carry out a site trial, to assess the safety and usability of the product.

The 'Pipe Pusher' is much safer to use, the operator is removed from the jointing operation, no large wooded buffer used, easier and quicker than traditional methods. The 'Pipe Pusher' is attached directly to an excavator via a quick hitch coupling.

BENEFITS

- Reduced risk of injury as operatives no longer near operation
- Reduced risk of injuries from manual handling
- Greater control over the jointing process
- Easily adjustable and interchangeable arms.

888

Contractor safety board

Aggregate Industries > Duntilland Quarry

HIGHLY COMMENDED

DESCRIPTION

At Aggregate Industries' Duntilland Quarry, contractors are regularly used to carry out both regular and one off tasks. In both 2014 and 2015, a contractor sustained a LTI at the quarry.

These injuries occurred in spite of a range of processes designed to ensure that contractors carried out tasks safely. Over 350 contractors had been through an induction that covered items such as site rules, safe systems of work, risk assessments and competence of the contractor based on the task and activity being carried out. Contractors' activities are monitored by site management through frequent safety tours.

However, following the LTIs, the management decided that a new approach was required. It was identified that sometimes the day to day information that contractors received was a bit inconsistent.

A small working group, involving management and operatives developed the concept of a Contractors Information Board. The idea was relatively simple and based around a large magnetic board with an aerial view of the quarry and a wipeable grid where additional information could be written. The board was located on the wall adjacent to where all personnel, contractors and employees, register their presence on site, ensuring that everyone would see it.

A contractor is allocated a coloured magnet and the magnet is attached to the aerial photograph to denote the contractors' working location. On the blank grid the contractor's company is written along with the task being carried out, and the number of contractors involved. There are also magnetic decals to indicate other activities that are being carried out by Aggregate Industries' employees on site, e.g. blasting, secondary breaking.

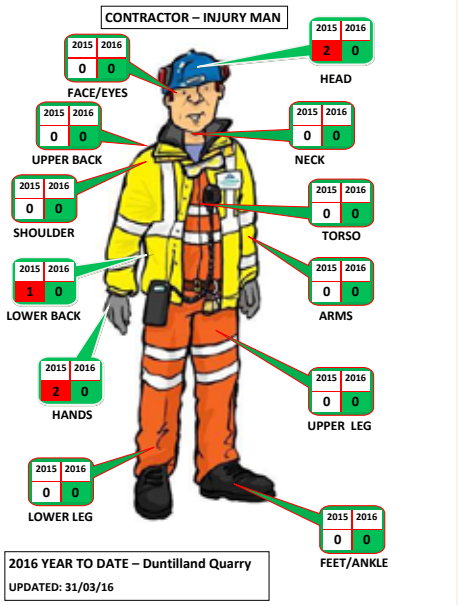
Additional information on the board included:

- Blasting information
- A daily risk predictor detailing activities on site for general information
- Contractors injury man detailing the number of injuries and parts of the body injured
- Information on incidents either on site or general safety alerts.

Following a successful two week trial in December 2015 with positive feedback from contractors, the board was formally launched at a 'Back to Work' safety day early January.

BENEFITS

- No injuries reported by contractors in initial three months
- Currently management enter information, in future contractors will complete
- Better awareness of activities by both employees and contractors
- A safer environment for all.



917

Working safely in partnership with contractors

Tarmac Ltd > Tarmac Marine Ltd

HIGHLY COMMENDED

DESCRIPTION

Tarmac Marine Ltd (TM) wanted to improve contractor engagement following the integration of wharves and ships into a new business. Statistics on contractor incidents and injuries identified variances in the safety processes and standards being employed. It also confirmed a variation between small, medium and large contractors approach to safety and health.

Following consultation with key stakeholders, it was agreed that new contractor forums and knowledge sharing exercises within the supply chain would be employed. External contractors would be more proactively engaged with both before and during the planning process. The objectives were to raise awareness and working standards and, most importantly, reduce incidents.

The forums allow contractors of all sizes to meet with various levels of Tarmac Marine employees, to help develop and drive improvements through their own businesses.

One of the most hazardous activities for TM is when a ship is taken in for major maintenance in a dry dock. Over a 100 contractors may be working on board, often involved in complex tasks with multiple contractors on several decks at the same time.

Prior to the partnership approach, incidents had been a regular occurrence. In part, this was caused by contractor competence and the contractors trying to comply with different standards (TM's, the ship yard's and their own employer's). To resolve this issue a 'Bridging' process has been developed to act as a conduit between the different sets of standards and to achieve a common safety goal – Zero Harm.

The process includes a pre-contract engagement, an interactive 'learning' style induction, the bridging document itself, security protocols, ship access control, competence review and a post project review process, to enable the 'Bridging' process to evolve.

BENEFITS

- A shared mindset that all accidents are preventable and unsafe activity must stop
- All work activity is risk assessed to identify and control risks
- All persons are suitably trained and competent for their task
- Recognition that no task is so important that it cannot be done safely
- Contractors whose first language is not English have an English speaking supervisor to translate
- Bridging document
  - All working practices are closely aligned to achieve best working practices
  - Responsibilities of key personnel and contacts are clearly identified
  - A single, quick point of reference with regards to safety, health and environment
  - Emergency procedures clearly set out including vessel evacuation
  - Key safety information shared at daily health and safety meetings
  - Common policies on processes such as permit to work and machinery isolation
  - Tool box talks help supervisors and managers understand and implement policies
- Access Control
  - All visitors must complete an induction before accessing site
  - T-card and hard hat sticker controls site access
  - Each individual carries their personal and task specific data
- Smaller contractors acquire the safety knowledge available to larger contractors
- Facilitates standardised approach to tasks
- System has been welcomed by contractors
- Regularly employed contactors attend six monthly safety days
- All stakeholders have signed a Safety Charter working towards Zero Harm
- Outputs being shared within the industry
- Significant improvements in safety performance.

828

Contractor evaluation following work completion

EPC-UK

DESCRIPTION

EPC-UK, as an operator of two upper tier COMAH sites, has to ensure that its contractors and sub-contractors work to the highest standards. In addition to a contractor approval system prior to work commencing and supervision during the task, EPC-UK has introduced an evaluation of the contractor's work following completion. This assesses the contractor's safety, environmental and quality performance. The review is carried out by a member of EPC-UK management team with a representative from the contractor at a formal, on-site meeting.

At an annual meeting, feedback is given to the contractor on their level of performance over the last 12 month period, combining and averaging individual project scores.

The following criteria are used to rate the contractor's overall performance:

- The overall safety performance of the contractor
- The overall performance of the contractor's personnel on site
- The contractor's adherence to overall work processes and procedures
- Did the completed work meet the standard required by EPC-UK?
- Did the contractor complete the work within the specified time period?
- Did the contractor complete the work within budget?
- Did the contractor ensure that PPE was available and worn?
- Was the equipment used by the contractor tested and certified?

0% to 20% – automatic removal from the approved contractors list

21% to 40% – agreed improvements required to remain on the approved contractors list

41% to 60% – meets the minimum EPC-UK requirements but improvements can still be made

61% to 80% – meets, and in some areas, exceeds the minimum expectations of EPC-UK

81% to 100% – exemplary performance.

BENEFITS

- Contractors receive on-going feedback on performance
- Contractors have opportunity to learn and improve performance
- Formal system ensures standard of contractors used by EPC-UK is improving
- Work can be allocated to most effective and safest contractors
- A safer environment for all.

839

Gully lifter

Stanton Bonna Concrete Ltd

DESCRIPTION

Stanton Bonna Concrete Ltd noticed some unsafe practices undertaken by site contractors when lifting concrete road gullies. Further research established that there was no recognised, safe, site specific, lifting equipment on the market for gullies.

Following some in-house design work, the services of a local engineering company were engaged to make a working prototype. After the first prototype, SBC engaged the services of Probst UK, which completed the required stress calculations and confirmed the 'Gully Hook' could be manufactured. Probst made a few test lifters for on-site trials. These tests proved very successful, modifications were made to allow the gullies to be picked up from the laid down position.

BENEFITS

- Gully hook is simple with no moving parts
- Ideal for use in harsh environment of construction site
- Lifting and handling much easier and safer
- Quicker than traditional methods
- Industry wide lifting hazard minimised.

867

Improving access to Penta tumble drum for maintenance

AWARD WINNER ON VIDEO

Brett Group > Brett Landscaping and Building Products Limited > Poole

DESCRIPTION

The fully automated Penta Line 'ages' concrete block pavers by tumbling the cured blocks inside a rotating steel tumbler drum. The drum has a 1m diameter, is 4.5m long and fitted with lifter bars. Due to wear and impact damage, the interior must be inspected fortnightly and every month repairs made including hot work such as welding.

The original access to the drum was at a height of 3.5m through the feed chute, via narrow walkways and interlocked gates. It required the fitter to climb down a 1.5m portable ladder in the feed chute before making their way along the drum. This created multiple hazards:

- Narrow route for fitters and equipment to get to drum access point
- Risks from working at height using temporary ladders
- Operator working in confined space
- Fitter inside the drum could not be directly seen by 'topman'
- No suitable structures to attach necessary rescue equipment
- Poor lighting and forced ventilation required whenever undertaking hot works.

The task was controlled using a Permit to Work. Although there was continuous supervision, the site team still felt it would be hard to get a person quickly out of the drum if there was a need.

The site team identified that the best route would be to enter from the discharge end only 1.2m from ground level. However, there was no access point in the enclosure guard and the steel discharge cowling was so heavy it required three men to handle it.

A pair of interlocked sliding doors were fitted to replace the solid enclosure guard at the discharge end. A lightweight aluminium discharge cowl was constructed. Following plant isolation and lock-off, the new cowling can be easily removed by a single fitter and stored safely to the side. Once removed, the tumble drum can be accessed using portable steps and the whole length of the drum can be easily seen by the 'topman' positioned at ground level.

BENEFITS

- Significantly better access route and working conditions
- Operator can be seen at all times
- An individual can be recovered quickly and safely if required
- Ventilation of the drum during hot-work is improved
- Working at height has been reduced from 3.5m to 1.2m
- Easier to get equipment and parts into the drum
- Reduced risk of manual handling or crushing/trapping injuries
- Inspection and repair time has been halved
- Modifications cost £3,700 and completed in two days.

898

Concrete placing machine – to separate pedestrians from fork lift trucks

RUNNER UP

ON VIDEO

CEMEX UK Materials Ltd > CEMEX Floors > Wick

DESCRIPTION

The batch plant that supplies the concrete for the wetcast T beam production at Wick is located outside at the end of the 100m production shed. The concrete is transported by a 1m^3 skip that is carried by a fork lift truck, the discharge is controlled by the driver hydraulically. The concrete was placed in the centre of the mould and a team of four operatives used asphalt rakes to place and level it to the required standard.

This exposed the operatives to the risk of being hit by the forklift with circa 200 loads of concrete being delivered each day. Various options were considered to minimise this risk. A placing machine option was selected as this could be integrated easily with existing production processes and also had the potential to reduce manual handling for the operatives placing the concrete.

The design was developed by the operatives and management team, it is based on the discharge chute of a readymix truck. The system is operated by one person who controls the speed the machine travels, the speed the concrete is discharged and the position of the chute, the latter two by means of a powered trigger handle attached to the chute.

The forklift truck with the concrete discharge bucket is still used to fill the hopper. However it is no longer required to operate within close proximity to the casting operatives.

BENEFITS

- Reduced risk of being struck by forklift.
- Forklift movement reduced to circa 50
- Easier and less stressful task for fork lift driver
- Reduction in manual handling for the operatives
- Reduction in the uncontrolled splashing of concrete from mould
- Improvement in quality and consistency of concrete.

854

Mill charging with steel balls

HIGHLY COMMENDED

ON VIDEO

Kerneos Ltd > West Thurrock

DESCRIPTION

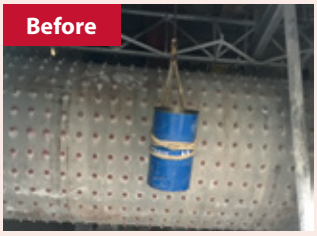
Charging the mill with steel balls was one of the highest risk activities at Kerneos Ltd. The task involved tipping 204 litres drums of various sized metal balls into the cement or raw material mills.

The drum of balls is lifted up to a hatch at the top of the mill chamber and tipped in. The risks associated with this task were a potential failure in the drum, slippage whilst lifting and tipping, and the possibility of a spilled ball falling on to people below.

The site devised a filling system where the drums could be discharged at ground level using a forklift with a rotating attachment. This discharges the balls into a specially designed vessel. Once filled, the vessel can be lifted safely using an electric hoist and chains. It is emptied into a specially designed discharge funnel, which is pre-installed into the mill charge door. The funnel connects with the vessel and hinges the vessel downwards, tipping out the balls. The vessel, ramp and funnel are all rubber lined to reduce the noise as much as possible.

BENEFITS

- No risk of drum failure or slippage
- Reduced risk of fatalities or injury from falling balls
- Potential for human error significantly reduced
- Task is now more efficiently completed
- Operators feel confident and safer carrying out this task
- The system has been shared with other Kerneos sites around the world.



957

Preventing articulated dump truck turnovers

Chepstow Plant International > Panshanger Quarry

HIGHLY COMMENDED

ON VIDEO

DESCRIPTION

Chepstow Plant's analysis of ADT turnovers since April 2013 revealed that there had been nine skip and four cab turnovers, thankfully with no injuries. The analysis showed that irrespective of the location – haul road, tip, and stockpile – all but two of the incidents could have been avoided with increased vision or early warning. Of the remaining two, one was due to excessive speed and the other due to unusual ground conditions.

Chepstow Plant approached both Bell Equipment and Volvo Construction Equipment. Bell had an on-board built in inclinometer that could be set to give an early warning when the ADT went outside of the set parameters. Following a successful trial day in a quarry, the inclinometers were activated across the Chepstow Plant fleet.

Volvo supplied an after-market version of an inclinometers, the trial with this unit produced similar results. All new Volvo ADTs delivered in 2016, in excess of 50 units, had inclinometers installed.

The inclinometer programme is fully supported by in-house training, familiarisation and downloadable data should anything untoward occur. Both visual and sound warnings are made when limits reached. The system has variable settings that can be adjusted by the company. The inclinometer system will hydraulically stop any 'unsafe' tipping action, returning the skip to flat and level. The operator can then reposition the ADT before attempting to tip again.

Virtual fence

At Panshanger Quarry, where the turnover was due to excessive speed on the haul road, a similar technical solution was sort. In spite of toolbox talks and driver briefs, it was felt that a more robust solution was required, Bell Equipment suggested a potential solution. The Bell ADTs are fitted with a global positioning system (GPS) that gives access to real time and recorded data such as location, speed and load carried. An additional function of this system is a Geo-fence.

Geo-fencing works by introducing a 'virtual fence' around a fixed point on the ground. In this case, the site compound at Panshanger Quarry was chosen. The longitude and latitude is set into the global positioning system (GPS) fitted to the machine, and a distance from the set point is determined, in this case a radius of 5km. A maximum speed limit is set for the area detailed within the virtual fence perimeter. During the set-up various speeds were trialled, 17.5 MPH set as the limit. The GPS system is only accessible via a laptop, ensuring system security. Upload time is approximately 15 minutes per machine.

The system works in a similar fashion to cruise control on a road going car. In the event of a malfunction, the machine would go into 'limp' mode and would not achieve the set speed limit.

The 'geo-fence' will only work for the settings made on an individual machine. When operating at a different location, they would be able reach their top speed. However, a new 'geo-fence' could be implemented, and set, for their new location if required.

BENEFITS

- Significant reduction in turnovers since inclinometer installed
- Drivers maximum speed controlled at Panshanger Quarry
- Speed control does not affect ADT's performance other than top speed
- Operators now safer and able work with more confidence
- Better understanding on sites of the need for good working ground
- System is easy to operate and manage
- Cost savings due to turnover reduction
- Effective solution achieved through collaboration with suppliers.

878

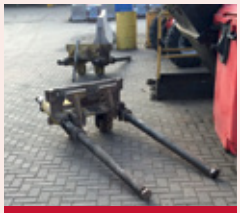
Mould carrier casing redesign

Brett Group > Brett Landscaping and Building Products Limited > Cliffe

HIGHLY COMMENDED

ON VIDEO

DESCRIPTION



Before

BLBP Cliffe produces concrete block pavers at three factories using Rekers block making machines. The mould carriers and tamper head are guided by four vertical poles The poles are 2.5m long, each weigh 117kg and are held in casings that weigh 350kg. These poles wear significantly at one end and, after a pre-defined number of cycles, must be changed.

The original casing design was a single element. To remove the poles required the complete assembly weighing 584kg to be removed. This was a time consuming job, undertaken in a space with limited access and headroom. A crane and a telehandler were required to lift and support the assembly whilst three fitters manually repositioned the unwieldy assembly two or three times before it could be removed. This task took several hours to complete. Once the extracted assembly was removed it would be taken to the maintenance workshop for further dismantling and replacement of the poles.

The maintenance team discussed with their machine supplier, Rekers GmBH, to create a design incorporating split mould carrier casings. The new design would allow each pole to be removed from the machine separately, without the need to remove the mould carrier. A prototype was trialled on one machine and is now being retro fitted to the remaining block paving machines.

BENEFITS

- Weight being handled reduced from 584kg to 117kg
- Significant reduction in manual handling
- Poles more easily manoeuvered in limited space
- Only two fitters required and task completed in less time
- Poles can now be reversed – doubling their serviceable life
- Poles can be changed singularly rather than changed in pairs
- Collaborative approach to mitigate risk and improve efficiency
- Revised design now being offered to other Reker's customers.

895

Kiln roller bearing and raw mill separator bearing lifting tools

CEMEX UK Materials Ltd > Rugby Cement Plant

HIGHLY COMMENDED

ON VIDEO

DESCRIPTION

A number of regular maintenance tasks at Rugby Cement Plant exposed operatives to the risk of manual handling and finger trapping injuries. Employees involved with these tasks have designed innovative tools to minimise these risks.

The installation of kiln roller bearings requires the bearing shells to be lifted onto the kiln roller and the clearances checked. The checking may need to be repeated many times. Previously, four operatives were required to lift the bearing on and off the roller. A new lifting rig enables a crane to be used, minimising the risks associated with the task. The rig was used successfully during the installation of two kiln rollers with bearings that weighed up to 100kg.

The raw mill Sepol separator often requires the bottom bearing to be changed, this can only be done in-situ which required working in a confined space. The bearing is awkward to handle, greasy and requires fitting at head height with consequent handling and trapping risks. A simple lifting tool has been designed that enables operatives to maintain a better lifting technique, improves grip and keeps fingers and hands away from trap and nip points.

BENEFITS

- Manual handling and trapping risks significantly reduced
- Tasks are easier and more efficiently completed
- Fewer operatives required to complete tasks
- Employee led solution supported by management.

896

Railway sleeper turning process

CEMEX UK Materials > Washwood Heath

HIGHLY COMMENDED

ON VIDEO

DESCRIPTION

Cemex Rail Solutions at Washwood Heath manufacture concrete railway sleepers. Part of the operation includes a small production shop that also undertakes remedial repairs to sleepers.

Sleepers are upside down when they are removed from the mould. Previously, they were laid face down on the floor and would then be manually turned, using heavy bars as levers. The sleepers weigh over 400kg and are 2.5m in length. Last year, there was a minor accident when one of the turning bars flipped back and hit an operative.

All the operatives were consulted on how this process could be made more efficient and safer. The concept of a sleeper turner that would pick up the sleepers after they were removed from the mould and turn them safely was developed. The design could also handle sleepers that required repair.

The turner can be adjusted at one end to allow any length of sleeper to be handled and different inserts have been created to allow for different shaped sleepers. The turner is operated by either inserting a hand or power tool onto a mechanism which has a 40 to 1 turn ratio.

In addition, a conveyor has been installed at waist height. Repairs to sleepers are no longer carried out at ground level, avoiding the need for operatives to bend and stretch.

BENEFITS

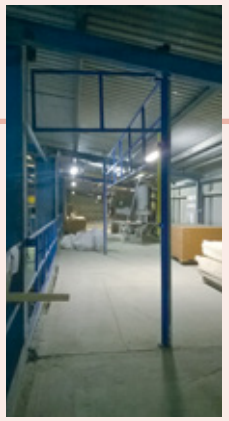
- Reduction in manual handling
- Eliminating work at ground level
- More efficient operation
- Improved morale
- Improved product quality.

Before

929

Edge protection system

Creagh Concrete Products Ltd > Toomebridge



DESCRIPTION

A potential falls from height risk was identified at Creagh's precast stair factory.

A raised, mezzanine area at first floor level is used to build moulds for the casting of the precast stairs. Large pallets of timber are delivered to a designated loading bay area on the mezzanine floor. A forklift truck raises the pallets from ground floor to the loading bays. Handrails were in place along of the edge of the mezzanine area but there were gaps by the loading bays to provide access for the forklift. Large straps were tied cross the opening to prevent a fall from height. However, this still left operators at risk as the bays were unguarded during loading, it also relied on the operators to attach the straps after every use.

To address this risk, the managers at the site developed a counter balanced barrier system, so that when one barrier was lowered the other was automatically raised or vice versa. The weight of one barrier mirrors the weight of the other, they are connected by a pulley system. Normally, the edge barrier is deployed, when loading however, this is lifted and the loading bay area barrier is automatically lowered into place.

BENEFITS

- Risk of fall from height eliminated
- Easy system to operate
- A barrier is always in place – no longer reliant on operator
- Maximises use of space on the mezzanine floor.

949

Input flow chute

Hanson UK > Whatley Quarry

DESCRIPTION

A simple yet effective design to manage input flows from a conveyor onto two separate screens has been developed at Hanson's Whatley quarry. It removes the requirement and costs of two feeders, whilst eliminating the additional issues of confined space entry and restricted access.

It was recognised that the original installation could feed disproportionately from a single feed onto two separate screens. A combined team from the engineering and production departments designed a chute with external controls that allows the screen flows to be easily adjusted. The controls are manual but, if required, could easily be adapted to be hydraulic or pneumatically operated by an automatic system.

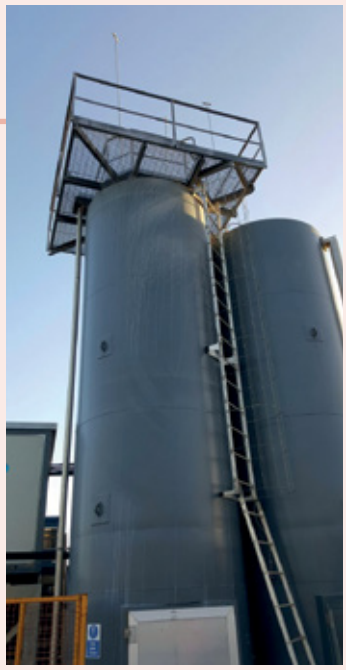
BENEFITS

- Confined space and restricted assess issues removed
- Virtually eliminates blockages
- Reducing manual handling risks when clearing blockages
- Removed need for frequent checks on the chutes
- Reduced power consumption and repairs
- Brought project team together
- Improved team performance and moral
- Manufacturers Metso looking at other applications for the system.

956

Access to silos

Hutton Stone > West Fishwick



DESCRIPTION

A water treatment and filtration unit at Hutton Stone's masonry production yard required servicing at least once a year. This was a hazardous task, the operator had to climb to the top of a large silo and then use a ladder to climb down inside. The maintenance work was carried out whilst standing on the ladder. The works team decided that this task was unsafe and a new approach must be found.

The solution was to design a working platform near the top of the silo. The platform is accessed via a lockable trap door, lightweight specialist tools were stored on the platform and safety fencing was placed around the edges of the platform. The maintenance task was changed to a weekly schedule that could be quickly and easily accomplished.

BENEFITS

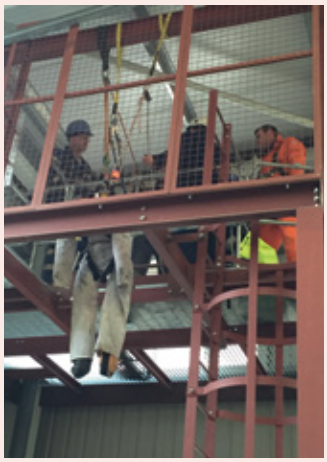
- Working at height risks significantly reduced
- Manual handling risks reduced
- Confined Space entry eliminated
- More effective housekeeping
- Minimal downtime for this task.

822

Working at height – practice platform

Kerneos Ltd > West Thurrock

DESCRIPTION



At Kerneos Ltd plant there are various tasks requiring operators to work at height. The company was aware that the 'Working at Height Regulation 4' requires companies to plan the task and states that planning includes the management of emergencies and rescue.

A key element of the plan is the availability of appropriately trained staff to handle a rescue.

The site uses the harness based 'Gotcha Safety Rescue System'. However, it was difficult to find a safe, controlled environment to train and refresh staff on how to use the equipment. To address this issue, a practice platform was constructed in the engineering workshop. The new platform allows trainers to teach staff on-site and enables them to practice in a safe, controlled environment.

BENEFITS

- Staff much more confident in use of emergency equipment
- Training can take place at convenient times for staff – not during shut downs
- Both staff and contractors are being trained
- Feedback from staff very positive
- Better prepared should an emergency occur.

922

Safety light curtain

Tarmac Ltd > Tarmac BP > Newark Topblock

DESCRIPTION

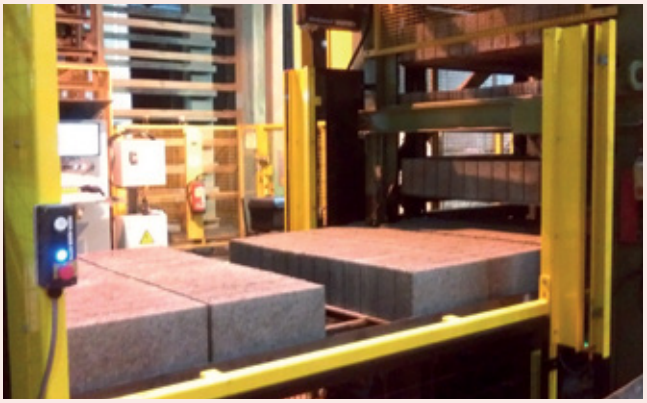
The team at Tarmac's Topblock manufacturing plant had identified a range of potential risks associated with the process conveyors. Both the 'wet' and 'dry' side conveyors had chains and sprockets which were potential trap and nip areas. The lack of comprehensive guarding could allow operator access to these potentially dangerous areas.

An issue had also been identified in the way the application of the stop and halt buttons on the line were controlled by the electrical system. There was no redundancy or fault tolerance in the system, only the control is switched off, not the main power to the appropriate drive. The potential existed for the system to restart in the event of a selector switch or relay failure.

The possibility of an operator deciding to 'just change one block quickly' without stopping the line and getting trapped also existed.

An in depth review of the line was made and a variety of changes introduced;

- Introduction of multi light gate safety beams
- Introduction of auto block measuring system
- Data collection from measuring system
- Automatic alarm if defects are detected
- New control systems for the stop buttons
- Improvements to the physical guarding.



BENEFITS

- Removal of potential for stop control systems failure
- Significantly reduced risk of trapping and crushing injuries
- Improved efficiency
- Improved product quality and enhanced data.

825

Esprit d'Equipe behavioural safety program

EPC-UK > All Sites

AWARD WINNER ON VIDEO

DESCRIPTION

EPC-UK has implemented an employee led program 'Esprit d'Equipe' (team spirit) to help develop the interdependent stage of safety* within its organisation. The Esprit d'Equipe program is employee led by 13 volunteer safety ambassadors. They have been selected to represent all the different operations working throughout the UK. The program built on a team approach to safety and included the following initiatives;

Understanding how behaviour impacts upon safety performance

The safety ambassadors prepared and delivered presentations to all employees. These interactive sessions included short, attention grabbing videos. The videos were used to help engage the participants in discussions about why people behave in the way that they do at times. It has provided a shared understanding of what drives behaviour.

Incident peer reviews

When incidents occur where the behaviour of those involved has had a significant impact, the safety ambassadors undertake 'Peer Reviews'. These provide the opportunity, in a non-threatening environment, to discuss why the incident occurred, the drivers that created the behaviour and the unsafe condition. The individual involved has the opportunity to reflect on their part in the incident. He/she is encouraged to learn from the experience, recognising the behaviour and thought process that should be applied in future.

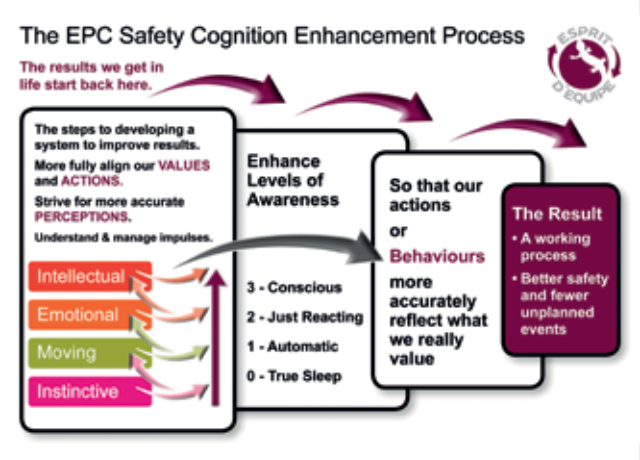
Two safety ambassadors

Job cycle checks

An internal review of safety, which was based on the eight elements of HSL's SCT survey, had identified 'Procedures' as the weakest area in EPC-UK. To help address this, a comprehensive process of checks was introduced. It involved observing and walking through every safety critical task in EPC-UK. The review was to ensure that the description of how each task is completed is accurate. Also, that it is a safe method of working and the appropriate control measures are in place in the current risk assessment. This review is conducted in the workplace by those undertaking the task and the relevant supervisor/manager. It also serves as a competence assessment and verification.

Other initiatives delivered by the safety ambassadors to promote behaviour awareness included; asking all employees to sign a 'Safety Charter', involvement in safety days, texting safety reminders to all company mobile phones, displaying messages on site electronic message boards and introducing our contractors to the concept of behavioural safety.

*Interdependent safety stage – Dupont's Bradley Curve, see page 21



BENEFITS

- An increase in the safety suggestions – 389 in 2015
- 22% increase in incident reporting between 2013 & 2015
- Increased awareness of unsafe behaviour and its underlying drivers
- Safer ways of working and recognition of procedures
- Changes in employee's behaviour and safety culture
- A safer work environment for all.

923

Tool box talks videos

FM Conway Ltd > Conway house

RUNNER UP

ON VIDEO

DESCRIPTION

Three years ago, FM Conway launched a behavioural change programme called 'People First: Go Home Safe', this has already achieved significant success. To take its behavioural programme forward, the leadership team wanted to focus on the safe and unsafe behaviours of its workforce, reinforcing the safe behaviour.

FM Conway was already using camera technology on its sites, fleet of vehicles and plant. The camera technology was initially introduced to help manage insurance claims, accident investigation and improved cycle safety.

It was decided to capitalise on the some of the incidents captured by these cameras. A number of short video tool box talks (TBT's) highlighting both safe and at-risk behaviours were produced in-house. Available in different formats, they can be viewed on tablets, PC and mobile phones. The dramatic, short videos used in the TBT's helps to open up a positive discussion about the video content and the lessons that can be learnt.

Please view the three video tool box talks on www.safequarry.com M25 near miss, traffic manager's near miss in live lane and Operator's fall from grab lorry.

BENEFITS

- High impact as videos involve FM Conway employees
- Operatives find it easy to relate themselves to incident
- Recognition that it could happen to them
- More near miss reporting of similar incidents
- Changing unsafe behaviours by operatives
- Videos shared across industry and with wider audience
- FM Conway achieving recognition for this initiative.









844

Our journey to safety excellence

HIGHLY COMMENDED

Lagan Cement Products > Company wide

DESCRIPTION

Lagan Cement Products Ltd (LCP) is a production and manufacturing business with eight sites throughout Northern Ireland and a workforce of 85 direct and indirect employees.

In November 2014, LCP took its first big step instilling an improved and lasting safety culture. The company launched its new health and safety vision at a safety day.

Zero Harm – Make Safety Personal
Home Safely, Everyone, Every day!

Following the launch, a series of innovations and programmes have been introduced to help change the health and safety culture and the behaviour of its employees including;

- Stop Think Observe Proceed – STOP Assessments – introduced on all sites. These pre-task risk assessments are completed on a daily basis and reviewed by line managers.
- In January 2015, a Director requested the review, rollout and sign off of all site risk assessments within a month, the process engaged all staff and captured their feedback.
- January to April 2015 – All staff attended a three day training program on H&S topics. It culminated with the introduction of a score based, risk assessment form. The objective was to help employees write effective risk assessments and to make them more easily understood across the business.
- A new near miss reporting programme, weekly reporting of safety concerns and a quarterly 'Best Safety Suggestions Competition' were introduced. Following all incidents, the root cause and learning are shared across the business.
- Health and safety communications have been improved using numerous communication channels such as;
  - Monthly HSE meetings with senior management, plant managers and employees representatives
  - Morning meetings with safety always on the agenda
  - Toolbox talks and safety alerts are shared across all sites
  - Site Notice boards with attention grabbing items e.g. 'Subject of the Week'
  - Safety Wednesday – first Wednesday of each month focusing on a particular topic
  - Safety Signs reviewed and updated
- In January 2016, the Visible Felt Leadership Program was introduced. Site tours enable managers to check compliance and engage with the workforce on all sites.
- In February 2016, the launch of the 'Charge Hand/Supervisor Leadership & Management Training Programme' offered a selection of staff the opportunity to improve their safety leadership.

BENEFITS

- Recognition of management's commitment to improving safety
- Management providing leadership on safety
- Increased profile of health and safety within business
- Increased visibility of management in the workplace
- Risk assessments improved and more effective
- Recognition of good performance
- Staff safety leadership improved
- Levels of near miss reporting increased across business
- Enhanced learning and sharing of lessons from incidents
- Enhanced employee safety awareness and safe behaviours
- AFR reduced from 1.84 to 1.43
- Enhanced safety culture
- A safer working environment for all.

916

Safety Cross – KPI increasing near hit reporting and reducing incidents on mobile sites

HIGHLY COMMENDED

Tarmac Ltd > Mobile sites

DESCRIPTION

Tarmac identified that on their contracting sites there was a difference in the safety culture, employee's behaviour did not always mirror what happened on their permanent sites. A reflection of this was that the contracting sites were not generating enough near hits to allow analysis, coaching and feedback to improve their safety performance.

Tarmac held workshops with employees, to discuss issues and asked for feedback on ways to improve. A number of specific items were identified that would help;

- A visual tool to be used as part of an enhanced daily briefing to encourage engagement and involvement at the site
- Feedback on how well they were doing when bench-marked across the region
- To know that their actions would be seen by management at head office
- To know what actions management would take as a result.

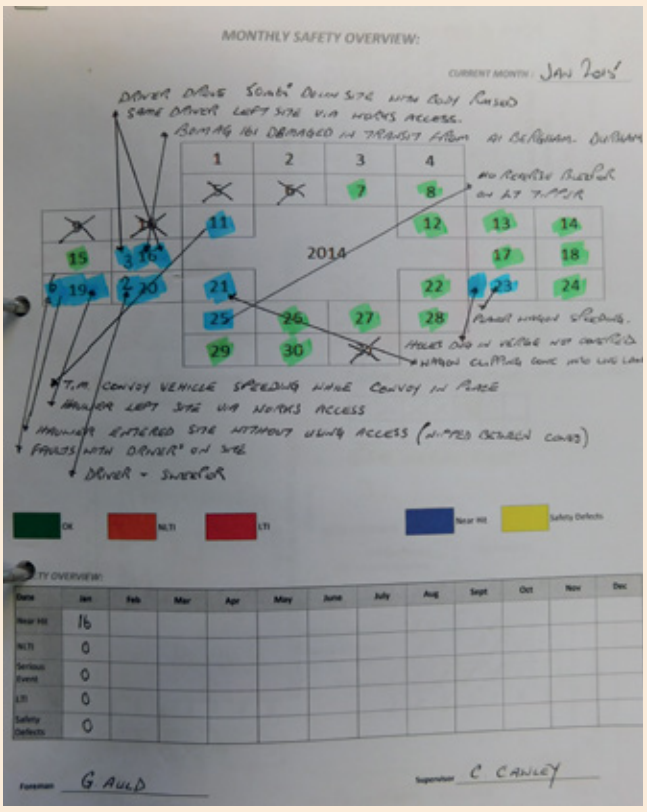
Their 'Safety Cross' was born. The teams developed and owned it, they changed and further enhanced it. The site foreman or supervisor gave an individual on each site the responsibility for completing it and reporting to the gang on a daily basis. He also encouraged team members to contribute.

The 'Safety Cross' allows any visitor to site to have a quick look and obtain an overview of incidents on that site. It allows management, supervisors or any visitor to challenge the team or commend them on their performance. Something managers were unable to do prior to this.

Each month, the completed safety cross is taken back into the office and displayed on the 'KPI wall'. This provides the management with a very quick, visual analysis by gang of how they are doing. Before visiting a gang, they have something to talk about or are able to pick up the phone, ring a foreman and thank them for their performance. This was much appreciated.

BENEFITS

- Provides feedback to the gangs how they are doing
- Basis for monthly league tables in a newsletter
- Provide feedback on every near hit – What actions will or have been taken
- Facilitates coaching and development of a foreman and his team
- Identifies which manager, supervisor, foreman and gang needs help
- Gangs now coaching and encouraging each other across gangs, teams and regions
- Very positive response from the gangs, they particularly like the feedback loop
- System owned and supported at all levels
- Significant increase in number of near hits reported
- Decrease in number of safety incidents
- Simple, visual system facilitating coaching, recognition and learning
- Improved safety performance, employee engagement and job enrichment
- A safer environment for all.



921

Tallington 'hearts and minds'– the journey to interdependence

Tarmac > Tarmac Building Products Ltd > Tallington

DESCRIPTION

In July 2014, five operatives were injured at the Tarmac Building Products (TBP) Tallington factory, prior to this, there had been 15 injuries at the site that year. Whilst all the injuries were minor, this was unacceptable to everyone on the site.

The factory embarked upon a campaign to reinvigorate factory health and safety. This was launched at a safety stand down day at the factory. The Managing Director led a series of identical workshops which each of the 50 members of the Tallington workforce attended. At that time, the factory had a contractor only employment model. The workshops were supported by SHE Management, HR, Agency Employer and factory management representatives.

The workshops provided an overview of the factory's safety performance and a refresher on key safety indicators and theory. The workshops then captured the workforce's feeling and beliefs with regards to five key areas;

1. Where did the team feel that the factory was on the Bradley Curve?
2. Did the team believe that the organisation is committed to individual's health and safety?
3. Why did the team believe that people get injured at the factory?
4. What did the team believe that the organisation needed to do to create an incident free workplace?
5. What did individuals believe that they could do to create an incident free workplace?

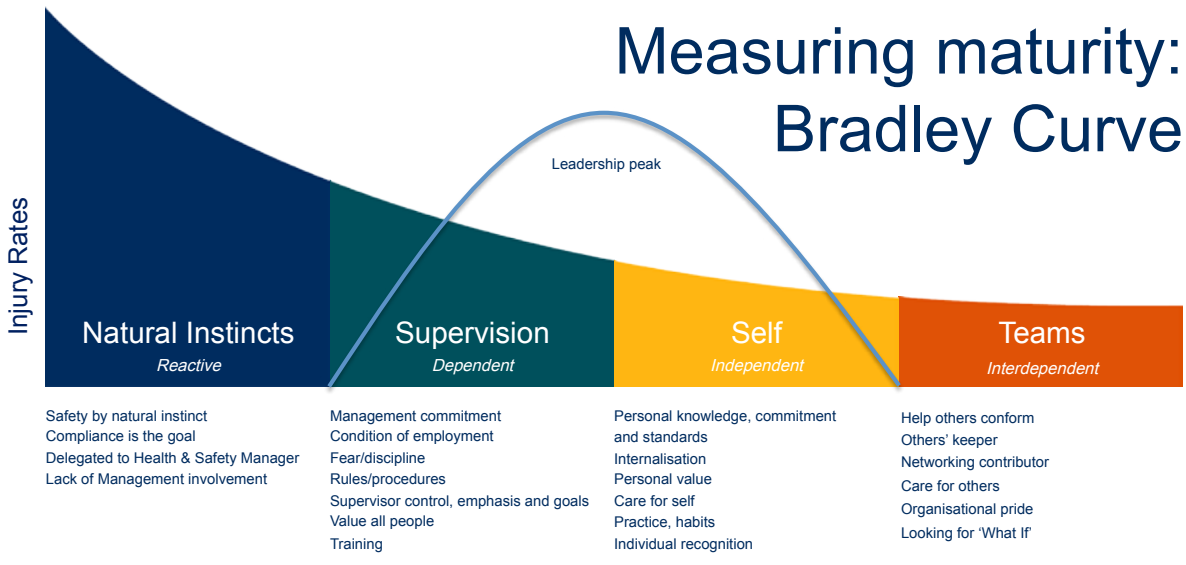
This generated a high level of engagement and a range of improvements were identified, the opportunities were grouped into the themes below:

- Welfare (amenities facilities and workwear)
- Communications
- Teamwork
- Behavioural safety
- Manual handling
- Small tools and equipment
- Training (SOP's, skills and task rotation).

These recommendations were delivered over a 12 month period following the commencement of the campaign. The most significant change was that the factory team members are now directly employed by TPT rather than through an agency. Communications were improved by regular safety briefings, team building, training and task rotations. Some processes were semi-automated. A range of changes were introduced to improve hygiene and welfare.

BENEFITS

- Cross team, collaborative approach to health and safety
- Improved engagement of workforce and improved safety culture
- Fall in injury frequency rate from 163 in 2014 to 97 in 2015
- Fall in the all injury count from 18 in 2014 to nine in 2015
- Reduction in manual handling risks following some automation
- Workforce safety climate survey – Year on year improvement of 8%
- Greatly improved level of trust between the management and the workforce
- Understanding that safety is management's top priority.



936

Factory improvement works

Sterling Services Ltd > Station Works

DESCRIPTION

Sterling Service's factory in Somerset had housekeeping and quality issues that appeared ingrained into the workforce. Previous efforts to solve the problem such as implementing new QC paperwork or having a 'tidy-up' of the factory, had been short-term successes, treating the symptom rather than the cause. The factory, which was based in a former railway station, was under-achieving in terms of both quality and health & safety.

As a result of a simple root cause analysis exercise, two inexpensive actions were identified and carried out. The replacement and relocating of the welfare facilities and the removal of the adjacent Nissen shelter. This set in motion a cultural change among the workforce and marked a turning point in the company's recent safety history.

Safety and quality performance started to improve and further actions were taken to build on this momentum. The safety procedures were reviewed and updated, more toolbox talks and safety meetings were held, and staff were encouraged to bring forward ideas and discuss issues.

BENEFITS

- Improved morale and a sense of reward amongst the workforce
- An appetite for further improvements
- An increase of pride and quality of work
- Improved acceptance of health & safety such as adherence to rules, wearing of PPE
- Increased volume of concrete produced per head by 14% per week after six months
- Staff migration halved from eight to four leaving per year
- Decreased entries in the accident log by approximately 50%
- Decreased QC failures resulting in 30% fewer scrapped units
- Estimated that the payback period for £50K project was 8.5 months
- A safer environment for all.

924

Prevention of lorry accidents

FM Conway Ltd > Conway House

AWARD WINNER ON VIDEO

DESCRIPTION

FM Conway wanted to improve prevention measures to help eliminate lorry accidents involving cyclist and pedestrians within its London locations. Having looked at an array of vehicle body builder styles, it considered the Econic body as a safe urban constructed vehicle, ideally matched for inner city operations.

Key features:

Excellent all-round direct visibility – minimizes blind spots – The low-entry concept enables a particularly low dashboard. The panorama windscreen and the fully glazed folding door enhance visibility particularly of cyclists at side or front of the vehicle.

Safety at all times – With the help of cameras attached to the vehicle and monitors integrated in the cab, the driver can keep an eye on everything else within the body load compartment area. The Econic comes standard with an Electronic Stability Programme (ESP), which enables emergency braking with an active lane keeping system. Proximity sensors activate and alert the driver, minimizing pedestrian collisions.

Driver access and egress – The Econic has one step access and egress and the driver is able to always egress on the vehicle kerb side, removing the risk of entering the live lane, particularly important when vehicles do a high level of motorway driving. The design also eliminates possibility of a driver seeking to take a short cut from cab to the rear grab platform, exposing themselves to the risk of a fall.

Performance in tight spaces – In confined urban environments, the Econic demonstrated its qualities as a manoeuvrable lorry with an ideal package for the safety of people and the environment. This eight wheeled vehicles comes with rear steer capability giving enhanced lane control, ideal for work in confined urban environment.

Numerous body mounting options – In line with the many uses of the FMC fleet the Econic can more than cater for a change in use such as tipper, grab lorry or cement mixers.

BENEFITS

- Reduced risk of accidents involving cyclists and pedestrian
- Vehicle well received by members of the public
- Vehicle is easier to drive in urban environment
- Drivers enjoy driving vehicle
- Significant reduction in falls from vehicles
- Flexible unit.

886

Reducing road risk for vulnerable road users

O'Donovan Waste Disposal

RUNNER UP

ON VIDEO

DESCRIPTION

O'Donovan Waste Disposal makes reducing road risk an absolute priority. Through its work with CLOCS (Construction Logistics & Cyclist Safety) it champions safety.

Training is at the heart of O'Donovan's strategy, it has one of the most robust induction schemes in the industry. With a diverse, multicultural workforce, the firm offers training and communications in a multi-lingual format.

Induction and training initiatives include:

- Staff handbooks tailored to each individual's role and language
- Five multi-language mentors in the business to support driver training
- Load security training with assessments undertaken and reviewed
- Fleet risk manager trains each recruit – (Uses FORS approved online hazard perception)
- Staff trained to be health and safety champions across the business
- Online training using multi-lingual modules is ongoing
- Monthly driver campaigns are run in partnership with the road safety charity BRAKE.

O'Donovan developed its own Driver CPC course 'Waste Essentials', which is JAUPT approved, this ensures that drivers are trained in the specifics of construction logistics. It is the first course designed and implemented by a waste management company and is delivered by the MD. All drivers undertake this course, as well as having NVQs in HGV driving. In addition, drivers must also undertake Safer Urban Driving courses and the new Staying Legal course.

A fleet audit manager helps to ensure that the systems are being effectively implemented. The audit manager supports drivers in best practice checks, will ensure that documentation is correctly completed, defects are noted and rectified and can provide independent advice and legal guidance to drivers.

New telematic monitoring equipment has been installed which captures driver behaviours such as accelerating, braking, cornering, speeding and idling in real-time via an online dashboard. The data from the system is used to identify areas where training is needed.

The training is reinforced with a significant investment in technology and equipment, the fleet is best in class and sets the industry benchmark for managing occupational road risk. O'Donovan has been retro-fitting the latest safety equipment including:

- Side-scan detection systems
- Side guards
- CCTV cameras
- Fresnel lenses
- Class V and VI mirrors
- Cycle safety signage
- Left hand turn audible alarms.

BENEFITS

- Events reduced by over 66%
- Accidents down by 25% in 12 months
- Performance recognised as outstanding by the company's insurers
- Company awarded FORS Gold in four successive years
- A well trained and safer workforce
- Risk to vulnerable road users significantly reduced
- Employee recognition of total commitment to safety
- SME providing leadership and a benchmark in improving safety.

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

829

Managing occupational road risk

EPC-UK

DESCRIPTION

In 2015, EPC-UK employed a Driver Training Manager to co-ordinate and deliver training to a set standards produced by the Institute of Advanced Motorists (IAM). The objective was to improve driving standards, fuel efficiencies and ensure drivers are aware of potential hazards and difficult driving conditions.

The training and support being provided covers a range of internal and external courses. EPC-UK is being proactive in working with professional bodies to help develop appropriate training packages. The initiatives include;

1) LGV drivers receiving a driver assessment to the standard of Driving Vehicle Standard Agency (DVSA).
2) All new employees receive a full driving assessment when they commence working for the company.
3) Introduction of Advance Motorists training for primary, secondary and grey fleet drivers to the exam standard for IAM skills for life.
4) Initial and refresher ADR training for LGV and LCV, including class 1 explosives is delivered in-house. A further 12 modules are available including Vulnerable Road Users (VRN).
5) Dangerous Goods Awareness Training has been delivered to non-commercial employees.

BENEFITS

- Tachograph infringements reduced from 68% to 1.24%
- Knowledge and awareness safety awareness of drivers improved
- Professional qualifications enhance drivers moral
- Standard of driving and associated activities improved
- Reduced risk of injury to vulnerable road users
- A safer environment for all.

920

Vehicle and pedestrian review following new products and vehicles

AWARD WINNER ON VIDEO

Tarmac Ltd > Glasgow Mortar

DESCRIPTION

In 2016, additional products and volumes were added to the portfolio of Tarmac's, Glasgow mortar site. The changes involved the introduction of a new vehicle and increased vehicle movements on a site with limited space. A multidisciplinary team was set up, involving representatives from all the different functions working on and entering the site, to review the vehicle pedestrian management plan (VPMP).

An initial review was carried out by the site team who walked through the site to determine areas of concern. An aerial view of the plant was utilised to highlight the key hazards identified and to aid the team in visualizing solutions. This was also used to facilitate communication with other stakeholders such as hauliers, contractors and visitors. A slide was produced to show vehicle movements and to highlight high traffic route usage, this helped identify bottlenecks and cross over areas.

The changes were presented to senior management and approved. Suppliers were asked to suggest further enhancements and these were also incorporated within the final solution.

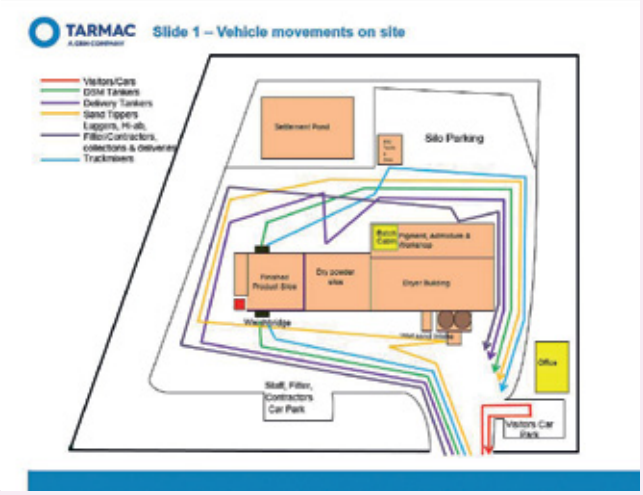
Following the success of this review, it was decided that the methodology should be presented at a Safety Day for the Mortar plant teams. An aerial image of each site within the business was reviewed for hazards and suggested solutions on post it notes were added to the image. Regional managers reviewed these and put forward applications to facilitate the recommended changes.

Further initiatives have subsequently been introduced to enhance the process:

- Videoing from hauliers cab to capture the issues a driver faces when entering and operating on each site.
- Site induction cards for each type of vehicle entering a site
- LED lighting on gate boon – supplier idea
- Hauliers invited to attend regular safety meetings
- Process now being adopted across all Tarmac business lines.

BENEFITS

- Improved site volumes, products and improved profitability
- Site is safer, better controlled with reduced risk of collisions and pedestrian contact
- High level of team involvement in process
- Incorporates both engineered and behavioural changes
- Enhanced engagement with all site users
- Process now applied nationally and across all business lines.



The table below shows the hazards identified by the review and subsequent risk assessment together with the solutions proposed;		
	Hazards	**Recommendations**
1	No interception or control of vehicles entering site	Introduce control barriers at site entrance with intercom and CCTV
2	RTU Mixer loading and testing areas not defined	Create designated bay for testing with access gantry and barrier to yard entry
3	DSM silo lugger movements crossing main traffic routes and movements not controlled	Lugger vehicles to park in silo park area only when space available
4	Overhead height restriction at loading points	Overhead height restriction signs at entrance to loading point
5	Merging of a wide range of vehicles on site	Controlled by barriers and cameras
6	Cars from carpark merging with site exit traffic	Controlled by barriers and cameras
7	Bulk bag production, silo lugger off loading, hi-ab loading area and fitters/contractors on site.	Bulk bag production and hi-ab loading in designated area only, limited lugger movement whilst this operation takes place and fitters to park in designated area when van not required for task
8	Pedestrian movements from main office crossing yard and transport routes.	Additions to site walkways and marked crossing points via 'goal-post' gates and signage

900

Fleet safety and operational improvements to the CEMEX fleet

RUNNER UP

ON VIDEO

CEMEX UK Materials Ltd > CEMEX Logistics

DESCRIPTION

CEMEX operate over 350 own fleet vehicles carrying aggregates, asphalt and cementitious powders. It is imperative that these vehicles are fitted with the latest safety features and technology to ensure UK road space is shared safely.

A number of enhancements were included in the bulk-powder tanker specification/design following the active involvement and consultation with drivers in workshop and field trials. These included:-

- Raising the product discharge pipe by 18 inches, eliminating the need to stoop down whilst supporting the weight of the pipe/unicone end and securing the clamp
- Adding a gas strut-assisted low level electric suzi/air jump hose connector. This eliminated the need to climb onto the chassis catwalk a minimum of four times per day
- LED lighting throughout including the addition of high level rear lighting (including strobes for on-site visibility)
- LED repeater marker lights to the sides enabling greater awareness of vehicle movements to vulnerable road users
- LED adjustable working lights that also serve as a vastly improved reversing aid
- The entire bulk tanker fleet (100 vehicles) was fitted with industry leading tyre pressure sensors. The driver has real time visibility of the tyre pressure and temperature with pre-set alarms
- Fitting camera systems to provide additional visibility of vulnerable road users – reducing blind spots
- Implementation of a fleet wide vehicle telematics program to measure the driving style and performance of the drivers.

BENEFITS

- Reduction in risk of manual handling injuries when clamping pipe
- Reduced risk of slips, trips and falls from introduction of jump hose connector
- Improved the vehicles visibility to other road users
- Enhanced drivers visibility of vulnerable road users and other hazards
- Safer for vulnerable road users in close proximity to CEMEX vehicles
- Tyre monitoring
  - Blowouts reduced from 12 to zero
  - Early detection of punctures – before leaving depot
  - Reduction in roadside breakdowns
  - Safer for driver and other road users
  - Savings in costs of breakdowns and lost time
  - Positive reaction from drivers to system
  - Being rolled out to tipper fleet
- Cameras
  - Footage used to provide evidence of drivers actions after incident
  - Helps protect drivers from mistaken or fraudulent claims about their actions
  - Footage used as a coaching aid
  - London has seen a 50% reduction in incidents during the camera trials
- Telematics
  - Reduction in harsh braking
  - Enhanced fuel performance from 7 to 7.25mpg – annual saving of £150K
  - Weekly reports used to support driver coaching.

879

Pocklington patio pack build automation

Brett group > Brett Landscaping and Building Products Limited > Pocklington

AWARD WINNER

ON VIDEO

DESCRIPTION

BLBP Pocklington produces wetcast concrete slabs. To meet customer demand, Patio Project Packs are supplied with a range of slab sizes. The line could not produce a range of different sized slaps in a production run, as different designs of volumetric dosing box portals were required for different slab sizes. The line was therefore set up to produce single size packs.

A team of six operatives were employed for six hours every Saturday to build projects packs from the single sized packs. This involved manually handling slabs ranging from 25kg to 7kg and transferring them by hand onto a new pallet to build the mixed sized patio packs. Each operative was manually handling up to 12 tonnes of slabs a session, in total 3,600 tonnes per annum being manually handled in pack production. The site team felt it was unacceptable to continue with this process.

It was identified that the system could be redesigned to create a total of eight portals so that a single dosing box could successfully fill a range of sizes without being changed. The order of the moulds and their placement in the curing system was changed to reflect the make-up of the patio packs. This allows them to be recovered in the correct order to build the patio pack using the existing robot. Sets of new moulds were purchased and the packing line adjusted to handle both a standard pallet and patio pack pallet.

BENEFITS

- Patio packs production now fully automated
- Risk of manual handling injuries creating multi packs eliminated
- System developed by site team improving morale and safety culture
- Modifications cost £23K, completed during planned maintenance shutdown.

925

Developing improvements to driver health

FM Conway Ltd > Conway House

RUNNER UP

ON VIDEO

DESCRIPTION

Driver health was very much at the forefront of FM Conway's (FMC) priorities. This followed the highly publicised incident in Glasgow involving a refuse truck and an accident where a FM Conway driver collapsed at the wheel and collided with a tractor, sustaining significant injuries. This incident was caught on vehicle cameras and was used within FMC's new video tool box talk system to relay the potential dangers of being unfit for work.

The leadership wanted to fast track improvements to minimise the likelihood of another incident occurring. It believed that the legal requirement for a DVLA five year medical was far from sufficient in both timescales and content. An investment in its workforce was essential for its driver's long term health and wellbeing and that of the other road users.

The introduction of additional safety critical medicals was discussed at employee forums. In spite of some initial reluctance, an agreement was reached for all drivers to take a safety critical medical that included; a medical questionnaire, blood pressure, audiometry, lung function tests, mobility tests, visual acuity, colour perception, mental health assessment and urinalysis. So far, circa 10% of the drivers tested have failed the medical.

At risk drivers, who fail the medical, are removed from driving duties and enter an assisted medical referral process supported by HR. The aim is to get the driver back to work at the earliest opportunity. To return to driving, the identified medical condition must have either been eliminated or controlled via medication. The medical condition must be confirmed as 'dealt with' and a 'Fit for Work Certificate' issued by the occupational health specialist. Medicals are repeated at least every three years or at shorter intervals, determined by the nature issues highlighted for the individual.

FM Conway further supports the drivers with well-being seminars. They provide support on such issues as nutrition, exercise, and how to stretch and flex while sitting the cabs of their vehicles.

BENEFITS

- Over 130 safety critical medicals completed to date
- Safer drivers and safer for other road users
- Previously unrecognised medical conditions identified
- Appropriate treatment put in place
- A healthier, safer and happier workforce
- Workforce better educated about health and lifestyle issues
- Clients can be provided with evidence of driver's fitness for work
- Minimised the risk of a catastrophic health related accident.

891

Cab vacuum facility

Aggregates Industry > Croft Quarry

HIGHLY COMMENDED

DESCRIPTION

Following an increased awareness of respirable crystalline silica (RCS) and the need to keep machine cabs clean, operators were encouraged to routinely clean their cabs using a vacuum and hose attachment. However, as the operators had to hold on to the hose whilst climbing in and out of the cab to clean it, they were exposed to an enhanced risk of falling from height.

To make the process easier, a high powered vacuum was connected through a steel pipe to a swinging arm located adjacent to the parking area. A suction hose was fitted to the end of the swinging arm.

Drivers can pull up alongside the swinging arm, descend the cab steps and switch the vacuum on. They then move the swinging arm out towards their machine and secure it in position. This then presents the hose for use at the right level for cleaning the machine cab. The operator ascends the steps without having to carry a hose or other portable vacuum. Once completed, the process is reversed.

BENEFITS

- Reduced the risk of falling from height
- Drivers encouraged to clean cabs more frequently
- Reduced exposure to RCS
- Cleaner work environment and improved morals.

938

Single mould press automation

Aggregate Industries > Bardon Hill > Concrete Products

HIGHLY COMMENDED

DESCRIPTION

At Aggregates Industries precast works, a number of areas for improvement were highlighted as high risk with three main systems showing the greatest potential for improvement;

- Batching system (manual volumetric weighing with wet concrete contact)
- Weekend work to remove dried concrete
- Guarding (operator dependent)

The solution was the renovation of the single mould process including the conversion of the manual volumetric batching system to an automated weighing process. This would both remove manual operator involvement from the process and allow for waste concrete disposal without manual intervention. The new system allowed a spherical concrete holding chute that would prevent the adherence of concrete during daily wash-down procedures, eliminating the requirement for weekend cleaning. The perimeter of the new batching system was fitted with tight guarding and an interlock system to prevent any access.

Where tasks required operator access, light gates were installed, increasing security over the previous two hand activation.

BENEFITS

- Reduced manual handling
- Reduced risk of Hand Arm Vibration
- Cleaner working environment
- Reduced employee turnover and moral
- More efficient and profitable operation
- Safer working environment for all.

899

Driver health and wellbeing

CEMEX UK Operations Ltd > Logistics

ON VIDEO

DESCRIPTION

In CEMEX, the 2015 New Year 'Back to Work' training focussed on Health and Wellbeing with a bespoke film featuring three drivers and a manager explaining how they changed their lifestyle and the subsequent positive results.

The objective was to motivate employees by demonstrating how simple it can be to change their lifestyle and highlight the consequence poor health can have on their vocational driving licence. The film included the importance of attending health surveillance and how it can identify issues such as diabetes, the benefits of stopping smoking, the positive results of taking a little exercise and provided a few tips from a nutritionist.

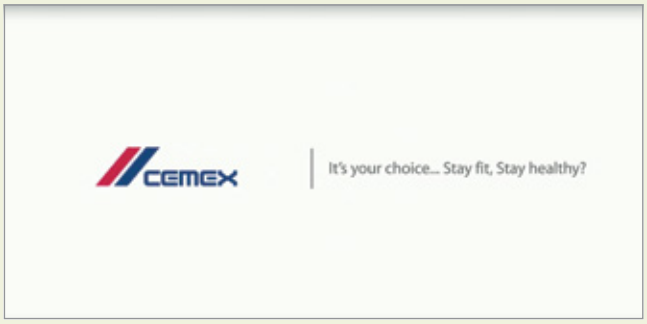
The annual 'Pedometer Challenge' was then launched with the best participation achieved to date.

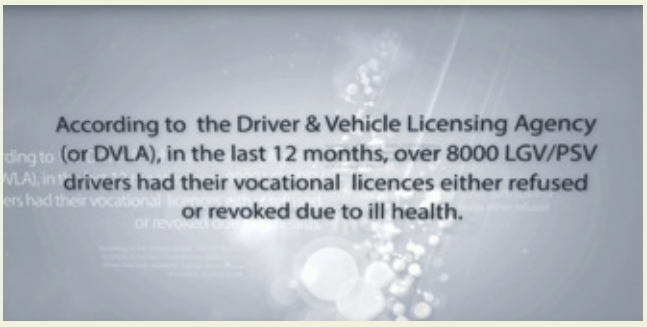
Towards the end of 2015, a trial was undertaken at Rugby of a 'Wellpoint' Station. This is a state of the art kiosk providing the user with the facility to take their own health metric. The service is confidential, the user does not have to make an appointment or go to see a health professional. The kiosk gives them advice and guidance, but the user has the responsibility for taking action where needed. The physical tests the kiosk takes are; Weight/BMI, body fat, blood pressure and heart rate.

The kiosk is a great tool for screening a large population, highlighting only those that require intervention. It's especially effective at engaging the cohort that don't generally see a health professional, middle-aged males – a typical prototype LGV driver.

BENEFITS

- User given their 'Heart Age', an easy to understand idea of their general health
- Anonymity encourages participation
- User can track their progress over time
- Enables users to identify health issues and take appropriate action
- Start of an ongoing and developing programme.





927

Improvement in health and safety communication and engagement

AWARD WINNER

ON VIDEO

Celsa Steel Services UK

DESCRIPTION

Celsa Steel Services UK (CSS UK) wanted to improve communications on all health and safety matters and develop the safety culture within the company. With 16 manufacturing sites spread across the UK and a wide demographic spread of employees, it was recognised that the traditional means of communication were not fully effective. The use of social media was considered but discounted due to the issues of information control outside of the company and user acceptance. It was decided to use the forum product available through the company's SAP based IT systems to create an internal safety forum.

Initially, the forum was seen as a free format for the general discussion of health and safety issues and the sharing of safety ideas. After some months, it was developed to also provide a more structured way to deliver information such as safety alerts, a way of organising safety working groups and to share safety reports. Unlike emails, the information on the system was visible to all and was not lost in the time based structure of the email log.

Whilst the initial use was by the senior management and the safety team, once the forum was bedded in and seeded with content, others were encouraged to join. The target is to increase membership of the forum to at least 100 and to use the task management facilities more extensively.

BENEFITS

- Membership rapidly expanding
- Supervisors and other safety representatives can easily interact with Directors
- Directors able to respond rapidly to queries wherever they are
- Broke down traditional hierarchical structure for communication
- Participants can highlight their initiatives increasing their self-worth
- Good ideas or safety lessons effectively shared throughout the organisation
- Significant increase in the number of documents being added
- Significant increase in the addition of comments
- Drafts of documents can be shared providing wider and speedier consultation
- Greater buy-in to changes as there has been wider input and involvement
- Ability to demonstrate to third parties consultation process
- More openness and trust in the information being provided
- Ability to track what issues are being viewed and generating interest
- Ability to identify who and at what intensity individuals are engaging
- Greatly enhanced sharing of all types of safety information
- A dynamic tool that can be easily developed over time
- A safer environment for all.

941

Dorset Highways collaborative partnership

Hanson UK

RUNNER UP

ON VIDEO

DESCRIPTION

A collaborative working approach adopted by Hanson Contracting, Raymond Brown and Dorset County Council has delivered exceptional, sustained safety performance on the county's highways term service contract (HTSC).

A relationship between the partnership businesses had been established prior to the current Dorset HTSC Partnership which commenced in 2010, so a high level of openness, honesty and trust was already present between the partnership members.

At the start of the partnership, collaborative working was a relatively new and novel approach to managing a construction contract. Nowadays, the opportunities offered by a collaborative working are more widely recognised and major clients are structuring contracts to realise the improvement in performance the Dorset HTSC Partnership has delivered.

The collaborative working approach was adopted during the planning, implementation and review of all the various different types of work, from routine maintenance to major schemes. At the heart of the system was ensuring that health and safety issues formed a critical part of the design and planning for all the work undertaken.

With 5,000 different people engaged at different times and for different durations during the partnership, this collaborative working approach spanned all different levels of worker who were all closely involved in discussing and defining the safety standards expected throughout the project.

This was facilitated by all keys parties sharing an office, which enabled issues to be easily discussed as they emerged and commitment by all parties to an agreed way forward. The gangs were issued with iPads that enabled them to easily report near misses, good ideas or other safety issues. The management were able to feed back in monthly reports, the actions they had taken 'You said – we did' and share relevant safety information such as tool box talks.

BENEFITS

- Exceptional safety performance achieved over six years contract
- Over one million hours worked and 500K tonnes of asphalt supplied and laid without accident
- 5,000 employees and contractors employed kept safe
- Enhanced safety culture of all those involved
- Sharing and effective communication on all safety issues
- A more efficient and successful operation.

882

Operational stand down day and risk assessment workshops

Colas Ltd > National

HIGHLY COMMENDED

DESCRIPTION

All operatives, foreman, supervisors, managers and directors of the surface treatment processing departments within Colas were brought together for a stand down day at the end of 2015. The objective was to engage all levels of the workforce in identifying any issues and concerns they had within their part of the business before and explore any new ideas and improvements to address them.

Many suggestions were made by the operational staff on how to engage and communicate more effectively. One was to involve the workforce in the risk assessment review process.

In response to this idea, risk assessment workshops were held at the beginning of the year. All operation staff came together to review their own assessments for the activities that they are involved in. The sessions resulted lots of suggested amendments or additions to the assessments from the crews and ultimately, gave ownership of the tasks back to the operational side of the business. The recommendations for changes in the risk assessments were implemented.

BENEFITS

- Workshops seen as great success across business
- Operational crews had ownership of assessments
- Format of day now incorporated into the incident reporting/ investigation
- Collective team approach in finding identifying solutions
- Better health and safety culture across the business.

911

Rail operator's visual display boards

Tarmac Ltd > Tarmac Lime and Powders

HIGHLY COMMENDED

DESCRIPTION

The rail loading and sidings at Tunstead Quarry cover a very wide area. There are 9.2km of track on site, 95% of this is not visible from the rail personnel's office building. This area is called zone 'R', entering the zone requires authorization and an induction. The need to manage and control train movements, stationary rolling stock, rail maintenance and contractors within this area is critical.

A change in the shift patterns in the rail operations resulted in a staff change over being made at midday when many tasks were being undertaken by the 'day teams'. Previously, the shift change occurred at 18.00 hours when all day teams had completed their tasks.

It was identified that the new shift on rail operations required better visibility of what tasks were being undertaken in the area, by whom and how these would be managed. This needed to be robust to ensure that all relevant information was passed on to the in-coming teams. An operative submitted his idea for visual display boards into the company suggestion scheme. The suggestion was reviewed by the management and then implemented.

The new visual display boards inform anyone entering the site; who else is in the rail zone, where they are working, what task they are carrying out, which locomotive is in operation and which others are available, which rolling stock is under repair and what permits are open.

The magnetic display board has a line drawing of the track layout in the sidings. Colour coded magnets are applied to the board indicating the location where any individual is working. Each maintenance team member, visitor or contractor is issued a numbered coloured magnet which is identified on the issued permit and placed on the track layout. This gives immediate visibility of persons in the area. Permits are also placed in magnetic sleeves to raise the visibility of their issue.

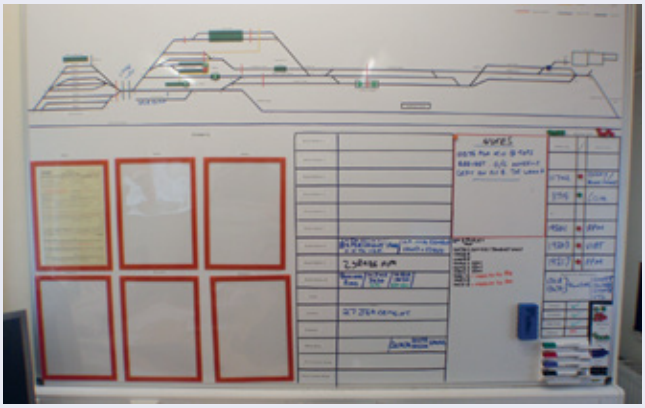
Rolling stock and locomotive availability, due vehicle inspections, out of service rolling stock are all written on the boards which allows all of the current activity to be visible on the same board. This facilitates discussions and briefing at the team meeting. They are kept up to date by the supervisor and team leader.

A display screen has been installed which displays current health & safety alerts, health and safety statistics, briefings and reports, this is now regularly updated.

A monitor has been installed which gives current status of incoming trains for loading or for holding and the whereabouts of delayed train movements.

BENEFITS

- Rail operatives and others have visual update on all activity
- Shift changes can be managed effectively
- Better awareness of all related activities enhance control
- Impact of cancellations or delays more effectively managed
- Safety information more effectively communicated
- A safer environment for all.



821

Saviour stretcher

Kerneos Ltd > West Thurrock

DESCRIPTION

Working in confined spaces is one of the highest risks faced at West Thurrock. Following staff concerns, Kerneos initiated a project to review confined space working, focusing on work inside cement ball mills and emergency rescue. The mill has multiple chambers and are accessed via hatches on the top, it was difficult to get people out safely using the existing equipment.

Working with a confined space training provider 'Train You', Kerneos consulted with staff, then trialled and purchased a new 'Saviour Stretcher' rescue system. Staff have been trained in using the new equipment. In addition, the access to and within the chambers has also been improved by some engineering modifications.

BENEFITS

- Stretcher is easy to use
- Colour coded straps help to place people
- Light weight and roles up so easily carried into position
- Staff like and more confident with new stretcher
- Emergency rescues will be easier.

919

Remote learning and tracker system

Tarmac Ltd > Tarmac Readymix

DESCRIPTION

Tarmac has developed a remote learning system having identified from employee feedback that communication of key health and safety messages including tool box talks was too complicated. The intended recipients did not receive the safety messages and management could not demonstrate whether individuals had been engaged.

The system is Google based. It enables Tool Box Talks (TBTs) to be rolled out across a national operational area. The TBT's are embedded onto a Google form, learners access on line and select their names from a drop down menu which links responses to a national tracker.

The system is ideal to target individuals on the circa 100 readymix sites operated by Tarmac Readymix with one or two working on the site. The delivery of TBT's in person on each of these sites is not practical. The system was designed to meet this needs and has enabled the production teams to engage with their employees on a scale never previously achieved.

Tool box talks are designed with multiple choice questions and responses are tracked and shared with line managers. Learners are generally given a month to complete the tool box talk.

BENEFITS

- Over 3000 Toolbox Talks completed on system
- Key health and safety information rapidly and easily disseminated
- Ability to track completion throughout the country
- Remote learning system can be tailored to fit different kinds of learning styles
- Mangers can gauge knowledge and retention of the monthly topic
- Learners can complete TBT at their convenience
- Safer and better trained operatives.

913

Tarmac Finning garage worker involvement during TUPE

Tarmac Ltd and Finning (UK) Ltd > Tarmac Lime and Powders

DESCRIPTION

In July 2015, Finning UK & Ireland was awarded the mobile plant maintenance contract for Tunstead Quarry by Tarmac. This resulted in seven Tunstead Garage employees being transferred to become Finning employees. Worker involvement before, during and after the TUPE process was critical to ensure the health and safety of everyone involved and, to ensure the best practice of both Tarmac or Finning was adopted without burdening workers with new processes and procedures.

A good foundation already existed because a strong working relationship between the Tarmac and Finning engineer groups had been built up over previous 15 years. This was built by;

Workshops where experience and knowledge on safety issues was shared. Highlights of the quarry workshop included an overview of the quarry, blasting and crusher operation, safety awareness of mobile plant and the experience of riding in a 100T truck. This workshop was reciprocated when the garage staff took part in a visit to the Finning fluid-analysis laboratory & Component Rebuild Centre in Leeds.

Regular group and individual meetings supported by both Tarmac and Finning. The open approach and honest feedback resulted in the standard of workmanship and safety performance/awareness being maintained throughout. The team focused on the positive areas where Finning could add further value to the garage operations, personal development of the workforce, technology & engineering support.

Using skills developed for continuous improvement, the garage team acted as conduit to network safety information across both companies. Care is being taken to ensure that the team's workload is not unnecessarily affected by duplicating policy and process, feedback on best practice helps to improve safety performance.

The delivery of a new Caterpillar 992K wheel loader presented an opportunity for the garage staff to work alongside their Finning colleagues. The machine was assembled on site; a task that would not have been undertaken previously.

BENEFITS

- Transition has been completed with minimal disruption
- Both organisations learning and adopting others best practice
- Garage team remain an remains an integral part of Tunstead Quarry Operation
- Continuing involvement in site safety committees and first aid response/training
- Enhanced capability within the on-site garage team
- Improved efficiency and safety of mobile plant.

883

Ground based pumps for unloading bitumen

Colas Ltd > Warrington

AWARD WINNER

ON VIDEO

DESCRIPTION

Colas Ltd's Warrington works receives numerous daily deliveries of bitumen. These were traditionally discharged into the tanks by the use of air pressure from either a compressor on the vehicle or located in the works. This method was very noisy for the drivers, the operatives nearby and a nuisance noise for the residents of a new housing estate next door to the site.

The traditional method also created manual handling issues for the drivers, they had to remove the delivery hoses from the vehicle rack and connect them to the discharge point. The delivery hoses had to be connected both to the tanker and the discharge point which gave two areas of potential failure in the delivery.

A further safety and environmental nuisance was created when blowing the lines at the end of the delivery. The excess compressed air would overcome the scrubber unit resulting in bitumen fumes and odours being released into the atmosphere.

It was decided to install ground based pumps on the site. These became operational in April 2015. The bitumen is now 'sucked off' the tankers using the pumps housed within the works rather than 'blowing it off' with compressed air. The delivery hose is permanently connected to the ground based pump system and is raised and lowered using a winch. The driver lowers the pipe to the correct level and then tightens the connection onto the tanker. Once a delivery is completed, the process is reversed. As the hose is stored almost vertically, any remaining bitumen in the pipes drains into a container within the ground based pump, this is periodically pumped back into storage.

BENEFITS

- Dramatically reduced noise levels both for drivers and other operatives
- Reduced the nuisance noise for local residents
- Reduced manual handling for driver
- Reduced risk of connection failure – only one connection point
- Reduced escape of fumes and odours
- Reduced spillage and wastage of bitumen
- Drivers say that the system is the best that they use
- A safer and cleaner environment for all.

914

5+2 People and plant segregation

Tarmac Ltd > Hendy Quarry

RUNNER UP

ON VIDEO

DESCRIPTION

Over a 12 month period, three very experienced employees were treated in hospital following collisions with rollers on Tarmac National Contracting sites.

Tarmac Contracting's senior management team were very concerned about this and implemented a 'People and Plant Segregation' working group, this was a multi-disciplined team of operational staff and surfacing operatives. Its remit was to look at the incidents, determine how to improve the segregation of people and plant and to prevent future incidents and accidents.

The group identified some common themes in all the incidents which were:

- Experienced operatives were involved in all incidents
- Roller struck injured person (IP) in every Incident
- IP spent time in hospital and time off work
- Poor Communication of the laying activity plan between gang
- No communication between the roller driver and IP
- People and plant risks in the laying area/process had not been considered in detail
- Operatives did not see dangers of working in and around moving plant.

5+2 – Following a period of development, the working group devised a 5+2 safety campaign which has been implemented on all Tarmac Contracting sites and was launched at the January 2016 safety days with presentations, briefing notes, training pack, test of understanding and 5+2 plant and helmet stickers to all operational staff:

5+2 people and plant safety segregation zones on all sites
5 = 5m Direction of travel plant protection zone, 2 = 2m Side plant protection zone. This is applied to all surfacing plant within the laying zone with the exception of pavers and planers. Delivery wagons passing pavers must be managed and planned to avoid 2m side + 5m forward protection zone in travel mode.

Thumbs Up – If any work is required within the 5+2 zones, the operative must make eye contact with the plant operative and both provide a 'thumbs up' to enter the zone after the item of plant has stopped and is in a safe mode. The operative can then approach the plant operator and communicate what activity is being undertaken and approximate duration to complete the operation. On completion of the activity another thumbs up must be given by both parties to indicate the operative is leaving the segregation zone. The Plant operative can only restart his operation when all operatives are safely outside the 5+2 zone.

Use of Horns – Plant horns are also used by drivers when starting to move to warn people. In addition, other aides could be used to separate people and plant: physical barriers such as, cones, cone and bunting, barriers, fencing, pipes are also used to provide segregation between people and plant in the laying zone.

Daily Laying Plan – Tarmac has implemented a 'Daily Laying Plan' which is completed by the foreman and the gang prior to commencing works in a newly created section of the job briefing sheet (JBS). This allows for the whole gang to review the days planned work, identifying where plant and people interactions could occur and what is to be done to ensure their safety, a kind of interactive Vehicle Pedestrian Management Plan. In addition the JBS signature sheet has been adjusted to allow Foreman/plant operatives to be highlighted to team and to remind them on a daily basis to abide by 5+2 safety zones.

The working group is also reviewing the use of plant proximity sensors, gang communication systems and introducing new high risk activity guidelines.

BENEFITS

- Reduced risk of incidents and serious injuries
- Collaborative approach enhanced commitment to improvements
- Ongoing activity to enhance safety
- Improved communications within operations
- A safer environment for all.

858

Main elevator inspection

Colas Ltd > Carnsnew Quarry

HIGHLY COMMENDED

DESCRIPTION

The Carnsnew Quarry asphalt plant main elevator has two inspection hatches, one at the top and one at the bottom. At the top hatch, you can only see the side of the bucket, the mesh over the hole is too fine to see any faults. At the bottom of the elevator, the bucket needs to be seen face on.

To remedy this, a frame was made that included a bolt on door for access and a guard cage fitted with a castell key for safety isolation. The frame was welded into place on the elevator body. When the door is unbolted, the operator has easy access to the buckets. The safety cage is closed with the castell lock in place. The elevator can be slowly turned around by the operator allowing the bucket inspection to be made from outside the cage. If a problem is identified, the castell key can be turned which isolates the power and allows repairs to be made safely.

BENEFITS

- Inspections can be undertaken safely
- Inspections more effective due to better access
- No longer need to work at height using top hatch.

835

Improving bond coat and joint sealing operation

Aggregate Industries > Contracting services

HIGHLY COMMENDED

DESCRIPTION

All pavement layers are bonded and joints over-banded to ensure pavement longevity. Over the last ten years, the specification for highway works (SHW) has introduced new clauses (903) to improve performance in a range of areas. To meet these requirements, the construction industry currently uses multiple products. Their application involves a range of manual handling tasks that also raise a high number of associated health and safety risks that impact on productivity and could lead to an incident.

Aggregate Industries' technical experts and senior fitters held collaborative meetings with its supply chain partner to:

1. Identify a product that would meet all SHW cl.903 requirements

2. Seek a solution to apply a single product mechanically

The solution was SuperBond™, the most advanced bonding product on the market. A polymer modified bitumen (PMB) bond coat that meets all SHW cl.903 requirements, replacing multiple products traditionally used for bonding and sealing asphalt pavement layers.

By modifying its integrated sprayjet pavers and spray tankers, Aggregate Industries is able to apply SuperBond™ to all joint interfaces in one automated activity.

BENEFITS

- Increases pavement life by eliminating water ingression
- Improved productivity as activities automated
- Significantly reduced manual handling operations
- No operatives required for manual application of bond, joint/edge sealer
- Reduces need for isolated working
- Less risk of accidents, attacks and abuse
- SuperBond™
  - is faster 'breaking material'
  - 32% stronger increasing pavement life and reducing maintenance
- Estimated operational savings of >£600,000 per annum.

892

Airflow system

CEMEX UK Materials Ltd > CEMEX Asphalt

HIGHLY COMMENDED

DESCRIPTION

A bitumen tanker delivery tanker driver reported a slight blowback of air with some residual bitumen droplets when he removed his pipe from the flange following a completed delivery. An investigation revealed that a small piece of carbon was restricting the vent pipe. CEMEX decided that they should monitor the airflow through the tanks to prevent a more serious problem if the pipe had a significant blockage.

An electronic pressure monitoring system was discounted as the transducers got blocked by bitumen fumes and it was expensive to install. A child's windmill inspired the idea of monitoring airflow using the speed of rotation. Although this gave a good visual representation of airflow through the tanks, it was not measurable. The idea was developed to use anemometer to test the flow. This proved to be a simple and effective way to monitor airflow through the tank. A pre delivery test was put in place and the results recorded for each tank, this reading has set the benchmark for each tank. The test results are recorded giving an early warning of the vent system starting to block up.

BENEFITS

- Potentially hazardous system can now be detected in advance
- Safer for delivery drivers.

889

Baghouse fire monitoring system

Aggregates Industries > Darwen Express Asphalt

HIGHLY COMMENDED

DESCRIPTION

In 2015, the baghouse at Darwen caught fire. No-one was injured but the local Fire and Rescue Service had to intervene. The subsequent investigation revealed the fire probably started at least 10 minutes before the external signs showed. It was recognised that some form of heat monitoring system would provide an early warning of a fire. The solution was to fit an additional thermocouple into the ductwork between the baghouse and stack to record the exiting gas temperatures. The data from both the input and exit probes was fed into the plant control system. These temperatures and the differential between them are displayed on the mixer operator's screen. In normal conditions, the exiting gases on most plants should be cooler than those entering, there would be a negative differential. Following testing to establish norms for the plant, the system was programmed to display a warning message if the differential is positive above 10°C. The operator would then visually assess the situation, if there is no retrace within the next 60 seconds, the plant shuts down, preventing any further assistance to a possible fire. If a fire is in progress, water suppression has been fitted to automatically dowse the outside of the filter bags, so nobody needs to access the baghouse.

BENEFITS

- Potential of serious fire significantly reduced
- Early detection of fire allows immediate corrective action
- Risk to staff and firefighters reduced in event of fire
- Cost of possible repairs in event of fire reduced
- Reduced risk of pollution in event of fire due to early action
- Plant improved to meet article 13 of the RRFSO 2005 & PUWER
- System may be adopted by supplier on new plants.

824

Safer loading of hot box collection vehicles under asphalt plants

HIGHLY COMMENDED

John Wainwright and Co Ltd > Rockingham Park

DESCRIPTION

When designing its new asphalt plant at Avonmouth, the company wanted to ensure that the loading of small collection vehicles under the hot storage bins would be more efficient and safer than the system at its older Moons Hill plant.

Hot box collection vehicles are prone to asphalt spillage over the side if the asphalt is not placed directly into the hot box. Loading these vehicles is difficult as they have to be in the correct position in relation to the hot bin doors under the storage bin. Most plants are designed to discharge directly into the middle of the vehicle rather than to the left or right hand side. However, many of the small collection vehicles require loading into bins located either on the right or left hand side.

The Avonmouth plant was designed with eight hot storage bins with discharge doors which open in the conventional way. Two additional storage bins have been fitted with a special discharge mechanism controlled by double action cylinder rams and linkages. This system allows the asphalt mix to discharge safely into the left or right hand side, front or rear of the vehicles hot box storage, depending on where the vehicle requires the desired material.

BENEFITS

- Reduces spillage of hot asphalt on the vehicle
- Driver no longer needs to work at height cleaning the top of the hot box off
- Better control for the asphalt plant operator of the discharge doors
- Collection vehicle more easily positioned
- Better and saver service for the collect customer.

884

Body cameras to deter road worker abuse

Colas Ltd > National

DESCRIPTION

A Colas Ltd employee, who was working as a traffic management operative, operating a stop and go system was attacked by a member of the public travelling through the site. After many months off work the operative has almost fully recovered physically and is back at work, however the emotional trauma still affects him and the rest of the crew.

After the incident, a full and detailed investigation was carried out and one of the recommendations identified was the implementation and use of body cameras and CCTV on site. A trial of body cameras was carried out at the end of last season. The crews involved feedback was that the cameras prevented many potential violent attacks, members of the public were deterred from being violent or abusive when they were aware that filming was being carried out on site. From the start of the 2016 season, all front line Colas operatives will be issued with body camera technology to help deter these attacks.

BENEFITS

- Early evidence is that the cameras are being effective
- Confrontations with members of the public reduced
- Reduced risk of injury and abuse
- Information being widely shared within industry.

856

Bitumen delivery Safe Working Practice (SWP)

Colas Ltd > Carnsew Quarry

DESCRIPTION

The Bitumen Discharge Permit (BDP) and site specific Safe Working Practice (SWP) did not include information about the location of emergency stop buttons on the bitumen tanker. In an emergency, in which the driver could not hit the stop button, no one else might know their location on the tanker. These documents have been amended to incorporate this, all delivery drivers must read and sign the site specific SWP and mark on the location of their emergency stop buttons on their tankers before starting a delivery.

BENEFITS

- Enhanced safety for driver and operator during delivery
- Well received by bitumen delivery drivers
- This concept may be included by RBA into BDP
- Highlights broad range of locations for stop buttons on tankers.

845

Bitumen delivery – the human factor

Aggregate Industries > Northwich Asphalt Plant

DESCRIPTION

Aggregate Industries identified that a range of different delivery cards was used across their sites. There was an opportunity to work with a supplier to improve these. A meeting was held that involved AI, the supplier and a haulier who delivered the product. The objective was to look at the human factors and what actually happens when a delivery is made rather than what may have been assumed about the process. This exercise was carried based on two different sites, one with pressure and one with pumped delivery. A delivery procedure was developed and converted into a discharge card that is used at the site. The card draws attention to the key 'Stop' points and highlights with warning symbols the points in the delivery where an incident or spillage is likely to occur. The card references the procedures to be adhered to at different stages.

BENEFITS

- Key safety points highlighted for delivery drivers
- Easy to follow cards based on input from all parties involved
- Safer deliveries.

849

Valves fitted to bottom of bag house

Aggregate Industries > Astley Asphalt

DESCRIPTION

In 2015, the bag-house at Aggregate Industries Astley had a blockage at the bottom of one of the two filler cones. The blockage resulted in circa 20 tonnes of limestone filler in the bag-house storage with no mechanism on site to get it out. Clearing the blockage could not occur without removing the filler.

The problem was resolved by an empty tanker sucking the filler out. To achieve this, the tanker driver had to run 40m of pipework from ground level up to the top of the bag-house and then down into the bag-house filler cone. The 12 hour process required two members of staff to work over night, on top of the bag-house, constantly manoeuvring the hose.

To avoid this situation arising in the event of another blockage, valves and flanges have been fitted to the bottom of each of the two cones in the bag-house. With this simple modification, the filler can be easily removed by a tanker connecting and sucking the contents out in circa one hour.

BENEFITS

- Operators no longer exposed to working at height and dust risk
- Removes risk of environmental dust pollution
- Minimises downtime when blockages occur
- Modification easily applied to similar plants.

893

Gartshore laboratory extraction system

CEMEX UK Materials Ltd

DESCRIPTION

The aggregates and asphalt laboratory at Gartshore had outdated and inefficient dust and fume extraction system. Following some poor individual results, the team at the laboratory set out to improve the methylene chloride and dust LEV readings. In conjunction with Nederman, state of the art extraction equipment was installed, including moveable extraction arms with enhanced extraction power and velocity. Based on the improvements in individual results following this investment, the same equipment will be rolled out across other laboratories.

BENEFITS

- Significant increase in health and safety standards
- Employee safety improved – better LEV result
- Easier to work with new equipment.

951

Batch heater wheel replacement

Hanson UK > MQP > Ettingshall Asphalt

DESCRIPTION

During maintenance at MQP's Ettingshall asphalt plant, it was noticed that batch heater wheels were regularly being changed due to wear on sections of the wheels shafts. The whole wheel needed to be removed and changed even if there was only minimal or no damage to the tyre section or the shaft on the other side of the wheel. It was a solid shaft built into the wheel's design.

To minimize manual handling and maintenance down time, in partnership with a maintenance contractor Mixlance Ltd, the shaft was redesigned to incorporate two removable shaft sections. This allows a single section of the shaft to be replaced if damage or wear occurs, eliminating the need to replace the whole wheel.

BENEFITS

- Reduced manual handling risks
- Reduced maintenance costs and time tankers.

943

Plant safety improvements

Hanson UK > North Asphalt

DESCRIPTION

Following a detailed review of operations at the start of the year, Hanson's north asphalt team has carried out a series of modifications and improvements to its plants at Leeds, Pateley Bridge and Keepershield.

These include:

- New bitumen storage tanks and tanker access improvements to segregate pedestrians
- Common point traffic light RBA delivery stations
- New bitumen showers – positions risk assessed to improve safe access
- Base mounted Vega instrumentation to eliminate working at height
- Breather pipe splutter box directing fume emissions away for truck drivers
- At Keepershield conveyor slip detection sensors upgraded.

BENEFITS

- Safer for everyone working on these sites
- Reduced risk of vehicle collisions or contact with pedestrians
- Safer for bitumen delivery drivers and operatives.

880

Chapter 8 signage for highways vehicles

Colas Ltd > National

DESCRIPTION

Colas company vehicles, especially company cars, have recently been designed with plastic trim and boots by the manufacturers. This created a problem when trying to display the required chapter 8 signage for highways works. It require that signage is attached with either a magnetic strip or is permanently mounted onto the paint work of the vehicle. Colas worked with a local sign manufacturer to develop highways maintenance signage and chevrons that could be attached to plastic boots and trims by suction pads and straps. These are now the specified chapter 8 signage to be used on all Colas Ltd cars and vehicles.

BENEFITS

- Company vehicles meet signage requirement
- Solution can be applied by others.

851

Bitumen tanker delivery exclusion zone

United Asphalt Ltd > Croydon

DESCRIPTION

Following a 'Eurobitume UK Safe Delivery of Bitumen Training Workshop', the operatives at United Asphalt's Croydon plant reviewed how to improve the safety of pedestrians during bitumen delivery. In the past, contractors had walked into the 6m exclusion zone in spite of being briefed during site inductions.

Some simple signage, retractable crowd control barrier tape, some footing posts and magnetic clips were purchased. When a bitumen tanker is in position to make a delivery, the retractable barriers are pulled across to the front, side and rear of the vehicle preventing unauthorised access. The magnetic attachments clip to the cab of the lorry which ensures the complete physical marking of the exclusion zone.

BENEFITS

- No incidents reported since system adopted
- Positive feedback from drivers and operatives
- Images shared across business in training workshop
- Risk of injuries during bitumen deliveries reduced
- Simple but effective means of creating exclusion zone.

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BITUMEN, ASPHALT & CONTRACT SURFACING

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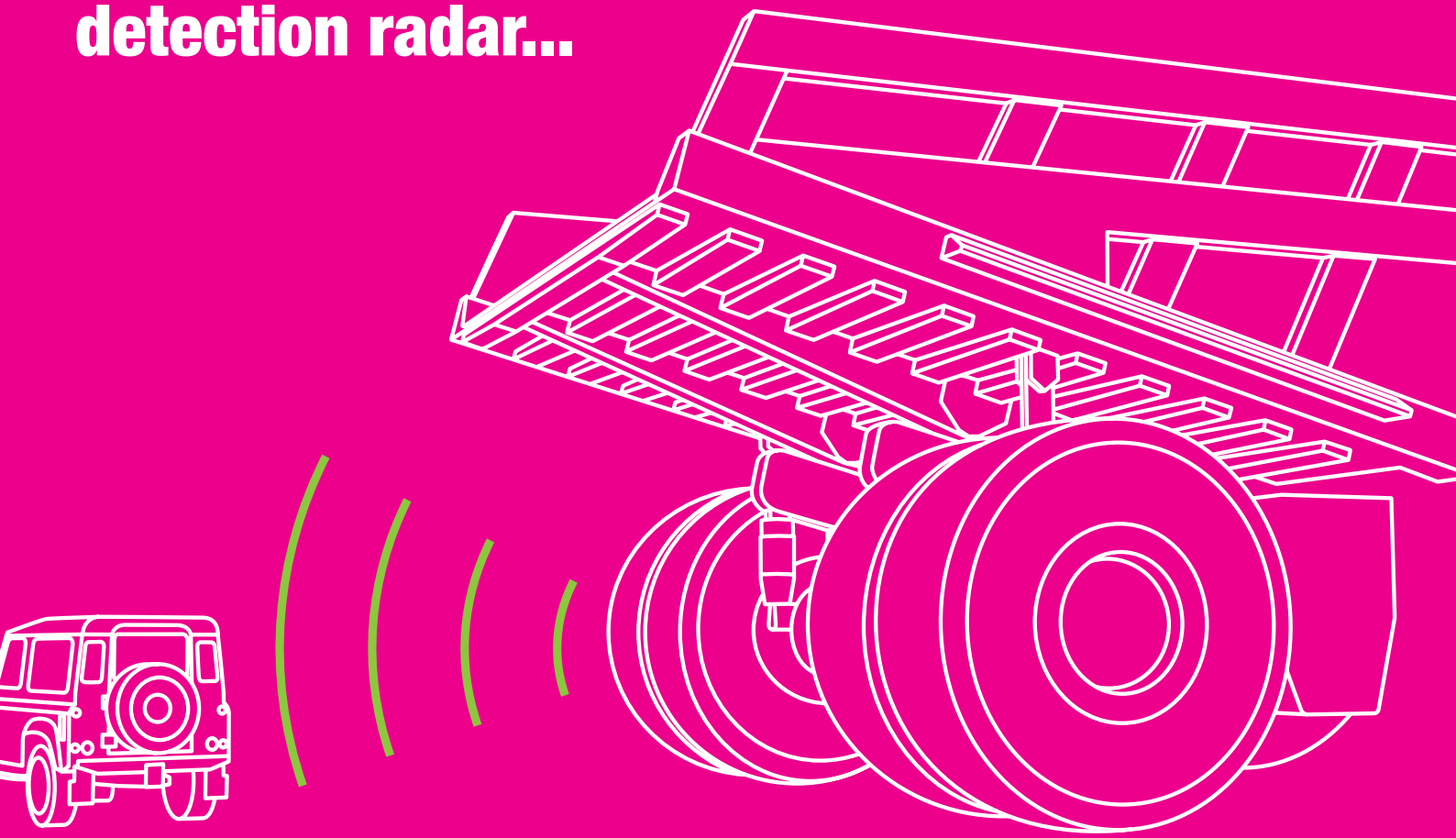

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