

# Your Contractual Questions Answered.

Entrustly Group, a multi-disciplinary group of companies, of which, one of their specialisation is in project, commercial and contractual management, will be running a regular contractual questions and answers section for Master Builders members in the Master Builders Journal.

To start off this section, Entrustly Group will provide the answer to the frequently asked question, **What constitute a variation and how does one value variations?**

## Variation Defined

First let us define variation and this is dependent on the construction contract that is used. Variation is defined by various standard forms of construction contract differently but principally means the same. The term "Variation" usually means a change, modification, alteration, revision or amendment to the original intent of the contract and/or its works.

By and large most variations occur due to the Client's change in its requirements e.g. from cement screed to tiles or the Designer's (Architect/Engineer/SO) revision or modification in their original design or amendment or change in statutory provision or requirement.

So, what happens if there is no variation provision in the contract? This will mean that any changes would require agreement of the Client and Contractor as well as the need to renegotiate the contract price each time a change occur.

## Standard Forms of Contract

### A. Definition of Variation

#### PAM Form of Building Contract

PAM 98 Form defined 'Variation' under Clause 11.1 (i) to (vi). PAM 98 incorporates the PAM 69 definition under (i) to (iv), with additional provision under (v) and (vi), as follows :

- (i) Alteration or modification of the design, quality or quantity of the Works as shown in the Contract Drawings and described/referred in the Contract Bills.
- (ii) Addition, omission or substitution of any work.
- (iii) Alteration of the kind or standard of any materials or goods in the Works.
- (iv) Removal from the site of any work executed, or materials or goods brought thereon by the Contractor for the purposes of the Works other than they are not in accordance with this Contract.
- (v) Addition, alteration or omission of any expressed obligations or restrictions imposed by the Employer on any limitation of working hours, working space, or access to or utilisation of any specific part of the site or the execution and completion of the work in any specific order.
- (vi) The term 'Variation' shall include any changes designed to alter ultimate use of the Work or changes in the obligations and/or restrictions on the Contractor's method of working, but exclude any instruction needed to cure any default of and/or breach of contract by the Contractor.

There are other provisions which allow for variation; one example is PAM Clause 4 - to comply with any change in the statutory requirements.

#### JKR/PWD Form of Contract (203A - Rev 10/83)

The term 'Variation' is defined in one paragraph under Clause 24 (b), which is similar to PAM 69 Form - Clause 11(2) and PAM 98 Form 11.1 (i) to (iv). Similarly, there are other provisions that allow for variation; one such example is. Clause 11 - to comply with any change in the statutory requirements.

Clause 11.5 sets out the rules for valuation of Variations and of work executed under provisional sum by the Contractor (except for work tendered under Clause 27.8) :

- (i) the prices in the Contract bills shall determine the valuation of

#### IEM Conditions of Contract for Civil Engineering Works 1989

The term 'Variation' is defined under Clause 23 (a) bearing some similarity in format to PAM 98 Form. Clause 23 (a) empowers the Engineer to make any necessary or desirable variation of the form quality or quantity of the Works or any part thereof and to order the Contractor to do any of the following:

- (i) increase or decrease the quantity of any work included in the Contract;
- (ii) omit any such work;
- (iii) change the character or quality or kind of any such work;
- (iv) change the levels lines position and dimensions of any part of the Works; and
- (v) execute additional work of any kind necessary for the completion of the Works

Similarly, there are other provisions that allow for variation; like Clause 11 - to comply with any change in the statutory requirements.

#### CIDB Form of Contract for Building Works 2000

In brief outline, the term "Variation" is defined in Clause 1.1 (p7) as any change in the original Contract Works, including but not restricted to :

- i) quantity increase and/or decrease;
- ii) addition or omission;
- iii) change in character, quality and/or nature ;
- iv) change in levels, elevations, layout and dimensions;
- v) demolition or removal of any part of the Works, Equipment, materials/goods not desired by the Employer/SO;
- vi) change in Contractor's Temporary Work, working method and/or Construction Plant by Employer/SO;
- vii) postponement of any part of the Works by Employer; and/or
- viii) Employer's requirement to complete the Works or any part/section earlier than its completion time.
  - include changes to alter the use to which the Works will be put, but
  - exclude any instruction to cure any Contractor's default or breach of contract.

Similarly, CIDB form also has other provisions that allow for variation; e.g. Clause 10 - to comply with any change in the statutory requirements.

### B. Valuation of Variations

Most standard forms provide some basis or rules for valuation of variation works. These rules are often similar, in principle.

#### PAM Form of Building Contract

PAM/ISM 69 Form has its rules on valuation of under Clause 11 (4) (a) to (d). PAM 98 Form has its rules under Clause 11.5 (i) to (v). PAM 98 is basically similar to the PAM 69 provision, except in relation to the character and condition of the variation work, where they differ. PAM 69 11 (b) provides for variation work not of similar character or executed under similar conditions to use contract rates, as far as may be reasonable, failing which a fair valuation. PAM 98 11.5 (ii) provides for variation works of similar character but may not be executed under similar conditions to use contract rates, as far as may be reasonable, including a fair allowance for the difference in conditions.

- by the Contractor to the Engineer of his intention to claim extra payment or a varied rate or price, or
- by the Engineer to the Contractor of his intention to vary a rate

work of similar character executed under similar conditions as work priced therein.

- (ii) where work is of similar character to work included in the Contract Bills but may not be executed under similar conditions the rates in the Contract Bills shall, as far as may be reasonable, be the basis of valuation, with inclusion of a fair allowance for the difference in conditions.
- (iii) where work cannot be properly measured and valued the Contractor shall be allowed daywork rates at the prices prevailing as far as may be reasonably ascertained at the time that such work is carried out or at the day work rates stated in the Contract Bills or if no such rates are included at the actual prime cost to the Contractor of his materials, transport and labour for the work concerned plus fifteen percent (15%), which percentage shall include for the use of all ordinary plant, tools and scaffolding, supervision, overheads and profit.  
Provided that in any case vouchers specifying the time spent daily upon the work, the worker's names, the plant and the materials employed shall be delivered for verification to the Architect or to the Quantity Surveyor as instructed by the Architect not later than seven (7) days after the work had been completed.
- (iv) The prices in the Contract Bills shall determine the valuation of items omitted. If omissions substantially vary the conditions under which any remaining items of work are carried out, the prices of such remaining items shall be valued under Clause 11.5 (ii).
- (v) Effect shall be given to measurement and valuation of all Variations in Interim Certificates and by adjustment of the Contract Sum.

#### JKR/PWD Form of Contract (203A - Rev 10/83)

Similar to PAM 69 Form Clause 11 (4) (a) to (d), the valuation of variations for JKR Form is provided under Clause 25 (b) (i) to (iii) and (d), using almost similar wordings, but reference made to SO instead of Architect.

In addition, it is expressly stated that quantities in BoQ are conclusive and not subject to remeasurement, unless it is stated as 'provisional'. Clause 25 (c) provides for valuation of remeasured works shall be in accordance with its rules (i) and (ii).

Clause 26 (d)(i) provides for prices and rates in the BoQ to be subjected to SO's agreement as to their reasonableness and be adjusted if required before signing of the contract.  
IEM Conditions of Contract

Similar to PAM 69 Form Clause 11 (4) (a) to (d), the valuation of variations for IEM Form is provided under Clause 24 (a) to (d), with some differences and reference made to Engineer instead of Architect/SO, as briefly outlined below;

Clause 24 (a) allows the Engineer to order all extra or additional work done or work omitted and value them at the rates and prices set out in the Contract, if they are applicable.

If the Contract does not contain any rate or price applicable, then suitable rates or prices shall be agreed upon between the Engineer and the Contractor.

It also allows the Engineer to fix the rates or prices, which in his opinion, is reasonable and proper in the event of disagreement.

Clause 24 (b) allows the Engineer to apply a suitable rate or price to be agreed by him and the Contractor, if the nature or amount of any omission or addition renders the rate or price contained in the Contract unreasonable or inapplicable. In the event of disagreement, the Engineer is also allowed to fix such other rate or price, which in his opinion, is reasonable and proper under the circumstances.

- The above sub-clauses (a) and (b) is subject to the proviso that the increase or decrease is made soon after the order/instruction date or before the commencement of the additional work, as is practicable by a written notice, either ;

- (iv) Such records (with the relevant vouchers, DOs or receipts be delivered to SO for verification within 7 Days of its execution.

If varied work continues, such records be delivered weekly to SO for verification and final records delivered within 7 Days its completion.

or price as the case may be.

Clause 24(c) states that if the net effect of all variations (other than those relating to variations in price of materials and/or labour) is found to result in a reduction greater than 20 percent of the Contract Sum on completion of the whole of the Works, the Contract Sum amount (less all Provisional Sums and Prime Cost items) shall be adjusted by adding 5 percent of the difference beyond the margin of 20 percent.

Clause 24(d) allows the Engineer to order any additional or substituted work be executed on a daywork basis and paying the using the rates and prices affixed in Daywork Schedule of the Bill of Quantities.

It also requires the Contractor to furnish the Engineer receipts or other vouchers to prove the amounts paid and submit to the Engineer quotations for his approval before ordering materials in the manner prescribed in this sub-clause.

The Engineer is also entitled to authorise payment for variation work either as daywork or at such value he considers fair and reasonable if the manner prescribed was impracticable.

#### CIDB Form of Contract for Building Works

Similar to PAM 98 Form Clause 11.5 (i) to (v), the valuation of variations under CIDB Form is provided under Clause 29.1 (a) to (e), with some differences and additional provisions, but reference made to SO instead of Architect.

Also have some similarity with JCT 98 Form, which provides for a fair allowance to a variation rate if there is a significant change of quantities.

Clause 29.1 states that all variations to be valued under the following valuation methods, where the varied work is of ;

- a) similar character to, is executed under similar conditions as, and does not significantly change the quantity of the work described in the Contract Documents, using the Contract Rates; or
- b) a similar character to the work described in the Contract Documents (which can include Drawings, Specification, BoQ, etc) and/or is not executed under similar conditions and/or involves significant changes in the quantity of such work described in the Contract Documents, using the Contract Rates as valuation basis but with a fair allowance for any differences in conditions and/or quantity changes; or
- c) Where (a) and (b) above do not apply, by valuation at fair market rates and prices; or
- a) Where (a), (b) & (c) are inapplicable or inappropriate under its circumstances, valuation be based on Daywork rates and prices of necessary Plant, materials or goods, labour and any additional Construction Plant necessary for its execution subject to :
  - (i) condition precedent to any payment - Contractor have received SO's instruction authorising the varied work on Daywork basis.
  - (ii) Unless otherwise specified, Contractor entitled to additional 15 per cent on the Daywork rates - percentage deemed adequate to compensate for all supervision, the use of Construction Plant (except for necessary additional Construction Plant), overheads, profit and all other loss, expense, costs or damages incurred in or connected with its execution.
  - (iii) Contractor to maintain proper daily records in its execution of the varied work specifying;
    - time spent by each relevant trade workman (incl. their names, if required by SO),
    - any Construction Plant employed and Equipment, materials or goods used.

A fair valuation or fair allowance on contract rate/price, usually encompass consideration based on cost plus or market rate basis together with the circumstances the variation work was subjected to.

With recent case law decisions, it is relatively clear now that a fair valuation should include the costs of labour, plant, material,

e) Contract Rates shall be used for valuation of work omitted;

If omission varies the conditions for execution of the remaining work, remaining work shall be valuation shall be in accordance with sub-clauses 29.1(b) or (c) or (d). The Contractor is not entitled to Loss and Expense for omission work unless it is carried out by the Employer or another contractor.

### Standard Forms - General Applications

What is the difference between the term 'similar character' and 'similar conditions' for variation work ?

The word "similar" means "of a like nature" and does not mean have to be "identical". Similar character of variation work usually refers to the similar item of work already described and has a rate/price in the contract BoQ. e.g. concrete columns/beams, brickwalls, etc. Variation work not of similar character e.g. installation of floor and ceiling tiles. Similar condition of variation work usually refer to the physical conditions, timing and extent of the variation work which is similar to that described and allowed in the contract BoQ. Variation work not of similar condition, which may be affected by the three factors e.g. addition of a concrete beam after completion of all concrete works in the project.

What is constitute fair valuation and/or fair allowance ?

Usually employed for valuing variation work not of similar character and/or executed under similar conditions. Essentially, what is fair may not be reasonable nor what is reasonable is fair. A fair valuation or fair allowance on the contract

rate/price must be construed/considered together with the circumstances of the variation work. For example, A market rate for a variation work may be reasonable to the Client, but under the circumstances of the variation work, it may not be fair to the Contractor. A QS/SO may value a fair rate or include a fair allowance on the contract rate/price to take into consideration the circumstances prevailing at the time of execution of the variation work. This fair rate may be far higher than the market rate or contract rate/price, which to the Client or others not knowing, may seem most unreasonable or unrealistic. Therefore, the QS/SO will need to decide what is fair and reasonable.

'What is fair will depend on the whole of the contractor's pricing' - *Buidling Contract Dictionary - Vincent Powell Smith & David Chappell.*

overheads and profit in the variation rate or price.

### Relevant Case Law

In *Weldon v The Commission for New Towns (English Technology & Construction Court, Judge Humprey Lloyd QC - July 2000)*, upheld the contractor's appeal on an Arbitrator's Award which excluded overheads and profit on costs of a variation order by deciding that a fair valuation has to include each elements usually found in contract rates or prices : costs of labour, plant, material, overheads and profit in the variation rate or price. He also said that it would not be a fair valuation if it did not include something on account for each of these items. The contract was under ICE Form.

In *Henry Boot Construction v Alstom Combined Cycles Ltd (Court of Appeal - 2000)*, by majority, found that the relevant variations had to be priced using contract bill rate, notwithstanding the apparent mistake which meant the contractor was likely to receive a windfall profit. "The sole function of the words "so far as may be reasonable" in Clause 52(1) (b) was to call for comparison between the work covered by variation order and the work priced in the Bills of Quantities. If the difference was very great, the Engineer might take the view that it was not reasonable to apply the bill rates. Otherwise, the Engineer should start his calculations from the bill rates.... (The clause does) not enable the Engineer to open up or disregard the rates on the ground that they were inserted by mistake...it is the use of the rates in the change to circumstances brought about the variation order that must be reasonable not the rates themselves".

### Conclusion/Solution

All the standard forms provide for variation and its meaning/definition and the rules for the valuation of variations, are similar in many respect but have some differences.

It is important to note that the Architect's/Engineer's/SO's written instructions are usually required for variation works.

The Architect/Engineer/SO (or QS if he is so instructed) is responsible for the valuation of variation works in accordance with the rules provided.

The next issue will be providing the answer the question, Can the Contractor insist on agreeing the cost of variation work before he proceed with it ?

The Entrusty Group includes Entrusty Consultancy Sdn Bhd (formerly known as J.D. Kingsfield (M) Sdn Bhd), BK Burns & Ong Sdn Bhd, Pro-Value Management and Proforce Management Services Sdn Bhd. Apart from project, commercial and contractual management services, the group also provides risk, resources, quality and value management and recruitment consultancy services to various industries, particularly in construction and petrochemical, both locally and internationally.

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