

**ADEPT ENGINEERING BOARD
 NATIONAL BRIDGES GROUP**

MEETING NOTES

Venue: Online Video Conference

Date and Time: 10:30hrs on Wednesday 22nd June 2022

Present:

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| Keith Harwood (Chairman) [KH]
Kevin Dentith (Vice Chairman) [KD]
James Salmon (Secretary) [JS]
Jim Hall (Chair Wales) [JiH]
Donald MacPherson (Chair SCOTS) [DMc]
Colin Ferris [CF]

Alex Holden [AH]
Graham Yates [GY] (North)
Stuart Molyneux (Chair North West) [SM]
Colin Jenkins (Secretary North West) [CJ]
Mark Watson (Chair Yorks/Humber) [MW]
Claire Richardson (Secretary Yorks/Humber) [CR]
Chris Plant (Secretary West Midlands) [CP]

Richard Waters (Chair East Midlands) [RiW]
Clive Woodruff (Chair East) [CWo]
Stuart Heald [SH] (Secretary East) [SH]
Rob Causton (Secretary South West) [RC]
Alan Mclean (Chair South East) [AMc]
Scott Gregory Scott [GS] (Secretary South East) | Hertfordshire County Council
Devon County Council
Bedford Borough Council
Denbighshire County Council
Aberdeenshire Council
Department for Infrastructure
Northern Ireland
Isle of Man
Sunderland City Council
Salford City Council
Warrington Borough Council
Doncaster Borough Council
Kirklees Council
Staffordshire County Council/
Amey
Lincolnshire County Council
Essex County Council
Suffolk County Council
Cornwall Council
Surrey County Council
Hampshire County Council |
| Alex Alder [AA]
Callum Alder [CA]
Chris Martin [CM]
Peter Hobley [PH]

Alan Daines [ADa]
Chris Rook [CR]
Alistair Dore [AD]
Kieran Dodds [KDo] | Accolade
Accolade
Imetrum
Somerset County Council/ADEPT
PRow group
Canal and River Trust
Devon County Council
Historical Railways Estates
National Highways |

ITEM		ACTION
1.	INTRODUCTIONS AND APOLOGIES	
1.1	Apologies for Absence Alastair Swan (Chair North) Nigel Burn (Secretary North) Chris Wright (Chair West Midlands) Abul Tarafder (Secretary East Midlands) John Burrridge (South West) Andy Matthews (WSP)	

1.2	<p>KH to contact TfL and Andy Matthews to establish future attendance</p> <p>New Members Rob Causton – Cornwall Council, Secretary South West Graham Yates – Sunderland City Council, North Alex Holden – Isle of Man</p>	KH
2.	GUEST PRESENTATIONS	
<p>2.1</p> <p>2.1.1</p> <p>2.1.2</p> <p>2.1.3</p> <p>2.1.4</p> <p>2.2</p> <p>2.2.1</p>	<p>The present and future of bridge monitoring Alex Alder/Callum Alder (Accolade)</p> <p>AA explained the importance of monitoring – gathering early information and managing the structure with useful information. CA added intervention before escalation, managing efficiently, automated degradation detection, maximising structure lifespan, avoiding congestion, trying to eliminate oversight and unnecessary routine costs. We should try to complete smaller, more cost effective, definitive monitoring on more structures. Reactive repairs are about 1.4 x more expensive to resolve than planned ones, emergency repairs are about 3.0 x more expensive than planned ones. AA covered tilt, distance, contactless, precision cameras and strain gauges.</p> <p>Examples: Paddington Station columns daily strain/bending monitoring, half-joints and annual bearing movement (identified lock up). Leaning Hammersmith Flyover piers during jacking for bearing replacement, where hidden defects were exposed by mobile, large and simple hydraulic ram load testing. Bridge strengthening with supporting beams to shed loads – measured deflection of structure during thermal movements when accommodating supporting beams.</p> <p>CA – in future monitoring could be completed through learning a structure's behaviour, which would permit immediate degradation detection and predict advanced failure. It could help understand what influences the bridge movement i.e. traffic or thermal matters. Behaviour restrictions could be set and alarms sent if movements exceeded. An M4 bridge in South Wales is currently being monitored in this way.</p> <p><u>Questions:</u> None received.</p> <p>Measuring the industrial world Chris Martin (Imetrum)</p> <p>CM covered digital image correlation (DIC) – using detailed video technology to track changes across time, which obtains movement changes in mm. The dynamic monitoring station (DMS) is a battery-operated camera for monitoring short term, passing traffic or load test style monitoring. Recorded videos can be post processed to add, change or replace virtual tools. There are short set up times, monitoring can be completed from a position of safety and avoid closures or permissions, such as a bridge when a train passes over it, to give visual heat maps and</p>	

	<p>show movements/feed into materials data. Technology has moved from a Windows based controller to a new hardware platform, which is much smaller and lower cost.</p> <p>2.2.2 Long term dynamic rail-based monitoring devices are also being generated. Future capabilities include self-calibrating, camera movement correction technology and real time data on a cloud data portal. There is a targeted release of civil products in 2023 and Imetrum would welcome help from industry experts.</p> <p>2.2.3 A more detailed discussion will be arranged. Group members should advise KH if they wish to attend. KDo/CR expressed an interest in the meeting.</p> <p>2.3 Rights of Way Structures Peter Hobley (Somerset County Council/ADEPT PRow group)</p> <p>2.3.1 PH covered the results of a mini survey of 19 questions on Rights of Way structures which 40 authorities have responded to:</p> <ul style="list-style-type: none"> • Some authorities have up to 11,500 RoW structures. • Quite a number of authorities maintain/source structures above 7 metres in span internally. • Funding varies from £0 to £1.1 million on RoW structures, often from an overall RoW budget mixed out of capital/revenue, but most authorities don't have a defined RoW bridges budget. • 68% of local authorities have a bridge inspection regime in place, with 2-3 years about the average timespan, but also up to 8 years in some cases. • Larger/complex structures tend to be inspected by engineers/consultants and smaller ones by RoW teams. • There are specific issues with access, age of infrastructure, landowners, weather and climate change. • There is an interest in generating smaller in-house bridges and using volunteers. There are different standards being used across the nation, with the slight majority wishing for specific RoW standards and the vast majority wishing to maintain style/historic character where present. <p>2.3.2 Suggested actions from the survey:</p> <ul style="list-style-type: none"> • Raising RoW structures profile • Creating guidance on bridge inspection regimes • Creating general standards that are not as prescriptive/not necessarily adhering to the DMRB • Funding • Historical recognition • Creating standard designs that can be built by volunteers • Resolving legal/maintenance restrictions for privately owned bridges (particularly when vehicular access involved) • Smoother relationships with the Environment Agency. • Making things appropriate for supply chains, taking account of costs and resources. 	<p>ALL</p>
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2.3.3	There is a hugely inconsistent approach. GIs in Somerset are typically carried out every 8 years on larger structures and every 10 years on smaller ones.	
2.3.4	JS to obtain copy of PRow report and the Somerset RoW inspection manual from PH.	JS
2.3.5	<p>JS raised a few more areas to consider:</p> <ul style="list-style-type: none"> • Ownership between Rights of Way teams and structures teams • Access to sites • Substandard/unsafe parapets • Maintenance, including vegetation removal and repairs v. replacement • Sharing materials/procurement approaches across Councils • Developer bridges 	
2.3.6	KH expressed a desire to maintain a link between the PRow and bridges ADEPT groups. There is the potential for significant claims on the PRow network and a robust policy is needed to defend this.	
2.3.7	<p><u>Questions/comments:</u></p> <p>JS – what is a suitable inspection frequency? A – SH: Suffolk has a profiled inspection regime dependent on size, but also has a RoW bridges budget nearly the same as the highway bridges budget. CJ: Warrington has a requirement that each RoW is videoed yearly and that bridges are inspected every 2 years, but very rarely do PIs. RoW contributes 50% of cost, highway authority contributes 50% of cost with better materials. Believes this is a national duty and Warrington have been doing that for 10 years. CJ to research more and advise if it legislation or best practice. PH – a RoW bridge project management handbook would be useful i.e. ecology, permitting, access – there is a narrow window to get in. JS – advised that Central Beds have standard details and would be useful to gather/generate durable versions jointly with engineers. JiH – How did you defend your claim, as that seems to set a precedent? A – PH: Somerset – we followed our policy of an inspection regime of 8 years and had no call from the public to revisit prior to accident. RC – there is a desire to get a ROW bridge standard approach. He has a standard footbridge that may be able to be shared (out of Oak, 1.2m wide from 3m up to 12m). Also looking at equestrian bridges. ROW team being allowed to use designs up to 5m if built to the drawings and a construction compliance certificate issued. PH – suspect there are different standard designs being used across the country. Somerset have these up to 25 metres. A SharePoint could be set up to share designs, but liabilities need to be considered. CW – Essex engineers only involved if asked by ROW team. But now only going out to inspect bridges if requested to by the public. Need to establish ownership and agree loading requirements with private owners/users. CP – expressed concern about general RoW bridges management and asked if LAs have asset registers. Has used Bison Bridges. MW – engineers did not inspect RoW bridges until a lost court case when somebody went through a deck plank. It was deemed that there was no inspection regime, that inspectors were not competent and that maintainers were not competent.</p>	CJ

<p>2.4</p>	<p>KH – lots of different approaches and not safe to be inconsistent. Probably worth taking to UKBB. Next step is for JS to form a working group. RC/CP/SH happy to join.</p> <p>Future presentations The following were discussed previously: Philip Gray – expansion joints Keith Harwood – achieving social value through active travel and subway maintenance Group members should advise any other thoughts</p>	<p>JS</p> <p>ALL</p>
<p>3.</p>	<p>MINUTES OF MEETING HELD ON 2 March 2022</p>	
<p>3.1</p> <p>3.2</p> <p>3.3</p> <p>3.4</p> <p>3.5</p> <p>3.6</p>	<p>Accuracy – agreed.</p> <p>Actions/Matters Arising</p> <p>3.3 – Superseded by discussion at UKBB.</p> <p>6.2 – KH to invite Brian Duguid to a future meeting.</p> <p>8.3 – CJ to send notes on what capital funds can be used for.</p> <p>10.2 – CJ to send notes on problems with abnormal load routes.</p> <p>13.3 – AD to contact RiW re. HRE not wishing to undertake backing presence investigation. (Later covered in section 14.1 of this meeting).</p> <p>(Other actions superseded/closed out)</p>	<p>KH</p> <p>CJ</p> <p>CJ</p>
<p>4.</p>	<p>SAFETY ITEM – WORKING FROM HEIGHT – HOW DO YOU DO IT AND HOW DO YOU CONTROL THE RISKS FROM MEWPS</p>	
<p>4.1</p>	<p>JS advised that Bedford had a standard checklist for MEWPs, plus that scaffolding checks and other items were covered in generic risk assessments.</p> <p>KH advised an example where an impact protection vehicle (IPV) had moved from where requested, so wasn't necessarily complete security.</p> <p>GY always has IPV on high-speed roads, a trained operative for the MEWP and generic risk assessments for other working from height.</p> <p>ADa – when working over railways or rivers – safety rope and working rope has to be coupled to different places.</p> <p>KH reminded people to sign up to National Highways safety shares, such as the CROSS. KH to send on NH MEWP safety alert and how to sign up.</p> <p>CP to send on link re. recent bridge collapses.</p>	<p>KH</p> <p>CP</p>
<p>5.</p>	<p>CRT COLLABORATION</p>	
<p>5.1</p>	<p>ADa gave some feedback on the CRT ADEPT guidance document, which is working well. An example of not charging for scaffolding was given</p>	

	<p>where a bridge could be lifted to prevent navigation restrictions. This has caused some revisits to work out internal costs where there is usually a lump sum paid. There has also been an initial surge in applications for inspections due to a backlog resulting from local authorities waiting for fee charging to be agreed. Separate navigation notifications have to be raised if the bridges are on different navigations or spaced a significant length of time apart. ADa believes that navigation closure notices are likely to be statutory requirements.</p>	
5.2	<p>KH advised that the fee charging document can be used by all people in any highway authority, not just ADEPT group members. One discussion area is as to what constitutes maintenance v. new infrastructure – one suggestion is that it depends on what the duty is under the Highways Act, but this is currently with solicitors.</p>	
5.3	<p>MW advised a scenario where CRT are charging high fees and licence costs to install an additional duct within an existing cable tray. KH to add to queries list with solicitor.</p>	KH
5.4	<p>ADa asked for early engagement in order to allow enough time to process any applications/consider any tidal issues.</p>	
5.5	<p>CP raised the concept of reciprocal payment for local authorities' work in enabling CRT work i.e. roadspace bookings etc.</p>	
5.6	<p>CJ asked whether CRT would apply charges in emergency scenarios. AD advised that it would need to be discussed in each scenario.</p>	
5.7	<p>CP advised they had recently strengthened a CRT bridge to 40/44 tonnes, whereas CRT only required it to be 24 tonnes. CRT are now refusing to maintain the structure to 40/44 tonnes. Should there be a requirement to do this considering a large local authority investment to strengthen recently. CJ advised historically that local authorities took temporary ownership of the bridge, strengthened it back to 40/44 tonnes and then handed it back to waterway authorities to maintain. KH to raise to UKBB.</p>	KH
5.8	<p>JS to share future agendas to CRT in case they wish to attend presentations/sections of the meeting.</p>	JS
	Standing Items	
6.	NETWORK RAIL LIAISON	
6.1	<p>SM has initiated setting up a working group re. joint liabilities.</p>	
6.2	<p>KH advised that using ACE has proved a struggle to use in practise, which echoes experiences in the northwest. Further experiences in the northwest are that Network Rail have waived BAPA requirements and gone straight to RAMS agreements in the case of emergency works.</p>	
6.3	<p>CP advised an example where advanced agreements of RAMS had not benefitted as the COSS on the night was unaware and so could not honour the planned longer possession. It was felt this was caused by late</p>	

	<p>appointment and lack of information supply to the COSS. CP to summarise to SM so that he can pass on to Colin Hall.</p> <p>CW advised that Essex had a possession and the COSS hadn't put the possession on the siding into place two weeks running, plus there were very high costs advertised by Network Rail. CW to send details to SM so that he can pass on to Colin Hall.</p> <p>MW advised that a possession was booked and took 10 attempts to get on due to Network Rail cancellations. Substantial costs have resulted. MW also passed on news of recent preclusion of underbridge units, leading to much greater costs from having to utilise scaffolding instead. MW to send details to SM so that he can pass on to Colin Hall.</p> <p>RC advised not receiving notification from Network Rail of works/Technical Approval that affect the highway. CP/SM also raised they had had similar experiences.</p> <p>All to include Network Rail possession reference numbers when supplying information to SM.</p>	<p>CP</p> <p>CW</p> <p>MW</p>
<p>7.</p>	<p>BRIDGE STRIKE PREVENTION GROUP (BSPG)</p>	
<p>7.1</p>	<p>CR advised that the group hadn't met for a long time until recently. There was a request to gather incident statistics. Group members to send information on locations or accident causes to CR for next meeting in 6 months and contact CR if they would be happy to attend and advise experiences at that meeting. Provision of information on any strikes, be it soffit or parapet strikes, would be appreciated but it is acknowledged that soffits is of more interest/more likely to be captured. The group is looking for dates, locations and any significant anecdotes/ notable events that led to the bridge strike to try and identify trends.</p> <p>CJ advised a trend for soffit strikes on very low bridges with people hiring high, low weight removal vans. christopher.rook@devon.gov.uk</p>	<p>ALL</p>
<p>8.</p>	<p>ABNORMAL LOADS LIAISON GROUP</p>	
<p>8.1</p>	<p>SH/KH advised that the group is no longer meeting since the Covid pandemic. There seems to be no desire to reform it although some local groups are still meeting. Agreed there would be benefit in the group continuing, but with a focus on bridge owners rather than enforcement. KH to take the question to UKBB</p> <p>The view is that hauliers should be asked for inspections, assessments and strengthening works in the case of need for Special Orders. Hauliers may also consider overbridging such scenarios.</p> <p>CJ questioned the suitability of ESDAL as it does not provide numbers of abnormal loads on routes. Cascade seems to be more effective. Local authorities do not have enforcement powers for abnormal loads.</p> <p>KDo agreed that the majority of abnormal loads should pass on trunk roads. National Highways has raised concerns about the national</p>	<p>KH</p>

	<p>abnormal loads grid being out of date/not being maintained with the DfT. All such queries should be raised through him.</p> <p>Heavier tankers are being assumed to be OK in the case of STGO 1 vehicles, as these are only slightly heavier than C&U regulations, in the case of emergencies.</p>	
9.	ADEPT ENGINEERING BOARD	
9.1	Refer to minutes for details.	
10.	UK BRIDGES BOARD	
9.1	Refer to minutes for details.	
11.	BRIDGE OWNERS FORUM (BOF)	
11.1	Refer to minutes for details.	
12.	ASSET MANAGEMENT BOARD	
12.1	Refer to minutes for details.	
13.	EUROCODES / MASONRY ARCH ASSESSMENT DOCUMENT UPDATE	
13.1	BS8779 (masonry parapet assessments and maintenance) has now been formally issued. CIRIA C800 is available for free, launch event at ICE HQ/webinar at 18:30 on Thursday 30 th June.	
14.	HISTORICAL RAILWAYS ESTATE	
14.1	<p>Great Musgrave case mentioned in passing. Retrospective planning permission has been refused. HRE currently tasked with removing concrete and strengthening bridge to BE4 capacity. It is thought that there will be implications to the current bridge infilling programme.</p> <p>RiW advised of a bridge that HRE planned to infill, but that backing had not been checked to see if the assessed capacity could be improved. AD advised he was happy to receive information in relation to this.</p> <p>JS queried not allowing a new Right of Way under/over a structure. AD advised it is part of protocol without agreement due to safety. JS queried the finishing quality on concrete infill, but AD advised that this was actually covered in an embankment (i.e. not as shown in the press). Settlement is checked after a year, grouted up and finished if it drops by 10mm, but about two thirds don't drop. Compacted fill in installed up to within one metre of arch, then foamed concrete.</p> <p>RC noted an FOI request in Cornwall about the numbers of below strength HRE owned structures and asked why a BE4 assessment was not completed on recent information. AD could not advise.</p>	

	<p>CJ asked about installing drainage through infill schemes, as standard 450mm diameter pipes were thought inadequate. AD advised that every such application would now be going through planning permission.</p> <p>RC asked if land needed to be purchased for embankments. AD advised that usually HRE had access rights to permit this.</p> <p>AD requested bridge owner contacts from across the country. JS to contact all regional secretaries to provide best contact for Council name/telephone number/email addresses, but all needs to be work related due to GDPR. AD has provided HRE contact details for JS to circulate.</p> <p>KH and AD summarised the recent Stakeholder Advisory Forum which outlined the work of HRE and presented a case study of a proposed bridge infilling.</p>	<p>JS</p> <p>JS</p>
	Discussion Items	
15.	SURFACE WATER ATTENUATION	
15.1	<p>CR provided a presentation on surface water attenuation tanks in the public highway. There has been an increase in recent proposals for these due to developments/limited space and they aren't routinely managed by water authorities. Attenuation tanks are at risks of silting and will eventually need replacing, leading to confined space working and highway closure issues if under roads. Consequently it is thought best to maintain a minimum carriageway width/protected corridor for utilities. Also, to place Public Open Space in the lowest part of developments so that it can house surface water attenuation means. Kirklees have put in a hierarchy of controls where some of these features cannot be achieved. Developers need to be made aware of this situation when they start out.</p> <p>There are minimum sizes for inspection in the DMRB. Further guidance can be found in CD529 section 3. Crate systems are causing particular maintenance concerns, as the BBA certificate does not cover Technical Approval – AIP and Category 2 check required. Plastic not recommended due to burning risk. Also, bigger inspection chamber entries lead to unsuitable remaining width for emergency vehicles when the covers are lifted.</p> <p>CR commended for work to agree a process for management of such subjects, and asked to provide an update at a future meeting</p>	CR
16.	COMMUTED SUMS	
16.1	<p>AMc reported that the group is currently working through an update, with first draft expected for the next meeting. This is being used with developers, but the rates and base rate have been considered low. It was felt useful to have this document available and that a bit more user guidance would benefit.</p>	

17.	UPDATED TERMS OF REFERENCE	
17.1	Chairman being replaced with Chair and TOR updated to highlight links to other groups. All to check and pass on any comments.	ALL
18.	BICS ALTERNATIVES – UPDATE	
18.1	SE ABG has rolled out alternative system to the group. West Midlands are submitting e-Portfolios to LANTRA and not receiving responses. Wales are currently assessing candidates, with a list expected to be in place by the end of the year. Also currently investigating competence in the management of bridge inspections. JH would welcome support from anybody interested.	
19.	UPDATE TO BCI GUIDANCE / INSPECTION MANUAL UPDATE	
19.1	The 2007 inspection manual is being updated and volunteers for the steering group are being sought by National Highways. JS to ask regional secretaries. LoBEG have updated their consistent element inventories document, and TfL have developed a new version of their process. It is hoped that this could be tweaked and used as a UKRLG/UKBB document. JS to ask regional secretaries for inspection and mathematics volunteers after UKBB update.	JS JS
20.	LIVE LABS 2	
20.1	Funding bids to be submitted in autumn for part of £30 million funding. All to consider ideas for adding structures to their authorities bids to trial new ideas for DfT objectives, particularly around carbon/extending the life of structures.	ALL
21.	TIES LIVING LAB / FOOTBRIDGE NUMBERS SURVEY	
21.1	Reminder to secretaries about survey and launch event advised.	
22.	CONFERENCES / EVENTS	
22.1	NCE Future Bridges Conference – presentations given on future and past 50 years of bridges, Hammersmith Bridge strengthening presentation about encasing roller bearings during their replacement, timber road bridges, a lot of carbon related items, High Speed 2 and CIRIA C800. IStructE have an embodied carbon calculator. It is felt that C800 will be very useful for arches that carry abnormal loads. Concrete Bridge Development Group conference takes place next week. The IStructE's Structural Rehabilitation conference takes place in October.	

23.	ANY OTHER BUSINESS	
23.1	JS queried whether there were any other updates on the National Highways/local authority boundary guidance. KH to raise at UKBB.	KH
24.	DATES AND THEMES OF NEXT MEETINGS	
24.1	<p>Thursday 22nd September 2022 Desire expressed to follow shortly after UKBB meetings, which this one does. Meetings to continue to be on MS Teams.</p> <p>Suggested themes – carbon via Sue Threader/Brian Duguid or present clients, achieving social value through active travel and subway maintenance. Meeting agreed that the next meeting theme should be carbon.</p> <p>Meeting closed at 16:45 Hrs</p>	