



**Temporary Works
forum**

Promoting best practice in
the construction industry.

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Blog: Temporary Works Forum (TWf)

Are Clients doing enough to lower embodied carbon in temporary works?

Although the government is the UK's largest client, other clients don't have to wait for the government to legislate prior to taking action. For example, car crash testing is currently, and has always been, at a level far and above that of the standard.

Manufacturers go above and beyond in the knowledge that an independent verifying authority will independently test. When will construction clients follow suit instead of the "race to the bottom"?

When clients issue a project brief that focuses on the required performance and outcome, it allows contractors, designers and constructors to work together to develop an integrated solution that best meets that outcome. With large projects, the brief must be provided sufficiently in advance to allow the supply chain to make informed choices (at their own risk) about where to invest in products, services, technology and skills. In many large projects a lack of carbon knowledge - despite huge targets for carbon reduction being built into contracts - results in progress being pushed rather than innovative solutions. Temporary works is sometimes ignored – and its contribution overlooked – as insufficient research has been put into carbon measurement.

Contracts between contractors and designers must incentivize innovation with pain/gain relationships. If a small increase in rebar cost can save many tonnes of high-risk propping - and result in large savings to everybody - the designer needs to be properly incentivized (in terms of both time and cost) to rationalize these savings.

Informed forethought and consideration of design fee allocation – allowing sufficient time and resource for temporary works designs - is imperative. For example, a permanent works designer taking 90% (say) of a steel frame design fee (by weight), leaving just 10% to complete connection design and temporary bracing (perhaps 90% of the design effort) leads to uneconomical design and waste (including the related CO₂). Clients need to think about risk allocation early on in their projects and consider proper financial reward to match the risk allocation.

Early contractor involvement is key to low carbon design. Clients must understand the importance of this in saving both cost and carbon. Late project decisions are not economic and encourage generic choices that fit all suppliers. For example, an early-engaged, local, proprietary equipment supplier can give economic specialist designs. An early-engaged, local, earth worker can provide low carbon local materials. Perhaps a local glass plant (for example) could divert waste from landfill to provide glass pea-gravel?



With temporary works, clients should allow designers and contractors the freedom to use novel solutions on a risk-based approach as opposed to providing generic, rigid and dated specifications sent out with little thought.

The reduction of carbon in temporary works should be thought about more widely by clients and their advisors:

- Can cement free products and manufactured aggregates be used in temporary works (to a PAS pending long-term durability testing to justify a developed standard)?
- Can topsoil be left in-situ?
- What specification is used for concrete mix designs in temporary works elements?
- A recycled material market maybe lower risk. For example, the temporary works industry could be the testing ground for recycled rubber black top (rather than being snared by a technical approval trap).

Action

Early contractor involvement is key. Clients must take the lead. Manufacturers should be encouraged to review a design, promote product efficiency of product and reduce waste. Design contracts should promote design innovation, particularly in reducing carbon and waste and share the risk/reward. What good practice are you promoting?

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on behalf of Temporary Works Forum (TWf) Working Group 32, Low carbon temporary works

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