



Ian Firth
BSc, MSc, DIC, CEng, FREng, FStructE, FICE

2017 President of The Institution of Structural Engineers

I have just passed the halfway point of my Presidency, so it is not a bad time to reflect on the past six months. In the May issue of *The Structural Engineer*, I reported on my visits to Regional Groups and some other key meetings which I had attended up to that time. They included visits to five UK Regional Groups and four international trips, and since then I have visited four more UK groups (Midland Counties, Chester and North Wales, Thames Valley and Western Counties). As before, I have been made to feel very welcome everywhere I go. I have also hosted or attended several key meetings and conferences at the Bastwick Street HQ as well as elsewhere. All in all, it has been, and continues to be, a very busy but interesting and enjoyable time.

But I feel that I must start this report with the event that has dominated so much of my/our thoughts in recent weeks, which is, of course, the tragic fire at Grenfell Tower in London and its potential consequences. My prayers are with those directly affected by this ghastly tragedy – those who have lost family, friends and, in many cases, everything in the fire.

Industry under scrutiny

We await the terms of reference of the public inquiry into the fire, but do know that there is already a criminal investigation under way. It is therefore too soon to talk about the specifics of Grenfell, and it would be wrong to speculate (as some are doing) about exactly what was wrong with the building. Nonetheless, within all of this, there is likely to be a high level of scrutiny both on the adequacy of the built environment and construction sector, and additionally on the extent to which professional advice and recommendations were sought, ignored or poorly observed.

Only time will tell whether these were factors at Grenfell, but it is already clear

President's mid-year report: an industry under scrutiny

that some of these issues were relevant in the problems highlighted in the Edinburgh Schools Inquiry report, published in February – just a few months before Grenfell. That particular incident concerned the collapse of some 9t of masonry at a school in Edinburgh, which was thankfully unoccupied at the time. Subsequent investigations revealed similar circumstances at a number of other schools in the area. The Inquiry report is well worth reading in full¹, and there is also an excellent SCOSS Alert on the subject which I commend to you².

Need for professional oversight

The Edinburgh report has thrown this issue of adequate professional scrutiny (or the lack of it) into sharp focus, but it is interesting that I have also been hearing similar concerns from several members on my visits in a variety of different contexts. Almost everywhere I hear versions of the same message from members, chiming with things I have been saying since my inauguration in January; namely, that growing restrictions on consultants' appointment terms make it harder to ensure the desired levels of build quality in the finished structure.

Whether it be due to inadequate scope, insufficient time or – the old nutmeg – derisory fees, our members are finding it harder to ensure that they can deliver the assurances of quality that society reasonably expects, indeed demands (remembering that when it comes to safety, our duty to society is greater than that to our client).

In particular, it is increasingly common for clients to engage structural engineers with a limited scope that does not include for any site supervision or inspection of the construction works, and there is often no clerk of works either. It is worst in design-and-build situations, where it seems that many of us are actively prevented from attending site to make inspections, due largely to dangerously short-sighted penny-pinching on behalf of the client.

When the client is the contractor, this is presumably because of fears that an inspection will require costly remedial work to parts that, in the engineer's opinion, are defective. But apparently this is even occurring when the client is the building owner or the employer in the construction

contract. This is more surprising because you would have thought that the client would welcome occasional site inspections by their consultant to keep an eye on quality, even if they don't want to go to the lengths of appointing a full-time resident engineer.

Perhaps they consider that a visit by an overzealous inspector may result in delays or extra costs due to rework, and this worries them more than the risk of poor quality of the building they have commissioned. So, instead, they rely on self-certification by the contractor under some kind of quality assurance process; but, unfortunately, we know that these can be fallible. I was expressing these concerns even before the publication of the Edinburgh report and it is now clear that these problems were among the causes of that disaster.

Lack of site experience

Being prevented from visiting site to inspect the works is generating another longer-term problem: our young engineers are not getting the essential site experience they need, and we risk growing a generation of designers without that essential practical knowledge. There is something of a vicious circle: young engineers are not getting practical experience. But appointment terms mean that consultants can only afford to send young engineers to site to inspect the works. So the inexperienced engineer might be overzealous in pointing out defects that don't really matter and may miss the ones that really do. Thus, the client obtains poor service and decides to dispense with any consultant supervision, and the young engineer remains inexperienced. Whatever happened to the proper valuation of consultants' advice which allowed for training the next generation?

Time to act

These are worrying trends, and I hear unwelcome echoes of historical disasters which would have been prevented by proper and timely scrutiny of construction work by a properly experienced engineer. We need to act now and take advantage of the opportunity presented by these recent incidents to press home the message about the vital importance of proper professional advice and scrutiny at all stages of a project. The time for change has come.



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Figure 1
Investigations following the Milford Haven collapse in 1970 led to new design and workmanship rules and a requirement for site supervision by the designer

I suspect that we will look back on these two incidents in years to come, in much the same way as we do on other disasters whose names we recognise today as defining a fork in the road. Tragedies such as Ronan Point, the Hyatt Regency hotel and Milford Haven Bridge (Figure 1) became a turning point: the moment when something changed forever in the way we designed and constructed buildings and bridges. Maybe the names Edinburgh and Grenfell will become forever associated with some new change which will be implemented in the coming months to reduce the risk of such disasters ever recurring.

You won't be surprised to know that the

Institution is closely monitoring developments and, through the expertise of its members, providing advice through a number of channels to the investigations, as well as developing reactions to the Edinburgh schools and Grenfell Tower incidents. But whatever else we do, we (and society at large) must learn the lessons from these events in the way we learned from earlier ones, and then, very importantly, not go on to forget them again a generation later.

These issues may manifest themselves differently in other countries and I will be discussing the situation with representatives from some of the international Regional Groups attending the July Council meeting, and will also raise it on my forthcoming visits to South Africa, the USA, Canada, Australia and New Zealand later in the year.

Cause for optimism

Finally, I will finish with a total change of tack to say how much I enjoyed the excellent Young Researchers' Conference (the 19th such event) in April and the Young Engineers' Conference (the second) in July, both of which demonstrated the exciting energy, enthusiasm and growth of our Young Members'

Groups. I really enjoy these events, and I am always encouraged to see such an excellent group of very capable and motivated young engineers developing as the new leaders of our profession. Our future is certainly in good hands!

REFERENCES

▶1) Cole J., Macartney S. and Phillips C. (2017) *Report of the Independent Inquiry into the Construction of Edinburgh Schools* [Online] Available at: www.edinburgh.gov.uk/download/meetings/id/53239/report_of_the_independent_inquiry_into_the_construction_of_edinburgh_schools (Accessed: July 2017)

▶2) Soane A. (2017) 'SCOSS Alert: Inquiry into the construction of Edinburgh schools', *The Structural Engineer*, 95 (4), pp. 24–27

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