

Sharing good practice 2022/23

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





Mobile on-site chest x-ray service

Protect the health of those exposed to respirable crystalline silica

The Mineral Products Association (MPA) recommends entry into a chest x-ray program for employees exposed at or above 50% of the workplace exposure limit.

Industrial Diagnostics Company Ltd (IDC) are the leading providers of nationwide mobile, on-site chest x ray services. With more than 20,000 chest x-ray conducted on employees exposed to RCS, we are the provider of choice for MPA members.

IDC Ltd's state-of-the-art mobile digital radiography generates high resolution images that are capable of detecting the very earliest signs of occupational lung disease.

Benefits of IDC's chest x-ray program include:

- Enables employers to fulfil their statutory health surveillance obligations under COSHH
- Detecting early cases of Silicosis
- Referring any cases of Silicosis or occupational lung disease to an occupational lung disease specialist for ongoing medical advice
- Occupational lung disease specialist referral for further investigation where necessary
- Improving an employee's prognosis and enable effective management of employee's future exposure to RCS

Why choose IDC for your chest x-ray program?

- Nationwide onsite service that can service up to 30 employees per session
- Efficient appointment times of 10 minutes per person
- New digital imaging technology
- Extremely low dose of radiation per chest x-ray
- Logistics allow small sites to share the service

For further information please contact our team on imaging@industrial-diagnostics.com or by calling 01530 239196.

How to use the Sharing good practice guide

The theme of 2022 Health and Safety Awards was 'Safer by Sharing'



PLEASE – HELP TO EMBRACE THIS CORE VALUE

By sharing the ideas and innovations presented in this publication with your colleagues, contractors, suppliers or anyone else who can contribute to making your workplace a safer and healthier environment.

Helping to celebrate and recognise the success of the individuals, sites and organisations featured in the publication by sharing within your organisation and key stakeholders.

ASK YOURSELF THESE QUESTIONS

- Which of these ideas or innovations could be applied or adapted to mitigate a risk at our site/sites?
- Who in my organisation needs to be aware of this?
- What will I do to facilitate the sharing of these ideas and innovations?
- What will I do to help them to be implemented within my organisation?

WATCH THE VIDEOS TO FIND OUT MORE

The video symbol means that a short video provides more information about the entry. The videos show the individuals directly associated with its implementation. The videos can be viewed in the following ways;

1. By clicking on the symbol if viewing a digital version of this publication
2. By going to Safequarry and looking for it in the 'Good Practice' section
3. By going to the [MPA's You Tube channel](#)

REVIEW AND CONSIDER IMPLEMENTING THESE SUGGESTIONS

- Ensuring all site managers and supervisors have access to hard copy (copies can be ordered from david.yelland@mineralproducts.org) or digital version of this publication – ask them to look through it
- Using one or more of the entries as basis for a toolbox talk or on-site safety discussion
- Leave a copy in a messroom, restroom or other location where people may have time to browse through the publication
- Ask your team to review and select one idea that could be implemented or adapted on your site / in your company
- Give a copy of the publication to anyone of your employees who is featured or was part of the team that was responsible for the innovation or its implementation
- Encourage your colleagues to look at the Safequarry website or APP, or review some of the Guides from previous years



VISION ZERO
SAFE & WELL EVERY DAY

One Vision • One Outcome
Everyone • Safe & Well Every Day

MPA Health and Safety Awards



2022 *Happier, Healthier and Safer by Sharing*



Foreword

The theme of the 2022 MPA Health and Safety Awards was 'Safer by Sharing'.

The successful achievement of the goals outlined in MPA's Vision Zero will only be realised if we share experiences and learn from each other. I am convinced that by implementing or adapting one or more of the entries highlighted in this Guide, you can make your operations safer and possibly prevent a serious injury or fatality related to 'The Fatal 6'. If you have not already done so, please review the ideas on the first page that suggest how you might use and benefit from this Guide.

It is gratifying to see how resourceful members have been in their efforts to eliminate potential high risks from their business. Many of the entries reflect the application of new technology or engineering solutions that have enabled companies to completely eliminate some hazards from their operations.

An excellent example of this was CEMEX's development which enables bulk tanker drivers to open and close their tanker's lids whilst remaining at ground level. This innovation has the potential to completely eliminate the risk of a driver falling from the top of their bulk tanker. The entry was the winner of this year's 'Fatal 6 Award'.

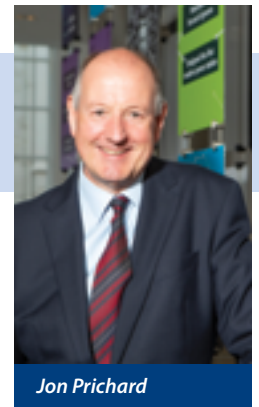
The excellent entries from companies that have introduced or enhanced programmes to improve the health and wellbeing of their employees is very encouraging. An organisation's ability to effectively manage the mental health and wellbeing of employees is becoming increasingly important in these uncertain times, and it is an area where the HSE is now focussing more attention.

I believe the moving presentation given by Jason Anker at the MPA Awards highlighted some important lessons for us all. He illustrated how the way that people interact at work, the culture within their work environment and external factors such as family pressures or tiredness, can all cumulatively impact the quality of one's decisions and behaviour on any given day. A combination of such factors and influences can lead individuals to take unnecessary risks or make mistakes that can have disastrous and long-term consequences. I would like to thank Jason for sharing his story with us.

Finally, but by no means least, this Guide and the MPA Awards are about celebrating the successes and achievement of the individuals and teams working within our industry. As you will see, this Guide is also designed to help us all recognise and celebrate the success of our peers. The individuals who have helped to make their colleagues, their companies and the mineral products industry a safer and healthier environment for us all.

Thank you to all the companies who submitted entries, it was rewarding to see that the number of submissions from smaller members continues to increase. I would also like to give my special thanks to the sponsors and exhibitors, without whom this Guide and the MPA Awards would not be possible. Your contribution to the health and safety of our industry is very much appreciated.

Safer by Sharing
Jon Prichard, Chief Executive, MPA



Jon Prichard

The Awards

This Guide is a compilation of the winners and finalists from the MPA Health and Safety Awards 2022.

They outline the solutions that MPA companies, contractors and suppliers have applied to minimise and, where possible, eliminate health and safety risks arising from their daily operations across all sectors of mineral products industry.

The digital version of the Guide also includes links to short videos that show the innovation or new process in action, and interviews with site operators talking about the benefits that have been realised.

In addition to the 8 Topics, winners of other MPA awards are also highlighted in this publication. A common theme of all the entries was the application of some, or all, of the Vision Zero values.

- 8 Topic Awards
- [John Crabbe Trophy](#)
- [Sir Frank Davies Award](#)
- [MPA Special Award](#)
- [Individual Recognition](#)
- [Young Leader](#)
- [The Fatal 6' Award](#)
- [The Eurobitume Award](#)

VISION ZERO
SAFE & WELL EVERY DAY

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

140 entries from 41 companies – MPA members, contractors and suppliers:

AG Paving + Building Products
Aggregate Industries
Blue Phoenix Ltd
Breedon Group
Breedon Products Ireland
Brett Group
Burlington Stone
CEMEX
Chepstow Plant International Ltd
CPI Mortars Ltd
EPC-UK

Explore Manufacturing
F P McCann
FM Conway
Forterra Building Products Ltd
Grundon Sand & Gravel
Hanson
Hargreaves (UK) Services
Hills Quarry Products
Ibstock
Imerys Aluminates Ltd
Imerys Minerals Limited

Kilwaughter Minerals Limited
Lhoist
Mansfield Sand Company Limited
Marshalls
Martin Engineering Ltd
Naylor Concrete Products Ltd
Northstone Materials
Patersons Quarries Ltd
Raymond Brown Quarry Products
Sibelco
Singleton Birch

SRC Ltd
Stanton Precast
Suttle Stone Quarries
Tarmac
The Mineral Planning Group Ltd
The Walters Group
Tillicoultry Quarries Ltd
Toppesfield Ltd (part of FM Conway Group)

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.



www.industrial-diagnostics.com
01530 239180

Industrial Diagnostics Company Ltd (IDC) are the leading providers of nationwide mobile, on-site chest x-ray services. With more than 20,000 chest x-ray conducted on employees exposed to RCS, we are the provider of choice for MPA members.



www.hycontrol.com
01527 406800

Hycontrol offers one of the most extensive ranges of level product selections available. Products include silo protection systems, continuous level measurement, point level switches, foam monitoring and control systems, bitumen safety systems, panels, and a variety of other products.



www.mp-qc.org
0115 983 5755

MPQC's purpose is to fulfil the extractive sector's need for a safe, competent and sustainable workforce through the setting and maintaining of standards and qualifications, ensuring quality training and assessment.



www.hsgplc.co.uk
0191 373 4485

Built on over 10 years of large scale mining experience, Hargreaves Mineral Products and Services is one of the largest mining and quarrying service providers in the UK.



www.eurobitume.eu/home
07776 140 090

Eurobitume is the voice of the European bitumen industry, educating and promoting the efficient, economic, effective, safe and sustainable use of refined bitumen in road, industrial and building applications.



www.spillard.com
01902 797930

Founded in 1992 with a proactive approach to vehicle safety, our aim was to promote the awareness of, and improve the safety of mobile plant through independent machine and site assessments, as well as the supply and installation of mobile safety products.



www.ibstockplc.co.uk
01530 261999

Our guiding purpose is to build a better world by being at the heart of building. Ibstock is the UK's leading manufacturer of clay and concrete building products. Our products have become a top choice for building the homes, places and spaces for people across the country.



www.minerals.weir
0141 637 7111

Over 150 years of innovation. Supplying our customers with the latest minerals excavation and processing technology proven to increase site-wide performance and excel in the toughest environments.

Contents

How to use the 'Sharing good practice guide'.....	1
MPA Health and Safety Awards 2022.....	2
Foreword.....	4
Sponsors.....	5
Contents.....	6
Topic winners and finalists.....	7
John Crabbe Trophy Winner – FM Conway.....	9
Vision Zero.....	10
Sir Frank Davies Trophy Winner – EPC UK.....	12
Safer production – SPONSORED BY IBSTOCK.....	13
Safer maintenance and housekeeping – SPONSORED BY WEIR MINERALS.....	19
Safer handling of inbound and outbound materials – SPONSORED BY HYCONTROL.....	27
Safer management of pedestrians and transport on-site.....	33
'The Fatal 6'.....	42
'The Fatal 6' Award – Winner – CEMEX.....	43
The Young Leader Award – SPONSORED BY MPQC.....	44
Individual Recognition Awards – SPONSORED BY MPQC.....	46
MPA Safer and Healthier by Leadership Online Workshops.....	48
Safer transport and logistics – SPILLARD VEHICLES SAFETY SYSTEMS.....	49
Eurobitume Award Winner – CEMEX SPONSORED BY EUROBITUME.....	54
Safer operations at a contracting, construction or customer site.....	55
Safer through improvements in health – SPONSORED BY HARGREAVES.....	63
MPA Special Award.....	69
MPA Apps and Handbook.....	70
Safer together.....	71
Safer by Design.....	77
Health and safety working groups.....	78

Topic winners and finalists

TOPIC 1 - SAFER PRODUCTION			
WINNER			VIDEO
Chepstow Plant International Ltd	22040	Safer tipping using telemetry and behavioural nudges	View
FINALISTS			
CEMEX	22030	Bitumen system management – (also Eurobitume winner)	View
F P McCann	22138	Reduce the exposure to vibration to employees	View
Forterra	22047	Remote stressing via automated pin locator	View

TOPIC 2 - SAFER MAINTENANCE AND HOUSEKEEPING			
WINNER			VIDEO
FM Conway Ltd	22134	Confirming LOTOTO Step 7 verified dead	View
FINALISTS			
Blue Phoenix Ltd	22073	Safer maintenance activities on impactor	View
CPI Mortars Ltd	22074	Recycling hopper redesign	View
Imerys Aluminates Ltd	22001	Mill plate handling	View
Martin Engineering Ltd	22072	Remote monitoring for belt cleaners	View
Tarmac	22071	Tyre maintenance	View

TOPIC 3 - SAFER HANDLING OF INBOUND AND OUTBOUND MATERIALS			
WINNER			VIDEO
Explore Manufacturing	22125	Safe Lifting	View
FINALISTS			
CEMEX	22029	Hot box customer safety	View
Hanson	22075	Safer access and operation of storage bays	View
Tarmac	22024	Bulk bagging production process improvement with reduced dust exposure	View

TOPIC 4 - SAFER MANAGEMENT OF PEDESTRIANS AND TRANSPORT ON-SITE			
WINNER			VIDEO
Hanson	22064	CSMR – Check, Speak, Move, Repeat – Pedestrian traffic management safety process	View
FINALISTS			
Breedon Group	22099	Traffic light system for single tracked site access	View
CEMEX	22087	Drone safety system	View
FM Conway Ltd	22130	Incorporating human recognition & risk reporting into Safer by Design.	View
Hanson	22068	Site traffic routing improvements and pedestrian segregation	View
Hanson	22070	Mobile plant parking area	View

Topic winners and finalists

TOPIC 5 - SAFER TRANSPORT AND LOGISTICS			
WINNER			VIDEO
Marshalls Plc	22139	Crane improvements	View
FINALISTS			
CEMEX	22110	Bulk tanker auto lids – Winner Fatal 6 Award	View
Marshalls Plc	22092	HGV Blind spot – Road safety school campaign	View

TOPIC 6 - SAFER OPERATIONS AT A CONTRACTING, CONSTRUCTION OR CUSTOMER SITE			
WINNER			VIDEO
FM Conway Ltd	22132	Engagement with the Highways Sector and National Highways to transform health and safety approaches for the better management of significant risk	View
FINALISTS			
EPC-UK	22002	Stop work authority policy and Stop work authority card initiative	View
FM Conway Ltd	22127	Turbo jet engine portable dryer	View
FM Conway Ltd	22128	GIS Augmented reality for utilities and other 3D information.	View
FM Conway Ltd	22129	Augmented Microsoft HoloLens	View
Toppesfield Ltd (part of FM Conway group)	22135	Machine gang 2-way radio communication	View

TOPIC 7 - SAFER THROUGH IMPROVEMENTS IN HEALTH AND WELLBEING			
WINNER			VIDEO
Kilwaughter Minerals Limited	22122	Safer through improvements in health and wellbeing	View
FINALISTS			
Aggregate Industries	22115	Automatic closed loop asphalt analyser	View
Imerys Minerals Limited	22067	Mental health & wellbeing	View
Marshalls Plc	22094	Supporting healthy minds and employee wellbeing	View

TOPIC 8 - SAFER TOGETHER			
WINNER			VIDEO
Hanson	22059	Hanson UK – National Aggregates 5S Council	View
FINALISTS			
Brett Group	22100	Pride in Plant – Small steps	View
CEMEX	22085	Worker involvement and engagement – Health & safety stand down	View
The Walters Group	22028	Safer together through behavioural change	View



John Crabbe Trophy



This award is made to an MPA member company with over 250 employees that has achieved an outstanding health and safety performance.



FM Conway has shown outstanding innovation and leadership in the management of health and safety within the industry.

It is also very proactive in adopting new technology and engineering solutions to eliminate risk from its business.

FM Conway has shared its knowledge and adopted a continuous review of the progress it is making in all aspects of health and safety. It has empowered its workforce by sending people to leadership programmes and workshops.

FM Conway's **Big Ten In Ten** concept has been a huge success. The John Crabbe Memorial Award also recognises and pays tribute to the legacy of Michael Conway, who sadly passed away last year.

"FM Conway is more than just a business, we are family. We are 100% committed to ensuring that everyone goes home safely every day. We have a culture ingrained in all of us by my father 'Never settle for good enough'. We will always continue to challenge the fundamental principles of health and safety and recognise the importance of sharing with others. This is an award for everyone in FM Conways."

Joanne Conway

Finalists

- CEMEX
- Brett
- Forterra

VISION ZERO

SAFE & WELL EVERY DAY



Vision Zero

MPA and its members have committed to **Vision Zero – to ensure that everyone goes home – Safe & Well Every Day**

Vision Zero is built around eliminating the causes of **'The Fatal 6'**. These are the high consequence hazards that analysis has shown are responsible for the majority of the fatalities, serious injuries and long term ill health in the industry. The strategy is to focus on these hazards in the work environment and, through a wide range of measures, achieve zero serious incidents or fatalities associated with 'The Fatal 6' by 2025.

6 strategies for MPA and its members to follow

- An unrelenting approach to **eliminating the things that can kill or seriously harm people** through adoption of industry safety principles and good practices focused on **'The Fatal 6'**.
- Developing **competent and committed leaders** at all levels.
- Promoting **recognition** as a means to support a positive culture within the workforce.
- Creating **forward looking measurement systems** which **balance** the measurement of 'the presence of safety' with the 'absence of incidents'.
- Helping members to create workplaces where **health and wellbeing is protected and promoted**.
- Actively promoting and facilitating **engagement** from all member organisations.



6 values to keep everyone safe



Empowerment

Every worker has the right to stop any job if concerned it may be unsafe or unhealthy to continue.



Engaged Visible and Consistent Leadership

Committed to achieving the vision of Zero Harm.



Zero Tolerance of Unsafe Working Conditions

That pose a significant risk of injury or to health.



High Quality Implementation

Developing clear health and safety principles, clarity of expectations, clear simple smart initiatives, no 'box ticking'.



Collaboration and Sharing

Building effective relationships & sharing knowledge and good practices.



Compliance

As a minimum with legal/regulatory requirements and MPA policies and aspiring to world class.

One Vision, One Outcome, Everyone, Safe & Well Every Day

'The Fatal 6'

Analysis has identified 6 high consequence hazards in the mineral products industry that account for 94 % of all fatalities.

MPA has set up a working group for each theme. They are tasked to develop recommendations and resources to help the industry to eliminate the causes of 'The Fatal 6'.

Information about the 'The Fatal 6' and the resources available to help mitigate them are all accessible on 'The Fatal 6' section of Safequarry.

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

Mitigating high consequence hazards

Leading and Lagging Indicators

MPA will monitor the following:

Leading indicators – are those activities which are likely to lead to a reduction in fatalities and serious incidents in the future.

Lagging indicators – record what has actually happened – these include **MPA's hard targets** which show whether we are succeeding in making our workplaces safer and healthier.

Leading

Achieving more of the following:

- Auditing of isolation and implementation of remedial measures
- Driver and contractor competency/skills cards
- Participation in H&S Leadership workshops
- H&S Good Practice awards submissions
- Sharing of high potential incidents
- Occupational health screening
- Routine monitoring of silica exposures
- Engagement in MPA H&S events
- Engagement in MPA Safety Days
- Engagement with MPA's 'Safer by Sharing'

Lagging

- **Hard Target 1** – A 50% reduction in Lost Time Injury Frequency Rate (LTIFR) to 1.5 by 2025.
- **Hard Target 2** – Zero Reportable Incidents (fatalities or serious injuries) relating to 'The Fatal 6' by 2025.
- **Hard Target 3** – Zero incidences of uncontrolled personal exposures to RCS above the Workplace Exposure Limit (WEL).



Safequarry website



3 Powerpoints



4 videos



Employee Guide



Reminder card

Resources explaining Vision Zero



Sir Frank Davies Trophy



This award is made to an MPA member company with 250 or fewer employees that has achieved an outstanding health and safety performance.



EPC UK epitomises the theme of the health and safety awards event – Safer By Sharing. Their entries also reflect the Vision Zero values and EPC’s determination to eliminate the ‘The Fatal 6’ from its business.

According to the judges, EPC UK demonstrates good leadership, it’s a people-focused enterprise that has introduced safety ambassadors and 360-degree evaluations.

One of its entries explained its **SPIRIT programme** – safety, passion, integrity, respect, innovation and teamwork: the company’s core values summed up in one word.

"This award is a real endorsement of our safety culture and our initiative that ensures that every employee has the courage to speak up and 'Stop work' if they believe something is unsafe. It means

a lot for everyone at EPC to be recognised with this award for health and safety."

Ben Williams, MD



Finalists

- **Raymond Brown**
- **Singleton Birch**
- **Hills QP**
- **Patersons**

Topic 1

Safer production



This award covers extraction, manufacturing and processing for all product groups.

SPONSORED BY

- A new innovation or engineering solution
- New systems or control measures
- A change in a process or procedure
- New warning system or training programme
- Investment in new plant



Ibstock
At the heart of building

WINNER		
Chepstow Plant International Ltd	22040	Safer tipping using telemetry and behavioural nudges
FINALISTS		
CEMEX	22030	Bitumen system management – (also Eurobitume winner)
F P McCann	22138	Reduce the exposure to vibration to employees
Forterra	22047	Remote stressing via automated pin locator
HIGHLY COMMENDED		
Aggregate Industries	22147	Sand tower chute turning remote handle (ground access)
Breedon Group	22032	Enhanced access & egress safety system for emergencies
CEMEX	22052	Edge protection system for field hoppers
Forterra	22046	Safe removal of stop ends
Lhoist	22007	LOTOTO Demonstration training aid
Mansfield Sand Company	22126	Kiln crash prevention system
CERTIFICATE OF MERIT		
Aggregate Industries	22149	Safe working practice at face Cat loading shovel
Breedon Cement Products Ireland	22084	Relocation of primary crushing plant control cabin and replacement of rock hammer
Breedon Group	22143	Quarry face management
Burlington Stone	22042	Roller bearing fitted to joiners table
Burlington Stone	22107	Long line dresser modifications
Burlington Stone	22108	Guarding and walkway improvements
CEMEX	22063	Lagoon Weir System
Forterra	22043	Elimination of a confined space
Forterra	22045	Reel handler
Naylor Concrete Products Ltd	22083	Safe working at height in lintel production
Stanton Precast	22056	Competency training scheme.
Tarmac	22145	Preventing ejected objects from crushers causing harm through engineering controls and operating procedure changes



WINNER
CHEPSTOW PLANT
INTERNATIONAL LTD

22040

Safer tipping using telemetry and behavioural nudges

Chepstow Plant International Ltd > Beacon House > Caldicot



DESCRIPTION

Chepstow Plant International (CPI) runs a fleet of circa 170 Articulated Dump Trucks (ADTs) for a variety of uses within the quarrying and allied industries, including loading and hauling sand and gravel, rock, clay, granulated steel slag, earthworks and restoration. They noticed an increasing trend in overturn incidents at client sites. CPI looked for high impact and sustainable improvements that could mitigate and eventually eradicate this serious challenge.

Working closely with their national client base, CPI reviewed the feedback from incidents to try and identify common trends and the root causes. This information was reviewed with the machine manufacturers, Volvo and Bell were selected as the manufacturers to work with to resolve this issue.

In 2016, CPI specified inclinometers to be fitted to their extensive fleet of Volvo and Bell ADT's. The inclinometers interact with the tipping controls to refuse a tip when the inclinometer or gradient exceeded 9 degrees. Together with refusing the tipping operation and an in-cab alarm, the telemetry for the ADT allows a report to be generated off-site which is collated and monitored at senior management level. This data is then discussed on a weekly basis at site level with individual operator teams. All points agreed and remedial measures taken are recorded and can be mapped against the refused tip reports that are generated each week.

The operators are empowered using this tool to highlight concerns regarding the condition of routes and tipping areas. They can halt the operation so that remedial action can be taken. The display and tip refusal helps less experienced operators better understand the capabilities of the machine in the altering ground conditions.

CPI's training department have been instrumental in rolling out the training to both new starters and time served operators. Numerous safety briefings and toolbox talks have been shared with the workforce throughout the UK.

Senior management at CPI have been instrumental in driving change in the industry and encouraging manufacturers of ADTs to develop new technology and fit it as standard to reduce risks on-site. By the end of 2016, inclinometers were standardised on all Volvo ADT's.

CPI have shared their information with major clients and believe that the system they have introduced is compliant with the QNJAC Guidance note on the 'Safe Operation of ADTs in Quarries and Surface Mining Operations'.

CPI believe the 'Refused-Tip' initiative that it has evolved, transitions the telemetry data and looped feedback, from a system based on dependent controls to encouraging interdependent behaviour on-sites.

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



BENEFITS

- A reduction in the number of overturns
- Risks to drivers and others on-site from overturns and recovery reduced
- A reduction in time for investigating incidents, recovery and repairing damage/time lost through injury
- Improved productivity and profitability of operations
- Drivers empowered with a tool that assists them to build their competence and decision making
- Drivers better understanding the ground condition parameters where a safe tip is achievable
- Driver's behaviour around ADT overturns has improved
- Management have clear metrics on performance which are investigated to drive improvements

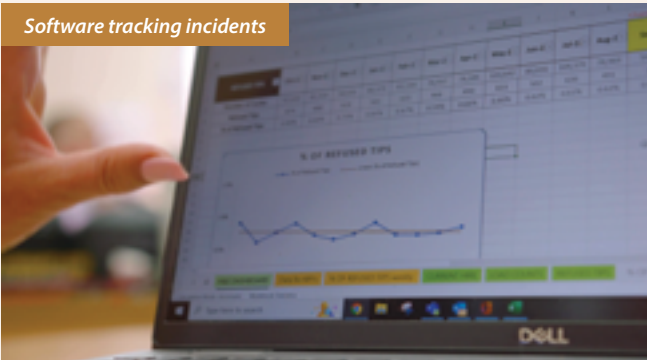
- Working with OEMs to improve the systems to alarm when a "static tip" is planned and to better pinpoint clusters of refused tips using Haul Assist and Fleet Matic software
- Working with clients to share data and ensure that elements of site which are outside of CPI's control can be highlighted and dealt with
- Initiatives reflect CPI's values of 'Service and Safety through Partnership'.

DEVELOPMENT AND TRANSFERABILITY

Further development areas include alarms to encompass ADT stability risks when travelling rather than just when the tipping action is in play. The use of OEM developed telemetry systems could be adapted further to give GPS data on the exact location of a refused tip. This would then allow the data to be overlaid with the site map, to generate and identify the refused tip hot spots.

The system used is fully transferable for sites using ADTs across the industry. CPI has shared its learnings and process with all its major clients and the Institute of Quarrying through technical events.

Software tracking incidents



In cab inclinometers





22030

Bitumen system management

CEMEX UK > Stourton Depot

DESCRIPTION

CEMEX have been reviewing and standardising the safety systems across all their asphalt plants. Through the introduction of safety controls, automated systems, fail safe devices, regular inspections and training they have worked to minimise the risk of spillages, fires and other bitumen related incidents. Fundamental to its approach is to view the entire bitumen operation on-site as a system, rather than separate elements. Systems have been put in place to manage and monitor the system as a whole.

As part of this on-going programme of improvement, CEMEX analyses incidents, near miss reports, and Eurobitume statistics to identify any common faults and emerging trends. It has also been an active participant in the MPA working group for bitumen, both sharing and learning from other companies involved in bitumen operations. This process helped identify that bitumen tank maintenance is lacking and blocked pipes have become a significant issue across the industry.

The ability of the small team at CEMEX's asphalt business to work together has helped them to discuss issues, brain-storm potential solutions, trial and evaluate the best options. This has helped ensure that they are able to make continuous improvements which include;

A reduction in kettle overflows. CEMEX has introduced two independent systems to monitor the kettle, **a high level probe** and an **independent pump cut-off timer** that only allows the pump to run for a set period determined by the kettle size and pump flow rate.

A simple system to monitor airflow through the bitumen tanks prior to delivery. This is based on an anemometer on a pole that is placed in front of the overflow pipe and records the airflow. This measurement gives an early warning of vent pipe blocking.

Following on from an investigation of a tank that went overtemperature, CEMEX found that all safety systems on the tanks had been working, the root cause of the overtemperature was the heater bank contactor sticking. **Secondary connectors** are now being fitted to all tanks, if one contactor sticks in the other one will still pull out cutting off the heaters, so the system has fail to safety built in.

CEMEX also fitted a **temperature monitoring system** to the tanks that sends a text message twice a day which shows the temperature and will also generate a text if there is a variance from pre-set parameters.

Whilst installing new tanks and checking the safety systems, CEMEX discovered that the new tanks didn't have a **low temperature cut-off** on one of the heater banks. On checking its existing tanks, CEMEX found that a low level cut-off wasn't fitted as standard, it was an extra that had to be requested from their supplier Hycontrol.

Information about innovations created by the asphalt team are shared via handouts and videos placed onto a CEMEX YouTube channel that can be easily accessed via QR Codes. Training

sessions have also been run across the CEMEX site managers to share information and awareness of effective management of bitumen systems.

BENEFITS

- Monitoring allows trends and areas for improvement to be recognised
- Monitoring enables problems to be quickly identified and recognised
- New tankage and equipment incorporate improved safety specifications, human error being engineered out
- Failsafe systems prevent incidents and spillages
- CEMEX improvements now being adopted as standard within industry
- Enhanced awareness of the dangers of bitumen
- CEMEX was awarded the Eurobitume Award at MPA H&S Awards 2022
- A safer workplace for all those involved with bitumen operations.

DEVELOPMENT AND TRANSFERABILITY

CEMEX has been sharing its knowledge and experience with the industry. The modifications introduced could be implemented on other sites or introduced when new tankage is being built. The use of QR Codes and videos has proved to be an effective and popular way of sharing information within CEMEX and could be adopted by others.



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



22047 Remote stressing via automated pin locator

Forterra > Hoveringham **5**



DESCRIPTION

At Forterra's Hoveringham precast site, pre-stressed reinforced concrete beams are produced in cells in a wet cast environment on 70 metre beds. The high tensile 5mm wires are stressed to 23.10KN and then concrete is poured over them to produce the beams.

The wires are stressed using two hydraulic rams controlled by 24V solenoids and valve blocks, at a working pressure of 350 Bar. The hydraulic rams stretch the wires into a tensioned state prior to casting, the stressing head travels out of the frame and the head is retained with steel blocks once the process is complete.

In March 2018, an operative was walking into the north end of the building when a 5mm wire snapped, with sufficient force and energy that the wire struck the operative entering the building.

Following the incident, improvements were made utilising exclusion zones, audible sounders, improved signage and stressing booths that operators enter prior to stressing, where they could insert the pin. However, Forterra wanted to remove all individuals from the site whilst stressing was undertaken.

Following site safety meetings and discussions, various ideas were considered. A maintenance engineer then elected to design and trial the most promising idea as a project for his BTEC Level 3, Advance Manufacturing Engineering course.

The solution involved two gas struts pushing the pin into the designated slot on the stressing head. The pin is pre-primed ready for when the opening is exposed for the pin to locate. The new system meant that there was no longer a need for a person to physically install the pins, therefore Forterra was able to achieve the goal of removing everyone from the plant area when stressing was taking place.

BENEFITS

- A significant safety improvement
- Stressing operation can be performed remotely
- Reduced potential for individuals to be struck by moving object – Fatal 5
- Collaborative approach to on-going safety improvements
- Technology can be applied in other locations.

DEVELOPMENT AND TRANSFERABILITY

The process is controlled by operatives via a remote handset. The next stage of this process is to install a CCTV system above each stress head. This will allow the operatives to view the whole process and control the entry / exit horn. All these measures will ensure that operatives have full and safe control, away from the stressing area. This technology will be applied in other areas of the plant.

The technology could be applied to other locations within the industry using similar processes in the stressing of concrete products.



Stressing booths



Automatic pin locator tool



22138

Reduce the exposure of employees to vibration

FP McCann > Cadeby



DESCRIPTION

During 2020, FP McCann initiated a project to reduce HAVS exposure during the manufacture of its fencing products. Its primary aim was to avoid operators exposure to contact with vibrating tables and moulds by reducing the requirement for them to use shovels and floats to achieve the required surface finish on products at the end of the filling process.

FP McCann worked closely with Coote Engineering on the design of new production machines that incorporate a fill hopper with an attached roller system for surface finishing. The roller is operated mechanically across the filled vibrating mould and is designed to provide the required surface finish without manual finishing.

The plan was to install 3 new Coote machines, and a new manufacturing unit was built to house them. The first two machine installations were completed by September 2021, with the third planned for completion in 2022.

The fill hopper with the roller system attached has been effective in removing employees exposure to vibration from the vibrating tables. The roller system is operated from the control panel of the fill hopper.

BENEFITS

- Significant reduction in HAVs
- Significant reduction in requirement for operatives to use shovels and floats
- Improved productivity and finish.

DEVELOPMENT AND TRANSFERABILITY

Coote Engineering have designed a retro-fit roller system that will be installed on all of FP McCann's existing Coote machines.



Topic 2

Safer maintenance and housekeeping



This award covers all aspects of maintenance and housekeeping for all product groups.

- Safer methods of carrying out a maintenance process
- Safer ways of cleaning all types of equipment
- Innovations that have made a maintenance process unnecessary.

SPONSORED BY



WINNER		
FM Conway Ltd	22134	Confirming LOTOTO Step 7 verified dead
FINALISTS		
Blue Phoenix Ltd	22073	Safer maintenance activities on impactor
CPI Mortars Ltd	22074	Recycling hopper redesign
Imerys Aluminates Ltd	22001	Mill plate handling
Martin Engineering Ltd	22072	Remote monitoring for belt cleaners
Tarmac	22071	Tyre maintenance
HIGHLY COMMENDED		
Aggregate Industries	22055	Safer access and egress into primary and secondary washing screens
Breedon Group	22076	Knowledge retention & safe systems of work by filming non-routine inspection
Northstone Materials	22026	Easy access dust tray
Tarmac	22033	Induction heater (For use on maintenance activities including bitumen lines)
Tillicoultry Quarries Ltd	22079	Lithium battery – recharger cabinet
CERTIFICATE OF MERIT		
Aggregate Industries	22114	Eliminating working at height risk during gyratory crusher maintenance
Blue Phoenix Ltd	22037	Contractor management
Blue Phoenix Ltd	22051	Isolation and lock off board
Breedon Group	22137	Electrical arc flash protection and rescue
CEMEX	22054	Vehicle clean down facility
CEMEX	22065	Mixer mould oil application
Hanson	22120	Access and inspection hatch for aggregate weigh hopper
Hanson	22121	P/H water treatment and discharge tank
Hanson	22123	Filter housing room sliding doors
Ibstock	22058	5S for safer workplace – Sittingbourne Factory
Marshalls Plc	22091	Wet press auto wash safety improvement.
Tarmac	22005	Safer handling & reduction in welding in confined space
Tarmac	22010	Step slips
Tarmac	22014	Use of retractable hose reels to aid housekeeping and to reduce the need for equipment guard removal
Tarmac	22016	Safer pedestrian travel through site because of excellent maintenance, safety steps and anti-slip walkways.
Tarmac	22034	Lousy ladders
Tarmac	22035	Air Rod– remote bin cleaning tool



WINNER
FM CONWAY

22134

Confirming LOTOTO step 7 verified dead

FM Conway > Erith Asphalt Plant



DESCRIPTION

FM Conway identified a major risk where competent and part-competent people often accessed electrical control panels to reset overloads. This put the individual at risk from electric shock and / or arc flash, with the potential to kill or inflict life changing harm through serious burns. In addition to many near misses, there had been a number of very serious incidents resulting in arc flash burns to both experienced and less experienced personnel.

FM Conway were also aware of several MPA incident alerts that highlighted isolator failures where, even though the isolator is switched in the OFF position, one or more phases of the plant had remained live due to a mechanical switch gear failure.

Applying the principles of their 'Big Ten in Ten Strategy', FM Conway looked for a solution that would control entry so that personnel could only access the protected area when the panel is confirmed safe and electrical energy has been isolated.

They identified new technology, developed by Verisafe, which could be retrofitted and could verify the existence or absence of a voltage.

The team at FM Conway combined the implementation of the Verisafe testing system but additionally, linked this process to a door solenoid that only allows access to the panel when the absence of voltage has been verified.

This is an intuitive solution that accepts human error can occur due to an operator performing a monotonous activity and/or a lapse in concentration.

BENEFITS

- The VeriSafe™ The Absence of Voltage Tester simplifies what can be a complex process involving several stages using a handheld portable tester
- Automates the voltage verification process
- Reduces the risk of exposure of electrical hazards for improved worker safety
- Reduces testing procedure time and complexity to improve productivity
- Supports compliance when used to verify the electrical lockout/tagout process
- Forcing function reduces possibility of human error
- Allows safe access to less experienced personnel without putting them at risk
- Designed for flexibility in multiple applications.



DEVELOPMENT AND TRANSFERABILITY

- This technology could be applied to all fixed plant, across all mineral product sites. It has the capacity to make a major contribution to the elimination of fatalities associated with 'Fatal 1 – Contact with moving machinery and isolation'.
- This would be of particular interest to smaller operators who don't have the necessary in-house skills and where production could be held up waiting for appropriately skilled individuals, or worse, that people enter the panel who are not competent.

- These small, unobtrusive items can also be fitted to local isolators on the plant that allow plant operatives with minimal training to safely carry out the try-out step.
- FM Conway carried out the pilot work at their flagship site and intend to install the system at all 6 of their asphalt plants and include in the asphalt plant standards for future builds.



VeriSafe tester



Door opens when safe



22001

Mill plate linings replacement

Imerys Aluminates Ltd > West Thurrock **5**



DESCRIPTION

At the Imerys Aluminates plant, West Thurrock, they had struggled with manual handling while replacing ball track mill plates inside cement ball mills on-site. 100s of plates weighing 55kgs each have to be lifted and replaced twice each year in both of its 2 mills.

There is limited space inside the mills and restricted access to get machinery inside to automate the process. The mills have a diameter of just 2.6m, an inlet entrance of approximately 750mm and two 2 small manhole type hatches on top.

Replacing the mill plates was a high-risk manual handling task with the potential for operators to incur hand injuries due to manipulating small, heavy mill plates in a limited working area.

The on-site maintenance and project team had internal brainstorming meetings to try and find a solution. Working with a local lifting supplier, the site took a lifting pin designed by the plate manufacturer and designed a rail system that could be installed to lift the plates using a lifting hole on the back of the plate. The rail was designed so it could easily be taken in and out of the mill as it is rotated, to ensure that it can be used for the whole mill chamber. It attaches to the roof using the holes for the mill plate clamping strips.

A lifting system using a pneumatic hoist was built as part of this project, ensuring that no electricity is used inside the metallic confined space. The team also designed a similar permanent pneumatic lifting system that allows the plates to be lifted out of the box onto a conveyor to be delivered to the mill.

The initial trial identified that the lifting pin was not suitable to place the last two plates on each row due to the length of the pin and the small diameter of the mill. A bespoke lifting tool was designed for this requirement. The total cost of the project was approximately £25,000.

BENEFITS

- Removes manual handling of plates both inside and outside the mill
- Reduces the risk of hand injuries while placing the plates into position
- Installation of mill plates is a more efficient and quicker operation
- Feedback from the team using the equipment has been very positive
- Safer working environment in a confined space.

DEVELOPMENT AND TRANSFERABILITY

- The system has only been installed in one mill, but following its successful trial, the other mill will be adopting the same system. Other Imerys sites have been informed of this development.
- This system could be adapted and used by other companies with similar sized mills. Larger mills might be able to use robotic arms.
- The lifting beam rail is made out of steel, and Imerys is planning to redesign these rails using aluminium to reduce the weight of the beam.

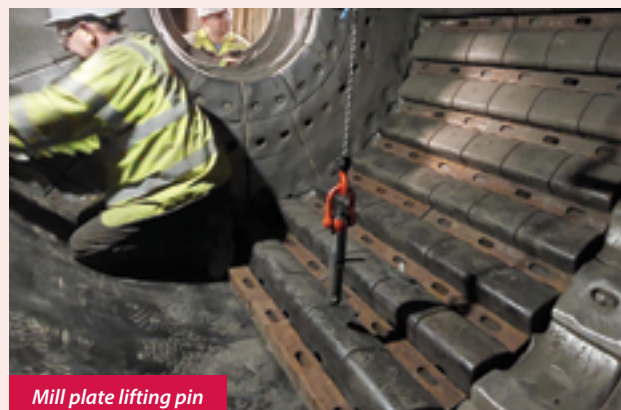
Internal rail system



View from outside mill



Mill plate lifting pin





22071 Tyre maintenance

Tarmac > Wensley Quarry **2** **6**



DESCRIPTION

Tarmac's Wesley Quarry is a limestone quarry operating one dump truck, two front loading shovels, a tractor and a JCB. As part of the daily checks, the operator inspects the tyres and confirms that they are fit for purpose.

Prior to the use of the automatic sensors, the operator could only rely on a visual inspection to determine the safety of the tyres and could not give an accurate tyre pressure reading. However, a loss of 5psi could result in excess tyre wear leading to a potential blowout. Previously, gauges had been fitted on the tyres which gave a visual readout but these were often covered in dirt and difficult to read.

The wheel nuts were also inspected visually to determine if they were tight again, not an accurate method. A wheel coming off a vehicle could easily lead to a fatal incident.

Tarmac contacted KAL Tyre to assist in the development of a system which would be operator friendly, more accurate and reduce the time taken to complete daily checks.

Following a demonstration of KAL's solution, the site purchased some automatic tyre pressure sensors which can download tyre pressure to a dongle type device carried by the operator. The dongles are simple to operate and give a digital readout when held close to the sensor fitted on the tyre.

The information is stored and can be downloaded onto a laptop or tablet and read by the supervisor or quarry manager. This is tracked and any reduction in pressure or over pressuring of tyres can immediately be acted upon to improve tyre maintenance, reduce downtime and enhance tyre life. The sensors also detect whether the wheel is overheating and/or starting to come loose.

The equipment was demonstrated to senior management and the quarry managers in the area who have also adopted it as good practice. Senior management gave their full support to getting the equipment fitted and more widely adopted.

BENEFITS

- Daily inspections more accurate and easier to carry out
- Operators empowered and have better ownership of the task
- Easier and cleaner to carry out tyre / wheel inspection
- More accurate data can be used for planning of maintenance
- Eliminates the objectivity of an operator assessing the condition of a tyre
- Ensures data is collected and retained
- Provides confirmation to supervisors that checks are being performed.
- Reduced risk of accidents due to poorly maintained wheels or tyres
- A safer environment for all.

DEVELOPMENT AND TRANSFERABILITY

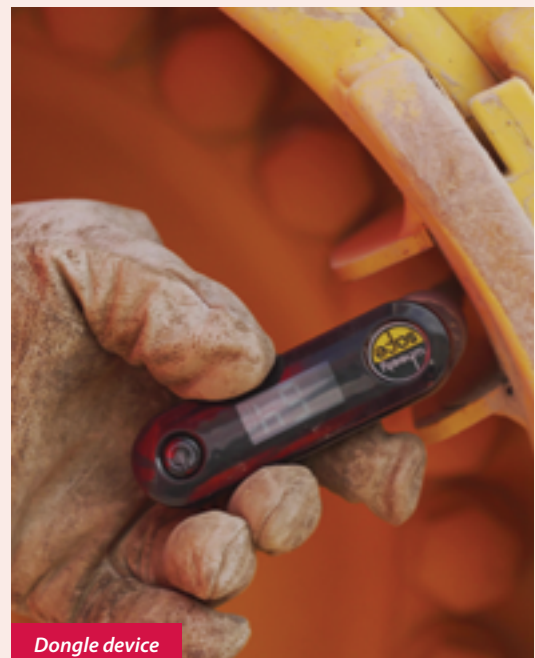
- The system is an innovative way of carrying out tyre maintenance and is an example of good practice. It will be widely adopted within Tarmac and could be easily adopted by other companies within the industry.



In cab warning system



Pressure sensor



Dongle device



22072

Remote monitoring for belt cleaners

Martin Engineering Ltd > Singleton Birch > Melton Ross Quarries



DESCRIPTION

Over recent years, a Martin Engineering technician has visited Singleton Birch's lime works in Lincolnshire to service 75+ conveyor belt cleaners over a few days each month. This involves manual inspection of every cleaner to ensure that they are preventing material carry-back, spillage and build-up.



Historically, the only way the technician could identify what maintenance was needed was to visit each belt cleaner location, involving all LOTOTO procedures, removal of guarding and, – where necessary, – following the RAMS for confined spaces, working at height, etc. Each conveyor presents significant hazards such as entrapment, working at height, working in confined spaces, exposure to fugitive dust and slips and trips. These are documented on risk assessments and SSOW, requiring permits to be issued and the conveyors to be isolated to allow safe servicing.

Martin Engineering embarked on a programme to explore whether this common task could be made safer and more efficient through the application of technology. This process involved a review of the maintenance history of the belts, incidents that had occurred and the risks that the engineers were exposed to on a regular basis. The data was discussed with the Singleton Birch maintenance team, along with the idea of trialling Martins Engineering's newly developed N2 remote monitoring system to address these issues. The N2 system comprises:

- (1) A 'position indicator' or PI – a polyurethane collar embedded with a remote sensor unit – fitted to each belt cleaner;
- (2) A single central 'gateway' device which collects data from the PIs then sends that data to the cloud.
- (3) A user-friendly mobile App and desktop dashboard which can be accessed at any time to track belt cleaner condition.

N2 eliminates the need for manual inspection visits as the system shows when a belt cleaner blade needs servicing, re-tensioning or replacement, allowing technicians to focus their time where it is needed.

The App was developed with input from the service team to ensure it was easy to use and would support decision making. For example, an early version indicated '% tension' and '% wear' of the cleaner blade – this was switched to a traffic light system that clearly shows when servicing is required, and when it is not.

N2 was trialled on a handful of conveyors for 6 months, analysing results through regular contact with management and site teams. Following the successful outcome of the trial, over 40 N2 PI installations were made at Singleton Birch. The case study was shared with Martin Engineering teams in other countries where new trials and installations are underway.

BENEFITS

- Reduced interaction between people and conveyors
- Time servicing belt cleaners reduced by at least 50% – from 2+ days to 1 day per month
- Reduced exposure to all hazards associated with conveyor belt maintenance
- Increase in plant uptime as belt servicing better
- Safe access can be prepared in advance
- Reduced potential for finer material to become airborne
- Reduced exposure to dust for maintenance technicians
- Reduced risk of carry-back, spillage and material fall
- Improved inventory management
- Reduced cost of maintenance for belts.

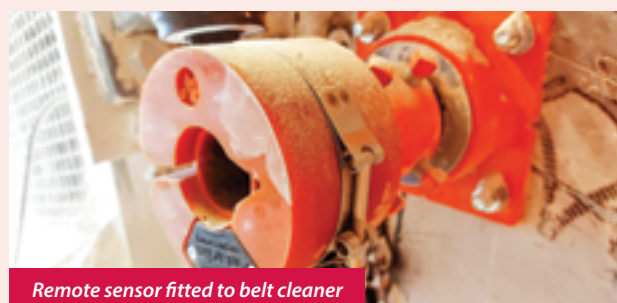
DEVELOPMENT AND TRANSFERABILITY

The N2 system has already been adopted on other conveyor systems across a range of industries. It is based on the principle of moving from reactive maintenance to preventative and now predictive, condition-based maintenance. N2's overarching aim is to reduce the need for workers to carry out routine maintenance that puts them at risk of harm whilst at the same time delivering better productivity.

Singleton Birch is working on the development of a central hub for the collection of data which they call 'The Data Centre', allowing them to remotely monitor the condition of various parts of the plant and use this to produce work orders for maintenance. The N2 conveyor system will be integrated into this.

Further development plans for N2 include:

- Automatic alerts to users.
- Using performance data for identifying long-term trends.
- 'Auto tensioners' to replace manual tensioning.
- Upgraded mobile App to allow teams to create visual reports.



Remote sensor fitted to belt cleaner

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



22073 Safer maintenance activities on impactor

Blue Phoenix Ltd > Tilbury > Essex **1** **3**



DESCRIPTION

At Blue Phoenix's processing plant for incinerated bottom ash in Tilbury, the impact crusher is cleaned every night at the end of production. The design of the crusher exposed the operators to three significant hazards. The team at the plant worked to find simple solutions to mitigate or eliminate these risks.

1. Fall from height – Operatives had to straddle a 3ft gap with a 3ft fall when cleaning parts of the equipment.

The first improvement was to prevent individuals falling in the gap. A local contractor was commissioned to produce a simple plate that fitted over the gap and was easy to install when required. This design was then sent to all other sites that had a crusher for implementation.

2. Fall from height – To open the crusher, operatives had to undo a securing bolt at the top of the crusher using a step ladder.

Due to the size of the machine and the position of the bolt, an individual had to lean over to undo the bolt making the ladder unstable. The space around the crusher is limited due to a belt drive cover and therefore, it was not easy to fit a permanent solution. Therefore, an access platform was installed that was fixed to the belt drive cover which can be easily removed should other works require this.

3. Contact with moving machinery – Although the equipment was electrically isolated, due to the hammers and the weight of the rotor, it was still capable of being turned manually. Therefore, before entering the crusher to carry out any works, a pin was placed through the side of the machine to secure the rotor. However, the pin could fall out as there was no way to secure it in position, and therefore, had the potential to cause a nasty injury or entrap a person. This risk had only been identified after there had been an accident.

A visible and much more secure design, was put together and fabricated by a local contractor that ensured the rotor could not move. Once the solution had been tested, the design was forwarded to all sites for implementation.

BENEFITS

- Enhanced safety culture through collaborative approach
- Reduced risk of fall from height
- Reduced risk of serious injury through contact with moving parts
- Completing maintenance tasks and cleaning easier and more efficient
- A safer environment for all.

DEVELOPMENT AND TRANSFERABILITY

- These simple improvements have been adopted throughout the operational sites that have a crusher installed. They could easily be applied by any business that has the same impactor.
- As new sites become operational, these additional safety devices will be added to the safe system of works prior to the site becoming operational.





22074

Recycling hopper redesign

CPI Mortars Ltd > Carlton Manufacturing **3** **4** **5**

DESCRIPTION

CPI Mortars Ltd implemented a project to improve its recycling hopper at its Carlton Manufacturing site. The hopper was used to split bulk bags and transfer the contents into a powder tanker. The existing system had poor access for maintenance and cleaning, unsafe access to the top of the powder tanker and no protection from the weather.

The poor design allowed material to harden on the inside of the hopper and transfer screw. In addition, lumps formed in the bulk storage bags causing blockages in the hopper. Access to clear the blockages was via a raised platform with a shoulder height door. Operators were exposed to manual handling risks, fall from height hazards and exposure to dust. The bag splitter was positioned on top of the inlet of the hopper and was inefficient at containing dust emissions, and sometimes the dust spilled onto the forklift. The only access to the top of the powder tanker being loaded was via the tanker's built-in ladder, handrail and walkway.

A full redesign of the system and operation was undertaken by the operations team involving the operatives to highlight the key problems. The design process was iterative, testing potential solutions against the most common and extreme conditions likely to be experienced. Key elements of the new design were;

- The height of the hopper was reduced for safer loading with the forklift. It can now be detached and placed on the ground for maintenance to take place at a much safer height.



- Hopper has a tub insert that houses the bag splitter and grate so any problems or blockages can be lifted out with the forklift and placed on the ground. Once this section is removed and placed on the ground it is less than waist height.



- To remove lumps or a blockage, the grate and bag splitter can be lifted out of the tub insert with the forklift acting like a tray holding the lumps, eliminating the need to climb into the hopper. The grate and bag splitter are about knee height when placed on the ground.



- A vibrator was added to aid with the flow of products.
- The grate and splitter are repositioned inside the hopper which allows the entire bulk bag to be lowered into the hopper before splitting the bag. The bag then presses against the walls of the hopper creating a seal which contains the dust.

- A safe access gantry has been installed so that operatives can safely view inside the hopper to check for problems and the driver can safely access the top of the tanker. The access platform has a cage that wraps around the tanker hatch to prevent the driver from falling off the sides.
- A DCE filter has been installed to dedust the outlet of the screw conveyor and capture emissions from the tanker.

The Safe System of Work for the operation was updated to include the new features and instruct the operatives on how to safely process bulk bags and clean and maintain the equipment. The operatives were then trained in the safe use of the new system.

The modifications introduced to the new hopper mean that even when it is completely blocked with material, it can be cleared from ground level with only 3 forklift movements and no manual handling.

BENEFITS

- Involvement of site team in finding solutions enhanced safety culture
- Reduced downtime and more efficient systems
- Improved recycling means material no longer needs to be disposed of by a specialist company
- Improved environmental performance of plant including reduced dust emissions
- Minimised manual handling
- Reduced risk of fall from height for operatives and tanker drivers
- Reduced exposure to dust for operatives and drivers
- A safer environment for all.

DEVELOPMENT AND TRANSFERABILITY

- A dust recycling system that will further reduce dust emissions in the plant is planned. This system is new to CPI Euromix and can be implemented at other sites to help control dust emissions.
- The design concepts could be applied to other recycling hoppers within the industry.



Topic 3

Safer handling of inbound and outbound materials



This award covers the unloading/delivery of materials and their storage to a site such as; Bitumen, fuel, aggregates or cement.

The storage of finished products and their loading for transit such as Precast products.

Product testing on-site.

SPONSORED BY



WINNER		
Explore Manufacturing	22125	Safe Lifting
FINALISTS		
CEMEX	22029	Hot box customer safety
Hanson	22075	Safer access and operation of storage bays
Tarmac	22024	Bulk bagging production process improvement with reduced dust exposure
HIGHLY COMMENDED		
Aggregate Industries	22025	Cement tanker containment shed
CEMEX	22103	New electric lifting hoists – ground to plant landing level
CEMEX	22066	Admixture Control System
Marshalls Plc	22089	Concrete block plant board exchange – minimising manual handling and falls from height
Tarmac	22012	Asphalt load out system – improving safety with automation
CERTIFICATE OF MERIT		
Brett Group	22101	Introduction of a lamella tank reduces likelihood of a safety incident
Burlington Stone	22106	Pneumatic ram fitted to ending off saw
CEMEX	22104	New admixture and steel fibre storage and loading point



WINNER EXPLORE MANUFACTURING



22125

Safe Lifting

Explore Manufacturing > Precast Concrete Products



DESCRIPTION

Explore Manufacturing produce over 300 products a week, with some weighing up to 25 tonnes. Each product gets lifted around 5 times to facilitate orientation and storage requirements.

Lifting failures have the potential to cause significant harm to employees, therefore it is imperative that there are robust processes in place. Explore Manufacturing continually evolve their products and strive to ensure that there is a consistency across the facility of how to control lifting operations. They operate a variety of equipment, cranes and lifting accessories which are managed and controlled by an engaged crane team.

Explore have invested in its people and equipment to ensure they have suitable skills, knowledge and risk controls to mitigate and manage the risks associated with lifting concrete products.

A video has been produced that summarises this and covers the following;

- Component lifts for units produced in the facility
- Common lifts for the movement of plant and equipment
- Lift plan for each unit is determined at design stage
- Lift plan briefings occur daily due to the variation and complexity of lifts
- Monthly crane team meetings are arranged for crane operators and slingers
- Reviews of what went well or issues associated with lifts
- Process of continuous evolution enables the company to meet industry demands.
- Extensive training programmes.
- Significant investment in cranes and lifting devices.
- Exclusion zones rigidly enforced.



Lifting points marked



BENEFITS

- Safer lifting operations
- Reduced potential for serious injuries or worse
- Positive feedback from our clients
- Positive attitude of employees about the processes
- Exceptional audits of lifts.

DEVELOPMENT AND TRANSFERABILITY

We share lifting videos across the business to provide information to the projects on how they should be lifting their products before they arrive for installation, this process will be further developed during coming months.



Shadow boards for lifting devices



Tickets with QR Code connect to lifting plans





22029

Hot box customer safety

CEMEX > Sheffield Asphalt Plant **1** **3** **5**



DESCRIPTION

CEMEX had encountered four incidents with hot boxes over the last two years. Three involved hot boxes exploding and in the other a customer was trapped inside his own hot box chamber when the lid closed onto his shoulder and head, trapping him in a heated hot box for nearly two hours.



CEMEX undertook a face to face survey of hot box drivers which highlighted a lack of training for hot box operation and their poor understanding of the dangers that exist. Discussions with the manufacturers revealed that many new hot boxes are supplied under lease agreements which include servicing for the lease period. When the lease ends, the hot boxes go to auction and are often purchased by less professional operators who don't have the hot boxes serviced or offer driver training.

A common problem is that when the hot box gas system starts to have issues with initiating, the drivers fiddle with the gas regulators and thermostats. If the gas regulators are incorrectly set, the air to gas ratio makes the hot box difficult to light. If the operators keep trying to light the hot box it can fill the body cavity with gas, so when it does light, there is the risk of an explosion.

Other common concerns are:

- Drivers getting on top of the hot box when the doors have not opened
- Drivers getting on top of the hot box to clear spilled material due to poor loading
- Drivers using diesel to keep the body and screws clean, this can vaporise when the lid is opened causing an explosion
- Thermostats on the heating systems being turned up above 135 degrees, in some cases up to 200 degrees.

To address these concerns, it was decided to produce a range of resources to raise customer awareness of the hazards associated with operating hot boxes, and improve driver understanding of the correct procedures to follow. The resources produced included the following;

- An information video that could be accessed via YouTube, the App or with a QR Code
- A complimentary Do's and Don't training leaflet
- An App called icollect.

The video and leaflet were made available for drivers at

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

the weighbridge office. Drivers could also access them by downloading from the icollect App. In addition to this, the QR Code can be scanned by a phone which links straight to an information video, which customers can view while waiting to load.

The individual responsible for creating the resources also participated in an MPA working group, sharing the resources and research with the group.

BENEFITS

- Raised profile of hot box safety issues at all levels
- A shift in mindsets on hot box safety across industry
- Hotboxes with defects banned from site until fixed
- Drivers learning how to get the best from their equipment
- Reduced risk of explosions related to hotboxes
- Improving the safety of drivers and hot box operators.

DEVELOPMENT AND TRANSFERABILITY

CEMEX is getting their sales team involved, asking them to speak to customers with a view to assessing the issue from a supplier and customer viewpoint.

Two working groups of site managers are looking at hot box issues at two sites. The aim is to come up with a specific solution for each site and see if this can be replicated at other sites; the outcome from this process will be passed to the MPA working group. The same procedure will be followed at other sites.

CEMEX uses QR Codes linked to YouTube so information is readily available. By sharing their experience and knowledge with the industry, the awareness of hot box safety issues will improve and the good practice can be applied at other sites.



Safety leaflet



Image of incident and QR Code link to video



22075 Safer access and operation of storage bays

Hanson Aggregates UK > Chipping Sodbury Quarry **1 2 6**



Loading shovel reverses towards road

DESCRIPTION

At Hanson's Chipping Sodbury Quarry there was a problem with the design layout of the storage bays which resulted in the loading shovel operator's visibility being limited whilst working in this area. The loading shovel reverses towards the main access road to the site which is used by more than 200 vehicles per day.

Although the area is wide enough to operate safely and the loading shovel does not need to obstruct the main access road, it was considered hazardous and this was indicated in the site induction. Instructions were that every vehicle must always stop and give way to any yellow machinery, and they should not move until communication had been established with the operator of the mobile plant. However, as a Cat 980M loading shovel and concrete mixer truck had collided in this area, it was recognised that additional controls were required to enable the machine operator to control this space whilst working.

Possible solutions were discussed with both the site team and external users. After considering all proposed options, Hanson decided to develop its own solution. Signs, including a light system, were installed in each bay. The sign is always above the material in the bay so it can never be obstructed. A green light is constantly glowing until a vehicle or pedestrian enters the area.

This solution operates in combination with a one-way system implemented on-site. An optic radar and receiver has been installed on the main access road to the site, on each side. In the event of the signal not being able to reach the receiver, an orange hazard light will be initiated. This will flash simultaneously while the green light is off for a period of 30 seconds.

This signal, as printed on the sign, indicates to the loader operator to STOP and wait for the light to turn green. The loader driver is instructed to always check their surroundings prior to moving off. The system returns to its default green light if the radar receptor is receiving a signal.

The system provides an additional warning system where permanent traffic lights cannot be fitted, is self-operated and does not require any human interaction.

Since its implementation in February 2021, the site management has not received any near miss related to traffic in the area.

BENEFITS

- Provides additional and very effective warning to the machine operator
- Self-explanatory signs so no training required
- System no longer reliant on individuals knowing and following site rules
- Positive feedback from loader operators, and other internal and external site users
- Reduced risk of loaders being in collision with other site traffic
- A safer environment for all.

DEVELOPMENT AND TRANSFERABILITY

It has been recommended that this system is installed at other Hanson-sites where the shovel must reverse back near an access road.

The solution is simple but very effective. Hanson believe that this solution could be a standard in any aggregate, concrete or asphalt bays or hoppers where the loading shovel must reverse out of the area. The system works regardless of the daylight conditions or visibility, and it warns the operator of the potential of other users coming into the area. The radar or triggers can be installed in numerous places such as roads and pedestrian gates.



New signs with inbuilt lights



View from inside shovel's cab



22024

Bulk bagging production process improvement with reduced dust exposure 4



Tarmac



Operator controls filling process

DESCRIPTION

Tarmac Building Products mortar business manufactures bulk dry silo mortar, some of which is taken by tanker to a silo on-site and blown into a 30 tonne mobile silo. The site manually fills the bulk bags, gravity fed from the silo.

When manually filling the bulk bags, significant volumes of dust escapes from the bags. This is due to the volume of air being dispelled from the bag, and as it passes between the filling chute and the neck of the bulk bag, the dust is expelled. A further hazard was that the weight of the material could sometimes pull the neck off the chute, creating a spillage.

For their protection, it was made mandatory for the operators to wear air fed masks during this task. Work clothing was also dusty and contaminated with material and required a clean down after the task was completed. The volume of bulk bags required to be manufactured was increasing significantly, so the control of the dust escape and the protection of the operators was becoming an increasing concern. The proposed solution was discussed with the silo team and trials undertaken in a maintenance yard before the project was fully implemented.

The solution was to have the silo legs modified and extended to allow for a pneumatically controlled valve to be installed, at the bottom of which an inflatable seal was fitted. The neck of the sealed bulk bag is placed over the seal, so when inflated it creates an airtight seal. The seal also has an air escape outlet with a filter sock. This allows the volume of air to be safely removed from the bulk bag during the filling process, meaning no dust or product is released into the atmosphere. The inflatable seal, along with the pneumatically controlled valve, allows the operator to stand clear of the discharge points but stay in control of the filling process.

HIRA's (Hazard Identification and Risk Assessment) and SSOW were reviewed and amended for the operators who were trained in the new procedures.

BENEFITS

- Operators can now safely monitor and fill bulk bags
- Filling bags more efficient and ergonomically easier
- Operators exposure to dust significantly reduced
- Bulk bags no longer falling off reducing spillages
- Reduced dust in operatives clothing and welfare areas
- Operators no longer required to wear air-fed masks
- Positive feedback from operators and site personnel
- Improved morale on-site
- Environmental benefits of improved dust control and reduced waste
- A safer environment for all.

DEVELOPMENT AND TRANSFERABILITY

Due to the positive feedback from the operators using the new system and the overall environmental benefits, Tarmac is now rolling this modification to five other manufacturing sites.

At Tarmac's Glasgow site, the process has been improved with the ability to fill the bulk bag on controlled weigh scales enabling bags to be automatically filled to a pre-set weight.

In Colchester, which has a combined 3 silo system, with a bag weighing and filling process, filling is now direct from the manufacturing plant to the silo. This removes the requirement for circa 12 additional tanker movements on-site.

This engineering solution is going to be shared across CRH's worldwide portfolio as well as this guide.



Image of Colchester's three silos

Topic 4

Safer management of pedestrians and transport on-site



This award relates to the safer management of people (employees, contractors, suppliers, customers and members of the public) and vehicles on-site. This could include:

- Site induction
- Traffic management
- Pedestrian zones
- Control systems



WINNER		
Hanson	22064	CSMR – Check, Speak, Move, Repeat – Pedestrian traffic management safety process
FINALISTS		
Breedon Group	22099	Traffic light system for single tracked site access
CEMEX	22087	Drone safety system
FM Conway Ltd	22130	Incorporating human recognition & risk reporting into Safer by Design.
Hanson	22068	Site traffic routing improvements and pedestrian segregation
Hanson	22070	Mobile plant parking area
HIGHLY COMMENDED		
Breedon Group	22144	Safer pedestrian routes and crossing
CEMEX	22109	Safety improvements to distribution area at Rugby Cement Plant
Hanson	22060	The rearrangement and development of traffic and manufacturing processes at Leeds Asphalt Plant
Hanson	22097	Trackside aggregate offloading – Pedestrian segregation intercom gateway
Hanson	22148	Proximity warning system (site zone)
Ibstock	22096	Site safety and security – Leighton Buzzard Factory
Suttle Stone Quarries	22019	Raising awareness of customers to dangers of on-site vehicle movements
Tarmac	22009	VMS radar system on asphalt plant front line loader
Tarmac	22017	Daily brake testing and radar systems on concrete plants
Tarmac	22022	Solar powered lighting installation to reduce the risks of slips, trips and falls on pedestrian walkway
CERTIFICATE OF MERIT		
Breedon Cement Products Ireland	22023	Promoting pedestrian and transport safety on-site
Breedon Group	22036	Interactive pedestrian in area sign – Kettleby Quarry Bag Plant
Breedon Group	22140	Traffic & Pedestrian Management Improvements
Breedon Group	22141	Standardised site visitor induction leaflet
Grundon	22018	Avoiding pedestrian and mobile plant interface with a walkway and site training with viewing platform
Sibelco	22027	Pedestrian access improvements
SRC Ltd	22050	Modifying mobile plant colour schemes to improve pedestrian visibility



**WINNER
HANSON
AGGREGATES UK**

22064

CSMR – Check, Speak, Move, Repeat – Pedestrian traffic management safety process

Hanson Aggregates UK > Penderyn Quarry



Example of driver site map

DESCRIPTION

Following an incident involving mobile plant in South Wales, Hanson enhanced its commitment to further improve the management of the interaction between pedestrians and transport.

A survey was undertaken, asking operators what changes could help improve the safety of quarry movements. Area operations managers reviewed the feedback, identified that a key aspect would be behavioural change and to support this the **Check, Speak, Move, Repeat (CSMR)** idea was developed. Improved communications were recognised as a particularly important element of the programme.

An expert working party developed the two main strands:-

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

Pedestrian and Transport

Pedestrian routes were developed using examples of good practice drawing on lessons from hospitals.

The transport strand was based around the idea of creating communication hubs managed by "zone controllers".

A second working party was established made up of employee safety representatives, transport managers, quarry managers, safety professionals, area managers and external consultants.

Their review established that a programme was needed to help improve the following:

- The sense of "One Team" between drivers and pedestrians
- The level of communication between all moving personnel
- Recognition of the dangers that both drivers and pedestrians face whilst travelling on-site
- Commitment to the achievement of zero incidents between drivers and pedestrians and between vehicles.

A multi-disciplinary team was established to develop and implement CSMR. This initiative was signed off by the senior management team in aggregates division and rolled out in 2021 across the UK.



The CSMR objectives were to eliminate fatalities, vehicle collisions, slips, trips and falls and mobile plant near hits.

CSMR ensures all people travelling around on-site, are briefed on their routes before beginning their journey. To aid this, vehicle and pedestrian maps were developed for each site. As people and plant move around, signs are seen to guide, support and control these movements.

The use of buggy whips, mobile plant identifiers, good radio communications and visual identifiers including maps and signs were standardised and implemented at all sites. External consultants were used to assist and support site managers with the implementation and development of the programme. Any questions, suggestions or new ideas were fed back to the control group.

Communications

To ensure a standardised approach and with Covid controls inhibiting a more personal roll out, Hanson used Microsoft Teams to communicate the concept and actions to Aggregates managers and supervisors, and the operational leaders in the Concrete and Asphalt business lines. This helped to ensure co-operation on co-located sites.

The senior management team included the CSMR process in their safety conversations and 5S reviews to raise its profile and help embed it. A multi-lingual haulier pack was rolled out across the business. Supervisors and managers received a guide on how to conduct an effective CSMR safety conversation to aid Visible Felt Leadership (VFL).

A behavioural change workshop with a CSMR focus was rolled out across the Aggregates business, delivered by the external consultants.

BENEFITS

- All Hanson's operations are safer places to move around
- More effective communications and enhanced controls
- Reduced risk of fatalities, injury, and damage
- Development of a standardised process for managing pedestrians and transport on-site
- Improved the efficiency of movement around sites
- CSMR requires and encourages the entire site team to engage
- Encourage a multi-faceted dialogue between people across Hanson's divisions.



Hanson-sites have: -

- Universal communication tools (maps and signs)
- Tools available in multiple languages to bridge the gap between operations and hauliers
- All 150 managers and supervisors are upholding the same standards across Hanson
- An opportunity for employees to engage with each other to successfully deliver the aims of CSMR
- A better understanding of real-life challenges leading to practical site specific improvements.

DEVELOPMENT AND TRANSFERSABILITY

With the MPA's support this could be an industry-wide life saver, providing a familiar set of protocols at every site – standardisation underpins safety. This system is aligned with the aims of Vision Zero and, in particular, the mitigation of hazards associated with workplace interaction between pedestrians and transport.

The ease with which the system was adopted by both the Asphalt and Concrete business lines within Hanson, demonstrated that this approach can be transferred successfully to different sites and sites sharing similar set-ups within our industry.

From inception, Hanson's desire was to create a framework which could be rolled out to all MPA sites. It is anticipated that this standardisation would further improve the safety of those moving around our sites as the message would be universally familiar.



New signage coordinated with maps





22070

Mobile plant parking area

Hanson UK > Tytherington Quarry **2**



New parking bays

DESCRIPTION

Hanson's Tytherington Quarry was producing 1.8 million tpa with a contract crushing, load and haul and production process. Demand had significantly increased to this level to meet the requirement for HS2. As a result, the fleet of mobile plant operating at the quarry had expanded rapidly to include 10 articulated dump trucks (ADTs), 5 front end loaders (FELs) and 5 excavators. As there was no dedicated parking area for mobile plant, the plant operators were parking their machines on traffic routes, in the stockyard and in the asphalt RAP area. Maintenance was carried out in a 'plant compound' area which was located next to a main haul road.

Several near hits were raised by the mobile plant operators and supervisors due to inadequate lighting and ground conditions where the mobile plant was being parked. There was also a significant near hit when a loading shovel reversed into a dumper that had been parked in the stock yard.

It was recognised that facilities for mobile plant and their operators should be improved and encompass the following :-

- Lighting for operator safety and pre-start inspections
- Good pedestrian access to and from the machines and the canteen
- Good pedestrian access around the machines
- Good ground conditions for access and egress and pre-start inspections to reduce hazard of slips, trips and falls
- Improved maintenance working areas

- Separation between mobile plant in case of fires.

Following a meeting with all stakeholders on-site, the most suitable location for the parking area was agreed. A site was chosen that was close to the canteen and a power supply, this required the relocation of a stockpile. The proposed design to achieve the objectives above was reviewed with the drivers, contractors, and others on-site.

Plans were drawn up using drone survey photographs for the physical demarcations for each parking space, logistics for electrical supply, access in and around the parking area for pedestrians, access to a workshop, and the layout for the walkways.

The construction was carried out over the course of a month with weekly check-ins on project development and timescale updates:

- The plans were marked out using paint to allow for trials to be conducted using ADTs and FELs. This was to ensure enough space for turning, reversing, and parking up plant. This was done each night to ensure any issues could be rectified as soon as possible
- Once the area was marked up, the floor was built up and a drainage system put in place to divert water from the hill above to prevent flooding
- Concrete dividers placed out to mark-up individual parking places
- Armco barrier was erected, and pedestrian walkway fences installed, including a new walkway created down the hill from the canteen

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



- Lighting installed for stairs, walkways, and parking area
- Flags/buggy whips installed on concrete dividers to increase the height of the demarcations and be more visible from within the mobile plant.

The site traffic management plan was reviewed and updated as required, along with the SSoW and RAMS. The maintenance requirements were established to keep the site in good condition.

BENEFITS

- Dedicated parking space for each ADT and FEL on-site
- Safe all-round access on level and even ground
- All machines parked in the same area
- Safe walkways between canteen and parking area, and safe access to plant
- Drainage system and elevated area to prevent flooding
- Provision of a safe, controlled maintenance area out of the main quarry
- Easy access to the mobile plant workshop area

- Improved lighting around pedestrian walkway and parking area
- Reduced risks of slips, trips and falls
- More efficient site and improvements in ease of checks and maintenance
- Reduced risk of contact with pedestrians and collision between vehicles
- Improved environment, reduced dust, and chance of spillages
- Improved housekeeping and aesthetic for parking areas
- Significant decrease in near misses
- Improved morale and safety culture
- A safer environment for all.

DEVELOPMENT AND TRANSFERABILITY

This concept is totally transferable to many operational quarries, and it can be scaled proportionally.



Safe pedestrian walkways



Parking areas well lit at night



22087

Drone safety system

CEMEX UK > Dove Holes Quarry 2

DESCRIPTION

Historically, obtaining technical safety information regarding geotechnical features for any site involved geologists, surveyors, a lot of processing time and consequently, delayed reporting. This could lead to information being out of date or features having been removed by the time it was available. On large sites this work might involve a permanent team manually measuring the features and, during this process, they could be working in areas adjacent to the traffic routes being used.

Surveying has moved on as technology has developed and more commonly drones are now being used, particularly when the site covers a large area. CEMEX has explored using software to significantly enhance the way in which data can be processed and used to provide key H&S information quickly, removing the need to manually survey the more temporary features such as edge protection and rock fall traps. The system has been developed so an in-house drone pilot can survey the entire site from a position of safety without being at risk from site traffic.

Drone surveys offer a remote measuring system removing the operator from the quarry environment entirely. Usually, they position themselves with a clear view of the flight path in a safe location, but for the larger drones even this is not required, with flight paths being programmed into the drone.

CEMEX in France were using a provider that could analyse the data quickly and provide the relevant data on an online system within a week. CEMEX UK set up a team to evaluate whether it could be applied in the UK. An assessment team comprising operations managers, geological specialists and site managers was established to test the system and its capability in the UK.

Successful trials demonstrated that the system was effective particularly on large locations or hard rock sites. It could be used for the remote measurement and analysis of :-

- Haul road widths and cambers
- Ramp gradients
- Edge protection bund heights
- Face heights.

In addition, the system could be used to plot any safety feature required by site for example, site services such as electric cable runs, water pipes and gas supplies. Pre-loaded highway code signs facilitate the creation of traffic and pedestrian routes for the site. The data is layered in the system, and each layer can be turned on or off depending on the audience. All this can be supplied using the platform already familiar to the survey team through its existing work with drones.

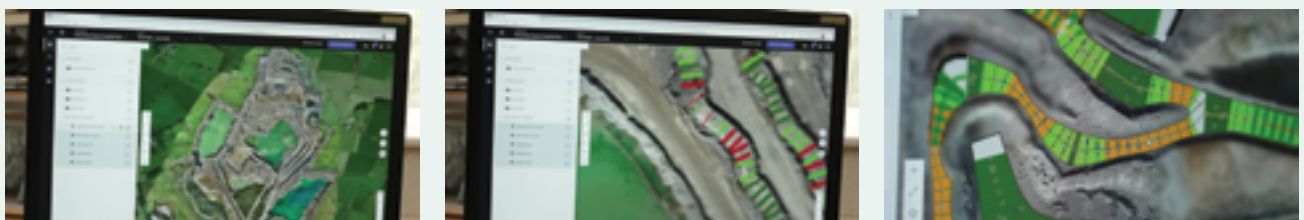
BENEFITS

- Ensures the transport routes comply with legislation and company policy
- Operation of mobile plant is safer
- Removes the need to manually survey smaller geotechnical features
- Eliminates survey related pedestrians and small vehicles from transport routes
- Enhanced effectiveness of survey/maintenance team
- All information recorded on subsequent surveys and maintained within the same system
- Reduced risk of pedestrian and vehicle contact
- Enhanced availability of key information to improve operational effectiveness
- A safer environment for all.

DEVELOPMENT AND TRANSFERABILITY

To date this system is in use at ten locations within CEMEX UK and this will be expanded to the whole of the UK within CEMEX's aggregates and cement operations.

It has been promoted internally as part of CEMEX's best practice awards within the region covering France, Spain, and the UK. CEMEX believes it could be used more widely across the quarrying industry.



Images produced by software highlight features





22130 Incorporating human recognition & risk reporting into Safer by Design



FM Conway **2**

DESCRIPTION

There has been considerable work across the industry attempting to reduce the risk of large mobile plant coming into contact with other vehicles and pedestrians. A consistent challenge with both people on the ground and those operating large mobile plant, especially on the public network, is that both can be unpredictable in their actions and their perception of risk.

Being able to predict the movement of people or capture the human factors influencing driver behaviour when operating vehicles, would be of significant benefit in further reducing the risk of fatal or life changing harm by reversing vehicles on-site.

FM Conway looked to see if it was possible to use current advances in optical artificial intelligence to find a solution that would take them to the next level in protecting people on the ground. The team had a particular focus on loading shovels and the inherent risk of them coming into contact with other items of plant especially collect customers. Over a 3 year period, FM Conway worked with Blaxstaire Detection Systems to develop and adapt technology originally designed for use on road sweepers so that it could be enhanced and applied on loading shovels.

The system, developed as part of this programme, has now been installed on 3 of FM Conway's wheel loaders supplied by Liebherr. The active personnel detection system monitors the rear area of the wheel loader and automatically warns the operator of dangers by means of a visual symbol on the display, and an acoustic signal. Another aid for avoiding collisions is the brake assistant. With the aid of the latest camera technology, the system distinguishes between people and objects, applying the brakes automatically to a stop when people are detected but bringing to a crawl speed when an object is detected. This is achieved using smart cameras and without the people on-site needing to be equipped with transponders or sensors. This makes the Liebherr system one of the safest currently on the market.

The addition of a smart camera on the front facing cab of the vehicle provides better forward protection, improving the ability to detect people and vehicles ahead of the machine. In addition, it provides operators with a better view of inside hoppers.

FM Conway are also exploring an automatic near miss reporting system. This does not require a person to see or report a near miss or unsafe act. If the system detects an incident, it automatically reports it via the cloud, sending SMS alerts to a specified individual or group, allowing action to be taken promptly. Risk assessments can be adjusted where pedestrian interface can be a problem. Risk maps can be produced to determine where changes need to be made to physical barriers or entry and exit points, where traffic needs better control or personnel entering unauthorised pedestrian zones.

FM Conway have invested in 3 machines fitted with the safety accessories and have another 3 on order.

<https://www.youtube.com/watch?v=F02i3y9VT04>

BENEFITS

- Estimated reduction in 3.2 million high consequence risk activities per annum with system on 3 machines
- Will increase the reduction to over 6 million high consequence risk activities with 3 additional loaders
- Video footage of unsafe acts used for training, toolbox talks and safety alerts
- Site is safer for employees walking around the site
- Safer environment for collect customers
- 65% reduction in reported damage and cost of repair to fixed plant and equipment
- Easy to operate machines safely in tight urban locations as safety systems prevent collisions
- A safer environment for all.

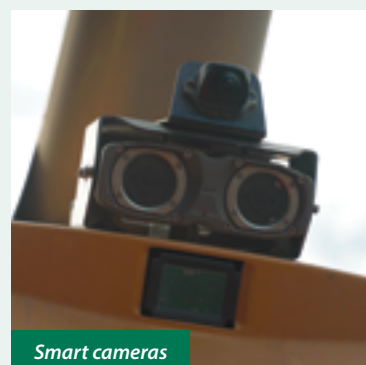
DEVELOPMENT AND TRANSFERABILITY

This is the first vehicle/system that accepts human error is a possibility through fatigue, a slip due to loss of concentration when performing a monotonous activity or other lapses. The use of AI in this type of application, will play an increasing part in human error reduction.

This technology could be transferred to all mobile plant across all mineral product sites, making a massive contribution to the reduction in Fatal 2 incidents.



Software highlights location of incidents



Smart cameras



Auto braking applied



22099

Workforce-led approach to reducing vehicle hazard 2

Breedon > Ashwood Dale Quarry



Traffic light control

DESCRIPTION

Breedon's Ashwood Dale Quarry has one entrance road which has blind bends, single tracked lanes and a mixture of vehicle types travelling on it. The limestone quarry typically sells circa 3,000 t/day which is all delivered by road transport. This equates to over 150 HGVs/day, together with other vehicles entering and leaving the site. As there was no control over vehicle movements, there were a number of near misses where incoming and exiting HGVs met on a steep inclined single tracked lane, requiring vehicles to reverse with no banksman.

A complaint was made by a regular HGV driver, highlighting the risks associated with the heavy usage of the road with no controls in place. The road could not be widened.

A traffic light system for managing the single tracked and blind entrance route was researched, and it was quickly established that due to the lack of passing and holding spaces the traffic lights could not be worked on sensors. Too many vehicles arriving in the same period would create a bottleneck and back HGVs onto the main highway.

Following consultation with the hauliers and others on-site, it was decided that a traffic light system, controlled by the weighbridge operator who would have live screens showing every aspect of the entrance road. This would enable him to regulate the site traffic whilst viewing live information on vehicle's locations.

Contractors worked with Breedon to establish and install cameras and traffic lights at the optimum locations. Minor amendments were also made to improve what would become the holding area with the new lights installed.



The suppliers of the traffic light system trained the management and the weighbridge operator in using the new system and confirmed that it would cope with the busiest times on the site. The traffic management risk assessment was updated and leaflets were produced to educate all drivers about the changes.

BENEFITS

- Positive feedback from all drivers using the site
- Improvement in the overall traffic management safety on-site
- Eliminated the risk of meeting a vehicle head-on, on a single tracked lane
- Reduced risk of collision or vehicle damage
- Hauliers and visitors more comfortable using the site access road
- No bottleneck traffic jams on the entrance road resulting in vehicles backing onto public highway
- The weighbridge operator can spot any issues when they occur
- A safer environment for all.

DEVELOPMENT AND TRANSFERABILITY

Breedon has ordered further signage that will be placed around the traffic routes, to further improve guidance for site users.

This traffic management system based on live video feeds and access controlled by an operative, could be adapted and applied to any construction-site where there is poor tight access, and blind routes. It will allow control over what vehicles can travel at what times on the routes.



Traffic on single lane access controlled by weighbridge operator



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



22068 Site traffic routing improvements and pedestrian segregation 2 6



Hanson

DESCRIPTION

Hanson's Appleford depot is a multi-division-site with aggregates, asphalt and concrete and has two third party companies using the depot for rail imported materials.

Hanson wanted to improve the traffic management around this busy site following several incidents involving mobile plant or other vehicles. Hanson undertook a full review to identify improvements to the site's workplace transport and pedestrian interface.

Representatives from all divisions including managers, supervisors and employees were consulted and played an active part in the development of the final scheme. Contractors working for the third-party companies on-site were also consulted to ensure they were given the best access to their working areas as possible. The changes implemented included;

- A redesign of the traffic routes for mobile plant, road vehicles and pedestrians with one-way systems introduced where possible
- New controls were put in place so that the divisions and third parties can communicate more effectively, two-way radios communications have been improved and the provision of fixed vision aids
- The creation of a new car park for rail contractors so that they no longer have to cross the main yard, but can park close to the railway and use a walkway to access their work area
- Pedestrian gates used to demark the routes with signs explaining the routes that are in place
- Gravel boards with posts and rope along the sides introduced to keep people off the rail at the required distance stated in SSOW 1.25m. Low level lights have been installed along the walkway with switched Passive Infra-red Sensors (PIR's). Gabion baskets have been put in place to hold back vegetation and avoid them growing onto the walkways
- At road crossing points, pedestrian lights and buzzers have been installed linked to traffic lights to stop HGV's whilst pedestrians are crossing. All crossing points are marked on the floor as an additional safety measure
- Some areas which required rest points halfway across, because of two-way traffic, have been constructed out of Armco and pedestrian gates installed
- Walkways that are running parallel to heavy traffic have been protected by Armco or Jersey barriers as a protection for pedestrians
- New large signs have been introduced with 6 do's and don'ts on it instead of 6 separate small signs, to avoid users becoming sign blind

- The yard which was poorly drained, pot-holed, undulating and regularly flooded has been asphalted and drainage improved
- All site risk assessments have been updated with the new routes added, along with updated site inductions and drivers maps which are being issued.

BENEFITS

- Better constructed roads and traffic management
- Clearer directional instructions and information increased levels of compliance
- Employees and contractors feel much safer operating around the busy site
- Improved walkways and general site appearance
- Reduced levels of slips, trips and falls
- High risk areas protected by Armco/Jersey barriers
- Whole-body vibration issues greatly reduced
- Reduced wear and tear on machines and vehicles
- Improved fuel efficiency and reduced maintenance costs
- Turnaround times for lorries have reduced
- Improved efficiency of mobile plant operators
- Near hits have reduced
- Employees and stakeholders can see company's commitment to safety
- A safer environment for all.

DEVELOPMENT AND TRANSFERABILITY

The approach taken drew on good practice from within the company, the minerals industry and more generally, the road haulage industry.

A survey is being developed to obtain feedback from all site users and to identify further potential improvements. A similar process is underway at some other Hanson-sites.

Hanson is particularly focussed on pedestrian walkway standards; this site demonstrates that the standards can be followed to ensure the safety of all who use the walkways. It demonstrates that, even in a small and busy facility, there are ways to improve the separation of yellow plant, lorries, and pedestrians.



'The Fatal 6'

- Mitigating the high consequence hazards in the Mineral Products Industry
- 94% of fatalities in the industry fall within these 6 common themes
- MPA and its members have committed to achieving a hard target of zero reportable incidents relating to 'The Fatal 6' by 2025
- A working group has been set up for each theme. They are tasked to develop resources and recommendations to help the industry eliminate the causes of 'The Fatal 6'.

1
Contact
with moving
machinery and
isolation

2
Workplace
transport and
pedestrian
interface

3
Work at
height

4
Workplace
Respirable
Crystalline
Silica

5
Struck by
moving or
falling
object

6
Road Traffic
Accidents



To find out more about 'The Fatal 6' go to [Safequarry.com](https://www.safequarry.com)

'The Fatal 6' Award

The winner of this award is chosen by an MPA panel. Entries are reviewed from across the 8 Topic Awards that have been selected by the judges because they demonstrate the greatest potential to mitigate hazards associated with 'The Fatal 6'.



Bulk tanker auto lids in safer and transport and logistics – page 51

The judges said 'CEMEX was selected because it has created a solution that can be widely adopted across the industry. It will make a significant impact in reducing fatalities and serious injuries associated with falls from height – Fatal 3. CEMEX has used technology to make an operation which is carried out every day across hundreds of sites safer – by eliminating the need for drivers to mount the top of their tankers to open and close the lids. This operation can now be completed safely at ground level'



Runners up

- Forterra – Remote stressing via automated pin locator
- Hanson – CSMR – Check – Speak – Move – Repeat – Pedestrian traffic management system

Young Leader Award

This award recognises the drive and energy of some of the rising stars within our industry. They have been chosen by the judges because they have been instrumental in achieving a significant improvement in health and safety within their workplace - Our Health and Safety Champions



Axl Farr
Singleton Birch



Cameron Duthie
Breedon Group



Chris Widberg
Brett Aggregates



Conor Mitchell
Tarmac



James Bodkin
FM Conway



Josh Herridge
Aggregates Industries



Kieran Adam
Tarmac



Laiba Laiba
FM Conway



Logan Gibb
FM Conway



Michael Elliott
Brett LBP



Mitchell Tucker
Ibstock



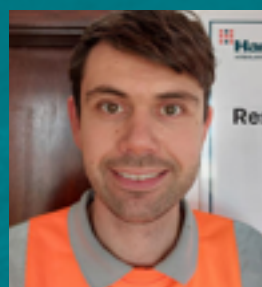
Olly Thompson
Hills QP



Ryan Murphy
Hanson



Samuel Wood
Marshalls



Shaun Holbrow
Hanson



Vasile Marica
CEMEX

JOINT WINNERS



Shaun Holbrow – Hanson



Michael Elliott – Brett LBP



Hanson say "Shaun has gone more than the extra mile quickly learning new skills, taking up the role of site safety rep and helping to drive the safety committee. He's a focal point, helping to ensure that everyone is engaged, and through his actions improving the safety culture on-site."

Michael's manager said "Although he's only been with the company for just over two and a half years – Michael has made a massive contribution to the development of the health and safety culture at Brett by listening to his colleagues. This has led to on-site improvements and Michael's team being confident about stopping work when things aren't safe."

FINALISTS

Chris Widberg – Brett Group
Samuel Wood – Marshalls
Josh Herridge – Aggregate Industries
Kieran Adam – Tarmac
Laiba Laiba – FM Conway

Individual Recognition

These awards acknowledge the important and critical role played by people in the workplace. These are the individuals who make things better for everyone. Nominated by their companies, these people are the industry's Health and Safety Heroes and Heroines. Their nominations may have been based on one or more of these achievements.



- They have played a pivotal role in the delivery of an H&S initiative
- They made a material difference in the outcome of an incident or event
- Their achievement in obtaining qualifications or completing training in health and safety
- Their role in supporting colleagues in respect of health, safety and wellbeing
- Their willingness to share their knowledge and expertise
- Their leadership either by example or other actions
- Their behaviour reflects the H&S values in Vision Zero



Alan Flippance
CEMEX



Alan Falconer
EPC-UK



Andrew Barber
CEMEX



Andrew Hogg
Breedon Group



Axl Farr
Singleton Birch



Ben Berrington
Hanson



Bob England
Marshalls



Cameron Duthie
Breedon Group



Cathy Maguire
Acheson + Glover



Chris Widberg
Brett Group



Christian Vale
CEMEX



Colin Warren
Imerys Aluminates



Dan Ives
Tarmac



Darrell Collins
CEMEX



David Burrell
Marshalls



David Saunders
Tarmac



Edward Berridge
Forterra



Emma Feist
FM Conway

Awards sponsored by **mpqc**



Hugh Reynolds
CEMEX



Ian Ward
FM Conway



Ivan Hewson
FM Conway



Jim Sheriff
Tarmac



John Thompson
Tarmac



Josh Herridge
Aggregate Industries



Kevin Cage
CEMEX



Mark Sydenham
FM Conway



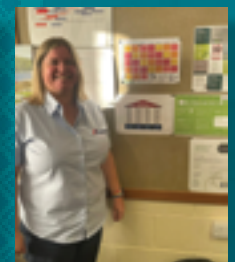
Matthew Bland
CEMEX



Vasile Marica
CEMEX



Mitchell Tucker
Ibstock



Nicola Drabble
CEMEX



Nigel Bateman
CEMEX



Nigel Tomlinson
Marshalls



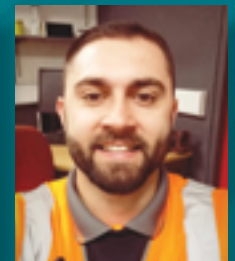
Rachel Sapstead
Breedon Group



Ryan McCrory
Northstone



Ryan Murphy
Hanson



Samuel Wood
Marshalls



Sharon Bowdery
FM Conway



Sharon North
Forterra



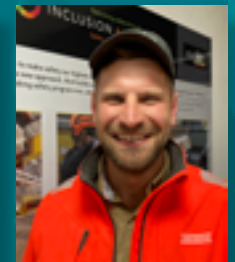
Shaun Holbrow
Hanson



Steven Williams
Tarmac



Stewart Martin
FM Conway



Kyle Sanders
Explore Manufacturing

Winners not pictured: Paul Parker, Tarmac; Scott Rooney, Marshalls; Jonathan Read, FM Conway



MPA Safer and Healthier by Leadership Online Workshops

Book Now – Contact Colin Mew

- Highly interactive and participative courses
- Engage with your peers on key health and safety issues
- Maximum of 12 attendees in a session
- Ideal for all sectors within the mineral products industry
- Focussed on managers working at all levels within the industry
- Delivered in two, 4 hour, online sessions, over consecutive days
- Company specific sessions available on request
 - either face-to-face or online

WHY ATTEND

- Develop a strategic understanding of the true value of health and safety
- Learn how to analyse your own organisation's health and safety performance
- Learn how to apply the good practice of leading global organisations
- Learn how you and your organisation can deliver 'engaged, visible and consistent leadership'
- Understand how the programme is aligned with the core health and safety values of Vision Zero

Watch the video on Mineral Products YouTube Channel to find out more



What previous attendees say

"It has been a long time since I've been in a training/ learning environment that left me thinking about the content and how I can apply it weeks after the event."

Glenn Henry, Aggregates Operations Manager, Whitemountain

"The course overall far outweighed my expectations and was extremely useful. I personally found a lot of value in the mix of people participating and the many open discussions where we learnt other people's experiences and models for working."

Danielle Thorpe, Head of Marketing & Product Development, Brett Landscaping

**Book now to secure your place
- £330 + VAT per person.**

**For more information download
the flyer or contact Colin Mew.**



Topic 5

Safer transport and logistics



This award relates to improving the safety of transport from the plant to the end user/customer site. This would include:

- Training of hauliers
- Safety devices on vehicles
- Measures to improve the safety of other road users, cars, vans, rail and waterborne transport.

SPONSORED BY



SPILLARD
vehicle safety systems

WINNER		
Marshalls Plc	22139	Crane improvements
FINALISTS		
CEMEX	22110	Bulk tanker auto lids – Winner Fatal 6 Award
Marshalls Plc	22092	HGV Blind spot – Road safety school campaign
HIGHLY COMMENDED		
Aggregate Industries	22077	Driving safety for its road logistics operations
CEMEX	22013	New vessel – Development of bespoke ship simulator and training of crews
CEMEX	22116	MP Connect – roll out
CEMEX	22111	Improved driver communication tools
Hargreaves (UK) Services	22098	Artificial intelligence cameras, as a driver safety aid
Marshalls Plc	22093	SLAM (Stop, Look, Assess & Manage)
Tarmac	22004	Cement bulk loading safety nets
CERTIFICATE OF MERIT		
CEMEX	22061	CEMEX UK supply chain – Rail H&S strategy
CEMEX	22062	CEMEX UK supply chain performance and improvement Initiatives
Northstone Materials	22031	Integrated portable traffic light stowage system



**WINNER
MARSHALLS**

22139

Crane improvements

Marshalls > Marshalls Landscape Products > St Ives Cambridgeshire



Crane on artic extended

DESCRIPTION

Marshalls manufacture and distribute concrete landscape products. The logistics department runs a fleet of approximately 200 HGV vehicles, split between artic cranes and drawbars, delivering mainly to building sites, merchant yards and the public. It employs around 380 employees, including Transport Planners, Logistics Administrators, FLT Operatives, HGV drivers and Site Logistics Managers.

The logistics team is constantly looking for ways to improve equipment such as forklifts, curtain sided vehicles and mobile plant.

Marshalls had 2 accidents involving crane operation, no one was injured but serious damage was incurred.

The first accident involved a driver forgetting to lower his crane after being loaded and driving off. The crane struck an overhead conveyer, seriously damaging it, resulting in production being

stopped. On inspection it was decided that the conveyer would need to be replaced.

The second accident involved a driver who left the crane hanging over the side of the trailer, which resulted in a full stack of product being pulled down.

The logistics director at Marshalls set up a project team which consisted of four logistics managers and the logistics health & safety advisor and consultation with HIAB, Marshall's crane supplier. The objective was eliminating the risk of human failure.

Issuing "Toolbox Talks" (TBTs) to the employees was considered but the feedback was that the department already had enough TBTs.

Risk assessments and standard operating procedures were reviewed and improved. The SOPs were made easier to follow and understand, with emphasis on pictorial instructions. The SOPs were communicated to all logistics employees and updated using their feedback.

Working closely with HIAB, Marshalls looked at a few systems to eliminate the chance of human failure and believe that they have come up with a system that achieves this and cannot be by-passed.

The solution is that each crane has the same key barrel as the vehicle ignition, therefore the driver must remove the key from his vehicle to start the crane and the same in reverse. The driver must ensure the crane is safely stowed on the trailer otherwise the key cannot be removed from the key barrel.



Marshalls executive board agreed to fit all their crane fleet with the new system. All new drawbars entering the fleet throughout 2022/23 will have the new safety system fitted to them together with warning signs on their dashboards.

BENEFITS

- Drivers cannot override the system
- Drivers cannot manoeuvre the vehicle until the crane is correctly stowed
- It has eliminated the risk of similar crane accidents occurring
- A safer environment for all on-site
- The 'Ignition Key Interlock' only costs £837.69 and takes 4 hours to install.

DEVELOPMENT AND TRANSFERABILITY

In addition to new vehicles, the Marshalls existing fleet is also being retrofitted with the system.

This system could be used throughout the industry by any operator using the same crane fleet as Marshalls. To assist the roll-out of this system across the industry, Marshalls are happy to share information about it.



Driver cannot remove keys until crane lowered



Crane stowed before moving





22092 HGV blind spot – Road safety school campaign

Marshalls Plc > Marshalls Landscape Products **6**



DESCRIPTION

Marshalls manufacture and distribute concrete landscape products and operate a fleet of approximately 200 HGV vehicles, split between artic cranes and drawbars. They deliver mainly to building sites, merchant yards and the public. The logistics team at Marshalls looked at different ways that it could help to educate young children about the dangers of HGV blind spots and road safety in general. The team worked together, sharing their ideas and being supported by the SHE team and marketing department, who helped to develop tools to support the training. The programme would help to enhance community relations and prevent accidents.

The aim was to deliver the training to schools that are in close proximity to Marshalls operations. A pilot study was carried out at a school in Halifax. The target audience was 7-11 year olds, who at times, might travel to school or be playing away from home without adult supervision. Statistics show that children of this age are easily distracted when leaving school for the day, possibly concentrating on their phones or being jovial with friends when walking the streets, not concentrating on busy roads and traffic.

The training included a short presentation showing different types of HGVs, the dangers around them and a short video illustrating where the hazards exist. The session also included a demonstration with a vehicle in the school playground. The children were encouraged to enter the cab of the vehicle and see for themselves what difficulties an HGV driver faces when driving the vehicle. The driver also demonstrated the crane, highlighting the dangers to the children whilst the crane is in operation.

Raising the children's awareness of the hazards surrounding HGVs, and what to look out for when walking to school or playing in the streets, will help reduce the number of accidents involving young children and HGVs.

To deliver the presentation in schools, Marshalls enlisted the help of their in-house driver trainers who have extensive HGV knowledge, being both qualified HGV drivers and skilled in presenting techniques.

BENEFITS

- Young children more aware of the hazards of being around HGVs
- Supporting the safety of young people in the community
- Drivers fully endorse this campaign
- Reduced risk of fatalities or serious injuries involving children and HGVs.

DEVELOPMENT AND TRANSFERABILITY

Initially, this campaign is being rolled out to local schools in close proximity to Marshalls manufacturing sites. Marshalls are aiming to build close relationships with the schools and local communities to promote road safety and highlight the dangers surrounding HGVs. In November 2022, Marshalls participated in the National Road Safety Week and would be delighted to share this campaign with other industries and schools.

Demonstrating blind spots



Pelican Crossing





22110 Bulk tanker auto lids

CEMEX UK > Rugby Cement Plant **3**



WINNER OF 'THE FATAL 6' AWARD



DESCRIPTION

CEMEX and Feldbinder, a major European manufacturer of bulk powder transport tanks, have worked together to develop a prototype automatic tank lid. This development paves the way for this to become a standard option on tanks. It removes the risks of working from height and manual handling which involved access platforms, kneeling and the ergonomics of having to loosen and tighten the lid hatches several times a day.

CEMEX installed the auto lid on two tanks and has undertaken field trials. The lids on the tanks can be opened automatically at ground level by the driver. The auto lids consist of a pneumatic sequenced ram and lid lock system with inflated lid seal. The same working practices as the standard manual lid tanks for test purposes have been utilised

The tanks have been operational for over 12 months. During this trial period, several improvements have been made to enhance the system in response to the operational experience and driver feedback. In particular, there have been issues associated with the tank seals in colder weather, some weather related problems with operational components, and the need for additional maintenance checks. To address these issues the following improvements were made;

- Redesigned stainless steel ram pivot mounts
- Upgraded the rams
- Modified the sequencing system

The auto lids are sealed at a constant pressure and thus eliminate the risk of cement dust escaping to atmosphere.

The additional cost, if part of new tank purchase, is currently circa £3K

BENEFITS

- Reduction in manual handling
- Eliminate driver having to work at height securing lid
- Lid activation system is operated at ground level
- Potential for improved loading times

- Cleaner working environment for driver as now stood away from the loading chute
- Potential for further loading automation
- Improved environment as potential for dust escape minimised.

DEVELOPMENT AND TRANSFERABILITY

This system has potential to significantly reduce risk in the industry for working at height and manual handling. It will also save time and effort in gaining access to the lids and the laborious process of undoing and tightening them.

CEMEX only allow access to the top of tanks via fixed platforms, but it is still Industry standard practice in some operations for drivers to access the lids via rear ladders and walkways on top of the tanks. The outcome of the project will be shared once completed and would be a significant contribution to the Fatal 6 accident reduction programme.



Handrails when top loading



Auto lid in action



Lid controlled at ground level



This award is selected from all the entries submitted by MPA members that relate to the handling or processing of bitumen and activities associated with contracting/paving.



Bitumen system management (page 41)

Cemex has been standardising the safety systems across all their asphalt plants. The introduction of safety controls, automated systems, fail safe devices, regular inspections and training, has worked to minimise the risk of spillages, fires and other bitumen related incidents.

The Judges said "The winning entry was a good example of investigation into incidents and near misses, which looked at the combined effects of a number of root causes. CEMEX has put in place some simple and cost-effective solutions for preventing potentially catastrophic incidents. It has used available technology and applied a range of engineering solutions to create a range of controls which can be simply rolled out by others."



Runners Up

- [CEMEX, Sheffield – Hot Box customer safety](#)
- [Aggregate Industries in Purfleet – Automatic closed loop asphalt analyser](#)

Topic 6

Safer operations at a contracting, construction or customer site



This award relates to:

- The safer unloading, storage or handling of products at a customer/end user site
- The delivery of services at a customer or construction-site including on the highway. This would include entries relating to contracting, laying and installation of precast products.



WINNER		
FM Conway Ltd	22132	Engagement with the Highways Sector and National Highways to transform health and safety approaches for the better management of significant risk
FINALISTS		
EPC-UK	22002	Stop work authority policy and Stop work authority card initiative
FM Conway Ltd	22127	Turbo jet engine portable dryer
FM Conway Ltd	22128	vGIS Augmented reality for utilities and other 3D information.
FM Conway Ltd	22129	Augmented Microsoft HoloLens
Toppesfield Ltd (part of FM Conway group)	22135	Machine gang 2-way radio communication
HIGHLY COMMENDED		
Tarmac	22112	Roadbuilding assessment programme
CERTIFICATE OF MERIT		
CEMEX	22105	Partners in safety customer award
FM Conway Ltd	22133	Triangle digital solution to controlling traffic management

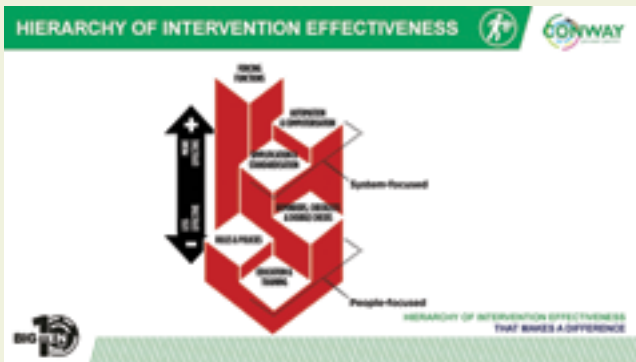


**WINNER
FM CONWAY**

22132

Engagement with the Highways Sector and National Highways to transform health and safety approaches for the better management of significant risk

FM Conway Ltd



DESCRIPTION

National Highways had seen FM Conway's (FMC) **Big Ten in 10 Strategy** and invited Adam Green (FMC CEO) to act as Chair for the National Highways Supply Chain Safety Leadership Group (SCSLG) to bring this approach to their supply chain. The group includes many of the major contractors involved in developing and maintaining the National Highways network and infrastructure.

FMC were delighted at this invitation and saw it as an opportunity to share its 'Big Risk Thinking' with the industry and, working collaboratively with National Highways, to influence

and drive change. The objective was to eliminate risk across an industry rather than just an individual company.

The process

The process involved identifying a risk profile for the entire National Highways infrastructure and specifically, their supply chain. The task was to determine those risks with the potential to cause a fatality or life-changing harm. Having identified these risks, to agree relevant control measures, leading and contributory indicators that could be adopted across the supply chain, and by this approach creating a safer and healthier environment for all stakeholders.

Data collection

For the plan to work, with so many major contractors involved, a system was required that would ensure appropriate data collection, both in quantity and accuracy. It would need to be managed effectively in terms of collation and confidentiality. This was essential to get the full co-operation and buy-in from all parties involved.

Representation from all elements of the supply chain, were added including designers, major projects, operations, maintenance, and specialist suppliers. This ensured that all areas of National Highways works were represented on the group.



The individuals were selected on the basis that they were decision makers who would have the ability to drive systematic change within their organisations.

Gaining support

Adam Green personally wrote to 60 members of National Highway's supply chain and met with several key influencers within the industry including HSE, CECA, Kier, Amey, Costain and MPA to garner the support for this new approach. HSE were consulted on the proposed approach and through them links were established with CONIAC, Innovations and the Construction Leadership Council.



The proposed strategy was supported by the National Highways Executive Health and Safety Committee and the National Highways Board Health and Safety Committee.

Over thirty different organisations provided their risk profiling data, and this was collated and analysed to confirm the significant risks across an industry rather than from an individual organisational perspective.

Significant Risks identified

The risks identified have become known as the 'Significant Risks'



Risk Profiling

Having identified the significant risks, members of the supply chain were required to risk profile their activities. The emphasis of this process was to use the 'Reverse Triangle' to prioritise the requirement to eliminate, substitute or engineer out the significant risks. The 'Hierarchy of Effectiveness Model' was applied. This helped to identify 'Above the Line' methods of control which should be considered when fully assessing risk and determining suitable control measures to prevent fatalities or life-changing harm.

30 organisations engaged in the process which included the largest players in the industry, SMEs, and specialists. The collaboration has been amazing and covered the whole life cycle of the National Highways assets. Responses involved discussion with employees, supervisors, management, senior team, and SHEQ professionals.

From these responses a series of objectives and tactical actions were also identified within the Risk Profile. These help the group develop leading and contributory indicators that will identify the current situation and reduction in risk over a specified period of time.

BENEFITS

- A system able to deliver sustainable solutions that prevent the fatal and life changing harm incidents
- High consequence activities have been identified as the 'Significant Risks'
- Supply chain looking at how to eliminate risk or engineer fail-safe controls
- National Highways and its supply chain supporting 'Significant Risk Thinking'
- Major companies altering their approach to risk
- The process has fostered collaboration on H&S within supply chain
- A focus on leading indicators to identify progress and areas for change
- Increasing recognition of the value of FM Conway's 'Big 10 in 10' approach
- A safer working environment for all involved in National Highways supply chain.

DEVELOPMENT AND TRANSFERABILITY

Big Risk thinking has been evolving within FMC for the last couple of years with an increasing interest in the process and thinking being shown by both their clients and other contractors.

National Highways have shown a keen interest in the process, and this is the first known attempt to achieve this type of reasoning across multiple organisations within a single supply chain environment.

The process takes sharing to a new level with multiple organisations having an input into decisions that could affect them, whilst developing a healthy debate across peers that will lead to best solutions

The Risk Profiling Exercise will be developed into Leading Indicators and Contributory Indicators which will allow the National Highway's Supply Chain to demonstrate significant reduction in risk due to the focus on elimination, substitution or engineering controls.



22002

Stop work authority policy and stop work authority card

EPC UK **1** **2** **3** **4** **5** **6**

Ben Williams, MD

DESCRIPTION

EPC-UK is a drilling, blasting and commercial explosives specialist that operates within quarrying, logistical and manufacturing environments. Highly trained employees work with hazardous materials and machinery as part of their roles whilst working on EPC or customer sites, and whilst in transit.

Committed to achieving Zero Harm, the safety of its employees, customers and surrounding environment is constantly prioritised by EPC. To limit the risk of an incident, and as part of its ongoing drive to support its safety standards and procedures, EPC-UK created the **STOP WORK AUTHORITY CARD**. This equipped employees with the confidence to speak out about any unsafe act or condition in any working environment without pressure or reprisal.

EPC appreciated that not everyone feels self-assured enough to speak out about witnessing or performing a working operation that may present safety concerns. A written **STOP WORK AUTHORITY POLICY** is printed on the card, it provides instant permission together with guaranteed backing and support of EPC's Managing Director. Any employee should feel confident to do what they feel is right regarding 'stopping work' due to safety concerns. It works because of the support of the leadership and avoidance of any 'blame game'.

Every person within EPC-UK's 220 strong team carries a card, and managers have the same right as any other employee to action

the initiative. If an employee feels it appropriate to enact the STOP WORK AUTHORITY POLICY, they present their STOP WORK AUTHORITY CARD. This gives them automatic and unquestioned permission to stop what they are doing and ask others to stop any work they may be performing. The employee's line manager, supervisor and in some cases customer or supplier (contractor) will then be informed that a card has been shown, so the safety concern can be assessed collaboratively with a 360-degree focus.

Work will not resume until any issue is fully rectified and all parties involved are completely reassured of the situation's safety. Any event information is also collected and used to cross reference against operations at other sites or locations. This helps to identify if corrections or changes to wider working practices are subsequently required. The individuals involved can meet with one of EPC's Safety Ambassadors for a 'Safety Chat' to ensure that they are happy with how the process has been managed.

BENEFITS

- Encourages and supports employees to flag any unsafe acts or conditions
- Improves safety for employees, partners, and members of the public
- Builds confidence, trust, integrity, and team spirit
- Enhances EPC-UK's **SPiRiT** value culture (Safety, Passion, Integrity, Respect, Innovation & Teamwork)
- Enhances safety culture out in the field and on-site
- Improves efficiency of EPC's operations.

DEVELOPMENT AND TRANSFERABILITY

EPC-UK has shared this initiative with customers and across social media. EPC-UK is committed to achieving Zero Harm across its own operations, but wish to be integral to improvements industry wide. EPC believes that if more companies adopt similar safety programmes that Fatal 6 incidences within the sector will be reduced and progress towards zero harm will be accelerated.



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



22127 Turbo jet engine portable dryer

FM Conway **2**



The Zirocco Hammer Jet Turbine Dryer

DESCRIPTION

FM Conway's Specialist Surfacing Division has been working on ways to reduce the use of open flame while working on the highway, and identified that, by reducing the use of thermal lances and other torches for the forced drying of road surfaces, it could eliminate up to 40% of its propane-driven open flame practices.

The traditional methods of surface drying within the road marking industry have long posed a danger to the workforce. The operatives are exposed to excessive noise, the heat of the tools, and the naked flames they produce, which also pose a risk to members of the public.

Thermal lances work by combining a mixture of propane gas and compressed air, which creates an exhaust gas that burns at around 1,000 degrees C. This practice is highly dangerous for the user and bystanders and is also harmful to the environment as it emits high levels of carbon dioxide. If there are faults with the equipment, the process can emit carbon monoxide.

Following a near miss where a hot torch burner had been left in the centre of a busy high street, FM Conway set up a 'Big Risk' reaction task and finish group to identify and implement a means of eliminating these hazards.

After extensive research, the Zirocco Hammer Jet Turbine Dryers were identified as the safest solution. The machine was demonstrated to management and a support day was provided for the workforce. This provided training and explained the benefits of a flame-free drying procedure. The improved safety and efficiencies were also demonstrated to major client in trials.

BENEFITS

- No naked flame working
- Reduced risk of fire and injury
- Lightweight and portable, weighing only 23kg
- Can be transported in van rather than LGV
- Reduces risk of manual handling injuries
- Effective drying speed of 2.5km/h
- Reduces the drying process time
- Reduction in lost shift work
- Reduces carbon footprint
- Built-in telematics with 4G antenna allowing for
 - Logging of working hours
 - Automated service notifications
 - Improved maintenance and performance
- A safer working environment for all.

DEVELOPMENT AND TRANSFERABILITY

FM Conway plans to remove all forms of open-flame activities from its operations and has now invested in an additional Zirocco Hammer Jet Turbine Dryer, to add to their road marking fleet. It is planned to introduce a self-propelled, drive-on pusher to the dryer. Ultimately, this will be a vehicle mounted process, keeping operatives in the works vehicle, and therefore reducing the risk of accident on a works site.





22129

Augmented Microsoft HoloLens

FM Conway > Structures > Conway House

1 2 3 4 5 6



Holographic headset

DESCRIPTION

FM Conway Structures (FMCS) regularly came across situations where its stakeholders were unable to visualise what FMCS was proposing, grasp the magnitude of clashes with other activities or how it may affect the public. In addition, they recognised that traditional design packs submitted to clients and operatives, do not utilise the detailed and extensive information gained during the design process.

As part of FM Conway's innovation strategy, a team was asked to look at opportunities to utilise technology that would enable safer and smarter working. One of the ideas was to explore the capabilities of Microsoft HoloLens and how it could be used within the business.

HoloLens is an untethered, self-contained holographic headset that allows users to leverage enterprise-ready mixed reality (MR) applications while working "heads-up" and "hands-free." FM Conway recognised among many potential applications, HoloLens could be used to make some of the investigation and maintenance work undertaken by Structures safer and help to address the issues highlighted above.

After some practice, the first trial was carried out showing the planned works on Westminster Bridge. The potential of the system was clear, but it needed to be tailored to the environment in which FM Conway worked. During trials at three different locations, FM Conway worked closely with the developers, using feedback from operatives to enhance the system. The operatives have been enthusiastic about the application and its potential benefits.

The FM Conway Board have been fully supportive of this system being progressed so that it can be used on their sites and integrate with its augmented utilities programme.

This is truly cutting-edge technology, and the structures team are busy putting together HoloLens programmes and Apps that will deliver real value.

FM Conway believe that the system is limited only by the imagination and the technical capability of the user. With prior data design and input, the following applications could use the HoloLens system;

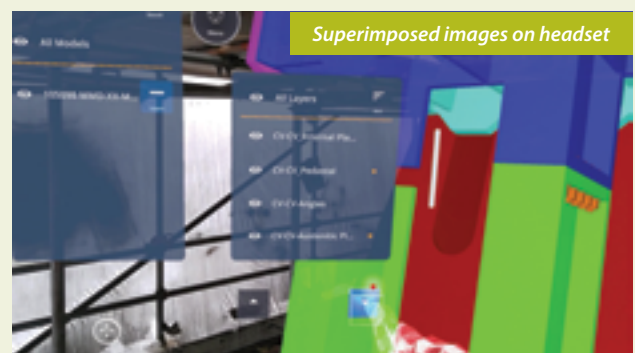
- Health and safety live risk assessments
- Commissioning of plant, equipment and structures
- 'Big Risk' and Quality Audits
- Virtual safety tours, providing feedback to laboratory and plant on quality issues
- Obtaining remote support from experts during maintenance and other work.

BENEFITS

- Can be used live, in real time and interact with other tools
- The ability to overlay ideas on drawing hand free
- Snagging pinpointed to GPS co-ordinates for report writing, visual recording of snags
- Reduces training needs
- Reduction in staff working in confined spaces
- Remote support being provided to asphalt plants during breakdowns
- Direct feedback on surfacing issues and quality control
- Remote authorisation of work, design changes and correct installs
- Remote training for fault finding or technical services
- Remote but close and effective supervision in high-risk environments.

DEVELOPMENT AND TRANSFERABILITY

This system could be beneficial to all MPA Member sites which are engaged in project or maintenance work. Whilst still in a development phase, FM Conway believe that over the next decade it will enable the use of remote operations of plant and equipment. It also envisages that both drone technology and the use of headsets will become more cost effective, as the price of the technology falls.



Superimposed images on headset



22135 Machine gang 2-way radio communication

FM Conway > Multiple sites **2** **6**



DESCRIPTION

Road surfacing requires the operation of multiple plant in a small space with a minimum of 8 operatives working closely around mobile plant. A tipper can be unloading material into the paver controlled by a banksman while operatives can be raking and rolling behind the paver. Hot roll and chip requires a chipper to be operated behind the paver by a gang of 6 or more, the rollers operated behind the chipper.

The operation of pavers and rollers create mandatory noise protection zones which require the use of hearing protection when in operation. This can cause communication difficulties between the operatives using the hearing protection or from the noise of the plant if hearing protectors are not being used.

Poor communication between the operatives involved in these activities presents a high potential risk of them coming in contact with the moving plant. Several near hits were raised by FM Conway operatives working in different gangs, further highlighting these risks.

Contact was made with several radio communication providers to trial their systems. The team involved decided to trial 2-way radio communication headsets as they provided noise protection and a communication facility.

The 2-way radio systems were allocated to 25% of the machine operating gangs to trial and after feedback, the 3M 2-way Peltor headsets were selected. These headsets provide noise cancellation with good ambient noise setting, providing protection around noisy plant whilst ensuring that operatives are still aware of plant movements. The device comes with 16 channels thereby avoiding conflict with other channels used by other contractors on-site.

Each operative was briefed on why the headset has been introduced and the safety benefits. The operatives were trained on the use and care of the headset and committed to using the equipment by signing a declaration. The 3M Peltor headsets have also been rolled out to the regular sub-contractors free of charge.

All site daily job briefings for machine laying operations now include the use of the 3M Peltor headsets as mandatory

equipment. Supervisors, Managers, SHEQ Advisors and Directors site inspections include an audit on the 2-way radio communication. All supervisors have been issued a handheld radio to ease communication with the operative.

BENEFITS

- Improved communication amongst the operatives working around the mobile plants
- Operatives are aware of the locations of all plant and other people
- The foreman can communicate instructions to the operatives
- Passing of instruction/information around moving plant safer
- Good noise protection for operatives
- Safer distances can be maintained during operations
- Easier for the sweeper and sprayer drivers to maintain 5m+5m exclusion zone
- Positive feedback from operatives using the headset
- A reduction in the number of near hits being reported
- Clients supportive of this application
- A safer work environment for all.

DEVELOPMENT AND TRANSFERABILITY

The 2-way radio communication can be used in any industry where mobile plant is being operated in close vicinity to operatives. It would significantly improve communications and operative's awareness of plant positions.

The use of the 3M Peltor headsets is being rolled out to the plant operators at the ToppBase depot in Birmingham and is currently in the implementation stage with FM Conway's surfacing unit.



22128

GIS Augmented Reality for Utilities and Other 3D information

FM Conway > Consultancy

DESCRIPTION

FM Conway Consultancy regularly came across situations where its stakeholders are unable to visualise what it was proposing, grasp the magnitude of clashes with other underground equipment relating to other statutory bodies. In addition, they recognised that traditional design packs submitted to operatives, do not utilise the detailed and extensive information gained during the design process.

Working in Inner London locations FMCC used Ground Penetrating Radar surveys (GPR) which provided a more accurate picture of the existing situation below the surface. Traditionally, FMCC combined this information into its design models, checked for clashes, made the appropriate design changes and then translated this to 2D drawings that formed part of its construction pack, issued to the site team.

The frustration for the in-house design team was knowing it had more information than it was able to incorporate into the design packs. Better information to site teams would provide a mechanism to help mitigate strikes to buried utilities and therefore, improve safety for operatives working in close proximity.

FMCC started to investigate better ways to transfer this information to both stakeholders during the design stage and to operatives during the construction stage. The research identified vGIS who were using Augmented Reality (AR) to map information on-site in real-time.

A trial of the software was arranged utilising GPR survey data from a very congested site, provided by Macleod Simmonds. Within a few days, their UK representative was providing an on-site demonstration of how to use the software and to test its capabilities.

Through subsequent trials at different locations the system was further developed to reflect what an operative might see using a CAT and Genie scan. The system uses an App compatible with IOS or Android negating the need for additional expensive equipment, as most operatives have smart devices available. It has been designed to allow for recalibration to adjust for drift associated with satellite positioning, improving the accuracy of the information.



Examples of images generated by software – highlighting services location

Regular updates have been provided to the FMC board along with other divisional directors, who are enthused and fully supportive of this system being progressed for use on all sites.

BENEFITS

- Enhances and adds to information provided to operatives
- Enhances but does not replace existing procedures
- The site team using exactly same information as the design team
- Provides ability to check the location of the buried services
 - even after the surface excavated and the tracer paint removed
- Provides the ability to filter displayed services by type
 - easier to locate a specific service on a congested site
- Operatives have more detailed and reliable information on-site
- Reduced number of strikes of buried services
- Reduced risk of injury.

DEVELOPMENT AND TRANSFERABILITY

FM Conway believe that whilst there are other systems in the marketplace, they do not utilise existing smart device technology already available. This makes the system potentially available to a wider number in the industry workforce.

This system could be used to map site utilities across all MPA Member sites. Potentially, this software could be transferred into a heads up display for excavators, allowing the operator to see where utilities are positioned. In the future, the recorded information could be used by an intelligent excavator that would prevent the operator from striking a utility.

FM Conway is looking at the possibility of setting up a virtual depot before build, enabling walkways, traffic routes and other areas of risk to be experienced virtually, to confirm whether they will work.



Topic 7

Safer through improvements in health and wellbeing



This award relates to initiatives that improve the health and wellbeing of people, this could be at a specific site, within a division, or a company-wide initiative. This could include:

- Management of mental health, diet, fitness, medicals
- Management of hazards such as dust, chemicals, HAVs or noise, if not more appropriately covered in an earlier topic

SPONSORED BY



WINNER		
Kilwaughter Minerals Limited	22122	Safer through improvements in health and wellbeing
FINALISTS		
Aggregate Industries	22115	Automatic closed loop asphalt analyser
Imerys Minerals Limited	22067	Mental health & wellbeing
Marshalls Plc	22094	Supporting healthy minds and employee wellbeing
HIGHLY COMMENDED		
Acheson + Glover	22041	Safer through improvements in health and wellbeing
Explore Manufacturing	22124	The Energy Project
CERTIFICATE OF MERIT		
Blue Phoenix Ltd	22053	Employee health & wellbeing
Breedon Group	22078	Technicians van – Concrete test cube making – 12v mobile vibrating table
Breedon Group	22142	Avoidance of excessive manual handling when cleaning field conveyors
FM Conway Ltd	22131	Mental health awareness
Forterra	22049	Mental Health First Aid (MHFA) and promotion of positive mental health
Naylor Concrete Products Ltd	22081	Take safety home
Naylor Concrete Products Ltd	22086	Mental health and wellbeing support
Tarmac	22011	Outdoor meeting spaces
Tarmac	22020	Business wide wellbeing weeks



**WINNER
KILWAUGHTER
MINERALS LIMITED**

22122 **Safer through improvements in health and wellbeing**

Kilwaughter Minerals Limited



DESCRIPTION

Established in 1939, Kilwaughter is a family-owned business, created around a quarry located near Larne, Co. Antrim. The business has evolved to incorporate manufacturing operations over 100 acres and 4 distribution centres in GB and Ireland. The company currently employs 200 people with 150 located in Larne.

Kilwaughter places a strong emphasis on employee engagement, health, safety and wellbeing, people investment and local communities. They believe that healthy and engaged employees are crucial to their success.

In November 2020, Kilwaughter formed a partnership with the company 'Great Place to Work UK' to measure engagement and wellbeing through an organisational wide survey. Kilwaughter achieved 'Great Place to Work' certification with a score of 70%, with almost all of their employees responding to the survey. The results highlighted a high level of job satisfaction and pride in the company.

However, Kilwaughter had recognised the pandemic brought about many challenges to people's personal and working lives. The world of work is very different and requires leaders to look after their own health and wellbeing.

Therefore in 2021, building on the strong culture that already existed, Kilwaughter decided to implement an employee engagement and wellbeing plan with monthly themed events, involving all sites and field-based employees. The multi-faceted plan included many elements.



Management

Working with an external consultant on a 'Mental Toughness and Resilience Programme', a programme was created that focused on:

1. Wellbeing & stress resilience
2. Psychological resilience & mental toughness
3. Enhancing motivation and high performing teams

The entire management team completed this programme. It has enabled them to focus on their personal wellbeing, understand stress triggers and learn strategies to develop and build on their resilience. The objective is to ensure that managers can function well, optimise their performance, and thereby raising the performance of their teams.

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



Rewards and Wellbeing Programme

An on-line 'Rewards & Wellbeing Programme' was launched which is accessible to all employees. The rewards section provided full details of everyone's reward package, it allows employees to easily view the breakdown of their salary and benefits. Employees can go on the portal to change flexible benefits, opting in and out, depending on their financial and personal circumstances.

The wellbeing section allows employees to tailor lifestyle plans, follow workout videos and get advice on sleep, keeping active, mindfulness and many other wellbeing topics.

Through the portal, employees can access the annual Engagement and Wellbeing Calendar, Mental Health First Aiders, Mental Health Charity Partners and Private Medical Insurance details and support.

Engagement and Wellbeing Calendar

The monthly calendar focused on all pillars of health and wellbeing including financial, physical, mental, and social. The wellbeing support plan was communicated to all employees to ensure they understood the different types of support that was available.

Some of the initiatives included:

- 29 trained Mental Health First Aiders
- Financial pension sessions run by external pension experts
- Financial wellbeing sessions run by Kith & Kin Financial Wellbeing
- Internal communications to raise awareness and enhance education on wellbeing
- 'Kilwaughter Steps Challenge' – employees walked 3.7m steps in one week
- Creating a picnic area for employees to have lunch and socialise outdoors
- Regular lunches provided to promote social wellbeing



- Private medical insurance for all employees through AXA with investment of £65k
- Establishing annual occupational health clinics
- Offering flu vaccinations to all employees
- Winter packs containing essentials to keep employees safe whilst driving in winter.



Kilwaughter continued to monitor progress through 6 monthly surveys which included an opportunity for employees to give feedback. The surveys demonstrated employees recognised and valued the improvements Kilwaughter was making to health and wellbeing.

BENEFITS

- GPTW Engagement Score improved from 70% in November 2020 to 75% in February 2022
- GPTW Wellbeing Score improved from 66% to 70% in the same time period
- 85% said Kilwaughter is a physically safe place to work
- 64% said that Kilwaughter is a psychologically and safe place to work (+ 13% from Nov'20)
- 90% said Kilwaughter actively promote mental and physical health among its employees (+ 9% from Nov'20)
- Employees are able to access medical advice for physical and mental health 24hrs per day and 365 days per year and receive treatment without long waiting lists
- Transformational change in culture and behaviour relating to safety and wellbeing
- Employees have a positive experience and are proud to work at Kilwaughter
- Positive feedback from employees
- A safer and healthier working environment for all.

DEVELOPMENT AND TRANSFERABILITY

Kilwaughter see the programme as continuously evolving.

Its approach could be applied throughout the mineral products industry and other industries. Kilwaughter has shared its plans with other companies who have subsequently implemented similar programmes.



22067

Mental health & wellbeing

Imerys Minerals Ltd (IML) > Par Moor Centre

DESCRIPTION

Imerys Minerals Ltd (IML) recognised the value of maintaining the health and wellbeing of their employees and the ability to deliver improved individual and organisational performance.

Monitoring of employee medicals and referrals to occupational health showed that referrals relating to mental health were increasing with the impact of Covid-19 affecting this.

IML decided to launch a mental health and wellbeing campaign with the following objectives:

- Improve the health and wellbeing of the UK workforce
- Prevent illness and injury whether work-related or otherwise
- Respond early and proactively when health problems arise
 - By ensuring that necessary interventions are readily available
- Educate the workforce on various wellbeing topics
 - By helping them to make appropriate lifestyle choices
- Facilitate return to work as soon as possible after illness
 - By ensuring rehabilitation support and workplace adaptations are available
- Promote a wide range of wellbeing initiatives and other benefits
 - Which contribute towards employee morale, engagement and retention.



IML increased the awareness of mental health by various methods. They adopted an educational and preventative based approach which included providing support to

managers on how to manage these conditions in the workplace and promote and support a healthier lifestyle.

A Campaign Toolkit was launched which incorporated the following elements:

- A mental health leaflet for employees and a guide for managers
- Training Mental Health First Aiders (MHFAs) across the workforce (circa 50 to date)
- Promotion of their Employee Assistance Program (EAP) & Early Intervention Support Service
- Raising awareness of Musculoskeletal (MSK) conditions for desk and manual workers
- Promoting a Healthy Heart campaign across the business

- On a monthly basis promoting different health related topics
- Providing walk-in clinics in the workplace on 'Life-Style Screening / Chiropractor back checks
- Financial education sessions
- An employee forum launched promoting activities such as social events, quizzes, participation in sporting events and the importance of getting active.

This approach helped improve the engagement with employees at all levels. The multi-faceted approach also helped IML respond to a changing health landscape, in particular staying ahead on all mental health related employee support. The success of the campaign was based on clear communications with employees having access to multiple resources. Support was provided both in-person and digitally.

The MHFAs played a significant role, understanding the important factors affecting mental ill-health and identifying in individuals the signs and symptoms for a range of mental health conditions. They were able to listen without being judgmental and were supportive in conversations about any issues or concerns of the individual involved. They signposted employees to professional help when it was identified that an individual needed ongoing support. IML have learnt the importance of practical mental health skills and awareness training in creating a safe and healthy workplace.

BENEFITS

- Building employees' confidence to have open conversations around mental health
- Breaking the stigma associated with mental health within the company
- Faster recovery time as employees access support earlier
- Empowering employees with a mental health issue or disability to thrive in work
- Promoting a mental health aware environment
- Stopping preventable health issues and allowing people to succeed
- A more productive workforce
- A long-term positive culture across the whole organisation.

DEVELOPMENT AND TRANSFERABILITY

The training, engagement and growth of the MHFA community is ongoing. Skills learned by the MHFA community are transferable into their home and community lives and are not limited to the work environment. IML continues to train and increase the number of MHFAs. Senior managers have also been trained in mental health awareness.

The IML model is now being used as the reference for raising Mental Health and Wellbeing across the Group globally.

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



22094 Supporting healthy minds and employee wellbeing



Marshalls Plc > Group

DESCRIPTION

Marshalls Plc is committed to providing a safe and healthy working environment for all of their employees. The company actively engages and consults with employees to promote an effective, pro-active approach to everyone's health, safety and wellbeing.

It has created a wellbeing vision, 'to do the right things for the right reasons; supporting colleagues The Marshalls Way'.

Marshalls aims to provide and deliver a holistic approach to wellbeing, creating an employee experience that enables people to be at their best. It is an end-to-end approach which focuses on preventative measures and enablement, as much as the support and reactive management when something has gone wrong.

Marshalls mental health and wellbeing policy was launched in 2019. It recognised that mental wellbeing is a key factor in an individual's health, safety, social wellbeing and productivity. By promoting good mental health, the benefits are realised by individuals, their families and the broader society.

In 2021, Marshalls launched NOW (News, Offers, Wellbeing) a reward gateway for all colleagues. It has a dedicated area for Wellbeing, including designated pages for its Employee Assistance Program (EAP) and Mental Health First Aiders (MHFAs). It also has a Wellbeing Centre which provides education and support.

A strong network of over 48 trained MHFAs has been developed, located throughout the business. They planned to train a minimum of 16 more throughout 2022, enabling coverage at every site.

Marshalls have adapted their structures to ensure that all functions are collaborating and supporting these initiatives. A 'Supporting Healthy Minds' working group now has an Executive Sponsor, Steering Committee and Working Group. This will enable them to champion and prioritise employee wellbeing at all levels of the business.

Simon Bourne, Marshalls Chief Operating Officer is the Executive Sponsor for wellbeing. He recognises the links that exist between wellbeing, engagement, customer experience and health and safety, and that health and wellbeing must be front and centre of any business.

The MHFAs are supported through regular catch-ups with the MHFA network to ensure everyone has the support of their peers. They are also supported through the EAP with supervision sessions to facilitate an open space for them to discuss issues or concerns.

It also allows them to recognise their own limits as a MHFA, and to improve their resilience.

Marshalls works hard to ensure the MHFAs were accessible and supported themselves. Every MHFA was provided with a company mobile phone with access to Marshalls NOW and its dedicated Teams chat.

The MHFAs record the number of conversations and referrals they have on a monthly basis to monitor the effectiveness of the network, collate and evaluate the underlying causes that are of concern, the nature of referrals made to EAP or other external resources, and to provide information about the volume of conversations. The size of the network can then be adjusted to meet the demand.

Marshalls has also collaborated with a small mental health charity Andy's Man Club holding a webinar which was extremely well received and made available to all colleagues.

BENEFITS

- A healthier lifestyle mentally, physically and financially for employees
- A portal that keeps employees upto date with news from the business
- A portal that gives employees access to mental, physical and financial benefits
- Employees given access to appropriate resources or external support
- Breaking down the stigma associated with mental health issues
- Improving the effectiveness and health and safety of the organisation.

DEVELOPMENT AND TRANSFERABILITY

Marshalls believe that the programme is still in its infancy; it will continue to support and develop the programme and increase the knowledge and understanding about health and wellbeing throughout the business. This will include a goal of having one MHFA per site, per shift.

Manager training and awareness (MLZ) commenced in 2022 with the use of an online learning platform (MLZ).





21115

Automatic closed loop asphalt analyser

Aggregate Industries > Asphalt Division > Purfleet



DESCRIPTION

Testing asphalt for constituent compliance has long been a manual operation where technical operatives are potentially exposed to hazards presented by Dichloromethane solvents or high temperature ignition furnaces (+700C).

The current Occupational Safety and Health Administration (OSHA) Permissible Exposure Limit (PEL) for Dichloromethane is an 8 hour timeweighted average concentration of 500 parts per million (ppm), with a ceiling concentration of 1000 ppm, and a maximum peak concentration of 2000 ppm.

Aggregate Industries has invested heavily in methods of Local Exhaust Ventilation (LEV) to achieve PEL but found that these control measures created an uncomfortable working environment for the technicians.

However, despite the safety hazard control of fume cabinets and/or PPE in the form of eye wear and gloves, safety incidents still occurred due to the uncomfortable nature of the PPE and repetitive nature of the testing.

Viewing the task using Eliminate, Reduce, Isolate, Control, Personal Protective Equipment, Discipline (ERICPD) as the hierarchy for control, Aggregate Industries researched and implemented the latest European technology to eliminate and reduce the risks identified rather than simply rely on PPE equipment.

A German manufacturer was located who had designed and developed an asphalt analyser that had more safety features, was more accurate in determining the bitumen content, and used lower volumes of Dichloromethane than other analysers. The main safety point for this equipment was the system's closed loop solvent and recovery system, ensuring that the operator is not handling or being exposed to Dichloromethane.

The machine is fitted with electro-magnetic locks and ultrasonic sensors to protect the user from exposure and directly determines the bitumen content.

Following successful testing, Aggregate Industries purchased 6 machines. The machine manufacturer provided on-site training which ensured the safety of the testing operatives. New and simpler risk assessments have been developed as a result of this safety implementation and the workplace environment for the technical testing staff has been much improved.

Originally, on the new machine, the Dichloromethane was manually fed into the unit via a charging point. When the lid of the storage compartment was lifted, the area was exposed to fumes for a short period. Pumps and pipework were installed so this process was replaced by the operator being able to recharge the storage chamber with the press of a button.

A technician user group has been set up to share best practice and information when using the machine and from this, improvement to working practices continue. Aggregate Industries continue to provide user feedback to the manufacturer with suggestions for further safety improvements.

BENEFITS

- The elimination of Dichloromethane from the laboratory
- Reduction in operative exposure to Dichloromethane fumes
- Elimination of ignition furnaces and the hazards associated with high temperature materials handling (+700c)
- Less manual handling of samples and test equipment
- Technicians freed from many of the restrictions and discomforts of PPE previously required
- Improved test accuracy and confidence in the test results
- Facilitates the optimisation of product quality and cost
- Improved productivity (test reduced from 90 to 40 mins)
- Easier to recruit and retain technical staff with this equipment
- Technicians involvement improved safety culture
- A safer environment for the technicians.

DEVELOPMENT AND TRANSFERABILITY

Aggregate Industries is in the process of installing the system in all laboratories. Dialogue is open with the manufacturer working towards a Dichloromethane free test machine employing UV radiation to analyse the bitumen content.

Aggregate Industries has received a number of enquiries from within the asphalt industry and is sharing its progress with MPA members through the Technical Panel.



MPA Special Award



The MPA wanted to recognise Forterra for the progress it has made in improving its health and safety culture and for introducing changes to make the workplace safer for all. Much of what they've been doing reflects the Vision Zero core values.

Forterra submitted seven entries to the Topic awards, reflecting the improvements they've been making. One was a finalist, two were highly commended and the remaining four were awarded Certificates of Merit.

The judges were impressed with the work they've been doing to make the operation of pre-stressing concrete safer, an operation that can cause fatal or very serious injuries if things go wrong.

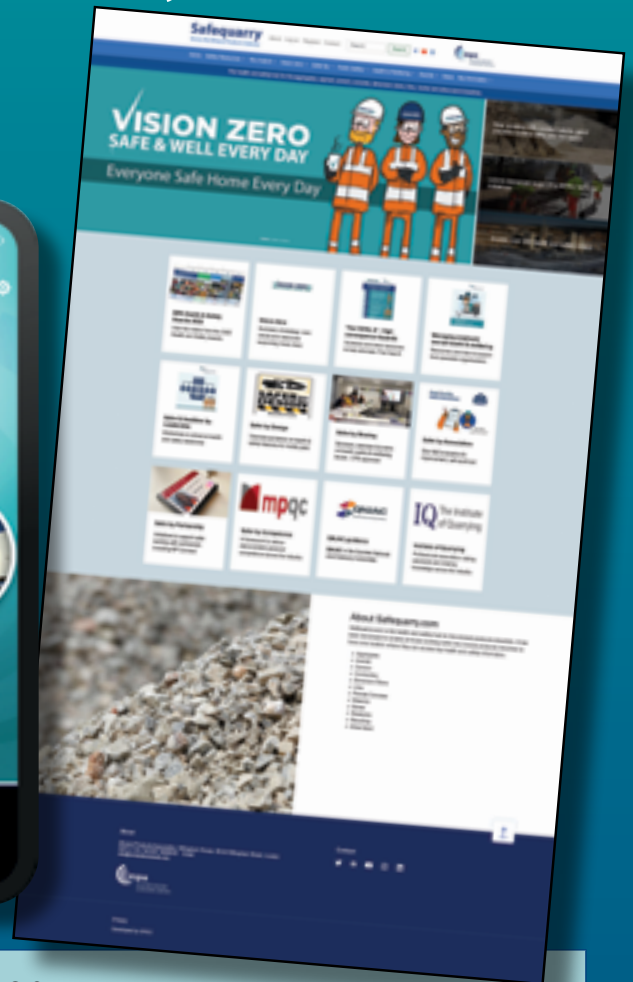


Safequarry.com & Safequarry App

Safequarry is the free health and safety hub for the mineral products industry.

All product sectors are covered

- Aggregates
- Asphalt
- Cement
- Contracting
- Dimension Stone
- Lime
- Masonry
- Mortar
- Precast Concrete
- Ready-mix
- Recycling
- Silica Sand



Extensive library of content and information on:

Good practice – circa 1200 entries from the MPA Awards	Covid Resources	Safer and healthier by leadership
Guidance from MPA, QNJAC and others	'The Fatal 6'	Safer by Association
Toolbox Talks	Vision Zero	Safer by Partnership
Incident Alerts	Quarries Partnership	Safer by Competence
Hot Topics	Public Safety	Safer by Design
Circa 400 videos	Mental Health	Safer by Sharing

Registered users receive alerts when new content is added.

Topic 8

Safer together



This award relates to initiatives where the main emphasis is on working together, leadership or behavioural change. This could be site-specific, divisional or company-wide initiative. It could include:

- Training programmes
- Safety days
- Communication programmes
- Cross site safety audits or similar initiatives.



WINNER		
Hanson	22059	Hanson UK – National Aggregates 5S Council
FINALISTS		
Brett Group	22100	Pride in Plant – Small steps
CEMEX	22085	Worker involvement and engagement – Health & safety stand down
The Walters Group	22028	Safer together through behavioural change
HIGHLY COMMENDED		
Forterra	22080	Golden Rules – roll out and implementation
Hanson	22102	SAFE-check
Marshalls Plc	22090	'See it, Sort it' & 'Go And See' (GAS walks)
Northstone Materials	22088	The importance of joint collaboration in establishing a positive safety culture.
SRC Ltd	22003	Mobile Apps for daily safety checks
SRC Ltd	22006	Group wide IOSH training
Tarmac	22008	The integration of an online induction platform for site local and shutdown inductions
Tarmac	22015	North Wales Security and liaison with emergency services
The Mineral Planning Group Ltd	22069	Lone working / site visit policy review
CERTIFICATE OF MERIT		
Acheson + Glover	22039	Have a 'SafeDay' at work and 'Go Home Safe' campaign
Aggregate Industries	22146	Digital noticeboards
Blue Phoenix Ltd	22038	National roadshows program to promote and continually develop a good health and safety culture
Breedon Group	22117	Health, safety & wellbeing management manual 2022
Hills Quarry Products	22118	Fatal 6 Awards 2022
Kilwaughter Minerals Limited	22119	Safer together through improvement in H&WB
Forterra	22048	National Health and Safety Day
Forterra	22044	Contractor control booklet
Marshalls Plc	22095	Safety improvements using continuous improvement tools
Naylor Concrete Products Ltd	22082	First aid lighting point
SRC Ltd	22057	LOTOTO Cards
SRC Ltd	22113	Plant QR Codes for certification checking
Tarmac	22021	Project Triangle Safety Initiative



**WINNER
HANSON UK**

22059

National Aggregates 5S Council

Hanson UK > Aggregates



DESCRIPTION

Over the past 4 years Hanson UK has ingrained 5S principles into the management of its operational sites, following the initial global launch of Heidelberg Cement's "Clean Site Safe Site" initiative in 2018.

In 2021, Hanson UK's National Aggregates team set up a 5S Council to focus on developing 5S initiatives and driving improvements at their aggregate sites as well as the wider business. In addition, the establishment of the 5S Council facilitates a standardised approach across the UK business.

5S – Methodology

5S is a methodology that results in a workplace that is clean, uncluttered, safe, and well organized to help reduce waste and optimise productivity. It's designed to help build a quality work environment, both physically and mentally. The 5S philosophy applies in any work area suited for visual control and lean production. The 5S condition of a work area is critical to employees and is the basis of customers' first impressions.

The 5S Council team is made up of members from across the company including; area operation managers and quarry managers from each region, SHE team members, purchasing and project management team members, LEAD apprentices, and regional directors. This team composition ensures a breadth of opinions and perspectives are heard and utilised in the decision-making process. The Council is open to volunteers from all aspects of the business and regularly rotates members, enabling

it to keep a fresh perspective and allow regular generation of new ideas.

The purpose and goal of the 5S Council has been communicated nationally throughout the business along with a list of the members.

The Council meets once a quarter to review progress of existing 5S projects and sets goals and actions for the following 3 months. It also assigns the team members and team leads allocated to each project, the team leads being selected from members of the Council.

Examples of 2 major projects that the Council has facilitated include the 'Making Time Initiative' and 'Walkway and Crossing Point Standardisation' specification to Highways standards:

Making Time Initiative:

This initiative is aimed at streamlining inspection regimes and elimination of duplication between Hanson's Information Management System (IMS) and the 5S Programme.

It began by completing time and motion studies on the management teams at all operational sites, which highlighted a significant amount of time spent on managing and carrying out IMS related activities. The council then reviewed key IMS inspection forms against the 5S programme showing many areas of duplication. The exercise also indicated an unnecessary level of detail in several daily inspections which were already covered quarterly as part of the 5S Audit schedule. The overall aim of the project was to drive a culture of prevention and improvement in place of inspection and conformance.

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



Walkway and Crossing Point Standardisation:

This project was set up to establish a minimum standard for operational sites to aim for to improve their 5S scores in this area. The project began by auditing the 8 sites with the highest 5S scores for walkways and crossings. This revealed a large disparity between the scores and the actual standard at the sites, in turn reinforcing the need for a standardised specification. The sites then put in place programmes to upgrade the walkways with progress being monitored using the 5S approach.

The 5S Council initiative reflects aspects of all the MPA Vision Zero Values.

BENEFITS

- Numerous 5S improvements made across operational sites
- The generation of a Standardised Specification for Pedestrian Walkways and Crossing Points
- Programme now in place to upgrade walkways and crossing points across all sites

- Consistent approach and implementation on all sites
- Streamlining of inspection regimes
- More consistent and effective inspections across all sites
- More effective communication of short and medium-term improvement plans
- Inspections are less of a check box process, now more of a dynamic process
- Management team's time freed up by improved systems
- Increased confidence and commitment to 5S approach
- A safer work environment for all.

DEVELOPMENT AND TRANSFERABILITY

The creation of the National Aggregates 5S Council reflects Hanson's commitment to Six Sigma practices, specifically the 5S programme and Lean Management principles. Although this is not necessarily an innovative approach within the manufacturing sector, it is innovative within the quarrying and building products industries, which will enable Hanson to achieve the same level of safety performance as most leading automotive manufacturers.

Hanson plans to further expand the 5S Council across all business lines based on its success with Aggregates. Plans are in place to form a National 5S Council which will incorporate Aggregates, Cement, Asphalt and Concrete supporting Hanson's 5S ambitions to further improve standardisation across the entirety of their operations.

The concept of the 5S Council is fully transferrable to any other industry or sector. It is also scalable and can be introduced at site level or nationally.



Safety features on walkways



21131

Safer together through behavioural change

The Walters Group

DESCRIPTION

Walters Group is a family-owned organisation that prides itself on working with the workforce to improve all business areas with a particular focus on health, safety, and wellbeing.

Key Safe Behaviours:

Walters has a programme based on Key Safe Behaviours (KSBs) which was originated within the Group Health and Safety team. From the outset, the team and senior management were determined that the workforce would play an integral part in the introduction and promotion of the KSBs.

A working group was established involving individuals from across the business. A decision was made to produce a video featuring employees from across the operations and the senior management team to promote the KSBs. Members of the workforce were invited to participate in the creation of this video.

Walters also reviewed key policies and processes to ensure that they dovetailed with the KSBs and implemented the following:

- The KSBs were incorporated into the recruitment process and are included in conditions of employment for the Walters Group
- Rolling out the KSBs, including the video, to every employee during site safety stand downs delivered by a senior director
- Toolbox talks relating to each KSB were rolled out during the year and refreshed through a continual improvement process
- KSB posters are displayed across all sites and offices and are part of a new site set-up guidance
- The KSBs form part of the company induction for new employees, visitors, and sub-contractors
- Health and safety performance was proactively monitored, this included a 360-degree review process to identify issues, hazards, problems and trends in behaviour.

The review process highlighted a number of incidents that were attributable to behavioural factors. This evidence was the catalyst to create a bespoke behavioural safety initiative to achieve the 'vision of a workplace that is free from injury'.

In 2022, the senior management team decided to enhance the KSBs with a bespoke Behavioural Safety Training (BST) initiative. In addition to their own investment in the development of this programme, Walters also secured funding from CITB. The resources developed included a training programme for both the Walters workforce and supply chain partners. The course focuses on how to change workplace culture, creating safety and how our behaviours can make a difference, rather than simply accident prevention.

Culture Club:

The BST is focused on changing the culture within Walters and moving away from blame. It involves the whole company, and is based on the **ABC – Activator, Behaviour, Consequence Model**. It is a collaborative, interactive and inclusive initiative that takes the learning and success of KSBs and builds on this to achieve a new level of awareness.

The bespoke nature of the training and supporting materials developed are tailored not only to the workforce of today, but the aspiring workforce of the future.

The key differences from the KSB process are a deliberate move from a system based on compliance with rules, to a system based on the empowerment of the workforce. It provides support and guidance to recognise 'what good looks like', and to help change the way we all think, act, and behave.

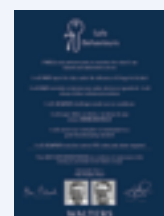
BENEFITS

- Increased near miss reporting across our sites and offices
- Increased take up of site safety champions and mental health champions
- Interaction in site meetings where KSBs are a standard agenda item
- Greater information sharing with our sub-contractors on lessons learnt and continual improvement
- A greater use of positive language around site safety
- Improved skills and competence of the workforce
- Enhanced wellbeing of workforce through pro-active involvement in the programme
- Improved efficiency of operations particularly with mobile plant
- A safer working environment for all.

DEVELOPMENT AND TRANSFERABILITY

Following initial funding support from CITB, (Construction Industry Training Board) to support the development of the BST, Walters are discussing further funding and support to achieve industry recognised accreditation/certification for its BST initiative and training programme.

If successful, in partnership with the training provider BPI, Walters hopes to expand the training programme and make it available for the industry.





22085 Worker involvement and engagement – Health & Safety Stand Down



CEMEX UK > Ready-mix > Yorkshire **1** **2** **5** **6**

DESCRIPTION

CEMEX UK Materials Ready-mix Yorkshire operates 17 ready-mix and mortar plants, delivering products via 58 Independent Haulage Contractors (IHCs), making over 70,000 deliveries to customer sites each year.

CEMEX's global strategy is to be a 'Zero 4 Life' operation requiring an interdependent health and safety culture on all their sites. The pandemic made it harder to monitor site behaviour, so it became even more important that each ready-mix site team became leaders in health and safety by 'Looking after themselves and each other', moving across the Bradley Curve to achieve interdependency.

CEMEX's Yorkshire management team discussed how it could make the plant managers health and safety leaders for their own sites. The objective was to improve the safety culture of the site and have a process that engaged with all the local team such as hauliers, contractors and in-bound delivery drivers. This was the genesis of 'Safety Stand Down'.

Safety Stand Down:

Once a month each site undertakes a Safety Stand Down delivered by the plant managers which comprises of:

- A review of recent safety alerts
- A discussion around a different topic each month
 - Literature is sent out to aid this discussion

Example of topics – Covid-19, slip, trip & falls, mental wellbeing, driving

- A discussion on-site specific issues and existing Near Miss Hazard Alerts (NMHAs)

The aim of the Stand Down is to engage all staff and hauliers (IHCs) in health and safety and, at the same time, increasing NMHAs. Since the easing of COVID restrictions, attendance has been extended to all business functions including commercial, technical, and management who are encouraged to attend.

The meetings are short but relevant, a key element is a plant walkaround. By stopping production to carry out the Stand Down,

possible distractions are removed, and the importance attached to the Stand Down is emphasised.

Resources supplied to support the Stand Down:

Each month a package is sent to the plants which includes

- Monthly topic in the form of short toolbox talks for the plant managers to deliver
- Material to aid the meeting such as a check sheet to carry out a plant walkaround, a hazard spotting game, or an initiative poster to display
- Recent safety alerts to discuss learning points.

A Safety Stand Down form is completed by the plant manager and sent to operation managers for review, and any new NMHAs are inputted on Intellex.

BENEFITS

- Engages all on-site personnel and helps create a good health and safety culture
- A large increase in quality NMHAs received
- A good understanding of Safety Alerts
- Good and open discussions on health and safety issues
- Site teams moving closer to interdependency
- Site morale – everyone wanting to 'Look after themselves and each other'
- Individuals more confident about 'stepping in' about unsafe conditions or behaviour,
 - Discussion perceived as constructive not as confrontational.

DEVELOPMENT AND TRANSFERABILITY

It is planned to roll this out across other businesses, the process will be regularly reviewed and improved to ensure that CEMEX continues to improve standards. CEMEX has a motto that health and safety has no memory, so we must start each day with the high standards and culture that health and safety deserve.



Stand Down discussion



Plant walkaround

22100 **Pride in Plant – Small Steps****Brett Group****DESCRIPTION**

Brett Aggregates operates 24 aggregate sites, ranging in size from larger operations with up to 30 operational permanent staff to smaller sites with 1 permanent member of staff. They vary from wharves processing marine aggregate, sites with rail sidings, landfills, extraction and processing sites, and sites servicing concrete plants. All require the associated support services such as transport, technical and administration services.

Sites are spread over a wide geographical area and it can be challenging to share consistent messages and best practice across all of them, particularly whilst operating during a pandemic.

Brett has established a Quarterly Training Group (QTG) to raise and promote SHE understanding, standards and behaviours across all Brett Aggregate sites and support teams. The QTG comprises site supervisors (from aggregates and asphalt), lead drivers from the transport team and technical representatives.

A typical agenda for the QTG would consist of a short business update, a guest speaker on something related to SHE followed by practical exercises around creation of toolbox talks (TBTs) and interrogating Brett procedures to ensure they are fit for purpose.

The QTG develop and create their own materials, these are presented and shared by the QTG members when back on their own sites, and a record is kept of this.

It was not easy to continue the QTG during the pandemic, but as Brett did not want to lose the momentum created a 'pandemic friendly' version was run throughout. Three different site locations were identified in the South, London and Eastern areas and half day sessions were run in parallel with a facilitator in each location linking up electronically with the others.

To supplement this the 'Pride in Plant' concept was introduced in late 2020 and has become an ongoing agenda item. The principle was simple, as employees could not work together, they focused on what could be done independently on-site to help achieve continual safety improvements.

Each site was challenged to make small health and safety driven improvements that they could affect themselves without the need for big budgets. It was recognised that collectively this would make a big difference.

The Pride in Plant Projects are based on consultation with the QTG members who are responsible for their implementation. The work completed is summarised in a PowerPoint which is then shared throughout Brett Aggregates:

- At the senior management team monthly health and safety meeting 'Pride in Plant' is an agenda item and the latest output from QTG is shared
- 'Pride in Plant' output is shared via the QTG members themselves back on their sites
- Area SHE meetings include output of the QTG Pride in Plant projects

- The Pride in Plant output is also shared with the rest of the Brett Group
- It is available on a public drive on the Brett Aggregates computer system.

Management ensures the production schedule is managed and at times supported by contractors to enable the members to attend the QTG. Management also ensures that the resources and time required to implement Pride in Plant projects is provided.

BENEFITS – EXAMPLES OF IMPROVEMENT

- Multiple physical 'low level' visual improvements
- Improved pedestrian segregation on several sites
- Cleaning and painting of marker barrels alongside haul roads
- Cleaning and refreshing goal posts
- Improved signage across all areas of sites
- Slip, trip and falls improvements
- Cleaner workshops and oil stores
- Improved external seating areas created for breaks
- Aesthetic improvements e.g. planting around site
- Alterations to inspection gantries reducing the risk of falls
- Protective covers installed on mobile plant
- Individuals more aware that they can make a difference
- Individuals more capable of spotting hazards and potential solutions
- Sites becoming safer, tidier, cleaner, and more efficient
- A significant reduction in both LTIFR and RIDDOR incidents
- Improved site morale and safety culture
- A safer environment for all.

**DEVELOPMENT AND TRANSFERABILITY**

A further development is to rotate the QTG around the sites. Brett believes there is no reason why this process could not be adopted by other companies, both within the minerals sector and other industries. To be successful, senior management support is critical and there are costs associated with the process, but the potential benefits can be huge.

Consistency is also key, this is not a 'one off' exercise, it is ongoing. Pride in Plant will be part of the Brett Aggregates DNA, tackling on-site safety hazards that are within its scope.

Pride in Plant has been shared with other Brett Group businesses.

Safer by Design

Safer by Design is the campaign to ensure that health and safety is built into the core design of the mobile and fixed plant used in the mineral products industry.

The health and safety features recommended in the Safer by Design module on Safequarry.com for mobile plant will eliminate or mitigate the high consequence hazards associated with 'The Fatal 6'.

The recommendations have been prepared by a cross industry working group of health and safety specialists. Please go to www.safequarry.com to:

- **Review** key safety features listed for all mobile plant commonly used within the industry
- **Specify** – the Safer by Design health and safety features when ordering new plant
- **Audit** – existing plant to check how well it meets Safer by Design recommendations

safer by design

[Safequarry] [About] [Register] [My Reports] [Contact Us] [Log in]

Safer by Design

This website has been developed to provide anyone responsible for the operation or maintenance of mobile plant with information on the essential health and safety features that should be incorporated on different types of plant. To find out more about Safer by Design please watch the video. [PLAY VIDEO](#)

The Safer by Design health and safety features will eliminate or mitigate the high consequence hazards associated with 'The Fatal 6'

The Fatal 6	Roller	Excavator	Wheel loader	Tractor	Truck
1. Unstable loading/unloading			✓	✓	✓
2. Unstable transport and unloading		✓	✓	✓	✓
3. Risk of being struck	✓			✓	✓
4. Unstable transport (loaders)					✓
5. Risk to being struck by plant					✓
6. Faulty controls	✓	✓	✓	✓	✓

Please select what you would like to do

REVIEW
SBD recommendations by plant type

SPECIFY
SBD specifications for new plant

AUDIT
SBD audit for existing plant

Sharing health and safety resources helps us all work towards Zero Harm

[Click here to visit the Safer by Design page](#)



Health and safety working groups

MPA H&S Committee	
Rob Doody (Chair)	Tarmac
Mike Belson	Aggregate Industries
Shaun Emson	Allen-Newport
John Colley	Breedon
Mick Stone	Brett Group
Jay Williams	Brett Group
David Hart	CEMEX UK
Andrew Taylor	CEMEX UK
Pat Sheehan	Colas
Craig Buttenshaw	CPI Euromix
Tyrone Partridge	Day Group
Dale Brown	Decomo
Andrew Cox	FM Conway
Paul Humphreys	Forterra
Gavin Caruana	Hills Group
Marian Garfield	Hanson
Jon Dransfield	Hanson
Asif Khalil	Ibstock
Stewart Vale	Imerys
Michelle Borrell	Marshalls
Kevin Lloyd	ROM
Andy Price	Sibelco
Axl Farr	Singleton Birch
Karla Malkinson	Singleton Birch
Andy Shuttlewood	Tarmac
Gordon Tuck	Tarmac Marine
Greg Lacey	Tarmac Building Products
Matt Bishop	Wainwright
Clint White	SigmaRoc
Darren Broadhead	Broadhead Global
Alan Doak	MPA Scotland
Phil Cox	MPA Precast/MPA Masonry
Gordon Best	MPANI
Viv Russell	MPQC
John Wilkinson	MPQC
James Thorne	QNJAC
Mike Tetley	HSE
MPA Health and Safety Communications WG	
Mike Belson	Aggregate Industries
Andy Taylor	CEMEX UK
Dale Brown	Decomo
Jon Dransfield	Hanson
Andy Price	Sibelco

Safer by Competence	
Andy Shuttlewood (Chair)	Tarmac
Mary Ann Macinnes Collins	CEMEX UK
Tyrone Partridge	Day Group
Stewart Vale	Imerys
James Hennessey	Ibstock
Asif Khalil	Ibstock
Laura Mountjoy	MPQC
Safer by Design	
Tyrone Partridge	Day Group
Paul Pounsford	Daybreak Communications
Andrew Cox	FM Conway
Kevin Stevens	FM Conway
Stephen Cooper	Breedon
Asif Khalil	Ibstock
Glyn Williams	Toppesfield
Safer by Partnership	
Andy Taylor (Chair)	CEMEX UK
Mike Belson	Aggregate Industries
Marian Garfield	Hanson
Russell Hunter	MPQC
John Wilkinson	MPQC
Andy Cox	MP Skills
Chris Leese	Mineral Products Association
Bitumen	
Gary Schofield	Total Energies
Jason Barker	CEMEX UK
Steve Taylor	CEMEX UK
Ian Lancaster	Eurobitume
Kevin Stevens	FM Conway
Contract Surfacing & Asphalt	
Mark Mercer (Chair)	Aggregate Industries
Ant Lindley	Breedon
Scott Jones	CEMEX UK
Darren Large	Colas
Brett Coupland	Eurovia
Martin Freeman	Eurovia
Ben Gilmour	GPL
Ian Tomlinson	Hanson
Jason Moore	Tarmac
Glyn Williams	Toppesfield
Darren Stokes	Tripod Crest
Matt Bishop	Wainwright

Lime	
Paul Geeney	Lhoist UK Ltd
Helen Wallace	Lhoist UK Ltd
Jayne Close	Minerals Technologies
Joseph Bowers	Tarmac Cement & Lime Ltd
Sandra Reid	Tata Steel Europe
Dominic Mooney	British Sugar
Karla Malkinson	Singleton Birch
Marine	
Alistair Adamson	Aggregate Industries
Aqeel Hyder	Aggregate Industries
Nigel Reeve	Britannia Aggregates
Shane Coveney	Britannia Aggregates
Matt Bland	CEMEX UK Marine
Kurt Cowdrey	CEMEX UK Marine
Gareth Sturges	Breedon
Simon Edwards	Breedon
Ben Manfield	CEMEX UK Marine
Mark Williams	CEMEX UK Marine
Gary Langton	Hanson Aggregates Marine
Patrick Mallon	Hanson Aggregates Marine
David Thomas	Hanson Aggregates Marine
Stuart Browne	Tarmac Marine
Gordon Tuck	Tarmac Marine
Mark Russell	Mineral Products Association
Precast and Masonry Health and Safety Steering Group	
Dale Brown (Chair)	Decomo
Simon Marriott	Aggregate Industries
Glenn Rowe	ASM
Rachel Stone	Brett Landscaping
Paul Kania	CEMEX UK
Henry Doherty	Creagh Concrete
Nicola Barron	Forterra
Paul Humphreys	Forterra
Jonathan O'Coy	FP McCann
Philip Ball	H+H Celcon
Natalie Tinsley	HSE
Asif Khalil	Ibstock
Daniel Wain	Ibstock
Chloe Day	Laing O'Rourke
Shannon Bogue	Mannok
Greg Lacey	Tarmac Building Products
Gav Fincham	Thorp Precast
'The Fatal 6' - Contact with Machinery and Isolation	
Jon Dransfield (Chair)	Hanson
Stephen Braund	Aggregate Industries
Justin Welford	Aggregate Industries
Stephen Cooper	Breedon
Derek Jelley	Breedon
Peter Luxmore	CEMEX UK
Michael Henderson	FM Conway
Kevin Stevens	FM Conway
Paul Aldersea	Hanson

Lois Hubbard	K2 Media Services
Pat Bowles	MPQC
William Allison	Tarmac
'The Fatal 6' - Workplace Transport and Pedestrian Interface	
Paul Pounsford	Daybreak Communications
Andrew Cox	FM Conway
Kevin Stevens	FM Conway
Nick Elliott	Hanson
Koreen Hubbard	K2 Media
'The Fatal 6' - Work at Height	
Mike Belson (Chair)	Aggregate Industries
Stephen Morris	3M
Jenny Swindells	3M
Peter Luxmore	CEMEX UK
Jonathan Wells	CEMEX UK
Kevin Stevens	FM Conway
Lois Hubbard	K2 Media
Billy Johnson	Tarmac
'The Fatal 6' - Respirable Crystalline Silica	
Andy Price (Chair)	Sibelco
Allison Calvert	AD Calvert
Rachel Stone	Brett Landscaping
Peter Luxmore	CEMEX UK
Brian Binnie	Denfind Stone
Melanie Brewster	IDC
'The Fatal 6' - Struck by Flying/Falling Objects	
Paul Lane	Aggregate Industries
David Routledge	Aggregate Industries
David Stead	Breedon Group
Dale Brown	Decomo
Jonathan O'Coy	FP McCann
Deane Spiers	MPQC
Matt Bishop	Wainwrights
Transport and 'The Fatal 6' - Road Traffic Accidents	
Dave Hart (Chair)	CEMEX UK
Matt Avery	Aggregate Industries
Mark Gaughan	Breedon Group
Daniel Bateman	CEMEX
Scott Pagano	Crick Trailer Sales
Dominic Day	Day Group
Paul Cerexhe	FM Conway
Paul Lacey	Hanson
John Warner	Hills Group
John Wilkinson	MPQC
Paul Bradley	Myers Group
Paul Needle	Smiths of Bletchington
Lee Downer	TJ Transport
Garry Lewis	Tarmac
John Anderson	Tarmac
George Kendall	Wincanton
Jane Walton	Wincanton
Robert McIlveen	Mineral Products Association

VISION ZERO

SAFE & WELL EVERY DAY



SAFER BY SHARING

Please review the content of this guide and implement or adapt the ideas presented to make your workplace healthier and safer.



Mineral Products Association

Gillingham House
38-44 Gillingham Street
London
SW1V 1HU

Tel 020 7963 8000
Fax 020 7963 8001
info@mineralproducts.org
www.mineralproducts.org
www.safequarry.com

The Mineral Products Association is the trade association for the aggregates, asphalt, cement, concrete, dimension stone, lime, mortar and silica sand industries.

Written by Daybreak Communications Ltd, Winchester
Designed by Theme Group
Managing editor: Tony Entwistle, MPA

Printed on paper and board which is totally chlorine-free and produced from pulp from sustainable forests.