

Government Construction Strategy

2018 Update

ICE Submission – Executive Summary

Since the publication of the 2016 – 2020 Government Construction Strategy there have been a number of commitments to different ways of working between Government and the wider construction industry including the commitment to offsite construction from 5 Departments, the announcement of the Construction Sector Deal and the publication of the IPA's TIP report with the commitment to better alignment of outcomes, smarter infrastructure and improved procurement processes. To deliver on a step change in the Government/Industry relationship.

After consulting with experts in these areas ICE suggests there are 5 areas of priority and 12 specific recommendations which should be included in the GCS to deliver this step change in relationships:-

1. Commercial Strategy

Aim: - To use Government's substantial influence effectively and consistently to stimulate a more sustainable and productive construction industry.

Recommendation 1: - To enable industry to evolve, Government should seek to adopt the 6 commercial principles set out in the Project 13 Commercial Handbook to consistently create the best environment for their relationship with industry.

Recommendation 2: - In their role as an Asset Owner and Investor, Government should seek more intelligent ways to organise competition by moving the emphasis away from competing lowest tendered capital cost to demonstrate value. Instead incorporating a positive incentivisation to outperform on a range of success criteria aligned with project outcomes against a benchmarked budget.

2. Procurement Process

Aim: - To develop an approach to the procurement process which provides transparency and demonstrates value to the public sector whilst minimising the burden and costs of bidding for industry.

Recommendation 3: - Incorporate the ICE produced best practice guidance in the training and development of procurement and commercial staff within the Government Construction Board member organisations and throughout Government Commercial Function.

Recommendation 4: - The tender process itself should be reviewed and streamlining targets set for the use of concise and focused standardised assessment methodologies, including introducing limits to the length of tender documents. There should also be assurance checks for ensuring procurement documentation aligns with project outcomes and business cases. Finally the use of standard prequalification sites such as Construction Line should be expanded to reducing the burden of tendering for SMEs.

3. Contracting approach

Aim: - To provide a fair, open and transparent contract which supports the intent of the commercial strategy and the procurement process to successfully deliver the programme outcomes.

Recommendation 5: - The approach of 2 stage open book contracting should continue to be championed including options for how it can be developed to apply the benchmarking data from both the Transforming Infrastructure Performance and Transport Infrastructure Efficiency Strategy programmes.

Recommendation 6: - Where possible Government should continue to promote the use of Project Bank Accounts while considering a more sustainable reward mechanism based on a guaranteed minimum fee and additional incentives available for value added to overall programme outcomes as set out in the Project 13 commercial handbook. Where a Project Bank Account is not suitable Government should insist on within 30 day payment terms throughout the supply chain and provide a digital system to monitor performance against this target.

Recommendation 7: - On Major Projects the Government should roll out widely Owner Controlled Insurance Programmes (OCIP) and explore the potential for programme level professional indemnity cover.

Recommendation 8: - The Government should insist on minimising amendments to NEC contracts throughout the supply chain, reducing the use of Z-clauses and avoiding unnecessary amendments which upset the balance of risk and reward undermining contract intent.

4. Risk Management

Aim: - To improve the visibility and mitigation of cross departmental risks resulting in increased delivery confidence and optimal use of available funding.

Recommendation 9: - Government Construction Board supported by HMT should develop the capability and take a proactive approach to understanding and mitigating cross departmental planning and delivery risks which impact on the infrastructure portfolio, such as taxation, skills, supplier performance, industry sustainability and immigration policy.

Recommendation 10: - Introduce a standardised more collaborative approach to risk measurement and mitigation across departments where risk is not transferred through contracts to the supply chain but instead suppliers are incentivised to help mitigate it.

5. Asset utilisation through digital transformation

Recommendation 11: - In line with the recommendations from the NIC's Data for the Public Good, we recommend that the Government Construction Strategy builds on this by formally recognising asset data as an asset in its own right – putting in place steps to value and maintain it appropriately to achieve best outcomes for users for the full life of the asset

Recommendation 12: - The next GCS should continue to embed BIM L2, and to build the foundations for future roll out of BIM L3 and L4 shifting the focus from construction of new assets to developing data to improve management of the existing asset network through mandating the standards and developing the capability of asset owner organisations to manage and apply data in decision making.

Commercial Strategy

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The six principles of the commercial approach

There are six key commercial principles which support a more productive and collaborative relationship with the supply chain. If any of these are missing it will undermine the productivity and performance, they are critical to creating the right environment. All of the more specific recommendations later in the paper aligns to these fundamental principles.

1. Alignment

The commercial performance measures are aligned to delivery of outcomes to the customer/end user; this ensures all partners work collectively in the best interests of the end user rather than introducing commercial tension across contracts. See Figure 1 below.

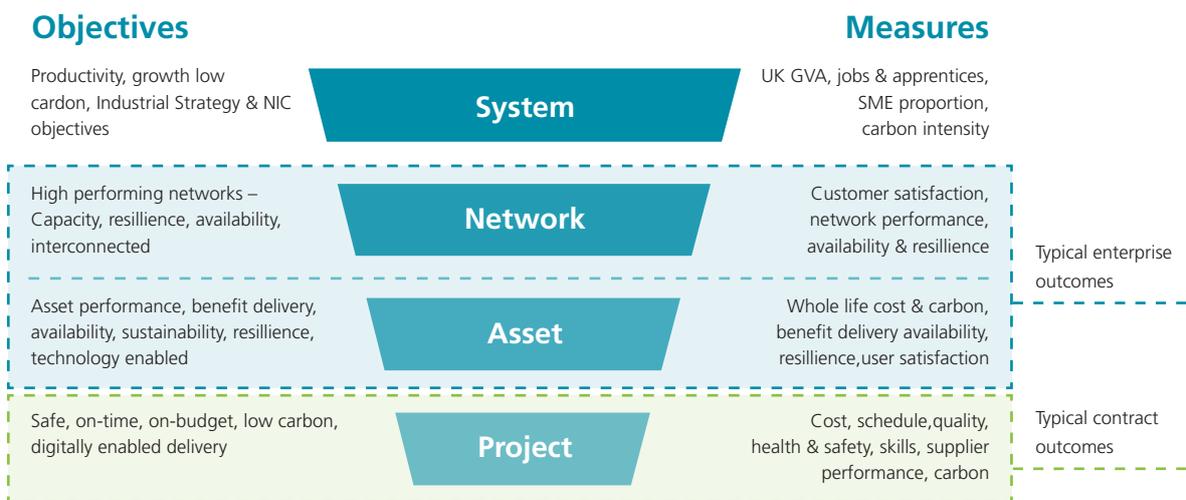
2. Reward

The reward mechanisms in the enterprise structure are based on value added in exceeding the outcomes, not competed lowest cost for a component. This way each party shares the interface risk between organisations and it also ensures reward is linked to a quality performance rather than volume of work/hours put in.

3. Risk

Risks that the owner or investor are accountable for are not transferred to the supply chain, instead all parties in the enterprise are given incentives and potential reward based on their ability to mitigate the risks.

Figure 1. Objectives and measures in an enterprise, adapted from Transforming Infrastructure Performance.



4. Engagement

The enterprise comes together at a much earlier stage in the asset enhancement/creation lifecycle; shortly after the need has been identified the owner will engage the Integrator. This allows for pooling knowledge, expertise and application of innovative solutions in solving the problem.

5. Scale

The enterprise model yields the greatest benefits when applied across asset networks not just small scale individual projects or to deliver component parts of programmes.

6. Time

The relationships between organisations last over a longer time period, incentivising investment in skills and tailoring of supply chain business models. This combined with asset network level scope will improve productivity through changes to ways of working; enabling innovations that require long term commitment for payback such as delivery methods like offsite construction.

What will this mean that industry can do differently to support the Government's ambitions around modern methods of construction/manufacturing?

The commercial approach in Project 13 combined with the increased levels of collaboration support the Government's ambitions for the industry by:

- **Providing sufficient scope for efficiency, productivity and innovation**, so that suppliers can invest in more productive methods of construction which will pay off across a larger programme.
- **Long-term relationships with closer collaboration**, allows suppliers and advisors to get to know their customer (the asset owner) better and adapt and develop appropriate methods and products for their needs.

- **Integration**, by bringing together advisors and different levels of suppliers jointly to work with the owner the combined expertise can be used to develop and deploy modern methods rather than introducing competition across contracts.
- **Earlier, strategic engagement of the supply chain**, allows better joint scoping of potential application of modern methods, therefore increasing the chance of successful and productive deployment.

How does this provide the right structure for suppliers to invest in improving their capabilities?

- **Long term relationships with closer collaboration**, this allows suppliers and advisors to get to know their customer (the asset owner) better and adapt and develop skills and behaviours for their needs.
- **Enterprise partner selection**, based on individual's skills and expertise rather than company expertise, so suppliers invest more in developing all staff.
- **Reward for impact on outcomes**, so that suppliers and advisors are rewarded for the quality of the service and input they provide rather than the quantity.
- **Consistency**, asset owners who follow the Project 13 principles will act with a degree of consistency which helps industry focus their skills development.

Recommendation 2: - In their role as an Asset Owner and Investor Government should seek more intelligent ways to organise competition by moving the emphasis away competing lowest tendered capital cost to demonstrate value. Instead incorporating a positive incentivisation to outperform on a range of success criteria aligned with project outcomes against a benchmarked budget.

Further information on this approach can be found in the Project 13 Commercial Handbook.

Procurement process

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ICE Procurement Best Practice Guidance - Principles

The ICE's procurement advisory group have researched developed a guidance note building on the Project Initiation Routemap procurement module with the aim of incorporating the latest best practice in procurement strategies, plans and processes for construction projects.

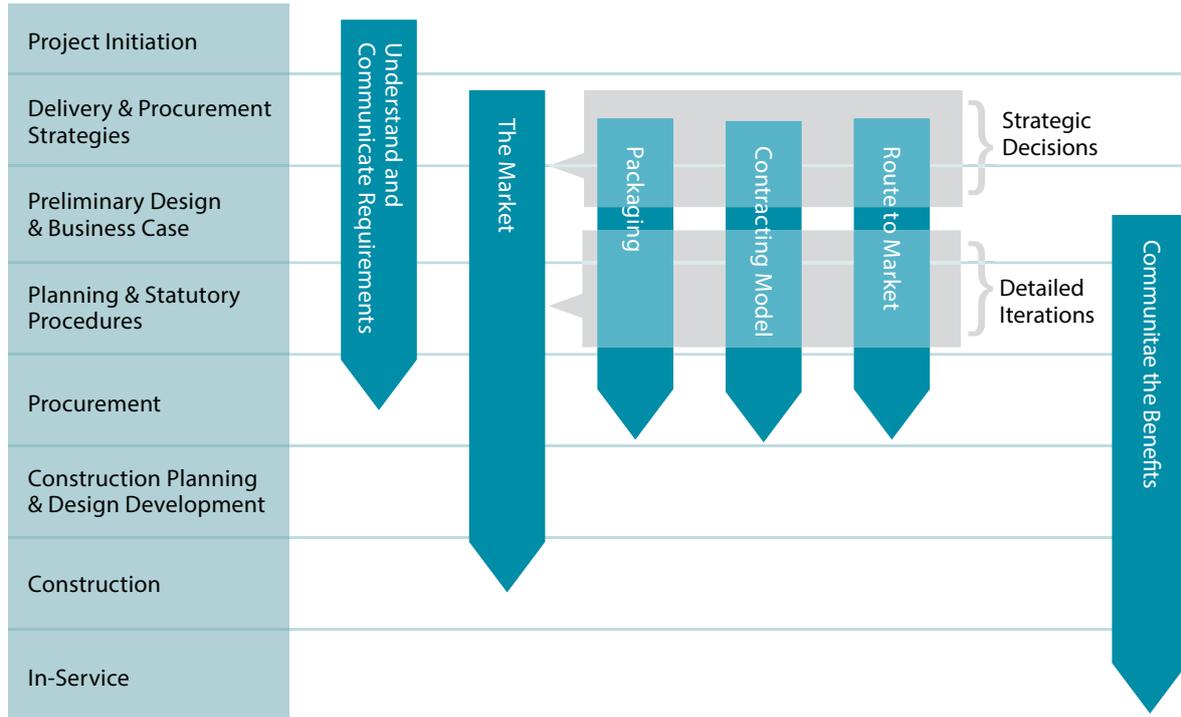
The headline principles are included below and the full document can be found online here.

The Institution of Civil Engineers (ICE) believes that the key strategic principles for procurement, commercial and contracting arrangements are:

- the enterprise¹ understands its capabilities, whether it is a mature or developing construction client, and the degree to which it will undertake the client role itself;
- the enterprise is clear from the outset about its key objectives and required outcomes over the whole life of the project, and builds these into the procurement process, avoiding unnecessary change;
- the enterprise undertakes market consultation and engagement to ensure good awareness of its requirements; to shape the procurement for the better; and to provide valuable intelligence on market capability, capacity and appetite;
- from the outset, the enterprise considers the packaging the entire project into contracts taking into account factors including design responsibility, management of interfaces and encouraging innovation;
- for programmes of work that require multiple contract packages, the enterprise considers how to integrate and incentivise contractors working on different packages throughout the programme lifecycle;
- contracts are developed to respect the principle that the enterprise, its lead contractors and the wider supply chain are partners in the success of the project, which is much more likely if there is a fair balance of risk and reward; and
- the enterprise designs, manages and assures that procurement processes to uphold the principles of equal treatment, transparency and proportionality and they should be able to expect an equivalent approach by contractors in return.

¹ This guidance note uses the term 'enterprise' to refer to the client body. It applies mainly to public sector Contracting Authorities, but is also relevant to private sector construction clients.

The pillars are used at various stages in the project lifecycle, illustrated generally as:



Tender & Evaluation Process

Tenders should be much shorter (e.g. 50 pages rather than 500) and contain only requirements that add value for citizens rather than unnecessarily increasing delivery costs.

In addition to these, there is scope for government to issue clearer and more detailed guidance as to the quality/technical and cost evaluation methodologies. The ICE's Independent Assurance Panel sees a wide range of variations. While the particular tender evaluation criteria / technical questions will change, the scoring frameworks and commercial evaluation formulae could be standardised.

Contracting

Aim: - To provide a fair, open and transparent contract which supports the intent of the commercial strategy and the procurement process to successfully deliver the programme outcomes.

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2 Stage open book contracting

In the previous Government Construction Strategy committed to 2 stage open book with pain/gain mechanism which is now widely used (e.g. HS2 Main Works Civils Contracts) and has been facilitated by the NEC Option C contract. It's not always the most appropriate approach but in general it does reduce tendering costs, facilitates early contractor involvement and avoids temptation for tenderers to bid an unsustainably low target cost in the absence of sufficient design development. This approach should continue to be championed through the update to the GCS and expanded to look at how it can develop further when the benchmarking data from both the TIP and TIEs programmes becomes available.

Project Bank Accounts

The introduction of project bank accounts in the previous GCS has delivered strong advantages for for all parties. For the client (for example Crossrail) it has helped understanding of actual cost as clients can see money accumulating in the account if WIP is over estimated. The Supply Chain benefits because it is the Project's money, not the Tier One contractor's and so it should be easier to ensure an orderly and prompt flow down the chain. The 'Government/Citex' model proposed for London 2012 was flawed, in that it required a second approval from the client for each payment from the PBA (once the Payment had gone into the PBA) - the sheer volume of transactions post payment made it unwieldy. Hence the Crossrail model is simpler and allows very little access for the client once money is paid in.

On smaller (£10-50 million) projects, project bank accounts can be difficult to set up due to conflicting corporate governance and financial reporting requirements. They are almost impossible on healthcare projects because directors of healthcare trusts are reluctant to become bank trustees due to concerns over personal liability. Therefore careful consideration should be used when seeking to apply them.

It is also important to recognise that many Tier 1 contractors operate at very low margins and factor in the cashflow to their business models. This is a symptom of where they have been driven down to unsustainable margins. In order to promote the use of Project Bank Accounts Government should be considering a more sustainable reward mechanism based on a guaranteed minimum fee and additional incentives available for value added to overall programme outcomes as set out in the Project 13 commercial handbook.

Fair Payment (process)

The position on prompt payment has improved significantly in terms of government clients paying their first tier contractors promptly. But there remains more to be done in terms of prompt payment down the supply chain where 'pay when paid' causes a chain of payments and associated delay.

One facilitator might be better use of advanced digital models (BIM) as a way of aligning the parties' understanding of where the cost/effort has gone - moving away from the use of day work sheets and receipts and a move back to measurement but now using the tools being developed in industry - not tape measures, paper or scale rules but the virtual simulations and digital twins. Any effort to ease calculation of Work In Progress will be warmly welcomed by all sides – perhaps more so than shaving a few days off prompt payment targets.

Owner Controlled Insurance Programme (OCIP)

If this means Owner Controlled Insurance Programme (OCIP), which is the Captive Insurance model used by Crossrail and prior to that London 2012 to provide a single umbrella policy over the supply chain then it should be strongly supported, at least for major programmes where there are numerous contractors. There will be a cost saving in having one OCIP rather than the duplication of each contractor providing its own insurances. A further step forward would be to provide the same for Professional Indemnity cover – vitally important as design is often now split between the client's designers and the contractor's with inevitable wrangling over transfer of liability, collateral warranties creating incentives which disaggregate the supply chain.

Standard Contract Terms

NEC has played a big part here, and it is inherently flexible to allow clients to tailor works information etc. to their own needs. However, clients continue to make variations to the core and supplementary conditions of contract and more should be done to discourage this.

The Government should insist on universal use of unamended NEC contracts throughout the supply chain minimising the use of Z-clauses and avoiding unnecessary amendments which upset the balance of risk and reward.

Risk Management

Aim: - To improve the visibility and mitigation of cross departmental risks resulting in increased delivery confidence and optimal use of available funding.

Recommendation 9: - Government Construction Board supported by HMT should develop the capability and take a proactive approach to understanding and mitigating cross departmental planning and delivery risks which impact on the infrastructure portfolio, such as taxation, skills, supplier performance, industry sustainability and immigration policy.

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Cross Departmental Policy Risks

Many of the risks to the delivery of programme in the National Infrastructure Delivery Plan are common across sectors, for example construction inflation, skills constraints and the planning system. As a sector however we still primarily manage these risks on a project-by-project or programme-by-programme basis. Furthermore clients in both the public and private sector too often seek to pass these risks to supply chain partners who are not always well placed to mitigate them.

There is a strong case to increase the role of the GCB to assess and manage risks that are too large for an individual project. This can be reinforced by the creation of governance structures, capability and spending processes which enable the supply chain to offer advice and insight on risk mitigation across the infrastructure portfolio.

The most significant risk facing infrastructure delivery presently is the risk of a deficit in skills.

The required skills blend to deliver the UK needs will change over time. Analysis by the Infrastructure and Projects Authority (formerly Infrastructure UK) suggests that we will need to retrain and up-skill around 250,000 of the existing workforce over the next decade.

This task is additional to the need to recruit new workers. The sector is exposed to changes in the attractiveness of the UK for overseas workers. Currently a significant proportion of construction workers - 1 in 86 - are non-UK residents, significantly higher in London.

The use of more digital and manufactured solutions will be the key driver to the change in type, distribution and number of skills required to deliver the National Infrastructure and Construction Pipeline. Managing this shift effectively will be key to mitigating the skills risk and should be core to the ambitions of the GCB.

Asset utilisation through digital transformation

Recommendation 11: - In line with the recommendations from the NIC's *Data for the Public Good*, we recommend that the Government Construction Strategy builds on this by formally recognising asset data as an asset in its own right – putting in place steps to value and maintain it appropriately to achieve best outcomes for users for the full life of the asset.

Recommendation 12: - The next GCS should continue to embed BIM L2, and to build the foundations for future roll out of BIM L3 and L4 shifting the focus from construction of new assets to developing data to improve management of the existing asset network through mandating the standards and developing the capability of asset owner organisations to manage and apply data in decision making.

Asset data as an asset

Infrastructure asset data is spread across multiple asset owners, public and private (and in some cases unknown), over assets of widely varying ages, forms and states of repair. It is often not known where that data is stored, how well maintained and reliable it is, and who has ultimate responsibility for it. In the case of big infrastructure owners and operators the picture is better but still far from complete.

Better asset data is essential to move from inefficient responsive maintenance to predictive and preventative maintenance. This enables optimum asset operation through its life, and better outcomes for operators and end users.

Better information from better asset data also allows us to make better future decisions about asset delivery, operation, maintenance and use – and as such potentially lower whole-life costs. It is also essential in order to realise a National Digital Twin. The proposed National Digital Framework for Infrastructure Data will help lay the ground work for this, enabling secure interoperability.

In order to maximise lifetime value from our assets in an increasingly interdependent infrastructure system we have to collect, analyse, fund, store, secure and maintain our digital assets with the same care we expect for our physical assets.

“The GCS in 2016 clearly recognised the value of data in construction, and set out a clear approach to more consistent data gathering and sharing. In line with the recommendations from the NIC’s *Data for the Public Good*, we recommend that the Government builds on this by formally recognising asset data as an asset in its own right – putting in place steps to value and maintain it appropriately to achieve best outcomes for users for the full life of the asset.”

BIM L2 and beyond

“The Government’s commitment to realising the benefits from BIM, outlined in the GCS in 2016, has supported the adoption of BIM Level 2 across client bodies. The next GCS should continue to embed BIM L2, and to build the foundations for future roll out of BIM for operation and integration phases (BIM L3 & L4).”

Following on from the success of the Project Delivery Capability framework introduced by the IPA there is scope to develop a similar approach to asset owners to develop their capability to **Creating and maintaining complex systems**, bringing together the appropriate technology, structures and processes and infuse a common understanding of what is to be achieved and the ability to manage change.

The UK has already shown itself to be at the forefront of Building Information Modelling (BIM) roll-out. The UK, Scottish and Northern Ireland government mandates and guidelines have given a positive indication to industry about its expectations for deployment on major public projects.

Industry awareness of BIM L2 is increasing, and the core principles are being more widely applied. There is still work to be done, however, and neither Government nor industry should lose sight of the importance of widely applied, strong BIM L2 foundations.

This is particularly important as we move from the construction phase of BIM (BIM L2) toward the operation and integration phases (BIM L3 & 4) which enable better management of existing assets.

This will be enabled by the development of a National Digital Transformation Strategy for infrastructure. The ICG’s Digital Transformation Task Group is working with a group of major infrastructure clients and owners to identify what a common strategy might look like, encourage the secure sharing of data and experience to realise mutual benefit. Moving forward together, in a collaborative fashion, will realise efficiency and best practice, and benefits for industry and infrastructure users, and build industry confidence.

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