

REVIEW OF SCOTTISH PUBLIC SECTOR PROCUREMENT IN CONSTRUCTION

**Guidance on Selecting a Procurement
Strategy and a Form of Contract**

Implementation of Recommendations

16, 17 and 18

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Selecting a Procurement Strategy and a Form of Contract

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1. Introduction

The Construction Procurement Review identified that not all procuring authorities apply an objective test to their selection of procurement strategies and the subsequent forms of construction contract. It concluded that there should not be a default to a reliance on “tried and tested” methods.

This paper seeks to encourage a selection process based on best fit for the delivery of project outcomes and for risk management. In particular, it attempts to encourage procuring authorities to include in their consideration the potential for a procurement strategy based on the definition of project outcomes and the early appointment of integrated teams.

Over the past decade, and more, a large number of reports have been published:

- Sir Michael Latham’s *Constructing the Team* (1994)
- Sir John Egan’s *Rethinking Construction* (1998)
- The National Audit Office’s *Modernising Construction* (2001)
- The Strategic Forum’s *Accelerating Change* (2002)
- The Office of Government Commerce’s *Achieving Excellence in Construction* (1999 – 2003)
- The Strategic Forum’s *Integration Toolkit* (2003)
- The Construction Industry Council’s *Selecting the Team* (2005)
- The Office of Government Commerce’s *Common Minimum Standards* (2005)
- The National Audit Office’s *Improving Public Services Through Better Construction* (2005)
- The Strategic Forum’s *Construction Commitments* (2006)
- The Strategic Forum’s *Profiting from Integration* (2007)

All have recommended that better value for money can be obtained by greater integration of the entire team, and more collaborative working. This should lead to the best possible solution in terms of design, buildability, environmental performance and sustainable development.

Whilst not suitable for all construction projects, nor all procuring authorities, it is recommended that the range of procurement strategies under consideration should include the best practice integrated team option.

2. Extract from the Review

6.7 Contract selection, terms and conditions

Contract forms

- 6.7.1 *Through our many stakeholder engagement meetings it has become obvious that public sector clients are using a myriad of contract forms.*
- 6.7.2 *In some cases, there has been a clear selection process applied to contract choice which addresses the nature of the work, the procurement method and the risks lying within a project.*
- 6.7.3 *In others, it appears that there has been much less thought and planning and rather a continuation of “tried and tested” historic practice, regardless of whether the contract type is the best fit or approach for the project in question. It is noticeable in some sectors that newer contract forms such as NEC3 and PPC2000, which promote a partnership approach to project delivery, are less widely used.*
- 6.7.4 *We do not seek to promote any particular contract form, but we find it self-evident that thought must be given to the pros and cons of whichever contract form is used for a given project.*
- 6.7.5 *Recommendation: Thorough consideration of options must be applied to contract selection as part of the pre-commercial stage.***
- 6.7.6 *To help achieve this recommendation, an updated comparison matrix of the main standard contract types currently available should be compiled and regularly reviewed and maintained.*
- 6.7.7 *We also believe that by recording the contract types being used for contracts awarded through Public Contracts Scotland (PCS) (see paragraph 7.3.9), greater intelligence on the usage of contracts could be accumulated and the public sector could more readily share experiences of different contract types and how well they have delivered. This will in turn help to make future contract selection more informed and the public sector client more confident in selecting the contract type most appropriate for the project.*
- 6.7.8 *Support should be available to authorities in contract selection decisions, making clear that ownership of risk and decision-making will still rest with the individual contracting authority.*
- 6.7.9 *On project completion and during post-occupancy evaluation, contracting authorities should also consider how well their selected contract type has delivered for them. This should be done in terms of quality of the end-product, value for money of both the project and the resource required to contract manage it, the collaboration it allowed and whether it delivered any additional benefits such as innovation. This learning should then be applied to future projects.*

Risk allocation and contract amendment

- 6.7.10 *Support should be available to authorities in contract selection decisions, making clear that ownership of risk and decision making will still rest with the individual contracting authority.*
- 6.7.11 *Sometimes this may be appropriate. However, this is not always the case. Risk should lie with the party most able to understand and manage it, and if that is with a contractor, be priced accordingly.*
- 6.7.12 *Chapter 7 discusses the need for skilled and capable teams to be involved in every construction exercise. Part of their role is to understand both the risks involved in a project, and the risk appetite of their organisations.*
- 6.7.13 *That level of understanding informs the decision making process on risk allocation in contracts. Once the level of risk has been quantified, an organisation might judge that the likely cost in choosing to accept that risk itself is less than the cost of paying another party to manage it – just as the Government self-insures the civil estate, rather than paying for commercial insurance, for example.*
- 6.7.14 *However, therein lies a key point. We have been told – anecdotally at least – that some client authorities view the current economic climate as an opportunity to price accordingly.*
- 6.7.15 *Public sectors buyers clearly have an obligation to get the best deal for the taxpayer they can. This must be sustainable, however. Risks will often not be realised, but inevitably sometimes they will be. If contractors have accepted these risks without explicitly factoring them in to their prices, there is a very real danger of this driving undesirable behaviours – cutting corners on quality in an effort to claw that cost back elsewhere, for example.*
- 6.7.16 *Alternatively, just as some clients are alleged to be using their current market strength to push risk on to contractors, so the main contractor might use its market position to push that risk to sub-contractors, and so on down the supply chain until the risk lies wholly inappropriately with the party least able to manage that risk, and most vulnerable should that risk materialise. This can lead to insolvencies and significant disruption to the planned programme for the project.*
- 6.7.17 *If – as some people have suggested to us – this is reflective of current practice in some areas, it is clearly neither sustainable nor desirable.*
- 6.7.18 *Recommendation: There must be an open, mature and reasonable discussion between parties when deciding on the allocation of risk.***
- 6.7.19 *On the part of the client, this means accepting that the party who accepts the risk should be fairly compensated for so doing.*

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- 6.7.20 *There is a role for industry, too, in addressing its own behaviour. We speak in chapter 10 about the need for contractors to act reasonably towards their supply chain – and so, just as the public sector client should engage in constructive discussion about allocation of risk with the contractor, so too should the contractor with its supply chain.*
- 6.7.21 *The amendment of contracts presents two further main risks. Firstly, that additional clauses may be incompatible with the remainder of the contract, and may lead to contractual disputes, or to clients being liable for costs which they thought that they had passed to the contractor.*
- 6.7.22 *Secondly, that, as the complexity of the contract increases, parties to it face increasing legal costs. Indeed, one Scottish contractor told us that in both 2011 and 2012 their legal bill charged to contracts was six times higher than it was in 2006.*
- 6.7.23 *Whilst not in any way seeking to diminish the rights or duties of either party to a contract to protect their interests with appropriate contract conditions, we do believe that there has to be a greater recognition of the pressures which can be caused by over-zealous amending of standard forms of contract.*
- 6.7.24 *Recommendation: Any variations to standard forms of contract should be kept to a minimum and used only when absolutely necessary to take account of the particular circumstances of the project. We also recommend that any such amendments should be clearly highlighted within contract documentation so that client and contractor are clear on the variations being imposed to the standard terms.***

3 Summary of Generic Procurement Strategies

There are five generic procurement strategies:

- Integrated
- Traditional
- Design and Build
- Management
- Revenue Financed

Each has variants, and further options can be applied to some of the variants:

- Frameworks
- Two Stage Tenders
- Target Cost Contracts

Finally, there are a variety of forms of construction contract which can be used with each variant and/or option which reflect differences in risk allocation between the parties and differences in the mechanisms for payment, variations and disputes.

Two standard forms of contract which historically were widely used are no longer maintained by their publishers. The Institution of Civil Engineers no longer supports or maintains its ICE Contract. Similarly, the GC Works suite of contracts are no longer updated by PACE (Property Advisors for the Civil Estate). As such, these forms of contract should normally no longer be used.

Other forms of contract such as the FIDIC suite published by the International Federation of Consulting Engineers, and the ICC Conditions of Contract, published by the Association of Consulting Engineers (ACE) and the Civil Engineering Contractors Association (CECA) are available. These are not in common use and are not considered in detail in this guidance note, but may still be worthy of consideration.

A summary of the generic procurement strategies and associated forms of contract is contained in the following table:

Figure 1 – Summary of Generic Procurement Strategies

Procurement Strategies	Integrated		Traditional	Design and Build		Management		Revenue Financed	
	Early Integrated Team	Hub Design and Build	Traditional	Design and Build	Design, Develop and Construct	Management Contracting	Construction Management	Hub DBFM	NPD
Option for Cost Reimbursable Target Cost	✓	✓	✓	✓	✓	✗	✗	✗	✗
Option for Two Stage Tendering	✓	*	✓	✓	✗	✗	✗	✗	✗
Option for Framework	✓	✗	✓	✓	✓	✓	✓	✗	✗
Available forms of Contract	SBCC Constructing Excellence NEC 3 Option C with Secondary Partnering Option X12 PPC 2000	Standard hub Design, Build, Development Agreement	SBCC Various NEC 3 Options A and B	SBCC Design and Build NEC 3 – Various Options Combinations	SBCC Design and Build NEC 3 – Various Options Combinations	SBCC/JCT Management Contract NEC 3 Option F	SBCC/JCT Management Contract NEC 3 Option F	Standard hub DBFM Model Form	Standard NPD Model Form

* The hub programme pricing mechanism is very similar to a 2 stage tendering approach.

4 Common procurement strategies and their characteristics

4.1 Characteristics

In the remainder of this section, each of the 8 most frequently used procurement strategies are described. Each description is accompanied by an assessment, in matrix form, of the extent (low 1 – high 10) the strategy displays each characteristic. Selection of the most appropriate strategy should be undertaken by a project specific analysis of the relative characteristics of each option. Firstly, the procurement strategy choices would be sifted by pass/fail criteria. Those choices remaining would then be assessed by a weighted score analysis to arrive at the optimum project specific strategy. This process is described in more detail, with examples, in section 6.

Characteristic	Description
Expert client involvement needed	The degree of expertise, low-high, needed by the client body
Client control over design and specification solutions	The amount of control afforded to the client in selecting a design solution, rather than simply testing if the specified outcomes are achieved.
Needs the client to produce an output performance specification. Often called “Employers Requirements” or “Accommodation Requirements”	The extent to which the procurement strategy is reliant on a detailed set of client technical requirements. For each design element this is normally expressed as achieving a minimum performance level.
Ease of implementing change during construction	The ease of instructing a change and of agreeing any implications of cost and time
Supports the early appointment of an integrated team	The extent to which the strategy enables contractors and designers to work collaboratively from an early stage of the project
Single point design and construction responsibility	The extent to which responsibility for both design and construction is contractually combined.
Cost and time certainty after contract execution	Measures the degree to which construction phase risks are typically able to be transferred to the contractor
Speed of development	A measure of the relative speed from project inception to start of construction
Suitable for simple projects	Low resource levels and limited expertise needed – low client administration
Suitable for complex projects	Supports a high level of client involvement, specialist contractor design, optional supply chain intervention by the client, complex risk management
Suitable for a target cost approach	The extent to which the strategy supports the use of a collaborative approach to procure to a cost target
Suitable for 2-stage tendering	The extent to which the strategy supports a 2-stage tendering approach

4.2 Integrated Procurement Strategies

4.2.1. Early Integrated Team / Partnering

Constructing Excellence defines this type of procurement strategy as:

“Working together in a seamless team to common objectives that deliver benefit for all through mutually beneficial (including commercial) alignment.”

The benefits of developing projects collaboratively have been promoted extensively by both Egan and Latham in their ‘Rethinking Construction’ and ‘Constructing the Team’ reports. In Scotland, the hub programme has also been developed on these principles.

Three forms of standard contract have been developed to facilitate partnering approaches:

- JCT Constructing Excellence;
- NEC3 with Partnering Option X 12; and
- PPC 2000

The first two rely on a series of bilateral contracts between the client and each supplier. PPC 2000 provides for a multilateral partnering agreement.

A number of operating models exist for partnering, most embody the following principles:

- The client develops a functional, outcome focussed brief with specific requirements covering budget, sustainability criteria and community benefits
- An integrated team of designers, contractors (including specialist design contractors if appropriate) and facilities managers is assembled based primarily on quality
- In collaboration with an informed client involvement, the team develop the most appropriate design solution, normally based upon open-book cost management and transparent risk identification, mitigation and allocation
- The subsequent construction contract can be based on a variety of approaches but will be characterised by fairness in risk allocation and payment mechanisms.
- Partnering is often used in framework arrangements where the long term benefits of teams who work together regularly can be realised
- Key performance measurements are used to drive improvement and include reviews of behaviours as well as hard processes.

The potential risks are;

- Requires strong client leadership and experience.
- Disputes between partners can be more difficult to resolve using contractual remedies and instead rely on the operation of mutual trust and respect, and escalation if necessary to senior management.
- Care and diligence is needed to understand the final risk allocation and its management in the construction contract.
- Relies on good benchmarking and cost data to establish a cost ceiling in order to demonstrate value for money, especially if competitive tendering is not used for all packages of works.

The potential benefits are;

- Maximises the opportunities for innovation in developing the optimum solution.
- Provides very good risk management.
- Strong alignment with client objectives and outcomes.
- Strong basis to develop continuous improvement in long term relationships.
- Potential to minimise claims during construction because of better risk identification, mitigation and allocation.

More recently, the UK Government instigated trials of new methods of procurement which embrace the concept of the appointment of an Integrated Team at the earliest opportunity.

Procuring Authorities considering this strategy are advised to research the operation of hub programme projects and also the progress being made by the UK Government trials of Cost Led Procurement and Two Stage Open Book. Descriptions of each of these procurement routes and links for guidance on their use follow:

Cost Led Procurement – The client puts in place a framework agreement with one or more integrated supply chain teams (encompassing designers, constructors, specialist suppliers and manufacturers). Teams are selected on their ability to work in a collaborative environment to deliver below the cost ceiling on the first project through continuous improvement, and achieve cost reductions on subsequent projects while maintaining the required quality outcomes. There is early market engagement and, through competition, 2-3 integrated framework supply teams are then given the opportunity early in the life of projects to develop their bids with the client team, allowing them to bring their experience to bear to innovate and drive cost reductions. Provided at least one of the supply teams can beat the cost ceiling, it is then selected on the relative scored attractiveness of its commercial and physical proposition, and of its team members, before being awarded the contract to deliver the project. Should none of the teams be able to deliver the work, the project is offered to

suppliers outside the framework. Further information can be found via this link: [Cost Led Procurement Guidance](#)

Two Stage Open Book - The Two Stage Open Book model sees the client invite suppliers on an existing framework agreement to bid for a project contract on the basis of an outline brief and cost benchmark. A number of contractor-consultant teams compete for the contract in a first stage with bidders being chosen based on their capacity, capability, stability, experience and strength of their supply chain, and fee (profit plus company overhead). The winning team then works up a proposal on the basis of an open book cost that meets the client’s stated outcomes and cost benchmark as a second stage. A key objective of this model is to further reduce supply chain bidding costs. Further information can be found via this link: [Two Stage Open Book Guidance](#)

Strategy: EARLY INTEGRATED TEAM / PARTNERING

Characteristic	Low										High
	1	2	3	4	5	6	7	8	9	10	
1 Expert client involvement needed											↔
2 Client control over design and specification solutions											↔
3 Needs client production of an output performance specification											↔
4 Ease of implementing change during construction											↔
5 Supports early appointment of an integrated team											↔
6 Single point design and construction responsibility											↔
7 Cost and time certainty after contract execution											↔
8 Speed of development											↔
9 Suitable for simple projects											↔
10 Suitable for complex projects											↔
11 Suitable for a target cost approach											↔
12 Suitable for 2-stage tendering											↔

4.2.2. hub

The hub programme has been established in Scotland and consists of five regional hubCo development companies. These are owned 60% by a competitively procured private sector development partner (PSDP) and 40% by the public sector. Each development company, (hubCo), can undertake project development work, strategic support services (professional consultancy services) or facilities management services.

“Participants” is the term used to describe those procuring authorities who have signed each Territory Partnering Agreement. They are mostly Local Authorities, NHS Boards and blue light services.

Any Participant with a project meeting the original procurement criteria – essentially a project delivering community services – can issue a ‘New Project Request’ (NPR) to the hubCo. This consists of a project brief and an associated budget which, if accepted by the hubCo, means that an Integrated Team, consisting of a Tier 1 contractor, designers and other consultants as appropriate, is then selected from the hubCo supply chain in consultation with the Participant. A proposal for delivering the project, based on a scheme design, is then collaboratively worked up over a period of approximately three months.

Design development is a joint exercise with the Participant. Risks are jointly identified, surveys and investigations carried out and options considered. A project development fee is only payable by the Participant if the proposal meets the project brief and budget criteria set out in the NPR (and can also demonstrate value for money). All components of the project development fee are subject to percentage fee caps set at the time of the original, competitive PSDP procurement.

Once the initial (“Stage1”) proposal is accepted, hubCo develops the design and, via its Tier 1 contractor, competitively tenders a minimum of 80% of the prime cost of the project on a transparent open book basis. The Tier 1 contractor’s overheads, preliminaries and profit are subject, again, to percentage caps of the prime cost. A “Stage 2” proposal is presented to the Participant and if this is accepted, a development contract is entered in to between the Participant and hubCo. A back-to-back construction contract is let at the same time between hubCo and its Tier 1 contractor. The standard hub terms are based on those of a design and build contract. Recognising the period during which the Integrated Team has identified, mitigated and priced risks, the terms include for the risks on ground conditions, weather, utilities and contamination (with exceptions for areas not able to be surveyed) to be transferred to the hubCo and in turn to its Tier 1 contractor.

Each hubCo has an initial 20-year term. The performance of each hubCo is monitored by a Territory Partnering Board, with a representative from each Participant, against both project KPI’s and continuous improvement KPI’s.

The potential risks are;

- Relies on clients being able to identify well defined project outcomes (a Brief) and to have a good understanding of the likely outturn cost.
- Relies on robust interrogation of hubCo proposals.
- Choice of contractors and consultants are mostly restricted to members of the hubCo supply chain, although there is a requirement for this to be refreshed regularly.

The potential benefits are;

- Significant time and resource is saved by not needing to comply with regulations relating to advertising and competitively tendering contracts for design or contractors.
- Embraces all the benefits of Early Integrated Team working.
- Provides very good risk management.
- Provides benefits of a long term relationship with hubCo.
- Provides very good time and cost certainty in the absence of variations.

Strategy: HUB

Characteristic	Low										High
	1	2	3	4	5	6	7	8	9	10	
1 Expert client involvement needed											
2 Client control over design and specification solutions											
3 Needs client production of an output performance specification											
4 Ease of implementing change during construction											
5 Supports early appointment of an integrated team											
6 Single point design and construction responsibility											
7 Cost and time certainty after contract execution											
8 Speed of development											
9 Suitable for simple projects											
10 Suitable for complex projects											
11 Suitable for a target cost approach											
12 Suitable for 2-stage tendering											

Note: The hub pricing mechanism is very similar to that of stage 2 tendering.

4.3 Traditional Lump Sum Strategy

With this type of contract, the design team are employed directly by the client to fully develop the design prior to going out to tender. The construction contract is with a main contractor who has responsibility only for the construction works. If the design has been fully thought out, developed and frozen, this type of contract should provide a reasonable degree of cost certainty at tender stage, subject only to client risk events. However, the need to work to timescales may mean that a fully developed design cannot be prepared in advance of tendering, in which case subsequent design development changes will invariably lead to cost and, possibly, time escalation. Typically, this procurement strategy also uses forms of contract where the client retains the risk of ground conditions, adverse weather, utilities etc. A reasonable contingency allowance of approx. 10% on cost and 10% for extensions of time is often necessary.

The potential risks are:

- The overall development programme may be longer due to the need to produce a fully detailed design before the project goes out to competitive tender and work starts on site.
- The Client must have the resources and access to the expertise necessary to administer the contracts of consultants as well as the main contractor.
- The consecutive timing of design and construction results in a lack of continuity between the designer and the builder (and hence little opportunity for input on 'buildability').
- Claims for delay and disruption can arise if the design is not fully detailed prior to agreeing the contract sum; if the Client varies the design afterwards; if outstanding design information is late; or if the issued design contains errors or omissions.
- Defects, where there is a dispute over whether the cause is design or workmanship, can prove difficult for the client to identify the party responsible and secure rectification.

The potential benefits are:

- Price certainty and transfer of risk to the main contractor is achieved at contract award, provided no subsequent changes are instructed to the design, and no client held risk events occur.
- A high level of quality in design and construction is achievable as the scope of the work is prescribed on an input specification basis by consultants reporting directly to the client.
- The client retains individual direct contractual relationships with the design team, cost consultant and main contractor.
- Changes to the works can be simply instructed and then evaluated on the basis of known prices obtained in competition without necessarily excessive cost or time implications.
- Tender pricing can be achieved based on a comprehensive bill of quantities which is attractive to the contracting market.

Strategy: TRADITIONAL

Characteristic	Low										High	
	1	2	3	4	5	6	7	8	9	10		
1 Expert client involvement needed	←				→							
2 Client control over design and specification solutions								←				→
3 Needs client production of an output performance specification	←		→									
4 Ease of implementing change during construction					←				→			
5 Supports early appointment of an integrated team	←		→									
6 Single point design and construction responsibility	←		→									
7 Cost and time certainty after contract execution		←				→						
8 Speed of development	←				→							
9 Suitable for simple projects								←				→
10 Suitable for complex projects			←				→					
11 Suitable for a target cost approach	←		→									
12 Suitable for 2-stage tendering					←				→			

4.4 Design and Build Strategies

4.4.1. Design and Build

In a design and build contract, a single supplier is responsible for both the design and construction of the facility. Typically, the client's own design team (either in-house or outsourced) develop a concept or scheme design to RIBA Stage 2 along with an output performance specification. Together these form the "Employer's Requirements" or "Works Information" depending on the form of contract chosen. The client then invites competitive tenders from, typically, 3 design and build contractors each of whom will employ their own design team. The successful tenderer is chosen based on both the price and the quality of his submitted design solution. The contractor's design must comply with the Employer's Requirements.

The contractor is likely to deliver the greatest performance benefits to the client through innovation and standardisation, where appropriate output specifications are produced by the client. Where an output specification is insufficiently well developed, there is a risk that the quality, design and performance of the completed facility may be compromised by a contractor pursuing the lowest cost material specification or design solution. Careful attention to the output specification is required to achieve the required outcome. Often the Client retains the services of the original design consultants to scrutinise the contractor's developing design and to confirm it is compliant with the Employers Requirements.

There may be some circumstances where it may be beneficial for the design and build procurement option to be extended to cover maintenance and also possibly operation of the facility for a substantial period. By including the maintenance and operation requirements within a design and construction contract, the supplier has increased opportunity for adopting innovative solutions that provide greater value for money when considering whole life costs.

The potential risks are;

- The client's requirements must be properly specified prior to signing the contract as client changes to the scope of the project, once let, can be expensive.
- The client has little control over design and quality standards once the contract is let, as the building is specified on a performance basis with output specifications.
- Design and build is unsuitable for complex, challenging projects which benefit from a developed design prior to pricing.

The potential benefits are;

- Low tendering and preparation cost to the client.

- Single point responsibility for design and cost risks, including design errors and omissions.
- Statutory Approvals are the responsibility of the contractor
- Potential for more economical construction due to earlier consideration of building methods ('buildability').
- Could result in a shorter overall design and construction period.

Strategy: DESIGN AND BUILD

Characteristic	Low										High
	1	2	3	4	5	6	7	8	9	10	
1 Expert client involvement needed											
2 Client control over design and specification solutions											
3 Needs client production of an output performance specification											
4 Ease of implementing change during construction											
5 Supports early appointment of an integrated team											
6 Single point design and construction responsibility											
7 Cost and time certainty after contract execution											
8 Speed of development											
9 Suitable for simple projects											
10 Suitable for complex projects											
11 Suitable for a target cost approach											
12 Suitable for 2-stage tendering											

4.4.2. Design Develop and Construct

Just as in a design and build contract, a single supplier is responsible for both the design and construction of the facility. In the case of Design Develop and Construct, the client's own design team (either in-house or outsourced) develop the design to a much greater level of detail than in a simple Design and Build strategy. Typically, this will be to RIBA Stage 3 and will include both fully designed input specifications as well as output specifications for those elements of design being left to the successful contractor to complete. Together these form the "Employers Requirements" or "Works Information" depending on the form of contract chosen. Commonly, Planning Consent is secured by the client in advance of the tender, leaving the contractor to comply with any Planning Conditions and to secure Building Warrants and other statutory approvals. The client then invites competitive tenders from, typically, 3 design and build contractors. The successful contractor will either employ their own design team or, more commonly, have the client's team novated to them. The successful tenderer is mostly chosen on the basis of price as his opportunity to influence the design solution is now much diminished. The contractor is then required to complete the outstanding design – often integrating many specialist contractor elements such as cladding, steelwork, building services – all of which must comply with the relevant output specifications contained in the Employers Requirements.

Where an output specification is insufficiently well developed, there is a risk that the quality, design and performance of the completed facility may be compromised by a contractor pursuing the lowest cost material specification or design solution. Careful attention to the output specification elements is required.

There may be some circumstances where it may be beneficial for the design and build procurement option to be extended to cover maintenance and also possibly operation of the facility for a substantial period. By including the maintenance and operation requirements within a design and construction contract, the supplier has increased opportunity for adopting innovative solutions that provide greater value for money when considering whole life costs.

The potential risks are;

- The client's requirements must be properly specified prior to signing the contract as client changes to the scope of the project, once let, can be expensive.
- The client has little control over the outstanding design and quality standards once the contract is let, other than to issue variations to his Employers Requirements.
- Design coordination issues can arise between the Employer Requirements and those elements still to be designed by the contractor.

The potential benefits are;

- Single point responsibility for design and cost risks, including design errors and omissions.
- Greater control of the design and specification compared to a simple design and build.
- Some, if not all, Statutory Approvals are the responsibility of the contractor.
- Potential for more economical construction due to early consideration of building methods ('buildability').
- Could result in a shorter overall design and construction period compared with a traditional strategy.

Strategy: DESIGN DEVELOP AND CONSTRUCT

Characteristic	Low										High
	1	2	3	4	5	6	7	8	9	10	
1 Expert client involvement needed											
2 Client control over design and specification solutions											
3 Needs client production of an output performance specification											
4 Ease of implementing change during construction											
5 Supports early appointment of an integrated team											
6 Single point design and construction responsibility											
7 Cost and time certainty after contract execution											
8 Speed of development											
9 Suitable for simple projects											
10 Suitable for complex projects											
11 Suitable for a target cost approach											
12 Suitable for 2-stage tendering											

4.5 Management Strategies

4.5.1. Management Contracting

This is a 'fast track' strategy which overlaps the design and construction stages and enables contracts for early work packages, for example groundworks and steelwork, to be placed before the overall design is complete. The design team remain separately appointed by the client throughout. A management contractor is appointed by the client to manage the overall construction contract in return for a management fee. The management contractor, if appointed early before the design is complete, can advise on buildability, programming, sequencing and the procurement of the various works packages. The contracts for the works packages are between the management contractor and the individual trade contractors. Costs are controlled by the development of a cost plan in which estimates of the costs of works packages are initially used for budgeting purposes prior to being replaced with actual costs obtained in open book competitive tenders. The projected final cost (still subject to risk events) will only be known once the final works package has been awarded and hence management of the cost plan focussing on risks and contingencies is extremely important.

The potential risks are;

- The final price and timescale are not fixed at the commencement of the works and do not become so until the last work package has been let, and even then are subject to the risks that lay with the client under the form of contract chosen.
- If the management contractor fails to organise and coordinate the various works packages it could result in claims from package contractors that the client could become responsible for.
- The client must have the resources and access to the necessary expertise to deal with separate design consultants and the management contractor and the scrutiny of each of the works package tenders.
- Management Contracting is unsuitable for an inexperienced and/or hands off client as there is a risk of increased costs and delays arising from ineffective administration.

The potential benefits are;

- Early completion is possible due to a shorter overall development period achieved by overlapping design and construction activities, even with complex buildings.
- While the client maintains direct control over the design team, the management and trade contractors can contribute to design development and improve the management and buildability of the construction process.
- Particularly suitable where there is complex design from specialist works package contractors to be incorporated
- The management contractor assumes some risk for the performance of the trade contractors.
- Changes can be accommodated more easily than in other forms of contract in both let and unlet packages provided there is little or no impact on the overall project timetable.
- Achieves good alignment of objectives between client and management contractor.

Strategy: MANAGEMENT CONTRACTING

Characteristic	Low										High	
	1	2	3	4	5	6	7	8	9	10		
1 Expert client involvement needed												←→
2 Client control over design and specification solutions												←→
3 Needs client production of an output performance specification	←→											
4 Ease of implementing change during construction												←→
5 Supports early appointment of an integrated team												←→
6 Single point design and construction responsibility	←→											
7 Cost and time certainty after contract execution												←→
8 Speed of development												←→
9 Suitable for simple projects	←→											
10 Suitable for complex projects												←→
11 Suitable for a target cost approach	←→											
12 Suitable for 2-stage tendering	←→											

4.5.2. Construction Management

This is also a 'fast track' strategy where works packages are let before the design of later packages has been completed. A construction manager is appointed by the client to manage the overall contract in return for a management fee and, as with management contracting, the project can benefit from the early involvement of the contractor. The main, and very significant, difference from management contracting is that the contracts for the works packages are placed directly between the client and the trade contractors. As with management contracting the projected final cost (still subject to risk events) will only be known once the final works package has been awarded. Costs are controlled by the development of a cost plan in which estimates of the costs of works packages are initially used for budgeting purposes prior to being replaced with actual costs obtained from open book competitive tenders. The management of the cost plan focussing on risks and contingencies is, therefore, extremely important.

The potential risks are;

- The final design, price and timescale are not fixed at the commencement of the works and do not become so until the last work package has been let, and even then are subject to the risks that lay with the client under the form of contract chosen.
- The client bears most of the total risk including delays, disruption, design and its coordination with construction; there must be a robust process for instructing and approving changes.
- The construction manager commonly does not assume any risk other than negligence, is not contractually responsible for achieving programme and cannot instruct third parties.
- The design team must envisage both the totality and detail of the design at the outset, accommodating uncertainty, procuring long lead-time items early and avoiding retrospective change.
- Clients need to be experienced, informed, decisive, and have the necessary expert resources to administer the contracts of the separate design team members, the construction manager, and many trade contractors.
- Construction management contractors must be sufficiently incentivised to avoid fee escalation; they should be experienced in construction management and have very good leadership skills.
- The client must place an even greater premium on risk management in construction management than under other procurement strategies, and needs to ensure that roles and responsibilities are well defined at the outset.

The potential benefits are;

- Construction management should reduce the overall project timescale by allowing procurement and construction to proceed before the design is completed.
- The client controls the design and changes can be accommodated in let and unlet packages provided there is little or no impact on the overall project timetable.
- It can be applied to a complex building and has opportunity to allow good buildability input.
- Achieves good alignment of objectives between client and the construction manager.
- Particularly suitable where there is complex design from specialist works package contractors to be incorporated.
- The client contracts directly with trade contractors, which could result in lower prices and allows poor performance to be dealt with directly.
- The construction manager can build better team relationships with trade contractors and hence potentially resolve disputes swiftly in the absence of a direct commercial relationship.

Strategy: CONSTRUCTION MANAGEMENT

Characteristic	Scale										
	Low	1	2	3	4	5	6	7	8	9	High
1 Expert client involvement needed											↔
2 Client control over design and specification solutions											↔
3 Needs client production of an output performance specification	↔										
4 Ease of implementing change during construction											↔
5 Supports early appointment of an integrated team											↔
6 Single point design and construction responsibility	↔										
7 Cost and time certainty after contract execution											↔
8 Speed of development											↔
9 Suitable for simple projects	↔										
10 Suitable for complex projects											↔
11 Suitable for a target cost approach	↔										
12 Suitable for 2-stage tendering	↔										

4.6 Revenue Financed (Not for Profit Distribution Model)

Private finance solutions, particularly the NPD and the hub design build finance maintain models, are created for the provision of services and not specifically for the exclusive provision of capital assets such as buildings. For this reason, it is preferable to investigate private finance solutions using the non-profit distributing model as soon as possible after a user need has been identified rather than leaving it until a conventional construction project has been selected as the solution. It is possible that a private finance solution using such a model may result in a provision of services to meet the user need that does not require a construction project.

It should be noted, however, that the tendering process is expensive for both potential service providers and the client, and takes the form of a negotiated or competitive dialogue procedure.

Use of the non-profit distributing model requires the private sector to assume responsibility for delivery of elements of service. The public sector sets out those elements of service in an output specification and also specifies the level and quality of service required. This is normally done through a long-term contract and the standard of delivery is monitored by the public sector throughout the contract period, with financial penalties applied if the specified outputs and standards are not delivered. Value for Money is achieved through private sector innovation, effective use of the competitive process, and appropriate allocation of risk to the party best able to manage it.

Early dialogue is required with Scottish Futures Trust, which controls the NPD and hub DBFM programmes

The potential risks are;

- The process will be at risk without a long-term commitment from both the client and “service providers”.
- The process leading up to the completion of a new building can take a long time and needs an extensive and fully refined brief at the outset.
- There is a significant cost to the industry in tendering which has to be recovered by each bidder.
- Change is difficult to achieve and potentially expensive to incorporate once the contract is let.

The potential benefits are;

- The process is service rather than project focused and concentrates on the whole life of the service and associated assets.
- Avoids the use of a procuring authority’s capital finance.
- There is a single point of responsibility for service delivery.
- There is an opportunity to draw on a wider range of management and innovation skills.

Strategy: REVENUE FINANCED

Characteristic	Low										High
	1	2	3	4	5	6	7	8	9	10	
1 Expert client involvement needed											←→
2 Client control over design and specification solutions				←→							
3 Needs client production of an output performance specification											←→
4 Ease of implementing change during construction	←→										
5 Supports early appointment of an integrated team			←→								
6 Single point design and construction responsibility											←→
7 Cost and time certainty after contract execution											←→
8 Speed of development to contract execution	←→										
9 Suitable for simple projects	←→										
10 Suitable for complex projects							←→				
11 Suitable for a target cost approach			←→								
12 Suitable for 2-stage tendering	←→										

5 Variants

5.1 Two stage tendering

Two-stage tendering is used to allow early appointment of a contractor, prior to the completion of all the information required to enable them to offer a fixed price.

In the first stage, a limited appointment is agreed allowing the contractor to begin work and in the second stage a fixed price is negotiated for the contract. It can be used to appoint the main contractor early or more commonly as a mechanism for early appointment of a specialist contractor such as a cladding contractor. A two-stage tender process may also be adopted on a design and build project where the employer's requirements are not sufficiently well developed for the contractor to be able to calculate a realistic price. In this case, the contractor will tender a fee for designing the building along with a schedule of rates that can be used to establish the construction price for the second stage tender.

The basis of the appointment for the first stage may include:

- A pre-construction and construction programme.
- Method statements.
- Detailed preliminaries including staff costs.
- Agreed overheads and profit.
- A schedule of rates to be applied to the second-stage tender.
- Agreed fees for design and other pre-construction services.
- CV's for proposed site and head office staff.
- Tendering of any packages that can be broken out and defined.
- Agreed contract conditions to be applied to the second-stage construction contract.

It is important that this appointment is based on as much information as possible and that requirements are well defined; as subsequent changes could prove expensive.

The first-stage appointment might be made on the basis of a bespoke agreement, a consultancy agreement or a pre-construction services agreement (PCSA), with an appendix setting out all tender items to be applied to the construction contract, with a clause that makes it clear there is no obligation to proceed to the construction contract, and in such circumstances the pre-construction fee would be full and final settlement of the contractor's costs.

The pre-construction services carried out by the contractor in the first phase might include:

- Helping the consultant team to develop the design, or the contractor undertaking all design development themselves.
- Helping the consultant team to develop the method of construction, or the contractor developing the method of construction themselves.
- Obtaining prices for work packages from sub-contractors or suppliers on an open book basis.

In theory, this early involvement of the contractor should improve the buildability and cost-certainty of the design as well as creating a better integrated project team and reducing the likelihood of disputes.

Ideally the second-stage negotiation is a mathematical exercise using the pricing criteria agreed in the first stage agreement. In reality however, there will be some items not previously considered, around which negotiations will ensue. In the case of sub-contractors, the second stage construction contract is negotiated by the main contractor subject to the approval of the design team.

Two-stage tendering enables the client to transfer design risk to the contractor, however the client inevitably loses leverage as the contractor becomes embedded in the team and competition is less of a threat. However, whilst tender prices for two-stage contracts may initially be higher than single-stage tenders, which are subject to full competition, the final account tends to include fewer variations and fewer claims. A longer period of familiarity with the project creates better relationships as well as a reduction in learning curves and programme performance.

It is in the client's interests to try to include some packages in the first phase, and to ensure that they have some means of securing an alternative bid if negotiations with the preferred contractor fail, albeit this is likely to result in delays and difficulties regarding design liability. However, the client may find that alternative contractors lose interest once they find out that another contractor has been awarded the first stage tender.

The potential risks are:

- Temptation to go to market with incomplete information;
- Can be used to mask the inadequacy of design development;
- Additional cost of a preconstruction fee;

- The cost of second stage tenders may be higher than predicted at Stage 1 leaving the client with difficult decisions on how to deliver within budget.
- Does not eliminate many sources of scope change;
- Increased input from client and consultants during the second stage tender;
- Difficulties in verifying the transparency of main contractor allowances and subcontractor costs;
- The contractor is able to walk away at any time.

The potential benefits are:

- Early appointment of the contractor, potentially bringing forward the completion date of the project;
- Second stage tender should be based on more complete information and a better understanding of the scope of works, so the final account should be closer to the contract sum;
- Improved identification of project risks within a timescale where action can be undertaken;
- Ability to procure specialist design contractor packages ahead of a first stage main contract tender that can then be incorporated into the second stage via novation;
- Client has no commitment beyond the preconstruction services agreement governing the first stage of the tendering process and through to the completion of stage two.

5.2 Target Cost Contracts

This description is extracted from the more comprehensive guidance on the use of Target Cost contracts which can be found [Reference to be inserted].

The basic principle is that a target cost is agreed and then the contractor is paid for the work undertaken on a cost reimbursable basis. The payments to the contractor are made on the basis of the contractor's accounts and records, provided to the employer for inspection on an "open book" basis.

At the end of the project, the final target cost – which is the original target cost plus the effect of any employer changes and employer risk events – is compared to the actual cost expended by the contractor. If the actual cost is lower than the target cost, a saving has been made, and this is shared between the parties on a pre-agreed percentage basis – referred to as "gain-share". Conversely, if the actual cost is higher than the target cost there is an over-spend, again shared between the parties on a pre-agreed percentage split – referred to as "pain-share".

The principal benefit of target cost arrangements is their ability to align the objectives of the parties, which helps to create a partnering environment. The contractor and employer are both encouraged to work together to control costs, sharing the risk of over or under spend through the gain-share/pain-share mechanism. The open book approach helps to build trust between the parties, through the sharing of sensitive information by the contractor and the visibility to the employer of the true cost of the project to the contractor.

Some employers are moving towards a greater use of target cost contracts, citing value for money as a driver. Others are moving away from them or looking to restructure how they are managed due to problems encountered on previous projects which were perceived not to deliver value for money.

One issue that often occurs is that target cost arrangements are entered into without fully understanding how the process works – in particular the additional risk that the employer takes compared to a fixed price contract. It is vital that this risk is effectively managed. Too frequently there is insufficient control of the target cost value so the contract becomes little more than a cost reimbursable arrangement with limited incentive for the parties to perform efficiently.

There are many examples where the actual cost has far exceeded the target cost – creating problems for the employer – and yet it appears there are few examples of contractors suffering from pain share. In most cases the gain-share/pain-share calculation results in a neutral or positive gain share.

Value for money will only be secured if the contract is let with a well-defined target cost, and is thereafter very actively managed. At all times the employer needs to recognise that it is carrying a larger degree of risk than a fixed price contract and therefore requires a greater resource to manage it.

Care is also needed when reporting likely outturn costs. It is not uncommon for a contractor, due to poor cost management of his supply chain, to under-estimate his final costs during the construction period only for a large amount of “actual cost” to come to light at the end of the project as sub-contractors present final account information. This often results in the employer needing to seek additional funding from its board. When questioned by that board on what has changed, what additional scope had been instructed, or what risk event had occurred to substantiate additional monies it would be good to avoid the response:

“Nothing, it’s just cost more than we thought”.

For those instances where some form of cost plus contract is appropriate (for example where a contract must be let before design development is sufficiently advanced to permit a lump sum price to be fixed; where the employer wishes to actively participate in design; or where contractors are simply not prepared to tender a lump sum due to the size and complexity of the project) the target cost route has clear advantages.

Advantages

- Provides contractors and subcontractors with an incentive to improve performance.
- Encourages active and equitable risk sharing, based on a clearly defined allocation of risk agreed at the outset of the project.
- Can incorporate both lump sum and prime cost-reimbursable subcontracts under a single target price.
- Target costs provide incentive for the timely administration of change control mechanisms.
- Provides an accountable mechanism to enable public sector clients to use incentives.

Disadvantages

- Employer and contractor must share gain and pain if the full benefits are to be secured. This exposes the employer to greater risk.
- Potential for failure on insufficiently defined projects owing to complexities in the operation of the incentive mechanism.
- Complex target price, gain/pain-share and change controls may not easily be understood by all parties.
- The separation of target and actual costs before completion creates the potential for loss of control in predicting the final cost to the employer.
- Requires best practice in project administration and a suitably skilled project manager.
- Disputes and adversarial behaviours can occur when the employer scrutinises the contractor's cost records to ensure they are valid.

Summary

Target cost contracts will only deliver value for money when:

1. The target cost is set at a level which requires the contractor and the employer to work together to create efficiencies beyond those normally expected
2. The target cost is actively managed and maintained so as to remain valid and to continue to drive performance
3. The gain-share/pain-share mechanism is carefully chosen to drive the right behaviours in the parties to seek savings and thus avoid pain
4. The contractor performs in an efficient manner, mitigating risk, and not incurring excessive actual cost

5.3 Frameworks

[Further words needed and reference made to the new SG Framework guidance when it is published on the Construction Journey]

Procuring Authorities which are continuously commissioning construction work might want to reduce procurement timescales, learning curves and other risks by using framework agreements. This allows the client to invite tenders from suppliers of goods and services to be carried out over a period of time on a call-off basis as and when required.

The framework contract documents should define the scope and possible locations for the works or services likely to be required during the defined time period. They should describe the contract conditions that will be used for pre-construction services (such as design) and/or the contract conditions that will be used to execute the works.

Depending on the size and complexity of the anticipated projects, the supplier might provide a pricing mechanism or risk adjustment mechanism for different types of contract that might be used, for example a minor works contract, a cost reimbursable contract, a design and build contract and so on. A suitable option would then be selected by the client depending on the nature of the projects that emerged.

Framework tender documents might include:

- The starting and completion dates of the agreement.
- Requirements and obligations regarding insurance, bonds and warranties.
- A description of the contract conditions to be used and assumptions regarding preliminaries.
- A description of how the project will be managed in its various stages and the basis of remuneration.
- A description of the tender selection procedure and assessment procedure to be employed by the client.
- A description of inflation, interest and retention percentages to be applied.
- A description of incentive mechanisms to be applied.
- A description of dispute resolution procedures.
- Rates for travel and subsistence expenses.
- A request for schedules of rates and time charges to be submitted and a breakdown of resources and overheads to be applied to design, or manufacture and installation (including any proposed subcontractor or sub-consultant details).
- Any other criteria required from tenderers in order that the client can properly assess their suitability.

One or more suppliers are then selected and appointed. When specific projects arise the client is then able to simply select a suitable framework supplier and instruct them to start work.

Where there is more than one suitable supplier available, the client may introduce a secondary selection process to assess which supplier is likely to offer best value for a specific project. The advantage to the client of this process is that they are able instigate a selection procedure for individual projects without having to undertake a time-consuming pre-qualification process. This should also reduce tender costs.

The advantage to the supplier is that the likelihood of them being awarded a project when they are already on a framework contract should be higher than it would be under an open procurement process. Some suppliers however complain that having already been appointed on a framework agreement, they may then have to bid for individual projects anyway, and after a great deal of time and effort may not be awarded any projects.

6 Selecting a Procurement Strategy and a Form of Contract

6.1 A Suggested Approach

A suggested approach is shown diagrammatically below, and each step is then described in later sections of this guidance. Procuring authorities should also take advice from their professional advisers.

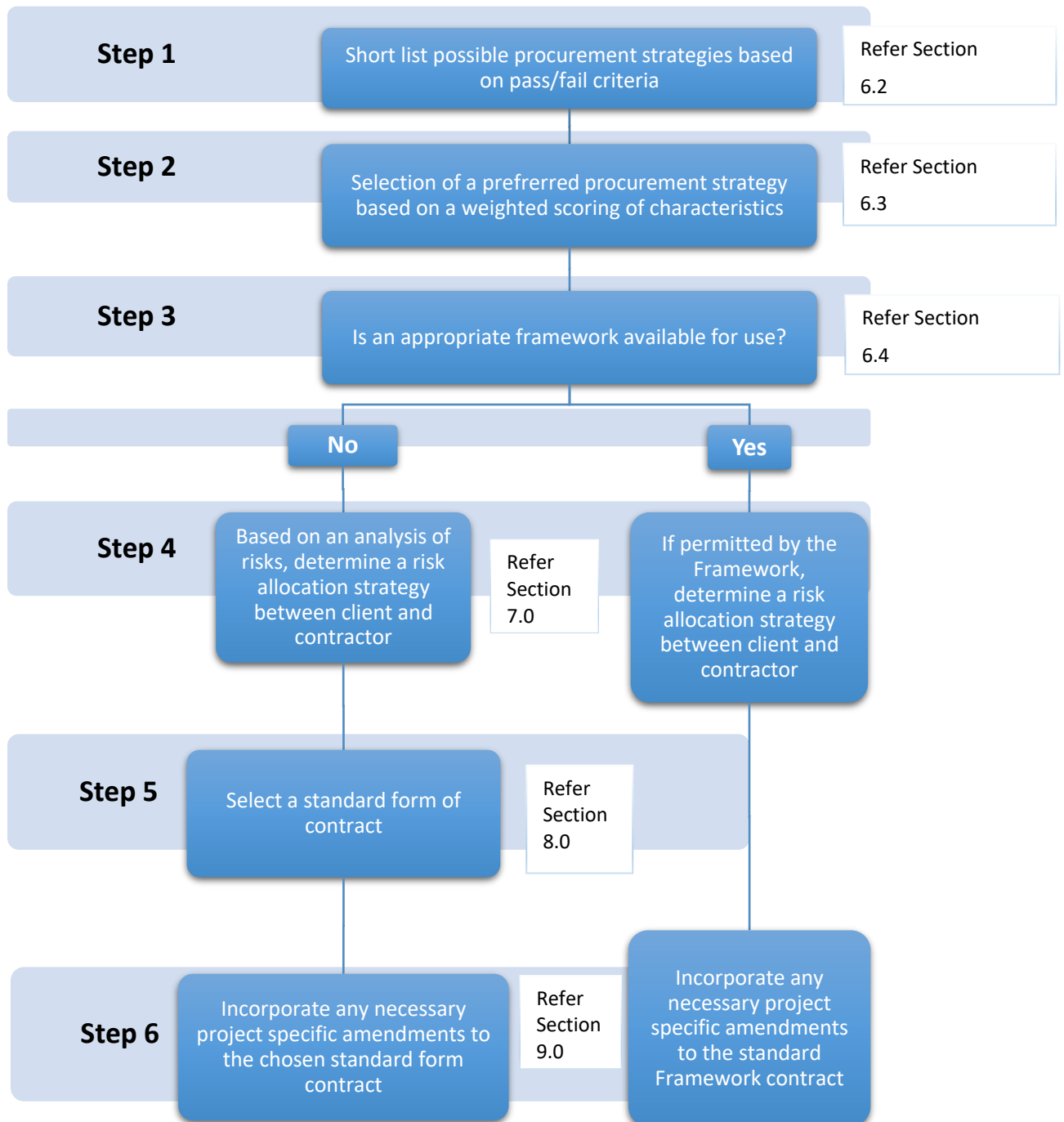


Figure 2 – Flowchart for selecting a procurement strategy and a form of contract

6.2 Short List Procurement Strategies based on Pass/Fail Criteria

Some procurement strategies are only suitable for certain types of project, and for procuring authorities with expert and experienced construction procurement resource availability.

It is suggested that an initial short list of possible procurement strategies might best be arrived at by sifting on the basis of pass/fail criteria. The criteria chosen are:

- Expert client involvement needed due to the complex nature of the strategy.
- If required, does the strategy support the early appointment of an integrated team.
- Is the strategy suitable for low value, simple projects?
- Is the strategy suitable for complex projects?
- If required, does the strategy support the operation of a target cost approach
- If required, does the strategy support a two stage tender approach for the main contractor.
- Is the client a Participant in the hub programme?

The following diagram will allow all available options to be selected.

Pass/Fail Criteria	Procurement Strategies							
	Early Integrated Team	Traditional	Design & Build	Design Develop & Construct	hub	Construction Management	Management Contracting	Revenue Financed
Expert client involvement needed	Yes	No	No	No	No	Yes	Yes	Yes
Supports the early appointment of an integrated team	Yes	No	Single Stage –No Two Stage - Yes	No	Yes	Yes	Yes	No
Suitable for simple projects	Yes	Yes	Yes	Yes	Yes	No	No	No
Suitable for complex projects	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Suitable for a target cost approach	Yes	Yes	Yes	Yes	Yes	No	No	No
Suitable for 2-stage tendering	Yes	Yes	Yes	No	Consider ¹	No	No	No
The client is <u>not</u> a hub participant or shareholder	Yes	Yes	Yes	Yes	No	Yes	Yes	Not Applicable

Figure 3 – Pass/Fail Criteria

¹ * The hub programme contains many of the characteristics of 2-stage tendering.

Example One

A simple project for a procuring authority not possessing expert construction procurement professionals, but who is a Participant in a hub territory.

Only four strategies are suitable for non-expert clients, and of those all four are suitable for simple projects. A weighted, project specific, scoring analysis would therefore be carried out for: Traditional; Design and Build; Design, Develop and Construct; and hub procurement strategy options. Additional consideration might be given to the variants of using either a target cost approach, or a 2-stage tendering approach.

Example Two

A complex project for a procuring authority which possesses expert knowledge, and which wants to develop its design solution collaboratively with an integrated team.

Only five strategies are suitable for integrated teams, and of these four are suitable for complex projects. A weighted, project specific, scoring analysis would therefore be carried out for: Early Integrated Team; hub; Construction Management; and Management Contracting procurement strategy options.

6.3 Select from Short List Based on a Weighted Scoring of Characteristics

In Section 4, each procurement strategy description ends with a matrix of 12 characteristics, scored as a range from 1 (low) to 10 (high).

Six of these characteristics have been used for the pass/fail criteria in order to develop a strategy short list.

The other six can now be used as part of a weighted scoring system to select the best fit strategy for the particular project.

It will be for the procuring authority to determine the weighting of these six criteria, and subsequently the score to be applied to each short listed strategy. The individual scores should not sit outside of the ranges suggested in Section 4.

A suggested weighting split follows for each of three generic project types. The procuring authority should, however, select their own based on project specific circumstances.

There follows a weighted scoring template which might be used.

6.4 Is an Appropriate Framework available for use?

Once a procurement strategy has been selected, the procuring authority should give consideration to whether it is eligible to use an existing appropriate framework which uses the same strategy. If it does not, a new contractor procurement exercise must be undertaken.

Characteristic	Description	Example Weightings			SRUC BARONY
		Simple project, low value and risk, no expert client availability	Complex, high value and risk, expert client available	Speed essential, comfortable with higher risk, expert client available	
Client control over design and specification solutions	The amount of control afforded to the client in selecting a preferred design solution rather than simply testing if the specified outcomes are achieved by a proposed design.	20	25	20	
Needs client production of an output performance specification	The extent to which the procurement strategy is reliant on a detailed set of client technical requirements expressed as achieving minimum performance levels.	0	10	10	
Ease of implementing change during construction	The ease of instructing a change and of agreeing any implications of cost and time	15	10	10	
Single point design and construction responsibility	The extent to which responsibility for design and construction is contractually aligned	15	20	20	
Cost and time certainty after contract execution	Measures the degree to which construction phase risks are able to be transferred to the contractor	35	25	15	
Speed of development	A measure of the relative speed from project inception to start of construction	15	10	25	
		100	100	100	

Figure 4 – Example procurement strategy characteristic weightings

Procurement Strategies

Early Integrated Team	Traditional	Design & Build	Design Develop & Construct	hub	Construction Management	Management Contracting	Revenue Financed
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Characteristic	Weighting	Early Integrated Team		Traditional		Design & Build		Design Develop & Construct		hub		Construction Management		Management Contracting		Revenue Financed	
		Score	Weighted score	Score	Weighted score	Score	Weighted score	Score	Weighted score	Score	Weighted score	Score	Weighted score	Score	Weighted score	Score	Weighted score
Client control over design and specification solutions																	
Needs client production of an output performance specification																	
Ease of implementing change during construction																	
Single point design and construction responsibility																	
Cost and time certainty after contract execution																	
Speed of development																	
	100																
Total weighted score																	
Ranking	1.					2.					3.						
Evaluation Panel Members Name:																	
Signature:																	

Note: Only those procurement strategies remaining after the pass/fail test should be scored.

Figure 5 – Example weighted scoring template

7 Risk Management and Risk Apportionment

7.1 Introduction

The recommendations of the Review of Public Sector Procurement in Construction (the Review) made clear that risk should lie with the party most able to understand and manage it. If that is the contractor, it should have an opportunity to understand and price the risk.

If risks do materialise, and they have not been adequately priced, there is both a danger of driving undesirable behaviours and (especially if such risks have been forced down the supply chain) of causing insolvencies leading to significant disruption to the planned programme. Such a scenario is not sustainable and not desirable.

7.2 Risk Apportionment

The following graphic illustrates the principles of risk apportionment between client and contractor. Note that the primary purpose of the form of construction contract is to define risk apportionment.

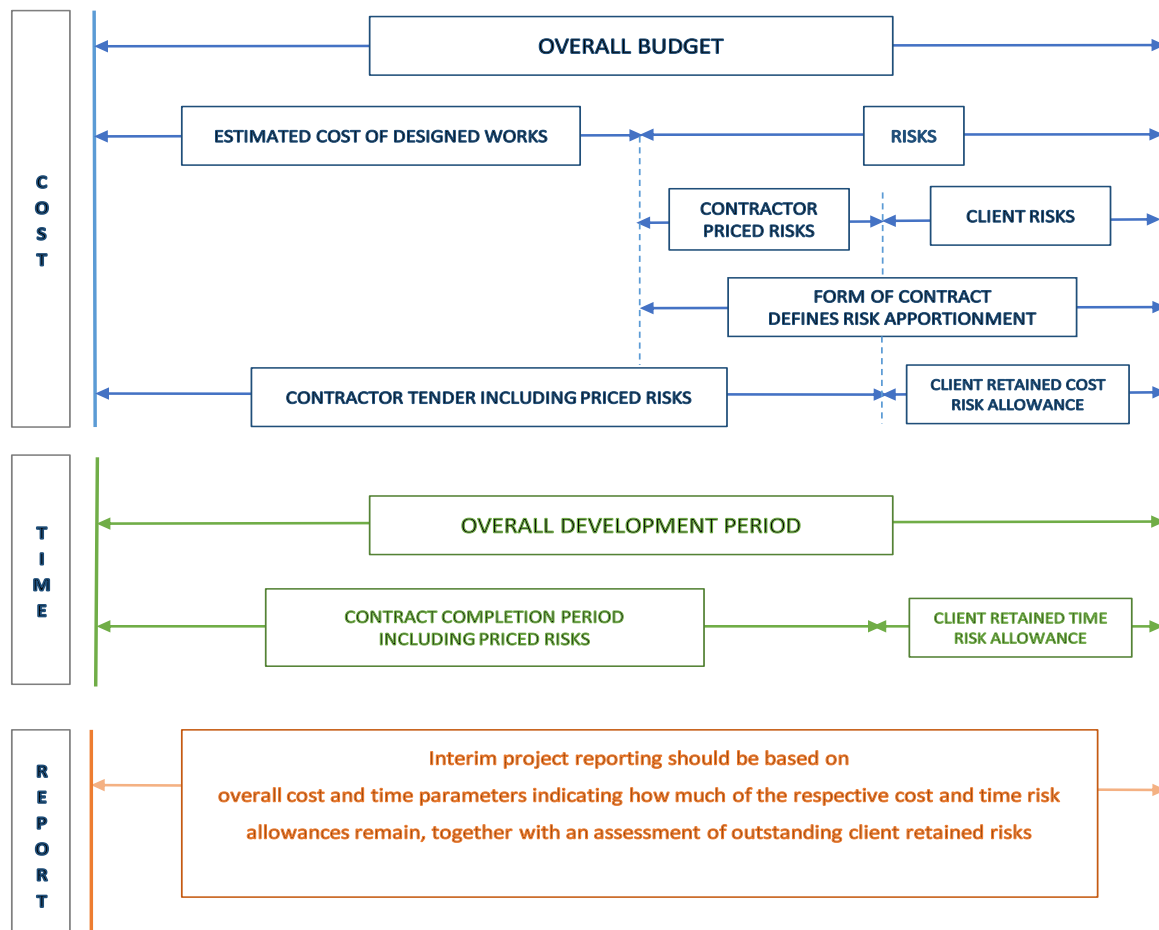


Figure 6 – Principles of risk apportionment

7.3 Risk Management

The key to successfully managing design and construction risks is to adequately determine and implement mitigation strategies from the earliest point in a project.

Examples include:

- The earliest commissioning of comprehensive surveys (with optional transferable warranties in favour of a future contractor) for ground conditions, contamination, utilities, ecology, archaeology etc;
- Establishing a coherent strategy for design coordination between client employed consultants and specialist contractor designed elements;
- Establishing a strategy for the responsibility for securing statutory consents;
- Where it is planned to place responsibility on a design and build contractor for previous design work carried out by others, how this can best be de-risked from the contractor’s perspective.

The following example of a template is suggested as a tool for procuring authorities to address these issues. A real project should start with a blank template.

Example of a risk	Example of a possible mitigation strategy	Consider Client Owned? Contractor Owned? Insurance?	Information needed to price the risk, whomever owns it
Ground Conditions, Contamination	1. Commission comprehensive surveys with transferable warranties of duty of care	Client or contractor depending on form of contract chosen	1. Results of surveys 2. Copies of warranties 3. Possible follow up surveys
Piling Obstructions	1. Ground radar survey 2. Ground probing exercise	To be priced by contractor. Then consider value for money.	Results of surveys and probing exercise
Utility Connections	1. Ground radar survey 2. Hand dug trial holes 3. Early client application for supply infrastructure	To be priced by contractor. Then consider value for money.	1. Information from surveys. 2. Quotations from utility infrastructure providers
Design is in insufficient detail to price works accurately	1. Define level of detail in consultant services 2. Monitor a detailed design and coordination programme 3. Review detail two weeks before tender 4. For specialist contractor designed elements, consider 2-stage tenders	Contractor owned (preferred) Client owned if a traditional, remeasured procurement strategy.	1. Review available design information – assess for level of detail and evidence of coordination 2. Review forms of consultant appointments, check liability obligations and scopes of service.
Damage to adjoining properties	1. Dilapidation surveys to establish condition	Insurance taken out by client.	Results of surveys.
etc, etc			

Figure 7 – Worked example of a risk mitigation and pricing template

Where it is considered desirable to transfer such risks to the contractor, procuring authorities should preferably establish the cost of doing so. This can be done by seeking provisional prices at tender stage for the effect of transferring each risk. The more successful each mitigation strategy has been, the lower the price should be.

Dialogue with all of the tendering contractors, or prior to tender with the market more generally, will inform procuring authorities on how best to present tender information such that risks are priced as economically as possible.

Procuring authorities should take appropriate legal advice to ensure such pre-tender dialogue with contractors complies with the relevant procurement regulators.

On more complex projects, procuring authorities may wish to make the process of risk apportionment a negotiation with each tendering contractor prior to submission of their final offer. The OJEU Competitive Procedure with Negotiation or, exceptionally, the Competitive Dialogue procedure can be used in these circumstances.

8 Amendments to Standard Form Contracts

8.1 Findings of the Review

The Review identified serious concerns with wholesale amendments to standard form construction contracts. Often this practice aims to place greater risk on contractors, which is then pushed down the supply chain such that the risk eventually lies wholly inappropriately with the party least able to manage that risk. The Review was clear this practice is neither sustainable nor desirable.

Section 9 of this Guidance deals with the selection of a particular form of contract with information on the range of standard form contracts available in Scotland. This Section 8 contains guidance on how authorities should assess the appropriateness of proposed amendments to those standard form contracts.

8.2 Guidance

In order to ensure the procuring authority adequately considers the appropriateness of any amendments, there must be dialogue with legal advisers on the likely consequences for contractors and their supply chains of all amendments which might be proposed.

If, after due consideration, a series of amendments are to be made then these should be made known to tenderers by way of a tracked change document – not by a separate schedule of amendments. The original text of a clause should be typed with any deletions struck through, and any additional text highlighted. This will significantly reduce the time, and cost, which every tenderer will incur in considering the effect of the amendments. Additionally, a schedule should be prepared which explains why the amendments are required.

A procuring authority must be mindful that the greater the number of amendments made, the greater the risk of disputes arising. This is due either to differences in interpretation or to the amendments being incompatible with the remainder of the contract. There is also a danger that the personnel administering the contract, for both parties, are not intuitively aware of, or understand, the effect of the amendments.

The greater the number of amendments also means possibly the greater the legal fees for preparing (and possibly negotiating) the contract – and the greater possibility of disputes arising for which further legal fees will be incurred by both parties.

Figure 8, below, is a table of examples of the type of amendments which should not normally be considered as appropriate.

Figure 9 is a table of examples of common amendments which should only be introduced if information is provided at the time of tender to allow the main contractor and its sub-contractors to both understand and price the risk being transferred from the authority.

8.3 Sub-Contracts

Procuring authorities should make clear to their main contractors that the guidance in 8.2 above is expected to be replicated through the supply chain. This addresses Recommendation 10.3.6 of the Review of Scottish Public Sector Procurement in Construction which stated:

“When the public sector adopts good practice - such as might relate, for example, to the appropriate use of retentions, requirements for insurance or the use without alteration of appropriate standard forms of contract - industry should replicate this throughout the supply chain.”

<u>Proposed Amendment</u>	<u>Reasons not to Amend</u>
Different or more onerous payment or retention arrangements	The payment terms in standard contracts are fair, and comply with the requirements of the Procurement Reform Act. Authorities must recognise their responsibilities for maintaining a sustainable industry and understand the importance of cash flow to contractors and sub-contractors. The Procurement Reform Act also requires authorities to introduce measures to ensure maximum 30 day payments throughout the supply chain.
Different or more onerous periods for the issue of contract notices	The periods in standard contracts are fair and are familiar to contractors and sub-contractors. Amendments present the particular risk that tier 2 and 3 contractors may miss notice dates and become unfairly and disproportionately penalised.
Different or more onerous dispute resolution procedures	Any amendments which extend periods for dispute resolution, or present barriers to its access, are disproportionately unfair to small businesses - particularly in securing payments.
Responsibility for the consequences of changes in law or statutory regulations after a contract is executed.	Such an amendment presents a risk that cannot be either understood or priced at the time of tender. The consequences will likely be stepped down the supply chain to businesses that are not equipped to take such risks.

Figure 8. Examples of contract amendments for risk transfer which should not normally be considered.

<u>Proposed Risk Transfer</u>	<u>Considerations</u>
Ground conditions, contamination, archaeology	Each tendering contractor should be given sufficient time to study site investigation reports and have an opportunity to request further investigations. Pre-market engagement recommended. Dark ground risk, e.g. under existing buildings, should always remain with the authority.
Effect of adverse weather conditions	If standard terms are proposed to be amended – for example to introduce a 1:10 year weather event test – there should always be a backstop after which the authority retains the risk.
Establishing specific completion criteria	Any amended criteria for determining when completion is achieved should be clear and objective such that disputes on interpretation are avoided.
Availability of utilities	Such risk transfer should only be considered if quotations for supply are available from utility providers at the time of tender. Pre-market engagement recommended.
Securing statutory approvals, other than planning consent	Pre-market engagement recommended. For a conventional design, this may be a reasonable risk transfer. If, however the design is complex, or will rely on relaxations to regulations - perhaps with cost implications - it should be avoided.
Compliance with Planning Conditions	Risk transfer should only be sought for those conditions which can be delivered by the contractor without reliance on the actions of the authority. Pre-market engagement recommended.
Responsibility for previous design work	This is common in the case of an authority's design team being novated to a design and build contractor. In other circumstances, it should only be considered for conventional designs and with sufficient time for the contractor to carry out due diligence.
Compliance with 3 rd party contract obligations e.g. covenants, wayleaves, rights of way	Such obligations should always be referenced by a detailed schedule at the time of tender and not by simple notification of the existence of a 3 rd party contract.

Figure 9. Examples of contract amendments for greater risk transfer – but only with an opportunity for the contractor and its supply chain both to understand and to price the risk at the time of tendering.

9 Selecting a Form of Contract

9.1 Selection

Once a procurement strategy is selected and a risk allocation strategy is prepared, the final step is to choose a form of contract. Figure 1 on page 8, section 3, notes of variety of forms of contract which might be selected for a particular procurement strategy. Procuring Authorities are encouraged to consider all available forms, not relying solely on familiarity or previous use, and to take advice from their professional advisers in arriving at the most appropriate selection.

9.2 Standard form Construction Contracts

There are many different standard form construction contracts available for use in the UK market. This guidance note only considers those most often used. These are contracts published by:

- (i) The Joint Contracts Tribunal (JCT), one of whose members is the Scottish Building Contract Committee (SBCC) which produces equivalent, very similar, contracts for use in Scotland.
- (ii) The NEC, which is a division of Thomas Telford Ltd, a wholly owned subsidiary of the Institution of Civil Engineers.
- (iii) The Association for Consultancy and Engineering (ACE) and the Civil Engineering Contractors' Association (CECA) which jointly publishes the Infrastructure Conditions of Contract (ICC). These are effectively re-prints of the now abandoned ICE Conditions of Contract.
- (iv) The Association of Consultant Architects (ACA) publishes contracts specifically drafted for integrated team/partnering arrangements.

9.3 Other Contracts

Other, less often used, contracts are published by:

- (i) The Institution of Chemical Engineers produces a suite of contracts used mostly in process industries.
- (ii) FIDIC (International Federation of Consulting Engineers) publishes a suite of contracts used internationally, and by the World Bank. If contemplating use in the UK, amendments would be needed to comply with UK legislation requirements.
- (iii) The Institution of Mechanical Engineers and the Institution of Engineering and Technology produce contracts for electrical and mechanical work.
- (iv) The Chartered Institute of Building has launched a contract for use with Complex Projects – CPC 2013.
- (v) Scottish Futures Trust publishes contracts for use on revenue financed schemes, and for design and build projects using the hub programme.

9.4 Commonly Used Contracts

The most commonly used contracts for each type of procurement strategy are:

Traditional Contracts

- JCT (SBCC) Standard Building Contract 2011 (in versions of with quantities, without quantities, and with approximate quantities)
- JCT (SBCC) Intermediate Building Contract 2011
- JCT (SBCC) Minor Works Building Contract 2016
- JCT Measured Term Contract
- NEC 3 ECC Option A (lump sum) or Option B (with quantities)
- ICC Minor Works 2011
- ICC Measurement Version 2011
- ICC Crown Investigation Version 2011

Design and Build

- JCT (SBCC) Design and Build Contract 2016
- JCT Major Project Construction Contract 2011
- NEC3 ECC Options A-E
- ICC Design and Construct Version 2011

Management Forms

- JCT Management Contract 2011
- JCT Construction Management 2011
- NEC3 ECC Option F

Integrated Team (Partnering)

- PPC 2000 (2013 edition)
- NEC3 ECC with Option X12
- JCT Constructing Excellence 2014
- ICC Partnering Addendum

Cost Plus/Cost Reimbursable/Prime Cost

- JCT Prime Cost 2011
- NEC ECC Option E

Target Cost

- NEC 3 ECC Options C and D
- ICC Target Cost

9.5 Guides and Comparison Tools

A number of useful guides and comparison tools exist which can help in understanding the relative characteristics of each contract suite in their approach to contract administration, payment mechanisms, contract documentation, quality control, change control, time control, insurance arrangements and risk events.

Perhaps the most comprehensive comparison is published by the Royal Institution of Chartered Surveyors (RICS) which can be found at:

<https://consultations.rics.org/consult.ti/appropriatecontractselection/viewCompoundDoc?docid=5228692&sessionid=&voteid=&partid=5232020>

It compares each of:

JCT Standard Building Contract 2011

NEC3 Engineer and Construction Contract (April 2013)

PPC 2000 (2013 edition)

Infrastructure Conditions of Contract (measurement version) 2011)

9.6 JCT (SBCC) or NEC3?

For building projects, unless an Integrated Team or Revenue Financed procurement strategy has been chosen, the procuring authority will mostly find it needs to choose between a JCT (SBCC) or a NEC 3 form of contract. Advice should always be sought from professional advisers to assist in making that decision, however care should be taken to ensure such advice is impartial, avoiding any consultant self-interest.

The procurement centre of expertise for Scotland's universities and colleges, APUC (Advanced Procurement for Universities and Colleges) in its Guide to Procuring Construction Projects published a useful comparison overview of the characteristics of each of JCT (SBCC) and NEC 3. Whilst the Guide is now out of date, the comparison remains relevant and is reproduced below:

JCT Form of Contract

Written in legalistic language
 Contains 40 principal Conditions
 Originally written for Traditional Contracts (and since expanded to include other Procurement Strategies)
 Design Consultant supervises the Contractors Work and applies the Contract Conditions independently of the Client and Contractor, so there could be potential conflict of interest.
 Reactive approach, with consequences and actions being determined in response to events
 Does not promote co-operative working style
 Claims are dealt with retrospectively and may become protracted
 Substantial volume of case law

NEC Form of Contract

Written in Plain English
 Contains 9 Core Clauses
 Options included to accommodate all Procurement Strategies
 Project Manager acts at the Client's agent and is not required to act independently, therefore no conflict of interest.
 Proactive approach, designed to minimise problems, including early warning systems
 Requiring the parties to act in a spirit of mutual trust and co-operation
 Claims are transformed into compensation events and dealt with during the term of the Contract
 Low level of Case law and low incidence of disputes

Choosing from the differing forms of Contract

The JCT provides a wide range of different forms depending on the procurement route – traditional contracting, design and build, management contracting, etc. – and the size and complexity of the project. The NEC starts from the reverse position: there is a single common form of main contract and flexibility is obtained by selecting one of the main pricing ‘Options’ (lump sum, target cost, etc.) and then from an extensive range of secondary clauses dealing with matters such as delay damages, sectional completion, limitation of liability and key performance indicators.

Management of the Contract

With the JCT form, management is the responsibility of the leader of the Design Team, which is normally the Architect, whilst in the NEC3 form the management is carried out by the PM, and is more onerous than those required by the JCT form. Therefore, the costs to manage an NEC project will be more than those required for a JCT contract of similar size and complexity. The overriding logic is that by increasing resources during construction, problems and issues can be dealt with as and when they occur at a time when the outcome can still be influenced. This should assist in completing the project on time and within budget and should reduce uncertainty for all parties. Compliance with the contractual procedures should also create an excellent set of records of project activities. Therefore, if claims or disputes are raised later, both parties will have access to these records and enable agreement of any dispute.

Dealing with Claims

The NEC3 Contracts promotes the compilation of a ‘risk register’ and risk reduction meetings to manage the consequences. There is a strict eight-week cut-off period for the contractor to notify that a compensation event has occurred, after which the right to compensation is lost.

Even shorter timescales are fixed for the contractor to submit quotations to deal with the event. A failure by the PM to respond to a notification or quotation within equally short periods will lead to its deemed acceptance, binding the employer and potentially exposing the PM to a claim by the employer. The quid-pro-quo for the NEC3’s pro-active approach is that it requires a heavy resource commitment from all sides to administer the project.

In contrast, the JCT standard forms give the parties greater freedom to put contractual claim issues to one side before completion and focus on delivering the project. The downside of this, which the NEC3 strives to avoid, is the greater possibility that claim issues will then fester over time, ultimately to the detriment of the project and the parties’ relationships. Before opting for either suite, it is important that adequate resources are available to meet all the relevant contractual obligations.

Design responsibility

The JCT forms provide for partial design by the contractor through the use of a ‘design portion supplement’ and for full design, via a range of ‘design and build’ forms. NEC3 approaches the issue in a rather more flexible way: the amount of any contractor’s design is set out as part of the ‘works information’, a schedule to the contract containing technical information relating to the scope of work. Under the JCT design and build forms, the standard design warranty expressly restricts the

level of duty owed by the contractor to one of reasonable skill and care. In contrast, under NEC3 the parties must expressly agree a secondary option clause (X15) to have this effect. Without such an agreement, a fitness for purpose obligation will normally be implied by law as part of the design and build contractor's responsibilities. It is interesting to note that under this clause, where a defect arises in the works due to the design, the contractor has the burden of proving they used reasonable skill and care.

Insurance arrangements

Whereas the JCT forms require insurance of the works to be maintained until practical completion is certified, under the NEC3 the contractor's obligation to arrange insurance extends to issue of the defects certificate.

Dispute resolution

JCT and NEC3 forms provide an automatic right to adjudication as provided for by the Construction Act. Under NEC 3 there is a further opportunity to challenge the decision of an adjudicator by arbitration or through the courts. The dissatisfied party must give notice to the other side within four weeks of that decision. After that, the decision becomes final and binding on the parties. Both forms of contract will provide the client with the protection that they require albeit in different ways. As noted above, all Design Teams and Contractors are familiar with the JCT Contracts and possibly less so with the NEC contracts. However, the pros and cons of each form of contract should be considered in relation to the procurement strategy to make the best decision for the delivery of the Project.

9.7 Other useful sources of advice and guidance

The NEC3 publisher's website
<https://www.neccontract.com>

The SBCC website
<http://www.sbcconline.com/>

A comprehensive guide to choosing the most appropriate contract from the JCT suite
<http://www.jctltd.co.uk/docs/Deciding-on-the-appropriate-JCT-contract-2011-Sept-11-version-2.pdf>

A flowchart for choosing from the JCT suite
<https://www.jctltd.co.uk/docs/Guide-to-selecting-the-appropriate-JCT-main-contract-Sept11.pdf>