

Capital Works Management Framework

Guidance Note

Implementation Process

GN 3.1

Implementation Process Guidance Note

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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) which has been developed to achieve better value for money on publicly funded works projects. Its purpose is to assist Contracting Authorities in the application of the Public Works Contracts at the Implementation stage of both building and civil engineering projects so that projects are delivered, ‘on cost’, ‘on time’ and ‘to the required quality standard’. In the context of this document:

- ‘on cost’ means tender price being the same as the final outturn cost.
 - ‘on time’ means that the project is delivered on or before Substantial Completion; and
 - ‘delivered to the required quality standard’ means that the project is constructed to the contract specification.
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Terminology in this guidance note

The **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.

Audience

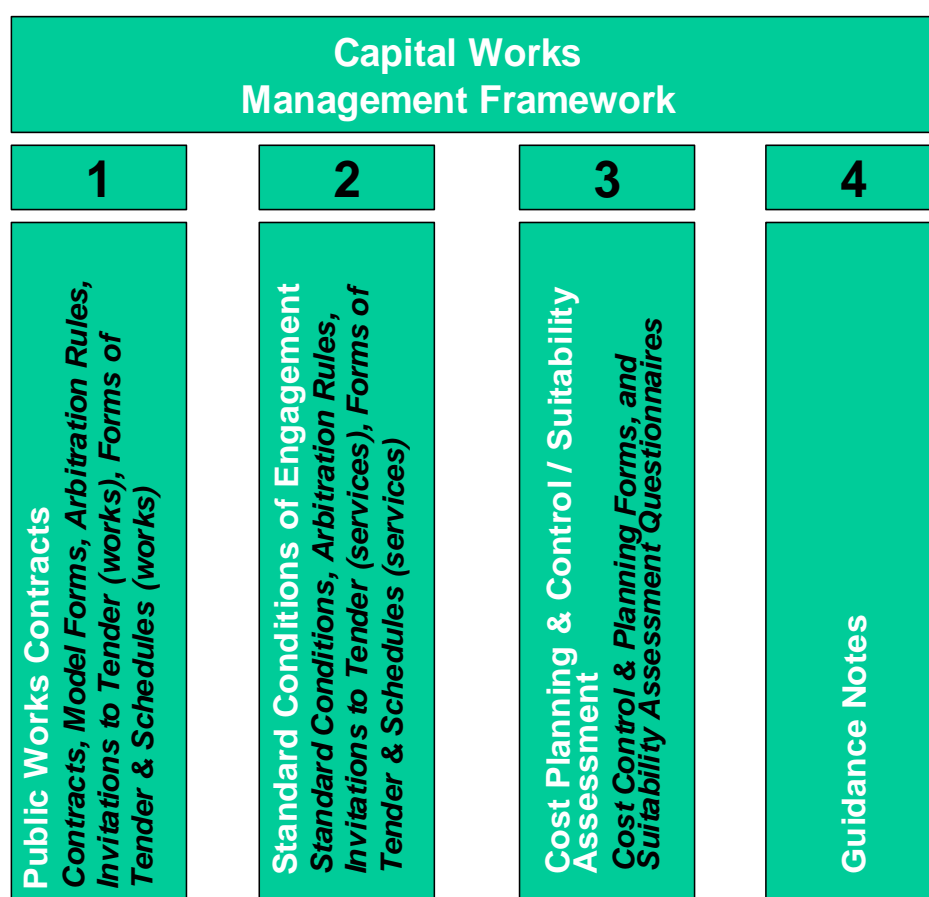
This document is intended primarily for the guidance of Sponsoring Agencies embarking on traditional and design-and-build projects. However, the role of the Sanctioning Authorities and any external consultants appointed in relation to the capital works projects is also considered.

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What is the Capital Works Management 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 Management 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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Foreword, Continued

CWMF Pillar 1 (continued)

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

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Foreword, Continued

CWMF Pillar 2 **Standard Conditions**

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

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

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

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CWMF Pillar 4

Guidance Notes

Guidance Notes	
GN 1.0	Introduction to the Capital Works Management Framework
GN 1.1	Project Management
GN 1.2	Project Definition and Development of the Definitive Project Brief
GN 1.3	Budget Development
GN 1.4	Procurement and Contract Strategy for Public Works Contracts
GN 1.5	Public Works Contracts
GN 1.6	Procurement Process for Consultancy Services (Technical)
GN 1.6.1	Suitability Assessment of Construction Service Providers, Restricted Procedure
GN 1.6.2	Suitability Assessment of Construction Service Providers, Open Procedure
GN 1.7	Standard Conditions of Engagement, Guidance Note and Sample Schedules
GN 2.1	Design Development Process
GN 2.2	Planning and Control of Capital Costs
GN 2.3	Procurement Process for Works Contractors
GN 2.3.1	Suitability Assessment of Works Contractors, Restricted Procedure
GN 2.3.2	Suitability Assessment of Works Contractors, Open Procedure
GN 3.1	Implementation Process¹
GN 4.1	Project Review
Glossary	
GL 1.0	Glossary

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¹ The current guidance note.

Foreword, Continued

Stages in capital works management

The four major stages in the delivery 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). The four stages are:

Capital Works Management	Stage	What happens
	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.

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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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Foreword, Continued

Content

This document deals with the following topics:

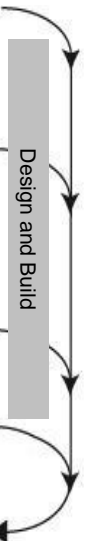
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1. Overview. About the Implementation Stage Outlines the key concepts for successful management of the implementation process.	14
2. Roles and Responsibilities in the Contract Outlines the roles and responsibilities of the Client Team and of the Contractor - as set out in the Contract.	33
3. Managing the Works in Progress Describes the management processes for the administration of the Contract.	50
4 Managing Risk in Progress Describes how to manage risk during the implementation process including, how to manage loss or damage, delay and compensation events, and contract insurance.	74
5. Calculating Price Variation Deals with how the risk of price variations is handled and how adjustments to the Contract Sum are calculated.	90
6. Project Completion and Handover Explains what ‘substantial completion’ and the ‘Defects Period’ are, and outlines handover activities and documents.	111
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Appendix B: Price Variation Calculation under PV2 (Formula Fluctuations Method): Worked Examples Contains a number of worked examples to illustrate the application of the various price fluctuation formulae.	117

Project Stages				
Appraisal	Capital Appraisal			
Approval in Principle				
Stage 1 Planning Initial		Stage (i) Feasibility Study / Preliminary Report	Standard Conditions of Engagement	
		Stage (ii) Design		
Stage 2 Planning Developed				
		Stage (iii) Tender		
Stage 3 Implementation		Stages (iv) Construction & (v) Handover		
Stage 4 Review				

Capital Works Management Framework

Main Project Processes

Project Management	Design Activities (Building)	Design Activities (Civil Eng.)	Cost Control Activities	Risk and Value Management	Documents for Approval
Manage outputs: Project Definition (through 16 N° overall parameters) Manage technical experts' appointment (if required)	Conduct Feasibility Studies Develop <i>Definitive Project Brief</i>	Conduct Preliminary Report Conduct design studies Develop <i>Definitive Project Brief</i> Appoint technical experts (if required) Appoint PSDP (if required)	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 Design Brief</i> <i>Final Output Specification</i> <i>Definitive Project Brief</i> <i>Project Execution Plan</i> <i>Risk Management Plan</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 / Preliminary 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)					
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 and 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)					
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
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>



1. Overview 1. About the Implementation Stage

1.1 Overview

Introduction

The main contract implementation begins once final approval for the award of the Contract has been secured.

There can be a variety of works contracts awarded in advance of the main contract that have to be executed within an overall timeline for the implementation stage. These may include, for example, demolition of existing structures, enabling works so as to level and leave clean the site, vehicle access works, temporary works, diversions of utilities, or even prefabrication of works off-site. Works such as these are classified as ‘advanced works’ and they may overlap the end of the Planning stage. It is also possible to have various types of separate contracts awarded after the Date for Substantial Completion of the main contract – these include, for example, fit-out, road marking, accommodation works for landowners outside land made available, additional signage and works to residual networks, or landscaping contracts etc. These post main contract implementation awards may overlap the start of the review stage. For an illustration of this overlap at start and finish of implementation stage-see *Fig 1* below.

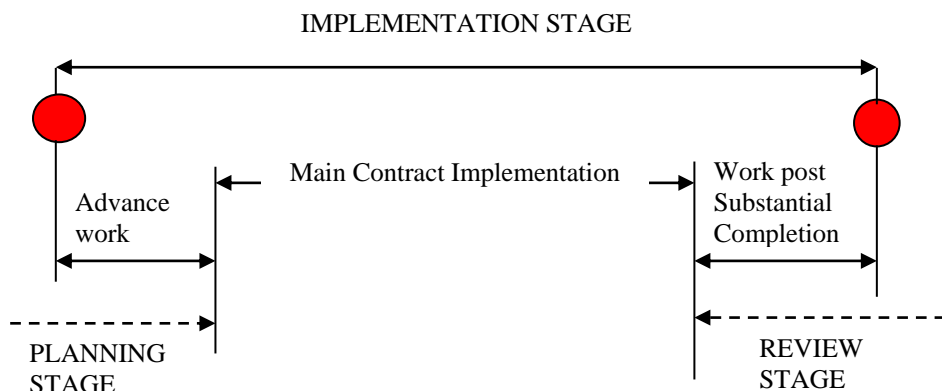


Fig 1: Overview of Implementation Stage

Substantial completion

The project is considered ‘substantially completed’ (i.e. ready for use / occupation), when it is handed over. Administrative, financial and possibly residual works together with rectification of minor defects subsequently discovered may be required to be carried out after Substantial Completion in the Defects Period (see Clause 8.6 of PW-CF1 to PW-CF5 and Clause 2.5 of PW-CF6). This is the Defects Period – it is defined in the Conditions or in the Schedule to the Contract, and usually lasts for 12 to 36 months after the Date for Substantial Completion. The Employer’s Representative issues a Defects Certificate to indicate the end of the Defects Period.

Continued on next page

1.1 Overview, Continued

Introduction (continued)

Ensuring project delivery

Sponsoring Agencies (Employers) should ensure that projects are delivered safely, on time, to budget and to the required quality standards.

While Employers are in most instances remote from the day-to-day activities of the construction process², it is important for them to obtain appropriate assurance on a regular basis on the status of construction activity and of cost. Some circumstances may require a more active involvement by the Employer at various stages during the implementation – for example, activities in relation to advanced works in preparation for the main works or to organize business activities where the project is being constructed around existing business operations. Also the handover and occupation phase can be a fairly intensive period for the Employer.

The critical success factors for this stage of the project are good planning and preparation, good processes, good communication and a team approach.

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² The day-to-day running of the contract is left to the construction managers and professional experts employed to do that job.

1.2 Key Principles at Implementation Stage

Key Principles to follow at Implementation stage

The award of a fixed price lump sum contract marks the start of the implementation stage. The key principles that must be adhered to during construction are:

1. Delivery ‘to the required standard’
2. Delivery ‘on cost’
3. Delivery ‘on time’

It is important that these principles are not compromised during construction. It is also important that in observing these principles there is no compromise in relation to compliance with health and safety legislation. Furthermore, the value for money decision taken at contract award stage should continue to hold true up to substantial completion. This is important since any costly unforeseeable design or specification changes arising during the Implementation stage could result in bringing into question the viability of a project from a cost perspective. Should a conflict arise between principles 1 and 3 arise during construction, the ‘required standards’ must not be compromised without full consideration of the implications of such action. In such instances the Employer’s Representative will not be able to act alone.³

Each of the three principles is discussed in turn below.

1. Delivery ‘to the required standard’

The standard to which the facility is to be delivered is set out in the contract documents. It is important that this standard is maintained throughout the implementation process for workmanship, products used and the design of the Employer’s requirements. No activity during the implementation process should in anyway compromise any of these key elements.

However, there may be instances when change orders are needed due to unforeseeable circumstances. These should only be instructed with the Employer’s approval. Such changes may relate to higher standards set by new legislation, or substitution of goods and products no longer available with alternatives. It is important to note that the Standard Conditions of Engagement for Consultancy Services (Technical) restrict the Employer’s Representative from issuing ‘... any Change Order causing or contributing to a reduction in safety, quality, usefulness, of the Project’ without the Employer’s approval. (See Clause 2.12 and Schedule A.)

Continued on next page

³ The ER’s authority is set out under Sub-Clause 2.12 of the *Conditions of Engagement for Consultancy Services (Technical)*.

1.2 Key Principles at Implementation Stage, Continued

1. Delivery 'to the required standard' (continued)

A similar requirement is also stated in Schedule (Part 1 A) of the Public Works Contract. The required standard in the case of a design-and-build contract is that the '*... completed Works are fit for their intended purpose as stated or inferred from the Works Requirements*' (see PW-CF2 and PW-CF4 Clause 8.1(4)). In the case of a traditional, Employer-designed contract where the Employer specifies materials and goods that are Work Items, the required standard is '*... that all Work Items selected or designed by the Contractor (including by any Specialist) are fit for their intended purpose in the Works*' (see PW-CF1, PW-CF3 and PW-CF5 Clause 8.1[4]).

2. Delivery 'on cost'

The 'on cost' principle is where there is little or no difference between the final cost of a project and the accepted tender amount. The same principle applies to both traditional and design –and-build contracts. The accepted tender amount should be the initial contract sum (as a fixed price lump sum) included in the Agreement (Article 3) of the Public Works Contract. This sum in accordance with Article 3 in the Agreement can '*...only be adjusted when the Contract says so*'. The limited circumstances under which the lump sum can be adjusted are set out in Schedule (Part 1K) of the Public Works Contracts. These circumstances are referred to as 'Compensation Events'. On certain projects (i.e. those of over 36 months' duration from tender) the contract sum can also be adjusted for inflation associated with labour and materials included in the construction work.

An instruction issued by the Employer's Representative that is a Change Order and not cost neutral is a Compensation Event under Schedule Part 1K of the Public Works Contract. The restriction on the authority of the Employer's Representative to issue such Orders is set out in sub-clause 4.3.2 and in Schedule (Part 1 A) of the Public Works Contracts.

All public sector projects, irrespective of duration, permit the contractors to recover increases arising out of certain changes in law that affect a project. Similarly hyper-inflation increases are also recoverable by the contractors at any time during a contract. These should be regarded as legitimate increases and where they arise they should be funded by the Employer in accordance with Section 1.5 of *Budget Development* (GN 1.3) which states " Allowance for hyper-inflation and permitted change in law increases should be included in the inflation provision that forms part of the overall approved budget..

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1.2 Key Principles at Implementation Stage, Continued

2. Delivery 'on cost' (continued)

Apart from the separate financial provision for construction inflation there is the *contingency fund* see Section 1.4 *Budget Development* (GN 1.3) which at Implementation stage should be not be more than 1-2% of the capital cost of a project. This is provided the Sanctioning Authority has delegated the 1-2% contingency to the Sponsoring Agency to use without prior approval. The contingency is to used to cover the cost of unforeseeable events ('Compensation Events') that could arise after contract award. In the case of significant Heritage Projects this contingency provision could be between 5% and 8%.

On large projects the use of a percentage to establish the contingency provision might not be appropriate in such situations a sum might be more appropriate. The Sponsoring Agency may in turn delegate a portion of this to the Employer's Representative during the construction stage, under strict controls regarding its use.

Once the contract is awarded no scope changes should be introduced during implementation stage as this would undermine the objective of achieving greater price certainty and value for money at tender stage. The purpose of the contingency fund is to cover genuine unforeseeable costs that arise on a project while meeting the original requirements specified in tender documents.

When the Employer's Representative issues a Change Order the cost of the change under the Contract should be stated on the Order and should be broken down and allocated to the main cost holding categories in the tender cost analysis. The up-to-date cost of each element/cost holding category should be recorded on the standard forms for cost control and planning (CO 1 and CO 2).

Another aspect to managing costs on a project is the strict notice provision in clause 10.3 of PW-CF1 to PW-CF5. These require a Contractor to notify the Employer's Representative within 20 working days after becoming aware, or should have become aware of something that could give rise to extra costs which entitles the Contractor to an adjustment to the contract sum. A further 20 working days notice period is also included within which the Contractor must supply the details necessary to support such a claim. If one of these periods is not adhered to the Contractor loses the right for its claim to be considered. These strict notice periods act as an automatic mechanism that keeps the adjusted contract sum up-to-date on an ongoing basis. They also allow time for corrective intervention to be taken if considered necessary. The use of notice periods for settlement of claims in relation to additional costs avoids deferring these issues until the project is completed. The main advantage of this control mechanism is that it allows for corrective action to take place at the appropriate time.

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1.2 Key Principles at Implementation Stage, Continued

3. Delivery 'on time'

The 'on time' principle refers to the fact that projects are required to be delivered on or before the Date for Substantial Completion as stated in Part 1G of the Schedule of PW-CF1 to PW-CF5 (or alternatively Part 2C of the Schedule) and Clauses 1,1 in the Schedule to PW-CF6. The requirement in Clause 4.9 of PW-CF1 to PW-CF5 to provide a construction programme before starting work on site and the sanction of withholding 15% of sums due if a revised programme is not provided should act as an incentive for the Contractor to provide such a chart at the appropriate time, displaying the up-to-date position of the project including any new Date for Substantial Completion.

In order to encourage the timely delivery of projects, the new reform measures promote on-site efficiencies. The following benefits could therefore be obtained;

- As a project is comprehensively designed before the contract is awarded a Contractor is well placed to organise, manage and proceed regularly and diligently to carry out the construction work in an efficient way uninterrupted by the Employer or designers from commencement to substantial completion of a project
- The Contractor can order and manage the deliveries of materials and goods well in advance of being required to do – this will ensure that they arrive on site at the right time;
- By having time to order materials the Contractor can take advantage of bargain sales;
- The Contractor has complete control over all specialists and subcontractors engaged on the works;
- The Contractor is better placed to plan off-site production of prefabricated components where this proves to be practical;
- The Contractor can coordinate all work activities both on and off site so as to ensure maximum efficiency and to minimise unproductive work;
- The Contractor is better placed to step in and solve any problem that arises in connection with the delivery of the project;
- The Contractor should find it easier to programme the works including amending a programme as required by sub-clause 4.9.3; and
- The Contractor can more easily plan the daily work schedule and deploy labour resources more efficiently.

Managing extensions of time is governed by strict notice rules which are set out in Clauses 9.3 and 10.3 of PW-CF1 to PW-CF5. Notice periods act as a mechanism to keep the Date for Substantial Completion up to date and allows time for corrective intervention to be taken if necessary.

1.3 Communication and Meetings

Introduction

Throughout the implementation process, the Employer is responsible for establishing clear and efficient communication procedures:

- At an operational level, good communications are necessary to achieve efficiency in the delivery of the facility; and
- At a broader informational level, communication with local communities and other stakeholders can help to ensure the success of the project from a wider societal perspective.

Communication between the Employer and the Contractor and other stakeholders may be formal (through meetings and reporting procedures), or it may be informal (through activities that help to create better relationships between project team members), or it may be a mixture of both, depending on the nature of the project.

Pre-start meeting

The Employer should hold a pre-start meeting with the Contractor, the Employer's Representative and other service providers to:

- Establish proper working arrangements;
- Confirm roles and responsibilities;
- Agree on communication lines; and
- Agree on the procedures to be followed while the project is on site.

A typical agenda for a pre-start meeting is in Appendix A.

Note: The Project Execution Plan should be reviewed and amended accordingly at contract award. For more information, see *Project Management* (GN 1.1).

Information release schedule

On traditional, Employer-designed projects, designers and contractors need to agree on an information release dates, based on the Contractor's implementation programme, in advance of work commencing on site. This will inform the Employer's Representative when the Contractor requires the information that it has not already received – to ensure that the flow of design information meets the Contractor's requirements at the right time.

Note: In the case of design-and-build projects, the output requirements should be comprehensively stated in the Works Requirements with the Contractor's input designs and specifications in the Works Proposals. In the case of traditional contracts, the Employer's input designs and specifications should be comprehensively developed and included in tender documents prior to submission of tenders. Therefore, the amount of information required by the contract should be small.

Continued on next page

1.3 Communication and Meetings, Continued

Regular communication activities

The Sponsoring Agency (through the Project Coordinator⁴) has responsibility for establishing and maintaining good communications between the Sponsoring Agency (Employer) and all other parties involved in the project. There are various ways in which this can be done including formal meetings and reporting procedures under the Contract (PW-CF1 to PW-CF6), the Standard Conditions (COE 1), or through more informal activities that are not contractual.

The formal communication activities that the Employer, the Employer's Representative, other Design Team members and the Contractor are involved in are those set out in the Standard Conditions (COE 1) and the Contract (PW-CF1 to PW-CF6). They should deal with such matters as:

- Regular meetings with the project team (preferably monthly) – progress reports must be completed and submitted by the Contractor for these meetings;
- The regularity of site inspections; and
- Regular management reports from the Employers Representative to the Sponsoring Agency – which should detail all significant project developments and costs. If adverse developments occur, include circumstances that threaten the delivery of the agreed scope of work arising out of unforeseeable cost increases, that call into question the viability of the project, this should be stated in the reports which should be submitted at the earliest possible time to the Sponsoring Agency.

Where there is a need to keep stakeholders informed of developments during the implementation stage the Sponsoring Agency should communicate with those stakeholders in the following way;

- Listen to and record comments from stakeholders, and
- Provide prompt responses to stakeholder comments and queries;
- Provide regular updates on the project's progress; and
- Communicate significant project changes to relevant stakeholders.

Continued on next page

⁴ For a description of the role of Project Coordinator see Department of Finance document *Guidelines for the Appraisal and Management of Capital Expenditure Proposals in the Public Sector*.

1.3 Communication and Meetings, Continued

Written communication

The Employer and the Contractor use a variety of documents to communicate formally about the project – these include letters, reports, notices, decisions, objections, approvals, certificates, determinations, instructions and requests. Such communications must be provided in writing and must be delivered as follows:

- Notices about termination of the Contract or disputes must be delivered by hand, or sent by pre-paid registered post to the designated person at the address stated for such notices in the Schedule (Parts 1 and 2) of PW-CF1 to PW-CF5.
- Other communications should be in electronic format where this is practical, or otherwise delivered by hand or sent by pre-paid post to the person at the address stated for such other communications in the Schedule (Parts 1 and 2) PW-CF1 to PW-CF5.

Communications by fax or e-mail are considered to have been received when receipt is electronically recorded. Communications sent by registered post are presumed to have arrived at 10.00 a.m. two working days after posting.

All communication between the parties to the contract must be purposeful. This means that the contract is not just to be read literally. Clause 4.14 of PW-CF1 to PW-CF5 states “*the parties intend all communications between them to be interpreted purposefully, having regard to the Contract’s purposes*”. If there is any ambiguity in the language in the contract the courts will, when faced with two or more possible interpretations, have regard to the purposes identified at Clause 1.2.1⁵ and not take an interpretation which might defeat those or serve them less well.

Period of notice to the ER

The Contractor must give the ER at least 10 working days’ advance notice of the date by which the Contractor requires any instructions from the ER, or works items or other things that the Employer is to provide. (A required work item could be, for example, a piece of salvaged material that the Employer wants built into the works and which has been indicated in the Works Requirements). The time limit within which the ER has to give instructions or provide work items (in accordance with clause 4.11.2 of PW-CF1 to PW-CF5) is the latest of the following:

- The date stated in the Contract (if any);
 - The date the instructions or work items are required in accordance with actual progress;
 - The date first notified that they are required; or
 - The date shown in the Contractor’s current programme.
-

Continued on next page

⁴ “*the parties intend the Contract to be given purposeful meaning for efficiency and public benefit generally and as particularly identified in the Contract.*”

1.3 Communication and Meetings, Continued

Scheduled and special meetings

The ER schedules regular meetings with the Contractor to discuss ongoing project progress and may also call special meetings to deal with particular issues as they arise.

The ER may invite other Employer's personnel to attend such meetings. The Contractor is responsible for arranging for the attendance of the Contractor's personnel if requested by the ER.

If the Contractor requests the attendance of the Employer's personnel, this should be accommodated whenever practical. The time and place of meetings will be set by the ER, in consultation with the Contractor.

The minutes of such meetings are recorded by the ER and must be made available to the Contractor within five working days. If the Contractor wishes to contest any minuted item, this must be done within the next five working days.

Informal communication

The informal activities (depending on project type and size) that the Employer may be involved with in order to maintain a good relationship with the construction team and other key project stakeholders are

- Regularly liaising with local media on project progress;
- Staging project milestone events – for example, 'sod cutting' at the start of a project, a 'topping out' ceremony when the structure reaches its highest point, and official opening at end of project.

There may be other activities that should be considered in order to anticipate or resolve particular issues, depending on project type, size and location, such as a name for a particular facility, or to arranging project viewing and presentations as well as marketing activities and materials.

Note: If any site access is required for these activities, the Employer must receive approval from the Contractor beforehand. Such activities should have been anticipated at tender stage and included in the Works Requirements in the Contract so that there is no difficulties or claims from the Contractor when the activities arise.

Facilitating organisational change

The Implementation stage often offers the best opportunity to initiate changes that may be required for the efficient business operation of a new facility (e.g. for a Local Authority to operate and maintain a new road) – such as the introduction or changes to management and operation protocols and funding.

Organisational changes need to be agreed, communicated and explained to all stakeholders through the appropriate medium (i.e. illustrative drawings, models, presentations etc). By engaging stakeholders in this way they will feel part of the delivery process and will be a better affiliation with the facility when operational.

1.4 Documentation Requirements Before the Starting Date

Introduction

Before work commences on site, all the documentation for the project required under Clause 9.1.2 of PW-CF1 to PW-CF5 must be provided by the Contractor. In particular, the Agreement (9.1.2[1]) to the Public Works Contract for the project must be executed and, depending on the project, the Contractor may also be required to provide a performance bond and to furnish details of insurance, a detailed programme (Clause 4.9.1 of PW-CF1 to PW-CF5), parent company guarantees and other documentation required by the contract.

These documentation requirements are described below.

Bonds and guarantees

If a Contractor is required to provide a performance bond or a parent company guarantee, these must be given to the Employer (unless already provided earlier e.g. in response to a Letter of Intent) before the Starting Date. The following table summarises the indemnities that might be required. For more information on these, see *Public Works Contracts* (GN 1.5) § 2.3 Bonds and Guarantees.

Bond / Guarantee	Description
Parent Company Guarantee	A parent company guarantee assures the Employer that the Contractor can recourse to the financial standing, technical capability and resources of the Contractor's parent company.
Performance Bond	A Performance Bond is effectively a contract of guarantee whereby the guarantor or surety (authorised to do guarantee business) undertakes to pay damages to a second party, in this case the Employer, arising from a breach of contract or insolvency, for losses sustained by the Employer due to non-performance by the Contractor.

Statutory consents

Statutory consents to be obtained by the Employer are set out in the Works Requirements; the Contractor must obtain all other consents (see Clause 2.3.1 PW-CF1 to PW-CF5) including those necessary to properly commence work. For information about consents and licences that may be required, see *Public Works Contracts* (GN 1.5) § B2 Consents and Licences Checklist. Consents required during the course of the contract are the contractor's responsibility and should be obtained in a planned manner so as not to impede the proper progress of the works.

Continued on next page

1.4 Documentation Requirements Before the Starting Date, Continued

Insurance requirements

The following table summarises the types of insurance that the Contractor is required to in place from the Starting Date of the Contract (Clauses 3.3, 3.6 and 3.7 PW-CF1 to PW-CF5 and Clause 10.1, 10.3 of PW-CF6).

Insurance Type	Description
Works Insurance	<p>The insurance of the works and other risk items shall name the Contractor, the Employer and any other person the Employer requires as co-insured. This insurance is required from the Contract Starting Date.</p> <p>Insurance for each section of the works must be maintained until the certificate of Substantial Completion is issued for that section.</p>
Public liability and employers' liability	<p>The Contractor must have public and employers' liability insurance covering any accidents that happen during the project. In the case of employer's liability insurance the Employer and the Contractor must be co-insured against particular liabilities. And in the case of public liability insurance, a provision should be included that indemnifies the Employer against any liability for which the Contractor would be indemnified against.</p>
Professional indemnity	<p>The Schedule may require the Contractor to maintain professional indemnity insurance for a period extending beyond the completion of the works.</p>

Implementation programme

The Contractor is responsible for preparing the implementation programme for the project (sub-clause 4.9.1 of PW-CF1 to PW-CF5). The programme should take into account any constraints specified in the Works Requirements. The Employer should therefore be clear about its requirements and state these in the Works Requirements. Although the Contract does not require the Employer to be consulted when the programme is being drawn up, the programme has to allow reasonable periods of time *'for the Employer and the Employer's Personnel to comply with their obligations under the Contract'* (Clause 4.9.2 PW-CF1 to PW-CF5). The Employers should check to see that the programme is compliant with the contract condition.

Continued on next page

1.4 Documentation Requirements Before the Starting Date, Continued

Implementation programme (continued)

There may be instances when, due to site limitations, neighbouring projects, cash flow issues or approvals, construction may need to be divided into several stages. In these instances, all details relating to such stages should be provided in the tender documents issued to tenderers. This information should be included in the Works Requirements and should be incorporated into the Contract. Where sections are to be completed early, the Dates for Substantial Completion should be included in Part 1G of the Schedule to PW-CF1 to PW-CF5. This is to ensure that all cost implications associated with such instances are included in the contract sum.

The Employer needs to be satisfied that the implementation programme is coordinated with other project arrangements to ensure that it has taken these other arrangements into account where they interfere with the Contractor's work on site. Project arrangements managed by others should be highlighted in the Works Requirements with specific dates given, or time periods when specific activities will be carried out. Such other arrangements could include, for example, relocation, occupation, fit-out work, separate phases of the project, commissioning existing road network, road closures, interfaces with neighbouring schemes, major utilities and service diversions, critical accommodation works, environmental works, seasonal constraints etc.

Any inconsistencies between the programme and what is stated in the Works Requirements should be queried by the Employer or the Employer's Representative. Sub-clause 4.9.1 (1) in PW-CF1 to PW-CF5 requires the Contractor to show on its programme when instructions are required. Sub-clause 4.9.1(2) requires the Contractor to show *'the order in which and times at which the Contractor proposes to execute the Works, including details of procurement, manufacture, delivery, installation, construction, testing and commissioning of Works Items and the sequencing and timing of inspections and of tests.'*

See sub-clause 4.9.1(3) to (8) for the rest of the requirements in relation to the programme.

1.5 Confidentiality and Secrecy during Implementation

Requirement for confidentiality

The Employer is required to keep confidential the Contractor's rates and prices and any records of a confidential nature provided by the Contractor under the Contract.

The Contractor and the Contractor's personnel must keep confidential any information in the Works Requirements that is identified by the Employer or the ER as confidential or secret. Any records covered by the Official Secrets Act must also be regarded as confidential.

The disclosure of confidential information is permissible only in exceptional circumstances, such as:

- Where it is necessary for the provision of the works or to enforce the Contract (for example, in conciliation or arbitration);
- Where required by law or by order of a court or, in the case of disclosure by the Employer, for governmental, parliamentary, statutory, administrative, fiscal or judicial purposes, or the publication of an award notice; or
- Where the information has, except as a result of breach of confidentiality, become available or generally known to the public at the time of the disclosure.

Time limits for confidentiality

The requirement for confidentiality continues in perpetuity, in so far as the Contractor is concerned.

The Employer's obligations expire when the commercial sensitivity of the relevant information has ceased, and in any event five years after the information was provided.

1.6 Value Management during Implementation

Value engineering proposals

Value management deals with methods of increasing the value that the Employer derives from the works – this can be achieved by reducing the cost, or by enhancing the use-value of the works in some way without increasing the cost.

One of the mechanisms for managing value is by way of a *value-engineering proposal* from the Contractor. This takes the form of a new or innovative solution that the Contractor proposes to the Employer. As far as practicable, the Employer should be open to considering solutions that do not increase the Contract Sum *in respect of traditional and design-and-build contracts*.

The Contractor's proposal

Typically, the Contractor prepares a written value-engineering proposal which, if adopted, will reduce the Contract Sum, accelerate the execution of the works, or bring some other benefit to the Employer without increasing the cost of the project. The Contractor's proposal should include details of the following:

- Proposed changes to the Contract or to the Contractor's documents;
- A breakdown of the Contractor's original tender cost for the relevant work and the parallel projected cost of the proposed changes and any proposed adjustment to the Contract Sum to reflect a share of any saving; and
- Details of any consequential changes to the programme.

The ER reviews the proposal and, having discussed it with the Employer, notifies the Contractor whether or not it is acceptable. If the Employer agrees to the proposal, the ER and the Contractor agree the adjustment to the Contract Sum. The Employer and the Contractor share the resulting savings. Where appropriate, the Date for Substantial Completion of the works is adjusted.

Where the proposal includes a change in the design of the works, unless otherwise agreed, the Contractor should undertake and be liable to the Employer for such design. The Employer may instruct the Contractor to obtain, at the Employer's expense, professional indemnity insurance (if not already provided by Contractor) in connection with any such design.

1.7 Health & Safety

Introduction

Employers need to ensure that they comply with the *Safety, Health and Welfare at Work (Construction) Regulations, 2006*. These regulations apply to:

- The site, including places where the works are executed;
 - The site where the equipment is delivered; and
 - Any areas / locations provided by the Employer for use by the Contractor.
-

Employer responsibilities in regards to health and safety

Under health and safety regulations, Employers have a range of responsibilities, which are outlined below.

Appointment of Project Supervisors (Health & Safety)

The Employer must appoint a competent Project Supervisor for the Design Process (PSDP) and a competent Project Supervisor for the Construction (Implementation) Stage (PSCS). The Employer must obtain written confirmation of acceptance (in the form of a signed agreement) for each of these appointments – see the model form for Appointment of Project Supervisor (MF 1.9).

- The PSDP must be appointed at or before the start of the design process; and.
- The PSCS must be appointed before the Implementation work begins.

Make safety files available

The Employer must make the safety file referred to in Regulation 8 (and any related information) available for inspection by any person who might need that information for the purpose of:

- Compliance by that person with the duties imposed under the relevant statutory provisions in relation to the Contract; or
- For that person's information when carrying out construction work on the structure to which the safety file relates.

Health & Safety Plan

Ensure that the Project Supervisor for the Design Process has prepared a *preliminary* Health & Safety Plan (prepared under Regulation 12) so that the Employer can provide a copy of it to every person tendering for the role of Project Supervisor for the Construction Stage which is a part of an overall tender for the main works contract.

Notice to the Sanctioning Authority

Promptly give the Health and Safety Authority written notice (Regulation 10) before implementation when construction work is expected to last longer than 30 working days or if the volume of work is expected to exceed 500 person days. The notice must be in an approved form *of those particulars as are known or can be reasonably known about the appointments made in accordance with Regulation 6*.

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1.7 Health & Safety, Continued

Role of Contractor as PSDP

The competence of the Contractor as Project Supervisor for the Design Process (PSDP) is determined by reference to the training, experience and resources that the Contractor as PSDP has relative to the service to be provided for the project in question. The Contractor as PSDP must:

1. Take account of the general principles of prevention during design development when technical or organisational aspects of the project are being planned including the estimated time required to complete the project;
2. Take account of any existing health and safety file;
3. Appoint a competent health and safety coordinator for the design process during the tender period in the case of design-and-build projects (this is a mandatory requirement for design-and-build);
4. Organise cooperation between designers on the same project;
5. Ensure coordination of designer activities in relation to health and safety in design;
6. Prepare a safety and health plan on a *preliminary* basis for the purposes of providing information for the Project Supervisor for the Construction Stage (PSCS);
7. Prepare a safety file appropriate for the project and deliver to Employer on completion of project; and
8. Monitor the compliance of Contractors and others and take corrective action where necessary notify the Authority and the client of non-compliance with written directions issued.

The PSDP may issue directions to designers or Contractors

Note: For more information on health and safety roles and responsibilities, see the *Safety, Health and Welfare at Work (Construction) Regulations, 2006*.

Continued on next page

1.7 Health & Safety, Continued

Role of Contractor as PSCS

The competence of the Contractor as Project Supervisor for the Construction Stage (PSCS) is determined by reference to the training, experience and resources that the Contractor as PSCS has relative to the service to be provided for the project in question. The Contractor as PSCS must:

1. Coordinate the identification of hazards, the elimination of the hazards or the reduction of risks during construction;
2. Develop the *Safety and Health* plan initially prepared by the Project Supervisor for the Design Process (PSDP) before construction commences;
3. Coordinate the implementation of the construction regulations by contractors;
4. Organise cooperation between contractors and the provision of information;
5. Coordinate the reporting of accidents to the Health & Safety Authority;
6. Notify the Health & Safety Authority before construction commences where construction is likely to take more than 500 person days or 30 working days;
7. Provide information to the site safety representative;
8. Coordinate the checking of safe working procedures;
9. Coordinate arrangements to ensure that craft, general construction workers and security workers have a Safety Awareness card, e.g. Safe Pass and a Construction Skills card where required;
10. Coordinate the appointment of a site safety representative where there are more than 20 persons on site;
11. Appoint a safety adviser where there are more than 100 on site;
12. Provide all necessary safety file information to the PSDP; and
13. Monitor the compliance of Contractors and others and take corrective action where necessary notify the Authority and the client of non-compliance with written directions issued.

The PSCS may issue directions to designers or Contractors.

2. Roles and Responsibilities in the Contract

2.1 Overview

Introduction

The contract type chosen (traditional or design and build) determines the roles and responsibilities for those involved in the delivery cycle of a works projects. The roles of each of the following are described in this section:

- The Sponsoring Agency / Employer;
- The Employer's Representative;
- The Contractor(s); and
- The Project Supervisor.

The Contract

Parties entering a contractual agreement should be familiar with and fully understand all the documents that go to make up the Contract including the contract terms and conditions and any supporting documentation (drawings, specifications, schedule, and so on), as set out in Article 5 of the Agreement to PW-CF1 to PW-CF5.

See *Public Works Contracts* (GN 1.5) for more detail on the nature of contracts and risk allocation; on what actually forms the Contract and the related documentation; on the contractual links between the main parties; and on the powers, roles and responsibilities under the contract – including what the Employer, the Employer's Representative and the Contractor have to do administratively.

The successful delivery of a works project requires the Employer, the Contractor and all other personnel involved in the delivery to cooperate with each other. This is nothing more or less than working together for the same end. Clause 4.1 of PW-CF1 to PW-CF5 requires both parties to cooperate – the only constraint on the Employer being that this must not be inconsistent with any statutory duty. This obligation is a key element in the Contract and the parties can agree to engage on a 'without prejudice' basis. The Contract is quite clear in regard to this, it states that

'The parties may agree to consult or communicate, without prejudice. In any case, offering or giving cooperation does not imply any admission of any responsibility or alter either party's rights or duties...'

Employers and contractors need to take a practical approach to any problems that might arise and should hold meetings to clarify issues and exchange information.

Continued on next page

2.1 Overview, Continued

Contents

This chapter contains the following topics:

	Topic	See Page
2.2	The Employer's Responsibilities In particular, those relating to employment records of personnel engaged on the works.	35
2.3	The ER's Responsibilities In particular, those relating to day-to-day liaison with the Contractor.	37
2.4	The Contractor's Responsibilities Compliance with employment legislation; and responsibility for subcontractors' compliance.	40
2.5	The Project Supervisor's Responsibilities Responsibilities in relation to health and safety on the works.	48

2.2 The Employer's Responsibilities

Introduction

The implementation process is governed by the contractual arrangements between the Sponsoring Agency (acting as the Contracting Authority) and the Contractor. Under the Contract the term Sponsoring Agency is referred to as the 'Employer' during the implementation process.

Although Employers do not normally get involved in the day-to-day running of projects during the implementation process (this is left to the Employers Representative), it is important for the Employer to regularly obtain assurance that everything is on schedule for completion and that costs are under control. Some circumstances may require a more active involvement – for example, if there is a need for activity in relation to advanced works in preparation for the main works, or to organize business activities where the project is being constructed around existing business operations.

The handover and occupation stage can be fairly intensive for employers.

The Employer and the ER

The Employer appoints a suitably qualified ER (Employer's Representative) as required under the Contract (PW-CF1 to PW-CF6). The Employer may replace the Employer's Representative at any time as permitted under the Contract.

The Employer must notify the Contractor if the ER is replaced or if the position becomes vacant for any reason. Pending the appointment of a replacement ER, the Employer must carry out the functions of the ER.

Responsibilities

At a high level, the Employer is responsible for ensuring that projects are delivered safely, on time, to budget and to the required quality standards.

At a more detailed level, specific tasks (other than the appointment of the Employer Representative) include:

- Ensuring that the project team are adequately performing their services;
 - Giving the Contractor access to, and use of the site as stated in the Contract;
 - Promoting and encouraging positive and constructive relationships between project team members;
 - Ensuring that the Contract incorporates quality control procedures, on-site and off-site inspections, and testing and reporting procedures;
 - Ensuring that there are no design changes that change the scope of the work as described in the Works Requirements and that the facility is completed on schedule;
 - Ensuring that funds are available and payments are made on time as agreed;
 - Paying the contractor in accordance with the contract for work satisfactorily done;
-

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2.2 The Employer's Responsibilities, Continued

Responsibilities (continued)

- Making decisions in relation to the delivery of the facility on time;
 - Establishing clear and efficient communication procedures and undertaking site visits as appropriate;
 - Evaluating project reports, completing any assigned action points and making timely decisions; and
 - Completing any necessary public relations work and managing client group interfaces (if required);
 - Discharging its Health and Safety legal obligations with respect to appointing competent contractors, designers, the PSDP and the PSCS; and
 - Taking over the facility at the end of the construction and also arranging to take over insurances at the appropriate time.
-

Checks on employment records

Under the Contract (clause 5.3.3 of PW-CF1 to PW-CF5 and clause 7 of PW-CF6), the Employer has the right, whenever he deems it necessary, to seek the production of any records on pay and conditions for work persons employed on the site. In addition, the Employer has the right to conduct random checks on these records where the option to do so is selected in the Contract (Schedule Part 1J). The Employer checks are mandatory where both of the following conditions exist:

- The Contract Sum is expected to exceed €30 million; and
- The duration of the work is expected to exceed 18 months.

Even where these conditions do not apply, the Employer may insist on inspecting records. The absence of a reference to such inspections in the Contract or the Schedule does not absolve the Employer of the responsibility to conduct such inspection where appropriate; nor does it absolve the Contractor from ensuring that records can be made available to the Employer on demand.

The Employer's own risk assessment of this issue should take into account that a certain level expertise is required to carry out these checks. If the expertise is not available in-house or elsewhere in the public service, consideration should be given to appointing consultants to do the work. This will require that such a service, whether provided by the design consultants or others, is well defined, and set out in tender documents so that it can be tendered for.

2.3 The ER's Responsibilities

What is the Employer's Representative responsible for?

The Employer's Representative (ER) is a person appointed to administer the Contract on behalf of the Employer and to represent the Employer's interest. In most cases this is the same person who acts as Design Team Leader / Lead Consultant during the Design Stage. The ER can be appointed from within the Employer's organisation; or the role may be filled by a consultant architect, engineer, surveyor or other person capable of carrying out the required responsibilities.

The ER is the person primarily responsible for liaison with the Contractor. The responsibilities of this position are outlined in the following table:

Responsibility for...	The ER ...
Instructions in the form of directions or Change Orders.	Issues instructions in the form of directions or Change Orders to the Contractor in relation to any matter connected to the works. Such instructions if they are Change Orders may amend the Works Requirements. These can be issued up to the time of Substantial Completion. The ER's instructions to the Contractor must be in writing – except in dangerous and urgent situations where there is a health and safety risk and to wait for a written instruction would otherwise delay a necessary action. In such a case (e.g. under sub-clause 4.5.4 of PW-CF1) the verbal instruction must subsequently be confirmed in writing by the ER as soon as practicable.
Certificates	Reviews the monthly progress reports and statements from the Contractor and issues interim payment certificates based on these.
Delay and compensation events	Assesses any claims for time extensions or cost increases submitted by the Contractor.
Meetings	Schedules and minutes regular meetings with the Contractor.
Design	Where further design is developed after contract award (for example, with design-and-build contracts) the ER checks the design to see that it meets the defined output requirements, performance specifications and any planning stipulations that may be necessary. All design risk, however, remains with the contractor.
Acting impartially	In making assessments or issuing certificates, the ER must act with impartiality and in accordance with the Contract.

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2.3 The ER's Responsibilities, Continued

Limits to the ER's authority

The limits of the ER's authority are stated in Part 1A of the Schedule. These concern the following:

- The maximum adjustment to the Contract Sum for a single Change Order changing the Works Requirements;
- The maximum cumulative value of adjustments to the Contract Sum for Change Orders in any three-month period;
- The issue of Change Orders that cause or contribute to a reduction in safety, quality, usefulness, or scope of the Works Requirements and are prohibited unless approved beforehand by the Employer;
- An obligation to consult with the Employer on any adjustment to the Contract Sum before deciding on the adjustment;
- Taking direction from the Employer as to whether to accept or reject a value engineering proposal; and
- Consulting with the Employer's quantity surveyor in relation to any adjustment to the Contract Sum before deciding on the adjustment.

Any other restrictions on the authority of the ER should be entered by the Employer in the Schedule. Outside the limits specified in these restrictions, the ER must seek the Employer's approval.

Note: Any Change Order from the ER to the Contractor is deemed to be within the ER's authority and must be implemented by the Contractor (e.g. Clause 4.3.2. PW-CF1).

Delegation

The ER may delegate in writing to a named representative any functions under the Contract and revoke any such delegation at any time (e.g. Clause 4.3.3 PW-CF1).

The appointment of such a representative must not prevent the ER from exercising any functions directly at any time.

The ER should promptly (within five working days) notify the Contractor and the Employer of any such delegation, of the names of the representatives, and of any subsequent changes. Any notification should require agreement by the parties to the Contract on the basis that the function (to be identified) is to be delegated, not the ER's responsibilities for that function.

Continued on next page

2.3 The ER's Responsibilities, Continued

Reviews and objection

In situations where the Contractor makes a written submission (including all supporting documentation) to the ER in relation to a proposed course of action, the ER must review the submitted material and determine the outcome. The ER may at this stage request any additional information that might facilitate the determination.

The ER may object to the submission on a number of grounds – for example if the ER believes that it does not comply with the Contract, or if it would impose an obligation on the Employer that he does not have to bear, or if it would have an adverse effect on the Employer or the public interest. The ER's objection must be made in writing and within ten working days of receiving the submission, (unless a shorter period is agreed).

The ER may subsequently alter or withdraw an objection, or may require the Contractor to make a new submission to meet the objections. The procedure for Contractor submissions (detailed in clause 4.7 of PW-CF1 to PW1-CF5) can be superseded by an alternative procedure in the Works Requirements.

2.4 The Contractor's Responsibilities

Introduction

The Contractor is the party responsible for executing the works as defined in the contract documents and must comply with all legal requirements under the Contract.

Before submitting a tender, the Contractor must be satisfied in respect of the following:

- All of the conditions and circumstances that might affect the costing of the works;
- The correctness and sufficiency of the Contract Sum to cover the costs of performing his obligations under the Contract; and
- The adequacy of the Contractor's own allowances for all risks, customs, policies, practices and other conditions affecting the works, whether they could or could not have been foreseen, except where the Contract expressly states otherwise.

Compliance of Works Proposals with Works Requirements

In particular, the Contractor must ensure that all Works Proposals comply with the Works Requirements. The Contractor may make proposals to the ER to change the Works Proposals in cases where the ER has issued an instruction that changes the Works Requirements.

Pay and conditions of employment

The Contractor has a number of significant responsibilities, in the area of pay and conditions of employment. The most important of these are listed below:

Responsibility for...	The Contractor...
Display of conditions	Exhibits details of pay and conditions of employment prominently on the site.
Compliance (see below for more detail)	Ensures that the rates of pay and conditions of employment (including provisions in relation to pension contributions [<i>see later limitations on enforcing Pension contributions</i>]) are in compliance with the law and apply to each work person (including agency or subcontractors' employees) involved with the works. <i>These rates and conditions (see later limitations on enforcing Pension contributions) cannot be less favourable than those for the relevant category of work person in any employment agreements registered under the Industrial Relations Acts 1946 to 2004.</i>
Prompt payment	Pays, and ensures that other employers on the site pay wages and other monies due no later than one month in arrears.

Continued on next page

2.4 The Contractor's Responsibilities, Continued

Pay and conditions of employment (continued)

Responsibility for...	The Contractor...
Pensions and other contributions	Pays and ensures that other employers on the site pay all pension contributions (<i>see later limitations on enforcing Pension contributions</i>) and other amounts due to be paid on behalf of each work person.
Deductions	As required by law, makes and ensures that other employers on the site make all deductions from payments to work persons, and pays them to the appropriate authority/body.
Maintenance of records	Maintains and ensures that other employers on the site maintain full records (including employees' payslips) for inspection by the Employer. <i>The Contractor must ensure that all subcontractors' employees' payslips are retained in proper order by the subcontractors and made available for inspection by the works' Employer.</i>
Production of other records	Produces, or ensure that other employers on the site produce any other records for inspection by the Employer.
Trade union membership	Respects and ensures other employers on the site respect the right of work persons to be members of trade unions.
Consultation with employees	Complies with all obligations relating to consulting with and informing employees.
Working times	Ensures that personnel execute the works during the working times set out in the Work Requirements. <i>Exceptions to this might be agreed – for example if there is danger to safety and health, or if there is a risk of damage to the works or other property.</i>

Continued on next page

2.4 The Contractor's Responsibilities, Continued

Limitation on enforcing pension contributions

Article 49 of the EC Treaty prohibits restrictions on the freedom to provide services within the Community. Limitations on this fundamental freedom will only be lawful if they fall within the acceptable principles set out by the established case law of the European Court of Justice (ECJ). In recognition of the potential conflict between the exercise of the freedom to provide services throughout the Community and appropriate protection of the rights of workers temporarily posted abroad Directive 96/71/EC (transposed into Irish Law by section 20 of the Protection of Employees [Part-Time Work] Act 2001) was introduced. Article 3 (1) (a) to (g) set down what is permitted in relation to the employment relationship laid down by collective agreements that are universally applicable in the construction industry. What is specifically excluded under Article 3(1)(c) is the inclusion of retirement pension schemes for workers. Case law has determined that a national measure which obliges contractors in another Member State to apply to their employees terms and conditions which go beyond the mandatory rules in Directive 96/71/EC for minimum protection is incompatible with European law. Therefore, it would seem that the pension rights under the REAs cannot be universally imposed on all posted workers from within the EU. The situation regarding posted workers within the EU is that the pension rights need to be considered in the context of compliance with the provisions in Directive 98/49/EC which deals with the movement of employees within the Community and their pension rights. Ireland is therefore required to recognise and comply with posted workers pension rights established in another member state during the period of posting in Ireland and should not impose any further obligation that would be incompatible with European law.

The Pension REA will apply to posted workers from outside the EU whose country of residence is not a member of the GPA of the WTO.

Article 6 of Directive 98/48/EC imposes an obligation to make pension contributions (i.e. REA Pension contributions) in respect of posted workers who are not covered by a pension scheme in their home State.

2.4 The Contractor's Responsibilities, Continued

Compliance with legislation

The interim payment statements provided by the Contractor must certify that the Contractor has complied in full with all pay and conditions requirements under the following legislation:

- Industrial Relations Acts 1946 to 2004;
- National Minimum Wage Act 2000;
- Safety, Health and Welfare at Work Act 2005; and
- Employment Equality Act 1998 and all other employment law, including regulations, codes of practices, legally binding determinations of the Labour Court and Registered Employment Agreements.

See 'Form of Rates of Pay and Conditions of Employment Certificate' MF1.13 in *Capital Works Management Framework* for a standard certificate that incorporates all the foregoing legislation.

Compliance of subcontractors

The Contractor has sole responsibility for compliance with all of these legislative requirements and also for ensuring that all subcontractors are equally compliant. If it is discovered that one of the Contractor's subcontractors is not compliant, it is a matter for the Contractor to resolve the issue and at no cost to the Employer.

The Employer should ensure that an appropriate Pay and Conditions of Employment clause is inserted in the specialist form of contract (in the case of novation).

- And in the case of other specialist sub-contractors the Employer should request the contractor in main contract tender documents (i.e. the Works Requirements) that an appropriate clause (i.e. clause 5.3 of PW-CF1 to PW-CF5, or clause 7 in PW-CF6 or clause 10 PW-CF7 and PW-CF8) in relation to Pay and Conditions of Employment must be included in all specialist sub-contracts (other than novated contracts).

Note: One of the forms of public works contracts (PW-CF1 to PW-CF8) should normally be used as the contract for novated specialists. This is separate from the model Form of Novation Agreement, which transfers the specialist contract to the Contractor.

Continued on next page

2.4 The Contractor's Responsibilities, Continued

Contractor's personnel

The Contract recognises as contractor's personnel all those engaged by the Contractor to carry out the works, including the Contractor's direct employees and subcontractors. The Contractor should ensure that these personnel:

- Are suitably qualified and experienced and are competent to carry out their designated tasks; and
- Carry out their respective tasks in accordance with the Contractor's obligations under the Contract.

The Contractor is responsible for any acts or omissions of his personnel (including specialists and design subcontractors) as if they were his own acts and omissions.

The Contractor should remove from the works any employee whom the ER so requires, on foot of that person's misconduct, negligence or incompetence, or on the basis that the person's presence on the site is not conducive to safety, health or good order.

Contractor's representative / supervisor

Before the Starting Date, the Contractor must appoint a Contractor's representative and supervisor, and inform the Employer of these appointments:

- The representative must have full authority to act on the Contractor's behalf; and
- For projects undertaken under PW-CF1, PW-CF2, PW-CF3 and PW-CF4, the supervisor must work full-time on the works, and have full authority to receive the Employer's instructions on behalf of the Contractor. For projects undertaken under the Minor Works Contract (PW-CF5) or the Short Form of Contract (PW-CF6), or the two Investigation contracts (PW-CF7 and PW-CF8) this requirement is relaxed.

The same person may fill both roles. Where the Contractor's representative or supervisor is named in the Works Proposals, then the Contractor must appoint the named person. The Contractor may not remove or replace the Contractor's representative or supervisor without the approval of the ER.

The ER may insist on the removal of a Contractor's representative or supervisor on grounds of misconduct, negligence or incompetence. In this case, the Contractor must appoint a replacement acceptable to the ER.

Cooperation with Employer's personnel

Where so indicated in the Works Requirements, the Employer may arrange for work to be executed on the site by his own personnel or other contractors.

The Contractor must cooperate with such personnel and is responsible for coordinating their activities with the execution of the works.

Continued on next page

2.4 The Contractor's Responsibilities, Continued

Working with subcontractors and specialists

The Contractor may use subcontractors by agreement with the ER where such an agreement is required (e.g. PW-CF3).

Specialists differ from other subcontractors in that they are named in the Contract or designated by the Contract as specialists. Substitution or replacement of specialists under any of the contracts must always be submitted in advance to the ER. In the case of design-and-build contracts a specialist is always required for design, and there may be other specialists.

Specialists, subcontractors or other personnel reporting to the Contractor who are named in the Contract must be engaged for and perform the work for which they are named.

The Contractor must fully comply with their obligations under the terms of any contract with a specialist or subcontractor and should not terminate, allow to be terminated, or accept a repudiation of such a contract without the ER's approval. If termination of a specialist subcontract does occur, the Contractor must replace the specialist with one whose details have been submitted to the ER and to whose appointment the ER has made no objection.

Collateral warranty from subcontractors

If Part 1F of the Schedule (PW-CF1 to PW-CF5) requires a collateral warranty from any specialist subcontractor, the Contractor must provide to the Employer such a warranty (by the date stated in the Schedule) in the form included in the Works Requirements (or if there is none, in a form approved by the Employer) executed by the subcontractor and the Contractor. The Employer is entitled to withhold payment of the amount stated in the Schedule until such time as the collateral warranty is provided.

Insurance cover for other contractors

Where necessary, the Works Requirements should identify other contractors and subcontractors the Employer intends to work on site alongside the main contractor, the scope of their work and the facilities that such contractors will require. The Contractor is responsible, unless expressly stated otherwise, for making sure that the Contractor's insurances cover the activities of other contractors on the site.

Continued on next page

2.4 The Contractor's Responsibilities, Continued

Contractor's Duties as Contractor under Health and Safety Regulations

The Contractor has a range of duties *as contractor* under the Health and Safety Regulations; these are:

- 1** To cooperate with the PSCS to enable the PCSC to comply with the relevant statutory provisions;
- 2** To take account of the relevant health and safety plan;
- 3** To take account of the existing safety file;

If Contractor's design is undertaken after contract award (e.g. a value engineering proposal under a traditional contract) then the Contractor should:

- 4** Provide the with appropriate information necessary for him to carry out his duties;
- 5** Cooperate with the and other designers to enable them to comply with the Regulation;
- 6** Comply with all directions issued
- 7** Promptly provide to the all known information about the project:
 - regarding particular risks to the safety, health and welfare of persons at work;
 - regarding the nature and scope of the project/work to enable the Coordinator comply with the Regulations;
 - that is necessary for the PSDP prepare the safety file; and
 - that is known for the safe construction of the design for the project.

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2.4 The Contractor's Responsibilities, Continued

Contractor's Duties as Designer under Health and Safety Regulations

The Contractor on a design-and-build project has a range of duties *as designer* under the Health and Safety Regulations; these are:

- 1** To take account of the general principles of prevention;
- 2** To take account of the relevant health and safety plan; and
- 3** To take account of the existing safety file.

If the Contractor's design is undertaken after contract award then the Contractor should:

- 4** provide the PSDP with appropriate information necessary for him to carry out his duties;
 - 5** Cooperate with the PSDP and other designers to enable them to comply with the Regulations;
 - 6** Comply with all directions issued by the PSDP; and
 - 7** Promptly provide to the PSDP all known information about the project:
 - regarding particular risks to the safety, health and welfare of persons at work.
 - regarding the nature and scope of the project to enable the Coordinator comply with the Regulations.
 - that is necessary for the PSDP prepare the safety file; and
 - that is known for the safe construction of the design for the project.
-

Value Engineering and Contractor Design

Under Clause 4.8 of the Contract (PW-CF1 to PW-CF4) the Contractor may put value engineering proposals to the Employer. Where such proposals involve a change in design, the Contractor is liable for the design (clause 4.8.4), and the independent PSDP must assess the Contractor's design from a Health & Safety perspective.

2.5 The Project Supervisor's Responsibilities

Introduction

The Safety, Health and Welfare at Work (Construction) Regulations 2006 require the 'Client' (i.e. the Employer, in the case of public works contracts) for every project to appoint a competent Project Supervisor for the Design Process and a competent Project Supervisor for the Construction Stage. In each case the Employer must obtain written confirmation from each project supervisor that they accept the appointments.

The Employer must be satisfied that the project supervisors are competent and that they have allocated or will allocate adequate resources to enable themselves to perform their duties under the regulations.

Appointment of Project Supervisor for the Construction Stage

A contractor who meets the requirements may be appointed as Project Supervisor for the Construction Stage. If the Contractor is to be appointed, it must be stated⁶ in Part 1C of the Schedule (PW-CF1 to PW-CF5)⁷ attached to the Form of Tender and the Employer will need to include, in the case of an open procurement process, suitability selection criteria in relation to the Contractor's competence and resources. In the case of a restricted procedure the criteria for suitability assessment will have been set at an early stage and evaluated separately in advance of tenders being sought.

In traditional contracts the stages of design and construction are usually administered by different health and safety project supervisors – to reflect the separation of design responsibilities from build responsibilities in such contracts – with the Contractor taking the role of Project Supervisor for the Construction Stage only. In design-and-build contracts, the Contractor will normally fulfill both roles – that is, Project Supervisor for the Design Process and Project Supervisor for the Construction Stage.

- **Third-party project supervisor:** the Employer may choose to appoint a third party (i.e. other than the Contractor) to fill the role of Project Supervisor, for the Construction Stage, and if so this should be indicated in the Schedule. This is most likely where there are a number of contractors working on the project and the Contractor awarded the first Contract is given the role of project supervisor. In this case, the Contractor must comply with all the lawful requirements of the appointed Project Supervisor for the Construction Stage and provide any copies of the Contractor's documents that the project supervisor may request.
- **Contractor as project supervisor:** If the Contractor is appointed Project Supervisor for the Construction Stage, the Contractor must accept this role in the form set out in the Works Requirements. The appropriate appointment form must be used – see the template in MF 1.9 *Appointment of Project Supervisor*.

⁶ In the case of a restricted procedure the Employer will (having assessed the competence of the Contractor as PSCS at suitability assessment stage) have filled in this information. In the case of an open procedure the Contractor will be required to provide with his tender appropriate information so that he can be assessed for competence as PSCS if the Employer signals in the Schedule that the Contractor is to be PSCS under the contract.

⁷ As identified in the Schedule to PE-CF6

2.5 The Project Supervisor's Responsibilities, Continued

Insurance cover Where the Contractor is appointed project supervisor, the Employer should ensure that the Contractor's insurances cover any liability that might arise from the performance or non-performance by the Contractor of his duties as Project Supervisor.

Termination of appointment The Employer may terminate the Contractor's appointment as project supervisor where, for example, the Contractor fails to comply with obligations under the Safety, Health and Welfare at Work Act 2005 and the Construction Regulations 2006. In this situation, the Contractor must pay all the Employer's additional costs resulting from the termination – including the cost of appointing a replacement Project Supervisor or the cost of the Employer taking on the role

3. Managing the Works in Progress

3.1 Overview

Introduction

Once the works are in progress, there are a number of management priorities that the parties to the Contract must address. For example, all project documentation must be maintained securely, and appropriate procedures must be in place to ensure that the Contractor is paid in a timely manner for work done.

This section describes ongoing management processes that help to ensure the smooth administration of the Contract to completion.

In this section

This section contains the following topics:

Topic	See Page
3.2 Project Documentation The requirement to maintain all project documentation, including progress reports, certificates and instructions securely.	51
3.3 Site Management Issues relating to site availability, access and safety.	53
3.4 Quality Assurance in Progress Issues relating to quality assurance while the works are in progress.	56
3.5 Interim Payments Procedures for making interim payments to contractors.	58
3.6 Actions on Substantial Completion of Works The actions that are actioned once the works are <i>substantially complete</i> .	62
3.7 Resolving Disputes Processes for resolving disputes, including conciliation and arbitration.	64
3.8 Suspension of Works Dealing with circumstances in which works may be suspended.	68
3.9 Termination of Contract Dealing with circumstances in which the Contract is terminated before the due completion of the works.	69

3.2 Project Documentation

Progress reports

From the Starting Date and for the duration of the works, the Contractor is required to submit monthly progress reports to the ER. These must be delivered within seven days of the end of each month. Typically, the reports will include the following information:

- A detailed description of the progress of each stage of the works compared with the Contractor's current programme;
- Names of Specialists and off-site suppliers and an account of progress and location of the design, manufacture, fabrication, delivery, installation, testing and commissioning of works items;
- Details of the Contractor's personnel and Contractor's things on site;
- Status or preparation and review of Contractor's documents;
- Copies of quality assurance documents, with test results and certificates;
- Details of when an ER's instructions are required and of any instructions that are still outstanding;
- Details of any Employer's works items and other things that are required.
 - A 'work item' is a contract term that could mean, for example, an ornamental railing restored by the Employer and to be installed by the Contractor.
 - 'Other things' could mean copies of documents the Employer received from third parties;
- Details of delay or compensation events that have occurred or are unresolved; and
- Details of all incidents involving environmental issues, labour issues, public relations issues, and health and safety issues that might adversely affect the works.

The ER should specify the form of the progress reports at the outset.

Availability of documentation

In the course of the project, a range of documents are used to control the delivery of the project in line with the Contract requirements. These documents include ER instructions, logs, value engineering proposals and other control documents.

The Contractor must provide the Employer with on-site access to the following documents:

- A set of Contract documents;
 - A log of all instructions; and
 - If requested by the ER, all publications referenced in the Contract documents and in the Contractor's documents.
 - All project documents must be in English.
-

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3.2 Project Documentation, Continued

Instructions

The ER may issue *instructions* to the Contractor in relation to any matter concerning the provision of the works at any time up to the date the Defects Certificate is issued. Instructions that are *change orders* are supplementary to the Works Requirements

A complete log of all instructions must be maintained by the Contractor and the ER should also maintain his own log

3.3 Site Management

Overview

Clause 7 of PW-CF1 to PW-CF5, clauses 2 and 3 of PW-CF6 and clauses 4 and 6 of PW-CF7 and PW-CF8 define the responsibilities of both Employer and Contractor in relation to the site of the works. This includes details of availability of the site, security, and access routes. This material can be expanded on in the Works Requirements.

The main issues relating to site management are described below.

Availability of the site

The Employer should ensure that all necessary interests and rights of way in the parts of the site that the Contractor is to occupy have been obtained in advance of the Starting Date.

Provided that the Contractor has done all the Contract requires the Contractor to do before the Starting Date, the Employer shall allow the Contractor to occupy and use each part of the site at the times set out in the Works Requirements, on or before the latest of the following dates:

- The Starting Date;
- The date stated in the Works Requirements, if any;
- The day after the Contractor has submitted the programme;
- The date stated for work on the part of the site in the Contractor's current programme; or
- The date on which the Contractor actually requires the part of the site in accordance with its actual progress.

The Employer's personnel may continue to work on the site if this is stated in the Works Requirements.

The Contractor must pay any charges relating to their occupation of the site – for example those relating to traffic disruption.

Contractor's occupation and use of the site

The Contractor's occupation and use of the site is determined by the Works Requirements.

The Contractor may occupy the site solely for the purpose of performing the Contract, and this is subject to any limitations stated in the Works Requirements – for example, those dealing with use of roads.

The Contractor is not entitled to exclusive possession of the site, or any part of it, and should therefore facilitate any use of the site by the Employer and others. The principles around this issue should be set out in the Works Requirements.

Setting out of the works

The Contractor should set out the works by reference to the points, lines and levels of reference in the Works Requirements.

Continued on next page

3.3 Site Management, Continued

Protection of utilities

Under the Contract the Contractor is responsible for all operations on the site including those in relation to excavations on or near utilities.

Therefore, Contractors should take full responsibility for excavations on or near to utilities and take appropriate steps to ensure their protection. Such steps should, as a matter of best practice, include:

- Liaison with the relevant utilities companies;
- Location and tracing of runs by remote detection and other means; and
- Trial excavation means.

The Contractor should also take responsibility for the protection and reinstatement of utilities in accordance with the requirements of the utility company or authority where they exist on a particular project.

Security and safety of the site

Once in occupation of the site, the Contractor is responsible for security and safety of the site. In particular, the Contractor must:

- Maintain the site always in good order and free from unnecessary obstructions and nuisance.
 - Ensure the site is secure (to prevent unauthorised persons from gaining access) and that adjacent landowners are protected from hazards and interference arising from the works. The Contractor is responsible for the activities of trespassers, protestors or other unauthorised persons on site.
 - Comply in all respects with the Safety, Health and Welfare at Work Act 2005.
 - Take responsibility for all site operations and for the Employer's facilities if the Works Requirements so state.
-

Access and facilities

The Contractor is responsible for maintaining the suitability and availability of access routes to and within the site, and associated maintenance work.

Site traffic must comply with current legislation concerning laden weights and dimensions as in the Road Traffic (Construction, Equipment and Use of Vehicles) Regulations 1963 to 2004. In addition, the Contractor is responsible for providing all power, water and other services as required to perform the Contract.

Archaeological objects and human remains

In the event of discovery of archaeological objects and/or human remains on the site the Contractor must promptly notify the ER and the appropriate authorities. Such remains must not be disturbed, and the Contractor must take all steps necessary to preserve them.

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3.3 Site Management, Continued

Condition of site on take- over

On conclusion of the Contract, the Contractor must leave the site in good order. At the latest, the Contractor must remove all his things at the end of the Defects Period.

3.4 Quality Assurance in Progress

Overview

Quality assurance describes all the planning, preparation, checking, recording and other work actions that are necessary to achieve the standard of outcome required by the Employer. These actions are not additional but should be seen as an integral part of doing the job properly to a consistent standard. The Works Requirements should request details to be submitted of the quality assurance systems and procedures that tenderers propose to use on the project. Any special requirements that tenderers have to take account of should be stated in the Works Requirements.

Contractor responsibilities

The Contractor in his Works Proposals must establish and implement quality assurance procedures, as required in the Works Requirements, including procedures for establishing quality assurance systems for his subcontractors. The quality assurance procedures should be reflected in appropriate quality plans accepted by the Employer.

The Contractor must provide to the ER copies of all reports prepared in accordance with these quality assurance procedures. The ER may carry out monitoring, spot checks and audits of the Contractor's quality assurance procedures.

Standards of workmanship and works items

The Contractor is required to ensure appropriate standards both of workmanship and in the work items:

- The works must be executed in accordance with the Contract, the Works Requirements, and the Works Proposals, and in a proper and workmanlike manner, and with appropriate standards of workmanship;
- All of the work items must comply with the Contract and any legal requirements; and they must be of good quality and new (unless agreed otherwise);
- All materials and goods that are works items must be fit for the purpose for which such materials or goods are normally used; and
- All works items selected or designed by the Contractor (or by any subcontracted specialist) must be fit for their intended purpose in the works.

Ownership of work items

Ownership of each works item will become the property of the Employer on the earliest of the following:

- When it is delivered and suitably stored on the site (if owned by the Contractor) and title to it has been vested in the Employer;
 - When it is incorporated into the works; or
 - When any payment for the works item is made by the Employer to the Contractor
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3.4 Quality Assurance in Progress, Continued

Dealing with defects

The ER may at any stage request the Contractor to search for a defect, or suspected defect. All defects must be notified to the ER as soon as practicable. The ER can then instruct the Contractor to:

- Remove the work item with the defect from the site;
- Demolish the work item with the defect;
- Reconstruct, replace or otherwise correct the work item with the defect; or
- Take any other action necessary to remedy the defect.

In the event that there is a major defect that affects the works, the ER has the right to reject the works. In such a scenario, the Contractor must rectify the defect or repay the Employer the costs of dismantling and removing the works.

Defects Period

The Defects Period is the period following Substantial Completion of the works during which the Contractor must rectify any defects that are identified by the ER. The Defects Period that applies to the Contract is stated in Part 1 (I) of the Schedule – it usually extends for one year following Substantial Completion, but there may be circumstances in which the Employer requires a longer period – for example, a landscaping contract. The ER may extend the Defects Period in relation to works outstanding or defects uncorrected at the end of the Defects Period without limiting the Employer's other rights. Furthermore an interim certificate may be issued at the end of the original Defects Period conclusively making an appropriate reduction in retention money.

The Contractor must rectify any defects that are notified by the ER during the Defects Period.

Defects Certificate

At the end of the Defects Period, the ER issues a Defects Certificate to the Contractor – usually within 20 working days of the end of the Defects Period.

3.5 Interim Payments

Overview

For the duration of the Contract, the Employer is required to make interim payments to the Contractor, as prescribed in the Schedule. These are payments on account for work done out of the fixed price lump sum in the Contract. For that reason, the Employer and the Employer's finance personnel must be aware of the payment intervals that have been entered in the Schedule. Payments must be made within 15 working days of the Employer receiving the Contractor's invoice following issue of the ER's certificate.

The process of valuing, certifying and making interim payments to the Contractor is listed in clauses 11.1 and 11.2 of PW-CF1 to PW-CF5 or clause 4.1 of PW-CF6 or clause 7.1 of PW-CF7 and PW-CF8. Interim payments are based on the value of the works executed as defined in the Pricing Document, less any retention percentage.

The statement that the Contractor presents to the ER for interim payment is based on the schedule of work done in the interim period, including detailed measurements, milestones, activities, etc. as in the Pricing Document.

Interim payments are progressed through the following stages:

Stage	Description
1	At the intervals specified in the Schedule, the Contractor submits statements with details of the amounts he believes are due.
2	<p>The ER reviews the Contractor's statements, and normally passes them for payment by way of an Interim Payment Certificate. See Pay and conditions compliance immediately below for some of the conditions that attach to the Contractor's statements.</p> <p>Note: the ER must issue an Interim Payment Certificate not later than the tenth working day after receipt of the Contractor's statement (PE-CF1 to PW-CF6. In the case of PW-CF7 and PW-CF8 this period is 14 calendar days). The certificate should be based on the information the Contractor has to hand, so if additional information requested from the Contractor is not supplied on time, the Contractor will lose out.</p>
3	After receiving the interim certificate the Contractor sends an invoice to the Employer. Within 15 working days of presentation of an invoice (PE-CF1 to PW-CF5; default in PW-CF6 and in the case of PW-CF7 and PW-CF8 this period is 30 calendar days), the Contractor receives payment, less retention.

Note: The Contractor is responsible for paying his personnel, specialists and subcontractors.

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3.5 Interim Payments, Continued

Pay and conditions compliance

In presenting an interim statement, the Contractor must also produce a single Rates of Pay and Conditions of Employment Certificate for all of the people working on the site for which payment for work done is being sought, including subcontractors' employees⁸. The Contractor is responsible for ensuring compliance by all his subcontractors. It is a matter for the Contractor to have appropriate procedures and conditions in place with his subcontractors to ensure that they are in compliance. One of these procedures might be for the subcontractors to provide certificates of compliance to the Contractor similar to the Rates of Pay and Conditions of Employment Certificate, the ER does not need to review-such subcontractors' certificates.

If the Contractor does not present the certificate, the ER will not pass the statement for payment and will not issue a payment certificate. The standard Rates of Pay and Conditions of Employment certificate is available under the Capital Works Management Framework Model Form MF 1.13.

ER's review of interim statements

Before issuing an Interim Payment Certificate, the ER reviews the Contractor's statements for the period under consideration and takes into account:

- 1** The value of the works executed (as determined by reference to the Pricing Document). The Contractor should provide a detailed breakdown and any supporting documentation.
- 2** The value of any *unfixed works item* acquired, the title to which is vested in the Employer. Unfixed works items are items which have not yet been incorporated into the works – they may be either on-site or off-site and clearly marked as the property of the Employer. Part 1L of the Schedule indicates the maximum percentage of the contract value of unfixed works items that may be included in interim payments – typically, this is 90%.
- 3** The retention percentage (as specified in the Schedule) on the full amount – this includes payments under point 2 above.

Interim Payment Certificates for part of the works.

The ER may not issue an Interim Payments Certificate unless the Contractor has supplied a single Rates of Pay and Conditions of Employment Certificate (compliance certificate) along with the interim statement. So, if one firm on the Contractor's team has not complied with the agreed national rates of pay and conditions of employment, the Contractor will not be in a position to issue a single Rates of Pay and Conditions of Employment Certificate that includes that firm. In this case, the Contractor should exclude the work of the non-compliant firm from the certificate and interim statement.

Continued on next page

⁸ See earlier note regarding exception for Pension compliance.

3.5 Interim Payments, Continued

ER's review of interim statements (continued)

The ER will only issue a payment certificate when a compliance certificate accompanies an interim statement for the part of the works that is in compliance. Once a compliance certificate is attached to an interim statement, the ER is obliged to accept that certificate without a requirement to look behind it unless a breach has been brought to his attention.

For example, if a contractor has five subcontractors and discovers that one of them is not paying the REA rates, then the costs relating to that subcontractor will not be included in the Contractor's interim statement and the payment certificate issued by the ER will reflect this. Only costs relating to the compliant subcontractors and the Contractor's own work will be passed.

If it is subsequently discovered that payment on a certificate included non-compliant labour costs the Employer can estimate the amount that should not have been paid and deduct that amount from any money due to the Contractor in the next payment certificate.

Employer's claims

The Employer may deduct from any amount due to the Contractor:

- Amounts determined by the ER to be due, or likely to become due, from the Contractor to the Employer under the Contract;
- Amounts due from the Contractor to the Employer under another contract;
- The amount identified in the Schedule (Part 1F) for the non-provision of a specialist collateral warranty by the required date;
- The estimated amount not paid by the Contractor or the Contractor's personnel contrary to clause 5.3 of PW-CF1 to PW-CF5 and Clause 7.3 of PW-CF6 and Clause 1..6 of PW-CF7 and PW-CF8; and
- Up to 15% of any payment due to the Contractor until the Contractor provides a revised programme (clause 4.8.3 of PW-CF1 to PW-CF4 or clause 4.9.2 of PW-CF5 [Minor Works]).

Breaches of Registered Employment Agreements (REAs)

If a contractor (or any subcontractor) is found to have been in breach of an REA, the Employer may withhold from the Contractor an amount equal to the estimated amount of the Contractor's underpayment to works personnel arising from the breach of the REA. This amount is withheld indefinitely until the Contractor comes into compliance with the REA and is able to prove this to the ER with documentary evidence.

The Employer has both the option and the obligation to conduct random checks of the Contractor's records of all wages, pension contributions and other amounts paid to works personnel – but only for the purpose of checking whether or not the Contractor's obligations have been discharged. (For more information on this area, see The Employer's Responsibilities on page 35.)

The Employer retains the right to terminate the Contract where the Contractor remains non-compliant with respect to pay and conditions of work persons.

Continued on next page

3.5 Interim Payments, Continued

Effect of payment and certificates

No payment by the Employer or certificate issued by the ER relieves the Contractor of any of their obligations under the Contract, or can be considered evidence of the value of the work or that the work has been executed satisfactorily.

Time for payment and interest

When a payment is to be made under the Contract, the amount due must be paid within 15 working days⁹ of receipt of a demand for payment (invoice).

For each payment, the Contractor is required to provide to the Employer an invoice complying with section 17 of the Value Added Tax Act 1972.

If a payment is not made within the Contract Time, interest is added to the amount from the date the payment was due under contract, at the rate provided in the EU (Late Payment in Commercial Transactions) Regulations 2002.

⁹ The default period is 10 working days in Schedule to PW-CF6 and 30 calendar days as a fixed period in the case of PW-CF7 and CW-CF8.

3.6 Actions on Substantial Completion of Works

Date for Substantial Completion

The Date for Substantial Completion of the works (or section of the works) is set out either by the Employer in Part 1G, or, if not stated by the Employer, then by the Contractor in Part 2D of the Schedule¹⁰.

The following steps are actioned on Substantial Completion.

Step	Action
1	Contractor requests certificate When the Contractor is satisfied that the works (or a section of work) is complete, the Contractor requests a Certificate of Substantial Completion from the ER.
2	ER issues certificate The ER is required to issue the certificate to both the Contractor and the Employer within 20 days ¹¹ of receiving the request from the Contractor, or to give reasons for not issuing the certificate. The certificate may list defects and outstanding work. Note, however, that the Contractor is not relieved of any obligations in respect of any defects not listed on the certificate.
3	Retained payment released Once the Certificate of Substantial Completion has been issued, the portion of retained payments for the works or that section should be released. The Contractor may provide an appropriate retention bond (PW-CF1 to PW-CF5 only) for the balance of the retained payment – in this case, all of the retained payment should be released.

If any of the programmed works are omitted on the instruction of the Employer, and the omission results (or has resulted) in a reduction of the time required to provide part or all of the works, the Date for Substantial Completion will be brought forward by agreement between the ER and the Contractor. Otherwise there will be no reduction in the time to Substantial Completion.

Continued on next page

¹⁰ PW-CF1 to PW-CF5. In the case of PW-CF6 the period referred to in clause 2.3 is Time for Completion which is also stated in the Schedule.

¹¹ 5 working days in the case of PW-CF6 [Cl..2.4]. In the case of PW-CF7 and PW-CF8 the period is 7 calendar days [Cl.4.4].

3.6 Actions on Substantial Completion of Works, Continued

Notice of take-over of part of the works

The Employer may take over a part of the works before Substantial Completion once this has been signalled in the Works Requirements, in this case giving at least five days' notice to the Contractor.

From the date of the notice, the Contractor has no liability for delay in relation to the part taken over by the Employer.

Liquidated damages

If the Contractor fails to achieve Substantial Completion by the agreed or extended agreed date, he must pay the Employer *liquidated damages* to cover the period between the scheduled and actual completion dates. The amount due in liquidated damages is determined in the Schedule. It should be a genuine pre-estimate of the loss the Employer would incur, and may be deducted by the Employer from any payments due to the Contractor.

There can be liquidated damages for sectional completion separate to the liquidated damages for the whole of the works. Liquidated damages are deducted for a section if the section is late. If a section and the works are both late, then it is the liquidated damages for the works that apply. Clause 9.8.2. of PW-CF1 to PW-CF5 deals with the situation where a section is not complete by the Date for Substantial Completion for the section and the *Liquidated Damages for the Section* is applied. There is no provision for sectional completion in PW-CF6, PW-CF7 and PW-CF8.

3.7 Resolving Disputes

Overview

Despite best intentions, contractual disputes can and do occur. Disputes can cause delays and add to costs, but it is hoped that the use of the public works contract will reduce their occurrence. The best way of dealing with disputes is to avoid them in the first place; and employers should pay particular attention to any issues they believe might give rise to a dispute. The following table summarises the escalation procedures for dispute resolution, from informal to formal methods.

Informal	1. Resolve amicably at operational level
	2. Refer to senior management
Formal	3. Appoint an independent conciliator
	4. Go to arbitration

Informal intervention

Before any formal intervention is initiated the parties should try and resolve the dispute themselves in a non-adversarial way. If the dispute cannot be resolved at operational level in the first instance, it should be referred to representatives of senior management of the parties who should try to resolve the issue in good faith perhaps with informal assistance from a third party.

Formal intervention

There are two levels of formal intervention to aid resolution of disputes:

- **Conciliation:** In this case the parties to the dispute appoint an independent conciliator; and
- **Arbitration:** Where conciliation does not resolve the dispute, the parties agree to arbitration.

Each of these is described in more detail below.

Conciliation

Conciliation proceeds through the stages outlined in the table below:

Stage	Description
1	<p><i>Referral to conciliation</i></p> <p>When a dispute arises in relation to the Contract or the works, either party (the Employer or the Contractor) may refer the dispute for conciliation.</p> <p>For example, the Employer may refer to conciliation the issue as to whether the Employer has become entitled to terminate the Contract on Contractor default.</p>

Continued on next page

3.7 Resolving Disputes, Continued

Conciliation (continued)

Stage	Description
2	<p><i>Appointment of conciliator</i></p> <p>Within ten days, the parties jointly appoint an independent conciliator.</p> <p>If the parties cannot agree, the person or body named in the Schedule (Part 1N) appoints the conciliator. These proceedings are confidential.</p>
3	<p><i>Documentation sent to conciliator</i></p> <p>The parties send the conciliator details of the dispute and provide each other and the conciliator with documentation and any other evidence the conciliator needs to consider.</p>
4	<p><i>Conciliator as facilitator to resolve dispute</i></p> <p>In facilitating the resolution of the dispute, the conciliator may meet with the parties, take legal advice or use professional advisors. The time limit for normal resolution of a dispute is 42 days or a longer period if so proposed by the conciliator and agreed by the parties.</p>
5	<p><i>If the dispute is still unresolved ...</i></p> <p>The conciliator issues a <i>written recommendation</i> at the end of the 42 days (or longer period, if agreed).</p> <p>If either party is not satisfied with the recommendation, they must notify the other party within a further period of 45 days. Otherwise, the conciliator's written recommendation becomes binding on the parties, and any payments recommended by the conciliator should be made.</p>
6	<p><i>If one party remains dissatisfied ...</i></p> <p>If the party required to make the payment remains dissatisfied, they should issue a <i>notice of dissatisfaction</i> and make the payment subject to the receipt of a bond for that amount provided by the other party.</p> <p>The purpose of the bond is to cover the eventuality that the final resolution of the dispute (by arbitration) might reverse the conciliator's recommendation.</p> <p>The conciliation process is now complete, and the dispute (if unresolved) moves to arbitration.</p>

Table continued on next page

3.7 Resolving Disputes, Continued

Arbitration

Disputes not resolved by conciliation are referred to arbitration under the arbitration rules set out in the Schedule (Part 1N). It should be noted that the resolution of disputes under PW-CF6 are dealt with by conciliation or the courts. Furthermore, the bond arrangements under conciliation referred to previously only applies to PW-CF1 to PW-CF5.

A copy of the findings of any arbitration in relation to these contracts should be submitted on a non-confidential basis to the Secretariat of the Government Construction Contracts Committee to facilitate the monitoring and analysis of disputes in relation to these contracts.

Continuing obligations

Despite the existence of a dispute, the parties are required to continue to perform their obligations under the Contract, unless it has been terminated. This means that a dispute should not cause disruption to the works.

Continued on next page

3.7 Resolving Disputes, Continued

New Arbitration Bill: capping costs or each party bears its own costs

Capping Costs

When the new Arbitration Bill is passed into law there will be an opportunity for Contracting Authorities under Section 20 to put in place pre-dispute agreements in relation to the costs of arbitrations, something that is not possible under Section 30 of the Arbitration Act 1954. A pre-dispute agreement would involve the need to insert text in the tender documents along the lines, for example, of the following:

‘To the extent permitted by law, the parties agree that the arbitrator in any arbitration under this Contract may:

- *award costs not exceeding...[insert the basis for the cap on recoverable costs],or*
- *determine that each party bears its own costs’*

Special oversight

The new Arbitration Bill, when passed into law, will also present an opportunity for Contracting Authorities to elect to have the special oversight provision included in it apply to particular projects. In order for this to happen the following text would have to be included in the tender documents.

‘To the extent permitted by the Arbitration Act [2008] (the Act), the parties agree for the purpose of Section 36 of the Act that special oversight as provided for in Section 34 of the Act shall apply to an arbitration under this Contract.’

The special oversight provision allows for:

- An arbitrator the power to state a case for a decision of the court on a question of law
- For a party to seek a court direction that a arbitral award be remitted to the arbitrator on the grounds of new evidence being available, or

For a party to seek a direction that the arbitrator state a case on a question of law.

3.8 Suspension of Works

Overview

There are circumstances where the works may be temporarily suspended:

- Where the Employer has not complied with obligations to pay amounts due to the Contractor; and
- Where the Employer (or ER) exercises his discretion to instruct the Contractor to suspend the works.

Each of these circumstances is described below.

Suspension of works by the Contractor

If the Employer fails to pay any amount due under the Contract, the Contractor may make a written demand to the Employer for payment and if the payment has not been made within 15 working days of the receipt of the demand, the Contractor may, on giving notice to the Employer, suspend the works until the amount has been paid. This only applies in the case of PW-CF1 to PW-CF5. PW-CF6, PW-CF7 and PW-CF8 does not allow for suspension the remedy under clause 4.9 and 7.9 respectively is for interest to accrue.

On receiving the payment, the Contractor shall resume the works.

Suspension of works by the ER

The ER may at any time instruct the Contractor to suspend all or part of the works¹². The Contractor must as a consequence protect and secure the works during the period of suspension. The Contractor may be entitled to an adjustment to the Contract Sum as a result of the suspension.

If a suspension is not due to a breach of the Contractor's obligations and the suspension continues for three months, the Contractor may request the ER to instruct a resumption. In this situation the following conditions apply:

If the Employer's representative...		Then...
Accedes to the request		The suspended works may resume.
Does not accede to the request within 28 days, and	The suspension relates to the entire works	The Contractor may exercise the option to terminate the works.
	The suspension relates to part of the works	The Contractor may treat the suspension as a Change Order to omit that part of the works.

¹² Clause 9.2 PW-CF1 to PW-CF5, or clause 3.12 of PW-CF6, or clause 6.14 of PW-CF7, or clause 6.9 of PW-CF8.

3.9 Termination of Contract

Overview

Termination of the Contract brings the works specified in the Contract to an end before they have been completed. There are three types of termination that can apply to a public works Contract (PW-CF1 to PW-CF5).

Type	Description
<i>Termination by the Contractor (PW-CF1 to PW-CF5 only)</i>	The Contractor withdraws from the works
<i>Termination at Employer's election (PW-CF1 to PW-CF5 only)</i>	The Employer, at its discretion, elects to terminate the Contract
<i>Termination at Employer's default (PW-CF1 to PW-CF8)</i>	If the Employer, having suspended the contract does not give permission to proceed (the whole of the works) within a particular period in the contract will by default terminate the contract.
<i>Termination on Contractor default (PW-CF1 to PW-CF8)</i>	The Employer may terminate the Contract where the Contractor is in default of contract obligations

Termination by the Contractor

The Contractor may terminate their obligation to complete the works in certain circumstances, such as:

- Where it is physically impossible for them to fulfil their obligations for a period of at least 6 months; or
- Where the Employer has not paid what is owed to the Contractor and in circumstances where the Contractor has suspended the execution of the works for 15 working days.

Following termination by the Contractor, the *termination sum* should be agreed – see Termination Sum on page 70.

Termination at Employer's election

The Employer may terminate the Contract at election on giving the Contractor 20 working days' notice. In this case, the Contractor's performance bond should be returned, and the *termination sum* should be agreed – see Termination Sum on page 70.

The Employer may not terminate by election the Contractor's obligation to complete the works with the purpose of retaining another contractor to execute the works.

Continued on next page

3.9 Termination of Contract, Continued

Termination at Employer's default

If the Employer, having suspended the contract does not give permission to proceed (with all of the works) within the time stated in the contract the Employer's default automatically triggers the termination mechanism in the contract.

Termination sum

On termination by the Contractor or termination at the Employer's election, the Contractor provides the ER with a *statement of the termination sum*, summarising the costs of removal from the site, and the unpaid value of the parts of the works completed to the date of termination in accordance with the Pricing Document. Within ten working days of receiving this statement, the ER should issue a certificate to the Employer and the Contractor indicating the amount due from the Contractor to the Employer, or from the Employer to the Contractor.

Termination on Contractor default

The Employer may terminate the Contract in cases where the Contractor has not satisfactorily fulfilled his obligations. For example, termination could arise if the Contractor:

- Fails to comply with his obligations under the Contract;
- Abandons the works;
- Does not have adequate insurance cover;
- Becomes insolvent; or
- Breaches the Safety, Health and Welfare at Work Act 2005.

The consequences for the Employer, the ER and the Contractor are described in the section dealing with Consequences for the Employer of termination on Contractor default on page 72.

Continued on next page

3.9 Termination of Contract, Continued

**Wrongful
termination by
Employer under
PW-CF1 to PW-
CF5**

The Employer may (but is under no obligation to) refer to a Conciliator (appointed under Clause 13.1 of PW-CF1 to PW-CF5) the issue of whether he is entitled by virtue of the Contractor's default to terminate the Contractor's obligation to complete the works. Where an Employer makes such a referral the Conciliator has 21 days after appointment to issue a recommendation.

The termination shall stand as if it were a termination by the Employer without reason to terminate (i.e. termination at Employer's election) under the following conditions:

- The Conciliator upholds his proposed termination;
- The Employer terminates the Contractor's obligation to complete the Works within 63 days of receipt of the conciliator's recommendation; and
- The Conciliator's recommendation is subsequently overturned in Arbitration.

The provisions of sub-clauses 12.6.1 to 12.6.4 of PW-CF1 to PW-CF5 shall apply retrospectively from the date of the termination notice. However, sub-clause 12.5.2 prohibiting the Employer from retaining another Contractor to complete the Works shall not apply in this instance.

Continued on next page

3.9 Termination of Contract, Continued

Consequences for the Employer of termination on Contractor default

When a contract is terminated on Contractor default, the Employer takes over the works and takes the following steps:

Step	Employer Actions
1	Review all insurance exposures and cover in relation to the works.
2	Make an assessment of the amount due to the Contractor in respect of works completed and as yet unpaid; this is called the <i>termination value</i> .
3	When the works have been completed (either by the Employer or by a different contractor), assess the <i>termination amount</i> – this is the difference between the amount it would have cost to complete the works in accordance with the original contract and the actual costs that the Employer has incurred in completing the works
4	Issue a certificate to the Contractor detailing the <i>termination amount</i> and the loss and damage incurred by the Employer as a consequence of the termination. The certificate should be issued within six months or as soon as practicable, based if necessary on estimates.
5	If the <i>termination amount</i> is greater than the <i>termination value</i> , issue a demand to the Contractor for the difference. The Contractor is required to pay this within 10 working days (PW-CF1 to PW-CF6) of receiving the demand. In the case of PW-CF7 and PW-CF8 the period is 14 calendar days. If the termination value is greater than the termination amount, invite the Contractor to invoice for the difference; and The Employer is to pay the Contractor within 15 working days of receiving the invoice. In the case of PW-CF6, PW-CF7 and PW-CF8 the period is 30 calendar days.

Notes

- 1 The Employer may engage other contractors, use any things on the site and do anything necessary for the provision of the works.
- 2 On termination of a main contract the Employer may, where Collateral Warranties exist, pay subcontractors and any suppliers to the Contractor any amounts due to them, and may subsequently demand the Contractor to repay these amounts (except for amounts due for work for which the Employer has already paid the Contractor). The Collateral Warranty that should be used should be Model Form MF1.11. In order to ascertain what is due the Employer will have to make enquiries to the subcontractors and suppliers and only make the payment if the Employer is satisfied that the money is due and has not already been paid to the Contractor. The Employer can, if unsure, decide not to pay.

Continued on next page

3.9 Termination of Contract, Continued

**Consequences
for the
Contractor of
termination on
Contractor
default**

On termination of the Contract, the Contractor must leave the site in an orderly manner, and must comply with instructions issued by the Employer. In particular, the Contractor must:

- Not remove any things from the site unless instructed to do so by the Employer; if so instructed, the Contractor should promptly remove works items, temporary works and Contractor's things from the site;
 - Assign to the Employer, if instructed to do so, without further payment, the benefit of any subcontract, any contract for the supply of any works item, or any other contracts in relation to the works; and
 - Provide to the Employer all Works Requirements and Contractor's documents.
-

4 Managing Risk in Progress

4.1 Overview

Introduction

Risk management runs for the duration of the construction period and involves minimizing the Employer's exposure to events that might increase the cost or extend the time-span of the works.

Both the Contractor and the Employer take out insurance policies to mitigate the realisation of some of these risks; others are borne by those parties to the Contract that are best able to manage, control and mitigate them.

Risk allocation and transfer

Risk is *uncertainty of outcome*. Before the project is put out to tender, the likely risks are identified, and then allocated to the Employer or to the Contractor as the Employer deems appropriate – the object at this stage is to place the risk with the party best placed to manage it.

The Employer seeks to *transfer* the optimal amount of risk possible to the Contractor – to obtain greater price certainty while also ensuring that value for money is obtained. The level of risk transfer, however, should be based on the information made available in the tender documents – the more comprehensive the information, the greater the level of risk that can be transferred to the Contractor at a realistic cost.

Contractors are required to take out insurance against certain risks, including public liability and professional indemnity – the details of required insurances are specified in the tender documents.

Effectively managing risk helps organisations deliver their objectives, while protecting their interests. In the context of capital works projects, good risk management helps employers to:

- Be more confident that projects will be completed on time and on budget;
 - Identify and quantify acceptable risk levels effectively; and
 - Take informed decisions when a risk is realised.
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Continued on next page

4.1 Overview, Continued

In this section This section contains the following topics:

Topic	See Page
4.2 Responsibility for Loss and Damage Describes how different kinds of risks are allocated between the Employer and the Contractor.	76
4.3 Delay and Compensation Sets out how realised risks to the duration and costs of projects are managed.	78
4.4 Managing Contract Insurance Includes a brief overview of contract insurance requirements.	88

4.2 Responsibility for Loss and Damage

Introduction

The Contractor and the Employer are responsible for the risk associated with different types of loss, damage and injury, as set out in clauses 3.1–3.3 of PW-CF1 – PW-CF5, in clauses 3 and 8 of PW-CF6 and in clauses 6 and 11 of PW-CF7 and PW-CF8.

For certain categories of risk, the Employer bears the entire risk – these are set out, for example, in clause 3.1 of PW-CF1-PW-CF5. For other risks, including those that might lead to delays or claims for compensation by the Contractor, the Employer has some discretion as to how they can be allocated. The Employer may also decide on the different programme contingency thresholds that should apply in the case of PW-CF1 to PW-CF4 with a single threshold for PW-CF5 for compensation events that are also delay events.

In the event of a risk being *realised*, it is very important to know who is bearing the risk – in other words who will accept the loss or damage that the realisation of the risk brings. The contractual responsibilities of the Employer and the Contractor in relation to risk items are described below.

Employer's responsibilities

The Employer is responsible for the risk of loss, damage or injury to the works resulting from any of the following (as defined in clause 3.1):

- War, invasion, hostilities, terrorism (only if this is noted in Section D of the Schedule as a permitted exclusion from the Contractor's insurance), riot, civil commotion;
 - Pressure waves caused by aircraft or other airborne objects;
 - Contamination caused by radioactivity or other hazardous properties;
 - Terrorism, but only if terrorism is a permitted exclusion from the Contractor's insurance of the Works; and
 - Use or occupation of the works by the Employer other than:
 - as provided for in the Contract; or
 - to the extent that the loss or damage is caused by the negligence of the Contractor, or the Contractor's personnel, or the Contractor's breach of contract; and
 - Employer design (in the case of PW-CF1, PW-CF3 and PW-CF5);
-

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4.2 Responsibility for Loss and Damage, Continued

Employer's responsibilities (continued)

Existing facilities

Clause 3.8 and the Schedule makes clear the level of risk that the Employer undertakes with regard to existing facilities. If the Employer does not want to carry this risk other than loss or damage to its existing facilities and the parts of the Works used or occupied by the Employer, and their contents from fire, storm, tempest, flood, bursting or overflowing water tanks, apparatus or pipes, explosion, impact, aircraft, riot, civil commotion or malicious damage then the 'shall not' option should be chosen in the Schedule, Part 1D (Optional Insurance Provisions), so that the text reads as follows:

'The Employer shall not have the risk of loss of and damage to its existing facilities and parts of the Works it uses or occupies, in accordance with sub-clause 3.8'. [PW-CF1 to PW-CF5]

Where the Employer does not use any part of the Works or occupy any part of the existing facilities and the Contractor is in sole possession the selection of the option 'shall not' will mean that the Contractor will be fully responsible for the Works and existing facilities and should therefore insure against the foregoing perils happening to the whole of the Works and existing facilities.

Otherwise the Employer should ensure that these risks are covered under its own insurance policies.

Contractor's responsibility for care of the works

The Contractor is responsible for the care of the works (under clause 3.2 of PW-CF1 to PW-CF5). This means that the Contractor must bear the risk of loss or damage to the works, equipment and facilities from the Starting Date up to the Date of Substantial Completion of the works.

The Contractor is also responsible for any loss, damage or injury that arises from defects in the execution of the works or any activities of the Contractor or his personnel.

The Contractor must promptly rectify any loss and damage for which the Contractor is responsible and bear any costs involved in doing so.

If loss of or damage to the works for which the Contractor is not responsible occurs before the Defects Certificate is issued, the Contractor must rectify it, if so instructed.

4.3 Delay and Compensation during the Project

Introduction

In the course of any construction project, different *events* can happen that have the effect of changing the completion date and/or the cost of a project. Those responsible for such risks (i.e. Employer, the ER on behalf of the Employer, or the Contractor) need to manage the risk in the context of: :

- **Compensation events:** affect the cost of the project and may affect the time-to-completion. They may be either:
 - *To the benefit of the Contractor*, for which the Contractor may seek additional payment; or
 - *To the benefit of the Employer*, for which the Employer may seek a reduction in the Contract sum
- **Delay events:** affect the time-to-completion only of the project. Some delay events also involve compensation to the Contractor – in other words, prolongation of the works may also add to the cost.

Schedule of Delay and Compensation Events.

Contract type	Total Number of Events	Number of Delay Events	Number of Compensation and Delay Events	Number of optional Compensation Events
PW-CF1 and PW-CF3	21	20	16	5
PW-CF5	20	19	15	1
PW-CF2 and PW-CF4	16	16	12	2
PW-CF6	13	13	9	0
PW-CF7	9	9	1*	0
PW-CF8	1*	1*	1*	0

* This is for Scope changes. Scope defines the works (as illustrated in technical drawings, described in specifications, schedules and other documents) and constraints on how the works are to be done and is set out in the documents listed in the Schedule.

Note: For information regarding delay events due to a Covid-19 Mandatory Closure, readers should refer to GN 1.5.4 (*Covid-19 and the Public Works Contracts*).

Continued on next page

4.3 Delay and Compensation during the Project, Continued

Compensation events to the benefit of the Contractor

Compensation events which benefit of the Contractor are events that, if they occur and are not the Contractor's risk will and entitle the Contractor to be compensated for the effect the events have on the cost and perhaps the time of the works.

Note: The Contractor must comply with the terms of the Contract in relation to giving notice to the ER of any compensation events for which he seeks payment.

If a contractor-compensation event occurs, the Contractor will seek an adjustment to the Contract Sum. The Contract defines the procedures for dealing with compensation events (clauses 10.3–10.6 of PW-CF1 to PW-CF5 and clauses 4.4 –4.8 of PW-CF6, clause 7.5 of PW-CF7 and clause 7.3 of PW-CF8).

The following tables lists compensation events that are common to PW-CF1 to PW-CF5 which may lead to the Contractor being compensated in accordance with those contracts. There is also a table some additional events that may apply only to PW-CF1, PW-CF3 and PW-CF5.

Continued on next page

4.3 Delay and Compensation during the Project, Continued, Continued

Compensation events to the benefit of the contractor (continued)

Compensation events for all contracts (PW-CF1 to PW-CF5)

- Instructions of the ER regarding:
 - changing the Works Requirements (Change Orders);
 - search for defects where no defects are revealed by the search;
 - suspension of all or part of the works;
 - dealing with an item of archaeological interest or human remains found on the site (such events are compensation events only if stated as such in the Schedule); and
 - rectifying loss of or damage to the works for which the Contractor is not responsible.
- Utility owners failing or delaying the relocation or disconnection of utilities (such events are compensation events only if stated as such in the Schedule).
- Failure by the Employer to provide:
 - access to the site;
 - Employer's things; and
 - works items.
- Unforeseeable interference by Employer's personnel.

Additional compensation events for traditional contracts only (PW-CF1, PW-CF3 and PW-CF5)

- Suspension by the Contractor in accordance with clause 12.3.
- The presence of unforeseeable ground conditions, man-made obstructions, unforeseeable utilities (such events are compensation events only if stated as such in the Schedule).
- Failure by the ER to give an instruction required under the Contract.
- A factual error in information about the site in the Works Requirements.
- A difference between the contract value in the Bill of Quantities and the contract value in the Works Requirements due to incorrect quantities or descriptions in the Bill of Quantities (such events are compensation events only if stated as such in the Schedule).

Note: Clause 4.4 sets out the list of Compensation Events for PW-CF6, clause 7.5 for PW-CF7 and clause 7.3 for PW-CF8

Continued on next page

4.3 Delay and Compensation during the Project, Continued, Continued

Compensation events to the benefit of the Employer

Compensation events which benefit the Employer are events that, if they occur, entitle the Employer to seek a reduction in the Contract Sum.

Where such an event arises, the ER should serve a notice of claim on the Contractor under clause 10.9, claiming a Compensation Event under clause 10.1 (of PW-CF1 to PW-CF5 in both cases).

Such an event might arise where there is an error in the Bill of Quantities (the primary Pricing Document) – for example, where the Contractor has priced a quantity in the Bill of Quantities which is greater than what is indicated in the Works Requirements. The Employer could make a claim in such an instance for the recovery of cost of the over measured item, provided that there is a **yes** in the Compensation Event column for item 17 in the Schedule, Part 1K, and the difference is greater than €500.

See **Quantity errors and compensation: ‘Yes’ Scenario** in section 2.6.3 Prescribing the Content of the Pricing Document in *Public Works Contracts* (GN 1.5) for some examples of compensation events to the benefit of the Employer arising from incorrect quantities.

Delay events

Delay events are events that, if they occur, are not at the Contractor’s risk (and subject to compliance with the Contract) entitle the Contractor to an extension to the Date for Substantial Completion of the works (and any affected section) equal to the amount of delay, taking into account only site working days. (This is a general definition; see the Contract conditions for particulars.)

Note: the Contractor must comply with the terms of the Contract in relation to giving notice to the ER of any delay events.

If a delay event occurs, the Contractor may seek an extension of time (EOT). The Contract defines the procedures for delay events (clause 9.3 of PW-CF1 to PW-CF5). If the delay is caused by a compensation event, the Contractor may also claim an adjustment to the Contract Sum. Delay events that are not also compensation events are listed in the Schedule, and include the following in PW-CF1 to PW-CF5:

Delay events for all contracts (PW-CF1 to PW-CF5)

- Compensation events that cause delay (see the Compensation Events table above)
- Loss of or damage to the works at the Contractor’s risk according to clause 3.2
- A delay caused by an act of a court or public authority
- A weather event
- A strike or lock out affecting the construction industry
- Dealing with an item of value or of archaeological or geological interest or human remains found on the site

Continued on next page

4.3 Delay and Compensation during the Project, Continued, Continued

Delay events (continued)

Additional delay events for traditional contracts only (PW-CF1, PW-CF3 and PW-CF5)	
<ul style="list-style-type: none">▪ The presence of unforeseeable ground conditions, man-made obstructions, or unforeseeable utilities▪ Utility owners failing/delaying the relocation/disconnection of utilities▪ Compensation events that cause delay, but with the exception of the (optional) compensation event for a difference between the Bill of Quantities and the Works Requirements (see the last item in the Compensation Events table above)▪ A strike or lockout affecting the construction industry generally or a significant part of it, <i>and not confined to employees of the Contractor or any Contractor's personnel</i>	
Note: Clause 2.7 sets out the list of Delay Events for PW-CF6 and Clauses 4.4 and 4.5 for Delay Events for PW-CF7	

Delays and extensions of time (PW-CF1 to PW-CF5)

The Contractor must give the ER full details of any potential delay as soon as possible (within 40 working days of becoming aware of the problem), and should outline the expected effect on the progress of the works.

If Substantial Completion of the works (or sections) is affected, and the Contractor is entitled to an extension of time then the Contractor will be granted additional time (expressed in site working days) to complete the Works, in accordance with the Contract and depending on the length of the delay.

Programme Contingency (PW-CF1 to PW-CF5)

The Contractor must factor in the Programme Contingency (as set by the Employer in the tender documents) both in the Contractor's tendered price and in the Programme of Works for the project. This contingency must be reasonable and proportionate to the scope, complexity and duration of the Contract. Use of the contingency is at the Employer's discretion in accordance with the Contract.

The Contractor's programme must take into account the programme contingency set by the Employer in Part 1K of the Schedule. The programme should clearly show how the contingency is accommodated relative to key critical activities and the Date for Substantial Completion as stated in Part 1G of the Schedule. The Date for Substantial Completion is fixed and can only be changed if an extension of time is granted by the ER after the awarding of the Contract. The Contract provides for the use of the programme contingency by the Employer (not the Contractor) up to the Date of Substantial Completion

Continued on next page

4.3 Delay and Compensation during the Project, Continued, Continued

Applying Programme Contingency rules (PW-CF1 to PW-CF5)

Delays can have cost implications for the Contract Sum. So, to provide for delays, the Contractor factors into the initial tendered Contract Sum and Programme of Works a contingency for delays *caused by compensation events* as described above.

To give effect to this contingency, the Employer includes in Part 1K of the Schedule two thresholds, expressed as a number of site working days, to be applied to delays *caused by compensation events*. In order to calculate the Contractor's entitlement to time extension, the thresholds are applied to the delays according to clause 9.4 of PW-CF1 to PW-CF4.

- **Threshold for no compensation:** For delays that amount to a number of days less than or equal to the first threshold, the Contractor does not receive any time to which delay costs can be applied and therefore bears the full cost of the delay.
- **Threshold for some compensation:** For delays that amount to a number of days that exceed the first threshold but are less than or equal to the sum of the first threshold plus ~~and~~ twice the second threshold, then the delay minus the first threshold by half is the time allowed to which delay costs can be applied so that part of the cost of the delay is recovered.
- **Threshold for some-compensation:** For the delay that is more than the sum of the first threshold and twice the second threshold then the delay minus the first threshold and minus the second threshold is the time allowed to which delay costs can be applied so that part of the cost of the delay is recovered.

Where the number of delay days passes the first threshold, the compensation days can be calculated using the following table:

Step	Description	Calculation
1	Take the total delay days	D
	If the delay (D) is equal to or greater than the first threshold (T ₁)	$D \leq T_1$
	Then the extension (E) is zero	0
2	If the delay (D) is greater than the first threshold (T ₁) but less than or equal to the first threshold (T ₁) plus twice the second threshold (T ₂)	$T_1 < D \leq (T_1 + 2T_2)$
	Then the extension (E) is the delay (D) minus the first threshold (T ₁) divided by two	$\frac{(D - T_1)}{2}$
3	If the delay (D) is more than the sum of the first threshold (T ₁) plus twice the second threshold (T ₂)	$D > (T_1 + 2T_2)$
	Then the extension (E) is the delay (D) minus the first threshold (T ₁) minus the second threshold (T ₂)	$D - T_1 - T_2$

Continued on next page

4.3 Delay and Compensation during the Project, Continued, Continued

See page 84 for some examples of how to calculate compensation days.

The cost of time extensions borne by the Employer is calculated based either on the daily rate(s) for delay cost or on the actual costs incurred by the Contractor – Part 1K of the Schedule specifies which method is to be used. The Contractor is not entitled to seek compensation for delay events that are not compensation events – for examples, for adverse weather or strikes.

Calculating compensation days: examples (PW-CF1 to PW-CF5)

In the following examples, $T_1 = 20$ and $T_2 = 30$

Where $D = 10$, the Contractor is entitled to no compensation, as D is less than T_1	$10 < 20$ no compensation
Where $D = 28$, the Contractor is entitled to 4 days' compensation.	$\frac{28 - 20}{2} = 4$ days
Where $D = 38$, the Contractor is entitled to 9 days' compensation	$\frac{38 - 20}{2} = 9$ days
Where $D = 90$, the Contractor is entitled to 40 days' compensation. In this case, $(90 - 20) / 2$ is 35 and greater than T_2 . So, T_2 is used in the calculation	$90 - 20 - 30 = 40$ days

Concurrent delays (PW-CF1 to PW-CF5)

When multiple events cause a delay, and one or more of the events is not a compensation event, there is no increase to the Contract Sum for delay cost for the period of concurrent delay. In other words, all the events contributing to the delay must be compensation events before any compensation can be considered.

Delays over holiday periods (PW-CF1 to PW-CF5)

Delay costs are payable only in respect of site working days. A site working day under the Contract is to be interpreted as a day that is not a Saturday, a Sunday, a public holiday established under the Organisation of Working Time Act 1997 or Good Friday. All other days are site working days. Therefore, if a delay period includes Christmas, bank holidays or traditional summer holidays, these may be taken into account in calculating extension and costs. This does not apply to the Minor Works form

Continued on next page

4.3 Delay and Compensation during the Project, Continued, Continued

Contractor claims for compensation (PW-CF1 to PW- CF5)

A contractor who wishes to make a claim in respect of a compensation event must notify the ER within 20 working days of the event in accordance with Clause 10.3.1 of PW-CF1 to PW-CF5. The Contractor then has a further 20 working days to give full details of the claim, including:

- All relevant facts concerning the claim;
- A detailed calculation of the amount claimed; and
- A proposal for an extension to the Date for Substantial Completion.

Monthly reports should be submitted to the ER where there are ongoing circumstances giving rise to a claim.

Contractor claims for compensation (PW-CF1 to PW- CF5) (continued)

The ER's response

On receipt of a contractor's claim, the ER must within 20 working days do one or more of the following in accordance with Clause 10.5 of PW-CF1 to PW-CF5:

- Instruct the Contractor to provide a detailed calculation of any adjustment to the Contract Sum, and additional information or revised proposals (within a further 10 working days);
- Notify the Contractor and the Employer that the claim is agreed (and make any resulting adjustments to the Contract Sum);
- Assess any adjustments to the Contract Sum; and/or

Notify the Contractor that the proposed instruction will not be given.

Continued on next page

4.3 Delay and Compensation during the Project, Continued, Continued

Adjustments to the Contract Sum (PW-CF1 to PW-CF5)

If a compensation event occurs that requires additional, substituted or omitted work, the Contract Sum will have to be adjusted. The assessment of such an adjustment is set out in the Schedule and can be based on:

- Rates in the Pricing Document for similar work;
- Fair evaluation by the ER; or
- The number of hours worked by each category of work person multiplied by the tendered hourly rate plus other identified tendered costs and percentages for materials and plant.

The Employer or the ER should notify the Contractor if they believe the Contract Sum needs to be adjusted, or if monies are owed to them by the Contractor. The Contractor has 20 working days to reply in accordance with clause 10.9.2 of PW-CF1 to PW-CF5 and the ER should determine the matter in accordance with the Contract.

Measurement errors where the Employer carries the risk

Where the Contract Sum is to be adjusted because of measurement errors in the Pricing Document and the difference is not greater than €500, the Contractor must bear the cost of the error. The Contractor must also bear the cost of any re-measurement he requests unless errors above this €500 threshold are discovered.

Note: the €500 is a threshold so if the error is more than €500 the Contractor recovers the full cost e.g. the error is €501 so the Contractor recovers €501

Consistent with the Government Decision of 2004, measure-and-value contracts are no longer to be used on public works projects. They have been replaced with lump-sum fixed-price contracts that exclude all the key elements of any measure-and-value contracts including contingency sums, provisional sums and provisional quantities. The only adjustment to quantities that is possible (other than one arising from a measurement error with a value in excess of €500 for each item) is where there is a *change order* altering the Works Requirements that results in an adjustment in quantities.

Continued on next page

4.3 Delay and Compensation during the Project, Continued, Continued

Adjustments to the Contract Sum (PW-CF1 to PW-CF5) (continued)

Measurement errors where the Employer does not carry the risk

Where measurement errors arise in the Pricing Document (for example, in the Bill of Quantities) and quantities do not form part of the Contract, the rule in relation to the Contractor carrying the first €500 for the error for each item in the Pricing Document is to be disregarded because the Contractor must now bear all the cost of the error. The opportunity to change quantities is even more restricted in this situation and only arises if there is a *change order* changing the Works Requirements that result in an adjustment in quantities.

Weather events

For information relating to weather events, see **2.5.2 Weather Events in Public Works Contracts** (GN 1.5.)

Contractors who wish to claim time extensions for weather events must supply the ER with corroborating Met Éireann data for the period in question together with the relevant reference data in *Weather Event* (WE 1.0.)

Met Éireann's contact details are:

Met Éireann
Glasnevin Hill
Dublin 9

Tel: (01) 806 4200

Fax: (01) 806 4247

Email: met.eireann@met.ie URL: www.met.ie

Archaeology

The archaeological risk is an optional risk under PW-CF1 to PW-CF4. Under PW-CF5 and PW-CF6 archaeological risk is always retained by the Employer. If the risk had been defined as a compensation event in PW-CF1 to PW-CF4, Schedule (Part 1K, item 18), any required cost adjustments are to be determined as set out in the clauses on compensation events (10.1) and programme contingency (9.4) in the Contract.

If the archaeology risk is not a compensation event (PW-CF1 to PW-CF4 only), it remains a delay event. In this case, the Contractor may be entitled to an extension of time, but not to an adjustment in the Contract Sum.

Ground conditions

The ground conditions risk is an optional risk under PW-CF1 to PW-CF4; while under PW-CF5 and PW-CF6 the risk is always retained by the Employer. A compensation event will arise if ground conditions are encountered that could not reasonably have been foreseen at tender stage – either from site investigation, from site inspections or from local knowledge of the geology and other surface and subterranean data of the area. The adjustment of the Contract Sum should be determined in the context of clauses 10.1 and 9.4 in the case of PW-CF1 to PW-CF5 and clause 4.4 of PW-CF6.

4.4 Managing Contract Insurance

Contract requirements

Clauses 3.3–3.9 of PW-CF1 to PW-CF5, clause 10 of PW-CF6 and clause 12 of PW-CF7 and PW-CF8 outline the insurance requirements for the project. These are supplemented by insurance clauses in the Schedule specifying details such as limits, permitted exclusions and excesses (see 2.4 Insurance Provisions in *Public Works Contracts* (GN 1.5)). The required insurance types for PW-CF1 to PW-CF5 are summarised in the following table:

Insurance Type	Description
Works Insurance	The insurance of the works and other risk items shall name the Contractor, the Employer and any other person the Employer requires as co-insured. This insurance is required from the Contract Starting Date. Insurance for each section of the works must be maintained until the certificate of Substantial Completion is issued for that section.
Public liability and employers' liability	The Contractor must have public and employers' liability insurance covering any accidents that happen during the project. In the case of employer's liability insurance the Employer and the Contractor must be co-insured against particular liabilities. In the case of public liability insurance, a provision should be included that indemnifies the Employer against any liability for which the Contractor would be indemnified against.
Professional indemnity	The Schedule may require the Contractor to maintain professional indemnity insurance for a period extending beyond the completion of the works.

Note: Similar provisions (as appropriate) are dealt with under clause 10 of PW-CF6 and clause 12 of PW-CF7 and PW-CF8.

Maintaining insurance provision

The Contractor must maintain all of the insurance policies for the terms specified in the Contract, and may not reduce the cover without the prior approval of the Employer.

The Employer must be satisfied that the Contractor has maintained up-to-date policies as specified in the Contract and the Schedule (PW-CF1 to PW-CF5). The ER may at any stage ask the Contractor to provide copies of policies and receipts for premiums paid. The Contractor must provide this documentation within 10 working days of the request being made (PW-CF1 to PW-CF6).

In relation to professional indemnity insurance, a certificate in the standard format (as supplied with Model Form 12 in *MF 1: Model Forms for Public Works Contracts*) and signed by the Contractor's broker or underwriters may be provided instead of a copy of the professional indemnity policy.

If the Contractor fails to maintain policies as agreed, the Employer may take out and pay for insurance, and subsequently demand that the Contractor pay the premiums.

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4.4 Managing Contract Insurance, Continued

In the event of a claim

In the event of a successful claim against an insurance policy, the proceeds (less any professional fees paid by the Employer) must be paid into a bank account in the joint names of the Contractor and the Employer.

The Contractor may then be reimbursed on presentation of interim payment certificates for the value of the work done to remedy the loss or damage. If there is any outstanding balance on the completion of the remedial works, this is paid to the Employer.

5. Calculating Price Variation

5.1 Overview

In fixed-price lump-sum contracts, the price is fixed for 36 months after the Designated Date/Recovery Date or for 30 months after the Contract Date, depending on which method of calculation has been specified in the Contract: PV1 or PV2.

- Within the fixed-price period, the Contract Sum may be adjusted (up or down) only in very particular circumstances arising from material hyperinflation or certain legislative changes; and
- After the fixed-price period, the Contract Sum may be adjusted to take account of variations in prices.

This section describes how to implement adjustments to the Contract Sum using either PV1 or PV2. For an introduction to the concept of price variation, see *Public Works Contract* (GN 1.5) § 2.5.3 Managing Price Variation.

Alternative methods of calculation

The way in which any adjustment to the Contract Sum is calculated is specified in the tender documentation and in the Contract. The two alternative methods deal with the adjustment as follows:

Method	See Page
3.5.1 PV1 – the Proven Cost Method Increases in the market prices are measured for: <ul style="list-style-type: none"> (i) hyperinflation for materials only during the fixed price period; and (ii) for inflation in the period after the fixed-price period (after the 30-month contract duration). This approach involves establishing the average price of materials to determine the market adjustments, and rates in Registered Employment Agreements payments to determine labour increases.	92
3.5.2 PV2 – the Formula Fluctuations Method Increases in the market prices are measured for: <ul style="list-style-type: none"> (i) hyperinflation for materials only during the fixed price period, and (ii) for inflation in the period after the fixed-price period (after the 36 months from the Designated / Recovery Date). The adjustment is calculated using formulae and price indices published by the Central Statistics Office, the Consumer Price Index, and/or percentage increase(s) in Social Partnership Agreements	96

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5.1 Overview, Continued

Close off of fixed-price period

To avoid unnecessary administrative inconvenience, construction contracts with a duration of 30 months or longer should have a process in place whereby an interim certificate is issued at the end of the 30th month in order to close off the Contractor's risk transfer period (provided there is money due or to become due to the Contractor at that point under a contract).

This is particularly useful where the adjustment to the Contract Sum to take account of price variation is based on a formula (PV2) rather than on proven costs (PV1).

If this is not done, and a certificate is subsequently submitted to cover a period that spans the fixed-price period and the variable price period, the items on the certificate to which variation applies must be identified and treated separately.

5.2 PV1: Proven Cost Method

Introduction

In the limited circumstances in which the Contract Sum may be adjusted to take account of variations in price (detailed in Chapter 2), the adjustment is calculated according to either clause PV1 or PV2 in the Contract.

This section deals with clause PV1, known as the Proven Cost Method.

Basis for calculation

Under PV1, the Contractor provides evidence by way of invoices to support any claim for increases (including hyperinflation increases) in the cost of materials incorporated in the works and also produces, for comparison purposes, evidence of the cost of those materials at the Designated Date/Base Date.

The Employer checks the validity of such claims independently by obtaining prices from a number of suppliers for the same materials in the same quantities and in the same timeframes, and compares them against the Contractor's claim.

Variations in labour cost recoupable by the Contractor are determined by reference to the Registered Employment Agreement (REA) rate at the Base Date and the general round increases conforming to the guidelines of Social Partnership at the time the work was done.

Validating claims

The Employer must verify that any claim for an increase in the Contract Sum as a result of increases in the costs of labour and materials is justified, and must also ensure that the Contract Sum is reduced to reflect downward variations in prices.

In support of the claim, the Contractor is required to produce invoices and credit notes for the material increases claimed. The Employer may in addition obtain from his consultants records of prices for those materials or he may use catalogues or price lists from other sources that help to establish market rates.

The price variation is measured as follows:

For...	From...
Hyperinflation and eligible changes in legislation	The Designated Date (ten days before the closing date for receipt of tenders)
Other eligible labour and material adjustments.	The Base Date

Continued on next page

5.2 PV1: Proven Cost Method, Continued

Adjustments for hyperinflation

At any time between the Contract Date and the Base Date (that is, within what is otherwise the 'fixed-price period'), the Contract Sum may be adjusted to reflect changes in the price of materials due to hyperinflation.

Hyperinflation of the price of any material is measured by:

1. Checking the price for the same quantity of the same material at the Designated Date and at the first day of the month in which the purchase was made; and selecting the highest of these prices;
2. Calculating the percentage increase in the price at the time of purchase in relation to that selected price; and
3. Checking if this percentage is greater than 50%, and noting the excess.

The amount of the adjustment to the Contract Sum is calculated by taking the amount by which that percentage change exceeds 50% and applying it (by addition) to the price at the Designated Date.

Example: Hyperinflation with recovery

Concrete blocks for a contract (clause PV1 selected) are €1000 per 1000 at the Designated Date. At the beginning of month 6 of the Contract, the price of blocks falls to €800 per 1000. During month 6, the price goes up and blocks are purchased at €1600 per 1000.

The Contractor is entitled to claim €100 extra per 1000 blocks purchased in the month according to the calculation for hyperinflation as follows:

Price (A) @ Designated Date	€1000
Price (B) @ 1st Day in Month of Purchase	€800
Price (C) selected highest of A and B	€1000
Price (D) Paid @ Purchase Date	€1600
Is $D - C > 50\%$ of A?	Yes
Adjustment (increase) in price: $D - A - A/2$	€100

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5.2 PV1: Proven Cost Method, Continued

Example: hyperinflation with no recovery

Consider a similar example where concrete blocks are €1000 per 1000 at the Designated Date of the Contract. The price of blocks during month 6 is €1600 per 1000 and they remain at this price at the start of month 7, however during month 7 block prices increases to €1800 per 1000, and it is at this point that the Contractor purchases more blocks.

The Contractor is not entitled to claim according to the measurement for hyperinflation as summarised in the following table:

Price (A) @ Designated Date	€1000
Price (B) @ 1st Day in Month of Purchase	€1600
Price (C) selected highest of A and B	€1600
Price (D) Paid @ Purchase Date	€1800
Is $D - C > 50\%$ of B?	No

Adjustments to take account of legislative changes

At any time during the execution of the Contract, the Contract Sum may be adjusted to reflect the impact on costs of:

- Changes in VAT, customs or excise duty, requirements for a licence to import or export any commodity or
- Changes to PRSI rates.
- Is not identified in the Works Requirements.

Such changes must not have been flagged in the Invitation to Tender – if they were, there is no recovery.

Continued on next page

5.2 PV1: Proven Cost Method, Continued

Adjustments after the 30- month fixed- price period

After the fixed-price period, the Contract Sum may be adjusted to take account of price variations, as follows:

Materials: If the price of the material at the purchase date is more than 10% above or below the price for the same quantity of the same material at the Base Date, the Contract Sum is adjusted. The adjustment amount is calculated by taking the amount by which the percentage increase or decrease exceeds 10% and applying it (by addition or subtraction) to the price at the Base Date.

Labour: The Contract Sum is adjusted to reflect any increase or decrease in labour costs, provided:

- The variation is a General Round variation (increase or decrease) under the current national Social Partnership Agreement; **and**
 - The variation is made to the standard rates paid at the Base Date to workers according to the Labour Court's Registered Employment Agreement; **and**
 - The variation comes into effect after the Base Date; **and**
 - The revised payments have actually been made; **and**
 - The Contractor has complied with the regulatory and legislative requirements set out in Clause 5.3 of the Contract.
-

Payment of variation amounts

Payments of the variation amounts are included in interim and final certificates and payments.

5.3 PV2: Formula Fluctuations Method

Introduction

In the limited circumstances in which the Contract Sum may be adjusted to take account of variations in price (detailed in Chapter 2), the adjustment is calculated according to either clause PV1 or PV2 in the Contract.

This section deals with PV2, known as the Formula Fluctuations Method.

Formulae

When the Contract Sum is adjusted to take account of price variations under PV2, the adjustment is calculated using one of a number of formulae that are specified in the Contract.

The formulae for calculating the adjustment to the Contract Sum use the percentages and weightings given to each of the categories of materials, fuel and other components listed in Appendix 2 to Clause PV2 and Appendix 3 to Clause PV2 of the Contract, which should be attached to the Invitation to Tender, and:

- For **materials** and **fuel**: index figures published monthly by the Central Statistics Office (CSO);
- For **non-reusable temporary works**: the Consumer Price Index; and
- For **labour**: Social Partnership Agreements.

These are used to establish base figures for the various cost elements in the project, and to subsequently measure fluctuations in cost of those elements for which recovery is permitted throughout the life of the Contract.

These formulae are not intended to produce exact calculations of the actual costs incurred by the Contractor, but rather to produce a reasonable figure that is easily calculated, objectively verifiable, and based on prior agreement, with a mutually accepted level of risk.

Variations in the price of **overheads** and **plant** do *not* affect the Contract Sum at any time.

CSO indices

The Central Statistics Office (CSO) publishes monthly construction material and fuel indices in its *Statistical Release* – tables 3A and 5 of the CSO's Wholesale Price Index correlate to the categories of materials and fuels used in the PV2 clause.

Absence of a relevant index

In the absence of any relevant index or agreement, the Consumer Price Index is used in its place.

Continued on next page

5.3 PV2: Formula Fluctuations Method, Continued

Changes to a relevant index

If any index figure used to calculate an adjustment is subsequently revised by the CSO prior to the issue of the Final Certificate, then any such adjustment is recalculated using the revised index figure and the appropriate adjustment is made on the next certificate.

Failure to complete on time

The Contractor is not entitled to an adjustment for increases in labour and materials under price variations that occur after the Date for Substantial Completion or approved extension to that date. Costs incurred after that date (or extended date) are valued at the rate pertaining at the Date for Substantial Completion or at the approved extension to that date.

This means that, under the price variation clause, the Contractor cannot claim for price increases that occur after the Date for Substantial Completion, and so may not benefit from not completing on time.

Excluded amounts

The formulae for calculating price adjustments refer to Excluded Amounts. The full list of such amounts is in the Contract (Clause PV2.6). They include items such as amounts for unfixed materials, delay costs and items priced on actual cost that are excluded by virtue of their being based on current prices or subject to specific price arrangements, or are due to the default or negligence of the Contractor.

These Excluded Amounts are deducted from the amount payable in any Interim or Final Certificate prior to calculating price adjustments.

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5.3 PV2: Formula Fluctuations Method, Continued

Adjustments allowed within the fixed price period

Adjustments for hyperinflation and legislative change may be made as follows:

At any time between the Designated Date and the Base Date, the Contract Sum may be adjusted to take account of changes in the price of materials arising from...	...hyperinflation
At any time between the Designated Date and the Date for Substantial Completion, the Contract Sum may be adjusted to take account of changes arising fromspecific types of legislative changes

Note 1: The Contract Sum may be adjusted to take account of legislative change both within and outside the fixed-price period according to the rule above, provided that any such adjustment is not made elsewhere under another part of the Contract.

Note 2: The Contract Sum may not be adjusted to take account of increases in the cost of labour within the fixed-price period (except where such increases are the result of legislative change).

Legislative changes

Changes in VAT, custom and excise duty, or import/export licensing requirements that impact on the cost of materials or fuel, and changes to PRSI rates that affect the cost of labour may result in adjustments to the Contract Sum (provided impending changes of this nature were not flagged in the Invitation to Tender).

Hyperinflation

Compensation is payable if the CSO monthly index applicable to the certificate for any material or fuel is:

1. More than 50% above the index for that material or fuel at the Designated or Recovery Date; and
2. More than 50% above the CSO monthly index for the same material or fuel in the month preceding the certificate.

If **both** these conditions hold, compensation is payable based on the excess over 50% of the CSO monthly index for the same material or fuel at the Designated Date. This is further explained below.

Continued on next page

5.3 PV2: Formula Fluctuations Method, Continued

Compensation for hyperinflation in the cost of materials

The Contractor is entitled to partial recovery of increases in the cost of materials within the fixed-price period, if such cost increases are due to hyperinflation, as defined by the two conditions set out on page 98.

The formula for calculating the recovery in this circumstance is set out in the Contract as follows:

$$\frac{\{W \times Y \times Z \times P \times (F2 - F1)\}}{F1} - (50\% \times W \times Y \times Z \times P) = M$$

Follow the steps set out below to apply this formula. A worked example of the calculation is in Appendix C.

Step	Action	Element in formula
1	Ascertain the net value (excluding VAT) of each material category affected by hyperinflation and used on the project in the period relating to the certificate, based on prices pertaining at the Designated Date.	
2	<i>Divide by</i> The total value, in terms of the Contract Sum, of the proportion assigned to that material in Appendix 8 to Clause PV2 of the Contract (attached to the Invitation to Tender), to obtain the value P in the formula.	= P
3	<i>Multiply by</i> The percentage value assigned to Materials in Appendix 7 to Clause PV2 of the Contract (attached to the Invitation to Tender).	P x Y
4	<i>Multiply by</i> The weighting assigned to the relevant Material Category in Appendix 3 to Clause PV2 to the Contract.	P x Y x W
5	<i>Multiply by</i> The Contract Sum (excluding VAT) <i>less</i> any Excluded Amounts and price adjustments <i>Note this result; you will need it again.</i>	P x Y x W x Z

Continued on next page

5.3 PV2: Formula Fluctuations Method, Continued

Compensation for hyperinflation in the cost of materials (continued)

Step	Action	Element in formula
6	<i>Multiply by</i> The increase in the CSO Index for the relevant Material Category from the month prior to the date on which the materials were purchased.	$P \times Y \times W \times Z \times (F2 - F1)$
7	<i>Divide by</i> The CSO Index for the relevant Material Category at the month prior to the date on which the materials were purchased.	$\frac{P \times Y \times W \times Z \times (F2 - F1)}{F1}$
8	<i>Subtract</i> 50% of the result obtained in step 5 above.	$- 50\% \times W \times Y \times Z \times P$
	<i>Result</i>	M

Continued on next page

5.3 PV2: Formula Fluctuations Method, Continued

Compensation for hyperinflation in the cost of fuels

The Contractor is entitled to partial recovery of increases in the cost of fuels within the fixed-price period if such cost increases are due to hyperinflation, as defined by the two conditions set out on page 98.

The formula for calculating the recovery in this circumstance is set out in the Contract as follows:

$$\frac{\{W \times Y \times EV \times (F2 - F1)\}}{F1} - (50\% \times W \times Y \times EV) = N$$

Follow the steps set out below to apply this formula. A worked example of the calculation is in Appendix C.

Step	Action	Element in formula
1	Ascertain the net value (excluding VAT) of work on the project in the period relating to the certificate, based on prices pertaining at the Designated Date.	= EV
2	<i>Multiply by</i> The percentage value assigned to Fuel in Appendix 7 to Clause PV2 of the Contract attached to the Invitation to Tender.	EV x Y
3	<i>Multiply by</i> The weighting assigned to the relevant Fuel Category in Appendix 8 to Clause PV2 of the Contract attached to the Invitation to Tender. <i>Note this result, you will need it again.</i>	EV x Y x W
4	<i>Multiply by</i> The increase in the CSO Index for the relevant Fuel Category from the month prior to the date on which the fuel was purchased.	EV x Y x W x (F2-F1)
5	<i>Divide by</i> The CSO Index for the relevant Fuel Category at the month prior to the date on which the fuel was purchased.	$\frac{EV \times Y \times W \times (F2-F1)}{F1}$
6	<i>Subtract</i> 50% of the result obtained in step 3 above.	- 50% x W x Y x EV
	<i>Result</i>	N

Continued on next page

5.3 PV2: Formula Fluctuations Method, Continued

Adjustments after the 36- month fixed- price period

From the Base Date (the first day of the 37th month after the Designated Date) up to the latest Date for Substantial Completion, the Contract Sum may be adjusted (up or down) to reflect variations in costs due to:

- General Round increases paid under the current national Social Partnership Agreement (for **labour**);
- Changes in the Consumer Price Index (for **non-reusable temporary works**); and
- Changes in the relevant CSO monthly indices (for **materials** and **fuel**).

For non-reusable temporary works, materials and fuel, the index figure for purchases after the Base Date must be more than 10% in excess of the index figure at the Base Date for the formula to yield a recoverable increase.

Overheads and plant are not subject to price variation at any time.

No compensation is payable for increases that arise after the latest Date for Substantial Completion, irrespective of the reason for the increase.

The calculation of adjustments to the Contract Sum for each of the four eligible categories is detailed in the following pages.

Adjustments after Date for Substantial Completion

After the Date for Substantial Completion, any adjustments to the Contract Sum are based on the relevant CSO figures and social partnership figures that are current or published at the Date for Substantial Completion.

Continued on next page

5.3 PV2: Formula Fluctuations Method, Continued

Variations in the cost of materials after the Base Date

The formulae for calculating adjustments to the Contract Sum arising from variation in the cost of materials after the Base Date are as follows:

A. Formula to be used where $A1 - B1$ is less than or equal to zero (i.e. where prices are lower than at the Base Date):

$$\frac{W \times Y \times Z \times P \times (A1 - B1)}{B1} = K$$

B. Formula to be used where $A1 - B1$ is greater than zero (i.e. where prices are higher than at the Base Date) – see step 6 below:

$$\frac{\{ W \times Y \times Z \times P \times (A1 - B1) \}}{B1} - (10\% \times W \times Y \times Z \times P) = K$$

Follow the steps set out below to apply this formula. A worked example of the calculation is in Appendix C.

Note: No compensation is payable for increases in price of materials that are not one of the weighted categories in Appendix 8 to Clause PV2 of the Contract.

Step	Action	Element in formula
1	Ascertain the net value (excluding VAT) of the material category affected by the price increase and used on the project in the period covered by the certificate, based on the prices pertaining at the Designated Date	
2	<i>Divide by</i> The total value, in terms of the Contract Sum, of the proportion assigned to that material in Appendix 8 to Clause PV2 of the Contract attached to the Invitation to Tender (to obtain the value P in the formula).	= P
3	<i>Multiply by</i> The percentage value assigned to Materials in Appendix 7 to Clause PV2 of the Contract attached to the Invitation to Tender.	P x Y

Continued on next page

5.3 PV2: Formula Fluctuations Method, Continued

Variations in the cost of materials after the Base Date (continued)

Step	Action	Element in formula
4	<i>Multiply by</i> The weighting assigned to the relevant Material Category in Appendix 8 to Clause PV2 of the Contract attached to the Invitation to Tender.	$P \times Y \times W$
5	<i>Multiply by</i> The Contract Sum (excluding VAT) <i>less</i> any Excluded Amounts and price adjustments. <i>Note the result, you will need it again.</i>	$P \times Y \times W \times Z$
6	<i>Multiply by</i> The change in the CSO Index for the relevant Material Category from the Base Date to the month in which the mid-date of the period covered by the certificate falls. (If the Index is lower on the later date, this figure is negative.)	$P \times Y \times W \times Z \times (A1 - B1)$
7	<i>Divide by</i> The CSO Index for the relevant Material Category at the Base Date.	$\frac{P \times Y \times W \times Z \times (A1 - B1)}{B1}$
8	If the result is:	= K
	Negative (i.e. if K is less than zero), reduce the Contract Sum by that amount;	
	Positive (i.e. if K is greater than zero), the calculation of K continues with Formula B, as follows: <i>Subtract 10% of the result obtained in step 5 above</i> If <i>that</i> result is positive, increase the Contract Sum by that amount; otherwise the Contract Sum is unaffected.	$- 10\% \times W \times Y \times Z \times P$

Continued on next page

5.3 PV2: Formula Fluctuations Method, Continued

Variations in the cost of fuel after the Base Date

The formulae for calculating adjustments to the Contract Sum arising from variation in the cost of fuel after the Base Date is as follows:

A. Formula to be used where $A1 - B1$ is less than or equal to zero (i.e. where prices are lower than at the Base Date):

$$\frac{W \times Y \times EV \times (A1 - B1)}{B1} = L$$

B. Formula to be used where $A1 - B1$ is greater than zero (i.e. where prices are higher than at the Base Date) – see step 6 below:

$$\frac{\{ W \times Y \times EV \times (A1 - B1) \}}{B1} - (10\% \times W \times Y \times EV) = L$$

Follow the steps set out below to apply this formula. A worked example of the calculation is in Appendix C.

Note: No compensation is payable for increases in the price of fuel that are one of the weighted categories in Appendix 8 to Clause PV2 of the Contract.

Step	Action	Element in formula
1	Ascertain the net value (excluding VAT) of the work on the project in the period covered by the certificate, based on prices pertaining at the Designated Date.	= EV
2	<i>Multiply by</i> The percentage value assigned to Fuel in Appendix 7 of Clause PV2 of the Contract attached to the Invitation to Tender.	EV x Y
3	<i>Multiply by</i> The weighting assigned to the relevant Fuel Category in Appendix 8 of Clause PV2 of the Contract attached to the Invitation to Tender. <i>Note this result, as you will need it again.</i>	EV x Y x W
4	<i>Multiply by</i> The change in the CSO Index for the relevant Fuel Category from the Base Date to the month in which the mid-date of the period covered by the certificate falls. If the Index is lower on the later date, this figure is negative.	EV x Y x W x (A1 – B1)

Continued on next page

5.3 PV2: Formula Fluctuations Method, Continued

Variations in the cost of fuel after the Base Date (continued)

Step	Action	Element in formula
5	<i>Divide by</i> The CSO Index for the relevant Fuel Category at the Base Date.	$\frac{EV \times Y \times W \times (A1 - B1)}{B1}$
6	If the result is:	= L
	Negative (i.e. if L is less than zero), reduce the Contract Sum by that amount;	
	Positive (i.e. if L is greater than zero), the calculation of K continues with Formula B, as follows: <i>Subtract 10% of the result obtained in step 3 above</i> If <i>that</i> result is positive, increase the Contract Sum by that amount; otherwise the Contract Sum is unaffected.	$- 10\% \times EV \times Y \times W$

Continued on next page

5.3 PV2: Formula Fluctuations Method, Continued

Variations in the cost of non-reusable temporary works after the Base Date

The formulae for calculating adjustments to the Contract Sum arising from variation in the cost of non-reusable temporary works after the Base Date is as follows:

A. Formula to be used where $CPI^A - CPI^B$ is less than or equal to zero (i.e. where prices have fallen since the Base Date):

$$\frac{Y \times Z \times P (CPI^A - CPI^B)}{CPI^B} = K$$

B. Formula to be used where $CPI^A - CPI^B$ is greater than zero (i.e. where prices have risen since the Base Date) – see step 7 below:

$$\frac{Y \times Z \times P (CPI^A - CPI^B)}{CPI^B} - (10\% \times Y \times Z \times P) = K$$

Follow the steps set out below to apply this formula. A worked example of the calculation is in Appendix C.

Note: No compensation is payable for increases in the price of non-reusable temporary works that are used in excess of the percentage specified in Appendix 7 to Clause PV2 of the Contract.

Step	Action	Element in formula
1	Ascertain the net value (excluding VAT) of the non-reusable temporary works affected by the price change and used on the project in the period covered by the certificate, based on the prices pertaining at the Designated Date.	
2	<i>Divide by</i> The total value of the non-reusable temporary works specified in the Contract Sum.	= P
3	<i>Multiply by</i> The percentage value assigned to non-reusable temporary works in Appendix 7 to Clause PV2 of the Contract attached to the Invitation to Tender.	P x Y

Continued on next page

5.3 PV2: Formula Fluctuations Method, Continued

Variations in the cost of non-reusable temporary works after the Base Date (continued)

Step	Action	Element in formula
4	<i>Multiply by</i> The Contract Sum (excluding VAT) <i>less</i> any Excluded Amounts and price adjustments. <i>Note the result, you will need it again.</i>	$P \times Y \times Z$
5	<i>Multiply by</i> The change in the Consumer Price Index from the month containing the Base Date to the month in which the mid-date of the period covered by the certificate falls. If the Index is lower on the later date, this figure is negative.	$P \times Y \times Z \times (CPI^A - CPI^B)$
6	<i>Divide by</i> The Consumer Price Index for the month containing the Base Date.	$\frac{P \times Y \times Z \times (CPI^A - CPI^B)}{CPI^B}$
7	If the result is:	$= K$
	Negative (i.e. if K is less than zero), reduce the Contract Sum by that amount;	
	Positive (i.e. if K is greater than zero), the calculation of K continues using Formula B, as follows: <i>Subtract 10% of the result obtained in step 4 above</i> If <i>that</i> result is positive, increase the Contract Sum by that amount; otherwise the Contract Sum is unaffected.	$- 10\% \times Y \times Z \times P$

Continued on next page

5.3 PV2: Formula Fluctuations Method, Continued

Increases in the cost of labour after the Base Date

The formula for calculating adjustments to the Contract Sum arising from variation in the cost of labour after the Base Date is as follows:

$$Y \times GRI \times EV = LV$$

Follow the steps set out below to apply this formula. A worked example of the calculation is in Appendix C.

Note: No compensation is payable for increases in cost of labour in excess of the percentage specified in Appendix 2 7 of the Contract.

Step	Action	Element in formula
1	Ascertain the net value (excluding VAT) of labour used on the project in the period covered by the certificate, based on the prices pertaining at the Designated Date.	EV
2	<i>Multiply by</i> The percentage value assigned to labour in Appendix 7 to Clause PV2 of the Contract attached to the Invitation to Tender.	EV x Y
3	<i>Multiply by</i> The percentage change (positive or negative) in the General Round of the current Social Partnership Agreement that came into effect after the Base Date and prior to the Date for Substantial Completion.	EV x Y x GRI
Result		= LV

General Round Increases exclude any increase in workers' wages that exceeds the percentage increases in basic pay in the private sector as agreed in the Social Partnership Agreement current at the time of the relevant certificate. All other increases are excluded, even where calculated as a percentage of a standard rate or resulting from any legislative enactment. For example, the Contractor is not entitled to any payment for:

- Local or site bargaining provisions;
- Any parity or restructuring increases;
- Any bonus under a site agreement, productivity, incentive, or other bonus; or
- Insurance premiums or other on-costs or consequential costs.

Continued on next page

5.3 PV2: Formula Fluctuations Method, Continued

Non-adjustable overheads and plant

No compensation is payable in respect of variations in the price of:

- Non-adjustable overheads; or
- Plant.

Total increase on each certificate

The relevant formula is applied in respect of each material and/or fuel category, non-reusable temporary works and labour that has been subject to an increase in price, and the total increase for the relevant Adjustment Period is included in the Interim or Final Certificate as an adjustment.

6. Project Completion and Handover

6.1 Overview

Introduction

As a project approaches completion, more frequent site visits are usually necessary to identify any issues (for example, defects or outstanding items) that need to be finalised before the facility is substantially completed.

These issues need to be collected by the Employer's Representative and discussed with the Employer. The list of defects or outstanding items, is generally prepared for the Employer's benefit, so as to determine if the project has reached the date for Substantial Completion but it can also be passed on to the Contractor.

Quality Control

Checking quality as part of an ongoing process during construction is also very important at this stage of the project to ensure that the standards set for each building item are met.

Contents

This chapter contains the following topics:

Topic	See Page
6.2 Date for Substantial Completion	112
6.3 Handover Requirements	113

6.2 Date for Substantial Completion

Introduction

The facility is considered to be ‘substantially completed’ (that is, ready for use or occupation), when the Certificate of Substantial Completion is issued at the handover stage.

The Date for Substantial Completion of the works (or section of the works) is set out either by the Employer in Part 1G, or, if not stated by the Employer, then by the Contractor in Part 2D of the Schedule (for PW-CF1 to PW-CF5). For PW-CF6, the Date for Substantial Completion is indicated under Clause 1.1 of the Schedule.

The Defects Period

The Defects Period is the period (normally of 12 months) following Substantial Completion of the works during which the Contractor must rectify any defects that are identified by the Employer’s Representative.

Defects identified periodically by the Employer’s Representative should be corrected in a planned manner that suites the Employer or user of the facility.

Note: In some situations a longer period may be required, such as for landscaping works where the Defects Period is required to span a number of planting seasons (i.e. 36 months).

Certificate of Substantial Completion

When satisfied that the works (or a section of work) is complete, the Contractor requests a Certificate of Substantial Completion from the ER.

The ER is required to issue the certificate to both the Contractor and the Employer within 20 days (5 working days for PW-CF6) of receiving the request from the Contractor, or to give reasons for not issuing the certificate.

The certificate may list defects and outstanding work. Note, however, that the Contractor is not relieved of any obligations in respect of any defects not listed on the certificate.

Notice of takeover of part of the works

If the Employer wishes to take over part of the facility before it has reached substantial completion (PW-CF1 to PW-CF4), the ER should give at least five days’ notice of this to the Contractor. The Contractor has no liability for any delays in completing that part – from the date of notice of takeover.

It is important to distinguish this type of handover with Sectional Completion which is decided prior to contract award. Early handover is usually not planned and where it occurs, it is normally where a particular need arises for an Employer during the Implementation stage.

6.3 Handover Requirements

Employer and Contractor responsibilities

Once the Certificate of Substantial Completion has been issued to the Contractor, the facility is handed over to the Employer who becomes responsible for insurance (i.e. Public Liability and Insurance of the Works and Other Risk Items), security and maintenance of the facility.

After handover, the Contractor is no longer responsible for costs incurred by the Employer and can only access the new facility if repair works are required.

Note: The Contractor's Employer's Liability insurance under the contract ceases to apply once the certificate of Substantial Completion has issued. However, should a Contractor's personnel have to return to the site after the issue of the Certificate of Substantial Completion is issued it is the Contractor's responsibility to see that both Employer's Liability and Public Liability insurances are in place for the Contractor's personnel whilst they are on site.

Handover activities

Just prior to handed over, the Employer (Employer's Representative) should check the completed facility to ensure that it meets the brief, the design and the requirements of the Contract. If any serious problems are identified, the Employer should not take over the facility until they are rectified.

Handover activities between the Employer and contractor

The following arrangements should be made between the Employer's Representative and contractor, during the handover stage:

- Procedures for recording and reporting defects to contractors;
 - Procedures for giving contractors access to complete repair works;
 - Plans and programmes for maintaining landscaping and open spaces;
 - Transfer of meters to the Employer after the final reading;
 - Handover of loose equipment, including keys to the Employer;
 - Security and policing requirements (if required) for open spaces; and
 - For complex projects where commissioning of the plant and equipment is essential for operating the facility – for example, hospitals and laboratories – programmes and procedures for gaining authorisation need to be set up and specialists appointed to deal with specialist works.
-

Handover documents

At handover, Employers need to receive:

- Operation and maintenance manuals for all systems;
 - Certificates of compliance with regulations;
 - Any guarantees and warranties;
 - Construction record information; and
 - Health and safety file.
-

Continued on next page

6.3 Handover Requirements, Continued

Fit-out and occupation

The fit-out stage is when the building is prepared for occupation. This is the final project stage and generally occurs after all construction works have been completed.

It is important for the Employer to allow enough resources for this stage, as fit-out has the biggest impact on how the building is used, perceived and occupied. For large or complex projects, fit-out may involve a different team of designers and contractors.

Appendix A: Pre-start Meeting Agenda

Pre-start meeting agenda

The following table is a typical agenda for a pre-start meeting, before the commencement of the implementation process:

Detail	Description
1) Introductions	<ul style="list-style-type: none"> ▪ Appointments, personal ▪ Roles and responsibilities ▪ Project brief
2) Contract	<ul style="list-style-type: none"> ▪ Priorities ▪ Handover of production information (this should be the issue of additional copies of design and other information in the Works Requirements). ▪ Starting Date in accordance with Clause 9.1 of PW-CF1-PW-CF5 and clause 2.1 of PW-CF6 ▪ Date for Substantial Completion in accordance with Part 1G of Schedule to PW-CF1 to PW-CF5 and Clause 1.1 in Schedule to PW-CF6. ▪ Defects Period as Part 1 I of Schedule to PW-CF1 to PW-CF5 and Clause 3.15 in Schedule to PW-CF6. ▪ Insurances ▪ Construction Programme and schedules ▪ Bonds (if applicable) ▪ Standards and quality
3) Contractor's matters	<ul style="list-style-type: none"> ▪ Land made available for the Works ▪ Implementation schedule ▪ Health and safety files and plan ▪ Site organisation, facilities and planning ▪ Security and protection ▪ Site restrictions ▪ Contractor's quality control policy and procedures ▪ Subcontractors and suppliers ▪ Statutory undertakers ▪ Overhead and underground services ▪ Temporary services ▪ Signboards

Continued on next page

Pre-Start Meeting Agenda, Continued

Pre-start meeting agenda (continued)

Detail	Description
4) Employer's Representative [Resident engineer / architect / site supervisor]	<ul style="list-style-type: none">▪ Roles and duties▪ Facilities▪ Liaison/communication▪ Instructions
5) Consultant's matters	<ul style="list-style-type: none">▪ Structural matters▪ Mechanical matters▪ Electrical matters▪ Other
6) Quantity Surveyor's matters	<ul style="list-style-type: none">▪ Adjustments to initial Contract Sum▪ Valuation procedures▪ VAT
7) Communication and procedures	<ul style="list-style-type: none">▪ Information requirements▪ Distribution of information▪ Validity of instructions▪ Communication lines▪ Responding to queries▪ Building Control notices▪ Notices to adjoining owners/occupiers
8) Meetings	<ul style="list-style-type: none">▪ Schedule and proceedings▪ Frequency of Meetings▪ Dates of Meetings▪ Employers Representative chairs meetings▪ Employer's Representative issues / minutes▪ Distribution of minutes

Appendix B: Price Variation Calculation under PV2 (Formula Fluctuations Method): Worked Examples

B1 Worked Examples: Overview

Introduction

This appendix contains a number of worked examples to illustrate the application of the various price fluctuation formulae.

All the examples are based on a hypothetical contract with the following characteristics:

A four-year works contract

Designated Date: 15th January 2005

Base Date: 1st February 2008

Contract Sum (excluding VAT and any price adjustments):
€6,285,000

Less: Excluded Amount for Specialists: €285,000
€6,000,000

Interim Certificates are submitted monthly

Each example starts by outlining the events that give rise to the claim for price variation, and then goes step by step through the calculation.

The examples cover the following situations:

Example	Reason for price variation	See Page
C2	Hyperinflation in the price of materials within the fixed-price period	120
C3	Hyperinflation in the price of fuel within the fixed-price period	121
C4	Increase in the price of materials after the fixed-price period	122
C5	Increase in the price of fuel after the fixed price period	124
C6	Increase in the cost of non-reusable temporary works after the fixed-price period	125
C7	Increase in labour costs after the fixed-price period	126

Note: All figures for indices and wage agreements used in this appendix are fictitious and are used merely to illustrate the working of the formulae. They are not to be used for actual calculations.

Continued on next page

B1 Worked Examples: Overview, Continued

Proportions and weightings used

The proportions and weightings for the different works elements used throughout the examples are shown in the tables below. Such proportions and weightings would be specified in Appendix 7 and 8 of the Contract.

<i>(From Appendix 2)</i> Work element	Percentage of Contract Sum
Labour	30%
Materials	30%
Fuel	10%
Non-reusable temporary works	5%
Plant	15%
Non-adjustable overheads	10%
Total	100%

<i>(From Appendix 3)</i> Material	Weighting
Stone, sand and gravel	0.08
Cement	0.00
Ready mixed mortar and concrete	0.20
Concrete blocks and bricks	0.00
Other concrete products	0.14
Structural steel and reinforcing metal	0.04
Structural steel	0.28
Reinforcing metal	0.00
Rough timber	0.00
Other timber	0.06
Bituminous macadam and asphalt	0.00
Bituminous emulsions	0.00
Electrical fittings	0.10
All other materials	0.10
Total	1.00

Continued on next page

B1 Worked Examples: Overview, Continued

<i>(From Appendix 3)</i> Fuel	Weighting
Electricity	0.50
Fuel Oil	0.50
Total	1.00

B2 Example: Hyperinflation in the price of materials within the fixed-price period

Variation details

In **August 2006**, the 18th Interim Valuation (relating to July 2006 – that is, within the fixed-price period) includes a claim for exceptional increases in the price of structural steel, as shown in the table below. Of the total amount of structural steel specified in the Contract Sum, 25% is affected by this price increase.

CSO Indices for structural steel	
January 2005 (the month of the Designated Date)	90
June 2006 (the month prior to the month in which falls the middle day of the period referred to in the Interim Certificate)	102
July 2006 (the month in which falls the middle day of the period referred to in the Interim Certificate)	190

Note: 190 is more than 50% of index figure at Designated Date (i.e. 90) and also more than 50% of index figure of the preceding month (i.e. 102).

Calculation

As the threshold for compensation has been reached, the compensation payable may be calculated as follows:

1. <i>Given P</i> The proportion of the total value of structural steel specified in the Contract Sum affected by this price increase (i.e. 25% of the 28% listed Appendix 7 to the Invitation to Tender).	25%
2. <i>Multiply by Y</i> The percentage value assigned to Materials in Appendix 7 to the Invitation to Tender.	25% * 30% = 7.5%
3. <i>Multiply by W;</i> The weighting assigned to structural steel in Appendix 8 to the Invitation to Tender.	7.5% * 0.28 = 2.1%
4. <i>Multiply by Z;</i> The Contract Sum (excluding VAT) less any Excluded Amounts and price adjustments.	2.1% * 6,000,000 = 126,000
5. <i>Multiply by (F2-F1);</i> The increase in the CSO Index for structural steel from June 2006 to July 2006.	126,000 * (190-102) = 11,088,000
6. <i>Divide by F1;</i> The CSO Index for structural steel in June 2006.	11,088,000 / 102 = 108,706
7. <i>Subtract (50% x W x Y x Z x P)</i> 50% of the result obtained in step 4 above.	108,706 – (126,000/2) = 108,706 – 63,000
Amount of increase in Contract Sum	= €45,706

B3 Example: Hyperinflation in the price of fuel within the fixed-price period

Variation details

In **August 2006**, the 18th Interim Valuation (relating to July 2006 – that is, within the fixed-price period) includes a claim for exceptional increase in the price of fuel oil, as shown in the table below.

The Effective Value for the Interim Valuation for the period up to 31st July 2006 is €1,000,000. (That is the value of work on the project in the period covered by the Interim Certificate.)

CSO Indices for fuel oil	
January 2005 (the month of the Designated Date)	90
June 2006 (the month prior to the month in which falls the middle day of the period referred to in the Interim Certificate)	113.2
July 2006 (the month in which falls the middle day of the period referred to in the Interim Certificate)	205

Note: 205 is more than 50% of index figure at Designated Date (i.e. 90) and also more than 50% of index figure of the preceding month (i.e. 113.2).

Calculation

As the threshold for compensation has been reached, the compensation payable may be calculated as follows:

1. <i>Given EV</i> The value (excluding VAT) of the work on the project in the period relating to the certificate, based on prices pertaining at the Designated Date.	€1,000,000
2. <i>Multiply by Y</i> The percentage value assigned to Fuel in Appendix 7 to the Invitation to Tender.	$1,000,000 \times 10\%$ $= 100,000$
3. <i>Multiply by W</i> The weighting assigned to fuel oil in Appendix 8 to the Invitation to Tender.	$100,000 \times 50\%$ $= 50,000$
4. <i>Multiply by (F2-F1)</i> The increase in the CSO Index for fuel oil from June 2006 to July 2006.	$50,000 \times (205-113.2)$ $= 50,000 \times 91.8$ $= 4,590,000$
5. <i>Divide by F1</i> The CSO Index for fuel oil for June 2006.	$4,590,000 / 113.2$ $= 40,548$
6. <i>Subtract (50% x Y x W x EV)</i> 50% of the result obtained in step 3 above.	$40,548 - (50,000/2)$ $= 40,548 - 25,000$
Amount of increase in Contract Sum	= €15,548

B4 Example: Increase in the price of materials after the fixed-price period

Variation details

In April 2008, the 38th Interim Valuation includes a claim for increases in the price of ready-mixed mortar and concrete and the price of structural steel which occurred on or after the Base Date (1st February 2008) – that is, after the end of the fixed-price period.

25% of the total amount of ready-mixed mortar and concrete specified in the Contract Sum is affected by this price increase.

10% of the total amount of structural steel specified in the Contract Sum is affected by this price increase.

The relevant CSO Indices for these materials are shown below:

CSO Indices for ready-mixed mortar and concrete	
February 2008 (the month in which falls the Base Date)	105.30
March 2008 (the month in which falls the middle day of the period referred to in the Interim Certificate)	126.36

CSO Indices for structural steel	
February 2008	109
March 2008	124

Note: The index figures for ready-mix mortar and concrete, and for structural steel when purchased (i.e. 126.36 and 124 respectively) are more than 10% in excess of the index figures at the Base Date (i.e. 105.3 and 109 respectively).

Continued on next page

B4 Example: Increase in the price of materials after the fixed-price period, Continued

Calculation

As the threshold for compensation has been reached, the compensation payable or recoverable may be calculated as follows:

	Ready-mixed mortar and concrete	Structural steel
1. Given P The proportion of the total value of same material category specified in the Contract Sum that is affected by the price increase (i.e. 25% for ready-mixed mortar and concrete, and 10% for structural steel listed in Appendix 8 to the Invitation to Tender).	25%	10%
2. Multiply by Y The percentage value assigned to Materials in Appendix 7 to the Invitation to Tender.	$25\% * 30\%$ $= 7.5\%$	$10\% * 30\%$ $= 3\%$
3. Multiply by W The weighting assigned to the relevant Material Category in Appendix 8 to the Invitation to Tender.	$7.5\% * 0.2$ $= 1.5\%$	$3\% * 0.28$ $= 0.84\%$
4. Multiply by Z The Contract Sum (excluding VAT) less any Excluded Amounts and price adjustments.	$1.5\% * 6m$ $= 90,000$	$0.84\% * 6m$ $= 50,400$
5. Multiply by (A1-B1) The change in the CSO Index for the relevant Material Category from the Base Date to the month in which the mid-date of the period covered by the certificate falls. (If the Index is lower on the later date, this figure is negative.).	$90,000 * (126.36-105.3)$ $= 90,000 * 21.06$ $= 1,895,400$	$50,400 * (124-109)$ $= 50,400 * 15$ $= 756,000$
6. Divide by B1 The CSO Index for the relevant Material Category at the Base Date.	$1,895,400 / 105.3$ $= 18,000$	$756,000 / 109$ $= 6,936$
7. The results are positive , so subtract 10% of the results obtained in step 4 above	$18,000 - 9,000$ $= 9,000$	$6,936 - 5,040$ $= 1,896$
Total amount of increase in Contract Sum		= €10,896

B5 Example: Increase in the price of fuel after the fixed-price period

Variation details

In April 2008, the 38th Interim Valuation (**for the period to 31st March 2008**) includes a claim for increases in the price of fuel oil which occurred on or after 1st February 2008 (the Base Date) – that is, after the end of the fixed-price period.

Amount (ex VAT) for work in the Interim Valuation, before retention:
€1,575,000

Less: amount for unfixed materials (Excluded Amounts): €75,000
€1,500,000

The relevant CSO Indices for fuel oil are shown below:

CSO Indices for fuel oil	
January 2008 (the month in which falls the Base Date)	184.5
March 2008 (the month in which falls the middle day of the period referred to in the Interim Certificate)	212.0

Note: The index figure for fuel oil when purchased (i.e. 212) is more than 10% in excess of the index figures at the Base Date (i.e. 184.5).

Calculation

As the threshold for compensation has been reached, the compensation payable may be calculated as follows:

1. <i>Given EV</i> The value (excluding VAT) of work on the project in March 2008, based on the prices pertaining at the Designated Date.	€1,500,000
2. <i>Multiply by Y</i> The percentage value assigned to Fuel in Appendix 7 to the Invitation to Tender.	$1,500,000 * 10\%$ $= 150,000$
3. <i>Multiply by W</i> The weighting assigned to fuel oil in Appendix 8 to the Invitation to Tender.	$150,000 * 0.50$ $= 75,000$
4. <i>Multiply by (AI-BI)</i> The change in the CSO Index for fuel oil from January 2008 to March 2008.	$75,000 * (212-184.5)$ $= 75,000 * 27.5$ $= 2,062,500$
5. <i>Divide by BI</i> The CSO Index for fuel oil in January 2008.	$2,062,500 / 184.5$ $= 11,179$
6. The result is positive , so subtract 10% of the result obtained in step 3 above.	$11,179 - 7,500$
Amount of increase in Contract Sum	= €3,679

B6 Example: Increase in the cost of non-reusable temporary works after the fixed-price period

Variation details

In April 2008, the 38th Interim Valuation (**for the period to 31st March 2008**) includes a claim for increases in the price of non-reusable temporary works which occurred on or after 1st February 2008 (the Base Date) – that is, after the end of the fixed-price period. 25% of the total amount of non-reusable temporary works specified in the Contract Sum is affected by this price increase.

The relevant Consumer Price Indices are shown below:

Consumer Price Indices	
February 2008 (the month in which falls the Base Date)	119.3
March 2008 (the month in which falls the middle day of the period referred to in the Interim Certificate)	133.6

Note: The index figure for the non-reusable temporary works when purchased (i.e. 133.6) is more than 10% in excess of the index figure at the Base Date (i.e. 119.3).

Calculation

As the threshold for compensation has been reached, the compensation payable **for the period up to 31st March 2008** is calculated as follows:

1. <i>Given P</i> The proportion of the total value of non-reusable temporary works specified in the Contract Sum affected by this price increase (i.e. 25% of the 5% listed in Appendix 7 of the Contract).	25%
2. <i>Multiply by Y</i> The percentage value assigned to non-reusable temporary works in Appendix 7 of the Contract).	$25\% * 5\%$ $= 1.25\%$
3. <i>Multiply by Z</i> The Contract Sum (excluding VAT) less any Excluded Amounts and price adjustments.	$1.25\% * 6m$ $= 75,000$
4. <i>Multiply by (CPI^A-CPI^B)</i> The change in the Consumer Price Index from February 2008 to March 2008;	$75,000 * (133.6 - 119.3)$ $= 75,000 * 14.3$ $= 1,072,500$
5. <i>Divide by CPI^B</i> The Consumer Price Index for February 2008.	$1,072,500 / 119.3$ $= 8,990$
6. The result is positive , so subtract 10% of the result obtained in step 3 above.	$8,990 - 7,500$
Amount of increase in Contract Sum	= €1,490

B7 Example: Increase in labour costs after the fixed-price period

Variation details

In April 2008, the 38th Interim Valuation (**for the period to 31st March 2008**) includes a claim for increases in labour costs that occurred on or after the Base Date (1st February 2008) – that is, after the end of the fixed-price period.

The labour costs (excluding VAT) for the period covered by the Interim Valuation amount to €1,500,000.

The current Social Partnership Agreement provides for the following general round pay increases in the private sector:

- 3% from 1st July 2007
- 2% from 1st February 2008

Calculation

The Contract Sum adjustment in the 38th Interim Valuation (**for the period up to 31st March 2008**) is calculated as follows:

1. Given EV The value (excluding VAT) of labour used on the project in March 2008, based on the prices pertaining at the Designated Date;	1,500,000
2. Multiply by Y The percentage value assigned to labour in Appendix 7 to the Invitation to Tender;	$1,500,000 * 30\%$ $= 450,000$
3. Multiply by GRI The percentage increase in the General Round of the current Social Partnership Agreement that comes into effect on or after 1 st February 2008	$450,000 * 2\%$
Amount of increase recoverable	= €9,000