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This issue of the journal, provides an opportunity to learn from others. Many have said that one sees further by 'standing on the shoulders of giants' (Newton to name one) and indeed this is the very essence of a learned society and the way we all move forward and develop (continuing professional development) I am sure none of our authors would pretend to be giants, but there are lessons here to be learnt.

In their two papers on the design of the elevated Dubai Metro,^{1,2} Smith, Hewson and Hendy give a useful description of the rail superstructure and its supports. Also, more than that, they present a discussion on the difficulties in realistic modelling of such a structure for the various design conditions. They show that it is important to consider the effects of using cracked and un-cracked section properties in the finite-element models; to interpret the results with care and to ensure relevance for the appropriate ultimate and serviceability limit states. Where design aspects of these complex structures were not covered by the base design code of practice, reference had to be made to others. Here too great care had to be taken to ensure compatibility. With the development of comprehensive analytical computer software, these papers remind us that it is the engineers' duty to apply principles and judgement, while not assuming that output from analytical models and codes are universally applicable (or indeed always correct)

For bridge live-loading, designers and codes have allowed for the considerable increase over static traffic-loading caused by dynamic effects for some time. Tests have clearly demonstrated the significance of road surface quality. Generally this has been considered by using a simple factor (Dynamic Amplification Factor) on the static-loading effects. Lauer, Gonzalez and O'Brian show in their paper³ that, by considering dynamic interaction with the bridge, the use of a simple linear relationship, may not be totally correct. Again, it is a reminder of the limitations of our design assumptions.

Robert Maillart was one of the world's significant bridge designers, working in the early part of the last century. His designs are recognised by engineers and architects alike, for their elegance and simplicity in design and for their efficiency. By effectively 'tuning' the proportions of the bridge to carry the various loads and load paths, he was able to simplify the design process at a time when computers were not there to assist. The paper by Micelli and La Tegola⁴ demonstrates this by reference to an existing Maillart bridge requiring restoration and strengthening.

Finally, we have introduced a paper⁵ from 1838 by Pasley, clearly demonstrating that, as a profession, we move forward by building on the work of others. Perhaps we learn most, when things do not turn out exactly as expected.

REFERENCES

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