

# Upfront

## Economic and safe design of the construction method



**Bill Hewlett** Chairman, UK Temporary Works Forum

I am delighted to have been invited to contribute an editorial to *The Structural Engineer* introducing a new series of articles on an important aspect of construction projects that does not always receive the attention it deserves.

We intend the "Temporary Works Toolkit" to describe the issues and current practice in temporary works and construction method engineering. We have asked leading practitioners to develop the articles with the intent of providing an introduction to the topic, guidance on where to look for further information and – in some cases – a case study or indicative calculations. We also wish to encourage feedback and debate.

Some of the topics we are looking to address are the interface between permanent and temporary works and the role of the Principal Designer under CDM 2015; others will cover the basic issues of loading, load paths and stability. While these are common to all structures, the lack of redundancy and the prevalence of rapidly changing loads in temporary works means that these warrant discussion. The world of temporary works engineering is markedly different from that of permanent works design, notwithstanding that the underpinning science is much the same.

Other articles will be on the challenges associated with particular activities, such as excavations, demolition, refurbishment and frame construction. Some of the activities that we undertake on a regular basis have consistent temporary works requirements, e.g. concrete

frames will usually need back-propping and striking strength assessments, and piling will need working platform design and possibly guide wall schemes.

We will also have some articles on the design of components and elements of work, such as tower crane foundations, facade-retention systems and deep excavation support. Many of these have good established guidance in the form of CIRIA or BRE documents. However, these are often being updated and so these articles will aim to describe the basic approaches and then the current and forthcoming guidance.

One set of articles will focus on the assessment of existing structures for their strength and stability during the processes associated with demolition and refurbishment. They will look at the use of existing codes and as-built information, the use of intrusive investigation and sampling, and the physical testing of elements of the structure *in situ*. There have been some recent collapses during demolition and refurbishment that we can all learn from.

In summary, economic and safe design of the construction method and the associated temporary works are vital parts of our ability to engineer the structures we are so proud of, and love to live with. We hope you find the series engaging, and we look forward to your feedback.

We start this month with a brief introduction to temporary works for the structural engineer (page 30).

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