

VARIATION ORDERS IN CONSTRUCTION CONTRACT

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Abstract

This paper attempts to examine the provision of clauses on variations in the standard forms of contract commonly used in the local construction industry i.e. the PWD Form 203 for building and civil engineering works in the public sector, the PAM Form for building and the IEM Form for the civil engineering works both in the private sector. It touches all aspects of variations both academically and in practice especially on the need to have variation clauses in the contract, its definition, application and more importantly the method of pricing. This could be something different from what has been encountered during the practical application on site. It also explains why adherence to the terms of contract in the contract administration especially on the pricing and payment will benefit both parties in a long run.

1.0 Preliminaries

In plain language a variation in a construction contract could possibly be construed as the introduction during the progress of the construction work of something mostly work-related in nature added to or deducted from that which was tendered and accepted originally. However, the proper technical definition can be found in the standard forms of contract between a client and a building contractor commonly used in the construction industry.

It is a change or deviation in design, material or workmanship from that specified in the original tender document. Variations may occur any time not only during the progress of the construction work but also prior to the possession of site. As a rule, no instruction for variation will be issued after the practical completion has been certified.

It is considered imperative and practical for a construction contract to have a provision for variations in its working procedure because of the length of time for the completion of a project and the complexity of design especially for a prestigious project in which changes in design and technology of construction will have to be accommodated in pursuit of aesthetic excellence and to comply with the changing needs of environment. Take a prestigious project which needs two or three years to complete for instance. When the project was

approved to be constructed about four years ago the design was acclaimed to be of the highest quality ever and the construction technology was methodically worked out and programmed for a targetted completion date. But when the work started and the project gradually took shape new idea to improve the design was conceived. Perhaps the owner (the client) has just returned from an extensive tour and inspired by some projects he happened to see and he decided to include some interesting features into his own to make it his dream project. This new idea or the features to enhance the aesthetic qualities of the project causes amendments on the original design, hence a variation. This type of amendment or variation touches on the aesthetic consideration. On the technical aspect, it may deal with site, under ground or environmental issues. Prior to the design work, it is prerequisite that the site survey and possibly under ground investigation are conducted to determine the prevailing conditions which will have great influence on the structural design work. It is normal to accept the data obtained from such investigation will only serve as a guideline to help the design work but will not guarantee that the design will work. The actual conditions will only be known when they are encountered and exposed during the progress of the construction work. Since the design was mainly based on the survey report, the discovery of the actual conditions which is different from that shown in the report will

make it mandatory for the designer to make relevant changes in his original design, hence a variation.

The statutory regulation in the Local Authorities in which area the project is constructed may contribute to a change within the procedure of the construction work. A new bye-law or an amendment to the prevailing regulation will cause changes to be made in the design or work procedure of the on going project that has been approved previously, hence a variation. Changes in the requirements on the fire safety precautions by Jabatan Bomba during the progress of work is a good example.

The above examples are some of the common first hand sources of changes in the construction works that could occur on an on-going-project. Imagine what would be the situation in the construction work if there is no built-in provision in the contract that allows changes or variations to be made? The work cannot accommodate the new idea on the aesthetic qualities and consequently the design and the appearance of the project remain the same as the original. The designer cannot make adjustment to his structural design to suit the actual conditions found on site. As a result the project will have to be aborted because the ground conditions do not permit the work to proceed if amendments to the original structural design cannot be carried out. As for the statutory regulations the work would proceed in accordance with the original design but the possibility that the work being ordered to stop, the owner being fined or the building will not be allowed to be occupied when completed (no Certificate of Fitness) is great. This is all because the construction work cannot comply with the recently amended or newly introduced bye-laws.

On the other hand if the project is simple, cheap and very common in design and which would take short time to complete and may need only simple contract to execute, the provision of variations in the contract may not be necessary. Any change or amendment in design both aesthetically and structurally is least expected and by the time the Local Authorities change or introduce new bye laws the project is already completed.

Problems encountered during the progress of construction work are many and those explained above are only a few. However it is hoped they are clear enough to throw light on

the need of variation clauses in a construction contract. It is to be emphasized here that variation work is either additional (or extra) work, omission work or a combination of the two, though in practice it has been made popular among the layman (clients) that a variation work is always something extra that they have to dig from their pockets. If this is not enough, they would allege that variation is a work which enables a contractor to embezzle their money by legal means. To them a variation is some form of additional work which they have to pay excessively. This may be true if you purchase yet to be built properties from a developer where the sale and purchase agreement is very much different from the standard form of contract commonly used for construction work.

Another nightmare experienced by a client when dealing with variation comes in a form of fear that a designer may treat it as a shield to cover for any oversight or error of judgement during the design stage. My view in this case is that to err is human and a designer is always a professional and being a professional he is always mindful of his duties and responsibilities. However, anything too excessive is bad and professional negligence is his enemy number one. However, because of this fear, it is observed that the clients especially in the public sector are always critical and alert on the possibility of additional variations in a construction contract. So much so they introduce additional rules and regulation to supplement those already in the contract to control and discourage variations. Viewed from this perspective, variation is regarded as a villain to some whereas as a matter of fact it is designed and intended to a samaritan for the completion of the project. Whatever it is, in a contract administration based on accepted standard form of contract, the fault is always due to the operator rather than the mechanism.

2.0 Technical Definition

The term 'variation' means "the alteration or modification of the design, quality or quantity of the Works as shown upon the Contract Drawings, Bills of Quantities and/or Specification, and includes the addition, omission or substitution of any work, the alteration of the kind or standard or any of the materials or goods to be used in the Works and

the removal from the Site of any work, materials or goods executed or brought thereon by the Contractor for the purposes of the Works other than work, materials or goods which are not in accordance with this Contract" (Clause 24(b) of PWD Form 203A, Rev. 10/83) and "the alteration or modification of the design, quality or quantity of the Works as shown upon the Contract Drawings and described by or referred to in the Specifications, and includes the addition, omission or substitution of any work, the alteration of the kind or standard of any of the materials or goods to be used in the Works, and the removal from the site of any work materials or goods executed or brought thereon by the Contractor for the purposes of the Works other than work materials or goods which are not in accordance with this Contract" (Clause 11(b) of PAM Form). Clause 23(a) of IEM Form states that "the Engineer shall make any variation of the form, quality or quantity of the Works or any part thereof that may in his opinion be necessary and for that purpose or if for any other reason it shall in his opinion be desirable, he shall have power to order the Contractor to do and the Contractor shall 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 Works; and
- v) execute additional work of any kind necessary for the completion of the Works".

Further all forms agree that no such variation shall vitiate the contract.

3.0 How do Variations Arise in a Construction Contract?

As has been explained earlier, a variation may arise in construction contract in many and varied ways. It arises more often during the progress of the work and seldom before the commencement of work but never and it will not be allowed at any cost after the practical completion has been certified. You may argue that you have come across several cases where

instructions for additional work have been issued after the practical completion. This is not in accordance with the proper contractual procedure as it may lead to embarrassment to the parties if the contractor chooses not to execute the work. After the practical completion, the contract work is considered over as the project has been handed over to the client for occupation and the power of the contract administrator such as the Superintending Officer on construction work (except for defects during the Defects Liability Period) ceases to operate. However you may further argue that in most cases it does not create any problem and the additional works manage to get done. It is all right if both parties agree on a new term (though they may not be aware that they are entering a new term of contract!). Or this is made possible in practice because of the spirit of give and take and the mutual understanding between parties where the contractor is more interested to develop goodwill and to project publicity of his business. However this subject is outside the scope of contract administration.

Because they arise in several and varied ways, I am inclined to classify variations into two categories, viz (i) active and (ii) passive.

- i) Active variations come in directly as a result of the issue of Instructions. So much so it has become a norm that there is no variation without Instruction. "Instruction" here refers to those instructions issued by the contract administrator i.e. the Superintending Officer's (S.O) Instruction in PWD Form 203A, the Architect's Instruction in PAM Form and Engineer's Instruction in IEM Form. "Instructions" are defined, identified and categorised with the method of they being issued and the effect thereof explained in the respective Forms. Only the contract administrator (i.e. the S.O. in PWD Form 203A, the Architect in PAM Form and the Engineer in IEM Form) is empowered to use "his absolute discretion and from time to time issue instructions" (Clause 5(a) PWD Form 203A) and "the contractor shall forthwith comply with all instructions issued to him ... (Clause 5(b) PWD Form 203A).

Another aspect of variation deals with statutory regulations. Clause 11(d) PWD Form 203A requires the contractor to inform the S.O. in writing of any change or amendment in the

statutory regulation and bye-laws taking effect after the Date of Tender which necessitates any variation to the works and apply for an S.O's Instruction before the S.O. could issue the Instruction. This Instruction is different from other Instructions in term of its origin. Nevertheless, it is an Instruction that would give rise to variations.

ii) The passive variations could be accepted as those which do not require the instructions to be issued directly to the contractor. They come in the form of :-

- i) Remeasurement and valuation of those quantities of the work which are stated as 'provisional' in the bills of quantities.
- ii) The adjustment of items having Prime Cost or Provisional Sums in the contract.

The variation work on these items shall be prepared and agreed by both parties to facilitate the finalisation of accounts in the contract. It will be prepared in a Variation Order format.

4.0 Measurement of Variations

Variations may arise as Additional work or Omission Work. For additions, the work shall be measured and recorded jointly by both parties as soon as the work is physically completed. If the Instructions were issued enclosing a drawing, the measurement could be done on drawing. But site measurement is preferred as it will give better accuracy. The work with quantities measured will be tabulated in a format similar to that of bills of quantities where the next activity i.e. pricing, will follow. As the measurement is done by both parties jointly, the allegation by any party on the inaccuracy of measurement will not arise.

5.0 Valuation of Variations

It is observed that the method of pricing of construction work more so on variations does not follow directly the rule set by the economic theory of supply and demand. In construction the cost of work is generally based on "the five pillars of pricing" i.e. :-

- i) the price of materials
- ii) the cost of labour
- iii) the owning and operating cost of plants and machinaries
- iv) the establishment charges and
- v) profit

All items of work revolve around these fundamentals for pricing. In tendering for a project, the trend of pricing may be influenced by the economic theory of supply and demand because of the presence of the element of competition (tendering) and the amount of risk that a contractor has to undertake during the construction period which he cannot possibly foresee at the time of tender. But in the case of variation, the method of pricing remains technically conservative.

PWD Form 203A and PAM Form are consistent in the method of pricing when they spell out the following rules :-

- i) The rates in the contract (bills of quantities or schedule of rates) shall determine the valuation work of similar character and executed under similar condition as work priced in the contract.

This is to say for example if the rate for 100 mm concrete bed in the contract is say RM4.00 the rate for similar work in variation order i.e. 100 mm concrete bed is also RM4.00. This is because the item in the variation is similar in character and in working condition as that in the contract.

- ii) The said rates, where work is not of similar character or executed under similar condition as aforesaid, shall be the basis for the work under variation.

To quote the above example, if the work under variation is 150 mm thick concrete bed the rate of RM4.00 for 100 mm thick will serve as a basis. The method to get the price for 150 mm thick is to build up basing on the principle of five pillars of pricing with RM4.00 for 100 mm thick concrete serving as a reference point. This method is more popularly known as "prorata rate". It must be emphasised

here that a prorata rate is not at all a proportionate rate because in this example not all quantities of materials and work in 150 mm thick are proportional to these in 100 mm thick. The quantities of materials may be in proportion but the quality of work levelling and trowelling top of concrete bed shall remain the same both in 150 mm thick and 100 mm thick bed. Therefore they are not proportionate in all respects. If the rate of 100 mm concrete bed is RM4.00, the rate (by prorata method) of 150 mm thick will not be RM6.00 but it will be, by approximate estimate, in the region of RM5.70 or RM5.80. This is how prorata rates work.

- iii) If the work under variation is totally different from that in the contract, the method of pricing shall be mutually agreed. It will be based basically on the five pillars of pricing through the process of negotiation. It is commonly called agreed or negotiated rates. It must be reminded that an agreed rate method is not based on bargaining, haggling or horse trading. It is mainly based on the five pillars of pricing through established method of negotiation (and not bargaining).
- iv) The rates in the contract shall determine the valuation of work omitted. This is mainly for omission variation.
- v) Daywork rates shall apply where work cannot be properly measured or valued. In this case the contractor shall be paid on the basis of the five pillars of pricing but with establishment charges plus profit element stand at fifteen percent (15%).

Though the IEM Form does not subscribe to the actual wording offered in PWD Form 203A and PAM Form, reading between the lines may reveal similarity in intention. Clause 24(a) of IEM Form states that "all extra or additional work done or work omitted by order of the Engineer shall be valued at the rates and prices set out in the Contract if, in the opinion of the Engineer, the same shall be applicable. If the Contract does not contain any rate or price applicable to the extra or additional work, then suitable rates or prices shall be agreed upon between the Engineer and the Contractor".

6.0 Quotation for Items having Provisional Sums or Works under Variations

There have been cases where consultants have requested the project contractors to submit quotations for items having provisional sums or work under variations in the contract so that the price of the work can be established before the work commences. This is a "short cut" method. This practice should be stopped forthwith because this method is not in accordance with the accepted contract procedure, neither it is mentioned in any established form of contract. To justify further, in reality in what manner the amount quoted would be certified as truly fair and reasonable unless it is supported (which is very rarely) with detailed break down costing prepared on the basis of the five pillars of pricing. In most cases the amount quoted is in one lump sum. Secondly if the quotation is called as normally done in the open or selective tendering method in order to procure fair and competitive pricing, what would happen if the quotation submitted by the project contractor is not favorable? Would the consultant call the quotation again until the quotation amount submitted by the project contractor is fair and reasonable? This sort of services will give value for money to the clients.

7.0 Payment of Variations to Contractors

The flow chart of variation works commences with the issue of the Instructions to the contractor. Activities such as physical execution of work on site, measurement, preparation of the variation order format, establishment of rates and agreeing of price would follow. The signing by the contractor and the client on the Variation Order form will establish the validity of the variation and its pricing which will permit payment to the contractor. The whole process may take time but from the transaction point of view as soon as the variation work is certified complete the contractor has the right to be paid. In the public sector, the payment for variations may take several months to be approved due to the check and balance system within the agencies so that every cent paid is accounted for. But the fact remains that payments shall be made all in accordance with the agreement signed by the parties and not to let the aggrieved party suffer just because the other party is kept busy putting his house in order. However, in the long run, if this trend were to continue and

develop into a tradition, the contractors may be forced to include the financing cost of waiting time into the contract amount and any project tendered out in future may experience higher cost.

When approved, the payment for variations will be included in the next progress (or interim) payment certificate where payment is made together with the payment of other work done.

8.0 Conclusion

A proper understanding of the intention and the implementation of a variation order in a contract administration is very important to all parties without which a contractor would take it that the cost of variation work is based mainly on negotiation before the work commences and if he finds the price is not attractive he would not accept the work, a consultant would remain merely a 'middle man' at a negotiation of pricing whilst a client would consider a variation work would only give profit to the contractors. Further, the timing of payment of a variation work is another factor that needs to be considered seriously by the client and the consultants. A client has to appreciate that a contractor has incurred expenses in doing a variation work and any delay in the payment thereof will cause cash flow problems to the contractor. A contractor cannot seek remedies due to late payment in the contract agreement (i.e. PWD Form 203) because the contract is silent on the right of a contractor on claim of interests on late payment. The only option left in him is to appeal for the good office of the client for help to pay early or suffer in silence. But as a business man knowing very well that this is an on going practice in the construction industry especially in the public sector in order to survive he has to strike the iron whilst it is still hot in term of tendering projects, cut corners in his work or any other things for the sake of survival. Yet notwithstanding all these problems we often see many construction contractors are doing very well indeed.