

BOF 40 Minutes corrected
Corrected and approved at BOF 41

BRIDGE OWNERS FORUM

MINUTES OF MEETING BOF 40: WEDNESDAY 22ND MAY 2013 AT THE FORTH ROAD BRIDGE, SCOTLAND

PRESENT

Campbell Middleton	Chairman & Cambridge University Engineering Department (CUED)
Graham Bessant	London Underground
Barry Colford	FRB and Big Bridges Group
Liam Duffy	NRA (Ireland)
Andy Featherby	Canal and River Trust
Richard Fish	Technical Secretary
Wayne Hindshaw	Transport Scotland
Neil Loudon	Highways Agency (HA)
Hazel McDonald	Transport Scotland
John McRobert	DRD(NI)
Stephen Pottle	Transport for London
Mungo Stacy	Transport for Greater Manchester
Paul Fidler	CUED
Graham Webb	CUED

1. Welcome and Apologies

The Chairman welcomed members to BOF 40 and gave special thanks to Barry Colford and his Forth Bridge colleagues for hosting this meeting. He also extended his gratitude to Barry, Transport Scotland and the FRC team for arranging excellent site visits on the previous day.

The Chairman welcomed Hazel McDonald to the meeting as a second Transport Scotland representative, bearing in mind the location.

Barry Colford was confirmed as the new representative of the UK Big Bridges Group. The Chairman thanked Peter Hill and his colleagues from the Humber Bridge for their past attendance.

The Chairman noted that David Castlo was to be the new Network Rail representative, replacing Brian Bell. He reported that David had been due to

attend this meeting but had had to give his apologies at the eleventh hour due to unforeseen issues arising.

Apologies had been received from the following:

Steve Berry	DfT
Peter Brown	ADEPT and Oxfordshire County Council
David Castlo	Network Rail
John Clarke	BRB (Residuary) Ltd.
Graham Cole	ADEPT
Jason Hibbert	Welsh Government
Rod Howe	Canal and River Trust
Robert Humphreys	CSS Wales
Graeme Muir	SCOTS
Eoghain Nagle/ Cathal Mangan	Irish Rail
Mungo Stacy	Transport for Greater Manchester
Paul Williams	LoBEG
Mike Winter	UKBB and ADEPT

2. Previous Minutes – BOF 39: 29th January 2013

The minutes of BOF39 were accepted and, subject to the following corrections, could be placed on the BOF website. NB these corrections include some material changes that had been sent by Wayne Hindshaw soon after the minutes were first issued but these were not aired at this meeting:

- **Page 8, Item 9, Paragraph 2:** Replace “Henshaw” with “Hindshaw”.
- **Page 8, Item 10, Paragraph 2, line 2:** Replace “Henshaw” with “Hindshaw”.
- **Page 9, Item 10, Paragraph 2, last line:** Replace “Henshaw” with “Hindshaw”.
- **Page 11, Item 13e, Paragraph iii:** After Dublin, insert “and Queen’s University, Belfast”.
- **Page 13, Item 13j:** Replace “Henshaw” with “Hindshaw”.
- **Page 13, Item 14b:** Replace “Henshaw” with “Hindshaw”.

ACTION 1: Paul Fidler

3. Actions from BOF 39

References in the text below refer to the numbered actions on the BOF 39 Action Sheet. Boxed reference numbers relate to the BOF 40 Actions:

Action 2, Temporary Bridge AIP Guidance:

Neil Loudon noted that he was in discussion with temporary bridge suppliers and hoped to be able to report more fully at BOF 41.

ACTION 2: Neil Loudon

Action 4, Deans Brook Viaduct Fire Damage Report:

Neil Loudon confirmed that the HA report had now been released. He was aware that Network Rail had also published a report on land use under bridges. Paul Fidler will provide links to both on the BOF website.

ACTION 3: Paul Fidler

Action 7, Contractor Evaluation:

John McRobert has issued this information to Paul Fidler who will upload it onto the BOF website.

ACTION 4: Paul Fidler

Action 8, DfT Framework Contracts:

Richard Fish had not yet been able to meet with DfT but will continue to seek opportunities to do so and will also explore the possibility of using DfT framework contracts for research related commissions.

ACTION 5: Richard Fish

Action 9, BOF membership – Sustrans

The Chairman will consider inviting Sustrans to join BOF.

ACTION 6: Chairman

Action 11, BOF Subscriptions:

The Chairman reported that all BOF subscriptions were either paid or in the pipeline with the exception of DfT. He undertook to contact Steve Berry.

ACTION 7: Chairman

Action 13, Bridge deck slabs with non-metallic reinforcement:

John McRobert and Liam Duffy reported that all members of the Steering Group (including the previous chairman, Albert Daly) were now content with this report and agreed that it could be published. Paul Fidler will ensure that it is forwarded to DfT for their website as well as uploading it onto the BOF site.

ACTION 8: Paul Fidler

Action 15, Industry Standards Group:

The Chairman is in ongoing discussions with Steve Denton (PB) on the progress of various initiatives and will report further at BOF 41. He noted that IUK ISG had recently published its initial report.

ACTION 9: Chairman

Action 28, Automating Bridge Inspections:

Stephen Pottle reported that he had discussed the contractual position with Andy Bailey at DfT and agreed to follow this up. It was agreed that TRL should not be paid additional monies as the scope of the project had not been changed.

ACTION 10: Stephen Pottle

All unrecorded actions from BOF 39 had either been completed or were discussed as part of the BOF 40 agenda.

Other matters arising: BOF 39, page 12, item 13h – ADEPT Soils and Materials group:

The accuracy of statement in this minute was questioned but could not be resolved as neither Peter Brown nor Graham Cole had been able to attend this meeting.

ACTION 11: Peter Brown/Graham Cole

4. Membership Update

As noted above, the Chairman confirmed that Barry Colford was now the new BOF representative of the UK Big Bridges Group and repeated his thanks to Peter Hill and his colleagues from the Humber Bridge for their past attendance. Barry requested a password to the BOF website and others also noted that they had had problems with password protection. Paul Fidler was asked to either supply or review password access for all BOF members.

ACTION 12: Paul Fidler

The Chairman also mentioned an email exchange that he had had with the Northern Ireland Railway company, Translink, over possible future BOF membership. John McRobert agreed to continue the discussions on BOF's behalf.

ACTION 13: John McRobert

As noted above, the Chairman also reported that Sustrans had expressed an interest in membership but this had yet to be confirmed. He advised that they are a prominent bridge owner with more than 1,000 structures in the UK.

Neil Loudon noted that BRB (Residuary) Ltd. would become part of the Highways Agency from September 2013. He would consider how BOF might best be represented and report to the next meeting.

ACTION 14: Neil Loudon

5. UKBB Update

Richard Fish reported that he had attended his first meeting of UKBB as a BOF representative on 28th February 2013. He had found it very informative and the Chairman, Mike Winter, had welcomed the fact that UKBB and BOF were now established in a more formal working relationship. Steve Berry of DfT had also been in attendance and echoed those thoughts.

The latest version of the BOF constitution which had been discussed at BOF 39 had been included with the UKBB agenda and formally accepted. Although all parties had agreed the constitution, it was also recognised that it was a means to an end rather than an end in itself and the important point was the formalisation of the link between UKBB and BOF. Richard agreed to issue the final version of the constitution to all BOF members.

ACTION 15: Richard Fish

The Chairman asked if UKBB and even UKRLG minutes could be given links via the BOF website so that all BOF members could access them. Richard Fish will raise this at the next UKBB meeting on 20th June.

ACTION 16: Richard Fish

Other BOF members who also attended UKBB agreed that the 28th February meeting had been a watershed in terms of the relationship between the two groups. Stephen Pottle suggested that communication needed to be formalised via the BOF Technical Secretary. He also pointed out that the next update of the UKBB Business Plan should include references to BOF especially in the context of advising on research priorities which UKBB would be passing on to UKRLG.

ACTION 17: All joint BOF and UKBB members

The discussion widened into broader research issues: the Chairman commented on the need to explore research needs with Network Rail whose R&D budget he understood was of the order of £300m pa. Neil Loudon noted that the HA's research budget was very low in comparison but the Agency were forging links with EU research where a number of projects were being supported. Information could be found via ERAnet and Neil agreed to supply a link for the BOF website.

ACTION 18: Neil Loudon/Paul Fidler

The Chairman also referred to an EU research initiative, Horizon 2020 – where a call for proposals was shortly expected. He also mentioned the European Construction Technology Platform, a UK based group, whose objective was to lever in funding in return for relatively low levels of input. This group was looking to appoint a respected Chairman and CEO before assembling a team to deliver projects such as future cities (based in London), transportation (Midlands based but centred on the automotive side of the sector), space research (based in Surrey) and composite materials (based in Bristol and associated mainly with aerospace although there were attempts to establish links with the construction industry).

Neil Loudon warned of the need to balance costs and benefits before committing to European research. The Chairman asked if other BOF organisations were pursuing research investment in Europe but, of those in attendance, only the Highways Agency were doing so.

6. SCOSS Update

Richard Fish reported that he had now established a regular contact link with Alastair Soane which covered areas of mutual interest between BOF and SCOSS. Neil Loudon recorded that he was a member of the CROSS committee and they were seeking to forge international links. It was suggested by the Chairman and agreed by all that Alastair Soane should be invited to either BOF 41 or BOF 42.

ACTION 19: Chairman

The Chairman also aired his concerns about the numbers of bridge collapses being reported in the media on an almost weekly basis around the world and the need to try to address the root causes.

The Chairman also expressed concerns over reduced strength and ductility standards in rebar that could be identified by reviewing CARES data. Neil Loudon warned that, under pressure from producers and suppliers, new EU Construction Product Regulations were due to come into force in July 2013 which could see a wider range of rebar becoming available and the removal of the need to have identification markings. He also cited cases of forged or falsified certification documents, noting that the only bodies legally able to investigate such matters were local authority Trading Standards departments.

Discussion continued on the absence of on-site testing and checking in favour of contractors' self certification. It was noted that few clients now have a significant site presence on often complex and prestigious structures. Graham Bessant pointed out that the practice of self-certification now extends through the supply chain. He suggested that this was an issue which should be raised with SCOSS.

Wayne Hindshaw recounted various historical issues with rebar and suggested that QA initiatives in the construction industry had never worked as well as had been intended. Stephen Pottle noted that some significant major construction projects were not being managed by appropriately experienced staff. His requirement in TfL was to insist on contractors providing a testing regime and to outline action plans which would be put in place in the event of a test failure. Stephen agreed to provide the relevant extract from the TfL documents.

ACTION 20: Stephen Pottle

Barry Colford suggested that the underlying issue was the fact that construction was too cheap. The continual driving down of costs was leading to a reduction in overall quality. Neil Loudon repeated John Carpenter's oft quoted mantra of "People, Product, and Process" but suggested another "P" was needed: Procurement. He viewed the activities in all four areas as crucial to successful project delivery. Liam Duffy noted that the NRA had recently reverted to having site staff on their projects.

The Chairman summarised the discussion by requesting the following actions:

- A formal approach to SCOSS regarding both product certification and the lack of site supervision.
- Similar approaches to UKBB and ICE
- An issues paper to be prepared to state the BOF concerns on the above.

It was agreed that Richard Fish would prepare an outline paper and circulate this to Neil Loudon and Mungo Stacy for comment and/or amplification.

ACTION 21: Richard Fish, Neil Loudon and Mungo Stacy

7. **Bridge Inspection Techniques**

This Item was not taken as there was no representative from Irish Rail at the meeting.

8. **Safety Critical Fixings**

Neil Loudon gave a presentation on this topic which he had also recently given to the HA Board. It emphasised the need manage risk in both fatigue prone structures and those where the failure of a structural fixing could lead to catastrophic failure and consequential serious or fatal injuries to the travelling public. The presentation had been prepared after concerns were raised following two in-service tunnel failures: Boston, USA (2006) and Sasago, Japan (2012). An IAN (104) had been issued following Boston and this was now under review. The HA are also preparing a new IAN which will adopt a risk based approach to managing fixings. Neil explained that there was also the possibility of a National Structures Programme for Safety Critical Fixings but offered this presentation as work in progress on what was an important issue. The scope had yet to be decided but it might be extended to include bridge parapet fixings.

Neil's presentation will be uploaded onto the private section of the BOF website.

ACTION 22: Paul Fidler

Before inviting comments and questions from the meeting, the Chairman suggested that BOF might have a role in the development of the National Structures Programme. He also thought that this was another matter to be referred to SCOSS.

ACTION 23: Richard Fish

Graham Bessant noted that polyester resin fixings were now in more common use than traditional epoxy resin. He suggested that this was a retrograde step as polyester resins were prone to creep and softening in moist conditions.

Richard Fish suggested that the proposed research project on the inspection of hidden components might include safety critical fixings. Neil Loudon noted that CIRIA had added this subject to their work programme.

9. BOF – future priorities and direction

The Chairman introduced this item by stating his view that it was an appropriate time for BOF to re-examine its *raison d'être* and refocus its future priorities and opportunities. Referring to the minutes of BOF 27, he noted the process of BOF filtering and prioritising research proposals based on the original Terms of Reference. Such proposals had been thoroughly scrutinised at BOF meetings before those considered as being most important to bridge owners were recommended to UKBB and UKRLG before being commissioned by DfT.

The Chairman was open minded as to whether this process was still fit for purpose especially as research funding had been reduced in recent times. He noted that some prioritisation work had been dealt with under the auspices of FIF (the Future Infrastructure Forum funded by EPSRC) although further pointed out that the proposals successful in obtaining funding (Auto-healing materials(Cardiff), Composite Material durability (Warwick) and Earthwork behaviour and performance (Newcastle)) had only limited benefits to the bridge industry.

The Chairman also referred to other new initiatives such as BIM, high performance materials, and Smart SHMS (Structural Health Monitoring Systems) as well as the still unfinished business of attempting to establish a national bridge database as possible alternative priorities. He also voiced concerns over current procurement practices and questioned whether highlighting these through BOF would be helpful. Lastly, he aired the possible options for other Fora, not necessarily part of BOF such as a Bridge Research Forum, the Bridge Consultants Forum and the International Bridge Forum (held in 2009).

Before opening discussion to the meeting, the Chairman reminded the meeting of the BOF “Grand Challenges” document which had been drafted by the previous Technical Secretary, John Menzies. He agreed to locate and re-issue this so that it could be discussed as part of the continuation of this debate at BOF 41.

ACTION 24: Chairman

The Chairman invited ideas and suggestions from the meeting:

Referring to possible alternatives to BOF, Stephen Pottle suggested that a one-off combined session with bridge consultants and contractors might be helpful. He

also supported an exploration of database systems and their links to BIM, with the emphasis on the collection and management of data in order to be able to focus on outcomes rather than processes and systems. Hazel McDonald agreed that this would be of great benefit in explaining to politicians what had to be seen as essential works and thereby helping to justify expenditure levels and budget setting.

Graham Bessant reiterated LUL's primary concern of dealing with existing and aging infrastructure. Following on from Item 8 above, he suggested that research into the longevity of resin fixings would be helpful.

Liam Duffy stated that he was very supportive of the existing Terms of Reference, especially numbers 1 and 3 but would wish to see research into non-destructive testing given a high priority. This was supported by Mungo Stacy and Wayne Hindshaw, the latter citing a specific example where weld testing could be undertaken without firstly having to remove paint. Wayne also referred to research being carried out by the Scottish Road Research Board, although acknowledged that their scope covered all transport sectors. In terms of a practical need, Wayne noted the need to address the problems associated with having to maintain structures to standards lower than those in the DMRB, and not just simply applying the Departures from Standard process via Technical Approval.

The Chairman invited other members to give their more important priorities:

Neil Loudon suggested that much of the above could be incorporated under a single heading of "Assessing and Managing Structural Risk".

Barry Colford suggested that all long span bridge owners would be very interested in further developments in bridge specific live loading and calibrated computer models which could give an accurate portrayal of structural behaviour under various load cases as well as the effects of reduced capacity in some elements.

Mungo Stacy's priorities included improved management of abnormal load movements (plus better understanding and control of overloaded vehicles which were not the subject of STGO movements), a more objective method of determining Bridge Condition Indicators (BCIs) especially at hand-over, and some specific issues related to light rail design and analysis.

Stephen Pottle's interests covered the rationalisation of standard components, network resilience and improving competencies of staff in all sectors, not least in bridge management.

John McRobert wished to see awareness raised of the importance of maintaining bridge maintenance funding at a satisfactory level and research into the consistency of existing materials, as noted in the discussion on rebar in Item 6 above.

Andy Featherby noted that CR&T's concerns were principally associated with scour but acknowledged that CIRIA were already engaged in reviewing their earlier work. John McRobert and Hazel McDonald reported that they sat on the CIRIA project steering group. Hazel also noted that Strathclyde University were working on an EPSRC funded research programme on real time monitoring of scour development. The Chairman suggested that the CIRIA scour report project manager should be invited to attend a future meeting of BOF.

ACTION 25: Chairman

In concluding this item, the Chairman suggested that the forward programme of BOF should be reprised at BOF 41 before reaching a proposal that all could endorse. He also considered that it might be helpful to invite representatives from EPSRC and TSB to attend a future BOF meeting so that they could hear the concerns of bridge owners direct.

ACTION 26: Chairman

A summary table of the various suggestions above is included at Appendix 1 to these minutes.

10. BOF Research Projects Update

The Chairman asked for updates on the following projects:

12a. Bridge deck slabs with non-metallic reinforcement

As noted in Item 3, all matters relating to this project had been satisfactorily concluded.

12b. Automating bridge inspections

As also noted in Item 3, Stephen Pottle referred to the contractual issue between DfT and TRL but recorded that the final report should be issued as soon as possible.

12c. Bridge Inspector Qualifications (Part II)

Stephen Pottle reported that he was still waiting to hear from Steve Berry at DfT but was expecting an OJEU invitation at any time. The Chairman also offered to contact Steve Berry on this matter.

ACTION 27: Chairman/Stephen Pottle

11. Any other business

There was nothing raised under this item.

12. Proposed dates for future BOF meetings

The Chairman proposed the following dates:

BOF 41 Tuesday 1st October 2013
BOF 42 Either Tuesday 14th or Tuesday 21st January 2014.

The Chairman will ask Lesley Bello to ask BOF members for their preferred date for BOF 42.

ACTION 28: Chairman

Wayne Hindshaw will give a presentation at BOF 41 on the “Strike it Out” campaign in Scotland, aimed at reducing incidents of bridge bashing by over-height vehicles.

ACTION 29: Wayne Hindshaw

Stephen Pottle suggested that a future BOF meeting could be held in London with the opportunity to include a visit to Hammersmith Viaduct.

ACTION 30: Chairman

13. Closing/Summing Up

The Chairman closed the meeting, thanked everyone for their contributions and repeated his thanks to Barry Colford for his hospitality for hosting this meeting and for the site visit to the Forth Bridge on May 21st. He also restated his thanks to Transport Scotland for arranging the presentation and tour of the Forth Replacement Crossing site.

Richard Fish
June 2013

Appendix 1: Summary of suggestions from Item 9

<u>Topic</u>	<u>Suggested/supported by:</u>
<p><u>Policy Issues</u></p> <ul style="list-style-type: none"> • Procurement practices • National Bridge Database • Funding for asset management/bridge maintenance 	<p>Chairman Chairman John McRobert</p>
<p><u>Good Practice</u></p> <ul style="list-style-type: none"> • Managing ageing infrastructure/ structural risk/network resilience • Improving staff competencies • Abnormal Loads/overweight vehicles • BIM • BCI data collection and presentation 	<p>Graham Bessant, Neil Loudon, Stephen Pottle Stephen Pottle Mungo Stacy Chairman, Stephen Pottle Stephen Pottle, Hazel McDonald, Mungo Stacy</p>
<p><u>Materials</u></p> <ul style="list-style-type: none"> • High Performance Materials • Structural Fixings • NDT • Material Consistency • Standardisation of Components 	<p>Chairman Graham Bessant Liam Duffy, Mungo Stacy, Wayne Hindshaw John McRobert Stephen Pottle</p>
<p><u>Monitoring</u></p> <ul style="list-style-type: none"> • Smart SHMS • Scour 	<p>Chairman Andy Featherby</p>
<p><u>Knowledge Sharing</u></p> <ul style="list-style-type: none"> • Occasional wider meetings/fora 	<p>Chairman, Stephen Pottle</p>
<p><u>Design and Analysis</u></p> <ul style="list-style-type: none"> • Live load for long spans • Structural Modelling • Light Rail 	<p>Barry Colford Barry Colford Mungo Stacy</p>