



Bridge Owners' Forum

Report No.7 to the Bridges Board on the activities of the Bridge Owners Forum (BOF) for 2009/10

For presentation at the Bridges Board Meeting, Tuesday 15th February 2011

HIGHLIGHTS OF 2009/10

A highlight for 2009/10 was the successful hosting by BOF of the first International Bridge Forum (IBF), held at King's College, Cambridge in September 2009. In addition, a scanning tour by a panel of senior US bridge engineers met with BOF representatives. There has been progress on the various research projects promoted by BOF. Several specialist technical sessions have been held in response to key events and issues such as the Cumbria floods in November 2009, where BOF contributed to the Bridges Board press release. BOF has continued to act as a conduit for dissemination of information throughout the bridge engineering community. The Bridge Inspector Qualification and Training project has progressed to the end of stage I but an impasse has been reached with the DfT for the implementation of stage II. The establishment of a national framework for the training and certification of the bridge inspectors is deemed by BOF to be of the highest national importance and a priority for BOF is to push forward with this work to ensure its recommendations are implemented.

MEMBERSHIP

Graeme Brown from Department for Regional Development (Northern Ireland) joined BOF on the retirement of the long-serving Ronnie Wilson. Dr John Menzies retired as Technical Secretary of BOF having served with great distinction in this role since BOF6 in June 2002. BOF was extremely fortunate that Richard Fish, past Chairman of the UK Bridges Board, agreed to replace Dr Menzies and take over as the new Technical Secretary of BOF at BOF30 in January 2010.

Current BOF members are:

- BRB (Residuary) Ltd
- British Waterways
- ADEPT (Association of Directors of Environment, Economy, Planning and Transport) formerly CSS (County Surveyors Society)
- CSS Wales
- Department for Regional Development (Northern Ireland)
- DfT (Department for Transport)
- HA (Highways Agency)
- Humber Bridge Board (representing UK Large Bridges Group)
- LoBEG (London Bridges Engineering Group)
- LUL (London Underground Limited)
- National Assembly for Wales

- NRA (National Roads Authority - Ireland)
- Network Rail Infrastructure Ltd
- SCOTS (Society of Chief Officers of Transportation in Scotland)
- Transport Scotland
- TfL (Transport for London)
- Technical Secretary (Richard Fish, past Chairman of UK Bridges Board)

SUMMARY OF MEETINGS HELD IN 2009/10

BOF28: July 2009

- Discussion of BOF project funding and procurement
- Discussion on the format of the International Bridge Forum to be held 13th-16th September 2009
- Research update from Network Rail and the National Roads Authority (Ireland)

IBF2009 (BOF29): September 2009

The inaugural International Bridge Forum was held 13th-16th September, 2009.

BOF30: January 2010

- Introduction of Graeme Brown - new Department for Regional Development (Northern Ireland) representative to BOF
- Introduction of Richard Fish - New technical secretary
- Discussions on the HA/BB response to the Cumbria Flooding
- Presentations on bridge vulnerability to scour by Brian Bell and Graham Bessant
- Discussions on the future of the Bridge Owners' Forum

INTERNATIONAL CO-OPERATION

US Scanning Tour – Assuring Bridge Safety and Serviceability – 11th June 2009

The BOF Chairman, assisted by Stephen Pottle, hosted on behalf of BOF a one-day visit by a US delegation of senior bridge engineers from the FHWA, AASHTO, consultants and universities at King's College, Cambridge in June 2009. This visit was part of a European wide tour undertaken by the US group. In August 2010 the FHWA published a report of this 2009 scanning tour. See: [Assuring Bridge Safety and Serviceability in Europe](http://www.international.fhwa.dot.gov/links/pub_details.cfm?id=675) (http://www.international.fhwa.dot.gov/links/pub_details.cfm?id=675)

International Bridge Forum (IBF)

The inaugural International Bridge Forum: [Bridges 2020: Management for Long-term Bridge Performance](http://www.bridgeforum.org/ibf/ibf2009/) was held 13th - 16th September 2009 at Kings College, Cambridge. Senior bridge engineers representing bridge authorities and research organisations from twelve different countries, in addition to BOF's UK and Irish members, attended a 2½ day forum at King's College, Cambridge to allow detailed comparison of innovations and new technologies in bridge engineering. (See <http://www.bridgeforum.org/ibf/ibf2009/>)

SUMMARY OF BOF RESEARCH PROJECTS

2003/04 – one completed

1. *Masonry arch bridges: condition appraisal and remedial treatment (C656)*
Published by CIRIA

2004/05 – two completed

1. *Drystone retaining walls and their modifications: condition appraisal and remedial treatment (C676)*
Published by CIRIA
Contractor: CIRIA/Mott Macdonald
Joint funding (CSS, DfT, Network Rail, DoRD(NI))

2. *Iron and steel bridges: condition appraisal and remedial treatment (C664)* **Published by CIRIA**

2005/06 – no new projects due to Ministerial moratorium on research funding

2006/07 – one completed, three still in progress

1. *Revision of BS6779 Part 4* (requested £100k for each of 4 years)
Contractor: AECOM. Lead: Amrit Ghose. Subcontractor: Matthew Gilbert
BOF Project Steering Group (PSG) Chair – Brian Bell
In progress - Contract commenced April 2009. Details of current progress are on the BOF website.
2. *Training and qualification of bridge inspectors (Phase 1)* (£50k)
Contractor: Atkins
BOF PSG Chair – Stephen Pottle
Project completed – report approved by steering group
3. *Bridge deck slabs with non-metallic reinforcement* (£55k)
Contractor: Queens University Belfast (Dr Su Taylor).
BOF PSG Chair – Albert Daly (replaced Ronnie Wilson)
In progress - research is progressing. Interim progress report has been submitted to PSG and BOF (and is on the BOF website). Awaiting final report.
4. *Carbon composites for the strengthening of steel structures* (£65k)
Contractor: Heriot-Watt University (Prof.Ian May).
BOF PSG – Brian Bell
In progress - project kick-off meeting held at Heriot-Watt University on Friday 4th September 2009.

2007/08 – one started, one removed from list by DfT, one approved with spec in preparation.

1. *Automating bridge inspections* (estimate £50k)
Contractor: TRL
BOF PSG Chair – Stephen Pottle
In progress - project started January 2009. TRL initial internal report produced.
2. *NDT of macalloy bars tying prestressed beams* (estimate £146k)

Project cancelled by DfT - BOF was advised on 16 September 2008 that this project was deleted from the list of projects being considered by DfT as it was deemed too expensive. This raises a number of concerns, in particular that this project was cancelled by DfT without any discussion with BOF and that notification was only received in response to a request from BOF for an update on progress, rather than soon after the decision to cancel was made.

3. *Scanning of HA research reports* (consultancy project) (estimate £30k)
BOF PSG – Neil Louden

Specification in preparation – HA research reports are now in HA Bedford office. Draft specification with BOF Project Steering Group for finalisation.

2008/09 – no new research projects funded by DfT

2009/10 – DfT advised that no new research funding will be available

2010/11 – 5 projects prioritised for 2009/10 were resubmitted to BB, UKRLG and DfT for reconsideration for (2010/11)

1. Bridge Inspector Competence and Training Phase 2 (£100K)
2. Review of Road Restraint Systems for Local Roads (£50K)
3. Best Practice for Specifying Long Life Road Surfacing for Bridges (£87K)
4. Design, Maintenance and Inspection of Concealed Metal Connectors and Bearing Pins in Moving Bridges (£90K)
5. Life-time considerations of FRP Strengthening of Bridges (£160K)

All 5 prioritised BOF research projects were resubmitted to DfT in time for consideration of their research programme for 2010-2011. Unfortunately no feedback on the outcome of this submission was received from DfT (despite a formal feedback procedure having been agreed by BOF and DfT in 2008). In late 2010, in response to queries from BOF, Paul Foskett (DfT) advised that all proposals were on hold subject to the outcomes of the new Government's Comprehensive Spending Review (CSR). He advised that the future role of the Bridges Board and BOF was also under review so no action with any of the research proposals would be forthcoming until the CSR was completed and a decision on the role of UKRLG and subsidiary organisations finalised.

The other key issue faced here relates to the project management of the BOF projects. The normal mechanism adopted to date for procurement of these research projects has been that the DfT formally lets the contract and assigns a project manager to deal with the contractual, financial and administrator matters whilst BOF appoints a Project Steering Group, including a Chairman, for each of its projects to support the project manager and provide technical oversight of the projects. Recently there has been considerable concern expressed by the PSG Chairmen at the difficulty encountered in contacting and getting a response from the DfT project managers. This is an issue that needs to be resolved quickly and BOF is seeking reassurance, backed by action, from the DfT that it will commit the appropriate personnel to manage the projects that are already underway.

HIGH PRIORITY PROJECT

BOF identified the project on Training and Qualifications for Bridge Inspectors Phase II as being a high priority project which will enhance the Asset Management of bridges. Phase I was successfully completed and BOF wished to pursue Phase II and introduce the actual schemes identified in Phase I. Members contributed towards funding of this project. Despite having the funding from participating organizations in place, the DfT failed to respond to the request to commission this project. As a result, there is a risk that the allocated funds may not still be available in the next financial year (2011/12) and it is of the highest priority that this contract be let forthwith.

FUNDING OF BOF

BOF funding was renewed up until end March 2011. DfT has indicated that it will not be able to fund BOF to the same level in future, although it would be prepared to consider some contribution towards the overall operation of BOF. BOF is considering a subscription system to cover operational costs from April 2011.

ISSUES FACING BOF

As highlighted in the report to the Board in 2008/09, one of the major sticking points in the procurement of BOF recommended projects had been the difficulty in obtaining feedback from the DfT on the progress and outcomes of the submission to DfT for commissioning of projects.

It is recognised that the DfT is under significant pressure to deliver a substantial road and bridge maintenance programme with very limited manpower available and reduced budgets. BOF has continued to offer assistance to the DfT in their efforts to deliver their research programme. In particular the BOF Technical Secretary has continued to prepare technical specifications, in discussion with the DfT and project proposers, for the various BOF projects.

A highly structured procedure for identifying, evaluating and prioritising research projects deemed to be of most importance to the bridge owners of the UK has been developed and implemented by BOF. The question is raised over whether those preparing the DfT's research programme each year are taking advantage of this high level of technical expertise that has been harnessed for the benefit of UK PLC. There remains a need for far better interaction and communication between officials at the DfT and BOF to enable both parties to work together for the collective good.

Finally the respective roles of UKRLG, Bridges Board and BOF need to be decided and this decision needs to be disseminated to all parties concerned.

THE FUTURE ROLE OF BOF

The Technical Secretary and Chairman of BOF have continued discussions aimed at identifying how best to enhance the role and effectiveness of BOF. At present they believe BOF could fulfil the role of a "think-tank" on issues of long term infrastructure management – putting forward to the Bridges Board and UKRLG papers/proposals on future directions and how to achieve desired outcomes. This activity would run alongside BOF's role in initiating and overseeing high priority bridge related research projects. In addition, BOF has the

capacity to offer expert technical response to the Bridges Board on critical issues, such as the Cumbria floods or the actions necessary in response to a major collapse. It is considered essential that BOF members continue to challenge the outputs and achievements of BOF to ensure it fulfils the role for which it was established.

BOF RECOMMENDATIONS TO THE BRIDGES BOARD

1. As a matter of urgency engage in dialogue with the DfT to commission Stage II of the Bridge Inspector project. This needs to be commissioned before the end of the 2010/11 financial year to avoid the risk of losing the funding that has been committed by BOF members.
2. The roles of the UKRLG, Bridges Board and BOF need to be clearly defined and disseminated to all parties involved.
3. A formal procedure still needs to be introduced by the DfT, UKRLG, Bridges Board and BOF for positive notification of the outcomes of each stage of the decision process and the amount of funding allocated to each project in the budget. All parties need to be advised on a realistic timeframe in which a contract can be let. Ideally the DfT would provide a written summary of the decision process and timeframe involved in commissioning research projects via the UKRLG to the Bridges Board and BOF on an annual basis.
4. The DfT should be encouraged to make greater use of the expertise and prioritisation procedures implemented by BOF to assist in formulating their annual research program.

BRIDGE OWNERS' FORUM

The overall goal of the Bridge Owners Forum is to provide a framework whereby there is wide dissemination of bridge research information and discussion on the technical merits of research developments. It also provides a conduit and filter for research proposals to be vetted and promoted to appropriate funding organisations. It provides the technical expertise and ability to evaluate key issues facing the UK in relation to bridges, such as the lessons to be learned from the Cumbria and Minnesota bridge collapses, appropriate response to concerns raised about the MEXE method of analysis for arch bridges and concerns raised about current code provisions for shear. It also serves as a forum in which the future priorities for bridge managers can be assessed and appropriate strategies for delivering improvement identified. Finally, it has brought together representatives from the organisations responsible for the vast majority of bridges in the UK resulting in increased collaboration, the avoidance of duplication of effort in some functions, the sharing of best practice and knowledge and significant co-operation between organisations in a range of areas.

The net gains to the UK are (i) better co-operation between owners (ii) managers who are kept abreast of the latest research and technological developments and (iii) the more effective use of the UK's resources in managing this key element in the national infrastructure. The meetings have been very well supported with members attending the majority of the meetings to date. In view of the time demands on managers today this is possibly the best indicator of the importance and relevance of the Bridge Owners Forum in fulfilling its role to help bridge owners more effectively manage the nation's bridges.