The cost of civil engineering works in the UK: areas for examination

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Summary

ACE agrees that there are valid grounds for investigating the cost of civil engineering works in the UK. The objective of any investigation should be to establish whether there are efficiencies that can be made in project processes that could yield significant cost savings without damaging the competitiveness or flexibility of the UK construction industry.

ACE suggests that the investigation into the cost of civil engineering works in the UK should focus on four broad areas:

- Standards of project management, from specification and market testing through to procurement strategies and construction management.
- Workforce capacity and labour costs, including whether there is a disproportionate reliance on temporary contractors and specialist consultants.
- The regulatory framework, including the cost of health, safety and environmental compliance and the efficiency of the planning approvals system.
- The speed and quality of decision making in government.

As part of the investigation process, consideration should be given to creating a National Construction Research Institute. This would support the drive to greater efficiency by coordinating the collection of national and international scale comparative information on the construction process. Such an initiative need not be a new organisation, but could be a "virtual" body formed by sharing resources between key industry, academic and government bodies.

Background

There have been suggestions that, on a like-for-like basis, construction in the UK is significantly more expensive than in comparable countries. In response, in 2010 Infrastructure UK announced its intention to investigate the cost of civil engineering works in the UK.

The new Government will also conduct a major spending review in October 2010, with a view to making significant savings in public sector expenditure. It is likely that construction and infrastructure budgets will face significant pressure, in common with other factors of Government spending.

ACE therefore urges the Government, construction industry and public and private sector clients to engage in an open discussion about the ways in which construction projects are commissioned, managed, delivered and funded. The objective should be to find long term, sustainable efficiencies that help to strengthen the industry and deliver greater value for investors, both public and private.

Existing sources of evidence

There are relatively few large-scale, robust, international comparisons of aspects of the cost of construction. Although the following provide only limited insight into individual phases of projects such as civil engineering works, they are useful in indicating some potential areas for investigation.

Eurostat: Comparative price levels for construction in 33 European countries for 2005[1]

Published in 2007, this report compared indices of construction costs across EU and non-EU European countries. The United Kingdom was found to be the seventh most expensive country in the comparison. The UK ranked above France, Germany, Belgium and Finland, but was significantly less expensive than Sweden and Switzerland.

[1] http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-SF-07-108/EN/KS-SF-07-108-EN.PDF

Residential construction demonstrated the greatest dispersion in prices, with civil engineering works being the most homogeneous. The Eurozone was found to have the smallest variation in prices from country to country.

Given that the countries with the lowest overall costs of construction were mainly former Communist countries of eastern Europe, the findings suggest that labour costs could play a significant role in cost disparity.

Turner and Townsend Construction Costs Survey 2009[2]

Turner and Townsend's study, published in January 2010, examines such factors as labour costs and the typical costs of common construction jobs and projects.

Examples of findings include:

Building cost per m^2 (US$, 2009)						
Country	**Townhouse, med standard**	**Primary and secondary schools**	**Offices, business park**	**High tech factory**	**3 star hotel**	**Regional hospital**
England	1,200	2,528	2,385	2,385	1,908	3,997
Scotland	1,000	4,452	1,972	--	--	3,578
Ireland	1,512	1,722	1,820	4,620	2,380	4,900
Germany	2,464	1,652	1,596	2,205	1,708	3,052
Australia	1,014	1,494	1,374	1,162	2,092	2,558
China	560	490	616	742	770	714
Dubai	1,782	2,214	1,269	--	2,160	--
India	400	200	540	740	714	600
Russia	800	--	1,267	2,752	1,901	--
Singapore	1,932	1,035	1,380	1,932	1,863	2,070
South Africa	720	600	600	720	960	840

The full findings seem to suggest that the cost of residential construction in England is quite competitive compared to countries such as Germany, Ireland and Australia. However, higher costs in England were seen in categories such as hospitals and schools. This may suggest that UK public sector projects could warrant close investigation to see if there are particular process inefficiencies that can be addressed.

[2] http://www.turnerandtownsend.com/ICCS_Report__2009_UAS2v.pdf.file

Commission for Integrated Transport: high speed rail international comparison[3]

Published in 2004, this study compared the cost of high speed rail construction in several countries with the Channel Tunnel Rail Link (CTRL). Among its findings, the report highlighted that CTRL was the most expensive system per kilometre of those compared. CTRL's headline cost (a little over €70m per kilometre) compared unfavourably with the next most expensive (HSL Zuid in the Netherlands at almost €50m/km). CTRL was also around twice the cost of Japan's Thoku Shinkansen.

Reasons for the apparently higher UK construction costs were suggested to include:

- **Higher land costs.** In Spain, for example, government land is often available free of charge for transport projects.
- The **use of existing rail corridors** for high speed lines in some countries. CTRL was, by comparison, almost entirely composed of new permanent way.
- Greater costs of complying with **health, safety and environmental regulations**.
- A slower **planning system** in the UK compared, for example, with France (where it is very difficult for objectors to stop a project once the government has made a decision in principle).
- A slow **project approvals process** in the UK, resulting in costs incurred preparing projects that are delayed or cancelled. This is attributable largely to changes in policy priorities and funding availability.
- A desire for **iconic designs and architecture** in UK transport projects.
- **Gold plating** of other, less necessary project elements in the specification.
- **Changing specifications** mid-project, for example during the West Coast Main Line upgrade.

[3] http://cfit.independent.gov.uk/pubs/2004/hsr/research/index.htm

- **Possession costs** where the new route meets the existing network.
- **Professional staff costs**, estimated to be around 25 per cent of the total cost of CTRL. This could be avoided by building projects in stages to ensure workforce capacity for the long term, thus reducing reliance on consultants.

The need for further evidence

The three reports referenced in this paper provide useful insights, but are not in themselves conclusive evidence. There will always be a need for updated, quantitative data on various aspects of the construction process.

Barriers to collating the required evidence include the effort and coordination needed to collect data in volume, and potential issues of commercial sensitivity which may discourage organisations from releasing data.

It may be useful – albeit difficult – for a suitably equipped organisation to investigate such factors as the direct cost impact of regulatory compliance, the comparative costs of planning approvals systems around the world, the impact of different procurement strategies (e.g. design and build versus traditional contracting), and the cost implications of changing specifications mid-project.

Such factors would help to focus more closely on areas where genuine efficiencies can be achieved.

Towards a National Construction Research Institute

To help overcome such barriers, a National Construction Research Institute could be established. This could be a virtual organisation formed by coordinating the existing workstreams of organisations such as:

- Leading university construction departments;
- Industry representative bodies such as the professional institutions, trade bodies and the Construction Industry Council;

- BRE;
- The National Audit Office; and
- The Office for Government Commerce.

The aim of the new Institute would be to ensure that research into construction processes – including technical, commercial, societal and environmental factors – are coordinated and complementary.

The Institute could enable research organisations to share resources and data, thus increasing transparency and enabling larger scale research to be conducted.

Findings of the Institute's work could be used by, for example, Infrastructure UK and major construction clients to inform strategic planning, programme management and project delivery.

There would be some additional costs in setting up and maintaining the virtual centre, but the majority of work would be funded through existing construction research funding streams. The key benefits would be to bring together disparate sources of funding and achieve economies of scale, particularly in the current climate where research funding is under pressure.

As a predominantly virtual organisation, it would differ from existing construction research institutes such as those in operation in Canada[4] and the USA[5]. The UK's Institute could be modelled to a degree on earlier initiatives such as the Knowledge Transfer Networks.

Such an arrangement could also help to overcome concerns about commercial sensitivity by putting formal structures in place that could address data security issues effectively.

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[4] http://www.nrc-cnrc.gc.ca/eng/index.html
[5] http://content.constructioninst.org/

Further details

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