

**Capital Works Management Framework
Guidance Note**

**Budget Development
GN 1.3**

Budget Development
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Foreword

Purpose of this document

This document is one of a number of guidance notes aimed at facilitating the implementation of the measures in the Capital Works Management Framework (CWMF) introduced to achieve better value for money on publicly funded works projects

The purpose of this document is to deal with the **content, structure and format of budget estimates for public works projects** – including the calculation of risk, allowance for inflation and other unquantifiable events, as well as the development and management of the capital cost of a project (allowing for inflation where appropriate).

Audience for this document

This document is intended primarily for the guidance of Sponsoring Agencies embarking on traditional (Employer-designed) and design-and-build (Contractor-designed) projects. It should be promoted by Sanctioning Authorities as best practice for Sponsoring Agencies to follow at the preliminary planning stage when determining the optimum output requirements that can be provided within the approved budget. This document is also intended as a strategic resource for the wider public sector.

Terminology in this guidance note

The title **Sponsoring Agency** changes to **Contracting Authority** once a contract for technical services for a works project is awarded. And **Contracting Authority** changes to **Employer** when a Works Contract is signed. The term **Client** is used throughout this guidance note as a generic term to cover the Sponsoring Agency / Contracting Authority / Employer.

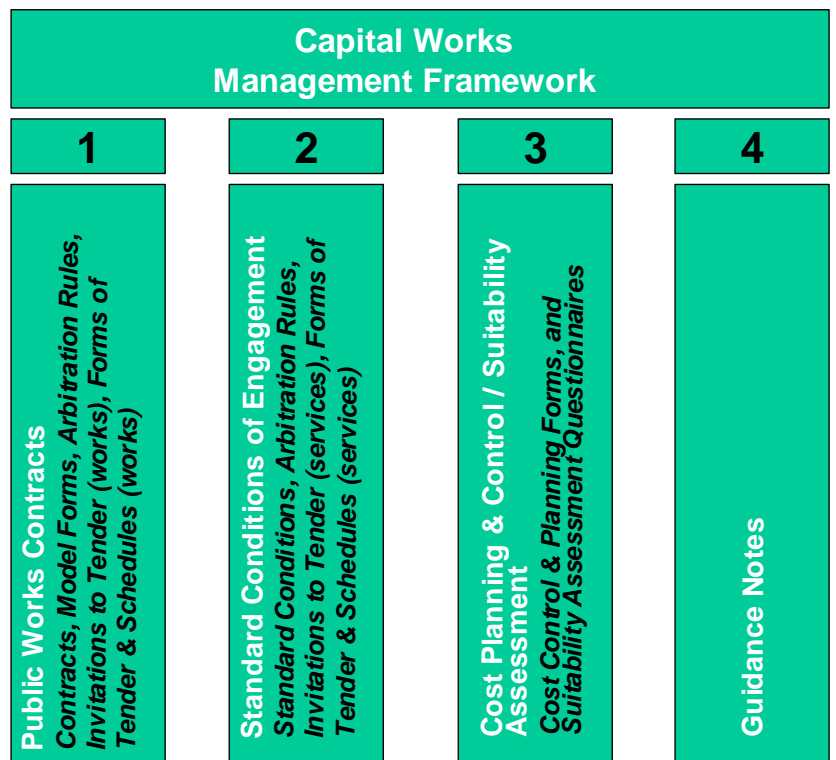
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What is the Capital Works Framework

The Capital Works Management Framework (CWMF) is a structure that has been developed to deliver the Government's objectives in relation to public sector construction procurement reform. It consists of a suite of best practice guidance, standard contracts and generic template documents that form four pillars that support the Framework; the pillars are:

1. A suite of standard forms of construction contracts and associated model forms, dispute resolution rules, model invitations to tender, forms of tender and schedules;
2. The standard conditions of engagement for consultants, dispute resolution rules, model invitations to tender, forms of tender and schedules;
3. Standard templates to record cost planning and control information; and for suitability assessment; and
4. Extensive guidance notes covering the various activities in a project delivery process.



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Foreword, Continued

What is the Capital Works Framework (continued)

The content of the four pillars is outlined below. The constituent documents are coded according to the following scheme:

Code	Description	Code	Description
PW-CF	Public Works Contract Form	COE	Standard Conditions of Engagement
MF	Model Form	GN	Guidance Note
AR	Arbitration Rules	CO	Cost Planning / Control Form
ITTS	Invitation To Tender, Services	ITTW	Invitation To Tender, Works
QC	Questionnaire: Suitability Assessment for Service Provider	QW	Questionnaire: Suitability Assessment for Works Contractor
FTS	Form of Tender and Schedule	GL	Glossary
WE	Data on Weather Event		

CWMF Pillar 1 **Public Works Contracts**

Contracts, Model Forms, Arbitration Rules, Invitations to Tender (works), and Forms of Tender & Schedules (works)

Contracts	
PW-CF1	Public Works Contract for Building Works designed by the Employer
PW-CF2	Public Works Contract for Building Works designed by the Contractor
PW-CF3	Public Works Contract for Civil Engineering Works designed by the Employer
PW-CF4	Public Works Contract for Civil Engineering Works designed by the Contractor
PW-CF5	Public Works Contract for Minor Building and Civil Engineering works designed by the Employer
PW-CF6	Public Works Short Form of Contract
PW-CF7	Public Works Investigation Contract
PW-CF8	Public Works Short Form of Investigation Contract
PW-CF9	Public Works Framework Agreement
Weather Event	
WE 1.0	Met Éireann's calculations of Weather Events

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CWMF Pillar 1 (continued)

Model Forms	
MF 1.0	<i>Model Forms (compendium of all model forms)</i>
MF 1.1	<i>Bid Bond</i>
MF 1.2	<i>Letter to Apparently Unsuccessful Tenderer</i>
MF 1.3	<i>Letter of Intent</i>
MF 1.4	<i>Letter of Acceptance</i>
MF 1.5	<i>Letter to Tenderers Notifying Award</i>
MF 1.6	<i>Performance Bond</i>
MF 1.7	<i>Parent Company Guarantee</i>
MF 1.8	<i>Novation and Guarantee Agreement</i>
MF 1.9	<i>Novation Agreement</i>
MF 1.10	<i>Appointment of Project Supervisor</i>
MF 1.11	<i>Professional Indemnity Insurance Certificate</i>
MF 1.12	<i>Collateral Warranty</i>
MF 1.13	<i>Rates of Pay and Conditions of Employment Certificate</i>
MF 1.14	<i>Bond – Unfixed Works Items</i>
MF 1.15	<i>Retention Bond</i>
MF 1.16	<i>Appointment of Conciliator</i>
MF 1.17	<i>Bond – Conciliator's Recommendation</i>
Arbitration Rules	
AR 1.0	<i>Arbitration Rules</i>
Invitations to Tender (works)	
ITTW 1	<i>Invitation to Tender for Works, Restricted Procedure</i>
ITTW 2	<i>Invitation to Tender for Works, Open Procedure</i>
ITTW 3	<i>Invitation to Tender, Investigation Contract under an Open Procedure</i>
Forms of Tender and Schedules	
FTS 1	<i>Form of Tender and Schedule: Public Works Contract for Building Works designed by the Employer</i>
FTS 2	<i>Form of Tender and Schedule: Public Works Contract for Building Works designed by the Contractor</i>
FTS 3	<i>Form of Tender and Schedule: Public Works Contract for Civil Engineering Works designed by the Employer</i>
FTS 4	<i>Form of Tender and Schedule: Public Works Contract for Civil Engineering Works designed by the Contractor</i>
FTS 5	<i>Form of Tender and Schedule: Public Works Contract for Minor Building and Civil Engineering Works designed by the Employer</i>
FTS 6	<i>Form of Tender and Schedule: Public Works Short Form of Contract</i>
FTS 7	<i>Form of Tender and Schedule: Public Works Investigation Contract</i>
FTS 8	<i>Form of Tender and Schedule: Public Works Short Form of Investigation Contract</i>

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CWMF Pillar 2 *Standard Conditions*

Standard Conditions of Engagement, Arbitration Rules, Invitations to Tender (services), and Forms of Tender & Schedules (services).

<i>Standard Conditions</i>	
COE 1	<i>Standard Conditions of Engagement for Consultancy Services (Technical)</i>
COE 2	<i>Standard Conditions of Engagement for Archaeology Services</i>
<i>Arbitration Rules</i>	
AR 1.0	<i>Arbitration Rules</i>
<i>Invitations to Tender (services)</i>	
ITTS 1	<i>Invitation to Tender for Services, Restricted Procedure</i>
ITTS 2	<i>Invitation to Tender for Services, Open Procedure</i>
<i>Forms of Tender & Schedule (services)</i>	
FTS 9	<i>Form of Tender and Schedule, Consultancy Services (Technical)</i>
FTS 10	<i>Form of Tender and Schedule, Archaeology Services</i>

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CWMF Pillar 3 **Cost Planning & Control/ Suitability Assessment**

Cost Control & Planning Forms; and Suitability Assessment Forms for works and services.

Cost Planning & Control Forms	
CO 1	<i>How to Use the Costing Document (Building Works) Template</i>
CO 1.1	<i>Costing Document (Building Works)</i>
CO 2	<i>How to Use the Costing Document (Civil Engineering Works) Template</i>
CO 2.1	<i>Costing Document (Civil Engineering Works, Roads)</i>
CO 2.2	<i>Costing Document (Civil Engineering Works, Water Sector)</i>
CO 2.3	<i>Costing Document (Civil Engineering Works, Marine)</i>
Suitability Questionnaires (works)	
QW 1	<i>Questionnaire: Suitability Assessment for Works Contractor, Restricted Procedure</i>
QW 2	<i>Questionnaire: Suitability Assessment for Works Contractor, Open Procedure</i>
QW 3	<i>Questionnaire: Suitability Assessment for Works Specialist for specialist area</i>
Suitability Questionnaires (services)	
QC 1	<i>Questionnaire: Suitability Assessment for Service Provider, Restricted Procedure</i>
QC 2	<i>Questionnaire: Suitability Assessment for Service Provider, Open Procedure</i>
QC 3	<i>Questionnaire: Suitability Assessment for Service Provider, Independent PSDP</i>
QC 4	<i>Questionnaire: Suitability Assessment for Service Provider, Independent PSCS</i>

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CWMF Pillar 4

Guidance Notes

Guidance Notes	
GN 1.0	<i>Introduction to the Capital Works Management Framework</i>
GN 1.1	<i>Project Management</i>
GN 1.2	<i>Project Definition and Development of the Definitive Project Brief</i>
GN 1.3	<i>Budget Development¹</i>
GN 1.4	<i>Procurement and Contract Strategy for Public Works Contracts</i>
GN 1.5	<i>Public Works Contracts</i>
GN 1.6	<i>Procurement Process for Consultancy Services (Technical)</i>
GN 1.6.1	<i>Suitability Assessment of Construction Service Providers, Restricted Procedure</i>
GN 1.6.2	<i>Suitability Assessment of Construction Service Providers, Open Procedure</i>
GN 1.7	<i>Standard Conditions of Engagement, Guidance Note and Sample Schedules</i>
GN 2.1	<i>Design Development Process</i>
GN 2.2	<i>Planning and Control of Capital Costs</i>
GN 2.3	<i>Procurement Process for Works Contractors</i>
GN 2.3.1	<i>Suitability Assessment of Works Contractors, Restricted Procedure</i>
GN 2.3.2	<i>Suitability Assessment of Works Contractors, Open Procedure</i>
GN 3.1	<i>Implementation Process</i>
GN 4.1	<i>Project Review</i>
Glossary	
GL 1.0	<i>Glossary</i>

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¹ The current guidance note.

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Strategic Objectives of the CWMF

The strategic objectives of the Government's Capital Works Management Framework are to ensure:

- Greater cost certainty at contract award stage;
- Better value for money at all stages during project delivery, particularly at handover stage; and
- More efficient end-user delivery.

Provided there is a comprehensive definition of the Client's requirements in terms of output specifications, and adequate pre-tender detail design input (in the cast of traditional contracts), the new public works contracts will enable the key objectives outlined above be achieved. The degree to which output specifications and the pre-tender detailed design input is developed is determined by the following guiding principles which underpin the new contracts:

- To ensure as far as practicable that the accepted tender prices and the final outturn costs are the same; and
- To allocate risk so that there is optimal transfer of risk to the Contractor.

The public sector Client or is called 'the Employer' in the new public works contracts. The achievement of optimal risk transfer is dependent on the Employer providing complete and detailed information in the tender documentation:

- For design-and-build projects, the Employer must provide detailed output specifications; and
- For traditional projects, the Employer must provide comprehensive input designs and specifications

Then in responding to an invitation to tender, prospective contractors can assess the impact of the risks being transferred and build the costs of such risks into their tender price.

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Content

The topics dealt with in this document are as follows:

Chapter	See Page
1: Establishing the Project Budget Deals with principles and method of budget preparation.	12
2. Maintaining the Project Budget Explains how to manage the contingency and inflation provisions within a live budget	26

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Project Stages

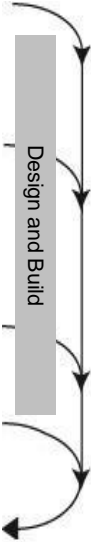
Capital Works Management Framework

Main Project Processes

Project Stages		Project Management	Design Activities (Building)	Design Activities (Civil Eng.)	Cost Control Activities	Risk and Value Management	Documents for Approval	
Appraisal								
Approval in Principle								
Stage 1 <i>Initial</i>	Stage I <i>Feasibility Study / Preliminary Report</i>	Manage outputs: Project Definition (through 16 N° overall parameters)	Conduct Feasibility Studies Develop <i>Definitive Project Brief</i>	Conduct Preliminary Report Conduct design studies Develop <i>Definitive Project Brief</i>	Conduct cost assessment of Feasibility Studies / Preliminary Report (capital and maintenance costs)	VM: Confirm strategic functional performance Review Feasibility Studies / Preliminary Report options Identify VM strategies Develop functional performance model RM: Identify and assess risk relating to the <i>Project Execution Plan</i> Develop high-level <i>Risk Management Plan</i>	<i>Project Management Structure</i> <i>Preliminary Project Brief</i> <i>Preliminary Output Specification</i> <i>Feasibility Study and Cost Plan</i> <i>Design Brief</i> <i>Final Output Specification</i> <i>Definitive Project Brief</i> <i>Project Execution Plan</i> <i>Risk Management Plan</i>	
		Manage technical experts' appointment (if required)	Appoint technical experts (if required) Appoint PSDP (if required)	Appoint technical experts (if required) Appoint PSDP (if required)				
	Stage II <i>Design</i>	Project Review 1: Confirm approval for design expenditure (Report to Sanctioning Authority and await approval prior to proceeding)						
		Manage procurement strategy Manage design consultant appointment Manage assessment of output requirements	Appoint Design Team / Design Team Leader Assess output requirements	Appoint Design Team / Lead Consultant Develop design standards Assess output requirements	Check / assess budget	VM: Consider VM in relation to procurement strategy RM: Identify risk in relation to procurement Agree risk allocation	<i>Definitive Procurement Strategy</i> <i>Contract Type Proposal</i> <i>Project Team Selection Report</i>	
		Project Review 2: Confirm requirements; review procurement strategy (Certify compliance to Sanctioning Authority; and proceed after agreed period provided no queries / hold from Sanctioning Authority)						
		Manage Outline Design process	Develop <i>Outline Sketch Scheme</i> Appoint PSDP (if not appointed earlier)	Develop Preliminary Planning Appoint PSDP (if not appointed earlier)	Develop <i>Outline Cost Plan</i>	VM: Consider VM in relation to Outline Sketch Scheme / Prelim.Planning RM: Consider RM in relation to Outline Sketch Scheme	<i>Outline Sketch Scheme (Building)</i> <i>Preliminary Planning drawings (C. Eng.)</i> <i>Outline Cost Plan</i>	
		Project Review 3: Assess project design and Outline Cost Plan (Certify compliance to Sanctioning Authority; and proceed after agreed period provided no queries / hold from Sanctioning Authority)						
		Manage Developed Design process Manage procurement process	Develop <i>Developed Sketch Scheme</i> Prepare submission for statutory approval	Continue Preliminary Planning Prepare submission for statutory approval	Develop <i>Developed Cost Plan</i> Develop <i>Whole Life Cost Appraisal</i>	VM: Carry out value engineering Assess buildability of the design Consider VM in relation to <i>Detailed Sketch Scheme</i> RM: Identify residual risks Consider RM in relation to <i>Detailed Sketch Scheme</i> Suitability assessment of contractors	<i>Developed Sketch Scheme</i> <i>Developed Cost Plan</i> <i>Statutory Approval Submission</i>	
		Project Review 4: Assess project prior to statutory approval (Report to Sanctioning Authority and await approval prior to proceeding)						
		Manage statutory submission process	Submit for statutory approval Review statutory approval outcome	Submit for statutory approval Review statutory approval outcome	Review <i>Developed Cost Plan</i>	VM: Review any planning conditions for value management impact. RM: Review any planning conditions for risk impact.	<i>Developed Cost Plan (reviewed)</i>	
Project Review 5: Assess outcome from statutory approval (Certify compliance to Sanctioning Authority; and proceed after agreed period provided no queries / hold from Sanctioning Authority)								
Stage 2 <i>Planning Developed</i>	Stage III <i>Tender</i>	Manage the Detailed Design Process	Develop Detailed Design (not design-and-build) Prepare tender documents	Develop Detailed Planning (Design) (not design-and-build) Prepare tender documents	Conduct <i>Detailed and Pre-Tender Cost Checks</i> and <i>Whole Life Cost Update</i> in advance of preparing tender documents	VM: Review suitability assessment of contractors for VM potential RM: Review suitability assessment of contractors for risk impact	<i>Tender Documentation</i> <i>Detailed Pre-tender Cost Check</i> <i>Whole Life Cost Update</i> <i>Contractor List Selection</i>	
		Project Review 6: Approve detailed design solution; review pre-tender cost check; review risk (Report to Sanctioning Authority and await approval prior to proceeding)						
	Manage the Tender Process	Issue tender documents Assess tender returns Recommend successful tenderer	Issue tender documents Assess tender returns Recommend successful tenderer	Develop <i>Tender Cost Analysis</i> Develop <i>Tender Report</i>	VM: Assess tender returns for VM potential RM: Assess tender returns for risk impact	<i>Tender Assessment Criteria</i> <i>Tender Analysis And Report</i> <i>Contractor Recommendation</i>		
	Project Review 7: Review tender returns in advance of awarding the contract (Report to Sanctioning Authority and await approval prior to proceeding)							
Stage 3 <i>Implementation</i>	Stages IV and V <i>Construction and Handover</i>	Manage the implementation / construction process Manage change control Manage contract	Develop Detailed Design (Design and Build) Implement design	Develop Detailed Planning (Design and Build) Implement design	Manage change control for costs Prepare final account	VM: Carry out value engineering (for design and build projects only) RM: Manage residual risk Manage construction risk	Various contract management reports	
Stage 4 <i>Review</i>		Manage the Project Review	Conduct design review	Conduct design review	Develop <i>Analysis of Outturn Cost</i>	VM: Evaluate value achieved RM: Evaluate the risk management and risk mitigation process Consider operational risk reviews	<i>Project Outturn Review</i>	

Capital Appraisal

Standard Conditions of Engagement



1: Establishing the Project Budget

1.1 Overview

Stages in capital works management

The four major stages in the life cycle of a public works project are set out in the Department of Finance's *Guidelines for the Appraisal and Management of Capital Expenditure Proposals in the Public Sector* (February 2005) and any subsequent addendum. The four stages are:

	Stage	What happens
Capital Works Management	1. Appraisal	The needs are identified, the broad parameters of a solution are agreed, and a decision-in-principle is made to proceed.
	2. Planning	The needs are quantified and assumptions verified, the desired outputs are specified, and the solution is designed.
	3. Implementation	The solution is constructed.
	4. Project review	An assessment is carried out of how successfully the delivered solution addresses the needs.

Budget development, as described in this guidance note, takes place in the early part of the Planning stage.

Contents

This chapter deals with what you need to know in order to establish the project budget; it covers the following topics.

Topic	See Page
1.2 Principles of Budget Development Presents an overview of the principles that underlie budget development.	15
1.3 Preparing a Budget Outlines the main stages in preparing a budget.	16
1.4 Providing for Contingencies Describes how to provide for contingencies and allow for risk in the budget process.	23
1.5 Providing for Inflation Describes how to provide for inflation in the project budget.	24

1.2 Principles of Budget Development

Why prepare a budget?

The purpose of preparing a budget is to identify an amount of money that a Sponsoring Agency is prepared to spend on a project. At the earliest possible opportunity this sum needs to be checked to confirm that sufficient funds are allocated to the project to meet the anticipated costs at the planning and the delivery stages of the project. If it is not the project should be referred back to the Sanctioning Authority who will decide if:

- additional funding is to be provided,
- the requirements can be reduced to meet existing funding allocation, or
- the project should be abandoned.
- it is appropriate for the requirements to be satisfied in another way

It is the responsibility of the public body in assessing a budget to predict the tender price and the final outturn cost of a capital project, to a level of accuracy that is realistic and within approved limits set by the Sanctioning Authority.

It is very important to arrive at a realistic figure when checking a budget at a very early stage in project development to ensure that the decision to proceed with a project is soundly-based with regard to its cost (i.e. when sufficiency of budget has been confirmed) and that there no waste of scarce public sector resources due to inaccurate forecasting

Note: The decision to invest in a project should not be based solely on the upfront capital costs, it should based on whole-life-costs, which means also taking into account design, long-term maintenance and the operational costs of the facility. The budget should therefore be appropriately balanced between these competing costs in the context of affordability.

It cannot be over-emphasised that a budget that fails to predict the outturn cost with a degree of accuracy and certainty is of little use. Both over-provision and under-provision are undesirable.

- Under-provision is undesirable because the project might not have been approved, or it might have been reprioritised had its true cost been known at the outset, because funds might not be available for its completion, or because financial resources might have to be redirected away from other public projects due to contractual commitments.
- Over-provision is undesirable because excess funds allocated to a project are effectively denied to other projects that have to be postponed due to the lack of available funds.

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1.2 Principles of Budget Development, Continued

Who is responsible for establishing the budget?

The project budget (including contingency funds) may initially be worked up by the Sponsoring Agency and then examined and approved or rejected by the Sanctioning Authority in its economic appraisal of the proposal.

Alternatively, the project budget (including contingency funds) may be formulated by the Sanctioning Authority – for example, this would usually be the case for repeat projects with standard cost norms. Or it might be where a lump sum is arrived at by considering costs of similar facilities in other jurisdictions and adjusting and tailoring them to suit the public purse.

When is the budget established?

Broad budgetary parameters are established and approved in the Appraisal stage, and the Approval in Principle to proceed to the Planning stage (Employer-Design and Contractor-Design projects) is generally based on these figures.

At each subsequent stage or sub-stage in planning up to contract award, the budget must be regularly checked at the Project Review stages to confirm that it still holds true.

Importance of budget structure

It is very important that the budget structure is properly addressed at the beginning of the Planning Initial stage. In particular, each cost component of the project cost must be identified and a realistic target allowance set against it. The project budget should be robust and adequate to facilitate the delivery of the project.

The notes accompanying figures in the budgetary structure should clearly state the following:

- What contingencies have been included for identified risks;
- What contingencies have been included for unidentified risks;
- What is the expected start date and the expected lifetime of the project; and
- What is the projected rate of inflation for the Planning and Implementation stages of the project.

Budget management during the Planning Initial, Planning Developed, Implementation and Project Review stages is a function of planning and control of capital costs – see *Planning and Control of Capital Costs* (GN 2.2) for details.

Value for money

Value for money is the optimum combination of whole-life costs, quality and affordability that meets the Sponsoring Agency's requirements.

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1.2 Principles of Budget Development, Continued

Whole-life costs Whole-life costs of a facility are the costs of acquiring it (including the cost of design, construction works, and equipment), the cost of operating it, and the cost of maintaining it over its whole functional life through to disposal – i.e. total ownership costs. Long-term costs over the functional life of a facility are more reliable indicators of value for money than the initial construction costs alone because:

- Well-considered, good design decisions taken early can yield significant savings in construction and maintenance costs; and
- Investment in a well-built project can, in turn, achieve significant savings in running costs.

A balance should be struck between the affordable capital cost, maintenance and operating costs over the functional life of the facility to yield the best result. The cost of long-term maintenance should be taken into consideration very early on in the design stage, as most of the cost of running, maintaining and repairing a facility is established through design decisions made at the during the early part of the design process.

Higher up-front capital costs that are affordable may be required at Design and Construction stage in the interest of achieving significant savings over the life of the facility. Promoting excellence in design does not necessarily mean a more costly project when if whole-life-costs are taken into account. This is because a well designed facility may cost considerably less than a poorly designed one if whole-life costs are taken into the consideration.

The focus on whole-life cost should start at Appraisal stage through the adoption of a policy of requiring the cost of maintenance and operating costs on the project to be kept as low as possible. To support such a policy the contingency fund (where necessary) within the affordable budget should be utilised.

A key part of any whole-life cost assessment must be to address the sustainability aspects of the facility. In some areas there are clear links between whole-life costs and sustainability – such as the direct cost of energy usage. When considering whole-life costs it is important to focus on future trends and develop estimates from first principles rather than relying on historical data which should only be used as a check.

Note: In **design, build and operate** contracts that include operation, the Contractor has to operate the facility to the standard specified in the tender, and bear the associated costs; for this reason, the Sponsoring Agency can be reasonably confident that the life cycle costs in the tender are realistic as they will normally have been subjected to close commercial scrutiny (because of the operational element) before tenders are submitted.

In **design-and-build** contracts (where operation is not a competitive item, on the other hand, the Sponsoring Agency needs to be more careful in assessing the tenderers life cycle proposals in its tender. The Sponsoring Agency should carry out a detailed investigations into the life cycle costs presented by tenderers to ensure that they a realistic particularly as they should be one of the MEAT criteria.

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1.2 Principles of Budget Development, Continued

Risk and Value Management

The budget will be required to cover all risks associated with a project and their costs should be either built-in to the project cost or funded out of a contingency fund. As soon a budget is identified a comprehensive risk analysis should be carried out as part of the checking arrangement put in place to determine the sufficiency of the budget. This should involve listing all significant risks that might occur over the life of the facility and costing those risks appropriately. Risk and Value Management are detailed in the guidance note *Project Management* (GN 1.1).

1.3 Preparing a Budget

Establishing cost components

At the early stages of budget preparation, the cost components of a project may be grouped together and not very clearly defined; and in some cases global costs may be set based on affordability. As more cost detail becomes available through the Planning stage, cost components that earlier were combined can be disaggregated into separate cost-holding categories to allow a more accurate picture to emerge as to the most likely costs of the project in the context of the overall approved construction budget.

From the beginning, all assumptions that are made about budgeted costs must be set out clearly. Where possible, the equivalent updated outturn costs from other similar projects (for particular items) should be carefully considered and if appropriate used.

A budget must be sufficiently fine tuned at the end of the Planning stage to ensure that there is greater accuracy at tender stage in the context of a fixed-price lump-sum tender so that tender price and final outturn cost are almost the same.

Stages in budget preparation

The following table summarises the main stages of budget preparation.

Stage	Description
1	<p>Initial draft: At this stage a rough breakdown of the global overall cost of the entire project is produced.</p> <p>The project construction costs might be based on <i>functional unit costs</i> multiplied by <i>number of units</i> according to the established norms in a sector (for example, construction costs for 1,000 pupils @ 6m²/per pupil @ €100/m²).</p> <p>Less complex unit costs can also be used (for example, construction cost per square metre for buildings, cost per acre of lands, cost per kilometre for roads or for water/sewerage services). The overall budget costs should also include an estimate for professional fees for design services. Percentages may be used to arrive at this estimate, or updated lump sums from similar projects might be used for professional fees and so on.</p>
2	<p>Risk assessment: The budget must include a contingency fund based on the expected level of risks attaching to the provision of the facility. See 1.4 Providing for Contingencies, on page 23.</p>
3	<p>Provision for inflation: The budget must include provision for inflation. See 1.5 Providing for Inflation, on page 24.</p>
4	<p>Known costs added: Included in the project construction budget may be other costs for specific known items. These should be identified based on target costs or they should be costed with some degree of accuracy.</p>

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1.3 Preparing a Budget, Continued

What should go into a budget?

The budget should be structured so that each component of the project cost is addressed. Focusing on an individual cost component in isolation could distort the overall picture, as a reduction in the cost of one component could result in a corresponding increase in another. The following is a (non-exhaustive) list of cost components that should be considered:

1: Costs at Planning Initial Stage	
<ul style="list-style-type: none">▪ Feasibility Study / Preliminary Report costs▪ Site supervision / investigation▪ Allowance for purchase of land (building)▪ Valuation fees▪ Estate agent's fees▪ Allowance for Land Registry fees▪ Security▪ CCTV Survey	<ul style="list-style-type: none">▪ Insurances▪ Environmental Impact Statement▪ Modelling▪ Archaeological costs (building and civil engineering)▪ Other investigations/ costs▪ Consultancy fees (e.g. client advice).▪ Legal fees (building and civil engineering)▪ Publicity and advertising fees▪ Other costs – e.g., those associated with statutory planning procedures, wayleaves, strategic land options purchased at this stage, planning fees, oral hearing costs, and so on.
2: Costs at Detailed Planning and Implementation Stages	
<ul style="list-style-type: none">▪ Design consultants▪ Supervision consultants▪ Project management consultants▪ Health and safety consultants▪ Other consultants▪ Legal fees▪ Archaeological costs (civil engineering)▪ Wayleave fees (civil engineering)▪ Licensing / planning application fees▪ Contributions arising out of licensing / planning approval▪ Fire safety certificate application fees▪ Fire consultant's fees▪ Capital cost of facility (with consideration for whole life costs also)▪ Artwork (where policy permits)	<ul style="list-style-type: none">▪ Cost of enabling work▪ Telemetry services▪ Geographic information system services▪ Cost of other specialists services▪ Allowance for purchase of land (civil engineering)▪ Allowance for Land Registry fees▪ Professional fees for valuation, auctioneers, estate agents, etc.▪ Loose furniture and fittings costs▪ Equipment cost▪ Plant installation cost▪ Commissioning of Plant and Equipment▪ Other fees (such as specialist legal and financial advice at procurement)▪ Affordable sustainability options

Continued on next page

1.3 Preparing a Budget, Continued

Learning from experience

Each Sanctioning Authority with a significant capital works programme should maintain centralised records of actual costs incurred on completed projects in a form that allows such cost data be easily accessed for use, as appropriate, on other projects. Some of the cost data should go to updating existing cost norms, other cost data should be isolated as abnormal costs which may be of value when developing a target cost for a particular quantifiable risk on a future project.

All budget figures should be firmly calculated from first principles and checked with historical data that has been updated and to reflect current market prices.

Post Implementation costs

Strategic information in relation to the operation and maintenance costs of the facility over its functional life should be included separately with the approved budget (the approved budget should also include the operating and maintenance costs which should be shown separately). When developing the estimate for the operation and maintenance costs the following should be considered:

1. Running Costs (for specified number of years)	
<ul style="list-style-type: none">▪ Insurances▪ Cleaning▪ Heating▪ Power and Lighting▪ Other utilities▪ Labour▪ Chemicals▪ Waste disposal▪ Maintenance (program, consumables, repairs, etc.)	<p>Running costs may be calculated by forming a matrix with a column for each year and a row for each cost heading. The cells in the matrix are filled with estimated costs for each year.</p> <p>The column totals are reduced to Net Present Value at an approved percentage, and the sum of these Net Present Values are then added to Capital Costs. The result is a derived <i>Whole Life Cost</i>.</p>
2. Costs in Use (for specified number of years)	
<ul style="list-style-type: none">▪ Cost-holding categories (as required) <p>A cost-holding category is a major key component of a facility, such as street lighting, a road surface, a bridge, a roof, or windows</p>	<p>The life expectancy of the components in the cost-holding categories should be decided on, and the number of times they will have to be replaced over the functional life of the facility should be stated. The specification of the components themselves is an exercise that takes place later.</p> <p>For example, a statement might be included that a roof should have a 40-year life expectancy, with a present-day value identified. This is then the standard against which subsequent design is measured.</p>

Continued on next page

1.3 Preparing a Budget, Continued

Post Implementation costs (continued)

3. Recycling Costs	
▪ Demolition	Consideration should be given to sustainable disposal – that is, to clean and recycle demolition waste on a project, or to dispose it for reuse elsewhere on other projects.
▪ Disposal/Sale	At the end of the useful life of a facility, if the facility is not being refurbished for re-use, its disposal and sale have to be considered.
▪ Site reinstatement	At the end of the life of a facility, if the site requires to be brought up to a certain standard before being handed back, the cost of reinstatement needs to be considered.

Budget template

See Appendix A and Appendix B for sample budget templates that practitioners might find useful as a guide when preparing a budget.

- Appendix A contains a budget template for Building Works; and
 - Appendix B contains a budget template for Civil Engineering Works.
-

1.4 Providing for Contingencies

Identifying risk The project budget needs to take into account the costs associated with risk and to quantify these as far as possible. Risk allowance needs to be made for items such as the following:

1. Items that will definitely form part of the final cost, but have yet to be quantified;
2. Identifiable items that may or may not form part of the final cost;
3. Known risk items that might or might not materialise; and
4. Unexpected items that, at the time of budget preparation, are not foreseen or foreseeable.

A matrix of the risks included in factors 1 to 4 above for a project should be established at Project Definition, and target contingency figures should be inserted in the budget for each of them.

Quantifying risks The main focus during project definition is to define, quantify and estimate the value of as many of these risks as possible, so that the risk contingency does not exceed 10 per cent of the capital cost. Time and resources should be utilised at this stage to ensure that the risk contingency is not greater than 10 per cent before progressing to the next step in planning (i.e. the appointment of project designers).

The initial budget drawn up for a project by either the Sanctioning Authority or the Sponsoring Agency should be sufficient to include for all anticipated eventualities based on information available at that time.

In each case, the budgetary process should be informed by experience from similar projects elsewhere, and by reference to social, political, historical and economic considerations that are particular to the proposed facility in the selected location.

The result should be a budgetary provision for contingencies included in the overall budget called a *contingency fund* that is appropriate and has a solid basis.

1.5 Providing for Inflation

Introduction

Apart from the *contingency fund* there should be a separate allowance for construction inflation (if appropriate) in the budget. The amount for construction inflation (if appropriate) will depend upon five things:

- The estimate of project costs (including contingencies) at current market prices;
- The start date and expected delivery period of the project;
- The projected rate of inflation (which may be zero) over the expected life of the project*; and
- The expenditure profile (excluding inflation) over the design and construction life of the project.
- Anticipated market conditions.

The amounts provided for inflation should be identified separately in the budget, and should be incorporated into the individual cost components at the various Project Review stages.

It should be noted in the current economic climate tender prices have fallen which may result in pre-tender budgets (if not assessed to take account of the more competitive market conditions at present) being too high due to the budgets being set at a time prior to the recession.

* In calculating the rate for inflation (if appropriate) for a project, consideration should be given to any exceptional factors that might apply to the specific project and how market forces might be brought to bear on such factors – for example, restriction on extraction of aggregates in an area requiring the sourcing some of all of materials from elsewhere, or international demand for structural steel that would affect the market price of steel.

Inflation rate

If the expected duration of the Implementation stage of a project is longer than six months, the amount allocated for the contract sum should include a provision for inflation.

- Up to the date of contract award, the inflation allowance should be at the predicted rate of inflation for the period concerned; and
- After contract award, the inflation allowance should be on a reducing scale to reflect the fact the main Contractor has now taken over some of the inflation risk.

The predicted level of inflation should be based on the best data available at the time.

Increases for hyper-inflation and certain changes in law

Allowance for hyper inflation and permitted increases arising out of changes in law should be included in the inflation provision in the overall budget.

Continued on next page

1.5 Providing for Inflation, Continued

Forecasting future construction inflation and future market decreases

A professional approach should be taken to allowing for construction inflation or market decreases, and the Sponsoring Agency should seek expert advice if necessary. In relation to determining what to include for inflation or a market decrease in a budget, the Sponsoring Agency should consider the following:

- Examine construction inflationary/ market decrease trends in the past from published information;
- Consider the future economic outlook for the construction sector in the medium term;
- Consider the impact that volatility in the price of oil and other energy sources might have;
- Consider possible future external events that may affect the Irish construction market; and
- Analyse other construction statistical information, both historical and short-/ medium-term projections, to determine a longer term forecast.

Whatever approach is taken, the rationale behind assumptions and data used should be explained and made explicit in the notes accompanying the budget.

2. Maintaining the Project Budget

2.1 Overview

Refining budget information

The information available when the project budget is prepared initially is almost always incomplete and imperfect, and global costs and risk allowances may have been included to derive a realistic overall project cost.

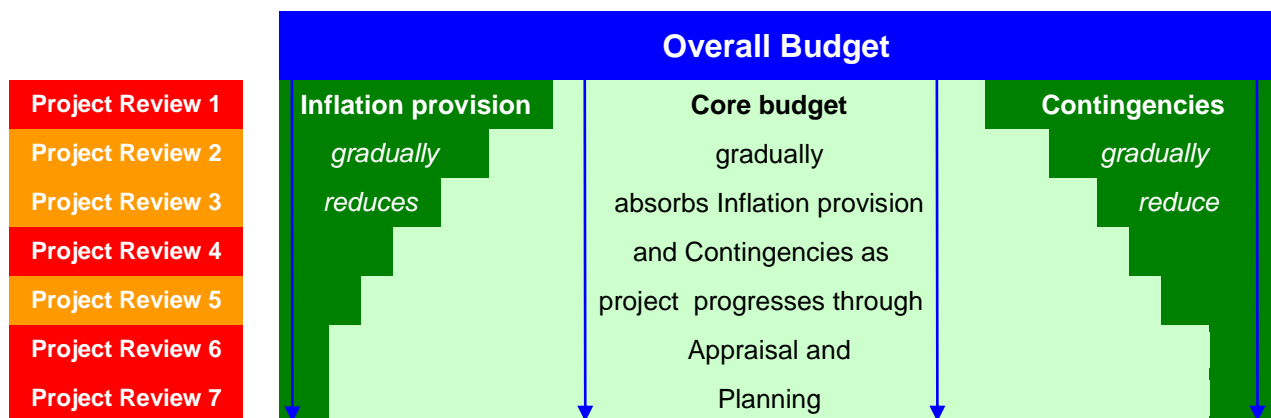
At an early stage in the preparation of the project budget, in addition to other costs provision is made for:

- inflation and
- for risk-related contingencies.

As the project progresses through the Planning stages the budget information is continually refined and revised in order to verify that the budget is adequate to cover the project costs. In this way greater accuracy is achieved, more precise requirements are specified, and circumstances identified as risks either do or do not materialise and their associated costs are allocated appropriate funding.

Absorption of the contingency and inflation amounts

The total budgeted project cost as illustrated in blue in the diagram below is the aggregate of the initial project cost *plus* the inflation provision, *plus* the contingency fund. As the budget is progressed from Appraisal through the Planning stage, the provisions for inflation and other contingencies are gradually absorbed into the core budget as shown by the dark and light green areas below.



Continued on next page

2.1 Overview, Continued

Contents

This chapter presents an overview of how to maintain the project budget as the project progresses, and as information relating to contingencies and inflation becomes more exact.

Topic	See Page
2.2 Maintaining Contingency Deals with the maintenance and control of contingency funds.	28
2.3 Maintaining Inflation Provision Describes how to manage the provision for inflation.	30

2.2 Maintaining Contingency

Dealing with risks

Every effort should be made at the earliest opportune time to improve information, to quantify risks or set target limits against them, and to reduce or eliminate uncertainties. At every stage, the Sponsoring Agency should attempt to:

- Identify risks and maintain a centralised register of known risks;
 - Allocate each risk to the party best able to manage it, bearing in mind the need for optimal risk transfer that represents value for money;
 - Classify the likelihood of the risk occurring;
 - Eliminate, reduce or mitigate risk, or transfer it to a third party (for example, by taking out insurance);
 - Allocate target costs to other project risks; and
 - Quantify and cost as many risks as possible at the various Project Review stages.
-

Managing the contingency fund

During Project Appraisal and the Planning stage, the overall budget includes items that are fully costed, it also includes provision for inflation (if appropriate) as well as contingency provisions to cater for anticipated problems and allowances for unknown or unquantifiable items.

As the design develops, the focus should be on reducing the contingency, so that by the start of the Design Stage it is not more than 10% of the capital costs and by the Implementation Stage it represents no more than 1–2 per cent, the exception at Implementation Stage being heritage contracts (see below).

As the project is examined in more depth, and various studies and surveys are carried out, items in the overall budget that were based on assumptions or estimates can be confirmed and some of the contingencies can be eliminated or quantified more precisely. The core budget is developed in line with this improved information, and amounts are moved from the contingency provision into the core budget proper under actual project cost holding categories. As long as the amounts involved are contained within the contingency provisions, and the project costs are contained within the overall budget for the project there is no need to revert to the Sanctioning Authority. Contingency sums for unforeseeable work must not be included in any tender document or in a pricing document; furthermore such sums must not be included as part of the Contract Sum in any contract with a Contractor.

Managing the contingency fund – heritage contracts

For heritage projects an adequate contingency fund should be available. The size of any such contingency provision depends on the quality of the information provided under an investigation-contract. If only limited investigation is possible a larger contingency fund will be required. The contingency provision for heritage contracts at main contract award stage should generally be in the range of 5–10% of the main contract value.

This contingency fund should only be used to cover unforeseen items which might arise, and should not be used to cover any expansion in the project scope.

Contingency sums for unforeseeable work in heritage projects must not be included in any tender document or in a pricing document; furthermore such sums must not be included as part of the Contract Sum in any contract with a Heritage Contractor, or Heritage Specialist Contractor.

Continued on next page

2.2 Maintaining Contingency, Continued

Control of contingency funds

As the project progresses through Appraisal, Planning (Initial and Developed) and Implementation, the core budgetary provision is continually tested to check its adequacy; and if it is found to be deficient, additional allocation may be made from the contingency fund, provided the residue in the fund is sufficient.

The Sanctioning Authority retains control of the contingency fund, but may delegate part of the fund to the Sponsoring Agency to cater for unforeseen circumstances that might arise during the delivery process of the project.

Typically the part of the contingency fund under the control of the Sponsoring Agency should be used to defray costs arising from:

- Changes to requirements after design has commenced;
- Changes to the design after construction has commenced (Note that this relates to design detail, but *not* to changes in scope); and
- Delays that attract costs during construction that are outside the control of the Contractor.

The contingency fund may be drawn on only in exceptional circumstances where all other options have been exhausted and the additional funding is essential to deliver the facility at the quality and standard in the project brief. Prior to any subvention from the contingency fund a search for savings that would not compromise quality or the functional requirements of the project should be initiated. Only when such a search fails to yield the required savings should there be any recourse to the contingency fund.

Application of contingency funds by the Sponsoring Agency

If the Sanctioning Authority has delegated a portion of the contingency fund to the Sponsoring Agency, the latter may apply these funds as it sees fit to cover any unforeseen event or expense, with the following provisos:

- It must allocate and maintain separate contingency provisions for the design development process and for the Implementation (construction) stage; the contingency provision for Implementation may not be used for design in the Planning stage.
 - Any unused portion of the design contingency provision must be handed back to the Sanctioning Authority at contract award stage – the unused portion may not be rolled forward into the contingency provision for Implementation.
 - The contingency provision for design should be adequate to cover any unforeseen events or expenses for the duration of this stage. The Sanctioning Authority should be alerted by the Sponsoring Agency if it seems likely that the design contingency fund will be exhausted before the end of design development.
 - In the case of Contractor-designed (design-and-build) contracts, there is no budgetary provision for contingencies after contract award, as it is assumed that the Contractor has absorbed all relevant risks that would otherwise have allocated to them contingency amounts (in the case of Employer Design contracts) within the tendered price.
-

2.3 Maintaining Inflation Provision

Timescale As inflation reduction in market price will continue to apply to the project costs throughout its design and construction life, any delays in starting the project or while it is in progress will impact on final costs. For this reason, time estimates must be prepared with the same care as cost estimates, and subjected to the same level of scrutiny throughout the appraisal and planning stages.

Application of the provision for inflation/reduction in market price Once the project budget has been approved which would be prior to the appointment of design consultants and the works contractor the amounts provided for inflation/reduction in market price (labor and materials) are applied to the project costs as a function of time up to completion of that project.

The forecast model should take account of the inflation/reduction in market price provision in the fixed price of a fixed-price lump-sum contract (at main contract award)

In fixed-price lump-sum projects under 36-months duration, construction inflation or reduction in market price after contract award does not arise for the Employer as the accepted tender and the Contract Sum includes for that risk. The Contractor’s tender makes provision for inflation or reduction in market price from the Designated Date to the end of the Construction phase (assuming construction time of 30 months or less). In the case of inflation the figure set aside and is gradually absorbed into the project cost over time. By the end of the Design stage, it should be fully depleted; if it is not, any remaining portion should be returned to the Sanctioning Authority.

Appendix A: Budget Template for Building Projects

1	Cost estimate for work at Pre-Design Stage	€	€
1.1	Feasibility Study		
1.2	Site Investigation		
1.3.	Site Supervision (Site Investigation)		
1.4	Archaeological Costs		
1.5	Other Costs		
1.6	Allowance for purchase of Land/Property		
1.7	Security		
1.8	Fees (i.e. legal, valuation, auctioneer's, Land Registry, etc.)		
1.9	Publicity and advertising fees		
	Sub-Total		
	VAT @ 0%; 13.5%, and 21.5%		
1.10	Provision for inflation on 1.1 to 1.9 above.		
1.11	Contingency provision for unquantifiable known/unknown risks associated with 1.1 to 1.9 above.		
	Sub-Total		
	VAT @ 0%; 13.5%, and 21.5%		
	<i>Carried Forward</i>		

Continued on next page

Appendix A: Budget Template for Building Projects (continued)

		<i>Brought Forward</i>			
2	Cost estimate for work at Design and Construction Stage			€	€
	FEE ESTIMATE	Basis for estimate Hours x Rate			
2.1.	Consultant 1				
2.2.	Consultant 2				
2.3.	Consultant 3				
2.4.	Consultant 4				
2.5.	Clerk of Works				
2.6.	Project Supervisor for the design process				
2.7.	Project Supervisor for the Construction Stage				
2.8.	Planning Application fees				
2.9.	Contributions arising out of Planning Approval				
2.10.	Fire Certificate Application fees				
2.11.	Other fees				
		Sub-Total			
		VAT @ 0%; 13.5%, and 21.5%			
	CONSTRUCTION COST	Unit x Unit Cost			
2.12.	Cost Title 1 (see note 2 below)				
2.13.	Cost Title 2 (see note 2 below)				
2.14.	Cost Title 3 (see note 2 below)				
2.15.	Cost Title 4 (see note 2 below)				
2.16.	Cost Title 5 (see note 2 below)				
		Sub-Total			
		VAT @ 0%; 13.5%, and 21.5%			
		<i>Carried Forward</i>			

Note 1: A balance should be struck between the affordable capital costs and the long-term maintenance costs of key construction cost-holding categories on a Net Present Value basis.

Note 2: The calculation may be based on the required number of functional units and on the established cost norms (for example, 1,000 pupils @ 6m²/per pupil), or it may be a an estimated lump sum for the cost a major component in a project.

Continued on next page

Appendix A: Budget Template for Building Projects (continued)

	<i>Brought Forward</i>		
	COST OF ENABLING WORK		
2.17	Cost Title 1		
2.18	Cost Title 2		
	Sub-Total		
	VAT @ 0%; 13.5%, and 21.5%		
2.19	Provision for inflation on 2.1 to 2.18 above		
2.20	Contingency provision for unquantifiable known/unknown risks associated with 2.1 to 2.18 above.		
	Sub-Total		
	VAT @ 0%; 13.5%, and 21.5%		
	<i>Carried Forward</i>		

	<i>Brought Forward</i>		
3	Cost estimate for Loose Furniture and Fittings	€	€
3.1	Estimated Cost		
3.2	Provision for inflation on 3.1 above		
3.3	Contingency provision for unquantifiable known/unknown risks associated with 3.1 above		
	Sub-Total		
	VAT @ 0%; 13.5%, and 21.5%		
	<i>Carried Forward</i>		

	<i>Brought Forward</i>		
4	Cost estimate for Equipment	€	€
4.1	Estimated Cost		
4.2	Provision for inflation on 4.1 above		
4.3	Contingency provision for unquantifiable known/unknown risks associated with 4.1 above		
	Sub-Total		
	VAT @ 0%; 13.5%, and 21.5%		
	<i>Carried Forward</i>		

Continued on next page

Appendix A: Budget Template for Building Projects (continued)

	<i>Brought Forward</i>		
5	Cost estimate for Plant Installation	€	€
5.1	Estimated Cost		
5.2	Provision for inflation on 5.1 above		
5.3	Contingency provision for unquantifiable known/unknown risks associated with 5.1 above		
	Sub-Total		
	VAT @ 0%; 13.5%, and 21.5%		
	<i>Carried Forward</i>		

	<i>Brought Forward</i>		
6	Cost Estimate for Commissioning Plant and Equipment	€	€
6.1	Estimated Cost		
6.2	Provision for inflation on 6.1 above		
6.3	Contingency provision for unquantifiable known/unknown risks associated with 6.1 above		
	Sub-Total		
	VAT @ 0%; 13.5%, and 21.5%		

TOTAL BUDGET ALLOWANCE for Pre-Design, Design and Construction Stages, Loose Furniture and Fittings, Equipment, and Plant Installation.		
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Continued on next page

Appendix A: Budget Template for Building Projects (continued)

6	Operating Costs (over ___year period, at Net Present Value)			€	€
		Per year			
6.1	Insurances		Sub-Total		
6.2	Cleaning		Sub-Total		
6.3	Heating		Sub-Total		
6.4	Power and Lighting		Sub-Total		
6.5	Other Utilities		Sub-Total		
	Total				
	VAT @ 0%, 13.5%, and 21.5%				
	Total Operating Costs				

7	Costs in Use at Net Present Value (see note below)				€	€
		Cost per replacement	No of replacements			
7.1	Cost-holding category No 1			Sub-Total		
7.2	Cost-holding category No 2			Sub-Total		
7.3	Cost-holding category No 3			Sub-Total		
7.4	Cost-holding category No 4			Sub-Total		
7.5	Cost-holding category No 5			Sub-Total		
	Total					
	VAT @ 0%, 13.5%, and 21.5%					
	Total Costs in Use					

Note: Where alternatives are being considered which have different life cycle costs, a technique such as NPV should be employed to allow for comparison on a common basis.

8	Recycle Costs at Net Present Value			€	€
8.1	Demolition				
8.2	Disposal/Sale				
8.3	Site Reinstatement				
	Total				
	VAT @ 0%, 13.5%, and 21.5%				
	Total Recycle Costs				

Signed _____

On behalf of _____ (Contracting Authority)

Date: _____

Note: an explanatory note should accompany this form with back up details explaining the basis of the estimates.

Appendix B: Budget Template for Civil Engineering Projects

1	Cost estimate for work at Planning Stage	€	€
1.1	Preliminary Report		
1.2	Site Investigation		
1.3.	Site Supervision (Site Investigation)		
1.4	CCTV Survey		
1.5	Environmental Impact Statement		
1.6	Modelling		
1.7	Archaeological Costs (Planning and Construction Stages)		
1.8	Other Investigations		
1.9	Legal Fees (Planning Stage)		
1.10	Publicity and advertising fees (Planning and Construction Stages)		
1.11	Data acquisition (e.g. Ordnance Survey data, GIS data)		
1.12	Other Costs (Planning and Construction Stages)		
1.13	Provision for inflation on 1.1 to 1.12 above.		
1.14	Contingency provision for unquantifiable known/unknown risks associated with 1.1 to 1.12 above.		
	Sub-Total		
	VAT @ 0%; 13.5%, and 21.5%		
	<i>Carried Forward</i>		

Continued on next page

Appendix B: Budget Template for Civil Engineering Projects (continued)

		<i>Brought Forward</i>			
2	Cost estimate for work at Design and Construction Stage			€	€
	FEE ESTIMATE	Basis for estimate Hours x Rate			
2.1.	Consultant 1				
2.2	Consultant 2				
2.3	Consultant 3				
2.4	Consultant 4				
2.5	Site Supervision				
2.6.	Project Supervisor for the design process				
2.7	Project Supervisor for the Construction Stage				
2.8	Licensing/Planning Application fees				
2.9	Contributions arising out of Licensing/Planning Approval				
2.10	Other fees				
	Sub-Total				
	VAT @ 0%; 13.5%, and 21.5%				
	CONSTRUCTION COST	Calculation (see note below)			
2.12	Cost Title 1 (see note 2 below)				
2.13	Cost Title 2 (see note 2 below)				
2.14	Cost Title 3 (see note 2 below)				
2.15	Cost Title 4 (see note 2 below)				
2.16	Cost Title 5 (see note 2 below)				
2.17	Cost Title 6 (see note 2 below)				
2.18	Cost Title 7 (see note 2 below)				
	Sub-Total				
	VAT @ 0%; 13.5%, and 21.5%				
	<i>Carried Forward</i>				

Note 1: A balance should be struck between the affordable capital costs and the long-term maintenance costs of key construction cost-holding categories on a Net Present Value basis.

Note 2: The calculation may be based on the required number of functional units and on the established norms or it may be an estimated lump sum for a major component in a project.

Continued on next page

Appendix B: Budget Template for Civil Engineering Projects (continued)

	<i>Brought Forward</i>		
2.20	Telemetry Services		
2.21	Geographic Information System Services		
2.22	Other Specialist Services		
2.23	Allowance for purchase of land		
2.24	Allowance for Land Registry fees		
2.25	Fees (valuation, auctioneers, estate agents, etc.)		
2.26	Legal Costs (Construction Stage)		
2.27	Wayleaves and Rights of Way		
2.28	Provision for inflation on 2.1 to 2.27 above		
2.29	Contingency provision for unquantifiable known/unknown risks associated with 2.1 to 2.27 above		
	Sub-Total		
	VAT @ 0%; 13.5%, and 21.5%		
	<i>Carried Forward</i>		

	<i>Brought Forward</i>		
3	Cost estimate for Equipment	€	€
3.1	Estimated Cost		
3.2	Provision for inflation on 3.1 above		
3.3	Contingency provision for unquantifiable known/unknown risks associated with 3.1 above		
	Sub-Total		
	VAT @ 0%; 13.5%, and 21.5%		
	<i>Carried Forward</i>		

Continued on next page

Appendix B: Budget Template for Civil Engineering Projects (continued)

<i>Brought Forward</i>			
4	Cost estimate for Plant Installation	€	€
4.1	Estimated Cost		
4.2	Provision for inflation on 4.1 above		
4.3	Contingency provision for unquantifiable known/unknown risks associated with 4.1 above		
	Sub-Total		
	VAT @ 0%; 13.5%, and 21.5%		
	<i>Carried Forward</i>		

<i>Brought Forward</i>			
5	Cost Estimate for Commissioning Plant and Equipment	€	€
5.1	Estimated Cost		
5.2	Provision for inflation on 5.1 above		
5.3	Contingency provision for unquantifiable known/unknown risks associated with 5.1 above		
	Sub-Total		
	VAT @ 0%; 13.5%, and 21.5%		

TOTAL BUDGET ALLOWANCE for Planning, Design and Construction Stages, Equipment, and Plant Installation.			
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Continued on next page

Appendix B: Budget Template for Civil Engineering Projects (continued)

6	Operating Costs (over ___ year period, at Net Present Value)			€	€
		Per year			
6.1	Insurances		Sub-Total		
6.2	Cleaning		Sub-Total		
6.3	Heating		Sub-Total		
6.4	Power and Lighting		Sub-Total		
6.5	Other Utilities		Sub-Total		
6.6	Labour		Sub-Total		
6.7	Waste Disposal		Sub-Total		
6.8	Maintenance		Sub-Total		
6.9	Other Costs		Sub-Total		
			Total		
			VAT @ 0%, 13.5%, and 21.5%		
			Total Operating Costs		

7	Costs in Use (over ___ years at Net Present Value) (see note below)			€	€
		Cost per replacement	No of replacements		
7.1	Cost-holding category No 1			Sub-Total	
7.2	Cost-holding category No 2			Sub-Total	
7.3	Cost-holding category No 3			Sub-Total	
7.4	Cost-holding category No 4			Sub-Total	
7.5	Cost-holding category No 5			Sub-Total	
				Total	
				VAT @ 0%, 13.5%, and 21.5%	
				Total Costs in Use	

Note: Where alternatives are being considered which have different life cycle costs, a technique such as NPV should be employed to allow for comparison on a common basis.

Continued on next page

Appendix B: Budget Template for Civil Engineering Projects

(continued)

8	Recycle Costs at Net Present Value	€	€
8.1	Demolition		
8.2	Disposal/Sale		
8.3	Site Reinstatement		
	Total		
	VAT @ 0%, 13.5%, and 21.5%		
	Total Recycle Costs		

Signed _____

On behalf of _____ (Contracting Authority)

Date: _____

Note: an explanatory note should accompany this form with backup details explaining the basis of the estimates, including the number of sites to be bought and the extent of wayleaves to be acquired.
