

project safety journal

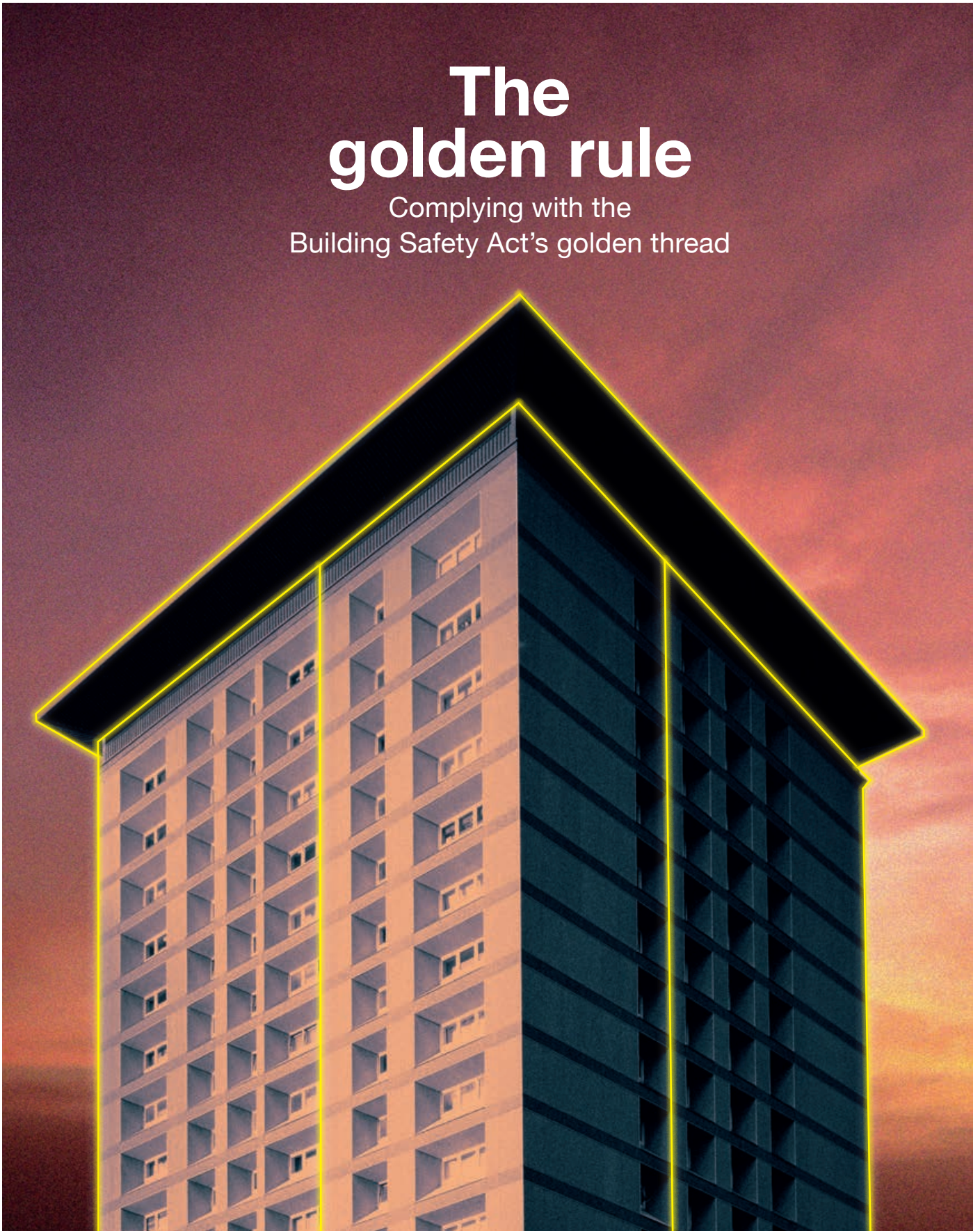
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health, safety and wellbeing in the built environment

Autumn 2022

The golden rule

Complying with the
Building Safety Act's golden thread



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Mips

Safety for helmets



How the law safeguards workers from asbestos-related ill health

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While we aim to use images that demonstrate best practice in this magazine, some are for illustrative purposes only.



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Atom Media Partners
Project Safety Journal is published for the Association of Project Safety by Atom Media Partners.
Atom Media Partners, 26 Bedford Square, London WC1B 3HP
Telephone: +44 (0)20 7490 5595
www.atompublishing.co.uk | eva@atompublishing.co.uk

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Printing
Printed by Precision Colour

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President's view

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“Members are the backbone of the association – we need to keep members on board, listen to what they want and try to address that”
Raymond Bone, APS





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Welcome

As we move into a new season, *PSJ* keeps you informed about a change of APS president, the rollout of the Building Safety Act and all our autumn webinar plans. By **Lesley McLeod**

Hello autumn! And welcome to this edition of *Project Safety Journal (PSJ)*, the membership magazine of the Association for Project Safety, where we will be looking forward to the new shape of the association and the events we have planned, as well as taking a deep dive into some of the key issues facing health and safety in construction.

The autumn season heralds new beginnings at APS. In October the association will start up its autumn webinar series. But on a more emotional note we will also be bidding a fond farewell to president Jonathan Moulam. His two-year tenure of the hot seat comes to an end and Ray Bone takes over.

Jonathan's presidency has witnessed a period of rapid change and challenge for the construction industry.

There was the pandemic and its effect on work practices – on site and in the office. We hear from Steve Coppin and the HSE's Gordon Crick



Lesley McLeod
Association for
Project Safety

“Now, five years on from Grenfell, the law is catching up with the changes needed

about how CDM is embracing change and moving into a digital future. And, as you will see from the events we have coming up, APS has also learned from lockdown – adopting the best of remote working to respond quickly to emerging issues.

The association has learned to love new technology and is now delivering an ever-increasing number of member webinars – all of which are on the website to access or watch again. APS is going to develop this further and you will see we have more and more planned. We are also looking to reintroduce some face-to-face meetings because we know you have missed getting out to meet your friends and colleagues.

One of those areas on which we will be focusing is the rollout of the Building Safety Act. The BSA – arguably the biggest industry shake-up in a generation – has finally completed the first part of its parliamentary passage. Now, five years on from the disaster at Grenfell, the law is catching

up with the changes needed to ensure buildings are safe in use and occupation as well as when they are being built. We draw on the insights of industry colleagues in our cover piece on the ‘golden thread’.

Ray will bring his own stamp to the presidency. And you will have ample opportunities to get to know him better. Suffice to say for now: he is one of the good guys, with wide sector experience and a deep-rooted interest, not just in the technicalities of health and safety, but underlying skills and attitudes. You will be seeing a focus on training and on the resilience needed to thrive in a changing world.

So, with great thanks to Jonathan, APS will be moving on into a new future. Ray will put the final touches to the governance review Jonathan began. This will make your APS fit to face the future – and to continue serving you all now and in the years to come. ●

Lesley McLeod is CEO of the Association for Project Safety.

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APS gives members a greater say

New rule book and streamlined regional network are part of governance changes that will make it easier to get involved

Changes to the governance of the APS, set by the organisation's leaders, aim to give members a greater say in the way the organisation is run and to make it more agile to adapt to challenges.

Chief executive Lesley McLeod said: "The current system is cumbersome and it is difficult to keep pace with the changes around us. Every little change needs to go to a general meeting of all members. Over time, things have also got out of step with how the association operates and the increasing number of services it provides.

"As a result, we have gone back to our roots and drawn up a simple set of rules for how the business is run and a separate rule book to set out how the membership part works."

She added: "This will mean it is easier to interrogate the running of the company while allowing the association to respond rapidly to changes – such as the demands

of the Building Safety Act. These changes are also necessary to allow the association to reapply for chartered status at some point in the future."

McLeod said that the aim is to give APS members more say in what the association does, set out clearly what is expected and to provide easier ways to contribute to its work. The proposals have been approved by the council and the board.

"The new structure will see every member of the association get a vote – and a voice. Key posts will be open to everyone and there will be elections – overseen by an independent, external body – to ensure members are in the driving seat of their association."

Governance changes also include: ● Rationalised oversight

The board will concentrate on skills needed to support the business. The chief executive will join the board and an independent chair will keep

business on track. This will allow the APS president to take on a greater ambassadorial role helping forge stronger bonds with legislators, regulators and key colleagues across the construction sector.



● Business and skills focus

The revised committee structure will concentrate on developing the business, ensuring it is well run, while having technical committees with experts in place to ensure the association delivers what members want and need.

● Streamlined regional network

This allows headquarters to support the association's work better. Currently APS has 16 regions largely run by volunteers. This means members experience very different levels of service and it is difficult to provide consistency and effective oversight.

In future there will be six regions, each returning two members to an advisory group with a dedicated seat on the board. Existing regions will continue as branches within one of the new regions. The new structure will also make it easier for new groups – perhaps in a single workplace or online – to be set up should members want that.

● Membership classes

APS is to rationalise its membership classes. This means removing from the rules some classes of membership which have not been used for many years.

"APS will make changes to our board and committees over the next few months. There will be elections in the autumn with new office bearers in post from the beginning of February," explained McLeod.

"This will also bring the APS election cycle into line with its business year. The association is also going to take membership payments at the start of the APS year rather than on the anniversary of when members join. This means it will be easier for APS to plan its finances but it will mean members pay a pro-rata subscription in 2023 until the changes work through by 2024."

McLeod added: "The aim of the association – now, as ever – is to provide the best service possible and to help all of our members discharge their professional duties well as part of a supportive community which values members' opinions." ●



“The new structure will see every member of the association get a vote – and a voice
Lesley McLeod, APS

Presidents hail APS governance shake-up

Bone and Moulam welcome positive step

Incoming APS president Raymond Bone – who takes over from current president Jonathan Moulam in October – said that the governance shake-up would be an enormously positive step for members, allowing more to have a say.

He urged “anybody who feels they can make a difference and improve the association to get involved”.

Bone, managing director of Abbey Construction Consultants and a lecturer at the University of Hull, said that liaising with members and keeping them fully updated with APS operations and activities would be a priority of his two-year presidency.

“Over the last two years, I’ve made a point of trying to connect and join with every region, attending local meetings and giving them updates as to who I am, what it is we’re doing and what’s happening in the background at board and council level.

“Members are the backbone of the association – we need to keep members on board, listen to what they want and try to address that. So that’s going to be my main focus, as well as liaising with other presidents, other associations and affiliate bodies, as well as other professional bodies and local government stakeholders to try and make things happen. I want to try and get the voice of the APS and those of its members out there. That will be my drive for the next two years.”

Bone also said that with changes coming as a result of the Building Safety Act he wanted to see the APS look to boost its training activities. This has already started with the setting-up of the new education and training committee, a proposal he originally put to the board about 18 months ago.

“The committee is looking at our current training providers and how we can improve training to existing and potential new members to improve their skills, knowledge and competency in line with new requirements from the Building Safety Regulator and in line with the BSI Flex 8670,” he said.

“There’s around 30 new pieces of regulations coming out to support the new Act, so we are conducting



“I want to get the voice of the APS and those of its members out there. That will be my drive for the next two years
Raymond Bone, APS

a gap analysis of needs and then advising members of the sort of competence and training they will need to comply with the new Act.”

Reflecting on his term in office, which began in October 2020, outgoing president Jonathan Moulam, director at Moulam Pragmatics, said: “I came into my presidency looking at governance. Now that is nearing completion, it will, hopefully, make the association a more nimble, more precise organisation and give members a greater voice into those that represent them.

“So I think that that’s been a really great focus.”

Moulam said that not being able to attend face-to-face meetings for almost a year and a half of his term had been a unique challenge, but he praised how the APS team had been proactive and innovative, setting up webinars to keep members informed against a backdrop of new legislation.

“I think the APS quickly adapted and made good use of communications over the last two years. I would say we’ve been probably the most proactive association in the country for liaising with not only our members, but inviting other people to join,” he said.



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Step up to your potential

Anyone making a career in health and safety needs help sometimes, says **Marisa Firkins**, director of Safety Forward and one of the founders of a new support group



Back at the start of 2022 a group of health and safety professionals formed a LinkedIn Group called The Safety 7. The group is a mixture of people from different backgrounds and careers who have collectively come together to try and help others.

The purpose of The Safety 7 is to share knowledge and support, through online meetings, those at any stage of their career in health and safety – from those looking to climb the career ladder to those who may have recently gained qualifications looking to land their first job. We recognise that getting your first break in a health and safety role can be difficult and we wanted to do something to change that.

Anyone working in the sector can hit roadblocks, no matter how experienced they are and our series of



Marisa Firkins
Director,
Safety Forward

webinars, discussions and tutorials are also intended to provide advice and inspiration to overcome such times.

My particular struggle was in 2014 when I took redundancy after 22 years with the National Crime Agency. Having started in intelligence work, I'd been working as a health and safety manager for the agency for the previous five years.

I had – I thought – a really good all-round skill set, but I was labelled as a specialist in 'law enforcement work' and brushed aside by lots of different agencies and employers. Yet I'd done risk assessments for the team that climbed satellite masts and other work at height. We had a team of electricians, others handling technical equipment like lasers, even construction projects – so health-and-safety work with readily transferable skills.

Hitting that brick wall worked in my favour, as it made me choose a path that I wouldn't have probably taken otherwise and prompted me to start my own consultancy. But it has made me subsequently reflect on my CV and that I'd probably made the mistake that a lot of ex-forces people make if you work within an institution – that is, expecting everyone in the outside world to understand the contents of your CV.

The Safety 7 want to help people in a similar position, so that they have the choice on the direction they want to take their career and make the most of the experience they can offer.

Some of the subjects we have covered include dealing with imposter syndrome, how to land your first role if you have a qualification but no experience and how to collate continued professional development (CPD) evidence for your chosen membership body. We have recently shared our favourite books on leadership and health and safety. Our LinkedIn Group is active with questions from followers across the world and has gained 550 members.

Like my colleagues, being part of the group is my way of giving back to the profession. I am lucky enough to have been inspired by so many great leaders during my career. It is now time to pay it forward and help others. ●

Marisa Firkins is director of Safety Forward.

The Safety 7

- **Neil Fisher**
Rail health safety and environment practitioner
- **Scott Crichton**
Principal health and safety consultant
- **Katy Jenner**
Senior safety health and environmental manager
- **Liz Hancock**
Head of health, safety environment and facilities
- **Robert Jukes**
HSEQ manager
- **Stuart Bailey**
Construction occupational safety and health advisor
- **Marisa Firkins**
Owner/director of Safety Forward

The Safety 7 are embarking on a fundraising challenge for Dementia UK. This has received great support and has so far raised more than £4,400. More details at www.justgiving.com/fundraising/safety7.

“We recognise that getting your first break in a health and safety role can be difficult and we wanted to do something to change that

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Five tips to avoid digging into disaster

Tony Abbott of ECA member firm Modus Utilities explains why contractors need to plan ahead when digging in busy towns and cities



Tony Abbott
SHEQ director,
Modus Utilities

Digging into urban streets is potentially dangerous work. And it seems that it's becoming riskier.

The Energy Networks Association (ENA) reports that electric cable strikes have increased 46% since the end of lockdown. On average, 70 people each year are seriously injured as a result of contact with underground electricity cables.

The problems are exacerbated when working somewhere like the City of London, where there are narrow streets and heavy traffic.

There is guidance on how to approach these projects safely.

HSG47 Avoiding Danger from Underground Services from the Health and Safety Executive (HSE) outlines three important stages of safe work during excavation:

- Planning the work;
- Locating and identifying buried services; and
- Safe excavation.

But not everyone is following this guidance. Figures show that around a third of construction workers fail to check for underground electricity cables when digging on site. ●

Information can be found in HSG47 from HSE: www.hse.gov.uk/pubns/books/hsg47.htm.

Going underground advice

△ Research your project carefully

Designing the preferred route includes making a request for statutory drawings for utilities. It's also crucial to take the time to walk the route because this will provide a clear view of any potential physical challenges in the area.

A visit to the site can help to identify risks in the work location that may not be marked on the drawings. This is far more common than many people realise, as the drawings rarely keep pace with the addition of road layout, new street furniture, pipes and cables.

side of a cable to avoid contact. But, if a cable lies very close the edge of the allocated work area, it could be tempting to lift the tarmac, 'just to see what's there'.

This is when accidents can happen. It's vital to take the time to stop work and assess how to proceed to undertake the work safely (by extending the work zone or extending the permit, even if that seems counterintuitive).

Planning ahead means that decisions are not left to a time-pressed site foreman who may make a bad decision with the best intentions.

△ Pre-plan and assess proposed routes

This can highlight danger areas. Potential problems can be controlled by instructing excavation teams on how to investigate (for example, by implementing no-dig zones). Clear instructions can reduce the risk of a bad decision being made, despite a team's best intentions.

The need to excavate in our city streets is growing. New buildings require the utilities that are vital for modern life. What's more, government is driving the development of low-carbon district heating systems in urban areas, which will add to the challenge as more pipes are laid.

△ Safety first

As contractors, we know the importance of prioritising safety for ourselves, our colleagues and our clients. With accidents on the rise on excavation projects, it's time to put that same focus on ensuring that contractors adopt robust safety standards out on our city streets.

△ Plan and check

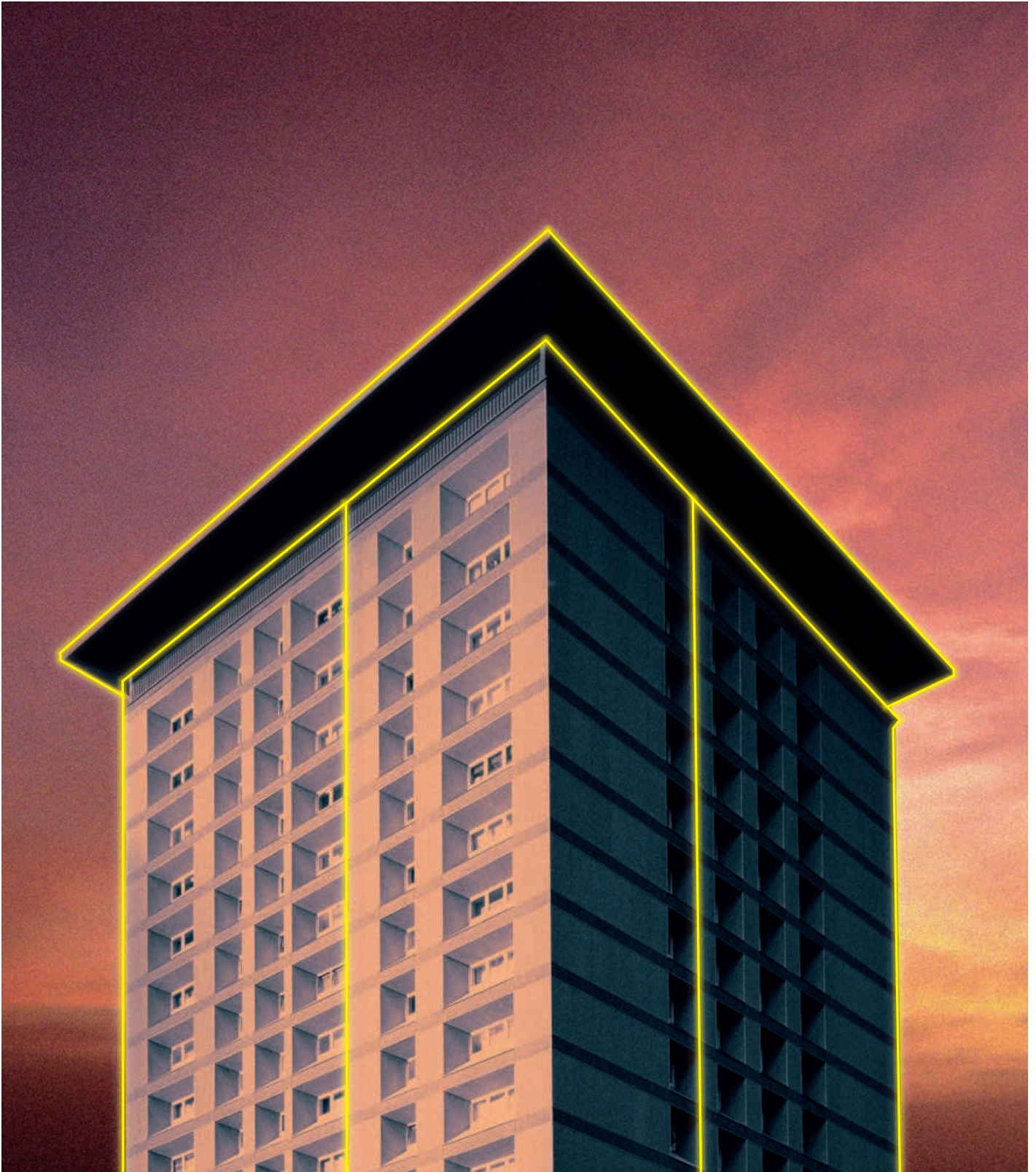
Although a CAT 4+ scanner can be used to track electrical cables, it does not provide accurate depths. If cables have been laid incorrectly this can be very dangerous to anyone working on the project. We have seen high voltage cables laid at 180mm when the depth should be 750mm. Planning and checking literally saves lives.

△ Give it enough time

We're all aware that projects are increasingly time pressed. Working anywhere in London is challenging because permissions to access roads may have to come from more than one local authority and involve Transport for London (TfL).

None of these bodies want to close city roads for very long. As a result, it's likely that the excavation contractor has limited time and space to get its work done and that's often when safety takes a back seat.

Ideally, a contractor should work 500mm either



Meeting the golden rule

The 'golden thread' of information born out of Dame Judith Hackitt's Grenfell report will soon be a reality. **Denise Chevin** asks four professionals what this means in practice

In July, the government published new details setting out expectations for complying with the 'golden thread' on projects involving higher-risk residential buildings as part of a raft of consultations to do with implementing the Building Safety Act.

Having a golden thread will mean that those people responsible will have easily accessible, reliable, up-to-date and accurate information, both during design and construction and once the building has been handed over.

Clients and their design and contracting teams have been working within their own organisations to improve data management in preparation for compliance. We talk to four different people representing different parts of the process over the next three pages.

The golden thread requirements will sit alongside those for tighter control procedures, so that if products or designs are changed during construction these are also documented.

Significantly, the golden thread consultation is proposing:

- only relevant information is kept in the golden thread – that is, information supporting compliance with all applicable building regulations; and
- some information will need to be permanently kept and handed over on building completion, while other information may only be needed for a limited period.

Digital information storage

Though the consultation confirms the need to keep information digitally, it deliberately does not specify systems or approach. It says: "We propose to require that the golden thread should be digital and that by digital we mean that information and data is stored electronically and can be transferred electronically. This is a purposefully broad definition."

The consultation says that the Building Safety Regulator intends to set out some best practice and examples of how someone could implement the golden thread in guidance.

Aman Sharma, managing director of Totus Digital, who is also deputy chair of the Building Regulations Advisory Committee (BRAC) and deputy chair of the BRAC Golden Thread Working Group, says that clients and their teams should not feel the immediate need to buy software claiming to comply with the golden thread.

He says: "My observations are that some parts of industry seem to be trying to capitalise commercially,

with the promise of compliance through enterprise software solutions, which is wrong.

"There will be a requirement to keep your golden thread information digitally, and invariably, software will play a part in it. But it's not the panacea."

"And I would implore those dutyholders to resist being enticed into procuring the solution here. It's often the case that the solution is already within the organisation – it just needs some thinking about."

He adds: "Dutyholders should ask themselves today: how are we already managing information relevant to building safety, what's important to us and our residents, what's golden to us as an organisation and our stakeholders? How can we make this information readily accessible and available in order to demonstrate compliance to the Building Safety Regulator? – who will expect far more than a simple declaration."

In terms of digital requirement, the consultation goes on to say: "We propose that the golden thread should operate as a single point of truth so needs to be able to easily shared and therefore interoperable."

"Further, given the length of life of these buildings, it is likely that in the future the golden thread information will need to be transferred to systems that have not been developed.

"For these reasons, we do not want to require particular software and technical solutions which would rapidly become outdated.

"Our approach aligns with the broad requirements of the International Standard ISO 19650 series and the guidance produced by the UK BIM Framework. These standards and guidance define digital information management principles in the built environment and are already used within certain parts of the sector."

When the information is transferred from the construction team to the accountable person, the transfer plan should set out how they plan to ensure:

- data/information in the golden thread retains its structured format (that is, the information should retain fidelity with its original format – it shouldn't be changed or lose anything by being transferred); and
- data and/or information remains accessible and any files containing data/information can be opened and are still accessible and useable following transfer.

The client will need to keep the transfer plan updated: "We will work with the Building Safety Regulator to support them in developing guidance. From early discussions, the intention is that it sets out the different types of exchange solution in guidance and not in regulations."

“It's often the case that the solution is already within the organisation – it just needs some thinking about
Aman Sharma,
Totus Digital

'The golden thread in occupation needs to be far simpler than the golden thread in construction'

Mark Snelling, managing director, Armfield Project Management



I've had a major involvement in the evolving Building Safety Act and how it will be implemented through my role at The Property Institute, where I'm the health safety and fire advisor. I also play a similar role in the APS as chair of the Legislation and Strategy Committee.

The Act has a robust change control process on projects involving HRBs (higher-risk buildings) to ensure what you build is what is designed, which will be scrutinised at 'gateways'.

DLHUC (Department for Levelling Up, Housing and Communities) is proposing that all the information the applicant has to submit as part of the building control approval application on these projects, including important changes, should be stored in the golden thread.

This information is needed by the client, principal designer, principal contractor and relevant dutyholders to ensure they are complying with building regulations and to demonstrate this compliance to the Building Safety Regulator. The requirements to evidence compliance and maintain that evidence will also apply to all building work to which the building regulations apply. ►

“It was very difficult to get them to follow this rigid process. But once they'd bought into it, they thought it was easy
Mark Snelling,
Armfield Project Management

I implemented an assurance process for a care home company a year and a half ago. I knew what was coming. But it was very difficult to get them to follow this rigid process. But once they'd done it, once they'd bought into it, they thought it was easy and fantastic to know that the fire stopping on a manufacturer's drawing is what you get on the actual building.

The golden thread in occupation needs to be far simpler than the golden thread in construction. Not all of that information will be needed by the people occupying the building because much of it is a record of the construction process. That is now the approach the DLUHC would appear to be proposing.

But there is a grey box, sitting below the golden thread in occupation, which contains everything else that occupiers don't need. We're hoping that a good landlord will keep hold of it, and indeed many of them will. But there's no legal compulsion to do so.

But designers and contractors will need access to the information in the golden thread as long as they are liable for the building – 30 or more years.

“Designers and contractors will need access to the information in the golden thread as long as they are liable for the building – 30 or more years

**Mark Snelling,
Armfield Project Management**

‘Having to develop digital repositories of information is galvanising housing associations’

Chris Lees, founder of consultancy Data Clan and member of the BRAC Golden Thread Working Group



“What I’d be saying to principal designers and contractors is be proactive with your clients
**Chris Lees,
Data Clan**

We do not have secondary legislation yet, which will come later this year and add more detail, nor do we have the guidance. But what I’d be saying to principal designers and contractors is be proactive in engaging with the clients.

When BIM was mandated, there was a lot of information handed over to clients which they couldn’t use. So, I would encourage designers and contractors to get joined up with the clients. I would advocate the use of industry standards (the consultation gives information management ISO 19650 for example).

In the longer term, I can see that the asset manager and the client are going to be the one that will

essentially own and operate their common data environment across all of their projects.

The demands of the Building Safety Act for a golden thread of information, and housing providers’ own desire to ensure safety of residents in the aftermath of Grenfell, is driving the desire to use data better. I’m working with a number of housing associations and the need to develop digital repositories of information about their housing stock is having a galvanising effect on them.

It has encouraged the more forward-thinking to explore how sharing data across asset management, housing management and development can benefit their residents while also streamlining their operations.

People have started to say, instead of thinking about housing management and assets, let’s really think about the customer – and that spans both, because one of the things that any housing provider will tell you is, if you’re looking at customer satisfaction, the number one problem that customers will report is repairs.

And so, when you start taking a customer view, that starts to bring together the asset world and the housing management.



‘Consultancies like ours could potentially take on a bigger role’

Mike Stowell, director Acaster Safety Management



of documentation. Consultancies like ours which take on the principal designer role for CDM could potentially be looking at taking on a bigger role acting as the principal designer for the building regulations.

There’s a big crossover between health and safety and building control, because you can’t do one without having some knowledge and understanding of the other. So it is conceivable that the principal designer CDM and the principal designer building control could be the same organisation or individual, providing the appropriate competencies are available.

I know that there are mixed views on whether individuals and organisations think they have the relevant competencies to actually

complete those tasks. There will be an element of retraining required for those that want to spread from CDM into compliance with building regulations – and they will need to demonstrate that competence.

We’ve been advising clients that there is going to be a change and it will take some time to implement it, but there are steps they can start taking now. Some clients struggle with that a bit, because they don’t want to spend money now before they need to.

One of the challenges will be how the information produced to comply with the golden thread is stored. It would be great if there was a way of depositing that information so it can be accessed at a later point by any relevant person.

“There’s a big crossover between health and safety and building control

Mike Stowell,
Acaster Safety
Management

The new approach takes me back quite a few years in terms of providing full compliance and providing evidence for building regulations.

I worked in Ireland for about four years as a project architect and I was responsible for compliance with building regulations (apart from Part B for fire, which was the fire service) which involved producing a building log which ticked off every single regulation and how the building complied with it.

What is being proposed in the Building Safety Act will be more involved, in terms of providing evidence for compliance with the building regs. And I think that will be a huge challenge providing that level

‘We’re exploring a range of options to help staff navigate relevant data’

Margaret Sackey, capital projects health and safety manager, University College London



management employer’s information requirements and arrangements.

It’s not just about having a model, it’s about the structure and collation of information. And that’s the change of culture we’re seeking to introduce. We amended our employer’s requirements earlier this year to reflect that.

We have a lot of digital information we have gathered for many years and that needs to be available in more structured format and for people to be able to find information quickly.

The Fire Safety Team has done a great deal in this area to an agreed fire safety standard and we’re seeking to almost piggyback on to that to ensure that we comply with the Building Safety Act when it comes into force.

We are gearing up for the golden thread – including additional appointments for ensuring compliance with competence requirements, which will be inculcated into our UCL project and operational procedures.

There is a clear overlap between CDM under the Health and Safety at Work Act and building safety legislation under the new Building Safety Act.

We use many different information systems at UCL and so we’re exploring different options including setting up a front portal that will help staff navigate relevant data. We have a Building a Safer Future Working Group at UCL which will recommend the most suitable solution.

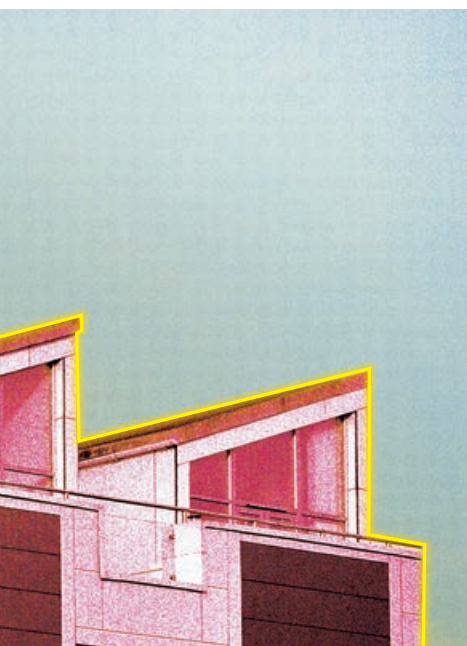
“We’re exploring different options including setting up a front portal that will help staff navigate relevant data

Margaret Sackey,
UCL

In my role I help support capital projects health and safety management arrangements and also support all estates projects more widely. The capital projects team has on-going projects from large capital to minor works including developments on the new UCL East Campus on the Olympic Park in Stratford.

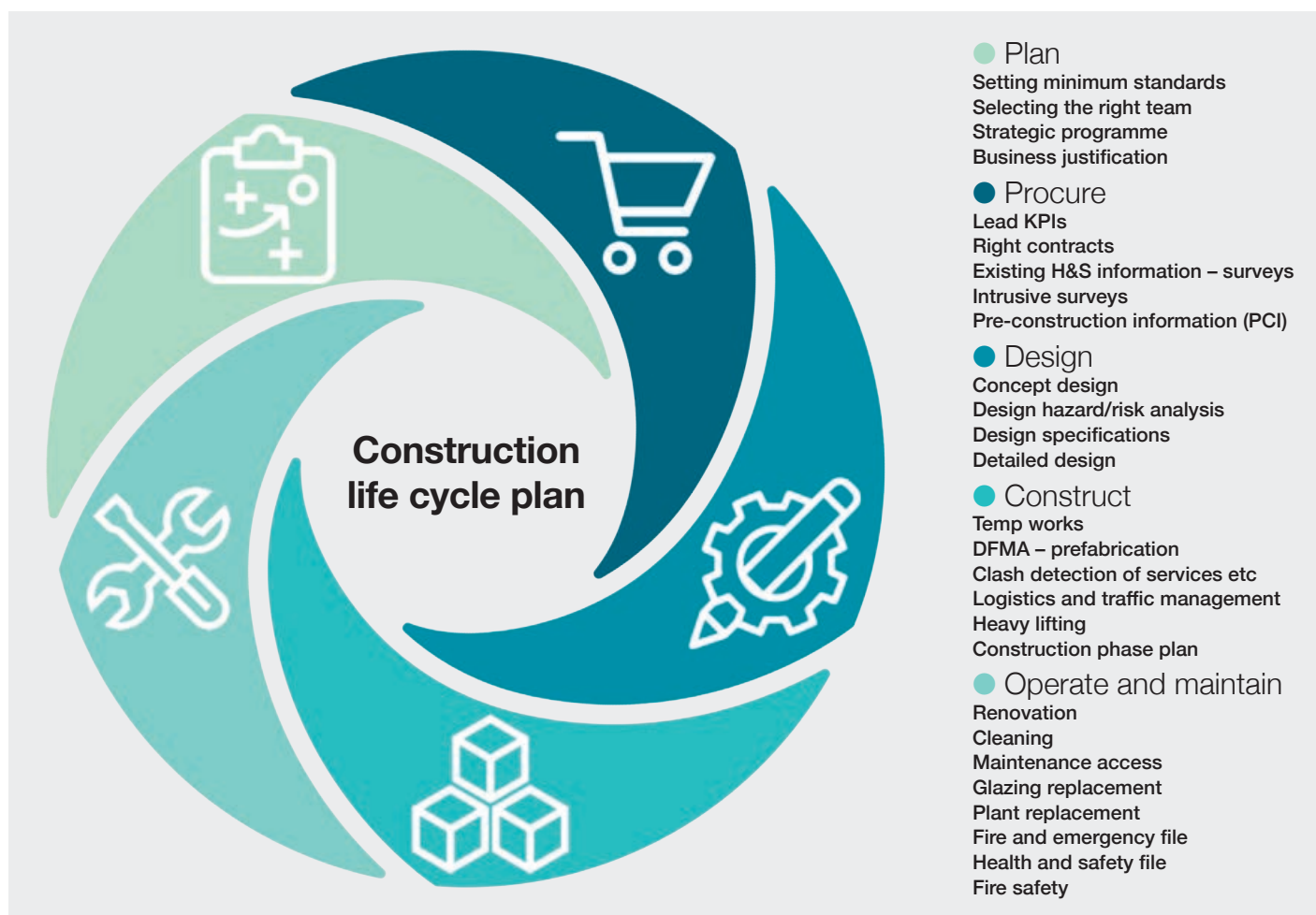
I make sure that UCL employer’s requirements with regards to projects health and safety are upheld – not just in terms of the information, but the performance and culture.

Building information including the health and safety file is provided as a single PDF at handover with hyperlinks into the operating and maintenance manual. But we want to move towards a more collaborative and intuitive format. And there are plans for improving our building information



Delivering CDM in a digital environment

The BIM4 H&S Working Group has developed new guidance for those procuring projects which should enable the project and design teams to identify significant issues and risks early. One of its authors, strategic technical adviser **Steve Coppin**, explains more



New guidance from the BIM4 Health and Safety Working Group will help clients discharge their duties under the CDM Regulations more easily by harnessing the standard building information management protocols. The working group is chaired by Gordon Crick, an inspector at the Health & Safety Executive (HSE).

Its title is *CDM Digitally – Guidance to Help all Clients: Improving information management in construction projects* and its purpose is to educate and inform clients on



Steve Coppin
Strategic technical
adviser, SJC Risk
Management
Solutions

how relevant data information can be captured and shared with the right people at the right times during the life cycle of their projects.

The guidance sets out why and how clients should adopt information management (IM) and information requirements (IMRs) in the contract via employer's information requirements (EIRs) as part of the procurement process and set this out in the brief at the earliest stage of the project.

Setting out information requirements enables the project and design teams to identify

significant issues and risks early and enables building elements to be captured and tracked during the life cycle of any project. This helps assist in complying with the legal requirements of CDM.

Better information management methodologies provide effective ways of meeting these requirements – for example, clash detection can identify significant health and safety issues and risks in early design, opening up new possibilities for monitoring and measuring risk management, including better learning opportunities.

Four key benefits include:

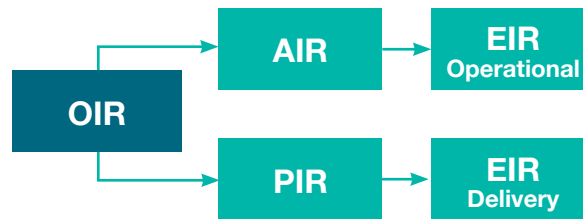
- from 3D to 4D and, better still, geometric models of structures in the early design phases provide visual pictures and animations which enhance the foreseeability of significant risks. (Duties on designers in CDM Regs 9 & 11);
- 4D and, better still, geometric animations and simulations, which show construction over time, enable designs to be tested, rehearsed and checked, where stages of work take place successively and simultaneously (CDM Reg 11);
- development of an effective common data environment (CDE) enables co-ordination for the purpose of planning, managing monitoring and coordination of critical health and safety information on a project (CDM Regs 11 and 13); and
- handover of an effective health and safety file is enabled by good information management (CDM Reg 4).

Bridging PAS 1192-6 and ISO 19650

The PAS document PAS 1192-6 sets out the protocol for adopting a common data environment which allows information to be shared between the team and then handed over to the client in a standard format when the project is completed.

This helps clients improve information management for any construction project for their existing and future assets. The principles can be adopted for a paper-based system or improving the industry through better use of digital technology.

The protocol set out in PAS 1192-6 is then added to, with 10 plain language questions that will help clients identify and prioritise key health and safety issues and risks. That is, focusing on good risk management, from project inception to design and construction and on to operational use of the asset.



The questions have an associated maturity matrix to help clients fully understand them and prompt solutions and actions they might consider and or be required to perform.

The context for this guidance is that the new ISO 19650 standard is now embedded as the new BIM standard. It replaces the PAS documents, but, for health and safety, the PAS 1192-6: 2018 standard is the only part of the 1192 series which remains. Work is in hand to convert this to ISO 19650 Part 6, but this will not be completed before 2024.

The good news is that ISO 19650 proves to be a very useful vehicle for taking forward health and safety information management and can be used to fulfil the spirit and purpose of 1192 Part 6. Underlying this is a common spirit and purpose with the CDM 2015 regulations – to provide the right information to the right people at the right times of the project life cycle.

The ISO 19650 approach requires some new terminology. The client becomes the ‘appointing party’, while a principal designer or principal contractor, who must be appointed directly by the client, will be a ‘lead appointed party’.

New terminology

Perhaps most fundamentally, the EIR is now redefined as ‘exchange information requirements’. Although the acronym remains the same, the purpose is different, in that EIRs in ISO 19650 terms are detailed information requirements derived from higher level project information requirements (PIRs) and asset information requirements (AIRs).

At the head of the information requirements chain are organisational requirements, which set out at the highest level the information the client needs to run their business. In health and safety terms the organisational information requirements (OIRs) will probably equate to statements you might find in a board-level health and safety policy document.

The clients’ guidance stresses the need for a line of sight from

“Setting out information requirements enables the project and design teams to identify significant issues and risks early

the high-level requirement down to the detailed point of delivery of information in a project. In this way a client is assured that the digital products specified will actually be delivered and that the client and other dutyholders, under the CDM15, are properly fulfilling their legal duties, rather than transferring them blindly to another party.

The guidance shows how PIRs should reflect the legal duties of a client and that PIRs can be drafted to emphasise the fact that it should be the client (as head of procurement and funding the project) calling the shots. Ideally a triangle of expertise – representing the client, principal designer and information manager – should develop a suite of appropriate information requirements for a project, right at the outset.

Both the PIRs for the project delivery and the AIRs for any asset replacement should be in the client’s procurement strategy and specified in the contract by the appointing party (the appointing body is the client through the EIRs).

Annex B of the UK BIM Framework’s *ISO 19650 Guidance Part D: Developing Information Requirements* sets out five examples of how information requirements for health and safety may be developed. These give some detail on how an EIR should be developed. The topics are:

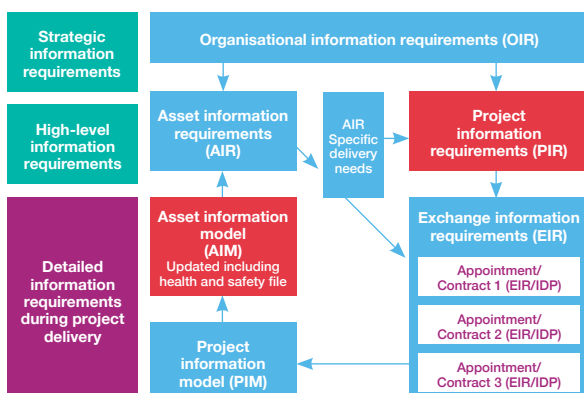
- asbestos;
- being an exemplar organisation in managing elevated risk;
- recording details of safety critical suppliers;
- producing an effective health and safety file; and
- managing risks of high-level glazing.

What are the next steps?

We hope this will help clients and their project teams utilise digital resources to land and embed health and safety considerations within their projects for their assets and to start piloting the approach that has been set out and capture the learning. ●

A copy of the current draft guidance is available via Stephencoppin@sjcriskms.com.

Top: The guidance stresses the need for a line of sight from the OIRs to point of delivery
Below: Flowchart showing the relationships between the information



Asbestos – a duty to take care

As Mesothelioma Awareness Day approaches on 26 September, **Amanda Stubbs** provides an update on the legal framework to safeguard workers from the risks of asbestos-related ill health



The Control of Asbestos Regulations 2012 (CAR 2012) have been on the statute book for over 10 years. Even back in 2012 the legislation was not conceptually new – equivalent regulations dating from 2006, 2002, 1987 and earlier still had been in force.

A total ban on the use of asbestos in construction has been in place since 1 January 2000, yet the number of people exposed to asbestos has been rising year on year. According to the HSE, asbestos kills around 20 tradespeople a week and over 5,000 people a year die from diseases such as mesothelioma, lung cancer and asbestosis.

While there is typically a long lead-in time between a potentially fatal exposure and proof of asbestos-related injury or illness – so today's



Amanda Stubbs
Partner,
Trowers & Hamlin

Top: Employers are required to provide staff with appropriate PPE, with respirators where appropriate

statistics were predetermined many years ago – it is still disappointing that we cannot do more to prevent so many unnecessary deaths.

How?

The CAR 2012 imposes a duty on employers and property owners who have responsibility for repair or maintenance works within non-domestic premises to manage the risk posed by asbestos through carrying out suitable and sufficient surveys. The regulations are then reinforced through a number of Approved Codes of Practice (ACoPs) and other guidance, in particular *HSG-264 Asbestos: The Survey Guide*, focuses on minimising risks associated with asbestos surveying work.

Unless it is specifically stated, it is not required to comply with all

the various guidance documents available, but the HSE will generally consider that enough has been done to comply with the law if this is done.

ACoPs are different, as they have a special status in law whereby, should someone be prosecuted for a breach of health and safety law and it is shown that they did not comply with the requirements of the ACoP, they will be found at fault by a court if they cannot show they complied with the law in some other way. This effectively reverses the burden of proof for the benefit of the prosecution.

A duty to whom?

As an employer in control of a workspace where some form of building or maintenance work could disturb asbestos, there is a duty to take reasonable steps to keep

“The HSE has prosecuted a number of companies that have carried out refurbishment works out of hours but left shoppers the next day exposed to fibres following inadequate containment

safe those who could be affected by these activities. The duty to take care extends to employees – a group widely defined to include sub-contractors and individual tradespeople as well as those on the payroll – and occupiers of the building in which the works are taking place and visitors to that building.

The HSE has prosecuted a number of construction companies that have carried out demolition or refurbishment works out of hours in retail units, but who have left shoppers the next day exposed to fibres following inadequate containment or cleaning procedures. Other cases concern scenarios where the material being stripped out has not been identified as asbestos at the outset, so the workforce has been unnecessarily exposed.

Nonetheless, many of those exposed to asbestos each year are not in a workplace. They are DIY enthusiasts operating in the apparent safety of their own homes, blissfully ignorant of the hidden dangers. The law is not able to protect them.

Tools of the trade?

Employers who commission works within their properties, and contractors who take on those contracts, each have a duty to ensure that any asbestos-containing materials (ACMs) present have been considered, their position identified and, where present, the type, the amount and condition noted.

This could take the form of a desktop risk assessment study commissioned by the building owner, or an onsite survey carried out by the contractor prior to the commencement of the works. Whoever undertakes the risk assessment must be competent to do so, with sufficient knowledge and expertise to make informed decisions about the risks and the measures to put in place to manage them.

Management surveys will usually identify suspected ACMs, but may not

entail intrusive sampling and testing, so such surveys must presume that materials contain asbestos unless there is strong evidence that they do not.

RAMS

Having identified the potential presence of such materials, contractors – whose workforce or subcontractors are likely to be working in close proximity – must prevent anyone being exposed to fibres released from the materials identified as a result of the works.

This should be achieved through preparation of a risk assessment method statement (RAMS) that sets out in step-by-step detail how the risks from these materials will be managed. This could include adequate ventilation, controlled wetting and use of enclosures as well as stipulating the decontamination procedures for equipment and personal protective equipment (PPE), much of which will be single use, to avoid spreading contamination off site.

Training

Where asbestos is a known risk, it is necessary to ensure that those liable to work on or disturb ACMs have had sufficient training to enable them to identify and manage the risk of any asbestos encountered. Even if its presence is unanticipated, employees who have received appropriate training will be more likely to spot the hazard and take appropriate action.

Employers are required to provide staff with appropriate PPE, including respirators if necessary, and sufficient training to enable decisions to be made about whether to remove asbestos and, if so, whether a licensed removal specialist will be required.

Licences

Certain types of ACMs can only be removed by someone who holds an HSE licence. Work on asbestos coating, asbestos insulation and asbestos insulation board, particularly where the

removal work is not sporadic or of low intensity, will typically be licensable.

The intensity is determined by the type of material and whether removal is likely to take more than two hours in any seven-day period and whether any one person would need to work for more than one hour in that two-hour period. While the HSE offers guidance on licensable work, decisions should be based on the perceived level of risk.

Liability

There are no safe levels of exposure to asbestos and in the UK the extent of understanding and risk management is dependent on employers and contractors checking that those on their sites have had adequate training to enable everyone to work safely.

It is almost impossible to contract out of health and safety responsibilities entirely, so even where a dutyholder has delegated responsibilities to a highly qualified specialist, having carefully considered the agent's competence and experience, the Management of Health & Safety at Work Regulations 1999 make it clear that this does not completely remove the accountability of the dutyholder.

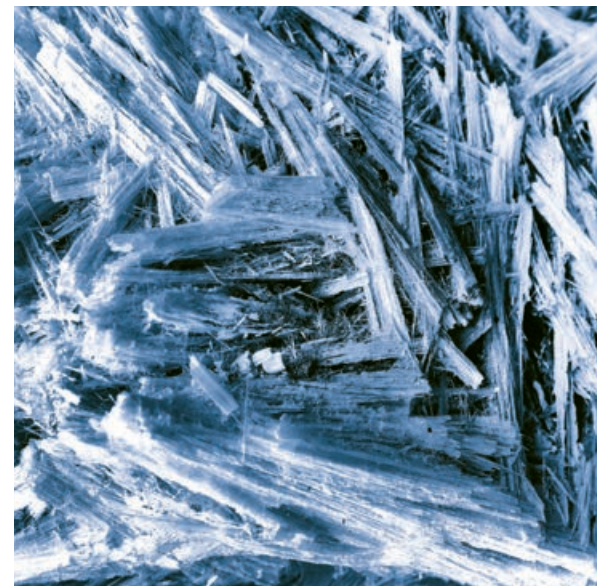
Furthermore, research has identified that only 30% of tradespeople – such as electricians, plumbers and joiners – are aware of the correct measures for safe working with asbestos. The pool of competent individuals is limited and a more concerted effort is required to prevent exposures and unnecessary deaths continuing into the second half of the century. ●

Amanda Stubbs is a partner at Trowers & Hamlin and specialises in health, safety and environmental law.

30

Only 30% of tradespeople such as electricians, plumbers and joiners are aware of the correct measures for safe working with asbestos

Over 5,000 people a year die from diseases related to asbestos





‘It really tests my knowledge daily’

Hayley Tollervey set up a health, safety, fire and environmental consultancy in 2021. She tells **Denise Chevin** how she loves the challenge of being a consultant with clients in a variety of sectors

“We remind our clients that the Health and Safety at Work Act says you must ensure the health safety and welfare of your employees and anyone else that might be affected and that includes mental health
Hayley Tollervey,
Chameleon Safety Services

What is your current role?

I'm director of Chameleon Safety Services, a consultancy I set up in February 2021, offering a nationwide health, safety, fire and environmental consultancy service.

It really wasn't the easiest of times to start. Britain was nearly a year into the Covid pandemic by then, but I also had the problem that my driving licence had been revoked for medical reasons, so I had to use public transport to get round the country.

I visited quite a few out-of-the-way places with my backpack and it was quite tough. But I was getting work, and in November that year I had enough of an order book to take on an administrator, in February another consultant and we've continued on that basis ever since. I'd like to expand in time but still stay quite small, say to five to 10 employees. That way we can be flexible and retain the company ethos.

What kind of work are you mainly doing?

We tackle everything, so it could be construction and non-construction site inspections, fire risk assessment, reviewing policies and procedures or putting risk assessments together.

We also deliver FAA-accredited training on a variety of subjects. And we can also offer bespoke. If a client came to us and specifically wanted something that related directly to their operations and their procedures, we could write something to help them to be compliant. We also have a library of 135 e-learning courses that we can offer customers as well.

What type of clients do you have?

It's a real mixture. We work with an energy technology business, a precast concrete specialist, a wood mill operator, a property management company, some supermarket chains

CV: Hayley Tollervey

● 2007-15: contracts secretary/
PA, Bridgford Interiors
(specialist fit-out contractor)

● 2015-16: H&S co-ordinator,
Bridgford Interiors

● 2016-17: HS&E advisor, Spie
(technical engineering services)

● 2017-18: QUENSH co-ordinator,
IWS (water treatment services)

● 2018-21: H&S consultant,
Safety Forward

● 2021-present: director,
Chameleon Safety Services

● Interests: languages; keeping fit;
weightlifting; dogs and dog welfare

● Personal ambition: to sail my own
boat around the Greek islands with
my husband during retirement

as well as a number of small retailers. I love the challenge of being a consultant working in any sector. I deal with a whole range of questions, some of them quite weird and wonderful queries, so it really tests my knowledge on a daily basis.

There's so much going on in health and safety at the moment. How do you keep up with everything while at the same time delivering all of this activity?

That is the million dollar question! I suppose the answer is that I never stop learning – every day is a school day! I'm a member of IOSH and APS, fire safety managers and IEMA (the Institute of Environmental Management and Assessment). To be a member you have to keep up to date with the CPD webinars and read the latest articles. We also keep up to date with any legislative changes via various means.

I understand you're very interested in mental health issues and, as a result, have been developing an initiative that helps schoolchildren.

Yes, that's right. Mental health is a massive interest of mine and I train people in first aid for mental health. I offer the level one course free of charge, just to raise awareness in the local community.

The idea is to teach people how you can spot someone who could be struggling with depression, anxiety, stress, suicidal thoughts, eating disorders, PTSD and so on. One of the problems is that we can all feel awkward about asking people if they're okay.

So we contacted a local school and asked if they would be interested in having the level one awareness course for free for both members of staff and higher level students so that they can help their peers, especially girls around 13-plus, which is when

“There needs to be much more alignment between what companies say they do and what they actually do. They've got to start walking the walk and not just talk the talk Hayley Tollervey, Chameleon Safety Services

body image dysmorphia and eating disorders are really prevalent.

In August we're delivering our first course at a secondary school academy in Tamworth, which is where we're based.

Are you working with mental health issues in the construction industry too?

It's something we're developing as part of our company audit work – it's one of the big issues we keep coming across which is not getting the attention it deserves.

We remind our clients that the Health and Safety at Work Act says employers must ensure the health safety and welfare of employees and anyone else that might be affected. That includes mental health too. As part of our audit, we stress test our clients and ask them what they have in place in terms of being able to support anyone that needs first aid – and not just first aid in a physical capacity.

One of the problems is that companies want to be seen as good employers, with safe and enjoyable working spaces. But when we go out and look at what they've got in place, it doesn't always mirror what they're saying on their corporate website. And often, when you peel away the layers, they're actually influencing the workplace in a negative way towards mental health by imposing work stresses and timescales and things like that.

There definitely needs to be much more alignment between what companies say they do and what they actually do. They've got to start walking the walk and not just talking the talk.

What are the biggest challenges for you at the moment?

I think the state of the economy has a huge influence on business culture and how much businesses are willing to invest. Many companies

still see health and safety as just an overhead so, when budgets tighten, it's one of the first things to go. That says to me that the safety and wellbeing culture is nowhere near where it needs to be.

What's the biggest thing on which these types of companies are cutting back?

The competent person requirements. It's a legal requirement for every business to have somebody who has competence in health and safety. But, during Covid especially, or when there have been other economic downturns, the health and safety person quite often gets made redundant.

And these companies don't realise they're leaving themselves wide open to prosecution if they don't have a competent person in place. Because it leads to multiple failures. Fire checks don't get done. Policies and risk assessments don't get reviewed. Everything starts to fall by the wayside.

How did you get into the health and safety business?

In a roundabout way. After being a PA secretary for 18 years, I felt that had run its course. I knew I liked organisation and things to conform to how they should be and I was thinking of maybe becoming a food hygiene inspector.

But then, before I gave in my secretary job, a woman in the health and safety department left and they offered me the job. I clicked with it straight away and have never looked back. It gives me the sense of contributing, being able to help to make workplaces a safer place.

The most important thing to me personally is being able to work and do a good job. Working in health and safety gives me that feeling every day. ●

Innovating with CDM

Martin Holland explains how the HS2 project gave an opportunity to improve collaboration and planning of works using a web-based geographic information system and database

A web-based geographic information system (GIS) is helping High Speed Two (HS2) manage its construction works and all the associated enabling and utility works. The HS2 project requires many organisations to coordinate their work activity teams at hundreds of locations, giving the perfect opportunity to improve collaboration and planning of works with the GIS linked to a work activity database.

A bold step was taken by the enabling works contractor responsible for the northern section of the phase one route to 'ban and bin' the spreadsheets used by many to plan and coordinate works. Instead they took the opportunity to move to a 'real time' single data source



Martin Holland
Laing O'Rourke
Murphy
joint venture, HS2

The scale of the HS2 project meant innovation could be put to the test

for work activity planning, aided by clear visuals showing in calendars, and GIS mapping for current and future works.

The initial benefit of using a user-friendly set of pre-configured map view options in GIS to connect the HS2 land database information directly to the same database platform for works planning was halving the time taken by the planning and coordination meetings. Activity clashes that remained unresolved by set dates also reduced by over 75%. Unresolved activity clashes were assigned clear action leaders.

Furthermore, any work team in any location had access on their phones or handheld devices to see the same, real-time information and contact

details for work teams, as well as the land status details to confirm authority to access land was in place.

Using web-based systems enabled all the interfacing organisations directly to input and view works, plan to avoid clashes and join coordination meetings via Microsoft Teams.

As Covid-19 lockdown restrictions came in, all CDM meetings were held online, without any disruption to the effectiveness of the meetings due to proven systems and protocols.

Background and industry context

With the extensive scope and scale involved in the construction of HS2, the challenge of efficiently coordinating the hundreds of work activities, thousands of surveys and



many major construction and utility diversions was the ideal opportunity to go beyond what was previously done and to make the best use of technology to provide robust and effective planning, management, monitoring and assurance for the work sites.

The enabling works contract (EWC) on the northern section of HS2 phase one (also known as Area North) is delivered by the Laing O'Rourke Murphy joint venture (LMJV).

LMJV was the first HS2 enabling works contractor on site. This covered over 80km of route, on over 2,500 land parcels with many hundreds of work locations where works interfaced with multiple clients including HS2, utilities, highways and Network Rail.

HS2 instructed LMJV to take the role of CDM principal coordinator for Area North. LMJV was also to develop further the LM Spatial GIS system and CDM coordination meetings to enable all the dutyholders in Area North to use and provide transferable knowledge for HS2 works to maintain and develop the use of GIS for effective and efficient coordination and collaboration as required by the Construction (Design and Management) Regulations 2015 (CDM).

CDM 2015 requires 'dutyholders', as defined by the regulations, to cooperate and communicate with each other and to coordinate their work.

HS2 was the client and principal designer for the project works. It appointed principal contractors for CDM-notifiable work and other organisations and contractors to undertake non-CDM work and to assist HS2 and other dutyholders to coordinate works. HS2 established a land acquisition and boundaries process and supporting database and geographical information system (GIS), as used on other major linear projects.

The land database information and a GIS viewer system used on HS2 are in formats familiar to many who have worked on major projects based in offices. However, the opportunity



Map showing the 80km of HS2 covered by Area North

to format the database inputs and functionality of GIS viewers for frontline and site-based operation teams and CDM work activity coordination was identified as an area to build upon, and for knowledge-sharing across industry.

Approach

As the enabling works commenced on the ground in 2017, and the number of live sites and survey activity locations increased, so did the finalising of locations of utility diversions and other permanent work locations.

It became apparent that the established industry norm of huge planning meetings, with the use of 'smart boards' for sketch-ups of potential clashes raised by all the participants and the meeting outputs of rows of spreadsheets updated with thousands of columns and rows, was very soon going to be overwhelmed by the sheer volume of data and speed needed to identify, review, accept or avoid clashes of work activities.

Although smart boards were a step forward in capturing images of sketches, they were not interactive and required many cross-references to land data and work activities listed on multiple spreadsheets. Many of these did not line up in time and boundary locations, leading to further ambiguity as to who was in control of any location, or who could be

“For Area North alone, the HS2 works covered over 80km of work sites on over 2,500 land acquisition parcels

contacted if a work activity was to overlap with another.

If a new and more efficient way was not found, the aim of keeping as many work teams separated in time and/or place, in order to remove and reduce work hazards and enable efficient working, would be lost.

To give a sense of scale, for Area North alone, the HS2 works covered over 80km of work sites on over 2,500 land acquisition parcels (LAPs) where:

- each LAP where works or a survey was to take place needed to be approved;
- not all works fell under the construction regulations/CDM;
- many works by multiple clients were in close proximity – HS2, utilities, highways;
- there were multiple principal contractors; and
- there was emerging scope and constant change as designs developed.

As various layers of information relating to work areas became available, and were entered in the GIS viewer, it became apparent just how many stakeholders and communities would be interacting with each other.

Late in 2018 the project director laid down the challenge of banning within six months the use of spreadsheets for any work activity planning and coordination. This was the catalyst to develop the land database and GIS – a time-enabled GIS viewer system was up and running to view work activities logged into a single database and in use at the Area North CDM clash resolution meetings.

Lessons learned and successes

Systems alone do not ensure success. Engagement and appreciation of all who design, develop and use the systems must be noted and communicated regularly, with support to new users to enable them to gain access and benefit from the functionality of the system.

To do this a number of levels and steps were identified in order to develop systems and meeting protocols rapidly. ►

1. Define a few champions to keep the pulse and pace

This is just the starting team, which can call on the subject matter experts for systems, IT, legal, delivery and commercial. This team drafted the outline strategic, tactical and operational goals.

● **Learning point:** This team does not have all the answers but it has a level of authority to call in resources. Attendance at very short weekly update meetings must be mandatory. Make and deliver on commitments, be brief, bright and get on with it. Some may join the development team of subject matter experts, but are accountable for the weekly update, progress and deliverables.

2. Form, explain and explore meeting

When the subject matter experts are identified, draw a launch meeting with them and the champions and explain the reasons why this development is so important. Not just a 'nice to have' but a legal duty under CDM to plan/ manage/monitor/coordinate. In short: who, what, when, where? Today, tomorrow and way ahead.

● **Learning point:** Not everyone will agree with a scope of what needs to be included. Some managers will be solely focused on 'the contract' and will not see their statutory duties under CDM. The next step of 'explore' is where additional training or information can be presented to give collective insights.

This meeting needs time and facilitators to enable discovery to benefit the collective team. Look at what is working well, what is missing and what is needed to achieve or support the goals for coordination.

3. Discovery meeting

This came the week after the 'form, explain and explore' meeting, when the subject matter experts presented what was currently best practice and more detailed steps needed to go beyond what was previously thought possible.

● **Learning point:** At this point the leadership and commercial teams need courage to call in additional resources to plant the seed for growth and return.

An example was that the director made a commitment to ask for another GIS expert. It was not fully known exactly what that specialist could do but it was recognised that this extra capacity, and potential innovator, was needed for speed of development and resilience. This was agreed very quickly and was a huge step forward.

● **Learning point:** Note the way different people have different data preferences and needs. Some like lists, tables and reports. Others interact with more visual methods. Develop the systems to support as wide a group of functional needs as possible and explain why some requests cannot be accommodated. This might be due to base system configuration limits.

HS2 works
on site in
Birmingham



“Outputs of the meetings in GIS map snapshots enabled local teams to focus on areas where follow-up action was needed

Some early report outputs crashed the databases due to the huge volume of land data that could be selected over a large time scale. Users became frustrated until the parameters were refined and locked down to what was really needed. Then the systems became fast again.

4. Launch the new way of CDM coordination

Supported by the leadership and their line managers, two colleagues committed a set proportion of their time away from other duties to deliver the initial introduction sessions. They also delivered training on procedures, issued guidance notes and held 'open surgery' Q&A and further training sessions after CDM clash resolution meetings held every two weeks. They also acted as a point of contact in between meetings.

To avoid issues being carried over to the next meeting, outputs of the meetings in GIS map snapshots, with short notes and defined action leaders, enabled local teams to focus on areas where follow-up action was required.

● **Learning point:** Having visible points of contact ensured that new or existing users with questions or ideas could raise them directly and have consistent support or feedback as needed.

One of the early commitments was always to hold the meeting at the same time and always have deputies to chair the meetings and deliver the support service. This continuity enabled rapid uptake of the systems and made savings in other meetings or with people not sure who to contact with a query.

Some organisations have limitations on downloading apps or programmes, but these web-based systems did not present blockers and enabled participants to interact directly.

5. Keep refining the inputs and outputs based on delivery requirements

Make the system data input as simple as possible and more reliable than a spreadsheet. This makes life easier for the many doing the work before designing reports for the few who assure the works. ►

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● **Learning point:** The aim of the data-entry database must be simple, accessible, reliable and recoverable for those inputting data. Make sure this new way of capturing the records is easier and gives access to more benefits than the previous methods.

For CDM activity coordination, the ability to enter planned works against a trusted database of land records – which is then displayed in a calendar with potential activity clashes immediately visible – enabled inputters to select other dates immediately to avoid work clashes. This made work planning and clash avoidance possible at the earliest opportunity, without having to attend meetings.

Only where a clash could not be avoided did it have to be raised at existing management meetings and, if still unresolved within the two-week window between the CDM coordination meetings, it then was visible on the GIS map as a 'red clash' to be allocated action leaders at a higher level.

The development and introduction of this 'clash calendar' has been one of the most significant functions allowing

Above: Phase one destinations served by HS2

over 500 work activities and surveys to be scheduled each week. It has reduced clashes brought to the higher level by 75% every two weeks. It has more than halved the administration and time taken to log works.

Recommendations

Where there is a need for extensive collaboration or coordination for CDM or non-CDM activities, the use of master database or data hub is the foundation stone. This is the platform where clash avoidance, standard activity reports and contact lists can be built. This makes it valuable for the data inputters and they would not now want to go anywhere else to enter or check works or contacts. From the database/data hub, the GIS mapping links can be made in clear and simple formats for sharing on handheld devices.

When starting to develop an approach like this, remember it is a bit like the space race to the moon. A commitment was made. No one knew at that point all the steps needed but, with engaged and passionate people working together and recognising the value that each and every one can bring to the process, it is possible to achieve beyond what was previously thought possible. ●

Martin Holland was CDM coordination lead, Laing O'Rourke Murphy joint venture, HS2. He is now HS&E leader, Laing O'Rourke. This article is part of HS2 Learning Legacy and is reproduced by kind permission of HS2 Ltd.



75%

The development of the 'clash calendar' has reduced clashes brought to the higher level by 75% every two weeks

CPD Questions

- 1) What is described as the 'foundation stone' for collaboration and coordination?
 - a) The master database/data hub
 - b) Handheld devices
 - c) Weekly update meetings
- 2) Who does CDM 2015 require to cooperate, communicate and coordinate their work?
 - a) Landowners
 - b) Champions
 - c) Dutyholders
- 3) What happened if a clash was left unresolved between meetings?
 - a) Another meeting was held
 - b) It was marked as a 'red clash' visible on the GIS map
 - c) It became a 'green clash'
- 4) What was banned in 2018?
 - a) Use of spreadsheets
 - b) Use of the GIS
 - c) Meetings held every two weeks
- 5) Which organisation was the CDM principal co-ordinator for HS2 Area North?
 - a) LMJV
 - b) GIS
 - c) HS2

To test yourself on the questions and collect CPD points, go to: projectsafetyjournal.com

Tips for the journey

The following points helped this team achieve its 'moon mission'

- Work out the number, duration and intensity of interfaces. Visual hot spots on a map or plan can help this evaluation.
- In developing the database and GIS viewer, take time for discovery – look for what works well for the delivery teams first, then for the assurance and reporting.
- Pair the GIS specialist with a delivery leader.
- Create a regular time and place to reflect upon discovery, suggestions and actions.
- Identify the duplications or overlaps and remove or thin them.
- Set up your activity coordination meetings to a regular pulse.
- Do NOT cancel any meetings.
- Build in resilience in the coordination meeting team, with multiple deputies.
- Roll out the strategy with visuals to act as 'anchor points' for when refresher briefings are made.
- Measure and show the savings (for example, time and clashes).
- Keep partners involved and dedicate clear points of contact and systems' champions.
- Recognise and thank all involved and let them know how their ideas are developing.
- Recognise that relentless refinement is needed and have resilience to face the unknown unknowns when they do become apparent.
- Be bold in commitment to resources at the start and explain when system limitations make some requests for development not currently possible, but keep seeking solutions.



BUILT FOR THIS MOMENT

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Construction deaths down by 25%

Ten fewer construction operatives were killed while at work between April 2021 and March 2022 than in the previous annual period, a 25% reduction, reports the Health and Safety Executive

The number of construction deaths in the latest reporting period fell from 40 to 30, compared to a rolling average of 36 annual deaths over the previous five years.

Despite the reduction, construction's death rate last year was the highest of any industrial sector, the figures published by the HSE in July revealed. In total, 123 workers were killed in work-related accidents in Great Britain in the last year, with 22 deaths in agriculture, forestry and fishing, and the same number in manufacturing.

Agriculture, forestry and fishing had the highest rate of fatal injury per 100,000 workers, as fewer people work in those industries than in construction.

The average rate of fatal injuries for employees in construction per 100,000 between 2017/18 and 2021/22 was 1.73. For the self-employed it was 1.49. Of those killed during construction

work in 2021/22, 64% were employed and 36% were self-employed.

The three most common causes of fatal injuries continued to be falling from height (29), being struck by a moving vehicle (23) and being struck by a moving object (18). These accounted for over half of all fatal accidents to workers in 2021/22.

The 123 worker deaths in 2021/22 is 22 fewer than the previous year, though it is in line with pre-pandemic figures. There has been a long-term downward trend in the rate of fatal injuries to workers, though in the years prior to the coronavirus pandemic the rate was broadly flat.

Eighty members of the public were killed following a work-related accident in 2021/22, an increase over the previous year but below the pre-pandemic level. The figures relate to work-related accidents and

30

Deaths in the construction sector during the year 2021/22

29

Fatal injuries caused by falls from height during the year 2021/22

do not include deaths arising from occupational diseases or diseases arising from certain occupational exposures (including Covid-19).

However, the HSE published the annual figures for mesothelioma, a cancer that can be caused by exposure to asbestos, which showed that 2,544 people died from the disease in 2020. This is in line with the average of 2,523 deaths over the previous eight years. Current mesothelioma deaths reflect exposure to asbestos that mainly occurred before the 1980s and annual deaths are expected to decline during the next decade.

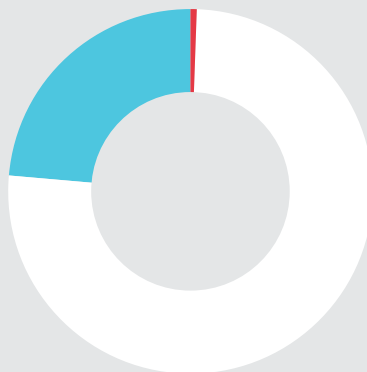
Based on the most recent comparable data to 2018, the UK consistently shows one of the lowest rates of fatal injury compared to countries across the EU. In 2018 the UK standardised rate, at 0.61 per 100,000 employees, was among the lowest of all European countries and compares favourably with most large economies such as France, Italy, Spain and Poland. Germany has a lower rate at 0.55 per 100,000 employees.

HSE's chief executive Sarah Albon said: "While Great Britain is one of the safest countries in the world to work, figures show we must continue to ensure safety remains a priority. Every loss of life is a tragedy and we are committed to making workplaces safer and holding employers to account for their actions, as part of our mission to protect people and places." ●

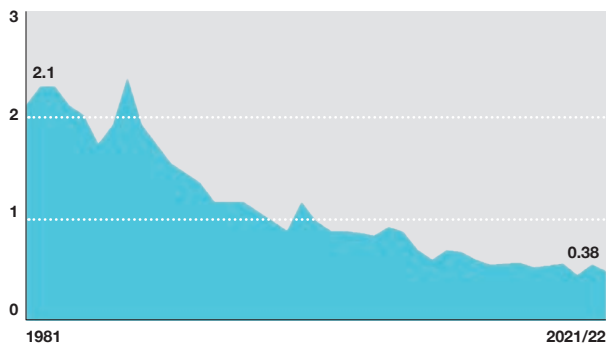
Fatal injuries to workers by age (2021/22)

Around a quarter of the deaths in 2021/22 were to workers age 60 and over (29), similar to the profile in earlier years

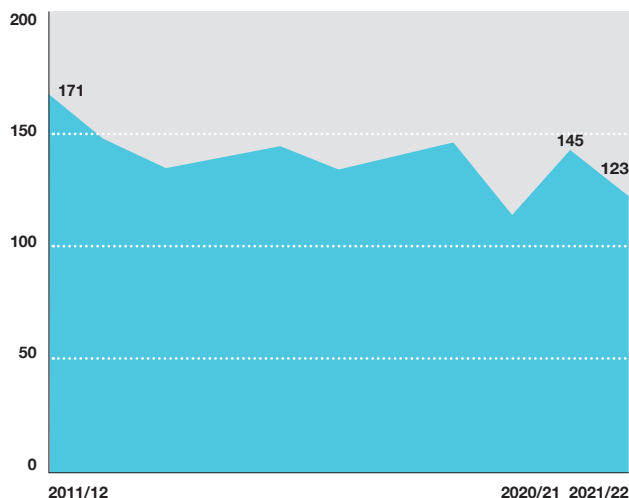
- One fatal injury to a worker age unknown
- 93 fatal injuries to workers aged 16-59
- 29 fatal injuries to workers aged 60+



Rate of fatal injury per 100,000 workers



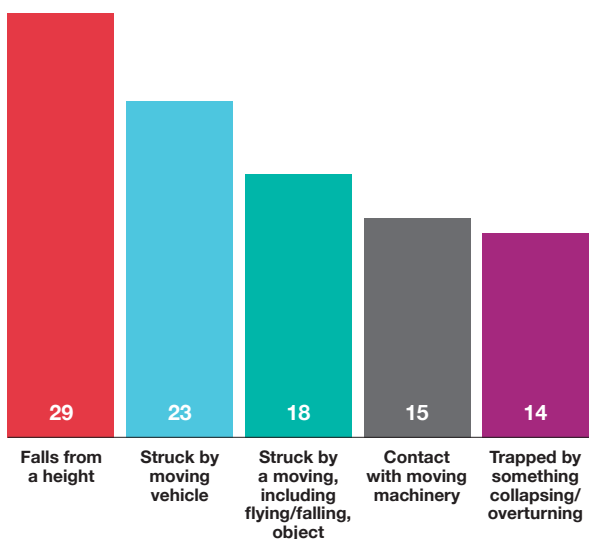
Fatal injuries to workers: GB between 2011/12 and 2021/22



Fatal injuries to workers by type (2021/22)

The most common kinds of fatal accidents to workers in 2021/22 continue to be falling from a height, being struck by moving vehicle and being hit by moving, including flying/falling, objects. These accounted for over half of all fatal accidents to workers in 2021/22.

Note: Chart shows all accident kinds accounting for 10 or more deaths in 2021/22



In the dock

Recent prosecutions for health and safety breaches

Demolition firm fined after fatal fall

A demolition company has received a £5,000 fine after a worker fell 9m to his death when part of a pipe bridge platform gave way underneath him.

Kirkcaldy Sheriff Court heard that John Gary Robertson suffered multiple injuries on 6 February 2019 when he fell from height at Longannet Power Station, Fife. Robertson's employer was CBR02 (formerly known as Brown and Mason), which is now in administration.

A joint investigation by the HSE and Police Scotland found the section of metal grating on the pipe bridge where Robertson had been standing gave way under his weight, as it had been extremely corroded.

Roofer's death leads to heavy fine and suspended sentence

Two construction contractors have received fines totalling £135,000, and one was handed a suspended prison sentence, following the death of roofer Raymond Morgan, 43, who fell 5m through the roof of a disused factory on 28 May 2014.

Both employers were sentenced at Belfast Crown Court on 7 July after earlier pleading guilty to breaches of health and safety legislation.

Leslie Wright, a Newtownards-based demolition contractor, was fined a total of £90,000. Wright also received a nine-month custodial sentence, suspended for two years, and was disqualified as a director for 10 years. H Miskimmin, a construction company based in Donaghadee, was fined £45,000.

Genie fined £270,000 after M25 fatality

Lifting equipment manufacturer Genie was fined £270,000 after the miscalibration of one of its machines led it to fall onto the M25 motorway, killing an access company employee.

Reading Crown Court heard that Rick Jaeger-Fozard, an employee of Kimberly Access, was carrying out a routine pre-delivery inspection on a mobile elevating work platform (MEWP) on 5 June 2013.

The MEWP extended to an unsafe angle and Jaeger-Fozard, who was

working on the platform, fell with it onto the M25. The HSE found that the machine had become unsafe due to a miscalibration of the angle sensor of its secondary boom, which started to extend even though it had not been raised to the necessary angle.

Construction bosses jailed after roofer death

Two construction company bosses have been jailed after a roofer, Graham Tester, fell to his death at a building site in Brunswick Street West, Hove, on Friday 27 July 2018.

A judge at Lewes Crown Court sentenced Steven Wenham, 48, of Charlotte Street in Brighton, to five years in prison. He and his company, Total Contractors, were found guilty of two offences and fined £190,000. Wenham was disqualified from being a company director for 10 years.

John Spiller, 52, of Fishersgate Close in Portslade, received a 15-month jail sentence. The court found him not guilty of manslaughter, but guilty of the same two health and safety offences as Wenham. His roofing company, Southern Asphalt, pleaded guilty to the same offence. The company was fined £120,000.

Suspended sentences for two directors after asbestos failings

Newcastle Crown Court has handed suspended prison sentences to two former construction company directors when workers disturbed large quantities of asbestos at Joplings Department Store in Sunderland when it was undergoing refurbishment in October 2017.

The court found two former directors of Keebar Construction, Alan Barraclough of Hutton Lane, Guisborough, and James Keegan, of Larkspur Road, Middlesbrough, guilty of breaching two counts of Section 37 of the Health and Safety at Work Act 1974 etc. Both men received a 14-month sentence, suspended for two years. Both were also ordered to carry out 120 hours of unpaid community work within 12 months.

Both men were suspended as directors for 10 years and were each ordered to pay costs of £44,774.



New information in a changing world

The Association for Project Safety continues its commitment to providing a comprehensive educational experience and keeping members informed on the key issues in construction

Webinars

The APS autumn webinar series will be running from Monday 19 September through to Monday 31 October 2022. Our theme of 'Hidden' has a focus on two areas: the unseen hazards and ignored individual experiences that affect health and safety in the workplace for both employer and employee alike.

Hidden Hazards will take a look at the new fire safety standards, temporary works, unseen budgets, the innovative technology of retrofitting and many more.

On the back of a huge demand from members, the APS is running webinars on dust hazards, including a dedicated webinar for an in-depth look at asbestos.

APS's Hidden Human webinars will focus on subjects that should not be invisible, featuring a discussion on menopause in the workplace, personal budgeting and workplace communication.

“The APS Energy Week is APS's answer to all the questions surrounding energy, its impact and what we can do to prepare ourselves

Alongside this, APS produces regular podcasts featuring key speakers from online events and webinars, providing the opportunity to delve deeper.

CPD series

APS is working with the Bell Group on retrofitting for a CPD series starting in November. This will include a full breakdown of the benefits, processes and implications.

Energy Week

The APS Energy Week is taking place from 28 November to 2 December 2022 and is intended to shine the spotlight on this most pressing subject for CPD members. It is APS's answer to all the questions surrounding energy, its impact and what we can do to prepare ourselves.

It will feature webinars on decarbonisation, energy poverty, futureproofing and budgeting, alongside efficient working practices and a look from a legal angle on how to move forward in this ever-prominent area.

These events are free for members and included as part of annual subscriptions. Industry colleagues can attend for a modest fee. APS will be providing more detail of the webinar series in the coming weeks.

Catching up on past events

Members who did not get a chance to attend a webinar or a CPD session can play back past events on the APS website (resources section) at their convenience. This includes our recent series of webinars on infrastructure. These can be accessed by logging into the APS website with your membership details and clicking into the resources sections for all APS past events. ●

Save the date: Annual Conference

Wednesday 7 September 2022

A flagship event in the industry calendar, the APS annual conference comes at a time of huge challenge and change in the sector.

Not only will organisations and individuals be looking to change processes and practices to reflect the new requirements in the Building Safety Act and new Building Regulator, but industry is grappling with materials shortages and inflation.

At the same time industry leaders are being expected to do more to demonstrate skills and knowledge when many are struggling to attract and retain suitably experienced staff or find ways to find and pay for affordable insurance.

Innovation, training and support will be key to future success for individuals and businesses.

This one-day online event brings together industry leaders and policy makers to look at what the future holds and how best to prepare for it.

Look out for all our APS events at: www.aps.org.uk/events.

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Synergie Training is one of the leading Construction, Infrastructure and IT Training Companies in the UK

Synergie Training specialises in the **APS Accredited Principal Designer** course which we provide as both onsite closed company courses and as public courses throughout the UK. We have successfully accredited over 2,000 individual Principal Designers with a 95% pass rate. We now also provide the **APS CDM Awareness**, **APS Accredited CDM Client** and **APS Accredited CDM Principal Contractor** courses along with CDM Overview, Domestic Client, Construction Safety through Design and customised CDM training.

VIRTUAL TRAINING

We are currently still running the majority of our CDM courses virtually via live trainers. These courses have been a great success having trained over 1000 delegates on our virtual APS CDM PD course.

Upcoming Dates include:

6 Sep - 7 Sep	*VIRTUAL* – APS Accredited – The role of the Principal Designer under CDM 2015 (2 Day)	Online - Remote	£595
12-Sep	*VIRTUAL* – APS Accredited – CDM 2015 for Principal Contractors	Online - Remote	£250
15-Sep	*VIRTUAL* – APS Accredited – CDM Client	Online - Remote	£295
29-Sep	*VIRTUAL* – CDM 2015 Overview	Online - Remote	£195
4 Oct - 5 Oct	APS Accredited – The role of the Principal Designer under CDM 2015 (2 Day)	London	£595
5 Oct - 6 Oct	*VIRTUAL* – APS Accredited – The role of the Principal Designer under CDM 2015 (2 Day)	Online - Remote	£595
10-Oct	*VIRTUAL* – CDM 2015 Overview	Online - Remote	£195
11-Oct	*VIRTUAL* – APS Accredited – CDM 2015 for Principal Contractors	Online - Remote	£250
19-Oct	*VIRTUAL* – APS Accredited – CDM Client	Online - Remote	£295
24 Oct - 25 Oct	*VIRTUAL* – APS Accredited – The role of the Principal Designer under CDM 2015 (2 Day)	Online - Remote	£595
25 Oct - 26 Oct	APS Accredited – The role of the Principal Designer under CDM 2015 (2 Day)	Leeds	£595
07-Nov	*VIRTUAL* – CDM 2015 Overview	Online - Remote	£195
08-Nov	*VIRTUAL* – APS Accredited – CDM 2015 for Principal Contractors	Online - Remote	£250
9 Nov - 10 Nov	*VIRTUAL* – APS Accredited – The role of the Principal Designer under CDM 2015 (2 Day)	Online - Remote	£595
15 Nov - 16 Nov	APS Accredited – The role of the Principal Designer under CDM 2015 (2 Day)	Nottingham	£595
21 Nov - 22 Nov	*VIRTUAL* – APS Accredited – The role of the Principal Designer under CDM 2015 (2 Day)	Online - Remote	£595
23 Nov - 24 Nov	APS Accredited – The role of the Principal Designer under CDM 2015 (2 Day)	Bristol	£595
24-Nov	*VIRTUAL* – APS Accredited – CDM Client	Online - Remote	£295

Please quote **APS-SEPT-10** or a **10% discount** on any of the above public courses.

Please visit: www.synergietraining.co.uk/course-schedule to view additional public course dates.

Synergie Training is an approved APS, CITB & IEMA Accredited Training Centre and holds ISO: 9001, ISO: 14001 and ISO: 45001 quality standard accreditations.

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