



Achieving Excellence in Construction

Construction projects Pocketbook



Office of Government Commerce

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NAO endorsement

The NAO recognise that proactive client leadership and robust project management are prerequisites to the successful delivery of construction procurement.

They consider that procurement of construction should be on the basis of whole-life value for money and endorse the use of the good practice promoted by this suite of guides. They may investigate whether this good practice is applied in practice in any future examination.

Acknowledgement

This guide has been published after extensive consultation within government and valuable contributions from leading individuals and organisations across the construction industry.

OGC would like to thank all who have contributed.

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Introduction

This Pocketbook provides a brief overview of procurement for construction projects. It explains the key considerations for this type of project and outlines the main project stages aligned to the Gateway process. The essentials of the project are summarised – project management, risk and value management, integrating the project team, procurement strategy, whole life costing, performance measurement, design quality, health and safety aspects and sustainability, together with pointers to more detailed sources of advice and guidance.

Critical factors for success

- Leadership and commitment from the project's Senior Responsible Owner (SRO)
- Involvement of key stakeholders throughout the project
- Roles and responsibilities clearly understood by everyone involved in the project, with clear communication lines
- An integrated project team consisting of client, designers, constructors and specialist suppliers, with input from facilities managers/operators
- An integrated process in which design, construction, operation and maintenance are considered as a whole
- Design that takes account of functionality, appropriate build quality and impact on the environment
- Commitment to excellence in health and safety performance
- Procurement and contract strategies that ensure the provision of an integrated project team
- Risk and value management that involves the entire project team, actively managed throughout the project
- Award of contract on the basis of best value for money over the whole life of the facility, not lowest tender price
- Commitment to continuous improvement
- Commitment to best practice in sustainability.

Who should read this Pocketbook?

Investment decision makers (IDMs): The Pocketbook helps them to make informed decisions about the project's value, affordability and achievability.

Senior responsible owners (SROs): The Pocketbook helps them to identify the key issues that they must address at each major project stage.

Project sponsors: The Pocketbook provides quick reference to the main stages and supporting activities.

Gateway review teams and project teams: The Pocketbook provides an outline of the information and activities they need to consider.

Key roles

Role	Function
Investment decision maker	Responsible for making the investment decision
Senior responsible owner	Ownership of the project at a senior level
Project sponsor	Interface between the client team and the supply team via the project manager, as the main day-to-day client representative
Project manager	Managing the project and project team
Independent client adviser	Providing independent expert advice to the client as required on legal, financial and/or technical aspects

Project steps

Before you start: the things you must get right

Determining the business need

- Define clear objectives and success criteria must be defined at the outset of the project
- Expert advice may be needed on how to meet the business need – the obvious solution may not be the best. Consider the need for future flexibility as well as the immediate business need; confirm that the project will contribute to strategic objectives

Realism about what can be achieved

- Ensure that the client organisation has the capability, capacity and resources to deliver the project; ensure that estimates are not over optimistic about cost and time to achieve the required quality

Leadership and commitment

- Ensure that the key roles have the appropriate skills and capability to carry out the task, together with the ability to commit enough time to the project

Involvement of key stakeholders

- Identify all stakeholders – that is, the groups or individuals who are directly involved in the project and/or affected by it. Ensure that the key stakeholders are involved – these are the individuals or groups who will have significant influence over the project. Stakeholders may include top management, operational staff, trade unions, suppliers, business partners and members of the public as end-users. Strategies will need to be developed for dealing with the inevitable diversity of interests and influence.

Project roles and responsibilities

- The key roles in the client organisation are the investment decision maker, SRO, project sponsor and project manager. Everyone involved in the project needs to know exactly what is expected of them, their empowerment and their reporting lines (see page 5 in this Pocketbook for more about project management).

An integrated project team

- The project team should be fully integrated, with the client, designers, constructors and specialist suppliers working together to reduce waste, improve quality, innovate and deliver the project (see page 7).

An integrated process

- An integrated approach considers design, construction, operation and maintenance as a whole. It ensures early involvement of all team members to advise on buildability of the design and the ongoing operation and maintenance of a facility (see pages 12-15).

Good design

- Good design delivers whole life value for money. It takes account of functionality, appropriate build quality and impact including sustainability aspects (see page 9).

Commitment to excellence in health and safety performance

- Clients should create an environment through all stages of the project that delivers excellence in health and safety performance. There are good business and ethical reasons to do so during the construction process and afterwards during operational use by their employees or members of the public (see page 9).

Sustainability

- Construction has a vital role in the delivery of the Government's sustainability agenda. Sustainability includes environmental, social and economic factors, and construction impacts on all three areas. All public sector construction clients should also adopt the Sustainability Action Plan, included in Achieving Sustainability in Construction Procurement. The Framework for Sustainable Development on the Government Estate has sections covering Procurement and Estate Management, which will include relevant targets for construction clients (see page 10).

The right procurement routes

- The recommended routes (PFI, Prime Contracting and Design & Build) allow the integrated project team members to work together (see page 7).

Effective risk and value management

- Risk and value management are inter-related activities that should involve the entire project team working collaboratively to reduce risk and increase value, actively managed throughout the project (see page 6).

Whole-life costing

- The lowest price tendered for construction rarely leads to best value for money. The focus should always be on the quality and whole life costs of a facility - the costs of acquiring it (including consultancy, construction costs and equipment), the costs of maintaining it, the costs of operating it over the whole life of the asset and the cost of its disposal (see page 8).

Commitment to continuous improvement

- Measuring the performance of construction projects is essential for ensuring that planned improvements in quality, cost and time are achieved (see page 8)
- Project teams should learn from previous/similar projects, carrying out research at an early stage of planning.

Different requirements for different groups of clients

Clients with regular construction requirements should seek long term relationships with their supply teams, within EC procurement rules. This should ensure that key members of the project team can provide valuable input from the earliest stages of the project; it also encourages a culture of continuous improvement.

For clients with small or occasional requirements, support from independent client advisers is essential, especially during the early stages of the project.

Essential activities

Project management

Projects should be organised in such a way that everyone in the integrated project team (client and supply team) is committed to successful delivery. Responsibilities for delivery should be placed with the business that needs the project, assigned to effective individuals who are empowered to deliver. There must be short and effective lines of communication to senior management so that they can take prompt action when needed. Everyone involved in the project knows what they have to do and when, their personal accountability and reporting lines.

Project management roles are an important factor for success. People with appropriate skills should be assigned to the key roles and responsibilities made clear so that everyone knows what is expected of them and who reports to whom.

Essential roles and responsibilities are:

- **investment decision-making** – takes the investment decision based on affordability and cost justification. For major projects this role may be taken by the management board
- **ownership** – defines the scope and content of the project for delivering the benefits; personally accountable for the success of the project – the SRO, who must be a senior individual in the organisation. The SRO should have the status and authority to provide the necessary leadership and must have clear accountability for delivering the project outcome

- **day-to-day management on behalf of the SRO** – the project sponsor, who provides an interface between ownership and delivery to ensure that the desired project objectives are delivered
- **project management** – leading, managing and co-ordinating the project team on a day-to-day basis (the project manager)
- **project team** – delivers the required outputs or deliverables (the integrated project team).

In addition to the essential roles described above, there may be a requirement for specialist advisers on procurement, legal advice, human resources or technical aspects and others who are appointed by the project sponsor or project manager.

For more information, see AE2 Project organisation: roles and responsibilities: with more detailed explanations of the key roles (investment decision maker, senior responsible owner, project sponsor, project manager, client adviser, stakeholders, etc), responsibilities and skills. The project sponsor training syllabus is provided via an electronic link only (clients without internet access should contact OGC for a copy).

Risk and value management

Risk and value management should be carried out throughout a project lifecycle, with early involvement of the entire integrated project team to minimise/manage risks. There must be adequate time and effort early on to analyse the risks and to develop a risk management plan governing how they are to be managed and funded. The risks should be managed actively throughout the life of the project in accordance with the risk management plan; the plan should deal with all risks, whether retained by the client or allocated to others in the integrated project team.

Value management is about enhancing value and not about cutting cost, although this may be a by-product. The principles and techniques of value management aim to provide the required quality at optimum whole life cost during the process of developing a project.

For more information, see AE4 Risk and value management: includes more practical detail on risk management and value management. Further "how-to" guidance will be developed as required on topics such as value management techniques, risk checklist, and risk allowance quantification.

Integrating the project team

The best projects and the best clients put time into getting the right project team. They assess the quality of the individuals, their ability to work together and their experience. The principle is simple: the client and the supply team working together can reduce waste, improve quality, innovate and deliver a project far more effectively than in a fragmented relationship that may be adversarial. Teamworking should be a core requirement for every element of every project. Putting it into practice requires real commitment from all parties involved, but brings benefits that far outweigh any perceived disadvantages.

For more information, see AE5 The integrated project team: teamworking and partnering: This provides a detailed description of what needs to be done when selecting and establishing the team. It includes notes on different types of partnering and when they should be used, together with examples of different approaches that have worked in practice.

Procurement and contract strategy development

The primary consideration in the choice of a procurement route is the need to obtain overall value for money in the whole life of the service or facility, and this includes maintenance. Design, construction and maintenance should not be considered in isolation from one another. The recommended procurement routes promote integrated project team members working together, whether they are involved in the design, construction or service delivery. An integrated approach allows early involvement of all team members to advise on buildability of the design and the ongoing maintenance of a facility.

The recommended procurement routes are PFI, Prime Contracting and Design & Build. Traditional approaches that separate design from construction should not be used unless they demonstrate better value for money than an integrated route.

For more information, see AE6: Procurement and contract strategies: This guide reinforces the key messages about recommended integrated procurement routes (PFI, Prime Contracting and Design & Build) with advice on when to use a particular procurement route. Examples of good practice include information about evaluation criteria to support decisions about procurement and contract strategies, and where to find practical guidance and help in implementing these integrated routes.

Whole-life costing and cost management

The lowest price tendered for construction rarely leads to best value for money: long term costs and quantity over the life of the asset are the real indicators of value for money. The focus should always be on the whole life costs of a facility – the costs of acquiring it (including consultancy, construction costs and equipment), the costs of maintaining it and the costs of operating it over the whole life of the asset to its disposal. The use of incentives can be a valuable tool in optimising whole life value – for example, pain/gain sharing of energy costs with those responsible for the maintenance of a facility. This can contribute significantly to whole life value by driving down energy costs and helping to achieve sustainability targets.

For more information, see AE7 Whole life costs and cost management: This guide emphasises the need to base decisions on a whole life value approach rather than the upfront capital cost of the construction. It provides advice on producing whole life value models and explains what needs to be done to keep costs under control at key stages in the project.

Improving performance

Measuring the performance of construction projects is essential for ensuring that planned improvements in cost, time and quality are achieved. It helps clients to compare achieved performance with that of similar projects, identify potential for doing things better and assess how their suppliers compare with other potential suppliers. Clients also need to measure their own performance and benchmark with other clients to identify areas for improvement. After construction is complete, clients should set targets and measure whole-life performance improvement of the facility and the service provided.

AE8 Improving performance: benchmarking and performance management: This guide updates the current advice on benchmarking, setting it in the context of recently developed Key Performance Indicators (KPIs). It explains how to use KPIs to measure and improve performance throughout the project. Post Implementation Review is described in relation to improving the project process through lessons learned, measuring and achieving business benefits and supporting the process of Gateway 5: Benefits Evaluation.

Achieving design quality

Good design is fundamental to achieving high-quality public buildings. HM Treasury and the National Audit Office agree that good design helps generate value to the taxpayer by creating environments that support improvements in public service delivery and by producing buildings and spaces of lasting civic value. It can also contribute to staff recruitment, retention and motivation.

Design development costs are likely to be small in relation to the whole life operating costs of publicly procured projects and yet it is through the design process that the largest single early impact can be made on these costs.

Good design is not primarily a question of style and taste, it is the quality that determines whether a facility works well for its user and the community. Good design encompasses functional efficiency, structural integrity, sustainability, lifetime value, and flexibility as well as responsiveness to site and setting.

For more information, see AE9 Design quality: This guide highlights the importance of good design in achieving value for money, including reference to government policy initiatives, the role of the design champion, methods of judging design quality and the importance of selecting a competent design team.

Health and safety

Clients should create an environment through all stages of the project that delivers excellence in health and safety performance. There are good business and ethical reasons to do so during the construction process and afterwards during operational use by their employees or members of the public.

Clients should:

- set requirements for healthy, safe working conditions and facilities on construction sites, so as to attract and retain a high quality workforce, on whom the quality of the finished product is largely dependent
- make health and safety of their customers, staff and everyone they work with, or for, a business priority when commissioning construction
- use integrated project teams to ensure the effective contribution of the entire supply chain to delivering a safe site and a safe product.

For more information, see OGC Construction Procurement Guidance No 10 (PG10)– Achieving Excellence Through Health and Safety. This guide identifies how client decisions and activities impact on health and safety issues and in turn how health and safety issues have a beneficial impact on the performance of the contract and on achieving Value for Money. It provides advice on the typical actions that a best practice client should undertake in the selection of the supply team. A new guide – AE 10 will form part of the new AE suite; it will replace PG10 in the near future.

Sustainability

Sustainable construction can deliver built environments that enhance the quality of life, offer customer satisfaction, flexibility and the potential to cater for changes in the future. It provides and supports desirable natural and social environments and maximises the efficient use of resources by:

- re-using existing built assets where possible
- designing for minimum waste
- aiming for lean construction
- minimising energy in construction
- minimising energy in use
- avoiding pollution
- preserving biodiversity
- conserving water resources
- respecting people and their environment.

Framework for construction procurement

Gate

Project step

START

Possible need for project raised

Identify business needs

Gate 0: Strategic assessment

Identify options to meet user requirements
confirm project required

Prepare high level business case
Produce risk register

Gate 1: Business justification

Produce project brief

Carry out feasibility study
Update risk register

Determine procurement route
prepare Outline Business Case

Produce output specification

Gate 2: Procurement strategy

Supporting activity

ised
Appoint SRO, PS, ICA
Value management (VM)

er needs;
VM, risk management (RM)

case (SOC)
Prepare estimates (whole-life costs); set budget

Appoint PM

Input from IPT and/or ICA

VM, RM; estimate whole-life cost of each option

ute;
ase
RM

on
RM, VM; input from stakeholders, IPT/ICA

Gate	Project step
	Determine selection and evaluation criteria; revise estimates
	Tendering process: select framework or invite new experts of interest*; select suppliers' tenders; prepare draft contract; produce Full Business Case
Gate 3: Investment decision	
	Award contract*
	Produce outline design
Decision point 1: Outline design	
	Produce detailed design
Decision point 2: Scheme design	
	Carry out construction
Gate 4: Readiness for service	
	Use facility; manage contract
Gate 5: Benefits evaluation (repeat as required)	
	Disposal
	END

*Procurement of new IST or agree terms under existing framework agreement.

For a detailed version of this table, see *AE3 Procurement project process*.

SRO Senior responsible owner | PS Project sponsor | ICA Independent client advisor

Supporting activity

evaluation

from
expressions
5*; evaluate
contracts

Whole-life assessment

Partnering workshop – client and IST form IPT

Value engineering (VE), RM

VE, RM

VE, RM; commissioning

Post project review

act

Feedback; post implementation review

Further information

The Achieving Excellence Procurement Guides

- AE 01 Initiative into action
- AE 02 Project organisation:
roles and responsibilities
- AE 03 Project procurement lifecycle: the
integrated process
- AE 04 Risk and value management
- AE 05 The integrated project team:
teamworking and partnering
- AE 06 Procurement and contract strategies
- AE 07 Whole life costing and cost management
- AE 08 Improving performance:
project evaluation and benchmarking
- AE 09 Design quality
- AE 10 Health and safety
- AE 11 Sustainability

Additional sources of information

- Construction Pocketbook
- Gateway checklist for managers
- The Successful Delivery Toolkit

Useful websites

- www.nao.gov.uk
- www.strategicforum.org.uk
- www.strategicforum.org.uk/report.html
- www.m4i.org.uk
- www.cabe.org.uk
- www.dqi.org.uk
- www.betterpublicbuildings.gov.uk
- www.sustainable-development.gov.uk/sdig/improving/

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