

BRIDGE OWNERS FORUM

MINUTES OF MEETING BOF 43: TUESDAY 13th MAY 2014 AT THE GRAHAM STOREY ROOM, TRINITY HALL, CAMBRIDGE

PRESENT

Campbell Middleton	Chairman & Cambridge University Engineering Department (CUED)
Graham Bessant	London Underground
Peter Brown	Oxfordshire CC and ADEPT
Nick Burgess	London Underground
Graham Cole	ADEPT
Liam Duffy	NRA (Ireland)
Andy Featherby	Canal and Rivers Trust
Richard Fish	Technical Secretary
Wayne Hindshaw	Transport Scotland
Neil Loudon	Highways Agency (HA)
John McRobert	DRD(NI)
Graeme Muir	SCOTS
Stephen Pottle	Transport for London
Nigel Ricketts	Network Rail
Paul Thomas	Railway Paths Ltd.
Paul Fidler	CUED
Phil Catton	CUED (part)

1. Apologies

The Chairman welcomed members to BOF 43 and the changed venue of Trinity Hall. He tabled a BOF membership/contact details form which attendees were asked to complete and included a section on the number of bridges for which each represented organisation had responsibility. The Chairman explained that this was an attempt to determine the total number of bridges in the UK in the absence of a national bridge database, pointing out that only the USA has such a record.

A short discussion ensued on definitions between culvert and bridge, bridge and viaduct etc. and also whether other highway structures should be included. The Chairman acknowledged that these issues needed to be addressed but remained keen to pursue the idea.

With regard to the membership details, the Chairman explained that his intention was to have some information on each BOF member organisation and their representative on the BOF website and to this end also asked for an electronic photograph of each BOF member to be sent.

ACTION 19: All

Apologies had been received from the following:

Steve Berry	DfT
David Castlo	Network Rail
Andrew Charnock	TfGM
Barry Colford	Large Span Bridges Group
Huw Davies	SUSTRANS
Richard Frost	Network Rail
Neil Garton-Jones	CSS Wales
Jason Hibbert	Welsh Government
Rod Howe	Canal and River Trust (Andy Featherby was substituting)
Paul Monaghan	LoBEG
Eoghain Nagle	Irish Rail
Mike Winter	UKBB and ADEPT

Nigel Ricketts explained that he was soon to retire from Network Rail and, whilst today he was effectively substituting for David Castlo, the future Network Rail representative would be Richard Frost.

Stephen Pottle noted that Paul Monaghan had now formally replaced Paul Williams as Chair of LoBEG.

2. Previous Minutes – BOF 42: 21st January 2014

The minutes of BOF 42 were accepted and, subject to the following corrections, could be placed on the BOF website:

- **Page 1, Attendees:** Replace “Samsoa” with “Sansoa”.
- **Page 2, Item 1:** Remove Liam Duffy from list of apologies.
- **Page 5, Item 4b:** Replace “Samsoa” with “Sansoa”.
- **Page 12, Item 13b, first paragraph:** Insert “, supported by load testing,” after FE assessment.

ACTION 1: Paul Fidler

3. Actions from BOF 42

References in the text below refer to the numbered actions on the BOF 42 Action Sheet. Boxed reference numbers relate to the BOF 43 Actions:

Action 2, Temporary Bridge AIP Guidance:

Neil Loudon reported that work on this guidance had been delayed as another UK supplier had entered the temporary bridge market and it was essential to ensure that the output will be generic. Neil also reported that HS2 had raised issues associated with temporary bridges and this was being considered by John Carpenter and the Temporary Works Forum. He agreed to update on progress at BOF 44.

ACTION 2: Neil Loudon

Action 3, Automating Bridge Inspections:

The Chairman and Stephen Pottle summarised the recent history of this project for the benefit of newer members. Both Stephen and Neil Loudon had seen the draft output and had found it disappointing. It was agreed that this could be issued to BOF members.

ACTION 3: Stephen Pottle/Paul Fidler

The Chairman expressed his concern over the DfT governance of the contract and the performance of the contractor, TRL. John McRobert also noted that there were questions to be answered on the financial arrangements as public funds had been spent on a project which had failed to deliver the full scope of the brief. The Chairman agreed to contact Steve Berry and/or Paul Hersey at DfT to query payment processes and the role of the project steering group.

ACTION 4: Chairman

Stephen Pottle agreed to formally request the final report so that discussions could take place at BOF 44.

ACTION 5: Stephen Pottle

Action 4, ADEPT Soils and Materials Group Report:

Graham Cole reported that this report, which covered all aspects of surfacing, had now been published but it contained little reference to bridges. John McRobert noted that the recent meeting of the ADEPT Soils and Materials Group had reviewed the report and a revision was already being considered. Graham Cole will provide any further information at BOF 44.

ACTION 6: Graham Cole

Nigel Ricketts noted that research into the colour of surfacing on bridge decks and its impact on temperature effects would be worthwhile; he reported that Network Rail had managed to cure a sticking swing bridge just by changing the colour of the surfacing.

Paul Thomas asked whether there was a move to no longer waterproof decks but instead to rely on the waterproofing qualities of surfacing. Neil Loudon reported that this was being considered by the Highways Agency along with a wider review of waterproofing systems through their research contract with Atkins. He agreed to provide an update at BOF 44.

ACTION 7: Neil Loudon

There followed a wider discussion on surfacing, waterproofing and joints:

Liam Duffy felt that not having waterproofing was a bad idea when it came to road maintenance and the need to plane off surfacing which could potentially damage the deck. He favoured some form of protective layer to the waterproofing such as red sand asphalt. Wayne Hindshaw noted that there had been problems with red sand carpets and reported that he had also used plastic indicator mesh to warn when planing. Graham Bessant advised that LUL now specify red GRP tiles as an indicator; his main concern over waterproofing and deck damage lies with the works of utility companies.

Wayne Hindshaw reported on the use of Guss Asphalt as a resurfacing material on Kessock Bridge and believed it had also been used on Avonmouth Bridge. Graeme Muir favoured a move towards thicker surfacing for improved durability and recommended that the design thickness should not be less than 120mm.

Graham Cole suggested that it was important to focus on the wider issue of water management on decks and not only to consider interactions between concrete, waterproofing and surfacing but also joints and drainage. Peter Brown endorsed this view and referred to the CSS/HA/TRL work on the subject from 1999.

Neil Loudon referred to other Highways Agency research into highway maintenance and in particular the formation of pot holes. Wayne Hindshaw referred to work which Transport Scotland had commissioned on the advantages and disadvantages of the use of HRA and SMA. He agreed to forward this for issue to BOF.

ACTION 8: Wayne Hindshaw/Paul Fidler

The Chairman extended the discussion into expansion joints and bearings and queried why their longevity never seemed to be as long as the manufacturers quoted. John McRobert reflected that this had been the case for the last 40 years, particularly with regard to leaking expansion joints. Stephen Pottle suggested that it might be a better solution to allow water to penetrate joints and have a robust water collection system which could be more easily maintained. Nigel Ricketts supported this suggestion and endorsed the view that water management should be designed in at the outset, even if the proposed joint was allegedly waterproof.

Stephen Pottle noted that the typical life of a joint in London was no more than 5 to 10 years. There always seemed to be problems at bridges close to junctions where vehicle braking and turning movements increased the rate of deterioration. At more straightforward sites, he had favoured the use of asphaltic plug joints although more lately he was using buried joints. It was clear the asphaltic plugs were favoured by some bridge owners (such as Graeme Muir) but not others (Wayne Hindshaw).

Discussion extended into problems of workmanship and supervision in the installation of replacement joints on existing bridges. As work usually had to take place under planned lane closures often at night and against the clock, this added to the overall poor performance of the finished product. The Chairman suggested that a detailed review and study into how long joints had lasted before replacement would be a useful exercise. Neil Loudon and Peter Brown urged caution, pointing out that there was a variety of factors and site conditions which influenced joint performance. Stephen Pottle suggested that BOF should lobby for extended life on all components, including an ongoing scrutiny of suppliers and manufacturers. Others felt that this was unrealistic as component failure could be linked to poor workmanship or lack of maintenance. Wayne Hindshaw estimated that 50% of joint “failures” were caused by breakdown of the surfacing on either side: he now requires three to five metres of surfacing to be replaced on each approach to the joint while it is undergoing replacement.

Nigel Ricketts suggested the use of mobile tents that could be erected over a joint replacement in order to alleviate possible weather issues during installation. Wayne Hindshaw described how he had utilised a shipping container with the floor removed and positioned over the joint.

Finally, Richard Fish suggested that the theoretical specification for movement in replacement joints could be relaxed in the more temperate parts of the world by considering the lag between air and bridge temperatures, the fact that prolonged spells of intense cold or heat were improbable and that with older decks, all of the shrinkage component had already taken place. Stephen Pottle was aware of a Flint and Neil paper on this topic which supported this view but he did not think that it had yet been published.

Action 5, UKBB Business Plan:

Richard Fish undertook to contact Mike Winter to determine the status of the 2014 UKBB Business Plan.

ACTION 9: Richard Fish

Graham Cole understood that Mike Winter was leaving Dorset CC in September and therefore would be standing down from his role as Chair of UKBB.

Action 7, EPSRC & TSB:

The Chairman will aim to invite representatives from research funding bodies to BOF 44.

ACTION 10: Chairman

The Chairman also explained that he was still trying to investigate possible EU funding sources. He was shortly due to visit Brussels and would report on progress at BOF 44.

ACTION 11: Chairman

Action 11, Protective systems and structural steelwork presentation

The Chairman will consider this presentation at a future BOF.

ACTION 12: Chairman

Action 12, Mersey Gateway:

The Chairman will invite a member of the project team to a future BOF. (See also BOF 43 Action 16 below).

ACTION 13: Chairman

Action 14, BOF Research Priorities:

The Chairman reported that he is still trying to contact Steve Berry at DfT, noting that Steve had now missed the last three BOF meetings. It was agreed that it might also be better for the invitation to be extended to Paul Hersey, Steve Berry's assistant.

ACTION 14: Chairman

Action 15, BOF Research Priorities:

The Chairman asked all BOF members to revisit the list of possible research topics as determined at BOF 41 and to prioritise between three and five projects.

ACTION 15: All

Action 16, Queensferry Crossing:

Considering the two major bridges presently under construction in the UK, Queensferry and the Mersey Gateway, the Chairman expressed a desire to understand issues of cost savings and innovations as well as the fact that all major schemes seem to be being built by non-UK led consortia. He undertook to co-ordinate invitations to representatives from both projects to the same BOF meeting. (See also BOF 43 Action 13 above).

ACTION 16: Chairman

Actions 17 & 18, Prevention of Bridge Jumping

John McRobert has yet to find the paper prepared for UKBB on this topic.

Wayne Hindshaw requested that this should become a standing item on BOF agendas, subject to a possible change of title, such as "Prevention of self harming". He also reported that Transport Scotland had collected data on bridge related suicides which had shown that, whilst numbers at Erskine had reduced,

suicides had transferred to nearby motorway bridges with a consequent increase in disruption and distress to the travelling public.

ACTION 17: Chairman

Action 19 & 20, Hidden Defects in Bridges: CIRIA Research Proposal:

Stephen Pottle understood that CIRIA had been pledged about 80% of the funds that they needed to undertake this research, although he noted that some organisations had offered “in kind” support which was difficult to quantify. It was clear that BOF members still supported the proposal although there was a feeling that the scope was still too broad. The Chairman undertook to speak to CIRIA’s Chris Chiverell to discuss progress

ACTION 18: Chairman

Action 21, CIRIA Bridge Scour Manual:

John McRobert reported that he had had the chance to review the latest draft and was impressed by what he had seen. When asked about putting the draft on the BOF website, John replied that this was unlikely to be acceptable to CIRIA although a link to the final version could be added after the final report had been launched in the autumn.

All unrecorded actions from BOF 42 had either been completed or were discussed as part of the BOF 43 agenda.

4. Membership Update

The Chairman advised that today’s BOF meeting was to be the last for Graham Bessant, who was about to retire from LUL, noting that Graham was an original “Boffer” having attended BOF 1. He asked Graham to reflect on the way that BOF had developed over the years.

Graham recalled that the first meeting had been a very informal affair but that there had been some healthy debate. He also remembered that IStructE had started a similar group at about the same time but, while BOF had flourished, that group had become moribund. Although BOF was now slightly more “dignified”, he was pleased to see that there was still the occasional heated discussion. Graham noted that although he had been a member since BOF 1, his attendance had not been continuous as LUL had been represented by Jim Moriaty when Graham had been TUPEd to Metronet for a short time. He stated how important it was for LUL and all bridge owners to engage in BOF and other similar groups.

The Chairman thanked Graham for his various and many contributions over the years; a sentiment that was echoed by all.

The Chairman then welcomed Nick Burgess to his first meeting as the new LUL representative and asked him to introduce himself. Nick explained that he had been with LUL for more than 30 years, although he had also been TUPEd for a

time to Tubelines. He had specialised in engineering information and asset management for most of his career before returning to structures. He referred to his philosophy that information should be considered as an asset. Nick felt that his asset management experience would be something which he could offer at BOF and looked forward to making a contribution.

5. New Bridges and Major Projects Update

The Chairman reprised the earlier discussions on Queensferry and Mersey Gateway, noting the significant Chinese input in terms of steel fabrication and what he saw as the “Lego-isation” of bridge building. (Others thought “Meccano-isation” was a more appropriate UK term). The Chairman restated his intention to produce and maintain a data sheet on the BOF website which would be a list of all current major bridges either being built, replace or strengthened. He invited BOF members to report on any projects on which their organisation was working:

- Liam Duffy reported very little new work in the **NRA**. The inter-urban motorway network radiating from Dublin had been completed and the next longer term strategy was to upgrade links on the west coast of Ireland.
- Peter Brown noted that more capital funding seemed to be available now for **ADEPT** members than had been the case for some time. For example, Oxfordshire County Council were working on two new bridges but the biggest challenge was working on a restricted site with services and utilities in the area.
- Graeme Muir was not aware of anything significant in the Scottish Local Authorities but undertook to check with **SCOTS** colleagues.
- Stephen Pottle referred to the following for **TfL**:
 - Hammersmith Flyover strengthening
 - Four major bridge replacements
 - The Silvertown Crossing of the Thames east of Blackwall
 - A new crossing near the Woolwich Ferry
 - A new 26km D2L orbital tunnel
- Neil Loudon reported progress on the transition from the **Highways Agency** to the new Government Company by 2015. At present it was unclear as to how the new company was to be regulated but the rail model was an option (cf The Office of the Rail Regulator). Neil also advised that the research budgets would be transferring to the new company but might focus more on the management of innovation. There was even likely to be an increase in overall budgets including some to be targeted at smart motorways but there was also the possibility of a three or four fold increase in maintenance funding. Neil noted that he would be in a better position to advise in more detail at BOF 44.

ACTION 20: Neil Loudon

In terms of bridge projects, Neil cited a possible new Lower Thames Crossing near the QE2 Bridge and a considerable number of motorway crossings, and even motorway re-alignment as part of HS2.

- Nigel Ricketts explained that **Network Rail** were expanding their overhead electrification programme which would mean bridge clearances having to be raised and consequently shallow depth decks were being investigated. He also had concerns about the lack of knowledge when it came to considering modifications to multi span arches. Referring to the “Legosisation” concept, Nigel noted that Network Rail had a history of using standardised bridges but these were not being used as much as they used to.
- Wayne Hindshaw reported that **Transport Scotland** were working on six to ten bridge replacements on the Trunk Road network as well as two new rail bridges. There were also some 60 to 80 bridges on the Aberdeen Western Peripheral Relief Road (£623m) and the M8-M73-M74 Improvement (£400m PPP DBFO scheme). Transport Scotland were also involved in the Queensferry Crossing approach viaducts. All this information can be found on the Transport Scotland website: www.transportscotland.gov.uk
- Graham Cole added to the **ADEPT** input by mentioning the New Wear Crossing in Sunderland. Richard Fish understood that the original “Bulls Horn” concept had now been abandoned and the present design was more conventional.
- Graham Bessant noted that **LUL** were considering eight bridge replacements in the next year. The major problems concerned the need for 24 hour running which was one of the reasons that Graham favoured reliability over innovation.
- Andy Featherby noted that the **Canal and River Trust** were working on a number of swing bridge refurbishments, including the South Weaver swing bridge. He also noted that C&RT were also likely to go through another reorganisation in the near future.
- John McRobert reported that **DRD(NI)** had very little capital budgets but were considering refurbishments of some 60 to 70 bridges as well as a new footbridge over the River Lagan. John expressed an interest in exploring rapid bridge replacement solutions.
- Paul Thomas noted that **Railway Paths Ltd.** were working on converting old railway viaducts and tunnels in Bath and Winchester for cycle use.

6. Bridge Inspector Competence Project – Next Steps

Stephen Pottle reported that expressions of interest requests had been issued in early May and were due back by the end of the June. Neil Loudon noted that a number of enquiries had been made by prospective tenderers. Both were assisting DfT with the process but the project manager was Paul Hersey (DfT). Neil noted that the Code of Practice commits those organisations following the Code to sign up to the new system. He accepted that LUL were not presently prepared to commit but he hoped that they might eventually be able to sign up to a stage 2 system.

7. Monitoring of Structural Performance

The Chairman introduced David Hester from Exeter University (where he was working with James Brownjohn) who gave a presentation on his proposal for a holistic performance monitoring proposal. He also asked if any bridge owner would be able to supply any bridge data that might assist his research. His presentation will be placed on the BOF website.

ACTION 21: Paul Fidler

The Chairman thanked David for his presentation which he thought was a refreshing approach to the issue of monitoring and excessive data collection. He invited comments and questions from the meeting.

Nigel Ricketts referred to the fact that bridge engineers need to recognise that there are many things which we do not know in terms of structural performance. He noted that the local environmental considerations in which the bridge is situated, and inside internal elements, often had a significant effect. He cited examples of clay shrinkage in tunnels and temperature ratcheting in bridge decks. David Hester agreed, suggesting that often the more one knows, the less one knows.

Wayne Hindshaw raised two issues: (i) Scour failures: he favoured the development of sensors to detect live changes in river bed levels during flood events and (ii) Catastrophic failures, such as I-35W in the USA, and some near misses, such as Hammersmith flyover and Boston Manor in the UK; he would like to know when to intervene to prevent bridge failures in service. Neil Loudon felt that there had to be something better than retro-fitting systems such as acoustic monitoring to detect wire breaks in post-tensioned bridges.

Recalling David's request for data, Stephen Pottle offered access to all TfL's records. He also suggested that David's work should be linked to the CIRIA Hidden Defects projects, noting the most important issue was not what can be seen but what cannot be seen.

Peter Brown noted that there was also a need for baseline data on any bridge's performance. If there was no such benchmark it is very difficult to define the extent of a problem when it first arises. Stephen Pottle noted that a change in data or different outputs did not necessarily suggest severe problems. Neil Loudon recognised the political reluctance to pay for monitoring systems on new and sound bridges. Liam Duffy agreed but also expressed his appreciation of David's refreshing approach to the subject and the link between bridge owners and academics. Nigel Ricketts thought that it was always useful to have any sort of information, quoting Nick Burgess's earlier comment that information was an asset.

David reaffirmed that he did not endorse the concept that every bridge should be monitored throughout its life but also recognised that he did not yet have all the

answers to this issue and was, therefore pleased to have this discussion with BOF today. Wayne Hindshaw described BOF's position on such matters as one of healthy cynicism but at the same time supportive and open minded to anything which would add reassurance to engineering judgement.

The Chairman echoed the discussion points raised but warned of the need to be aware of understanding what was cause and what was effect. He cited Hammersmith where temperature effects had had a significant impact. He also drew a comparison with the developments in the car industry where sensors and diagnostics were now commonplace. Stephen Pottle extended this point, suggesting that monitoring of bridge components rather than the whole structure might be worth consideration.

The Chairman thanked David for his presentation and input to the discussion.

8. SCOSS

The Chairman introduced Dr Alastair Soane, Director of Structural Safety, who was invited to present on the work of SCOSS and CROSS. Alastair gave permission for his presentation to be placed on the password protected section of the BOF website.

ACTION 22: Paul Fidler

Alastair described the work of SCOSS which had started in 1976 and CROSS which dated from 2005. He gave examples of structural failures from the Boston Big Dig (where a \$1 fixing had led to a \$1bn claim), the Sasago tunnel in Japan and the Balcombe tunnel in Sussex, and the Apollo theatre in London. All of these had issues with the failure of resin-based roof fixings or similar. Alastair also touched on the process for checking bridge falsework and links to other temporary works and the use of Eurocodes. At the end of the presentation, the Chairman invited questions and comments:

Neil Loudon reported that the Highways Agency had procedures and systems which were connected to SCOSS and CROSS but whilst there was total buy-in from the Agency, there were occasional problems with ensuring full engagement from their contractors. Neil agreed to issue the HA CROSS procedure.

ACTION 23: Neil Loudon

Stephen Pottle asked if there was any SCOSS guidance on peer reviews and whether it would be appropriate for the new Bridge Inspector Competency programme. Alastair replied that there was nothing specific but endorsed the principle of high level peer reviews and, with regard to the latter point, suggested that that was a possible option.

The Chairman suggested that all BOF member organisations should sign up to CROSS and incorporate the principles into their management procedures. Graham

Cole thought this could be done through UKBB and the Code of Practice but ultimately it was down to individual local authorities to seek approval from their elected members. Alastair Soane pointed out that CROSS reporting could come either from a corporate body or from individuals. The Chairman thanked Alastair for his presentation but also undertook to formally request that all bridge related CROSS reports could be sent to BOF. He also decided that there should be standing item on BOF agendas on accidents and near misses.

ACTION 24: Chairman

9. BOF Sponsored Research Projects - Update

The Chairman reiterated past concerns over the lack of funding and progress from DfT in bridge related research. He advised that he would try to arrange another meeting with Steve Berry at DfT

ACTION 25: Chairman

The Chairman also raised concerns on the retention of historical records and suggested that the drive to Asset Management plans had not helped. Nigel Ricketts shared this view: whatever records were available were not always easy to access, partly due to the migration to electronic data and emails. Neil Loudon noted that the Highways Agency's electronic filing system automatically deleted emails that were more than two years old. Stephen Pottle noted that most records were generated through the original works contracts but, once the contracts had been completed, all records should go the Asset Manager. Nick Burgess felt that LUL's record management was governed by law, including the CDM regulations.

Reflecting on local authority asset management, Peter Brown noted that each Council would have their own systems and procedures. Graham Cole added that many authorities had externalised parts of their departments and contract details often left much to be desired such that management information was not always recoverable when a contract came to an end. Reporting on SCOTS, Graeme Muir thought that most Scottish local authorities retained all records, albeit on many different systems and platforms. Nigel Ricketts was opposed to records being held by consultants as Network Rail had had some bad experiences on this.

The Chairman noted that BIM methodologies and CDE (Common Data Environment) might assist in this area and welcomed the fact that Nick Burgess had joined BOF with his asset management specialism. Neil Loudon reported that the Highways Agency favoured an integrated approach across all highway assets, in many cases utilising a GIS front end.

Graham Cole reported that the LoBEG AGM had included an excellent presentation on data collection and asset management from his ex-Surrey CC colleague, Hugh Brooman. The Chairman will consider inviting Hugh to a future BOF to receive his presentation.

Stephen Pottle noted that decision support tool kits were available from CIPFA and DfT to help ensure that optimum value for money was being obtained. With regard to BIM, he noted that at the end of the build, everything that was important should be retained as records; there was a problem, however, in that we do not always know what is going to be important in the future. He also reiterated his idea that the priority should be to come up with standard nomenclature and classifications of components.

10. Other Bridge Research Update

10a TfL

Stephen Pottle referred to a temporary plating arrangement which TfL had developed a few years ago to be used during joint replacement works. Unfortunately, on a one occasion, there had been a catastrophic failure which had resulted in a serious injury to a motorcyclist. TfL were now working with TRL on an improved system.

10b Network Rail

Nigel Ricketts reported that Network Rail's main focus of attention was their new asset management system. He also referred to improved collaboration with the Highways Agency as recorded below.

10c Highways Agency

Neil Loudon reported on the following:

1. The State of Bridge Infrastructure project (a follow up to the 1988 Maunsell study) which was being undertaken by PB/WSP.
2. A water management project for bridges.
3. The smart tagging of materials.
4. A shared technical workshop later this month between the Agency and Network Rail to discuss joint working, shared knowledge and common standards.
5. Bridge inspections by drone. Neil gave a short presentation on progress to date.

Neil agreed to update BOF 44 on the shared workshop with Network Rail.

ACTION 27: Neil Loudon

10d LUL

Nick Burgess referred to a multi-scope asset monitoring system (which he conceded was only likely to be applicable to LUL) and a new train borne system for checking bridge/tunnel geometry and deformations. He agreed to provide more information at BOF 44.

ACTION 28: Nick Burgess

11. Any Other Business

11a Future Agenda Items - General

The Chairman expressed his wish that BOF might return to items which could be debated and discussed, similar to the today's impromptu discussion on waterproofing and joints. He also liked the idea of a series of BOF "White Papers" on specific topics which could be produced by a BOF working party. He suggested that membership of such a group might not be limited to BOF members but might also include experts from other bridge owners and possibly some old Boffers. This was widely supported by the meeting. The Chairman suggested that this might start at BOF 44 when he would try to limit the number of external speakers to provide more discussion time.

11b Future Agenda Items – Specific

The following is a list of suggestions from the Chairman or from BOF members:

1. Protective Coatings
2. Rapid construction techniques (Lego-isation)
3. Self Harm Prevention
4. Component life/longevity
5. National bridge inventory/database
6. Road gantries

11c Canadian Visit

The Chairman briefly reported on his recent trip to Canada and suggested that he might look to arrange another international BOF in the next couple of years.

11d Nigel Ricketts

Nigel confirmed that he will retire from Network Rail on July 5th but hoped to be available for possible future opportunities, as mentioned in 11a above.

11e CE marking of Rolled Steel Sections

Andy Featherby raised this issue and he was recommended to speak to Neil Loudon (who had had to leave by this time).

11f Bridge Strike Protocol

Paul Thomas asked about the status of this subject. Graham Cole replied that it was adopted by all bridge owners but that bridge strike prevention was generally a highway authority issue.

11g Leenane Bridge Collapse

Liam Duffy gave a short presentation on this incident in which an arch bridge had collapsed in 2012 under a 1 in 100 year flood event. The Area Engineer had been called to inspect the bridge, decided to close it and an hour later it collapsed. Contributory factors included vegetation growth in the channel, services below

the crown of the arch and the piers of an upstream footbridge trapping debris. Liam agreed for the presentation to go on the BOF website.

ACTION 29: Paul Fidler

12. Proposed Dates for Future BOF Meetings

The Chairman proposed to send out a doodle poll for the two day BOF 44 which would be held in London in October and include a visit to Hammersmith Flyover. He would also propose a date for BOF 45 in January 2015.

ACTION 30: Chairman

13. Closing/Summing Up.

The Chairman thanked all members for their attendance and contributions to the meeting.

He also presented Graham Bessant with a gift and a card signed by all present. Graham responded by reiterating how much he had enjoyed his time on BOF and how appropriate it was that as the industry moved towards BIM and asset management that Nick Burgess should succeed him as LUL representative.

14. Notices

The Chairman drew attention to the various meetings and conferences which had been included on the agenda.

Richard Fish,

June 2014