National Highways
Principal Designer Working Group
Meeting No.28

Thursday, 21st July 2022 9.15 am – 12.45 pm.
(Teams Call)

Attendees

Name	Initials	Position	Organisation
Richard Wilson (Chair)	RW	H&S Director C&P	National Highways
Doug Potter (Secretary)	DP	TA HSW Lead - Principal Designer Manager	Arcadis
Nina Warminger	NW	H&S Manager SWAD	National Highways
Mark Lamport	MLa	Technical Director / Principal Designer Manager	Arcadis
Pav Singh	PSi	Technical Director / Principal Designer Manager	Arcadis
Tim Bowes	TB	Principal Designer Manager	Atkins
Ian Nixon	IN	Hub Lead	Costain
Paul Brown	PB	Technical Manager	WSP Group
Roger Swainston	RS	PD / CDM Advisor	Jacobs
Tim Goddard	TG	Principal Designer Manager	Arcadis
Toria Thomas	TT	Principal Designer	Arup
Abbey Featherstone	AF	Technical Lead	Connect+
Katie Harman	KH	YNE Safety Lead	National Highways
Elizabeth Bennett	EB	Director	Safety in Design
Jonathon Giles	JG	Principal Designer Manager	Rambolt
Tony Lewis	TL	P Designer Man. YNE	Costain
Dave Olorenshaw	DO	Area Manager	Kier
Natalie Mansell	NM	Head of Safety – SR, H&LT	Atkins
Jon Webster	JWe	Safety Lead	Kier
Jim Gallagher	JG	Prin Struct. Advisor (SES)	National Highways
Josh Hicks	JH		Mott Macdonald
David Riley	DR	H&S Business Partner	Amey
Andrew Finch	AF	Director of Operations	Jacobs
Beverley Mears	BM		National Highways
Robert Legg	RL	Highways Safety Co.	Motts

Helen Richardson	HR	NH Regional Lead	National Highways
Steve Willoughby	SW	Technical Director	Pell Frischmann
Stephen Larkin	SL		Aecom
Sophie Gwynne	SG	Graduate Highway Engineer	Arcadis
Charlotte Cook	CC	WHS Lead	Arcadis
Jim Castle	JC		LTC
Leah Shah	LS		
Nick Boyle	NB	Technical Manager	Balfour Beatty
Michael Salvanos	MS		Pell Frischmann
Paul Dennis	PD		Arup
Tim Walker	TW		Galliford Try
Andy Robinson	AR		
Alexandra Kouts	AK		Arup
Saskia Lear	SL	Principal Designer Manager	Arup
Liz Brathwaite	LBr	H&S Lead	Skanska
Euan McRobie	ER	H&S Lead	Capita

Guests:

Kevin Stevens	KS	Safety Manager	FM Conway
Kenneth Brodie	KB	Senior Dev. Sust Dev.	National Highways
Janvi Shar	JS	Asset Manager	National Highways
Paul	P	Intelligence	CPNI
Jonathan Marshall	JM	Technical Director - GIS	Arcadis
Aidan Cavander	AC	BIM Lead	WSP
Chris Sinfield	CS	BIM Lead	Atkins

Apologies:

Paul Boddy	PB	Director	Interserve
Stephanie Goldsmith	SG	Senior H&S Advisor	Skanska Infrastr.
Katie Swanick	KS	Contracts Manager	Motts
Aimee Blay	AB	Design Manager	Galliford Try
Thomas Merry	TM	H&S Lead	National Highways
Ronan Finch	RF	Principal Designer	WSP
Shaun Pidcock	SP	Director LTC	National Highways

Paul Claydon	PC	H&S Manager	WSP Group
Phil Samms	PS	Engineering Man. (Area 3)	Kier
Kevin Morgan	KM	PD / CDM Advisor	Jacobs
Mark Riordan	MoR	Principal Engineering Man.	Amey
Paul Wilkins	PW	Ass. Tec. Director Structures	Arcadis
Dave Townsend	DT	H&S Team Standards	National Highways
Jon Horrill	JH	Principal Designer / H & S	WSP Group
John Migoski	JM	Technical Manager	Network Rail
Suryakant Patel	SP	Principal Designer Manager	Costain
Steve Ristow	SR		Transport for London
Sean Connon	SC	Principal Designer Manager	Costain
Ben Moult	BM	Safety Lead	Balfour Beatty
David Lumb	DL	Health and Safety Business Partner – RIP North	National Highways
Steve Yates	SY	PD / CDM Advisor	Jacobs
Mark Bridges	MBr	Former H&S Hub Lead	Galliford Try
Jordan Flint	JF		Kier
Lawrence Weller	LW	Safety Manager	TfL
James Washington	JWa	Safety Lead	Kier
Owaiz Khan	OK	Technical Manager	MGF
Richard Horan	RH		Telent
Glen Matthews	GM		Kier
Robert Mullen	RM	Asset Information Group	National Highways
Marcus Anning	MA		National Highways
Jim Tod	JT	Temp Works Designer	Tony Gee/Twf
Jason Glasson	JG	Asset Information Manager	National Highways
Tarandeep Atwal	TW	Associate Director	Arcadis
Rob Eagles	RE	Temp Works Designer	MGF
Charlotte Taylor	CT		Morgan Sindall
David Owens	DO	Digital Manager	WSP
Russell Brookes	RB		National Highways
Chris Griffin	CG	Design Innovation Manager	National Highways
Greig Houghton	GH	Design HSE Lead	Jacobs

Terry Meadows	TM	Safety Lead	Kier
Paul Watson	PW		Amey
Steve Haviland	SH	Partnership Lead	Farrans
Simon Wilkinson	SWi	Technical Director	AECOM
Richard Delaney	RD	Senior H&S Consultant	Capita
John Quarless	JQ	Safety Manager	Kier
Tom Bolton	TB	Principal Designer Manager	Amey
Ken Harrison	KH	Principal Engineer	Amey Consulting
Samuel Hogan	SH	Principal Engineering Man.	Balfour Beatty
Craig Simmonds	CS	Managing Director	Macleod Simmonds
Elliot Galvin	EG		Mott Macdonald
Sulagna Ghosh	SG	Ass. H&S Rep Leeds	WSP Group
Adrian Shawcross	AS	Rail Associate	Ramboll
Clare Brown	CB	Safety Lead	Link Connex (Bam Nuttall)
Darren Allen	DA		Tellent
Mark Lawton	MLo	Head of Engineering Surveying and GIS	Skanska
Dave Avery	DA	H&S Manager	Kier
Malcolm Shaw	MS	Principal Designer Manager	Arup
Oliver McMann	OM		Atkins
Liam Burns	LB		National Highways
Philip Farrar	PF	Highways Safety Hub Website	Galliford Try
Tom Bolton	TB		Amey
Andrew Koutsouki	AK		Arup
Simon Hawley	SH		Rambol
Nicola Tweedie	NT	SA – Road User Safety	National Highways
Chris Gee	CGe	Head of Utility Diversions	National Highways
Ali Chaudry	AC	Principal Designer	Galliford Try
Sam Allin	SA	CDM Manager	LTC
Robert Butcher	RB	Technical Director CDM	Jacobs
Martin Partington	MP	Principal Engineering Man.	Jacobs
Stephen Pettifer	SP		Volker Fitzpatrick
Tony Wallis	TW		Tetra Tech

	Eleanor Brennan	EB			
	Matthew Murrell	MM			

1.0	**(9.15 – 9.30) Welcome (Richard Wilson)**	

Wellbeing, Health and Safety Moment
- RW shared that National Highways have a Monday morning review of LTI, Incidents, High potentials for NH and suppliers. Noted there is a worrying trend with people forgetting to apply handbrakes and a recent incident where a vehicle rolled off site and onto a live lane resulting in a RTA. Noted a review of the recent RTA and fatalities on the network, and two in particular with motorcyclists and vans and people exiting works sites onto the live lanes. Has there been enough thought in the design to consider how we re-join the network / entering the site from the network? Request for designers to give this thought in the overall scheme designs.

Key Actions and matters arising from PDWG 27 – 19/05/22.

Minutes

1.1 Next meeting – Face to Face at Arcadis Birmingham Office. Now 13/10 at 10.00 a.m. Updated invite to follow.

1.2 Design Close Calls – RW noted there is now the facility to upload shared experiences / close calls / best practice onto the NH webpage, RW to issue template out via Teresa Moss. RW to update when any further developments in this area. **RW**

1.3 MLa NH Predictive Indicators for utilities – ML to meet will Chris Gee in August to discuss the Predictive Indicators and application of CDM roles. **MLa/CG**

1.4 Management of utilities on construction sites. Katie Harman noted that (Neil Hawthorn - Utilities) was developing a report. The report is currently in draft and being reviewed internally in NH. Suggestion Neil Hawthorn and Chris Gee discuss this further. Liz B noted that (Jamie Easterbrook / Ruth ??) are also undertaking a review of utilities management. (NH Utilities team). LB to forward contact details to Katie Harman to enable KH to discuss further internally. **NH/CG** **LB/KH**

1.5 A63 Safety Shares – MP to touch base with James Howarth-Rogers – Phil Leng has left BB **MP**

1.6 SCSLG 2 Year Strategy update – Kevin Stevens will provide an update

1.7 Gantry Design Group within the SMP Alliance. JG was aware of the group. PB would provide the feedback to this group at next meeting. **PB**

1.8 Safe Gantry Access – JG/RW to review how to best develop a co-ordinated approach to reporting within the Technology support chain and a centralised / co-ordinated NH response to request upgrades / retrospective repairs. **JG/RW**

1.9 RW to take a number of issues back to Jo Goulding **RW/JGo**

1.9.1 Potential requirements for Social Risk Assessments – as identified on A63

1.9.2 Could GG142 WCHAR assessment be widened to include the construction phase of a project

1.9.3 Suggested updated 5x5 Risk Matrix for construction related issues

1.9.4 JG to be invited to future meeting. **DP**

	1.10 Incident Trend Analysis – RDP (N) CoP have suggested the capture of positive outputs would add greater value. DP has a meeting with Ian Nixon (Highways Hub Chair) on 25/07/2022 to review / discuss.		DP/IN
	1.11 Keeping Pace with Change Working Group – PS and Sam Allin to follow up with Tony Putsman and Gary Mees on the work being undertaken on LTC. Meeting now arranged for 8/09/2022.		Psi/SA
	1.12 Chris Gee to pick up on the proposed Pre-Construction Phase Plan being developed by Paul Dennis next time.		CG/PD
	1.13 Reviewing Residual risk – how are organisations undertaking this – ML providing feedback later in meeting.		
	1.14 Passport Scheme – Designer module for site attendance. RW indicated that it needed to be clear what should be considered, the review was ongoing with a further meeting later today. He will chase up on progress		RW
	1.15 ERO – number of actions - to be picked up later by Paul Dennis		
	1.16 Current update of WHS PCF Products - Currently work in progress, with feedback later in the year at future PDWG.		DT
	Chat Room		
	1.17 CDM 20-20 Sector Plans in place for Buildings and Rail – nothing currently for Highways – RW noted currently work ongoing with Tom Merry (Head of Home Safe & Well) reviewing and taking further.		TM
	1.18 Future presentation from NH Knowledge Share Team to be arranged.		RW/DP
1.2	**SCSLG/Safety Hub update – (15 min) Ian Nixon**		
	  Recommend you review CHE471 		All

Common Intent & RtB Progress

Last Updated 08-07-2022	SCSLG Member Lead	Common Intent Drafted	Common Intent Released	Raising the Bar Drafted	Raising the Bar Released	Hub Lead	Support Members (inc PDWG Lead)	Comments / Progress Update
Live Lane Working / Carriageway Crossing	Dave Shaw (HWM)	Target Sept-21	Target Oct 21	Target Jan 2022	New RTB 39 - Carriageway Crossings and Live Lane Working - Target Jan 2022	David Riley – Amey	Dave Riley – Amey Liz Brathwaite – Skanska Maureen Gargan - Telent Phil Gregson -	Ready for issue pending signatures. Signed by Adam Green, **Still awaiting** signatures from Dave Shaw & National Highways.
Health by Design	Adam Green - (FM Conway)	TBC	TBC	TBC	New RTB 40 - Health by Design - Target TBC	Natalie Mansell - Atkins Andrew Cox - FM Conway	Phil Gregson	1st draft of CI issued for comment. As part of this work we will also look to revise RTB's 8, 12, 18, 19, 22, 24 and 33. **On hold awaiting confirmation of SCSLG significant risk areas.**
Suicide Prevention	Nicola Tweedy (HE)	Jun-21	Mar-22	Mar-22 Target March 2022		Paula Parsons (Tilbury Douglas)	N/A	Feedback on draft provided to Paula Parsons. Awaiting updated documents.
Revisions								
B1 Plant and Equipment					Nov-21	Bob Tootell		Proposal to amend 3DMC wording to mandate for bulk earthworks and require for drainage and pavement unless a business case is provided. Bob T to request the plant group to define earthworks and gain views from maintenance contracts. Draft due 01/06.
B2 Traffic Management Entry Exit					Jul-12	Liz Brathwaite		Feedback provided to Keith Smith, final updates being made.
B11 Influencing driver behaviour					Jun-13	Liz Brathwaite		B11 being taken to incursions group for confirmation but believe is s/s by common induction
B15 Task Lighting					Aug-13	Bob Tootell		Review & update. Draft due 04/08
B16 Working at height					Sep-13	Bob Tootell		Review & update. Draft due 04/08
B22 Fatigue					Mar-14	Phil Gregson		Proposals made at Hub 01/06 which will now be written up for the Aug meeting.
B17 Traffic Marshalls, B25 Loading/Unloading Vehicles, B35 Loading/Unloading Plant, B36 Lost Loads.					Oct 13/ Jul 14/ Dec 20	Tom George	Mark Cartight	Proposal from lost loads working group to combine B25, B35 & B36. Mark Cartwright's team drafting documents.
New: Safety Critical Communications						Liz Brathwaite		Published

Highways Safety Hub

• RW indicated he had signed off the Live Lane Crossing RtB39 and highlighted the importance of this document to engineering consultancies - Theresa Moss to forward this onto Ian N   RW

1.2 SCSLG – Strategy and Direction – (15 min) Kevin Stevens (FM Conway)

Supply Chain Health & Safety Leadership Group
Update 26th May 2022

IDENTIFYING THE RISKS

What's gone before

- Shift in membership
- Operations and SME's now involved
- New members increasing gravitas and diversity of the group
- Consultation and Engagement
- Created a National Highways Risk Profile
- Common Intent not adding value as anticipated

SCSLG Members

CONWAY	**Adam Green** CEO
MARTIN	**David Shaw** HW Martin
SKANSKA	**Glennan Blackmore** Highways Sector Director
octavius	**John Dowsett** CEO
RAMBOLL	**Jonathan Giles** Senor Managing Consultant
KIER	**Vicki Glover** HR Director
telent	**Andy Gifford** Highways Director
Tilbury Douglas	**Catherine Brookes** Highway Sector Director
Carnell	**Andrew Sharp** Managing Director
ATKINS	**Ian Spellacey** Client Director Strategic Highways
RINGWAY	**Mitesh Solanki** Managing Director
COSTAIN	**Simon Ellison** Highways Director

wj	**Nick Holt** Operation Director
ARUP	**Toria Thomas** Associate Highways Director
Connect Plus Services	**Ellie Hossack** Head of Delivery
amey	**Stephen Knott** Account Director Amey

national highways

Dean Sporn Director Regional Investment Programme South

Alan Shephard Regional Director

Richard Wilson HS&W Lead Commercial & Procurement

Teresa Moss HS&W Business Partner

Vision

To eradicate any occurrences of fatal harm from **"significant risks"** throughout the complete lifecycle of all National Highways assets by 2030 and prevent occupational health life-changing harm by 2040, by elimination, substitution, isolation and/or engineering controls.

SUPPLY CHAIN SAFETY LEADERSHIP GROUP

CEO & MD's Support. Commitment of time and resources

TRADE BODIES

Industry Support

SUPPLY CHAIN SAFETY LEADERSHIP GROUP
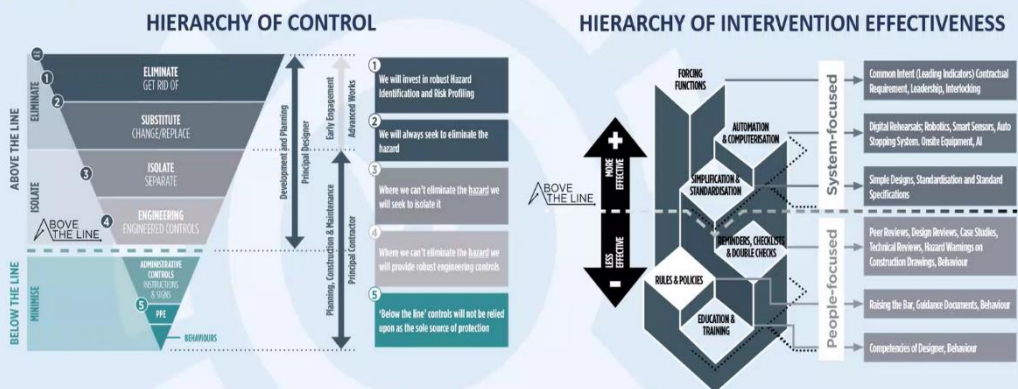
cpa construction products association · AECOM · ATKINS · wj think exceptional · CONWAY good people good work · Balfour Beatty · bam · BREEDON · ARCADIS · amey · CHEVRON · COSTAIN · Highways Safety Hub · AGGREGATE INDUSTRIES · CROWN HIGHWAYS · Carnell · COLAS WE OPEN THE WAY · ARUP · HSE Health & Safety Executive · EUROVIA VINCI · ferrovial · GallifordTry · Connect Plus Services · Tilbury Douglas · CLC Construction Leadership Council · Hanson · MARTIN TRAFFIC MANAGEMENT EXPERTS · KIER · FLANNERY · TARMAC A CRH COMPANY · VolkerFitzpatrick · JACOBS · GRAHAM · RAMBOLL · SWECO · SKANSKA · telent · MOTT MACDONALD · SISK CONTRACTORS BUILDERS · ceca · Sir Robert McALPINE · SIEMENS · octavius · mpa · RINGWAY · WSP

Future Focus and Approach

SUPPLY CHAIN SAFETY LEADERSHIP GROUP

HIERARCHY OF CONTROL

HIERARCHY OF INTERVENTION EFFECTIVENESS

- **We still kill and have health concerns**

- **Health and Safety Performance -** needs to be sustainable with Leading Indicators as a measure of performance. We can decide what H+S performance looks like rather than what we do at the moment which is the absence of accidents

- We still kill and have health concerns

- **Health and Safety Performance -** needs to be sustainable with Leading Indicators as a measure of performance. We can decide what H+S performance looks like rather than what we do at the moment which is the absence of accidents

Risk Profiling Results

8

SIGNIFICANT RISKS

PRIORITY GROUPS

IDENTIFYING THE RISKS

RISK PROFILE - A FIRST FOR INDUSTRY

- Occupational Road Risk
- People Plant Interface (including Incursions)
- Working at Height
- Temporary Works
- Underground – Overground Services
- Occupational Health – Noise – Dust – Manual Handling
- Plant Turnover
- Lifting Operation

What's next?

SUPPLY CHAIN SAFETY LEADERSHIP GROUP

- Phase 2 Risk Profiling - focus on exposure hours
- Redesign Common Intent and Raising the Bar Templates - Significant Risk Thinking and Simplification
- What is currently available to manage Significant Risks?
- Introduce Risk based compliance auditing performance measures
- Create Significant Risk Groups with Leading Indicators
- Transform health and safety performance monitoring

Significant Risk Groups

SUPPLY CHAIN SAFETY LEADERSHIP GROUP

Establish Max of 4 Significant Risk Groups. Each Group will be led by a SCSLG Member + members from Safety Hub and supporting organisations

Additional Groups to be established are Health and Safety by Design, Communications and Health and Safety Performance

Groups will be required to deliver:
- Vision + Leading Indicator with 2 year milestones
- Background information plus detailed risk analysis and frequency of exposure
- A review of transferable innovations
- The application of Reverse Triangle and Hierarchy of Intervention - going Above the Line
- The removal human error – what are the performance influencing factors (PIF's)
- Leading Indicators and HS performance weak signals
- Legacy and Embedment (Significant Risk Compliance)
- Communication of achievement

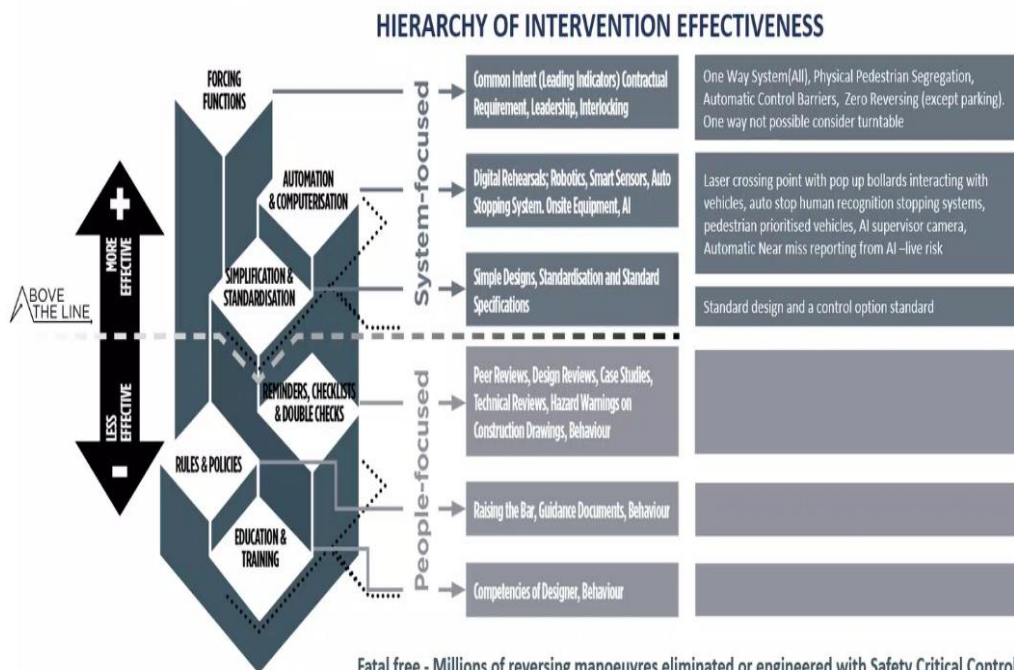# What it could look like - Contact with Moving Plant/Vehicle

Over the last 15 year reversing manoeuvres remain one of the biggest killers in the construction industry but by implementing new technologies, we can help to eliminate the potential risk of vehicles coming into contact with people.

- Ensure safety critical controls (SCC) are developed wherever we are reliant on a human to save a life.
- 3.2 Million reserving manoeuvres protected with SCC on 3 loading shovels – Human recognition camera linked to braking system
- Automatic Near Miss Report from machines – Major Hazard – equipment now contributes to near miss reporting

Depot - Reversing Vehicles the possible

HIERARCHY OF INTERVENTION EFFECTIVENESS

System-focused	
Common Intent (Leading Indicators) Contractual Requirement, Leadership, Interlocking	One Way System(All), Physical Pedestrian Segregation, Automatic Control Barriers, Zero Reversing (except parking). One way not possible consider turntable
Digital Rehearsals; Robotics, Smart Sensors, Auto Stopping System. Onsite Equipment, AI	Laser crossing point with pop up bollards interacting with vehicles, auto stop human recognition stopping systems, pedestrian prioritised vehicles, AI supervisor camera, Automatic Near miss reporting from AI –live risk
Simple Designs, Standardisation and Standard Specifications	Standard design and a control option standard

FORCING FUNCTIONS

AUTOMATION & COMPUTERISATION

SIMPLIFICATION & STANDARDISATION

ABOVE THE LINE

MORE EFFECTIVE

LESS EFFECTIVE

People-focused	
Peer Reviews, Design Reviews, Case Studies, Technical Reviews, Hazard Warnings on Construction Drawings, Behaviour	
Raising the Bar, Guidance Documents, Behaviour	
Competencies of Designer, Behaviour	

REMINDERS, CHECKLISTS & DOUBLE CHECKS

RULES & POLICIES

EDUCATION & TRAINING

Fatal free - Millions of reversing manoeuvres eliminated or engineered with Safety Critical Controls

• Healthier and Safer Design and Delivery – KS felt the PDWG are fundamental to the creation of the SCSLG's outputs

• The SCSLG Safety Focus Groups are meeting at the end August to go through a facilitation process on the principles, to ensure all are coming with a standardised and simplified approach.

• Once the groups have met and defined their approach this will be opened out to the PDWG members who will be encouraged to participate

• The outputs from each of the groups will be an agenda item to enable the tracking of progress by PDWG members.

AC/KS

2.0	**(9.45 – 11.00) Presentations for Learning Opportunities**
2.1	**Security-mindedness briefing-protecting the physical and digitally engineered world – (Paul) (Head of Physical Security CPNI – UK Govt.)** Critical Protection of National Infrastructure – please find following links for further reading on the subject ○ **Passport for good security** - Attendees to review https://www.cpni.gov.uk/managing-my-asset/leadership-in-security/board-security-passport ○ **PAS1192: BIM / DBE Security - Now BS EN ISO 19650-5 -** https://www.cpni.gov.uk/system/files/documents/86/c3/CPNI%20-%20Introduction%20to%20BS%20EN%20ISO%2019650-5.pdf ○**PAS185:2017 Smart Cities and Connected Places Securit**y **(Specification for Establishing & Implementing a Security Minded Approach)** - https://www.cpni.gov.uk/system/files/documents/b7/db/CPNI%20-%20Smart%20cities.pdf#:~:text=PAS%20185%3A2017%20is%20a%20specification%20for%20establishing%20and,not%20prevent%20the%20delivery%20of%20a%20city%E2%80%99s%20aims.

- **CPNI Connected Places - Cyber Security Principles** - https://www.ncsc.gov.uk/files/NCSC-Connected-Places-security-principles-May-2020.pdf#:~:text=Connected%20Places%3A%20Cyber%20Security%20Princi-ples.%201%20traffic%20light,%20%20What%20is%20a%20connected%20place%3F%20

- **Game of Pawns -** https://www.fbi.gov/video-repository/newss-game-of-pawns/view

- **Think Before you Link -** https://www.cpni.gov.uk/security-campaigns/think-you-link

- Think Before You Link – GLITCH

https://youtu.be/J1FD8bxfg1Y

- **Engineering Council -** https://www.engc.org.uk/security

- cpni.gov.uk has all the material unclassified. and the "digital engineering" pages - Security-Minded approach to Digital Engineering | CPNI

   A New set of guidance documents and video have been published to ensure security-related vulnerabilities are considered across a range of activities and processes within an organisation:

   Security Considerations Assessment
   https://www.cpni.gov.uk/security-considerations-assessment

   Developing a Security-Mindedness approach
   https://www.cpni.gov.uk/developing-security-mindedness-approach

   Security-Minded approach to developing Smart Cities
   https://www.cpni.gov.uk/security-minded-approach-developing-smart-cities

   Smart Cities - Specification for Establishing & Implementing a Security-Minded approach
   https://www.cpni.gov.uk/system/files/documents/dd/99/CPNI%20-%20Smart%20cities.pdf

   Security-Minded approach to Open and Shared Data
   https://www.cpni.gov.uk/security-minded-approach-open-and-shared-data

   Security-Minded approach to Digital Engineering
   https://www.cpni.gov.uk/security-minded-approach-digital-engineering

   Open and Shared Data: Adopting a security-minded approach
   https://www.cpni.gov.uk/system/files/documents/47/bf/CPNI%20-%20Open%20and%20Shared%20Data%20Folder%20v5.pdf

   Triage Process - For Publication or Disclosure of Information
   https://www.cpni.gov.uk/system/files/documents/06/e9/Triage%20Pro-cess%20for%20the%20publication%20or%20disclosure%20of%20information.pdf

   Establishing information needs (Use Cases)
   https://www.cpni.gov.uk/system/files/documents/71/da/cpniguide-establishing-information-need-and-management-requirements05.pdf

2.2 **Asset Management Strategy – (15 min) Dr Janvi Shah (NH SES)**

Asset Management Policy Principles

The Asset Management Principles that underpin all of our asset management decision-making

Focus on customer service

We provide the right road network that delivers the right service to our customers and communities.

Consider the whole life of the asset

Our decisions are underpinned by whole life cost considerations. We consider value for money and long-term affordability on the service that our assets provide to our customers.

This considers the impact that we have on the environment including meeting our Net Zero commitments. that delivers the right service to our customers and communities.

Manage our asset risk effectively

We manage our asset risks through appropriate mitigation and controls supported by our policies, standards, and governance. Intelligent use of data informs our management of risk and resilience to events that impact our network, including climate change.

Make efficient use of available resources

We understand the current and future needs of our assets allowing us to make efficient, appropriate, and timely interventions to optimise cost, risk and performance.

Align our strategic plans and delivery

We have published a long-term vision for the strategic road network and will deliver our programmes of works included in the Road Investment Strategy and the Delivery Plan in line with our organisational objectives of safety, customer, digital, and carbon.

Empower and connect our people

We empower our people by providing them with the right capability, training, and skills. A consistent asset management approach is promoted within the Company through regular communication.

Our asset management approach

What are our asset management objectives that should guide all of our transformation and delivery activity?

During RP2 we will,

'Maintain the performance, integrity and resilience of our assets to deliver the service to our customers.'

The ways in which we will achieve this are:

- Maximise the use of our data, asset management systems and digital technology to make intelligence led decisions
- Standardise our asset management processes, to support consistent decisions
- Developing our whole life cost approach
- Manage asset risks effectively and consistently on our network
- Enable our Net Zero commitments through our asset management decisions
- Mature our asset management capability in line with our licence requirement
- Embedding asset management

What does this mean for Principal Designers Working Group

Our approach to Asset Management is defined within a hierarchical suite of strategic documents

Our assets are integral to how we provide a service to our customers.

We work closely and rely on the support and expertise of our supply chain to deliver our asset management approach.

- Ensure our decisions are underpinned by the AM principles outlined in the Policy

- Our 'ways' embody how we design, build, operate and manage our assets

- In everything we do, we ensure its clear line of sight with our policy and approach

Case Study 2 set out in our AM approach

We have asset class strategies and handbooks for each of our key assets. Our asset class strategies set out our objectives for each of our key asset classes and the handbooks will provide guidance to enable consistent decision making across our end-to-end asset management lifecycle to support on-the-ground delivery.

- Launch of the the refreshed **Asset Management Animation** in July 2022.
- Launch of the Asset Management Systems Strategy – July 2022.
- Launch of the refreshed **Asset Management Animation** has been shared on AM Portal:

Link: National Highways | Asset Management in Action - YouTube

We want to hear from you on how do you see you contribute towards our asset management approach

Provide your comments or share your insights with us on AssetManagementDivision@nationalhighways.co.uk

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- National Highways - Asset Management in Action You Tube Video

- https://eur02.safelinks.protection.out-look.com/?url=https%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3DdBN8rY4D5Og&data=05%7C01%7CJanvi.Shah%40highwaysengland.co.uk%7C6ec56db542f648334d2508da599e686e%7C29509fb27faf4f8bb7a232f96ec5de6c%7C0%7C0%7C637920834293937404%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haW-wiLCJXVCI6Mn0%3D%7C3000%7C%7C%7C&sdata=8E21%2FCKtiB-cQsYXSvBR0Z12XhfCXN%2FF%2Fkv%2ButsksYwY%3D&reserved=0

- PB asked if the Asset Classes strategy linked to the asset groups identified in the latest H&S file template?
  - NW confirmed she had checked the Asset Classes are stated in the H&S File template; they do, although vehicle restraint and lighting form part of 'carriageway inventory' within the template. This template is due for review at the end of the year, so NW asked for any feedback in order to ensure that issues are included in the review.
  - https://share.highwaysengland.co.uk/Share/llisapi.dll?func=ll&objaction=overview&objid=95669221
- A Residual Risk Register isn't currently linked in the Asset Class Strategy; however, it could be linked as an addendum within the handbook. JS requested that the PDWG review and provide comments as required.
- JS provide links to the AM policy and approach here:
  - Asset Management Policy - https://nationalhighways.co.uk/media/2mvhwhsi/asset-management-policy-v_final.pdf
  - Approach to Asset Management - https://nationalhighways.co.uk/media/si2pi4yz/approach-to-asset-management_v_final.pdf

		All
		All

2.3   On The Road to Good Design - Kenneth Brodie (Senior Design Advisor National Highways)

On the road to good design

Kenneth Brodie, Senior Design Advisor
Presentation to the Principal Designer Working Group

21 July 2022

On the road to good design

- We must ensure our network is well designed as required by our Licence and planning and wider government policy.
- We are supported by our Strategic Design Panel, chaired by Executive Director Mike Wilson.
- Good design can reduce objections and delays, enhance user experience and reduce maintenance. It can also help ensure wider benefits beyond safety and capacity, such as supporting growth, active travel, net-zero and biodiversity.

Connecting the country

- Our design vision published in 2018:

  "We aim to put people at the heart of our work by designing an inclusive, resilient and sustainable road network; appreciated for its usefulness but also its elegance, reflecting in its design the beauty of the natural, built and historic environment through which it passes, and enhancing it where possible."

- Our vision is supported by 10 principles of good road design:

Connecting people

1. **Safe and useful:** good design creates safe roads that meet users' needs and support other wider objectives.
2. **Inclusive:** all users and communities are considered to reduce barriers to access and participation.
3. **Understandable:** 'Self-explaining roads' focus on the essentials and eliminate unnecessary and confusing clutter.

Connecting places

4. **Fits in context:** Good road design demonstrates sensitivity to the landscape, heritage and local community.

5. **Restrained:** Good road design can enhance a sense of place and add to what we have inherited.

6. **Environmentally sustainable:** Multi-functional, resilient and sustainable, good roads achieve net environmental gain.

Connecting processes

7. **Thorough:** The design of all elements of the road environment are considered together and integrated.

8. **Innovative:** An innovative and resourceful approach that is mindful of context is necessary for better outcomes.

9. **Collaborative:** Collaborative working is a rigorous process that finds both dependencies and opportunities.

10. **Long-lasting:** With quality materials and careful detailing, good road design brings lasting value.
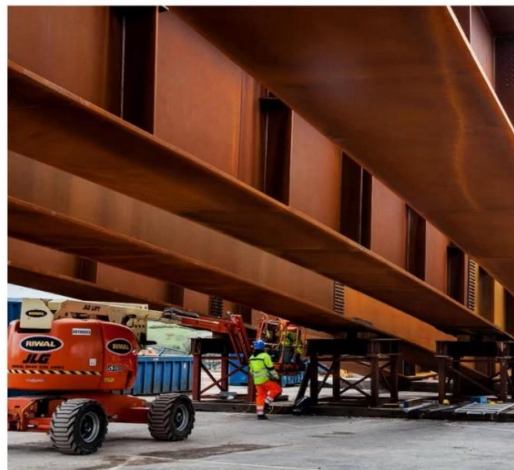
Good design

- Understands and reflects the places the road passes through and the people who use it
- Ensures projects teams have the broad range of skills necessary to deliver
- Is enabled through having robust processes, including design review
- Adds value by identifying and maximising opportunities
- Is not just about appearance – good design is safe, efficient, functional *and* responsive to people and place

Publications 5 July

- Three documents published 5th July to help us on the road to good design:
  - *On the road to good design: Design review at National Highways*
  - *People, places and processes: A guide to good design at National Highways*
  - *Learning on the road to good design: Case studies*
- Webinars planned for the autumn with further advice and learning
- We also now have a new good design page on our website under information for suppliers

Design review report

- A report from our Strategic Design Panel on design review 2017-2021
- 30 schemes and standards reviewed to end of 2021
- Outlines the process of independent design reviews and benefits
- Identifies design review outcome trends
- Sets out key learning, actions and recommendations from reviews to date

Good design guidance

- Guidance for our 10 principles of good road design
- Focusses on the three principle themes of connecting:
  - *people*
  - *places*
  - *processes*
- Additional guidance on:
  - *context*
  - *climate change*
  - *beautiful roads*
  - *view from the road*
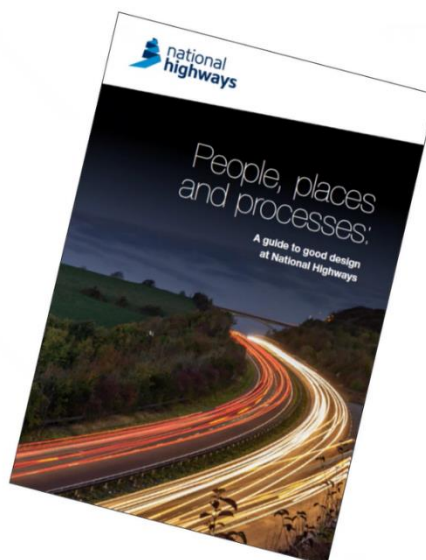
Good design case studies

- 25 good design case studies from UK and beyond
- Case studies focus on the wider benefits of good design
- Help to answer, 'what does good design look like?'
- Encourages learning from best practice and use of precedents in design

o   PB asked if introducing places of relative safety signs every 400m on our Smart Motorways equate to clutter as defined by Good Design? KB noted that designers need to review the existing signage at any specific location, as well as that within the proposed design to consider a holistic approach to the potential for clutter.

o   KB asked for feedback on the documents from the PDWG community and defining what does good design look like.

All

o   KB requested that all designers should look to contribute to improving the network through the development of good design, therefore if you get the offer/request to undertake a design review with NH please take up the opportunity, he encouraged all to champion good design and utilise the good design examples, highlighted in the documents.

o   NH have been undertaking evaluations of completed schemes and are looking to become more involved in the future to help provide feedback / learning on their findings.

o   NH are currently undertaking research into clutter on the network (not solely relating to signs) - Reviewing the causes and recommendations and would be happy to provide feedback at any future meetings.

Summary

- We need the supply chain to help us improve the quality of the network through good design.
- Support design review and recognise value of independent advice from our Panel.
- Champion good design in your organisation and check out the recent publications.
- Further activity planned in autumn.
- Get in touch: gooddesign@nationalhighways.co.uk

o   Jim Gallagher noted that there is a proposal being worked on by NH on the aesthetics of gantries and also further guidance being developed as a Safety Share on fencing safety which is to be published by the PDWG (Whole life design safety shares working group).

DP

	o Kevin Stevens - Vital at this level we consider safer & healthier by design aspects across the 3 lifecycle phases and where possible the simplification and the standardisation of assets and materials being used.	
	o Liz Bennett – referenced the quote - "If designers can design, and we must assume they can, then we simply need to feed into that process the key points to consider health and how to do so." Kat Perry, Atkins. It was felt this worked for any topic but ultimately IT ALL DEPENDS ON GOOD DESIGN.	
	o David Olorenshaw – Felt the case study documents included some excellent examples in very broad descriptions. Further examples could be found at the following link: https://nationalhighways.co.uk/media/ty1bf5xd/learning-on-the-road-to-good-design_case-studies.pdf	

3.0	**(11.10 – 12.00) T&F Group Updates - (SCSLG – H&S Hub Support)**	
3.1	**Whole Life Design Safety Shares – (15 min) (Doug Potter – Martin Partington had sent his apologies)**	
	DP provided an update on the progress being made by the Safety Shares Group	

IMPACT WITH MOVING VEHICLE – POSITIONING OF ASSETS | WLD.002

Description of Event
A designer has positioned assets (a traffic loop box) on live carriageway side of vehicle restraint system

Population at Risk
Maintenance Contractor Workers and Inspectors

Hazardous Activity and Residual Risk Description
- Live carriageway working exposes workers maintaining and inspecting assets to the potential of being struck by a Member of Public (MOP) vehicle with an assessed residual risk of an almost certain likelihood of extreme harm being incurred.
- A low load class of an asset cover is a hazard to vehicles driving on the shoulder with an assessed residual risk of an unlikely likelihood of minor harm being incurred.

Photo traffic loop box road side of vrs

Potential consequences of this event
- The residual risk requires (TTM) Temporary Traffic Management solution to be designed and implemented, negatively impacting road users' wellbeing.
- Putting TTM solutions in place is a hazardous activity placing workers at risk of harm. Sept 2021 National Highways performance report showed 49 vehicle incursions.

Photo of an Impact Protection Vehicle following a vehicle strike

Safety Hub Alert Database
- Sub-category 2 MOP incursions has 8 alerts including 1 fatality.

Potential Mitigation Measures

ELIMINATE GET RID OF

Design
- Provide a safe working area by positioning assets set back behind a suitable vehicle restraint system.
- Provide information and instructions for workers on load class of cover and safe route from maintenance vehicle to working area within a Maintenance and Repair Statement.

Construction
- Submit Request for Clarification to National Highways Project Manager.
- Raise safety observations.

Maintenance / Operations
- Submit Works Request to provide a safe working area and raise safety observation.
- Design a suitable TTM solution before working on live carriageway.

Further Guidance and Reading
- DMRB TD 131 Roadside technology and communications
- DMRB GD 304 – Designing health and safety into maintenance
- RtB 26 – Safety by Design
- CIRIA C686 Safe access for maintenance and repair. Guidance for designers

Please send ideas for Whole Life Design safety shares to wellbeing@nationalhighways.co.uk

LEAN | | Reduced Plant | | Reduced Labour | | Reduced Transportation | Improved end user benefits | Reduced Activity Duration | Reduced Defects | Reduced Reportable Accidents

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MANUAL HANDLING/SLIPS & TRIPS – REVETMENT FINISHES | WLD.003

Description of Event
A designer has specified a block paving finish for a bridge revetment increasing repetitive strain or risk of slips

Population at Risk
Maintenance Contractor Workers and Inspectors

Hazardous Activity and Residual Risk Description
- Maintaining and inspecting a bridge revetment may expose workers to tripping on uneven ground hazards, slipping and falling on slopes with an assessed residual risk of an almost certain likelihood of minor harm and a may happen likelihood of moderate harm being incurred.

Potential consequences of this event
- This residual risk may require a safe working at height solution to be designed and implemented, such as a rope access system.
- A finish that cannot be easily and quickly maintained or one with a short design life increases the number of man-hours to which workers are exposed to the hazards and risks.
- A soft landscaped revetment exposes maintenance and inspection workers to a higher number of man-hours compared with a hard landscaping finish.

Photo of a bridge revetment without surface stabilization treatment

Safety Hub Alert Database
- Sub-category 2 Slips trips & falls (same level) for Housekeeping has 13 alerts.

Potential Mitigation Measures

ELIMINATE GET RID OF

Design
- Design bridges without sloping revetments.
- Specify revetment with a slip resistant hard finish.
- Evaluate block paving with sprayed concrete solutions.

Construction
- Submit Request for Clarification.
- Raise safety observations.

Maintenance / Operations
- Submit Works Request to provide a hard landscaped finish and raise safety observation.
- Design suitable engineering controls when working on sloping revetments.

Photo of a bridge revetment with block paving surface treatment

Further Guidance and Reading
- BD 97/12 – The Assessment of scour and other Hydraulic Actions at Highways Structures.
- CD 351 The design and appearance of highway structures
- LD 117 Landscape design.
- DMRB GD 304 – Designing health and safety into maintenance
- CIRIA C686 Safe access for maintenance and repair. Guidance for designers.

Please send ideas for Whole Life Design safety shares to wellbeing@nationalhighways.co.uk

LEAN | | | | | | Improved end user benefits | | Reduced Defects | Reduced Reportable Accidents

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- o DP provided 3 examples that the group had been working on (as above) with a further 13 being worked on. The intention was that these are to be uploaded onto Highways Safety Hub and NH Home, Safe & Well webpages to promote best practice. This should happen very shortly.

- o A further request was made to the community to come forward with additional safety shares.

All

	o EB reminded all that CDM asks for ERCI not ERIC. Just saying. (Ref Reg 9) Though C and I are usually integrated.	
3.2	o **Safe Gantry Access Design Working Group** o Updates provided within matters arising earlier on in the meeting by JG and RW. Feedback still awaited from SMA T&F Group	
3.3	o **Suicide Prevention Tool – (Nicola Tweedie)** o No update available	
3.4	**Utilities Avoidance – (Chris Gee)** • Chris Gee to provide feedback at the next meeting	
3.5	**H&S File Digital Development – (10 min) (Mark Lamport – Arcadis)**	

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Task and Finish Group Meetings
- Task and Finish Group Kick-off Meeting held on 18/1/2022
- Meeting #2 held on 11/7/2022
- Next meeting to be held on 19/9/2022

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Task and Finish Group Team
Mark Lamport – Arcadis (T&F Group Lead)
Doug Potter – Arcadis
Pav Singh – Arcadis
Saskia Lear – Arup
Natalie Mansell - Atkins
Tim Bowes – Atkins
Darren Allen – Jacobs
Rob Butcher – Jacobs
Andrew Finch - Jacobs
Richard Wilson – National Highways, PDWG Chair and T&F Group Sponsor
Jason Glasson - National Highways, Head of Asset Management
Kevin Clague - National Highways, Asset Needs Manager - Operations NW
Jon Horrill – WSP
David Owens – WSP

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Task and Finish Group Terms of Reference, Objectives and Tasks

- The T&F Group will move forward on the **assumption** that the various National Highways actions needed to align PCF and National Highways Business Collaborator (BC) with the new CDM Standard and Health & Safety File template will have been undertaken.
- This T&F Group will look specifically at Health and Safety Files Digital Development and how the transition can be made from the current document-based Health and Safety Files to a digital platform.

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Task and Finish Group Outputs & Deliverables

Ultimate objective - to produce a "Best Practice Guide for Health and Safety File Digitalisation" - but this is a significant piece of work and probably beyond the reasonable scope of this T&F Group. A more realistic deliverable could perhaps be a report which covers:

- Summary of current situation on H&S File digitalisation – where are we now, what are National Highways and supply chain organisations currently doing? How this links into PCF and 3D processes?
- What is working well/what needs to be improved?
- What are the blockers eg interface/incompatibility issues between MP and OD, progress of OD adoption of digital, software limitations (eg can the existing software available in the marketplace be used to present H&S File content in digital form?)
- What are the future-proofing considerations – the digital H&S File information must be retrievable and readable in 50+ years?
- A proposed roadmap for the transition to digital of National Highways Health and Safety Files

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Task and Finish Group Sub-Tasks

Sub-Task 1

Establish which other National Highways group(s) are working on H&S File digitalisation and liaise with them to avoid duplication.

Sub-task Owner: Richard Wilson

Supported by: Jason Glasson

Outputs: list of National Highways group(s) are working on H&S File digitalisation and contact details

Timescale: provide list to Mark Lamport by Tuesday 13/9/2022

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Task and Finish Group Sub-Tasks

Sub-Task 2
Establish what progress consultant organisations who are members of PDWG have already made with respect to Health & Safety File digitalisation.

Sub-task Owner: Saskia Lear

Supported by: representatives of PDWG consultant organisations

Outputs: bullet point summary of responses from PDWG consultant organisations

Timescale: provide bullet point summary to Mark Lamport by Tuesday 13/9/2022

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Task and Finish Group Sub-Tasks

Sub-Task 3
Establish end-user requirements – clients, operators, maintainers, designers (of future modifications and upgrades), decommissioners/demolishers.
- What information do they need from the H&S File?
- In what format?
- On what platform?

Sub-task Owner: Andrew Finch

Supported by: OD representatives. David Olorenshaw (Kier) has volunteered to help – ML to contact DO and share his contact details with Andrew Finch

Outputs: bullet point summary of responses from operators and maintainers

Timescale: provide bullet point summary to Mark Lamport by Tuesday 13/9/2022

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Task and Finish Group Sub-Tasks

Sub-Task 4
Identify which of the National Highways H&S File content requirements set out in the H&S File PCF product guidance can be presented in digital form. Is this all or some of the content?

Sub-task Owner: Tim Bowes

Supported by: David Owens (and also make contact with David Townsend)

Outputs: bullet point summary or list of H&S File content requirements which can be presented in digital form.

Timescale: provide bullet point summary/list to Mark Lamport by Tuesday 13/9/2022

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Task and Finish Group Sub-Tasks

Sub-Task 4 – example of what the format of digital
H&S File tagged asset data could look like:

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Task and Finish Group Sub-Tasks

Sub-Task 5

Produce a draft process map – to help ensure consistent approach and format of data and risk tagging for point, linear and areal hazards (including shape, size and colour of hazard symbols [?triangles, polygons] and fields within the associated tagged data set).

Sub-task Owner: David Owens

Supported by: Tim Bowes

Outputs: initial draft process map

Timescale: provide initial draft process map to Mark Lamport by Tuesday 13/9/2022

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Task and Finish Group Sub-Tasks

Sub-Task 6

Identify any specific requirements of the National Highways Digital Delivery and Digital Roads documents which would be relevant to H&S File digitalisation.

Sub-task Owner: not allocated

Supported by:

Outputs:

Timescale:

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National Highways
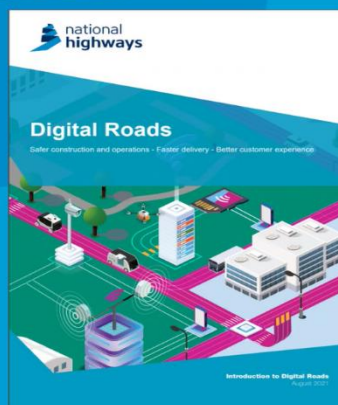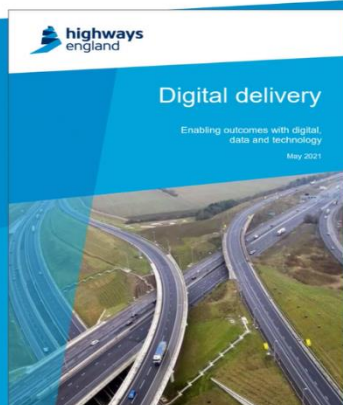
Task and Finish Group Sub-Tasks

Sub-Task 7
Produce Outputs and Deliverables

Sub-task Owner: not allocated (future action following completion of other sub-tasks 1 - 6)

Supported by:

Outputs:

Timescale:

National Highways

Alignment with BIM 4 H&S Working Group
- Overview of the H&S File Digitalisation Task and Finish Group presented top the BIM 4 H&S Working Group by Mark Lamport on 12/7/2022

	o NM asked if a date was available for the completion of the PCF review?	RW
3.6	**Passport Scheme – Designer Module (5 min) (Update) (Natalie Mansell - Atkins)** • NM updated that at the last meeting the group reviewed the current modules of the Common Induction to understand the gaps in information for Designers, the consensus of the group was that the gap was in relation to Safe by Design. • It had been agreed to review RtB 26 Safe by Design and extracted the script to help form the Designers Module. NM has created a draft and is currently with TB & OM for review prior to issue to the working group.	NM
3.7	**Eliminating Risk from the Outset – (5 Min) (Update) – (Paul Dennis - Arup)** • PD referenced the recent email issued out to all PDWG members by DP with respect to a review and comment on the Work Packages and the Workshop Arranged for the 24/8. • Technical notes – PD requested all to review and add comments which would be collated as part of a Comments Log • During the exercise, other task groups have been approached, a review of existing task groups is ongoing to capture common tasks and joint issues. • Further details for the 24/8 Workshop to be emailed out shortly - technical notes / comments log • Pre-Construction Phase Health & Safety Plan – the proposal is to have this document as a new PCF deliverable product. • Trial about to commence on A417 (Arup scheme) with an Exactium tool to measure designer H & S performance – PD to feedback to the group.	All PD

	• In respect to the review of the need for a Design Strategy Record PCF product – PD had discussed further with MLa and the recommendation was likely to be that this would be rolled out to the whole of the SRN.	
4.0	**Information for Discussion**	
4.1	**BIM Progress Update (5min presentation provided by Arcadis, Atkins, Costain/Jacobs, WSP, Arup)** 　　　**Arcadis - Jonathan Marshall** 	
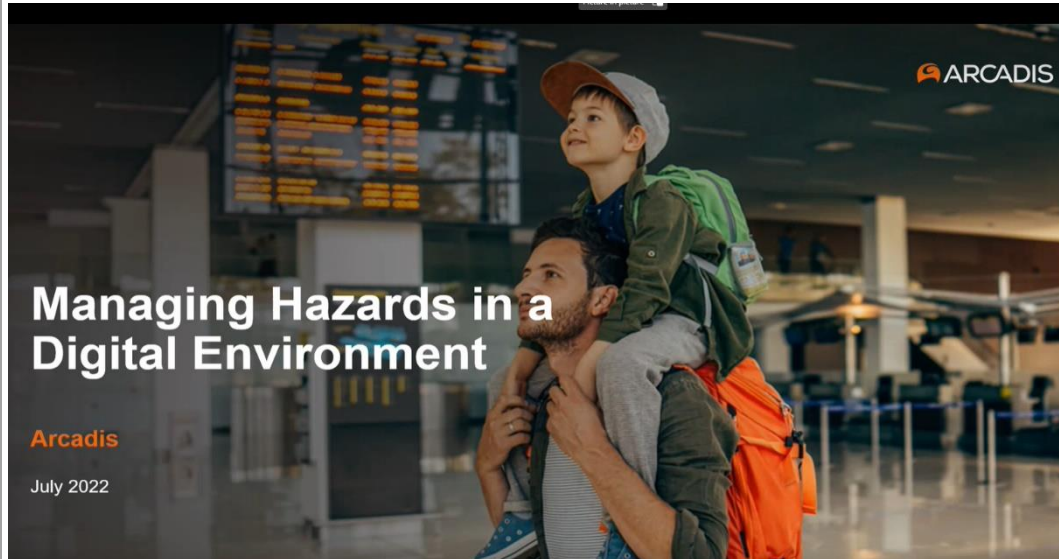
Smart Geospatial Mobility Tools

ARCADIS

Smart Stories
by Arcadis GIS

Smart Hazards
by Arcadis

ARCADIS FieldNow™

Smart Atlas
an Arcadis Solution

Smart Accident Analysis
by Arcadis

Smart Dashboards
by Arcadis

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ARCADIS

Embedded Enterprise Systems and Integrated Collaboration Tools

Collaboration & Integration

Automation

esri

GIS database (3D enabled)

Data Management

Risk ID & Rating calculated via database trigger

Smart Atlas
an Arcadis Solution

Cloud Site:
Integration with other systems
Real Time Access
Sharing of Records

Mobile Site Working

Client/Supply Chain can use in real time to improve H&S

Scripts auto upload to ProjectWise

Design Risk Management

Integration provides Management with assurance and compliance.

esri

AUTODESK NAVISWORKS

GIS Data Capture, Review and Handover

Design and Risk Managers have access to all project data to better inform capture, review and approval of risk.

Dashboard Reporting & GIS Visualisation

More robust decision making and transparency

Visualisation in Design DRMS

Designers can quickly understand impact across built assets and assure risk tagging and standards.

7

ARCADIS

Digital CDM: Interactive Dashboard

DigitalCDM Risk Register - Dashboard

Initial Risk Category

Total Number of Approved Risks

42,560

Risks Remaining after Filter(s) Applied

2,303

Residual Risk Category

25 Most Significant Risks by Residual Risk Rating

Risks By Current Status

Level 1 Asset Selector

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21 July 2022

6
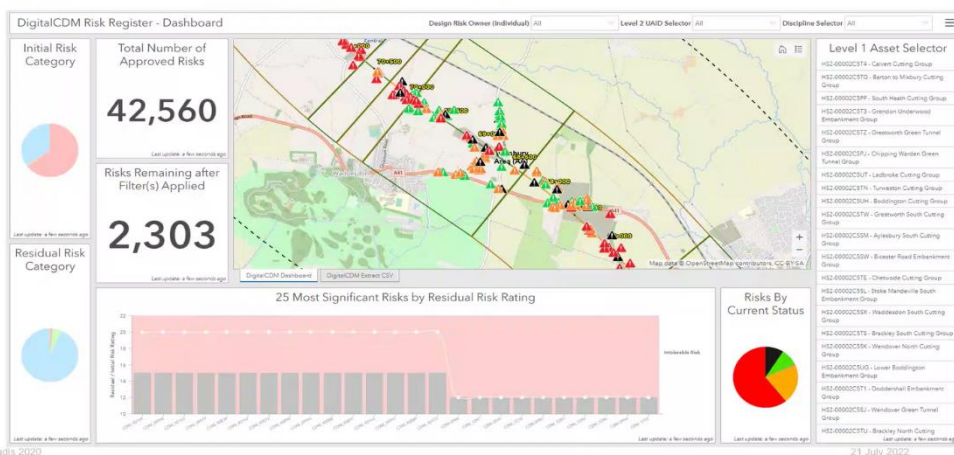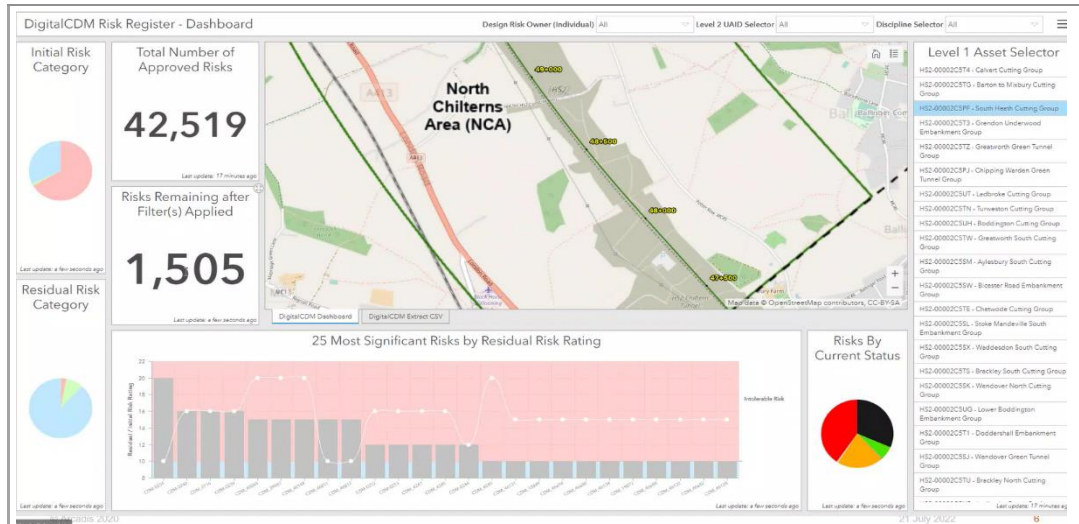
Digital CDM: Risk Handover

- Once handover completed. These risks are locked for editing through a definition query/filter.

- They do remain in the non editable views of the data, e.g. Dashboards, however, can no longer be edited.

Uses data held in central GIS database maintaining 'single source of truth'

Tool supports batch attribute updates

Accessed through Digital CDM Platform

Access controlled to only allow project staff involved in **Risk Handover** process to update

Requires ESRI licences, which could be a limitation on a major projects with a lot of suppliers

ARCADIS

Digital CDM: Risk Handover

Contains editable CDM layer that owners can transfer risks. This is the same layer (non editable view) that is displayed in other Digital CDM apps

- Users filter the map view to show only the risks in question at time of meeting
- Current filters available: IDR, Level2 Asset, Discipline

Digital CDM: Risk Handover
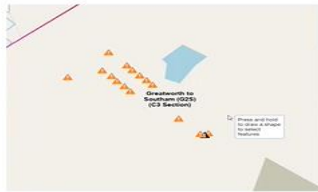
Using the selection widget the user will then highlight the risks that they wish to be transferred
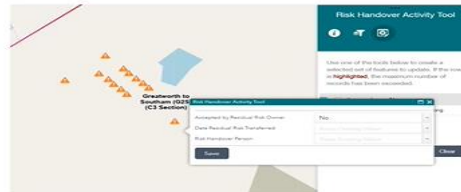
A pop up displaying the three required fields will show and the user will then input the relevant information at the time of the meeting.

3D GIS Developments

South Heath Cutting

Waddesdon South Cutting
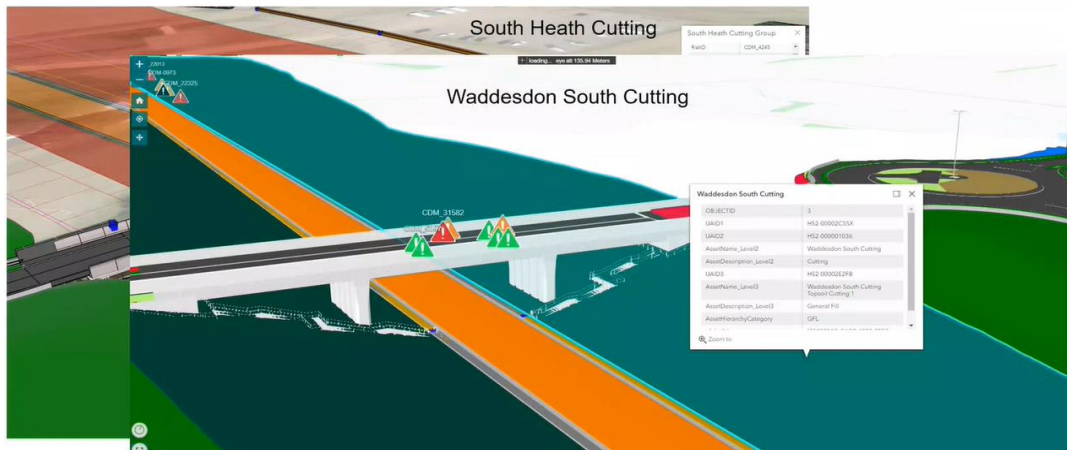
Scheduled maintenance from July 22 to July 24.

Atkins – Chris Sinfield
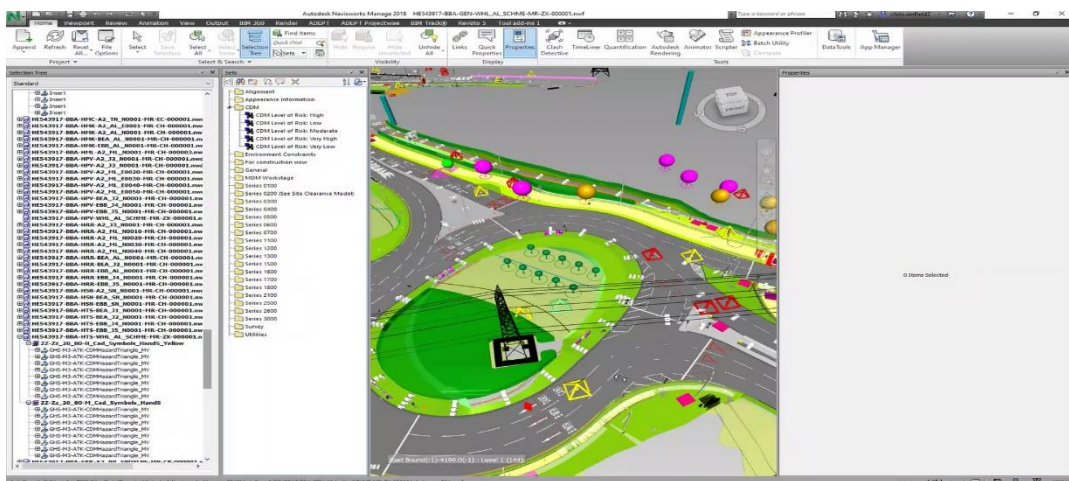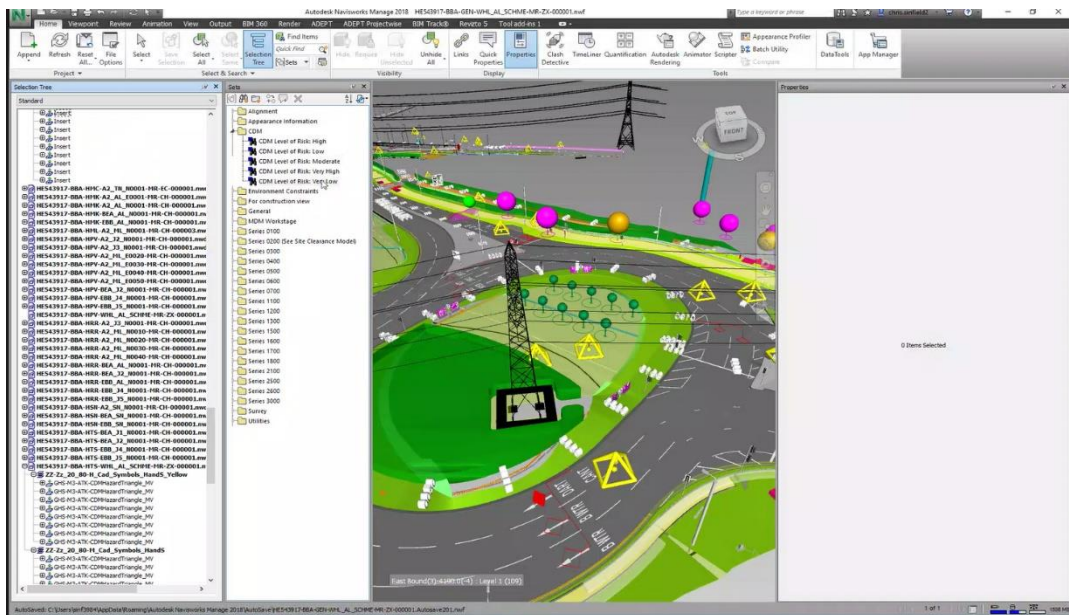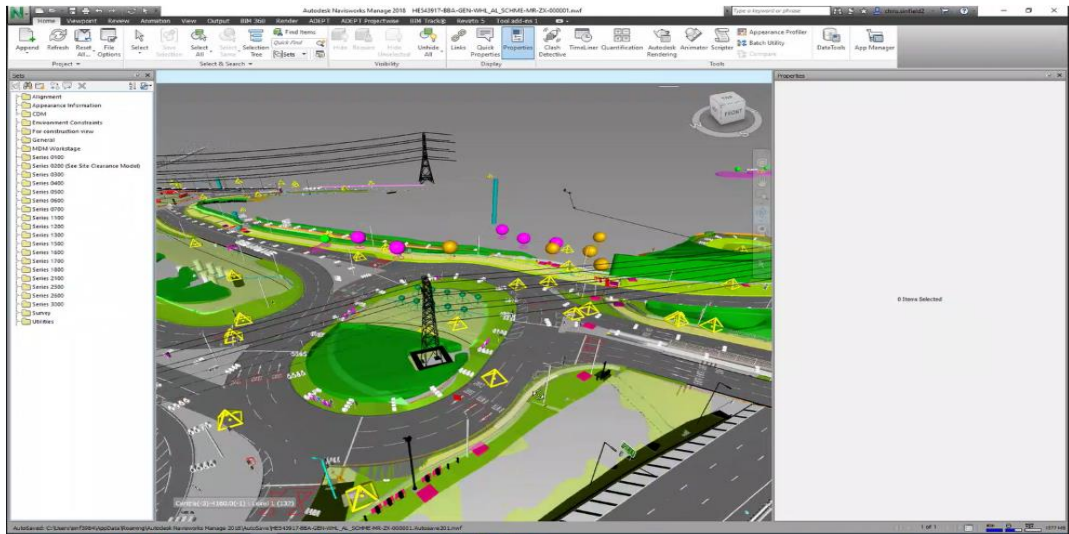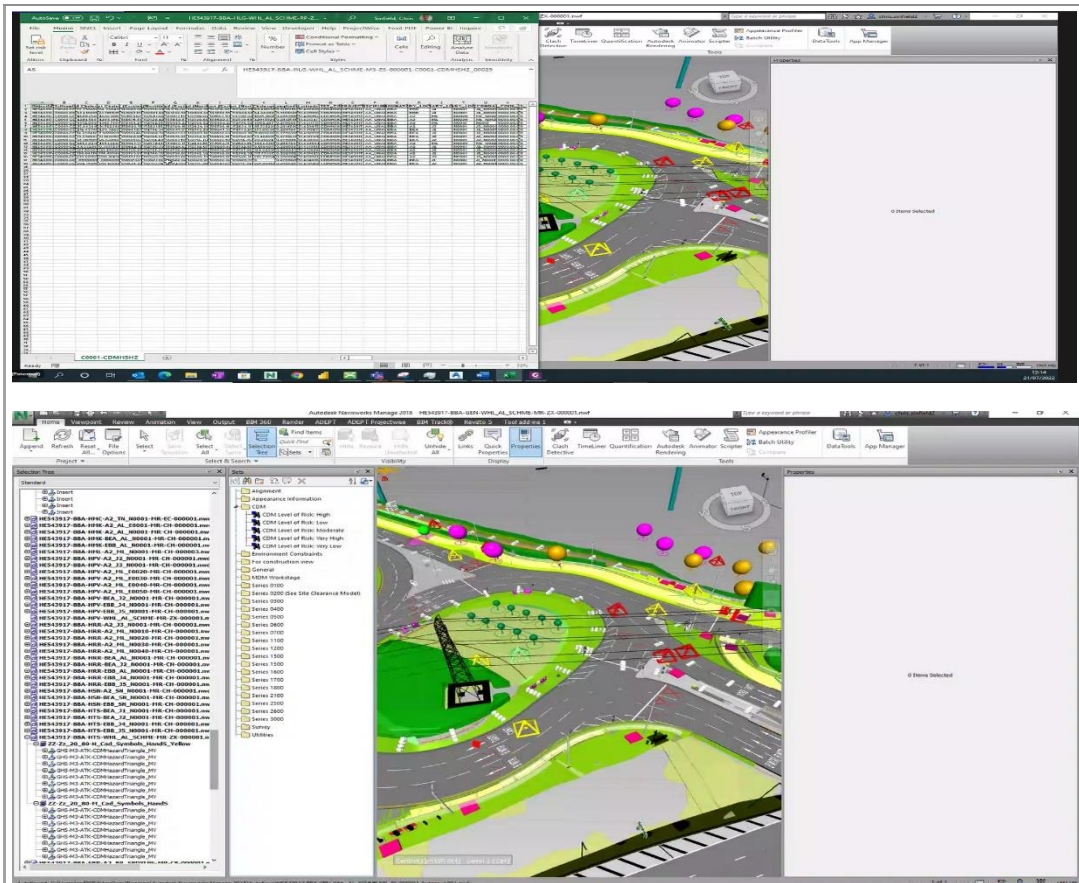
Costain – Jacobs – Roger Swainston

Track Record Safety
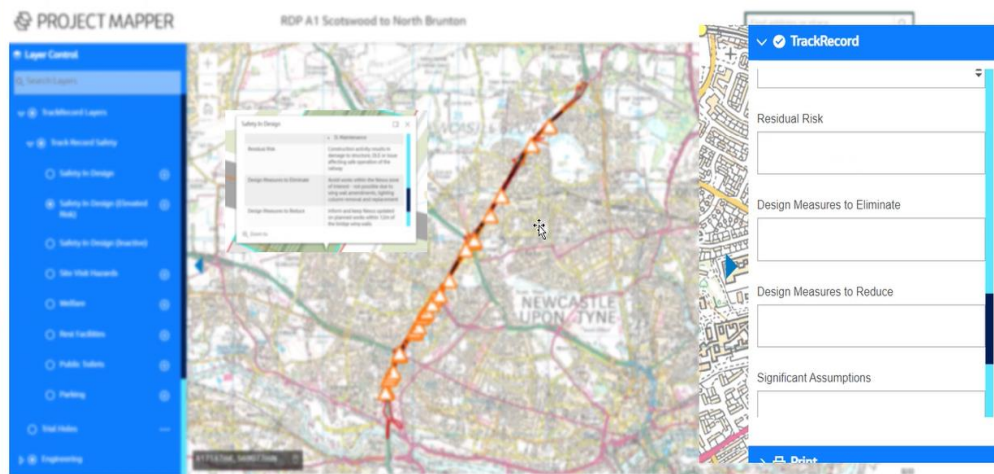
Track Record Safety

Where next?

General Meeting Comments

- **How would digital design consider health issues and decision making in design options including noise, manual handling, buildability** - RS clarified that this type of issue would be treated as isolated specific hazards and would be captured as separate triangles with specific mitigation measures noted accordingly. The actions would be documented, and a record of the additional information captured for use at the next stage or closed as appropriate.

- **Are the designers using a consistent approach to the 5x5 risk matrix? Do contractors want a consistent totem or hazard triangle format similar to rail projects?** - RS indicated that Jacobs / Costain have undertaken an exercise to interpret how hazards were being captured across different designer organisations and contractors to understand how hazards / risks are interpreted. This had resulted in the suggested 5x5 matrix discussed earlier which was a further development from the GG104 matrix which was operationally focussed.

  It was Noted however, that the schemes should not get held up on colours and needed to understand the specific hazards. Have we accurately captured the background detail that is forming the next course of action? What is the actual hazard and the potential risk arising from this and who this will be directly affected. What are/have we done to eliminate it, and where not possible, what measures are we doing to minimise the impact in the design along with passing on the appropriate information.

  - **How do we communicate digital risk within the H&S file?**

    - RS asked all to remember that the residual risks must be captured in a form that the constructor, maintainer and asset owner can easily access, without needing to have access to lots of different software. The Residual Risk handover process must ensure that it is completely compatible with the Client / Maintainer needs – This should be discussed and agreed as early in the project life cycle as possible - all agreed that this was paramount to a successful transfer of risk.

WSP – Sergio Cober

SMPA HEALTH & SAFETY DIGITAL APPROACH

Hazard Model

Federated Model
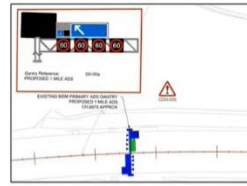
Drawings

Asset Data

HERR

Power BI Dashboard

GIS

wsp

Identifying
Hazards

Updating hazard attributes in Excel
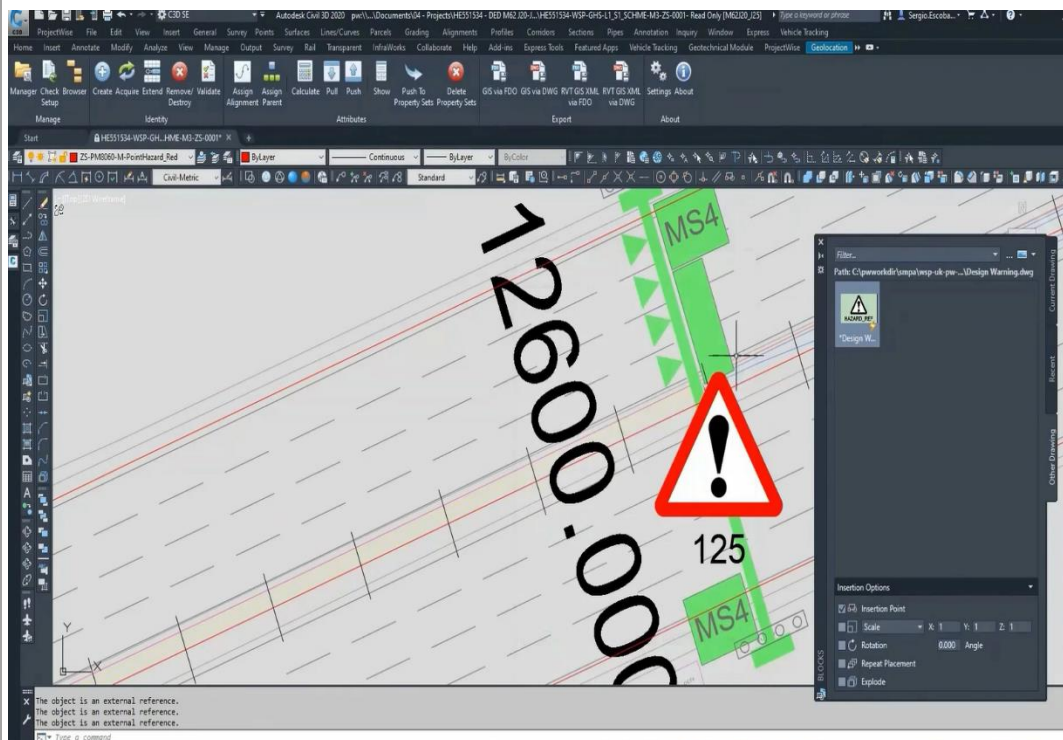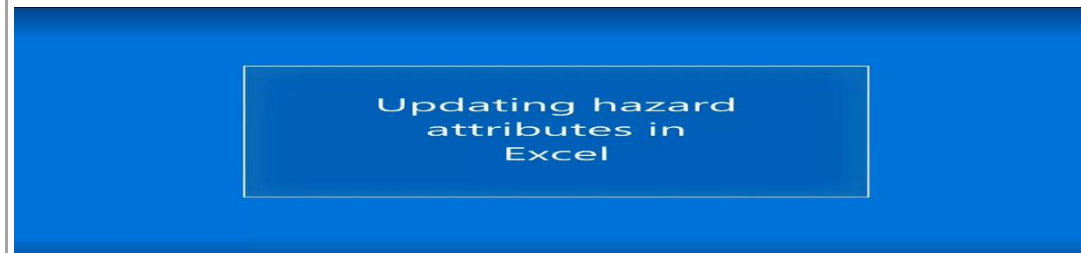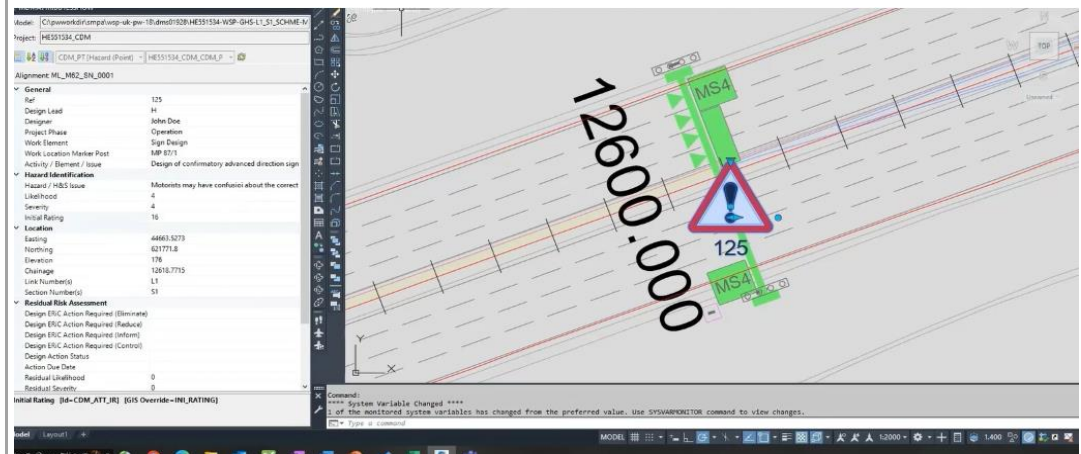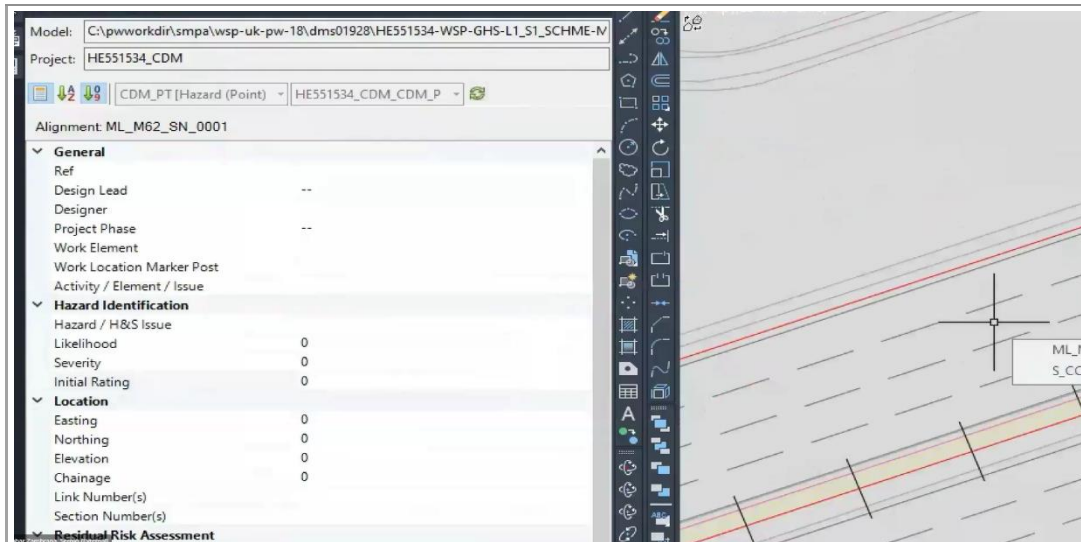
ObjectId	ClsItemId	Easting	Northing	Elevation
HE551534_CDM_CDM_PT_00075	CDM_PT	63389.0257800931	629550.994147466	274.049477084033
HE551534_CDM_CDM_PT_00077	CDM_PT	43967.215968758	621472.020842794	158.952939682717
HE551534_CDM_CDM_PT_00078	CDM_PT	43826.5839146605	621386.623578702	157.888584201032
HE551534_CDM_CDM_PT_00079	CDM_PT	45040.9145320992	621904.310432122	173.170450616043
HE551534_CDM_CDM_PT_00080	CDM_PT	44390.9070962261	621661.88790759	167.397554444184
HE551534_CDM_CDM_PT_00081	CDM_PT	44270.8192197344	621604.47850273	164.888584201032
HE551534_CDM_CDM_PT_00095	CDM_PT	44663.5292777572	621771.804015849	176
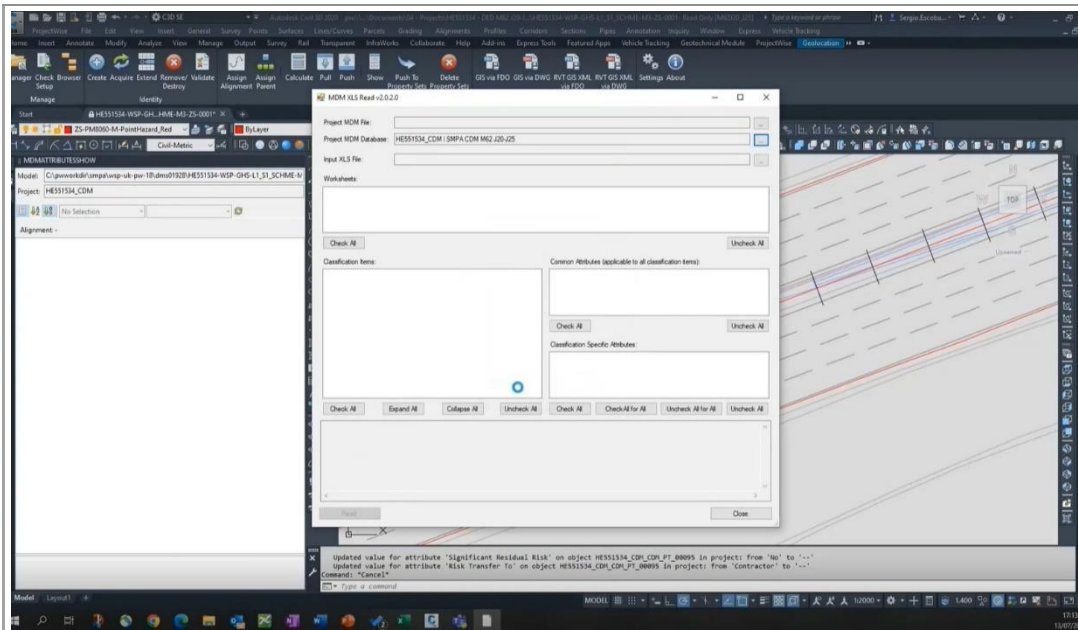
Updating warning symbols based on Hazard attributes
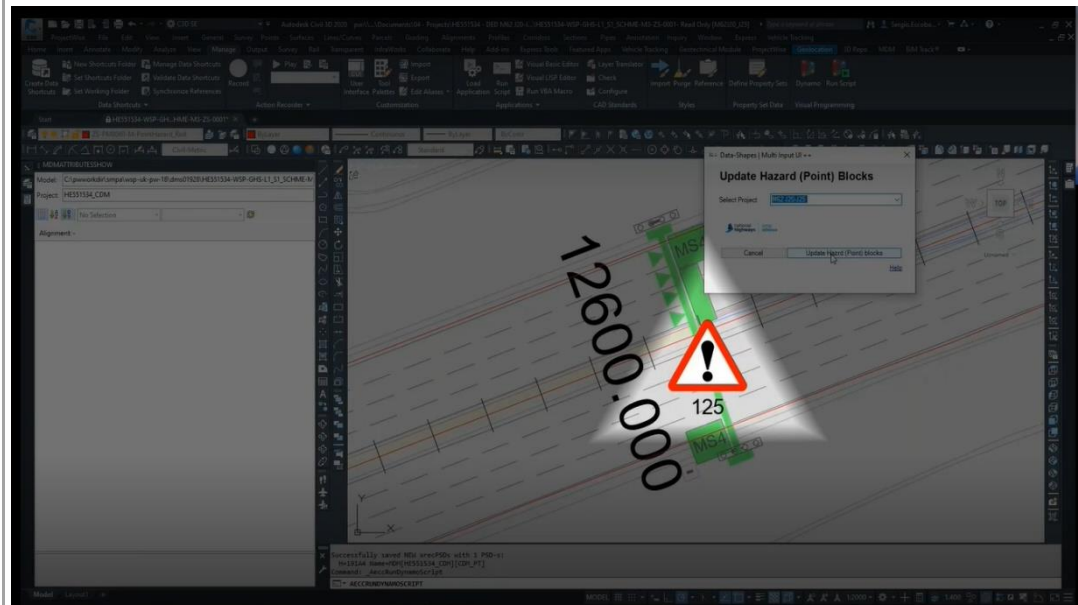
Exporting hazard information to the Federated Model
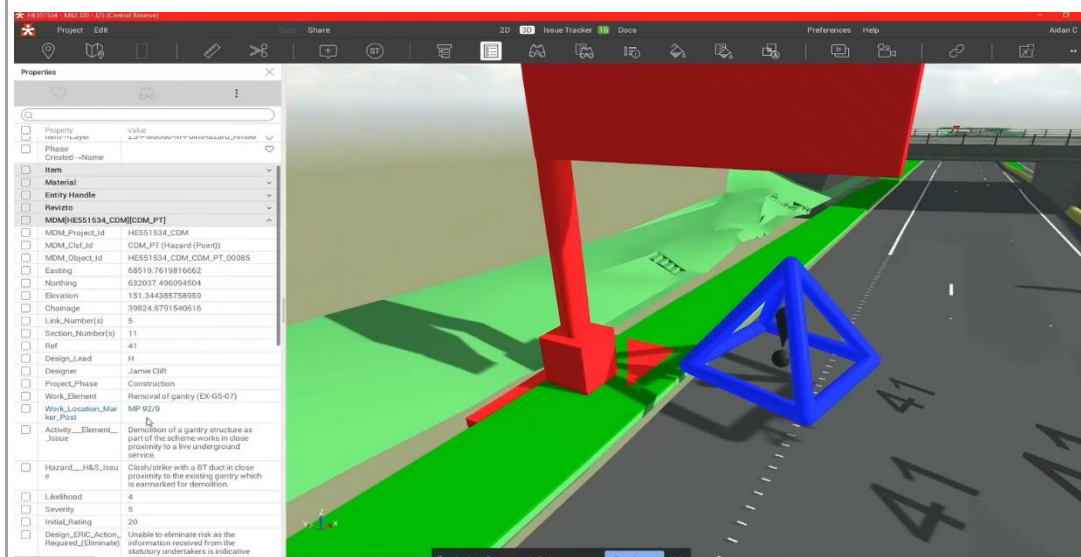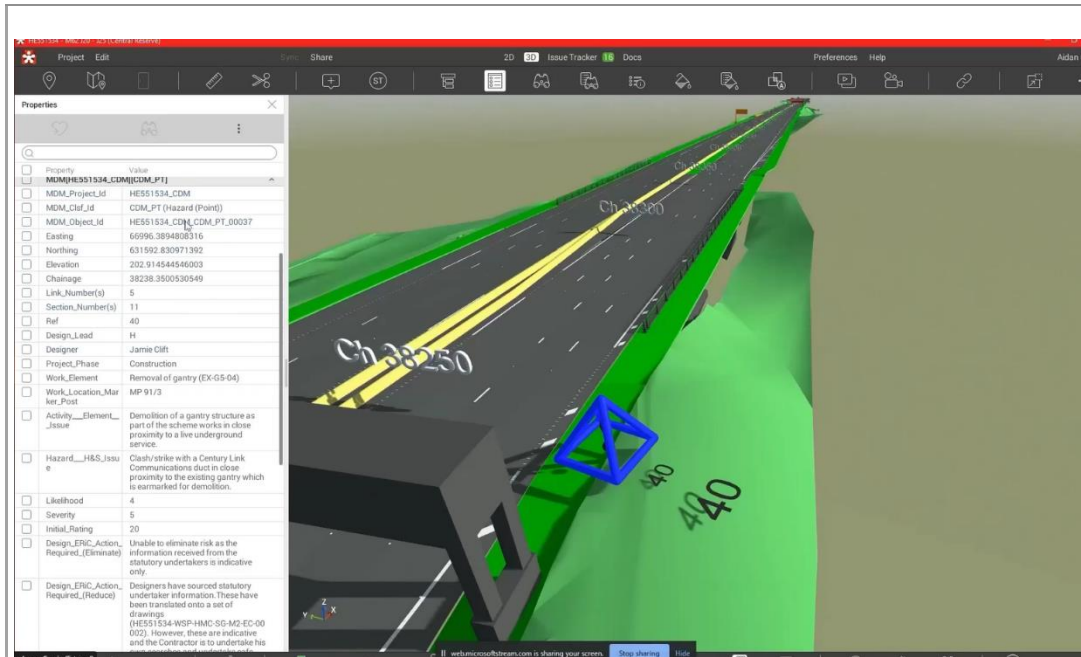
Adding hazard information to drawings
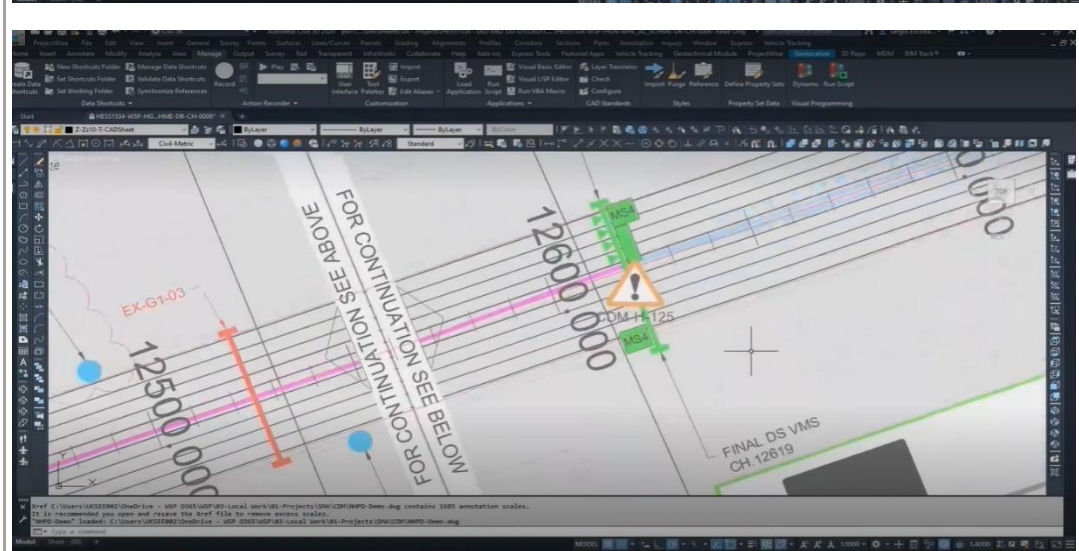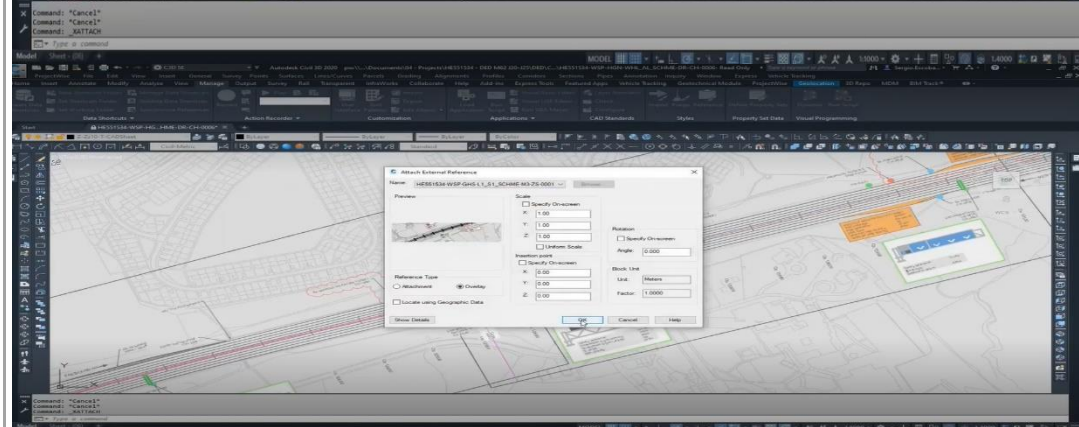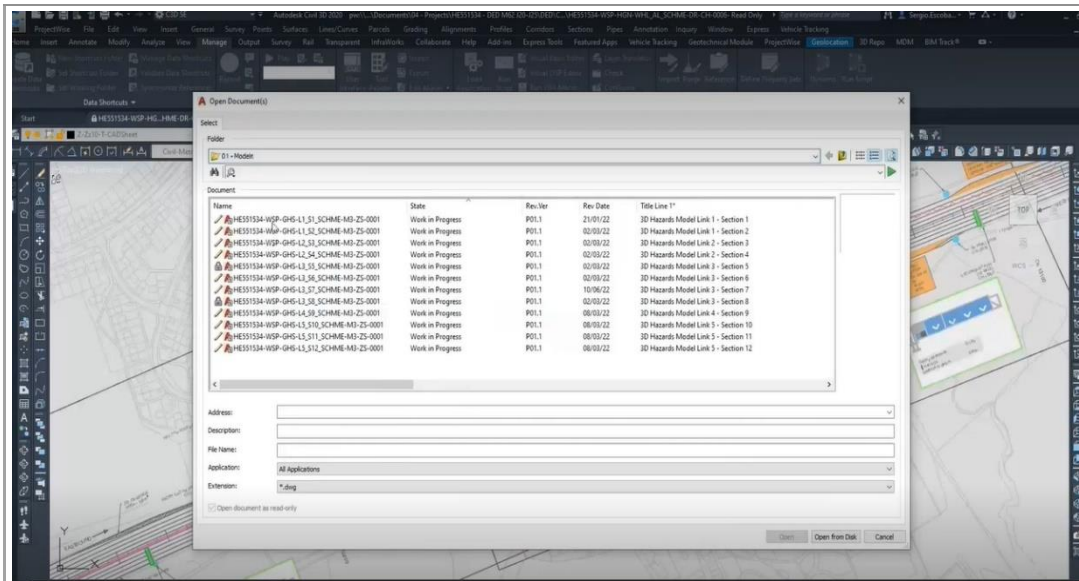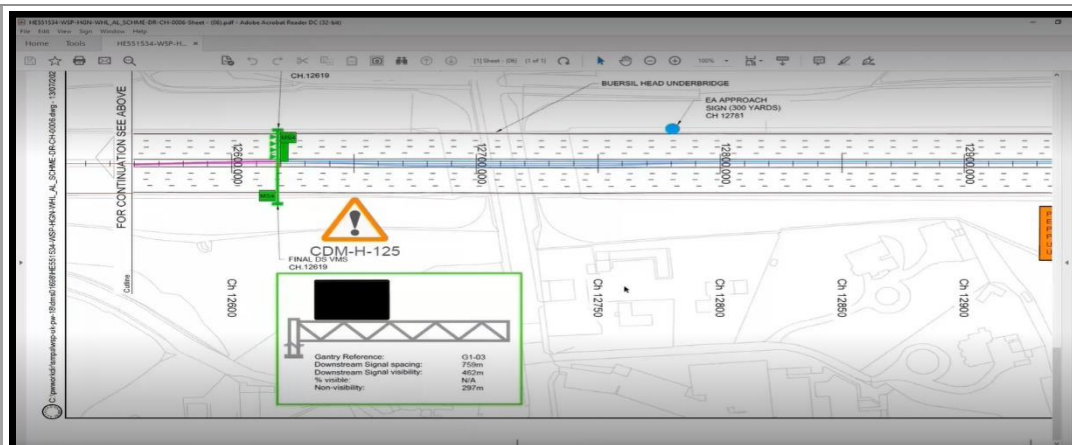
Arup – Saskia Lear

ARUP

GIS/BIM risk management processes
Digital development

Saskia Lear
21/07/2022

ARUP

Early stages (1 & 2)
Risk register embedded in Teams/Sharepoint for access by whole team

ARUP

Early stages (1 & 2)
Initial Hazard identification – automated to update the design risk register

Early stages (1 & 2)

Work flow, alerts, views
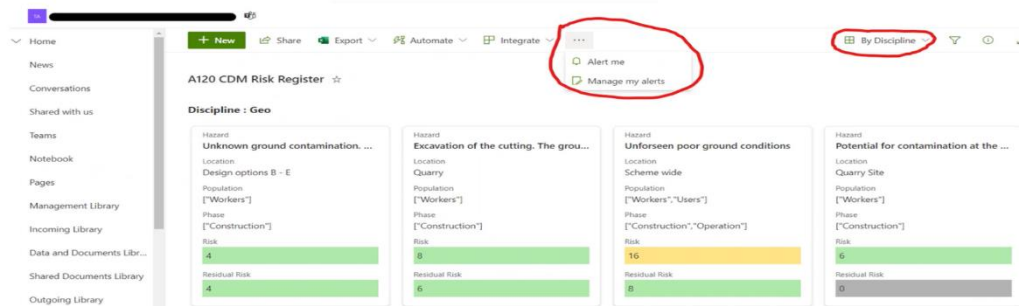
Later stages (4 & 5)

Internally developed

Digital GIS based Webviewer

- Live link engineering CAD models
- Web based tool
- View engineering designs
- Client and project team access

- Highway layout
- GI – borehole locations
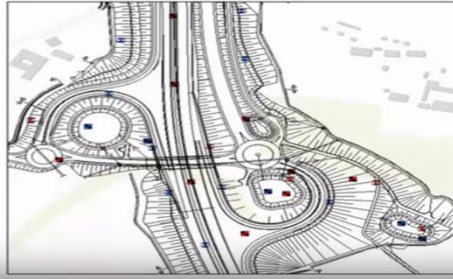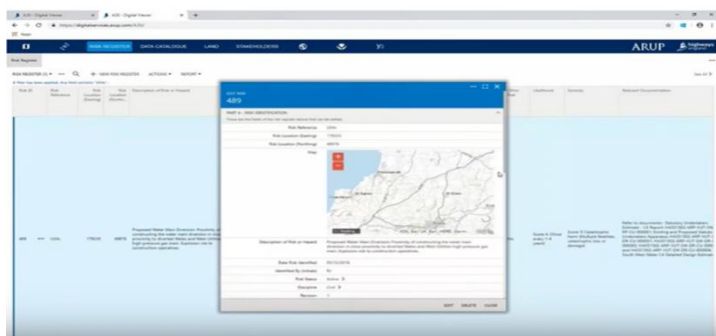

Later stages (4 & 5)

Webviewer – GIS map
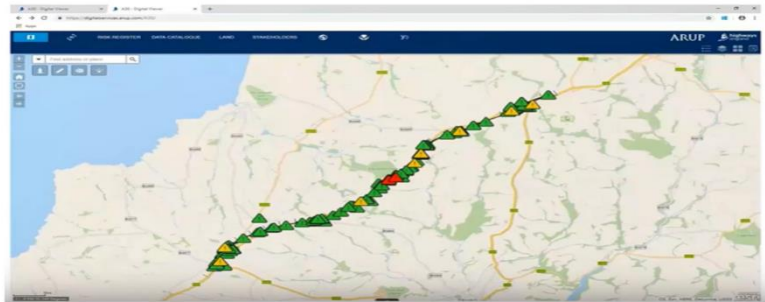
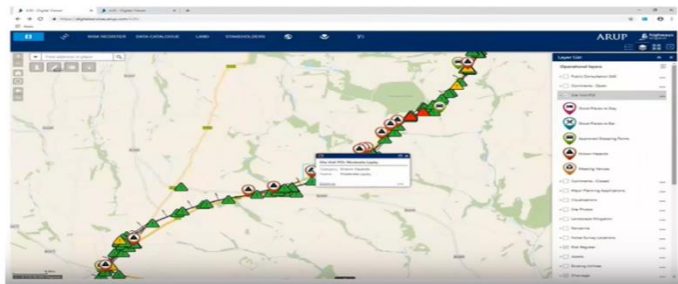# Later stages (4 & 5)

Webviewer – Risk register & hazard details

Later stages (4 & 5)
Webviewer – Incorporate site visit information (welfare, safe stopping points, etc)

Later stages (4 & 5)
Trialling - Externally developed

- SafetiBase & ITwin

5.0	AOB	
	• Note: CIRIA GIS Webinar - https://www.ciria.org/CIRIA/Navigation/Events/Event_Display.aspx?EventKey=E22711	
	• PB asked if anyone had utilised the Pre-Construction Information or Health & Safety File PCF templates issued by National Highways last October, if so, would they be willing to share examples - All	MLa/All
	• CDM process and procedures – RW asked that any comments on these documents are to be discussed / forwarded to Dave Townsend from National Highways.	All
6.0	Date of Next Meeting – (Now) 13th October 2022 (PDWG 29) – Teams Meeting	