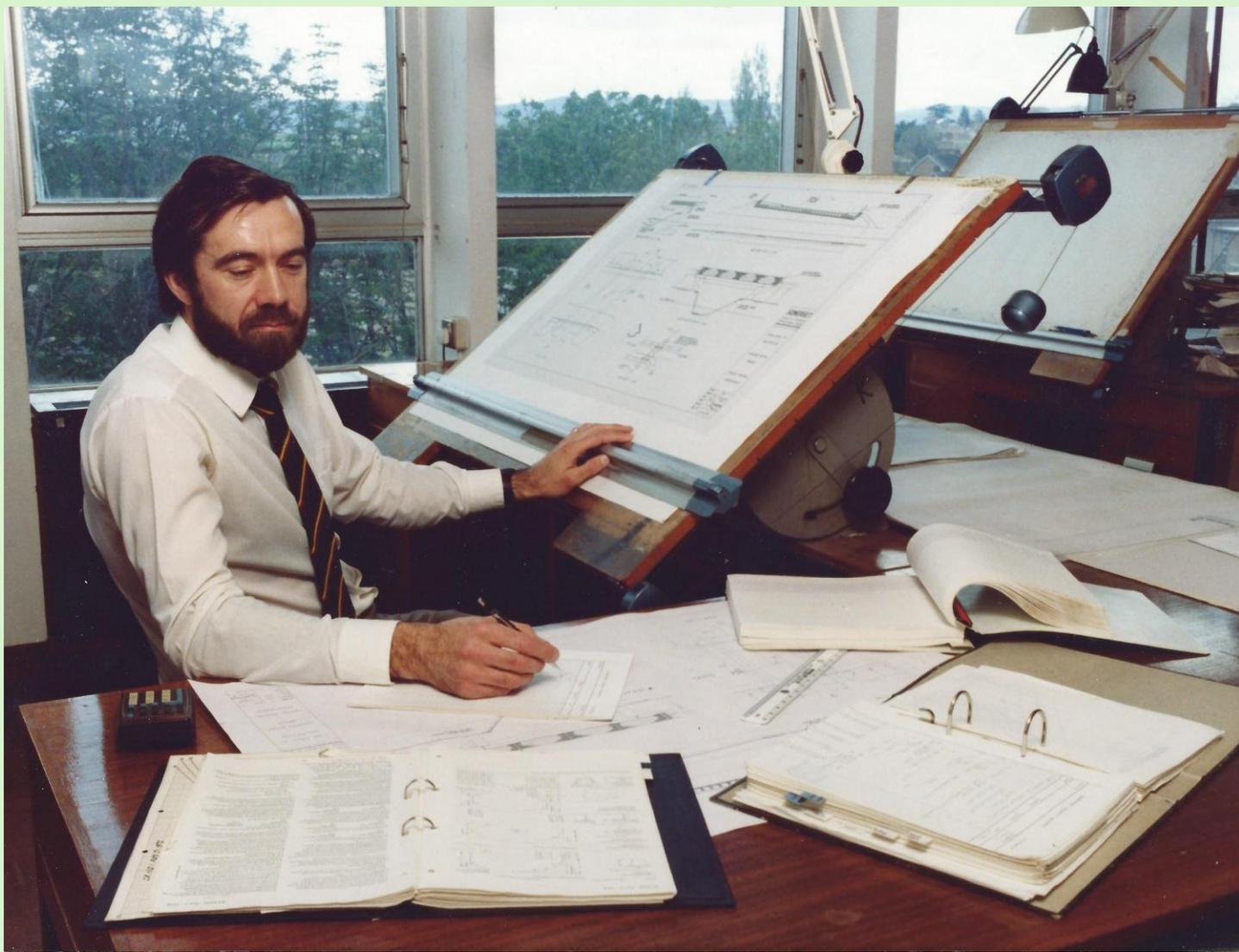
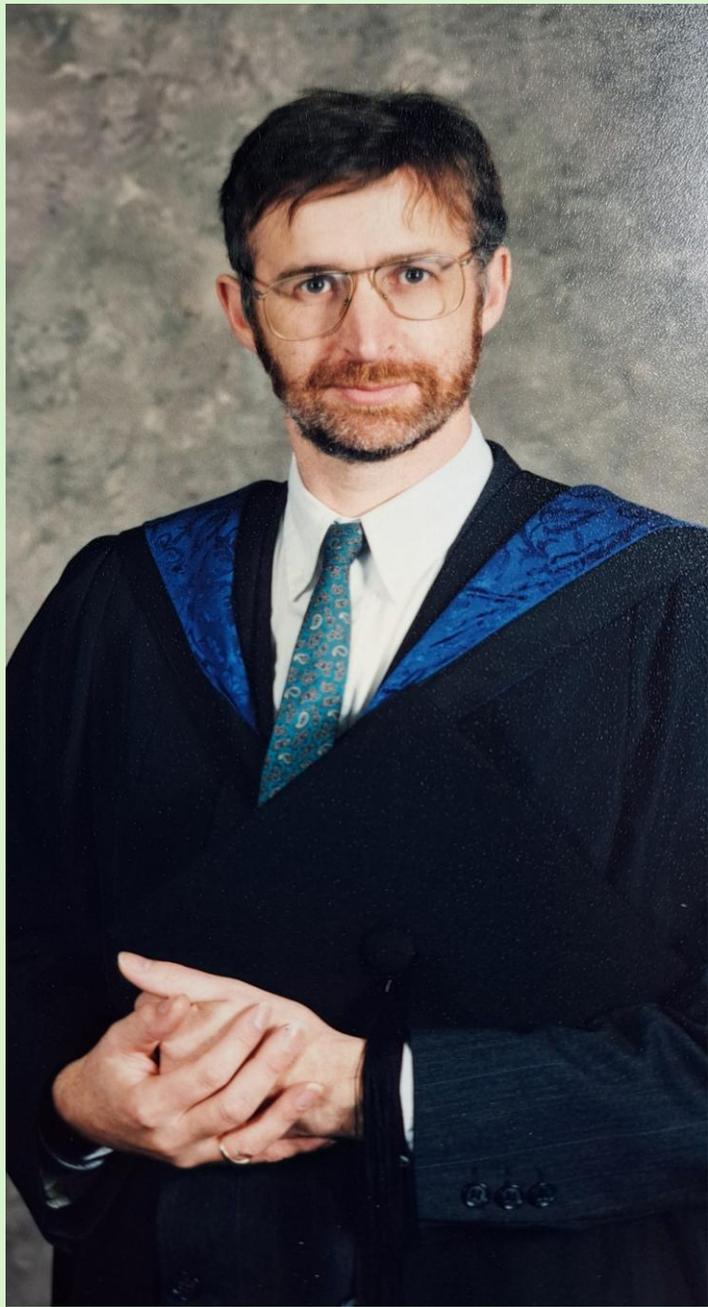
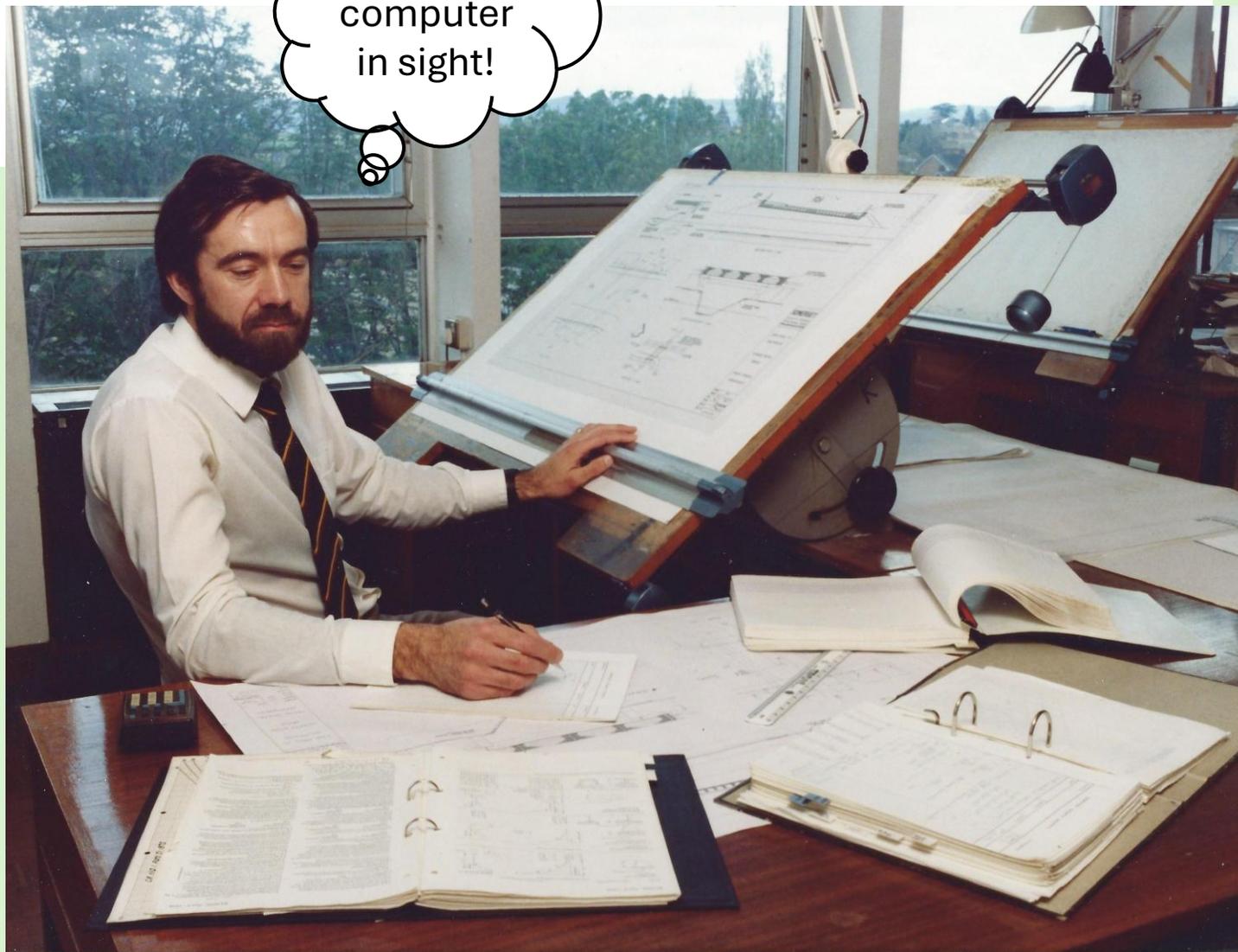
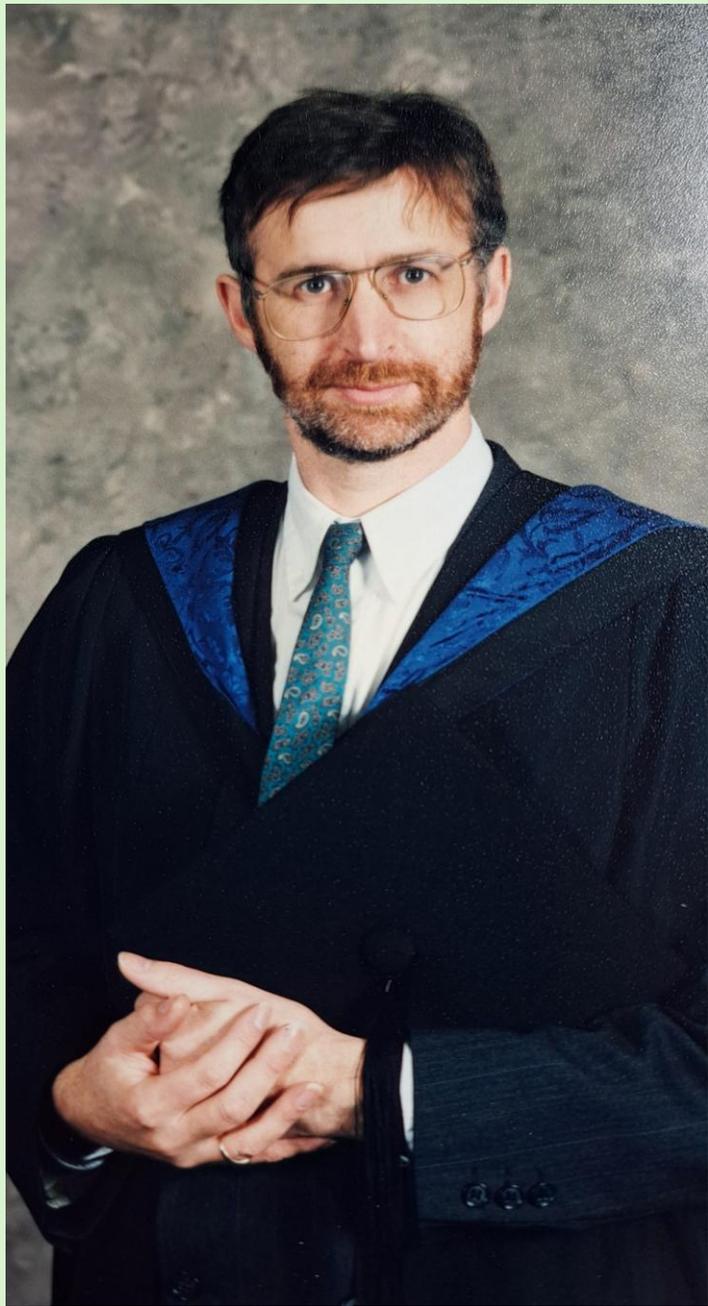




Reflections of 100 years' experience
Graham Cole and Richard Fish

**Career Highlights
and
Greatest Hits**

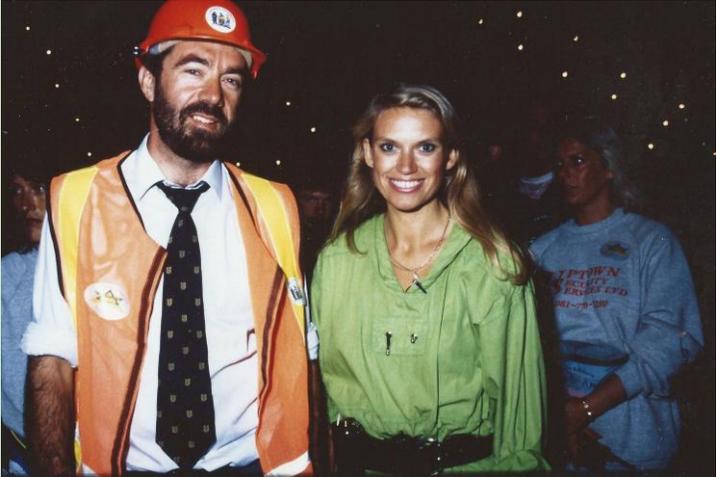












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Bridge Failures and Lessons Learnt

Future-proofing to prevent disasters



Richard Fish



BOF 1 – 21st November 2000

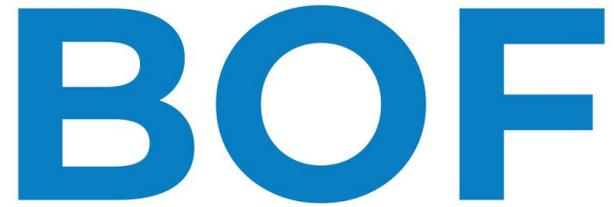
BOF 3 – 17th July 2001

- First mention of a Tech Sec: Graham Cole!

BOF 7 – 19th November 2002

- John Menzies first meeting as Tech Sec

John Clark	BRB (Residuary) Limited
Geoff Medd	BRB (Residuary) Limited
John Powell	British Waterways (Technical Services)
Greg Perks	County Surveyors Society
Graham Cole	County Surveyors Society
Ian Holmes	DETR
Ronnie Wilson	Department for Regional Development (Northern Ireland)
David Yeowell	LoBEG/LoTAG
Jim Moriarty	London Underground Limited
Brian Bell	Railtrack
Brian Swan	SCOTS Bridges Working Group
Raymund Johnstone	Scottish Executive
John Collins	Welsh Assembly
Barry Mawson	Welsh Association of Technical Officers
Roger Salmon	King's College, Cambridge
Campbell Middleton (Chairperson)	Cambridge University

The logo for the Bridge Owners Forum (BOF) features the letters 'BOF' in a large, bold, blue sans-serif font. The 'O' is a solid circle. The letters are centered within a white rectangular box that has a thick black border.

Bridge Owners Forum

BOF 30 – 19th January 2010

- Tech Sec change – John Menzies to Richard Fish

BOF 77 – 5th November 2024

- Tech Sec change – Richard Fish to Keith Harwood

BOF on tour - 2014



2016



2019



2022



So... what's changed in 50 years?



1970s to 2020s

Then:

- Motorway and trunk road programmes – Road Construction Units
- Local highway authorities – all led by a County Surveyor (CEng) and trunk road maintenance agents.
- All bridge expertise within County Surveyors Society Bridges Group (including DfT, RRL, British Rail etc.)
- Road Research Laboratory – centre of excellence
- Department for Transport – another centre of excellence and well supported HECB suite of design software
- ICE Conditions of Contract – Resident Engineer, Clerks of Works
- Good working relationships with 3rd parties: British Rail, BWB, Statutory Undertakers
- Stuff got done!

TRL Reports

Design of bridges with external prestressing: construction and testing of a model bridge

Woodward and Daly. TRL 392. January 1999

Design of a bridge with external prestressing: design example

Daly and Jackson. TRL 391. January 1999

The effectiveness of sub-standard shear reinforcement.

Daly. PPR 215. April 2007

Strengthening of concrete structures using near surface mounted FRP reinforcement.

Daly, Shave and Denton. PPR 053. October 2006

The assessment of filler beam decks without transverse reinforcement

Low and Ricketts RR 383. January 1993

The UK Highways Agency advice notes on the non-destructive testing of highway structures.

Forde et al. PA-INF-4497-05. April 2005.

Automated inspection of highway structures - stage 2.

Mc Robbie et al. PPR 255. December 2007

TRL Reports (Contd.)

Application of bridge deck waterproofing to concrete aged 3 to 28 days.

Calder et al. PPR 154. December 2006.

The performance of surfacing overlaying bridge deck waterproofing

Jordan et al. PPR 221. August 2007

Assessment implications from tests on a model concrete beam and slab bridge

Daly and Cullington. RR309. January 1991

Flexural and punching shear strengths of concrete beams and slabs.

Clark and Thorogood. CR 060. January 1987

Load tests to collapse on two arch bridges at Strathmashie and Barlae.

Page. RR201. January 1989

Waterproofing of concrete bridge decks: site practice and failure

Price. RR317. January 1991

Temperatures of bridges during the hot summer of 1976.

Emerson. LR783.

TRL Reports (Contd.)

**Load tests on a reinforced beam and slab bridge at Dornie
Ricketts and Low. RR377. January 1993.**

Collaborations: CSS/HA/TRL

**Repair of concrete in highway bridges: a practical guide.
Pearson and Patel. AG43. 2002**

**Water management for durable bridges.
Pearson and Cuninghame. AG33. 1998.**

**Practical guide to the use of bridge expansion joints
Barnard and Cuninghame. AG29. 1997.**

1970s to 2020s

Since then:

- 1980s: RCUs sold to consultants
- Compulsive competitive tendering (Private sector must be better than public sector).
- Client/consultant split in County Councils – and externalisation.
- Arm's length quangos – Highways Agency, Highways England, National Highways
- Demise of TRL
- Reduced site supervision in favour of self-certification
- No more County Surveyors. Who needs experts?

Now

- Fee competition – a race to the bottom?
- An ageing post-war bridge stock needing urgent investment
- Issues of capacity, capability and competence in the sector
- Salami slicing of maintenance budgets
- Still an emphasis on new build as opposed to maintenance
- A fatal collapse waiting to happen?

But...

There are positives from the last 24 years:

- 2005 Code of Practice (although no longer the force it was)
- BOF Grand Challenges
- BOF supported CIRIA research guides:
 - Masonry arches
 - Dry stone walls
 - Metallic structures
 - Defects in hidden components
 - Safety critical fixings
 - Plus many other non-CIRIA research projects
- And... the need for competency accreditation for bridge inspectors!

But...

- There are also positives in improving networking and knowledge sharing
- You are not alone!
- UKBB, BOF, ADEPT, ABG exemplars
- But BOF reaches the parts that others cannot reach.
- But are we fiddling while Rome burns?
- Bridges need a voice
- So... long live BOF!

**BRIDGE
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Grand
Challenges

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