

BRIDGE OWNERS FORUM
BOF 76: TUESDAY 4 June 2024
via MS Teams and in THE BEVES ROOM,
KINGS COLLEGE, CAMBRIDGE

PRESENT:

In person:

Tim Arianpour	TfL (LUL)
Graham Cole	HRA
Andy Featherby	Canal and River Trust
Paul Fidler	CUED
Richard Fish	Technical Secretary
Keith Harwood	ADEPT
Nicola Head	TfL
Jason Hibbert	Welsh Government
Trish Johnson	Big Bridges Group
Simon Latham	City Bridge Foundation
Hazel McDonald	Transport Scotland
Cam Middleton (Chairman)	CUED
Osian Richards	CSS Wales
Helen Rowe	ADEPT
Santosh Singh	National Highways
Julian Staden	Network Rail
Martyn Thomas	SSE Renewables
Paul Thomas	Railway Paths
Sue Threader	Rochester bridge Trust

Guests:

Neil Atkinson (part)	Arcadis
Sri Sivananthan	TfL

Virtual:

Kris Campbell	Department for Infrastructure – Northern Ireland
Henry Dempsey	SCOTS

Guests:

Alex Bouas	Environment Agency
Brian Duguid (part)	NZBG
Fouad Khazen	LoBEG

NB 1. Any statements recorded in these minutes, and attributed to an individual, are their own personal views and not those of their employer.

NB 2. These minutes are recorded in the agenda order and not necessarily in the order in which the items were taken in the meeting.

1. Welcome

The Chairman welcomed everyone to BOF 76, remarking that it was now 24 years since BOF had been formed. He was encouraged by the numbers attending in person, including some new members.

2. Introductions and Apologies

After round table introductions, the Chairman invited new members and guests to introduce themselves:

Simon Latham is the Chief Operating Officer for the City Bridge Foundation (CBF) which had recently joined BOF. Formerly the Bridge House Estates, the CBF is responsible for five bridges over the river Thames in London. Simon is not an engineer but a career public servant, having previously worked for the London Corporation. For the avoidance of doubt, Simon confirmed that both the Chairman and Sue Threader have recently been appointed to the CBF Board. His hope in joining BOF is to enhance the visibility of the CBF in the bridge sector and to ensure that they are exemplars of bridge management.

Helen Rowe is Head of Structures and Tunnels at Kent County Council. She is also the secretary of the ADEPT National Bridge Group and will from now on be the second ADEPT representative on BOF. Helen began her career with Surrey County Council, working for Graham Cole, before working on marine engineering with consultants.

Julian Staden has replaced Colin Hall as Network Rail's representative on BOF (and on UKBB). He has been with Network Rail for 12 years and is now part of their Technical Approval Authority. His earlier experience had been in highways before joining Network Rail and working on investment policy for bridges and developing standards for bridge examinations. Julian is also a CIRIA Board member.

Fouad Khazen is the LoBEG substitute for Jasdeep Bhachu. Fouad is LoBEG's vice-chair and is the bridge engineer for the London Borough of Enfield. He has over 20 years of experience in the design and maintenance of highway assets

Sri Sivananthan works with Nicola Head in the Technical Assurance team at TfL, working on project delivery for new bridges, and was joining this meeting as a guest. Sri had previously worked for the (then) Highways Agency in Area 3, on bridge replacement and strengthening projects.

The Chairman noted that the policy of inviting guests to BOF did not seem to be being widely taken up and he congratulated Nicola Head for leading the way. He encouraged others to do so, and also to send substitutes when unavailable to attend in person, and to continue to keep gender diversity in mind.

ACTION 1: All

Richard Fish recorded apologies that had been received from the following:

Jasdeep Bhachu ¹	LoBEG
Malcolm Cattermole ²	Forestry England
Liam Duffy	Transport Infrastructure Ireland
Ian Norriss ³	Environment Agency

Richard also reported that he had been expecting Mark Cox (DfT) to join via Teams and that he had received no replies to emails from Mark Downes at East-West Rail.

3. Matters Arising from BOF 75 Minutes

The Chairman noted that the accuracy of the BOF 75 minutes had been approved by email and that they were now on the BOF website.

He then posed the question as to whether the minutes should be in the publicly accessible area of the website, thereby reversing a decision taken at the last meeting. On reflection he had reservations on keeping them private and proposed a change, subject to views of the meeting.

Martyn Thomas believed that, in order for BOF to be a leading light in the bridges sector, that the minutes should be publicly accessible. Trish Johnson agreed, subject to there being an element of caution when recording discussion on sensitive subjects such as suicide prevention. Henry Dempsey echoed this concern. Osian Richards suggested that perhaps some contributions to discussions could be anonymised.

Paul Thomas felt that one of the biggest benefits from BOF meetings was the trust and honesty in discussions between members. He would be reluctant to damage this if members were wary of what and how things might be recorded.

Graham Cole noted that, as well as being available to BOF members, larger groups such as ADEPT and HRA should be able to share them within their wider organisations. BOF membership was based on this principle, not on specific individuals only.

Tim Arianpour expressed his reservations about the minutes being widely circulated, suggesting that it could hinder debate and that some organisations might need to approve them before release. Richard Fish pointed out the disclaimer⁴ which had been in the minutes since BOF 73.

The Chairman concluded the discussion by proposing the following process, which was accepted:

¹ As noted, Fouad Khazen was substituting.

² Malcolm had been intending to join via Teams but had some urgent issues to attend to on the day of the meeting.

³ Alex Bouas was substituting, joining via Teams.

⁴ See NB 1 above.

1. Anyone can state anything that should not be minuted during the meeting.

ACTION 2: All

2. Draft minutes to be sent to BOF members for comment, correction etc., giving at least two weeks to do so.
3. Final agreed minutes to be posted on the website in the publicly accessible area.

ACTION 3: Richard Fish/Paul Fidler

The Chairman then referred to the BOF 75 Action Update sheet that had been issued with the agenda, noting that all actions had either been completed or that they featured on today's agenda. With regard to the meeting format, the Chairman once more encouraged attendance in person but also agreed to try to improve the IT for remote access.

ACTION 4: Chairman/Paul Fidler

4. Update on CROSS VORS⁵ Group

Hazel McDonald gave a brief resumé of the background behind this initiative, starting with the DfT request for research projects through UKBB and UKRLG. The proposal had been to have a body for investigating highway bridge failures, similar to the RAIB or the AAIB in the UK, or the NTSB in the USA. Although the project had been given a high priority by both UKBB and UKRLG, no funding had been forthcoming. This had led to a closer collaboration with CROSS (as per the attendance of Alastair Soane and Emma Shaw at BOF 75) and the ICE, to build on the former's concept of precursor events.

The VORS communication strategy had now been launched and Hazel had presented on it at a recent ICE event with another presentation scheduled for Bridges Scotland at the Scotland Roads Expo event later in the year. Hazel asked everyone to report precursor events via the CROSS website, no matter how seemingly insignificant and including failures of joints, bearings, parapets etc.

ACTION 5: All

Hazel sensed that momentum was beginning to build with articles to be published in The Structural Engineer, New Civil Engineer and Transportation Professional. It was also on the radar of the ICE Infrastructure Client Group. Hazel emphasised that there was a need for a high volume of reported precursors if the system was going to be effective. Santosh Singh noted that he recently joined the CROSS Expert Panel.

The Chairman thanked Hazel for summarising the current position and also to all concerned with getting the initiative this far. He reflected on the time and effort taken to get details of the Eastham bridge collapse in 2016 and encouraged everyone to report precursor events.

⁵ Voluntary Occurrence Reporting Scheme

He also expressed his frustration with the way that the sound working practice for prioritising research from well over ten years ago had become so dysfunctional. He recalled how BOF had usually been the driver for bridge related research, making recommendations to UKBB, UKRLG and onwards to DfT. He was also concerned about the role of TRIB in deciding on research programmes, often not based on advice from any other party. He has drafted a letter covering all these points and also based on the original DfT agreements from BOF's formation in 2000, which he will send to David Coles at DfT.

ACTION 6: Chairman

He also noted that the ORR was another key player, and it was agreed that their bridge representative should also be contacted.

ACTION 7: Chairman/Hazel McDonald

The Chairman then invited discussion on the VORS scheme and the reporting of precursors. Keith Harwood had some issues with the length of time that it might take, especially with the need to anonymise people and bridge locations, citing HCC's defective precast beams which he had raised at BOF 72. Kris Campbell questioned if there was a *de minimis* in terms of scale? He had had a two-metre span arch collapse through scour and thought that this might be too small to report. Hazel McDonald suggested that this event was exactly the sort of thing that should be submitted. Jason Hibbert agreed that it was essential that all precursor events should be submitted, no matter how insignificant. Helen Rowe also questioned time scales, noting that she had submitted details of a third-party wall in Canterbury to CROSS, but it still had not been published. Andy Featherby asked if it might be best to wait for any internal investigations to have been completed. The view of the meeting was that the sooner a report was submitted, the better. It was also suggested that the number of precursor events could be added as a question in the forthcoming RACF survey.

ACTION 8: Keith Harwood

Before closing this item, the Chairman suggested that the UK would do well to work towards a model of the NTSB⁶ in the USA, noting that they were on site on the morning after the Francis Scott Key Bridge had collapsed and provided regular updates on their investigations on their website.⁷ This was a point he had included in his draft letter to David Coles. He also reflected on how all this would dramatically change should there ever be a UK bridge collapse, drawing comparisons with the Grenfell Tower fire and the subsequent inquiries, legislative changes and potential criminal prosecutions.

5. Update on Welsh Government Non-Statutory Guidance.

The Chairman invited Jason Hibbert to introduce this item which had been mentioned at BOF 75. Jason explained that he had presented on the concept of precursor events to a meeting of senior managers and the, then, Director had been very receptive to the

⁶ National Transportation Safety Board [Home \(nts.gov\)](https://www.nts.gov)

⁷ [NTSB Issues Investigative Update for Baltimore Bridge Collapse](#)

idea. Following some reorganisations, a new Director was now in post who was also enthusiastic but had suggested that non-statutory guidance would be the best approach. Osian Richards confirmed that the idea had full support from CSS Wales and the view had been taken that precursors should be reported as soon as possible, without any need to anonymise reports. He and Jason agreed to issue draft guidance when available.

ACTION 9: Jason Hibbert/ Osian Richards

The Chairman congratulated the Welsh contingent on this initiative, noting that this was all about good leadership. Jason also reported that this was also well supported by his politicians which had been a great help. Keith Harwood agreed that Wales were doing this much better than in England, but he believed that this was more about the difference in organisational structures of highway authorities between the two countries.

Santosh Singh explained The Highways Safety Hub; something of which BOF members were largely unaware. He advised that it consists of National Highways supply chain partners across both major projects and operations directorates as well as key representatives from the design community. The Highways Safety Hub works collaboratively to support the National Highways imperatives of “Safety, Customer and Delivery”, contributing to the “Home Safe and Well” strategy.

Santosh also noted the link to GG 128 which is the DMRB Standard that outlines the requirements for reporting incidents, events, and all undesirable circumstances: health, safety, wellbeing, structural and environmental. Any such concern which occurs during work for, or on behalf of, National Highways is reported using the Highways Accident Reporting Tool (HART). Santosh agreed to present more details on the Hub and the HART at BOF 77.

ACTION 10: Santosh Singh

It was agreed that anyone wishing to use the hub should do so with immediate effect.

ACTION 11: All

6. Reflections on the Francis Scott Key bridge collapse

In the early hours of 26th March 2024, one of the main supports of the I-695 Francis Scott Key (FSK) bridge in Baltimore, Maryland, USA, was struck by an errant container ship, rapidly leading to a progressive and total collapse which had claimed the lives of six construction workers. The chairman introduced this item by asking about lessons to be learned and any actions that had since been taken.

He also reflected on a similar collapse in his home state in 1975 when the Tasman bridge in Hobart, Tasmania had collapsed⁸. Part of this tragedy had been that no warning could be given to traffic crossing the bridge and several vehicles had unknowingly driven off the edge of the remaining bridge deck. The replacement bridge

⁸ [Tasman Bridge disaster - Wikipedia](#)

now had warning signs to stop the traffic in the event of another ship collision. Hazel McDonald questioned how effective such signs might be, noting the Queensferry Crossing had overhead gantries which gave a red “X” in the event of a high ice accretion risk, which were widely ignored.

With respect to the FSK, the Chairman again noted the rapid response of the NTSB investigators. Richard Fish said that this was almost certainly going to be led by the NTSB marine section in the first instance, as had been the case for the 1980 Sunshine Skyway collapse. Trish Johnson noted that the UK Big Bridge Group had already been approached by the NTSB requesting information on UK practice. She agreed to forward this to Richard Fish for onward issue.

ACTION 12: Trish Johnson

Hazel McDonald described a Transport Scotland review of their estuarial crossings, and what standards had been in place when they were built. There were five such bridges and a risk assessment was also underway to include port practices, such as the use of tugs. For National Highways, Santosh Singh reported that a similar exercise was being undertaken, with four bridges identified for review. Julian Staden confirmed that Network Rail reviews were being carried out at a regional level. Simon Latham noted that the Port of London Authority had jurisdiction over vessel sizes, but he also pointed out the considerable size of towed barges, citing one which had delivered large, prefabricated stand sections to the Craven Cottage football ground. Also in London, Nicola Head noted that a proposed footbridge at Rotherhithe had needed to look at very high ship impact design loading. Tim Arianpour said that LUL had only one bridge over the Thames, but this had dolphin pier protection.

Hazel McDonald noted that CROSS would be issuing a safety alert on the FSK collapse. The Chairman asked for links to this and to any NTSB reports to be posted on the BOF website.

ACTION 13: Richard Fish/Keith Harwood/Paul Fidler

Richard Fish noted that the 1980 Sunshine Skyway collapse, mentioned above, had led to a change in US ship collision design standards and pier protection. Opened in 1977, the FSK had obviously predated this review. He also observed that maximum cargo ship tonnages had increased by a factor of seven during the life of the FSK bridge.

7. BOF Agility re Dealing with the Media when Future Collapses Occur

The chairman noted that he been asked for comment on the morning after the FSK collapse when he was still unaware of the facts. Later in the day, he had asked Richard Fish to draft a statement⁹ to go on the BOF website but, as it turned out, this had taken several days to be uploaded. Richard Fish noted that he, too, had been asked for

⁹ [Collapse of the Francis Scott Key Bridge - Bridge Owners Forum \(bridgeforum.org\)](https://www.bridgeforum.org/collapse-of-the-francis-scott-key-bridge)

comments but felt that his personal position as an independent consultant meant that he need not worry about obtaining approvals.

Hazel McDonald suggested that all communication with the media should preferably be given as a written statement rather than over the phone. Trish Johnson agreed, adding that TV or radio interviews should never be live, but only recorded.

It was agreed that the BOF Technical Secretary should lead on preparing a statement from BOF as soon as possible after any significant collapse or other bridge issue.

ACTION 14: Technical Secretary

8. Bridge Strikes - Update from Bridge Strike Prevention Group (BSPG)

Andy Featherby reported on a recent meeting of the BSPG and agreed to issue minutes when they were available.

ACTION 15: Andy Featherby/Richard Fish

At the meeting, Andy had reported on the Trust's own initiatives with bridge strikes such as motion activated CCTV cameras at a bridge in Lancaster and an ANPR camera on another where the overhead lifting frame had been frequently struck by over-height vehicles. Network Rail had also presented on geographic strikes in Surrey, based on a 2012 report which was due to be updated. The BES Group had given a presentation on their system¹⁰ which used cameras and accelerometers, albeit at a cost of about £50k per bridge. Finally, the US FHWA had attended remotely but were planning a trip to the UK later in the year to speak to individual BSPG members.

The Chairman thanked Andy for his summary and commented that he had seen many systems being promoted over the years, but none seemed to provide the perfect solution. Andy agreed to report on the effectiveness of the two examples above at a future meeting.

ACTION 16: Andy Featherby

Julian Staden noted that bridge strikes were the highest cause of disruption on the railway network. Helen Rowe described systems in place within Kent CC's tunnels in which cameras would recognise any incident and activate signage. She agreed, however, that prevention beforehand required a different technology which in turn was dependent on the road classification.

Hazel McDonald referred to guidance provided by the Scottish Plant Operators Association, specifically on how plant should be loaded onto transporters. Henry Dempsey agreed that education was the most important issue and added that, as most strikes were on rail over road bridges, it was important to have good liaison between road and rail authorities especially with regard to signage.

¹⁰ [Bridges and Structures - BES Group](#)

Tim Arianpour asked about possible benefits from mapping systems or ESDAL? Helen Rowe suggested that neither would really help with low headroom bridges. She added another issue in that there were sites where, even if a vehicle stopped before hitting a bridge, there was nowhere nearby to turn around. The chairman asked about Sat Nav systems and Keith Harwood replied that he was aware that the AA system had low bridges marked but the accuracy could not be guaranteed. Henry Dempsey agreed, adding that databases would only work if they were constantly updated.

Julian Staden believed that the BSPG was an effective body on all these points and offered a presentation on Network Rail's initiatives at a future meeting.

ACTION 17: Julian Staden

9. Bridge Strikes – Heritage Railway Experience

Graham Cole presented on some recent strikes on Heritage Railway bridges, agreeing that his presentation could be uploaded to the BOF website.

ACTION 18: Paul Fidler

After reprising some statistics on the UK's Heritage Railways, Graham focussed on recent strikes on a bridge on the Spa Valley railway which had been caught on camera with some dramatic footage and near misses with respect to co-lateral third-party injuries. In some cases, police prosecution was pending but as well as that, incidents had to be reported to the Transport Commissioner which could lead to a haulier losing their licence.

The Chairman thanked Graham for his presentation, adding that being able to see a bridge strike in real time highlighted both their severity and the need to do something to prevent them

10. Half-joints

The Chairman invited Hazel McDonald to present on this topic. Hazel agreed that her presentation could be uploaded to the members-only area of the BOF website.

ACTION 19: Paul Fidler

Hazel described the M8 Woodside viaducts in Glasgow. Completed in 1971, these two parallel viaducts are formed of post-tensioned concrete I-beams (with U-beams at the deck edges) supported on substructures of crossheads on the tops of piers with half-joint details. Although site cast, the beams were in good condition. The half-joints, however, were suffering from severe delamination and rebar corrosion. An unusual detail was where the viaducts crossed the SPT (the Glasgow underground) on a very high skew. Here the PC beams were supported on massive triangular crossheads, each supported on three columns.

Hazel outlined the recent history of the viaducts, including a 1990s widening. An assessment (and beam PTSIs) had been commissioned in 2019 but the inspection for

assessment had had to be delayed due to the pandemic. Based on the 2016 Principal Inspection, however, and using the CS 454 strut and tie method, necessitated interim measures of lane restrictions. Once the IfA had been completed, it was clear that significant works were needed, and a decision was taken to prop the viaducts.

The point of this item was to seek benchmarks from other bridge owners who had similar issues with half-joints. The Chairman thought that this was another value in BOF; both in being able to share problems and also to seek support from colleagues. He firstly asked if anything could have been done differently in the management of the viaducts over their life. Hazel suggested that there was very little. Henry Dempsey cited another bridge¹¹ for which he was responsible in Glasgow and agreed to discuss with Hazel. Graham Cole mentioned the Redbridge flyover in Southampton (although acknowledged that the details were not that similar) and Sri Sivananthan thought the detail at the M4 Junction 14 bridges might be relevant. Santosh Singh agreed to look at this and other National Highways half-joint sites.

ACTION 20: Santosh Singh

The Chairman thanked Hazel for sharing what was a hugely complex piece of maintenance and asked everyone to assist with benchmarking.

ACTION 21: All/Richard Fish/Hazel McDonald

11. Instrumentation and monitoring of a bowstring arch bridge

The Chairman welcomed Neil Atkinson from Arcadis who was going to present on this item which had been put forward by Jason Hibbert several meetings ago. Neil agreed that his presentation could be uploaded to the BOF website.

ACTION 22: Paul Fidler

Neil began by stating his credentials: over 25 years of experience culminating in his current post as Technical Director of Instrumentation and Monitoring for Arcadis. He went on to define what he called his “Ethical Decision Making Model” which emphasised the need for transparency in monitoring systems and making all parties aware of risks and accuracy of measurements. He then turned to the structure in question, the Brynmawr bridge over the A465 Heads of the Valleys road near Ebbw Vale in South Wales. The bridge suffered from cable oscillations and had been instrumented as part of the original construction contract. The data appeared to show excessively high amplitudes (>500mm) which were clearly wrong when compared with visual observations on site. There was no transparency with the suppliers of this bespoke system who seemed to be reluctant to accept any constructive criticism and requiring any concerned party to enter into non-disclosure agreements. Neil concluded by suggesting that clients should always demand evidence that instrumentation systems were accurate.

Jason confirmed that this problem had arisen about four years ago but added that the cables had now been fitted with dampers. There remained, however, various

¹¹ No half-joints but beams on deteriorating crossheads, and presently weight restricted.

commercial and contractual disputes which would need to be resolved before the bridge could be handed over.

The Chairman thanked Neil and Jason for giving an insight into this issue. The effectiveness of instrumentation and being able to trust the data it produced was a matter which he had often promoted himself. He urged everyone to insist on full transparency of systems. Osian Richards concurred; this was a line he had taken, to state what is needed rather than to simply accept a sales pitch.

12. Update from Net Zero Bridges Group (NZBG)

The Chairman welcomed Brian Duguid, chair of the NZBG, who joined the meeting via Teams. Brian agreed that his presentation could be uploaded to the BOF website.

ACTION 23: Paul Fidler

Brian began by noting that the NZBG now had 37 members and were running with five task groups. He gave an invitation to any bridge owner who would like to join any of the task groups and to anyone who would be willing to share their carbon data.

ACTION 24: All

Brian noted some upcoming publications, including a paper in the ICE Bridge Engineering Journal and also drew attention to the NZBG LinkedIn page which now has over 1,500 followers. This was the medium through which all NZBG updates were given.

As well as listing many upcoming conferences and other events where NZBG were presenting, Brian focussed on the BOF Grand Challenge Zero, launched at Bridges 2024 in March, specifically our areas for development:

- Benchmarked bridge-specific data and guidance
- Mandate benchmarked carbon data reporting
- Cross industry pilot projects
- Carbon literacy and net zero training
- Focus on existing bridges as the place where greatest savings are possible.

Brian suggested that a BOF representative on the NZBG would be very welcome or any other joint working arrangement.

ACTION 25: All

Finally, he posed the questions of how and where could funding for net zero could be found. At the moment, consultants were giving their time *gratis* as part of what Brian described as “hobby” activities.

The chairman thanked Brian for his presentation and for the excellent work of the NZBG. He invited comments.

Sue Threader advised that she was still actively sharing Rochester bridges as an exemplar. In April 2025, a new Term Maintenance Contractor was to be appointed with an even more carbon conscious contract, including a requirement for no fossil fuels from day one. Paul Thomas noted that Railway Paths were now a year into their carbon journey and had benchmarked six areas. Although improvement was gradual, there were steps in the right direction.

Santosh Singh reported that he now chaired the CBDG¹² and offered to present on this at a future meeting.

ACTION 26: Santosh Singh

Santosh also noted that CBDG supported the need to collect and share data but asked Brian if there was a need for even greater joint working. Brian offered the NZBG to be an independent sounding board for any upcoming initiatives. He added that consultants only sell their time and there were, therefore, no allegiances with suppliers. He also made the point that cement was the biggest challenge and that we need to recognise that there can be no quick fix.

Nicola Head advised that TfL project requirements include the need for carbon usage to be minimised and have a carbon calculator tool, with carbon modelling being mostly undertaken in-house. Osian Richards accepted that most clients were not doing enough at the moment and, as owners, we needed to address our Grand Challenge Zero commitments. Helen Rowe noted that asking for a carbon skillset in a job was a good recruitment tactic. She also added that some consultants she had engaged had not offered much evidence of a commitment to low carbon initiatives.

The Chairman referred to the Lower Thames Crossing (LTC) which, after Rochester Bridge Trust, he considered was leading the way with respect to embedding low carbon in their procurement. He suggested that the LTC representative who had spoken at Bridges 2024 should be invited to present to a future BOF meeting.

ACTION 27: Richard Fish/Keith Harwood

He also offered to provide an update on the Cambridge Electric Cement project at a future meeting

ACTION 28: Chairman

The Chairman closed this item by thanking Brian for his time and added his endorsement for the proposed closer working relationship between BOF and NZBG.

13. Introduction to City Bridge Foundation (CBF)

The chairman invited Simon Latham to give an introduction to the CBF. Simon agreed that his presentation could be uploaded to the BOF website.

ACTION 29: Paul Fidler

¹² Concrete Bridge Development Group

Simon explained that the CBF's primary purpose is to maintain five Thames bridges (Blackfriars, Millenium, Southwark, London and Tower) in perpetuity. The Foundation was founded 900 years ago, and the sole Trustee is the City of London Corporation. As well as the bridges, the CBF supports charities across London. The CBF is currently working on their "Bridging London Strategy".

The Chairman thought that the CBF was a welcome addition to BOF and suggested that each could benefit from the other. He invited questions and comments from the meeting. Trish Johnson asked about the reality of maintaining *in perpetuity*; did this include eventual replacement? Simon replied that this was theoretically the case, but the emphasis was on keeping them in a good state of repair. Sue Threader suggested that "maintain" in this case meant to maintain the existence of the crossing.

Jason Hibbert noted that organisations such as the CBF had the benefit over other owners of maintenance needs defining budgets rather than vice-versa which was the case for most other publicly funded owners.

The Chairman thanked Simon for his presentation and restated his welcome to BOF.

14. Pontcysyllte Principal Inspection

The Chairman noted that this had been a popular suggestion at BOF 75 and invited Andy Featherby to present. Andy agreed that his presentation could be uploaded to the BOF website. The presentation will include an animation of the aqueduct's original construction which time pressures had meant could not be shown during the meeting.

ACTION 30: Paul Fidler

The chairman invited questions and comments. Paul Thomas asked if there were any cracks in the cast iron plates in the trough. Graham Cole asked how many inspectors undertaking the PI were BICS qualified. Alex Bouas asked if there were any scour issues. Andy's answer to all these questions was that there were none.

15. Website issues

The Chairman invited Keith Harwood to give an update on the BOF website. Keith's presentation will be uploaded to the site.

ACTION 31: Paul Fidler

Keith presented the stats on website hits, harvested via Google Analytics. Among the headlines, Keith noted that there had been 763 visits over a 30-day period. The most popular area of the site was the list of bridge guidance documents and 91% of visitors appeared to be new to the site.

Keith then suggested that the next steps should be an optimisation of the site to suit search engines (Search Engine Optimisation) and also to make the site more active, with ideas such as regular blogs or other updates.

Discussion then moved on to BOF's visibility on social media, notably LinkedIn and X. For the former, it was noted that BOF was currently a "Group" whereas better accessibility could be achieved by turning it into a "Page".

ACTION 32: Keith Harwood

Santosh Singh noted that the CBDG had a LinkedIn page as well, and this also facilitated access to the website. In a similar way, it was also suggested that the BOF LinkedIn page could be the medium through which BOF outputs, such as Grand Challenges, could be disseminated.

ACTION 33: All/Keith Harwood

The need for blogs, for the LinkedIn page and/or the website (about 500 words) on any relevant subject was considered to be a good idea and volunteers were needed to write something.

ACTION 34: All

With regard to X, Richard Fish noted that BOF now has over 550 followers. At the moment, he ran the account, but it would have to be transferred when the Technical Secretary position changed.

ACTION 35: Richard Fish/Keith Harwood

In terms of maintaining the site, Osian Richards agreed to ask his authority's IT team if they might be able to do this.

ACTION 36: Osian Richards

16. BICS

Firstly, as part of his winding down to retirement plans, Graham Cole confirmed that he had recently stood down as the BICS lead assessor.

Hazel McDonald reported on recent developments to assist in the take up of the scheme:

- A user hub had been added to the website.
- Online webinars are currently being prepared.
- Progress had been made with ICE and CIHT towards Eng Tech qualifications.

Hazel also reported on a meeting that she had recently held with Peter Hill and Sarah Subtil of National Highways who have agreed *not* introduce their own interim scheme.

Santosh Singh confirmed, however, that National Highways plans to implement their own mentoring and assurance scheme that complements BICS. They are also developing an internal system of governance, to actively record the skills and competency of their inspectors. This will allow a better understanding of the skills and development needs of inspectors *en route* to attaining BICS qualifications. Santosh

confirmed that currently most of the inspectors that NH use are in their supply chain rather than direct employees.

The Chairman asked about the position of ORR. Hazel's view was that NH may be slightly nervous of contact with ORR, who are not as close to roads issues as they are with rail. It also seemed that ORR were also more interested in *numbers* of completed inspections, not necessarily their quality. The big question was whether BICS could be mandated, and she agreed to speak to the incoming chair of UKRLG on this later in the month.

ACTION 37: Hazel McDonald

Paul Thomas asked if the mentoring scheme was open to others. Hazel replied that it was only within NH at the moment, but it was something that LANTRA were keen to encourage. Osian Richards confirmed CSS Wales' position which was to introduce BICS requirements into new contracts over the next five years, including penalties such as withholding retention payments if companies failed to increase the number of BICS inspectors. Henry Dempsey agreed that was a need to force consultants to adopt BICS. He cited two recently tendered contracts where no consultants had BICS qualified inspectors and suggested that this was a commercial decision taken by the private sector, based on supply and demand. Henry also reported that he is going to take some inspection work back in-house but could not insist on BICS as GCC do not pay professional fees. He proposed to use the SCOTS scheme to test his own inspectors. Helen Rowe confirmed that Kent CC also do not pay fees, adding that if they invested in training and BICS accreditation, her inspectors would probably move on.

Osian Richards asked if the number of BICS accredited inspectors, or whether it was a requirement for contracts, could be added as a question in the RACF survey.

ACTION 38: Keith Harwood

The Chairman drew the item to a close by thanking Hazel and the steering group for their efforts, remarking that it was good to see significant progress being made. He reiterated the point, however, that the question to be asked was: has everything possible been done in the event of a collapse and subsequent court action?

17. National Highways/DMRB

Santosh Singh confirmed that CS 469 on scour had now been released, together with a CHE memo regarding its implementation. The new standard included an enhanced scour assessment requirement, a new risk-based approach, an allowance for the effect of wood debris, and a climate change predictive model. He offered to present on this at BOF 77.

ACTION 39: Santosh Singh

18. Suicide Intervention Sub-group

Trish Johnson reported that she had had very few comments on the draft guidance, but she was also aware that National Highways have produced their own document which is soon to be published. Trish had seen a draft which she liked, noting that it contained many points also in the BOF work. Rather than duplicate guidance, she was minded to make the BOF advice a series of anonymised case studies and a tool kit of available options. The sub-group will meet again to develop this idea.

ACTION 40: Trish Johnson

Trish also expressed concerns over the current Public Health England advice that all parapets on at-risk sites should be 2.5 metres high.

Hazel McDonald noted that the next revision of CG 300 will include AIP clauses on how suicide risk has been assessed and what measures need to be taken.

Henry Dempsey confirmed that he would share the information from the Glasgow River Safety Group.

ACTION 41: Henry Dempsey/Richard Fish

19. TRIB IWG Update

The Chairman noted that he had been unable to attend the last meeting, but he remains unclear as to what TRIB is aiming to achieve. He was also concerned about the process of how bridge research projects were instigated and able to reach TRIB without following the BOF to UKBB to UKRLG route. He is currently trying to clarify TRIB's objectives and *raison d'être* with DfT and will give an update at BOF 77.

ACTION 42: Chairman

20. Current Bridge Issues and/or Research

Due to time pressures this item was not taken but it was agreed that anyone with relevant points should add them to the previously issued proforma.

ACTION 43: Richard Fish/All

21. Reflections and Feedback from Bridges 2024

Richard Fish had previously issued the feedback from delegates that had been given to the conference organisers. Any suggestions for Bridges 2025, either in format or content should be sent to him for onward advice to the Hemming Group. The immediate consensus was that the two-day format should be retained, but with more presentations and less workshops, and with no streaming.

ACTION 44: All/Richard Fish

22.Any Other Business

22.1 Trish Johnson asked for any information on electric vehicle fires on bridge or in tunnels.

ACTION 45: All/Richard Fish

22.2 Trish also asked for any policies on multi-coloured lighting on bridges.

ACTION 46: All/Richard Fish

22.3 Andy Featherby asked for views on systems for managing abnormal load movements. It was agreed that there was some inconsistency between highway authorities, but Helen Rowe and Keith Harwood noted that only Cascade carry out route checks.

22.4 The Chairman advised that some BOF subscriptions have yet to be paid and asked BOF members to check, and as necessary, expedite payment.

ACTION 47: All

22.5 The Chairman showed some slides of his third-year student constructionarium project of the installation of a modular 14-metre span bridge.

23.Next Meetings

BOF 77: 5th November 2024 to be held in Cambridge and via Teams.

ACTION 48: All

2025 Meetings: Dates to be confirmed but BOF 78 is likely to be a Tuesday in late January or early February 2025.

ACTION 49: Richard Fish

24.Close

The Chairman closed the meeting, thanking everyone for their contributions and looking forward to seeing as many as possible in person at BOF 77.

Richard Fish,
BOF Technical Secretary,
16th August 2024