CONSTRUCTION MANAGEMENT

Clients are returning to package-based procurement to get better value from their supply chain, even though this involves taking on much more risk. Simon Rawlinson of Arcadis examines the steps that clients need to take to deliver a successful construction management project.

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INTRODUCTION

Construction management is the building procurement route most subject to business cycles and client sentiment. A small number of clients stick with it because it offers them the best balance of speed, flexibility and control over the project design and delivery. However, others will only adopt it when it’s not possible to deliver projects by less risky, more conventional approaches, such as design and build. Similarly, contractors only consider fee-based work when their ability to secure profitable, lump-sum contracts is compromised.

Now is such a time. Contractors’ weak balance sheets mean they are less able to carry delivery risk at an acceptable price, and clients want to secure better value and greater transparency by cultivating direct relationships with specialist contractors. This has resulted in a wide range of ways in which clients have moved away from lump-sum contracting, ranging from direct delivery and construction management to early procurement of key packages for a conventional, contractor-delivered project. Whereas construction management was previously prized for the opportunity to accelerate the programme and accommodate change, clients now appreciate access to specialist contractors and insight on project status.

How long construction management’s popularity will last is difficult to forecast, but, while clients need to take on a greater share of risk to deliver projects, all members of the project team – client, construction manager, designers and contractors – must work in a more disciplined and open way. It is a procurement route where all parties must play their part, and the construction manager manages the process.

Most importantly, the client leads, takes responsibility for decision making and accepts the risks and benefits of the project. No other procurement route is more sensitive to the capability of the client’s team and no other approach will expose the strengths and weaknesses of the project management process so much. Clients with the skills and capability to drive their project should be able to deliver great outcomes. However, for clients more accustomed to the “hands off” culture of design and build, the risks of being at the centre of a project are only too real.

THE REVIVAL OF CONSTRUCTION MANAGEMENT

In the late 1980s, construction management was introduced into the UK because conventional lump sum contracting could not deliver high quality office buildings quickly enough into a booming market. In the 1990s, construction management was also adopted by non-commercial employers including governments and arts organisations on complex, one-off projects such as the Scottish Parliament. These were delivered to varying degrees of success, cementing construction management’s reputation as a procurement route that relies on expert client leadership and effective CM input.

During the depths of the recession, clients were able, for a time, to transfer a high degree of project risk to the supply chain, meaning that construction management’s appeal fell away. However, as the market over-heated, cost overruns, delays and contractor failures have highlighted the hidden costs associated with two-stage lump sum procurement.
Firms providing CM services also need to be attracted to commissions in the current market, when demand is growing and where little additional capacity is being added. Fee levels at around 2.5% are, for example, well below the levels of overhead and profit that are currently sought in competition for design and build projects. Currently, the main attraction is the opportunity to take on projects with a reduced risk profile, retaining relationships with clients and suppliers.

Given that many contractors have to adopt a risk-averse approach to complex projects, the CM option is an appealing alternative for contractors with the right skill set and track record.

Unfortunately for both clients and construction managers, the cyclical demand for construction management procurement is a problem. Both face problems maintaining the skills base and struggle to grow teams when demand returns. As a result, competition for experienced managers is currently very high.

ADVANTAGES AND DISADVANTAGES OF CONSTRUCTION MANAGEMENT AND PACKAGE PROCUREMENT

The conventional view of package-based procurement routes such as construction management is that the main benefits come from opportunities to overlap design and construction to accelerate the programme, together with the client’s ability to accommodate major change without a significant cost penalty. It has been said that unless speed and flexibility are crucial to the client, there is not enough benefit in construction management to justify the additional in-house resources required and the extra risk that the employer must hold. Funders are also wary of these risks and their need for certainty will influence the project’s management.

However, with clients looking to use package procurement to reduce the costs of risk premiums and to build better relationships with their specialist contractors, the priorities associated with the delivery of CM projects have subtly changed. For example, whereas the client might previously have seen the benefit of accessing the construction manager’s preferred supply chain, in the current market, the client is more likely to take steps to “sell the project” directly with suppliers of their choosing.

These problems have reduced the benefits of single point responsibility offered by lump-sum contracts and have highlighted the increasing loss of control that occurs through the two-stage tender process. Increasingly, clients and contractors have recognised that the costs of risk transfer on lump sum contracts exceed the benefits to either side. The advantage of construction management for clients is that it eliminates “worst-case” up-front risk allowances that are routinely built into lump-sum bids, increasing the transparency of commercial dealings.

Costs are only incurred if the risks crystallise. Furthermore, if there is the prospect of a market slowdown, package procurement allows the client to benefit from some of that market correction without placing undue pressure on the subcontractor supply chain.

One of the main drivers for clients to adopt construction management and other forms of package procurement is the opportunity to engage directly with trade contractors. A slowing market is encouraging trades to diversify, giving clients direct access to specialist expertise and innovation. It is not easy to compete with contractors for trade contractor interest, and clients need to invest in mutually beneficial relationships to attract their interest.

Steps that clients may need to take to secure the supply chain include:

- Investment in warming-up suppliers through well-managed soft market testing
- Direct involvement in the project by senior members of the client organisation
- Commercial flexibility on issues like the levels of liability and payment terms
- Being easy to do business with – for instance by having reliable and simple payment processes
- Using the CM’s supply chain relationships.

These include:

- Increased costs of risk premiums affecting project viability
- Limited benefit from early contractor involvement
- Lack of transparency and reduced levels of collaboration in project teams
- Poor design and risk management
- Low profits throughout supply chain
- Ineffective lump sum procurement that delivers neither competitive prices nor cost certainty.

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Similarly, clients are taking greater ownership of the commercial dimensions of the project – recognising the opportunity to drive better value through the transparency of contractual arrangements with the supply chain.

These benefits are of course only secured if the project goes well, and it is important to establish a culture where the whole team work together to “do the right thing” for the project.

Clients also need to understand and mitigate the downside risks of CM, as the consequences of proceeding with a poorly set-up and managed CM project will directly affect them.
Assuming that a project is well set up with a client that understands its role in delivery, the benefits and disadvantages of CM can be summarised as follows:

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Disadvantages</th>
<th>Mitigation</th>
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<tbody>
<tr>
<td>Faster overall programme by overlapping design and construction</td>
<td>Design coordination risk and increased likelihood of design change</td>
<td>Design baseline needs to be complete enough to inform the detailing of early packages</td>
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<tr>
<td>Ability to closely manage cost during design and procurement</td>
<td>No single point lump sum cost commitment. Cost certainty only achieved when all packages are let and the project is completed</td>
<td>Clarity over package scope and what has and has not been procured. Procure a high proportion of value at an early stage. Obtain detailed costs as part of tender submission.</td>
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<td>Opportunities to adjust the timing of procurement to secure commercial benefit</td>
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<tr>
<td>Proactive management to integrate design and construction</td>
<td>Exposure to risk associated with construction management and team performance</td>
<td>Accurate and appropriately complete design information. Proactive management of the programme and scope of unlet packages to mitigate change. Client management of the risk pot. Understanding of the knock-on impacts of change on following trades.</td>
</tr>
<tr>
<td>Input of specialist trades into the development and co-ordination of mature design solutions</td>
<td>Reliance on capability of construction management and project team to forecast consequences of change. Responsibility to fund solutions to problems should they occur.</td>
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<tr>
<td>Hands-on involvement of the client on the project</td>
<td>Increased administration role for client on construction management route</td>
<td>Investment in an in-house team supplemented by the construction management team. Clear identification of the client’s focus, for example on approvals and sign-offs.</td>
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<tr>
<td>Fully professional team, including the construction manager, focused on project delivery. Integration of design and construction skills</td>
<td>Construction management and professional team owe duty of care liability only.</td>
<td>Client leadership to ensure that team members perform their role. Clearly defined roles and responsibilities with well-managed interfaces.</td>
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<td>Full control over design including incorporation of design by specialist</td>
<td>High degree of client ownership of risks associated with design including impacts of late/incomplete and uncoordinated design.</td>
<td>Client ownership of design management as an integral part of the procurement process. Give co-ordination duty to trade contractors.</td>
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<tr>
<td>Early appointment of construction advisors and specialist trade contractors</td>
<td>Early completion of some package design constrains following packages.</td>
<td>Development of the baseline design to a sufficient level of detail.</td>
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<tr>
<td>Ability of client to influence the selection of trade contractors</td>
<td>Added complexity of one-to-one contractual relationships of client with all team members</td>
<td>Client investment in development of relationships with trade contractors.</td>
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<tr>
<td>One-to-one contractual relationships</td>
<td></td>
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<tr>
<td>Management focus on programme, sequencing and buildability</td>
<td>Reliance on management capability of construction management.</td>
<td>Quality of the construction management team and project management processes.</td>
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<tr>
<td>Client ownership of tendering and contractual arrangements</td>
<td>Client position at centre of management requires effective decision-making.</td>
<td>Manage procurement as part of the critical path.</td>
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<tr>
<td>Opportunity to package the work to suit the capability of the trade contractors and to manage on-site interfaces</td>
<td>Potential for co-ordination clashes and missing interfaces.</td>
<td>Package works down to the trade level at which the work will be done. Phase procurement of scope of package interfaces where programme allows.</td>
</tr>
<tr>
<td>Ability to identify and act upon poor trade contractor performance</td>
<td>Client exposure to performance risk and exposure to consequential loss associated with trade contractor default.</td>
<td>Insulate the rest of the project by resolving problems within the package. Manage change into following packages to recover programme and cost.</td>
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<tr>
<td>Avoidance of “spill over” of problems into the overall management of the project</td>
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TYPICAL CONSTRUCTION MANAGEMENT
SCOPE OF APPOINTMENT

As the analysis of the advantages and disadvantages of construction management demonstrates, the definition of the construction manager’s scope plays an important role in the mitigation of the added risk retained by the client.

While the work content of package procurement, project and commercial management are broadly comparable to any other construction contract, the exposure of the client to the impact of shortfalls in administration means that it is essential that requirements are clearly articulated and adhered to.

The following duties are typically found in a construction management appointment:

• Programming of design and construction activity, including information release programmes, approvals and reprogramming to meet overall completion dates
• Advising on buildability, construction methodologies, sequencing and logistics
• Managing the safe working environment and safety culture associated with the project
• Planning, co-ordinating, monitoring and managing the progress of design development
• Advising on requirements for preconstruction works, temporary works, mock-ups and testing
• Packaging up the works into well co-ordinated and clearly demarcated trade contracts, including the transfer of design responsibility and definition of package interfaces
• Advising on the pre-qualification of trade contractors
• Preparing and collating pre-qualification and tender documentation together with the administration and negotiation of tenders
• Planning and managing the work of trade contractors, including the administration of inspections and approvals
• Monitoring and reporting on overall progress and performance
• Forecasting the impact of design changes or disruption to the progress of the works
• Managing financial aspects of the project, including trade contract valuations, claims and the administration of contra-charges
• Initiating action by the client and project team to mitigate delays or cost over-runs
• Reporting on project performance.

To mitigate the client’s risk exposure, elements of the construction manager’s appointment including design management, contractor selection and procurement may be taken on directly by the client’s in-house resources rather than by the construction manager. This reflects the fact that these aspects of work are difficult to resource successfully in the current market and that weaknesses in these areas commonly contribute to poor-performance on conventional, lump-sum procurement.

Other aspects of the construction manager’s appointment that can be flexed to secure better value include:

• **Fee levels:** Some clients opted to apply fee premiums to specific elements of the work in order to buy out targeted elements of risk. Programme risk associated solely with craneage and hoisting can be bought-out in this way with a limited impact on overall project costs.
• **Logistics:** Typically bought as part of the construction manager’s scope. However, it can make sense to include some of the scope, such as craneage, within the scope of a trade package. Alternatively, some logistics packages can be hard procured, taking advantage of the commodity nature of many of these services.

The allocation of roles across the client team, design team and construction manager points to a wider issue with respect to the timing of the appointment. Conventional wisdom holds that a construction manager should be appointed as early as possible, to allow input into design development and procurement strategy. Certainly, this is preferable to the late adoption of a construction management approach as an alternative to a failed lump-sum procurement. But a balance needs to be struck with respect to the cost of the construction management service and the value that can be delivered before procurement starts in earnest. For example, on a project with a large, directly procured sub-structure element, it may be appropriate to bring the construction manager in later, as design development is progressed.
Other attributes that are valuable in a construction management team are strong “soft skills” – recognising that an adversarial approach to contract management is less appropriate on a trades contract project where the construction manager has no direct commercial interest in the project’s outcome. Similarly, a thorough, well-resourced approach to procurement and project management is needed to give the client confidence that the project is delivering value and to provide the knowledge base to manage package interfaces and change. Having access to a range of standard processes, documents, templates and databases and the skills to use them is an important attribute of the construction manager but one that is difficult to sustain given the cyclical nature of demand for the procurement route. As a result, it is important that clients assure themselves that their preferred construction manager has both the skills and systems in place to manage their risk exposure effectively.

There are package procurement options that involve a greater or lesser commitment to the management of a project that will help to manage the extent of this involvement. At one end of the scale is direct delivery, where no external consultant is appointed into the construction manager role and where the client takes on all project and commercial management roles. This approach is common in housebuilding but has also been adopted by some commercial and industrial clients.

At the other extreme, clients can invest in the development of relationships with their second-tier contractors, perhaps extending to the early procurement of major packages prior to a main contractor. Under the latter, less risky route, the client’s ability to secure an open dialogue with the trades will always be limited by the parallel conversations which must take place with the main contractor.

Construction management lies more towards the direct delivery route, albeit the scope of the construction manager’s role will determine the full extent of the client’s involvement. For clients going down the full construction management route, the following elements of the role are particularly important with respect to leadership, securing value and effective management of the process:

- **Provide project leadership:** Project success relies on decisive leadership by the client. This means the acceptance of responsibility and fast decision making. For this reason, construction management can be difficult to implement in an overly hierarchical client organisation.

- **Promote positive project culture:** Clients inevitably have a considerable influence on project culture. Typically, under construction management, the client is expected to play a major part in encouraging positive behaviours such as team collaboration. Where project viability and cost reduction are key factors in the adoption of package procurement, project culture must drive clarity, transparency and performance-to-role – a good example is the clear demarcation of the scope of client-side and supply chain-side design. The client will need to drive the adoption of the preferred style of Working

- **Invest in in-house capability:** The client should not wholly rely on the project team for key technical skill sets given the extra demands for management input and co-ordination created by the construction management approach. Priority areas where the client should focus investment include design-management and practical construction management skills in support of real-time decision making. This resource can be obtained through the appointment of a specialist.

- **Work within project disciplines:** Given the influential role that the client has on package-procured projects, it is essential that they adopt and promote a managed way of working. A good example is design sign-off, which needs to be performed with sufficient rigour to provide the assurance of a firm baseline.

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**THE ROLE OF THE CLIENT AND THE MITIGATION OF RISK**

In the current business cycle, package-based procurement is increasingly likely to be adopted by clients that do not have a track record in construction management. The emergence of economic considerations as the prime driver behind this trend means that a wide range of UK-based and overseas clients are considering not only how they can build more effective relationships with their trade contractors, but also how they can contribute more effectively to the actual delivery of work on their project.

Direct procurement is challenging for clients, not only due to the administrative burden and increased risk, but also because the client is more exposed to the day-to-day glitches and workarounds that are inevitable on complex construction projects. Clients under construction management, for example, will inevitably find themselves paying for the consequences of minor mistakes made by others, and through the greater transparency of package procurement, will become more aware of the challenges and costs associated with maintaining optimal utilisation of management, plant and logistics. While clients only pay for the work that is done under construction management, they will become more aware of how resources are used on projects.
• **Sell the project to suppliers:** Successful procurement increasingly relies on the client’s input into commercial dealings with trade contractors. Clients need to recognise that they do not have the buying power of the large contractors and as a result must work extra-hard to secure the interest of high-calibre contractors.

• **Maintain progress in-line with the programme:** Many of the activities undertaken by clients will sit directly on a project’s critical path. Procurement is a good example, where the ability to maintain progress on design development, package definition, tendering and acquisition report sign-off is essential to maintain project momentum.

• **Run a tight ship:** Routine administrative tasks associated with awarding contracts and processing of payments are an important contributor to a positive project culture. Investment in reliable systems will also help to differentiate the project for team members.

• **Be proactive when issues emerge:** Well-managed package-based projects should provide enough transparency to enable problems to be spotted and resolved early. It is important that clients act on early warnings and support the project team when recovering from problems.

## CONCLUSION

The emerging trend for construction management is borne out of a unique set of circumstances, with contractors stepping away from risk and with clients relying on building deeper relationships with their suppliers to obtain value through their construction projects. Increasingly, clients that do not have a background in construction delivery may begin to consider a procurement option that was previously off limits.

There are strong parallels with the adoption of construction management by non-specialist clients for the delivery of complex, lottery-funded projects in the 2000s. Many high-profile projects such as the Royal Albert Hall and Royal Opera House were delivered successfully, but others – notably The Public, a mixed-use arts project in the West Midlands – experienced severe problems, exposing suppliers, clients and funders to unnecessary losses and disruption.

Any client planning on undertaking a project under a construction management or package procurement route must understand their increased influence on project outcomes and the impact of their performance on the way in which a project will proceed. For this reason, it is essential that the client addresses critical success factors including:

• **In-house skills:** To perform the role, the client must have access to a construction capability that is independent of the construction manager and the project design team. This role is essential to provide the necessary real-time leadership and decision-making that construction management requires.

• **Project discipline:** Successful construction management projects rely on excellent project discipline. Project teams have increasingly lost the ability to fully complete and coordinate design solutions to the level of precision required. The client cannot wholly rely on either the construction manager or design lead to drive this requirement. Taking control is an important aspect of risk mitigation.

• **Primacy of the programme:** Many of the client’s actions lie directly on the critical path, meaning that clients will be exposed to the risk of triggering delay throughout the project. Putting in place the resources and management processes to drive and maintain the primacy of the programme is very important if project objectives are to be met.

• **Information quality:** The ability of project teams to develop and deliver increasingly complex design solutions has expanded through innovation and the ambition of clients. As projects require more unique solutions with complex co-ordination, clients need to ensure that the project teams deliver information that is up to the task – material should be complete, understandable, co-ordinated, priceable and buildable in order to protect the interests of the client.

• **Effective management of change:** Construction management’s appeal to many clients is the ability to introduce change without excessive penalty. Construction management doesn’t necessarily reduce the impact of changes on the progress of work but provides greater transparency and access to the contractors that manage the fallout. Construction management does not provide a licence for change, only a better means of managing the consequences. What is more, the mitigation is only effective when construction management is delivered effectively.

Construction management has never been a procurement route for all clients, but it does offer unique advantages to clients with the need, motivation and capability to drive value from their projects. For as long as clients need their supply chains to take on more risk than is commercially viable and some funders are prepared to lend without a fixed-price contract, there will be a demand for construction management. But to make these projects a success, clients will need management skills that are at least as good – if not better – than those seen on conventionally delivered projects.

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