

**ADEPT ENGINEERING BOARD
 NATIONAL BRIDGES GROUP**

MEETING NOTES

Venue: Online Video Conference

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

Present:

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| <p>Keith Harwood (Chairman) [KH]
 Kevin Dentith (Vice Chairman) [KD]
 James Salmon (Secretary) [JS]
 Jim Hall (Chair Wales) [JH]
 Donald MacPherson (Chair SCOTS) [DMc]
 Colin Ferris [CF]</p> <p>Nigel Burn (Secretary North) [NB]
 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 Wright (Chair West Midlands) [CW]r</p> <p>Chris Plant (Secretary West Midlands) [CP]</p> <p>Richard Waters (Chair East Midlands) [RW]
 Abul Tarafder (Secretary East Midlands) [AT]
 Clive Woodruff (Chair East) [CWo]
 Rob Causton (Chair South West) [RC]
 Alan Mclean (Chair South East) [AMc]
 Scott Gregory (Secretary South East) [SG]
 Philip Gray [PG]</p> <p>Sue Threader [ST]
 Cameron Archer-Jones [CAJ]
 Mark Kemp [MK]</p> | <p>Hertfordshire County Council
 Devon County Council
 Bedford Borough Council
 Denbighshire County Council
 Aberdeenshire Council
 Department for Infrastructure
 Northern Ireland
 Gateshead Council
 Salford City Council
 Warrington Borough Council
 Doncaster Borough Council
 Kirklees Council
 Herefordshire County Council
 (Balfour Beatty)
 Staffordshire County Council
 (Amey)
 Lincolnshire County Council
 Leicester City Council
 Essex County Council
 Cornwall Council
 Surrey County Council
 Hampshire County Council
 Transport for London</p> <p>(Rochester Bridges Trust)
 (Net Zero Group)
 (Hertfordshire County Council
 /ADEPT President)</p> |
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ITEM		ACTION
1.	INTRODUCTIONS AND APOLOGIES	
1.1	<p>Apologies for Absence Alastair Swan (Chair North) John Burrige (Secretary South West) Stuart Heald (Secretary East)</p> <p>(No Isle of Man representative present)</p>	
1.2	<p>New Members None</p>	

2.	GUEST PRESENTATIONS	
2.1	Rochester Bridge Sue Threader (Rochester Bridge Trust)	
2.1.1	Rochester Bridge Trust is a charity formed to manage a bridge across the River Medway and is independent of all authorities/government. It is funded through adjacent land arrangements. The bridge is made up of three parts, including a service bridge, is about 200m overall length and has a large tidal range. It does not include the adjacent railway bridge.	
2.1.2	This project was a recent major refurbishment, with the first part made carbon neutral and the second part made maintenance net zero. Works were on site prior to thinking of carbon, so calculations were completed retrospectively (which is not recommended). But full commitment was then given as the project went to carbon neutral and net zero maintenance within nine months. PAS 2060 was used to demonstrate carbon neutrality, which was a higher level document than PAS 2080. The approach should be to measure, reduce, offset and then document/validate what has been completed. Unfortunately the reduce step was missed on Rochester Bridge.	
2.1.3	The works comprised large amounts of scaffolding for brickwork, steelwork and concrete repairs, bird netting, repairs to the service bridge roof, new parapets and lamp columns, new joints, re-waterproofing and resurfacing, redundant utilities removal, river wall repairs, ornate ornamental painting, the creation of new public space areas and new coloured lighting. A lot of work was completed by hand to keep the bridge open during the works, which also reduced the carbon impact.	
2.1.4	Carbon footprint was measured in a life cycle model with product, construction, operations and end of life stages. The team worked out that one average tree can take 0.1574 tonnes of carbon dioxide out of the atmosphere during 50 years, so 8,000 trees were planted to offset the number of tonnes of carbon used during the project. It was decided much more tangible to discuss things in terms of trees and noted that different trees have different potential to collect carbon.	
2.1.5	Metals and quarried materials were the biggest issues. The impact of metals was investigated, with aluminium being a particular issue. There was a huge difference resulting from where and how it was sourced – fossil fuels were worse than blended fuels and much worse than hydropower. In terms of quarried materials the re-use of existing stone was initially precluded due to appearance, but it was then realised that using new stone from overseas had a huge carbon impact.	
2.1.6	The construction carbon element was primarily down to workforce and travel to site, with about half of that then from traffic diversions and diesel plant/generators. There was a smaller impact from site offices, power and water. It was noted that closing bridges had a huge carbon impact, so efforts were made to keep traffic flowing where possible.	
2.1.7	Carbon in day-to-day maintenance was considered, with about 75% resulting from the sweeping and cleaning of footways, so this was switched to hand cleaning and hydrotreated vegetable oil was used. All vans were	

	switched to electric and bikes/walking was encouraged for workforce travel. All electricity on the bridge is LED and from renewable sources and the rescue boat is electric with a battery pack. Overall, maintenance carbon emissions were reduced by 85%.	
2.1.8	The general Rochester Bridge Trust approach to carbon: Maintain properly and defer replacement, calculate broad numbers to reduce carbon NOW (and then refine numbers later), leave nothing out of calculations, tackle preconceptions and challenge complacency, a whole team commitment is needed, always “communicate in trees”. Procure by fitness for purpose, embodied carbon, end of life consideration and then price. Overall this did not actually cost more financially.	
	<u>Questions:</u>	
2.1.9	JH – what land area and cost was there for 8,000 trees? ST – 12.41 acres, including ponds/open areas and £38,000 (but the land was already owned and its value reduced by 20% as a result)	
2.1.10	RW – how closely planted were the trees? ST – used Woodland Carbon Code calculator to work out spacings/thinning/management etc., which knocks off 20% for data then 20% for buffer areas. The Recommended spacing was 1.5 metres, but 2.25 metres was used.	
2.11	CJ – how would you calculate not maintaining a bridge for 50 years? ST – look at whole life costs and extra costs resulting from not doing this.	
2.2	Accelerating progress towards Net Zero bridges Cameron Archer-Jones (Net Zero Bridges Group)	
2.2.1	The group’s aim is to accelerate progress towards Net Zero carbon bridges by sharing knowledge and ideas and shaping practice. It is based around carbon and not other sustainability matters, Members of the group have made carbon pledges/statements in relation to the climate and biodiversity emergencies. The Carbon 2050 budget will be exhausted in only 14 years if we carry on at the current rate.	
2.2.2	The group is sharing case studies of what they have done i.e. timber/concrete composite bridges, net zero bridges toolkit, FRP composite bridges, integrating BIM, a low carbon concrete routemap. Information is shared at conferences and in publications (Bridge Design and Engineering). The low carbon concrete routemap is currently very buildings focussed, so efforts are being made to draw out bridges and timelines more.	
2.2.3	Some working groups have been set up to consider: <ul style="list-style-type: none"> • Carbon data and benchmarking (ensuring consistency and major elements, then sharing data in databases, consider most carbon efficient options for various spans); • steel bridges (appropriate carbon factors for fabrication, application of PAS 2080); • timber bridges (restrictions of use, appropriate carbon factors); and, • concrete bridges (concrete mix designs, state of the art reinforcement). 	
2.2.4	The group’s key strategic issues are:	

	<ul style="list-style-type: none"> • Setting clear carbon budgets (balancing new-build v renewal); • looking to set realistic carbon budgets alongside financial budgets; • a whole system approach to capital v operational v user carbon trade-offs; • considering when to invest in capital carbon to reduce user carbon; • PAS 2080 use across all projects/procurement documents. • DfT shared digital carbon architecture (common approach to carbon data); • looking to generate a used carbon scale in the same way as the energy ratings scales; • investment in materials decarbonisation; • to “become comfortable with the uncomfortable” (an openness to innovation and challenge, ability to manage risk); • pilot projects/structures/cross-industry programme; • a research and development programme, focussing on reduced consumption enablers, efficient resource use and material substitution; and, • a focus on existing assets i.e. waiting for low carbon steel and concrete prior to new bridges (thought likely to be in the early 2030s), making what you have last longer. 	
2.2.5	<p>The Net Zero Bridges Group website is coming soon to share guidance and data, plus the group is engaging with Bridge Owners Forum. Contact for the group is at info@netzerobridges.org</p>	
2.2.6	<p><u>Questions:</u> RC – Do you think there should be a national ‘database/toolkit’ for all to use / have input into to measure carbon use. CAJ – Yes. Low financial cost doesn’t always mean low carbon cost, so you should get both numbers</p>	
2.2.7	<p>JS – how does the replacement of timber elements compare in extra carbon to a higher carbon material initially? CAJ – some timber decks have the same design life as concrete, it depends on where the bridge is sourced/replaced. Replacing timber components once or twice is generally better than different materials, but this is not the case for whole bridge replacement.</p>	
2.2.8	<p>CJ – why use PAS 2080 instead of PAS 2060? CAJ – PAS 2080 is more towards procurement/new servicing relating to an asset, PAS 2060 covers the companies/bodies who are hoping to become carbon neutral.</p>	
2.2.9	<p>CJ – is there a briefing note to address an FOI on an existing structure on carbon? CAJ – would appreciate guidance on what is wanted. If they are interested it should lead to a more positive outcome.</p>	
2.3	<p>Current ADEPT plans Mark Kemp (Herts Director of Environment and Infrastructure/ ADEPT president)</p>	
2.3.1	<p>The ADEPT group covers the highways service, including strategic planning, highways waste etc. There is a keenness to share</p>	

	<p>collaboration/learning and influence what DfT/DEFRA etc. are doing in terms of impact on communities. MK's three priorities for his year in office are:</p> <ol style="list-style-type: none"> 1.) People – ensuring suitable resources and understanding skills needed in 5-10 years' time. 2.) Place – the contribution place makes to the health and wealth of the community. i.e. keeping bridges open, looking at levelling up to fill gaps. 3.) Planet – i.e. proven services on looking at scopes 1 and 2 in relation to climate change. 	
2.3.2	<p>There are two main conferences – ADEPT main conference in May, Traffic Management conference (free) in Birmingham in October.</p>	
	<p><u>Questions</u></p>	
2.3.3	<p>JH – how can we help with your aims? MK – The future highways research group is looking for members, share current ideas and information, how to help with inflationary costs on services, making sure we're up to date on our standards and challenging the right people.</p>	
2.3.4	<p>RC – are you aware of the National Highways surety protocol? MK – yes, meeting the National Highways Chief Exec this afternoon. DfT were very supportive of a robust response.</p>	
2.3.5	<p>CR – any thoughts on resolving the skills shortage? MK – look at how we're using digital tools, behavioural science in terms of embedding a community's thoughts into the early stages of a project, asset management, including economic and climate impact, within themes such as bridges, roads, drainage and street lighting. Making this work appeal to young people.</p>	
2.3.6	<p>JS – how do we persuade politicians to invest more on bridges/drainage etc. instead of roads etc.? MK – the current battle is getting spend on highways instead of social care etc. Other parts of the business tell a story and then end up with numbers at the end of it, so sell that – explain outcomes, value and evidence it. i.e. comparative interventions. This has happened with surfacing repairs (moving away from reacting to the high amber ones), needs to be explained to the public. Milk problem areas for what they are worth. Ask for the right amount of money to deliver the services to the levels expected. KH – explain what the risk means to the public, we used graphs and a picture of a car going through a bridge parapet. Put on the same footing as other assets instead of over-loading with numbers.</p>	
2.3.7	<p>CJ – how can we reduce road widths for cyclists at the cost of freight and abnormal loads? MK – it depends on the size of the settlements. Government is pushing hard on sustainable travel, which makes it more difficult for private vehicles and freight too.</p>	
2.4	<p>Future presentations The following were discussed previously: Philip Gray – Westway expansion joints Keith Harwood – achieving social value through active travel and subway maintenance</p>	

	Group members should advise any other thoughts. Project examples would be particularly welcomed.	ALL
3.	MINUTES OF MEETING HELD ON 22 June 2022	
3.1	Accuracy – agreed. Actions/Matters Arising	
3.2	2.2.3 – Arrange meeting with Imetrum Accolade for a more detailed discussion	KH
3.3	4.1 – Advise how to sign up for CROSS and Nationa Highways alerts	KH
3.4	5.3 – High CRT fees and licence costs to install an additional duct within an existing cable tray were raised and need to be considered in a cost sharing agreement – mentioned at UKBB and added to agenda for CRT discussions.	
3.5	5.8 – Share future agendas with CRT in case they wish to attend presentations/sections of the meetings	JS
3.6	6.3 – Summarise case where COSS hadn't put siding possession into place for two weeks running, with very high advertised costs for SM to pass on to Colin Hall	CWo
3.7	6.3 – Summarise case where it took 10 possession booking attempts to obtain access (due to Network Rail cancellations) and preclusion of underbridge units for SM to pass on to Colin Hall.	MW
3.8	7.1 – No information was sent through on locations or causes of bridge deck strikes, but Bridge Strike Champions were viewed as best practice and it was suggested that their names were put on the local area contact lists. SH/KD to investigate if there is a formal process and if we should be following it.	SH/KD
3.9	8.1 - UKBB agreed that ALLG should continue but focus on bridge owners instead of enforcement. Awaiting ideas for a Chair.	KH
3.10	14.1 – Remaining regional secretaries to provide best work-related bridge contact details for Councils (name/telephone number/email addresses) for HRE use.	AT/CF/CJ/ CR/DMc/ NB/PG/SG/ SH/TB
3.11	15.1 – Provide an update on surface water attenuation at a future meeting.	CR
3.12	23.1 – NH/LA boundary guidance issue is imminent (Other actions superseded/closed out)	
4.	SAFETY ITEM – HOT WEATHER MANAGEMENT AND INCIDENTS	
4.1	The group advised examples of incidents resulting from the summer hot weather: <ul style="list-style-type: none"> • KH mentioned buckling safety barriers experienced by National Highways 	

	<ul style="list-style-type: none"> • JH mentioned numerous bridge joint issues • JS mentioned the A14 surfacing bulging and breaking up • KD mentioned footbridge deck plank warping, plus a Network Rail bridge that had a set of steps pull away from bridge and collapse. • CP had to monitor below waterline timber exposed at low levels and moving walls. 	
	Standing Items	
5.	UK RLG/ADEPT FEEDBACK – ADEPT ENGINEERING BOARD/ASSET MANAGEMENT BOARD	
5.1	Commuted sums guidance due to be issued in the autumn, the next meeting of the ADEPT Engineering Board is in October.	
5.2	National Highways surety – Shropshire being asked for a bond of about 200% for this, but Neil Loudon and ADEPT engineering board knew nothing about it. CWr to feed back any further details he had.	CWr
6.	UK BRIDGES BOARD/BRIDGE OWNERS FORUM	
6.1	The Network Rail parapet protocol document issue is imminent.	
6.2	Cost sharing (Bridgeguard) information – SM, JH, PG and Nicola Head (TfL) discussing with Network Rail (Colin Hall) who will provide data on the assets, review the data, see what passes BE4, advise costs to strengthen anything needed to 40 tonnes and the number of structures involved. A backlog will then be generated based on responsibilities instead of ownership.	
6.3	Hazel MacDonald is asking DfT to take a lead on the update to the CSS/NR cost sharing protocol through a group including NR, DfT, CRT, HRE etc.). ADEPT to be represented by either SM or KH.	SM/KH
6.4	DfT are keen for BridgeCAT (vehicle mounted bridge scour inspection equipment from Cumbria) to be used elsewhere. Uncertainty was expressed in terms of safety during flood events, road closure requirements resulting from its use and the need to deploy three staff to operate it. The camera also needs regular repositioning as it only covers a small area. KH to pass on summary comments and contact names (CP/CW/KD/SM) to Matt Eglinton.	KH
6.5	JS to circulate Bob Humphries' BICS feedback email.	JS
6.6	Richard Waters is standing down as chair of the Access Planning group – the main issues that the group covered were cancelled Network Rail possessions, CRT charging and the collation/co-ordination of bridge numbers/data. RW to send spreadsheet on for JS to circulate to the group. All to advise if they wish to become chair to the group.	RW/JS ALL
6.7	Bridge Owners Forum are trying to collate ongoing research to increase awareness and avoid duplication. All to advise on any research projects they are aware of.	ALL

7.	LIAISON WITH OTHER GROUPS: NETWORK RAIL LIAISON/ BRIDGE STRIKE PREVENTION GROUP/ ABNORMAL LOADS LIAISON GROUP/ HRE-SAF	
7.1	<p>SM met with Colin Hall previously and asked for comments on possessions and AIPs. ALL to advise Network Rail queries to SM.</p> <p>RW advised that Network Rail needed more compensation claims to evidence issues with cancelled possessions. RW to send through potential table to JS to circulate to capture incidents.</p>	<p>ALL</p> <p>RW</p>
8.	CODES, STANDARDS AND PUBLICATIONS	
8.1	<p>Andy Matthews (WSP) is withdrawing from the group, but all to keep an eye on developments and invite presenters when suitable.</p> <p>PG to send on video links to CIRIA C800 presentation from Matthew Gilbert in July</p>	PG
	Discussion Items	
9.	RIGHTS OF WAY STRUCTURES	
9.1	First meeting arranged for 10 th October, with 3 Rights of Way officers and 7 structures staff. The ADEPT national bridges group voiced major concerns regarding funding and aligning asset management systems.	
10.	CS 471 – TECHNICAL IN-SERVICE REQUIREMENTS FOR SAFETY	
10.1	No comments to report.	
11.	INSPECTION MANUAL FOR HIGHWAY STRUCTURES - UPDATES	
11.1	There are currently two volunteers on the steering group (Jacqueline Mynott and Peter Burge), but no feedback yet. WSP are requesting assistance in scoring defects, which they will put online. KH to send on link to website as soon as it is available.	KH
12.	BRIDGE GUIDANCE – LIST AND BCI UPDATES	
12.1	Richard Fish previously presented a paper on Bridge Guidance and Governance – issues include ownership, lack of update, difficulty of finding copied. KH leading a group to identify and start to address these with the first step being a list of documents. KH to circulate the list of documents for all to comment/add.	KH
12.2	UKBB felt it should be the owner of the updated BCI documentation. The ADEPT group’s desire is for DfT to fund, but ADEPT is happy to lead the steering group.	
13.	PERSUASION FOR FUNDING ALLOCATIONS	
13.1	<p>(Refer to Mark Kemp presentation notes for discussion – section 2.3.6)</p> <p>Also refer to the below links:</p>	

	<p>https://www.gov.uk/government/publications/highways-maintenance-funding-allocations/highways-maintenance-and-itb-funding-formula-allocations-2022-to-2025 https://ukrlg.ciht.org.uk/media/15247/the-case-for-investing-in-highway-maintenance_final.pdf</p>	
14.	ANY OTHER BUSINESS	
14.1	<p>PG asked whether anybody had any success in pursuing hauliers for the costs of bridge assessments when they have been caught by the police travelling over structures that they have not sent notification for. PG to pass on email to JS for circulation.</p> <p>KD provided a short presentation of his work on a bridge in Barnstaple. This was very interesting and prompted the suggestion that project example presentations would be a good topic for the end of the day slot.</p>	PG
15.	FORTHCOMING CONFERENCES / EVENTS	
15.1	<p>Highways UK – 2nd/3rd November ADEPT Autumn Conference – 17th November, Leeds Bridges Scotland – 29th/30th November Bridges Conference – 8th/9th March 2023 in Coventry NCE Future of Bridges – expected June 2023</p>	
16.	DATE OF NEXT MEETING	
16.1	Wednesday 15 th February 2023, MS Teams	