Health and Safety
Executive

HSE

WELCOME TO CONIAN

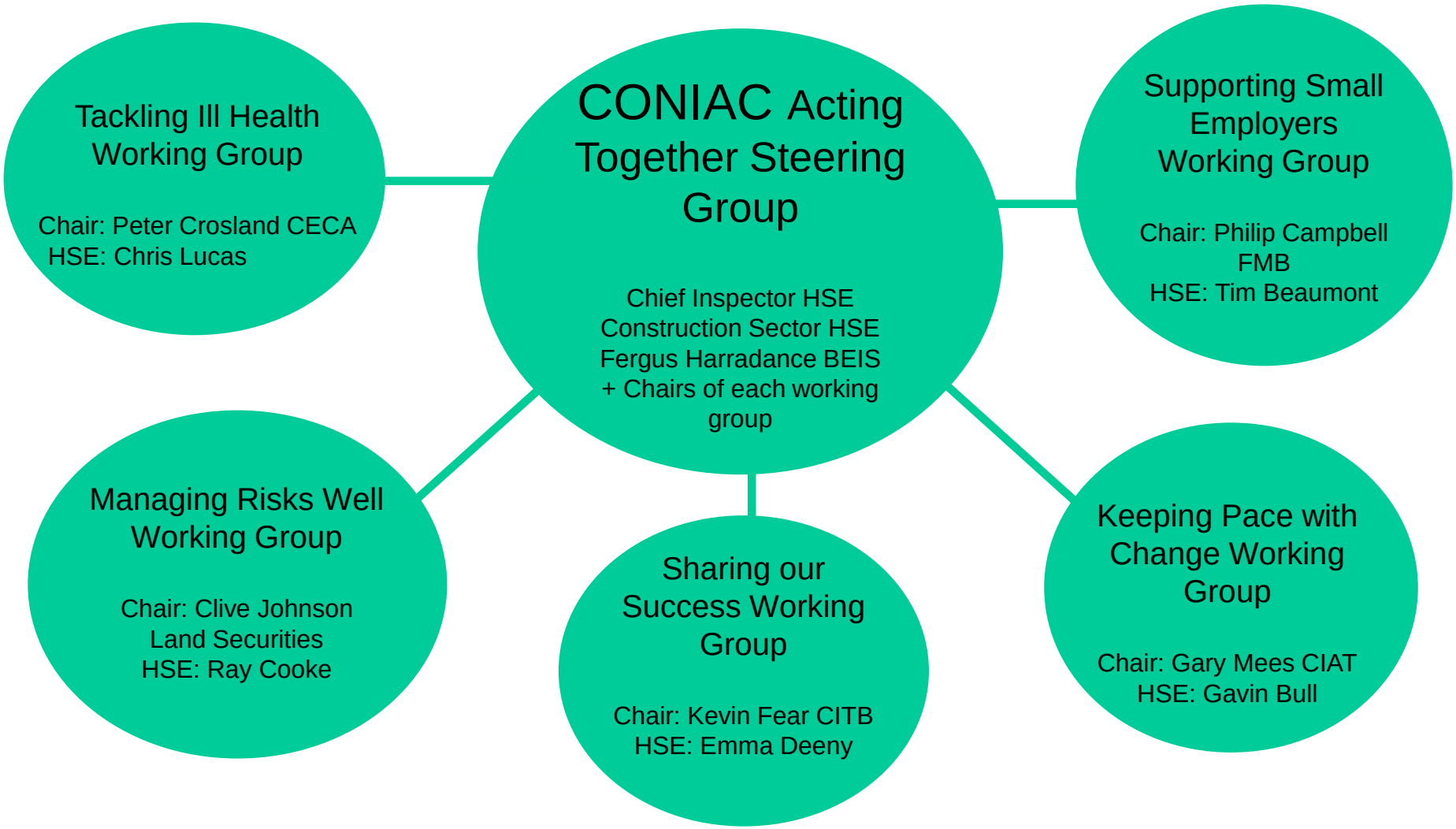
5 July 2019

Introduction

Russell Adfield

HSE Head of Construction Policy & Sector

Understanding CONIAN



Keeping in touch with CONIAN

- Search Google for CONIAN Community, go to the link and register
- https://webcommunities.hse.gov.uk/connect.ti/coniac/grouphome

Agenda for the morning

10.30	Welcome, introduction and housekeeping
10.35	Progress in Implementing the Construction Sector Deal
10.55	Supporting Small employers - Insight work progress
11.05	The Building Safety Programme
12.00	Tackling ill health work group update
12.10	Process safety approach to construction safety management systems
12.45	Lunch

Construction Leadership Council

Progress in Implementing the Construction Sector Deal

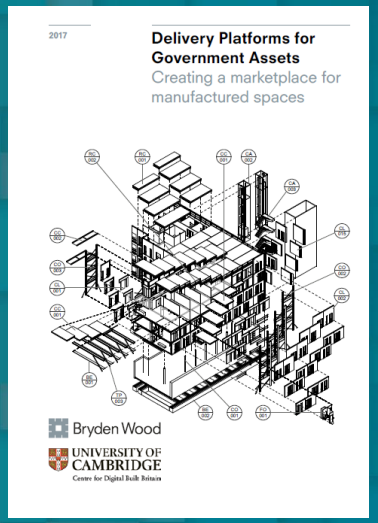
Fergus Harradence
Deputy Director, Construction, Department for Business, Energy & Industrial Strategy

Our Challenges

- Productivity
- Delivering Value
- Better Built Asset Performance
- Reputation and Confidence

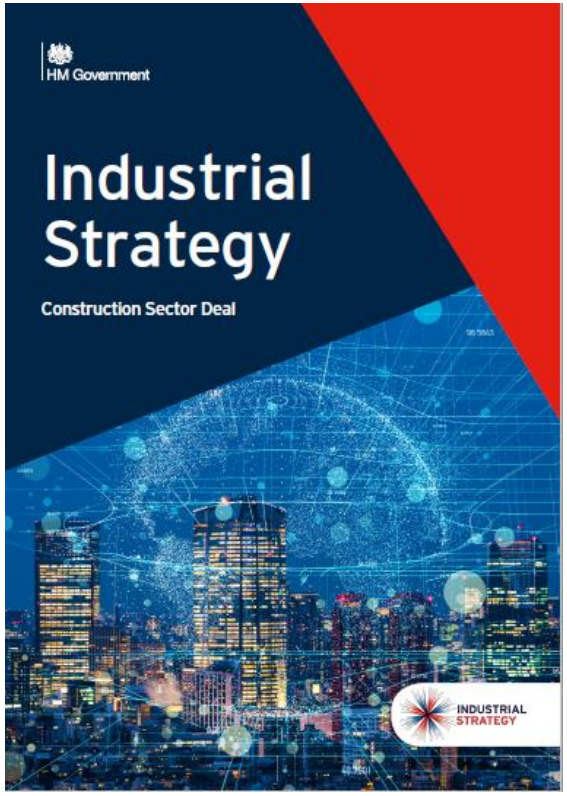
Construction Leadership Council

AN UNPRECEDENTED OPPORTUNITY FOR TRANSFORMATION

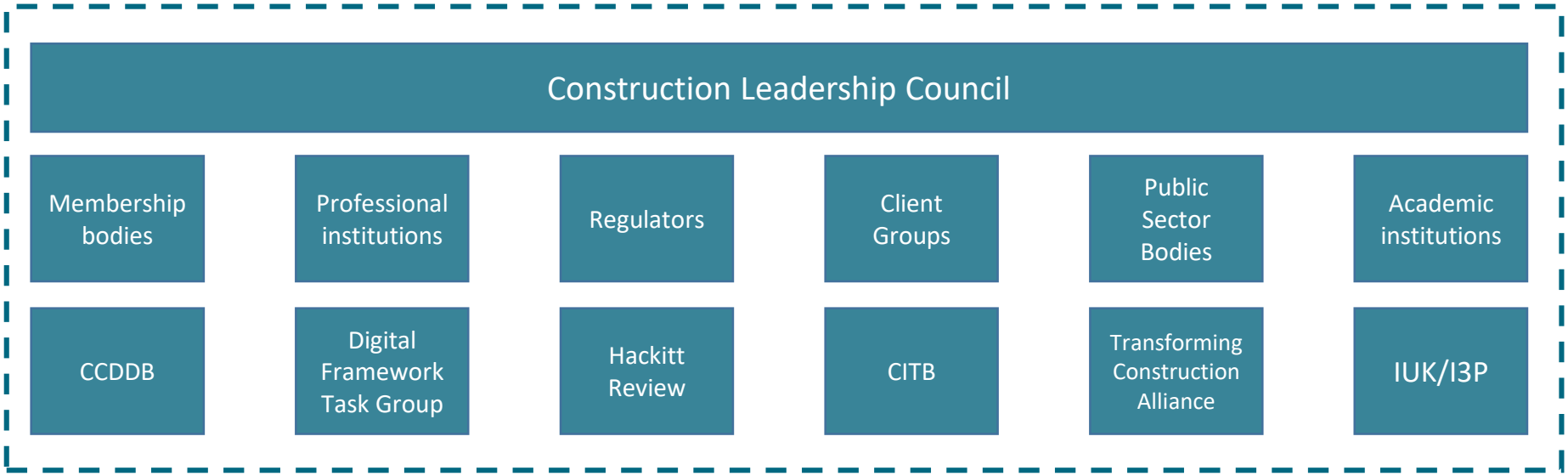


CLC's purpose

- Lead the delivery of the Construction Sector Deal
- Bring the industry together to improve performance
- Support key industry initiatives
- Represent the industry to Government and inform future policy development



CLC's position in industry



CLC Advisory Group

- Major challenge is the fragmentation of the construction sector in the UK
  - **Initiatives** (TIP, TIES, Sector Deal, Hackitt Review)
  - **Organisations** (i3P, ICG, trade associations, professional institutions)
- Main value that the CLC can add is as a convenor and representative of the industry
- Advisory Group role to ensure CLC linked to key initiatives – and to encourage organisations and initiatives to collaborate effectively
- Advisory Group members are the connections to the industry
  - To represent views of members to CLC, BEIS, HMG
  - To provide the communication channels for CLC investment and activity

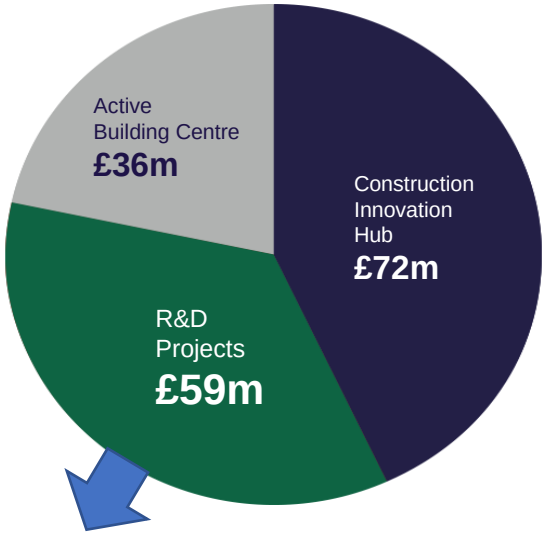
Construction
Leadership
Council

Workstream Progress

Transforming Construction ISCF

£170m total ISCF fund

£129m committed to date



£59m fund for R&D

£23m committed to date

TRANSFORMING CONSTRUCTION ALLIANCE

Construction Innovation Hub

What

- MTC – Manufacturing R&D
- BRE – Testing and assurance
- CDBB – Digital innovation

How

- £72m funding
- Industry participation in product development
- Scale from large programmes

What's in it for clients?

- Collaborative, standards-driven innovation
- Cross-sector platforms
- Integrated digital capabilities

Active Building Centre

- Based at Swansea University
- Researching energy generation and storage technologies that can be integrated into buildings
- Utilising modern methods of construction – designed to be incorporated into product platforms
- Data based approach to building monitoring and control
- Supports 2050 climate objectives, use of electric vehicles

Collaborative R&D Competition Round 1 (2018)

- There were 100 proposals submitted.
- 34 project achieved the quality standard (70% assessment score) – 24 have been funded (c£14m).
- The planned portfolio of projects had a balance of up to 12 month projects and up to 24 month projects, plus 2 longer term projects.

Participant Locations

Objective	count
Increase productivity	14
Increase pre-manufactured value	8
Reduce whole-life costs	8
Reduce project time	18
Improve whole-life value	7
Integrate energy active components	2

Network Plus – Academic Research

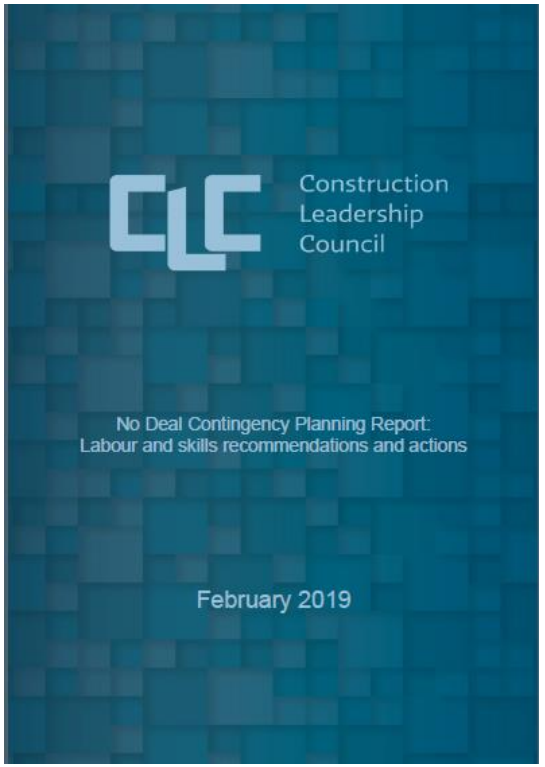
- Co-ordinated by UCL (Bartlett School, with Imperial College and Warwick University).
- The vision for N+ is to deliver transformational impact by adopting an integrated approach, situating construction as a production system for built assets that adds value to cities and their infrastructures.
  - **Knowledge**: to inform new research and development (R&D) models and government policy that link digital, construction, manufacturing and energy to improve productivity
  - **Community building**: to advance collaborations through knowledge exchange and debate, beyond what is currently possible
  - **Business models**: to produce user-informed, practical resources that accelerate pathways to manufacture and delivery
  - **Investment and legacy**: to de-risk and increase construction sector business R&D spend and enable new R&D collaborations that outlive the grant

Industry Adoption

- Expand the membership of the workstream to include more housebuilders
- Expand the use of KPIs and the Smart Buildings dashboard
- Promote the Smart Construction Case Study initiative
- Promote the CLC's demand aggregation methodology
- Trial new contracts
- Develop an MMC quality assurance scheme

Skills

- Brexit related skills planning and follow-up with Home Office
- Enhanced GoConstruct proposals under development in line with plans for Industry-wide campaign by Dec 2019
- 72 Apprenticeship standards approved
- c21,000 apprenticeship starts – on track for 23,000 by 2022
- Future skills plan under development
- CITB reform programme on track



Shortage occupations in construction:
A cross-industry research report

January 2019

Post-Brexit Skills Agenda

What

- Cross-industry response to the skills agenda
- Focused lobbying in connection with the Migration White Paper
- Innovation aimed at increasing productivity

How

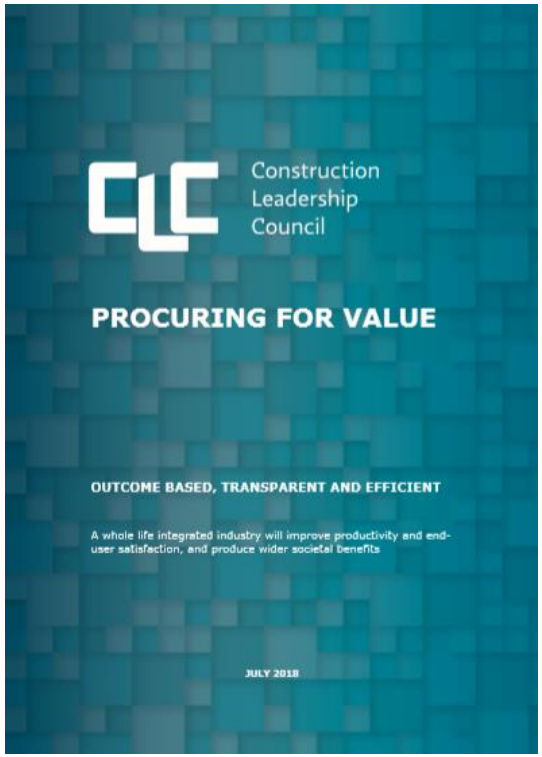
- Approved Apprenticeship Levy training courses
- Future skills forecasting
- Direct engagement with the Home Office

What's in it for our clients?

- Increased project deliverability
- Direct engagement with the skills issue

Procurement for Value

- Outcome-based procurement – final report setting out scope for value comparison tool
- Procurement Round-Table – ministerial-led open forum on public and private sector procurement practice
- Benchmarking and efficiency – TIP/TIES led by IPA
- Industry-standard PQQ – Common Assessment Standard published
- Retentions consultation – ongoing



Next Steps

- **Digital –** developing the National Digital Twin and encouraging the digitisation of the built environment to support building safety
- **Business Model** – Driving change in the industry business model, e.g. the adoption of Project 13 approaches
- **Fair Practices** – seeking to improve payment and contractual practices – reduce payment time from 43 days, use of fairer contract terms.
- **Common Assessment Standard** – drive the use of this across the public and private sectors.

Construction
Leadership
Council

Health and Safety Executive

CONIAN NETWORK

Supporting Small Employers Intervention Development – Progress So Far

Dr Tim Beaumont
Construction Management Policy Unit
5th July 2019

‘Insight’ project background

Origins

- Insight work consists of an initial research project that looked in depth at industry behaviours and barriers to behaviour change
- Commissioned by HSE on behalf of CONIAC in 2017, final report in 2018

Significance

- High profile example of joint working between the regulator and industry
- HSE has demonstrated commitment through resources (funding and people) allocated so far and design and facilitation of the working sessions

Timetable

Intervention Area	1	2	3
Idea Generation	January to April 2019 - complete	May to August 2019 – ongoing	September to December 2019
Move It Forward	May to August 2019 **On hold - requires support to take forward**	September to December 2019	January to March 2020
Prototype	To be determined	To be determined	To be determined

Intervention 1: Targeting Clients by Helping Them to Get Quality

The Challenge

- Inexperienced domestic clients do not understand how to 'hire a trusted professional', the 'actual' costs a project involves and how to ensure a 'quality' job.

The Opportunity

- Indirectly drive up good H&S standards by tapping into the clients' desire for a quality outcome.

Intervention 1: Targeting Clients by Helping Them to Get Quality

Where we are now

- Agreed a target audience – **home improvers** (4M in UK)
- Agreed the objective - **to create a new product that will help improve domestic clients' knowledge and skills in hiring contractors and managing the process for before undertaking new build, refurbishment, repair and maintenance work**
- Identified a consumer need - **for all the information to be in one place (USP)**
- Identified preferred locations to find the information – **online and in store**
- Identified the **features and benefits of one web based and one paper product**
- Have developed **two new product concepts** ready for testing with the target audience

Intervention 1: Targeting Clients by Helping Them to Get Quality

Target Clients by Helping Them to Get Quality Work

What next?

- Need to develop a delivery mechanism for the proposal consisting of:
  1. Funding the testing of concepts with users
  2. Development of a prototype with users
  3. Identifying sources of support to sustain the project
  4. Completing the final product and planning its launch (including further evaluation)
  5. Creating a framework for sustaining the product in the future
- Opportunity for CONIAC/CONIAN members to help development this proposal further.

HSE

Intervention 2: Win the Cost/ Benefit argument - The Businessman Offer

Win the Cost/ Benefit argument-'The Businessman Offer'

The Challenge

- At the most competitive end of the market (particularly generalist trades), H&S can still be seen as optional and costly as opposed to integral and part of a quality job and is gets costed out. 'Getting the job done', time and money/ profit are prioritised over other factors e.g. quality, individual's health.

The Opportunity

- Collectively do more to win the cost/ benefit argument so that H&S is 'part of the package' and becomes the norm when clients buy, and small construction businesses sell, new build, refurbishment, repair or maintenance work.

Intervention 2: Win the Cost/ Benefit argument - The Businessman Offer

Where we are now

- Agreed a target audience – **specific specialist and generalist trades**
- Agreed the objective – **To develop a suite of tools and messaging** which:
  - Help contractors cost H&S practices into their quotes at the selling and tendering stage
  - Illustrate return on investment in terms that resonate with this audience
  - Illustrate the cost of poor practice/ cutting corners and provide them with messages to use with potential clients
- Developed '**Personas'**

Two further working sessions planned in July and August

Intervention 3: Accessible Training Offer to drive up Professional Identity

The Challenge

- A two-tier H&S system where less specialist workers are being pushed downwards, feeling disempowered and lack confidence to speak up against safety risks they may not be willing to take, for fear of impact on employability.

The Opportunity

- Promote professional development amongst non specialists. Reach out to unskilled workers with a training package designed to drive up general construction knowledge/ skills in order to increase confidence levels, empowering them to speak up. (Embed H&S messages but don't make them the sole focus)

Intervention 3: Accessible Training Offer to drive up Professional Identity

Where we are now

Four working sessions planned in from September to December


CHALLENGES
AHEAD

Sustaining momentum

Questions

- How can the partnership developing these products progress?
- What opportunities are there for industry?
- Are there any potential partners who have yet to get involved?

Health and Safety
Executive

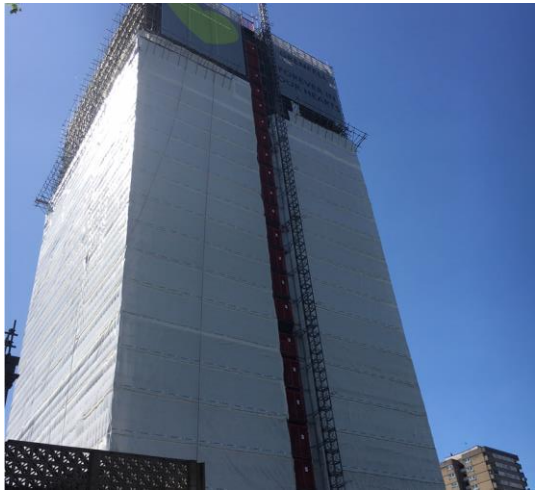
HSE

Building Safety Programme

Sandra Ashcroft

Policy Adviser Building Safety Programme

HSE response



- Category 2 responder
- Structural stability
- The future of the site
- Testing materials
- Gas riser interventions
- Operation Northleigh

Building Safety Programme

- Residents of high-rise buildings are safe – and feel safe – now and in the future
- Identification of high-risk residential buildings (>18m) with unsafe ACM cladding
- Risk-based remediation of existing housing stock
- Testing of materials and identification of unsafe materials
- Ban on combustible materials
- Independent review of building regulations and fire safety

Ministry of Housing, Communities & Local Government

HSE Involvement in the Independent Review

Working Group (WG) 1

- Design, construction and refurbishment of new and existing buildings

WG2

- What building owners, landlords and regulators need to do differently to fully embed building safety throughout occupation

WG5

- Ensuring risk-based approaches to regulation and guidance balancing goal-setting outcomes with appropriate prescription

Main themes of the reforms

- **A more effective regulatory and accountability framework** to provide greater oversight of the industry
- **Clearer standards and guidance**, including establishing a new standards body
- **Put residents at the heart of the new system** of building safety, with more effective routes for engagement and redress
- **Create a culture change** and a more responsible building industry, from design, through to construction and management

Principles of a new regulatory framework

- Drive cultural change and the right behaviours
- Simpler, more effective, outcomes-base, with real teeth
- Buildings considered as a system
- Risk-based approach
- Transparency of information and an audit trail throughout the lifecycle of a building
- Build on what currently works
- Very clear model of risk ownership

"The primary responsibility for doing something about the present levels of occupational accidents and disease lies with those who create the risks and those who work with them."

Lord Robens (1972)

A new stronger regulator

- HRRBs subject to more intrusive, robust and expert scrutiny across the building life cycle
- Learn from HSE's experience and approach to:
  - Construction (Design and Management) Regulations (CDM)
  - managing risk and delivering safety case reviews in major hazards
  - working in partnership with a range of other regulators at national and local levels
- Oversight by a new joint competent authority (JCA) comprising Local Authority Building Standards, FRAs and HSE.

Potential roles for HSE

- Build on our long experience of achieving sustained h&s outcomes through a broad range of strategic and site-based interventions
- Help design the HRRB regime and broader building safety infrastructure
- Help establish sanctions and enforcement regime based on the duty holder concept
- National footprint and local involvement in ‘gateway assessments’ and occupation safety cases, onsite verification and enforcement
- An independent assurance role
- Advice, guidance and support to regulators

Implementation Plan – December 2018

- Joint Regulators Group (JRG) comprising HSE, LABC, NFCC, and LGA
- Develop and pilot new approaches and, later, assist with the transition to a new regulatory framework
- Work with the Early Adopters to trial aspects of the proposed new regulatory framework
- Assess the resource needs of the future regulator
- Seek input from stakeholders to ensure a strong resident and consumer perspective
- Oversight of ACM cladding remediation inspection programme

JRG Workstreams

Pilot and test

- WG1 - Trial Safety Case, Gateways, and Golden Thread design

Advise and consult

- WG5/6 - Clarify national and sub-national roles under the new system
- WG4 - Minimise conflicts of interest and clarify role of associated disciplines

Prepare and transition

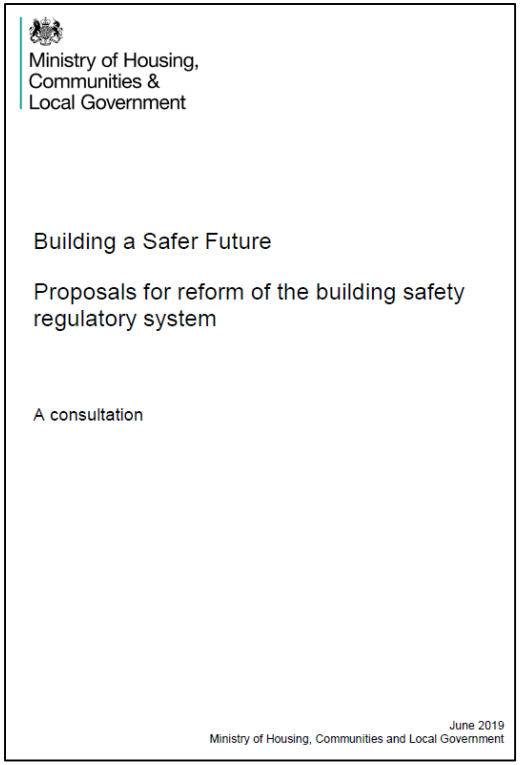
- WG3 - Map regulator capabilities and requirement for skills uplift

More effective within existing framework

- Manchester pilot

Building a Safer Future Consultation

- **Scope** of the new building safety regulatory regime
- **Duty holder** concept through planning, design, construction and occupation
- Giving residents a **stronger voice** and ensuring their concerns are never ignored
- A more effective **regulatory and accountability framework**
- Strengthened **enforcement** and **sanctions** to deter non-compliance
- Closing date: **31st July 2019, 11.45pm**
- Home Office **call for evidence** on the Regulatory Reform (Fire Safety) Order



Ministry of Housing, Communities & Local Government

Building a Safer Future

Proposals for reform of the building safety regulatory system

A consultation

June 2019
Ministry of Housing, Communities and Local Government


GRENFELL
We miss You
Love Jayce
xxx

HSE
Health & Safety
Executive

TIHWG UPDATE

PETER CROSLAND - CHAIR

HSE
Health & Safety Executive

- WHAT'S BEEN GOING ON……
- Meeting between HSE & HCLG
- Regular telecom calls & meetings
- Shared/joint responsibility between HSE activity & TIHWG
- Sub groups: MSD
    - Welfare
    - Respiratory
    - Work Related Stress & Mental Health
- COST!!

Construction Industry Advisory Committee (CONIAC)

Tackling Ill Health Working Group

Highlighting and tackling the costs of work-related ill health

#HelpGBWorkWell

HSE Health & Safety Executive

Health risks from exhaust fumes

Key Points

The fumes from engines, generators and other equipment can be extremely harmful. In some cases, exposure to these fumes can kill within minutes. In other cases, it can lead to longer term ill health conditions like cancer. This document outlines the key risks with using petrol, liquid petroleum gas and diesel powered equipment and what you need to do to manage these. Use safer alternatives where you can.

Plant and Equipment

Petrol, Liquid Petroleum Gas (LPG) and Diesel are used as a fuel to power many common items of construction plant and equipment. These include:

- Petrol: hand held equipment like cut-off saws and strimmers together with smaller generators to supply electricity.
- LPG: heaters in welfare units, bitumen boilers, drying out structural elements, curing concrete. LPG is also used to power larger items like floor polishers and fork lift trucks.
- Diesel: wheeled vehicles, generators, telehandlers and compressors.

Health Effects

You need to consider both the immediate and long-term health risks from using equipment powered from any of these sources. The exhaust fumes produced by this plant and equipment can be harmful. The effects can vary from mild irritation to death.

- **Petrol** - Using petrol powered equipment indoors or enclosed spaces with inadequate ventilation, even for a few minutes, can create significant levels of carbon monoxide which can **KILL**. Carbon monoxide is a colourless and tasteless poisonous gas which often goes undetected.
- **LPG** – a leakage of LPG could displace air and cause asphyxiation. Skin contact with the fuel can also cause severe cold burns. Significant use of LPG in small, unventilated spaces can also create **FATAL** levels of carbon monoxide.
- **Diesel** – High levels of diesel smoke/soot can irritate the eyes, nose and throat. Due to some of the components within it, regularly breathing in such high levels over long periods is linked to more serious health effects such as cancer. In general, the more smoke/soot you can see the higher the risk.

Managing the Risk

- **Petrol** – Petrol powered equipment should never be used indoors or in enclosed spaces unless the ventilation required for breathing (not just running the machine) has been fully assessed and found to be sufficient. You should seek specialist assistance to help you with this assessment. Use safer alternatives – eg. Electrical powered tools. When usuing petrol powered equipment:

  - Make sure the engines are properly maintained and used
  - Place generators outdoors in a suitable location so that fumes cannot gather or drift into building openings.
  - Consider use of personal or mounted carbon monoxide / oxygen detectors if appropriate.

  If there is no alternative to using petrol powered equipment in an enclosed area you should seek specialist assistance to help you assess the situation. Specially selected mechanical extraction that vents to the outside will almost always be needed.

- **LPG -** The significance of the risk increases the greater the LPG usage / power output of the equipment and the longer it is used for.

  - You must ensure there is adequate ventilation, both at high and low levels.
  - Vents and other ventilation sources in welfare should never be blocked to stop draughts.
  - Ensure open flames are burning cleanly with no spluttering or redness and no signs of soot.

- **Diesel** – There should be no additional risk compared to background emission levels to either workers or the public as a result of using operational equipment. However, **AVOID** working in enclosed spaces (inside buildings or in excavations) for long durations near diesel plant/ equipment.

  - Regularly maintain and tune the engines. Look out for black and blue heavy soot. This is a sign of unburnt fuel caused by poor servicing or a mechanical fault with the engine.
  - Buy or hire, equipment with new or properly maintained modern engines.
  - Make sure there is suitable ventilation when working indoors.
  - Limit; a) long periods of engine idling, b) using the engine near to its capacity (unless it is designed for that) and c) stop-go work.
  - Limit the amount of engines / number of people working nearby and the time they are exposed to the fumes.

Other Risks

You will also have to consider other risks associated with the use of Petrol, LPG and Diesel:

- Fire and explosion
- Confined space work
- Contamination of the ground with spills

Further Information

More detailed information on the risks outlined above can be found at

- Construction hazardous substances: Carbon Monoxide - http://www.hse.gov.uk/construction/healthrisks/hazardous-substances/carbon-monoxide.htm
- LPG – http://www.hse.gov.uk/gas/lpg/
- Diesel engine exhaust emissions http://www.hse.gov.uk/pubns/indg286.pdf
- Fire risks - http://www.hse.gov.uk/construction/safetytopics/processfire.htm

REMEMBER:

- **NEVER RUN PETROL POWERED EQUIPMENT INDOORS UNLESS THERE IS ADEQUATE VENTILATION FOR BREATHING**
- **MAINTAIN YOUR EQUIPMENT**
- **TRAIN YOUR STAFF SO THAT THEY KNOW THE RISKS AND KNOW HOW TO USE EQUIPMENT IN A SAFE MANNER**

HSE
Health & Safety Executive

Key Points

The fumes from engines, generators and other equipment can be extremely harmful. In some cases, exposure to these fumes can kill within minutes. In other cases, it can lead to longer term ill health conditions like cancer. This document outlines the key risks with using petrol, liquid petroleum gas and diesel powered equipment and what you need to do to manage these. **Use safer alternatives where you can.**

HSE
Health & Safety Executive

REMEMBER:

- NEVER RUN PETROL POWERED EQUIPMENT INDOORS UNLESS THERE IS ADEQUATE VENTILATION FOR BREATHING
- MAINTAIN YOUR EQUIPMENT
- TRAIN YOUR STAFF SO THAT THEY KNOW THE RISKS AND KNOW HOW TO USE EQUIPMENT IN A SAFE MANNER

HSE
Health & Safety Executive

Signposting……

More detailed information on the risks outlined above can be found at

- Construction hazardous substances: Carbon Monoxide - http://www.hse.gov.uk/construction/healthrisks/hazardous-substances/carbon-monoxide.htm
- LPG – http://www.hse.gov.uk/gas/lpg/
- Diesel engine exhaust emissions http://www.hse.gov.uk/pubns/indg286.pdf
- https://www.nhs.uk/news/cancer/who-diesel-exhaust-fumes-cancerous/
- https://www.iosh.com/resources-and-research/our-resources/occupational-health-toolkit/inhalation-disorders/
- Fire risks - http://www.hse.gov.uk/construction/safetytopics/processfire.htm

Construction Industry Advisory Committee (CONIAC)

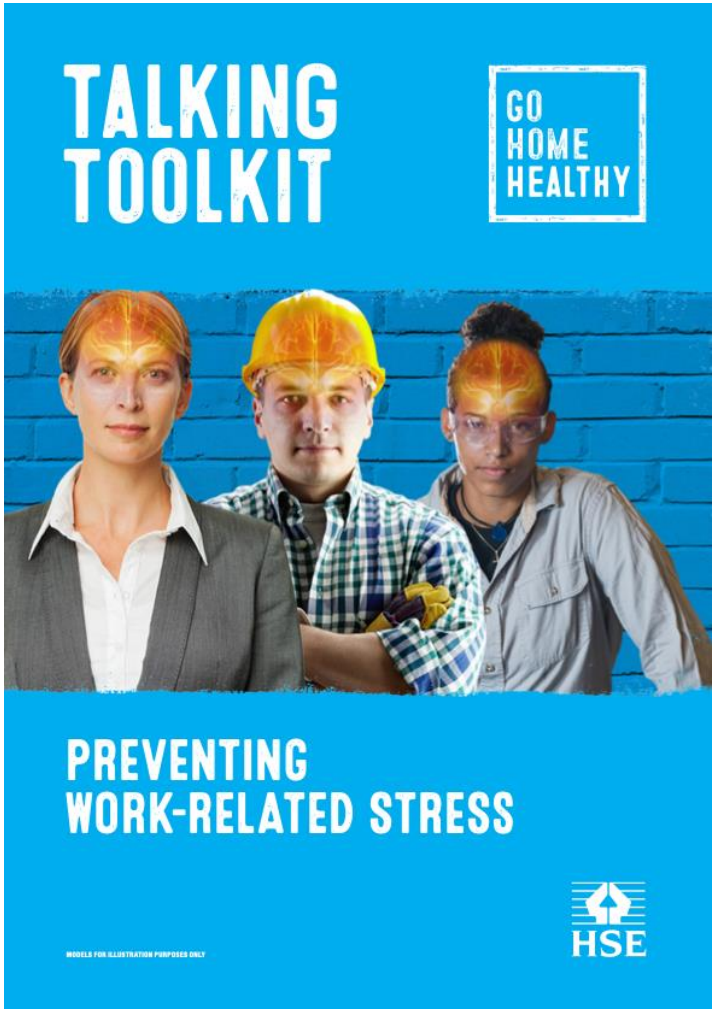
Tackling Ill Health Working Group

Highlighting and tackling the costs of work-related ill health

#HelpGBWorkWell

PREVENTING WORK RELATED STRESS

- HSE + TIHWG
- TIHWG + HSE
- Others



HSE
Health & Safety Executive

Construction Industry Advisory Committee (CONIAC)

Tackling Ill Health Working Group

Highlighting and tackling the costs of work-related ill health

#HelpGBWorkWell

- Plain Speaking Toolkit to help identify work related stress - on Sites.
- Toolbox Talk, Tea break discussion, Hopefully to be incorporated within an existing App – see next slide!

Similar Toolkit to be used for Office based staff.

PLAIN SPEAKING TOOLKIT TO HELP IDENTIFY WORK RELATED STRESS - ON SITES

How to use this Toolkit

The questions are provided to help identify workers who might otherwise not come forward to speak up about how they are feeling. The questions can be used as part of a 'Toolbox Talk' to a group of workers, or more informally to individuals over a (tea)break for example. It would be helpful to try and answer each question using the **Red, Amber, Green** process - e.g in Q1, (first bullet point), if you feel you have too much to do in the time available - you would put a **'X' under Red**. If you are completely satisfied with the time element, then an **'X' under Green** would be appropriate. If you are unsure, then it would an **'X' under Amber**. Any answers marked Red should be addressed as soon as possible by the most appropriate person.

QUESTIONS	R	A	G
1. Demands - Plain Speaking - Construction Conversation 1			
• Have you got too much to do in the time available?			
• Have you done this type of work before?			
• How far are you travelling to get here and does this make your day too long?			
• Can we change anything to make things easier for you?			
2. Control - Plain Speaking - Construction Conversation 2			
• Did anyone talk to you about how to do this job?			
• Are your skills being used to the full?			
• Do you think you could have your say about how to do things?			
• If you could change a anything to make it better, what would it be?			
3. Support - Plain Speaking - Construction Conversation 3			
• Do you think that this is a good place to work? How well are you supported?			
• Do you have anyone to talk to if you need help?			
• Do you have anyone to listen to you if things were going wrong?			
• Would you change anything to do with the support you have?			
4. Relationships - Plain Speaking - Construction Conversation 4			
• Have you seen anyone messing about and behaving badly on site? Was this properly dealt with?			
• Do you think you could tell the site management how it is?			
• Do you trust them to do anything about it?			
• What changes would you make?			
5. Role - Plain Speaking - Construction Conversation 5			
• Do you have a clear idea about what you are being asked to do?			
• Have you been set any targets and are these OK?			
• Do you think that those around you know what they are doing and how you are supposed to fit in?			
• If you were in charge would you change anything?			
6. Change - Plain Speaking - Construction Conversation 6			
• When things have to change on site, is this done well?			
• Are you told in good time when you have to move to other sites?			
• When change does happen, does anyone talk to you about what difference this will make?			
• Does anyone talk to you about why the change was needed?			
• Can you have your say to make things better?			

DRAFT

Construction Industry Advisory Committee (CONIAC)

Tackling Ill Health Working Group

Highlighting and tackling the costs of work-related ill health

#HelpGBWorkWell

HSE Health & Safety Executive

QUESTIONS	R	A	G
1. Demands - Plain Speaking – Construction Conversation 1			
☐ Have you got too much to do in the time available?			
☐ Have you done this type of work before?			
☐ How far are you travelling to get here and does this make your day too long?			
☐ Can we change anything to make things easier for you?			
2. Control - Plain Speaking – Construction Conversation 2			
☐ Did anyone talk to you about how to do this job?			
☐ Are your skills being used to the full?			
☐ Do you think you could have your say about how to do things?			
☐ If you could change a anything to make it better, what would it be?			
3. Support - Plain Speaking – Construction Conversation 3			
☐ Do you think that this is a good place to work? How well are you supported?			
☐ Do you have anyone to talk to if you need help?			
☐ Do you have anyone to listen to you if things were going wrong?			
☐ Would you change anything to do with the support you have?			

DRAFT

Construction Industry Helpline

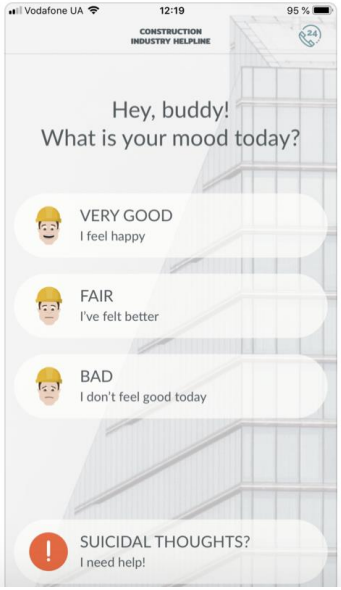
Construction Industry Solutions Limited

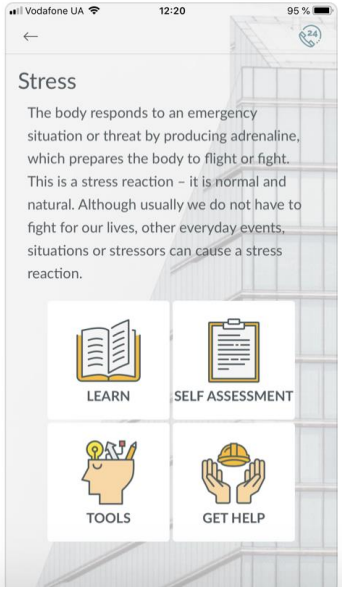
★★★★★ 5.0, 1 Rating

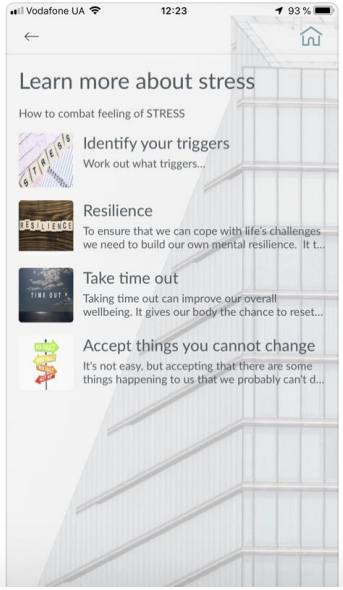
Free

HSE Health & Safety Executive

iPhone Screenshots







HSE
Health & Safety Executive

- PLUS

- MATERIALS MOVEMENT STRATEGY…….!!

- Looking at how to provide a MMS at the different stages between inception to completion (including post construction, occupancy, maintenance and demolition).

Construction Industry Advisory Committee (CONIAC)

Tackling Ill Health Working Group

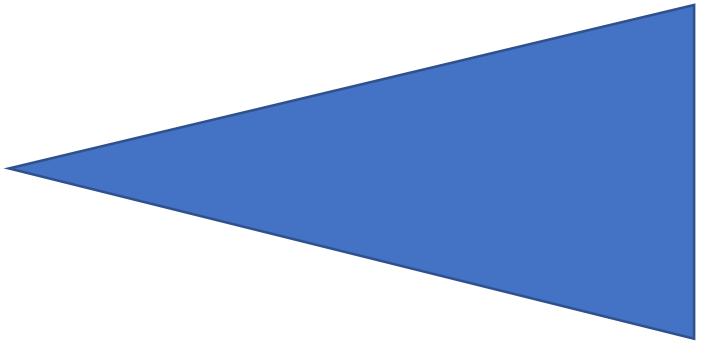
Highlighting and tackling the costs of work-related ill health

#HelpGBWorkWell

HSE Health & Safety Executive

COST – of Ill Health……

£1bn



£5bn?

……..WHAT IS IT COSTING YOU AS AN EMPLOYER?

Catastrophic Incident Prevention:

Process safety approach to construction safety management systems

Process Safety Management
Competence Programme Board

Richard Roff CEng FIMechE

Group Process Safety Manager, Costain
Chair, UK PSM Competence Programme Board

COSTAIN

This session

- Background - Redefine the safe state
- Case studies for reference
- PSM relevance in creating the built environment
- Costain's approach
- PSM education – transferable concepts

Process Safety Management

PSM is the application of management systems to

- Identify,
- Understand and
- Control

Process hazards.

Hazardous materials; Energy

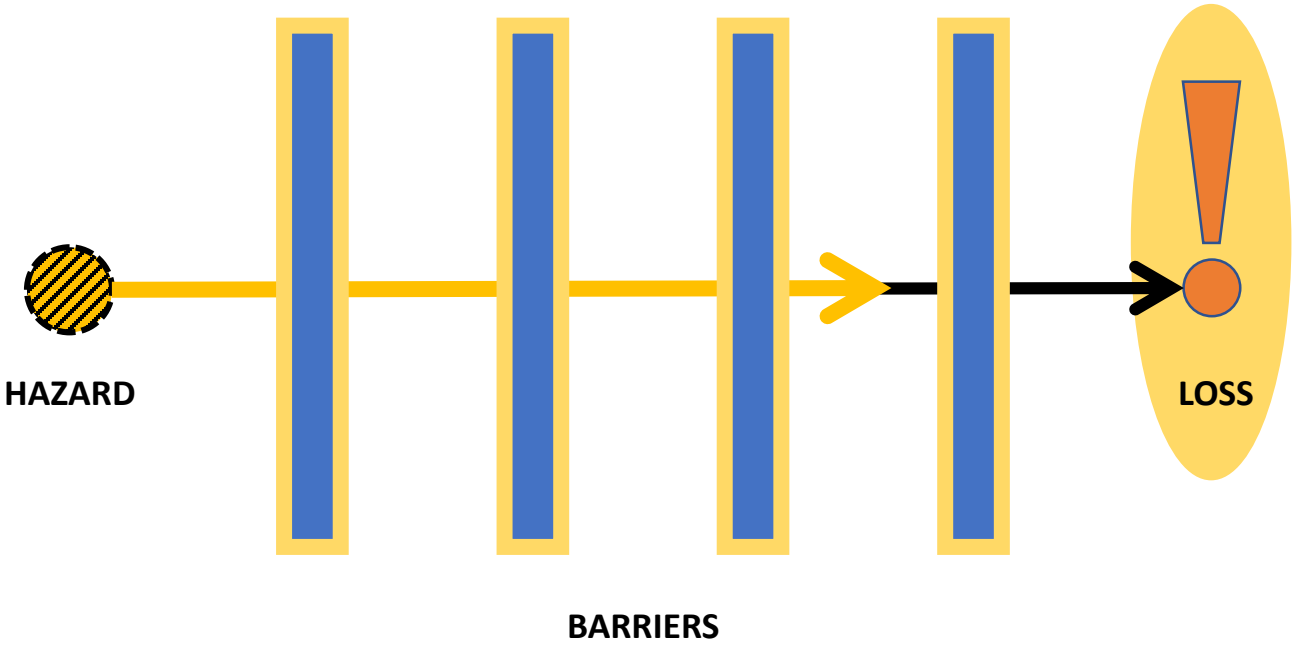
Process Safety Management

Proactive, systematic focus on processes, equipment, procedures and people involved in these.

PSM is intended to ensure acceptable levels of risk of:

- Fire
- Explosion
- Suffocation
- Poisoning
- Environmental damage

PSM: Attention to barriers, not to loss



Redefining our ‘safe state’

In process safety management, the safe state is defined by:

The presence of things we want

Not by:

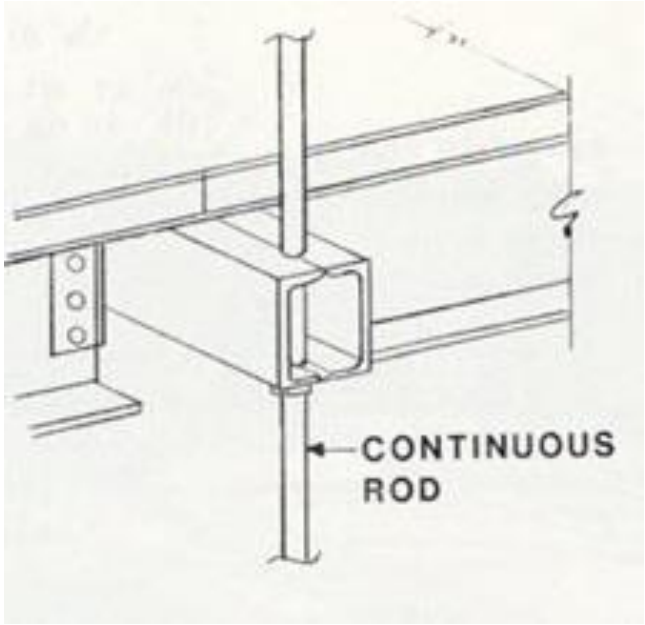
The absence of the things we don’t want.

Case studies

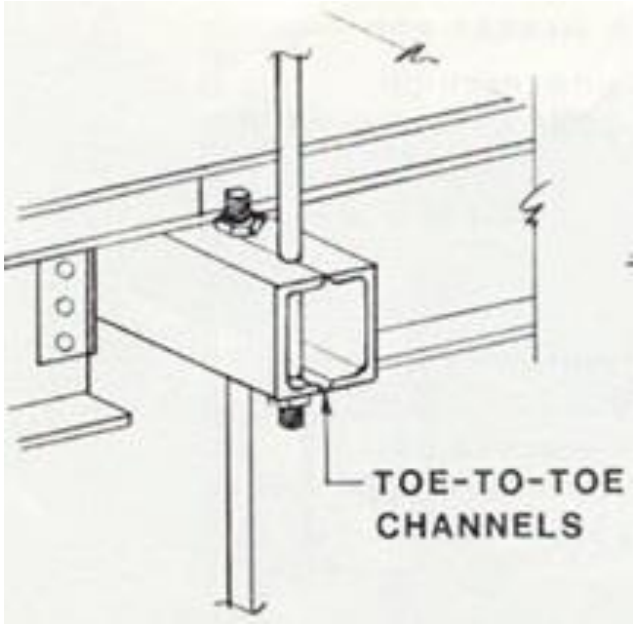
Hyatt Regency Kansas City

- Suspended walkway across hotel atrium collapsed
- Design changed during construction
- Structure not capable of carrying load
- 114 killed, over 200 further injured

Design change overview

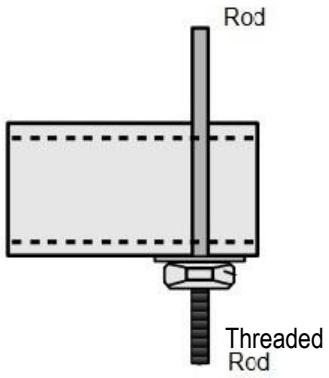


As designed

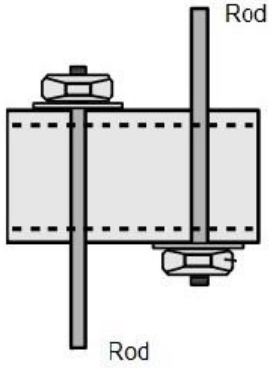


As changed

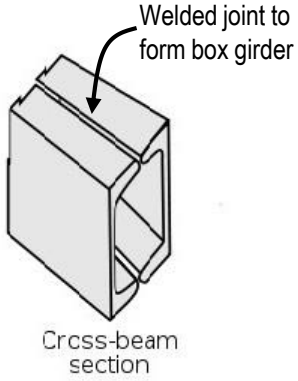
Design change section



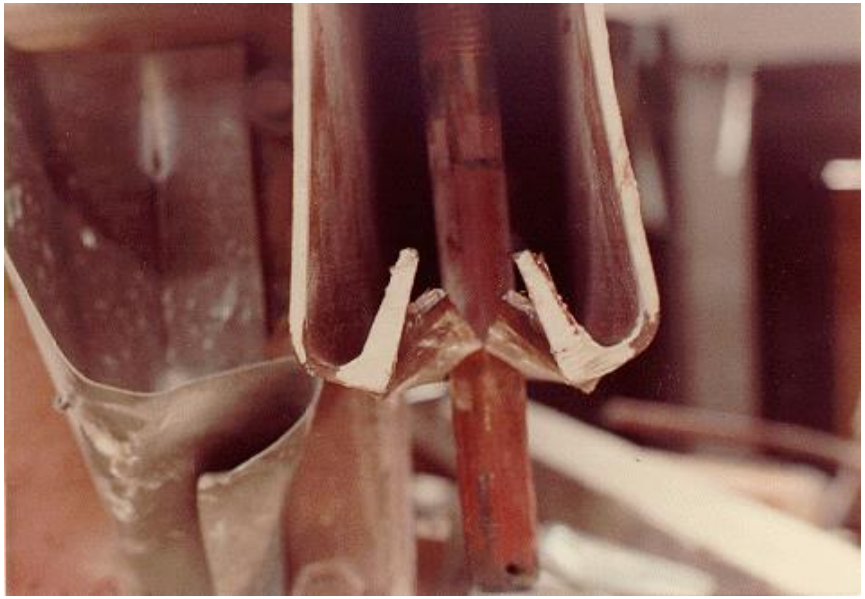
As designed



As changed



Failure mode of connection



KC Lessons

Principal contractor control – who *is* in control

Constructability

Change of design during construction – who is *now* the designer

Recognition of critical structures and redundancy in these

Lifting – Alphen aan den Rijn

https://youtu.be/LJevke4_i5Y

Alphen Lessons

Lifting operations expertise

Principal contractor control – who *is* in control

Clarity of procedural steps

Technology limitations

Inherent safety in technology / design

Inherent safety in operational processes

Consideration of location of hazardous activities

PSM wider relevance

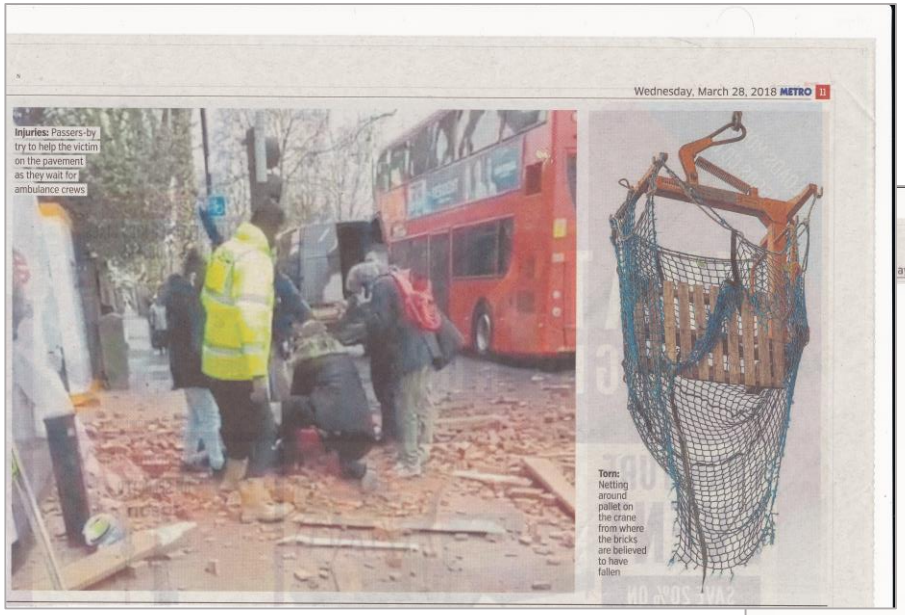
PSM – some prompts

- Relevance of catastrophic incident prevention using process safety concepts to the built environment

- In delivering infrastructure, the most hazardous time may well be during construction; clients may be less knowledgeable about this phase…

- Proximity of workforce to hazards

- Proximity of public to hazards



Wednesday, March 28, 2018 METRO 11

Injuries: Passers-by try to help the victim on the pavement as they wait for ambulance crews

Torn: Netting around pallet on the crane from where the bricks are believed to have fallen

ay, March 28, 2018

Building site: Bricks and masonry are scattered over the pavement, ringed, next to luxury flats

Woman hit by falling bricks fights for her life

by ELEANOR SHARPLES

A WOMAN was critically ill last night after she was struck by bricks and debris that fell from a building site crane.

The victim was walking along a pavement next to a development of luxury flats when the bricks apparently toppled from a pallet and crashed down around her.

Ambulance crews attended the scene in east London and the woman was taken to hospital with severe injuries.

Police were called at just after 9.30am to the Bow Corner development at St Paul's Way, Tower Hamlets.

Building debris could be seen scattered around the victim as she lay on the pavement with passers-by giving her first aid.

Aladdin Rahman said: 'My friend was driving a bus when it happened and said that some bricks had fallen on the woman. Several people were trying to get to the lady and so were the construction workers. It was a hectic scene.'

One witness posted on Twitter: 'Pallet a brick (sic) fell from a crane on a building site hit a young lady.'

Police said the victim's relatives have been informed.

Bow Corner is a development of 19 flats selling for up to £650,000.

Steve Boreham, construction director of Higgins Homes, said in a statement: 'Our primary thoughts and concerns are with the lady who has been injured and those affected today.

'We are working with the Health and Safety Executive and will release more information as soon as is available. Our priority at the moment is of course to make the area safe.'

The Health and Safety Executive confirmed it is investigating.

Investigation: Health and Safety Executive staff assess scene of the accident

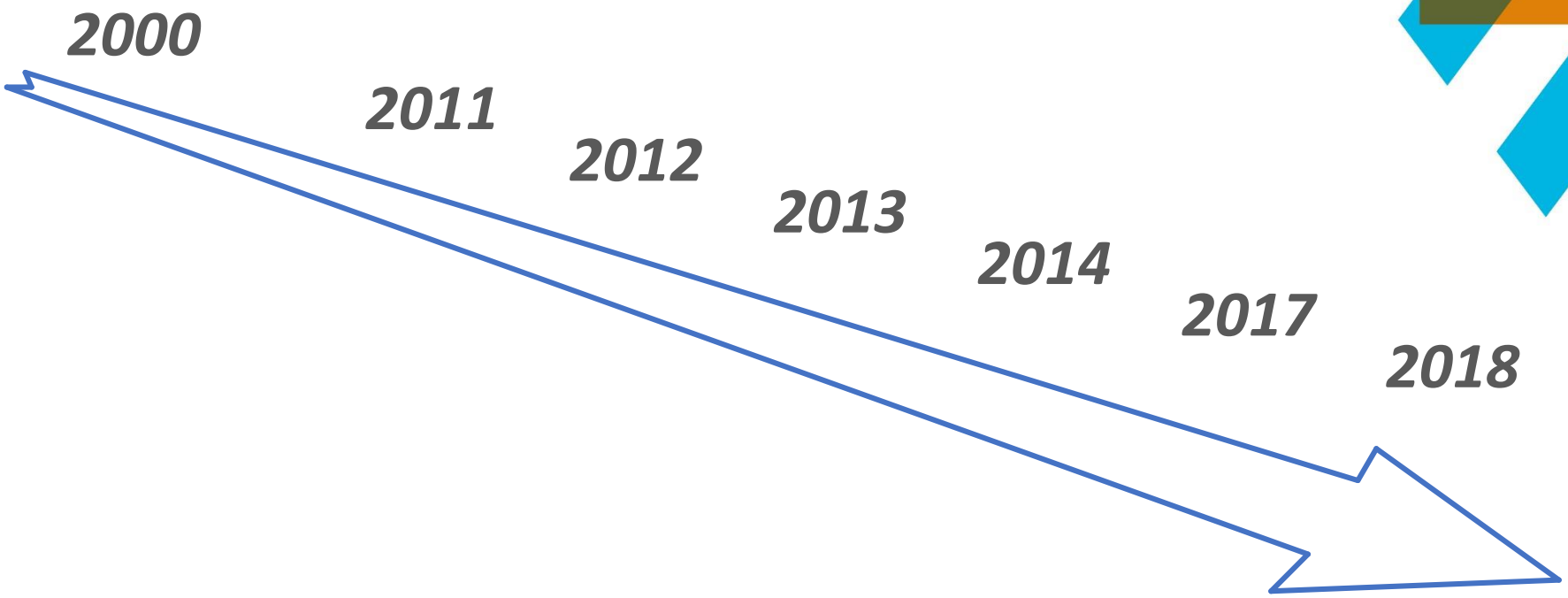
- Lifespan means control of latent defects is important

PSM Relevance

- Can we conclude that catastrophic incident prevention is relevant outside process industries?

Costain’s approach

PSM timeline in Costain



PSM timeline in Costain

2000

- **Process safety in engineering design for oil gas and nuclear sectors**
- **Government challenge to the construction industry to reduce fatal and serious injuries – focus on personal safety**

2013

2014

2018

PSM timeline in Costain

2000

2011

2012

2014

2017

2018

- **HSE research report published: Preventing catastrophic events in construction**

PSM timeline in Costain

2000

2011

2012

2013

2014

2017

2018

- **Board and senior leaders attended Process Safety Leadership training**

PSM timeline in Costain

2000

2011

2012

2013

2014

2017

2018

- **Company PSM lead appointed**
- **PSM strategy launched:**
  - **Education**
  - **Broader process safety management system**
  - **Auditing**
  - **Searching for and sharing learning**

PSM timeline in Costain

2000

2011

2012

2014

2017

2018

- **Broad education programme launched: Process Safety Management for Operations used**
- **Inclusion of high-level PSPIs in group SHE dashboards**

PSM timeline in Costain

2000

2011

2012

2014

2017

2018

- **Principles of mindful organising & highly reliable organisations included in SHE leadership training**
- **Improved recognition of incident potential in investigation**

PSM timeline in Costain

2000

2011

2012

2014

2017

2018

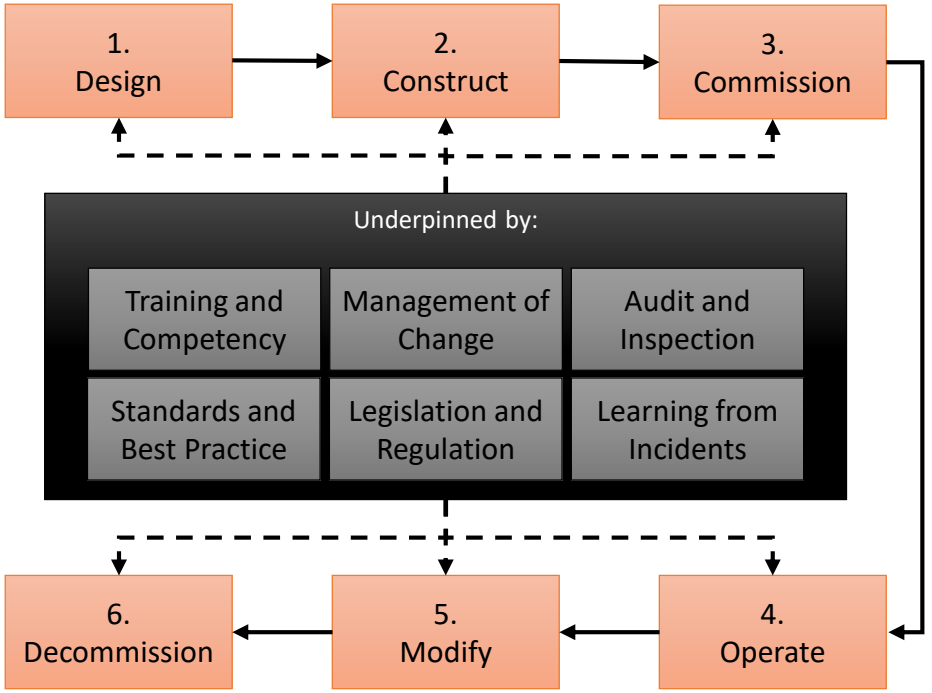
- **Bespoking of PSMO to reflect the nature of catastrophic incidents in infrastructure delivery**
- **Moving from quantity to quality measures in dashboards**

Education – transferring PSM concepts

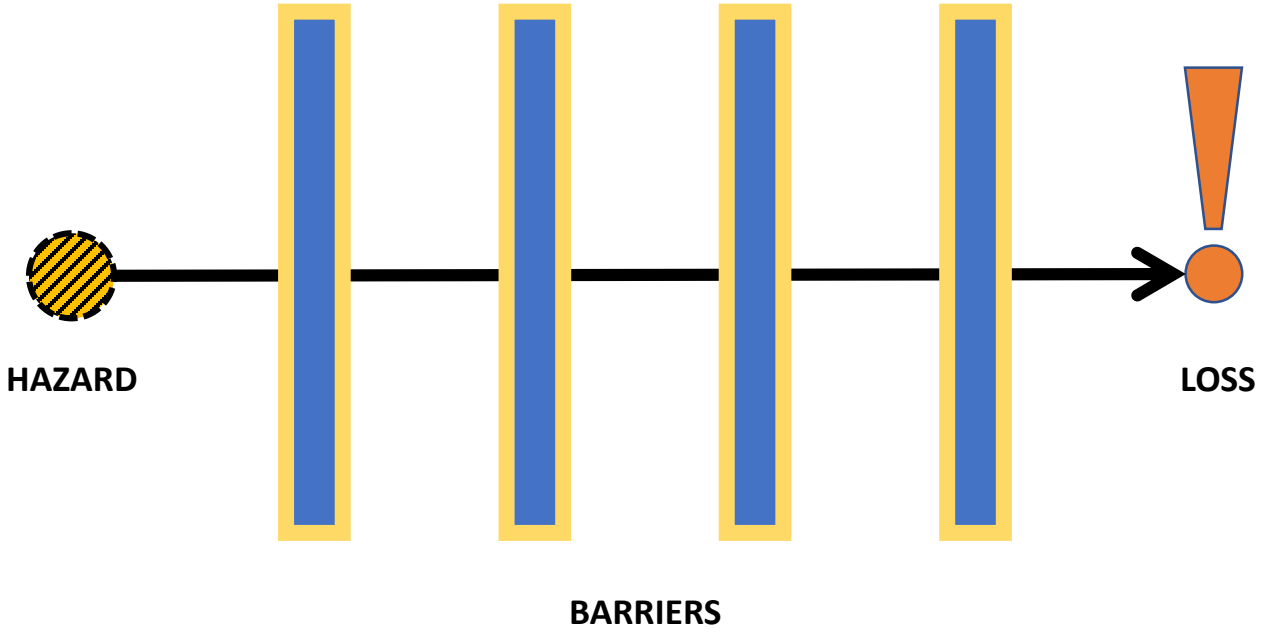
The asset lifecycle

Successful Process Safety Management must be focused on every stage of an asset's lifecycle to assure integrity

Engineering and design must therefore consider all elements of Hardware, Process and People

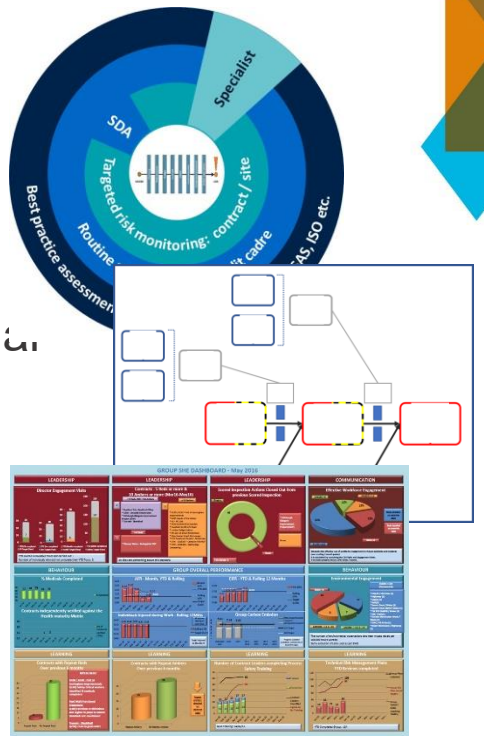


How to bring focus to barriers



Measure them…

- Audit specific systems and equipment
  - Design and operation
  - Prevention and response
- Investigate the incidents and near-misses
  - Work on recognition of ‘incidents’ and their potential
  - Fight the urge to focus on injuries
- Have leaders engage with the data
  - Sometimes in detail
  - Alongside other data
  - Recognise the weak signals in overall data



Take a different point of view


ZWAVELZUUR
UN1830
UN1803
FENOL
SULFONZUUR
PSA

Why should this be a focus

Why be interested in PSM?

Catastrophic incident potential is out there…

- Current approaches narrowly defined as the engineers' problem
- Loss data are (becoming) scarce
- Near-miss data tend to be only partially helpful
- Clients and stakeholders should be asking – some are
- The approaches are applicable beyond SHE
- Breadth of view improves your engineering capability

COSTAIN

Way forward?

- Industry defines key concepts that people in construction should know about
- Think about different information for leaders, engineers and teams
- Cheap to access, sponsored model

- Compare PSM competence programme
  - Originally NSAPI now Cogent Skills
  - https://www.cogentskills.solutions/psmcpb/

Agenda for the afternoon

13.30 Managing risk well working group update

13.40 Procurement in construction

14.20 KPWC The Inter Institutional Group Report

15.00 Sharing our success working group update

15.15 Summary and close

Construction Industry Advisory Committee (CONIAC)

Managing Risk Well Working Group

Simplifying risk management and
helping business to grow

#HelpGBWorkWell

Risk Aware, but not Risk Averse, acting Responsibly

CONIAN: Procurement in Construction

SSIP SAFETY SCHEMES IN PROCUREMENT (SSIP) LTD

Eleanor Eaton, SSIP Chair

BUILDUK Leading the Construction Industry

Paul Reeve, ECA – engineering services (Vice Chair CAS Interim Cross Industry Body).

ECA

SSIP – An introduction

When SSIP was formed in May 2009 it was made up of 3 registered members undertaking Desktop H&S Assessments.

Fast forward almost 10 years and SSIP has 70 members comprising 26 Registered Members, 21 Certification Body Members, 22 Supporter Members and 1 Affiliate Member.

Out of the 65,000 SSIP assessed organisations 51% are micro business (1-9) and 34% are SME (10-49).

Aims and overview of SSIP

SSIP is an umbrella organisation established to facilitate mutual recognition between H&S Assessment Schemes.

SSIP is a not-for-profit organisation.

SSIP has been supported by the HSE since inception (2009) and continues to work collaboratively with the HSE and other key stakeholders

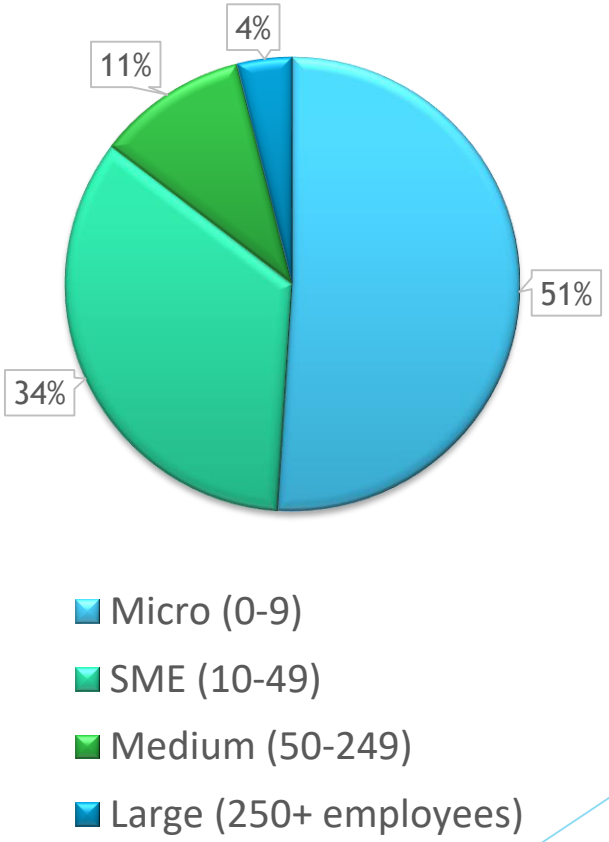
The **strategic aim of SSIP** is to reduce the overall burden and cost of Health & Safety pre-qualification to suppliers and/or buyers.

Confidence in the SSIP standard

- **SSIP supports Procurement in Construction (and beyond) by:**
  - Assessments are aligned to the SSIP Core Criteria (derived from the CDM 2007 ACOP) and are proportionate to the scope of works and size of the organisation,
  - All SSIP Assessors hold minimum H&S qualifications supported by appropriate SKE,
  - Registered Members are audited by SSIP to ensure compliance with our Membership Rules,
  - Certification Body Members are audited by UKAS as part of their UKAS SSIP Sector Scheme Accreditation.
- In addition the SSIP Core Criteria is subject to ongoing development to ensure it continues to meet the demands of industry.

Assessment Proportionality

- Member schemes must be **proportionate** in their assessment process whilst confirming the standards to be achieved have been met.
- SSIP assessments will take into account the **size** of the organisation and **risks associated** with their scope of work activities.
- SSIP assessments recognise the reduced documentation requirements for a micro business / SME.

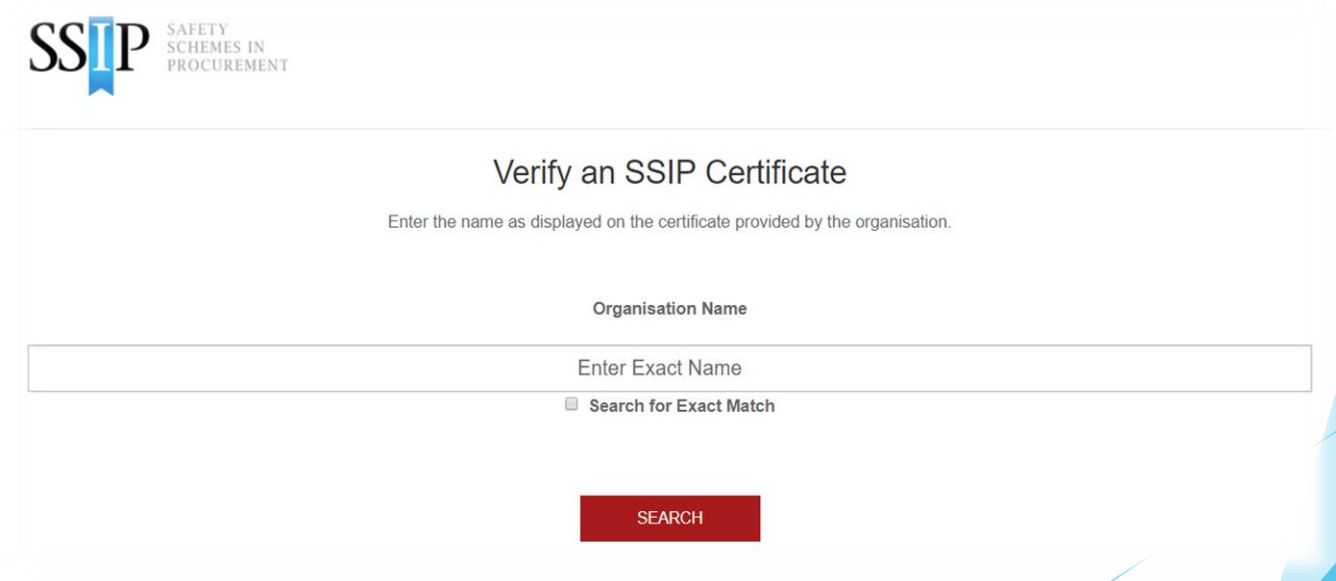


Mutual Recognition between Schemes

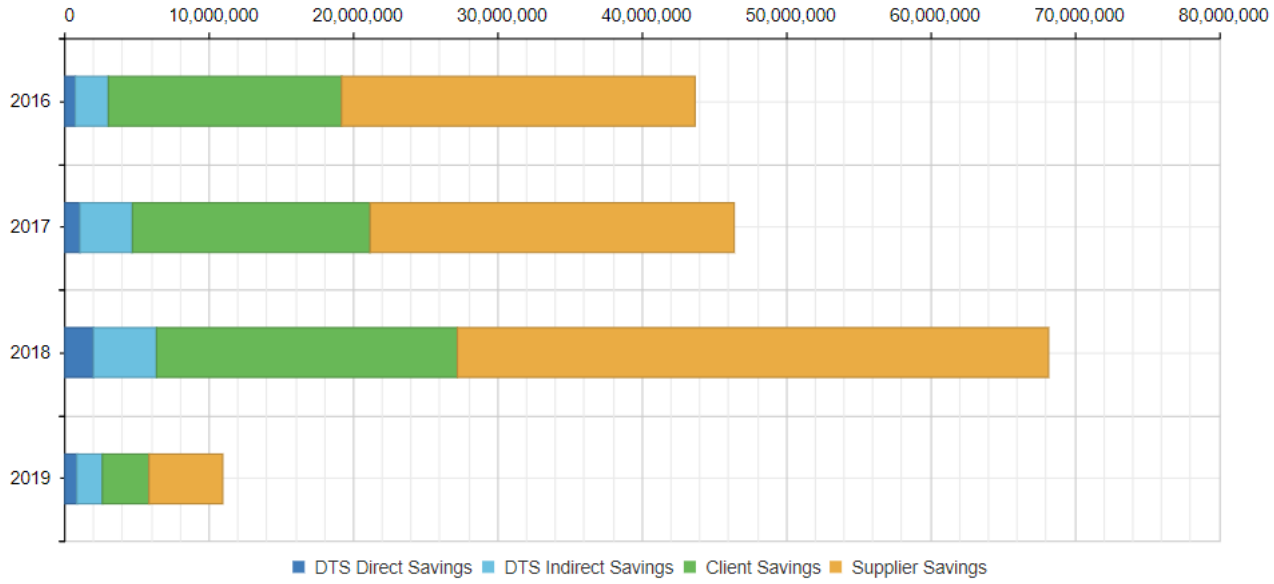
- A key aspect of SSIP is ‘Deemed to Satisfy’
  - This enables an organisation to only have to undertake one full assessment with any member scheme,
  - Once approval has been achieved the details will be shown on the SSIP **Portal**,
  - If a buyer requires a specific scheme the organisation can claim a DtS certificate with any other Registered Member scheme at a reduced fee and without the need to go through another H&S Prequalification assessment
  - Thus reducing time, effort, cost and bureaucracy

Other Benefits: The SSIP Portal

- The SSIP Portal is **provided free of charge** to industry, enabling users to simply verify that a supplier holds SSIP member scheme health and safety certification.
- The SSIP Portal is a ‘live’ online database detailing over 64,000 suppliers who have successfully completed SSIP member scheme assessments.



Validated Savings to Industry

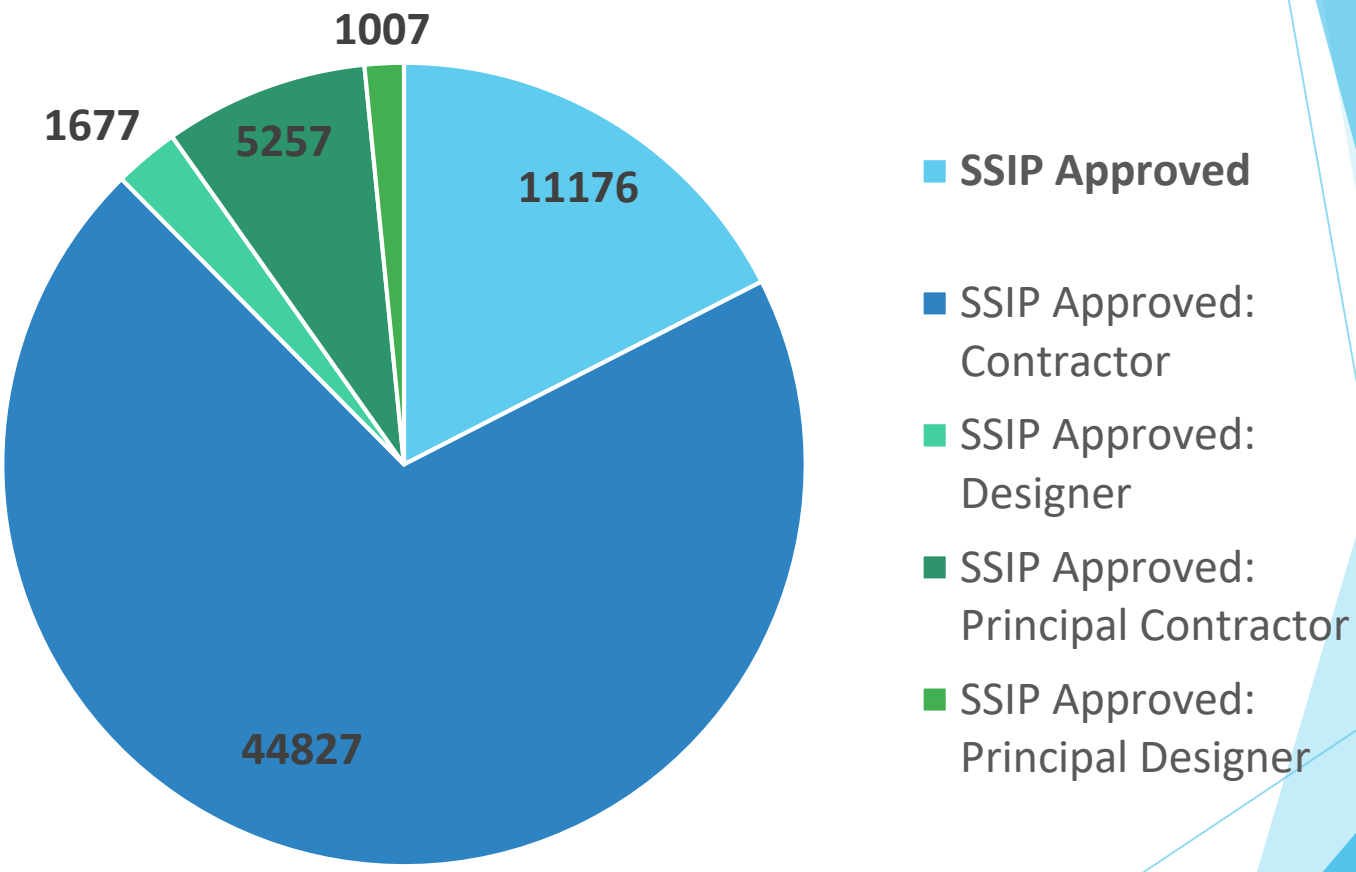


Total Savings
£169,095,050.00

Total DTS
£16,599,575.00

Total Client & Supplier
£152,495,475.00

Beyond Construction:
63,944* SSIP Portal Entries



* Figures valid 03.07.2019

A new Common Assessment Standard…

During 2019, **Build UK, CECA** and industry partners are delivering on an action in the current **Construction Sector Deal**, by introducing a **Common pre-qualification Assessment Standard.**

BUILDUK
Leading the Construction Industry

SSIP

Aims and overview of the Common Assessment Standard

The Common Assessment Standard has been developed by Build UK/CECA with the support of both member organisations and external bodies

The Common Assessment Standard is *not a new scheme* - it is intended to be the industry-agreed construction prequalification standard for assessment schemes.

Build UK/CECA will eventually take a step back and the Common Assessment Standard will be overseen by an **Industry Oversight Body** that will include even more industry stakeholders

The **strategic aim of the Common Assessment Standard is to do away with the** burden and cost of excessive pre-qualification to suppliers and buyers.

BUILDUK
Leading the Construction Industry

Overview of the Common Assessment Standard

Assessors must meet agreed *criteria* in order to be Recognised Assessment Bodies

Assessment via any Recognised Assessment Body will be fully recognised by any other Recognised Assessment Body

In addition to the questions, the Common Assessment Standard has *question assessment criteria* for both desktop and site-based audits

The questions cover a range of general, essential pre-qualification buyer enquiries and are based on the widely recognised **PAS 91** question set

There are significant exemptions from the questions – e.g. for micro businesses, helping to deliver **proportionality**

BUILDUK
Leading the Construction Industry

The Common Assessment Standard

The **Common Assessment Standard** *includes* health and safety and it **recognises SSIP member scheme assessment as exemption from the bulk of health and safety questions** (via an SSIP certificate).

The Common Assessment Standard (a further industry development of **PAS 91)** aims to be the **'one prequalification scheme, many providers'** solution long requested by both buyers and suppliers. The Common Assessment Standard covers:

- Identity
- Financial
- Corporate & Professional Standing
- **Health and Safety** (**SSIP Assessment** + 4 additional questions) – 'Section 4'
- Environmental
- Quality
- Equality
- Corporate Social Responsibility
- Information Security and GDPR
- Building Information Modelling (BIM)

There are currently 3 Recognised Assessment Bodies: Achilles, Constructionline and CHAS - and more are expected shortly.

There are two types of assessment: **desktop** and **site-based** and it is potentially applicable *beyond construction* (e.g. maintenance, services, utilities)

BUILDUK
Leading the Construction Industry

SSIP

AM I EXEMPT FROM ANSWERING SECTION 4 OF THE COMMON ASSESSMENT STANDARD IF MY ORGANISATION ALREADY HOLDS A VALID ASSESSMENT WITH AN SSIP MEMBER SCHEME?

Yes! - If you hold a valid assessment/UKAS-accredited ISO 45001 via an SSIP Member Scheme you are **exempt** from answering *44 out of the 48* Health and Safety questions…

The 4 supplementary questions in the H&S section are:

1. Who is responsible for H&S within your company? i.e. name of H&S contact who should be a director of the business.
2. Does all your workforce (including those who are self-employed), who are working on construction sites undertaking a recognised construction occupation, hold CSCS or CSCS partner scheme cards? ***Advisory***
3. Is your company part of any fleet operations/management scheme? ***Advisory***
4. Do you have a drug and alcohol policy? ***Advisory***

BUILDUK
Leading the Construction Industry

SSIP

SSIP and the CAS offer *complementary industry solutions*

""We hope the CAS will embrace the excellent work of SSIP which has been achieved by both our members and also the increasing number of organisations who have demonstrated compliance with the SSIP Core Criteria. SSIP will continue to support SMEs and micro businesses to demonstrate compliance with health and safety legislation in a ***proportionate, achievable way, as supported by the HSE****."*

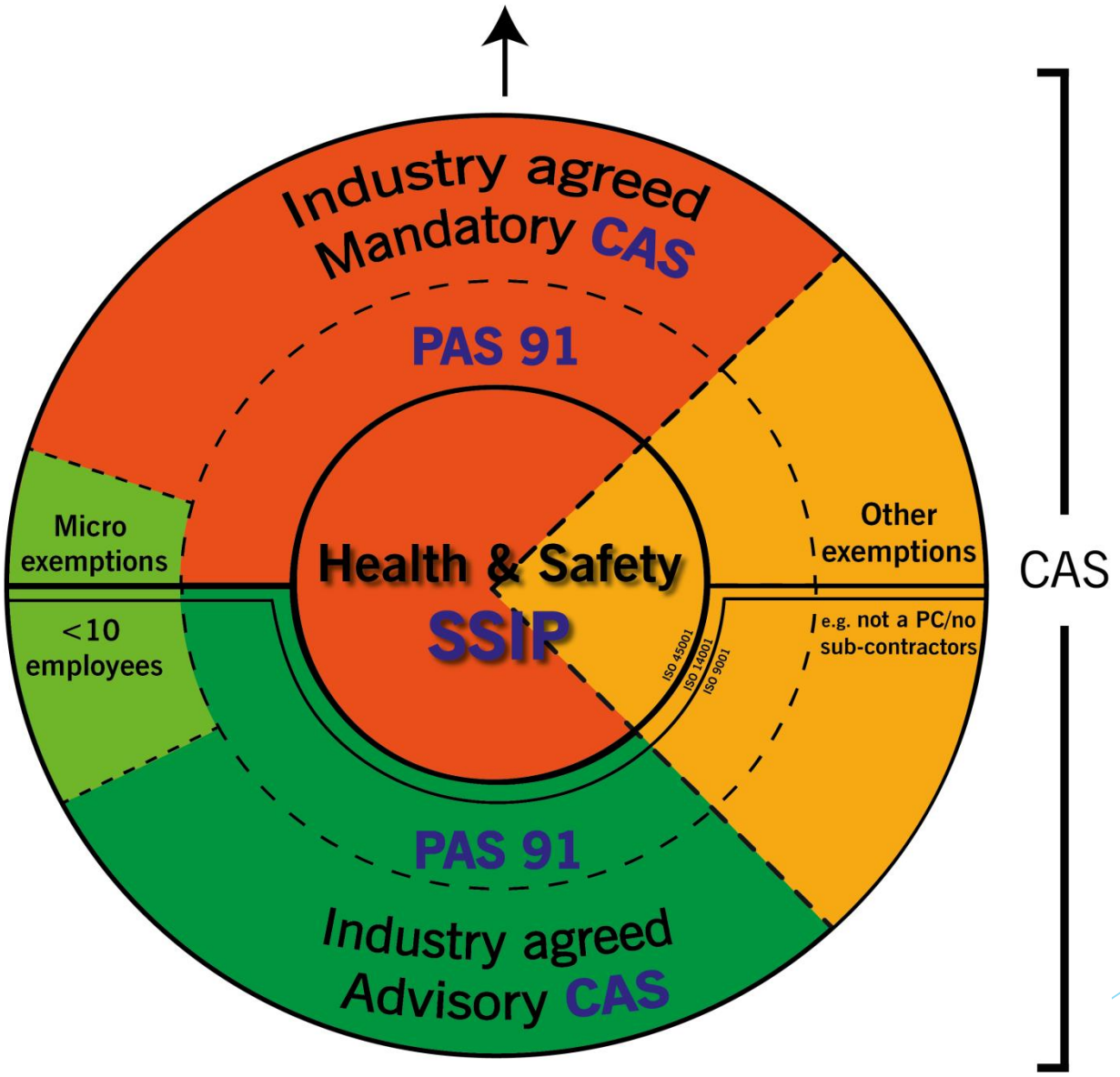
Eleanor Eaton, SSIP Chair, June 2019

"As the CAS develops, buyers and suppliers will see early and continued benefit from CAS recognition of the health and safety assessment standards ***already established by SSIP****. SSIP and the CAS are thus complementary approaches to* ***saving buyers and suppliers time and money****"*

- *Paul Reeve, ECA, June 2019*

QUESTIONS ?

CAS/SSIP Assessment Criteria and Processes



Buyer requests either CAS site-based, CAS desktop or SSIP

CDM 2015 – from Compliance to Consultation & Collaboration

An inter-institutional report

CONIAN – Friday 5th July 2019

CIC BUILT ENVIRONMENT PROFESSIONS TOGETHER

Introduction

- Why we wrote the report
- The most significant features of CDM 2015 (L153)
- ICE/RIBA training delivery 2015-2019
- Case studies
- Areas of confusion
- Summary of key findings

Why we wrote the report

‘Professional institutions - eg. RIBA, ICE, IStructE, CIOB, RICS etc. MUST lead the development of standards for their communities’

Russell Adfield, Head of the Construction Management Unit, HSE- addressing the APS Health and Safety Conference in London on 14th September 2016

CDM 2015 – what are the significant changes?

- The client owns the management arrangements
- The Principal Designer is the lead design management function preceding any construction activity at any stage
- Skills, knowledge and experience replace ‘competence’
- Information/instruction must be ‘comprehensible’
- Workforce involvement with risk assessment

ICE training

Industry –wide

- Ports
- Transport
- Local Authorities
- Water
- Energy
- Local government
- Health Authorities

ICE training – 2015 to 2019

252 - the number of companies who have booked In-house courses

3275 - the approximate number of attendees on in-house courses

519 - the numbers of delegates on Public courses

199 - number of downloads of eLearning

RIBA Principal Designer training

AIMS

- To equip qualified architects to take on the duties of the Principal Designer, as intended by CDM 1994 & 2015
- Explain that this is a new role and not the same as the CDM-Coordinator.
- Utilising their current range of skills and experience
- Increasing their understanding of health and safety issues.
- Explain that many CDM-C duties now with the client and Principal Contractor e.g. F10, competence assessment, CPP, site inspections, etc.
- PD to concentrate on ALL design risk management issues & NOT just “Health and Safety”.
- This needs resourcing so reasonable fees are legitimate

RIBA Principal Designer training

2015 to mid 2019:

Total of 75 RIBA events: 1,773 delegates

- Two day training, feedback & workshops
- One day training workshops
- Half day training sessions
- Webinars – with 6no. Modules
- E-Learning –recorded modules

Total Students Approx. 900 (Av. 50 per course)

Common content – ICE and RIBA

- CDM Strategy Brief- CDM -scene setting & the big issues
- Application of the General Principles of Prevention (sfarp)
- Reducing bureaucracy and ensuring information is easy to understand- not just narrative.
- Focus on ‘Project CDM’ rather than ‘Legal CDM’- actual issues not just “liability risk avoidance”

Case study - InterGen

SPALDING NORTH 400kV SUBSTATION CDM AREA IDENTIFICATION

ACCESS
A Road Access National Grid /SEEL
B Pedestrian Access National Grid / SEEL
C National Grid Emergency Exit / Siemens
D Siemens T&D CDM area access

LIVE BARS

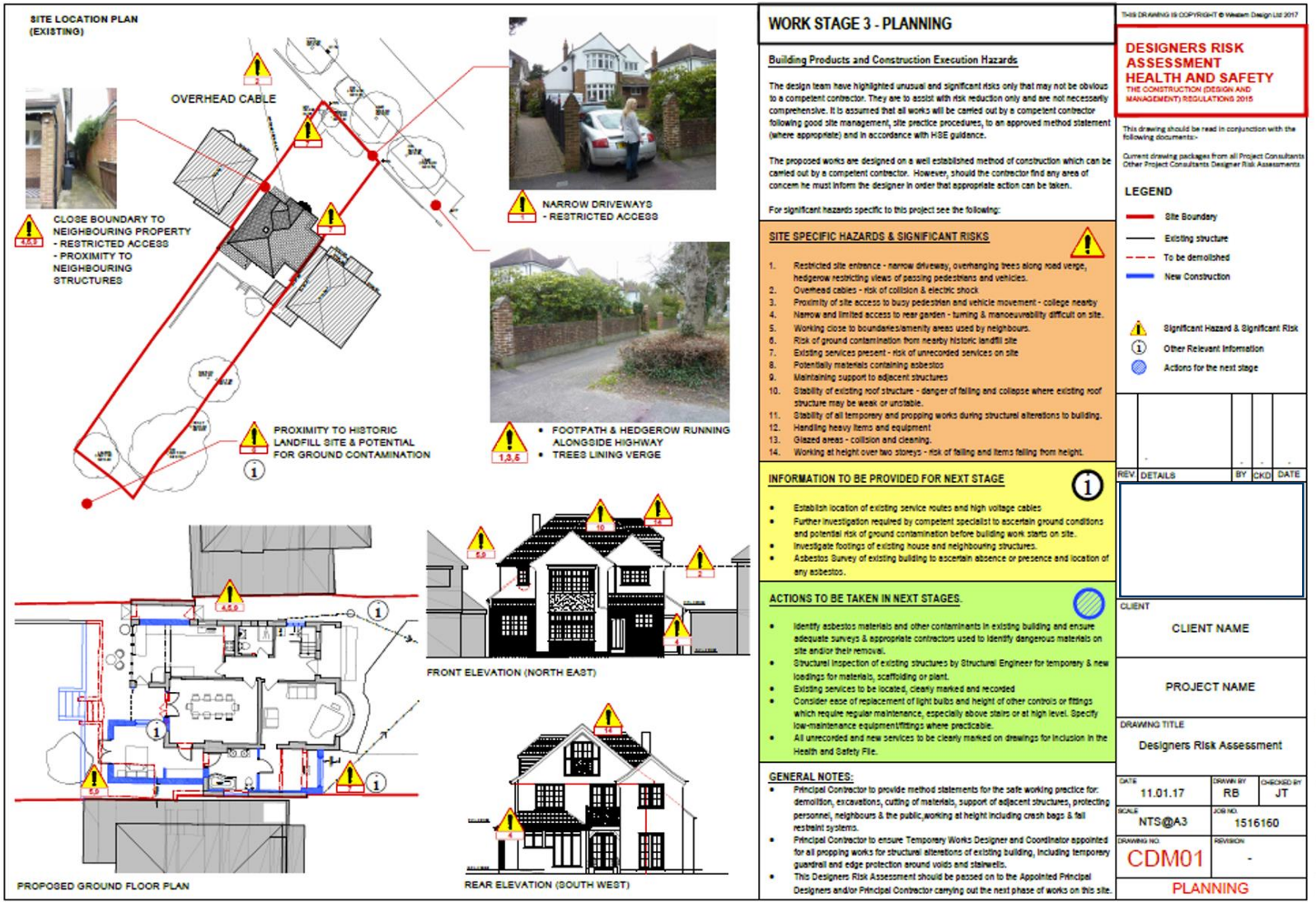
SIEMENS T&D CDM AREA (SEEL)
SIEMENS T&D CDM AREA (NGC)
HAZARD

Incomprehensible information

CDM Design Hazard Log: Project 'X'

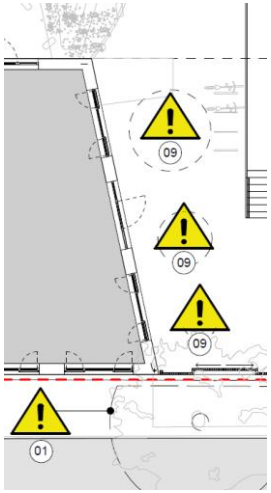
PART A - HAZARD ELIMINATION/REDUCTION												PART B - TRANSFER OF INFORMATION				PART C - CONTRACTOR IMPLEMENTATION			
A	B	C	D	E	F			G	H			I	J	K	L	M	N	O	P
Ref	Specific Location/Activity	Phase	Author - Name & Company	Potential Hazards	Initial Risk Rating L	S	R	Action by Designer to Eliminate/Reduce Risk Rating	Residual Risk Rating L	S	R	Information provided about the residual hazards - Drawing/Document	Design Manager responsible - Name	Designer/Constructor Discussion Date & Comments	Status Active/ Closed	Construction Manager responsible - Name	Control Measures required	External Review of Control Measures? Y/N (by whom)	Control Measures identified in:
STRUCTURES																			
S.1	S01 piers	C,M,D	TAN (Jacobs)	Working in proximity to live traffic	4	5	20	S01 crosses several major roads and impossible to configure within alignment constraints to avoid constructing near live traffic. Risk cannot be eliminated or significantly reduced. Position piers as far away from live traffic as possible. Single span	3	5	15	Note on drawing - method statement required to cover particular issues relating to the complexity of the existing slip roads and A282 underneath and requirements for temporary road closures for pier construction.	Tim Nicholson	17/05/06 & 21/05/06	Active	M Bell	Works to be carried out with lane closures in accordance with Costain TM phases. Provide proteced safety zone with barriers		
S.2	S01 Working in A2 c.r. adjacent to live traffic	C,M,D	TAN (Jacobs)	Working in proximity to live traffic	4	5	20	S01 crosses several major roads and impossible to configure within alignment constraints to avoid constructing near live traffic. Cannot be eliminated and therefore no mitigation available to designer.	4	5	20	Note on drawing - method statement required to address the particular difficulty of working in an island site	Tim Nicholson	17/05/06 & 21/05/06	Active	M Bell	Works to be carried out with lane closures in accordance with Costain TM phases. Provide proteced safety zone with barriers		
S.3	Pier bearing installation, maintenance & replacement (S01, S04, S10(N) & S10(S)	M	TAN (Jacobs)	Working in proximity to live traffic. Working at height	5	5	25	Design as integral bridges without bearings considered but structure too long for this. No alternative mitigation available to designer in this respect.	5	5	25	Note on drawing - method statement required addressing handling and installing of heavy components at height with restrictive clearances. Log in H&S file.	Tim Nicholson	17/05/06 & 25/05/06 Residual risks to be noted in H&S plan - barrriesrs & TM required	Active	M Bell	Provide protected safety zone with tvcbs to mitigate traffic risk.		
S.4	Inspecting joints and bearings at abutments (S01, S04, S10(N) & S10(S)	M	TAN (Jacobs)	Working at height.	3	5	15	Provide enclosed abutment galleries	2	2	4	RRR <6 - no further action required	Tim Nicholson	17/05/06 & 21/05/06	Closed	M Bell			
S.5	Painting of steelwork (S01, S04, S10(N) & S10(S)	C,M	TAN (Jacobs)	Working at height.	3	5	15	Use weathering steel	1	5	5	RRR <6 - no further action required	Tim Nicholson	17/05/06 & 21/05/06	Closed	M Bell			
S.6	Concrete impregnation	C	TAN (Jacobs)	Use of potentially toxic substance (silane)	4	2	8	Apply for Departure from Standards to use less toxic substance (Pavix) or to use concrete additive.	4	1	4	RRR <6 - no further action required	Tim Nicholson	17/05/06 & 21/05/06	Closed	M Bell			
S.7	Parapet installation (S01, S04, S10(N) & S10(S)	C	TAN (Jacobs)	Working at height, debris falls	3	5	15	No mitigation available to designer at installation stage.	3	5	15	Note on drawing - method statement required to address the particular dufficulty of providing temporary edge protection while installing the permanent edge protection at the same location. Log in H&S file - maintenance wpork on the outside of the parpap	Tim Nicholson	17/05/06 & 21/05/06	Active	M Bell	Cantilever formwork left in position until parapet installation complete		
S.7a	Parapet maintenance (S01, S04, S10(N) & S10(S)	M	TAN (Jacobs)	Working at height, debris falls	3	5	15	Use aluminium parapet to minimise maintenance	1	5	5	RRR <6 - no further action required.	Tim Nicholson	17/05/06 & 31/05/06 Residual risks to be noted in H&S plan	Closed	M Bell			
S.8	Placing deck formwork (S01, S04, S10(N) & S10(S)	C	TAN (Jacobs)	Working at height.	5	5	25	No mitigation available to designer.	3	5	15	Note on drawing - method statement required. Consider placing deck formwork at ground level and lifting into place with beams. Otherwise special precautions e.g.netting, harnesses, will be required to ensure safety of operatives while working on bare st	Tim Nicholson	17/05/06 & 21/05/06	Active	M Bell	Permanent formwork placed where possible at ground level and lifted into place with main steel.		
S.9	Placing deck formwork (S01, S04, S10(N) & S10(S)	C	TAN (Jacobs)	Debris falling onto motorway and construction site.	5	5	25	No mitigation available to designer	3	5	15	Note on drawing - method statement required - see above - but addressing containment of materials by use of netting or similar.	Tim Nicholson	17/05/06 & 21/05/06	Active	M Bell	Any formwork erected at height to be carried out wijt lane closures in place or area beneath enclosed		
S.10	Site splicing of steelwork (S01, S04, S10(N) & S10(S)	C	TAN (Jacobs)	Working at height.	3	5	15	Minimise number of splice positions.	2	5	10	Note on drawing - method statement required to address handling of heavy components at height.	Tim Nicholson	17/05/06 & 21/05/06	Active	M Bell	All work at height to be carried out wijt lane closures in place or area beneath enclosed		

A Domestic Principal Designer Drawing

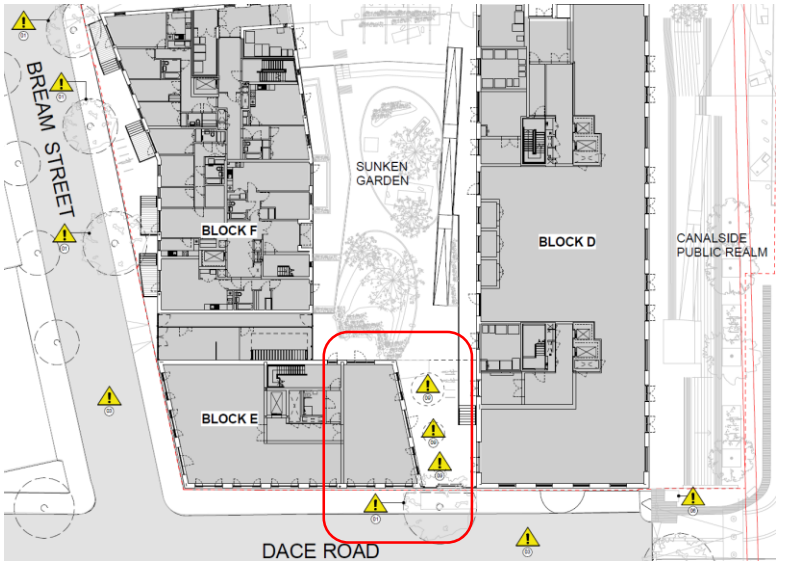


AHMM CDM Analysis Process

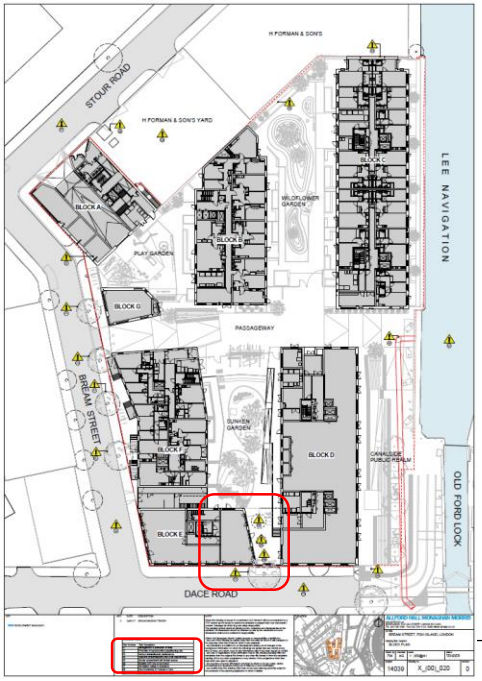
Identify risk/issue



Project specific risk/issue



Locate risk/issue



General arrangement risk/issue

RESIDUAL RISKS	
Risk Number	Risk Description
01	Management & protection of trees
02	Proximity of canal/overflow pipe/flooding risk
03	Narrow streets/facade maintenance
04	Adjacent properties/party wall (note sequencing)
05	Smoke extract/shaft with limited access
06	Existing CRT box to be moved
07	Substation design in abeyance
08	New Substation in Foreman's Yard
09	Sky light open/fall restraint provided

List of risk/issues on drawings

Hazard Awareness and Risk Management Register

ALLFORD HALL MONAGHAN MORRIS

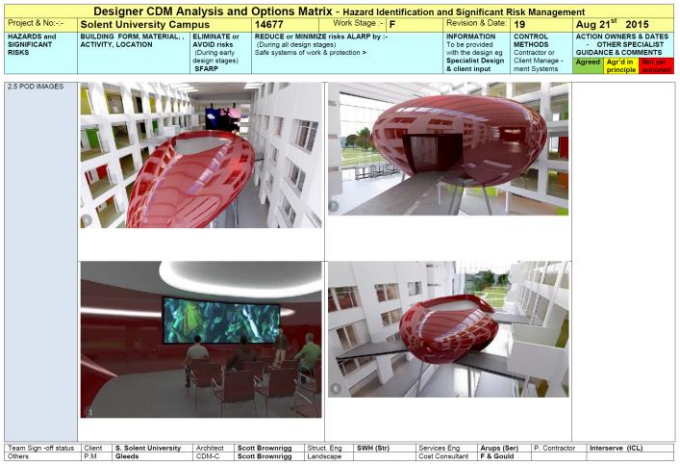
Project Name				Risk Tolerability/Acceptability
Project Number				Risk tolerable
Prepared by		Checked by		Further consideration required
Date		Stage		Risk not tolerable

Risk Ref.	Relevant Hazard / Risk Identification	Design Control Measures / Residual Risk / Drg. Ref.	Action Owner	Date Required	Completed
[Unique ref. no to identify risk on drawings]	*[Identified from HARI Checklist or project analysis reviews]*	*[Brief summary of proposed risk control measures]*			

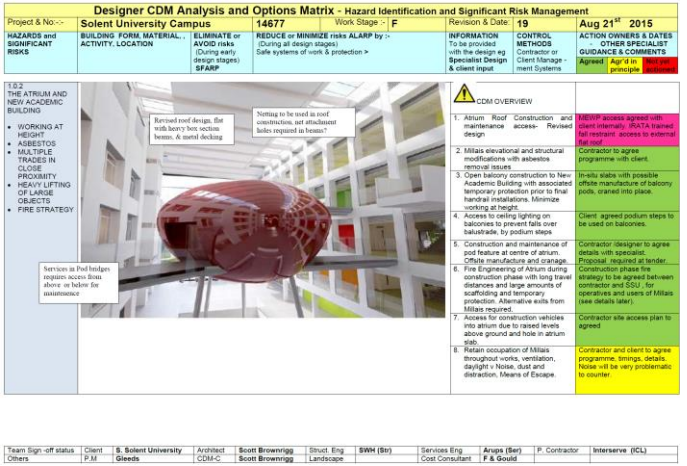
Simple management register of risk/issues

CIC

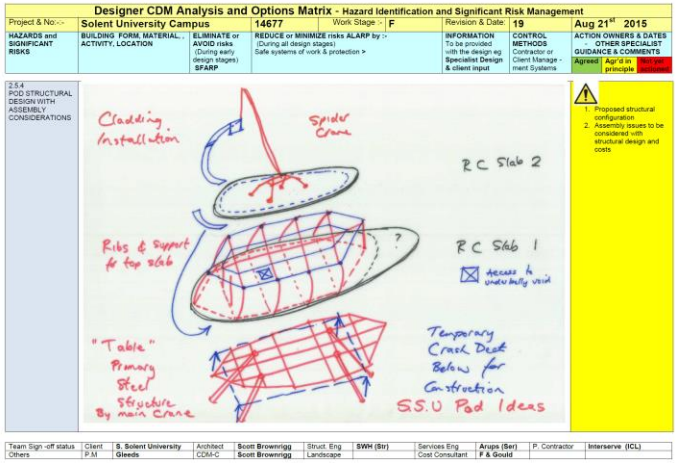
RIBA – CDM Issues Analysis-



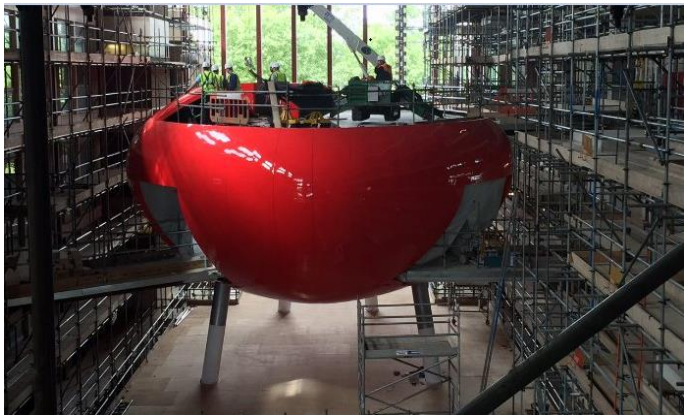
1. The design intent



2. The design risk analysis



3. The design development



4. The construction implementation

CDM 2015- areas of confusion

1. Domestic projects –
   - Client Duties before PC appointed?
   - Adequate “time and resources’’ for PD role?
   - PD role “falls to” Lead designer (in writing) NOT “Defaults”.
   - PD- Designer in control of the pre-construction phase
2. Pre-construction phase- ie. any “design” phase (not before start on site)
3. Two contractors – what constitutes a contractor?
   - If 2 contractors for a PC, why not 2 designers for a PD?
   - H&S file for projects with 2 Contractors or more?
4. F10 as early as possible but before start on site?
5. “Designer” and “Principal Designer” definitions too ambiguous/flexible.

Summary of Main Findings

- With the right education, architects and engineers are well capable of leading the Principal Designer function
- The development of a CDM Strategy brief is key to establishing a coherent approach to CDM at the beginning of the project
- Visual risk representation aids team-based risk management

Sharing our Successes Working Group

Dr Tim Beaumont

Construction Management Policy Unit

Concluding remarks and thanks

Safe journey home and please provide feedback