INTRODUCTION

The Time and Cost Management Contract (the Contract) is a revised edition of what was previously the CIOB’s Complex Projects Contract, published in 2013. The name has been changed to reflect more clearly the core strengths of the Contract. The Time and Cost management Contract is written for use with the Time and Cost Management Contract suite’s Subcontract and Consultancy Appointment to provide a uniform approach to time cost and risk management from initiation to completion of building and engineering projects.

USE OF THE CONTRACT

The Contract is most suitable for those projects which cannot be effectively managed intuitively and which require for their success a more scientific approach to time and cost risk management than is usual on more simple projects. The Contract can be used by companies, public authorities and private individuals in the UK and in any other country requiring the Contractor to build only from a design prepared under the direction of the Employer, or for the Contractor to design the Works in whole or in part. The Contract can be used for:

- build only of a design prepared under the direction of the Employer
- build only of a design prepared under the direction of the Employer, but with the Contractor’s design of parts
- design and build or turnkey projects in which the Contractor is responsible for both the design and construction of the Works
- construction management and management contracting (with some changes in terms required by Special Conditions).

PRICING

The Contract can be used with any method of pricing. Commonly, these include fixed price, target cost, measured term, fixed fee, cost reimbursement, partnering and alliancing. The required method of pricing is to be described in the Special Conditions.

SPECIAL CONDITIONS

The standard documentation is expected to be supplemented by Special Conditions setting out the method of pricing, insurance requirements, bonding and any other matter peculiar to the particular project for which it is used. The Special Conditions take priority over these standard conditions.

SPECIFICATION

The standard documentation is expected to be supplemented by a Contract Specification identifying the standards of performance required for the particular project.

TIME MANAGEMENT

The Contract requires competence in critical path network modelling, resource allocation and productivity analysis. The Working Schedule is required to be in differing densities updated and revised on the rolling wave principle that constantly predicts the currently attainable completion date, sectional completion dates and key dates.

COST MANAGEMENT

Cost management is by reference to the values attributed to the activities in the Working Schedule with progress updated from databased progress records. The updated working schedule constantly predicts the out-turn cost of the Works and the value of work done to date.

RISK MANAGEMENT

The Contract is a collaborative contract requiring the Contractor, its Subcontractors and the design Consultants to work with the Time Manager, Cost Manager, Contract Administrator and the Employer to constantly appraise risk and to confer in taking practical action to overcome and avoid unnecessary consequences of time and cost risks. The Time Manager is required to collaborate with the Contractor, Subcontractors and Consultants. The Contract contains power to instruct acceleration both to overcome the effects of a delay to progress and bring forward completion dates where practical.
COLLABORATION

The Contract requires a collaborative approach to design in conformity with British Standards Institution's BS 1192:2007, but goes further in expressly requiring the Contractor and all Subcontractors and Consultants having a continuing role in design, administration or quality control during the Works to participate in decision making, quality control, time management, cost management and risk management.

BUILDING INFORMATION MODELLING

The Contract is suitable for Level 2 Projects¹ and the collaborative production of information throughout the project life cycle. It is compatible with the requirements of the British Standards Institution's PAS 1192: Part 2, 2013 “Specification for information management for the capital/delivery phase of construction projects using building information modelling” and it may be used with any desired Building Information Modelling protocol.

INFORMATION TRANSFER

The Contract requires information to be transferred electronically either by readable file or in native file format and in accordance with a File Transfer Protocol compatible with the British Standards Institution’s PAS 1192:4 2014 COBie.

STANDARD DOCUMENTATION

The suite comprises

- Document No. 2, Contract Conditions, 2015 Edition and
- Document No. 4, Subcontract Agreement, 2015 Edition
- Document No. 5, Subcontract Conditions, 2015 Edition
- Document No. 7, Consultancy Appointment, 2015 Edition
- Document No. 8, Schedules 8 and 9 for the appointment of the Time Manager, 2015 Edition
- Document No. 9, Schedules 8 and 9 for the appointment of the Contract Administrator, 2015 Edition, and
- Document No. 10 User Notes (this document).

DISCLAIMER

The Contract has been produced for use in a wide variety of construction and engineering projects. As with any standard document, however, the unique circumstances of each project will demand careful consideration as to its suitability and that of each provision. The parties will need to rely upon their own skill and judgement (and that of their advisers) in making use of this or any other standard form comprised in, or for use in connection with, this Contract. Neither the Chartered Institute of Building nor any author or contributor assumes any liability to anyone for any loss or damage caused by any error or omission whether such error or omission is the result of negligence or any other cause.

FEEDBACK

The Chartered Institute of Building would like to receive your comments on the Contract in use, which should be addressed to

SALEEM AKRAM
Director of Construction Innovation and Development

The Chartered Institute of Building
1 Arlington Square
Downshire Way
Bracknell
Berkshire
RG12 1WA
United Kingdom

T: + 44 (0) 1344 630 700
F: + 44 (0) 1344 306 434
E: sakram@ciob.org.uk

www.cio.org

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Overview

INTRODUCTION

The Contract requires a collaborative approach to the management of design, quality, time and cost. The Working Schedule and Progress Records (which are to be inspected and accepted by an experienced Time Manager and independently audited for quality assurance) are at the core of management. They are the tools by which all time and time-related cost issues are to be determined and are to conform with the standards required by the Conditions, Appendices and the CIOB’s Guide to Good Practice in the Management of Time in Complex Projects.

DEFINITIONS

The Contract contains many of the terms familiar to other users of standard forms of contract, however, because the Contract is intended to be operated using modern information technology, there are many terms which do not appear in other standard forms of contract. Appendix A identifies the capitalised terms used in the Contract and their meanings.

Timescales under the Contract are identified in Business Days, which are defined in Appendix A as “Any days other than those indicated in the Special Conditions and/or the Contractor’s Pricing Document as being days during which no work is to be carried out.”

In application, for example, where the Employer states in the Special Conditions that “Business Days exclude weekends and Bank Holidays” and in the Contractor’s Pricing Document, the Contractor states “Business Days exclude 28 March to 1 April 2016 and 23 December 2016 to 6 January 2017”, the global working calendar in the Working Schedule will define as non-working days the more restrictive days of every weekend, Bank Holiday and the days 28 March to 1 April 2016 and 23 December 2016 to 6 January 2017.

Similarly, Working Hours are defined in Appendix A as “Any hours other than those indicated in the Special Conditions and/or the Contractor’s Pricing Document as being hours during which no work is to be carried out”.

So, for example, where the Working Hours are defined in the Special Conditions as 7.00 am to 6.00 pm, and the Contractor states in the Contractor’s Pricing Document that it intends to work from 8.00 am to 12.00 noon and from 1.00 pm to 5.00 pm, the global Working Hours in the Working Schedule will be defined as the more restrictive period of 8.00 am to 12.00 noon and from 1.00 pm to 5.00 pm.
In the absence of any specified limitation on Business Days and/or Working Hours, the Contractor will be assumed, for the purposes of the Working Schedule, to work 365 days per year (366 in a leap year) and 24 hours per day and any failure to do so may be interpreted as suspension of work. It is thus very important that any required limitation on Business Days and/or Working Hours is stated in the Special Conditions and/or the Contractor’s Pricing Document.
Contract Documents

The Contract comprises three documents, the Contract Agreement,¹ the Contract Conditions² and the Contract Appendices.³ These will typically be supplemented by Special Conditions,⁴ A Contract Model or Contract Federated Model,⁵ Contract Drawings,⁶ and Contract Specification,⁷ Contract Bill of Quantities,⁸ Contractor’s Pricing Document,⁹ Contractor’s Design,¹⁰ Development Schedule and other Contract Documents¹¹ the aggregate of which forms the Contract Documents listed in the Contract Agreement.

Clause 3.5 requires the Contractor to check the Contract Documents to ascertain whether there is any actual or potential impossibility, clash, conflict, discrepancy, omission, error, inconsistency and/or ambiguity in or between any of them, or between any of them and Applicable Law.¹²

Unless a Clause 3.5 issue is covered by a Clause 3.3 or 3.4 priority, or it involves Contractor’s design, any matter notified is to be corrected by an Instruction to be valued as a Variation.¹³ In order to discourage the Contractor from failing to properly inspect the Contract Documents, or if inspected from not disclosing any such issue until the last moment, the Contract provides that in regard to anything not notified to the Contract Administrator within 20 Business Days of the date upon which it is intended that the work affected is to be carried out, any consequential delay and delay-related costs arising out of any such instruction for correction are at the Contractor’s risk.¹⁴

¹ See “Contract Agreement”, on page 12
⁴ See “Special Conditions”, on page 12.
⁵ See “Contract Model”, on page 35.
⁶ See “Contract Drawings”, on page 35.
⁷ See “Contract Specification”, on page 34.
⁸ See “Contract Bill of Quantities”, on page 37.
¹⁰ See “Contractor’s Design”, on page 42.
¹¹ See “Development Schedule” and “Other documents forming a part of the Contract”, on page 42.
¹² Clause 3.5. This requires the Contractor to check for conflicts with the mandatory laws affecting the project notwithstanding that they may be laws of a jurisdiction different from that of the governing Law of the Contract.
¹³ Clause 3.7.
¹⁴ Clause 3.8.
CONTRACT AGREEMENT

The Contract Agreement is the operative part of the Contract, which joins the other parts together and binds them to it. It is a brief document setting out:

- the Date of Contract
- the names and details of the Employer and Contractor
- the nature of the work and/or services to be provided by the Contractor
- the description and address of the Works
- The parties’ Authorised Representatives
- the names and details of those having an administrative role under the Contract
- the Law of the Contract
- the list of Contract Documents
- the price for which the Works are to be completed, and
- the execution requirements.

In its published form, the Contract Agreement is designed to be operated under the Law of England and Wales and to be executed as a deed. Wherever any other Law of Contract (that is, the Law of the Contract is not that of England and Wales), or another form of execution is required (for example, it is for execution under hand) the Contract Agreement must be edited accordingly. The Contract Agreement makes no mention of initialling or signing the Contract Documents. Nonetheless, it is common on high value construction contracts to page-turn and initial each page of the Contract at execution, or to initial the front page of each separate contract document and to also initial any printed pages which feature manuscript amendments or insertions. Unless agreed otherwise, in regard to Insurances, a Performance Bond, Advance Payment Bond, Holding Company Guarantee, or where the Contractor is required to design the whole of the Works, the parties’ obligations commence on the Start Date identified in Appendix B.

SPECIAL CONDITIONS

The Special Conditions take priority over the Contract Conditions. This is the project-specific Contract Document which identifies any change to the terms of the standard Contract Conditions whether by addition, deletion or amendment.
Those matters referred to in the Contract Conditions and Contract Appendices as to be defined in the Special Conditions are

- The terms of any Connected Contract
- Any person permitted to use a Model and identified as Design User
- The Site Services to be provided by the Employer for the Contractor’s use in carrying out the Works.
- Any special terms by which the status of the Employer’s Reference Design is to be identified
- Any Contractor obligations in relation to a design prepared by or under the direction of the Employer21
- The documentation required from the Contractor in order to demonstrate its financial stability22
- The terms on which access to the Site may be granted to the Contractor before the Access Date23
- The descriptions of any defined Sections and their Sectional Commencement and Sectional Substantial Completion Dates24
- The descriptions of any defined work to be completed by a Key Date and the specified Key Dates25
- Any limitation on the powers granted to the Employer’s Authorised Representative26
- The form of any required Collateral Warranty27
- The form of any required Holding Company Guarantee28
- The form of any required Performance Bond29
- The form of any required Advance Payment Bond30
- Any insurances to be taken out by the Contractor and those to be taken out by the Employer including the risks, the term and the insured sum31
- Any special grounds for the rejection of any particular submission32
- The terms and details of any joint access or joint possession where the Contractor does not have sole access and possession33
- Any licences or permits that the Contractor is not required to obtain34

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21 Clause 3.6.
22 Clause 4.6.
23 Clause 5.3.
24 Clause 5.4.
25 Clause 5.5.
26 Clause 6.3.
27 Clause 8.1.
28 Clause 9.1.1.
29 Clause 9.1.2.
30 Clause 9.2.
31 Clause 10.2.
32 Clause 13.2.5.
33 Clause 27.3.
34 Clause 28.1.
The terms under which the Employer is to have non-exclusive use of any part of the Works before Substantial Completion\(^{35}\)

The terms under which a Subcontractor can achieve substantial completion of the Subcontract Works before Substantial Completion of the Works\(^{36}\)

The form required of any Retention Bond\(^{37}\)

**CONTRACT CONDITIONS**

The Contract Conditions sets out the standard terms and conditions under which the Works are to be carried out. The Contract anticipates the completion of project-specific Special Conditions\(^{38}\) (referred to above) containing the terms and conditions specific to the particular project for which it is being used.

The Contract also anticipates the completion of a Contract Specification\(^{39}\) describing the procedures and standards of performance, in conformity with which the Contractor is to price and construct the Works.

**CONTRACT APPENDICES**

There are seven separate appendices. Appendix A\(^{40}\) contains the definitions of terms and Appendix G\(^{41}\) contains the Issue Resolution provisions, neither of which require any data to be added. The project-specific data of Appendices B,\(^{42}\) C,\(^{43}\) D,\(^{44}\) E\(^{45}\) and F\(^{46}\) must be inserted by the Employer or the Employer’s advisors and incorporated in the documents upon which the Contractor’s Pricing Document will be based.

If a particular project requires data additional to that set out in the seven Appendices and there is insufficient space provided in the standard form, the relevant part of the Appendix should be noted to refer either to the clauses of the Special Conditions\(^{47}\) or to the parts of the Contract Specification\(^{48}\) which contain the relevant data.

\(^{35}\) Clause 53.5.

\(^{36}\) Clause 54.1.

\(^{37}\) Clause 59.4.

\(^{38}\) See “Special Conditions”, on page 12.

\(^{39}\) See “Contract Specification”, on page 36.

\(^{40}\) See “Appendix A”, on page 14.

\(^{41}\) See “Appendix G”, on page 34.

\(^{42}\) See “Appendix B”, on page 15.

\(^{43}\) See “Appendix C”, on page 32.

\(^{44}\) See “Appendix D”, on page 32.

\(^{45}\) See “Appendix E”, on page 33.

\(^{46}\) See “Appendix F”, on page 34.

\(^{47}\) See “Special Conditions”, on page 12.

\(^{48}\) See “Contract Specification”, on page 36.
APPENDIX A

This contains definitions of the capitalised terms used in the Conditions of Contract.

APPENDIX B

This contains the discrete project data required to give effect to the terms and conditions which require project-specific contract data. Where such data is essential to the operation of the Contract, default data is provided so that if anything is not completed by the user, the Clause will still function by reference to the default data.

The default periods in Business Days assume a 5-day working week. Where a longer working week is anticipated the project specific data for the relevant periods or intervals should be inserted, otherwise the real-time period for performance will become correspondingly more difficult to achieve.

Listed Persons

The Listed Persons are all those consultants acting for, or under the direction of the Employer, other than the Contract Administrator, who, during the course of the Works, are intended to have continuing responsibilities for design, supervision, testing, inspection, or administrative functions under the Contract. The Listed Persons must include the Time Manager and, the Cost Manager.

A default listing of those disciplines which might be expected to be Listed Persons in a building project is given in Appendix B, to which is to be added the particular details of the appointed Listed Person against each relevant discipline. There is space provided in Appendix B for two additional disciplines to be added. If other disciplines are required, or other data is to be made available, it should be identified in the Special Conditions.

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49 See also “Overview, Definitions”, on page 9.
50 For example, in some countries a 6-day or 7-day working week may be encountered and in some circumstances, even where a 5-day working week is normal, a 6- or 7-day working week will be needed. It is important that the Business Days and Working Hours are identified in the Special Conditions and/or the Contractor’s Pricing Document, otherwise, by default, the Contract will be based on 365 days/year 24 hours per day. See “Overview, Definitions”, on page 9.
51 See “Roles and Responsibilities, – Listed Persons”, on page 53.
52 See “Roles and Responsibilities, - Contract Administrator”, on page 51.
53 See “Roles and Responsibilities, – Time Manager”, on page 51.
54 See “Roles and Responsibilities, – Cost Manager”, on page 52.
Method of Measurement

Where quantities are provided to determine the scope of part of or the whole of the Works, or where a schedule of descriptions is provided for pricing to be used in the valuations of variations, it is essential to specify the rules by which the quantities will be or have been measured. In the UK, quantities for building works were formerly measured by reference to “The Standard Method of Measurement” (7th Edition 1998), commonly referred to as SMM7. The “New Rules of Measurement: Order of Cost Estimating and Elemental Cost Planning” has been published in three volumes, volume 2 of which is entitled “Detailed measurement of building works” commonly referred to as NRM2), and supersedes SMM7. Where the Works primarily consist of civil or other engineering works, a different method of measurement will be appropriate and must be stated.

Holding Company

Unless stated otherwise the Contractor’s Holding Company is deemed to be its ultimate parent company. When the Contractor is a member of a group of companies, it may be appropriate in some instances, depending on the asset-holding structure of the group, for the Holding Company to be a different group company of the Contractor’s from its ultimate parent company.

Monetary currency

This should be identified as the currency of the country in which the Site is situated. If none is identified, the default currency applicable to the Works is the pound sterling. If parts of the Works are to be paid in currencies other than that applicable to the Works, those parts and the currency in which payment is to be made must be identified in the Special Conditions.

Base Date

The Base Date is the operational date to be used by the bidding Contractor in identifying the status of relevant information for the purposes of pricing the Works. The use of the Base Date for pricing ensures that competing bidders use compatible pricing data and that if changes in law are an allowable ground for adjusting the price or the Works are to be priced on a fluctuating basis (the terms of which must be identified in the Special Conditions), the Base Date is the date from which the cost of the Works will be adjusted or will fluctuate. If none is stated, it is 20 Business Days before the earlier of the Start Date and the Access Date.
Access Date\textsuperscript{62}

Unless access to the Works is to be made available in Sections,\textsuperscript{63} this is the date upon which the Employer is to provide access to and possession of the whole of the Site to the Contractor. The Contractor is obliged to commence the Works on Site on the Access Date stated.\textsuperscript{64}

The Contractor is deemed to have satisfied itself that the access provided is satisfactory for the purpose of carrying out the Works.\textsuperscript{65}

Apart from access for the Employer, Contract Administrator, Time Manager, Cost Manager the Listed Persons and other persons authorised by the Employer,\textsuperscript{66} the Conditions assume that unless Sectional Access or Sectional Completion applies\textsuperscript{67} or a part of the Works is taken into Partial Possession,\textsuperscript{68} the Contractor will have sole possession of the Site until Substantial Completion.\textsuperscript{69} If the Contractor is intended to have access only in common with others then the details of those others together with the Access Date, the purpose of that work, its expected timing and dependencies and other relevant information should be set out in the Special Conditions.

Date for Substantial Completion\textsuperscript{70}

In the absence of any extension of time\textsuperscript{71} or instructed acceleration for an earlier date\textsuperscript{72} this is the date by which the Contractor is contractually obliged to complete the Works.

Start Date\textsuperscript{73}

Where the Contractor is required to design the Works,\textsuperscript{74} or where for particular purposes set out in the Special Conditions, the Contractor is required to undertake particular obligations before the Access Date on which the Works on Site are to commence, the Contract makes provision for a separate Start Date to be identified.

\textsuperscript{62} Clause 5.1.
\textsuperscript{63} Clause 5.4.
\textsuperscript{64} Clause 5.2.
\textsuperscript{65} Clause 27.1.
\textsuperscript{66} Clause 27.2.
\textsuperscript{67} Clause 5.4.
\textsuperscript{68} Clause 53.
\textsuperscript{69} Clause 27.3 and see “Special Conditions” on page 12.
\textsuperscript{70} Clause 5.2.
\textsuperscript{71} See “Key Features, Extensions of Time, Compensation and Concurrency, Extension of time”, on page 59.
\textsuperscript{72} Improved Progress, Acceleration and Recovery on page 67.
\textsuperscript{73} Clause 5.3.
\textsuperscript{74} See Clauses 15.1 and 37.5.
Dates for Sectional Access\textsuperscript{75} and Sectional Completion\textsuperscript{76}

The table in Appendix B provides for the identification of up to ten defined Sections, the dates upon which the Employer intends to grant access and/or possession of and the dates by which the Contractor must complete each Section. The Sections must be described in the Special Conditions\textsuperscript{77} and identified on the Contract Drawings, Contract Specification, Contract Model, and/or the Contract Bill of Quantities. If the Contractor is intended to share possession of a defined Section with others, then the details of what others, the purpose, expected timing and dependencies and other relevant information should be set out in the Special Conditions.\textsuperscript{78}

Key Dates\textsuperscript{79}

Key Dates may be either a logical\textsuperscript{80} or fixed date\textsuperscript{81} by which any described submission, approval, or supply is to be made of information, plant, materials or goods or the start or completion of any specified trade, the work of any Subcontractor, supplier or sequence, or any other thing is to be achieved.

Appendix B provides for up to 34 separate Key Dates to be listed with the Activity ID of the relevant Milestone and performance dates. The details of each Key Date and what must be achieved in order for it to be met must be set out in the Special Conditions.\textsuperscript{82} The status of Key Dates to be achieved must be described in a way which renders compliance capable of being objectively assessed, otherwise there will be a risk of ambiguity and they may be unenforceable. The Contractor is obliged to perform by the Key Dates but, if the Contractor fails to do so, the Employer will have to prove it has suffered loss before it can recover general damages from the Contractor.\textsuperscript{83}

\textsuperscript{75} Clauses 5.4.1 and 5.4.3.
\textsuperscript{76} Clauses 5.4.1 and 5.4.4.
\textsuperscript{77} Clause 5.4.1.
\textsuperscript{78} Clause 27.3 and see “Special Conditions” on page 12.
\textsuperscript{79} Clause 5.5.
\textsuperscript{80} For example, the date by which the Works are intended to be “weather-proof” may be indicated by a logical Key Date. Similarly, the date when plant to be supplied by the Employer is required to be delivered for incorporation into the Works may be indicated by a logical Key Date, logically linked to completion of the Activities which must precede the delivery. The predicted date on which the Works will achieve the status of “weather-proof” or the plant is required to be delivered will then change dynamically in accordance with the progress of the works and its planning as the Working Schedule is updated, revised or impacted.
\textsuperscript{81} For example, the date upon which the Employer warrants that it will supply Permanent Plant to the Works may be identified as a fixed calendar date.
\textsuperscript{82} Clause 5.5 and see “Special Conditions”, on page 12.
\textsuperscript{83} Key Dates are not subject to Liquidated Delay Damages. See Clause 57.
Email Subject Code Data

Ideally, all correspondence and other information flow should be managed by a document management system (commonly referred to as a “DMS”) capable of making sure that parties who are required to see documents actually get them and respond. However, if ordinary email is used then, in order to assist parties in managing their mail, a facility is included here for a subject code to be inserted. Subject to proof to the contrary, email is deemed to have been received when sent provided that the stated subject code is used in the transmittal.

Holding Company Guarantee

Where a Holding Company Guarantee is required, this must be indicated and the form in which the guarantee is to be made is to be included in the Special Conditions. If not stated in Appendix B to be provided, by default a Holding Company Guarantee is not required.

Performance Bond

Where a Performance Bond is required, this should be indicated and the form in which the bond is to be provided is to be included in the Special Conditions. If not stated in Appendix B to be provided, by default a Performance Bond is not required.

Advance Payment Bond

Where an Advance Payment Bond is required, this must be indicated and the form in which the bond is to be made is to be included in the Special Conditions. If not stated in Appendix B to be provided, by default Advance Payment Bond is not required.

Status of the Reference Design

Where the Contractor is required to design a part, or the whole of the Works and the Employer provides any design work to illustrate its requirements in whole or in part, the status of the Employer’s design must be identified. If it is warranted to be developed to a particular Design Stage, or to a project-specific status identified in the Special Conditions, the Employer will be responsible for the specified accuracy of that design to that Design Stage or status. Alternatively, it can be identified as “for information purposes only and may not be relied upon by the Contractor for
any purpose” or it can be developed to a particular standard identified in the Special Conditions. If nothing is stated, or the Design Stage or Design Level of Development is not stated against option 2 the default status of any Reference Design provided is that the Reference Design is provided for information purposes only and may not be relied upon, for any purpose.

Building Information Modelling Protocol[^89]

This is the document which sets out the protocol for collaborative design where independent Models or a Federated Model are required to be used. If none is stated, the default protocol is that produced by the American Institute of Architects, G202–2013 or such later edition current at the Base Date.[^80]

It is important that whatever Building Information Modelling Protocol is adopted, Tables 1 and 2 of Appendix C are configured to be consistent with it.

It should also be noted that by Clause 17.4 where there is any inconsistency between Clause 17 and the Building Information Modelling Protocol, Clause 17 is to prevail.

Interval for Progress Meetings[^91]

Progress Meetings are the collaborative forum in which the details of the Contractor’s Working Schedule, and any revision or update of it, is reviewed in the light of the published Progress Records. It is also the forum in which the calculated time and cost effect of any Event is to be reviewed.

By the rules of interpretation in Clause 2.5.4, a meeting includes a virtual meeting by video or telephone conference, so long as the substance of it is recorded in writing.

No less than 5 Business days before each Progress Meeting, the following are required to be issued for review by the meeting.

- by the Contract Administrator
  - Database of the Contractor’s general submissions and responses[^92]
  - Database of the Contractor’s design submissions and responses where design is not using BIM[^93]
  - Instructions regarding any changes in the Employer’s time risk contingencies[^94]
- by the Time Manager

[^89]: Clauses 17.1.1 and 17.2.2.1.
[^91]: Clause 30.1.
[^92]: Clause 13.9.
[^93]: Clause 16.9.
[^94]: Clause 47.1.
• Database of the Contractor’s submissions of its Working Schedule and Planning Method Statement and responses\textsuperscript{95}
• Database of the Contractor’s submissions of its Progress Records and responses\textsuperscript{96}

by the Contractor
• Details of any early warning and the impacted Working Schedule and Planning Method Statement identifying the calculated effect of an Event\textsuperscript{97}
• Notice of any loss or expense that is likely to be caused, is being caused or has been caused by an Employer’s cost risk event\textsuperscript{98}
• Planned changes to any Contractor’s time risk contingencies.\textsuperscript{99}

The interval between Progress Meetings should be not so short that there is an unreasonable burden placed upon those having to prepare information for it, nor so long that the participants are deprived of a reasonable opportunity to manage the predicted consequences of emerging risks. If no period is stated then, by default, Progress Meetings are to be held 20 Business Days after the earlier of the Start Date or Access Date and at intervals of 20 Business days thereafter.

**Status Interval for Publication of Progress Records**\textsuperscript{100}

This is the interval at which the Contractor is required to regularly status the Progress Records database and publish it for acceptance so that it may be checked and accepted by the Project Time Manager, or rejected or conditionally accepted (with reasons) within 5 Business Days of the submission.\textsuperscript{101}

The obligation to publish for acceptance the Progress Records database\textsuperscript{102} commences on the stated interval following the Start Date or the Access Date, whichever is the earlier. If none is stated, the default period is 10 Business Days after the earlier of the Start Date and Access Date and at intervals of 20 Business Days thereafter. This requires the publication of the Progress Records 10 Business days before the default date of the Progress Meeting at which they and the Update Working Schedule (which relies upon them) will be considered.

\textsuperscript{95} Clause 37.11.
\textsuperscript{96} Clause 39.5.
\textsuperscript{97} Clause 43.6.
\textsuperscript{98} Clause 44.1.
\textsuperscript{99} Clause 46.1.
\textsuperscript{100} Clause 39.2.
\textsuperscript{101} Clause 39.3.
\textsuperscript{102} For the meaning and implications of publication see Clauses 2.5.8 and 36.
The model time-line on page 82 shows the relationship of the publication of Progress Records to the update of the Working Schedule, the Progress Meeting dates and valuation and payment. The optimum frequency for republication during the course of the Works of data collected will usually be weekly, fortnightly or monthly intervals, depending upon the number of records likely to be available for checking at the most intense period of working. The interval for update of the Working Schedule is 5 Business Days after acceptance of the Progress Records.

Status Interval for Revision of Working Schedule

Whilst all aspects of the Working Schedule should be reviewed and revised from time to time, the standard revision interval is related to the change from Medium Density to High Density of the work in which the logic will change from that which is generally Activity-based to what must be resource- and/or location-orientated.

The obligation to publish for acceptance the Draft Updated Working Schedule commences on the stated interval following the Start Date or the Access Date, whichever is the earlier.

The default first date for publication of a Draft Revised Working Schedule is 5 Business Days after the first Progress Meeting. The purpose of delaying the first revision until after the Progress meeting is to permit a proper review of the progress achieved to be made, independently of the effects of any change of intent, and to stagger the update and revision submissions throughout the duration of the Works thereafter. The model time-line on page 94 shows the relationship of the publication of the revision of the Working Schedule to the publication of Progress Records, update of the Working Schedule and the dates of Progress Meetings.

The change from Activity-based to resource- and/or location-based logic is expected to be incorporated in a revision made 60 Business Days ahead of the Data Date on which such work is scheduled to be carried out. In most projects unless there are peculiar reasons for reducing the High Density period to below 60 Business Days, a status interval of 20 Business Days will be adequate. This provides at least three reviews of the sufficiency of information, the proposed logic, the resources to be made available and their expected productivity before the work is actually carried out. If nothing is stated the interval is 20 Business Days.

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103 Clause 40.1.
104 Clause 41.1.
105 For the meaning and implications of publication see Clauses 2.5.8 and 36.
Interval Between Schedule Quality Assurance Audits

After appointment of the Contractor, an initial validation of the Contractor’s design of the Working Schedule and Planning Method Statement for compliance with Appendix D and its intentions for keeping Progress Records in compliance with Appendix E should be carried out on the materials submitted prior to commencement.

Subsequent and more detailed audits should then be carried out on the Progress Records, Working Schedule and Planning Method Statement at regular intervals and prior to any new work stage commencing.

When considering the frequency of schedule quality control audits, it should be borne in mind that the longer the period between audits, the longer the examination will take and the more serious are likely to be the consequences of any errors found. Accordingly, depending on the nature of the work being carried out, detailed audits should be carried out against Progress Records, the Working Schedule and Planning Method Statement at intervals no greater than two to three times the status interval for submission of the Progress Records. If nothing is stated, the interval is 60 Business Days from the earlier of the Start Date and the Access Date.

Post-Substantial Completion Retention Period

This is the period after a Certificate of Substantial Completion has been issued, or Partial Possession has occurred, during which the Contractor is responsible for making good at its own expense any defects notified to it.

Liquidated Delay Damages

There are three issues to be considered in relation to Liquidated Delay Damages:

1. Whether they are to apply at all, to the Works or to any Section.
2. If they are to apply in relation to the Works as a whole, then the limit on the period of delay and the rate at which the Liquidated Delay Damages are to apply.
3. If they are to apply to any Section, then the identity and value of that section together with the limit on the period of delay and the rate at which Liquidated Delay Damages are to apply.

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106 Clause 42.2.
107 Clause 42.1.
108 Clause 39.2.
109 Clause 58.
110 See Clause 48.
111 See Clause 49.
112 See Clause 56.
113 Clauses 57.1 and 57.2.
This part of Appendix B applies only to the first issue. If it is intended that Liquidated Delay Damages should be applied for the failure of the Contractor to achieve Substantial Completion of the Works or any Section by the Due Date, this must be indicated. If not indicated, then by default Liquidated Delay Damages do not apply.

Liquidated Delay Damages for Failure to Complete the Works

Where Liquidated Delay Damages for failure to complete the whole of the Works by the Relevant Substantial Completion Date apply, they are to be calculated by reference to the stated rate for the period between the Date identified in the Certificate of Failure to Complete and the Relevant Substantial Completion Date, up to the cap specified, if any, on the period of delay against which they may be levied.

The rate of Liquidated Delay Damages should be that which represents, at the Base Date, the reasonably foreseeable loss that the Employer is likely to suffer if the Works as a whole are not completed by the Date for Substantial Completion.

Notwithstanding that the Contract records that the parties are agreed that the rate of Liquidated Delay Damages is a pre-estimate of the Employer’s loss, care should be taken to ensure that the rate inserted is compliant with Applicable Law. A figure inserted as Liquidated Delay Damages which is not a genuine pre-estimate of loss, but which is intended to penalise the Contractor rather than to compensate the Employer, may be disallowed as a penalty at common law. Accordingly, the Contractor must be made aware of the calculation of Liquidated Delay Damages before the Contract is entered into and both parties should take appropriate legal advice on and ensure that they are content with the manner of calculation and that they stated Liquidated Delay Damages represent a genuine pre-estimate of likely loss.

The point is undecided in English law (although there is obiter authority) that where liquidated damages are construed as a penalty everything falls away including any cap or limit on liability for liquidated damages.

Accordingly, to overcome the obvious difficulties that such an interpretation brings, the Contract provides that if for any reason the provisions for Liquidated Delay Damages are subsequently found to be unenforceable at law, the Liquidated Delay Damages calculated for the period of delay up to

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114 Clause 57.1. See also “Appendix B, Damages for failure to complete a Section”, on page 25.
115 Clause 57.1.
116 Clause 57.4.
117 Clause 2.4 and see also “Appendix B, Base Date” on page 16.
118 Clause 57.3.
119 The concept is not unique to the common law, the French Civil Code, for example, also has the comparable concept of clause pénale.
120 See Steria Ltd v Sigma Wireless Communications Ltd, [2007] EWHC 3454 (TCC) at 114.
the limit on the period of delay, or, if none, the sum calculated by reference to the rates payable as Liquidated Delay Damages for the full period of delay to completion, are to act as a cap on the recoverable general damages for delay.\textsuperscript{121}

Provided that the Contract Administrator has issued a Certificate of Failure to Complete\textsuperscript{122} the Employer may deduct or withhold the Liquidated Delay Damages at the specified rate from monies due to the Contractor under any subsequent Notice of Payment Due and/or recover the amount due as a debt.\textsuperscript{123}

**Liquidated Delay Damages for Failure to Complete a Section**\textsuperscript{124}

Where it is indicated that Liquidated Delay Damages are to apply and it is intended that they are to apply for failure to complete by one or more Sectional Substantial Completion Dates the following information must also be identified in relation to each applicable Section:

1. The identity of the relevant Section
2. The value of the relevant Section calculated by reference to the data from the Contractor’s Pricing Document
3. The rate of Liquidated Delay Damages to apply in relation to the relevant Section, and
4. The limit on the permitted period of delay to the relevant Section.

The identity of the relevant Section must be that stated in the Special Conditions and identified in relation to the Contract Drawings, Contract Specification, Contract Model and/or Contract Bill of Quantities.

The value of the relevant Section is important where Liquidated Damages are leviable for a failure to achieve Substantial Completion of the Works as well as a failure in relation to an identified Section.\textsuperscript{125} Without the value of the Section it will not be possible to calculate the correct residual value of the Liquidated Delay Damages applicable to the remainder of the Works, which could render them unenforceable.

Provided that the Liquidated Delay Damages can be calculated to apply they will be calculated by reference to the relevant rate for the period between the date identified in the Certificate of Failure to Achieve Substantial Completion and the relevant Sectional Substantial Completion Date.\textsuperscript{126}

\textsuperscript{121} Clause 57.4.
\textsuperscript{122} Clause 56.1.
\textsuperscript{123} Clause 57.5.
\textsuperscript{124} Clauses 5.4.1, 5.4.2 and 57.2.
\textsuperscript{125} Clause 5.4.2.
\textsuperscript{126} Clause 57.2.
Where a limit on the period during which Liquidated Delay Damages is indicated to apply in relation to the Relevant Section it will provide a basis for the calculation of a cap for the purposes of general damages, if Liquidated Delay Damages are found to be unenforceable and it will also identify a date after which the Employer may terminate for undue delay.

The rate of Liquidated Delay Damages should be that which represents, at the Base Date, the reasonably foreseeable loss that the Employer is likely to suffer if the relevant Section is not completed by the relevant Sectional Substantial Completion Date.

Notwithstanding that the Contract records that the parties are agreed that the rate of Liquidated Delay Damages is a pre-estimate of the Employer’s loss, care should be taken to ensure that the rate inserted is compliant with Applicable Law. A figure inserted as Liquidated Delay Damages which is not a genuine pre-estimate of loss in relation to the relevant Section, but which is intended to penalise the Contractor rather than to compensate the Employer, may be disallowed as a penalty at common law.

Accordingly, the Contractor must be made aware of the calculation of Liquidated Delay Damages before the Contract is entered into and both parties should take appropriate legal advice on and ensure that they are content with the manner of calculation and that they stated Liquidated Delay Damages represent a genuine pre-estimate of likely loss.

Limit on the period of delay to completion

The Employer should identify a long-stop period, after the end of which it is no longer willing to accept Liquidated Delay Damages in compensation for culpable delay and after which it is entitled to terminate the Contractor’s employment for default. If no limit is specified on the period of delay for which Liquidated Delay Damages may be taken, then the Contractor’s employment may not be terminated for default on the grounds of excessive delay to completion alone and the Employer is then left with the choice of:

- leaving the Contractor to complete when it can, or
- terminating the Contractor’s employment without fault.
Limit of Liability

If the Contractor fails to comply with properly and reasonably issued instructions for recovery of the Contractor’s culpable delay, or for acceleration, and, as a result, the Contractor fails to achieve Substantial Completion by a Relevant Substantial Completion Date then, following the Contract Administrator’s certificate to that effect, the Employer will be entitled to the specified Liquidated Delay Damages for the Contractor’s failure to complete by the Relevant Completion Date. However, aggregated Liquidated Delay Damages for delay to completion to which the Employer is then entitled will not always adequately compensate for the loss that the Employer actually suffers when the Works are not completed on time. Accordingly, Clause 50 provides that where, contrary to instructions, the Contractor fails to take the reasonable and appropriate action it was instructed to take, the Contractor will become liable for the actual losses the Employer suffers over and above the Liquidated Delay Damages recoverable.

Where the actual losses are expected to be so high as to not be realistically payable (or commercially viable for the Contractor), this clause provides for the Contractor’s liability to be capped at a commercially acceptable level.

Retention Fund for Making Good Defects

The Contract provides the Employer with two alternatives regarding the security it may need if it incurs the cost of making good defects: a retention fund or a Retention Bond.

The purpose of the retention fund is to provide an accruing portion of the Current Contract Value to be set aside against the costs likely to be incurred by the Employer in arranging to have defects made good, if such defects are not corrected by the Contractor at its own expense within the required period.

A figure of between 2% and 10% retained may be considered reasonable depending upon the scale, complexity and risk of default. However, the more supervision and testing carried out during the Works, the more reliable the Contractor and the less scope there is for defects, then the lower the proportion of Current Contract Value retained against defects should reasonably be. If none is stated, the default retention fund is 2.5% of the Current Contract Value.
The sum retained under this provision does not belong to the Employer but is held by the Employer on trust for the Contractor. If the Employer uses for its own purposes any of the funds deducted, it will amount to a breach of trust for which the remedy is an application to the court of local jurisdiction.

When the Certificate of Substantial Completion has been issued, half the retention fund is to be released to the Contractor with the second half becoming due for release when the Contract Administrator’s Certificate of Making Good Defects is issued at the end of the Post-Substantial Completion Retention Period.

Retention Bond

Where a Retention Bond is adopted, its terms must be set out in the Special Conditions and so long as the Bond is in place the terms regarding a retention fund will be inapplicable.

Interval of Statement of Current Value

This is the period after deemed or actual acceptance of the Draft Updated Working Schedule during which the Cost Manager is to prepare and issue to the Contract Administrator a statement of the Current Contract Value. If nothing is stated, the default interval is 10 Business Days.

Within 5 calendar days (excluding Bank Holidays or Public Holidays) after the issue of the statement of Current Contract Value, the Contract Administrator is to serve its Notice of Payment Due, following which the Employer must make payment before the final date for payment.

Final for Date Payment

This is the period following the issue of a Notice of Payment Due within which the paying party must make payment. If none is stated, the default period for payment is 20 Business Days from the date of the Notice.

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143 Clause 59.2.
144 Clause 63.2.
145 Clause 59.4.
146 Clause 61.1.
147 Clause 40.5.
148 See definition of Notice Date in Appendix A
149 Clause 64.1.
150 Clause 66.
151 Clause 66.3.1 and Clause 66.5.1.
Interest Rate

This is the rate of interest which is to be added to the principal sum in compensation for the effect of late payment. The rate identified should be calculated to be compensatory for the loss the payee is reasonably likely to suffer in the event of non-payment by the due date and should not be punitive, or by Applicable Law it may be disallowed as a penalty.

The rate is to be identified as either a simple or a compound interest rate together with the rests at which the interest due is to be calculated. If nothing is stated the default rate of interest is defined as being five per cent per annum, simple, above the Official Dealing Rate.

Official Dealing Rate

The Official Dealing Rate should be that set by the governing bank of the region or state in which the Site is situated. If nothing is stated, the default Official Dealing rate is that set by the Bank of England at the date that the payment became overdue.

Principal Expert

This is the named Expert who is to administer the Issue Resolution procedure identified in Appendix G and to produce any Determination required. Normally, this role will be taken by one of the listed experts.

However, if none is identified, or the named individual is unable to act, then the Principal Expert can be agreed by the parties or, in default of such agreement, is to be appointed by the Appointing Body for the Expert.

List of Experts

Appendix B makes provision for the appointment of experts to assist the Principal Expert in contemporaneous Issue Resolution. The Appendix anticipates the appointment of experts in eleven suggested disciplines, but the expert in Time Management also fills the role of the Auditor under the Contract and is an essential appointment.

If more experts or more details of the experts are required, they should be set out in the Special Conditions. Ideally, the proposed experts should be identified at tender stage and agreed to in the Contractor’s Pricing document.
Appointing Body

The Contract Appendices make provision for the nomination of an Appointing Body to make the appointment of the Principal Expert, Adjudicator and Arbitrator. If none is identified, the appointing body for the Principal Expert is The Academy of Experts, and that for the Adjudicator and Arbitrator is the CIOB.

Adjudication

A number of countries, including the UK, have passed legislation making adjudication available to anyone carrying out work within the description of relevant operations. Section 108 of the Housing Grants, Construction and Regeneration Act 1996, which applies to England, Wales and Scotland, makes adjudication available “at any time” to any party to a construction contract having a dispute or difference. Where statutory adjudication is unavailable under the Applicable Law, the parties may elect to have adjudication as a primary form of dispute resolution under the Contract. In such cases unless stated otherwise, adjudication will be available to the parties, by default.

Rules of Adjudication

If the Applicable Law does not require adjudication but nevertheless the parties wish to adopt adjudication as their primary dispute resolution forum, they may choose the adjudication rules under which the adjudication will be processed. If adjudication is selected as a dispute resolution forum, but no rules are identified, by default the rules are to be those of UK Statutory Instrument 2011 No. 2333, The Scheme for Construction Contracts (England and Wales) Regulations 1998 (as amended).

The Adjudicator

The parties may name the Adjudicator in the Contract. The advantage of naming the same adjudicator across the suite of contracts for a project should lead to greater consistency between the various adjudication decisions, regardless of joinder/consolidation of claims. Where none is stated,
the Adjudicator may later be agreed between the parties, or, if none is agreed, will be appointed by
the appointing body for the Adjudicator.\textsuperscript{163}

Final Dispute Resolution Mechanism\textsuperscript{164}

If the Employer wishes to have disputes resolved by the courts of a particular jurisdiction then
relevant jurisdiction must be stated in Appendix B. Otherwise, final dispute resolution will be
by arbitration.

Rules of Arbitration\textsuperscript{165}

Unless Appendix B identifies the courts of a particular jurisdiction as the forum for final dispute
resolution the final dispute resolution forum is arbitration. Parties are at liberty to agree the rules
by which any arbitration is to be conducted, but if none is identified, the default rules are those
current at the Base Date of the London Court of International Arbitration.\textsuperscript{166}

The Arbitrator\textsuperscript{167}

As with adjudication, the advantage of naming the same arbitrator across the suite of project
contracts should lead to greater consistency between arbitral decisions, regardless of
joinder/consolidation of claims. Where none is named, the Arbitrator may be agreed between
the parties, or, if none is agreed, the appointment is to be made by the Appointing Body.\textsuperscript{168}

APPENDIX C

Table 1 of Appendix C contains a description in terms of geometry, precision, content and use of the
design at each Design Stage and Design Level of Development to which the Contract Specification
requires the Contractor to design.

The project-specific data required to be inserted in Appendix C is the Contributor for each Design
Level of Development of each relevant Design Element. Where Table 2 does not reflect the nature
of the work contemplated, it should be deleted and replaced with an appropriate and suitable design
element/design stage/design author responsibility matrix.
The Special Conditions, Contract Specification and the Building Information Modelling Protocol are to identify any other requirements including any limitation on the Design Stage or Design Level of Development to which the Contractor is required to contribute and the particular Models required.\footnote{See also “Key Features, Exchange of Information, Building Information Modelling”, on page 83.}

## APPENDIX D

Appendix D contains the performance specification for the Working Schedule. This is the core document upon which any post-Contract Design Contribution and the production of the Works on Site are to be managed and controlled.\footnote{See also “Key Features, The Dynamic Time Model”, on page 58.}

The Working Schedule is to contain the data described in Paragraphs D3 and D4 coded according to the data fields and values identified in Paragraphs D5 to D11. Where the Contractor is to design the whole of the Works, or is required to make a Design Contribution, the Working Schedule is to contain details of the Contractor’s design submissions and any submissions for licensing or permissions identified in Paragraph D4. The Working Schedule submissions are to be managed by means of a database and, if not managed in a Common Data Environment which tracks such communications automatically, the Time Manager is to keep a log of submissions in accordance with paragraph D13. The project-specific data required to be inserted in Appendix D is as follows:

- the software to be used for the Working Schedule\footnote{Paragraph D1. There are many software products available, of varying degrees of usefulness. Not all offer the facilities needed to manage time on major projects. The CIOB Guide (See Note 1) provides a listing of the features that are most desirable.}  
- the maximum duration of planned Activities for\footnote{Paragraphs D7 and D8.}  
  - the High Density period between the data date and three months after the Data Date  
  - the Medium Density period between 4 months and 9 months after the Data Date  
  - the Low Density period more than 9 months after the Data Date  
- the identity of the Contract Drawings, and/or Contract Specification and/or Contract Models and/or Contract Bill of Quantities\footnote{Paragraph D10.} identifying the parts to be coded as:
  - Sections  
  - sub-sections  
  - levels, and  
  - zones
data entry fields required to be kept in addition to the default standard data fields in regard to:

- Design Contributors
- Milestones and
- trades.

APPENDIX E

Appendix E contains the performance specification for the maintenance of Progress Records. Depending upon the type of work, Progress Records may be made daily or even more frequently. In rail and similar work, for example, in short possessions, it may be expedient to make records hourly, or even half-hourly, depending upon the number of Activities and the complexity of their interrelationships at the time the progress is being recorded.

The Contract requires the Progress Records to be kept on a database, to be published for acceptance at regular intervals. This Appendix contains a default specification for the database fields which will usually be required and the management of input and output from the database. The Records are to be fully cross-referenced to the Working Schedule. This means that each data entry must identify the Activity ID and Activity Description on the Working Schedule to which it relates.

The data required to be inserted in Appendix E is as follows

- the types of records to be made and kept other than the specified default types
- the software to be used for the database
- data entry fields required to be kept in addition to the default fields in regard to:
  - a change of, or unplanned Contractor’s design Activities, not contemplated in the Working Schedule
  - a change of, or unplanned production Activities, not contemplated in the Working Schedule

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174 Paragraph D12, a.
175 Paragraph D12, b.
176 Paragraph D12, h.
177 Clause 39.2.
178 Paragraph E3.
179 Paragraph E1.
180 Paragraph E2. Some scheduling software products contain a Progress Records database; others interface with time control software which contains the necessary features. Otherwise, generally available database software should be sufficiently powerful.
181 Paragraph E5, b.
182 Paragraph E6, b.
• approvals, information, drawings, design model information, details or instructions
  • requested
  • supplied
• quality control, and
• Events

A database log of submissions and acceptance or rejections is also to be kept by the Time Manager and made available to the Contractor, Contract Administrator and Listed Persons 5 Business Days before each Progress Meeting.

APPENDIX F

Appendix F is a table in three parts stating the descriptions of the foreseeable occurrences which may delay the progress of the works.

The first part, Paragraphs F1 to F15, are those Events identified as being within the control of the Employer, or under the control of those acting under the Employer’s direction and at the Employer’s risk as to both time and cost. If any of those Events described in Paragraphs F1 to F15 occur to delay the progress of the Works the Contractor may become entitled to an extension of time and/or compensation. No change should ever be made to those Paragraphs F1 to F15 as, depending upon the Applicable Law, if one should occur to delay a Relevant Date for Substantial Completion and the Employer was not empowered to extend the time for performance, the Employer Risk Event could be construed as an act of prevention which could remove the Contractor’s obligation to complete by the Due Dates. The second part contains the descriptions of those other occurrences, which are not normally within the Employer’s or Contractor’s control, and are identified as discretionary Events at Paragraphs F16 to F23. By striking out the option which does not apply, these risks can be indicated to be at the Employer’s or Contractor’s risk, as to time, and/or cost, as the parties determine according to the commercial desirability of the chosen risk allocation. If no selection is made of the options in relation to each risk, by default it is at the Contractor’s risk as to Time and Cost.
The third part of this Appendix provides space for a further 11 project-specific risks to be defined and allocated to the Employer or Contractor (by striking out the option in relation to each described risk which does not apply). In order to avoid ambiguity, care must be taken to make sure that each risk is clearly described and that those risks which are actually or ostensibly within the control of the Employer, its employees, consultants or directly appointed contractors are not allocated to the Contractor (see first part, Paragraphs F1 to F15 above).

The Contract also provides that, irrespective of whether it is identified as being the Employer’s or Contractor’s risk, if any of the occurrences described in Appendix F occurs to delay the progress of the work for a continuous period of 120 Business Days or more, either party may notify the other that if the suspension continues for a further five Business Days it intends to terminate the Contractor’s employment under the Contract.\(^\text{190}\)

APPENDIX G

This contains the procedure for Issue Resolution. It sets out the role, responsibilities, powers and duties of the Principal Expert, and of other Experts, procedural matters, time scales, and so on.\(^\text{191}\)

CONTRACT MODEL

Where a Model is prepared as a Contract Document, the Drawings are to be generated from the Model and hence, for the purposes of identifying the consequences of inconsistencies between them, the Model must rank in priority above any Drawings included in the Contract Documents.\(^\text{192}\)

A Federated Model is a collection of separate Models which can be combined electronically for the purposes of, for example, conflict checking.

CONTRACT DRAWINGS

The Contract Drawings are to be listed as Contract Documents in the Contract Agreement. Drawings are defined as two-dimensional plans, sections, elevations, details, sketches, three dimensional projections that are not extracted from a Model and two-dimensional projections extracted from a Model which are supplemented with data, information or projections, any of which are not extracted from a Model.

\(^{190}\) Clause 71.1.2. See also “Key Features, Termination”, on page 85.

\(^{191}\) See “Key Features, Issue and Dispute Resolution”, on page 88.

\(^{192}\) Clause 3.3.
**CONTRACT SPECIFICATION**

Unless the Contract Specification is contained in the Contract Bill of Quantities, a separate Contract Specification is required. This will usually contain details of anything specifically required by the Employer in connection with the procedures and standards of performance required to carry out the Works. The following is intended as a brief checklist of those project-specific details, the description of which the Contract Conditions and Appendices require to be set out in the Specification:

- The work required to be constructed by the Contractor
- The work required to be designed by the Contractor
- Temporary Work required
- Testing required
- Completion Testing required before Substantial Completion
- Operation manuals required before Substantial Completion
- Permanent Plant
- Predicted Climatic Conditions
- Any Findings expected to be discovered on the Site
- Special standard of the Reference Design
- Description and location of the Site
- Welfare Facilities to be provided by the Employer
- Work to be carried out by the Employer or others engaged by the Employer
- Where the Working Schedule is to not include the Design Execution Plan
- Where the Progress Records are not required to include Contractor’s design progress records
- The date of supply of specific information
- Whether the Contractor is to design the whole of the Works
- Design Stages to which the Contractor’s Design is to be prepared
- Where the Contractor is to design the whole of the Works using BIM
- Any labour, goods, materials or plant not required to be provided by the Contractor
- Standard required of the Contractor’s labour, goods, materials and Contractor’s Plant
- Where samples are required for approval of work, goods, materials and/or plant
- Materials or goods to be supplied by the Employer as Free Issue

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194 Appendix F, Paragraph F21.
195 Appendix D, Paragraph D4.
196 Appendix E, Paragraph E5.
197 Clause 12.4.3.
198 Clause 15.1.
199 Clause 16.2.4.
200 Clause 17.3.
201 Clause 24.3.
202 Clause 24.3.
203 Clause 24.6.
204 Clause 24.8.
the time for delivery of Free Issue materials and goods\textsuperscript{205}
any limitation on Working Hours\textsuperscript{206}
any limitation on Business Days\textsuperscript{207}
the terms and conditions under which the Employer will provide any area required for Temporary Buildings\textsuperscript{208}
the terms and conditions under which the Employer will provide any area required for Laydown\textsuperscript{209}
any listed Subcontractors\textsuperscript{210}
Employer’s Prime Cost, Provisional and Contingency Sums required\textsuperscript{211}
Employer’s Time Contingencies required\textsuperscript{212}

**CONTRACT BILL OF QUANTITIES**

In general, the Bill of Quantities is not prepared for the purposes of construction, but as a vehicle for obtaining a contract sum and valuing changes to it. Accordingly, where a Bill of Quantities is identified as a Contract Document, it will form the basis of the Contractor’s Pricing Document. Unless the Employer provides an Activity-based Bill of Quantities as a part of the bid documents it is often preferable for the Bill of Quantities used for bidding to be trade-based and the subsequent allocation of costs to Activities carried out by the successful Contractor\textsuperscript{213}

The Bill of Quantities sets out the quantity and quality of the Works required by the Employer and, unless the description within the Bill of Quantities defines the quality and quantity of work by making reference to a particular Drawing or Specification clause, it is the sole document upon which the pricing is based. On the other hand, depending upon the adopted Method of Measurement, reference to a Model or Drawings may be required in order to give an idea of complexity, which may not be required to be stated in the chosen Method of Measurement\textsuperscript{214}

Ultimately, it will be beneficial for quantities to be operationally allocated so that resources can more easily be allocated to Activities in the Working Schedule.

Where a Model or Federated Model is prepared as a Contract Document, or the Contractor is required to design the whole of the Works using Building Information Modelling, the quantities of materials will be extracted from the Model and no separate Bill of Quantities is required\textsuperscript{215}

\textsuperscript{205} Clause 24.8.1.
\textsuperscript{206} Clause 24.17.
\textsuperscript{207} Clause 24.17.
\textsuperscript{208} Clause 25.1.
\textsuperscript{209} Clause 25.5.
\textsuperscript{210} Clause 29.3.
\textsuperscript{211} Clause 31.1.1.
\textsuperscript{212} Clause 45.1.
\textsuperscript{213} Clause 38.
\textsuperscript{214} See “Appendix B, Method of Measurement” on page 16.
Where a Model does not form a part of the Contract Documents there are five possibilities as to the role a Bill of Quantities might take; it may be:

1. prepared by, or on behalf of the Employer, forming the basis of the Contractor’s lump sum contract price for the Works
2. the basis of the Contractor’s bid or bid aggregate price where the Contract is based upon remeasurement
3. a quantified schedule of rates to be used only for the valuation of Variations
4. a partly quantified schedule of rates, or
5. ad hoc quantities to provide for provisional allowances.

1. Prepared by, or on behalf of the Employer, forming the basis of the Contractor’s lump sum price for the Works

Under this option, the Bill of Quantities will be prepared by the Cost Manager named in the Contract Agreement and measured in accordance with the Method of Measurement Specified in Appendix B. The accuracy of the quantities and description is then the Employer’s responsibility. Whilst it is theoretically possible to shift the risk of liability to the Contractor for the cost of an error in the Bill of Quantities, no such exclusion or limitation appears in the Contract and if there is a divergence between the Bill of Quantities and what is actually required to be built (whether shown on the Contract Drawings or by subsequent amendment to the Contract Drawings) it will be dealt with as a Variation and will be an Employer’s Time and Cost Risk Event.\(^{216}\)

2. Bill of Quantities is the basis of the Contractor’s price for the Works to arrive at a “bid” sum

Under this option, the Bill of Quantities will be prepared by the Cost Manager named in the Contract Agreement and measured in accordance with the Method of Measurement Specified in Appendix B. However, this option is used when at the time of pricing the work, the Works have not been fully designed and the scope cannot be accurately defined. Accordingly, this type of document is commonly referred to as a bill of approximate quantities.

Before this can be used as the Contractor’s Pricing Document, the design must be refined to a state in which it is possible to identify the Activities to be carried out in sufficient detail for the costs to be allocated to the Activities in the High Density\(^{217}\) part of the Working Schedule.

As with option 1, above, with this possibility the risk of the accuracy of the quantities and description remains with the Employer.\(^{218}\)

\(^{216}\) See Appendix F, Paragraphs F1, F4, F6 and F7.
\(^{217}\) See Clause 38.3 and Appendix D, Paragraphs D7 and D8.
\(^{218}\) See Appendix F, Paragraphs F1, F4, F6 and F7.
3. Bill of Quantities is a quantified schedule of rates and used for the valuation of variations only

This option applies wherever a lump sum contract is required and where the Employer wishes to control the mechanism for pricing of variations, for example where the Contractor is required to design the whole of the Works or, where the design is based upon a Model or a Federated Model.\(^\text{219}\) Under this option the Contractor takes responsibility for whatever quantification it adopts for the purposes of pricing. However, for the purposes of the Contractor’s Pricing Document, the pricing must be Activity based and be related to the Working Schedule.\(^\text{220}\)

4. Bill of Quantities is a partly quantified schedule of Works

In this option the Bills of Quantities are prepared by or on behalf of the Employer, but is only a part of the matrix of documents which the Contractor is required to price to arrive at a contract price. This document may be a hybrid of options 1–3, above.

5. Ad hoc quantities to provide for provisional allowances

This is a hybrid of item 1. A lump sum contract based on Bill of Quantities is intended to be an accurate reflection of the scope of works (not approximate or subject to measurement with variations being dealt with on an add and omit basis). That is to say that there will only be a change in the cost of work done where either a variation has been instructed or a conflict/error is found.

However it is commonplace in a lump sum contract based on Bill of Quantities, to include ad hoc provisional quantities to deal with such things as BWIC\(^\text{221}\) since, (notwithstanding the underlying presumption of the use of a lump sum Bill of Quantities contract is that the scheme has already been fully designed), the reality is that the Works are rarely fully designed and where they are not, the author of the Bill of Quantities has to make assumptions by filling the gap with provisional quantities. Provisional quantities are also used on an ad hoc basis to deal with unknowns such as breaking out pre-existing structures and ground-related issues.

### CONTRACTOR’S PRICING DOCUMENT

Details of the Contractor’s pricing of the Works are to be kept confidential.\(^\text{222}\) Where the Contract Documents include a Bill of Quantities, the priced Bill of Quantities will usually be the basis of the Contractor’s Pricing Document.\(^\text{223}\) However, unless the Contractor’s Pricing Document is Activity based, before the rates and prices can be transferred to the Working Schedule, the allocation of costs between Activities and Levels of Effort must be agreed with the Cost Manager.\(^\text{224}\)


\(^\text{220}\) See Clause 38 and Appendix D.

\(^\text{221}\) “Building Work in Connection With...”

\(^\text{222}\) Clause 18.

\(^\text{223}\) See Also “Contract Bill of Quantities”, on page 37.

\(^\text{224}\) Clause 38.10.
Apart from the usual items for pricing, consideration should be given to how the Contractor should be required to price the work involved in complying with the Contract requirements for:

- publication of design and time and cost management information
- preparation of the Working Schedule
- revisions to the Working Schedule
- Progress Records
- updates to the Working Schedule and
- Progress Meetings.

These should not be included as unspecified items in a general Preliminaries or Overheads items, but should be priced as separate elements of cost. This may become important if they are not properly performed as without an individual priced element, it will be difficult to identify the value to be deducted from valuations for non-performance.

Depending upon the experience of the Contractor involved, at tender or bid stage there may also be a benefit to be achieved in identifying these items to be covered by a Provisional Sum or, for matters other than the Progress Meetings, a Prime Cost Sum. When the value is identified as a Prime Cost or Provisional Sum, any difference between the Provisional or Prime Cost Sum and the effect of the actual work and cost required will be an Event.

If provided, a Provisional Sum, or Prime Cost Sum, should not include the costs of:

- the correction and resubmission of any rejected or conditionally accepted submission
- impacting the effect of Events
- instructed acceleration, and

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225 Clause 2.5.8 and see also “Publication” on page 56.
226 Clause 37 and Appendix D.
227 Clause 41 and Appendix D.
228 Clause 39 and Appendix E.
229 Clause 40 and Appendix D.
230 Clause 30.
231 Clause 61.2.1 and 61.2.2.
232 Clause 30.
233 In the past, Contractors have been required to include their costs of complying with management requirements in their general, project-wide Preliminaries, without identifying the costs individually. In many construction contracts this has proved to be an unsatisfactory arrangement. Contracts have tended to be awarded to those contractors with lowest Preliminaries and Overhead costs who did not plan to spend too much time or money managing the Works. The result has generally been manifest in confusion, delay and claims. The purpose of the Provisional or Prime Cost Sum is to take out of the bidding equation the costs of scheduling and recording the construction process and to make the cost of those elements a common factor amongst all bidding contractors.
234 Appendix F, Paragraph F2.
235 These are at the Contractor’s risk for which it should allow its own contingencies, if thought necessary.
236 Clauses 43 and 44. This is a cost arising directly as a result of the Event concerned and is properly recoverable under Clause 60.1.4.
237 Clause 49.
Because the software and hardware will have a value to the Contractor beyond any particular contract, it is recommended that purchase, installation and any training in the use of the specified software and any necessary computers be a cost to be included in the Contractor’s priced bid in the item of general Overheads and Profit.

Apart from including the cost of the labour, goods, plant and materials for carrying out the Works, the Contractor’s Pricing Document should also include separate rates and prices for:

- trades and ranks
- Activities
- Design Elements
- Preliminaries
- dayworks
- Overheads and Profit
- Prime Cost Sums
- Provisional Sums, and any
- Employer’s Cost Contingency.

The Contractor’s Pricing Document must contain Provisional Sums for work which is defined or undefined and state whether Preliminaries are included for them. It is important that the rates for Preliminaries and Overheads and Profit are set out individually and identified in the Working Schedule as priced Levels of Effort. The Contract makes it clear that the Contractor is to include in its Working Schedule either the time allowance identified in the Specification or, if none is specified, then a fair allowance for such provisional work. If no rate is indicated, it is deemed to be agreed that the Contractor is not entitled to recover Preliminaries and/or Overheads and Profit as a part of the loss and/or expense incurred as a result of any of the Employer’s Cost Risk Events. Apart from that, without an adequate pricing mechanism, the Contractor may not be fully compensated in the event of termination for Employer default.

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238 Clauses 48. This is a matter at the Contractor’s risk for which it should allow its own contingencies, if thought necessary.

239 It is important to recognise that there is a difference between the rates for ranks within trades as well as between trades. For example, master tradesman, apprentice, labourer, etc.

240 A method of valuing work based upon “all-inclusive rates” usually used when the extent of work required cannot be foreseen and the bid rates are inapplicable. The all-inclusive rates, include not only the prime cost of labour but also an allowance for incidental costs, overheads and profit. The all-inclusive rates are fixed for the period of the Contract. However, where a fluctuating price contract is used, or where the rates in the contract are to be index-linked, the all-inclusive rates are adjusted by the appropriate index in accordance with the Special Conditions.

241 Clause 38.4.

242 Clause 45.1.

243 Care should be taken to avoid conflicts when using the UK standard SMM7 as the Method of Measurement. SMM7 only requires an allowance to be made for “defined” provisional sums. According to the definition contained in SMM7, where they are “undefined” no allowance for time or preliminaries is to be made against the undefined provisional sum and this is in conflict with Clause 45.2.

244 See Clause 38.5 and Clause 60.1.3.

245 Clause 70.7.1.
CONTRACTOR’S DESIGN

By definition, Contractor’s Design includes the design or Design Contribution prepared by or under the direction of the Contractor comprising Drawings and any specifications, calculations, analyses, or other information relating to the design or Design Contribution, or a Model prepared by or under the direction of the Contractor and any drawings specifications, calculations, analyses, or other information extracted from the Model, or any other design or Design Contribution for which the Contractor is required to assume responsibility.

DEVELOPMENT SCHEDULE

The Development schedule is defined as a critical path network schedule, prepared by or on behalf of the Employer which identifies the planned process of project procurement from inception to completion and which functions as the Employer’s time and cost model for the project as a whole.

In those projects containing a single contract for the Works to be carried out and managed by a single Contractor, in which procurement does not start until after the Contract is signed, the Development Schedule will have no part to play in the construction Contract. However, where pre-contract procurement is required of specialist components, enabling works are necessary, work is to be carried out by multiple prime contractors, or where the Special Conditions are written to enable the Works to be carried out by the procurement method known as Management Contracting, then the Development Schedule identifying the intended relationship between the various procurement contracts may be a necessary Contract Document.

The particular version of the Development Schedule required as a Contract Document must be identified in the Contract Agreement.

OTHER DOCUMENTS FORMING A PART OF THE CONTRACT

Other documents which are to be included in the Contract Documents will depend upon the special circumstances of the particular project. Other documents should be listed as Contract Documents in the Contract Agreement.
Roles and Responsibilities

EMPLOYER

The Employer is the party identified in the Contract Agreement as being responsible for paying for the Works.\textsuperscript{246}

CONTRACTOR

The Contractor is the party identified in the Contract Agreement as being responsible for carrying out the Works and, so far as concerns Contract, the term Contractor includes Subcontractors and suppliers employed by or working under the direction of the Contractor.

SUBCONTRACTORS

Subject to the Contract Administrator’s approval, Subcontractors may be employed to carry out any Activity, or part of the Works on behalf of the Contractor. Where it is stated in the Specification, the Contract Administrator’s prior authority to subcontracting any specified part is not required.\textsuperscript{247} The CIOB Time and Cost Management Subcontract, 2015 Edition, should be used as, or incorporated in, the subcontract conditions of contract.\textsuperscript{248} This provide consistency with and transparency between the terms of the Contract and those of the Subcontract. The Subcontract deals with the following standard matters:

- Defined Terms\textsuperscript{249}
- Interpretation\textsuperscript{250}
- The Subcontract\textsuperscript{251}
- Obligations of the Parties\textsuperscript{252}
- Commencement and Completion\textsuperscript{253}
- Authorised Representatives and Site Supervision\textsuperscript{254}
- Communications\textsuperscript{255}

\textsuperscript{246} In other standard forms this party has also been called the “Government”, “Owner”, “Client”, “Authority”, “Purchaser”, “Principal”, etc.

\textsuperscript{247} Clauses 29.2 and 29.3.

\textsuperscript{248} Clause 29.4.

\textsuperscript{249} Clause 1.

\textsuperscript{250} Clause 2.

\textsuperscript{251} Clause 3.

\textsuperscript{252} Clause 4.

\textsuperscript{253} Clause 5.

\textsuperscript{254} Clause 6.

\textsuperscript{255} Clause 7.
Subcontractor Collateral Warranties
Security for Subcontractor’s Performance
Insurances
Information
Subcontractor’s Requests for Supply
Subcontractor’s Submissions
Intellectual Property
Design Execution Plan
Subcontractor’s Design Contribution
Building Information Modelling
Confidentiality
Findings
Unforeseeable Conditions
Temporary and Ancillary Work and Contractor’s Facilities
Health, Safety and Welfare
Subcontractor’s Methods
Labour, Plant and Materials
Temporary Buildings and Laydown
Quality Control
Completion Testing
Access
Permits and Licences

Clause 8.
Clause 9.
Clause 10.
Clause 11.
Clause 12.
Clause 13.
Clause 14.
Clause 15.
Clause 16.
Clause 17.
Clause 18.
Clause 19.
Clause 20.
Clause 21.
Clause 22.
Clause 23.
Clause 24.
Clause 25.
Clause 26.
Clause 27.
Clause 28.
Clause 29.
Assignment and Sub-subcontracting
Site Meetings
Contractor’s Instructions
Variations
Valuation of Variations
Early Warning
Risk Management
Failure to Provide Risk Management Information
Subcontractor’s Scheduling Contribution
Incorporation of Subcontractor’s Pricing Document
Progress Records
Updated Scheduling Contribution
Revised Scheduling Contribution
Calculation of Effect of Event on Time
Calculation of Effect of Event on Cost
Float and Time Contingencies
Subcontractor’s Improvement of Progress
Contractor’s Improvement of Progress
Instructed Recovery
Instructed Acceleration
Failure to Comply With an Instruction to Recover or Accelerate
Extension of Time
Concurrency
Partial Possession and Use of the Subcontract Works
Handover
Making Good Defects
Failure to Achieve Handover
Liquidated Delay Damages
Limit of Liability
Retention Fund
Working Schedule and Planning Method Statement
Predicted Subcontract Cost
Current Subcontract Value
Penultimate Subcontract Value
Final Subcontract Value
Contractor’s Notice of Payment Due
Subcontractor’s Notice of Payment Due
Payment
Interest on Unpaid Amounts
Termination Without Fault
Termination for Subcontractor Insolvency or Default
Termination for Contractor Insolvency or Default
Termination for Impossibility, Illegality or Prolonged Suspension
Consequences of Termination

300 Clause 52.
301 Clause 53.
302 Clause 54.
303 Clause 55.
304 Clause 56.
305 Clause 57.
306 Clause 58.
307 Clause 59.
308 Clause 60.
309 Clause 61.
310 Clause 62.
311 Clause 63.
312 Clause 64.
313 Clause 65.
314 Clause 66.
315 Clause 67.
316 Clause 68.
317 Clause 69.
318 Clause 70.
319 Clause 71.
320 Clause 72.
321 Clause 73.
Issue Resolution
Dispute Resolution

The Standard form of Time and Cost Management Subcontract also contains the following Contract Appendices

APPENDIX 1 Defined Terms
APPENDIX 2 Contract Particulars
APPENDIX 3 Building Information Modelling
APPENDIX 4 Working Schedule
APPENDIX 5 Progress Records
APPENDIX 6 Events
APPENDIX 7 Issue Resolution.

There are no special conditions for nominated Subcontractors in this form. If the Contract Administrator wishes any part of the Works to be carried out by a specific Subcontractor, the particulars must be clearly defined and made a term of the Contract by being setting out in the Special Conditions.

CONSULTANTS

The CIOB Consultancy Appointment is written to promote consistency with and transparency between the terms of the appointment of the Consultants and those of the Contractor working under the Contract and those of the Subcontractor working under the terms of the Subcontract. The Consultancy Appointment deals with the following standard matters

Defined Terms
Interpretation
The Appointment
Obligations of the Parties
Commencement and Completion
Authorised Representatives
Communications

\[\text{Clause } 74.\]
\[\text{Clause } 75.\]
\[\text{See “Special Conditions”, on page } 12.\]
\[\text{Clause 1.}\]
\[\text{Clause 2.}\]
\[\text{Clause 3.}\]
\[\text{Clause 4.}\]
\[\text{Clause 5.}\]
\[\text{Clause 6.}\]
\[\text{Clause 7.}\]
Collateral warranties
Insurances
Security for Consultant’s Performance
Information
Submissions
Intellectual Property
Design Execution Plan
Design Contribution
Building Information Modelling
Continuing Design Services
Confidentiality
Personnel
Access and Accommodation
Permits and Licences
Assignment, Subcontracting and Novation
Progress Meetings
Employer’s Instructions
Suspension of Services
Variations
Early Warnings
Risk Management
Failure to Provide Risk Management Information
Scheduling Contribution
Incorporation of Schedules 8 and 9
Progress of Design Services Records
Updated Scheduling Contribution
Revised Scheduling Contribution
Calculation of Effect of Interference on Time
Calculation of Effect of Interference on Cost
Float and Time Contingencies
Consultant’s Improvement of Progress
Employer’s Improvement of Progress
Instructed Recovery
Instructed Acceleration
Failure to Comply with an Instruction to Recover or Accelerate
Extension of Time
Progress of Non-Design Services Records
Failure to Complete
Liquidated Delay Damages
Limit of Liability
Development Schedule
Predicted Cost of Services
Current Value of Services
Final Value of Services

Clause 30.
Clause 31.
Clause 32.
Clause 33.
Clause 34.
Clause 35.
Clause 36.
Clause 37.
Clause 38.
Clause 39.
Clause 40.
Clause 41.
Clause 42.
Clause 43.
Clause 44.
Clause 45.
Clause 46.
Clause 47.
Clause 48.
Clause 49.
Clause 50.
Clause 51.
The Standard form of Time and Cost Management Consultancy Appointment also contains the following Contract Schedules

- Schedule 1 – Additional Defined Terms
- Schedule 2 – Appointment Particulars
- Schedule 3 – Building Information Modelling
- Schedule 4 – Scheduling Contribution and Development Schedule
- Schedule 5 – Progress of Design Services Records
- Schedule 6 – Time and/or Cost Risks
- Schedule 7 – Issue Resolution
- Schedule 8 – Services
- Schedule 9 – Fees and Expenses
CONTRACT ADMINISTRATOR

The Contract Administrator may be any experienced professional associated with the industry in which the Works are carried out, or may be a professional Contract Administrator. The Contract Administrator’s role is to make sure, in so far as it can, that the machinery of the Contract runs smoothly and operates as it should.

Unless an issue is referred for Issue Resolution, the Contract Administrator is the sole arbiter of the parties’ rights under the Contract and as such, notwithstanding that it is also employed and paid by the Employer as its consultant, it is nonetheless required to act independently and fairly and if it fails to do so, the consequences will be at the risk of the Employer.

For a full listing of the Contract Administrator’s duties under the Contract, reference should be made to Schedule 8, the Model Schedule of Services for the Contract Administrator’s Appointment.

TIME MANAGER

The Time Manager is the Contract Administrator’s adviser on the time-related matters related to the project. Notwithstanding that it is also employed and paid by the Employer as its consultant, is nonetheless required to act independently and fairly and if it fails to do so, the consequences will be at the risk of the Employer.

The Time Manager must be kept informed of the state of the Works and has a vital role in the management of risk, mitigation, recovery of culpable delay and acceleration. Accordingly, the party who undertakes that role must always be a Listed Person.

The Time Manager is responsible for ensuring that the Contractor’s time management processes are satisfactory and can be relied upon for the purposes of decision making by the Contract Administrator and the other Listed Persons. It is the Time Manager’s job to check, on a regular basis, whatever is produced by the Contractor by way of time-related information and to accept it, if satisfactory, or reject it, or accept it subject to conditions and to maintain a log of submissions.

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387 In other standard forms this party has also been called the “Employer’s Agent”, “Employer’s Representative”, “Contract Manager”, “Project Manager”, “Supervising Officer”, “Superintendent”, “Superintending Officer”, “Architect”, “Engineer”.
388 Clause 73 provides for either party faced with what it considers to be an unfair or unreasonable act, omission or decision to refer the issue to an independent expert.
389 Clause 4.2.
390 Appendix F, Paragraph F15.
391 Clause 4.2.
392 Appendix F, Paragraph F15.
393 Appendix B and see “Roles and Responsibilities, Listed Persons”, on page 53.
394 Clause 37.11, Appendix D, Paragraph D13, Clause 39.5 and Appendix E, Paragraph E10.
For a full listing of the Time Manager’s duties under the Contract, reference should be made to Schedule 8, the Model Schedule of Services for the Time Manager’s Appointment.

**COST MANAGER**

The Cost Manager is appointed by the Employer to advise the Employer, Contract Administrator and Listed Persons on the content of the Contractor’s Pricing Document and the valuation of Activities in the Working Schedule, the measurement and valuation of Variations, the Predicted out-turn cost of the Works and for payment purposes the Current Contract Value of the Works, from time to time. Notwithstanding that it is employed and paid by the Employer, it is nonetheless required to act independently and fairly and, if it fails to do so, the consequences will be at the risk of the Employer.

Because, during the course of the Works, the Cost Manager must be kept informed of the state of the Works and have a part to play in the management of risk, the person taking on that role should always be included as a Listed Person.

**AUDITOR**

The Auditor is that person named in Appendix B as the Time Management Expert or, subject to any reasonable objection by the Employer, such other person as the Time Manager may appoint as the Auditor, from time to time.

The role of the Auditor is to examine before work commences and the intervals stated in Appendix B the state of the Contractor’s

- Planning Method Statement
- Working Schedule, and
- Progress Records.

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In other contracts the role of the Employer-appointed quantity surveyor (sometimes referred to as the “PQS”) is synonymous but not identical to the role of the Cost Manager. The Cost Manager’s duties are more extensive than those normally undertaken by an Employer-appointed quantity surveyor.

Clause 38.
Clause 33.
Clause 60.
Clause 61.
Clause 4.2.
Appendix F, Paragraph F15.
See “Roles and Responsibilities, Listed Persons”, on page 53.
Clauses 37.5, 37.6, 39.2 and 41.1.
The purpose of the audit is to ensure that the Contractor’s submittals comply with the CIOB Guide 404 and the specific requirements of the Contract and that they form a suitable basis for the management of the Employer’s and Contractor’s time risks from time to time.

The issues which the Auditor is normally to consider are set out in the CIOB Guide 405 any other considerations should be set out in the Contract Specification and be included in Schedule 8, the Model Schedule of Services for the appointment of the Auditor.

LISTED PERSONS

At Appendix B, the user is to identify those consultants having a continuing part to play during the course of the Works, either in the provision of design or other information, inspection, supervision or administration. 406

Typically, these will include the Architect and Engineers, but will also include Clerks of Works or other superintendents of work and other professionals who are to be involved.

The Listed Persons must always include the Time Manager and Cost Manager and, if there is an Employer’s Building Information Model, then they should also include the design coordination manager.

404 See Note 1.
405 See Note 1.
INFORMATION TRANSFER

Generally, the Contract requires all communications to be in writing. Although the Contract does not forbid correspondence from being reduced to hard copy and delivered by post or by hand, electronic data transfer by email, an agreed File Transfer Protocol or by being kept in a Common Data Environment is the preferred method of communication.

In order to promote transparency and collaboration between the Contractor, Subcontractors, the Consultants and the Employer, particular document types are identified as being required to be “distributed” or “published”.

DISTRIBUTION

Distribution is the term used to describe the issue of a document in Portable Document Format. Where a document is required to be distributed, it is to be issued to the other party, or if issued by another person, to both parties and to the

- Contract Administrator
- Time Manager, and
- Cost Manager

Because it must be issued in Portable Document Format, it must be issued electronically, by means of email or by an agreed File Transfer Protocol.

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407 Clause 7.1.
408 Clause 7.5.
409 Clause 7.6.
410 Clause 7.2.
411 Clause 7.3.
412 Clause 7.4.
413 Clause 2.5.7.
414 Clause 2.5.8.
415 Commonly referred to as a PDF document.
Those Documents required by the Contract to be distributed are

- **By the Contractor**
  - general submissions
  - Design Execution Plan
  - statement of working methods
  - Draft Planning Method Statement
  - Draft Updated Planning Method Statement
  - Draft Revised Planning Method Statement
  - Draft Impacted Method Statement
  - specified details of any Event impacted
  - notice of loss and/or expense or delay to a Due Date
  - access codes and passwords to published materials

- **By the Contract Administrator**
  - decision on extension of time
  - Certificate of Partial Possession
  - Certificate of Substantial Completion
  - Certificate of Failure to Achieve Substantial Completion
  - Notice of Payment Due releasing half of Retention Fund
  - Notice of Payment Due releasing balance of Retention Fund

- **By the Auditor**
  - Report on schedule quality assurance

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416 Clause 13.1.
417 Clause 15.1.
418 Clause 23.2.
419 Clause 37.2.
420 Clause 40.3.
421 Clause 41.3.
422 Clause 43.5.
423 Clause 43.6.
424 Clause 44.1.2.
425 Clause 72.1.
426 Clause 51.2.
427 Clause 53.2.2.
428 Clause 54.4.
429 Clause 56.1.
430 Clause 59.2.
431 Clause 59.3.
432 Clause 42.4.
The Contract requires complete transparency in the submission of information required for the collaboration between the Contractor, its Subcontractors, the Consultants and the Employer in the management of risk. This is achieved by requiring such documents to be issued electronically in native file format by the process referred to as publication. Where a document is required to be published, it is to be issued to the other party, or if issued by another person, to both parties and to the

- Contract Administrator
- Time Manager, and
- Cost Manager.

Because it must be issued in native file format, it must be issued electronically, by means of an agreed File Transfer Protocol, by virtue of its management in a Common Data Environment to which the necessary persons have access or by email. However, for the majority of documents required to be published email is may not be a satisfactory method of transference simply because of the possible size of the files concerned.

Those Documents required by the Contract to be published are

- By the Contractor
  
  - the Contractor’s Design
  - Model and/or Federated Model
  - Working Schedule including Contractor’s Design
  - Working Schedule for the Works
  - database of Progress Records
  - Draft Updated Working Schedule
  - Draft Revised Working Schedule
  - corrected Working Schedule
  - Draft Impacted Working Schedule
  - Contractor’s Design Contribution

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433 Clause 2.5.8. This is a file transmitted electronically in editable file format, in the software in which it was created.
434 Clause 16.8.
435 Clause 17.3.2.3.
436 Clause 37.5.
437 Clause 37.6.
438 Clause 39.2.
439 Clause 40.1.
440 Clause 41.1.
441 Clause 42.5.
442 Clause 43.6.
443 Clause 72.1.
By the Contract Administrator

- database of records of general submissions\(^{444}\)
- database of records of design submissions\(^{445}\)

By the Time Manager

- database of records of Working Schedule submissions\(^{446}\)
- database of records of Progress Records submissions\(^{447}\)

If the Contractor refuses or neglects to properly plan and schedule the Works, the Employer and its management team cannot plan and schedule the Works in its place. However, under of the Contract, to fail to produce a contractually compliant submission, or to fail to disclose the Progress Records of the resources and productivity achieved may lead to a series of unwelcome consequences:

1. there will be foreseeable difficulties for the Contractor in receiving payment for work done as the Working Schedule and Progress Records are at the root of the interim payment mechanism\(^{448}\) and, without them, the Contract Administrator will necessarily be hampered in formulating promptly an accurate Notice of Payment Due,\(^{449}\) or gauging the accuracy of the Contractor’s Notice of Payment Due\(^{450}\)

2. because the Working Schedule and Progress Records are at the root of the time and cost adjustment mechanism, in the event of excusable and/or compensable delay there will be foreseeable difficulties for the Contractor in obtaining an accurate extension of time\(^{451}\) and/or time-related compensation\(^{452}\)

3. the Contractor is not entitled to be paid for the provision of management information which it has either not competently prepared, or not published as required\(^{453}\)

4. the Contractor may not start the Works until compliant management information is published\(^{454}\)

\(^{444}\) Clause 13.9.
\(^{445}\) Clause 16.9.2
\(^{446}\) Clause 37.11.
\(^{447}\) Clause 39.5.
\(^{448}\) Clauses 38, 60, 61, 64 and 66. See also the model time-line on page 94 illustrating their relationship.
\(^{449}\) Clause 64.
\(^{450}\) Clause 65.
\(^{451}\) Clauses 43 and 51.
\(^{452}\) Clauses 38, 44 and 60.1.3. Under the Contract the Contractor is not permitted to choose for itself how it demonstrates entitlement to more time or money. Clauses 43.8 and 44.3 make it plain that in the event that the Contractor does not follow the procedures in the Contract the Contractor’s entitlement is to be calculated after the relevant Substantial Completion Date according to the materials then available to the Time Manager and Cost Manager.
\(^{453}\) Clauses 61.2.1 and 61.2.2.
\(^{454}\) Clauses 23.7, 37.5, 37.6 and 37.10.
5. when the work is underway, the Contract Administrator may instruct the Contractor to cease work (at the Contractor’s risk as to time and cost) until compliant management information is published.

6. the Employer may employ others (at the Contractor’s expense) to investigate, record the resources, productivity and sequence of work achieved and to provide any schedule of anything carried out upon which the Contractor has not published contractually compliant information, and

7. the Contractor’s employment may be terminated for default.

Notice of the Employer’s intention to employ others to make investigations, produce schedules and/or make Progress Records of work carried out is not strictly necessary: the Employer’s right to do so arises on default continuing for five Business Days after the Contract Administrator’s notice of failure to provide a compliant submission. However, giving notice of the employment of others for such investigation, record keeping and scheduling, permits the matter to be monitored by both parties for the avoidance of future disputes about the facts.

Flow Chart No. 1, “Failure to Publish”, illustrates the various procedures of submission, decision and redress and its relationship to Flow Chart No. 11, “Termination”.

The expense incurred by the Employer in carrying out the investigations, record keeping and scheduling arising out of the Contractor’s default may be deducted in a Notice of Payment Due, witheld in a Notice of Payment Due, or may be recoverable as a debt.

THE DYNAMIC TIME MODEL

Working Schedule is the name given to the Contractor’s critical path network schedule which identifies the Contractor’s intentions for the future conduct of the Works and which, together with the Planning Method Statement (containing the assumptions and calculations on which the Working Schedule is based) function together as the Contractor’s time and cost model for the Works.

Unlike the requirements of other standard forms of contract, in the Contract the Working Schedule is required.

See page 95
to be described in terms of content calculations and assumptions in a Planning Method Statement\textsuperscript{465}

to be priced in conformity with the Contractor’s Pricing Document\textsuperscript{466}

to be prepared to a controlled standard\textsuperscript{467}

to contain the Contractor’s short-term resource logic\textsuperscript{468}

to be revised at regular intervals\textsuperscript{469}

to be updated with progress achieved in accordance with quality controlled Progress Records\textsuperscript{470} to be used to calculate

- interim valuations for payment\textsuperscript{471}
- predicted out-turn cost\textsuperscript{472}
- an extension of time,\textsuperscript{473} and
- time-related compensation\textsuperscript{474}

and to be published only electronically and transparently in native file format. There is no provision in the Contract for the Working Schedule to be printed by the Contractor or distributed by paper copy alone.\textsuperscript{475}

Depending upon whether the Contractor is to design the whole of the Works, the first submission for acceptance is to be made either 20 Business Days after the Start Date, or 20 Business Days before the Access Date. For convenience, the model time-line illustrated on page 82 shows all periods in Business Days and the first submission both 20 Days after the Start Date and 20 Days before the Access Date, although necessarily where the Contractor designs the whole of the Works a considerably longer period will be usually required between the two dates.

If the Contractor is required to design the whole of the Works the first submission is required to embody the Contractor’s Design Execution Plan,\textsuperscript{476} the first 60 Business Days of design procedures (at High Density) and the Contractor’s intentions for the remainder of the design and the construction of the Works (at Medium and Low Density).\textsuperscript{477}

\textsuperscript{465} Clause 37.2 and Appendix D, Paragraphs D2 and D3.
\textsuperscript{466} Clause 38.
\textsuperscript{467} Clauses 37.1 and 42 and Appendix D.
\textsuperscript{468} Clause 37.7.
\textsuperscript{469} Clauses 41.1 and 41.2.
\textsuperscript{470} Clauses 39 and 40.
\textsuperscript{471} Clause 61.
\textsuperscript{472} Clause 60.
\textsuperscript{473} Clauses 43 and 51.
\textsuperscript{474} Clauses 43 and 44.
\textsuperscript{475} Whilst the practice of accompanying a copy of the electronic file in native format with a print to a PDF document may appear to be superficially helpful, it should be recognised that whatever is printed to a PDF document can never be any more than that which the author wishes to convey in the PDF. It may be neither what the recipient needs to see, nor wants to see. Transparency is best achieved by access to the Working Schedule in native file format from which the recipient can make its own investigation and print what it needs to see.
\textsuperscript{476} Clause 15.
\textsuperscript{477} Clauses 37.5 and 37.7 and Appendix D, Paragraphs D4 to D8.
Otherwise, the first submission is to be made 20 Business Days before the Access Date and to demonstrate the first 60 Business Days of construction (at High Density) and the Contractor’s intentions for the remainder of the Works (at Medium and Low Density).

Flow Chart No. 2, “Working Schedule”, illustrates the procedure of preparation, incorporation of the Contractor’s Pricing Document, submission and decision and the relationship of this to Flow Charts No. 1, “Failure to Publish” and No. 12, “Issue Resolution”.

**SCHEDULE UPDATE**

The Working Schedule is to be updated at regular intervals from the Progress Records to demonstrate the effect of progress achieved on both time and cost.

Through the incorporation of the Contractor’s Pricing Document in the Working Schedule, the Update of the Working Schedule is also the basis of valuation of the Predicted Cost of the Works, the Current Contract Value of work done and stimulates the issue of the Contract Administrator’s Notice of Payment Due.

If the Contractor’s update demonstrates that as a result of slow progress, any Due Date is unlikely to be met, it is to revise its intentions for the future conduct of the Works to overcome the predicted delay.

Because the updated part of the Schedule is necessarily in High Density, containing both the resources used and productivity actually achieved, it can also be used to validate the planned duration and resources of similar future activities.


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478 Clauses 37.6 and 37.7 and Appendix D, Paragraphs D3 to D8.
479 See page 96.
480 Clause 38.
481 See “Key Features, Progress Records”, on page 66.
482 Clause 38.
483 Clauses 38 and 60.
484 Clauses 38 and 61.
485 Clause 64. See also the model time-line illustrating the relationship of the update to submission of Progress Records, Progress Meetings and valuation and payment on page 94.
486 Clause 40.4.
487 See page 98.
The Working Schedule is not a fixed target and is not only expected to change, but is required to be revised in both content and detail to reflect changes in the Contractor’s intended method of working, any improvements of progress against that planned, instructed recovery or acceleration, the quality of information currently available from time to time, and the necessary shift in the Contractor’s intentions from Activity-based logic to resource- and location-based logic.

If the Contractor’s revision demonstrates that as a result of its change in intentions, any Due Date is unlikely to be met, it is to further revise its intentions for the future conduct of the Works to overcome the predicted delay.

Flow Chart No. 5, “Revision of Working Schedule”, illustrates the procedure of preparation, submission and decision on any revision of the Working Schedule and the relationship of this Flow Chart to Flow Charts No. 1, “Failure to Publish” and No. 12, “Issue Resolution”.

**SCHEDULE QUALITY CONTROL**

The Working Schedule is to be prepared to a rigorous standard required by the Conditions, the CIOB Guide and the default specification contained in Appendix D. It is to be in different densities, according to the degree of detailed information about design, resources and productivity that is available from time to time and is to be checked for compliance by the Time Manager and by an independent quality assurance Auditor.
SCHEDULE SOFTWARE

The software to be used for the Working Schedule is to be specified in Appendix D.500 Depending upon its degree of complexity and ability to handle a quantity of data, the software adopted for a Building Information Model501 may also be capable of producing the time management data, but that will not always be the case.

Accordingly the Contract is written in such a way that the time management functions can be performed irrespective of whether a Model is adopted for design management or, if it is so adopted, irrespective of whether the Model is developed to an appropriate Level of Development, and/or the software used is capable of being used for time management.502

SCHEDULE CONTENT

Paragraph D3 of Appendix D sets out a description of the work content to be included in the Working Schedule and Planning Method Statement. Where the Contractor is to have a design role during the course of the Works, Paragraph D4 describes the design Activities to be included, together with periods for consideration, correction/amendment and resubmission and, where licensing and approvals (including those of Statutory Authorities) are required to be included for Activities related to preparation of submission, submission, consideration and approval.

MILESTONES, ACTIVITIES AND LEVELS OF EFFORT

The Contractor is required to prepare the Working Schedule by reference to three different types of content: Milestones, Activities and Levels of Effort. All are to bear a unique ID and Activity Description,503 but otherwise have radically different characters.

A Milestone has neither resources nor time. It signals a point in time on which something in a Key Date description is required to occur, is planned to occur or does occur such as the date of creation of a QA/QC record (e.g. material approval, permissions to proceed, ceiling closure approval, etc.), the start or finish of a process, or a state of completion. Milestones must be included for those described504 and such other occurrences as may prove useful in the management of the Works such as the initiation date of an Event, for example, or the date upon which an instruction for a Variation is issued.

500 Appendix D, Paragraph D1.
501 See “Contract Model”, on page 35.
502 See also “Key Features, Exchange of Information, Building Information Modelling”, on page 83.
503 Appendix D, Paragraph D12.
504 Appendix D, Paragraph D3.
An Activity has both duration and resources. An Activity identifies the duration over which a task is planned to be performed, or is actually performed. The planned duration is to be identified in three densities. At Low and Medium Density, the duration and resources must usually be estimated. At High Density, the planned duration is required to be calculated by reference to the expected productivity of the resources which are planned to be available in order to execute the task, and when completed is required to show the resources which were actually used to execute the task during its actual duration.

A Level of Effort has duration but no resources attached to it. This is the type of indicator to be used to identify the duration over which Preliminaries are planned to be expended or Overheads and Profit are planned to be recovered. If the periods change over which the Preliminaries and Overheads and Profit are planned to be recovered, the amount to be recovered will change pro-rata the duration and, by comparison of the figures before and after the impact, the calculation is made of the prolongation costs likely to be, or actually incurred as a result of the change in any Due Date. If Level of Effort durations are not priced in the Working Schedule, it is deemed to be agreed that the Contractor is not entitled to recover delay-related costs for the effect of Events.

TIME CONTINGENCIES AND FLOAT

The Contract Conditions distinguish between different types of float, between float and time contingencies, and between time contingencies owned by the Employer and those owned by the Contractor.

Float is not a time contingency. Neither party owns any float in the Working Schedule.

The Contractor is encouraged to identify in its Working Schedule any time contingency it requires to absorb any risks which it can foresee as being likely to occur to cause slippage in the progress of the Works. Any such contingencies are owned by the Contractor and are to be used only for mitigating the effect of the Contractor’s risks unless, by a separate agreement, their benefit is transferred to the Employer.

Where Contractor’s Time Contingency periods are on the Critical Path to a Relevant Substantial Completion Date, and hence included in the Contract duration, the effect of those time contingencies in the priced Working Schedule is to require the Contractor to pre-price (by virtue

505 Appendix D, Paragraph D7.
506 Clause 37.7 and Appendix D, Paragraph DB.
507 Clause 40.1.
508 Clause 38.4.
509 Clause 38.5.
510 Clause 45.5.
511 Clauses 45.1 and 45.4.
512 Clause 45.5.
513 Clause 45.4 and Appendix D, Paragraph D3 (d).
of its tender or bid) the prolongation costs it is likely to suffer as a result of those contingency periods later being absorbed by Contractor’s risks.

If the Contractor does not use its critical contingencies then, all other things being equal, there will be a reduction in the duration of the work, a reduction in the Contractor’s costs for the work and an earlier Substantial Completion Date, to the Contractor’s benefit. There is no provision in this contract by which the Employer can refuse to accept the completed Works, merely because they are completed earlier than the Substantial Completion Date.

The Employer is also encouraged to identify in the Specification whatever time contingencies it requires in order to cover the time effect of those risks listed in Appendix F which, at the time of tender/bid, it can foresee might be needed. If the Specification requires the Contractor to include in the Contractor’s Pricing Document any Prime Cost, Provisional or Contingency Sum in the Contractor’s Pricing Document, but the Specification does not identify a commensurate time contingency, then the Contractor is required to include what it considers to be a reasonable Employer’s Time Contingency for the expenditure of those items.

The Employer’s Time Contingencies are owned by the Employer and cannot be used by the Contractor unless, by a separate agreement, their benefit is transferred to the Contractor. If by improving its progress the Contractor is able to reduce the time needed for future work, instead of leaving that additional time as float it may, if it wishes, secure that additional time as its own time contingency to be used in managing future risks.

Similarly, if by the omission of any Activities, or obligations, the Employer is able to reduce the time needed for future work, instead of leaving that additional time as float it may, if it wishes, secure that additional time as its own time contingency to be used as it decides in managing future risks.

Where Employer’s Time Contingency periods are on the Critical Path to a Relevant Substantial Completion Date, and hence included in the Contract duration, the effect of those time contingencies in the priced Working Schedule is to require the Contractor to pre-price (through its tender or bid) the prolongation costs it is likely to suffer as a result of those contingency periods later being absorbed by Events. If the Employer does not use its critical contingencies then, all other things being equal, there will be a reduction in the duration of the Works, an earlier Substantial Completion Date and hence a reduction in the Contract price, to the Employer’s benefit.

In principle, to the extent of the duration of such Employer’s Time Contingencies, in relation to the occurrence of an Event which would otherwise delay achievement of a Relevant Substantial Completion Date, their effect is:

514 Clause 45.1 and see “Contract Specification”, on page 36.
515 Clause 45.2 and see also “Contract Specification”, on page 36; “Bill of Quantities”, on page 37; and “Contractor’s Pricing Document”, on page 39.
516 Clause 47.1.
517 Clause 31.1.2.
where caused by an Employers’ Time Risk Event, to avoid the obligation to award an extension of time, and/or
where caused by an Employers’ Cost Risk Event to avoid the obligation to pay prolongation costs.

If the aggregate delay that is actually suffered to a Relevant Substantial Completion Date is less than the aggregate of Employer’s Time Contingencies on the Critical Path to the Relevant Substantial Completion Date, the effect of the omission of the unused contingency period\textsuperscript{518} will be to

- bring the Due Date forward to an earlier date,\textsuperscript{519} and
- reduce the Predicted Cost of the Works.\textsuperscript{520}

Where the ultimate aggregate duration of delay to a Relevant Substantial Completion Date is greater than the aggregate Employer’s Time Contingency period included on the Critical Path to the Relevant Substantial Completion Date, then, to the extent that aggregate delay exceeds the aggregate Employer’s Time Contingency, the Contractor will become entitled to an award of an extension of time,\textsuperscript{521} and where the delay is caused by an Employer’s Cost Risk Event, payment of disruption and/or prolongation costs.\textsuperscript{522}

However, merely because all the Employer’s and Contractor’s contingency periods are absorbed does not mean that delay to completion is rendered thereby inevitable, since the Contract Conditions also contain powers to instruct both acceleration and recovery, where practically it can be achieved.\textsuperscript{523}

**WORK BREAKDOWN STRUCTURE AND ACTIVITY CODES**

The purpose of Work breakdown structure is to provide a logical process against which the Working Schedule can be designed and filtered for examination and analysis in use. Paragraph D7 of Appendix D provides for seven levels of content.

Paragraph D11 sets out standard data fields and values for the coding of particular Activities, Milestones and Levels of Effort. The purpose of this is two-fold: firstly, it provides the minimum necessary categorisation of data to permit filtering, retrieval and sorting of data for analysis and management reporting during the course of the Works. Secondly, it provides a structure for benchmarking and comparative analysis of data between projects.

\textsuperscript{518} Clause 31.1.2.
\textsuperscript{519} Clause 49.3.
\textsuperscript{520} Clause 60.1.3.
\textsuperscript{521} Clause 51.
\textsuperscript{522} Clauses 44 and 60.1.3.
\textsuperscript{523} See “Key Features, Improved Progress, Acceleration and Recovery”, on page 67.
Where a specific project requires data to be coded in addition to the standard data fields, Paragraph D10 of Appendix D provides for project-specific coding in addition to the standard data fields.

**PROGRESS RECORDS**

Although the Working Schedule cannot be accurately updated without Progress Records\(^\text{524}\) and they are thus the essential informational resource for managing time\(^\text{525}\) and essential for determining the extent to which an Event has caused delay or disruption,\(^\text{526}\) the Contract is unique amongst standard form contracts in requiring the Contractor to maintain any Progress Records other than those in support of a claim.

Apart from reliable progress data being vital to the calculation of the cause and effect of disruption and lost productivity and to the production of the updated Working Schedule, it is exceptionally important as a management tool: a departure from the planned productivity of a given resource cannot be identified without records of the productivity actually achieved.

The Progress Records are required to be maintained on a database for ease of validation, sorting, filtering and reporting. The Contract contains provisions for the submission of the database for acceptance shortly after commencement of work and at regular intervals thereafter.\(^\text{527}\) The Working Schedule cannot be updated without publication of the Progress Records and hence the efficacy of the Progress Meetings and the payment provisions are also dependent upon them. The model time-line on page 94 shows the relationship of the progress records to other submission, the Progress Meetings and valuation and payment.

The comparison of resources and productivity planned with that achieved is particularly important where a particular resource is planned to be engaged over long periods in different parts of the Site, for example for such things as earth moving, piling, pipework, track laying and so on, or where a number of repetitive cycles are to be performed. Without good records of productivity achieved to compare with what was planned, the progress of the Works can easily get out of control before it is possible to identify the consequential delay to progress in an update of the Working Schedule.

If adequate attention is paid to recording the way work is scheduled and performed, the later retrieval of such data can also lead to increasingly improved accuracy of forward planning and quality control in project development.

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\(^{524}\) Clause 40.1.

\(^{525}\) See CIOB Guide, Section 4.3.


\(^{527}\) See “Appendix B, Status Interval for publication of Progress Records”, on page 21.
Flow Chart No. 3, “Progress Records”, illustrates the procedure of preparation, submission and decision on the updated Working Schedule and Planning Method Statement and the relationship of this Flow Chart to Flow Charts No. 1, “Failure to Publish”, and No. 12, “Issue Resolution”.

IMPROVED PROGRESS, ACCELERATION AND RECOVERY

IMPROVED PROGRESS

The Contractor is encouraged to make improvements in performance wherever it can. However, unlike other standard forms, the Contract permits the Contractor to keep any float created by its efforts and preserve for its own benefit of any time it has saved as a Contractor’s Time Contingency.

Similarly, if by the omission or reduction of obligations, the Employer is able to improve progress it can preserve for itself the benefit of any float it has created by such omissions and save it as an Employer’s Time Contingency.

INSTRUCTED RECOVERY

If the Contractor should find itself slipping against the progress planned to be achieved, it must take action to recover the lost time.

The Time Manager is not obliged to accept any Draft Working Schedule which indicates that a Due Date is unlikely to be achieved except when the cause of such failure is the occurrence of an Event. In other words, the Contractor must plan to overcome its own culpable slippage and, if it does not do so, the Contract Conditions contain the powers necessary for the Contract Administrator to control the way the slippage is to be recovered.

Once the Time Manager is satisfied that, irrespective of the cost of compliance, such instructions can be complied with, it should advise the Contract Administrator, who within 5 Business Days is then to issue the appropriate instructions for recovery at no cost to the Employer.

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528 See page 97.
529 Clause 46.1.
530 Clause 47.1.
531 Clause 40.4.
532 Clause 40.4.
533 Clause 48.
534 Clause 48.2.
The instructions issued under these recovery provisions are for the purpose of recovery of lost time only and may not be used to achieve an earlier completion date.\(^{535}\)

**INSTRUCTED ACCELERATION**

If the Employer wishes to achieve a Due Date earlier than that identified in the Contract Documents\(^{536}\) or, if, as a result of delay to progress caused by an Event, the Contractor shows in its Working Schedule that a Due Date is likely to be missed, and the Employer wishes either to achieve the Due Date, or reduce the period of likely delay to the Due Date,\(^{537}\) then the Time Manager is to consult with the Contractor to see what instructions can reasonably be issued to achieve the Employer’s wishes.

The Contractor is entitled to be paid for its work in preparing proposals for acceleration and for achieving any such acceleration.\(^{538}\) Once the Time Manager is satisfied that it is practically possible to comply with the instructions, it is to inform the Contract Administrator, who within 5 Business Days of receipt of the Time Manager’s advice, is to issue the acceleration instructions to the Contractor as a Variation.\(^{539}\)

**REDRESS FOR FAILURE TO COMPLY WITH AN INSTRUCTION TO RECOVER OR ACCELERATE**

Unlike other standard forms in which the Contractor may ultimately ignore instructions to recover lost time or fail to achieve paid-for acceleration with impunity, the Contract contains four significant sanctions for a failure to carry out the instructions which, following proper investigation, the Time Manager has ascertained can reasonably be complied with:

1. it can arrange for work which the Contractor has failed to carry out according to instructions to be carried out by others,\(^{540}\) and recover any expenditure and/or loss from the Contractor.\(^{541}\) This will enable the Employer to increase resources of its own accord

2. where a Relevant Substantial Completion Date is missed as a result of the Contractor failing to take prescribed action for recovery of culpable delay, the Employer will be entitled to the specified Liquidated Damages\(^{542}\)

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\(^{535}\) Clause 48.3.
\(^{536}\) Clause 49.3.
\(^{537}\) Clause 49.1.
\(^{538}\) Clauses 49.4 and 60.1.4.
\(^{539}\) Clause 49.1.
\(^{540}\) Clause 31.5.
\(^{541}\) Clause 31.5.3.
\(^{542}\) Clause 57.
3. where as a result of a delayed completion caused by the Contractor’s failure to recover culpable delay the Employer suffers expenditure and/or loss over and above the rate of Liquidated Delay Damages for delayed completion, or the Contractor fails to accelerate as instructed, the actual losses suffered by the Employer can be recovered up to the Limit of Liability, if any, identified in Appendix B,\(^{543}\) and

4. the Employer may terminate the Contractor’s employment for default.\(^{544}\)

**EXTENSION OF TIME, COMPENSATION AND CONCURRENCY**

**EXTENSION OF TIME**

There are no provisions in the Contract for a subjective assessment by the Contract Administrator of a “fair and reasonable” extension of time or an “equitable adjustment”. The Contractor is only entitled to the time it can prove by calculation that it should actually need. Since the Working Schedule is a fully linked critical path network complying with the standards of the CIOB Guide, it operates as a predictive tool, which is to be used contemporaneously to calculate the consequences of any Event impacted upon it.\(^{545}\)

The Working Schedule is to be impacted by the effect of Events that can be foreseen,\(^{546}\) and/or have occurred\(^{547}\) to demonstrate their effect on Due Dates and other Milestones. When a Variation is instructed for work to be carried out in the future, or any other Event is predicted to be likely to occur, the Working Schedule is to be impacted to reflect the likely effect of the Event.\(^{548}\) Ultimately, unless the predicted time effect of the Event has been pre-agreed,\(^{549}\) the actual progress and resources required by the Variation, or the ultimate effect of any other Event will be recorded in the update of the Working Schedule to reflect the actual time effect of the Event on the progress of the Works and on the Due Dates.\(^{550}\)

Unless the Contractor fails to produce a contractually compliant Working Schedule, and Progress Records, the latest accepted updated Working Schedule\(^{551}\) is the base-line against which the effect of Events is measured for the purposes of calculating the effect of an Event on the timing of the

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\(^{543}\) Clause 50.2.

\(^{544}\) Clause 69.3.2.1.

\(^{545}\) Clause 43.

\(^{546}\) Clause 35 and 43.1.

\(^{547}\) Clause 43.1.

\(^{548}\) Clauses 43 and 44.

\(^{549}\) Clause 51.3.

\(^{550}\) See Clauses 36.2, 44.3 and 51.5.

\(^{551}\) This should include the date when Variations are carried out and in relation to work executed, any changes in quantity or provisional quantities (and re-measurement in a re-measurement contract) and the resources used.
Works,\(^{552}\) the award of an appropriate extension of time\(^{553}\) and payment including compensation for disruption and/or prolongation.\(^{554}\)

Calculation of the effect of Events is based upon what is commonly referred to as “Time Impact”\(^{555}\) or “modelled/additive/multiple base”\(^{556}\) analysis. This method uses the latest updated and accepted Working Schedule as a baseline against which to measure the effect of an Event by

- adding the relevant non-working period of a suspension or a Fragnet of changed work to the Working Schedule\(^{557}\)
- recalculation of the Critical Path by rescheduling\(^{558}\) and
- calculating the effect of the Fragnet or non-working period by reference to the difference between the Working Schedule before the Event occurred and that after the Event is added.\(^{559}\)

Where a number of Events occur in a single reporting period, the method is to be carried out using what is colloquially referred to as the “Windows”\(^{560}\) or “modelled/additive/multiple base/stepped insertion/fixed periods”\(^{561}\) process.

The Calculation is to be prepared and published as a Draft Impacted Working Schedule and Draft together with a Draft Impacted Planning Method Statement\(^{562}\) describing the Event and its calculation no less than 5 Business Days before the next Progress Meeting.\(^{563}\) If a Time Risk Event occurs within 5 Business Days of the next Progress Meeting, or for any other reason the Contractor is not able to prepare the required calculation before the next Progress Meeting, it is to be provided in advance of the subsequent Progress Meeting.\(^{564}\)

On the basis of the calculation contained in the Draft Impacted Working Schedule, the Time Manager is to check the Contractor’s calculations and make sure that:

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\(^{552}\) Clause 43. See also the model time-line illustrating the relationship of the impacted Working Schedule to the updated and/or revised Working Schedule, Progress Meetings and valuation and payment on page 94.

\(^{553}\) Clause 51.

\(^{554}\) Clauses 44 and 60.1.3. See also “Key Features, Extensions of Time, Compensation and Concurrency”, on page 69.

\(^{555}\) See also Society of Construction Law, “Delay and Disruption Protocol” (October 2002) and Keith Pickavance, “Delay and Disruption in Construction Contracts”, 4th Ed. 2010 at Paragraphs 15-144 to 15-158.


\(^{557}\) Clause 43.4.1.

\(^{558}\) Clause 43.4.2.

\(^{559}\) Clause 43.4.3.

\(^{560}\) Clause 38.5.2. See also Mirant Asia-Pacific Construction (Hong Kong) Ltd v Ove Arup And Partners International Ltd [2007] EWHC 918 (TCC), at Paragraphs 132 to 133 and Keith Pickavance, Delay and Disruption in Construction Contracts, 4th Ed. 2010 at Paragraphs 15-159 to 15-170.


\(^{562}\) Clause 43.5.

\(^{563}\) Clause 43.6.

\(^{564}\) Clause 43.7.1.
the Event described has in fact occurred\textsuperscript{565}

the Event is an Employer’s Time Risk Event\textsuperscript{566}

any Fragnet is either an accurate record of the Activities and the resources, durations and sequence arising as a result of the Event, or is a reasonable estimate of the quantity of work, Activities and the resources, productivity, durations and sequence likely to flow directly from the Event\textsuperscript{567}

any non-working period is either an accurate record of the duration of any period of suspension which occurred as a result of the Event, or is a reasonable estimate of the duration of suspension likely to flow directly from the Event,\textsuperscript{568} and

the impact of the Event calculated is likely to prevent the Works or any part thereof from being completed by a Relevant Date for Completion after a Relevant Completion Date has passed.\textsuperscript{569}

Provided those five conditions are satisfied then within the 10 Business Days following the Contractor’s distribution and publication of the required information, the Time Manager is to consult with the Contractor and ascertain what acceleration instructions can reasonably be given to overcome, or avoid in whole or in part, the calculated likely effect of the Event\textsuperscript{570} and advise the Contract Administrator accordingly.\textsuperscript{571}

If there are accelerative measures that can be taken, then the Contract Administrator should confer with the Employer and make sure that the Employer would prefer to pay the costs of the acceleration rather than suffer a delayed completion and, within 5 Business Days of receiving the Project Time Manager’s advice, the Contract Administrator must then

- award an extension of time by fixing a new Relevant Substantial Completion Date commensurate with the impact calculated by the Draft Impacted Working Schedule,\textsuperscript{572} or
- issue acceleration instructions for a reduction of time required for any part of the work\textsuperscript{573} and, commensurate with the predicted impact of the Event in the light of such instructions, either
  - confirm the Relevant Substantial Completion Date,\textsuperscript{574} or
  - award an extension of time by fixing a new Relevant Substantial Completion Date.\textsuperscript{575}

\textsuperscript{565} Clause 51.1.1.1.
\textsuperscript{566} Clause 51.1.1.2 and Appendix F.
\textsuperscript{567} Clause 51.1.2.
\textsuperscript{568} Clause 51.1.3.
\textsuperscript{569} Clause 51.1.4.
\textsuperscript{570} Clauses 47 and 49 and see also “Key Features, Improved Progress, Acceleration and Recovery, Instructed Acceleration”, on page 68.
\textsuperscript{571} Clause 51.1.6.
\textsuperscript{572} Clause 51.1.5.
\textsuperscript{573} Clause 51.1.6.
\textsuperscript{574} Clause 51.2.2.1.
\textsuperscript{575} Clause 51.2.2.2.
Where an extension of time is awarded on the basis of assumed data, the Contract provides for any extension of time granted to be recalculated on the basis of the facts, when they become available.\textsuperscript{576}

If the Contractor fails to comply with the Contract Conditions with the result that there is no Working Schedule and/or Event Analysis that can be used contemporaneously for Time Impact Analysis, then the Contract provides that any entitlement the Contractor may have can only be demonstrated using the method known as the “Collapsed As-Built”\textsuperscript{577} or “modelled/ subtractive/ single simulation”\textsuperscript{578} analysis after the Works or relevant Section has been completed using

- any Employer’s records and schedules prepared during the course of the Works following the Contractor’s default\textsuperscript{579} or, if none were made
- such other records and schedules as in its absolute discretion the Time Manager adopts for the purpose of calculating the Contractor’s entitlement.\textsuperscript{580}

Flow Chart No. 7, “Extension of Time and Compensation”,\textsuperscript{581} illustrates the procedure of submittal and operation of the procedure for identifying the impact on time and cost of an Event and the relationship of this Flow Chart to Flow Charts No. 9, “Valuation”.

**COMPENSATION FOR DELAY AND/OR DISRUPTION**

Where a Draft Impacted Working Schedule indicates that any part of the Works or the productivity of any resources has been adversely affected by an Employers Cost Risk Event, the Contractor may suffer loss and/or expense for which it is entitled to be compensated.\textsuperscript{582}

Accordingly, where the Contractor is likely to suffer, is suffering, or has suffered loss and/or expense, the Contractor is required to notify the Contract Administrator, no later than 5 Business Days before the next Progress Meeting.\textsuperscript{583} The Contractor must provide with the notice such information as is then available concerning the Employer’s Cost Risk Event and its consequences and if any of the stipulated information to be provided\textsuperscript{584} is not then available or for any other reason the Contractor is not able to prepare the required calculation before the next Progress Meeting, it is to be provided in advance of the subsequent Progress Meeting.\textsuperscript{585}

\textsuperscript{576} Clause 51.3.
\textsuperscript{577} See also Society of Construction Law, “Delay and Disruption Protocol” (October 2002) and Keith Pickavance, “Delay and Disruption in Construction Contracts”, (4th Ed. 2010) at Paragraphs 15-112 to 15-143.
\textsuperscript{578} American Association of Cost Engineers, International, Recommended Practice No. 29 R-03 (2009).
\textsuperscript{579} Clause 51.5.1.
\textsuperscript{580} Clause 51.5.2.
\textsuperscript{581} See page 101
\textsuperscript{582} Clause 44.1.1.
\textsuperscript{583} Clause 44.1.
\textsuperscript{584} Clause 44.2.
\textsuperscript{585} Clause 44.4.
Although notice is required as soon as there is a likelihood of loss and/or expense occurring, the Contractor is only permitted to recover the loss and/or expense that it has actually incurred.\textsuperscript{586} The purpose of this provision is not to penalise the Employer, but to compensate the Contractor for loss and/or expense actually suffered.

Where the information provided to the Cost Manager demonstrates that the Contractor has suffered loss and/or expense as a result of an Employer’s Cost Risk Event, the Predicted Cost of the Works is to be adjusted by:

- any loss and/or expense incurred by the Contractor which has been caused by the Employer’s Cost Risk Event,\textsuperscript{587}
- any expense incurred by the Contractor arising from the calculation of the effect of the Event,\textsuperscript{588}

and, as a result, those costs are then automatically included in the next valuation\textsuperscript{589} and paid for under the next Notice of Payment Due.\textsuperscript{590} It is thus in the Contractor’s interests to keep the necessary records and to produce them as soon as it is able to do so.

Flow Chart No. 7, “Extension of Time and compensation”,\textsuperscript{591} illustrates the procedure of submission and operation of the procedure for identifying the impact on time and cost of an Event and the relationship of this Flow Chart to Flow Charts No. 9, “Valuation”.

**COMPENSATION FOR PROLONURATION**

The Contractor is required to identify its Preliminaries\textsuperscript{592} and Overheads and Profit\textsuperscript{593} by Levels of Effort logically linked to the Activities to which they relate.

Provided that the information required has been incorporated in the Working Schedule,\textsuperscript{594} prolongation costs can be estimated during the course of the Works based upon the extent by which any Levels of Effort are adjusted from time to time by the impact of an Employer’s Cost Risk Events on the Working Schedule.\textsuperscript{595}

\textsuperscript{586} Clauses 44.2.4 and 60.1.3.
\textsuperscript{587} Clause 60.1.3.
\textsuperscript{588} Clause 60.1.4.
\textsuperscript{589} Clauses 60.1 and 61.2.
\textsuperscript{590} Clause 64.
\textsuperscript{591} See page 101.
\textsuperscript{592} Clause 38.4.1.
\textsuperscript{593} Clause 38.4.2.
\textsuperscript{594} Clause 38.5.
\textsuperscript{595} Clauses 44.1 and 60.1.3.
However, because the Contractor is only entitled to be compensated for loss and/or expense that it has actually suffered,\textsuperscript{596} it cannot be compensated for prolongation costs until after the relevant Due Date has passed and then, only if the prolongation which has occurred arose as a result of an Employer’s Cost Risk Event.

Flow Chart No. 7, “Extension of Time and Compensation”,\textsuperscript{597} illustrates the procedure of submission and operation of the procedure for identifying the impact on time and cost of an Event and the relationship of this Flow Chart to Flow Charts No. 9, “Valuation”.

CONCURRENCY

Concurrency is defined as occurring in two cases. The first is when a delay to progress is caused to a single Activity by two or more causative events, at least one of which is the Contractor’s liability and at least one of which is an Event.\textsuperscript{598} In the second, concurrency is defined as occurring when a delay to progress is caused to a single Activity by one or more causative events at the risk of the Contractor and, over the same period of delay to progress, in whole or in part, a delay to progress is caused to another Activity by one or more Events.\textsuperscript{599}

When, at the date upon which the delay to progress occurs, the Event is an Employer’s Time and Cost Risk Event and the delayed Activity is, or both delayed Activities are, on a Critical Path to a Relevant Date for Substantial Completion, the predicted delay to the Relevant Date for Substantial Completion so caused shall be deemed to be one for which the Contractor is entitled to an extension of time, but not compensation.\textsuperscript{600}

Where any part of a delay to progress is caused by an Employer’s Cost Risk Event so that only entitlement to compensation is a relevant consideration, it is important that the costs which the Contractor wishes to recover are caused by and are traceable back to the effect of that Employer’s Cost Risk Event.\textsuperscript{601} Otherwise, the Contractor is not entitled to compensation.\textsuperscript{602}

Flow Chart No. 8, “Concurrency”,\textsuperscript{603} illustrates the decision making process regarding the Contractor’s entitlement in circumstance of concurrency and the relationship of this Flow Chart to Flow Chart No. 9, “Valuation”.

\textsuperscript{596} Clauses 44.2.4 and 60.1.3.
\textsuperscript{597} See page 101.
\textsuperscript{598} Clause 52.1.1.
\textsuperscript{599} Clause 52.1.2.
\textsuperscript{600} Clause 52.2.
\textsuperscript{601} Clause 52.3.
\textsuperscript{602} Clause 52.4.
\textsuperscript{603} See page 103.
VALUATION

Apart from adjustments of Prime Cost, Provisional and Contingency sums and fluctuations in prices, if applicable, there are four possible changes in cost that remain to be ascertained during the course of the Works:

1. The direct cost of Variations
2. The loss and or expense arising out of delay to progress of the Works caused by an Employer’s time risk Event
3. The extended Preliminaries and/or Overheads and Profit arising out of delay to a Due Date caused by an Employer’s time risk Event
4. The cost of calculating the impact of an Event.

VALUATION OF VARIATIONS.

Variations are closely defined. Whenever a Variation is instructed or circumstances occur which amount to a Variation, the Contractor is always entitled to have the direct effect of the Variation valued and added or omitted from the Contract Sum. That is so irrespective of whether the Variation causes delay or disruption, the cost effect of which also remains to be ascertained under items 2 and 3 above.

For the direct costs:

1. Omissions are always valued at the rates and prices in the Contractor’s Pricing Document
2. Additional or substituted work is to be valued primarily by reference to the Contract rates and prices.

where is to be executed under similar conditions and is similar in character and quantity to that priced in the Contractor’s Pricing Document, the Variation is to be valued pro rata the rates and prices in the Contractor’s Pricing Document. This also applies to work
the subject of approximate quantities where the work carried out is plus or minus 10% of the stated quantity.\textsuperscript{614}

where any part is materially different from that priced, the Contractor is entitled to a fair allowance for the difference in description or quantity.\textsuperscript{615} This also applies to work the subject of approximate quantities where the work carried out differs in quantity from the described work by more than 10%.\textsuperscript{616}

3. where the value of any work or liabilities cannot be ascertained by application of those rules then the Contractor is entitled to a fair valuation.\textsuperscript{617}

\section*{VALUATION OF DELAY TO PROGRESS}

Delay to progress can be manifest in a suspension of work or in a loss of productivity that is, work taking longer to complete than it should. Where work is suspended for any reason, the Activities concerned must be identified in a published Draft Impacted Working Schedule\textsuperscript{618} supported by distributed back-up information.\textsuperscript{619}

Delay to progress caused by lost productivity is not always so easy to demonstrate. However provided that the High Density part of the Working Schedule has been competently calculated\textsuperscript{620} and the calculations supported in a Planning Method Statement\textsuperscript{621} and comparable records of undisturbed work\textsuperscript{622} then the evidence of the lost productivity, if any, will be manifest in the difference between the planned productivity in a given Activity and that achieved as evidenced by the Progress Records.\textsuperscript{623}

Whenever the Contractor considers that loss and/or expense is likely to be, is being or has been caused by the suspension or lost productivity it must distribute a notice to that effect\textsuperscript{624} together with the necessary supporting information.\textsuperscript{625}

\begin{footnotesize}
\begin{enumerate}
\item Clause 33.1.2.1.
\item Clause 33.1.2.2.
\item Clause 33.1.4.
\item Clause 43.3.
\item Clauses 43.5 and 43.6.
\item Clause 37.7.
\item Clauses 37.2.
\item Clause 40.1.
\item Clause 39.
\item Clause 44.1.1.
\item Clause 44.2.
\end{enumerate}
\end{footnotesize}
VALUATION OF EXTENDED PRELIMINARIES AND/OR OVERHEADS AND PROFIT

Provided that the Contractor has indicated with Levels of Effort the Preliminaries and Overheads and Profit it needs to recover, any change in those arising from the impact of an Event will automatically be calculated by the Impacted Working Schedule that contains the Event.

VALUATION OF THE COST OF CALCULATING THE EFFECT OF AN EVENT

The cost of implementing the procedures in Clauses 43 and 44 flows from the Initiation Date of the Event until the procedures are completed. Depending upon the nature of the Event, these costs may reasonably comprise some management time, the time of one or more schedulers and, where the Event is an Employer’s Cost Risk Event, the time of one or more Contractor’s quantity surveyors.

FORECASTING THE FINANCIAL EFFECT OF CHANGE ON THE PREDICTED COST

The Activities in the Working Schedule are to be attributed with values in accordance with the Contractor’s Pricing Document and when a Variation is instructed for work to be carried out in the future, or any other Employer’s Cost Risk Event is predicted to be likely to occur, the Working Schedule is to be impacted to reflect the likely effect of the instruction, or Employer’s Cost Risk Event. Thus, when the Working schedule is updated with progress achieved, unless the predicted indirect cost effect of the Variation or other Event has been pre-agreed, it will also reflect in the relevant Levels of Effort the consequential effect of Variations, changes in provisional quantities (and changes of quantity in a re-measurement contract) and other Employer’s Cost Risk Events on the progress of the Works and on the Due Dates.

Accordingly the updated Working Schedule provide the calculation of the interim value of the work completed for the purposes of payment and the ultimate projected out-turn cost of the Works.

Flow Chart No. 9, “Valuation”, illustrates the process of valuation in relation to the updated Working Schedule and the relationship of this Flow Chart to Flow Charts No. 2, “Working Schedule” and No. 12, “Issue Resolution”.

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626 Clause 38.4.
627 Clause 43.4.
628 Clause 38. See also “Contractor’s Pricing Document”, on page 39.
629 Clauses 43 and 44.
630 Clause 40. Competent valuation requires Variations and any changes in quantity or provisional quantities (and re-measurement contract) to be timeously quantified and resourced together with the date when such events are actually progressed. See Clauses 33 and 44.
631 Clause 52.2.
632 See Clauses 33.5, 43, 44 and 51.3.
633 Clauses 28, 33 and 54.
634 Clause 53.
635 See page 103.
PAYMENT

The primary mechanism for payment under the Contract is the Contract Administrator’s Notice of Payment Due,\(^{636}\) which is dependent upon the Cost Manager establishing the Current Contract Value of the Works,\(^{637}\) which is dependent upon the Cost Manager establishing the out-turn Predicted Cost of the Works,\(^{638}\) which, in turn is dependent upon the Contractor’s updated Working Schedule\(^{639}\) and the Progress Records.\(^{640}\)

The Contract provides for the Contractor to pay the Employer as well as for the Employer to pay the Contractor.\(^{641}\)

If the primary mechanism for payment breaks down, the Contractor may formulate its own Notice of Payment Due, which then takes effect on its date of issue.\(^{642}\)

There is a defined time scale for the issue of the Notice of Payment Due and the ultimate payment to the Contractor. Appendix B provides for the periods to be identified but, if none is stated, the default final date for payment is 20 Business days from the Notice Date.

If either party has a legitimate cause for paying less than stated in the Notice of Payment Due, it may pay less provided that the calculation of and reason for the deductions is set out in a notice to the payer issued no less than 5 Business Days before the final date for payment.\(^{643}\)

Unless Applicable law requires otherwise, interest at the rate stipulated in Appendix B, is chargeable on any late payment.\(^{644}\)

Where payment in full is not made by the due date, in default of such notice, where the Employer is to pay the Contractor, the Contractor may suspend all or any of its obligations until payment is made, at the time and cost risk of the Employer.\(^{645}\)

Flow Chart No. 10, “Payment”,\(^{646}\) illustrates the process of payment, deductions and the parties redress for non-payment and late-payment in relation valuation and the relationship of this Flow Chart to Flow Charts No. 9, “Valuation” and No. 12, “Issue Resolution”.\(^{647}\)

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\(^{636}\) Clause 64.

\(^{637}\) Clause 61.

\(^{638}\) Clause 60.

\(^{639}\) Clause 40.

\(^{640}\) Clause 39.

\(^{641}\) Clauses 66.3 and 66.5.

\(^{642}\) Clauses 65 and 66.2.

\(^{643}\) Clauses 66.3.2 and 66.5.2.

\(^{644}\) Clause 67.1.

\(^{645}\) Clause 66.4.

\(^{646}\) See page 104.
EXCHANGE OF INFORMATION

EARLY WARNING AND RISK MANAGEMENT

This contract provides the parties with all the tools necessary to reach a contemporaneous binding determination on the Contractor’s entitlement to additional time. It therefore avoids the likelihood (which is faced in many other types of standard forms) of claims for additional time and/or money being left to the end, resulting in confusion of responsibility during the course of the Works and costs wasted in retrospective litigation, arbitration and adjudication to determine liability for the ultimate unmanaged loss.

If anyone becomes aware of anything likely to interfere with the progress of the works or its cost, they are to issue a notice to that effect to the Contractor, following which the Contractor is to issue an Early Warning, following which the Contract Administrator is to arrange for a risk management meeting to identify how the risk should be dealt with, to update the Risk Register and to issue appropriate instructions for avoidance or mitigation of its effects.

Flow Chart No. 6, “Early Warning”, illustrates the procedure of submission and operation of an Early Warning and the relationship of this Flow Chart to Flow Charts No. 5, “Revision of Working Schedule”, and No. 7, “Extension of Time and Compensation”.

PRE-EXISTING CONDITIONS

The status of any information provided by the Employer in relation to the accuracy of any investigation report, data, maps, Drawings, historical records or any other information of any kind provided by the Employer concerning existing structures, the physical ground conditions, subsurface conditions, geology, below ground services and/or any other significant features (such as a sculpture in the grounds of an existing building) must be stated in the Contract Specification. Unless advised to the contrary, the Contractor may rely upon whatever information is provided. However, unlike other standard forms, under the Contract the parties have the option of carving out elements of responsibility for various risks.

One possibility is that the Employer might assign a survey report to the Contractor. Assignment (or otherwise giving contractors the ability to rely on surveys) could result in lower bid returns.

Another possibility is that the Employer might obtain a reliance letter for the Contractor from the producer of any survey report.

Ultimately it is for the Employer to decide how to deal with its risks. It can
provide no site data at all and let bidders price for the cost of carrying out their own surveys\(^{651}\)

arrange for letters of reliance to be given to the Contractor and exclude the provisions of Clause 11.2, or

leave Clause 11.2 in place, but be aware that to the extent that the Contractor claims time and/or costs for the consequences of deficiencies in it, the Employer may similarly have to claim against the producer of the site data.

If any limit is to be placed upon the reliability of any Site data provided, or the Contractor is not to rely upon anything provided, but to make its own investigations, this must be made clear in the Contract Specification.\(^{652}\)

Suspension of any part or the whole of the Works as a result of the discovery of Unforeseeable Conditions may be identified as being entirely at the Contractor’s Risk, entirely at the Employer’s Risk, or the liability for time and cost can be allocated separately to one or the other.\(^{653}\) Unless a distribution of risk is identified in Appendix F, the risk of both time and cost caused by suspension as a result of the discovery of Unforeseeable Conditions is at the Employer’s Risk.\(^{654}\)

### INFORMATION, DRAWINGS, DETAILS, AND ANYTHING THE EMPLOYER IS TO PROVIDE

Where the Specification stipulates a date by which the Employer warrants that it will supply any information, Drawings, details, or anything which the Employer is to provide to the Contractor, the supply is to be identified by a Key Date in the Working Schedule.\(^{655}\)

Where no fixed date is stipulated, the Contractor is to indicate the logical date for receipt in its Working Schedule\(^{656}\) and make its request for any acceptance, or approval of a submission,\(^{657}\) the supply of anything the Employer is to provide,\(^{658}\) instructions and other information,\(^{659}\) no later than 10 Business Days before it would like to receive any response.\(^{660}\)

\(^{651}\) If data exists it should be disclosed. However, if the Contractor is not permitted to rely on it, it should be disclosed with a warning to the effect that the data is provided for information only and no representation is made by the Employer as to its accuracy, completeness or sufficiency. The contractor should also be advised to conduct its own investigations and warned that a failure to do so will not constitute a clash, conflict, discrepancy, omission, error, inconsistency and/or ambiguity in information provided by the Employer, (correction of errors in Contract Documents), or Clause 19.3 (investigation and disposal of Findings).

\(^{652}\) Clause 11.2.

\(^{653}\) Appendix F, Paragraph F20.

\(^{654}\) Appendix F. See asterisk footnote to Paragraph F20.

\(^{655}\) See “Contract Specification”, on page 36, and Appendix D, Paragraph D3 j. and k.

\(^{656}\) Appendix D3, Paragraph D3 k.

\(^{657}\) Clause 12.1.1.

\(^{658}\) Clause 12.1.2.

\(^{659}\) This obligation does not extend to instructions for a Variation other than instructions to which Clause 3.7 (correction of errors in Contract Documents), or Clause 19.3 (investigation and disposal of Findings) apply.

\(^{660}\) Clause 12.3.
Where any such request is made, the Contract Administrator is to respond no later than the later of four possibilities.\(^{661}\) In effect, this means that irrespective of any date by which the Contractor requests that anything is to be supplied or the Employer warrants that anything will be supplied, if the currently accepted Working Schedule shows that it is not needed until a later date, it need not be supplied until that later date.

Only if it is not supplied by that later date is there a delay in supply for which the Employer is at risk as to the time and cost consequences.\(^{662}\)

**EMPLOYER’S REFERENCE DESIGN**

Where the Employer produces a Reference Design for the purposes of describing its requirements, it must be made clear in Appendix B\(^ {663}\) that it has been prepared

1. For information purposes only and cannot be relied upon for any purpose
2. to a defined Design Stage or Design Level of Development, or
3. to a particular status defined in the Special Conditions.

The use to which a design completed to a particular Design Stage or Design Level of Development is indicated in Table 1 of Appendix C by reference to geometry and content.

Where the Reference Design has been prepared to a defined Design Stage or Design Level of Development referred to in Table 1 of Appendix C, that stage must also be inserted in Appendix B, otherwise option 2 becomes inapplicable.

Unless the status is made clear by deletion and the insertion of appropriate data, the Reference Design will be deemed to be supplied for information purposes only and may not be relied upon by the Contractor for any purpose.

**CONTRACTOR’S DESIGN**

The Contract provides for the possibility of the Contractor designing the whole of the Works,\(^ {664}\) making a Design Contribution to a design prepared by or under the direction of the Employer,\(^ {665}\) or having no design responsibilities at all.\(^ {666}\) Any value engineering, or suggestion by the Contractor as to how the Works may be made more cost effective, is deemed to be a Contractor’s Design Contribution.\(^ {667}\)

\(^{661}\) Clause 12.4.
\(^{662}\) Appendix F, Paragraph F12.
\(^{663}\) Clause 11.1.
\(^{664}\) Clauses 16 and 17.3.
\(^{665}\) Clauses 16 and 17.2.
\(^{666}\) In which case, Clause 16 is of no effect.
\(^{667}\) Clause 16.1.
Unless prepared as a Building Information Model in a Common Data Environment, which automatically records such information, the Contractor’s Design submissions are to be recorded in a database by the Contract Administrator. Unless instructed otherwise, the Contractor may not start any Design Stage until the previous stage has been signed off as satisfactorily completed.

Necessarily, the Contractor’s Design also includes any design prepared by a Subcontractor or supplier and by the terms of the Subcontract each Subcontractor it is to indemnify the Contractor against any deficiency in its design and warrants to the Employer the sufficiency and quality of its design.

The duration and cover required of any Professional Indemnity insurance to be taken out by the Contractor must be stated in the Special Conditions. It should be borne in mind in this regard that post-completion design liability is notoriously difficult to predict and the Employer might usefully consider requiring a single premium payment for the Contractor’s project-specific professional indemnity insurance.

Where the Contractor designs the whole of the Works and unless the Special Conditions state otherwise, apart from those licences and permissions required for the carrying out of the Works, the Contractor must also obtain those required for the development of land and occupation of the finished project.

Where a Contractor’s Design is a Contract Document it must conform to the other Contract Documents. In the event that there is in it, or between it and any other Contract Document or Local Law, any actual or potential impossibility, clash, conflict, discrepancy, omission, error, inconsistency and/or ambiguity, it must be notified to the Contract Administrator, who is obliged to issue instructions for correction. The time and cost effect of compliance with such instructions is at the Contractor’s risk.

Whilst the Contractor owns the copyright in any design it produces, the Employer is to have a perpetual, irrevocable, non-exclusive and royalty-free licence to use the Contractor’s Design in connection with

- constructing the Works
- resolving any issue or dispute arising out of or in connection with the Contract
commissioning, maintaining and operating the finished project
promotional activity, advertising, leasing or selling, and/or
repairing or altering the project, irrespective of who performs such repairs or alterations.

BUILDING INFORMATION MODELLING

Building Information Modelling can be achieved in a number of different prescribed levels of sophistication ranging from uncoordinated 2D computer aided design Drawings, printed on paper, to a fully integrated and collaborative virtual web based Model, which includes construction sequencing, cost and scheduling data and operations and maintenance management information. The lowest level of maturity is referred to as Level 0 and the highest, Level 3. The Contract provides for working at Level 2, as a coordinated three-dimensional Model or a Federated Model comprising separate Models, with data attached.677

Where the design is to be prepared by the Contractor using Building Information Modelling, the Contractor is responsible for appointing its own design coordination manager,678 who must produce a Design Execution Plan for the Contract Administrator’s approval within 20 Business Days after the Start Date.679

The Conditions anticipate the preparation of a Building Information Modelling Protocol identifying the participation and responsibility of the various designers in the preparation of whatever individual Models are required or a Federated Model. If a project-specific Protocol is not identified in Appendix B then for the avoidance of ambiguity, it is important to delete from the default Protocol680 any clause giving that Protocol priority over the Contract Conditions.

Where the Works are designed by or under the direction of the Employer, the party responsible for the maintenance of the Model will be the Employer’s design coordination manager (usually working under the direction of the lead design consultant) to ensure the proper coordination of that Contribution.

The Contract requires time and cost data to be contained in the Working Schedule,681 which can be integrated with a Model if required. In any case, where a Model is used the Working Schedule must adopt the same coding structure as the Model.682

677 The UK Government’s published Building Information Modelling strategy requires the industry to achieve this Level 2 maturity by 2016.
678 Clause 17.3.2.1.
679 Clause 15.1.
680 Clauses 17.4 and see also “Appendix B, Building Information Modelling Protocol”, on page 20.
681 Clauses 37 and 38.
682 Appendix D, Paragraph D6.
INSURANCES

There are no default provisions for insurances under the Contract. The Contract provides for those insurances which are specified in the Special Conditions to be taken out for the duration and cover stated and for redress if they are not. The parties are advised to take professional advice from their insurance brokers on the insured risks cover and duration which is appropriate in relation to the parties, the project and the nature of the work or services to be performed.

TESTING AND COMPLETION TESTING

The Contract provides for the interim testing of any samples of work, materials, goods or plant and also provides for Completion Testing.

Interim testing and Completion Testing are to be separately defined in the Specification which is required to identify everything to be tested, its location, the method of testing and the Standards to be achieved.

Completion Testing is relevant to any tests which must be carried out and satisfactorily completed after the Works or any Section have been carried out and before it is deemed to be Substantially Complete.

In complex mechanical and/or electrical plant or engineering, commissioning and Completion Testing requirements are often extensive and on such projects, the Contractor is also likely to be required to provide Performance Bonds, guarantees and Collateral Warranties.

Where any interim or Completion Testing is required, the appropriate Activities must be indicated in the Working Schedule and described in the Planning Method Statement. The Activities are to be logically linked to the completion of Activities, trades, resources or sequences to which they relate. The anticipated extent and timing of any testing will thus be plain for all to see from the Working Schedule and Planning Method Statement. Nonetheless, the Contract also provides for notice of any testing to be given no later than five Business Days before any test is to be carried out. All testing is to be witnessed by the Contract Administrator and such other persons whose

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683 Clause 10.
684 Clause 26.
685 By definition, Substantial Completion cannot be achieved until all the work required under the Contract has been performed and operation and maintenance manuals required by the Specification have been provided.
686 For example, power stations, wind farms, hospitals, advanced science laboratories, high technology buildings and other projects procured on a turnkey basis.
687 See Clauses 8 and 9.
688 Clause 37 and Appendix D, Paragraph D3.
689 Clauses 26, 37 and 38.
690 Clause 26.3.
attendance may have been required, such as any relevant designer, supervisor, clerk of works or the Employer.691

The Contractor may proceed with any testing on the scheduled date irrespective of whether the Contract Administrator or any other person required attends, unless the Contract Administrator instructs otherwise.692 If the Contract Administrator instructs the Contractor to defer the tests, the instruction is an Employer’s Time and Cost Risk Event.693

TERMINATION

The Contract provides for termination of the Contractor’s employment under the Contract in four categorised situations. These are for

- without fault on either side694
- the Contractor’s insolvency or specified default695
- the Employer’s insolvency or specified default,696 and
- where without fault on the part of the Contractor it becomes impossible or illegal to continue or part or the whole of the Works is suspended by reason of any of the occurrences in Appendix F for a continuous period of 120 Business Days or more.697

The latter case applies to all occurrences described in Appendix F, irrespective of whether they are described as being at the Employer’s or Contractor’s risk as to time and/or cost.

INSOLVENCY

Unlike termination for default, there is no power to repair insolvency and termination is immediate. If at any time before issue of the Certificate of Substantial Completion either party698

- becomes bankrupt or insolvent,
- goes into liquidation,
- has a receiving or administration order made against it,

691 Clause 26.1.
692 Clause 26.4.
693 Appendix F, Paragraph F10.
694 Clause 68.
695 Clause 69.
696 Clause 70.
697 Clause 71.
698 Clauses 69.1 and 70.1.
compounds with its creditors, or
- carries on business under a receiver, trustee or manager for the benefit of its creditors, or
- anything occurs which under Applicable Law has the effect of depriving the that party of the power to manage its financial affairs,

the other party may notify defaulter that the Contractor’s employment is immediately terminated, stating the Clause under which the termination is effected and the Contract Termination Date.

If, at the time of termination for Contractor insolvency, it has failed to provide in accordance with Clause 8.1.2 any requested sub-contractor Collateral Warranties in favour of the Employer that include step-in rights which would allow the Employer to take over the sub-contracts and complete the Works, then to the extent it fails to do so and to the extent the failure is not due to sub-contractor insolvency, the Employer may withhold a reasonable proportion of any sums owing to the Contractor until such Collateral Warranties are provided.  

On the other hand, where notice of termination is given for a specified default, the notice must state

- the nature of the default
- the date of its occurrence, and
- the action required to remedy the default or, if appropriate, that it believes the default is incapable of being remedied

the defaulting party is then given 10 Business Days to correct the default following which, within 5 more Business Days the Contractor’s employment may be terminated.

Notwithstanding that the innocent party believes the default to be incapable of being remedied, the defaulting party may nevertheless, within 5 Business Days propose a solution, which at the innocent party’s discretion may be accepted or rejected, or if further details of the proposal are requested, they must be provided within a further 10 Business Days before the Contractor’s employment may be terminated. In all cases, on termination the Contractor is entitled to be paid for the Current Contract Value of work done, valued in accordance with Clause 61, together with the value of any Contractor’s Plant, Temporary Work, or Welfare Facilities remaining on Site after termination. Where termination is without fault, the Contractor is entitled to be paid in addition

- the cost of removal from the Site of any Contractor’s Plant, Temporary Work, or Welfare Facilities which are to be removed
- any costs and loss and/or expense incurred by the Contractor and arising directly from the termination

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499 Clause 69.2.
500 Clauses 69.3 and 70.2.
501 Clauses 69.4 and 70.3.
502 Clauses 69.5, 69.6, 70.4 and 70.5.
503 Clause 68.2.1.
504 Clause 68.2.4.
the amount of any unrecovered Overheads and Profit on the uncompleted work at the date of termination. 705

Where termination is for Contractor default, the Contractor’s basic entitlement arising out of termination without fault is to be reduced by

- any expenditure and/or loss arising directly from the termination incurred by the Employer, and
- the cost to the Employer of completing the Works. 706

Where termination is for Employer default, the Contractor is also entitled to paid in addition

- the amount of any Overheads and Profit on work not completed at the date of termination 707
- the cost of removal from the site of any Temporary Work, Contractor’s Plant, or Welfare Facilities which are to be removed 708
- the value of any Contractor’s Plant. Temporary Work and unfixed goods and materials remaining on Site 709
- any costs and loss and/or expense suffered by the Contractor and arising directly from the termination. 710

Where termination occurs because it is impossible or illegal to proceed or there has been a prolonged suspension caused by one of the stipulated risks the Contractor is also entitled to be paid for the value of any Temporary Work, Contractor’s Plant and unfixed goods and materials remaining on Site. 711

Apart from the stated heads of claim, the Contractor is not be entitled to any other consequential loss or damages for termination. 712

Flow Chart No. 11, “Termination”, 713 illustrates the timescales and process of the various methods of termination.

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705 Clause 68.2.1.
706 Clause 69.9.
707 Clause 70.7.1.
708 Clause 70.7.2.
709 Clause 70.7.3.
710 Clause 70.7.4.
711 Clause 71.3.
712 Clause 72.4.
713 See page 105.
The Contract provides for the private processes of mediation\(^714\) conciliation\(^715\) and Expert Determination for the contemporaneous resolution of differences of opinion. However, if the parties cannot agree, or do not accept the Expert’s Determination, either party may refer their dispute to adjudication and/or arbitration according to the appropriate rules, or if it identified as such in Appendix B, the courts of a particular jurisdiction.\(^716\) In such formal proceedings, either party may call the Principal Expert or any other Expert who has played a part in the Determination as a witness and the Expert’s Determination may be produced as evidence in the proceedings.\(^717\)

Unless the parties agree otherwise, as it is with the decision of a court, any Adjudicator’s Decision and/or the Arbitrator’s Award is a public document.\(^718\)

Flow Chart No. 12, “Issue Resolution”,\(^719\) illustrates the timescales and process of the various methods of dealing with differences between the parties by conciliation, Issue Resolution, Adjudication and Arbitration. Mediation is available to the parties at any time, by agreement.\(^720\)

**ISSUE RESOLUTION**

The Contract takes the view that differences of opinion as to liability and hence the party who is empowered to control the risk should be dealt with immediately, otherwise the party ultimately responsible will be deprived of its ability to control its exposure to risk. Accordingly, the Contract provides that differences of opinion arising during the Contract should not be permitted to remain unresolved until it is too late to do anything about them other than compensate the injured party, but should be brought to the fore immediately and resolved privately, if possible.\(^721\)

Where the difference of opinion concerns the rejection or conditional acceptance of a submission or the power to issue particular instructions or certificates, the issue must be resolved immediately, or within 5 Business Days must be submitted for Issue Resolution. If not so submitted, those particular issues are deemed to be agreed and can then no longer form the basis of a dispute.

The particular issues upon which a time limit is imposed before agreement is deemed to have been reached are

\(^{714}\) Clause 74.1.
\(^{715}\) Clause 73.3.
\(^{716}\) Clause 74.11
\(^{717}\) Clause 73.11.
\(^{718}\) Clause 74.6.
\(^{719}\) See page 106.
\(^{720}\) Clause 74.1.
\(^{721}\) Appendix G, Paragraph 1.
Within 5 Business Days of notice of an Issue referral, the Employer’s Representative and Contractor’s Representatives (if available) are to formally attempt to agree the matter, if at all possible. If they have not done so within a further 5 Business Days (10 Business Days from the notice), the matter is automatically referred to the Principal Expert for Determination.

If the Principal Expert is not identified in Appendix B, then the appointment can be agreed between the Employer’s Representative and Contractor’s Representative for a specific reference, or in default, the Principal Expert is to be appointed by the Appointing Body (if any) and, if none is identified then by default, the Academy of Experts.
For any particular issue, the Principal Expert may call on other experts named in Appendix B. Where it is necessary to consult another expert not identified in Appendix B, either because none is identified in the appropriate discipline or, if identified, is not available at the time, the Principal Expert may consult such other person as it considers necessary.\textsuperscript{726}

For every issue referred to Issue Resolution, the Principal Expert is required to determine\textsuperscript{727}

\begin{itemize}
  \item whether the Contractor’s submission properly complies with the Contract and, if not, with which term of the Contract it is in breach
  \item whether the rejection of the submission, valuation, or measurement, if any, was proper in the circumstances
  \item whether the conditions applied to acceptance, if any, would properly have rendered the submission, valuation, or measurement not in conformance with the Contract
  \item whether the conditions applied to acceptance, if any, amount to a Variation of the Contract
  \item whether and, if so, what other conditions should reasonably be applied to acceptance, and
  \item any other questions identified or required by the parties having regard to the nature of the Issue.
\end{itemize}

The procedure to be adopted is set out in Appendix G. In summary, the other party has 5 Business Days in which to formulate its response,\textsuperscript{728} during which time the parties’ representatives are to meet to attempt to resolve the issue. If the issue is not resolved to their mutual satisfaction within a further 5 Business Days, the Principal Expert takes over management of the Issue Resolution procedure and must make its Determination within a further 20 Business Days,\textsuperscript{728} the whole procedure from notice of referral to Determination being completed in 30 Business Days from notice of referral.

The Principal Expert’s Determination may be relied upon by either party in any subsequent dispute resolution procedure and the Principal Expert and/or any other expert who has contributed to the Determination may be called as a witness, by either party, the nominated court or the arbitral tribunal, in any subsequent dispute resolution procedure.\textsuperscript{730}

Flow Chart No.12, “Issue Resolution”,\textsuperscript{731} illustrates the timescales and process of Issue Resolution in relation to Adjudication and Arbitration.
ADJUDICATION

The Contract contains provision for final dispute resolution by the courts of a named jurisdiction\(^{732}\) and for private dispute resolution by both Adjudication and Arbitration.\(^{733}\) However, unless Local Law requires that a dispute may be referred to Adjudication at any time, (as it does, for example, in the UK and several other jurisdictions\(^ {734} \)), no dispute arises unless and until the Principal Expert has issued its Determination.

In order to provide transparency in the operation of the Contract and to provide the industry with guidance on the way disputes under the Contract are dealt with, unless the parties agree otherwise both the Adjudicator’s Decision and the Arbitrator’s Award are to be public documents.\(^ {735} \)

When Local Law does not, Appendix B permits the Employer to identify whether Adjudication is to apply,\(^ {736} \) and if so, by what rules the adjudication is to be conducted\(^ {737} \) and who the adjudicator should be.\(^ {738} \) If no rules are identified in Appendix B but adjudication is identified as a means of dispute resolution then, by default, the rules to be applied are the Scheme for Construction Contracts modified as necessary to meet any requirements of adjudication under Local Law.\(^ {739} \) If no adjudicator is named in the Contract or subsequently agreed, then the appointing body for the purposes of the Scheme is the CIOB.\(^ {740} \) Joinder appears to be rarely sought in adjudication and it is not provided for in the standard form.\(^ {741} \) If the parties require joinder provisions for adjudication they should be included in the Special Conditions.\(^ {742} \)

Flow Chart No.12, “Issue Resolution”,\(^ {743} \) illustrates the timescales and process of Adjudication in relation to Issue Resolution.

\(^{732}\) Clause 74.11.
\(^{733}\) Clause 74.
\(^{734}\) See Note 160.
\(^{735}\) Clause 74.6.
\(^{736}\) Clause 74.7 and see “Appendix B, Adjudication”, on page 30.
\(^{737}\) Clause 74.7 and see “Appendix B, Rules of Adjudicator”, on page 31.
\(^{738}\) Clause 74.8 and see “Appendix B, The Adjudicator, on page 31.
\(^{739}\) Clause 74.7.
\(^{740}\) Clause 74.8 and see Appendix B, “Appointing Body”, on page 30.
\(^{741}\) Whether joinder of statutory adjudication is permissible is undecided in English law although there is obiter authority, see Yuanda (UK) Co Ltd v WW Gear Construction Ltd, [2010] EWHC 720 (TCC) per Edwards-Stuart J.
\(^{742}\) Clause 74.14.
\(^{743}\) See page 106.
FINAL DISPUTE RESOLUTION

COURT

Where it is intended that final dispute resolution is to be by the courts of a particular jurisdiction, that must be stated where indicated in Appendix B, otherwise the final dispute resolution process will be arbitration. Arbitration can be advantageous due to the ease with which an arbitral award obtained in one country can be enforced through the courts of another country. Enforcement can be a key consideration on international projects. This is because 146 states (as at the time of writing) are signatories to the New York Convention 1958,\(^{744}\) under which they have agreed to such reciprocal enforcement, subject to a few exceptions. In comparison, there is no similar treaty of equal spread to deal with the reciprocal enforcement of foreign court judgements.

ARBITRATION

Unless the courts of a particular jurisdiction are identified in Appendix B as the tribunal of final dispute resolution, final dispute resolution is by Arbitration according to the rules identified in Appendix B,\(^ {745}\) or if no rules are identified then in accordance with the Arbitration Rules of the London Court of International Arbitration.\(^ {746}\)

The arbitrator may be named in the Contract.\(^ {747}\) The appointment of the same arbitrator across all Connected Contracts, Consultancy Appointments and Subcontracts should lead to greater consistency between the various arbitral awards, regardless of joinder/consolidation of claims. If not specified in the Contract or subsequently agreed, the appointing body is the CIOB.\(^ {748}\)

Joinder provisions permit the Contractor to be joined to arbitrations commenced in respect of other agreements involving the Employer and provide for the Contractor’s consent to joinder of third parties to an arbitration under the Contract.\(^ {749}\)

Contracts between the Employer and a third party such as Connected Contracts (e.g. finance agreements and development agreements) and consultancy appointments (e.g. contracts with the Contract Administrator and Listed Persons) should also provide for the third party to be joined to an arbitration under the Contract.

The Contract contains joinder provisions which permit the Contractor to be joined to arbitrations commenced about disputes related to other agreements involving the Employer and require

\(^{744}\) The International Convention on the Recognition and Enforcement of Foreign Arbitral Awards.

\(^{745}\) Clause 74.11.

\(^{746}\) Clause 74.11 and see “Appendix B, Rules of Arbitration”, on page 31.

\(^{747}\) Clause 74.12 and see “Appendix B, The Arbitrator”, on page 31.

\(^{748}\) Clause 74.11 and see “Appendix B, Appointing Body”, on page 30.

\(^{749}\) Clauses 74.13 and 74.14.
the Contractor to consent to the joinder of third parties to an arbitration under the Contract. In order to make sure that contracts between the Employer and a third party allow such third party to be joined, they should contain a clause to the effect that

“Notwithstanding any other provision of this agreement, the parties hereby agree to be bound by Clause 66.14 of the [Construction Contract] and acknowledge that they shall be Consenting Parties for the purposes of that clause.”

The consolidation of claims, combining arbitrations under different agreements into a single proceeding, is more complex because the contracts may range from upstream Connected Contracts\(^{750}\) to agreements which sit alongside the construction contract.\(^{751}\) Whilst it may not be easy to agree consistent arbitration clauses, the joinder/consolidation clauses\(^{752}\) will bind both the Employer and the Contractor in respect of the Contract as well as any third party which has agreed to be bound by the provisions.\(^{753}\) Such third party agreement can either be set out in the contract with the Employer or the third party can confirm its agreement by a short side letter to the Employer in the terms suggested above.

The arbitrator with jurisdiction to hear the consolidated dispute will be the arbitrator appointed in respect of the first referred claim.\(^{754}\) If that claim did not arise out of the Contract, the arbitration procedure for the consolidated proceeding will be that which is set out in the relevant contract (or which was agreed ad hoc for that contract) and the applicable law, arbitration rules and seat and procedural law which then apply may differ from those agreed in the Contract.

Clauses 74.14 and 74.15 also permit the Employer to consolidate against the same Contractor two or more claims it has under different contracts into one for the purposes of the arbitration.\(^{755}\) Flow Chart No.12, “Issue Resolution”,\(^{756}\) illustrates the timescales and process of Arbitration in relation to Issue Resolution and Adjudication.

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\(^{750}\) For example, finance and development agreements which will largely dictate the construction terms under the construction contract rather than vice versa.

\(^{751}\) For example, service agreements with the Contract Administrator, Listed Persons directly appointed specialist contractors, and so on.

\(^{752}\) Clauses 74.14 and 74.15.

\(^{753}\) A party with which the Employer has entered into an agreement. This will include appointments of Listed Persons, development agreements, agreements for lease, collateral warranties from novated consultants, and so on.

\(^{754}\) Clause 74.15.

\(^{755}\) For example, where the Contract serves as the construction contract but the Employer has also entered into a project-specific operation and maintenance agreement with the same Contractor.

\(^{756}\) See page 106.
Clauses 15.7 and 23.7
Contractor may not carry out any work not described by a compliant submission, if work has been started
Contract Administrator instructs suspension of the works, Temporary Works or any part of them

There has been a failure to distribute a contractually compliant submission for acceptance
Clauses 15.7, 23.7 and 57
Contractor is responsible for delay to progress, and liable for expenditure and/or loss, liquidated damages and/or consequential loss up to the limit of the specified caps, if any

Clause 64.3.1
Employer recovers cost from Contractor

Clause 15.1
distribution of Design Execution Plan

Clauses 37.5, 37.6, 39.2, 40.1, 40.6, 41.1 or 42.5
Submission concerns Progress Records or the Working Schedule

Clause 23.2
distribution of Contractor’s working methods

Clause 36.1
Project Time Manager notifies Contract Administrator of Contractor’s default

Clause 43.6
Submission concerns Impact of an Event on the Working Schedule

Clause 36.2
Employer may employ others to make investigations, keep records and make schedules of work done

Clauses 43.8.1 and 44.3.1
Contract Administrator must use the records and schedules to determine Contractor’s entitlement to extension of time and/or compensation

Clauses 43.8.2 and 44.3.2
Contract Administrator may use any information suitable for determining Contractor’s entitlement

Clause 15.6 and 23.6
Contractor provides compliant submittal

Clauses 40.4, 41.4 and 48.2
Contractor recovers culpable delay at its own expense
Flow Chart No. 4 – Update of Working Schedule

Clause 40.1: Contractor inputs Progress Records into Working Schedule.

Clause 40.2: Contractor resets Data Date, reschedules Working Schedule and recalculates Critical Paths.

Clause 40.4: Contractor revises its intentions so as to overcome any predicted delay to achievement of a Due Date.

Clause 40.5: Time Manager notifies Contractor that submittal is rejected or conditionally accepted for specified reasons.

Clause 40.7: Time Manager advises Contract Administrator that submittal is accepted.

Clause 13.6: Contractor submits issue for Issue Resolution.

Appendix D: Paragraph D13: Submission is maintained in Common Data Environment.

Clause 37.11: Time Manager maintains database record of submission.

Clause 40.7: Time Manager advises Contract Administrator that submittal is accepted.

Clause 13.4: Contractor corrects defects and submits compliant Draft Updated Working Schedule and Planning Method Statement.

Clause 54.4: Certificate of Substantial Completion issued since the last published update.

Clause 13.2: Contractor inputs Draft Updated Working Schedule into Working Schedule.

Clause 39.1 and 39.2: Progress Records have been published for acceptance.

Clause 40.1: Contractor inputs Progress Records into Working Schedule.

Clause 13.6: Contractor submits issue for Issue Resolution.

Clause 40.4: Contractor revises its intentions so as to overcome any predicted delay to achievement of a Due Date.

Clause 40.5: Time Manager notifies Contractor that submittal is rejected or conditionally accepted for specified reasons.

Clause 13.4: Contractor corrects defects and submits compliant Draft Updated Working Schedule and Planning Method Statement.
Clause 23.3 Contractor wishes to change its way of working

Clause 23.3 Contractor revises its statement of working methods for acceptance

Clause 23.5 Contractor Administrator for no reason notifies Contractor that submitted Working Methods Statement is rejected or conditionally accepted for specified reasons

Clause 23.6 Contractor revises its statement of working methods and distributes it for acceptance

Clause 23.8 Contractor Administrator notifies Contractor that submitted Working Methods Statement is rejected or conditionally accepted for specified reasons

Flow Chart No. 5 - Revision of Working Schedule

Clause 41.1 Status interval identified in Appendix B has elapsed

Clause 41.3 Contractor has obtained better information about the work to be done or the resources to be used

Clause 41.4 Contractor recalculates Critical Paths and revises its intentions so as to overcome any predicted delay to achievement of a Due Date

Clause 41.5 Time Manager advises Contract Administrator that submission is accepted

Clause 41.6 Time Manager advises Contractor that submission is rejected or conditionally accepted for specified reasons

Clause 41.7 Contractor corrects defects and publishes compliant Draft Revised Working Schedule and Planning Method Statement

Clause 41.8 Contractor Administrator accepts submission as is or conditionally accepted for specified reasons

Clause 41.9 Contractor Administrator notifies Contractor that submission is rejected or conditionally accepted for specified reasons

Clause 41.10 Contractor Administrator accepts submission as is or conditionally accepted for specified reasons

Clause 41.11 Time Manager maintains database record of submission

Clause 37.11 Time Manager maintains database record of submission

Go to Flow Chart 1 (failure to publish)
Clause 34.1
Event described in Appendix F is perceived to be likely to occur or is occurring.

Yes
No
Yes
No

Clause 34.2
Contractor is aware of the material circumstances.

Yes
No

Clause 34.3
Contractor prepares description and likely effect on progress and issues to Contract Administrator and Listed Persons as an Early Warning.

Yes
No

Clause 35.1
Risk Management meeting determines strategy for dealing with risk of Event and/or its consequences.

Yes
No

Clause 35.2
Contractor Administrator updates Risk Register identifying new Data Date, revisions of risk, agreements made and instructions issued.

5 Business Days

Clause 35.3
Instructions issued involve a revision of Working Schedule and Planning Method Statement.

Clause 36.1
Event comprises a suspension of a working period.

Clause 36.2
Event comprises a change in a planned Activity or an additional Activity.

Clause 36.3
Contractor identifies non-working period in appropriate working calendar.

Clause 43.1
Contractor, Employer, Contract Administrator or Listed Person notify Contractor of material circumstances.

Clause 43.2
Contractor proceeds to prepare submission in time for next Progress Meeting.

Clause 43.3
Event comprises a suspension of a working period.

Clause 43.4
Contractor publishes Draft Impacted Working Schedule and Planning Method Statement showing effect of all Events occurring since the last Progress Meeting for acceptance.

Clause 43.5
Contractor adds Fragnet or non-working period to Working Schedule sequentially, recalculates the Critical Path, identifies effect and publishes Draft Impacted Working Schedule and Planning Method Statement for acceptance.

5 Business Days before next Progress Meeting

Clause 43.7.1
Contractor proceeds to prepare submission in time for next Progress Meeting.

Clause 43.7.2
Other Events have occurred since last Progress Meeting.

Clause 37.11
Time Manager maintains database record of submission.

Appendix D
Paragraph D 13
Submission is maintained in Common Data Environment.
Clause 51.1.1.1 Event identified in Appendix F has occurred

Clause 51.1.1.2 Event is an Employer’s Time Risk Event

Clause 51.1.4 Impact of the Event is likely to prevent the works or a Section from being completed by a Relevant Date for Substantial Completion

Clause 43 Draft Impacted Working schedule and Planning Method Statement have been published

Clause 51.2.2.1 Contact Administrator to confirm Relevant Completion Date

Clause 51.3 Any award previously made is revised in light of facts

Clause 51.3 Contractor and Employer agree Contractor’s estimate of time effect of event

Clause 44.1 Event is also an Employer’s Cost Risk Event

Clause 44.1 Delay to progress or suspension has caused, is causing or is likely to cause Contractor loss and/or expense

Clause 44.1 Contractor gives notice that loss and/or expense is likely to be caused

Clauses 51.2.2.1 and 51.2.2.2 Contractor Administrator awards extension of time accordingly

Clause 44.1 Event is also an Employer’s Cost Risk Event

Clause 44.1 Contractor gives notice that loss and/or expense is likely to be caused

5 Business Days before next Progress Meeting

Flow Chart No. 7 – Extension of Time and Compensation
Clause 73.1
Disagreement has arisen

20 Business Days

Clause 73.2
Notice issued to other party of a matter for Issue Resolution

Clauses 13.6, 15.6, 20.4, 23.6, 24.9, 25.2, 25.6, 26.10, 31.4, 33.4, 33.5, 33.6, 33.7, 38.5, 38.11, 39.4, 40.8, 41.6, 50.1 and 54.3

Issue is deemed to be agreed

Clause 74.7
Adjudication is applicable

Clause 74.11
matter referred to court of nominated jurisdiction or arbitration commenced within limitation period imposed by Applicable Law

No

Clause 73.1
Notice is given to other party of a matter for issue resolution

No

Clauses 20.4, 24.11, 25.2, 25.6, 26.10, 31.4, 33.5, 33.6, 40.8, 50.1 and 54.3

Issue concerns other matters in which there is a brief time for referral

Another issue has arisen requiring an independent opinion

20 Business Days

Yes

Clauses 13.9, 15.5, 23.5, 37.8, 38.10, 39.3 and 41.5

Issue concerns rejection or conditional acceptance of a submittal

No

5 Business Days

Yes

5 Business Days

Yes

Yes

No

Yes

Yes

No

Yes

Yes

No

Yes

No

No

No

No

Clause 73.3
Authorised Representatives meet to resolve issue

Clause 73.4
Principal Expert is identified in Appendix B, or subsequently agreed

Procedure in Appendix G is followed

Appointment date of Principal Expert

No

further action

Clause 73.6
Principal Expert produces Issue Determination

No

Yes

Clause 73.7
Principal Expert produces Issue Determination

Parties accept Expert’s Issue Determination

No

Yes

Yes

Yes

No

Yes

No

Yes

No

Yes

No

Clause 74.7
Procedure and timing determined by Adjudication Rules identified in Appendix B

No

Yes

Yes