

Help GB Work Well case study highlights science and innovation in health and safety.

During national science week, HSE want to share a case study about how Crossrail's commitment to its workforce uses a science and innovation approach to provide a safe and healthy working environment for drill operatives.

Crossrail recognised early on in their project that innovation and the use and development of new technology had the potential to manage the risks posed by such a project. Championing innovation from the top of the organisation was instrumental to the changes they wanted to make and funding was provided. Everyone was involved and encouraged to bring forward new and innovative ideas.

One challenge faced by Crossrail was the fitting of supporting bracketry for the electrical cable management systems, overhead power and firefighting systems within the railway tunnel environment. There was a requirement to drill some 250,000 holes. To meet this challenge, a bespoke automated drilling rig was developed, which provided multiple drilling points to create service connection holes.

Whilst the potential for increased productivity initiated this project, the core value of safety and the welfare of the workers was paramount. This resulted in the focus being on improving the working environment for operatives. The innovations made to the drilling rig reduced, and under certain conditions eliminated, the issue of hand arm vibration, reduced the need for manual handling, and provided a key health benefit – the control of Silica dust.

For most of its use on the Crossrail project, the rig has mostly been used along the rails of the tunnels. The changes made provided flexibility to allow the rig to be mounted on tyre mounted vehicles, allowing the holes to be drilled where the track hadn't been laid. This gave the programme some schedule benefit with more work fronts being made available.

The process for setting up the drilling operation included a scientific approach using a 3D scan of the tunnel, development of the programme of data for the machine to operate and input of that data to the machine. The rig was designed and constructed to be capable of drilling 16 holes at a time, working through 250 metres of tunnel a shift. Supporting data suggests that undertaking the same operation manually would complete some 30 metres a shift.

The business benefits of this approach included elimination of setting out resources within the tunnel environment, saving time and reducing safety and health risks at the work face. This was the first time this piece of

equipment has been used in an operational environment in the UK. Developing a solution to improve safety and health while also delivering programme / schedule benefits has proved invaluable and can be of benefit to others in the construction tunnelling environment going forward.

This equipment was a wonderful example of collaborative working across the Crossrail project environment, linking client, designers and contractor's delivery teams, who contributed valuable time and resources into making the rig a success.

There is no doubt that the process and schedule benefits will provide some element of commercial saving but the relevance in terms of improving health and safety in the workplace provided the inspiration for engineers on the project and we hope can inspire others in the future to demonstrate that innovative thinking can effectively align health, safety, cost and schedule benefits.

Further details on the development and use of the equipment will be available on the Crossrail Learning Legacy Website.

Make your commitment today visit [make a commitment](#) to join Crossrail in playing a part in #HelpGBWorkWell during British Science Week #BSW18

[Construction firm fined over safety and welfare failings](#)

A construction firm has been fined after failing to safeguard the public and workers from an unsafe excavation and lifting operation, and not providing adequate welfare facilities for workers on site.

Greater Manchester Magistrates' Court heard how, on 23 June 2016, Toft Construction Limited were undertaking the refurbishment of a domestic property in Salford. A Health and Safety Executive (HSE) inspector issued two prohibition notices (PNs) to the company when he found an unsupported, deep excavation in the front garden with insufficient controls to prevent members of the public accessing the hazard. The inspector also found that a steel beam was being lifted unsafely.

The investigation also found that there were no toilet and washing facilities for workers on the site. The company also failed to comply with an improvement notice that was issued after the inspector's visit, after failing to provide suitable and sufficient welfare facilities.

The HSE investigation found that Toft Construction Ltd did not properly plan the lifting operations or carry it out safely. The company failed to take suitable and sufficient measures to prevent falls into the excavation and to

fence it off to prevent risks to the public.

Toft Construction Limited, of Three Acres Lane, Cheadle Hume, Cheshire, pleaded guilty to breaching Sections 2(1), 3(1) and Section 33(1) (g) of the Health and Safety at Work etc. Act 1974. The company also pleaded guilty to breaching Regulations 15(11) and Regulation 2 of the Construction (Design and Management) Regulations 2015.

The company was fined £20,000 with £5,176.90 costs.

HSE inspector David Argument said after the hearing: "These risks could so easily have been avoided by simply carrying out correct control measures and safe working practices. Companies should be aware that HSE will not hesitate to take appropriate enforcement action against those that fall below the required standards".

Notes to Editors:

1. The Health and Safety Executive (HSE) is Britain's national regulator for workplace health and safety. We prevent work-related death, injury and ill health through regulatory actions that range from influencing behaviours across whole industry sectors through to targeted interventions on individual businesses. These activities are supported by globally recognised scientific expertise. www.hse.gov.uk
2. More about the legislation referred to in this case can be found at: www.legislation.gov.uk/
3. HSE news releases are available at <http://press.hse.gov.uk>

Journalists should approach HSE press office with any queries on regional press releases.

Company fined following unlicensed asbestos removal from primary school

A construction company has been fined after it carried out unsafe and unlicensed asbestos removal during the refurbishment works in a junior school in Dursley.

Cheltenham Magistrates Court heard how, in October 2016, R F Gardiner Limited removed asbestos in an unsafe manner and did not have the appropriate licence to carry out the work. Operatives working for the company were exposed to high levels of airborne asbestos fibres during the removal work as no water suppression was used and they had not been face-fit tested for the face mask they were wearing.

An enclosure under negative pressure was not set up to contain the asbestos

fibres released during the removal and as such asbestos fibres were spread to the surrounding area. Workers also had no way of decontaminating onsite on completion of the work.

An investigation by the Health and Safety Executive (HSE) found that poor planning of the work meant that unsafe and unlicensed asbestos removal work was undertaken.

R F Gardiner Limited of Cirencester Road, Gloucestershire, pleaded guilty to breaching Sections 8(1), 11(1) and 16 of the Control of Asbestos Regulations 2012 and was fined £28,000 and ordered to pay costs of £1,141.80.

Speaking after the hearing, HSE inspector James Lucas said "The company in this case should have ensured appropriate measures were identified during the planning process to include the engagement of a licensed asbestos contractor to carry out correct control measures and safe working practices for the removal of the asbestos.

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Company and director sentenced after carrying out unregistered gas work

A Chelmsford based company and director have been fined after conducting gas work at a domestic property in Mount Pleasant, Maldon without being gas safe registered.

Chelmsford Crown Court heard how N Murray and Sons Ltd had been contracted in May 2014 to install two boilers at two domestic properties in Essex. Following the boilers being fitted complaints were made to Gas Safe register.

Gas Safe Register inspectors subsequently confirmed that the gas appliances installed by an employee of N Murray and Sons were considered to be “at risk” and required immediate work to ensure the safety of the occupiers of the properties.

An investigation by the Health and Safety Executive (HSE) found that Nigel Murray, director of N Murray and Sons Ltd, had sub contracted gas installation work to his son who he knew was not Gas Safe Registered. It was also found that Nigel Murray was aware that Grant Murray was not competent or gas safe registered but allowed the work to be completed.

N Murray and Sons Ltd of Chelmsford pleaded guilty to breaching two charges of Regulation 3 (2) of the Gas Safety (Installation and Use) Regulations 1998.

The company has been fined £6000.

Nigel Murray pleaded guilty to breaching two charges of Section 37 of the Health and Safety at Work etc Act 1974 and has been sentenced to a six-month community order and a 7pm – 5am curfew for four months.

Grant Murray pleaded guilty to breaching two charges of Regulation 3 (1) of the Gas Safety (Installation and Use) Regulations 1998 and he has been sentenced to a 12-month community order and a 7pm – 5am curfew for six months.

Speaking after the hearing HSE inspector Edward Crick said: “Gas Safe Registered engineers are regulated and have to ensure they can prove they are competent. This safe guard is removed when people choose not to register which is highlighted in this case, where the individual placed people at risk of harm in their homes.

“It is important that anybody who has gas work carried out checks their engineer is carrying a valid gas safe registered identification card. They should also check online or call Gas Safe Register to confirm they are competent to carry out the work.”

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Farm fined after worker struck and injured by bull

A dairy farm has been fined after a farm worker was struck by a bull and suffered a serious leg injury.

Kidderminster Magistrates Court heard how, on 23 August 2016, the 28-year-old T N Beeston and Son employee entered the shed in which the cows were kept to clear it out when he was struck by a dairy bull at Moreton Hall Farm. The worker, who arrived to work at the farm a year beforehand, suffered a serious leg injury which required an operation.

An investigation by the Health and Safety Executive (HSE) found that the mature dairy bull was housed with cows in a cubicle shed which farm workers had to enter three times a day to clear out, while the bull was loose in the same enclosure.

The investigation found that a suitable bull pen, with means of restraint, was not provided on the farm to ensure workers did not have to enter an area occupied by the bull. Mature dairy bulls are large animals and can be unpredictable and aggressive. The farm's risk assessment identified a risk from the unrestrained bull but failed to identify adequate controls, even though there were clear signs that the bull was getting more difficult to handle.

T N Beeston and Son, of Moreton Hall Farm, Morton Say, Market Drayton pleaded guilty to breaching section 2(1) of the Health and Safety at Work etc. Act 1974. The company was fined £16,000 and ordered to pay costs of £3,079

HSE inspector Wendy Campbell said after the hearing, "Farmers have a responsibility to assess risks from their cattle and provide suitable housing and handling facilities to ensure that bulls are excluded from areas where they or their employees work. Farm workers should never enter an enclosure when a bull is loose."

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