

# **KEY OUTPUT 12: CURRENT CHALLENGES WITH PEOPLE & COST ASSURANCE AUDITS ON INFRASTRUCTURE PROJECTS**



**MULTIDISCIPLINARY STEERING GROUP  
FOR COST ASSURANCE AND AUDITS ON  
INFRASTRUCTURE PROJECTS & CONTRACTS**

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# INTRODUCTION

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## **KEY OUTPUT 12: Current Challenges With People & Cost Assurance Audits on Infrastructure Projects**

In Key Output 12, our steering group examines the Current Challenges with People and Cost Assurance and Audits on Infrastructure Projects. We discuss the topic as usual from a multi-disciplinary viewpoint and explore the topic from the perspective of funders, clients, legal and contract experts, audit and assurance experts, and contractors delivering infrastructure projects. This output developed by our steering group of experts includes discussions on key themes relating to the topic, real-life issues, practical examples and examines the future outlook for cost assurance on infrastructure projects.

Our multidisciplinary steering group of diverse experts, professionals, and member companies have the required wealth of UK and global expertise on cost assurance and audits on infrastructure projects and construction contracts.

Through our ESG governance initiative, we are working collaboratively with funders, clients, and contractors to drive change and transformation industry wide. Our vision is to lead on infrastructure project cost assurance nationally in the UK and globally on construction projects.

### **Key Topic Q&A Themes**

- Open-book Culture - What does this mean? How should this work in Practice?
- Industry Skills and Behaviours - What are the current and emerging challenges?
- What are the barriers to early assurance from pre-procurement to delivery phases?
- Why there is often resistance to audit compared to deals or commercial arrangements?

***\*Access our past steering group key outputs and CICES articles here:  
<http://bit.ly/3zXEXpo>***

## Challenge

There is currently no industry-wide, UK, or global standard for cost assurance and audits on infrastructure projects or contracts. Actual cost data and lessons learned from previous projects throughout the project lifecycle are not always correctly captured, passed on, or used to make better-informed cost decisions. Several participants in the value and supply chain for construction are therefore still subject to these risks. Assurance should start with a well communicated strategy driven by data-led decisions at all stages from the pre-contract and investment funding phase to budgeting, design, estimating, contracting, contract management, and reporting at the independent cost assurance and audit phase.

## Multi-disciplinary Steering Group

The multidisciplinary steering group for cost assurance and audits on infrastructure projects and contracts (a CSR / ESG governance initiative) was borne out of the joint agreement by the parties on the need for this. From the onset, we sought to make this a diverse multidisciplinary group of experts because we know from experience that successful projects across sectors consist of experts from diverse backgrounds and professions. The steering group comprises a panel of professionals and representatives from a cross-section of the industry, including lawyers, contract specialists, auditors, engineers, quantity surveyors, and consultants.

The objective is to meet quarterly in a setting where lessons learnt and best practices from real-life experiences from projects delivered around the world in various industries and sectors are shared confidentially, creating a common voice of interpretation to help identify and resolve issues quickly and to share knowledge, expertise, and best practice on infrastructure projects. The goal is for the group to deliberate early on emerging issues, key issues, and short, medium, or long-term options for resolving these from multiple lenses.

Challenges and remit (in volume 2) of the steering group's work was informed by our 2022 industry-wide conference in collaboration with Eversheds Sutherland. There was an industry-wide call 1. To continue discussing and highlighting more real-life practical challenges 2. To address assurance throughout the project lifecycle from funding to completion 3. To provide through our expertise deep insight into the future of UK and global infrastructure projects and construction contracts. The steering group responds to this call to address these challenges through access to our deep diverse multi-disciplinary expertise, and our quarterly key outputs and thought leadership reports that are driving industry-wide change and transformation on infrastructure projects and construction contracts by addressing risks and issues impacting the sector such as:

1. Risk and market forces
2. Supply chain challenges
3. People challenges
4. Cost audit and a wider ESG assurance remit
5. Legal and construction contract settlements
6. Technology and digital in cost and sustainability assurance
7. Process standardisation and improvements
8. Digitisation data analytics, cost and sustainability reporting

# FOREWORD

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## Our Outputs

The steering group is multidisciplinary, collaborative and jointly produces quarterly outputs in the form of articles, protocols, documents, and best practice guides and communicates guidance on the latest thought leadership to the broader industry. Technology and sustainability are fundamental aspects of our remit that feature quarterly. These outputs are summary recommendations and the latest thinking from multiple lenses and from our experts, and we hope that the industry find these beneficial. Our past outputs can be found and downloaded here: <https://www.cfbusinesslinks.com/multi-disciplinary-steering-group/>

## Our Members

- Cecelia Fadipe - CFBL Consulting (Chair)
- Imran Akhtar - Turner & Townsend
- Claire Randall-Smith - Eversheds Sutherland
- Ian Heaphy - INCC / NEC Board
- Gary Bone - Blake Newport
- Darren Ward - The Orange Partnership
- Tom Leach - Southern Water
- Kathleen Hannon - Scottish Water
- Shy Jackson / Jennifer Varley - BCLP
- Charlotte Edwards - Atkins / SNC Lavalin
- Jim McCluskey - Vinci Construction /CICES
- David Worsley - Transport for the North
- Elliot Patsanza - Ridge & Partners
- David Sharp - Mott Macdonald
- Michael Bamber - WSP
- Justice Secheles - Arup
- Chris Leech - Balfour Beatty
- Victoria Hill-Stanford / Lisa O'Toole / - Network / HS2
- Martin Perks - National Highways
- Chris Richardson - Colas
- Charlotte Hughes - DLA Piper
- Tony Cave - Crofstone Management

## Our Professional Sponsors

Darrell Smart / Danielle Kenneally - CICES

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# REPRESENTATION

From employees, professional members and associates of:



## Disclaimer

The views, opinions, and thoughts expressed by members and contributors to the steering group reflect only the author's views and not that of their employer or professional body.



**Cecelia Fadipe**  
**CFBL Consulting**



**Cecelia is a qualified accountant of 25+yrs, and director of CFBL Consulting, a cost and strategy consultancy specialising in independent cost audits on infrastructure projects and strategy advisory. She has worked across commercial, finance and project control functions. A CIMA fellow and member of AICPAs, sustainability and R&D panel. She is a cost consultant and auditor experienced in the rail, technology, defence, renewable energy, and electrification sectors and has led audits on major programmes. She is chair of the multi-disciplinary steering group. Her career in construction spans 20 years and she has worked on high-profile projects such as HS2, Hinkley Point C, and Crossrail, and as a result, brings a wealth of knowledge and experience to this space.**

### **Open-book Culture - What does this mean? How should this work in Practice?**

Open book culture can be defined as an aspect of supply chain management where key financial and commercial information are transparently shared with key stakeholders and non-sensitive information is also shared with other suppliers in a joint venture or alliance. This can help increase value to customers and stakeholders by optimising costs on a project and highlighting non-value-adding costs. The open-book culture in construction strives to establish a setting where all stakeholders, have visibility into the project's financial aspects. To successfully adopt an open-book culture, the business requires a cultural shift for implementation adopting an open-book culture has the following major goals:

- Transparency and Collaboration
- Cost Control and Optimisation
- Risk Identification and Mitigation
- Continuous Learning and Improvements

Fostering an atmosphere of mutual trust and cooperation among project stakeholders can be achieved by building trusted professional connections, promoting open communication, active listening, and mutual respect. Stakeholders should be informed about project specific goals, expected outcomes, and the benefits of an open-book culture for buy-in and to align the parties understanding of and commitment to values of openness and cooperation. Establishing protocols and systems for securely exchanging financial data, such as contract details, costs, and project budgets. Making sure that only those who need to know have access to information.

Encouraging input and participation by actively involving key parties in the decision-making process when making crucial project decisions, and inviting participation to obtain feedback, and take their opinions into account. This can be achieved by creating efficient channels of communication to allow contractors to share their thoughts and offer cost-optimising and risk-mitigating recommendations. Asking for input and proactive early warnings will allow issues to be addressed actively and support the successful implementation of an open-book culture in a non adversarial manner.

## **Industry Skills and Behaviours - What are the current and emerging challenges?**

In a cost assurance or audit engagement, independent qualified professionals have been appointed to assess and assure the reliability and accuracy of commercial and financial cost data, risks, controls systems and forecasts. They play a key role in identifying potential risks, evaluating cost performance, people, process, and controls and making recommendations to mitigate future financial challenges.

The cost assurance landscape is changing because of the emergence of innovative technologies like automation, machine learning, and artificial intelligence. To improve the accuracy and efficiency of cost assurance procedures, professionals need to invest in and adapt to these technological changes and develop the skills required to make use of data analytics tools, predictive modelling, and other innovative techniques.

For cost assurance professionals more focus is being placed on independent audit and assurance of sustainability KPIs on sustainable construction projects. Adopting sustainable practices, energy-efficient technologies, and renewable materials must be evaluated in terms of their cost impact. Accurate cost assurance and decision-making depend on having a clear understanding of the scope 1,2,3 emissions, costs and benefits associated with a sustainable project.

Due to the participation of multiple stakeholders, international supply chains, and complicated financial arrangements, construction projects are becoming more complex. To overcome this complexity, cost assurance professionals need to be knowledgeable about complex contracts, legislation, and risk management. To offer precise cost assessments and recommendations, they must be able to analyse and evaluate complex financial data.

Cost assurance professionals face ongoing challenges with compliance, evolving laws and standards. For accurate cost reporting, financial transparency, and compliance with legal requirements, professionals must stay current with relevant laws, regulations, and accounting standards.

Soft skills and communication are crucial for cost assurance professionals. They must clearly and concisely convey and report complex financial information to an array of stakeholders, such as project managers, leaders, and clients. Therefore excellent interpersonal skills are needed for working with cross-functional project teams and addressing challenging financial risk and opportunities early on.

## **What are the barriers to early assurance from pre-procurement to delivery phases?**

Early assurance in a project's pre-procurement to delivery phases entails assessments, risk analyses, and evaluations to ensure that important project components, such as cost estimates, schedules, and records and systems are precise and attainable. The application of early assurance throughout these phases may be hampered by several barriers. Here are a few typical barriers:

Early assurance efforts may be impeded by a lack of participation and collaborative relationship among stakeholders, such as between clients project managers, contractors, designers, and cost assurance professionals. Limited stakeholder engagement may lead to incomplete or incorrect information, poor risk identification, and poor administration of findings and decision-making.

Complete and reliable data may be hard to obtain during the early stages of a project. Conducting accurate cost assessments, schedule evaluations, and risk analysis may be difficult due to incomplete project designs, conceptual estimates, and incomplete scope definitions. Early assurance attempts will not be successful if there are no plans in place or reliable data sources.

One major challenge to early assurance is caused by unclear or changing project objectives and requirements. It becomes challenging to establish appropriate cost estimates, correctly evaluate risks, and define performance indicators without clearly defined objectives and requirements. Project goals that are unclear might lead to misalignment and inefficient costs and early assurance processes.

A project's early time constraints can make it difficult to provide early assurance. The pressure to proceed swiftly through the pre-procurement and delivery phases frequently results in a rushed assessment process, insufficient data analysis, and inadequate risk assessments. Lack of time for early assurance can lead to missed risks, incorrect cost, and potential project delays.

Early assurance activities may be difficult to implement if resources, both financial and human, are limited. The quality and efficacy of early assurance efforts may be impacted by inadequate financial support for these processes and a shortage of trained personnel with experience in cost estimation, risk analysis, and project assessment.

### **Why is there often resistance to audit compared to deals/commercial arrangements?**

Resistance to audits compared to deals or commercial arrangements can result from several factors:

An audit involves careful evaluation of financial records, procedures, and controls. Audits may be perceived as intrusive and disruptive to daily individual activities at work. It can be disturbing and unsettling knowing that external auditors will be examining records, systems and seeking supporting documentation.

Audits are intended to find potential errors, discrepancies, or non-compliance with rules and regulations. Due to fears of scrutiny of decisions, conduct being questioned or fraud exposed, people may reject audits in favour of commercial deals. Some parties could feel uneasy about having more accountability, which might cause resistance.

The compilation of documentation, providing backup to auditors, responding to audit queries, and working with auditors can take considerable time and effort during audits. The perception that audits are time-consuming and difficult makes some parties resist audits and instead opt for commercial deals if they already have pressing delivery priorities.

Resistance to audits may result from a lack of knowledge and understanding of the sustainable forward-thinking benefits and purpose of these audits. People who are unfamiliar with the audit protocols could perceive it as a nice-to-do or tedious process, instead of appreciating its value in promoting improvements, transparency, identifying risks, and strengthening controls early.



**Tom is the Head of Commercial Management at Southern Water. He is a chartered surveyor and manager of commercial, contract, and audit teams for large infrastructure clients and contractors. Specialising in the commercial management of construction contracts, claims, and disputes, He demonstrates a solid track record in infrastructure markets with experience in major energy, water, aviation, transport, and communications networks.**

**Tom Leach**  
**Southern Water**

### **Open-book Culture: What does this mean? How should this work in practice?**

At the point of agreeing to utilise a cost-based price mechanism, the parties are accepting obligations around 'open book' assurance of costs. Importantly this is often for 'both' parties. Typically, a contractor will need to provide access to its costings, systems record, etc. when entering into a contract such as the NEC 4 using Option C.

In practice, these records and systems are not homogenous across organisations, and clients will want their assurance objectives to be achieved resulting in varying degrees of difficulty. However, on long-term framework agreements, it is not uncommon for the parties to enter into whole project budget models, partnership arrangements, or alliances that incentivises against cost performance of the aggregated costs of the client and contractor.

Therefore, the client will equally need to be prepared for a cost audit by the contractor to ensure that allocated costs are bona fide.

### **Industry Skills and Behaviours: What are the current and emerging challenges?**

Current challenges:

- Client budgets and allocation of resources to achieve the appropriate level of assurance.
- Experience of QS and auditors can often be 'junior' desk-based and lacking on-site experience.

Emerging challenges:

- Investment in efficient auditing processes and automation vs tight budgets
- Skills and experience gap

## **Barriers to Early Assurance: What are the obstacles from the pre-procurement to delivery phases?**

This forum has generally agreed in principle that early assurance of costs, systems, and processes produces benefits and mitigates the risk of things going wrong. However, this is not always achieved in practice. The following circumstances may be at play:

- Appreciation of the benefit could be underestimated.
- Lack of understanding of the effort required when selecting cost-reimbursable mechanisms.
- Lack of decision-making pre-contract in the selection of project controls / PMO systems
- Detail within the contract documents may be poorly defined.
- The onboarding process is not properly invested in.

## **Resistance to Audit: Why is there often resistance to audit compared to deals/commercial arrangements?**

The audit is rarely so straightforward and ultimate assurance is achieved the first time around. Some degree of additional inter-party collaboration, negotiation, or argument is generally required to achieve the ultimate sight of costs or understanding of systems and processes.

From the Contractors' side, the following risks of non-compliance are common:

- Systems and record keeping may be antiquated.
- The head office may not share all detail with project-level teams.
- Manual changes to costs, journals, etc. may be misunderstood or unexplained.

From the Clients side, in whole project budget models, the following risks can occur:

- Clients may feel they don't have an obligation to share costs in the same way as the contractor.
- Clients may be unprepared for this process.
- The availability of people and resources to present this information.



**Imran is an experienced chartered accountant (ACA) providing Cost and Commercial Assurance services to a variety of major infrastructure clients with prior experience in external and statutory audits from working at the U.K National Audit Office. He is currently the UK lead and global SME for Cost Assurance service development and delivery within Turner & Townsend global provider of consultancy services within the construction industry.**

**Imran Akhtar  
Turner & Townsend**

### **Open-book Culture - What does this mean? How should this work in Practice?**

In practice, an open book culture means that the supply chain agrees to an environment where they are required to provide unfettered access to their records, accounts, and data to substantiate cost, commercial outputs, and performance. Typically, in the industry, the term has been coined with the expectation that an open book environment means having access to a standard and limiting suite of documents (i.e., invoices and timesheets) but really this transparency should extend to the underlying systems and processes that form the supplier's records. In practice, the supply chain should be willing and ready to demonstrate the systems, controls, and processes that they use to manage contract performance. However, the party/individual (s) undertaking this review requires the right level of experience and skill to properly form a robust risk-based view of the environment which should then ultimately form part of a pragmatic audit/assurance regime.

### **Industry Skills and Behaviours - What are the current and emerging challenges?**

As the scale and complexity of projects and programmes increases, there is an increasing demand for audit/assurance activity. Undertaking an audit/assurance activity requires experience and a refined approach to collaboratively manage numerous stakeholders, all of whom may have different objectives/demands from the process (often conflicting). Whilst collaborative ways of working continue to be developed, such as Alliancing arrangements or incentivisation approaches that reward efficiency and productivity, there is still an underlying risk that projects end up with frayed relationships when issues occur during the delivery phase. The key challenge is maintaining an assurance approach that is independent and evidence-based despite the pressures of the project/programme. Assurance activities that pay on findings made and disallowed costs identified can sound like a fair idea in practice from a project owner's perspective however adopting this approach may have unintended consequences by either threatening the auditor's independence and integrity and also driving the wrong behaviours within the supply chain that may ultimately result in a lack of trust and credibility in the assurance process.

## **What are the barriers to early assurance from pre-procurement to delivery phases?**

As noted above, one of the challenges is undertaking assurance in the 'right' way, adopting a risk-based approach, and taking time to understand the supply chain's ways of working. Ultimately this takes time and also may not yield monetary findings or savings making it difficult for the project owner to justify the activity in a phase that is usually time critical. There may also be a natural challenge that the supply chain may not have sufficient evidence to provide support and substantiate their ways of working as things may still be 'in theory' rather than executed in practice. Whilst it is viable to undertake this early assurance to create a risk-based expectation and assurance framework further audits will still need to be undertaken to confirm that the proposed ways of working have been adopted and any risks identified have properly been managed and dealt with. Finally, commercial audits/assurance activities are not defined statutory activities and as such do not have a defined set of procedures and tests that need to be conducted (as is typical and common in the world of company external financial audits). Project owners need to think carefully about any pre-contract audit/assurance regime to ensure that it is able to be opened up to scrutiny and challenge by the supply chain as part of a fair and transparent procurement process (which is a requirement for many Government organisations or projects that use public funding).

## **Why is there often resistance to audit compared to deals/commercial arrangements?**

Time is typically of the essence in the industry as productivity is seen as a key factor for delivery. It is often quicker and easier to agree on a deal or settlement with the supply chain on a nominal basis (50/50, 'meet in the middle') and this approach could help preserve relationships and ultimately avoid further potential legal costs should the matter escalate to dispute. An audit in this instance could be seen by both parties as a potential disruptor should the findings contradict the intention to settle equally. Audits should be used as a way to gain intelligence, comfort, and knowledge of how things have actually been managed during a project. They should be used as a means to identify and eliminate issues before they escalate and become contentious between parties and also identify those matters where there is a difference of opinion and there may need to be some form of mutual agreement or settlement. Ultimately audits should be used as part of a settlement scenario as it is unlikely (and not recommended) that an audit would ever seek to test 100% of records, costs, and requirements, and as such the interpretation of audit findings will always require pragmatism and implementation in the context of the project. Hopefully, one that all parties can agree to.



**Shy Jackson**  
**BCLP**



**Shy specialises in construction and engineering law and his practice covers project advice and acting in a dispute related to UK and international projects. His experience covers litigation, arbitration, adjudication, and ADR and he has advised on all main forms of contract, including NEC, JCT, and FIDIC. He is a fellow of the Chartered Institution of Civil Engineering Surveyors. He is a visiting lecturer at King's College London and the University of Stuttgart, a member of the NEC Contract Board, and a council member of the UK Society of Construction Law.**

### **Open-book Culture - What does this mean? How should this work in Practice?**

When looking at open book culture and what it may mean in practice, it is necessary to step back and consider what this seeks to achieve and what are the potential benefits of such an approach. Traditionally, parties have been reluctant to share information, especially about costs, and this approach could be justified on the basis that when contracts are agreed on a lump sum basis then the actual costs incurred are largely irrelevant. In such an environment, the lack of transparency sometimes gives rise to concerns by the employer, often unjustified, as to actual recovery and what the employer may see as excessive profit. This is not the place to discuss the issues with such concerns but it seems clear that a lack of transparency creates uncertainty that leads to a lack of trust which in turn goes against a collaborative environment. This should be less of an issue where the contract is cost-reimbursable or where change is assessed based on actual cost, but even then questions may arise as to how costs are recorded and the extent of information to be provided.

### **True Collaboration, Trust and a Mutual Open-book Culture**

In practice, therefore, this means that if parties are seeking to achieve true collaboration, a way to achieve trust between the parties is to have an open-book culture. That should be operated on a mutual basis and while the emphasis tends to be on the contractor's costs information, there is no reason why an open book approach should not apply to the employer's commercial drivers, covering for example its financial arrangements and anything that may affect the funding of the works. In the same vein, transparency should go beyond the financial position to anything that may affect the project. That is the rationale behind the early warning mechanism in the NEC form of contract, premised on the idea that if the parties are open about matters that may affect the works, regardless of the contractual liability, then they can take the necessary action where possible to limit any adverse consequences. This is especially the case when it comes to costs, where early identification of any issues allows the parties to address and improve their cost recording systems while the project is ongoing – as opposed to taking a retrospective approach post-completion. The challenge for the industry therefore is to move away from the traditional mindset where once the price is agreed the actual costs no longer matter and the reluctance to be open about any issues that may affect the works. If parties recognise the wider benefits of open book culture, that will promote better delivery and support a collaborative environment.



**Kathleen Hannon**  
**Scottish Water**

**Katy is an experienced Quantity Surveyor with a demonstrated history of working in construction/contractor/client-held roles within the construction industry. Skilled in negotiation, tender optioneering, value engineering, contract drafting and administration (NEC & JCT), change control, dispute resolution, auditing cost and commercial Compliance, and other aspects of commercial management. She is a chartered surveyor working towards an LLM in Construction Law from the University of Strathclyde to reinforce existing experience and knowledge.**

### **Open-book Culture - What does this mean? How should this work in Practice?**

The open book culture is based on the transparency of costs, records, and management, clarity of responsibilities, direction, decision-making, and a risk/opportunity sharing approach in which parties are incentivised to share information, improve efficiencies, and value for money based on shared objectives and collaboration. It is often adopted alongside other mechanisms which promote this level of collaboration such as partnering/alliancing, shared risk-based contracts, integrated teams with shared working spaces, and regular meetings with decision-makers.

Open book culture is a fundamental approach of openness to achieve shared objectives. It encourages the use of early contractor involvement which can reduce the risks and cost of design changes as well as improve efficiencies of time. It moves away from a positional standpoint and promotes no-blame working practices which allow change, errors, or miscommunications to be recognised and addressed in a forward-thinking manner to protect both parties.

In practice, this is an adjustment from the historical norm for all parties and requires full engagement to succeed. There are contracts and guidance which provide a good framework and tools to build an open-book culture, but communication, the building of relationships, and trust are core requirements that cannot be mandated. Clear expectations and objectives are important alongside a recognition that some priorities will not align but remain important.

### **Industry Skills and Behaviours - What are the current and emerging challenges?**

Embracing and pioneering change is a continuing challenge that will not dissipate in the industry. New priorities in the industry such as value for money, focus on efficiency and carbon reduction may lead to a shift in working practices and decision-making, having an impact on the desired skillsets and behaviours required of all parties. These skillsets and behaviours will take time to acquire, to align with business objectives and procedures, and be embedded in the workforce.

New technology and tools are being developed to assist but it takes time and alignment to identify the best tools, adapt, embed, and for users to embrace these. These combined with external challenges such as market shift and a wider skill requirement can be challenging to all areas of the industry be it client, contractor, or supply chain.

## **What are the barriers to early assurance from pre-procurement to delivery phases?**

Time pressures can often mean that assurance is requested at a point in time where the scope of projects has not been fully developed and the risks to the project may not be fully understood. Market change particularly in recent years means that costs and available resources may not be as predictable as they have been. While many companies have a good degree of information in the form of cost intelligence, productivity, and KPIs from historical projects, market changes can be difficult to track and project forward such that the degree of confidence in assurance may not be as reliant as in previous years. Risk management and commercial management during delivery can also impact early assurance. This can be exacerbated by issues in the early stages however having a sound foundation in the basics is key for ensuring that change and risk realisation are managed effectively and do not impact the quality, cost, and time of a project.

## **Why there is often resistance to audit compared to deals/commercial arrangements?**

At its root, this may be a reluctance to have works examined under a magnifying glass and the apprehension that issues that are found may assign blame to one party or another. Having a future-focused, no-blame approach to audit which encourages communication to resolve and prevent future issues can be helpful to both parties and encourage acceptance of audit. This is however in tension with the fact that audit usually looks at historical data and therefore where decisions have been made, they cannot be undone. As such it is very important for a focus to be put on what lessons can be learned from findings and how improvements moving forward can protect both parties.

The resources and time required to facilitate an audit can also be a barrier with no guarantee that an outcome will be agreed upon (particularly where the interpretation of the contracts differs). In comparison, a commercial deal takes a wider view and can resolve several issues so that both parties feel they have compromised but ultimately feel protected in a short space of time. The benefit to audit is that it can ensure principles are agreed upon and interpretations align whereas, with a commercial deal, the issues may well arise again as clarity may not have been provided.



**Gary is an experienced construction and commercial consultant. His specialism includes dispute resolution, Quantum, and Delay analysis, Contract Administration, Construction law, Subcontract Management, Reporting, Cost Control, and Change Management.**

**Gary Bone**  
**Blake Newport**

### **Why there is often resistance to audit compared to deals/commercial arrangements?**

I see a few common issues which present as resistance to audit:

#### **Position in the Supply Chain**

In the era of cost-plus and target cost contracts applied to big infrastructure projects in particular, Client/Employer organisations need to account for their costs to the central government. Even if they are private schemes, there is still likely to be some public finance. There are often structures, expertise, and expectation in place within that organisation to audit “cost” from its contractors. Mostly this is an audit of staff/management and subcontractor costs against the definition of cost in well-used and well-understood contracts. However, in subcontracts between contractors and subcontractors, back-to-back contract terms do not necessarily mean that the parties have back-to-back structures, expertise, and expectations to demonstrate cost which will include far more direct costs such as labour, plant, and materials which can have multiple cost components.

#### **Distrust and Confidentiality**

There can be less trust between subcontractors and contractors than between contractors and client organisations. Generally, a division within a contractor organisation will have very few customers but subcontractors have far more options and contractors have more choices, so there is a different dynamic to consider. Sometimes there is a distrust to be truly ‘open book’ and only demonstrating costs to a level of granularity that the subcontractor is comfortable showing to its customer for fear of giving away too much private and confidential information.

#### **Dealing with Commercial Decisions, Discounts, and Fee Disparities**

Often, when securing a contract, there has to be a final decision made on how the deal is structured and what a subcontractor or contractor is prepared to offer to get the deal over the line and secure the work. Then, when the costs are audited, there can be a difference between a rate included in (say) the BOQ and the actual cost of that item where a rate could be lower than the cost. This can cause issues in agreeing on variations/compensation events and final accounts. Also, components included in the fee and the total fee percentage can vary between contractors and subcontractors depending on the deal that has been struck. The fact that subcontractors can have a fee percentage of around 25% (or more) and contractors around 10% (or less) can create a desire to protect that position for fear of it being reduced on the next project.



**Elliot Patsanza**  
**Ridge & Partners**



**Elliot has over 30 years of experience providing specialist pre- and post-contract commercial and project management services in the built environment across multiple sectors that include: infrastructure, residential, office, leisure, and mixed-use development projects. His pre-contract areas of specialism include development due diligence and feasibility assessment, value engineering, cost planning, procurement strategy development, contract form selection, and contract drafting. Post Contract: proven in-depth experience in leading large project and commercial management teams to deliver high-value, key complex programmes.**

### **Open book Culture: What does this mean? How should this work in practice:**

This is all about transparency and ensuring all contracting parties, funders, supply chains, and stakeholders operate a transparent financial system to deliver sustainable infrastructure projects. The transparency culture is embedded from the early project phases into the operation phase. In practical terms, this begins by setting up a commercial management plan from day 1 of Contract implementation. For example, if it is an actual cost contract (target or reimbursable), the Project Manager should arrange for the cost audit team to have access to and understand how the contractor's financial system work. This requirement should ideally be Included within the contract scope documents or works information. Open book culture results in opportunities for higher productivity levels, delivery efficiencies, and for achieving greater value for money levels.

### **Industry Skills and Behaviours: what are the current and emerging challenges**

The audit industry sector is going through a transformative phase as new technologies disrupt embedded behaviours and methods of auditing. Previously, clients relied on auditors to be data custodians, now they are turning to data analytics digital systems and Artificial intelligence (AI). The emergence of AI means auditors must acquire new skillsets and behaviours that align with the digitalisation of audit services. Auditors must increase their digital quotient and pivot to new roles that require them to audit and validate digital systems used by clients.

### **3. What are the barriers to early assurance from pre-procurement to delivery phases**

There is an unfounded perception that early assurance opens and exposes firms to external threats such as Intellectual property espionage. Most organisations find the concept of opening their financial systems to external parties unpalatable with their objectives of building 'Unique Selling Points' and products. These unfounded fears manifest behaviours that result in barriers to early assurance. During early development stages there is a lack of awareness amongst the supply chain that cost assurance audits are part of the core activities of delivering large complex infrastructure projects. The workforce is unaware their organisations are mandated under the contract to support and facilitate regular cost audits throughout the programme of work that monitor and assess performance. Another barrier is the lack of resources to support early assurance from the supply chain, this is a particular barrier that applies to SMEs who normally have limited resources. Lack of clear guidance and a consistent approach to early assurance adds another layer of complexity which also leads to early assurance barriers. The public and private sector must develop a regulatory framework that drives a fair and consistent approach with clear standards that encourage early assurance and eliminates barriers.

#### **4. Why is there often resistance to audit compared to deals/commercial arrangements?**

Resistance to audit when compared to other commercial arrangements can be reduced to workforce competencies and capabilities. Most of the construction workforce does not understand the basic purpose, function, or need for an audit. An auditor review request comes as a surprise to many! Most construction-related academic qualifications do not cover auditing at all. Most delivery organisation charts rarely include the audit team so it is not seen or ever supported as a core delivery function. Whereas on commercial arrangements, which normally include finance managers, audits are seen and treated as a core component.



**Martin Perks**  
**National Highways**



**Martin Perks is a highly accomplished professional with a diverse range of skills in the construction and business sectors. As a visiting professor at Birmingham City University and a Chartered Surveyor (FRICS), he possesses expertise in quantity surveying and project commercial management. Martin serves as a Board Director of Lean Construction Institute UK and is a member of the Institute of Collaborative Working (MICW). Additionally, he chairs the VOX Datavista Group as a NED. With a PgCert in Research Practice, Martin is a business performance coach and is currently training to become a life coach. His specialties include sustainable procurement, lean construction thinking, and asset management.**

### **Open-book Culture - What does this mean? How should this work in Practice?**

Open-book contracting is a work culture that emphasises collaboration and transparency between parties involved in a contract. This approach is based on sharing information about project costs, profits, and risks to build trust, align incentives, and promote joint problem-solving. In an open-book contracting culture, parties are encouraged to work together to establish a shared understanding of the project's goals, timelines, and costs. This includes sharing detailed information about costs, liabilities, and profits, as well as any potential risks and uncertainties. By doing so, both parties can gain a deeper understanding of the project's financial implications and work together to identify potential cost savings or opportunities.

Open book contracting can work in practice through several key practices, including:

- **Building a collaborative relationship:** A successful open book contracting culture requires trust and cooperation between parties. To build this relationship, parties should establish clear communication channels and agree on common goals and objectives.
- **Sharing information:** Both parties should be willing to share relevant information, including financial data, project progress reports, and risk assessments. This information should be presented clearly and concisely and should be accessible to all parties involved.
- **Aligning incentives:** both parties are incentivized to work together to maximize project value. This can be achieved by structuring the contract in a way that aligns incentives and rewards for both parties.
- **Establishing performance metrics:** To track progress and ensure accountability, parties should establish key performance indicators (KPIs) ideally leading indicators that are aligned with project goals. These metrics can be used to measure success and identify areas for improvement.
- **Continuous improvement:** An open-book contracting culture requires a commitment to continuous learning and improvement. Parties should regularly review project performance, share feedback, and identify opportunities for improvement.

So, an open book contracting culture is a collaborative and transparent approach to contract management that can help to build trust, align incentives, and promote joint problem-solving. To make this approach work in practice, parties should focus on building a collaborative relationship, sharing information, aligning incentives, establishing performance metrics, and committing to continuous improvement. By doing so, parties can maximize project value and achieve shared success.

### **Industry Skills and Behaviours - What are the current and emerging challenges?**

- Integrated Project Delivery
- Lean Integration Project management
- Lean Construction practice
- Data Analytics
- Digital solutions and thinking, not digitizing paper-based systems
- Third-party risk management

### **What are there barriers to early assurance from pre-procurement to delivery phases?**

There are several barriers to early commercial and contract assurance from pre-procurement to the delivery phases of an infrastructure project. Some of these include:

- Lack of clarity in project requirements: When project requirements are not well-defined or communicated, it can lead to ambiguity in contract terms and conditions, which can cause disputes and delays.
- Inadequate contract management can lead to missed deadlines, cost overruns, and disputes between parties. This can also lead to a lack of transparency and accountability in the project.
- Inadequate/Insufficient risk management can lead to unexpected delays, increased costs, and other project challenges. It is important to identify and manage risks from the outset of the project to avoid potential issues down the line.
- Limited collaboration and communication between parties can lead to misunderstandings and disputes. It is essential to establish clear communication channels and encourage collaboration between parties to ensure project success.
- Inadequate resources and expertise can hinder early commercial and contract assurance efforts. It is important to ensure that the project team has the necessary resources and expertise to manage contracts effectively and ensure project success.

### **Why there is often resistance to audit compared to deals/commercial arrangements?**

- There is often resistance to auditing an infrastructure construction contract rather than striking a commercial deal because audits can be seen as invasive and disruptive. Audits involve a detailed examination of financial and operational records, which can take a significant amount of time and resources to complete. This can be seen as an unwelcome intrusion into the contractor's operations and can result in confirmation of the real level of trust/mistrust between parties.
- Moreover, audits can also reveal issues and discrepancies in the project, which can lead to disputes and potentially impact reputations. As such, parties may prefer to strike a commercial deal that is based on trust and cooperation rather than subjecting themselves to an audit.
- However, audits are an essential tool for ensuring transparency and accountability in infrastructure construction contracts. Audits can identify potential fraud, waste, and abuse in the project, which can save costs and prevent future problems. Moreover, audits can provide valuable feedback to both parties on how to improve project management and performance.
- Overall, while audits may be met with resistance, they are an essential part of ensuring transparency and accountability in infrastructure construction contracts. By striking a balance between commercial deals and audit requirements, parties can ensure a successful project outcome while maintaining a positive relationship.



**Charlotte is a Commercial Manager at Atkins SNC Lavalin with 15 years of industry experience on complex major civil projects, working for contractor organisations such as Costain, Bam, Kier, Mace, and Atkins. She has worked as both an estimator and a commercial manager and brings with her experience significant contributions to the steering group. She is currently working on the East-West Rail Alliance as the Atkins commercial lead.**

**Charlotte Edwards**  
**Atkins - SNC Lavalin**

### **Open-book Culture - What does this mean? How should this work in Practice?**

The only negatives I can think of to an open book culture is that we expose ourselves to additional scrutiny and give potential competitors on future projects inside knowledge. Reviewing actual cost data can be time-consuming for commercial staff and open the project up to the potential review of every cost element. However, an open book culture enables assessments of our applications and cost increases due to the change to be fully transparent. It reduces disagreements based on assessments. An open book contract prevents misunderstanding of cost build-ups as they can be based on actuals. It also prevents forecasts from having elements of bounce, preventing parties from managing risks within budgets and making incorrectly priced or project overspends visible. I feel an open and honest approach to everything means the best for the project.

### **What are the barriers to early assurance from pre-procurement to delivery phases.**

I have noticed an increase in rates due to subcontractors and contractors being held to commercial agreements that were insufficient over the past few years, steel, labour, and fuel are the main ones. Subcontractors and SMEs are trying to recover previous losses and now the current uncertainties within the economic environment are exasperating the situation. As well as cost increases, I am seeing an increase in commercially aggressive pre-commencement discussions, subcontract applications, and final accounts.

### **Why there is often resistance to audit compared to deals/commercial arrangements?**

I appreciate the benefits of auditing and providing clients and parent companies comfort from independent auditors. I have not resisted auditing, but I do find it frustrating. Auditing compliance with the policy shouldn't be required if a project is run correctly. I personally find the peer reviews by those who are familiar with the complexities of the project more beneficial, and they find more errors or potential issues. The auditor's lack of commercial involvement and familiarity with major civil work processes could lead to miss understanding and potentially missing areas of concern. Working on major infrastructure projects, deals are not an option and auditing is heavily favoured and a very common occurrence.



Dr Anywhere is currently the Rail Division Commercial Manager at BAM Nuttall Ltd in West Sussex, UK a position he has held since November 2006. Before this, he was the Managing Quantity Surveyor at Faithful and Gould in London for a year, and before that, he worked as a Senior Project Surveyor at Davis Langdon & Everest in London for almost three years. He has over 30 years of experience In the construction Industry, having served as the Chief Quantity Surveyor at Costain Zimbabwe for over 12 years.

**Dr Anywhere  
Bam Nuttall**

## **Open book culture – what it means & how should this work in practice?**

### **Open-book Culture**

This means being open and honest with each other in the contractual arrangement and sharing all documents required in support of cost assurance audits. For this to work and to manage expectations and avoid surprises a list of base documents required to support this openness is to be agreed upon and wherever possible included in the contract rather than leaving an open-ended requirement in the contract that just says records are required to be kept in support of cost assurance audits. Behavioural training for project teams responsible for keeping/recording documents/records is also needed to support and promote the culture of openness required for this to work.

### **Industry Skills and Behaviours**

Emerging challenges are that staff coming through from academia appear to struggle when faced with open book culture may be due to a lack of training/education in the curriculum – a coordinated effort involving professional organisations, industry leaders and client organisations to get such subjects taught in educational institutions – the soft skills that appear to be in the blind spot of the current curriculum. Are we doing enough to harness the power of digital construction tools to help with improving on data collection, data analysis and accessibility? I do not think so and believe there is room for improvement.

### **Barriers to early assurance**

Lack of cost assurance specialist involvement during the early stages of procurement with their involvement currently being tagged post contract at which point the opportunity to influence best practice cost assurance processes and systems is gone/missed. Lack of knowledge by the parties involved is another barrier. Most if not all contractual arrangements over the last 100 or so years were non-cost-based contracts with no requirement for construction cost audits by the client organisation/consultants, so this process is a relatively new phenomenon and most parties involved are genuinely not experienced in the process. Compounded with this are differences in cost capturing/collation systems out there in existence which may not have been geared to fulfil robust cost assurance audits. So a combination of people, processes and culture in the industry have contributed to the barriers to cost assurance audits that we see today.

## **Resistance to audit compared to deals/commercial arrangements.**

Audits take a long time to undertake and cost more to clients leading to a temptation to make commercial deals in some cases. The contractor may feel that he/she has not got all the records required for an audit and therefore will be more inclined to make a deal rather than have the agony to fail an audit and not get the resolution that he is expecting which may come through a negotiated commercial deal. The contractor/client may lack the resources to undertake a comprehensive audit and therefore go for a commercial deal as this is relatively cheap and quick to achieve in most cases where there is willingness to get an agreement from both parties.



**Tony Cave is a seasoned professional in the rail and infrastructure industry with over two decades of experience. As the Managing Director and Founder of Croftstone Management Limited, Tony has spent 12 years leading the company to become a top commercial management consultancy, delivering services across various infrastructure sectors, particularly rail. Before founding Croftstone, Tony held multiple positions at Network Rail, such as Programme Commercial Manager and Senior Commercial Manager, accumulating over 11 years of experience within the company.**

**Tony Cave**  
**Croftstone Management**

### **Open-book Culture - What does this mean? How should this work in Practice?**

An open-book culture refers to a transparent and collaborative approach to financial and commercial matters within a project or organisation. It involves sharing relevant information, such as cost data, budgets, and financial performance, openly and honestly among all stakeholders involved. This fosters trust, promotes effective communication, and encourages joint problem-solving. In practice, an open-book culture can be implemented by:

- **Establishing clear expectations and guidelines:** This involves defining the principles of openness, trust, and collaboration in project contracts and agreements. Ensuring that all parties understand their roles, responsibilities, and the importance of open communication.
- **Sharing relevant financial information:** This entails facilitating the sharing of financial data, cost breakdowns, and project budgets with all involved stakeholders. This enables a shared understanding of the financial aspects of the project and promotes collaboration in cost management.
- **Regular reporting and updates:** This includes providing regular updates on project finances, including progress against budget, actual costs incurred, and forecasts. This allows stakeholders to monitor financial performance, identify potential issues, and make informed decisions.
- **Collaboration in decision-making:** Encouraging stakeholders to participate in financial discussions, value engineering exercises, and cost-saving initiatives. Fostering a culture where ideas and suggestions from all parties are welcomed and considered.
- **Establishing trust and accountability:** Building trust among stakeholders by ensuring that financial information is accurate, reliable, and presented in a transparent manner. Holding regular review meetings where financial performance is discussed openly, and issues are addressed collectively.

## What are the barriers to early assurance from pre-procurement to delivery phases?

Some barriers to early assurance from pre-procurement to delivery phases include:

- **Lack of clarity on project requirements:** Insufficient understanding of project scope, objectives, and stakeholder expectations can hinder early assurance efforts. Unclear requirements make it challenging to establish effective assurance mechanisms and can lead to delays in identifying and addressing potential issues.
- **Limited stakeholder engagement:** Inadequate involvement and collaboration among key stakeholders during the early stages of a project can impede early assurance. Lack of communication and coordination among stakeholders can result in missed opportunities to address risks and ensure compliance with project requirements.
- **Resource constraints:** Limited availability of skilled resources, both internally and externally, can pose challenges to conducting early assurance activities. Insufficient staffing, budget constraints, or a shortage of specialised expertise can hinder the ability to perform thorough audits and assessments in the early phases of a project.
- **Complex procurement processes:** Lengthy and complex procurement procedures can delay the initiation of assurance activities. If assurance is not factored in early, it may be difficult to align the assurance plan with the project timeline, leading to gaps in monitoring and control.
- **Resistance to change:** Resistance from stakeholders, including contractors, to adopt new assurance practices or engage in early assurance activities can act as a barrier. Reluctance to embrace new approaches or perceived burdens associated with additional scrutiny can hinder the effectiveness of early assurance efforts.



**Justice Sechele**  
**Arup**

**ARUP**

Justice Sechele is a chartered quantity surveyor with over 15 years of experience in the construction industry. He has provided strategic advisory services in capital projects across the UK, as well as in countries like Poland, Botswana, Nigeria, and Cameroon. Currently leading a cost management team at Arup, Sechele is focused on implementing innovative approaches such as the 5D BIM initiative to enhance efficiency and deliver value to clients. With a strong emphasis on leadership development, he completed an Executive MBA at Warwick Business School, equipping him with strategic thinking skills that further enhance his ability to drive success in the industry.

### **What are the current and emerging challenges?**

The construction industry faces several current and emerging challenges related to skills and behaviours. Some of the key challenges include the following:

- **Workforce Shortage:** One of the significant challenges in the construction industry is a shortage of skilled labour. Many experienced construction professionals and operatives are retiring, and there is a lack of new talent entering the industry. Succession planning and knowledge transfer strategies are essential to capture the expertise of senior professionals and operatives and transfer it to the next generation. Other geopolitical and market forces such as BREXIT have compounded pressure on the UK workforce shortage. This shortage of skilled workers can lead to delays, increased costs, and reduced productivity.
- **Skills Gap:** The construction industry is evolving rapidly with advancements in technology, sustainability practices, and new building techniques. However, there is a gap between the skills required for these emerging trends and the skills possessed by the existing workforce. Bridging this skills gap through training and upskilling programs is crucial.
- **Technological Advancements:** The construction industry is becoming increasingly reliant on technology, such as Building Information Modelling (BIM), drones, robotics, and augmented reality. However, integrating these technologies into daily operations requires construction professionals to have digital literacy and the ability to adapt to new tools and systems. There is a risk that some labour-intensive and repetitive operations are likely to be replaced by technology in the future which may require the workforce to be upskilled and trained in other areas to ensure their continued employability.
- **Safety, Health, and Well-being:** Construction sites can be hazardous environments, and ensuring construction professionals' and operatives' safety, health, and well-being is a constant challenge. Promoting a strong safety culture and enforcing best practices are essential to mitigate risks and prevent accidents.
- **Diversity and Inclusion:** The construction industry traditionally lacks diversity and struggles with inclusivity. Encouraging a more diverse and inclusive workforce can bring in fresh perspectives, improve innovation, and address skill shortages. Efforts should focus on attracting and retaining individuals from underrepresented groups and creating inclusive work environments.

- **Soft Skills and Collaboration:** In addition to technical skills, the construction industry requires strong soft skills such as communication, teamwork, problem-solving, and adaptability. Building effective collaboration between different stakeholders, including contractors, subcontractors, architects, engineers, other consultants, and clients, is crucial for successful project delivery.
- **Sustainable Practices:** Sustainable construction practices are gaining prominence due to environmental concerns and regulatory requirements. Adopting sustainable behaviours, such as green building techniques, energy efficiency, and waste reduction, requires the construction workforce to be knowledgeable about these practices and committed to their implementation.
- **Addressing these challenges** requires proactive efforts from industry stakeholders, including construction companies, trade associations, educational institutions, and government agencies. Initiatives should focus on attracting and developing new talent, providing relevant training programs, promoting safety, health, and wellbeing practices, fostering diversity and inclusion, and adapting to technological advancements. By addressing these challenges, the construction industry can build a skilled and resilient workforce capable of meeting the demands of the future.

### **What are the obstacles from the pre-procurement to delivery phases?**

Early Assurance refers to the process of providing assurance during the pre-procurement to delivery phases of a project. It involves identifying and mitigating risks early on to ensure successful project outcomes. However, several barriers can impede the effective implementation of Early Assurance. Below are some of the common obstacles across the different phases:

#### **Pre-Procurement Phase**

- **Lack of Clarity:** Unclear project objectives, scope, and requirements can hinder the early identification of risks and development of appropriate assurances.
- **Inadequate Stakeholder Engagement:** Insufficient involvement and collaboration with key stakeholders, including project owners, designers, and end-users, can lead to misunderstandings and gaps in expectations, making it challenging to provide assurance.

#### **Design Phase**

- **Insufficient Information:** Incomplete or inaccurate design information can hinder the assessment of risks and the ability to provide relevant assurances.
- **Inadequate Design Coordination:** Poor coordination among the design team members can lead to conflicts, inconsistencies, and omissions in the design, making it difficult to provide effective assurances.

#### **Procurement Phase**

**Lack of Contractor Collaboration:** Limited collaboration and communication with potential contractors during the procurement process can hinder the early identification of risks and the development of appropriate assurances.

o **Inflexible Contract Terms:** Contractual terms that restrict flexibility and prevent adjustments based on early risk assessments and assurances can impede effective risk management.

#### **Construction Phase**

o **Inadequate Communication and Documentation:** Poor communication among project stakeholders, including contractors, subcontractors, and suppliers, can lead to misunderstandings, delays, and errors in the construction process, affecting the ability to provide effective assurances.

o **Inadequate Quality Control:** Insufficient monitoring and control of construction quality can result in defects and non-compliance with project requirements, undermining the effectiveness of early assurances.

## Delivery Phase

- o Lack of Monitoring and Evaluation: Inadequate monitoring and evaluation of project performance and outcomes can hinder the identification of issues and the provision of appropriate assurances during the delivery phase.
- o Limited Post-Delivery Support: Insufficient support and maintenance services after project delivery can affect the long-term performance and effectiveness of early assurances.

Overcoming these barriers requires proactive measures, including:

- Clearly defining project objectives, scope, and requirements during the pre-procurement phase.
- Engaging and involving key stakeholders throughout the project lifecycle to ensure their buy-in.
- Promoting effective communication and collaboration among all project participants.
- Implementing robust risk assessment and management processes.
- Incorporating flexibility in contract terms to accommodate early risk mitigation measures.
- Mandating independent assurance throughout the construction process.
- Establishing mechanisms for ongoing monitoring, evaluation, and post-delivery support.

By addressing these barriers, Early Assurance can be effectively implemented, leading to improved project outcomes, reduced risks, and enhanced stakeholder satisfaction.