

RICS PRACTICE INFORMATION

Valuing change

UK

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RICS standards framework

RICS' standards setting is governed and overseen by the Standards and Regulation Board (SRB). The SRB's aims are to operate in the public interest, and to develop the technical and ethical competence of the profession and its ability to deliver ethical practice to high standards globally.

The RICS [Rules of Conduct](#) set high-level professional requirements for the global chartered surveying profession. These are supported by more detailed standards and information relating to professional conduct and technical competency.

The SRB focuses on the conduct and competence of RICS members, to set standards that are proportionate, in the public interest and based on risk. Its approach is to foster a supportive atmosphere that encourages a strong, diverse, inclusive, effective and sustainable surveying profession.

As well as developing its own standards, RICS works collaboratively with other bodies at a national and international level to develop documents relevant to professional practice, such as cross-sector guidance, codes and standards. The application of these collaborative documents by RICS members will be defined either within the document itself or in associated RICS-published documents.

Document definitions

Document type	Definition
RICS professional standards	<p>Set requirements or expectations for RICS members and regulated firms about how they provide services or the outcomes of their actions.</p> <p>RICS professional standards are principles-based and focused on outcomes and good practice. Any requirements included set a baseline expectation for competent delivery or ethical behaviour.</p> <p>They include practices and behaviours intended to protect clients and other stakeholders, as well as ensuring their reasonable expectations of ethics, integrity, technical competence and diligence are met. Members must comply with an RICS professional standard. They may include:</p> <ul style="list-style-type: none"> • mandatory requirements, which use the word 'must' and must be complied with, and/or • recommended best practice, which uses the word 'should'. It is recognised that there may be acceptable alternatives to best practice that achieve the same or a better outcome. <p>In regulatory or disciplinary proceedings, RICS will take into account relevant professional standards when deciding whether an RICS member or regulated firm acted appropriately and with reasonable competence. It is also likely that during any legal proceedings a judge, adjudicator or equivalent will take RICS professional standards into account.</p>
RICS practice information	<p>Information to support the practice, knowledge and performance of RICS members and regulated firms, and the demand for professional services.</p> <p>Practice information includes definitions, processes, toolkits, checklists, insights, research and technical information or advice. It also includes documents that aim to provide common benchmarks or approaches across a sector to help build efficient and consistent practice.</p> <p>This information is not mandatory and does not set requirements for RICS members or make explicit recommendations.</p>

Introduction

This practice information summarises what is meant by 'change' and how it is valued under JCT, NEC and FIDIC forms of contract. It does not seek to cover every form within these families, but covers rules and procedures from the most regularly used forms.

For the purposes of giving guidance, it is assumed that a valid change has occurred, and the document does not attempt to deal with demonstrating entitlement to a change.

Change is given specific definition within standard forms of contract, for example a Variation, Change of Employer's Requirements or a Compensation Event. Each of these terms is explained in the definition section of the relevant contract conditions. They will all have a common theme and be associated with valuing either:

- the carrying out of a different scope of work (addition or omission)
- the effect of carrying out the same scope of work in a different manner (timing, conditions, etc).

Guidance is given for each of the main groups of contracts and the forms in most regular use within those groups, under the following headings which map to the Assessment of Professional Competence (APC):

- General Principles (Level 1: Knowing)
- Practical Application (Level 2: Doing)
- Practical Considerations (Level 3: Doing/Advising).

Minimum level of service

The quantity surveyor is expected to fulfil the following duties, notwithstanding the detailed terms of any appointment or contractual obligation:

- Review the scope of the change and quantify it, in accordance with the provisions of the construction contract.
- Review documents submitted to the client, by a contracting party, which are intended to represent a quotation or valuation of change under the construction contract.
- Prepare a valuation of the change, in accordance with the construction contract, where there is a requirement to do so.

1 General principles: (Knowing)

Guidance is given within this section in respect of the main forms of contract currently in use. There is little difference between these forms and their predecessors, however, the reader is advised to check the precise wording if working with earlier versions or forms that are not specifically reviewed in this practice information.

There are many consistent principles of valuing change across the range of contracts. Most forms of lump sum contract, i.e. a contract which is neither measured as the works proceed nor based on a cost reimbursable arrangement, have some common basic principles:

- Additions to, and omissions from, contracted works are valued by quantifying the change of scope and using rates and/or prices for identical or similar work as the basis of valuation.
- Effects on preliminaries, risk allowances, design fees, overheads and profit, etc. should be considered as appropriate for the circumstances.
- When work is not identical or similar, rates and/or prices for other work in the contract are used as a basis to form a new rate or price with suitable adjustments to reflect the difference. This difference could be due to changes in conditions, character, quantity, or other reasons provided for by the contract.
- When it is not possible to produce a new rate or price on this basis, a fair rate or price is calculated, usually by the employing party, to reflect the changed factors.
- As a last resort, when a 'fair' rate or price cannot be identified due to special circumstances, work is valued on the basis of the time taken and resources used to complete it. This may be a 'daywork' valuation.

These principles are set out in more detail against each of the standard forms reviewed in this practice information and summarised in the following table.

Contract title	Generic type	Basis of quantification	Description of change
Standard Building Contract without Quantities	Traditional	Lump sum	Variation
Standard Building Contract with Quantities	Traditional	Adjustable	Variation
Standard Building Contract with Approximate Quantities	Traditional	Remeasurable	Variation
Intermediate Building Contract	Traditional	Adjustable	Variation
Minor Works Building Contract	Traditional	Adjustable	Variation
Design and Build Contract	Design and Build	Lump sum	Change
Major Project Construction Contract	Design and Build	Lump sum	Change
Intermediate Building Contract with Contractors Design	Design and Build	Lump sum	Variation
Minor Works Building Contract with Contractors Design	Design and Build	Lump sum	Variation
NEC Option A – Priced Contract with Activity Schedule	Traditional / Design and Build	Lump sum	Compensation event
NEC Option B – Priced Contract with Bill of Quantities	Lump sum	Variation	Compensation event

Contract title	Generic type	Basis of quantification	Description of change
NEC Option C – Target Contract with Activity Schedule	Traditional / Design and Build	Target cost	Compensation event
NEC Option D – Target Contract with Bill of Quantities	Traditional / Design and Build	Target cost	Compensation event
NEC Option E – Cost Reimbursable Contract	Traditional / Design and Build	Cost reimbursable	Compensation event
NEC Option F – Management Contract	Traditional / Design and Build	Cost reimbursable	Compensation event
FIDIC Conditions of Contract for Construction	Traditional	Lump sum	Variation
FIDIC Conditions of Contract for Plant and Design Build	Design and Build	Lump sum	Variation

1.1 JCT Standard Building Contract Without Quantities

What constitutes change under this form?

This form of contract is sometimes referred to as a 'spec (specification) and drawings' or 'lump sum' contract. The employer does not provide the contractor with a bill of quantities and the contractor is required to complete the Works for a lump sum. This is broken down in an agreed format against a Work Schedule, Contract Sum Analysis or a Schedule of Rates. These documents are referred to as 'The Priced Document' and are used as the basis for valuing any variations.

The principal characteristic of this contractual arrangement is that the contractor holds the risk of having quantified the scope of work correctly from the contract documents. The employer does not prepare a bill of quantities and consequently there is a limited amount of pricing detail from which to value variations. The employer should ensure that the pricing information included in the contract is of appropriate detail for this purpose. This may take the form of a schedule of rates, which may be quantified.

Change is defined as follows:

- i the alteration or modification of the design, quantity or quality of the Works
- ii the imposition by the Employer of any [additional] obligations or restrictions, or the addition to or alteration or omission of any obligations or restrictions. These obligations or restrictions refer specifically to access to the site, or specific parts of the site, limitations on working space or working hours, and carrying out of work in a specified order, and create changes in condition and/or character of the work.

How is change valued?

The fundamental premise under this form of contract is that the employer and the contractor shall agree the value of a Variation. This reflects the common practice in the industry for the parties to exchange information and calculations pertaining to the value of a Variation and ultimately reach an agreement, which forms part of a rolling final account.

This consensual approach is given further weight by the inclusion of provisions dealing with contractors' quotations. The contractor may be requested to submit a quotation, for agreement, prior to actioning an instruction of the architect/ contract administrator.

Where agreement has not been reached, the quantity surveyor is obliged to carry out a valuation of the variation in accordance with the 'Valuation Rules'. In reality, the quantity surveyor will often be acting for the employer in reaching mutual agreement. Imposing a valuation is to be a least favoured option.

1.2 JCT Standard Building Contract with Quantities

What constitutes change under this form?

As the name suggests, this form of contract has a contract sum calculated from a fully priced bill of quantities. The bill of quantities is referred to as the Contract Bills and it is a contract document. The bills of quantities define the quality and quantity of the work to be carried out by the contractor. The employer holds the risk that these quantities are accurate and for any errors in their preparation against the stated measurement rules. Any errors in quantity or method of preparation are corrected and treated as variations.

The benefit to the employer of having a priced bill of quantities, amongst other things, is that there is far more information for the quantity surveyor to use for the valuation of variations. The likelihood of having agreed rates for similar work, to use when valuing change, increases when compared to lump sum versions.

The categories of change are the same as for the Without Quantities form.

How is change valued?

The approach here is the same as when working with the Without Quantities form.

1.3 JCT Standard Building Contract with Approximate Quantities

What constitutes change under this form?

As the name suggests, this form of contract has a contract sum calculated from a bill of approximate quantities. The bill of quantities is still referred to as the Contract Bills, is a contract document, and defines the quality and quantity of the work to be carried out by the contractor. The employer holds the risk that these quantities are accurate and for any errors in their preparation against the stated measurement rules. Any quantity adjustment or errors in the method of preparation are corrected and treated as variations.

This form of contract allows the employer to proceed on the basis of having a priced bill of approximate quantities, and is most often applicable where there is not time to produce a fully detailed design to enable an accurate bill of quantities to be measured.

The bills of quantities will be the subject of remeasurement once the design has been completed and an accurate quantity of work determined. It is important that measurement is carried out jointly and agreements reached on a progressive basis. Rates contained in the bills can be used by the quantity surveyor for the valuation of variations, subject to adjustment where necessary for changes in quantity.

The categories of change are the same as for the forms previously discussed.

How is change valued?

There is a subtle but important distinction between this form and the earlier forms reviewed in that the quantity surveyor is to value all work carried out, unless the employer and the contractor agree otherwise. This obligation to value applies not only to variations, but to all work carried out in accordance with the contract. This deals with the quantity surveyors duty to remeasure the work carried out by the contractor and adjust the bills of quantities as appropriate.

Remeasurement is not carried out to work which is the subject of a Contractor's Quotation, or to Contractor's Design Portion work which is stated as fixed and not for remeasurement.

1.4 JCT Intermediate Building Contract

What constitutes change under this form?

This is essentially a With Quantities form of contract that applies to projects that are of a simple content, utilising standard trades and skills. The employer holds the risk for the accuracy of quantities used and for their departure from the stated method of preparation.

How is change valued?

The approach here is the same as when working with the With Quantities form.

1.5 JCT Minor Works Building Contract

What constitutes change under this form?

The Minor Works form is for work which is simple in character and for which there is no bill of quantities prepared. The employer is still responsible for describing the quality and quantity of the work which the contractor is to complete, and this takes the form of specifications, drawings and work schedules. The employer holds the risk for any inconsistency between these documents, the removal of any inconsistency being treated as a variation.

How is change valued?

The contractor should endeavour to agree a price for any variation with the architect/ contract administrator prior to carrying out the work.

If an agreement is not reached then the architect/ contract administrator shall value the variation on a fair and reasonable basis, using any relevant prices from the work schedules or schedules of rates. This valuation will include any loss and expense incurred by the contractor.

1.6 JCT Design and Build Contract

What constitutes change under this form?

This form of contract is the principal and most popular form of JCT design and build contract. It requires the employer to prepare a set of Employer's Requirements, which set the basis of the contractor's scope of work obligation. This is a lump sum contract where the contractor completes the design, based on the Employer's Requirements, in return for the contract sum which is not adjusted except for changes to the Employer's Requirements.

It should be noted that the standard form is drafted on the basis that the employer retains responsibility for the design in the Employer's Requirements. It is quite usual, in some market sectors, for the contractor to accept responsibility for the design undertaken by the employer within the Employer's Requirements. This arrangement would be the subject of bespoke drafting and reference should be made to project specific amendments in such instances.

The principal characteristic of this contractual arrangement, in its standard form, is that the contractor holds the risk of having quantified the scope of work correctly that is needed to complete and construct a design that satisfies the Employer's Requirements and the Statutory Requirements. The employer does not prepare any quantities and consequently

there is a limited amount of pricing detail from which to value variations, other than the Contract Sum Analysis, and the employer should ensure that the pricing information included is of an appropriate detail for this purpose.

Change is defined as follows:

- i the alteration or modification of the design, quantity or quality of the Works (via a change of the Employer's Requirements)
- ii the imposition by the employer of any [additional] obligations or restrictions, or the addition to or alteration or omission of any obligations or restrictions. These obligations or restrictions refer specifically to access to the site, or specific parts of the site, limitations on working space or working hours, and carrying out of work in a specified order.

How is change valued?

The approach here is similar to some of the earlier forms reviewed, namely:

- i The employer and the contractor shall endeavour to agree the value of a variation.
- ii Where agreement has not been reached, a valuation of the variation is made, in accordance with the Valuation Rules. It is not clear who undertakes this valuation. It is probably at the direction of the employer's agent. Imposing a valuation is to be a least favoured option.

1.7 JCT Major Project Construction Contract

What constitutes change under this form?

This form of contract is for major works, where the employer regularly procures large scale construction work and where the contractor is experienced and able to take a greater share of risk, including the completion of the design. It is reasonable to envisage therefore that the scope for change should be restricted to a limited set of circumstances.

Change is defined as follows:

- i any alteration in the Requirements and/or the Proposals that gives rise to an alteration in the design, quality or quantity of anything that is required to be executed in accordance with the contract.
- ii any alteration by the employer of any restriction or obligation set out in the Requirements and/or Proposals as to the manner in which the contractor is to execute the Project, or the imposition of additional restrictions or obligations.
- iii Any matter that the Contract requires to be treated as giving rise to a change.

How is change valued?

An early warning procedure is required, whereby both parties are under an obligation to notify the other if a change occurs.

Prior to a change being instructed, the employer may request a quotation. A quotation is required to deal with the valuation of the change itself, including adjustments for preliminaries and design as appropriate, and any necessary extensions of time together with a pre-estimate of loss and expense.

The value of a change is to be agreed prior to an instruction being issued. If an agreement cannot be reached then a 'fair valuation' is to be made in accordance with the contract.

1.8 JCT Intermediate Building Contract with Contractors Design

What constitutes change under this form?

This form is similar to the main Design and Build Contract in many respects, and reference should be made to earlier guidance.

How is change valued?

The approach here is very similar to the Design and Build Contract. It is possible, when using the Intermediate form, to encounter bills of quantities, or a Contract Sum Analysis, depending on whether pricing option A or B has been used. The document used is referred to as the Priced Document.

The employer and the contractor shall endeavour to agree the value of a variation. Where agreement has not been reached, a valuation of the variation is made in accordance with the Valuation Rules, using the Priced Document as a basis.

1.9 JCT Minor Works Building Contract with Contractors Design

What constitutes change under this form?

This form of contract is for work which is simple in character, and where the contractor will design only part of the work. The contract conditions are relatively simplistic when compared to some other JCT forms, and the variation provisions are no exception.

The architect/contract administrator may issue instructions effecting a change in the Employer's Requirements relating to:

- i an alteration or modification of the design of the CDP Works

- ii issuing instructions requiring an addition to, omission from, or other change in the Works
- iii a change in the order or period in which work is to be carried out.

How is change valued?

Consistent with most other JCT Forms, the architect/contract administrator shall endeavour to agree a price, prior to the contractor carrying out additional work.

If an agreement cannot be reached, the architect/ contract administrator shall value the variation on a fair and reasonable basis, including any direct loss and/or expense incurred by the contractor.

1.10 NEC Option A – Priced Contract with Activity Schedule

What constitutes change under this form?

This contract has a contract sum calculated from a series of lump sums for each of the activities on the Activity Schedule.

Change is implemented via the occurrence of any of the Compensation Events which are defined in the contract. These events cover a range of situations which are agreed to be at the employer's risk. Compensation Events deal with the cost effect of the 'change' together with any extension of time and loss and/or expense that is due.

How is change valued?

Change is valued by considering changes to the activity schedule caused by a Compensation Event.

These changes could, for example, include scope of work addition or omission, design fees, preliminary type items, as well as changes in sequence or timing. The prices (specific parts of the contract sum) are assessed (valued) as the effect on:

- i the Defined Cost of the work already done
- ii the forecast Defined Cost of the work not yet done
- iii the resulting fee (fee percentage applied to the amount of Actual Cost covering specific costs, mainly head office overheads and profit).

The change to the activity schedule is valued by identifying resources that are affected by the change, by reference to the Schedule of Cost Components, and establishing their cost or forecast cost. Effectively the contractor is put back in the position they would have been in had the Compensation Event not occurred. This approach is used for both the contractor's direct costs and also those of the subcontracted supply chain.

1.11 NEC Option B – Priced Contract with Bills of Quantities

What constitutes change under this form?

This contract has a contract sum based on a series of lump sums calculated by multiplying the rates by the quantities for the items in the bill of quantities.

Change is implemented via the occurrence of any of the Compensation Events which are defined in the contract. The following Compensation Events are specifically included in Option B to deal with the following circumstances should they arise:

- i a difference between the final total quantity and the quantity stated in the Bills of Quantities (inaccurate quantities)
- ii any such inaccurate quantity causes the Defined Cost per unit to change
- iii an item in the Bill of Quantities comprises more than 0.5% of the Prices at the Contract Date (contract sum)
- iv correction of departures from the adopted method of measurement
- v correction of an inconsistency between the Bill of Quantities and another document.

How is change valued?

Change is valued by considering changes to the bill of quantities caused by a Compensation Event.

This can be on a Defined Cost basis, as Option A, or based on the use of rates and lump sums from the bill of quantities (if the project manager and contractor agree).

1.12 NEC Option C – Target Contract with Activity Schedule

What constitutes change under this form?

This contract has a contract sum calculated from a series of lump sums against each of the activities in the activity schedule.

Change is implemented via the occurrence of any of the Compensation Events which are defined in the contract. See Option A above for further guidance.

How is change valued?

Change is valued by considering changes to the activity schedule caused by a Compensation Event. See Option A above for further guidance.

1.13 NEC Option D – Target Contract with Bills of Quantities

What constitutes change under this form?

This contract has a contract sum based on a series of lump sums calculated by multiplying the rates by the quantities for the items in the bill of quantities.

Change is implemented via the occurrence of any of the Compensation Events which are defined in the contract, reference Option B above for further guidance.

How is change valued?

Change is valued by considering changes to the bill of quantities caused by a Compensation Event.

This can be on an actual cost basis, as Option A, or based on the use of rates and lump sums from the bill of quantities (if the project manager and contractor agree).

1.14 NEC Option E – Cost Reimbursable Contract

What constitutes change under this form?

This contract does not have a contract sum, the prices being based on the Defined Cost plus the fee.

Change is implemented via the occurrence of any of the Compensation Events which are defined in the contract. See Option A above for further guidance.

How is change valued?

Change is valued by considering the actual cost of change caused by a Compensation Event. See Option A above for further guidance.

1.15 NEC Option F – Management Contract

What constitutes change under this form?

This contract does not have a contract sum, the prices being based on the Defined Cost plus the fee.

Change is implemented via the occurrence of any of the Compensation Events which are defined in the contract. See Option A for above for further guidance.

How is change valued?

Change is valued by considering the Defined Cost of change caused by a Compensation Event. See Option A above for further guidance.

1.16 FIDIC Conditions of Contract for Construction

What constitutes change under this form?

This form of contract comprises a set of conditions for building and civil engineering construction works, intended for international application, where works are designed by the Employer.

The contract sum is usually derived from a priced bill of quantities or other schedule which may either be remeasured, or form the basis of a lump sum or series of lump sums.

The engineer designs the Works and administers the contract, acting for the employer. The engineer may instruct the contractor to undertake a variation in the Works or request the contractor to submit a proposal. There is no provision for the contractor to undertake a variation unless and until the engineer instructs or approves. A variation may comprise:

- i an increase or decrease in the quantity of work
- ii a change in the quality and other characteristics of any item of work
- iii changing the levels, positions and/or dimensions of any part of the Works
- iv omission of any work (unless it is to be carried out by others)
- v execution of additional work
- vi changes in a specified sequence or timing of construction of any part of the Work, i.e. where the sequence or timing has been prescribed and is at the employer's risk.

How is change valued?

Change is valued under this form by the engineer in the following manner:

- i the contractor, if requested by the engineer, prepares a contractor's proposal for the evaluation of the variation. This evaluation shall follow the Valuation Rules unless the engineer instructs or approves otherwise.
- ii the engineer instructs the contractor to commence the variation and may require the contractor to record the costs in connection with the variation.
- iii the engineer fixes new rates or prices for variations which are not the subject of a contractor's proposal.

All rates and prices used to value the variation, by either the contractor or the engineer, should be derived by application of the Valuation Rules within the contract.

1.17 FIDIC Conditions of Contract for Plant and Design-Build

What constitutes change under this form?

This form of contract comprises a set of conditions for building and civil engineering construction works that are delivered under a design and build arrangement, intended for international application. Design is carried out by the contractor.

The contract sum is a lump sum, based in the contractor holding full responsibility for design.

A Variation is described as a change to the Employer's Requirements which is instructed or approved as a variation.

How is change valued?

The contractor can be directed by the engineer to provide a proposal prior to implementing a variation. The proposal shall comprise a description of the proposed design, and adjustments to the Contract Price or Time for Completion. The engineer shall consult with the contractor and either approve, disapprove or pass comment on the proposal.

2 Practical application: (Doing)

This section looks in more detail at the Valuation Rules that govern how change is valued, and begins to look at the practical application of these general principles. The same forms of contract discussed in section 1 are reviewed here also.

2.1 JCT Standard Building Contract Without Quantities

What are the Valuation Rules?

The Valuation Rules are set out in the Contract Conditions and reflect a sliding scale of options, based on how closely the varied work resembles work that is part of the Contract Documents.

- 1 Where work is of similar 'character' to work in the original Contract Documents then the valuation of the Variation shall be consistent with rates, prices or amounts for work in the Priced Document, which could be a bill of quantities or a schedule of rates. The valuation shall include a 'fair allowance' to reflect any change in conditions or change to the quantity of work carried out. It should also make appropriate allowance for any addition to or reduction of preliminary items. The application of these various factors is sometimes referred to as 're-rating' or 'star rating'. These rules apply to all rates, even those that a contractor may have over or under priced at tender stage. There are many quite complex issues to deal with when valuing a variation and these are considered below.
 - **Character.** The character of an item of work is what distinguishes it from other, possibly similar, specifications of work. An example of this could be in the specification of finishes such as joinery or stonework. A piece of stone may be bedded in the same material and attract the same labours in terms of cutting and grouting, but the specification of the material itself will effect cost greatly. Joinery is the same. A carpenter may take more time to hang a hardwood door than a softwood door and the material itself will be more expensive. These operations may be carried out under the same conditions but the character means that the rates are not relevant and need to be adjusted.
 - **Conditions.** The stage at which work is programmed into the contract period will affect the cost of execution. This could be due to the timing in the year, such as carrying out groundworks in winter as opposed to summer, or constraints due impinged access or productivity impacts such as completing cladding works once scaffolding has been struck.
 - **Quantity.** At tender stage, the contractor will assess the economies of scale that can be achieved by carrying out the quantity of work indicated in the Contract Documents.

The estimator will make judgments such as procurement volume discounts, labour gang efficiencies and supervision ratios. If these quantities change, up or down, then these factors need to be revisited and adjusted. There should not automatically be a rate adjustment if the quantity of work changes and these, or other, factors need to be considered relative to the particular operation in question.

- **Preliminaries.** It is usual for a contractor to prepare a bill of preliminaries for a project, which should follow the structure of the Standard Method of Measurement/New Rules of Measurement (NRM). These preliminary resources may include site accommodation and set up, staff, scaffolding and access equipment, craneage, power, and many other items that are not included in rates for work items. It is necessary to review these resources for each variation to assess if allowances are due to be made (in addition or omission) to cater for the impacts on the contractor's preliminaries by execution of the change. It is not the case that adjustments should be made automatically, and in fact the conditions state 'where appropriate'. The contractor is not required to evidence their cost in connection with additional preliminaries (these are value based adjustments to contract rates as opposed to ascertainment of costs or losses) but there should be evidence provided of additional resources being used, such as prolonged use of staff, additional staff, additional or prolonged attendant labour, plant, access equipment etc. The contractor should be prepared to demonstrate where costs are fixed (a single one-off cost) or time related (where the costs vary with time, such as rental, maintenance and the like). Increased preliminaries due to the cumulative effect of multiple changes is most likely to be dealt with as loss and expense.

- 2 'Fair rates and Prices.' In instances where work is not of a similar character then it should be valued at 'fair rates and prices'. The requirements of this form of valuation are open to debate and interpretation. Case law does not provide a definitive position. For the purposes of this practice information, it is assumed that the terms 'fair rates and prices' and 'fair valuation' are the same.
- 3 Daywork. This is a method of valuing additional or substituted work which cannot properly be valued by measurement. Records, or vouchers, need to be prepared by the contractor recording the labour, plant and materials used in the operation. These records are to be submitted to the architect/contract administrator for verification. The valuation of work on daywork is made by using the verified records and applying rates derived by reference to the 'Definition of Prime Cost of Daywork carried out under a Building Contract' current at the Base Date, together with the percentage definitions set out in the Priced Document.

Examples of daywork activities could be opening up works for inspection, testing operations, repair of damage etc. It is intended for short duration, limited scope activities. Significant works, or works of a prolonged duration, should be capable of valuation by measurement, either using a contract rate as a basis or preparing a new rate based on fair rates and prices. Daywork is a last resort basis of valuing works and care should be taken that a daywork valuation is not covering the payment of resources that are already being recovered via the valuation of other variations or loss and expense.

- 4 Contractor's Designed Portion. The valuation of changes to the CDP works broadly follows the same process as other works under the contract. There are, however, some key points to highlight:
 - Allowance is to be made for the addition or omission of design work. This is likely to be professional fees from consultants engaged by the contractor, or fees from specialist subcontractors.
 - The CDP analysis is used as the basis for determining the contract baseline, upon which allowances should be made for changes of condition, character, etc. It is not uncommon for a CDP analysis to be a summary level breakdown or a series of lump sums. This is obviously of little use for valuing changes and it is therefore necessary to include as much pricing information as possible into the CDP analysis. This would normally include a schedule of rates, possibly quantified, which details the most common items as a minimum.
- 5 Change of Conditions for other work. The conditions state that where there is a substantial change in the conditions under which other work is executed, then that other work shall be treated as if it had been the subject of a variation instruction. It is likely from the use of the word 'substantial' that it is not intended that this provision should be operated regularly. Substantial is a subjective term and this clause, like any other provision of a contract, should be operated fairly. An example of such an instance could be a change in ceiling design having a serious effect on the way the mechanical and electrical services installation is installed and commissioned, or some additional external drainage work impacting on the method of supporting scaffolding for cladding works. Where a substantial change of conditions has occurred then those effects on other work can be valued as well, in accordance with the Valuation Rules.
- 6 Additional Provisions. Where a valuation does not relate to carrying out additional or substituted work, or the omission of work, or where the Valuation Rules cannot effectively deal with the valuation of a variation, then a fair valuation shall be made. These provisions provide a very wide authority to the effects of change to be valued as part of a variation. If used properly, then there is likely to be less need to invoke the loss and expense provisions of the contract.

When valuing work on a fair basis it is necessary to understand how the contractor's costs are generated. The contractor will employ a series of resources, some directly engaged such as labour, plant, materials, staff and other preliminaries, while other resources are provided by subcontractors. The contractor will have limited choices as to how to execute work imposed by a variation. In many cases the contractor will be in breach of their subcontracting arrangements if the contractor brings in other companies to do substituted works. It is also not desirable, from a management and programming perspective, to introduce additional trades or companies into the supply chain unless absolutely essential. These constraints mean that the contractor's cost for executing a variation are, in reality, quite fixed.

A 'fair valuation' or one based on 'fair rates and prices' should therefore be cognisant of the contractor's cost of carrying out the works. Where new resources are brought to the how

these are procured, then it is not unreasonable to expect the contractor to demonstrate market competitiveness (where this does not cause delay to the execution of the variation). Where existing resources are used, either directly or via existing subcontracting arrangements, then the valuation should reflect these costs. An allowance should be made for the contractor's overheads and profit as part of any 'fair valuation' or computation of 'fair rates and prices'. Any costs associated with putting right defective work should not be included in any valuation.

7 Contractor's Quotations. The JCT describe this valuation approach as a 'Schedule 2 Quotation'. It applies when the architect/ contract administrator requests that the contractor provides a quotation.

The contractor may notify the architect/contract administrator, within a defined time period, identifying disagreement with the approach of producing a quotation. The contractor is then not obliged to proceed unless instructed further, in which case the variation will be valued by the quantity surveyor in accordance with the Valuation Rules. A reason for the contractor refusing to provide a quotation could be that there is insufficient information to provide a lump sum and take the financial and/or time risks of invoking the change. For example, a lack of design information, inability to access the affected area, unknown ground conditions, etc.

Schedule 2 of the Conditions provides a detailed procedure for the submission and acceptance of a quotation. The key issues for inclusion and consideration in a quotation are:

- sufficient information must be provided to the contractor to enable preparation of a quotation
- prescriptive time periods exist for the preparation and acceptance of a quotation
- the quotation must include the value of the varied work and the effects on any other work
- supporting calculations should be submitted, with appropriate reference to the Valuation Rules
- any requirements for an extension of time
- any amounts to be paid in lieu of ascertaining loss and expense
- a fair and reasonable amount in respect of the cost of preparing the quotation should be included. This fair and reasonable amount is to be paid even if the quotation is not accepted
- method statements and resource requirements should be included if asked for by the instruction to provide the quotation.

Provisional Sums

A Provisional Sum is a financial allowance, included within the Contract Sum, for work which is not sufficiently designed to allow the contractor to offer a firm price at tender stage.

A provisional sum should be stated to be either Defined or Undefined, based on its compliance with the applicable measurement rules. Where a provisional sum is included for Defined work the contractor will be deemed to have made due allowance in programming, planning and pricing preliminaries. A provisional sum for Undefined work may entitle the contractor to be paid additional preliminaries (assessed in accordance with the Valuation Rules) and to an extension of time if the provisional sum work causes a delay to completion.

The architect/contract administrator will issue instructions to the contractor for omission of the Provisional Sum. Once sufficient design information is available to enable a firm valuation to be made, the contractor will be instructed either to prepare a quotation or for the work to be valued as a variation in accordance with the Valuation Rules.

The Provisional Sum is omitted from the adjusted Contract Sum and the valuation of the variation added back. A Provisional Sum is therefore only an allowance for work which may or may not be carried out. The contractor bears no risk in connection with the adequacy of the Provisional Sum.

When does loss and expense apply?

Loss and expense becomes payable to the contractor, on satisfactory demonstration of entitlement in accordance with the Conditions, that direct loss and/or expense has been incurred for which no reimbursement would be made by a payment under any other provision of the Conditions.

There are many tools on the quantity surveyor's workbench for valuing all sorts of changes to work, the introduction of new work, and effects on other work caused by change. If these tools are used properly, and to their full extent, there are likely to be limited occasions where the contractor needs to seek ascertainment of loss and expense.

For more detailed guidance, please refer to the current edition of RICS' [Ascertaining loss and expense](#).

2.2 JCT Standard Building Contract With Quantities

What are the Valuation Rules?

The Valuation Rules under this form of contract are similar to the Without Quantities form. The following points should be noted.

- Variation work should be measured and quantified using the same rules of measurement as the bills of quantities.
- Allowance shall be made for any lump sum or percentage adjustments applicable from the bills of quantities. This could be a main contractors/directors discount, expressed as either a lump sum or percentage.
- Adjustment is to be made for preliminary items, where appropriate.

- If an approximate quantity is a reasonable forecast of the quantity of work required then the rate in the bills of quantities shall be used to determine the valuation. Work which is the subject to an approximate quantity is measured fully in accordance with the chosen measurement rules. The quantity is then remeasured once the design has been completed, and the quantity is adjusted (if necessary).
- If an approximate quantity is not a reasonable forecast of the actual quantity then the rate in the bills of quantities is used as the basis for the valuation and a fair allowance is made for the change in quantity.

2.3 JCT Standard Building Contract With Approximate Quantities

What are the Valuation Rules?

The Valuation Rules under this form of contract are consistent with the With Quantities form, with the exception that there are no provisions dealing exclusively with approximate quantities. This is due to the whole contract being subject to remeasurement/revalidation that the approximate quantities are accurate.

2.4 JCT Intermediate Building Contract

What are the Valuation Rules?

Valuation Rules for this form are consistent with the Standard Building Contract with Quantities.

2.5 Minor Works Building Contract

What are the Valuation Rules?

There are no specific rules included within this form. The guidance that can be reasonably taken from the general obligations is that:

- Contract rates or prices should be used as a basis where relevant. When considering if a rate or price is relevant, it is considered reasonable that cognisance should be given to changes of conditions, character, quantity, preliminaries etc. There is however no specific obligation to adjust for these factors, potentially moving straight to a fair and reasonable valuation.
- A valuation on a fair and reasonable basis is likely to be consistent with the use of fair rates and prices, or conducting a fair valuation.

Contractor's quotation

There are no specific provisions in this form governing the process of preparing and submitting a quotation. It is likely, however, in practice, that the process of the contractor and the architect/ contract administrator agreeing prices for variations will involve the submission of quotations, albeit not in a structured way.

Provisional Sums

The valuation of provisional sum work is carried out in accordance with the same rules as other variations.

2.6 JCT Design and Build Contract

What are the Valuation Rules?

The following rules apply to the valuation of work under this form:

- Allowance must be made for the addition or omission of relevant design work. This is likely to be professional fees from consultants engaged by the contractor, or fees from specialist subcontractors.
- If varied work is of similar character, carried out under similar conditions, and is of similar quantity to, work in the contract sum analysis (i.e. it is practically the same item of work), then the valuation of the variation shall be consistent with such values in the contract sum analysis.
- If varied work is of similar character, but is not carried out under similar conditions or is not of similar quantity to, work in the contract sum analysis, then the values in the contract sum analysis shall be used as the basis for the valuation of the variation and a 'due' allowance shall be made for the change in quantity or conditions. There is no further detail in the contract conditions as to what constitutes a 'due allowance'. It is considered, for the purposes of this guidance, that such allowance will consist of a 'fair valuation' of those elements that have changed, as an add or omit to the original value taken from the contract sum analysis.
- If varied work is not of similar character to work in the contract sum analysis then fair rates and prices shall be used as the basis for valuing the variation.
- Omission of work set out in the contract sum analysis shall be in accordance with the values in the contract sum analysis for such work. In reality it is unlikely that the item of work to be omitted will be exactly identifiable from the contract sum analysis and the employer and the contractor need to act fairly in agreeing the value of an omission. Reference should be made to the Valuation Rules to assist in determining the value to be omitted.

- Any valuation shall make due allowance for the addition or omission of site administration costs, site facilities (i.e. preliminaries type items) and temporary works. No further information is given in the conditions as to how these adjustments should be calculated.
- Daywork. This method of valuation is for work which cannot properly be valued by measurement. More detailed guidance is given against the Without Quantities form.
- Contractor's Quotation. The provisions dealing with contractor's quotations are included within Schedule 2 to the contract conditions, in a similar way to other JCT forms, however this schedule is introduced as a set of supplemental provisions and as such is optional. Reference to the contract particulars will determine if these supplemental provisions apply. The supplemental provisions should be consulted for specific information.

Provisional Sums

The employer can include provisional sums within the Employer's Requirements which will then form part of the Contract Sum and should be identified in the contract sum analysis.

Once the employer has sufficient information available, they will issue instructions to the contractor to proceed with the provisional sum work, including elements of design as required. The contractor will either be instructed to issue a quotation prior to proceeding or the works will be valued in accordance with the Valuation Rules.

The Provisional Sum is omitted from the adjusted Contract Sum and the valuation of the variation added back. A Provisional Sum is therefore only an allowance for work which may or may not be carried out. The contractor bears no risk in connection with the adequacy of the Provisional Sum.

2.7 JCT Major Project Construction Contract

What are the Valuation Rules?

The employer may initially provide details of a proposed change and request that the contractor provides a quotation. The quotation should include a valuation of the proposed change, having regard to the following points:

- the nature and timing of the change
- the effect of the change on other parts of the project
- the prices and principles set out in the Pricing Document
- any loss and/or expense that will be incurred as a consequence of the change
- any adjustment to the Completion Date considered necessary as a consequence of the change.

The employer can accept the quotation, reject it, or request that a revised one is prepared and submitted.

Where agreement of a quotation is not reached, but a change has occurred or an Instruction is issued for a change, then a fair valuation shall be made by the employer. A fair valuation should also have regard for the points listed above. The term 'fair valuation' is discussed in more detail within the Valuation Rules for the Without Quantities form.

2.8 JCT Intermediate Building Contract with Contractors Design

What are the Valuation Rules?

The Valuation Rules are almost identical to the Design and Build form and reference should be made to the guidance above.

It should be noted that the Intermediate Form does make provision for approximate quantities and these should be adjusted as necessary, in accordance with the conditions.

2.9 JCT Minor Works Building Contract with Contractors Design

What are the Valuation Rules?

There are no specific Valuation Rules in this form of contract, other than for the architect/contract administrator to value variations on a fair and reasonable basis.

It is considered that it is likely that a fair and reasonable valuation will embrace many of the components referred to in the more detailed standard forms, particularly the Without Quantities version reviewed at the beginning of this section.

2.10 NEC Option A – Priced Contract with Activity Schedule

What are the Valuation Rules?

Assessments for changed Prices (adjustments to the contract sum) are valued based on the Defined Cost of changes to the activity schedule. Defined Cost is costs based on rates and percentages stated in the Contract Data and other amounts at open market or competitively tendered prices. Alternatively the contractor and the project manager can adopt a more traditional approach to valuation and agree rates and lump sums instead of Defined Cost. In practice it will be necessary to utilise a combination of these approaches to facilitate the smooth running of the project. To the extent that Defined Cost is used as the basis for valuing change, the Shorter Schedule of Cost Components is used to identify the resources that may be costed. This is the method of valuing all resources, whether they are directly engaged by the contractor or by their subcontractors. In other words, the contractor cannot just submit subcontractors' quotations to the project manager (where the Defined Cost approach is being used).

The contractor cannot recover their own costs or the subcontractors' costs for preparing quotations.

The Contractor's Fee is added to the Defined Cost of any change or should be included in any lump sum adjustment accepted by the project manager. All costs which are not included in the Defined Cost are treated as included in the Fee. Typical examples are head office overheads, profit, insurance premiums and insurance excesses.

2.11 NEC Option B – Priced Contract with Bills of Quantities

What are the Valuation Rules?

The guidance in Option A applies here also unless stated otherwise.

Assessments for changed Prices (adjustments to the contract sum) are valued based on the Defined Cost of changes to the Bill of Quantities.

If there is a Compensation Event changing an item within the Bill of Quantities, it is valued on the basis of a changed rate, quantity or lump sum.

If there is a Compensation Event for which there is no item in the Bill of Quantities then, unless the contractor and the project manager agree otherwise, a new priced item is compiled in accordance with the adopted method of measurement. They can also agree to use rates and lump sums to assess a Compensation Event instead of Defined Cost.

2.12 NEC Option C – Target Contract with Activity Schedule

What are the Valuation Rules?

The guidance in Option A applies here also unless stated otherwise.

Assessments for changed Prices (adjustments to the contract sum) are valued based on the Defined Cost of changes to the Activity Schedule.

Assessments are made based on the Schedule of Cost Components, unless the contractor and the project manager agree to use the Shorter Schedule of Cost Components.

Defined costs, under this form, permit the payment of the cost of preparing quotations. The definition of Defined Cost is more extensive under this form, and a new term 'disallowed cost' is introduced.

These points are considered outside the scope of this guidance as they relate principally to the regular valuing of work completed, and due for payment, as opposed to the valuation of change. A note of caution, if amounts paid to subcontractors for Compensation Events that are in excess of amounts included in agreed quotations under the Main Option contract then the excess amount paid to subcontractors is treated as disallowable.

2.13 NEC Option D – Target Contract with Bills of Quantities

What are the Valuation Rules?

Guidance here is identical to Option B, with the exception that payment of the cost of preparing quotations is permitted.

2.14 NEC Option E – Cost Reimbursable Contract

What are the Valuation Rules?

Guidance here is identical to Option C, with the exception that there is no Activity Schedule and the cost of preparing quotations is permitted.

2.15 NEC Option F – Management Contract

What are the Valuation Rules?

Guidance here is identical to Option C, with the exception that there is no Activity Schedule and the cost of preparing quotations is permitted.

2.16 FIDIC Conditions of Contract for Construction

What are the Valuation Rules?

The Valuation Rules, to be followed by the contractor and/or the engineer, comprise a set of options which closely match the general principles, namely:

- i** variations to be valued at the same rates and prices set out in the contract
- ii** use the relevant rates and prices set out in the contract as a basis for valuation, with reasonable adjustments for changes in quantity, conditions and character
- iii** new rates or prices to be derived from the reasonable cost of executing the work, together with reasonable profit
- iv** the engineer can determine a provisional rate or price until such time as an appropriate rate or price is agreed or determined
- v** use of daywork, for work of a minor or incidental nature, if the engineer agrees.

Rates are adjusted for quantity variance if the quantity increases or decreases by more than 10% from the quantity in the Bill of Quantities or other schedule, the value of the item comprises more than 0.01% of the Accepted Contract Amount, or the Variation directly changes the unit cost by more than 1%. This provides some useful objective analysis.

There is also provision for the contractor to propose Value Engineering, which is valued in accordance with the evaluation procedure set out above. The contractor shares in the savings that are generated at a share range set out in the contract.

Provisional Sums are valued in accordance with the evaluation procedure.

2.17 FIDIC Conditions of Contract for Plant and Design-Build

What are the Valuation Rules?

The Conditions do not offer detail as to the Valuation Rules to be followed by the contractor and/or the engineer, other than adjustments to the Contract Price should include reasonable profit. The engineer can direct the contractor to keep records of costs in connection with a variation. Cognisance to the general principles, set out at the beginning of this practice information, would be a useful starting point.

3 Practical considerations: (Doing/Advising)

This section uses a checklist approach to look at many of the practical considerations that have to be made when valuing specific items or circumstances, in accordance with the Valuation Rules discussed in section 2.

A chartered surveyor should consider these aspects when advising on the likely valuation of change under the contract in question.

3.1 Changes in character

The following list gives an indication to the sorts of variations which may give rise to a change in character:

- change of material – i.e. type of timber (hardwood, softwood, sourcing of timbers etc) or choice of brick or block (supply price, density/weight), change of mortar or change of concrete finish (brushed, power floated or tamped)
- change of method of fixing to other work – i.e. a skirting is plugged and screwed as opposed to pelleted or glued, or a conduit being chased into a wall as opposed to being surface fixed
- change of background of other work – i.e. emulsion paint is applied to new render in lieu of plaster.

3.2 Changes in conditions

The following list gives an indication to the sorts of variations which may give rise to a change in conditions:

- work carried out at varied depth – e.g. deeper excavation causing lower productivity for removal of arisings
- seasonal variation for work compared with agreed programme – e.g. increased winter working
- working in completed areas – requirements for protection
- working with varied access constraints – e.g. use of staircase in lieu of hoisting, access via completed areas, increased number of trades working in an area
- changed material distribution strategy – e.g. tower crane removed or utilisation changed
- attendances – ability to share cost of specific attendant items across other operations may have changed based on timing

- reduced or increased quantities of work may affect outputs and ratios of attendant costs
- plant utilisation allowances
- height at which work is carried out at
- size of components relative to weight changes, e.g. steelwork.

3.3 Valuing preliminaries

The following list gives an indication to the sorts of items which should be considered when adjusting Preliminaries in connection with a variation. Not all items will be applicable to every situation and care should be taken to establish if such items are already covered in rates used to value the change:

- access equipment, including extended hire – craneage, scaffolding, hoisting, mobile towers, etc
- temporary protection – hoardings, fans, walkways, etc.
- insurances (sometimes turnover related charges)
- staffing
- attendant labour – access control, welfare, loading and distribution etc
- hired plant and small tools
- temporary power and water – consumption charges
- temporary electrics – changes to the installation
- waste removal – labour, skips, disposal etc
- safety
- supervision – non working labour and staff
- document control
- out of hours working
- whether the work is the subject of a Defined Provisional Sum, in which case due allowance for preliminaries are deemed to have already been made by the contractor in the Contract Sum
- possible duplication with additional preliminaries resources that have already been valued under variations for adjacent work or adjacent work carried out on a daywork basis
- whether the cost is a fixed allowance price or time related
- 'head office' overheads and profit – the case law on this topic is constantly evolving, so it would be prudent to examine the current situation before proceeding.

3.4 Dayworks

The following list gives an indication to the sorts of variations which may be valued on a Daywork basis:

- minor additions of quantity to completed works
- disjointed operations with extreme changes of conditions
- opening up the works (subsequently found to be in accordance with the contract)
- emergency works immediately proceeding loss or damage to the works
- cleaning and clearance operations
- testing
- repair and reinstatement of damage (assuming that large scale reinstatement will usually be separately measured and priced).

3.5 General considerations

- Consider the effects on other work caused by the variation in question. This can be 'collateral' effects on other work.
- Are costs being claimed as loss and expense which should reasonably form part of the valuation of the variation?
- Any 'exclusions' and 'assumptions' to an agreement or a valuation should be clearly set out. For example certain risk items may be valued later, once the events have unfolded on the project.

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