

## **BRIDGE OWNERS FORUM**

### **MINUTES OF MEETING BOF37: TUESDAY 22nd MAY 2012 AT THE BEVES ROOM, KING'S COLLEGE, CAMBRIDGE**

#### **PRESENT**

Campbell Middleton	Chairman & Cambridge University Engineering Department (CUED)
Graham Bessant	London Underground
Brian Bell	Network Rail
John McRobert	DoRD(NI)
Peter Brown	ADEPT and Oxfordshire County Council
Graham Cole	ADEPT
Liam Duffy	NRA (Ireland)
Richard Fish	Technical Secretary
Jason Hibbert	Welsh Government
Peter Hill	Humber Bridge and UK Large Bridges Group
Rod Howe	British Waterways
Robert Humphries	CSS Wales
Neil Loudon	Highways Agency (HA)
Graeme Muir	SCOTS
Paul Williams	LoBEG
Paul Fidler	CUED

#### **Introduction**

The Chairman welcomed members to BOF 37. He noted his two key objectives for this meeting: to determine a viable future for BOF and start the process of re-focussing on bridge related research.

#### **1. Apologies for Absence**

Andy Bailey	DfT
Steve Berry	DfT
John Clarke	BRB (Residuary Ltd.)
Mike Winter	UKBB and ADEPT

The Chairman welcomed Liam Duffy and John McRobert to their first BOF meeting. He also noted that an attendee from Transport Scotland had yet to be identified following Bill Valentine's retirement.

Contrary to the position stated at the last meeting, Brian Bell advised that he would be available in September to attend his last meeting.

## 2. **Previous Minutes - BOF36 28<sup>th</sup> February 2012**

The minutes of BOF36 were accepted and, subject to the following corrections, could be placed on the BOF website.

**Page 1:** Change the year from 2011 to 2012.

**Page 3: Item 3, Action 1:** Line 2: replace "there were" with "if any" and, at the end of that sentence, add "were identified these should be reported to the Chairman".

**Page 12:** Last paragraph: Replace "prestressed" with "post-tensioned". Replace "were auditing" with "had audited".

ACTION 1: Paul Fidler
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## 3. **A. Actions from BOF36**

References below are linked to the BOF36 Action Sheet:

**BOF36, Section 3, Action 1, Bridge Collapse Database:** It was agreed that all members should report errors, as and when indentified, to the Chairman and Paul Fidler who would amend the database.

ACTION 2: All/Paul Fidler
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**BOF36, Section 3, Action 2, Bridge Joints:** The IAN has yet to be issued. Neil Loudon will advise in due course.

ACTION 3: Neil Loudon
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**BOF36, Section 3, Action 3, Transport Select Committee Inquiry into Cumbria Flooding:** Neil Loudon reported that he had discussed this with Steve Berry at DfT and the outcome was that the report is unlikely to be published due to changes in Government priorities.

**BOF36, Section 3, Action 4, Availability of Temporary Bridges:** Neil Loudon reported that the HA were working on contingency plans in advance of the events this summer. He noted that advice from suppliers was that the stock was adequate. HA were also preparing outline AIPs, although there were possible issues with Departures from Standard which would need to be addressed. In terms of

Eurocodes for the design of temporary works, Neil noted that the Temporary Works Forum (led by John Carpenter) were going to lead on this.

The Chairman asked if the HA work could be made available to other bridge owners and suggested that this might be done through BOF. He also questioned whether there were fatigue issues with previously used components. Neil replied that this had been addressed and that that he would ensure that any information would be made available in due course.

ACTION 4: Neil Loudon

Robert Humphries asked how many local authorities had their own temporary bridging (his did): Graham Cole replied that a recent ADEPT survey had proved that most do not, with exceptions being the more mountainous areas of Scotland and Wales. Liam Duffy reported that a temporary bridge had been erected quickly following a collapse in Galway about 5 years ago but he agreed to give an update on capacity in Ireland at the next meeting.

ACTION 5: Liam Duffy

Paul Williams questioned the role of the Royal Engineers, noting that they had had a high profile role in Cumbria. Neil Loudon reported that the RE had experience in erection but had used a temporary bridge supplied by Janssons. The Chairman suggested and it was agreed that a representative from the RE should be asked to give a presentation at a future BOF.

ACTION 6: Chairman

John McRobert noted that there was no temporary bridging in Northern Ireland but that the Roads Service had been considering whether to buy some.

Brian Bell noted that temporary rail bridges were different with the higher live load: whilst British Rail had a stock, these has been sold as part of the privatisation process.

**BOF36, Section 3, Action 6, US Accelerated Bridge Construction:** Neil Loudon suggested that much of this issue was associated with short cuts in the procurement process but he agreed to try to locate some copies of US presentations on the subject.

ACTION 7: Neil Loudon

In terms of faster construction, Neil pointed out that there was some material on line, including YouTube. Brian Bell noted that Network Rail were looking at this as part of their ongoing research programme. Graham Bessant referred to the example of a bridge reconstruction on the Heathrow line, in particular how procurement requirements could be waived in emergency situations. He also noted that LUL had produced emergency plans for every bridge on their network but these had now been lost.

Richard Fish questioned whether the whole issue of emergency bridge replacement should be included in the next revision of the Code of Practice, including a list of necessary consents and approvals. Neil Loudon suggested that there should be reference to risk and resilience assessments as part of the decision making process. The Chairman expressed his enthusiasm for BOF to follow this subject up and to take a lead. He noted that there were several recent case studies which could be written up to assist others.

Peter Brown noted the Local Authorities also had a role in emergency planning and being part of the control team dealing with emergencies.

**BOF36, Section 3, Action 8 & 9, Fire Damage to bridges:** The Chairman agreed to consider whether the BOF website should include a section on fire damage and/or whether the Code of Practice should be updated to include recommendations on fire prevention and rehabilitation. Graham Cole noted that the UKBB would supervise any changes via Atkins who were still commissioned to administer all the UKRLG codes.

ACTION 8: Chairman

Brian Bell reported that Edinburgh University had conducted a number of tests on fire damaged structures and there was also a report available from the United Nations Economic Commission for Europe (UNECE); Neil Loudon referred to work by BRE and the Fire Research Station (FRS). He was also looking at other outcomes from the M1 Deans Brook fire. John McRobert reported that there had been a project in Northern Ireland where bridge piers had been sleeved with fire protection material. He agreed to try to locate information on this.

ACTION 9: John McRobert

It was noted that SCOSS had still to be contacted and Richard Fish agreed to do this.

ACTION 10: Richard Fish

Neil Loudon agreed to locate further reports on fire damage ahead of the next meeting.

ACTION 11: Neil Loudon

**BOF36, Section 3, Action 10, Remote Monitoring of Scour:**

Brian Bell repeated his concern about the rewrite of the CIRIA scour report ahead of the HA's release of the revised BA74. Neil Loudon confirmed that this was scheduled for June 2012 and will be BD97/12. Neil also reported that he had met with CIRIA and other interested parties and had agreed a scope for the CIRIA review. The Chairman suggested that a future BOF meeting could major on scour issues.

ACTION 12: Chairman

**BOF36, Section 5a, Action 1, Research into Hidden Components:**

Rod Howe has yet to send the current documentation to the Chairman.

ACTION 13: Rod Howe

**BOF36, Section 5b, Action 2, Parapets on Local Roads:**

Paul Fidler confirmed that the Sherriff's report had been received but would check that it is on the BOF website.

ACTION 14: Paul Fidler

**BOF36, Section 10e, Action1, Scanning of HA Reports:**

Richard Fish will check with Paul Hershey at DfT on the availability of funding for this work.

ACTION 15: Richard Fish

**BOF36, Section 12f, Action 1, Post Tensioned Bridge Special Inspections:**

Neil Loudon reported that Ian Sandle at HA was working on a new standard for PTSIs.

**B. Actions from BOF35**

**BOF35, Section 1, Action 1, Contractor/Consultants Performance:**

A discussion took place on the need to review consultants' bridge assessments: Graham Bessant reported that, following an initial failure rate of 40% with LUL bridges, he had established an in-house review team, following robust internal procedures, which had seen the failure rate reduce to <5%, saving some £300m. Neil Loudon confirmed that the HA also have an in-house team to review their assessment results. The Chairman reflected on the fee bidding approach which not only drove down initial costs but also standards and performance. He suggested that a bonus for passing assessments might have been more appropriate. John McRobert pointed out that consultants were more concerned with their PI insurance and recovering costs from early loss leaders.

Neil also questioned whether the current standards were too prescriptive and allowed little room for flexibility. He was concerned that Eurocodes would exacerbate this problem.

Brian Bell noted that Network Rail have a national assessment contract and the direction is to do everything possible to get bridges to pass.

Graham Cole reiterated concerns about the procurement emphasis on cheapest price but also pointed out that some owners had been too quick to strengthen failures. He also noted that assessments formed part of ongoing bridge management practice and were not just one-offs following the 40 tonne vehicle introduction.

Robert Humphries noted that he personally reviewed assessment calculations for his bridges and had even found some assessments based on incorrect dimensions. He was concerned that smaller local authorities (and being subjected to further cuts) will have very little capacity to do this.

The Chairman concluded the discussion by remarking that there were still issues to be addressed with regard to assessments:

1. Low fees as a result of procurement processes
2. The specification was to establish a pass against the 40 tonne vehicle and not to establish actual capacity.
3. The analyses were too conservative.
4. The reports were of a very poor quality.

As actioned from BOF35, Neil Loudon agreed to provide a sample form which could be used to evaluate contractors/consultants performance.

ACTION 16: Neil Loudon

**BOF35, Section 2, Action 2, BOF Achievements and Benefits:**

Richard Fish will prepare a paper on this.

ACTION 17: Richard Fish

**BOF35, Section 3, Action 1, Ireland Update:**

Liam Duffy gave a brief update on the assessment programme in Ireland. The Chairman suggested that an independent review by a leading UK consultant may be of benefit.

**4. Feedback from Meeting with Steve Berry (DfT) and Mike Winter (UKBB Chair)**

The Chairman reported on a very productive meeting on 4 May 2012 with Steve Berry and Mike Winter. The latter had put his thoughts on paper, including a draft constitution, (these were tabled at this meeting of BOF) and the Chairman expressed his thanks to Mike for his efforts in seeking to establish a position for BOF. He was also impressed by the positive approach that Steve Berry was showing on behalf of DfT. It was agreed that the Chairman and Richard Fish should review and, as necessary, amend the draft constitution for agreement at the next meeting.

ACTION 18: Chairman/Richard Fish

One of the main issues was the independence of BOF and its relationship with UKBB: Mike Winter wanted a sub-group to whom he could delegate tasks from UKBB and suggested that this should be BOF's role. Brian Bell noted, and it was generally agreed, that BOF had a much wider remit and scope than UKBB. It was felt that whilst BOF could fulfil such a role, it should have enough freedom to do other work as had been the original intention.

It was agreed that the description of BOF as “an independent organisation, working closely with UKBB” should be incorporated in any constitution or prospectus.

It was also agreed that, subject to approval and formal invitation by UKBB and UKRLG, BOF should take a seat on UKBB to improve mutual understanding and working relationships. It was also agreed that the BOF representative should be Richard Fish.

#### **4a. Possible New BOF memberships**

It was agreed that the Chairman should approach any UK and Irish bridge owners to invite them to attend BOF. Possible organisations mooted were as follows:

Northern Ireland Rail  
Irish Rail  
Transport for Greater Manchester (Metrolink)  
Tyne and Wear Metro  
West midlands Light Rail

ACTION 19: Chairman

Liam Duffy noted that there may be other possible members in Ireland, including Waterways Ireland and he agreed to make an initial informal approach.

ACTION 20: Liam Duffy

#### **4b. Subscription Levels**

The Chairman reprised earlier discussion at which a minimum annual subscription level for BOF membership of £500 should be set which would cover BOF costs following efficiencies already introduced: approximately £12,000 per annum. This would apply to all members with the exception of ADEPT, SCOTS and CSS Wales for whom the payment from their governments would be deemed to include their contributions. Some organisations (notably Network Rail and LUL) would prefer to pay for, say, 5 years membership up front, as this would reduce their overall administration costs. The process to be followed was that the Chairman should write to all members with BOF benefits/achievements being demonstrated; organisations would then issue Purchase Orders; BOF (via CUED) would then issue invoices for BOF membership starting in 2012/13. Richard Fish will draft the letter and supporting document.

ACTION 21: Richard Fish

Actual figures were then discussed:

LUL	£2,000
Welsh Government	£1,000
HA	£1,000
Network Rail	£1,000 minimum (£2,500 had previously been quoted.)
DfT	£2,000

LoBEG	£1,000
BWB	£500
HBB (Big Bridge Group)	£500
DoRD(NI)	£500
Transport Scotland	£1,000 assumed <sup>1</sup>
NRA (Ireland)	£500 (Liam Duffy to confirm)
BRB	£500 <sup>2</sup>

<sup>1</sup>With Bill Valentine's retirement, the Chairman would write to both engineers who were currently doing his role with a view that one or other should attend BOF.

ACTION 22: Chairman
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<sup>2</sup>John Clarke had previously indicated that £500 would be acceptable but he had also pointed out that BRB would be transferring to the Highways Agency in 2013.

## 5. BOF Research Projects Update

The Chairman reported that Steve Berry had acknowledged the DfT's past shortcomings in contract management but reaffirmed that their performance would improve under his direction.

### 5a Revision of BS6779 Part 4 (Masonry Bridge Parapets)

Despite the Chairman's assurance above, Brian Bell reported that there had still not been any DfT representation at Steering Group meetings. He reported, however, that Steve Berry had been in correspondence with Aecom and he had asked them for an update on 11 May. A response had been promised within a week but to date nothing had been received, as far as Brian was aware. Whilst he acknowledged that he may not have been copied in to any further correspondence, he was aware that the work was all but finished. There was a need to review the Aecom report before publication via UKRLG and the contract also required a seminar to present the outcomes. In the interim there had been two presentations at Surveyor Conferences but Brian was unsure whether this was sufficient; if a seminar was still needed, he was unclear who would make the arrangements or cover the costs.

In terms of the contractor performance, Brian described Aecom's management of the contract had been very poor. He suggested that the Steering Group should meet and produce an objective marking sheet.

ACTION 23: Brian Bell
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As part of the actions (from BOF34), the Chairman will request copies of the contract documents from DfT.

ACTION 24: Chairman
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### **5b Bridge Deck Slabs with Non-metallic Reinforcement**

The chairman noted that the report had been submitted and that Albert Daly had chaired the last meeting of the Steering Group: the only issues still to be resolved were the contractor performance review and the formal publication. John McRobert agreed to take the lead from now on, supported by Liam Duffy. John pointed out that he would need to see the original brief and contract specification in order to be able to sign off the work but the Chairman said that these were still with DfT. The Chairman also suggested that an academic peer review might be appropriate but agreed that this would be a Steering Group decision.

ACTION 25: John McRobert/Liam Duffy

### **5c Carbon Composites for Strengthening Steel Structures**

Brian Bell reported that the final test was due to be undertaken on Friday 25 May but the early indications predicted an increase of up to 50% in web shear capacity. Again, the specification for this project calls for a seminar and Brian proposed, and it was agreed, that the project should be presented at the 2013 Surveyor Bridge Conference. There was also a proposal for a paper and presentation at IStructE. He also suggested that it should be presented at BOF38.

ACTION 26: Brian Bell/Chairman

Brian had also spoken to Chris Chiverell at CIRIA but there were no plans at the moment to revise their document on this topic.

### **5d Automating Bridge Inspections**

In Stephen Pottle's absence, it was noted that TRL had asked TfL for additional funding and it was understood that this was likely to be approved. It was agreed that the project should be brought to a conclusion as soon as possible and a contractor performance review completed.

ACTION 27: Stephen Pottle

### **5e Scanning of HA Reports**

It was agreed that this should still be a priority but Neil Loudon thought it most realistic to plan for this to take place in the autumn, and subject to DfT's confirmation that funding was available (see action above).

### **5f Bridge Inspector Qualifications (Part II)**

In Stephen Pottle's absence, Peter brown reported that the remaining decision - on how the work should be procured - rested with DfT but a number of options were under consideration. It was noted that this process was being managed by Atkins on behalf of DfT. Neil Loudon suggested that the Steering Group should consider how the qualification should be promulgated to all users. An IAN was likely to be issued to enable phase implementation. John McRobert questioned the breadth of the qualification, especially into specialist areas. Rod Howe undertook to discuss with Stephen Pottle.

ACTION 28: Rod Howe

The Chairman asked about the choice of training and certification body and it was confirmed that expressions of interest had been sought and a short list drawn up.

## **6. Research Projects for the Future**

Time constraints precluded discussion on this topic but the Chairman noted that, once projects in 5 above had been completed, there was a chance to re-launch BOF's original objective of promoting research and suggested that this is a focus of BOF38.

ACTION 29: Chairman
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Neil Loudon noted that structural risk was high on the political agenda with Hammersmith and Boston Manor Farm the subjects of ministerial briefings. He also suggested that fatigue vulnerability was going to be a major issue and the Chairman endorsed that idea.

## **7. Update on current Asset Management Initiatives in the UK**

This item was deferred due to lack of time.

## **8. Temporary Bridge Options and Inventory for Emergencies**

The Chairman introduced Darren Keep and Ted Wells of Mabey Bridge Ltd. who gave a presentation on their company's capabilities in the provision of temporary bridging. Copies of the presentations will be placed on the BOF website.

ACTION 30: Paul Fidler
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## **9. Infrastructure UK Working Parties**

The Chairman introduced this item by explaining the work that was underway with HM Treasury and other government departments as part of the IUK initiative. He had invited Steve Denton of Parsons Brinckerhoff to speak to BOF on the issues most relevant to the Forum.

### **9a Industry Standards Group**

Steve explained the background to the IUK groups, especially those in which he was involved. There was one on Standards and Specifications which had a number of sub-groups, including one which covered bridge design. The overall objective was to examine possible efficiencies and differences in client requirements. Steve had previously issued a questionnaire and was grateful for the information provided by BOF members.

He outlined five potential opportunities for improvement:

1. Improved alignment of Eurocode implementation between clients
2. Consistency of construction specification in Eurocodes
3. Improved assessment standards – both in terms of better alignment between road and rail requirements and a wider application of the full array of assessment tools and methods
4. The gap between Eurocode and assessment standards in the rehabilitation and modification of existing structures
5. Improved streamlining of departures from standard processes

Three pilot studies were proposed: on assessment, bridge management and departures. Steve pointed out that one of the outcomes of a pilot study was that it may show that there would be little to be gained from a wider investigation and therefore unproductive work could be avoided. Paul Williams suggested that there could be some London Borough bridges which might be used for the assessment pilot.

Steve asked BOF members to email him with any thoughts on this topic as soon as possible.

ACTION 31: ALL
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Brian Bell questioned the efficacy of finding savings in initial costs which may add to whole life costs. He suggested that work on improving discount rate calculations for whole life costing might be beneficial.

Neil Loudon suggested that what was of most need was some hard evidence on the current state of the UK bridge stock.

Graham Cole referred to the recent ADEPT survey which had achieved a 65% response rate. The results had been analysed by Dorset and Devon County Councils and were the subject of a presentation by the latter's Kevin Dentith at the Surveyor Bridge Conference. He suggested that the Structures Tool Kit might help here, as well as ongoing work on the Treasury's methodology for defining the value of the asset and the HMEP programme.

Graham Bessant expressed some scepticism on whether aligning assessment codes between road and rail bridges would be of value. The existing standards had been written around the type of bridge prevalent in their stock. For example, rail bridges often had issues with rivets, whereas that was inapplicable to road bridges. Brian Bell noted that the same principle could be applied to arches as far as Network rail and the Highways Agency were concerned.

### **9b Eurocode Update**

Steve also reported on the latest developments on Eurocodes: Steve sits on TC250 and chairs the group looking at bridge applications. He advised that work was underway on the next generation of Eurocodes, scheduled for publication in 2019. A work programme had been developed and included some evolution of some existing parts as well as some new codes on subjects such as robustness, assessment, membrane structures, glass and FRP structures.

There was also an initiative working towards improving ease of use: Steve has drafted a resolution which he agreed to make available to BOF via Richard Fish.

Steve also referred to the Specific Mandate which was aimed at prioritising some of the above. He was going to draft a response to the Mandate which he hoped would keep the focus at a pragmatic level and minimise some of the more extravagant expectations. He was hoping to produce codes which would be more informative and less prescriptive. This response will be made available to BOF once it has been issued to the EC. Lastly, Steve hoped that some BOF members might be able to join some of the new committees, or at least to have input into their work. The Chairman reemphasised the point about the UK engagement in Europe. He had raised this with Steve Berry at DfT who had supported the idea of increased involvement.

### **9c Infrastructure Data Group**

The Chairman reported on the activities of this group of which he is a member. It represents many national infrastructure owners including water and power companies. Its starting premise is that there is inadequate data on the UK asset base which hinders decision making processes. He has been party to a number of tele-conferences with many big asset owners, many of whom are adopting and implementing the PAS 55, Asset Management Standard, against which they can be audited and certified. Brian Bell noted that CIRIA have produced a guide on the use of PAS 55. Graham Cole pointed out that ADEPT supported PAS 55 and the Code of Practice was based on PAS 55 principles.

The Chairman noted that there was an overall better approach to asset management in those sectors whose assets have real value (e.g. water, power etc.) rather than those whose assets are in public ownership. This enforced his view that asset owners in small authorities, with reduced capacity, would struggle to meet minimum standards. Part of his input to this group is, therefore, to push for more accountability and enforcement. Robust bridge management systems would meet the requirements but his view was that most bridge owners would only acknowledge that they were working towards this goal. The Chairman predicted that a mandatory requirement for whole of government accounting, combined with penalties, would be introduced within two years. Rod Howe remarked that the move of BWB to charitable status was based on 15 years of funding from government but, based on the state of the asset after 10 years, there could be

additional bonus funding. He agreed to forward whatever information on this as he was permitted.

ACTION 32: Rod Howe

## **10. Other Bridge Research Update**

This item was deferred to the next meeting due to shortage of time.

## **11. Any Other Business**

### **11a Future Agenda Items**

The chairman had been approached by a software company seeking to demonstrate abnormal load routing software, ABLOADS. It was agreed that this was likely to be a marketing exercise and should not be taken up. Discussion extended to other initiatives and it was agreed that a presentation on ESDALL might be appropriate for future BOF meeting.

ACTION 33: Chairman

## **12. Proposed dates for 2012 BOF meetings**

BOF38 Tuesday 25<sup>th</sup> September 2012

## **13. Dates for 2012 FIF Meetings**

FIF4: Tuesday 11<sup>th</sup> and Wednesday 12<sup>th</sup> September 2012

Richard Fish  
June 2012