



Infrastructure in the New Era

Constructing Excellence and Pinsent Masons LLP



Acknowledgements

This report has been written by a team and is based upon the views and opinions of a wide range of practitioners within the infrastructure sector who attended four roundtable discussions, chaired by Martin Rowark.

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Executive Summary

The current economic crisis has changed the landscape for all involved in the UK construction industry.

No longer able to rely on a healthy economy for continuing prosperity companies have to rethink their approach to business and consider how they will survive the recession and maximise the opportunities as we emerge into a new economic and political era.

In October 2009, the Constructing Excellence report *'Never Waste a Good Crisis'*, identified that the infrastructure sector had made considerably better progress than many other sectors of the construction industry in its attempts to reform and improve since the publication of the Egan Report over a decade ago.

This report seeks to understand the key drivers for this change and presents a manifesto for further improvement in the infrastructure sector – a key part of the construction industry.

Constructing Excellence and Pinsent Masons set out to engage with the clients, consultants and supply chain contractors, specialists, product manufacturers, suppliers within the infrastructure sector to examine the approach being taken towards collaborative working and to understand their views to implementing change to the way in which infrastructure assets are procured, delivered and managed, particularly in the current economic climate.

In undertaking this work, we defined the infrastructure sector to encompass both economic and social infrastructure.

There was a mutual exchange of ideas with Infrastructure UK throughout the process of our dialogue with all parts of the infrastructure sector that informed the development of the Infrastructure UK Implementation Plan.

Vision

A vision for *'Infrastructure in the New Era'* emerged from a series of key roundtable discussions. Significant common ground also emerged on an action plan for change and improvement to the way in which infrastructure assets are procured, delivered and managed.

The vision is an infrastructure sector where clients clearly understand their needs, build on those needs to define their requirement in terms of business outcomes and select and work closely with integrated supply-chain teams that develop and manage infrastructure assets over their lifetime, to deliver that requirement, supported by clear commercial and governance structures.

'Intelligent clients' have a holistic view on the core needs of their own business and long-term development programmes that achieve those needs. They have a focus on the performance of infrastructure assets over their lifetime, rather than a narrow focus on projects and capital cost. Intelligent clients are also lean, but bring together in-house inter-related capabilities, including expertise in procurement and contracting strategy, design and technological know-how, capital project and programme management as well as facility management and asset management capabilities, knowledge of project finance, understanding of alternative models of programme governance, leadership and stakeholder management skills.

It is recognised that not all infrastructure clients have yet fully developed their in-house capabilities and developed the inter-related capability as intelligent clients of the future. Many clients have already embarked on change programmes that will develop their capability for the future, including BAA and the newly formed Defence Infrastructure Organisation, which provide models for other clients. The water infrastructure sector and some transport infrastructure clients also provide such models that will assist other clients develop their capabilities.

Constructing Excellence will continue to work closely with its members, Manchester Business School and others to provide support for client and supply-chain organisations in the infrastructure sector to define and develop client and supplier leadership capabilities and to guide the development of advanced executive education.

Commercial Alignment

New business models are required which align and reward the supply side for delivering better value with regard to achieving delivery goals as well as goals for the performance of infrastructure assets over their lifetime.

Collaborative working is a critical factor for the successful delivery and management of high-risk, high-value infrastructure assets.

The alignment and integration of capital project delivery and operational requirements should be investigated as well as the opportunity for the supply-side to take a stake in the performance of infrastructure assets over their lifetime, and thereby help to unlock value.

Constructing Excellence will work with Manchester Business School and others to promote collaborative working in the infrastructure sector and to encourage commercial alignment, particularly through innovation in funding, contracting and procurement models.

Compete for Value

Competition between suppliers is healthy, and the right basis for this competition is required to help deliver value.

Client teams need to base competition between suppliers upon the whole life performance of infrastructure assets, including outturn delivery and operational costs supported by a deep understanding of business needs and the need for long term collaboration, rather than simply initial tender prices.

Constructing Excellence will continue to develop, validate and support new methods for achieving value through competition, in partnership with government, clients and others.

'Should' Costs

Investment is needed in research, at different levels, to ensure that government and other infrastructure clients develop a clear understanding of the actual cost of their assets over their lifetime, including both capital and operational costs.

Constructing Excellence will engage with clients, suppliers, Infrastructure UK and infrastructure asset regulators to ensure that good benchmarking takes place across different infrastructure sectors such as rail, air, road, water

and other utilities, and that accurate data on the cost of good quality is available to procurers.

Early Involvement

Operational managers, specialist contractors, product manufacturers and suppliers are too often excluded from early decisions which have the greatest direct influence over asset delivery and performance, yet it is their operational strategies, products' installation and performance which determine long-term success.

The optimal early involvement of asset maintainers and supply-side partners in the planning, and design stages of new infrastructure assets is therefore critical to improving efficiency and productivity of delivery, increasing flexibility and adaptability to accommodate ongoing change in requirements, and reducing waste in all its forms.

Constructing Excellence will continue to seek demonstrations of alternative approaches to early involvement and the identification and dissemination of the benefits that flow.

Integrated Supply Chains

Integrated delivery teams and supply chains need to evolve to deliver better value. These may take the form of one-stop shop organisations, alliances, joint ventures or special purpose vehicles. The key is to offer clients seamless and integrated whole-life solutions – a complete infrastructure asset from planning design to delivery and asset life management service to support business outcomes.

Constructing Excellence will work with Manchester Business School to understand the needs of infrastructure clients and to determine approaches that are best suited to meeting those needs.

New Processes and Tools

Success for intelligent clients and their supply chain partners needs the adoption of better processes, and tools help to facilitate these. We welcome the Government's acceptance that Building Information Modelling (BIM) and Management will facilitate collaborative working and deliver better integration of the design process to improve the quality and efficiency of delivery, operation and maintenance.

Constructing Excellence will work with the government and other industry bodies to ensure that BIM is established as a standard industry tool.

Greater standardisation of delivery and operational processes, investment in modular products through standardisation of interfaces, clear mapping of functions to building components and development of tests to validate the functioning of the overall system once the components are put together are other tools and methods critical to achieving better value solutions and high performance in delivery and operations.

Constructing Excellence will continue to prompt new innovations and to measure and review their success to demonstrate their impact.

Use the Contract

Modern collaborative forms of contract, such as the Engineering and Construction Contract (NEC), have been successfully adopted in the infrastructure sector. These seek to align risk and reward with the collaborative working behaviours essential to success and provide the tools for effective project management. It is important that those involved understand how to use standard and innovative contract mechanisms to align the interests of clients and suppliers. It continues to be demonstrated that far too few understand the management, organisational, and commercial principles on which the NEC is built to deliver the benefits of such forms of contract.

Constructing Excellence will work with Pinsent Masons to develop and deliver project-based workshops on the NEC in practice and provide training in modern procurement techniques for the implementation of collaboration based contracts.

Lean Processes

Lean management, derived from the Toyota Production System, is a proven approach to manage and organise work, and identify and remove waste in production processes implemented across a wide range of advanced manufacturing and capital goods industries

worldwide. Its introduction into the design and construction industry has been slow due to a conflation of reasons including organisations' reluctance to make the necessary capital investments in an industry that is predominantly project-based, a lack of collaborative working on projects, inadequate commercial and procurement practices, and high levels of fragmentation within the industry.

Constructing Excellence will facilitate sector-specific activity, where it does not already exist, to search for the most effective ways in which lean principles and practices can best be translated and applied to deliver value in sectors as diverse as transport, water and power.

Government Long-Term Plan

The Government's National Infrastructure Plan provides a long-term view of the UK's infrastructure needs. It is vague on who might fund this investment and how it might be delivered, let alone on how capital and operational budgets might become single Asset Life Budgets.

Constructing Excellence will maintain its dialogue with Government, private sector funding organisations and clients to improve the quality of the National Infrastructure Plan.

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Front Cover Image

Copyright Crossrail Ltd and Canary Wharf Group – Cross-section of the Crossrail Canary Wharf Station which shows the six-storey structure from track-level to the roof-top garden. The station's retail scheme is designed by Foster + Partners. The station itself is designed by Tony Meadows and Associates. The park scheme is designed by Gillespies. The structural engineering and building services is undertaken by Arup.

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