

**PART 3C**  
**PRELIMINARIES DESCRIPTIONS**

**Note: The Tenderer shall note that this section sets out the conditions and requirements in regard to Preliminaries for the Works. All pricing for preliminaries shall be priced in Preliminaries, and the cost for each item shall correspond with the items and description contained herein.**

## **PRELIMINARIES DESCRIPTIONS FOR THE WHOLE PROJECT**

### **1 SCOPE OF WORKS**

The extent of Works included in this Contract shall be as described in the Contract Documents or reasonably inferred therefrom.

The Contractor shall carefully study the Contract Documents, and satisfy himself as to the full extent, character and nature of the Works to be performed under this Contract. The Employer shall not entertain any claim arising from the Contractor's failure to study these Documents.

### **2 SPECIFICATIONS**

The term 'the Specifications' used throughout the Contract shall be deemed to include, but not limited to:-

- i) Specifications in this document,
- ii) Technical Specifications

Inclusive and all shall be deemed to form part of the Contract and shall be supplementary to one another.

The specifications is to be read in conjunction with the aforesaid General Specifications that sets out generally the Employer's requirements as regards to quality of materials and workmanship. The Contractor shall familiarise himself with the General Specifications and refer to clauses appearing under the relevant work section.

Where specific provision is made in the Particular Specification for any workmanship or materials, such provision shall have precedence over the other Specifications.

### **3 CONDITIONS OF CONTRACT**

The Conditions of Contract shall be the Public Sector Standard Conditions of Contract for Construction Works, 8<sup>th</sup> Edition July 2020, including the Appendix, any Option Modules and supplementary amendment thereto.

Further details or additional requirements in respect of some but not all of these Conditions are given herein solely for the guidance of the Contractor; notwithstanding this, the Contractor shall be fully responsible for taking all the implications of the Conditions of Contract into account.

## **1 Definitions and Interpretation**

### **1.1 Definitions**

The following definitions of terms shall apply throughout the Contract Document:-

<u>Term</u>	<u>Definition</u>
SO/S.O.	Superintending Officer
AS	The latest Australian Standards (including any amendments) in force at the time of tendering
BS	The latest British Standards (including any amendments) in force at the time of tendering
SS	The latest Singapore Standards (including any amendments) in force at the time of tendering
DIN	Deutsche Industrie Norm (German Industrial Standards)
ASTM	The American Society for Testing and Materials
EN	Eurocodes
AASHTO	The American Association of State Highway and Transportation
Officials As Specified	As specified in the Specifications

### **1.2 Singular and Plural**

### **1.3 Headings and Marginal Notes**

### **1.4 Joint and Several Liability**

## **2 Superintending Officer and Superintending Officer's Representative**

### **2.1 Superintending Officer's Authority**

### **2.2 Superintending Officer's Representative**

### **2.3 Superintending Officer's Authority to Delegate**

### **2.4 Appointment of Assistants**

### **2.5 Instructions by Superintending Officer**

### **2.6 Failure to Comply with Superintending Officer's Instructions**

### **2.7 Urgent Repairs**

### **2.8 No Obligation to Exercise Powers**

**3        CONDITIONS OF CONTRACT (Cont'd)**

**3        Contract Documents**

- 3.1      Contract Documents to be Taken as Mutually Explanatory
- 3.2      Custody and Supply of Drawings and Documents
- 3.3      Drawings to be Kept on Site
- 3.4      Need for Further Drawings etc.
- 3.5      Further Supplementary Drawings etc. and Instructions.
- 3.6      Delay and Time

**4        General Obligations of the Contractor**

- 4.1      Contractor's General Responsibilities
- 4.2      Site Operations and Methods of Construction
- 4.3      Contractor's Responsibility for Subcontractors
- 4.4      Responsibility for Identifying Ambiguities, Discrepancies, etc
- 4.5      Security Deposit
- 4.6      Sufficiency of Tender
- 4.7      Patents, Trademarks, Copyrights, etc.

**5        Sub-Surface and Ground Conditions**

- 5.1      Inspection of Site and Geotechnical Information
- 5.2      Adverse Physical Conditions
- 5.3      Underground Services

**6        Permanent Works Designed by the Contractor**

- 6.1      Contractor's Design Responsibility
- 6.2      Submission of Documents Prior to Commencement
- 6.3      Submission of Documents After Completion
- 6.4      Amendment and Modification of Accepted Design

**7        Notices and Fees**

- 7.1      Generally
- 7.2      Variations Arising from Compliance
- 7.3      Cost of Compliance

**3        CONDITIONS OF CONTRACT (Cont'd)**

**8        Setting Out**

8.1      Accurate Setting Out

8.2      Errors in Setting Out\_

Registered Surveyor\*

The setting out of the Works shall be carried out by a registered surveyor. All survey marks and pegs shall be protected and maintained. If any of the survey marks and pegs is displaced, the Contractor shall reinstate it at his own expense.

The registered surveyor shall certify that works have been correctly set out in accordance with the Drawings. One set of tracings and four sets of prints of "as set-out drawings" as prepared and endorsed by the registered surveyor shall be submitted to the SO within two months after completion of the Works. The Contractor is also required to submit in PDF Format as well.

The Contractor shall note that employing a registered surveyor to set out works on his behalf does not relieve him of his responsibility under the Contract. Should any inaccuracy occur, the cost of any corrective measure and legal claim shall be borne by the Contractor. The Employer shall not entertain any claim for such costs or loss of time incurred as a result of inaccurate setting out.

The Contractor shall, as and when directed by the SO, provide adequate surveying equipment on Site for use of the SO for checking purposes.

**3**      **CONDITIONS OF CONTRACT** (Cont'd)

**9**      **Programme for the Works**

- 9.1      Programme to be Furnished
- 9.2      Revision of Programme
- 9.3      Acceptance of Programme
- 9.4      Failure to Submit Adequate

Programme Preliminary Tender

Programme

The Contractor shall submit with his tender a preliminary programme showing how he intends to organise, carry out and complete the Works within the Contract Period. The programme shall identify the sequence of the main operations and the time limit within which the Contractor proposes that each operation shall commence and complete.

The programme shall not form part of the Contract unless specifically agreed to in writing before award of the Contract.

The Contractor shall submit his programme for the Works in accordance with the requirements of the Contract and the programme shall be in the form of a critical path network.

The Contractor shall submit four copies of the programme to the SO. A copy of the approved programme shall be retained on the Site.

Progress Report

The Contractor shall monitor the progress of the work and submit weekly reports to the SO showing the actual progress of the work compared with the scheduled progress in the programme.

The report shall include the progress status for each trade of work, number and types of workmen employed, materials delivered and construction equipment used, compared with the planned activities and resources.

**3            CONDITIONS OF CONTRACT (Cont'd)**

**10        Quality in Construction**

- 10.1    Plant, Materials, Goods and Workmanship
- 10.2    Contractor to Provide Everything Necessary for Testing
- 10.3    Cost of Samples
- 10.4    Cost of Test
- 10.5    Examination and Measurement of Works before Covering up
- 10.6    Uncovering and Making Openings
- 10.7    Defects during the Progress of the Works
- 10.8    Default of Contractor in Compliance

**11        Administration**

- 11.1    Days and Hours of Working
- 11.2    Contractor's Representative
- 11.3    Removal of Workmen and Other Personnel
- 11.4    Access for Superintending Officer\_

Works Requiring 'Standing'

Supervision

Notwithstanding the provision in Clause 11, works which require "standing" supervision e.g. concreting, piling, mixing of cement and sand for plastering or screeding and mixing of paints, etc. shall be carried out between 8.30 a.m. and 6.00 p.m. on Mondays to Fridays and, between 8.30 a.m. and 1.00 pm on Saturdays. The prior written permission of the SO will have to be obtained if, in the exigency of the case, such works are required to be carried out outside these hours.

No claim for loss or delay consequent upon the Contractor's failure to comply with this Clause will be entertained.

**3            CONDITIONS OF CONTRACT (Cont'd)**

**12        Possession of Site And Commencement Of Work**

- 12.1    Commencement of Works
- 12.2    Site Possession
- 12.3    Failure to Give Possession
- 12.4    Rights of Access etc.
- 12.5    Other Contractors

**13        Suspension**

- 13.1    Suspension of Work
- 13.2    Suspension lasting more than 90 days

**14        Time for Completion**

- 14.1    Contractor to Complete on Time
- 14.2    Extension of the Time for Completion
- 14.3    Notice Contract

Period

The period of completion of the Works shall be deemed to include Sundays and Public Holidays.

Exceptionally Adverse Weather

The Contractor's attention is specially drawn to the fact that rainfall records are received monthly from the Meteorological Service Stations at Singapore Power Building, Tengah Airbase, Seletar Aerodrome, Paya Lebar Airport and Changi Airport.

The average rainfall obtained from these five stations shall be taken as the basis for assessing the adverse weather conditions prevailing for the whole of the Island of Singapore and her neighbouring islands.

The Contractor shall **not** be allowed any extension of time due to adverse weather unless exceptionally adverse weather conditions occur in excess of the following average figures of "wet-day" returns for the last ten years (2010 - 2019).

**3**      **CONDITIONS OF CONTRACT** (Cont'd)

**14**      **Time for Completion** (Cont'd)\_

Exceptionally Adverse Weather

(Cont'd)

JAN	FEB	MAR	APR	MAY	JUN
6	4	8	7	7	6
JUL	AUG	SEP	OCT	NOV	DEC
6	5	6	7	11	10

A “wet-day” is reckoned to be one when the rainfall exceeds 10.16mm per day.

The Contractor is required to submit the daily rainfall tabulation obtained from the Meteorological Service, Singapore of the Meteorological Station nearest to the site on a monthly basis. The rainfall figures recorded at the nearest meteorological station shall be used to compute the number of “Wet day” in the month.

Extension of time due to adverse weather shall only be granted when the total number of “Wet Days” within the Contract Period exceed the total allowed “Wet Days” as shown in the chart herein.

**15**      **Expediting Progress of Works**

- 15.1      Notification to Expedite
- 15.2      Work to Expedite Progress

**16**      **Liquidated Damages**

- 16.1      Payment by the Contractor
- 16.2      Reduction of Liquidated Damages
- 16.3      Employer's Common Law Rights for Damages
- 16.4      Extension of Time During Delay Period

**17**      **Substantial Completion**

- 17.1      Certificate of Substantial Completion
- 17.2      Access to Remedial Work
- 17.3      Completion of Phase or Part

**3**      **CONDITIONS OF CONTRACT** (Cont'd)

**18**      **Defects**

- 18.1 Completion of Outstanding Works and Remedying Defects
- 18.2 Cost of Remedying Defects
- 18.3 Diminution in Value of Works
- 18.4 Contractor to Search
- 18.5 Liability at Common Law

**19**      **Variations to the Works**

- 19.1 Variations
- 19.2 Power to Order Variations
- 19.3 Submission of Quotations
- 19.4 Alternative Proposals by

Contractor Variation Meetings

The Contractor (including Approved Specialist Sub-Contractors unless directed otherwise) shall attend regular variation meetings convened by the SO. The meetings shall be chaired by the SO and held fortnightly to verify variations issued and to settle variation claims.

The Contractor shall submit to the SO an up-to-date statement of his variation claims at the variation meetings and he shall ensure that the claims are made in accordance with the provisions of the Contract.

**3**      **CONDITIONS OF CONTRACT** (Cont'd)

**20**      **Valuation of Variations**

- 20.1    Valuation Methods
- 20.2    Agreement on Valuation
- 20.3    Provisional Sum

Items Star Rates

Where the Contractor contends that work is not of a similar character or executed under similar conditions as priced in the Fixed Schedule of Rates he shall give to the SO a written notice within seven days from the time of receipt of the instruction from the SO with regard to such work for the SO's consideration. Unit rates for such items shall be termed 'Star Rates' and will be indicated thus ' \* ', if so decided by the SO. All "Star Rates" shall be substantiated by Contractor's submission of at least three (3) quotations

The Contractor shall declare on the prescribed form D9 (given in the Particular Specification) that the prices quoted in the supporting vouchers/invoices are nett of trade discounts. The SO may request for documentary evidence of the amount paid by the Contractor to his suppliers and/or subcontractors.

Provisional Quantities

Where provisional quantities are provided against any item of works, such works shall be subject to measurement on completion and valued at rates tendered by the Contractor in the Provisional Quantities Bill.

- 20.4    Daywork

**21**      **Measurement**

- 21.1    Contractor to Attend Measurement
- 21.2    Contractor to Provide Assistance
- 21.3    Record of Measurements
- 21.4    Failure to Agree Measurements

**3            CONDITIONS OF CONTRACT (Cont'd)**

**22        Claims for Loss and Expense**

- 22.1    Reasons for Loss and Expense
- 22.2    Sufficiency of Loss and Expense

**23        Procedure for Claims**

- 23.1    Notice of Claims
- 23.2    Contemporary Records
- 23.3    Substantiation of Claims
- 23.4    Access to Contractor's Books and Documents
- 23.5    Payment of Claims
- 23.6    Failure to Comply

**24        Construction Equipment Temporary Works Materials and Goods**

- 24.1    Exclusive Use for the Works
- 24.2    Vesting
- 24.3    Employer Not Liable for Damage
- 24.4    Conditions for Hire of Construction Equipment
- 24.5    Revesting and Removal
- 24.6    Incorporation of Clause in Subcontracts

**25        General Responsibilities**

- 25.1    Care of the Works
- 25.2    Excepted Risks

**26        Indemnity Provisions**

- 26.1    Injury to Persons
- 26.2    Damage to Property
- 26.3    Contractor to Rectify Damage

**27        Insurance for Personal Injury Workmen's Compensation and  
Property Damage**

- 27.1    The Policies
- 27.2    Damage to Property when Contractor Not Negligent
- 27.3    Default in Insuring

**3**      **CONDITIONS OF CONTRACT** (Cont'd)

**28**      **Insurance of the Works**

- 28.1      Risks to be Insured  
28.2      Application of Insurance Moneys

**Insurance**

The Contractor shall procure the insurances required under the Conditions of Contract. The policies shall be in accordance with the specimen policies (Contractor's All Risks) contained in the tender documents and secured from an approved insurance company. The Contractor shall examine the specimen policies and satisfied himself on the terms and conditions and coverage of the policies.

The sum insured for the Works and the Limit of Indemnity for Liability to Third Parties shall be as follows:-

Builder's Risks

Contract Works	-	<u>Contract Sum</u>
Professional Fees	-	<u>15%</u>
Removal of Debris	-	<u>2.5% of Sum Insured or maximum S\$100,000.00 each and every occurrence</u>
Employer's Existing Property	-	To be assessed by Contractor's insurer

Table of Limits of Indemnity

- |   |   |  |
|---|---|--|
| a) Where the amount tendered does not exceed S\$5,000,000 | - | S\$2.5 million for any one accident, unlimited for any one period of indemnity |
|---|---|--|

**3**      **CONDITIONS OF CONTRACT** (Cont'd)

**28**      **Insurance of the Works** (Cont'd)

- b) Where the amount tendered exceed S\$5,000,000 but not more than S\$50,000,000.00 - S\$5 million for any one accident, unlimited for any one period of indemnity
- c) Where the amount tendered exceed S\$50,000,000 - S\$10 million for any one accident, unlimited for any one period of indemnity

The excess to be borne by the Contractor shall be as

follows: Section I - Material Damage

Each and every occurrence giving rise to loss or damaged caused insured in respect of the following:

- a) by storm, tempest, typhoon, - S\$15,000  
earthquake, subsidence, (max)  
landslip, collapse or other  
convulsion of nature
- b) loss, destruction or damage -  
S\$5,000 due to other causes (max)
- c) loss or damage to Existing - S\$15,000  
and/or Principal's Property (max)

**3**      **CONDITIONS OF CONTRACT** (Cont'd)

**28**      **Insurance of the Works**

(Cont'd) Public Liability

- |   |   |   |
|---|---|---|
| a) by collapse, vibration,-<br>subsidence, lowering<br>of ground water,<br>weakening or removal<br>of support | - | 10% of loss amount<br>subject to a minimum<br>of S\$20,000 (max)* |
| b) damage to<br>underground services<br>S\$20,000 (max)*  | - | 10% of loss amount<br>subject to a minimum of<br>S\$20,000 (max)* |
| c) Other loss   | - | S\$5,000  |

(The maximum allowable is up to  
S\$20,000)

The period of insurance shall commence from Date of Commencement of Works stated in Letter of Acceptance and shall end upon expiry of the Defects Liability Period under the Contract. The Policy shall firstly cover the whole of the original Time for Completion plus 6 months and plus a further 12 months for Defects Liability Period.

The Contractors' All Risks policy shall be endorsed to cover the Employer in respect of any loss, expense, costs, damages, liability or claim which the Employer may incur or sustain due to injury or damage of any kind to property real or personal (including property of the Employer but not the Works themselves) caused by collapse, subsidence, vibration, weakening or removal of support or lowering of ground water arising out of the Works and cause otherwise than by any breach of contract, negligence, omission or default of the Contractor, his servants or agents or of any Sub-Contractor, his servants or agents or any person responsible for the provision of any plant, materials, goods or work for the Works. The same limit of indemnity and excess stated above for liability to third parties shall apply to this endorsement, unless otherwise stated. For the avoidance of doubt, the additional premium (if any) for the endorsement shall be priced by the Contractor into his tender price and the excess shall be borne by the Contractor.

**3            CONDITIONS OF CONTRACT (Cont'd)**

**28        Insurance of the Works (Cont'd)**

Important Notes :

1.        Evidence of payment of insurance premiums in the form of stamped receipts must be presented to the S.O., who on receipt of such evidence, will include the amounts shown on the stamped receipts or the amounts allowed for insurances in the Contractor's tender whichever is the lesser, in an interim certificate. The balance if any, of the amounts stated in the Contractor's tender will be paid proportionately throughout the total contract period.
2.        The Contractor will be responsible for the premium in connection with extending the period(s) of insurance cover in the event that the Contractor fails to complete the Works by the Completion Date / extended Completion Date in accordance with the Conditions of Contract.
3.        If the Contractor is of the opinion that the above policies are likely to be insufficient to cover his obligations under the Contract then he is at liberty to arrange such additional insurance coverage as he deems necessary to meet such obligations and bear all costs in respect of such additional insurance coverage.
4.        All excesses shall be borne by the Contractor and the amount of excess shall be subject to the S.O.'s approval.

**29        Damage to Property of Employer or Government**

- 29.1     Costs of Making Good Damage Loss or Injury

**30        Assignment and Subcontracting**

- 30.1     Assignment by Contractor  
30.2     Subcontractors

**3**      **CONDITIONS OF CONTRACT** (Cont'd)

**31**      **Termination by the Employer**

- 31.1 Termination for Default
- 31.2 Effects of Termination for Default
- 31.3 Liquidated Damages after Termination
- 31.4 Termination without Default

**32**      **Progress Payments and Final Account**

- 32.1 Payment Claims
- 32.2 Payment Certificates
- 32.3 Correction of Certificates
- 32.4 Final Payment Claim
- 32.5 Interim Final Account, Final Account and Final Account Certificate
- 32.6 Period for Honouring Certificate
- 32.7 Claim and Payment of Goods and Services Tax
- 32.8 Delay in Certification

Government's Financial

Year

The Contractor shall note that the Government's financial year begins on 1st April and ends on 31st March. For the month of March, the Contractor shall submit his application for an interim certificate within the first seven days of the month or such shorter period as may be notified by the SO.

Unfixed Materials on Site

The Contractor shall submit with each progress payment claim, a statement of unfixed materials-on-site on the prescribed form D8 given in the Particular Specification.

Such a statement shall be substantiated with appropriate vouchers and invoices, with quantities adjusted to reflect the actual quantities on Site, and submitted to Quantity Surveyor for his verification and inclusion in the progress payment.

Notwithstanding the Contractor's statement, if in the opinion of the Quantity Surveyor, the prices and quantities of materials stated in the vouchers and invoices are unreasonably high, the Employer shall be entitled to adjust such prices and quantities.

**3        CONDITIONS OF CONTRACT (Cont'd)**

**34        Final Completion Certificate**

- 34.1    Time for Issue
- 34.2    Certificate not Conclusive

**35        Settlement of Disputes**

- 35.1    Reference to the Superintending Officer
- 35.2    Reference to Arbitration
- 35.3    Arbitration in Event of Termination
- 35.4    Powers of the Arbitrators
- 35.5    Reference to Adjudication
- 35.6    Mediation

**36        Recovery by the Employer**

**37        Governing Law & Notices**

37.1    (1) Law

This Contract shall be deemed to be made in Singapore and shall be subject to, governed by and interpreted in accordance with the Laws of the Republic of Singapore for every purpose. The application of the United Nations Convention on Contracts for the International Sale of Goods 1980 to this Contract is hereby expressly excluded.

(2) Third Party Act

(3) Security of Payment Act 2004

37.2    Notices

**4        ADDITIONAL CONDITIONS**

The Contractor shall not alter any terms contained in the Conditions of Contract or attach to his tender any additional conditions.

If the Contractor shall vary any of the terms contained in the Conditions of Contract or introduce additional conditions, his tender may be rejected.

**5           ALTERNATIVE PROPOSALS**

The Contractor may submit alternative proposals using materials, designs or processes different from those specified in this tender. Provided always that the Contractor shall price the base offer (offer based on the original specification) regardless of whether he proposes any alternative or otherwise. Each alternative proposal shall be clearly identified, entered separately on a photocopy of the Form of Tender and submitted together with the Form of Tender containing the base offer.

**6           ALTERATIONS TO TEXT**

No alteration shall be made by the Contractor to the text of the Specifications, the Preliminaries and the Fixed Schedule of Rates. If any alteration, addition or note is made by him, such alteration, addition or note will not be recognised and the text as originally prepared will be strictly adhered to.

**7           COST AND OTHER CONSTRUCTION INFORMATION**

The Contractor shall furnish any other cost and other construction information such as disposal of earth as and when required by Employer and Consultants

**8           FORM OF TENDER**

The amount appearing as the total of the Summary of Tender and marked "Total Carried to Form of Tender" shall be transferred to the Form of Tender in Dollars and Cents, without any alteration or rounding off and if any discrepancy between the two documents occurs, the amount in the Form of Tender shall take precedence.

If there is any discrepancy between the tender amount printed in words and figures on the Form of Tender, the amount printed in words shall take precedence.

**9           TREASURE TROVE**

Any treasure trove, coins or objects of antiquity which are discovered on the Site during the progress of the Works shall become the property of the Employer.

The Contractor shall immediately notify the SO upon the discovery of any treasure trove, coins or objects of antiquity and shall exercise due care and protection to prevent them from damage.

## **10 ACTS AND REGULATIONS**

The Contractor shall comply with any written law and byelaws, rules and regulations of any government ministry, statutory boards or other public authorities which are applicable or relevant to the execution of the Works. These include, but are not limited, to the following:-

1. Requirements of Ministry of the Environment relating to the proper provision, erection, and subsequent, disposal of toilet facilities; the proper disposal of trade effluent; the erection and operation of canteens; control of water pollution and drainage; control of air pollution, control of noise and erosion and silt control.
2. Requirements of the current "Factories (Building Operations and Works of Engineering Construction & Occupational Safety Health) Regulations".
3. Requirements of the Ministry of Manpower forbidding the employment of illegal workers.
4. Requirements of the current "Building Control (Temporary Buildings) (Amendment) Regulations".
5. Requirement of LTA (Land Transport Authority And Road Works Act)
6. Requirements Fire Safety Shelter Bureau relation to compliance to the Fire Safety Act and Code of Practice Fire Precautions in Building.
7. Requirements of National Parks Board
8. Requirements of PowerGrid
9. Requirements of Public Utilities Board
10. Requirements of Ministry of Manpower
11. Requirements of Workplace Safety and Health Act 2006 including the subsidiary legislation gazetted under the Act. The provision shall deem to include consequential code of practice and guidelines gazetted by the Government.
12. All other relevant Authorities.

The Contractor shall note and implement the SARS prevention measures under the new MOM requirements to maintain vigilance against the possible outbreak of SARS at the workers dormitories and workplace. The Contractor shall note that daily temperature taking is mandatory for all construction worksites employing more than 25 workers, as well as dormitories. The Contractor shall also ensure that contact tracing facilities are in place in workplace.

## **11 DETECTION OF UNDERGROUND SERVICES**

The Contractor will be responsible for locating and precise position of all underground services including power cables, telecommunication cables, gas pipes, water pipes, sewer pipes and the like located within the site boundary. Prior to the commencement of the works, the Contractor shall employ a licensed cable detector to locate all underground services through the use of suitable detection devices. Where necessary the Contractor shall be responsible for excavating trial holes to confirm the existence of local underground services.

The Contractor shall mark out on site with marker/pegs the location of all detected underground services and he shall submit a certified record drawing for reference purposes.

Where available, drawings indicating locations of underground services or where marked out on site they shall be indicative only and are intended as an approximate guide for the Contractor's own verification on site.

The Contractor shall be responsible for liaising with the relevant authorities for the termination and removal of any redundant underground services. Before any work commences or during the progress of the work, should the Contractor discover that certain services may obstruct and impede the progress of the works he shall arrange for the diversion of the services. The Contractor will be reimbursed for the cost of the diversion. However, should the Contractor divert any services without obtaining written permission from the SO, then he shall bear all costs arising therefrom.

## **12 TEMPORARY ACCESS AND TEMPORARY ROADS**

The Contractor shall be solely responsible for complying with all traffic restrictions and providing all temporary roads and access to the Site which he deems necessary for the execution of the Works. The Contractor shall be solely responsible for payment of all fees and deposits required by the Authorities in this regard.

The layout of any proposed temporary roads, ramps, paths, platforms, etc. must be submitted to the SO for his approval prior to the commencement of the Works. The SO may issue instructions to the Contractor regarding the layout and method of forming temporary roads, ramps and paths and the Contractor shall comply with these instructions at no extra cost.

**12            TEMPORARY ACCESS AND TEMPORARY ROADS (Cont'd)**

The Contractor shall form and maintain all necessary temporary roads, ramps, platforms etc. to provide adequate all weather access within the Site and reinstate the Site and all work damaged or disturbed during construction and upon Completion to the satisfaction of the SO. Provide all temporary crossings over existing pavements and culverts as required and make good any work disturbed to the Authorities' entire satisfaction.

**13            HOARDINGS**

The Contractor shall provide, erect and maintain full height profile metal hoardings (complete with corrosion resistant coating and painted finish) of the project to areas as shown in the drawings and/or as and when directed by the SO throughout the Time for Completion of the works temporary metal hoardings and shall alter, repair and adapt the metal hoardings as and when necessary.

All new hoardings shall be provided to locations approved by the SO including gates, access doors and fastening for the execution of the Works and occupants of adjoining premises and for meeting the requirements of the SO and the relevant authorities.

The boundary hoarding and gates for segregation of public/owner activity areas from construction areas must be solid and sufficiently high to provide visual and noise barrier.

Where the metal hoarding height exceeds 5.0 metres, the Contractor's Professional Engineer endorsement is required to certify that the design and construction is safe and fit for its intended purpose.

The hoarding shall have adequate warning signs such as "Warning : Construction Site. No Access", "Out-of-Bounds to public", "Inconvenience Regretted", etc. and directional signage where existing routes are blocked or altered.

Dismantle and remove off site to the Contractor's own dumping ground the metal hoarding upon completion of the Works and make good all works disturbed to the satisfaction of the SO.

**14 PROTECTIVE BARRIERS, SCREENS, ETC.**

The Contractor shall provide all necessary barricades, tarpaulins, screens, etc. for the protection of the workpeople, occupants of adjoining property and the public, and shall alter, adapt and maintain them as necessary.

**15 SIGNBOARD**

The Contractor shall provide and maintain on the Site, a BCA standard approved temporary signboard to the approval of the SO, at positions directed by the SO. The signboard shall contain the title of the Project and the name of the Employer, Project Manager, Superintending Officer, Structural Engineer, M&E Engineer, Quantity Surveyor, Contractor, of the correct size lettering. Signboard shall be in the format and contain information as required by BCA. This signboard shall be erected within 2 weeks from the Permit to Carry Out Structural Works and remove once the main signboard is completed and at such time as instructed by the SO.

In the midst of getting endorsement from S.O., Contractor shall require to put up a simple banner to inform the resident of the development.

The Contractor shall provide and maintain on the Site, where directed, an approved main signboard as shown in the drawings including perspective drawings letterings and description of the project to the approval of the SO. This main signboard shall be erected within 6 weeks from the date of commencement of the works and remove within 2 weeks of the completion of the works.

**16 OTHER SITE BUILDINGS**

Other site buildings shall only be erected in positions approved by the SO and shall be such a form of construction that is approved by the SO. All temporary buildings must be cleared away within two weeks of the completion of the Works.

The Contractor shall allow for maintaining the site buildings for the duration of the Contract and keeping them in a clean condition.

**17            SCAFFOLDING FOR ALL TRADES**

The Contractor shall provide all necessary temporary scaffolding, staging, planks, catwalks, gangways, ladders, etc. of whatever height for the proper execution and completion of the Works and pay all costs and charges in connection therewith. He shall alter, shift and adapt from time to time as necessary and remove same on completion of the Works.

The Contractor shall only employ approved steel scaffolding for all works to the external surfaces of all structures.

The Contractor shall be fully responsible for the design and safety of scaffolding and must allow for obtaining approval from the relevant Authorities and for submitting design details if required.

Should the Contractor strike any of his scaffolding before ascertaining whether it is required by any of his Sub-Contractor or by any Public Authority, he must re-erect it if so required at his own cost and expenses.

**18            WATER FOR THE WORKS**

The Contractor may tap (subject to the Employer's prior written approval) from the main water supply and if approved, a sub-meter shall be provided by the Contractor for monitoring purposes. The Contractor shall keep records of the water consumption and submit to the Employer at the end of each month. The Employer reserves the right to back charge the Contractor the cost of all water consumption by the Contractor, his specialists, his supplier or his sub-contractors.

The Contractor may also maintain a temporary water supply and distribution system sufficient for the execution of the Works (including the works to be executed by specialists, his supplier or his sub-contractors). The temporary water supply installation shall comply with the requirements of the Public Utilities Board. The Contractor shall alter, adapt, maintain as necessary and remove the installation upon completion of the Works, reinstate all works disturbed to the satisfaction of the Employer and the Public Utilities Board and pay all costs, charges and fees in connection therewith.

**19            TEMPORARY LIGHTING AND POWER**

The Contractor shall provide all necessary temporary lighting and electrical power including temporary wiring and meters required for the Works including that for Nominated Sub-Contractors, Suppliers and Approved Specialist Sub-Contractors. The Contractor shall alter, adapt and maintain as necessary and shall pay all charges and clear away all on completion.

The Contractor is required to employ a licensed Electrical Contractor to install and maintain such temporary lighting and electrical power on the Site, and to ensure that they are in accordance with Singapore Standard CP 5:1998 - "Code of Practice for Wiring of Electrical Equipment of Buildings" and CP 88:2001 - Temporary Electrical Installations for Construction and Building Sites.

All such supplies of 60A and less shall incorporate a current operated Earth Leakage Circuit Breaker (E.L.C.B.) and direct tripping sensitivity of 20/30 mA and tripping time within 0.1 second.

The Contractor is encouraged to implement energy conservation plan on site so as to spearhead energy conservation initiatives.

**20            UTILITIES BILLS**

The Contractor shall bear all utilities bills (water, electricity & gas) from the date of turn-on to the date of Substantial Completion. The electricity bills shall include the monthly maximum demand charges. Meter provided shall be read in the presence of SO, the Employer and Contractor on the date of turn-on and also on the date of Substantial Completion. The Contractor shall pay/reimburse the Employer accordingly in a mode as stipulated by the SO

**21            PROVISION OF BULK BINS AND DUMPING OF DEBRIS AND WASTE, ETC.**

The Contractor shall not dump construction debris, rubbish and waste at the Site, vacant plot of land, roadside or drains as it may cause obstruction, pollution and chokage to the drains and water courses. All rubbish, construction debris and waste arising from the Contractor's occupation of the Site or Works must be collected, stored and removed off the Site in a manner as described below.

**21            PROVISION OF BULK BINS AND DUMPING OF DEBRIS AND WASTE, ETC.**  
**(Cont'd)**

The Contractor shall provide proper bulk bins for these materials. For storage of all inorganic waste such as building debris, dust, litter, timber, boxes, the bulk bins shall be of size not less than one cubic metre each. Separate bins with tight lid covers shall be provided for the storage of organic waste such as waste from canteens and each bin shall be of a capacity not less than 85 litres. No food waste shall be allowed to be deposited into the skip containers which are provided strictly for the storage of inorganic construction/bulky waste.

The Contractor shall make all necessary arrangements for the collection and storage of such materials in the bins provided and remove them and all unwanted earth as often as necessary to the Tuas Marine Transfer Station 98 Tuas South Avenue 3, Singapore 637821.

- a)      Non-incinerable debris, rubbish, garbage, waste, etc. and unwanted earth to Tuas Marine Transfer Station 98 Tuas South Avenue 3, Singapore 637821.
- b)      All incinerable debris rubbish, garbage, waste, etc. to Senoko, Tuas and Ulu Pandan Incinerations Plants.

No empty container or receptacle capable of collecting water and forming breeding places for mosquitoes shall be left in the open and the Contractor shall take all necessary steps to prevent the breeding of mosquitoes in the areas handed over to him during the period of the Contract.

## **22 PROTECTION OF EXPOSED EXCAVATED SURFACES**

The Contractor shall organise and execute all earthworks in such a manner as to minimise the period the earth surfaces are left stripped of vegetation and exposed to erosion by rain. Excavation works shall be carried out progressively. All surplus excavated materials shall be removed from Site immediately, and spoil for filling or surcharge shall be covered to prevent soil erosion.

Stripping of existing vegetation shall not commence unless the Contractor has provided sufficient silt traps and/or other approved silt control devices, and is ready to follow up with the subsequent work activities. All exposed surfaces shall be progressively turfed. Where it is not practical to carry out turfing and where the exposed earth surfaces are left bare and undisturbed for more than 1 month, such surfaces shall then be protected from soil erosion by spraying with bitumen-based emulsion or other approved means.

If in the opinion of the SO, the Contractor fails to meet these requirements, the SO may order or arrange for, at the expense of the Contractor, such remedial measures as he may deem necessary.

## **23 EROSION AND SILT CONTROL MEASURES**

The Contractor shall engage a Qualified Erosion Control Professional to submit an Earth Control Measures (ECM) Proposal to the Superintending Officer for forwarding to the Director, Drainage Department for clearance. The ECM Proposal shall be to the full satisfaction of the Superintending Officer as well as Public Utilities Board. Before the ECM Proposal is cleared, the Contractor shall not commence earthwork or any activity that will result in the formation of bare ground at any site that will contribute to soil erosion. The Contractor shall allow for all the cost in his tender price to comply with the Authority's requirements.

The ECM Proposal shall consist of the following five parts:

- 1) Project particulars;
- 2) Erosion control plan;
- 3) Sediment control plan;
- 4) Ground cover preservation and restoration plan; and
- 5) Silt control measures

**23            EROSION AND SILT CONTROL MEASURES (Cont'd)**

1)    Project Particulars

The following information shall be provided under project particulars:

- a)    Project description;
- b)    Name and address of site occupier;
- c)    Site area and contract period; and
- d)    Location map and site plan

2)    Erosion Control Plan

The Contractor shall allow for the implementation and maintenance of the Erosion Control Plan all as specified. The Erosion Control Plan shall depict graphically the activities, including sequence of work, type and duration for each phase of construction activities to include the following measures to:

- a)    sequences and schedule of the earthworks/demolition works in stages and progressively with the sequence construction activities and building works;
- b)    minimise site disturbance by keeping site clearance works to a minimum by retaining as much of the existing vegetation as possible;
- c)    pave up the bare surfaces and all construction access by concrete or milled waste or other suitable materials;
- d)    protect the bare slopes with close-turfing, concrete grouting, canvas or erosion control blanket;
- e)    protect the earth stockpiles with canvas or erosion control blanket;
- f)    restore ground cover over disturbed areas, which are or have become bare, as soon as possible

3)    Sediment Control Plan

The Contractor shall allow for the implementation and maintenance of Sediment Control Plan (including the provision of the storage basin and treatment system); all as specified. The Sediment Control Plan aims to capture the sediments washed down from the construction sites. Some of these sediment control measures and facilities, which must be in place before the works start, shall include but not limited to the following:

- a)    concrete-lined cut-off drains (minimum C7 precast channel) along the perimeter of the construction sites;

**23            EROSION AND SILT CONTROL MEASURES (Cont'd)**

- b) silt fence properly installed and embedded onto the ground along the perimeter cut-off drains (between the construction site and the cut-off drain);
- c) sediment basins or any other sediment filtering or settling system of adequate size and sufficient numbers along the perimeter cut-off drain and before the discharge points into public drain;
- d) a treatment system to be provided before the discharge points into public drain. A storage basin/tank may be required to capture the runoff before treatment; and
- e) turbidity curtains shall be installed along all the exposed slopes/riverbanks for works in or adjacent to water bodies, such as canals, rivers, sea or in a reclamation work. The silty discharge trapped within the turbidity curtain shall be allowed to be settled or treated

**4)    Ground Cover Preservation and Restoration Plan**

The Ground Cover Preservation and Restoration (GCPR) Plan aims to minimise the formation of bare areas at the site through:

- a) Leaving existing vegetation or ground cover over as much as possible of the site undisturbed and for as long as possible;
- b) Restoring ground cover over disturbed areas, which are or have become bare, as soon as possible so that they will stop generating silty water

The GCPR plan shall contain the following details:

- a) the sequence or stages, types of activities (earthwork, earth stockpile, foundation work, etc), duration (including start/end dates) of each stage/activity and the respective area affected. The entire site should thus be divided into sectors where only minimum number of sectors will have land disturbing activities going on at any one time;
- b) plans depicting graphically the above activities and sequences, showing in particular areas (with size indicated) which will have existing ground cover preserved or restored;
- c) proposed ground cover or temporary soil, stabilization measures (erosion control blankets, hydro-blanket, canvas sheet or turfing, etc) that will be provided to prevent erosion of bare areas that have been formed and will thereafter remain dormant for at least one month;

**23 EROSION AND SILT CONTROL MEASURES (Cont'd)**

- d) measures (such as barriers or hoardings, etc) for preventing disturbances to:
  - i) areas where the existing ground covers (e.g. existing vegetation) will be preserved in the initial phases of the contract; and
  - ii) areas where land disturbing activities have been completed and have temporary soil stabilization measures put in place

The Contractor shall carry out permanent or temporary soil stabilization measures in the following manners:

- a) Permanent or temporary soil stabilization shall be applied to denuded areas within seven (7) days after the final grade is reached on any portion of the site. Temporary soil stabilization shall be applied within seven (7) days to denuded areas that may not be at final grade but will remain dormant for longer than one month. Permanent stabilization shall be applied to areas that are to be left dormant for more than one year
- b) Permanent soil stabilization measures such as turfing or equivalent shall be established on denuded areas not otherwise permanently stabilization
- c) Temporary soil stabilization measures such as erosion control blankets, canvas or equivalent may be installed to reduce velocity and erosive force of storm water runoff
- d) Cut and fill slopes shall be designed and constructed in a manner that will minimise erosion. Slopes that are found to be eroding excessively within one year of permanent stabilization shall be provided with additional slope stabilization measures until the problem is corrected
- e) All excavations, grading or filling shall have a finished grade not to exceed a 3:1 slope. Steeper grades may be allowed if the excavation is through rock or if excavation or the fill is adequately protected (a designed head wall or toe wall may be required)

The Contractor shall notify the SO as well as the Director, Drainage Department on completion of each stage of the work as described in the above before land disturbance takes place on a new sector, which spells the start of soil erosion at this new sector

**23            EROSION AND SILT CONTROL MEASURES (Cont'd)**

**5)    Silt Control Measures**

The Contractor shall engage a Qualified Erosion Control Professional to design a comprehensive silt control measures to prevent silt laden water which will still be generated from the site from being discharged into public storm drains. The proposed silt control measures, including full basis and calculations shall be submitted to the SO and subsequently forwarded to the Director, Drainage Department for retention.

The silt control measures shall generally consist of, but not limited to:

- a) concrete-lined cut-off drains;
- b) silt fence;
- c) silt traps (the minimum storage capacity of silt trap shall be 250m<sup>3</sup> per hectare of drainage area, for drainage area < 1 ha);
- d) perimeter bunds; and
- e) sedimentation ponds (the minimum storage capacity of the ponds shall be 250m<sup>3</sup> per hectare of drainage area, for drainage area ≥ 1 ha)

The qualified erosion control professional shall submit full basis and calculations to show clearly how the cut-off drains, silt traps and sedimentation ponds are designed and sized as well as how such design will effectively filter off silt and allow only clean water to discharge into public storm drains. The intensity of a one in three months recurring storm may be adopted for the design.

The silt control measures will have to be modified and improved during the contract period as and when they are found inadequate and silty water is discharged into public storm drains.

The silt control measures shall be constructed fully to the professional engineer's design and under the supervision of the qualified erosion control professional who shall provide a certificate of supervision of the works to the SO and Director, Drainage Department.

The silt control measures shall be diligently maintained by the Contractor to ensure that they are effective at all times. The Contractor shall submit monthly reports supported by photographs to the SO detailing the maintenance works carried out during the month.

**23            EROSION AND SILT CONTROL MEASURES (Cont'd)**

5)    Silt Control Measures (Cont'd)

Erosion Control Blankets (Cont'd)

The Contractor shall allow all cost in compliance with all of the above requirements in his pricing.

Erosion Control Blankets

The work shall consist of furnishing, placing and maintaining the erosion control blanket (ECB).

The blanket shall be a machine-produced mat of consistent thickness with coconut fibre or palm oil fibre, or other approved fibres with equivalent performance properties stitched or otherwise mechanically bonded evenly over the entire area of the mat. The blanket shall be covered on both sides with photodegradable polypropylene netting and sewn together with polyester thread.

The blanket shall have the following properties:

Coconut fibres:

Property	Requirements
Weight of netting	Not less than 270g/m <sup>2</sup> — 10%
Mesh size of netting	Not less than 16mm x 16mm
Functional longevity	Not less than 3 months

Palm oil fibres:

Property	Requirements
Weight of netting	Not less than 300g/m <sup>2</sup>
Mesh size of netting	Not less than 19.2mm x 36.3mm top Not less than 9.3mm x 8.5mm bottom
Functional longevity	Not less than 3 months
Weight of netting	Not less than 270g/m <sup>2</sup>
Mesh size of netting	Not less than 16mm x 16mm
Functional longevity	Not less than 3 months

**23            EROSION AND SILT CONTROL MEASURES (Cont'd)**

5) Silt Control Measures (Cont'd)

Erosion Control Blankets (Cont'd)

The Contractor shall submit certified test data from the manufacturer covering each shipment of the material.

Fasteners shall be used to anchor the blanket to the prepared ground/soil. The appropriate fasteners shall be used in accordance with the manufacturer's design and suitable for the ground conditions. Except grounds that will be protected for at least 12 months, metal or non-degradable fasteners are not permitted.

The functional longevity of the blanket to be chosen depends on the dormant period of the bare ground. The longevity of the blanket shall be chosen such that erosion would be effectively under control at the bare ground covered with ECB throughout the dormant period of the bare ground. The Contractor shall ensure that no bare ground shall be left unprotected from erosion for a month or longer.

The Contractor is deemed to have allowed in the Contract for complying with the above requirements.

**24 INSPECTION OF SEWERS AND CHECKING OF LEVELS**

The Contractor shall arrange for the following to facilitate the Ministry of the Environment's inspection of sewers:-

- (a) aluminium ladders for use at manholes and in particular, ladders of adequate lengths for deep manholes;
- (b) barricades and warning signs at all openings along roads during the inspection and survey;
- (c) safety helmets;
- (d) air-blowers for proper ventilation of the sewers to be inspected, opening of manhole covers for ventilation and also for entry of their staff for inspection;
- (e) an adequate number of ranging poles for use of the surveyor;
- (f) a levelling staff (the Sewerage Department will provide the levelling instrument); and
- (g) any assistance that may be requested by Sewerage Department's staff to carry out the inspection in a safe manner.

**25 DETECTION AND PROTECTION OF EXISTING SERVICES, ETC.**

The Contractor shall maintain and protect all public drains, sewers, gas mains, water mains, electrical mains, telephone cables and the like in connection with the Works, including provision of temporary supports or making any minor temporary diversions where necessary and shall make good all damage to such utilities at his own expense to the satisfaction of the SO. And the competent authority during the execution of the Works and shall indemnify the Employer against any claim or legal proceeding arising therefrom. It shall be fully understood by the Contractor that it shall be his sole duty and responsibility to check, investigate and acquaint himself at his own expense with the full extent, positions, depth, condition and detail of all existing overhead and underground services, cables, pipelines and drainages in the vicinity of, in and around the site.

**25 DETECTION AND PROTECTION OF EXISTING SERVICES, ETC. (Cont'd)**

The approximate positions of certain services etc. may have been indicated in the Contract Drawings for the guidance of the Contractor but such details are not to be taken as complete. The Contractor shall, at his own expense determine the existence of other services etc. which are not shown in the Drawings by either cutting trial trenches or by making enquiries with the relevant service departments/companies.

The Contractor shall engage a Licensed Telecommunication Cable Detection Worker to locate existing telecommunication plant in the vicinity of the earthworks before commencement of earthworks.

The Contractor shall engage a Licensed Cable Detection Worker to locate existing underground services before execution of the piling works. The Contractor shall also submit six (6) sets of drawings certified by the Specialist to the SO indicating all the existing underground services.

The Contractor shall inform the SO immediately should any services to be found. The cost of diversion shall be borne by the Employer and any damage done on the part of the Contractor's negligence shall be made good at the Contractor's expense.

**26 PROTECTION OF THE WORKS**

The Contractor shall, at his own expense, provide and maintain everything necessary to cover up and protect all materials and works including temporary works liable to be stained or damaged from any cause whatsoever including the effects of extreme weather conditions and remove same on completion of the Works all to the direction and satisfaction of the SO.

If the Works or any part thereof or any temporary works is damaged from any cause whatsoever, the Contractor shall, at his own expense, repair and make good the same so that at completion, the Works shall be in good order and condition.

## 27 TESTING & TESTING FACILITIES

The Contractor shall carry out or arrange to carry out all tests stipulated in the Specifications or as directed by the SO and arrange for submission of copies of test results to the SO as soon as they are available. All tests and checks on Site shall be carried out as directed by or in the presence of the SO.

The Contractor shall arrange for the tests listed in Table 1 below to be carried out at approved Engineering Laboratory as and when the SO may direct or at such intervals as the Specifications so require.

Fee for such tests shall be charged to the Contractor only when the test fail; and these fees shall be recoverable from the Contractor by the SO as a debt or may be deducted by him from any money due or to become due to the Contractor.

**TABLE 1: TESTING FACILITIES AT APPROVED  
ENGINEERING LABORATORY**

<u>Material</u>	<u>Test</u>
Soil	Compaction Test of Standard Proctor or modified AASHTO.
Concrete	Compressive Strength Test Indirect Tensile Strength Test
Brick	Crushing Strength
	Test Absorption Tests - 24 hours cold immersion - 5 hours boiling test
Bituminous Asphalt Mixtures	Extraction and Grading of Concrete Sample Standard Bituminous Tests which include:  - Determination of flash and fire points - Determination of penetration - Determination of Softening Point - Determination of solubility
Steel	Tensile and Elongation Tests (on round bars and flat bars)

**27        TESTING & TESTING FACILITIES (Cont'd)**

Prior to the commencement of any concreting, the Contractor shall provide on Site at a shaded area at least one lockable water- tight curing tank of approved material and design. The tank shall be at least 760mm long, 530mm wide and 660mm high. The Contractor shall provide a sufficient number of tanks to accommodate the expected number of cubes, before they are sent for testing.

The Contractor shall also provide and maintain for the duration of the Contract adequate apparatus on Site for concrete testing to the approval of the SO.

The cost of all samples, transport and other expenses incidental to testing shall be borne by the Contractor.

**28        REIMBURSEMENT OF TESTING FEES TO CONTRACTOR**

The Contractor shall carry out any other tests not specifically mentioned in the Specification but requested or required by the SO. The Contractor shall arrange and pay for all costs for the tests to be carried out at approved testing laboratory as and when the SO may direct. The Employer will reimburse the Contractor for the laboratory fees only if the test results show that the material tested meet the Specification.

**29        SAFEGUARDING THE WORKS, MATERIALS & PLANT AGAINST DAMAGE & THEFT**

Cover up and protect the building and their contents and all materials from all damage (day and night) or the injurious effect of inclement weather, flood or any other cause whatsoever and make good or pull down and renew any damaged work that may occur and also including for the use, adaptation and maintenance of tarpaulins, temporary roofing and screens and other protection and security measures and their removal on completion of the Contract.

If, in the opinion of the Contractor that materials and goods stored on site and the completed works (including all Sub-Contractor's works) need to be safeguarded against theft then he must allow herein for such provision.

The Contractor is to insert a Unit Rate for providing a security guard base on per month basis in the event should the Employer intend to employ the security guard beyond the Contract Period.

**Unit Rate Per Month for Security Guard @\$\_\_\_\_\_/mth**

**30            HOUSEKEEPING & FIRE SAFETY ON SITE**

The Contractor shall maintain a high standard of housekeeping and ensure fire safety on Site for the duration of the Contract. He shall keep the Site of his operations in as clean, neat, safe condition and free from mosquito breeding as possible.

All materials, particularly timber and other combustible materials, must be properly stored. Fire extinguishers shall be provided by the Contractor for all temporary buildings and at strategic points on the Site. All existing fire extinguishers shall be maintained by the Contractor.

All rubbish, debris, etc (including those left by Nominated Sub-Contractors, Suppliers or Approved Specialist Sub-Contractors) shall be cleared from time to time. In particular, the Contractor shall, at all times, keep all accesses free of debris, excavated materials and other obstructions.

Particular attention is directed to cleaning out the roof space and leaving it entirely free from rubbish that may be left by Nominated Sub-Contractors, Suppliers or Approved Specialist Sub-Contractors.

**31            CLEANING UP AND REINSTATEMENT OF WORKS ON COMPLETION**

The Contractor shall leave every part of the Works included in this Contract and all areas within the site boundary in a clean, sound and perfect condition free from all flaws, cracks and settlement whatsoever at completion of the Works.

All locks and hinges and other ironmongery shall be greased and oiled and missing keys supplied, cold water tanks, flushing cisterns to WCs etc. eaves gutters and down pipes, gullies, etc. shall be cleaned out and checked for proper supports and watertightness.

On completion, huts, sheds, etc. shall be removed and the area occupied by the same and used by the Contractor shall be reinstated and left clean and in perfect condition to the satisfaction of the SO.

All turf disturbed or destroyed by excavation, site huts, dumps of materials, lorries and the construction works, etc. shall be reinstated at completion and watered and rolled, etc. to the satisfaction of the SO.

The whole of the works are to be cleaned and fit for occupation to the entire satisfaction of the SO.

**31            CLEANING UP AND REINSTATEMENT OF WORKS ON COMPLETION (Cont'd)**

The Contractor shall deem to have allowed for all equipments, hoist, plants for carryout the abovementioned cleaning and reinstatement work.

**32            MATERIALS**

All materials and fittings shall be in accordance with the latest revised B.S. or S.S. current at the time of tendering. Should no standard be quoted the materials or fittings shall be to the approval and satisfaction of the SO.

**33            LOCALLY MANUFACTURED MATERIALS**

Wherever any construction materials required for the Works is manufactured in the Republic of Singapore and bearing the PSB Mark of quality, the Employer will give preference to the use of that material in lieu of an equivalent imported material provided that, in the opinion of the SO, the material is considered satisfactory with regard to quality, etc. In case of doubt, the Contractor is required to refer to the SO whether any locally manufactured materials of acceptable standards are available for use in the Works.

**34            ORDERING MATERIALS**

The Contractor shall place his orders for specified materials at the earliest possible date after notification of acceptance of his tender or at such times as may be specifically stated elsewhere for any particular material. If, in the opinion of the SO the Contractor by his failure to order any specified material, or by his failure to deliver to the Site any specified material within the time stated for same, causes interruption or delay in the progress of the Works, then in either case, the SO may be at liberty to purchase such specified materials in whatever quantities he deems necessary and at the rates current in local markets at the time of purchase and all charges in connection therewith including delivery charges shall be borne by the Contractor and shall be deducted from money due or to become due to him under this Contract and neither profit nor extension of time shall be allowed to the Contractor in respect of such items.

**35            SAMPLES**

Where materials and fittings are specified to be "approved", samples shall be submitted for approval according to the master programme approved by the SO after notification of acceptance of the Contractor's tender and before any order or bulk delivery to the Site is made. All samples which are approved will indicate the minimum standard to be maintained in the execution of the Works and shall be so marked and retained by the SO.

In the case of rejection, further samples shall be submitted until they are approved. All samples shall be submitted free of cost. The SO may reject any material or workmanship which, in his opinion, is not up to the approved standard. No time and cost claim arising there from shall be entertained.

The SO may send the samples to laboratories for testing. The cost of all samples and transport for tests shall be borne by the Contractor. The Employer will pay for the laboratory fees only if the test results show that the materials tested meet the specified standards.

**36            MOCK-UPS**

The Contractor shall construct mock-ups of rooms, areas or locations as specified for the purpose of pre-assessing the quality of works expected in the Contract. The mock-ups shall be complete with finishes, fitments, appliances, mechanical and electrical fittings as applicable to the room, area or location. The appliances, mechanical and electrical fittings need not be operational for the mock-up but shall be made so and handed over upon completion of the Works.

The mock-ups shall be completed before commencement of the architectural works and according to the master programme approved by the SO. No time claim shall be entertained due to the late commencement of Mock-up.

Mock-ups shall be executed to the satisfaction of the SO. The SO may reject any mock-up which, in his opinion, is not up to the approved standard. If the mock-up is rejected, the Contractor shall undertake all necessary rectification and remedial works to the mock-up to achieve the quality and workmanship as specified. No claim arising therefrom shall be entertained.

All mock-ups approved by the SO shall be the minimum reference standard of workmanship the Contractor would have to provide in the execution of the architectural works.

**37 OPEN UP WORK FOR INSPECTION**

The Contractor shall at the request of the SO within such time as the SO shall name, open for inspection any work covered up and should the Contractor refuse or neglect to comply with such request the SO may employ other workmen to open up same. If this said work has been covered up in contravention of the SO's instructions or if being opened up it be found not in accordance with the Drawings, Specification and Tender Summary or Instructions of the SO, the expenses of such opening and covering it up again whether done by the Contractor or such other workmen, shall be borne by and recoverable from the Contractor. If the work has not been covered up in contravention of such instructions and be found in accordance with the said Drawings, Specification and Tender Summary Or Instructions the expenses aforesaid shall be borne by the Employer and be added to the contract sum provided always that in the case of any urgent work so opened up and requiring immediate work, the SO shall within a reasonable time after receipt of notice from the Contractor that the work has been so opened up, make or cause the inspection thereof to be made and at the expiration of such time, if such inspection shall not have been made, the Contractor may cover up the same and shall not be required to open it up again for inspection except at the expense of the Employer.

**38 SUBSTITUTIONS AFTER AWARD OF CONTRACT**

After the award of the Contract, the Contractor shall not substitute any material, article, product, or equipment specified (hereinafter called the "specified item") in the Contract without the prior written approval of the SO.

If the Contractor wishes to propose a substitution for a specified item, he shall make a timely written request to the SO, stating the reasons (as supported by documentary evidence) for the request. He shall also provide such drawings, specifications, samples, manufacturer's literature, performance data and test results, and other information as are necessary for the SO to evaluate the proposed substitution completely. Any deviation from or non-compliance with the contract requirements shall be highlighted and brought to the attention of the SO, failing which the Contractor shall be deemed to warrant that the proposed substitute will comply with the contract requirements.

The Contractor shall also submit details of the comparative prices for the specified item and the substitute to the SO, and indicate the savings accruing to the Employer.

**38 SUBSTITUTIONS AFTER AWARD OF CONTRACT (Cont'd)**

For the avoidance of doubt, the Contractor is bound to provide the specified item under the Contract. The decision whether or not to consider the request for substitution and to accept or reject it is entirely a matter of discretion for the SO and the Employer whose decision shall be final and binding. Any delay or alleged delay on the part of the SO or the Employer in considering the Contractor's request for substitution or in coming to a decision shall not entitle the Contractor to an extension of time or additional payment.

**39 CARRIER**

The Contractor shall ensure that the carriage by sea of all goods, materials and equipment imported for the purposes of this Contract shall be on vessels owned and operated by shipping lines which are approved lines at the time the contract of carriage is entered into. Other ships may be used only if no approved line:

- (a) can deliver the goods, materials and equipment in time to meet the delivery dates specified in the Contract; or
- (b) can provide the same measure of service at the same cost.

The Bills of Lading for the goods, materials or equipment used by an approved line(s) shall be sufficient evidence of their carriage by an approved line(s) in compliance with this clause.

Where the carrier is not an approved line, the Contractor shall satisfy the SO that the conditions of para 1 hereof has been satisfied. The SO may require and the Contractor shall forthwith furnish to the SO letters from each and every approved line at the time the contract of carriage with the carrier is entered into stating that in respect of the shipment in issue they are either unable to quote or to provide the service required.

Notwithstanding anything contained in this clause, it is understood that the SO is not and shall not be responsible for any act or default of the carrier or for any loss or damage sustained by the Contractor on account of having to comply with this clause.

The list of current approved lines can be obtained from the SO.

**40            GUARANTEES**

The Contractor shall obtain all guarantees specified in the Specifications on formats approved by the SO covering the workmanship and materials for the periods agreed from such Nominated Sub-Contractors, Suppliers and Approved Specialist Sub-Contractors as directed by the SO. The original guarantee shall be forwarded to the SO within 30 days from the date of Certificate of Substantial Completion as specified.

**41            SAFETY REQUIREMENTS FOR BUILDING OPERATIONS AND WORKS OF ENGINEERING CONSTRUCTION**

The Contractor shall provide the Employer, SO and his representatives on Site and Consultants, safety helmets, safety boots, waterproof coats and hats, umbrellas, protective apparel and any other necessary safety devices, and shall comply with WSH safety requirements, as briefly highlighted in the extract of WSH Acts included in the Appendices.

The Contractor shall also note and implement the Risk Management Regulation under the new MOM requirements to carry out risk assessment.

**42            TRAFFIC CONTROL AND ROAD SAFETY**

The Contractor shall provide for all necessary traffic and directional signs, barriers, warning lamps, rubber cones etc. to guide and inform the public that the working area is closed or partially closed to all traffic (vehicular as well as pedestrians) during the contract period and shall replace/resite or remove all those signs etc. as directed by the SO or the Traffic Police and other relevant authorities.

**43           USE OF ROADS AND HIGHWAYS**

All operations necessary for the execution of the Works and the construction of any temporary works shall as far as practicable be carried out so as not to interfere unnecessarily or improperly with the use of public or private roads and footpaths, highways or bridges or property whether in the possession of the Employer or of any other person.

The Contractor shall use every reasonable means to prevent damage to existing roads, highways, footpaths, culverts, bridges, etc. caused by any traffic of the Contractor or any of his sub-contractors etc. He shall not subject any of the roads, highways or bridges communicating with or on the routes to the Site to extraordinary traffic and in particular shall select routes and use vehicles and restrict and distribute loads so that any such extraordinary traffic as will inevitably arise from the moving of plant and materials or manufactured or fabricated articles from and to the Site shall be limited as far as reasonably possible.

The Contractor shall make good all damage to existing roads, footpaths, culverts, bridges, etc. caused by or in any way attributable to his workpeople, his or any vehicle or plant entering or leaving the Site, and shall at his own expense maintain, repair and reinstate the aforesaid to their original condition to the satisfaction of the SO. The extent of the making good shall include but not limited to removing of the existing interlocking pavers, compact the ground and reinstall the pavers to the satisfaction of the SO if necessary.

The Contractor shall verify with the authorities whether any restrictions exist as regards free passage at any time of vehicles or plant approaching or leaving the Site; and he shall provide against any limitation of such free passage.

The Contractor shall indemnify the Employer in respect of all claims, demands, proceedings, damages, costs, charges and expenses whatsoever arising out of or in relation to the aforesaid matters.

**44            LIABILITY FOR NUISANCE, ETC.**

The Contractor shall bear all risks and responsibilities in carrying out the Works and shall be responsible during the progress of the Works for any damage or disturbance to existing or adjoining properties, or annoyance or nuisance to residents and users of these properties arising out of the execution of the Works.

The Contractor shall be responsible for restricting his workmen only to the Site of the Works and shall prevent trespass into adjoining properties and existing buildings.

The Contractor shall indemnify the Employer against all claims resulting from the above liabilities.

**45            NUISANCE CAUSED BY THE LITTERING OF PUBLIC HIGHWAYS WITH EARTH, ETC.**

The Contractor shall not litter public highways with earth, mud, debris, etc. To prevent littering of the public highways by vehicles moving out of a muddy site, the Contractor shall provide facilities and labourers to wash off mud and earth before any vehicle leaves the Site.

The Contractor shall allow for any cost incurred in complying with this requirement. Should the Contractor fail to comply with this requirement, the SO may employ labourers and/or take whatever necessary actions to comply with the requirement and any cost incurred shall be deducted from any money due or to become due to the Contractor.

**46            CONTROL OF CONSTRUCTION SITE NOISE**

Upon the award of Contract and prior to commencement of the Works, the Contractor shall notify nearby residents to forewarn them of any construction activities that would be carried out. The residents shall be notified of the Works and the person to contact on a 24-hour basis to assure them that their welfare is not compromised. This is to create a more congenial environment to carry out the works besides promoting good public relations. The notification shall be in an approved format. The Contractor shall obtain from the SO, a copy of the sample notice to the residents prior to the commencement of any construction activities. The Government shall not be under any liability to the Contractor for any loss to the Contractor due to lack of good public relation practices by him and/or lack of tolerance and understanding by aggrieved residents arising from the Works.

**46 CONTROL OF CONSTRUCTION SITE NOISE (Cont'd)**

The Construction Noise shall be according to prevailing NEA Guideline and including additional real time noise meter should the site conditions warrants according to SO discretion.

Extra care shall be taken on weekends to ensure that Construction Noise to be kept at the minimum.

**47 PROGRESS PHOTOGRAPHS**

The Contractor shall allow for the cost of taking and developing photographs to show the progress of works as directed by the SO.

- a) Three (3) sets and one (1) DVD of twenty-four (24) copies of 4R size digital photographs will be required each month and must be delivered together with the progress report
- b) At least 10 best shots must contain the entire aerial view to show the progress of work. Caption is required for every photo;
- c) Upon completion of the project, the Contractor shall compile all monthly construction progress photographs in digitised format into a DVD with caption and submit to the SO within 2 weeks of substantial completion of the project.

In addition to the above photographs, the Contractor is required to provide the digital camera for use on site.

**48 PHOTOGRAPHS OF COMPLETED PROJECT**

Upon completion of the project, the Contractor shall engage a professional photographer approved by the SO to take 24 nos of 4R size completion photographs of the external view. These shall be submitted to the SO in an album. The SO shall then select and inform the Contractor of the 6 photographs chosen for enlargement into 8R size. The Contractor shall compile and furnish the 6 nos of 8R size photos into an album. Caption should be digitized within these photographs. These completion photos are then to be stored into a DVD and submit together with the photographs.

**48            PHOTOGRAPHS OF COMPLETED PROJECT (Cont'd)**

In addition, the Contractor is also required to submit photographs of 4R size with caption being digitized within each photograph for all types of completed rooms including all external facilities in an album and the same photographs should be stored in a DVD. A minimum of 2 shots of each room/external facilities is required and the photographs are subjected to the satisfaction of the SO. All these photographs are to be compiled, stored in a DVD and submitted together.

The ownership and copyrights of all photographs and negatives and slides shall be vested in the Employer and these shall not be used for any purpose whatsoever without the SO's approval.

**49            MECHANISATION**

The Contractor shall allow for the provision of all necessary plant, tools, hoists, materials, labour etc. for the duration of the Contract and shall allow for all labour and material in installing, operating, moving, adapting, maintaining same as necessary and subsequently removing on completion.

All mast derrick cranes, hoists, cranes etc. shall be erected in a manner so as not to affect progress of the Work or cause damage to the permanent works. The Contractor shall ensure that all plant, tackles equipment etc. shall be erected to conform to the requirements of the relevant Authorities and to the satisfaction of the SO. All plant shall be periodically checked with an updated "Worthiness Certificate".

The cost of providing, erecting and maintaining all the plant and equipment etc., the paying of hire fees and the effecting of all necessary insurances pertaining thereto shall be borne by the Contractor.

The location of all major plant shall be submitted for the approval of the SO in the form of layout plans clearly indicating the levels, loads and attachments to structure at least two weeks prior to commencement of erection on Site.

**50            CONDITION SURVEY**

The Contractor is to engage a Professional Engineer for the works and to submit a report containing his recommendations on the appropriate measures to be taken to ensure public safety and preventing damage to any nearby buildings or property (located outside the contract boundary) as according to the Building Control Regulations 2004.

The Professional Engineer and registered land surveyor engaged by the Contractor, prior to commencement and after the completion of works shall carry out investigations and condition surveys of all nearby buildings, pavement, roads, culverts and drains (located outside the contract boundary) and submit 7 sets and 1 DVD of certified and signed reports to the SO. The aforesaid report shall cover information on the foundation and superstructure details and the condition surveys including minimum 24 numbers (4R size) of labelled colour photographic records of the structures. The Contractor shall, as and when directed by the SO any period of time from the date for commencement of Works to the date of substantial completion thereof engage the same Professional Engineer and registered land surveyor to undertake additional investigation and conditions surveys in order to determine the effects of the Works on the aforesaid structures at any stage of the Works. Should there be any discovery of Cracks on the aforesaid structures or the appearance of new cracks in the course of carrying out the Works, the Contractor shall install "tell-tales" indicators approved by the SO at suitable points on the cracks to study their behaviour and development overtime.

The Contractor shall be liable for and shall rectify the aforesaid cracks at his own cost in so far as the same arises out of or in the course of or by reason of carrying out the Works, unless the same is shown to be due to solely to any negligent or wilful act of the Employer or of any person for whom the Employer is responsible.

**51 AS-BUILT DRAWINGS**

During construction, the Contractor shall maintain accurate records of the Works. This information shall be entered by the Contractor on prints of drawings and supplied to the SO. The drawings to be updated progressively shall show all deviations and changes due to site conditions, variations and other causes to record the Works as constructed or installed. The drawings shall be the as-built record of the Works as finally constructed.

The as-built drawings shall capture all the features and the building irrespective of whether they are included in the Contractor's scope of work.

At least one (1) weeks before the substantial completion of the Works, the Contractor shall submit in the latest version of AutoCad compatible or any format approved by the SO, three (3) sets of prints of as-built drawings for verification. Upon verification by the SO, the Contractor shall within one (1) month thereof submit to the SO five (5) sets of prints of as-built drawings and DVD-ROM(s) depicting all aspects of the Works including position of equipment, fittings, accessories, fuseboards, fitted together with wiring diagrams and distribution diagrams. The Contractor is also required to submit in PDF copy as well for all the as-built drawings

Eight (8) weeks before the end of the Defects Liability Period , the Contractor shall submit in the latest version of AutoCad compatible or any format approved by the SO, three (3) sets of prints of as-built drawings for verification. Upon verification by the SO, the Contractor shall within one (1) month thereof submit to the SO five (5) sets of prints of as-built drawings and DVD-ROM(s) depicting all aspects of the Works including all variations and amendments to the Works from the time the earlier set(s) was/were submitted.

The required as-built drawings/Operation & Maintenance (O&M) manual shall include but not limited to the following:-

- a) Architectural drawings
- b) Civil and Structural (C&S) drawings

Note: Refer to Particular/Technical Specification for details of submission requirements.

- c) Mechanical and Electrical Services drawings including electrical single line as- built / O&M Manuals

**51      AS-BUILT DRAWINGS (Cont'd)**

These shall include services co-ordination drawings.

Note: Refer to the Particular / Technical Specifications for details of submission requirements.

d) External Works drawings

All External Works as-built drawings shall be endorsed by a registered/licensed surveyor.

The as-built drawings shall include the name and address of the Contractor, date, scale, drawing numbers and titles. In addition, the following particulars (including the appropriate logos) shall be printed above the Contractor's name:-

- i) Owner : Singapore Sport School
- ii) SO : The Architects Circle Pte Ltd
- iii) C&S Engineer : Sterling C&S Consulting Engineer Pte. Ltd.
- iv) M&E Engineer : Elead Associates Pte Ltd

The Contractor shall allow in his tender the costs of engaging land and building surveyors and other personnel in the preparation of the as-built drawings.

## **52 SHOP DRAWINGS**

Where shop drawings are required for the Works, the Contractor shall provide complete and properly drawn copies of such drawings to the SO for approval.

Unless otherwise stated elsewhere and notwithstanding Clause 3.2(2) of the Conditions three sets of all shop drawings shall be submitted to the SO for approval. Such drawing shall be submitted within the time as specified and in any case in sufficient time to permit review and consideration by the SO so that any undue delay to the ordering, delivery, fabrication or installation of the works could be avoided. Where modifications are required of the shop drawings, the shop drawings once modified shall be resubmitted for further review by the SO. Delay caused by late submission of such drawings or modifications thereto arising from repeated errors, unacceptable details, unclear or insufficient information will not be reasons for request for any extension of time.

No work shall be carried out until the relevant shop drawings have been submitted by the Contractor and approved by the SO.

It should be clearly understood that the approval of shop drawings by the SO does not constitute checking of detail measurements or acceptance of auxiliary, units or materials. Notwithstanding the review and approval by the SO the Contractor shall not be relieved of his primary responsibility and obligation under the Contract.

## **53 CO-ORDINATION DRAWINGS**

The Contractor shall prepared a fully co-ordinated set of drawings which shall indicate a composite layout of all building services, Architectural layout and the relevant structural members where directed by the SO.

The co-ordinated drawings shall be related to a reflective ceiling plan. Sections shall be provided for areas as and when required to resolve conflicts between trades as well as the structural and finishing elements.

The co-ordinated drawings shall be prepared using a scale similar to that used for the design drawings unless otherwise approved by the SO. Drawings shall be enlarged as required.

The Contractor shall submit copies of the co-ordination drawings to the SO for approval prior for carrying out the satisfaction works.

**54 DISCREPANCIES**

Where a discrepancy of divergence occurs between this document and the drawings or within this document and within the drawings as to be precise extent or nature of the work to be carried out then the Contractor shall be deemed to have allowed for the highest standard of work that specified. The Contractor shall immediately given notice of such discrepancy or divergence to the SO who shall issue an instruction as appropriate. No claim arising therefrom shall be entertained.

**55 DILAPIDATION SURVEY**

The Contractor shall engage an approved registered Loss Adjuster to investigate, inspect record and photograph the conditions of surrounding roads, paved areas, sewer, drains, structures and all existing building including existing rooms, corridors and external surface within the Site boundary prior to commencing any work and shall record their existing condition with special attention being paid to any existing damage or defects in particular all existing buildings and rooms and submit a properly bound report in seven sets and one DVD to the SO. The photographs shall be properly mounted, labelled and dated. The Contractor shall regularly monitor the adjacent structures and buildings, roads, sewers paved areas, drains, in order to monitor any damage or settlement.

**56 CONTROL OF NOISE, POLLUTION AND ALL OTHER STATUTORY OBLIGATIONS**

The Contractor is to take all necessary steps and comply with any directions and requirements from any Authority to restrict the nuisance of dust, noise or other pollution. Pneumatic drills shall be fitted with silencer. Compressors shall run quietly and shall be placed away from adjoining premises. The Contractor shall take care to abate the nuisance by frequently damping with water. No open fires will be permitted on Site. The Contractor shall immediately make good any damage to adjacent buildings caused by dust, noise or other pollution to the entire satisfaction of the SO.

The Contractor shall indemnify the Government against any claims, demands, proceedings, damages, court charges, penalties or fines and expenses whatsoever arising out of the breach or breaches of these obligations.

Mechanical plant and equipment which emits excessive noise, water, smoke, fumes and/or obnoxious liquids or gasses in excess of any Authorities' regulations will not be allowed to be used on Site.

The Contractor is to provide all necessary dust sheets, barriers, signs, notices and other temporary protection.

**57 PEST CONTROL**

The Contractor shall throughout the duration of the Contract, engage an approved pest control service to undertake regular checks and treatment of the Site and the Works in accordance with the Authorities' regulations. The pest control service shall submit certificates stating that inspection and treatment has been effected at intervals as directed by the SO and upon completion of the Works but prior to the issue of the Completion Certificate.

**58 PROGRESS SURVEY/ VERTICALITY AND SETTLEMENT CHECK**

The Contractor shall allow for a Licensed Surveyor to carry out verticality and settlement checks during the construction stages of the structure. In the case of settlement checks, these shall be carried out at designated bench marks on the lowest floor level. Settlement checks on adjacent structures and buildings, roads, sewers, drains and penal areas shall be carried out at positions to be agreed with the engineer.

Progress Survey/Verticality checks shall be carried out to establish and check the accuracy and levels in both vertical and horizontal directions of the work and the level of every floor and roof slab. As well as the accuracy, levels, alignments and co-ordinate of all civil and external works and services. Verticality checks shall be carried out at agreed lines along the face of the column, reinforced concrete wall or shaft to be determined by the Structural Engineer. In particular, the Contractor is to carry out periodical verticality checks on all lift hoist ways to ensure that the tolerances as required by the lift Sub-Contractor are met.

All the above checks shall be taken at not more than one month interval up to practical completion of the building.

The Contractor's Licensed Surveyor shall forward certified copies of the results of such periodical checks to the Engineer for record.

Progress surveys shall be submitted in five (5) sets of paper prints. Progress surveys shall be submitted within ten (10) days of striking the formwork to the soffits of each floor/roof slab.

**59 SUBSTANTIAL COMPLETION**

Pursuant to the provisions of the agreement and schedule of conditions of Contract, a Certificate of Substantial Completion will not be issued until:-

- a. All works included in the Contract are performed including such rectification as may be required to bring the work to the completion and standards acceptable to the SO.
- b. Any certificate of compliance is issued by relevant authorities and any other certificate which is necessary to demonstrate completion of the works or any part thereof to the extent that such certificates are required under the terms and conditions of Contract.

**60 MAINTENANCE AFTER COMPLETION**

The Contractor shall note that the Defects Liability Period shall commence from the completion date of Substantial Completion Certificate. The Contractor shall make good any defect, shrinkage or other faults which may appear within the Defects Liability Period in accordance with the Conditions of Contract.

One (1) month prior to anticipated Date of Completion, the SO will issue to the Contractor Schedules of Defects and Uncompleted Work. The scheduled items are to be completed prior to Date of Completion.  
Immediately prior to and following Date of Completion, the SO will issue further Schedules of Defects and Uncompleted Works and will nominate times for the completion of such works.

**61 TEMPORARY OCCUPATIONAL PERMIT (TOP) AND CERTIFICATION OF STATUTORY COMPLETION (CSC)**

The Contractor shall allow here for the relevant authorities/Registered Inspectors to make TOP and CSC inspections. The Contractor is to complete all necessary works to enable the submissions to be made to the authorities, namely, FSB, PUB and ENV etc. for the application of TOP by the SO at a date not later than two (2) weeks prior to the Date of Substantial Completion for the works. As and when required he shall arrange for all concerned parties of Nominated Sub-Contractors, Suppliers, Direct Sub-Contractors, etc. to attend. The Contractor shall also allow for all additional works required by the relevant authorities in order to secure the TOP/CSC. Allow here for all costs incurred in the above items.

The SO shall give five (5) days clear notice before every inspection.

**62 CONTRACTOR'S M & E SITE CO-ORDINATOR**

The Contractor shall provide at least one (1) full time qualified M & E Site Co-ordinator and adequate subordinate site supervisory staff for this project. They shall be employed solely for this project for the whole duration of the works. The M&E Site Coordinator shall possess a M&E Coordinator Certificate awarded jointly by SCAL and BCA or a Diploma in Mechanical Engineering, Electrical Engineering, Building Services Engineering from a local Polytechnic or other institutions acceptable to the SO. The M&E Coordinator shall require to have at least a minimum three (3) years relevant experience.

The M & E Co-ordinator shall be responsible for the organising, co-ordinating, supervising, directing, programming and monitoring the work of all M & E Sub-Contractors. The Contractor shall submit weekly progress report of all M & E works to the M & E Consultant Engineer.

The M & E Co-ordinator is also required to resolve all site and service co-ordination problems arising from the Sub-Contractors installation works.

Any alteration to the routing of services or changes made to resolve site co-ordination problems shall be carried out within the requirements of all Rules and Regulations of the Statutory Boards and authorities having jurisdiction over the M & E services. The M & E consultant engineer shall be notified of any or changes pertaining to the design of the systems and his consent or approval must be obtained prior to execution of any modification.

The M & E Co-ordinator shall be responsible for the preparation and production of all structural penetration and co-ordinated services drawings based on the Sub-Contractors' construction drawings and requirements. He shall consolidate all Sub-Contractors' opening requirements and request through the Structural Engineer for any additional openings required.

**63 CONTRACTOR'S SITE MANAGEMENT**

The Contractor shall constantly keep on site a team of competent construction professionals (such as engineers, architects, architectural coordinators, building graduates and other qualified persons) as are necessary for the proper execution, supervision and management of the Works. The team shall include at least one Civil Engineer/Structural Engineer, one Project Manager and one Architectural Coordinator who shall be stationed on site on a full-time basis for the duration of the Contract.

The Contractor shall, within 6 weeks from the date of site possession, engage the stipulated number of Civil Engineer/Structural Engineer, Project Manager and Architectural Coordinator or Site Supervisor and deploy them to work full time on site. The Civil Engineer/Structural Engineer shall possess a degree or other qualification approved by the Professional Engineers Board for the purpose of registration and shall have a minimum of 5 years experiences. The Project Manager shall possess a degree in any discipline and have a minimum of 5 years relevant project management experience. The Architectural Coordinator shall possess a minimum diploma holders from the relevant local Polytechnics either in Architectural or Buildings or relevant courses to the satisfaction of the SO with a minimum relevant working experience of at least 3 years.

The Contractor shall provide constant supervision and competent direction, co-ordination, planning and superintendence of the Works to the satisfaction of the SO.

The Contractor shall provide management and administrative personnel employed on the Works who will be resident either full or part time on Site for the duration of their respective functions and duties. Staff requirements are to be adequate for the satisfactory execution of the Works.

The Contractor shall maintain an efficient organisation so that all instructions issued by the SO are communicated immediately to the Site and he shall take instructions only from the SO or from persons authorised by the SO in writing to act on his behalf in giving instructions.

The Contractor must submit a site organisation chart and site management resume together with his tender submission for SO's approval.

**64 AUTHORITIES IN-COMING SERVICES**

The extent of work for the building services are as indicated on the Contract Drawings for the relevant services. Connections to the Authorities' mains are included in this Contract and the Contractor shall co-ordinate and co-operate with the Authorities and plan the work up to the final connection so as to totally avoid abortive work and any damage to the Works or other works.

The Contractor shall remain solely responsible for making good any disrupted work to the entire satisfaction of the SO.

Payment for works undertaken by the relevant Authorities will be paid for directly by the Employer and the Contractor shall not be entitled to any profit for such works. The Contractor shall allow here for providing all necessary attendances to the Authorities' contractors as directed by the SO.

**65 RELEVANT ACTS OF PARLIAMENTS**

GOODS AND SERVICES TAX (GST)

GST payable by the Employer

The Contract Sum (including all rates and prices) shall exclude all GST payable by the Employer under the provision of the Goods and Services Tax Act.

GST payable by the Contractor

If applicable, the Contractor shall allow **here only** for all cost and expenses relating to GST payable by him on the purchase of goods and services necessary for the execution, completion and maintenance of the Contract Works. Such cost and expenses shall extend to, but not limited to, all administrative cost, financial charges and any loss or Input Tax, etc. relating to GST payable by the Contractor to all his suppliers and sub-contractors (domestic or otherwise). If no amount is stated, then all such cost and expenses shall be deemed to be included in the Contract Sum. There shall be absolutely no adjustments whatsoever to such cost and expenses as a result of any rise or fall in Contract Sum due to any variations, additions, omissions or substitution of the Works; fluctuations in cost of materials, labour or plants and any instructions or directions issued under the provisions of this Contract.

The Contractor is to note that all unit rates and prices inserted hereafter in this Document shall be nett of (ie. exclusive of) any GST payable by the Contractor.

**66 SPECIAL PRECAUTION**

The Contractor's attention is drawn to the following special precautions:-

Adjoining Property: take all reasonable precautions to prevent damage to adjoining property. Obtain permission as necessary from the occupier/owners of adjoining property if required to erect scaffolding on or otherwise use adjoining property and pay all charges. Clear away and make good on completion or when directed.

Structural: Provide and maintain during the execution of the works all shoring, strutting, needling and other supports as may be necessary to preserve the stability of the buildings, whether new or existing, on the site or adjoining, that may be endangered or affected by the works.

Existing Trees to remain / Transplanted Trees: All trees which are to remain or to be transplanted on site are shown in the architectural or topographical plans. The Contractor is to ensure that all these trees are maintained, watered, protected and barricaded to avoid damage during the contract period, all to the satisfaction of the SO.

The Contractor shall also comply with the National Parks Board's guidelines and requirements on saving and protection of existing trees where these are to be retained or have been transplanted.

In general, construction works should not encroach within 5m radius from the tree trunk. Where this is not possible, the SO is to be informed beforehand. All necessary works within 10m of the tree to be retained or the transplanted tree shall be carried out by using non vibratory methods.

a) Physical - Boundary Hoarding

The boundary hoarding for construction areas must be solid and sufficiently high to provide visual barrier. The hoarding must be properly designed for its purpose and the design endorsed by a PE. It has to be secured without gaps and painted.

b) Physical Barriers - Netting

Construction netting must be provided to keep dust within the construction site. The net must be mounted on the boundary fence and at least 2 storeys high.

**66 SPECIAL PRECAUTION (Cont'd)**

c) Physical Barriers - Screen Walls

Within the existing buildings, the full height screen walls should be provided. The screen walls shall be of solid construction and properly designed for its purpose as a security, safety, noise and dust control barrier. The design shall be endorsed by a PE.

d) Controlled Access

Access to construction areas must be controlled. Number of access shall be limited to minimum required and subjected to the approval of the SO. Access shall be locked when not in use. Access shall be manned by security guards engaged by the Contractor at all times when opened. The main access to the construction area shall have a proper security post. The security guards engaged by the Contractor shall be responsible for controlling the issue of security passes.

e) Security Guards (Construction Area Security)

Within the construction area, the Contractor shall provide 24-hour full time security guards within the construction site to manned the access and patrol the barriers to check for damage or unauthorised openings. The nos. of security guards depends on the nos. of entrance and is subjected to SO approval. Security guards shall ensure that workers are properly attired with company provided uniform and have security passes with names prominently displayed.

f) Workers Attire

All workers, including Sub-Contractors' workers shall be required to wear the Main Contractor's company uniform and security pass at all times. Security passes are to be waterproofed and defaced passes must be replaced immediately.

**66 SPECIAL PRECAUTION (Cont'd)**

g) Security Passes

A security pass system shall be implemented by the Contractor for all workers, suppliers and visitors entering the site.

Security passes are to be worn and prominently displayed. Violators will be barred from entering the site.

h) No Workers' Quarters and No Open Fire Cooking in the Site

Other than the security guards, no one should be staying in the construction areas after working hours.

Contractor has to ensure that all workers are out of the site before locking up the entry/exit point.

No fire cooking in the site is allowed at all times.

**67 SAFETY MEASURES**

a) Physical Barriers

The hoarding shall have adequate warning signs such as "Out-Of-Bounds", "Hard Hat Area", "Inconvenience Regretted", etc.

b) Overhead Protection

Where staff and members of the public need to go near or through part of the construction areas, proper walkway with overhead protection must be provided. This overhead shelters shall be made of curved metal roofing with a diameter of at least 1.5m or a metal pitched roof with a slope greater than one in two with timber boarding below supported by steel pipes resting on rigid base.

Professional Engineer shall be engaged for the designing this shelter. Drawings are to be submitted to the SO for approval.

**67 SAFETY MEASURES**

c) Instrumentation

Instrumentation such as inclinometers, strain gauges, etc., shall be installed on the existing buildings to monitor for settlement, signs of stresses and vibration in the building. The Contractor shall be responsible for the supply, installation, monitoring and maintenance of the instrumentation. The number of each type of instrumentation shall be as specified in the contract. Daily readings and reports shall be submitted to the SO.

d) Safety Officer

The Contractor shall employ a full time Safety Officer on the site. The Safety Officer is required to conduct daily safety inspections of the site and to submit daily reports while will cover any non-conformances and the necessary remedial measures. The Safety Officer will coordinate with the Owner to ensure that the safeties of users/ owners are not compromised. He/She will have to ensure that all safety measures are fully implemented. Safety Officer must be contactable at all time.

The Contractor shall proposed a attendance system of keep track the site personnel under the Contract to the satisfaction of the SO.

e) Safety Management System

The Contractor shall be required to implement a Safety Management System for the project according to the requirements of WSH. The safety management system shall be kept in the site office and made available for reference at all times.

Safety poster shall be prominently displayed at site office, entry/exit points and along hoarding.

f) Safety Audits

The Contractor shall engage a 3<sup>rd</sup> party at his own expenses to carry out safety audits, at an interval of every 6 months, regardless of the contract sum, to ensure that the Safety Management System is properly implemented and that his Safety Personnel carries out his duties properly.

**67        SAFETY MEASURES (Cont'd)**

g)        Cranes

The Contractor has to ensure that only an approved crane Contractor can install, repair, alter and dismantle a mobile/tower crane.

The crane has to be tested and certified safe by an 'Approved Person' before commencing lifting operation on the site, irrespective of any valid test certified.

Daily checks are to be carried out by the crane operator and maintenance checks conducted every three months.

Operational tests on all limits switches under no load condition have to be carried out before the start of every work shift. Results of such test shall be entered in a logbook.

Overload safety devices are to be operational at all times.

A set of safe lifting procedures must be imposed and carried out by the lifting supervisor.

Only registered crane operator, appointed riggers and signaller can carry out any lifting operation.

The jib of the tower crane shall not be allowed to slew over classrooms or any other area where there are student activities, with/without load. This rule also applies to mobile crane.

Before lifting can begin, Contractor's Safety Officer must clear approved lifting plan and method statement.

Mobile/Crawler crane must rest on steel plates for any lifting operation.

The age of the crane shall not be more than fifteen (15) years.

**67        SAFETY MEASURES (Cont'd)**

h)        Crane Operator Competency Test

All crane operators entering the site must have a valid license and must have experience operating the particular model and size of crane. All crane operators whose license is expiring must go through the refresher course before being allowed to continue operating the crane. The Safety Officer shall maintain proper records of the cranes used at the site and the crane operators on each crane. A minimum of Five (5) years experience is required for crane operator.

i)        Access for the Use of Mobile Crane and Piling Machines

Access for Mobile Crane and Piling Machines shall be of steel plates or reinforced concrete or bituminous pavement as approved by the SO. All such access shall be provided over compacted hardcore base.

j)        Restriction to Working Hours

No work allowed from 10.00pm on Saturday/eve of Public Holiday to 7.00 am on the following Monday/day after the Public Holiday

k)        Safety Inspection

Regular inspection of all heavy machinery, for example, mobile and tower crane is to be carried out at 6 monthly interval.

These machines must be maintained at the required safety specification.

l)        Safety Inspection

Documentation of all inspections shall be kept and maintained on site.

The Contractor is required to employ a safety consultancy company to conduct inspections and audits on safety measures at the site at half yearly intervals.

**67        SAFETY MEASURES (Cont'd)**

m)     Safety Netting

The Contractor shall erect and maintain an overlying screening net to cover the entire external face of the scaffold. Full height safety netting shall be provided for the new extension blocks and existing blocks where there are major works.

n)     Standby Plumbers and Electrician

There must be a full time plumber and electrician on site during office working hours. This is to ensure that any leakage and blackout is promptly attended to. The functionality of the building shall not be compromised.

o)     Metal Scaffold

The Contractor shall erect and maintain MOM approved, metal scaffold for buildings of 4 storeys and above or 12.0m in height and above. Approved galvanised metal working platform shall be provided at every alternate lift, starting from the 2<sup>nd</sup> lift of the scaffold. This also applies to the immediate level below the top most level and the roof level of the building.

Where the height between the platform at the roof level and the platform directly below is 2 lifts or less, the latter platform may not be necessary subjected to the approval of the SO. No omission from the Contract Sum shall be made in the event that such a platform is not necessary.

The metal scaffold shall comply with the requirements of the Singapore Standard Code of Practice for Scaffold, CP14 and any amendment or re-enactment thereto. The metal scaffold shall be prezinc galvanised or other approved by the SO.

The scaffold shall be erected ahead of the structural work from the second storey and supported by cantilevered platforms erected according to the drawings of the PE. It shall be erected within 3000mm from the building edge and have a projection of about 1.1m from the edge of the building, or any other distance approved by the SO.

**67**                    **SAFETY MEASURES** (Cont'd)

o)        Metal Scaffold (Cont'd)

Where the structure does not allow the scaffold from the second storey, the Contractor may erect the scaffold from the first storey subject to the approval of the SO.

p)        Warning Signs and Lights

The Contractor shall display warning signs of sizes 900mm x 600mm at strategic points around the periphery of the Site where trespassing is likely to occur. Such signs shall have the words "DANGER - KEEP OUT" in the four official languages painted in red on a white background in gloss finishing paint.

Warning lights shall be placed at similar positions at night to serve as a warning.

q)        Noise Hazards

Noise monitoring equipment shall be installed within the existing building and at the ENV prescribed distance from the building to continuously measure the noise levels. Daily records of the noise readings at prescribed intervals shall be submitted to the SO. The acceptable noise level as measured from the nearest room/unit to the construction works shall not exceed 60 decibels from 7am to 7 pm. Where deemed necessary, the Contractor shall provide and install more than one number of noise meters. The Contractor shall maintain noise meters to monitor the noise generated in the rooms nearest to the source of noise. In the event that the average noise level exceed 60 decibel in the rooms, the Contractor shall find ways and means to rectify the noise problems immediately otherwise stop works order may be issued by the SO with no extension of time whatsoever on account of excessive noise level.

All cost involved and associated therewith to reduce the noise level to within 60 decibel shall be deemed included in the Contract Sum.

**67        SAFETY MEASURES (Cont'd)**

r)        Working Platform

The material used for the metal working platform shall be galvanized steel and comply with SS 280. Working platforms shall be adequately secured to scaffolding frames at the required levels. For any portion of the working platform where the use of metal is not suitable, the Contractor may use timber platform subject to the approval of the SO. The platform shall be completed with 200mm high metal coloured toeboards and metal guardrails at least 1.1m above the platform.

s)        Working Platforms for Lift Shafts

The Contractor shall provide working platforms, according to the design of his PE, for the erection of lift shaft. The lift shaft platforms shall effectively cover the voids at alternate storeys.

t)        Barricades to Lift Opening, Voids, The Open Side of Buildings and Excavation

The Contractor shall barricade all lift openings, internal voids, the open side of buildings and excavations where workmen is liable to fall. The barricade shall be at least 1.1m high and shall have a sufficient strength and rigidity to withstand a lateral point load of 50kg.

u)        Personal Protective Equipment

The Contractor shall provide and maintain suitable personal protective equipment to all workmen employed on the site. The Contractor shall ensure all equipment comply with the requirements of the BOWEC regulations. The Contractor shall also ensure that his workmen during the course of their work properly use all equipment. Mirror of sizes 600mm x 1500mm are to be installed for workers to check their protective equipment during Tool Box Meeting.

**67        SAFETY MEASURES (Cont'd)**

v)        Authorised Operators for Machinery on Site

The Contractor shall employ only qualified operator for this site machinery. The operator for the machinery shall possess the relevant Skill Evaluation Certificate (SEC) from the Construction Industry Training Institutes (CITI) or other approved training centre. For machinery whereby CITI or other approved training centre does not conduct courses or practical test for the operator, the Contractor shall only engage an experience or trained operator with a minimum of 2 years experience in operating the machinery.

**68        OTHERS CONTRIBUTORY MEASURES**

a)        Pest Control within the Construction Area

The Contractor shall appoint a pest controller who shall implement proper pest control measures such as regular fogging of the site and rodent control throughout the duration of the contract. At the end of the project, the pest controller shall be required to carry out a thorough inspection of all area in the building and certify that the premises are free from pest.

b)        Temporary Drainage System

The Contractor shall ensure that a proper temporary system of drains is set up. Where possible, the temporary system of drains shall not connect to any of the existing drains. In the event that this is unavoidable, the Contractor shall be responsible for the daily cleaning and the maintenance of the existing drains.

c)        Co-ordination Meetings

Fortnightly co-ordination meetings shall be held with Singapore Sport School, Consultants and Contractor to discuss the programming, inter-phasing and co-ordination of works within the building compound. The meeting will also address issues on safety, security, site clean and complaints.

**69            USE OF COMMON AND SURROUNDING AREAS**

The Contractor shall confine his works site within the designated contract boundary unless prior written permission has been obtained from the SO. No trespassing on the surrounding property is permitted. The Contractor shall ensure that his workers take their meals and rest within the approved workers' rest area and that they do not make use of the existing classroom blocks, open spaces or other structures whether within or outside the contract boundary as living quarters, rest area or for any other use at any time for the duration of the contract and maintenance period.

No workman, except on official duty approved by the SO, is allowed to stay within the site boundary after working hours.

Building materials are not allowed to be placed or stored outside the contract boundary unless approved by SO.

**70            TOL FEES FOR LAND OUTSIDE CONTRACT BOUNDARY**

Where the Contractor requires land outside the contract boundary for the setting up of workers' quarters and storage of materials for the Works, the Contractor shall check on the availability of such land and apply to the relevant Authority or Lands Management Section of HDB for the use of such land.

In the event the relevant Authority or HDB's Lands Management Section allows the Contractor the use of such land, the Contractor shall at his own costs and expenses comply with all the terms and conditions, pay all TOL (Temporary Occupation Licence) fees, bear all costs and expenses for the use and maintenance of and Management Section. The Contractor shall reinstate the land to its original condition before handing over the land back to the Lands Management Section.

The Contractor shall use such land allocated solely for the purpose of executing this Contract.

**71 WORK PERFORMED BY THE EMPLOYER'S / CONSULTANT'S SITE SUPERVISORS BEYOND NORMAL WORKING HOURS**

Any person or persons who shall be appointed by the Employer / Consultants as the site supervisors, their normal working hours shall be:

Monday to Friday: 8.30am to 5.30pm  
Saturday: 8.30am to 12.30pm

Any work which requires 'standing' supervision eg. concreting, piling, mixing of cement and sand for plastering, mixing of paint, etc. will have to be organised and programmed within the above stipulated hours of work of the supervisors.

The prior written permission of the SO will have to be obtained if in the exigency of the case, such work is required to be carried out beyond the above stipulated hours and the Contractor shall be responsible to reimburse the Employer for all overtime payments and other incidental expenses incurred as a result of the supervisors working beyond the stipulated hours. If the cause of the overtime is due to contractor fault in his organisation of his work.

**72 EXISTING SERVICES**

The Contractor shall take note that the electrical substation and the electricity and water supply serving the site shall be kept in use during the duration of Works. The Contractor shall be responsible for the utility consumed including the provision of Licensed Electrical Worker and Plumber to be in charge of the electrical and water supply during the Works including the transferring of utility account, etc.

No interruption to the existing electricity and water supply at all time.

Should Power Grid need to maintain the existing Sub-Station inside the premises within the Contract Period, the Contractor shall deemed to have allowed the cost for providing assistance and facilities for them to carry out the maintenance work.

**73 WORKING WITH OTHERS AT SITE**

The Contractor shall note that where other Contractors, Tradesmen, Craftsmen and the like who are directly engaged by the Employer to work within the vicinity of the site together with him during the course of the works. The Contractor shall execute the works in such a manner that work by others will not be affected. In no circumstances will the presence of other Contractors, Tradesmen, Craftsmen and the like at site be considered as a ground for claim for extension of time. Any provision for accommodating such others at site shall be allowed in the tender as no claim to the contrary will be entertained.

**74 LIAISON WITH OTHER CONTRACTORS**

The Contractor must arrange his programme of works to work very closely with the Contractors from Authorities such as SP Power Grid, SP Services, Public Utilities Board, Telecoms, Ministry of Environment, Power Gas, National Computer Board, etc. during the course of the Contract. He shall include in his tender for all costs and expenses incurred in connection with the said liaison and making good of all works disturbed and damaged by the Authorities' Contractor.

**75 CADESTRAL SURVEY**

The Contractor shall be required to carry out Cadestral Survey by a Registered Surveyor approved by SO as specified.

**76 PROVISION OF LABOUR FOR SHIFTING EXISTING LOOSE FURNITURE**

The contractor shall be required to provide assistant to shift existing loose furniture, fittings and equipments, protect and store them in a specified location.

**77 SITE MEETINGS**

The Contractor shall provide and erect proper temporary site offices for the use for site meeting and material sample storage with all necessary facilities approved by the S.O. The Contractor shall attend site meetings called by the Superintending Officer. Persons designated by the Contractor to attend and participate in site meetings shall have the required authority to commit the Contractor to solutions agreed upon at the meetings. The Contractor shall attend technical meetings to clarify, co-ordinate and review technical matters. The technical meetings shall be convened weekly or fortnightly as directed by the SO. The Contractor shall conduct his own co-ordination meetings at least once a week with all sub-contractors and will be responsible for recording and circulating minutes to the SO within three working days of such meetings. He shall also conduct co-ordination meetings for the direct contractors when necessary. The SO, may at his own discretion, attend such meetings.

## **78 PREPARATION OF TENDER**

The Contractor shall submit a fully detailed summary of his tender price showing clearly and correctly the rates, prices and quantities of each and every aspect and item of the Works presented in the form of a priced Bills of Quantities (Bills). The rates and prices set down in such Bills shall be held to include for waste on materials, storage, packing, carriage and cartage, hoisting, plant, scaffolding, supervision, establishment charges, profit, labour, professional services and everything else necessary for the due and proper completion of each and every item and aspect of the Works all in accordance with the Contract Documents. The Employer shall have the right to require the Tenderer to adjust his quantities in the Bills if they are found to be incorrect and the Tenderer shall comply forthwith. It shall be the sole responsibility of the Tenderer to prove that the quantities provided in the Bills by him are correct. In adjusting the quantities, the Tenderer shall adjust his rates/prices inserted in the Bills in order that the amount after extension tally with the amount inserted in the Schedule of Works/Summary of Tender.

The aforesaid Bills will be checked for arithmetical errors, consistency and reasonableness. Any substantial error may affect the award of the tender. The Contractor shall ensure that all extensions are checked over and that the prices are consistent and fair.

The Bills shall be of no contractual effect, except insofar as such document may constitute the Schedule of Rates for valuing variations under Clause 20 of the Conditions of Contract.

## **79 INFECTIOUS DISEASES ACT**

In the event of any pandemic outbreaks or infectious diseases as defined in the Infectious Diseases Act (Cap.137) (the "Infectious Diseases Act") or any subsequent amendment thereof, the Contractor shall comply strictly with the requirements, guidelines, measures, protocols and the like prescribed and implemented by the relevant Authorities on the containment and prevention of the Infectious Diseases. The Contractor shall implement all necessary requirements, guidelines, measures, protocols and the like and all costs and expenses, consequent thereon or incidental thereto, that may be incurred shall be borne by the Contractor.