

Major Programmes

Lessons Learnt 10 years on from the
London 2012 Olympic and Paralympic Games

Executive Summary

This paper reprises the lessons from the successful delivery of the London 2012 Olympic and Paralympic Games and explores their relevance to the infrastructure industry today as it prepares to fulfil the U.K. Government's forward infrastructure investment programme. This paper acknowledges the Principles for Project Success, published by the Infrastructure and Projects Authority (IPA)¹, and builds on some of these themes.

Using the seven key lessons identified in 2013's 'Making the Games'² report, this paper makes recommendations for how the delivery of today's major infrastructure projects can be improved.

The seven focus areas are:

- A unifying vision
- Political leadership & support
- Institutional design & governance
- The right people & skills
- Budget realism & transparency
- Programme & project definition
- High levels of assurance & scrutiny

1.0



1. Principles for Project Success, Infrastructure and Projects Authority, 9th July 2020

2. Institute for Government, 'Making the Games, what Government can learn from London 2012'. Emma Norris, Jill Rutter, Jonny Medland (2013)

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1. A unifying vision

Lesson from the 2012 Olympics: Major projects need a unifying vision to focus on a common goal. Incentivised contracts aligned to outcomes and progress reporting can build confidence and maintain momentum around the vision.

Recommendation: Enterprise approaches to delivery, such as Project 13, provide a great platform to unite the whole enterprise around a common vision, with all parties incentivised to achieve a common framework of outcomes. This will drive collaborative and uniting behaviours.

2. Political leadership & support

Lesson from the 2012 Olympics: Cross-party support and political continuity facilitate efficient delivery, with regular briefings to provide transparency and trust.

Recommendation: We support the recommendation by the National Infrastructure Commission for a clearer strategic framework for the long-term investment needs of the country. Further, we recommend that major projects should be held to account by Parliamentary and public bodies, but also provide support to enable the achievement of schedule, budget and quality standards.

3. Institutional design & governance

Lesson from the 2012 Olympics: A purpose-built intelligent client with clear decision-making accountability is crucial for effective major project delivery, aiding problem solving and ensuring clear accountability.

Recommendation: Consideration should be given to increasing the frequency of the use of Special Purpose Vehicles, with their own independent governance structures, for particularly complex cross-sector infrastructure developments.

4. The right people & skills

Lesson from the 2012 Olympics: A successful blend of private and civil service skills; the best people with the best track record regardless of salary; and stability of personnel.

Recommendation: Procurement guidance should be developed that encourages an outcome focus rather than transactional delivery, alongside right skills-right time. This would attract top-class people who will drive the greatest value across the project outcomes.

5. Budget realism & transparency

Lesson from the 2012 Olympics: Invest time to get it right; include a generous contingency to build confidence; and provide transparency through regular updates.

Recommendation: Avoid publishing a singular budget too early. Instead, a gateway approach should be adopted with budget ranges being approved only once they have been de-risked to approved confidence intervals. Transparent Government policy, which is clearly and concisely designed and integrated in to the overall programme, will significantly help with this process.

6. Programme & project definition

Lesson from the 2012 Olympics: Invest time up front in getting the scope right and tight control on changes. Spend a sufficient proportion of the budget on a highly incentivised programme or project manager.

Recommendation: For all major investments, Delivery Authorities should allocate a significant and defined period at the outset to a Project Definition phase and reduce protracted procurement phases to accommodate it.

7. High levels of assurance & scrutiny

Lesson from the 2012 Olympics: A very high level of internal assurance and testing is needed, with expert critical friends to provide informed external challenge.

Recommendation: Independent assurance experts should be appointed to all major and complex infrastructure projects and report into Government rather than the Delivery Authority. Government should create a central repository of lessons learnt from these assurance experts to de-risk future projects.

Introduction

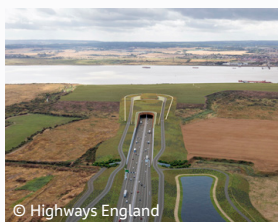
1.1

The London 2012 Olympic and Paralympic Games (The Olympics) were a success story – ahead of time, under budget and deemed a success by 83% of the public³. Their delivery marked a step-change in the U.K. Government's approach to major infrastructure projects: managed through a bespoke Special Purpose Vehicle (SPV), with a unifying vision, transparent budgeting, best-in-class resources, rigorous planning and stringent external assurance. Following high-profile failures to deliver against time and budget, the Olympics promised to turn a corner in the delivery of major infrastructure projects in the U.K.

In January 2013, the Institute for Government (IfG) think tank published 'Making the Games', a report that sought to identify lessons from delivery of the Olympics that could be applied to future projects. As the U.K. Government prepares for the largest infrastructure investment programme in its history, this is an appropriate moment to revisit those findings and reinforce the importance of some of the industry's past learning. What has been learned, what needs to be re-learned, and what immediate steps are available to enhance the procurement, planning, delivery and oversight of major projects? Here we recap the themes of the IfG's seven 'key lessons' from the Olympics, assessing developments since and providing recommendations.

We have seen how the Olympics model has been replicated and refreshed with mixed results. We have also seen the evolution of the industry into a world with different needs and new challenges.

The Olympic experience highlights some of these critical success factors that should be informing major projects today – notably the bespoke governance and institutional design of Special Purpose Vehicles, the value of independent assurance representatives with meaningful powers, and the importance of a vision that can unite all delivery parties around the most important outcomes. Indeed, these success factors work in harmony with Project 13 principles and digital delivery techniques, which form such an important part of major infrastructure projects today. This paper suggests that some key issues that the Olympics programme grappled with – how to achieve the strong governance needed for complex major projects; how to incentivise a focus on outcomes and avoid the limitations of the rate card; how to plan properly in a politically impatient environment – are as relevant today as a decade ago. What was learned then can help today's Delivery Authorities and Partners to achieve greater cost and time certainty, innovate more effectively, and retain the best talent. In turn, this will help to build political and public confidence in the industry and, most importantly, support the successful delivery of major infrastructure that will create economic, social and environmental value across all areas of the U.K. in the next five years.



About Jacobs: Jacobs was the lead partner in CLM, the Olympic Delivery Authority's (ODA) delivery consortium for the London 2012 Olympic Games. Since then, Jacobs continues to deliver the U.K. Government's biggest projects and programmes in infrastructure and the built environment – including the Elizabeth line, HS2, Thames Tideway, Palace of Westminster renewal and restoration, the Lower Thames Crossing, A14 Cambridge to Huntingdon and Thames Estuary Asset Management (TEAM) 2100.

3. <https://docs.cdn.yougov.com/7idck7sw5w/YG-Archive-Post-OlympicsComparison-150812.pdf>

A unifying vision

Lesson learnt from the Olympics

Major projects and programmes need a unifying vision to focus on a common goal. Incentivised contracts aligned to outcomes and progress reporting can build confidence and maintain momentum around the vision.

Context

A critical governance theme of the U.K. Government's 'Managing Successful Programmes' framework is 'vision'. This rightly reflects the need for mechanisms that can unify the multiple delivery partners involved in major infrastructure projects and govern the complex interactions between them; but too often, vision either comes late in the process, is vague or limited, or even lacking entirely. It should be the first building block for any major project – influencing its behaviours, contracting and procurement.

That was the experience of the 2012 Olympics, with clear messaging and a comprehensive communications strategy to all stakeholders from the outset. This was the basis for the successful procurement and contracting strategy, ensuring close alignment between vision and outcomes. Indeed, the lesson of London 2012 was that the best delivery models are grounded in vision and are outcome driven.

In the years since, we have seen that the benefits of this approach have often been diluted. Rarely are contracts sufficiently incentivised and linked to a project's vision and key outcomes, spanning factors including sustainability, health and safety performance, quality and skills development and performance in use, as well as traditional schedule and cost.

Because of this, the first year of many major infrastructure projects is often characterised by a transformation towards programmatic delivery and retrospective alignment of all parties to a vision and outcomes. This time could be saved if the vision drove the strategy from the outset.

There are strong, recent examples in the Olympic mould that deserve to be replicated. HS2 Phase 1 was organised around the vision of 'an engine for growth', providing a sense of purpose to development partners and connecting the project with wider benefits to people, communities, cities and the country as a whole. While on Tideway, the vision has been about reconnecting London with the Thames by cleaning up the river – something that goes beyond simply building a tunnel. Backed up with appropriate contracts, visions such as these are critical to aligning and incentivising development or

delivery partners. In more recent years, Project 13 has developed these ideas. The Institution of Civil Engineers (ICE) collaborative contracting model focuses on an enterprise approach to delivery, bringing partners into an integrated, collaborative team. Its ideas around governance, organisation, integration and capable owner start to explain how to deliver the benefits of an outcome-based model for major infrastructure projects.

Our recommendations

- For major, complex and poorly defined projects, delivery authorities should universally adopt an enterprise approach to delivery, with a unifying vision that aligns the whole supply chain to a framework of outcomes that creates value for all stakeholders.
- We concur with the IPA's recommendation¹ to be clear about the outcomes that need to be achieved before starting the project and to focus on the delivery of benefits and outcomes throughout the project.
- Contractors and operators should be involved early in the process, and appropriately incentivised, working with the U.K. Government, sponsor body, delivery authority, supply chain and stakeholders to create a compelling and unified vision, one that supports a 'whole project' – ideally 'whole life' – framework for all contracted activity.
- To ensure commercial buy-in, procurement should use a suite of outcomes-based contracts that incentivise delivery of the vision and related outcomes over the measurement of inputs and outputs.



HS2: The vision for HS2 is to be a catalyst for growth across Britain and create opportunities for people and businesses across the UK.

Political leadership & support

Lesson learnt from the Olympics

Cross-party support and political continuity facilitate efficient delivery, with regular briefings to provide transparency and trust.

Context

Major infrastructure projects and programmes require a level of stability and certainty at odds with the rhythms of the UK's political cycle. A new Government often means new priorities, new manifesto commitments to meet, and a new roster of MPs. Changes to political personnel often mean changes in priority – leading to delays, reviews, and re-scoping of projects. This affects not just the progress of individual projects, but wider confidence within the industry, making it harder to plan, hire and invest for the future. The extent of this challenge has been recognised by the National Infrastructure Commission (NIC) whose remit, in part, is to address the lack of a long-term strategy, fragile political consensus and short-termism.

As a widely-supported project championed by two successive Governments, the Olympics had widespread political support and continuity of political personnel, which smoothed the transition between successive administrations.

The Channel Tunnel Rail Link and HS1 also benefited from political support, but more recently there has been greater polarisation of opinion for major infrastructure schemes. The development of Crossrail, for example, was impacted by changing political influence until the mid-2000s, and the decision on new airport expansion for the U.K. was also delayed by divided political opinion. HS2 is another example – whilst it achieved cross-party support for the Phase 1 Hybrid Bill, it continues to justify its merits with pockets of political resistance.

Tideway had to undertake a broad programme of engagement and consultation to gain cross-party support, despite the threat of mandated fines from the EU if the River Thames was not cleaned up. The clarity of the smart financing model and business case allowed the project to further solidify its position with stakeholders. Even now, Tideway continues to sustain political support through regular briefings to Government, locally elected representatives and its regulator.

The reasons for polarised opinion are numerous and case specific. However, what is clear is that political support follows public support and discontent arises when Senior MPs represent constituencies that will receive concentrated localised adverse impacts and not always the benefits.

The Olympics programme recognised this. To generate and sustain public, and therefore political, buy-in for the Olympics, Parliamentary and public bodies held the programme to account over schedule, budget and quality standards, with the delivery team appearing regularly in front of the cameras and making information publicly available around progress, changes and the rationale for key decisions. Major programmes and projects need to return to a position where they are not only scrutinised by independent assurance experts, but are also held to account in public to build an atmosphere of transparency and trust between government and opposition.

Our recommendations:

- We support the recommendation by the National Infrastructure Commission for a clearer strategic framework for the long-term investment needs of the country. Furthermore, the government should set out a long-term strategic vision for each of the regulated sectors, through strategic policy statements, to support lasting plans and stable funding.
- Major projects should be held to account by Parliamentary and public bodies regarding their schedule and budget, as well as quality and safety standards and carbon emissions. Transparency would also be improved by a communications campaign and making information publicly available around the rationale for key decisions.



1.3

Heathrow: A ruling on airport expansion was awaited through successive administrations.

I Institutional design & governance

Lesson learnt from the Olympics

A purpose-built intelligent client with clear decision-making accountability is crucial for effective major programme and project delivery, aiding problem solving and ensuring clear accountability.

Context

Since the Olympics, some major projects have been hampered by governance approaches that lead to inadequate definitions of roles and responsibilities, lack of clarity over ownership, or insufficient delegated authority and empowerment.

Some large public sector bodies overlay their own organisational governance onto major infrastructure projects. However, major projects are valued in the billions and they are of a scale and complexity greater than some established bodies can easily handle. An alternative approach is needed, and a proven model exists in the form of the Special Purpose Vehicle (SPV): A 'pop up' client delivery authority whose governance, institutional design and resources can be tailored to the specific needs of a major project.

SPVs help delivery enterprises to work programmatically, establishing logical phases that drive project-specific outcomes with collaborative contracts and well-apportioned risk. They allow for clear and simple governance structures, can be staffed by experts in programmatic delivery, and avoid the need for culture change within an existing, large organisation. By contrast, strained governance structures often result in undue levels of risk being transferred to the supply chain, and a transactional culture that undermines the overall project vision.

London 2012 benefitted from the existence of the Olympic Delivery Authority (ODA) as its SPV. With the autonomy to create a bespoke institutional design and governance structure, the ODA was able to establish clear roles and responsibilities and develop a bespoke procurement and contracting strategy.

An alternative take on this model is Crossrail Ltd. As a limited company wholly owned by Transport for London (TfL), it is designed to act as an autonomous vehicle with its own board, accounts and liabilities. While it does not follow TfL's governance per se, it is still governed by TfL and the Department for Transport (DfT) as joint sponsors.

Strong governance is needed for collaborative delivery models to thrive. Project 13 is an excellent model for organisation and collaboration between delivery partners, but only as effective as the governance which surrounds it. Indeed, for Project 13 to be successful it relies on clients being freed from existing institutional and governance constraints, through the creation of structures akin to the ODA. Even in a case such as TEAM2100, where there is no SPV, the Environment Agency has created an innovative contracting strategy, aligned to Project 13, that gives TEAM2100 an agile governance structure.

Our recommendation

- Programmes and projects that reach a certain scale should be governed by an SPV by default. Government could develop clear guidance concerning the type, scale and complexity of programmes and projects that would trigger this requirement.
- As part of a coordinated learning legacy, the governance principles for major programme and project delivery organisations should be captured and highlighted.



1.4

Thames Estuary Asset Management (TEAM2100): This Project is a case study in the ICE's Project 13 blueprint. The Environment Agency made the decision to move away from their standard project delivery approach towards a new model based on shared values and the integration of their partners and suppliers.

I The right people & skills

Lesson learnt from the Olympics

A successful blend of private and civil service skills; the best people with the best track record regardless of salary; and stability of personnel.

Context

An SPV has flexibility over governance, and has the scope to recruit the senior, skilled people needed to achieve challenging outcomes. In this regard, the ODA did two important things: First employing top-class individuals internally, then procuring an expert delivery partner (the CLM consortium) on a heavily incentivised model linked to outcomes. This gave CLM the scope to provide very experienced people who were able to drive the right outcomes for the ODA, rather than being limited financially and forced into sub-optimal recruitment.

The post-financial crisis drive for better value has often led delivery authorities to focus on cost reduction, prioritising price over value in procurement. By failing to acknowledge the salary structures needed to obtain the best people, these bodies undermine the quality-based, outcome-driven approach that London 2012 showcased so effectively. They make immediate savings but fail to achieve value-for-money in the long term - the best outcomes will never be achieved when rate cards drive the procurement and resourcing of major projects.

The experience of CLM also underlined the importance of having the right people for each phase of a major project. The leadership and delivery skills needed at the start up, delivery and close out phases are fundamentally different. Specialists in fields as diverse as scheme design, detailed design, systems integration and commissioning, long term asset management and operation are required. Needs will change and so organisational design and capability needs to be regularly reviewed.

The Olympic lesson about people and skills is deceptively simple: The best people need to be recruited and given appropriate resources. However, with financial and organisational barriers, that is harder to achieve than it sounds. It requires an emphasis on value over price, and clearer focus on the organisational composition and culture of project teams.

Under collaborative delivery models, a 'best athlete' approach is encouraged where the right person for the right phase of the project is selected for each role regardless of their parent organisation.

This happens because the incentives are aligned to overall outcomes in a way that encourages collaboration. Therefore, organisational politics does not get in the way of tasking the best people with the right job.

Bringing skilled people together in a high-performing team is essential to the smooth functioning of an enterprise that brings together many different people, working styles and business cultures. An effective harmony does not arise by accident but must be worked towards as a priority.

Our recommendations

- We concur with the IPA¹ to 'Plan ahead for the diversity of people, skills and experience needed to deliver the project and build a strong, properly resourced and competent team, evolving as necessary through the project lifecycle.'
- Delivery authorities should abandon using only traditional rate cards for procurement pricing and incentivise suppliers around outcomes, thus allowing suppliers to deploy top-class people who will drive the greatest value across the most significant of project outcomes.
- Government should provide additional guidance on approaches to procurement and contracting that create collaborative models for major projects, in place of transactional systems.



1.5

Anglian Water Strategic Pipeline Alliance: Key alliance leadership positions were appointed by 'blind interview' of shortlisted partner candidates to achieve an unbiased, best-for-task approach.

Budget realism & transparency

Lesson learnt from the Olympics

Invest time to get it right; include a generous contingency to build confidence; and provide transparency through regular updates.

Context

Budget overrun is one of the greatest concerns surrounding any major infrastructure project, often arising from a fundamental lack of realism in how those budgets are first developed, and insufficient flexibility in their design. Getting beyond this will require better comparable data to benchmark new projects against, but also better advocacy of the value projects will create to offset the costs.

The Industrial Strategy: Construction Sector Deal⁴ has set ambitious targets to deliver major infrastructure while reducing costs by a third – a necessary and achievable target. However, striving for such a step-change must be achieved in harmony with measures to improve budget certainty and not exacerbate the optimistic setting of ambitious budgets.

The Olympics offered two lessons; the first being that it takes time. In the first year of the programme, CLM and the ODA met for budget conversations twice a week. Through rigorous and extensive dialogue, a realistic baseline budget was agreed. The second lesson concerns budget governance and incentives. Once the upper limit had been set (£8.92bn, compared to the 2004 estimate of £2.4bn), a sizeable contingency was put in place to give confidence that it would not be breached, and incentives carefully aligned to the budget. A zero-budget change policy was agreed, so that overspend in one area had to be matched by savings elsewhere.

By contrast, many contemporary infrastructure projects publish absolute budgets too early, at a point when both design and risk profile are insufficiently developed to provide the necessary accuracy (e.g. including significant contingencies for unknown ground conditions before appropriate surveys have been completed). Singular budgets that fail to reflect the full range of risks can quickly become legacy millstones as a project develops.

The National Audit Office now warn against the use of absolute cost estimates, given the unrealistic expectations they can create. Furthermore, included in the IPA's principles for project success is to 'Use ranges for costs, benefits and delivery dates, adjusted as certainty increases through the life of the project. Plan for contingencies and be aware of optimism bias.' Projects including Queensferry

Crossing, Crossrail and Tideway have followed suit, using a range of upper and lower budget estimates.

Momentum can be built behind this, so that budgets incorporate industry best practice for estimating costs. Quantity surveying methodologies become incrementally more accurate over time, and this should be reflected in how budgets are designed and approved. Budgets should not be fixed politically when the risk profile means a cost range is at its widest. This puts the public narrative and political expectations at odds with industry best practice. Instead, an approach to budgeting is needed that makes the best use of data and benchmarking, allows enough time to reduce the risk factor of key estimates, and makes the case for the value a project will create as well as the money it will cost.

Our recommendations

- Government should develop an incremental 'gateway' approach to budget creation, where budgets are developed in ranges, based on the maturity of the project, and adjusted for annual inflation. Main works contracts should only be procured when all parties agree the budget has been de-risked to an acceptable confidence interval.
- Delivery authorities should allow sufficient time in schedules for a budget to move through multiple gateways in this way, de-risking and improving accuracy over time.
- A consistent approach to capturing data to develop actual costs for benchmarking is needed. A standard approach to calculating contingency should then be created with the supply chain disincentivised from using it.



A14 Cambridge to Huntingdon: Opened on budget and ahead of schedule, the scheme design moved through several gateways, helping to refine the price over time.

4. Industrial Strategy: Construction Sector Deal, HM Government, July 2018.

Programme & project delivery

Lesson learnt from the Olympics

Invest time up front in getting the scope right and tight control on changes. Spend a sufficient proportion of the budget on a highly incentivised Programme Manager.

Context

Major programmes and projects are highly complex systems whose success depends on more than good project management practice – they require a programmatic approach led by expert Programme Managers.

Such a high degree of complexity takes considerable time to plan – what is known as the programme or project definition phase. The Olympics got this right. Even with an immovable deadline, and widespread pressure to demonstrate progress, the ODA and CLM still dedicated the first 12 months to planning. This resulted in the widely-admired 'Yellow Book' that set a foundation for the entire programme, with a clear scope, breakdown of activities, and timescale for completion.

By contrast, as the former Chief Executive of the ODA, Dennis Hone, has said: "Many projects start with a scope that's not buttoned down, a lack of clarity over the programme and therefore a budget that isn't defined."

Despite the critical importance of a clear work scope there is a tendency to accelerate this phase, often in the face of political pressure. This can lead to scopes of work, budgets and timescales that are poorly defined and subject to costly changes later on.

Protracted procurements also eat into the available time for programme definition. One multi-billion pound infrastructure programme, after recently undertaking a 12-month competitive procurement process for an Engineering, Procurement and Construction Management (EPCM) contractor, expected their new supplier to conclude the programme definition phase within the first three months. The balance is wrong and risks the success of major programmes from the very beginning.

Without effective planning, the greatest benefits of programmatic management are undermined – the ability to manage interdependencies between workstreams, drive standardisation across all projects and cut out waste at multiple interfaces. Furthermore, the lack of a defined process methodology and logistics strategy limits the use of off-site manufacturing and digital technologies, hampering innovation and efficiency. Project Leaders also need a fully developed scope to control changes that provide the best chance of

delivering against time and budget. Without a proper scope, they will struggle to understand how a change in one place will affect an intensely complex system elsewhere.

For the Olympics, the robustness of the Yellow Book meant that any changes to it had to be tabled before a Change Board that would scrutinise the proposals and require strong persuasion to approve. This is the kind of rigour needed to successfully deliver the biggest infrastructure projects and fulfil the Industrial Strategy: Construction Sector Deal target of reducing delivery times by 50%. More comprehensive planning means major projects can move more quickly, efficiently and innovatively. It both enhances and accelerates outcomes.

Our recommendations

- Delivery Authorities should make a programme definition phase mandatory at the outset of every major investment. The output would be an agreed baseline detailing the scope of work, a change process, an aligned and incentivised performance management regime, and a governance and culture framework.
- Government should cascade guidance to all delivery authorities of how a robust definition phase gives HM Treasury and taxpayer greater certainty over time and cost and enhances public confidence in delivery.
- The time taken to procure Programme or Project Managers and main works contractors should be considerably reduced, to allow more time in the end-to-end schedule for the programme definition phase.



1.7

Thames Tideway: At the outset 'The Blue Book' was created which includes the baseline scope, budget, risks and schedule. The Blue Book is embedded in the formal licence agreement with the regulator and it forms the backbone of the programme's scope delivery definition.

I High levels of assurance & scrutiny

Lesson learnt from the Olympics

A very high level of internal assurance and testing is needed, with expert critical friends to provide informed external challenge.

Context

As much as the success of a major programme or project depends on internal organisation and resourcing, it also relies on robust external assurance. For the Olympics, this was undertaken by the International Olympic Committee and Commission for Sustainable London, well placed as experts in their fields. The Making the Games report recommended that this “critical friend” approach be adopted for future programmes.

That recommendation was carried forward by Crossrail Ltd, who appointed a Project Representative to provide independent assurance and hold Crossrail Ltd to account over schedule, budget and standards. However, the Project Representatives were not hardwired into the governance and Crossrail was not mandated to act upon the findings. The London Assembly’s report into Crossrail ‘Derailed: Getting Crossrail back on Track’⁵ stated:

“The role of independent reviewers on Crossrail and other infrastructure projects needs to be clearly and fully built into the governance structure. Sponsors should strengthen the role of independent reviewers by clearly outlining from the outset the actions to be taken in response to their recommendations. This will not only provide assurance of deliverability but will also protect the public purse.”

More recently the Crossrail model evolved into industry best practice, which should be shared. It provides robust scrutiny and assurance baked into the Governance model.

Hardwiring assurance into the Governance structure is only effective if a trusted and collaborative culture is established between the delivery organisation and the assurers. This avoids suspicion which would otherwise erode trust between delivery and sponsor teams. A trusted culture should not be taken for granted and should be worked at during the programme or project definition stage.

Strong governance and a collaborative culture are needed to ensure delivery authorities respond constructively to the presence and advice of independent monitors, who are an important part of countering the optimism bias inherent in any public body that is under political pressure to deliver. Tideway is a good example of this, where

the Independent Technical Assessor (ITA) is party to performance reviews, provides regular reports, and whose findings are considered and acted upon, as appropriate, by Tideway and by DEFRA.

The Infrastructure and Projects Authority (IPA) arranges and manages more than 200 independent assurance reviews of major government projects each year to provide support and constructive challenge to senior responsible owners. Independent assurance experts could work in collaboration with the IPA to ensure guidance is being followed and HM Treasury requirements are being met.

Our recommendations

- All major projects should have full-time independent assurance by expert advisors, who report direct to the U.K. Government rather than the Delivery Authority. They should work in collaboration with the IPA to ensure established guidance is being utilised and HM Treasury requirements are being met.
- Independent assurers should be built into the governance structure and trust should be established with the Delivery Authority during the Project Definition stage.
- Government should maintain a central repository of lessons learnt and examples from the work of independent assurers, which could be used as a baseline checklist to de-risk future Projects. This should be held in the public domain.



Crossrail: Project representatives reported to the Joint Sponsors to provide assurances that the Elizabeth Line would meet its rescheduled opening date.

5. Derailed: Getting Crossrail Back on Track, London Assembly, Transport Committee, April 2019.

Jacobs

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Delivering large-scale infrastructure programmes and projects is challenging. Delivering a triple bottom line across inclusive economic growth, the environment and social benefits across our communities is complex. Delivering outcomes that balance often competing and sometimes varying needs pushes us to the limit. But it also brings out the best in us.

Tackling these complex problems in partnership with governments and our clients is something Jacobs is respected for the world over. Here in the U.K., we have been trusted over the years with some of the most challenging infrastructure programmes and projects, including the London 2012 Olympic & Paralympic Games, A14 Cambridge to Huntingdon, Thames Tideway Tunnel, Queensferry Crossing, the Elizabeth line, Transpennine Route Upgrade, HS1, HS2 and the Palace of Westminster. The most important lesson from these projects has been that a collaborative approach delivers the strongest outcomes. In the best examples, the programme boundaries become 'blurred' as partnerships are expanded to other clients and investment commitments to enable collective delivery of those broad ranging outcomes that we all need.

At Jacobs, we do the right thing:

- We are networkers and enablers - connecting funders, customers, business, clients and statutory bodies to create broad partnerships that deliver;
- We collaborate with our clients and statutory bodies, bringing our breadth of technical expertise and experience to help challenge the accepted ways and enable technical and policy innovation. We challenge today to reinvent tomorrow;
- We are solutions-driven and outcome-focussed. We listen to challenges and provide the right answer; not always the built solution, but the path that delivers sustainable solutions for a more connected world; and
- We continue to make significant investments in attracting and developing the best U.K. talent as we seek to be the employer of choice for those seeking something more than a job.

Queensferry Crossing
South Queensferry, Edinburgh.



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