

**BBSE3009 Project Management and Engineering Economics**

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**Lecture Notes**

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# Measurement and Valuation of Works (MWV)

## 1. Architect's Instructions

The architect is expressly empowered under the conditions of the HK Standard Form (HKIA, 1997) to issue instructions to the main contractor. Clause 2(1) – *Architect's Instructions* states that: *The Main Contractor shall ... comply forthwith with all instructions issued to him by the Architect in regard to any matter in respect of which the Architect is expressly empowered by these Conditions to issue instructions.* However, if an instruction is not issued according to the provision of these conditions, the main contractor is not obliged to comply.

There are three ways in which an architect's instructions may be officially conveyed to the main contractor: as written instructions direct from the architect; as oral instructions direct from the architect; or as oral directions given by the clerk of works on behalf of the architect.

### 1.1 Written Instructions

Clause 2(3) deals with the procedure for confirmation of an instruction. The primary effect of this clause is that all architect's instructions must be confirmed in writing; until they are, the main contractor need not comply.

Clause 2(1) provides that the main contractor must comply with architect's written instructions which are issued under express authority.

If the main contractor does not comply with properly authorised written instructions within *seven* working days, then the employer can employ and pay other persons to carry out the work necessary to give effect to the instruction. The cost of such work shall be recoverable from the main contractor by the employer as a debt or may be deducted from monies due to the main contractor under the contract.

This avoids the employer having to determine (end the employment of the main contractor) under Clause 25 or having to treat the contract as repudiated at common law.

### 1.2 Oral Instructions

Clause 2(3) allows the architect to give oral instructions if he so wishes. This will in effect minimise delays in the time taken to write and deliver a written instruction. The main contractor should however, get the instruction in writing, since if the matter in question is allowed to remain unwritten for too long or is forgotten during subsequent operations, the main contractor runs the risk of losing payment if the architect has no record or cannot recall items. Where instructions are requested on site and given orally by the architect these should be written in a site record book kept by the main contractor and signed by the architect.

The normal procedure for confirmation of an architect's oral instruction is for the main contractor to write to the architect within seven days confirming the instruction. If the architect does not dissent (disagree) in writing within seven days of receiving the main contractor's confirmation, then the instruction will take effect as from the expiration of the latter seven days – Clause 2(3).

If the architect confirms an instruction in writing first within seven days, then the main contractor does not have to confirm his instruction – Clause 2(3)(a).

### 1.3 Clerk of Works Directions

The clerk of works acts only as an inspector on behalf of the employer under the direction of the

architect. As such he has no authority to give instructions to the main contractor, however, he may give directions. According to Clause 10:

*If any directions are given to the Main Contractor or his foreman upon the Works by the clerk of works or the Architect's representative the same shall be of no effect unless given in regard to a matter in respect of which the Architect is expressly empowered by these Conditions and unless confirmed in writing by the Architect within two working days of their being given. If any such directions are so given and confirmed then as from the date of confirmation they shall be deemed to be Architect's instructions.*

In practice, this means that directions given to the main contractor by the clerk of works will usually be treated as architect's instructions. The main contractor will therefore comply with such directions, knowing that the architect's written confirmation will invariably follow.

#### **1.4 Clauses Which Empower Instructions**

The architect is empowered to issue instructions to the main contractor under the following clauses and provisions:

##### ***Clause***

<b>No.</b>	<b>Provision</b>
1(2)	Discrepancies are found between contract drawings and contract bills.
4(1)	Contract drawings or bills do not comply to byelaws or regulations.
5	Errors are discovered in the main contractor's setting out.
6(3)	Opening up the works for inspection.
6(4)	Removal of materials or goods from the site which are not in accordance with the contract.
6(5)	Dismissal of persons employed on the works.
11(1)	Ordering or confirming variations.
11(3)	Expenditure of provisional and prime cost sums.
15(3)	Making good defects during Defects Liability Period.
20(2)	Removal of any of the debris after storm, flood, fire etc.
21(2)	Postponement of work under the contract.
27	Nomination of sub-contractors.
28	Nomination of suppliers.
32(2)	Doing special work, for example, protecting the works in the event of an outbreak of war.
33(1)	Removal of debris from site.
34	Antiquities are found on site.

##### ***Disputing an instruction***

Clause 2(2) sets out that the main contractor is not required to comply with any instruction which is not expressly empowered under the contract, and may request the architect to specify the relevant clause number which empowers his instruction at the time of issue.

The standard form of architect's instruction provides a space to enter the relevant clause number. This practice not only provides the main contractor with immediate confirmation, but also ensures that the architect considers and identifies his authority before issuing each instruction. This is intended to protect the main contractor against such things as the architect's interference with the main contractor's site organisation. If the main contractor is still not satisfied, his remedy is arbitration

which can proceed at once under clause 35(2) but will involve inevitable delay to the works.

## **2. Variations**

Most building contracts are entire contracts. The significance of an entire contract is that there is no obligation to carry out variations or to pay for variations; this is known as the *doctrine of entirety*. However, standard forms of building contract commonly introduce a variations clause, under which the doctrine of entirety is modified. This is to give the employer the right to require variations and provide rules governing the adjustment of the contract sum.

A variation is defined in Clause 11(2) of the HK Standard Form as:

*...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 Contract Bills, 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 Main Contractor for the purpose of the Works other than work, materials or goods which are not in accordance with this Contract.*

The main contractor may be ordered to carry out variations for the following reasons:

- The employer may ask for details to be changed.
- A discrepancy between contract documents.
- A discrepancy between statutory requirements and the contract documents.
- An error or omission in the contract bills.
- Expenditure of provisional and prime cost sums.
- Restoration of damaged work caused by perils.
- Protective work upon an outbreak of hostilities.
- Removal of debris as a result of war damage.

The architect's general authority to make variations is set out in Clause 2(1) – *Architect's Instructions*, while specific authority is given in Clause 11 – *Variations, Provisional and Prime Cost Sums*, and Clause 33 – *War Damage*. Variations may only be ordered within the terms of the contract and they must be written and signed by the architect.

Clause 11(5) provides that both variations and the adjustment of provisional sums are to be allowed for in *Interim Certificates* and are subject to retention. This clause also authorises the adjustment of the *Contract Sum* to take into account the value of the variation work carried out.

Clause 11(6) deals with the situation where the main contractor might suffer some direct loss and/or expense (for example, idle plant) while carrying out work ordered by the architect under Clause 11(1) or 11(3) for which he will not be reimbursed by payment made in accordance with the valuation rules contained in Clause 11(4). In such a case the main contractor is required to submit a separate claim under Clause 11(6) which, subject to the architect's approval, will be added to the Contract Sum and included as payment in the next *Interim Certificate*.

## **3. Measurement and Valuation of Variations**

It is the duty of the quantity surveyor to measure and value variations under Clause 11(1), 11(3), and 11(4). Variations will ultimately be presented as part of the final account, and the main contractor is to be presented with a copy of the priced *Bills of Variation* before the issue of the *Final Certificate*, as provided by Clause 30 (5)(a) – *Certificates and Payments*. If the main contractor is dissatisfied with the quantity surveyor's valuation, he can take the matter to the architect who must review the valuation.

**Rules For Valuing Variations – Clause II (4)(a)-(e)**

- (a) Work of similar character in similar conditions, use prices in the Contract Bills to determine proportionally valued rates (pro-rata rates).
- (b) Work of dissimilar character or executed under dissimilar conditions, use prices in the Contract Bills as far as reasonable (pro-rata rates) or make a fair valuation.
- (c) Work that cannot be properly measured or valued, use *dayworks*, which is written evidence of time spent and materials used to carry out the variation work. The information is recorded on standard dayworks sheets, which are signed by the clerk of works.

Variation work carried out on a daywork basis must be in accordance with the following:

- (i) Rates for labour must be those offered by the main contractor in the Contract Bills.
- (ii) If the main contractor did not include daywork rates in the Contract Bills then the rates will be those given in the current *Standard Day Labour Schedules*, and current *Plant Hire Schedules*.
- (iii) Materials provided specifically for the variation work will be valued at its actual cost plus the cost of packing, carriage and delivery with an addition of 15% for overheads and profit.
- (d) If omissions required by the architect significantly vary the conditions of carrying out the remaining items of work, the prices for such remaining items will be valued under rule (b).
- (e) If required by the architect, the main contractor shall within *fourteen* days of the architect's written request, submit a detailed estimate of the value of the variation.

**4. Pro-Rata Rates**

There are three main methods of assessing pro-rata rates (proportionally valued rates) which are by *derivation*, *analogy*, and *reconciliation of analysis*.

**4.1 Derivation**

From two or more similar unit rates in the contract bills, for example:

<b>Rates in contract bills:</b>	
20 mm th. C&S (1:3) screed	\$40.00/sq.m
40 mm th. C&S (1:3) screed	\$50.00/sq.m
<b>Pro-rata rate for 30 mm th. C&amp;S (1:3) screed:</b>	
\$50.00 - \$40.00 = \$10 and 40 mm – 20 mm = 20 mm	
- 1 mm thickness: \$10 ÷ 20 mm = \$0.50	
Contract Bills rate for 20 mm screed	\$40.00/sq.m
Add additional thickness (10 mm @ \$0.50)	\$ 5.00/sq.m
- Pro-rata rate for 30 mm screed	= \$45.00/sq.m

## 4.2 Analogy

With a knowledge of pricing and building operations, it is sometimes possible to discover items of different description, or even trades, which are equivalent in labour, or labour and materials, to the items for which a price is sought.

For example, a rate might be required for screwing and pelleting hardwood and only a rate for the same operation in softwood appears in the bills. Provided the screws are of the same description (the pellets being manufactured out of waste material have no value as such), it may be assumed that the difference is virtually one of labour.

Rates in contract bills:	50x100mm HW frame	\$ 15.00/m
	50x100mm SW frame	\$ 14.00/m
	75x100mm SW frame	\$ 20.00/m
Pro-rata rate for 75x100mm HW frame:	50x100 HW	\$ 15.00/m
	50x100 SW	\$ 14.00/m
- Difference in labour	=	\$ 1.00/m
75x100mm SW frame		\$ 20.00/m
Add additional labour		\$ 1.00/m
- Rate for 75x100 HW frame	=	\$ 21.00/m

## 4.3 Reconciliation of Analysis

- *When substituting labour cost* - break up unit rate by:
  - deducting overheads and profit;
  - deducting labour cost - what is left is the material and plant cost;
  - adding the new labour cost;
  - adding the overheads & profit.
  
- *When substituting material cost* - break up the unit rate by:
  - deducting overheads and profit;
  - deducting original material costs - what is left is the labour and plant cost;
  - adding the new invoice price;
  - adding the overheads and profit.

**Example of substituting material cost:**

<p><i>Rate in contract bills:</i> brick wall in type A fcg. bk. in stretcher bond in g.m. 1:1:6 ptg. wi. Fl. jt. a.w.p. \$65.00/sq.m</p> <p><i>Required:</i> Pro-rata rate for bk. wall in type B fcg. brick in substitution.</p> <p>Cost of type A fcg. brick = \$650.00/1000          Cost of type B fcg. brick = \$750.00/1000</p>		
Rate for type A fcg. brick:		\$ 65.00/sq.m
Less profit and overheads 15% (15 ÷ 115)	=	\$ 8.48/sq.m \$ 56.52/sq.m
Less material cost for type A facing brick		
Bks./sq.m x % waste = (60 x 1.075) x 650.00 / 1000	=	\$ 41.93/sq.m
- Labour content	=	\$ 14.59/sq.m
Add material cost for type B facing brick Bks./sq.m x % waste = (60 x 1.075) x 750.00 ÷ 1000	=	\$ 48.38/sq.m \$ 62.97/sq.m
Add profit and overheads 15%		\$ 9.45/sq.m
- Rate for wall in type B fcg. bk.	=	\$ 72.42/sq.m

## 5. Fair Valuation

A fair valuation is simply an *estimate* of the cost of carrying out an item of work, including overheads and profit, and may be used as an alternative to pro-rata rates. Where a fair valuation is required, it may be valued by:

- Building up a unit rate from basic principles taking into account all factors such as invoice cost of materials, waste allowance, transportation and handling cost, standard labour constants, cost of plant, overheads and profits.
- Obtaining prices from building price books, such as *Spons*, *Laxtons*, *Griffiths*, and adjusting them to take into account the peculiarities of the contract concerned. Such factors may be: location, size, quality and complexity of work, fluctuations, overheads and profit.
- Extracting unit rates from bills of quantities used on jobs of a similar nature, and adjusting for factors previously mentioned: location, size, quality, complexity, fluctuations (meaning, that the prices would have to be higher if the employer has not agreed to pay increases in costs, which may occur during progress of the works), overheads and profit.

## 6. Provisional and Prime Cost Sums

Clause 11(3) states that: *The Architect shall issue instructions in regard to the expenditure of prime cost and provisional sums included in the Contract Bills and of prime cost sums which arise as a result of instructions issued in regard to the expenditure of provisional sums.*

There is a footnote to this sub-clause stating that the term *prime cost* may be indicated by the abbreviation *P.C.* in any document relating to the contract.



- **Provisional sums.** A provisional sum is a sum of money provided in the Contract Bills for costs which cannot be entirely foreseen, defined or detailed at the time the tendering documents are issued. This may include the value of measured work (which is the actual quantity of finished work whether valued by measurement or as daywork), and any preliminary costs such as scaffolding and plant directly related to the work in question. It may even, in some cases, include the cost of other preliminary items such as special supervision. Adjustments would be made by deducting the provisional sums from the Contract Sum and replacing them with the value of actual expenditure.
- **Prime cost sums.** A prime cost sum is a sum of money provided in the Contract Bills for payment of nominated sub-contractors and nominated suppliers and is to be expended in favour of such persons as the architect shall instruct. Normally, prime cost sums are incorporated into the tender as cover for the cost of nominated work. In so doing the employer does not have to enter into a series of special contracts. After the initial nomination these specialists become sub-contractors and suppliers to the main contractor. In the adjustments, the prime cost sums would be deducted from the Contract Sum and substituted by the final accounts of the specialist sub-contractors and suppliers so nominated.

## 7. Certificates and Payments

Payment certificates are binding statements, issued by the architect under Clause 30 of the HK Standard Form, which commit the employer to an obligation to pay the main contractor the amount certified; the two types of payment certificate are *Interim Certificates* and the *Final Certificate*. Other certificates issued by the architect throughout the contract period include, the *Certificate of Practical Completion* and the *Certificate of Making Good Defects*. *Interim valuations* and the *Final Account* are the responsibility of the quantity surveyor.

### 7.1 Interim Certificates

Generally, payment on interim certificates may be calculated either by stage payments made at agreed stages of completion (for example, 10% of the Contract Sum upon completion of foundations, 20% upon completion of first floor etc.), or by measurement of work done at agreed intervals throughout the contract. The latter method is by far the most common and is adopted by most standard forms of building contract in Hong Kong, including the HK Standard Form.

Clause 30 – *Certificates and Payments*, of the HK Standard Form, deals with all certificates that regulate payments under the contract. *Interim Certificates* certify the value of the work completed to the time of the certificate and are an estimate of value only. The employer is bound to pay the sum stated on the certificate, but adjustments can be made on future certificates. The procedure to be followed for the issue of *Interim Certificates* is set out by Clause 30(1), while Clause 30(2) sets out what may be included in the amount stated as due in an *Interim Certificate*. Both of these clauses also apply to *Interim Valuations*. *Interim Valuations* are for the purpose of ascertaining the amount due in an *Interim Certificate*, and must be prepared whenever the architect considers them necessary.

Clause 30(1) provides for the issue of *Interim Certificates* by the architect both before and after practical completion. *Interim Certificates* are issued periodically before practical completion at intervals which are defined in the appendix, usually one month. The architect is under an obligation to issue *Interim Certificates*; if he does not, the employer will be in breach of contract.

When an *Interim Certificate* has been presented to the employer by the main contractor, payment must be made within the *Period for Honouring Certificates* named in the appendix, *fourteen* days from presentation unless otherwise stated. If the employer does not pay within the time, then after giving notice the main contractor may determine (end his own employment under the contract) in accordance

with Clause 26(1). If the main contractor feels that any *Interim Certificate* was not properly prepared, he can give notice of arbitration.

## 7.2 Interim Valuations

Before an *Interim Certificate* is issued an *Interim Valuation* is usually prepared by the quantity surveyor and agreed by the main contractor's quantity surveyor. Once the architect has checked the *Interim Valuation*, and is satisfied that it is correct, he will sign and issue the *Interim Certificate* by sending it to the main contractor. It is then up to the main contractor to present it to the employer for payment.

Clause 30(2) sets out what may be included in an *Interim Certificate* (and therefore an *Interim Valuation*), which is the estimated value of the work properly executed, and the total value of materials and goods delivered to or adjacent to the works for use thereon. Restrictions on the materials or goods to be included are as follows:

- They must be delivered to or adjacent to the works (delivery to the main contractor's yard is not enough).
- Delivery must have taken place up to and including a date *seven days* before the date of the certificate.
- Materials or goods must not be brought onto or adjacent to the works prematurely.
- Materials and goods must be adequately protected against weather and theft. Under Clause 14(1), once these materials and goods are certified and paid for, they become the employer's property, though the main contractor remains responsible for loss or damage to them.

Clause 30(2)(A) deals with off site goods and materials. This clause gives the architect a discretionary power to include in the amount stated as due in an *Interim Certificate*: ... *the value of any materials or goods before delivery thereof to or adjacent to the Works...* This is on the proviso that such materials or goods conform to certain requirements, such as: intended for inclusion in the contract; in accordance with the contract; and insured against the perils set out in Clause 20 [A] or [B].

This sub-clause is intended to cover the increasing use of pre-fabricated materials off site, and to enable the main contractor to be paid for them before their delivery to site. This sub-clause will only be a part of the contract if specifically stated to be so in the Contract Bills.

From the total of work, materials and goods, retention due under Clause 30(3) is to be deducted. All previous instalments (certificates) that have been paid by the employer must also be deducted from the total.

## 7.3 Retention

The object of retention is to secure the main contractor's obligation to complete the works and make good defects. The employer holds retention money as a trustee for the main contractor but without obligation to invest.

Clause 30(3) provides that the employer may retain a percentage of the total value of the work, materials and goods valued under Clause 30(2). This is referred to in as *Percentage of Certified Value Retained* and should not normally exceed 10%.

When the sum of the amount of retention money retained equals that shown in the appendix as *Limit of Retention Fund* then no further amounts will be retained. The limit referred to should not normally exceed 5% of the Contract Sum.

Clause 30(4) sets out the nature and purpose of the retention fund and how it should be paid over to

the main contractor. The employer is permitted under the contract to draw from the fund to reimburse himself for:

- Work executed by another party where the main contractor has not complied with a valid instruction.
- Premiums paid for insurance when the main contractor has failed to insure.
- Payment of Liquidated and Ascertained Damages.
- Direct payments to nominated sub-contractors.

After the *Certificate of Practical Completion* is issued, one moiety of the retention fund is released with the other moiety being released after the issue of the *Certificate of Making Good Defects*.

### ***Nominated Sub-Contractor's Proportion of the Retention Fund***

The case of *Hsin Chong Construction Co. Ltd. v. Yaton Realty Co. Ltd* (1986), raised a question concerning the application of Clause 30 of the HK Standard Form.

The question raised was: whether or not Clause 30 creates in the hands of the employer, an effective retention fund in relation to the nominated sub-contractor's proportion of the fund.

The main contractor, as plaintiff, contended that in relation to these monies (the nominated sub-contractor's proportion of the fund), the retention fund is effective in his hands only. The employer must first accumulate the monies in a trust account. Then when each moiety is released by certificate, the employer must pay such moiety to the main contractor without any deduction. The only party entitled to exercise any rights of deduction or set off against any particular nominated sub-contractor, is the main contractor himself.

The employer, as defendant, contended on the other hand that Clause 30 creates a single indivisible fund. The initial obligation to set aside and accumulate the trust was not disputed. However, in the same way that moiety of the whole fund on release becomes due and payable to the main contractor, so the employer can recover losses from the whole fund.

The basic facts of the *Hsin Chong v. Yaton Realty* case are as follows:

The contract, which related to a property in King's Road, was entered into on 1 May, 1982. The contract date for completion was 22 June 1983. The architect certified that the contract was in fact practically completed on 11 June 1984 and under Clause 22, that it should have been completed on 21 August 1983. This certificate (the *Certificate of Practical Completion*) left \$7,740,000 payable in liquidated damages by the main contractor to the employer. The architect also issued a certificate under clause 27(c) entitling the employer to deduct from the main contractor, a direct payment to a particular nominated sub-contractor in the sum of \$1,324,123.38. The total sum covered by these two certificates was \$9,064,123.38. On 19 June 1984, the total of the retention fund held by the employer was \$9,084,171.55.

The plaintiff gave notice of arbitration on 11 June 1984, and also asked the employer to place the total retention monies in a trust account. The defendant only paid \$20,048.17 into the account. This amount was arrived at by deducting the total of the two certificates in question (\$9,064,123.38), from the total of the retention fund (\$9,084,171.55). The crucial question which therefore arose, and which the court was asked to rule on, was whether the defendant was entitled to deduct from the portion of the retention monies that was due to the nominated sub-contractor.

The court held that the employer's right of recourse under Clause 30(4) of the HK Standard Form extends to the whole retention fund, without distinction between the main contractor's and nominated sub-contractor's proportions of it. Such recourse is based upon a right to deduct arising under any of

the clauses that allow deductions - clauses 2(1), 19(1)(c), 22, or 27(c); all are equally effective.

### ***Early Payment of Nominated Sub-Contractors***

If there has been early final payment of a nominated sub-contractor, for example, a contractor engaged to complete piling, then half the retention fund should be released for the value of the work carried out by that nominated sub-contractor under Clause 27(e). Likewise, if there is sectional completion, that is the employer, with the main contractor's consent, takes over a part of the works before they are complete, then under Clause 16(f), half the retention fund should be released for that section of the works completed.

## **7.4 Certificate of Practical Completion**

It is the main contractor's obligation to complete the works according to the Contract Bills and Contract Drawings, while it is the employer's obligation to pay the main contractor the amount stated in the *Interim Certificates* issued by the architect. This procedure will carry on until, in the opinion of the architect, the works are practically completed. When this state is reached by the main contractor, the architect will issue a *Certificate of Practical Completion* as required by the contract, set out in Clause 15(1).

As there is no definition in the HK Standard Form concerning the precise stage at which practical completion of the works has been reached, it will be for the architect to decide. Once the certificate is issued, the main contractor is no longer obliged to accept new instructions requiring extra work, even on modified terms; he should hand over the building to the employer and move off site.

Contractual provisions that are dependent on the date of the issue of the *Certificate of Practical Completion* are as follows:

- Beginning of the Defects Liability Period. Clause 15(2)
- Ending of the main contractor's liability for typhoon damage. Clause 15(5)
- Ending of insurance of the works by the main contractor. Clause 20
- Ending of liability for liquidated damages. Clause 22
- Ending of regular *Interim Certificates*. Clause 30(1)
- Release of one moiety of the retention fund. Clause 30(4)(b)
- Beginning of the *Period of Final Measurement and Valuation*. Clause 30(5)
- Opening of arbitration matters. Clause 35(2)

## **7.5 Certificate of Making Good Defects**

The issue of the *Certificate of Practical Completion* marks the beginning of the *Defects Liability Period* stated in the appendix; six months unless otherwise stated. For this period of time after the issue of the *Certificate of Practical Completion*, the main contractor is required to maintain and repair the building in respect of damage occurring through his poor workmanship, such as plaster cracking, doors and windows not closing properly.

Clause 15(2) requires that the architect must deliver a *Schedule of Defects* within *fourteen* days from the expiry of the Defects Liability Period. If the architect fails to do this, the schedule would become invalid and the employer would have to resort to a separate claim for damages against the main contractor for his failure to properly complete the contract.

The main contractor is to make good defects within a reasonable time of receiving the schedule. Much depends on the nature and circumstance of a particular defect as to what may be considered a reasonable time. All work will normally be at the main contractor's expense.

Clause 15(3) overrides the provisions of Clause 15(2), allowing the architect to issue instructions covering urgent individual defects, for example a leaking roof.

When the Defects Liability Period has expired and on completion of the repairs the architect is required to issue a *Certificate of Making Good Defects* (Clause 15(4)). The main contractor is then relieved of any further contractual responsibility for the maintenance and repair of the building. One certificate is issued covering all making good defects.

The issue of the *Certificate of Making Good Defects* has two effects as far as the contract is concerned; these are:

- Release of the residue of the retention fund. Clause 30(4)(c)
- Clearance for the issue of the *Final Certificate*. Clause 30(6)

The *Certificate of Making Good Defects* means that the main contractor himself is no longer obliged to return and remedy defects, but it does not end the main contractor's liability for the cost of remedying them. The main contractor remains liable to the employer, under the *Limitation Ordinance*, for any breach in complying with contract specifications. The period of the main contractor's liability, is six years for ordinary (simple) contracts and twelve years for contracts under seal.

In the case of sectional completion, the same limitation of action rules apply, the only difference being that the Defects Liability Period applies only to that section of the works which has received a *Certificate of Practical Completion*.

## **7.6 Final Account**

Before the *Final Certificate* can be issued, the final account has to be prepared by the quantity surveyor, who is required to adjust the Contract Sum in the Contract Bills to include all the monetary additions and omissions of the following items:

- Contingency sums
- Architect's instructions
- Provisional quantities
- Provisional and prime cost sums
- Fluctuations and agreed main contractor's claims

Under the HK Standard Form the *Period of Final Measurement and Valuation* should begin with the issue of the *Certificate of Practical Completion* and be completed within the time stated in the appendix; six months unless otherwise stated. All adjustments made to the Contract Sum should be agreed by the main contractor's quantity surveyor. When the final account has been agreed, a summary is prepared setting out all the adjustments, which should be signed by the main contractor. The agreed final account sum is the amount that the employer should pay the main contractor for executing the works.

## **7.7 Final Certificate**

The *Final Certificate* is issued to certify that the works have been entirely completed to the employer's satisfaction in accordance with the terms of the contract between the two parties.

Clause 30(6) provides that the *Final Certificate* must be issued as soon as is practicable but before the expiration of *three* months from the end of the Defects Liability Period, or from completion of making good defects under Clause 15, or when the main contractor has completed his obligation to send all the necessary documentation to the architect so that the final account can be completed; whichever is the latest.

The *Final Certificate* will include the sum of all amounts previously certified and the Contract Sum adjusted as necessary in accordance with the conditions of the contract. The difference (if any) between these two sums will be expressed as a balance due to the main contractor from the employer or to the employer from the main contractor as the case may be. This balance must be settled as from the *fourteenth* day after the main contractor has presented the *Final Certificate* to the Employer.

Clause 30(7) deals with the effects that the *Final Certificate* has on the contract. These effects are that all materials and workmanship are to the reasonable satisfaction of the architect, and that all adjustments to the Contract Sum have been made.

Once the *Final Certificate* is issued, all adjustments made are indisputable by any accidental inclusion or exclusion. It is therefore extremely important that all calculations are checked carefully while adjusting the Contract Sum. However, if arbitration is going to take place, or is taking place when the *Final Certificate* is issued, the certificate will be subject to the arbitrator's main award (see lecture notes on alternative dispute resolution).

#### **[Review Questions]**

- (1) What are the possible ways that an architect can issue architect's instructions to the main contractor? Briefly describe the procedures.
- (2) To measure and evaluate the variations in a project, pro-rata rates are often used. What are the typical methods for assessing the pro-rate rates?
- (3) Briefly describe the different types of certificate and payments found in a building contract.

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