Particular Specification for Site Safety

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PART 1 - PARTICULAR SPECIFICATION ON SITE SAFETY

1 General

(1) The *Contractor* shall ensure as a priority in all activities connected with the *works*, the safety and health of all persons on or adjacent to the Site.

(2) The *Contractor* shall provide and employ on the Site only such personnel who have received adequate training including safety and health training relevant to their tasks and adopt safe working practices at all times and shall ensure its Subcontractors comply with this requirement.

(3) The *Contractor* shall not allow any person to work on the Site who has repeatedly breached safety requirements. A notice of such sanction shall be displayed at a prominent place on the Site.

2 Legislation, Regulations and/or Codes of Practice

(1) The *Contractor* shall keep one set each of the following legislation, regulations and/or codes of practice on the Site including, but not limited to :-

Legislation

- the Factories and Industrial Undertakings Ordinance
- the Construction Sites (Safety) Regulations
- the Factories and Industrial Undertakings (Safety Officers and Safety Supervisors) Regulations
- the Factories and Industrial Undertakings (Lifting Appliances and Lifting Gear) Regulations
- the Factories and Industrial Undertakings (Woodworking Machinery) Regulations
- the Factories and Industrial Undertakings (Abrasive Wheels) Regulations
- the Factories and Industrial Undertakings (Confined Spaces) Regulations
- the Factories and Industrial Undertakings (Dangerous Substances) Regulations
- the Factories and Industrial Undertakings (Protection of Eyes) Regulations
- the Factories and Industrial Undertakings (Cartridge-Operated Fixing Tools) Regulations
- the Factories and Industrial Undertakings (Electricity) Regulations
- the Factories and Industrial Undertakings (Suspended Working Platforms) Regulations

- the Factories and Industrial Undertakings (Noise at Work) Regulations
- the Dangerous Goods Ordinance (Section 6)
- the Electricity Ordinance (Part VII)
- the Electricity (Wiring) Regulations
- the Builders' Lifts and Tower Working Platforms (Safety) Ordinance
- the Occupational Safety and Health Ordinance
- the Occupational Safety and Health Regulations
- the Boiler and Pressure Vessel Ordinance
- Electricity Supply Lines (Protection) Regulations

Codes of Practice, Guides and others

- "Code of Practice for Bamboo Scaffolding Safety", published by the Labour Department, where applicable
- "Code of Practice for Metal Scaffolding Safety", published by the Labour Department, where applicable
- "Code of Practice for Safe Use of Mobile Cranes", published by the Labour Department, where applicable
- "Code of Practice for Safe Use of Tower Cranes", published by the Labour Department, where applicable
- "Code of Practice on Safety and Health at Work for Industrial Diving", published by the Labour Department, where applicable
- "Code of Practice on Safety at Work (Lift and Escalator)", published by the Labour Department, where applicable
- "Code of Practice for Safety and Health at Work in Confined Spaces"
- "A Guide to the Factories and Industrial Undertakings Ordinance (Section 6A & 6B) - Know Your General Duties" published by the Labour Department
- "A Guide to the Construction Sites (Safety) Regulations" published by the Labour Department
- "Code of Practice on Safety Management" published by the Labour Department
- "Guidance Notes for the Electrical Products (Safety) Regulation" published by the Electrical and Mechanical Services Department
- "Guidelines on Safe Use of Lifting Frames and Launching Girders for Bridge Construction" published by the Labour Department
- "Guidelines on Safety of Vehicles and Mobile Plant on Construction Site" published by the Construction Industry Council

- "Guidelines on Work-Above-Ground Safety" published by the Construction Industry Council

- "Guidelines on Planking Arrangement for Providing Working Platforms on Bamboo Scaffolds" published by the Construction Industry Council

- Code of Practice for the Lighting, Signing and Guarding of Road Works (Highways Department)

- Guidance Notes on Safety and Health of Hand-dug Tunnelling Work (Labour Department)

- "Construction Site Safety Manual", published by the Development Bureau

- other safety and health related legislations, codes of practice and guides relevant to the execution of the *works*.

(2) The *Contractor* shall display advisory and warning signs, labels and/or posters for the promotion and enhancement of safety and health and notices concerning the availability of the legislations and documents stated above at prominent locations around the Site including site offices, workshops and rest areas.

(3) All legislations and documents referred to in this Clause shall be kept in both Chinese and English insofar as available.

3 Safety Plan

The *Contractor* shall in accordance with D6 of the *additional condition of contract* prepare and submit to the *Project Manager* six copies of the Safety Plan signed by a senior management representative from the *Contractor*'s headquarters, the site agent and the Safety Officer. For the purposes of signing the Safety Plan and attending the Site Safety Committee and the Site Safety Management Committee as specified hereinafter, the qualification requirements of the *Contractor*'s senior management representative shall not be lower than the specified qualification requirement for the Technical Staff as stipulated in the Contractor Management Handbook – Appendix 2C for the Building Category. The Safety Plan shall contain details of the following 14 key elements of a safety management system:-

- safety policy
- safety organisation
- safety and health training
- safety rules and regulations
- safety committees
- safety and health inspections
- job hazard analysis
- personal protective equipment
- accident/incident investigation
- emergency preparedness
- safety promotion
- health assurance programme
- evaluation, selection and control of sub-contractors
- process control programme

Details shall contain, without limitation, the following:-

(1) Safety Policy

A policy statement setting down in clear and unambiguous terms the management's approach and commitment to communicate, implement and maintain health and safety for those involved in the *works* and others who may be affected by the *works*; it shall:

(a) be signed by the managing director of the *Contractor*, or the managing directors of companies of the consortium, partnership or joint venture comprising the *Contractor*,

(b) declare that safety and health are given priority in all aspects of the *works* and in discharging its contractual obligations,

(c) state the *Contractor*'s commitment to comply with relevant statutory and contractual obligations regarding safety and health and the means by which the *Contractor* will supervise, monitor and audit the safety assurance system to achieve due compliance,

(d) identify the key senior personnel for overall co-ordination and implementation of the policy,

(e) state the general responsibilities and duties of the *Contractors* employees and sub-contractors in upkeeping safety and health,

(f) state the safety targets to be achieved,

(g) be communicated to all levels of persons involved in the *works*, and

(h) be dated, reviewed periodically and revised.

(2) Safety Organisation

The safety organisational structure and the manpower resources to implement the management's commitments; it shall:

(a) define clearly the safety and health responsibilities of staff at all levels including those of Subcontractors,

(b) describe the arrangements for a regular communication and reporting system on safety and health amongst all levels from top management down to labour force and vice versa,

(c) list the names and telephone numbers of the senior management representative, site agent, Safety Officer and Safety Supervisors administering and ensuring compliance with the Safety Plan, together with their disciplines and the geographical area of the *works* under the supervision of each Safety Supervisor, revised and re-issued at any time necessary to reflect accurately the current arrangement for safety supervision,

(d) state the powers vested in the safety staff which would enable them to take urgent and appropriate action to make safe the Site and the *works* and to prevent unsafe working practices or other infringements of the Safety Plan or statutory regulations,

(e) state the name of the personnel responsible for updating the Safety Plan, and

(f) maintain and upkeep a register of first aiders, competent persons and examiners required under the relevant legislations and persons responsible for conducting different levels of safety training.

(3) Safety and Health Training

Procedures established to ensure that all staff working on the Site, and in particular those joining the Site to work for the first time or staff transferred to new assignments are given proper general safety and health training as well as job-specific training relevant to their duties; a programme shall be developed to identify and review the training need which shall contain the frequency, coverage and application of training ranging from safety management training to tool box talks and to check that the knowledge covered in the safety trainings are applied by the *Contractor*'s staff.

(4) Safety Rules and Regulations

(a) Arrangements for safety rules and regulations including those specific rules laid down by the *Client* to be documented, reviewed, amended and communicated to all appropriate levels of staff working on the Site including means and disciplinary action to ensure that they are implemented and enforced,

(b) Arrangements for method statements and permit-to-work systems to be implemented for high risk activities carried out on Site including the provision of details such as persons identified by job titles who will be authorising the issue of permits. These activities should include, but not limited to hot work, electrical work, slope works, confined spaces work, release of flammable/toxic liquid or gas etc.,

(c) Specific rules and regulations laid down by the client for *works* to be carried out within premises that are occupied, partially occupied and/or controlled by the client, and

(d) Rules and regulations to protect authorised visitors and prevent entry of unauthorised persons to the Site.

(5) Safety Committees

The objectives, powers, functions, terms of reference, membership, frequency of meetings, agenda and distribution of minutes of meetings of the safety committee.

(6) Safety and Health Inspections

Arrangements to establish procedures for the identification, recording and reporting of hazardous conditions and their rectification; they shall include:

(a) planning and review of the frequency, coverage and extent of inspections conducted by safety staff, supervisory staff and senior management,

(b) developing a comprehensive safety inspection checklist for use in safety inspections to record irregularities or hazards identified and a scheme for them to be reported and prompt corrective actions to be taken by the appropriate staff, and

(c) developing a preventive maintenance programme for the workplace, electrical installations and equipment, plants (fixed and mobile) and equipment (including emergency equipment), in particular lifting plant and equipment to ensure that statutory tests, examinations, and inspections are carried out at required intervals and for such records to be made available for inspection by the *Project Manager*.

(7) Job Hazard Analysis

Arrangements for identification of potential hazards and assessment of health and safety risks associated with *works* are carried out by trained safety personnel for the development of safe working procedures and method statements to ensure the satisfactory elimination, reduction or control of such risks before work starts; they shall include:

(a) procedures for the recording and regular review of the risk assessments and the developed safe working procedures and method statements to ensure that the risk control measures contained therein are suitable and relevant to the *works* being undertaken; these should include those prepared by Subcontractors, and

(b) means to ensure that the risk control measures contained in the risks assessments, safe working procedures and method statements are clearly written down and communicated to those supervising and carrying out the *works* and that their implementation are being regularly monitored.

(8) Personal Protective Equipment

Procedures for the identification and selection of suitable personal protective equipment and their issue, including the means and frequency by which personal protective equipment will be inspected, tested and maintained and records kept and the standard below which the equipment will be removed from the Site and replaced; they shall include:

(a) means to ensure that proper and, where appropriate, mandatory use by all persons on the Site,

(b) arrangement to ensure that information, instruction and training in the safe use, storage and maintenance of such equipment are provided, and

(c) arrangement to ensure adequate supply and for replacement.

(9) Accident/Incident Investigation

Procedures for the prompt reporting, recording and investigation of accidents/incidents including dangerous occurrences occurred on Site or related to the *works*; they shall include:

(a) the keeping of accidents statistics and their analysis with a view to identifying causes/trends and developing measures for prompt implementation against recurrences, and

(b) means to communicate accident statistics, recommendations against recurrences and lessons learnt from previous accidents to all persons working on the Site.

(10) Emergency Preparedness

Arrangements for the establishment of procedures to deal with emergency situations on the Site (e.g. any situation requiring rescue) prior to arrival of the Police, the Fire Services Department or Marine Department and procedures during tropical cyclones, thunderstorm warnings, rain alert warnings, flooding warnings, landslip warnings and heavy rainstorm warnings, outbreak of a fire, etc., they shall include:

(a) means to communicate the emergency procedures to all personnel on the Site and to promote their emergency awareness,

(b) the organisation and training of emergency and/or rescue teams,

(c) checklists on steps to be taken during emergency,

(d) means of receiving and communicating adverse weather information to site staff,

(e) emergency equipment to be provided and their locations,

(f) drills and exercises to test the preparedness for emergency actions which shall be carried out at not less than 6 months intervals or as stated in the Contract,

(g) the first aid personnel and facilities, including arrangements for transporting the injured,

(h) arrangements for the review and regular updating of emergency procedures and telephone list, and

(i) detailing the site arrangements of continuing, suspending and resuming the outdoor confined space works under different adverse weather conditions and warning signals.

(11) Safety Promotion

Methods of promoting and maintaining safety awareness and developing a safety and health culture amongst all persons on the Site; they shall include:

(a) the display of the company safety policy, accident statistics, safety signs and posters and the showing of safety videos and films,

(b) procedure for the selection of appropriate safety promotion items for displaying on Site,

(c) the conduct of talks and campaigns and distribution of safety bulletins or newsletters drawing attention to particular special safety issues and emergency procedures, and

(d) procedure to recognize and commend those site personnel, teams, sections or Subcontractors with good safety performance.

(12) Health Assurance Programme

The programme shall contain:

(a) arrangements for pre-job and regular medical examinations of workers exposed to health hazards,

(b) arrangements for the identification, assessment, regular monitoring of health hazards and the reduction of exposure through technological and administrative control measures; they shall include:

(i) arrangement to ensure that all persons at the Site are aware of the health risks associated with their work and those in their vicinity and are fully informed of the necessary precautions in controlling the risks,

(ii) procedures for the selection, provision, training and supervision on the use of suitable personal protective equipment to supervisors and workers, in particular to those working in an environment potentially hazardous to health,

(iii) the seeking of outside specialist assistance for assessment and monitoring of health hazards where necessary, and

(iv) the provision of welfare facilities on the Site.

(13) Evaluation, Selection and Control of Subcontractors

Arrangements for the evaluation, selection and control of Subcontractors working on the Site; they shall include:

(a) provision to each Subcontractor with a copy of the Safety Plan and the list of safety obligations and requirements which must be met for incorporation into the sub-contract agreement before *works* commence for ensuring compliance,

(b) means to ensure that only Subcontractors with acceptable safety performance will be employed and procedures for evaluating the safety performance of Subcontractor employed on the Site at regular intervals,

(c) the timely provision of adequate safety and health information to suppliers of materials to the Site for their compliance,

(d) means by which safety procedures and method statements proposed by Subcontractors, whether directly employed or not, will be reviewed for compliance with the Safety Plan and the statutory regulations,

(e) arrangements to ensure that machinery and other plants used on Site by Subcontractors are appropriate to the nature of the task and that they are properly operated and maintained,

(f) the safety co-ordination system established to liaise between various Subcontractors, and

(g) ensure that Subcontractors' workers have received proper training appropriate and relevant to the type and level of work to be undertaken.

(14) Process Control Programme

The programme shall contain:

(a) The formulation of policy on the review of accident control and hazards elimination measures during the conception and design stages, the setting of parameters for processes and materials to take into account of any changes in site conditions and the development of a regular monitoring mechanism, and

(b) Arrangements and means for the effective implementation of accident control and hazards elimination measures described in the Safety Plan to ensure safety and health in the execution of the work processes, they shall include safety rules, regulations, safe working procedures, and in particular method statements and permit-to-work systems incorporating the findings of risk assessments conducted for identified high risk processes including, but not limited to the following :-

- Working in ceiling voids
- Wet trade works near energized installations
- Housekeeping
- Traffic control and transportation
- Fire prevention measures and fire fighting equipment
- Excavation
- Working in confined spaces
- Hand dug caissons
- Diving
- Hot work
- Electrical equipment and installations
- Welding/cutting operations
- Personal protective equipment
- Conveyance, handling and use (blasting) of explosives
- Lifting operations involving cranes and hoists etc.
- Manual handling
- Scaffolding and working platforms
- Ladders and accesses
- Hand tools and portable power driven tools
- Use and storage of hazardous substances including chemicals
- Working over water or adjacent to water
- Working at height
- Structural steel erection
- Floor and wall openings and stairways
- Lighting
- Protection against falling objects
- Protection against lightning
- Demolition
- Tunnelling
- Operation of launching girders and/or lifting frames

(c) The risk assessment should also identify whether there are works that cannot be done safely by a person working alone. In general, a co-worker system shall be put in place in the following situations:-

(i) Temporary access equipment for working at height, including portable ladders or trestles that cannot be safely handled by one person.

(ii) The plant, substances and goods cannot be safely handled by one person.

(iii) Working near or over water, or electrical work at or near exposed live conductors.

(iv) There is a risk of violence.

4 Safety Organisation

The *Contractor* shall provide to the *Supervisor* monthly intervals an updated safety organisation chart containing a complete list of all Subcontractors, whether directly employed by the *Contractor* or not, on the Site and the *works* and the name of the Safety Supervisor for each such Subcontractor, insofar as the employment of a Safety Supervisor is expressly set out in the Contract or in the absence of such requirement then by any enactment or statutory requirement. The list shall also include the names of the Safety Officer and Safety Supervisors, and the names of Safety Representatives and the respective labour groups or teams they belong. Telephone numbers of these safety staff shall also be shown on the chart.

5 Safety Officer

(1) "Safety Officer" means a person registered as a safety officer in accordance with the Factories and Industrial Undertakings (Safety Officers and Safety Supervisors) Regulations (FIU(SO&SS)R) and employed by the *Contractor* to carry out the duties of a Safety Officer as specified in the Contract and duties specified in the FIU(SO&SS)R.

(2) The *Contractor* shall employ at least one Safety Officer who shall be accepted by the *Project Manager*.

If the total number of workers employed on the *works* or in connection with the Contract whether in the employ of the *Contractor* or its Subcontractor is less than 50, the Safety Officer may be engaged part time for this Contract but with sufficient presence on the Site to perform the duties of a Safety Officer. The time thus spent on Site shall be not less than **12** hours per week excluding attendance of progress meetings, the Site Safety Management Committee (SSMC) meetings and the Site Safety Committee meetings.

Where the number of workers thus employed is equal to or more than 50, then the number of approved full-time Safety Officers to be provided shall be:

Total no. of workers	Minimum no. of full-time Safety Officer
50 to 200	1 (shall be a safety officer who has been qualified and registered as required under clause (1) above)
201 to 700	2 (at least 1 of them shall be a safety officer who has been qualified and registered as required under clause (1) above for at least 3 years and during which has gained the relevant experience in site safety administration of the contract)
701 to 1200	3 (at least 1 of them shall be a safety officer who has been qualified and registered as required under clause (1) above for at least 3 years and during which has gained the relevant experience in site safety administration of the contract)
1201 and above	4 (at least 2 of them shall be safety officers who have been qualified and registered as required under clause (1) above for at least 3 years and during which have gained the relevant experience in site safety administration of the contract)

(3) The *Contractor* shall not commence any construction work on the Site without the appointment and attendance of the required number of Safety Officer(s) unless expressly permitted by the *Project Manager* in writing.

(4) The duties of the Safety Officer shall be solely directed towards safety and health matters. In addition to the duties stipulated in the Factories and Industrial Undertakings (Safety Officers and Safety Supervisors) Regulations, the Safety Officer shall:

(a) carry out safety inspections and prepare inspection reports,

(b) supervise and monitor implementation of the Safety Plan,

(c) ensure that Subcontractors and all persons working on the Site are made aware of and comply with the Safety Plan, and

(d) carry out internal safety audits for the Safety Plan at intervals of not less than once every six months, which format, scope and programme are to be proposed and agreed with the *Project Manager*. In this respect, the internal safety audits can be carried out either by the Safety Officer or a Registered Safety Auditor (RSA).

(e) carry out duties as required under the contract.

(5) The Safety Officer shall maintain a safety diary which shall record all matters related to safety and health, including Safety Supervisors' reports, details of safety

inspections and audits, accidents, dangerous occurrences, safety related incidents, etc. The Safety Officer shall check to ensure that all unsafe situations are promptly rectified and the dates of their completion duly recorded in the safety diary. The safety diary shall be made available for inspection by the *Project Manager* upon request and copy thereof shall be submitted to the *Project Manager* upon request.

(6) The *Contractor* shall empower the Safety Officer to order any person working on the Site to suspend any unsafe operation or to take urgent action to make safe the Site or the *works* or to disallow any practice which may infringe the Safety Plan or any statutory safety requirement.

(7) The Safety Officer shall carry out comprehensive safety inspections on all activities on the Site at weekly intervals. The safety inspection shall identify any unsafe operation or potential hazards using a check-list agreed by the *Supervisor*. The Safety Officer shall give prior notice to the *Supervisor* of the date and time of the weekly inspection and shall allow the *Supervisor* to attend the inspection.

(8) If the Safety Officer is unable to perform his duties for any reason, the Safety Officer shall be replaced as soon as practicable but in any case within 14 days. The Safety Officer shall not be replaced without consent by the *Project Manager*.

(9) The Safety Officer shall be clearly identified on the Site by wearing an armband or a safety helmet appropriately marked in Chinese and English.

(10) (Not used)

6 Safety Supervisors

(1) "Safety Supervisor" means a person employed by the *Contractor* or Subcontractors of all tiers on the Site to carry out the duties of a Safety Supervisor as stipulated in the Factories and Industrial Undertakings (Safety Officers and Safety Supervisors) Regulations. The Safety Supervisor shall carry out safety inspections on all active parts of the Site for which he is responsible at least at daily intervals using an appropriate comprehensive checklist agreed by the *Project Manager*. All completed safety checklist shall be signed by the Safety Officer to ensure prompt follow-up actions have been taken on unsafe situations.

(2) The Contractor shall employ at least one Safety Supervisor to be present full time on Site. Where the number of workers employed on the *works* or in connection with the contract whether in the employ of the *Contractor* or by his Subcontractor exceeds 50, the number of Safety Supervisors to be provided shall be increased by one for every additional 50 workers.

(3) Notwithstanding the requirements stated in sub-clause no. 6(2) above, each Subcontractor of the first tier (directly employed by the Contractor) engaging 20 persons or more in the activities for which he is responsible shall provide at least one full-time Safety Supervisor to oversee the safety of his own activities.

(4) Safety Supervisor shall have at least three years' experience on construction work and have completed an appropriate training course provided for safety supervisors.

(5) Safety Supervisors shall be clearly identified on the Site by wearing an armband or a safety helmet appropriately marked in Chinese and English.

7 Safety Representatives

(1) In addition to the Safety Officer and Safety Supervisors, the Contractor shall appoint the foreman or ganger of each labour group or team working on the Site to act as Safety Representative. The Safety Representative shall be responsible for ensuring that the directives from the *Contractor*, the Safety Officer and Safety Supervisors on safety and health matters are duly carried out, safety practices are adopted and protective clothing and equipment are used by the work force at all times on the Site. Normally, each gang of workers shall have one Safety Representative. He shall be made aware of his responsibilities and the group of workers on the Site whose activities he is required to supervise. Every worker working on the Site shall be made aware of the roles of the Safety Representatives and from which Safety Representative he may seek advice or receive instructions on safety and health matters.

(2) Safety Representatives shall be clearly identified on the Site by wearing an armband or a safety helmet appropriately marked in Chinese and English.

8 Safety Training

(1) The *Contractor* shall regularly review the training needs of all persons employed on the Works or in connection with the Contract and prepare a long-term training programme. Each month the *Contractor* shall submit a proposed training programme to be provided in the next month for the *Project Manager*'s acceptance. It shall contain the topics, dates, venues, the target participants of the proposed training and the names and qualifications of the trainers.

(2) All persons carrying out construction work including general workers, skilled workers, foremen, gangers, drivers and plant operators, who are employed on the *works* or in connection with the contract whether in the employ of the *Contractor* or sub-contractors of all tiers must have completed the mandatory basic safety training course for the construction industry under the Factories and Industrial Undertakings (Amendment) Ordinance 1999 and hold the relevant valid certificate which shall be referred to hereafter as the Labour Department Recognised Green Card (LDRGC).

(2)(A)(i) In addition to clause 8(2) above, skilled workers of specific trades set out below in this sub-clause who are employed on the *works* or in connection with the contract whether in the employ of the Contractor or sub-contractors of all tiers shall attend the relevant Safety Training Course for Construction Workers of Specified Trades (also known as the Silver Card course) organised by the Construction Industry Council (CIC):

- painter and decorator
- carpenter
- demolition worker (building)
- plumber
- bar bender and fixer
- plasterer and tiler
- bamboo scaffolder and metal scaffolder
- curtain wall installer
- construction materials rigger
- lift mechanic (installation and maintenance)
- tower crane worker (erecting, dismantling, telescoping & climbing)
- tunnel worker
- rigger and signaller
- concretor

Any other recognized courses as notified by the *Project Manager*.

(2)(A)(ii) If the *Contractor* intends to employ or permit the employment of any skilled workers of trades specified in sub-clause (i) but do not possess the Silver Card that is relevant to the trade and work in which he/she is working on the Site for the execution of the *works*, he shall arrange within 2 working days of such skilled workers commencing work on the Site to attend the course specific to the trade and work in which he/she is employed under the Contract. A skilled worker who passes the test at the end of the course will be awarded with a Construction Industry Silver Card (Silver Card). For the purpose of this Contract, this course shall be referred to hereafter as the "trade specific advanced safety training" course.

(3) The *Contractor* shall also ensure that all card holders will carry their LDRGC and Silver Card, or their Construction Workers Registration Cards with record of valid LDRGC and/or Silver Cards information as equivalent document of the LDRGC and/or Silver Card as applicable, whilst working on the Site.

(4) The Contractor shall pay a token allowance as specified in relevant item in the *bills of quantities* to each skilled worker of a specific trade set out in clause 8(2)(A)(i) above after it has successfully completed a Silver Card Course and received a Silver Card. If a skilled worker of a specific trade set out in clause 8(2)(A)(i)above has completed a revalidation course and received a revalidated Silver Card, the Contractor shall pay a token allowance as specified in relevant item in the *bills of quantities* to the skilled worker. The skilled worker is responsible for the payment of the course fee. However, the token allowance will not be paid if the course is attended:

(i) before the skilled worker starts works on the Site; or
(ii) after the skilled worker has left the Site.

At the end of each month, the *Contractor* shall prepare and submit a certified monthly statement of workers who have successfully completed the trade specific advanced safety training course to the *Project Manager* using the proforma attached in Part 2 of this Particular Specification. Copies of the Silver Card, the original receipts signed by the workers for the receipt of the token allowance and a certified payroll record indicating the trades and salaries of the workers shall be made available for inspection if requested by the *Project Manager*.

(5) The Contractor shall only arrange skilled workers to attend the trade specific advanced safety training course that is relevant to the trades and works in which he/she is employed under the contract. The *Project Manager* has a right to disapprove the payment on the trade specific advanced safety training to a skilled worker if he/she is found on the Site and not working for the trades and works in which it has received the training.

(6) (a) All persons employed on the *works* or in connection with the Contract whether in the employ of the *Contractor* or Subcontractors of all tiers shall receive "site specific induction training".

(b) Site specific induction training and <u>its refresher</u> shall take the form of an one-hour talk conducted by the Safety Officer in accordance with sub-clause 6(e) below.

(c) The talk should be conducted as follows:

(i)	Safety Policy	10 mins.
(ii)	General particulars of the Site	10 mins.
(iii)	Special characteristics of the Works and inherent hazards on the Site, highlights of particular safety measures and use of personal protective equipment	15 mins.
(iv)	Emergency procedures and first-aid facilities	10 mins.
(v)	Reporting of accidents and injury compensation procedures	5 mins.
(vi)	Questions and answers	10 mins.
	total	60 mins.

(d) The Safety Officer shall prepare the talk based on Part II of the "Site Safety & Health Induction Training Manual" published by the Hong Kong Construction Association Ltd (HKCA).

(e) An outline of the talk and every update of it shall be provided to the *Supervisor* for acceptance. All persons enumerated in sub-clause (6)(a) above shall be provided with the site specific induction training on the first day of their commencement of work on the Site. Thereafter, they shall be given refresher talks at intervals of 6 months depending on the amount of changes to the site condition.

(f) The *Contractor* shall ensure that "site specific induction training" talks are carried out by Safety Officers who are competent trainers and have received training on safety training techniques organised by the HKCA, CIC, Occupational Safety and Health Council (OSHC) or other accepted training organisations.

(7) (a) The *Contractor* shall provide tool box talks at a frequency of one talk per worker on Site every two weeks commencing from the *starting date* subject otherwise to any change in frequency as may be accepted by the *Project Manager*. The *Contractor* shall also ensure that the topic of every talk given to a worker is relevant to his/her trade and the work that he/she will perform under the Contract and a worker shall attend no more than one talk on the same topic in any two-month period.

(b) The *Contractor* shall propose the topics of the tool box talks at a frequency specified in sub-clause (a) having regard to the activities of the Site and the prevailing safety concern at that time. They shall be submitted with the proposed monthly training programme to the *Project Manager* for its acceptance. The *Project Manager* has the right to disapprove the training programme when the proposed topic is considered not relevant to the trade of the workers or the prevailing work activities. Moreover, the *Project Manager* can request the *Contractor* to review the topics to cater for special safety concern. For workers undertaking scaffolding work including truss-out bamboo scaffolds, demolition work and works in confined spaces, they should be provided with suitable tool box talks prior to the commencement of these works. Workers not having attended the concerned tool box talks shall not be allowed to undertake these works. For workers carrying out road works, they should be provided with specific tool-box talks, and be arranged to attend training course “Safety at Road Works” by OSHC or other equivalent training course by other approved training organisations, prior to the commencement of these works. Workers not having attended the relevant training shall not be allowed to carry out any road works with risk of exposing to the potential hazards of live vehicular traffic.

(c) The content of the toolbox talks shall be based on training kits published by the HKCA. Where such a proposed topic is not amongst one of those in the training kits published by the HKCA, the *Contractor* shall develop training kits to a similar standard for acceptance by the *Supervisor*.

(d) The *Contractor* shall ensure that "toolbox talks" are conducted by Safety Officers or Safety Supervisors or gangers who are competent trainers and have received training on safety training techniques organised by the HKCA, CIC, OSHC or other approved training organisations.

(e) Payment for this item shall be made monthly provided that the *Project Manager* is accepted that the talks have been conducted in accordance with this clause.

(8) (not used)

(9) (not used)

(10) The *Contractor* shall prepare attendance records on site specific induction training and tool box talks which shall include the topics and dates of the talks, the names of the trainers, names and trades of the persons receiving the talks and their signatures.

(11) The *Contractor*'s site agent or Safety Officer shall certify the accuracy of attendance records on site specific induction training and tool box talks before they are submitted to the *Project Manager* for payment. If requested by the *Project Manager*, the *Contractor* shall give at least 24-hour notification on the time and venue of each tool box talk to be held, so that the *Project Manager* could arrange its staff to take attendance record for measurement.

(12) The *Contractor* shall ensure that all site management and supervisory staff, who are employed on the Works whether employed by the Contractor or sub-contractors of all tiers, shall attend, if they have not done so, and complete the basic training commensurate with their duties, as follows:-

(a) The term “site management staff” means persons engaged in the senior or managerial posts such as project managers, site agents, sub-agents, superintendents and site engineers. The basic training required to be attended by site management staff shall include :–

(i) Appropriate training course such as the Safety Training Course for Site Management Staff run by OSHC/CIC or other accepted training organizations; or the corresponding revalidation course as appropriate. The course should cover amongst others: safety legislation and safety management techniques, risk assessment and safety inspection, accident investigation and accident prevention, Consruction and Design Management (renamed as Design for Safety since 2016), work safe behaviour and safety climate index.

(b) The term “supervisory staff” means gangers and foremen. The basic training required to be attended by supervisory staff shall include:-

(i) Appropriate training course such as the Safety and Health Supervisor (Construction) Course run by OSHC or the Construction Safety Supervisor Course run by CIC or other approved training organizations; or the corresponding revalidation course as appropriate, such as the Enhancement Course for Safety Supervisors (Construction) run by OSHC or the Construction Safety Supervisor Enhancement Course run by CIC. The course should cover amongst others: safety legislation, safety management & training techniques, principle of accident

prevention, safety at work and safety inspection techniques on construction sites.

(13) The *Contractor* shall keep on Site records of all safety training received by its staff including those on refresher training and make them available for inspection by the *Supervisor* upon request.

8A Risk Assessment

The *Contractor* shall carry out, review and submit to the *Project Manager* risk assessments for works scheduled to start at least for the next two months. The *works* shall be broken down into jobs/tasks for hazard identification and evaluation of the level of risk by competent persons. The documentation shall contain the hazards identified, the likelihood and consequence of the hazards occurring, the level of risk thus evaluated, the proposed risk mitigation/control measures and the anticipated residual risks, and identify the respective risk controller. The results of such risk assessments and documentation shall be endorsed by the Safety Officer and the site agent. In addition, they shall be incorporated into the Safety Plan or relevant safety working procedures or method statements. In addition, the *Contractor* shall also maintain an updated register of all risk assessments carried out, and update the relevant safety checklist based on the safety measures recommended in each new risk assessment.

9 Site Safety Committee

(1) The *Contractor* shall establish a Site Safety Committee which shall be responsible for ensuring the implementation of the Safety Plan, reviewing and monitoring the effectiveness of the safety and health measures taken and seeking the co-operation and commitment of staff at all levels. The *Contractor* may combine the committees in relation to safety and environmental matters (if necessary) for efficient monitoring.

(2) The Site Safety Committee shall be chaired by the site agent with members comprising a representative at senior management level from the *Contractor*'s headquarters or the project manager, the Safety Officer, all Safety Supervisors, selected Safety Representatives and other staff of the *Contractor* or Subcontractors as may be considered necessary. It shall meet at monthly or more frequent intervals discussing all matters relating to the implementation of the Safety Plan. The first meeting shall be held no later than 30 days after the *starting date*. The *Contractor* may invite any other party such as the Labour Department, Marine Department, Fire Services Department, Police or representatives of utility undertakers to attend the meeting and provide advice as necessary.

(3) The *Contractor* shall give an advance notice of every Site Safety Committee meeting to the *Supervisor* who will attend the meeting in person or nominate a representative to attend the meeting as an observer.

(4) The following items shall, amongst others, be discussed at the Site Safety Committee meeting :

(a) Review of the Safety Plan

- update risk assessment for the work scheduled at least for the next two months,
- review and establish safety and health provisions, safe working procedures and method working procedures and method statements,
- update the emergency and rescue procedures,
- discuss and reconcile any discrepancies between the Safety Plan prepared by the Specialist Contractor and that of the *Contractor*,

(b) Update of the safety organisation chart and review of the adequacy of safety personnel,

(c) Review of the safety performance of sub-contractors,

(d) Any unsafe practices and conditions identified during safety inspections/audits and any follow up action,

(e) Advisory/warning letters issued by Marine Department and Labour Department and any Improvement/Suspension Notices received,

(f) Review of accident frequency rates and statistics of the *Contractor* and Subcontractors and identification of trends,

(g) Details of the *Contractor*'s accident and dangerous occurrence experience,

(h) Safety and health training undertaken in the previous month and the proposed training programme for the following month,

(i) Details of safety promotional activities,

(j) Safety co-ordination between various Subcontractors working in close proximity to each other, and

(k) Monitoring of the follow-up action on defects and deficiencies identified.

(5) Minutes of the Site Safety Committee meeting shall be prepared by the *Contractor* and copied to the *Supervisor* within 10 working days of the meeting. One copy of the minutes in Chinese and English if necessary, shall be posted at a prominent place on the Site.

10 Site Safety Management Committee

(1) The *Project Manager* shall establish a Site Safety Management Committee (SSMC) to monitor the adequacy of the Safety Plan and ensure its implementation on Site by the *Contractor*, and to enhance communication between the *Project Manager* and the *Contractor* on safety and health matters. The SSMC shall be chaired by the *Project Manager* or *Supervisor* and shall meet at monthly or more frequent intervals. The first meeting shall be held no later than 30 days after the *starting date*. The *Project Manager* may combine the management committees in relation to safety and environmental matters (if necessary) for efficient monitoring.

(2) The *Contractor* shall provide all necessary assistance required for the proper functioning of the SSMC and shall be represented on the Committee by a representative at senior management level from the *Contractor*'s headquarters or the project manager, the site agent, the Safety Officer and Safety Supervisors. The *Contractor* shall act without delay upon the decisions or recommendations made by the Committee on matters of safety and health. The above arrangements are entirely without prejudice to and do not relieve the *Contractor* from any contractual or legal obligation with respect to safety and health. Where a Specialist Contractor is directly employed, a representative at senior management level from the Specialist Contractors' headquarters or his project manager, site agent, Safety Officer and Safety Supervisors shall also attend this meeting.

(3) Prior to every meeting of the SSMC, the *Contractor* shall arrange an inspection of the Site by those who are to attend the meeting and/or any other members nominated by the *Project Manager*. This inspection shall be taken as one of the weekly safety walk.

(4) The following items shall, amongst others, be included in the agenda of each SSMC meeting:-

(a) Review of the Safety Plan

- update risk assessment for the work scheduled at least for the next 2 months
- review and establish safe working provisions, safe working procedures and method statements,
- update the emergency and rescue procedures
- discuss and reconcile any discrepancies between the Safety Plan prepared by the Specialist Contractor and that of the *Contractor*,

(b) Update of the safety organisation chart and review of the adequacy of safety personnel,

(c) Review of safety performance of sub-contractors,

(d) Any unsafe practices and conditions identified during safety inspections/audits and any follow up action,

(e) Advisory/warning letters issued by Marine Department and Labour Department and Improvement/Suspension Notices,

(f) Public concern/complaint,

(g) Review of accident frequency rates and statistics of the *Contractor* and sub-contractors and identification of trends,

(h) Details of the *Contractor*'s accident and dangerous occurrence experience,

(i) Monitoring of the follow-up action on defects and deficiencies identified,

(j) Safety and health training undertaken in the previous month and the proposed training programme for the following month,

(k) Details of safety promotional activities,

(l) *Contractor*'s monthly safety report,

(m) Safety co-ordination between various sub-contractors including Specialist Contractor working in close proximity to each other and,

(n) Reports on safety audits conducted by internal or external safety auditors and action plans prepared by the *Contractor*.

(5) The *Project Manager* may invite any other parties, such as Labour Department, Marine Department, Fire Services Department, Police, representatives from utility undertakers and the departmental Safety and Environmental Advisory Unit to attend the SSMC meeting and provide advice as necessary.

(6) The *Project Manager* or *Supervisor* shall prepare the minutes of the SSMC meeting for distribution to all attending parties within 10 working days of the meeting. The minutes of each meeting shall be signed by the *Project Manager* or *Supervisor* and the site agent.

11 Weekly Safety Walk

(1) The *Contractor* should arrange a weekly safety walk attended by the *Contractor*'s Safety Officer and site agent or its delegate and the *Project Manager*'s nominated site representative to inspect the Site checking that safety and health conditions are being maintained on the Site. It shall include, but not be limited to:-

(a) Checking scaffolding in current use to be in compliance with the accepted Codes of Practice for Bamboo and Metal Scaffolding Safety issued by the Commissioner of Labour,

(b) Checking that the temporary lighting and electrically powered hand-held tools and equipment are all rated at 110V CTE (centre-tapped to earth) in compliance with this Particular Specification clause no. 15(13), and

(c) Checking that site tidiness and cleanliness are conducive to avoiding accidents and mosquito breeding.

Weekly safety walks conducted under this clause are entirely without prejudice to and do not relieve any of the *Contractor*'s responsibility to carry out regular inspections to upkeeping safety and health conditions on Site required by the Factories and Industrial Undertakings (Safety Officers and Safety Supervisors) Regulations.

(2) The *Contractor* shall prepare and agree with the *Supervisor* a comprehensive check-list for use during safety walk and site inspections. It shall contain a table listing out the deficiencies identified during the walk/inspection with the proposed rectification measures, the names of the persons responsible for taking any necessary rectification measures and the corresponding completion dates. More than one comprehensive checklist may need to be prepared by the *Contractor* to suit the variety of works at various portions of the Site.

The Contractor shall adopt ArchSD’s Digital Works Supervision System (DWSS) to facilitate the digital processing of the site safety records i.e. Weekly Safety Inspection Checklist specified above. In case the ArchSD’s DWSS is out of service, alternative means such as submission in electronic format and/ or hard copy of checklist shall be adopted as notified by the *Supervisor*. The *Contractor* will not be entitled to any claim arising from the service suspension of ArchSD’s DWSS.

(3) Immediately after the safety walk, the comprehensive checklist shall be agreed by the Safety Officer and the *Project Manager*'s nominated site representative. The Contractor shall take prompt action to rectify those deficiencies identified during the walk and shall report the status of actions taken at the forthcoming SSMC meeting.

12 Subcontractors

(1) The Contractor shall provide each Subcontractor with sets of site rules and regulations, safe working procedures and safety obligations to ensure compliance.

(2) The *Contractor* shall, for contracts where more than two *Contractors* are working in close proximity, establish a safety co-ordination system to liaise amongst the sub-contractors and to maintain a safe working environment.

13 Reporting

(1) In addition to the requirements of the this clause D33 of these *additional conditions of contract*, the Contractor shall complete any other forms as the Commissioner for Labour may require including, but not limited to, forms requesting supplementary information used by the Labour Department for the purpose of accident analysis. Copies of such forms should be made available for inspection by the *Project Manager* upon request.

(2) Further to sub-clause (1) above, the *Contractor* shall notify the *Project Manager* immediately of any accident/incident occurring on the Site or related to the *works* involving dangerous occurrence or death or serious personal injury or with worker(s) admitted to the hospital, or damage of properties or major site plant or equipment, or notifiable accident as described in paragraph 9.1.2(b) of Chapter 9 of the Construction Site Safety Manual. The initial notification may be made verbally to the *Supervisor* immediately upon the occurrence of the accident/incident. A written notification with details shall be made within 24 hours of the occurrence of the accident/incident. If the accident results in death or total or partial incapacity of the injured person(s) for a period exceeding 3 days, the *Contractor* shall also submit the duly completed “Injury Report Form” as per Appendix VI of Chapter 9 of the Construction Site Safety Manual to the *Supervisor* within 7 calendar days of the accident.

(3) The *Contractor* shall then investigate the incident/accident and complete any further report as may be required by the *Project Manager* on the detailed cause of the accident or dangerous occurrences, measures to prevent recurrence and complete standard forms provided by the *Project Manager* to enable the *Client* to prepare an up-to-date database on site accident statistics.

(4) The *Contractor* shall submit a monthly report for consideration at the meeting of the SSMC. It shall be prepared by the Safety Officer and duly endorsed by the site agent, to the *Project Manager* containing the following information:

(a) all accidents involving dangerous occurrence, death, personal injury irrespective of severity or damages to properties in or adjacent to the Site,

(b) results of any Labour Department's inspections, advice, warning, Improvement/Suspension Notices and prosecutions,

(c) proposed training programme for the next month and training carried out in the previous month,

(d) a list of all competent persons and a summary record of all examination

and test certificates required by any legislation or the contract, and

(e) Safety Officer's inspection reports, reports on follow up action taken on irregularities identified during safety inspections and weekly safety walks, and safety audit reports on the implementation of the Safety Plan.

(5) Within 14 days from the request of the *Project Manager*, the *Contractor* shall submit a written report to explain the high accident rates and to propose measures to improve the safety performance of the Site.

(6) The *Contractor* shall maintain on the Site a register of all accidents occurring on the Site including dangerous occurrences, near misses and accidents with or without personal injury. The register shall be made available for inspection by the *Supervisor* upon request.

(7) Further to sub-clause (2) above regarding incident/accident with hospitalization of worker(s), the Contractor shall notify the *Supervisor* immediately when the injured worker(s) has been discharged from the hospital, by provision of the relevant medical certificate or report with declaration detailed in paragraph 9.3.5 of Chapter 9 of the Construction Site Safety Manual.

14 Further Safety Measures

(1) Safety, rescue and health matters shall be given a high degree of publicity on the Site. The *Contractor*'s safety policy statement, emergency procedures and any rescue organisation shall be made known to all persons on the Site. Such information shall include an emergency telephone list including the names and contact telephone numbers (such as mobile phone number and pager number) of at least two key members of the *Contractor*'s emergency organisation, and the telephone numbers of the appropriate divisional police, fire and ambulance stations, utility undertakers, Labour Department's Operation Division and Marine Department. Copies of the above information and safety posters, in Chinese and English languages, shall be displayed at prominent places on the Site. A notice board shall be erected near the entrance of the site for the display of safety posters, up-to-date accident records and the names of the Safety Officer and the site agent.

(2) The *Contractor* shall ensure that all tools, plant, equipment and temporary facilities and all other items used in carrying out the *works* how-so-ever provided are in a safe, sound and good condition, are capable of performing the functions for which they are intended, and where required by the law or by the relevant codes of practice, are licensed and/or have been issued with the necessary permits for use.

(3) The *Contractor* shall establish, implement, maintain and regularly review the safety system of work for working in lift shaft including, but not limited, to the following:-

Provision of a structurally sound temporary full height metal gate with lock and key, where key is required for opening the gate from outside of the lift shaft and can be opened from the inside of the lift shaft at any time without the need of key to facilitate emergency escape. In addition, any opening on the gate shall not be greater than 50mm x 50mm in size;

Using the lift shaft as storage space is strictly prohibited at any time; and

Using the lift shaft for transportation of materials or refuse is strictly prohibited unless the lift installation works are certified by authority as completed for use and exemption is granted from the *Project Manager* for such activity to be carried out.

(4) Metal scaffold system including falsework and working platform, shall be designed by professional engineer who shall be a corporate member of Hong Kong Institution of Engineers in structural or civil discipline or equivalent with adequate training and experience. The *Contractor* shall provide the method statement, design drawings, specifications and structural calculations for the metal scaffold system when required by the *Project Manager*.

(4a) All metal scaffold system shall not be used unless it has been inspected by a competent person with statutory Form 5 according to Regulation 38F of Construction Site (Safety) Regulations. The *Contractor* shall appoint the competent person in writing and inform the *Supervisor* of the name, qualifications and experience of its appointed competent person. The *Contractor* shall also ensure the appointed competent person is, by reason of substantial training and practical experience, competent to perform the duty.

(4b) For bamboo Scaffold System with working platforms laying on every lift as per Section 4.4.1(c)(i)(1) of the Code of Practice for Bamboo Scaffolding Safety issued by Labour Department, the following requirements shall also apply:-

Notwithstanding Clause 1.46(b) of General Specification for Building (GS), the bamboo Scaffold System shall be designed and endorsed by a Registered Professional Engineer who shall have adequate relevant experience. Working drawings for the bamboo Scaffold System shall be prepared, checked and endorsed by the Registered Professional Engineer before submission to the *Project Manager*. The vertical spacing of the steel brackets for supporting the bamboo Scaffold System, or other form of support, shall not exceed 10m.

(5) Fences and/or nets of adequate strength shall be provided along all edges where workers may be liable to fall into water. If it is not possible to provide such fences and nets, persons working over or immediate adjacent to water shall wear a life jacket or a suitable buoyancy aid or a personal fall arrestor (as is appropriate) when so working. If there is a risk of the personnel becoming unconscious after falling into water, the life jacket shall be a self-inflatable type of the appropriate buoyance.

(6) If required by the contract, the *Contractor* shall provide a suitably equipped and dedicated rescue launch, manned and available whenever work is being carried out on or over water. Adequate rescue equipment and personal protection equipment (PPE) shall be provided and maintained according to the manufacturer's specifications and recommendations.

(7) Alcoholic drinks and other substances which may impair judgement shall be prohibited from the Site. The Contractors shall remove any person under the influence of such substances from the Site immediately.

(8) Personal protective equipment provided by the *Contractor* for use in confined spaces and for protection against falling from height shall be full-body type safety harnesses with suitable lanyards. Safety belts shall not be permitted except for use as a means of positioning to restrict horizontal movement. The *Contractor* shall also provide secure anchorages for the attachment of safety harnesses/safety belts.

(9) Permit-to-work systems shall be implemented to control access to hazardous areas or the carrying out of any hazardous operations including, but not limited to, hot work, electrical work, work in confined space, maintenance of material hoist, area or operation liable to release of flammable or toxic liquid or gas, work in lift shaft, etc.

(10) All lifting gear including slings, shackles and such like equipment shall be colour coded for identifying lifting gear which require re-inspection or disposal. Details of the colour coding system are given in Part 3 of this Particular Specification.

(11) All material hoists installed shall be fitted with fail-safe interlocking hoistway gates such that the driving mechanism is operable only when all gates are closed and latched; and hoists shall not be operated manually when one gate is opened. A single channel communication from the user to the operator of the hoist shall also be provided.

(12) All persons engaged in works with risks of receiving foot injuries including but not limited to pneumatic drilling work and manual handling work shall be provided with safety boots when they are engaged in such works. The cost of provision of safety boots shall be deemed to have been allowed in the Contract Rates. Safety boots shall comply with BS EN ISO 20345 with protection properties to Category S3 or equivalent standards.

(13) Further to the requirements under the Factories and Industrial Undertakings (Noise at Work) Regulations, the *Contractor* shall provide approved ear protectors to all persons working on the Site who are exposed to noise level of 90 dB(A) or above.

(14) The *Contractor* shall keep a register of all dangerous substances including those hazardous to health which are delivered to and stored for use on the *works*. The register shall include information on:

(a) their physical and chemical properties,

(b) hazards,

(c) safe handling and storage,

(d) precautionary measures to be taken, and

(e) first aid measures,

extracted from the manufacturers' material safety data sheets.

(15) Receptacles with full containment on four sides to prevent the falling out of materials shall be used for the lifting and transportation of reinforcement links, stirrups, short pieces of splice or reinforcement U-bars, couplers and the like. The safe working load shall be marked on the receptacle after being tested by a competent examiner. The colour coding system for lifting gear shall also apply to these receptacles.

(16) The lifting of reinforcement bars shall be by the use of wire slings. No cradles shall be used for the lifting of reinforcement bars unless they are properly designed and with their safe working load certified.

(17) Roads and footways below suspended precast concrete/steel segments or the like, shall be closed until such time the segments are secured in their permanent locations unless measures are taken to the *Project Manager*'s acceptance to prevent the segments from falling in the event of the failure of the equipment used to suspend the segments. The *Contractor* shall seek acceptance from the relevant authorities for the closure of the concerned sections of roads and footways. Adequate measures including the use of barricades and warnings shall be provided to ensure that no person shall inadvertently enter the area below any suspended segments.

(18) Construction vehicles and plant used on Site shall be equipped with audible signals on reversing. Other form of warning signals and/or banksman shall be provided as necessary to guide such reversing movements if audible signals are causing nuisance to nearby residents particularly at night. For quarry operations, no person shall operate or drive any mechanical equipment at or near the edge of any face, side, tip or embankment in a quarry unless a banksman is in attendance.

(19) (a) Where there are more than one tower cranes operating within the Site and there is a possibility of overlapping crane movements, the *Contractor* shall develop, implement and maintain a safe system of work to prevent the overlapping of tower cranes lifting operation. The system shall include, but not limited to, the following:

- the provision of a warning system in the form of light and/or sound to alert the crane operator of the approach of cranes in the overlapping area;

- the appointment of Overlapping Area Lapping Supervisor (OALS) to co-ordinate and control the lifting operation in the overlapping area or the provision of an automatic control device to prevent the occurrence of overlapping situation;

- the provision of adequate buffer zone on both sides to slow down the slewing movement of cranes so as to prevent a sudden stop which might induce an inertia to the moving load; and

- regular inspection and maintenance of the warning system and automatic control device.

Appropriate measures shall also be implemented to address the possible overlapping crane movement for a mobile crane movement and a tower crane operating within the Site.

(b) Routine checks of tower cranes and derrick cranes

- the routine checks of tower cranes and derrick cranes at the beginning of each shift or working day by the crane operator/competent person in accordance with the Labour Department's "Code of Practice for Safe Use of Tower Cranes" shall be witnessed by the *Contractor*'s safety supervision staff, at Safety Supervisor or above. The checklist for routine checks shall be signed by the operator/competent person and endorsed by the Contractor's safety supervision staff witnessed the routine checks.

(c) Weekly inspections of tower cranes and derrick cranes

- the weekly inspections of tower cranes and derrick cranes in accordance with the Labour Department's "Code of Practice for Safe Use of Tower Cranes" shall be conducted by the competent person of the specialist tower crane/derrick crane contractor.

- the weekly inspections of tower cranes and derrick cranes shall be witnessed by the *Contractor*'s safety management staff, at Safety Officer or above. The checklist for the weekly inspections shall be signed by the competent person and endorsed by the *Contractor*'s safety management staff witnessed the weekly inspections.

(20) The *Contractor* shall actively organise safety promotional activities to promote and enhance the standards of health and safety on the Site. In addition, the *Contractor* shall also participate in other territory-wide safety promotional campaigns as instructed by the *Project Manager*.

(21) The *Contractor* shall implement a Permit to Move and Operate System for Mobile Cranes and Piling Rigs operating or moving on the Site in accordance with Part 4 of this Particular Specification, which shall be prepared by the *Contractor* with proper risk assessment to suit the prevailing site conditions. The *Contractor* shall also implement additional safety control measures as necessary in case of special circumstances or high risk conditions. The requirement under this Sub-clause shall not reduce or absolve the *Contractor*'s obligations or liabilities in respect of any permit to work system applicable to cranes and piling rigs imposed elsewhere under the Contract or by any enactment, regulations, bye-laws or rules, e.g. the permit system imposed on construction site within the protection zone of MTRCL.

(22) The *Contractor* shall implement defibrillation measures on the Site as first aid measures against sudden cardiac attack which shall include:-

(a) The provision and manning of one functional set of automated external defibrillator (AED) and the required accessories with technical requirements as per Part 6 of this Particular Specification. The AED shall be placed at a prominent and easily accessible place on the Site as agreed by the *Project Manager*. The *Contractor* should ensure that the AED is properly maintained in functional condition.

(b) The provision of person(s) trained both in use of AED and application of cardiopulmonary resuscitation (CPR) to be present on site during working hours is shown below:-

Total no. of persons on the Site	Minimum no. of person(s) trained both in use of AED and application of CPR to be present on site during working hours
Less than 100	1
100 or more	2

The person trained in use of AED shall mean a person who holds a current certificate on use of AED issued by the Auxiliary Medical Services (AMS) or other approved equivalent institution. The person trained in the application of CPR shall hold a current certification on CPR course issued by AMS or other approved equivalent institution.

(23) Protection to protruding steel reinforcements

The *Contractor* shall provide protection to protruding steel reinforcements which may cause impalement injury. The protection can be by means of reinforcement caps; dowel bar sleeves; covering of the protruding steel reinforcement by wooden or metal troughs, steel planks and angles; or other means as agreed by the *Project Manager*. Depending on the actual conditions of the site works, protection to the protruding steel reinforcements locating at the areas non-accessible to the workers may not be required subject to the acceptance of the *Supervisor*.

(24) Wearing of chin straps attached to safety helmets

The *Contractor* shall ensure all persons on site to fasten the chin straps attached to their safety helmets when performing works to avoid accidental detachment of the safety helmets. Safety helmets shall comply with the "Guidance Notes on the Selection, Use and Maintenance of Safety Helmets" published by the Labour Department.

15 Electrical Safety

(1) A Registered Electrical Worker (REW) of the appropriate grade under the Electricity Ordinance (EO) shall be employed by the *Contractor* throughout the contract to handle the entire temporary electrical systems and installations on the Site.

(2) Upon completion of the temporary electrical system (TES) and after each alteration/repair to the existing TES, the *Contractor* shall arrange its REW/Registered Electrical Contractor (REC) under the EO to complete an individual Work Completion Certificate (WR1) as required by the Code of Practice for the Electricity (Wiring) Regulations (COP) issued by the Electrical and Mechanical Services Department. If a REC is not employed, the *Contractor* shall then assume the responsibilities of a REC and sign on the WR1 together with the REW employed by the *Contractor* as per Code No. 19B(d) of the COP. Each of such Certificates shall include a circuit diagram clearly indicating which portion(s) of the TES is/are covered, and, where appropriate, other necessary supporting documents.

(3) Temporary electrical installations, such as lighting fittings, distribution boards, socket outlets, plugs and cable couplers in outdoor or damp environment shall be of splash-proof type to IP 54 or above.

(4) The sheath of all electric portable cables shall be of heavy-duty type or otherwise adequately protected against mechanical damage if laid on ground. They shall be hung overhead as far as possible. Ordinary PVC cables, if employed, shall be enclosed in metallic conduits or trunkings and properly maintained.

(5) The *Contractor* shall develop checklists for carrying out regular routine inspections and checking and monthly comprehensive checking of the TES. The checklists shall be developed by the *Contractor* and agreed by the *Supervisor*. Comprehensive checking shall include, but not be limited to, checking of temporary generators, functional test of earth leakage circuit breakers, integrity of cables and connections, measurement of earthing resistance and those items listed in Checklists Nos. 3 and 4 of the COP where appropriate. The checklist should be signed by the REW after each inspection and/or checking.

(6) Adequate precautionary measures shall be adopted to ensure safety during inspection, repair and maintenance of the temporary electrical installations including the use of permit-to-work system and/or lock-off system. The *Contractor* shall establish and review regularly the maintenance programme and logging system for the TES.

(7) The *Contractor* shall keep and maintain updated circuit diagrams, WR1 (complete with supporting documents) and records of inspection and checking of the TES by REW/REC in a dedicated file for inspection by the *Project Manager*'s site supervisory staff upon request.

(8) During weekly safety walks and when requested by the *Project Manager*'s site supervisory staff, the *Contractor* shall open the cover plates of temporary electricity distribution boards for inspection of the conditions of the internal wiring and/or carry out testing immediately. Updated schematic circuit diagram shall also be affixed inside the cover of the temporary distribution boards.

(9) All temporary electrical distribution boards shall be kept locked and accessible only by authorized persons appointed by the *Contractor*, e.g. REW and/or general foreman. Legible warning notices (Danger - Electricity) in both Chinese and English, names and telephone numbers of such authorized persons shall be posted on the temporary distribution boards.

(10) For work carried out in occupied buildings, unless prior acceptance has been obtained and proper and safe arrangement has been made, the *Contractor* shall not connect his fixed electric equipment directly to any existing permanent distribution boards. Such connection shall only be made through temporary distribution boards equipped with proper protective devices.

(11) All arc welding machines and electrode holders shall comply with BS 638 : Part 7, IEC 60974 - 1 (or BS EN60974 - 1) and BS EN 60974 - 11 or equivalent standards. Welding machines should be placed close to the point of welding operation to minimize the length of the electric cable connecting the electrode holder with the arc welding machine, and the welding return should be connected close to the point of welding operation. The welding machines should be fitted with no-load voltage reducing device to reduce the rated open-circuit no-load voltage of the electric power output to less than 50V a.c. or 110V d.c., unless otherwise approved by the *Project Manager*, for protection against electric shock at the output side. Welding machines shall be enclosed and the metal casing shall be effectively connected to earth. Cable terminals of the welding machines shall be effectively insulated.

(12) All hand-held electrical tools and portable equipment (e.g. submersible pumps), whether they belong to the *Contractor* or Subcontractors of all tiers, Nominated Subcontractor or Specialist Contractors under domestic Subcontract, shall be examined by the REW before they are used on Site. The examination shall include visual inspection for the general conditions of the tools and equipment and also tests for checking the functional, protective conductor continuity, polarity and insulation aspects. After passing the examination, all hand-held tools and equipment shall be registered and recorded. Identification labels showing the registration number, type of the tool, name of the owner and date of examination stamped with the *Contractor*'s company chop shall be affixed to these tools and equipment. Re-examination of the registered hand-held tools shall be carried out at 3-month intervals or each time after repairs to damages.

(13) Voltage in excess of 110V shall only be used for heavy equipment such as hoists, tower cranes, etc. with an earth leakage circuit breaker installed and in proper function. Portable and hand-held tools and temporary site lighting shall be operated at a voltage of 110V or less supplied from a step-down transformer with its output winding centre-tapped to earth and comply with BS EN 61558-1 and BS EN 61558-2-23 or equivalent. All cables shall be terminated within the transformer enclosure of Class I and IP 55 and the outgoing circuit shall be provided with short circuit protection. In confined and damp environment, the voltage of temporary lighting and hand-held tools shall not exceed 25V.

(14) For works to be carried out inside ceiling void or at high level, temporary lighting (at 110V or below) shall be used. Lighting fittings using 220V electricity supply shall not be deployed even if available unless adequate safety arrangement has been made and prior acceptance of the *Project Manager* has been obtained.

(15) The *Contractor* shall implement a Permit-to-work System after Energisation of Permanent Power Supply in accordance with Part 5 of this Particular Specification.

(16) The *Contractor* shall provide LED strip light with motion sensor switch, where applicable, for temporary site lighting with the following specification:

- operate at DC power input of 12V or less;
- minimum 1800 lm (Lumen) white light output per strip;
- IP65 water-proof protection; and
- equipped with motion senor switch.

16 Site Safety Cycle

The *Contractor* shall practise "Site Safety Cycle" (SSC) to improve and promote the safety and health of the Site. Site Safety Cycle shall begin when there are workers working on the Site, and shall cease by the Completion Date, or at a date proposed by the *Contractor* and accepted by the *Project Manager*. The activities for Site Safety Cycle for one day, one week and one month are referred to as the "Daily Cycle", "Weekly Cycle" and "Monthly Cycle" respectively. Details of the activities and the provisions for holding the activities are described below. For simplicity, the Pre-work Exercise and Safety (PES) meeting, Hazard Identification Activity (HIA) meeting and Pre-work Safety Checks of the Daily Cycle are collectively referred to as the "Pre-work Activities".

The *Contractor* shall arrange Pre-work Activities to be held for attendance by persons employed on the *works* (excluding clerical and administrative staff in site office), irrespective of whether they are in the employment of the *Contractor* or its Subcontractors. For the avoidance of doubt, persons employed on the *works* are those persons whose number of man-hours worked on the Site are to be included in the number of man-hours worked for the Contract. The *Contractor* is encouraged to arrange Pre-work Activities to be held daily, but in any case the frequency of Pre-work Activities for attendance by each person employed on the Works shall be not less than once in a week (commencing on Monday). Where necessary, the *Contractor* can arrange more than one session of Pre-work Activities to be held in a day in order to suit the large workforce or the different times of arrival of workers at the Site. The Pre-work Activities shall be carried out prior to any work carried out by the persons attending the Pre-work Activities on that day. Furthermore, the number of persons attending the Pre-work Activities in a session shall be governed by the hard-paved area which shall be sized based on the rate for a person specified in sub-clause 5 below.

(1) Daily Cycle

1.1 PES Meeting

1.1.1 The *Contractor* shall arrange and hold PES meetings each about 10 to 15 minutes for all the persons employed on the *works*.

1.1.2 The PES meeting shall be led by the Site Agent or a senior staff of site management of the *Contractor*, who has attended the training course on SSC or the Safe Working Cycle of the OSHC or CIC, or other relevant training courses notified by the *Project Manager*.

1.1.3 The first few minutes of PES meeting shall start with a physical exercise set by the *Contractor*. After that, the leader of the PES meeting shall address the attendees on the prevailing safety and health matters related to the Site, such as common hazards and control measures, general fire and safety precautions, specific safety concerns, general defects and irregularities observed in inspections, accidents or near misses etc.. Besides, the *Contractor* shall also make use of the PES meetings to announce common safety matters in execution and co-ordination of the *works* on the Site among Subcontractors and workers, or presenting awards to workers and/or Subcontractors in recognition of their good safety performance.

1.1.4 The Contractor shall maintain a brief record of the run-down programme and a register of the persons attended for each PES meeting, or keeping photo records showing the attendance. The *Supervisor* and/or its staff shall attend the PES meetings regularly to ensure their quality for certifying payment.

1.2 HIA Meeting

1.2.1 The *Contractor* shall arrange and hold HIA meeting of about 10 minutes for the attendees immediately after the PES meeting.

1.2.2 To strengthen the communication on the Site, the *Contractor* shall arrange persons on the Site to take turn to lead the HIA meeting. Such person can be either a foreman, ganger, Safety Officer, Safety Supervisor or Safety Representative who has attended, in addition to the SSC course as mentioned in sub-clause 1.1.2 above, the presentation skill course such as the Occupational Safety and Health Trainer Course of OSHC or the Safety Training Techniques of CIC or other relevant courses notified by the *Project Manager*. The *Contractor* shall ensure that sufficient persons on the Site have received the training to lead the HIA meetings as soon as the Contract commences.

1.2.3 The leader of each HIA meeting shall prepare the training materials before conduction, which shall include, but is not limited to, hazards and control measures specific to the works or trades, special safety concerns, assurance of safety requirements and measures, reprimand of repeated irregularities and malpractice etc. Besides, the leaders of the HIA meetings shall also encourage workers to give their views in the HIA meetings. Where necessary, Site Agent, Safety Officer and/or Safety Supervisors who are more experienced in provision of training shall provide guidance and assistance to the leaders of HIA meeting before conducting the meeting. The training materials prepared for and the discussion during the HIA meeting shall be recorded in a HIA table, a sample of which is shown in Annex 1.A. The HIA Table shall be kept in the *Contractor*'s site office for ready inspection by the *Supervisor* or its staff upon request.

1.2.4 Subject to the agreement of the *Supervisor*, the *Contractor* can alternatively

arrange the HIA meetings to be held in small groups according to the trades, work teams or works areas set out by the *Contractor* for the Site. If so, the *Contractor* shall ensure that the assigned persons are competent to lead the HIA meetings, whose names and curriculum vitae shall be submitted to the *Supervisor* for acceptance. The *Supervisor* or its staff shall attend the HIA meetings regularly to ensure their quality for certifying payment. The *Supervisor* shall not certify payment for the number of persons who have attended the HIA meeting in a group if the *Supervisor* does not accepted with the content and/or the arrangement of the HIA meeting for that group.

1.2.5 The *Contractor* can use the register or photo records for the PES meeting for taking attendance of the HIA meeting if the attendees have not split up into small groups. Furthermore, the *Contractor* shall complete one HIA table for each HIA meeting held for individual groups pursuant to sub-clause 1.2.4 above.

1.3 Pre-work Safety Checks

1.3.1 The *Contractor* shall arrange and hold Pre-work Safety Checks for the attendees immediately after the HIA meeting. The Pre-work Safety Checks shall be carried out by foremen, gangers, Safety Supervisors or Safety Representatives of the attendees according to the trades, work teams or works areas set out by the *Contractor* for the Site. The Pre-work Safety Checks shall include the checking of personal protective equipment worn by attendees before they start working on that day such as safety helmet, reflective vest, ear protectors, eye protectors, safety harness, safety footwear etc.. The *Supervisor* or its staff shall attend the Pre-work Safety Checks regularly to ensure the proper checking by the *Contractor* for certifying payment.

1.3.2 The *Contractor* shall assign persons who are competent with the relevant knowledge, experience and training to check and ascertain the safety conditions of facilities, machinery, plant and equipment and materials before commencing work on that day. The *Contractor* shall propose a list of facilities, machinery, plant and equipment to be checked and develop relevant checklists for such checking for the acceptance of the *Supervisor*. The assigned persons shall use the checklists for Pre-work Safety Checks of facilities, machinery, plant and equipment, and the completed checklists shall be kept at the *Contractor*'s site office for ready inspection by the *Supervisor* or its staff upon request.

1.4 Safety Inspection by the Site Agent or his Representative

1.4.1 The *Contractor* shall arrange the Site Agent or his/her representative to carry out safety inspection of the Site daily, particularly for those areas identified for improvements in weekly safety co-ordination meetings, Weekly Safety Walks, SSMC meetings or Site Safety Committee meetings pursuant to sub-clause 2.1, 2.2, 3.1 and 3.2 respectively. The Site Agent or his/her representative shall check and ensure that the safety instructions given in PES meetings or HIA meetings have been observed and carried out.

1.4.2 Any unsafe act or unsafe conditions observed during inspections shall be recorded in a diary maintained by the Site Agent, who shall promptly communicate the irregularity to the respective party concerned for follow-up actions. The Site Agent shall check and ensure that the unsafe acts or unsafe conditions are rectified promptly, and the date is duly recorded in the diary after completion. The safety diary shall be made available for inspection by the *Supervisor* and copying thereof upon request.

1.5 Guidance and Supervision during Work

The *Contractor* shall assign sufficient supervisory staff to be responsible for the safety and health of workers on the Site. The names of the assigned supervisory staff shall be shown in the site safety organization chart posted up in the safety bulletin board pursuant to sub-clause 4.2 below. The assigned supervisory staff shall provide guidance and supervision for the workers under his/her control, and rectify any irregularities, unsafe acts or unsafe conditions for the works on the Site. Guidance and supervision provided shall also include the implementation of safety instructions given in PES or HIA meetings.

1.6 Safety Co-ordination Meeting

The *Contractor* shall arrange and hold safety co-ordination meeting each day to coordinate safety and health work to be carried out on the Site on the following day. The meeting shall be chaired by the Site Agent or a senior staff of site management of the *Contractor*, and attended by assigned supervisory staff pursuant to sub-clause 1.5 above where necessary. The meeting shall be used to discuss the findings in safety inspections and/or the matters to be announced in the next PES or HIA meeting. It can also be used for discussion and co-ordination of site safety matters, such as sequence of works, usage times for shared machinery and equipment and works areas, phasing of works at various interfaces, delivery and storage of materials and equipment to the Site etc.

1.7 Daily Cleaning and Tidying up of the Site

Detailed requirements are specified in PS.G16– Particular Specification for Daily Cleaning and Weekly Tidying.

1.8 Checking of the Site after Each Day's Work

The *Contractor* shall assign designated person to check the safety of the Site after each day's work including, but is not limited to, the following:

i. all flames and heat sources have been extinguished (particularly for welding and hot-work operations);
ii. keys have been removed from construction machinery and plant and kept in a safe place;
iii. all construction plant are parked properly on level and stable ground;
iv. all machinery and power sources have been turned off;
v. all openings are properly covered and all edges are provided with fall protection measures;
vi. all nailed timber, planks and/or sheets are piled and put aside away from main accesses;
vii. excavated surfaces on soil slopes are provided with temporary protection;
viii. all temporary works are properly maintained;
ix. signing, lighting and guarding are provided in accordance with the approved temporary traffic management scheme;
x. hoarding and/or covered walkways along the periphery of the Site are maintained in proper condition; and
xi. the Site has been fenced and guarded against unauthorized entry.

The designated person shall, after completion of checking, notify the Site Agent any unsafe conditions or imminent danger that require immediate follow-up actions. The designated person shall also draw the attention of the Site Agent about the minor irregularities to arrange rectification on the following day.

(2) Weekly Cycle

2.1 Weekly Safety Walk

Detailed requirements are specified in Clause No. 11 of Part 1 of this Particular Specification.

2.2 Weekly Safety Co-ordination Meeting

The *Contractor* shall arrange the Site Agent or a senior staff of the site management of the Contractor together with the Safety Officer, Safety Supervisor and/or supervisory staff of Subcontractors to attend the weekly safety co-ordination meeting chaired by the *Supervisor*. The meeting shall discuss or coordinate safety and health matters including, but is not limited to, safety performance, housekeeping and tidiness of the Site, together with the specific areas of concern, defects and deficiencies observed in Weekly Safety Walks, accidents and near misses occurred on the Site, etc. A brief notes of the meetings shall be prepared by the *Contractor* and endorsed by the *Supervisor* after the Meeting.

2.3 Weekly Overall Cleaning and Tidying up of the Site

Detailed requirements are specified in PS.G16 – Particular Specification for Daily Cleaning and Weekly Tidying.

(3) Monthly Cycle

3.1 Site Safety Management Committee Meetings

Detailed requirements are specified in Clause No. 10 of Part 1 of this Particular Specification.

3.2 Site Safety Committee Meetings

Detailed requirements are specified in Clause No. 9 of Part 1 of this Particular Specification.

(4) Safety Bulletin Board

4.1 The *Contractor* shall provide a safety bulletin board at the location where Pre-work Activities pursuant to sub-clauses 1.1 to 1.3 shall be held. Subject to the acceptance of the *Project Manager*, additional safety bulletin board can be provided where Pre-work Activities have to be held at more than one location of the Site.

4.2 The safety bulletin board shall be made of recycled materials with a size approximately 6m x 1.5m which can be varied to suit the site condition subject to the acceptance by the *Supervisor*. The board shall contain, but is not limited to, the following information:

i. the design by the *Contractor* on promotion of Site Safety Cycle;

ii. a chart with names and contact telephone numbers showing the site safety organizational structure from senior site management down to sub-contractors, gangers, foremen, Safety Officer, Safety Supervisors and Safety Representatives according to works trades, work gangs or works areas, together with the emergency teams, first aid personnel etc.;

iii. accident statistics with breakdown to sub-contractors; and

iv. a figure showing a worker wearing all the personal protective equipment plus a mirror to cover the full view of the person when standing in front.

The safety bulletin board may contain other safety information related to the Site such as Site plan, safety policies, in-house safety rules and regulations, slogans, colour coding systems for lifting gears, important safety and health issues etc..

4.3 The *Contractor* shall propose the location for the erection of the safety bulletin board and the hard-paved area pursuant to sub-clause 5 where Pre-work Activities will be held for the acceptance of the *Supervisor*.

(5) Hard-paved area

5.1 The *Contractor* shall arrange and provide a hard-paved area on the Site for holding Pre-work Activities pursuant to sub-clauses 1.1 to 1.3 above under GS Clause 1.31 "Site accommodation for *Contractor*" in the Particular Specification PS.G01 for General Obligations and Requirements. The hard-paved area shall be sized based on a rate of 1.5 m^2 per person multiplied by the maximum number of persons to be arranged for one session of Pre-work Activities. The hard-paved area shall be designed to be able to sustain the load at that area throughout the contract. Details of construction of the hard-paved area shall be submitted to the *Supervisor* for acceptance.

5.2 Subject to the agreement of the *Supervisor*, the *Contractor* can arrange Pre-work Activities to be held at more than one location, and the hard-paved areas at each venue shall be sized separately based on the specified requirement given in sub-clause 5.1 above. The hard-paved area can be an open area in front of the site office, or an area inside building structure under construction, or at the main *works* areas in case of roadworks or mains laying contracts, or near shaft opening for a tunnelling contract, whichever is appropriate. The *Contractor* shall submit the proposed location and its area for holding Pre-work Activities for the approval of the *Supervisor* within 14 days from *starting date*.

5.3 If the proposed location for holding of Pre-work Activities is outdoors, consideration shall be given to provide a cover for the hard-paved area unless otherwise accepted by the *Supervisor* that the provision is not necessary. Details of construction of the cover shall be submitted to the *Supervisor* for acceptance.

5.4 The *Contractor* shall maintain the hard-paved area and the cover throughout the contract, and shall demolish and reinstate the area to the acceptance of the *Supervisor* prior to completion of the Works unless otherwise agreed by the the *Project Manager*.

17 Welfare Facilities for Workers

Immediately after the award of the contract, the *Contractor* shall arrange to provide welfare facilities specified below for workers employed on the *works*, irrespective of whether they are in the employment of the *Contractor* or its Subcontractors. The *Contractor* shall maintain the welfare facilities provided on the Site throughout the contract, and shall remove the facilities and reinstate the areas after removal of the facility or upon completion of the *works* where necessary. The costs for the provisions shall be priced in the Bill Nr. 1 – Preliminaries under GS Clause 1.31 "Site accommodation for contractor". The sufficiency of provision for the welfare facilities shall be monitored and reviewed in the SSMC meetings. The *Contractor* shall replenish the insufficiency of provision to meet the specified requirements and shall not be entitled to claim the cost of such replenishment after commencement of the *works*.

(1) Storage Compartments

The *Contractor* shall provide storage compartments for use by workers. The storage compartment shall be placed at a location close to the Site entrance to facilitate workers to obtain/place their personal protective equipment such as safety helmet, reflective vest, eye protectors, safety harness etc. when they enter/leave the Site.

The *Contractor* shall ensure adequate provision of storage compartments taking into account the fluctuation in labour workforce. The *Contractor* shall determine the dimensions of the storage compartments. To facilitate monitoring and control, each storage compartment shall be designed for use by not more than five persons unless otherwise accepted by the *Supervisor*. The *Contractor* shall propose the number, location and layout arrangement for the placement of storage compartments on the Site for the acceptance of the *Supervisor* within 14 days from the *starting date*. The *Supervisor* shall review regularly the adequate provision of storage compartments on the Site for use by workers throughout the contract.

(2) Drinking Water Facilities

The *Contractor* shall provide free drinking water facilities for workers working on the Site throughout the contract to minimize waste plastic bottles. The drinking water facility can be in the form of a water pot with a cover at the top for water refilling and a tap at the bottom for drawing water, a distilled water drinking fountain or any other form that the *Contractor* considers appropriate. The drinking water facilities shall be provided indoors and each of which shall have a storage capacity of not less than 20 litres.

The Contractor shall be responsible for maintaining the drinking water facilities in clean and hygienic condition and refilling drinking water to the facilities when empty. The number of drinking water facilities provided on the Site shall be at least 1 water dispensing points for every 20 workers. The *Contractor* shall propose the number, location of placement and the refilling frequency for drinking water facilities provided on the Site for the acceptance of the *Supervisor* within 14 days from *starting date* on the Site. The *Supervisor* shall review regularly the adequacy of drinking water facilities provided by the *Contractor* throughout the contract.

(3) Toilet Facilities

The *Contractor* shall provide toilet facilities for workers working on the Site throughout the contract, unless otherwise approved by the *Project Manager* that the provision is not necessary. The toilet facilities shall be suitable for use bisexually and placed at convenient locations close to workers' workplace. The toilet facilities shall be wet type with flushing water supply and the toilet waste properly collected and discharged into a sewerage system, septic tank, soakaway system, or in-situ sewage treatment facilities proposed by the *Contractor* and accepted by the *Supervisor*. Where wet type toilet provision is not feasible due to site constraints, chemical type toilet facilities complete with containers for regularly cleaning and removal by specialist contractor may be adopted subject to *Supervisor* acceptance.

For connection to a public sewerage system, the *Contractor* shall obtain acceptance from the Drainage Services Department prior to making the connection. If a soakaway system is adopted, the *Contractor* shall carry out in-situ percolation test to prove that the soil shall have sufficient absorption capacity to treat the toilet waste flow. The test results shall be submitted to the *Supervisor* for recording before discharging. If in-situ sewage treatment facility is adopted, the plant shall be equipped with disinfection unit to sterilize the treated effluent before discharging.

The number of toilet facilities provided on Site shall be according to the table below:-

Minimum provision	1 no. of toilet facilities
When workers exceed 30 in number	at a ratio of not less than 1 no. of toilet facilities for every 30 workers
For multi-storey development	not less than 1 no. of toilet facilities additional setup on every third floor

The *Contractor* shall propose the toilet type, number and locations of toilet placement for the acceptance of the *Supervisor* within 14 days from the *starting date* on the Site. The *Contractor* shall maintain the toilet facilities in clean and hygienic condition. The *Supervisor* shall review regularly the adequacy of toilet facilities provided by the *Contractor* on the Site and the cleanliness and hygienic conditions of these toilets throughout the contract.

(4) Hand-wash Facilities

The *Contractor* shall provide hand-wash facilities in the form of water points and sinks for workers working on the Site throughout the Contract, unless otherwise accepted by the *Project Manager* that the provision is not necessary. The number of hand-wash facilities provided on the Site shall be at a ratio of not less than one for every (20) workers. The discharge from hand-wash facilities shall be collected to prevent spillage on the floor, and discharged to a water reception tank or flushing water supply tank for recycling/reusing as appropriate. The *Contractor* shall propose the number of hand-wash facilities, their locations and the system of how to collect the discharge from the wash-water basin for reuse/recycle on the Site for the acceptance of the *Supervisor* within 14 days from the *starting date* on the Site. The *Supervisor* shall review regularly the adequacy of hand-wash facilities provided by the *Contractor* on the Site and the effectiveness of the discharge collection system throughout the contract.

(5) Showering Facilities

The *Contractor* shall, in addition to the provision of hand-wash facilities pursuant to clause (4) above, provide showering facilities on the Site unless otherwise accepted by the *Project Manager* that the provision is not necessary. The showering facilities shall be provided indoors or inside containers with appropriate drainage connections.

The number of showering facilities provided on Site shall be according to the table below:-

	For Male Worker	For Female Worker
Minimum provision	1 no. of showering facilities	1 no. of showering facilities
When respectively male / female workers exceed 50 in number	at a ratio of not less than 1 no. of showering facilities for every 50 male workers	at a ratio of not less than 1 no. of showering facilities for every 50 female workers

The *Contractor* shall provide showering facilities at different locations/rooms for use by male or female workers separately. Each showering point shall be furnished with hot and cold water supply. The *Contractor* shall be responsible for the water and electricity charges for providing the facilities. Details of installation of the facilities shall be submitted for the acceptance of the *Supervisor* within 30 days after the commencement of the *works* on the Site.

(6) Rubbish Bins

The *Contractor* shall provide sufficient rubbish bins with covers at strategic locations on the Site for collection and disposal of general wastes generated by workers throughout the contract. The rubbish bins shall be provided in pairs, one for aluminium cans and plastic bottles and the other for general refuses. The locations for the rubbish bins in pairs shall be placed at convenient locations close to the workers' workplace to facilitate use. The number of paired rubbish bins in pairs provided on the Site shall be at a ratio of not less than one pair for every 20 workers. The size of the rubbish containers shall be of minimum 1 m high and have an opening of at least 0.28 m^2 at the top for collecting wastes.

The *Contractor* shall maintain the cleanliness of rubbish bins, and arrange collection and disposal of general waste inside the rubbish bins regularly, but in any case shall be not less than once in every three days. The *Contractor* shall also make arrangement for collecting papers and packaging on the Site to reduce disposal of wastes to landfills. The *Contractor* shall propose the number and the location of placement of rubbish bins provided on the Site together with the arrangement for on-site sorting of aluminium cans, plastic bottles and papers for the acceptance of the *Supervisor* within 14 days from the *starting date* on the Site. The *Supervisor* shall review regularly the adequacy of rubbish bins provided on the Site by the *Contractor*

and the effectiveness of on-site sorting of general wastes throughout the contract. The *Contractor* shall include this requirement to form part of its waste management plan if appropriate.

(7) Reverse Vending Machine

The *Contractor* shall provide, install and maintain a Reverse Vending Machine at a convenient location within the Site that allows site personnel to deposit used plastic beverage containers for instant rebate via e-payment platform, such as Octopus, to encourage site personnel to return used plastic beverage containers. The machine shall be equipped with scanning function to verify the barcodes on containers to ensure that only designated containers are accepted and with compression function to reduce the volume of beverage containers so as to enhance its handling and storage capacity. Plastic beverage containers collected at the Reverse Vending Machine shall be collected and delivered to suitable local recyclers to ensure proper recycling on a regular basis.

(8) Food Waste Machine

The *Contractor* shall provide, install and maintain a Food Waste Machine at a convenient location within the Site to allow site personnel to deposit food waste for recycling to reduce food waste generated at the Site. The Food Waste Machine shall be able to reduce deposited food waste volume by at least 60% within 24 hours by decomposing and transforming food waste into organic fertilizer in powder or other solid form. The *Contractor* shall arrange suitable agents to collect the organic fertilizer power for reuse on a regular basis.

18 Workplace Sheltered Rest Area

(1) The *Contractor* shall provide workplace sheltered rest areas for use by workers irrespective whether they are employed by the *Contractor* or his Subcontractors. The sheltered rest areas shall be able to provide sun shade and wind screen for the workers.

(2) Workplace sheltered rest areas shall be located at convenient locations close to working places of workers for them to take rest break or meal break. The rest areas should be provided with seats and tables, hand-wash facilities, rubbish bins, drinking facilities and with proper ventilation. The *Contractor* shall be responsible for maintaining cleanliness and hygiene of the rest areas.

(3) The *Contractor* shall provide adequate number of workplace sheltered rest areas taking into account the number of workers and their locations on the Site. The *Contractor* shall submit the proposal for these rest areas including their sizes, locations, layout, facilities to be provided for acceptance of the *Supervisor*. The accepted workplace sheltered rest areas proposal shall be reviewed and updated by the *Contractor* as required by the *Supervisor*.

19 Measures for Working in Hot Weather

(1) The *Contractor* shall set up a hot weather safety and health system for workers in accordance with the latest version of the "Guidelines on Site Safety Measures for Working in Hot Weather" issued by the Construction Industry Council (Version 4 published in April 2022). The hot weather safety and health system shall be included in the Contractor's Safety Plan.

20 (Not used)

21 Safety Measures of Trenches and Excavation

(1) The *Contractor* shall observe and comply with the relevant requirements under the Construction Sites (Safety) Regulations (Cap. 59I) and the Electricity Supply Lines (Protection) Regulation (Cap. 406H) when the works activities are carried out in the vicinity of electricity supply lines. He shall follow the practical guidance detailed in the Code of Practice which has been prepared by the Electrical and Mechanical Services Department (EMSD). Further to the requirements under the Electricity Supply Lines (Protection) Regulation, the *Contractor* shall comply in particular with the following safety measures with regard to trench and other excavation works:

(a) Before the commencement of any excavation work, sufficient information shall be obtained from the utility undertakings and by inspection pits or, if agreed by the *Project Manager*, by other means including referring to the investigation data obtained from the *Project Manager* to verify the locations of underground installations.

(b) A competent person accepted by the Electrical and Mechanical Services Department shall be appointed to locate the alignment and depth profile of all underground cables in the areas irrespective of the excavation depth.

(c) Ensure that any underground cable alignment and depth profile as identified by the competent person in the area are clearly marked on the ground.

(d) Excavation shall be carried out by trained and experienced workers who shall be fully informed of the possible dangers and safety precautions, before work is commenced.

(e) Hand digging method shall always be employed as part of trench / open cut excavation where there are utilities adjacent to or within the trench / open cut excavation works. Portable mechanical tools may be used but shall be restricted to the breaking of the pavement surface. Due care shall be exercised to prevent damage to the underground cables, water pipes, gas pipes or other utility installations. The *Contractor* shall adopt his own working method to overcome the obstruction by utilities is encountered in trench / open cut excavation, including but not limited to the excavation by hand digging. The *Contractor* shall adopt hand digging or other method in trench excavation instead of awaiting diversion of utilities unless the obstruction is substantial which covers more than half width of a trench and extends more than 10 metres. Adequate utility support works shall be carried out so that safety of working underneath utilities can be achieved and the damage or disruption to utilities can be avoided. Safety measures shall be adopted for the hand digging work.

(f) Exposed utility installations shall be adequately supported and protected from accidental damage. The requirement /recommendations by Joint Utilities Policy Group (JUPG) shall be followed. "Detailed Requirements on Support of Utility Services" published by JUPG shall be complied with. The *Contractor* shall be responsible for liaising with and seeking approval from the relevant utility undertakings in relation to the handling or supporting of utilities. The *Contractor* shall liaise and seek approval from relevant utility undertaking if any requirements are proposed to be relaxed or waived for the construction. The *Contractor* shall be entitled to no claim for extension of time or payment in any form for complying with such requirement / recommendation and/or delaying in making liaison or seeking acceptance.

(g) Smoking and use of naked flames shall be prohibited if gas pipes are present.

(h) The side of an excavation shall be properly shored and adequately supported so as to avoid dangers arising from dislodgement of earth or other materials and instability of adjacent buildings/structures/services.

(i) Every excavation shall be examined by a competent person daily who shall submit to the *Supervisor* a report, in the format to be agreed by the *Project Manager*, stating the safety and stability conditions of every excavation and its supporting structures. Work in the excavation shall not be carried out unless the written report of the examination shows that the excavation and its supporting structures are safe and secure.

(j) No materials, plant or other loads shall be placed or stacked close to the edges of an excavation.

(k) Ready means of evacuation shall be provided for the workers to escape from an excavation in the event of emergency.

(l) Suitable barriers shall be provided to the edges of an excavation.

(m) When temporary covers/decking to the trenches and barriers at the edges of excavation are being installed, the *Contractor* shall ensure that they are safely and securely installed at all times, especially during adverse weather conditions, and shall be flush and continuous with the surrounding carriageway and pavement.

(n) The Site with excavated trenches or pits should be securely fenced off with notices posted to warn on danger and against trespassing. Should there be any possibility of ponding of water, life saving rings should be placed at the edge of excavation for emergency use.

22 Site Traffic Safety Management Plan

(1) The *Contractor* shall prepare, update and submit to the *Project Manager* the Site Traffic Safety Management Plan (STSMP) for the *works* under the contract. The STSMP shall be submitted within 42 days after the *starting date*. They shall be updated monthly and whenever there are significant changes to the conditions of the Site. The STSMP shall be discussed in the Pre-work Exercise and Safety meetings, daily/weekly safety coordination meetings, where appropriate. The STSMP shall include the following:

(a) risk assessment associated with the site traffic;

(b) safe working procedures;

(c) safety training for site personnel;

(d) site traffic layout design and safety measures with due consideration to planning of traffic routes such as designing routes of traffic and ingress and egress points for vehicles; minimizing the movements of vehicles and mobile plant, and reversing movements of vehicles; designating loading and unloading areas; providing facilities such as segregation of pedestrian and vehicular traffic and pedestrian crossing points to facilitate safe movement of personnel within the Site; and imposing speed control measures;

(e) site traffic layout plans which provides traffic layouts for the Site and related haul roads;

(f) an assessment on feasibility of installation of reversing video devices or other reversing safety devices, and preparation of implementation plan; and

(g) an inventory of vehicles and mobile plant which lists out the type, model and statutory certificates of the vehicles and plant being used in the contract.

(2) The *Contractor* shall display the site traffic layout and the safety measures on the safety bulletin board at the location where the Pre-work activities pursuant to clauses 16(1.1) to 16(1.3) under the PS Clause of "Site Safety Cycle" shall be held.

(3) The *Contractor* shall take note of the "Publication No. 3 – Guidelines on Safety of Vehicles and Mobile Plant on Construction Site" published by the CIC in preparing the STSMP.

Record of Hazard Identification Activity (HIA) Meeting

Contract No: SS N504 Name of Contractor: *[------ pre-printed --------]*
Contract Title: Activity Centre in Kowloon Park

Team Reference *(if appropriate)*:	
Date:	Time:
Potential Hazards/ Irregularities/ Unsafe Acts or Unsafe Conditions	Safety Precautionary Measures/ Rectification Actions/ Improvement Actions
Name of Leader:	
Signature: Position:	

(Please complete one sheet for one HIA Meeting)

PART 2 - MONTHLY STATEMENT OF TRADE SPECIFIC ADVANCED SAFETY TRAINING FOR SKILLED WORKERS (SILVERCARD)

(for the month of _____)

Department : _____
Contract Number : _____
Contract Title : _____
Contractor : _____

Name of Worker			Silver Card		Remarks
in English	in Chinese	Trade of Worker	Serial No.	Date of Issue	

Prepared by : _____ (Name of Safety Officer)

Signature : _____

Date : _____

Checked by : _____ (Name of Site Agent)

Signature : _____

Date : _____

PART 3 - COLOUR CODING OF LIFTING GEAR

1. General

1.1 This procedure applies to all slings, shackles and such-like equipment that are required by regulation to be certified.

1.2 This procedure will be distributed and shall apply to all *Contractors* who are working on the Site.

1.3 This procedure will be distributed to Suppliers. It shall become a condition of purchase that all Suppliers use only certified lifting equipment on the Site. Such equipment will not feature on the Site Lifting Gear Register (the Register) if it is only present on a temporary basis during loading/unloading of plant, equipment or materials.

2. Arrival on the Site

2.1 Upon arrival on the Site, all *Contractors* shall ensure that their lifting equipment is properly certified and identifiable (i.e. any stamping is legible). If it is not certified or the stamping is not legible then the equipment shall be quarantined and not used until such time as it is tested and certificates can be provided.

2.2 Subcontractors shall report to the *Contractor*'s Safety Officer (SO) who shall ensure that the certification and stamping are acceptance, before entering the equipment in the Register and painting the equipment with the appropriate colour (see para. 3.1 below). The Register shall include the due date for re-examination of the equipment.

3. Routine Monitoring

3.1 A colour coding system will be in use for months as noted below :-

Jan	-	Feb	-	Mar	Blue
Apr	-	May	-	Jun	Yellow
Jul	-	Aug	-	Sept	Green
Oct	-	Nov	-	Dec	Orange

To be removed from the Site Equipment under quarantine in Main *Contractor*'s Central Yard	Red White

3.2 The *Contractor* and Subcontractors' foremen are to familiarise themselves with the colour for that month and ensure that personnel in their charge use only equipment painted in the appropriate colour.

3.3 On the last working day of each month (except as noted in para. 3.5) the Safety Officer of the *Contractor* (SO) will issue copies of the updated register to site foremen. The foreman will then check all equipment on their batch for compatibility with the Register. The foremen shall particularly ensure that stamping is still legible and the colouring is appropriate. Any equipment in doubt shall be removed from the working area and delivered to the *Contractor*'s central yard whereupon sub-contractors will be required to have it quarantined, re-certified or scrapped accordingly. The equipment under quarantine shall be painted white by the SO. The SO or Safety Supervisors will supervise this operation and be responsible for it.

3.4 During day-to-day operations, it is the responsibility of all concerned to ensure that proper lifting equipment is used. Any irregularity shall be immediately reported to the SO who shall take action as necessary.

3.5 On the following days, or as soon thereafter as practical but in any event within 14 days, all lifting equipment shall be inspected by the SO who shall also check the validity of the certificates as stipulated in the FIU (Lifting Appliances & Lifting Gear) Regulations.

The days are	31st	March
	30th	June
	30th	September
	31st	December

Upon satisfactory inspection and certification, SO shall paint the said equipment with the new colour as noted in para. 3.1 and enter in the Register accordingly.

3.6 The *Contractor*'s Safety Officer shall be responsible for ensuring that all equipments are painted with the appropriate colour and an updated register of such equipment kept. If routine monitoring (re. paras. 3.3 & 3.4) reveals faults with colour coding then sub-contractors shall inform the Safety Officer who will take the appropriate action. If equipment is obviously faulty then it shall be painted red and the Subcontractor be advised to remove it from the Site immediately.

3.7 The colour coding does not evade the *Contractor*'s duty under the Factories & Industrial Undertakings (Lifting Appliances and Lifting Gears) Regulations in examining them every six months by Registered Professional.

4. Completion/Removal from the Site

4.1 From time to time, or upon completion of its work, a Subcontractor may require to remove equipment from the Site. Such removal shall be notified to the SO for updating the Register.

4.2 Once removed from the Site, if the equipment is then brought back, then it shall be treated as per para.2 above.

PART 4 – PERMIT TO MOVE AND OPERATE SYSTEM FOR MOBILE CRANES AND PILING RIGS

1 Planning stage

(1) The *Contractor* shall appoint the authorized agent under Clause D1 of the *additional conditions of contract* or a designated person (collectively referred to in this Part as the *Contractor*'s Mobile Crane ("MC") Representative) to establish, implement and exercise overall control of the Permit to Move and Operate System for Mobile Cranes and Piling Rigs (the "Permit System") to ensure the safe use and associated operations of mobile cranes and piling rigs on Site. The designated person shall be of senior site management rank, who shall have at least 5 years of site management working experience and shall have a qualification equivalent to Technical Competent Person of grade T4 or above as defined in the "Technical Memorandum for Supervision Plans 2009" issued by Buildings Department.

(2) The mobile cranes referred to in this Part shall also include all types of piling rigs. All requirements in this Part including the statutory requirements, Codes of Practice, etc. for mobile cranes shall be applicable to piling rigs as appropriate.

(3) Prior to carrying out any site operation using mobile cranes, detailed consideration by the *Contractor*'s MC Representative shall be made and documented in an operation plan. Such operation plan shall include the selection, provision and use of Lifting Appliances and Lifting Gear (LALG) as defined in the Factories and Industrial Undertakings (Lifting Appliances and Lifting Gear) Regulations; method statements and risk assessment; planning of fabrication and dismantling of the mobile cranes; managing maintenance, examination and testing of mobile cranes, emergency preparedness and other safety related issues.

(4) If mobile cranes are used for duties other than lifting, such as piling operations, grabbing, etc., the *Contractor*'s MC Representative shall critically assess the safety impacts, such as dynamic loads on the LALG by referring to the Code of Practice for Safe Use of Mobile Cranes issued by Labour Department and the manufacturer's specifications, instructions and manuals which specify the limitations and conditions of the operation.

(5) In case that lifting operation is to be conducted within the Railway Protection Area, the *Contractor* shall comply with all requirements stipulated in the Development Bureau Technical Circular (Works) No. 1/2019 - Railway Protection and by the MTR Corporation Limited. Special attention shall be given to:

(i) Avoiding slewing the loads over or close to the railway zone with overhead high-tension electricity power lines.

(ii) Consulting MTRCL on the lifting operation plan and seeking consent from MTRCL and the *Supervisor* prior to conducting the lifting operation there.

(iii) Allowing adequate safe working distance between the lifting zone and the overhead power lines of the railway as per the legislative requirements of EMSD. Additional distance shall also be allowed for lateral swinging force caused by wind effect.

(iv) Providing sufficient railway safety briefing to all lifting personnel prior to mobile crane operation or lifting work.

(6) Procedures for the Permit System shall be established and implemented under the overall control of the *Contractor*'s MC Representative. A permit to move certificate or a permit to operate certificate shall be obtained before a mobile crane is allowed to move or operate respectively. Samples of the permit to move and the permit to operate certificates for mobile cranes are attached in Annex 4.A and 4.B of this Part.

(7) Lorry mounted cranes lifting a load not exceeding 2.5 tonnes within a distance of 2.5 metres from the edge of such crane may be exempted from the requirement to obtain the permit to move and the permit to operate certificates as mentioned in sub-clause (6) above. Such exemption shall only be given if the requirements in sub-clauses (1) to (5) above are properly established and followed including:-

(i) the provision of a designated loading and unloading bay and the implementation of safety control measures stipulated in the risk assessment for the use of such cranes; and

(ii) the conducting of risk re-assessment after every occurrence of adverse weather or change of site condition.

2 Operational stage

(1) Before the mobile cranes are delivered to Site for fabrication, the *Contractor* shall appoint a Registered Professional Engineer ("RPE") of Mechanical Engineering or Navel Architecture and Marine Discipline to conduct pre-fabrication examination and certify that the mobile cranes are safe for use in accordance with the manufacturer's specifications.

(2) Each permit to move or permit to operate certificate shall be signed by the crane operator and the appointed site foreman, endorsed by the *Contractor*'s MC Representative and submitted to the *Supervisor* each time before a mobile crane is allowed to move or operate respectively on Site. The *Contractor*'s MC Representative shall check the adequacy of (i) the ground condition for the safe maneuvering and operating the mobile crane and (ii) the safe working loads of the mobile crane to lift the load at front, back and side quadrants, and the Safety Officer and a site foreman shall conduct a last minute risk assessment and review the site situation with a checklist which shall be prepared according to the *Contractor*'s own risk assessment, prior to each certification of the permit. The site foreman shall be a Technically Competent Person of grade T1 or above as defined in the "Technical Memorandum for Supervision Plans 2009" issued by Buildings Department and has completed the Construction Materials Riggers Silver Card training course organized by the Construction Industry Council (CIC). This last minute risk assessment shall include due consideration of aspects including positioning and stability of the mobile crane, safety at the proximity area, maintenance of safe access, weather condition of the operation, etc.

(3) A copy of the permit to move certificate appended with a designated mobile crane routing plan permitted by the *Contractor*'s MC Representatives or a permit to operate certificate shall be displayed prominently on the mobile crane. Such permit certificate shall be valid for a maximum of 3 days (including the date of issuance of the permit) and expire (i) when

the validity period terminates, or (ii) upon occurrence of adverse weather e.g. yellow rainstorm, red rainstorm, typhoon, etc, or (iii) upon change of site conditions, whichever is the earliest. Expired permits shall be kept on Site for at least 3 months. The crane operator shall familiarize himself with the above conditions causing expiration of the permit and avoid moving or operating the mobile crane once any of these conditions arise. Such conditions causing expiration of the permit to move or the permit to operate certificates shall be monitored by the site foreman, the Safety Officer or the lifting supervisor. The lifting supervisor shall have completed the Construction Materials Riggers Silver Card training course organized by the CIC and have at least 5 years relevant working experience of lifting operation.

(4) The lifting supervisor, the site foreman, or the Safety Officer shall be present full time on Site during the carrying out of the lifting work to review the overall site situation with checklist prepared according to the *Contractor*'s own risk assessment.

(5) The *Supervisor* shall be notified to monitor the lifting work. For extra high risk activities, e.g. erection of bridge deck, large steel structure, etc., the *Project Manager* shall also be notified.

(6) Wherever necessary, the *Contractor* shall appoint additional lifting supervisors to work in various work fronts of the Site where mobile cranes are in operation. They shall ensure proper implementation of the Permit System during the carrying out of the lifting works.

(7) The crane operators, slingers and signalers shall have completed the Construction Materials Riggers Silver Card training course organized by CIC before carrying out the lifting work on Site.

(8) Briefing sessions on safe use of mobile cranes and lifting operations shall be arranged and conducted by the Safety Officer with assistance from the site foreman and lifting supervisor(s) at least bi-weekly to crane operators, slingers and signalers to ensure their conversance of all proper procedures, plant efficiency and safety measures in operating the mobile cranes. Risk assessment report and safety rules shall be presented to them.

(9) The safety rules and load chart of the mobile crane (in both Chinese and English) and any other restrictions, such as safe working loads of the mobile crane to lift the load at front, back and side quadrants, after the checking in sub-clause (2) above shall be posted up inside the mobile crane cabinet for easy reference such that they shall be followed strictly by the operators. Operating the mobile crane at specified radii with the load exceeding 90% of the safe working load of the mobile crane as tabulated in the statutory LALG forms certified by the RPE shall be prohibited unless such use is under the direct supervision of the site foreman.

(10) Applying the mobile crane for load dragging purpose shall not be allowed. Applying free fall mode of the mobile crane in all sorts of construction activities shall generally not be allowed. When free fall mode is required for operations such as chiseling in construction of

large diameter bored piles, specific risk assessment shall be conducted and adequate safety precautions and procedures shall be made. The *Contractor* shall in any case implement safety measures to avoid unintentional activation of free fall mode.

(11) All out-riggers of the mobile crane shall be fully extended as far as practicable to ensure sound stability. In exceptional or unexpected situation where the out-riggers are only partially extended due to congested site condition, site risk re-assessment and review shall be made by the site foreman and the Safety Officer to ensure safe operation by taking account of factors such as reduction in lifting capacity of the crane. In such case, the related permit to move and permit to operate certificates shall address the particular site condition.

(12) In case of multiple mobile cranes being employed for lifting operation on Site, the site foreman shall ensure that crane operators, slingers and signalers concerned have established effective communication among themselves at work using radio telecommunication tool to prevent any conflict or incident during lifting.

3 Inspection, examination and maintenance stage

The *Contractor* shall arrange routine maintenance, examination and testing of the mobile cranes by a RPE, including the automatic safe load indicator, all safety devices, mechanical and structural elements to ascertain their compliance with the requirements stated in the ‘Code of Practice for Safe Use of Mobile Cranes’ and ‘Guidance Notes on Inspection, Thorough Examination on Testing of Lifting Appliances and Lifting Gear’ issued by the Labour Department. All valid certificates of testing and examination and maintenance log book with history records of the mobile cranes shall be properly maintained on Site and ready for verification.

ANNEX 4.A

PERMIT TO MOVE FOR LIFTING APPLIANCE (Tick ☑ in the appropriate box)

I. Description — Separate Permit to Operate Certificate is required to operate the Lifting Appliance

Contract No: _____ Date of Movement from: _____ to _____

In force until: (Maximum 3 days validity period including the day of issue) This permit shall be voided upon change of site conditions listed in Section II or occurrence of adverse weather.

Time of Movement from: _____ to _____

Move from: _____ to: _____

Type: ☐ Crawler ☐ Hydraulic ☐ Piling Rig ☐ Other: _____ Serial No.: _____

Name of Operator: _____ License No.: _____ Name of Signaler: _____

II. Hazards identified in the area

☐ Excavations	☐ Public areas	☐ Other cranes
☐ Slopes	☐ Roads	☐ Culverts
☐ Soft areas of ground	☐ Railways	☐ Other work in the vicinity
☐ Uneven ground	☐ Schools	☐ Other: _____
☐ Overhead lines	☐ Public footpaths	☐ Other: _____
☐ Underground services	☐ Buildings	☐ Other: _____

III. Safety precautions to be implemented before the move

☐ Maintain safe distance from the hazards	☐ A designated routing plan permitted by the *Contractor*'s Mobile Crane Representative is displayed on the lifting appliance
☐ Identify, sign or barrier off the hazards	
☐ Lay steel plate over the hazards	☐ The routing of the appliance can avoid the hazards
☐ Erect goal post on each side of the overhead cable	☐ Other: _____

IV. Additional safety precautions to be implemented before the move (This Section is not applicable to piling rigs)

☐ Secure the hook block	☐ Retract and park the telescopic jib in the parking position
☐ Lower the loads as close to the ground as possible	☐ Other: _____
☐ Retract the jib or mast as close as possible to the plant	☐ Other: _____

V. Appointed Foreman

I have assessed the hazards in the area in which the lifting appliance is to be moved and the designated routing plan. I am satisfied that the area is safe for the movement of the lifting appliance.

Appointed Foreman: _____ (Name) _____ (Signature) _____ (Date)

VI. Operator

I am aware that as the operator, I am responsible for the safe movement of the lifting appliance. I am aware of the hazards in the area and the designated routing plan and I am satisfied that the necessary safety precautions have been taken. I am satisfied that the lifting appliance is safe to move.

Operator: _____ (Name) _____ (Signature) _____ (Date)

VII. Permit is given to move the lifting appliance according to the designated routing plan displayed on the appliance

I have checked and confirmed that the ground condition is suitable for the safe moving and operating the lifting appliance according to the designated routing plan. I have also communicated with the appointed foreman to display this designated routing plan on the lifting appliance.

Contractor's Mobile Crane Representative _____ (Name) _____ (Signature) _____ (Date)

ANNEX 4.A

起重機械移動許可證 (在適當空格內填上剔號)

I. 基本資料　　操作起重機械須另持有操作許可證

合約編號：＿＿＿＿＿＿＿＿　起重機移動日期：由 ＿＿＿＿＿＿ 到 ＿＿＿＿＿＿

有效期至：有效期最長三天(包括簽發日), 在此期間如第二部份所載潛在危險的地方有所變化或遇惡劣天氣則此許可證即告無效　起重機移動時間：由 ＿＿＿＿＿＿ 到 ＿＿＿＿＿＿

由：＿＿＿＿＿＿＿＿＿＿＿＿＿＿　移動至：＿＿＿＿＿＿＿＿＿＿＿＿＿＿

種類：☐ 履帶式 ☐ 液壓式 ☐ 打樁式 ☐ 其它：＿＿＿＿＿＿　編號：＿＿＿＿＿＿

操作員姓名：＿＿＿＿＿＿　執照編號：＿＿＿＿＿＿＿＿　訊號員姓名：＿＿＿＿＿＿

II. 潛在危險的地方

☐ 挖掘工程	☐ 公眾地方	☐ 其它起重機
☐ 斜坡	☐ 道路	☐ 暗渠
☐ 地面軟土	☐ 鐵路	☐ 鄰近的其他工程
☐ 凹凸不平的地面	☐ 學校	☐ 其它: ＿＿＿＿＿＿
☐ 架空電纜	☐ 公眾行人徑	☐ 其它: ＿＿＿＿＿＿
☐ 地底設施	☐ 樓宇	☐ 其它: ＿＿＿＿＿＿

III. 移動起重機械前須實施的安全預防措施

☐ 與有潛在危險的地方，保持安全距離	☐ 在該起重機械上張貼經承建商的流動式起重機代表審批的指定路徑圖
☐ 辨識、標示或圍封有潛在危險的地方	
☐ 在有潛在危險的地方鋪蓋鋼板	☐ 機械的移動路線可以避開有潛在危險的方
☐ 在架空電纜兩邊豎立龍門架	☐ 其它: ＿＿＿＿＿＿

IV. 其它移動起重機械前須實施的安全預防措施 (此部不適用於打樁式機械)

☐ 穩固吊鈎	☐ 把可伸縮的吊臂收起，放置在停泊的位置
☐ 盡量把負載物的高度調低至最接近地面	☐ 其它: ＿＿＿＿＿＿
☐ 把吊臂或桅桿收起使其最接近機身	☐ 其它: ＿＿＿＿＿＿

V. 委任管工

經評估起重機械移動範圍內的潛在危險及指定路徑圖，本人認爲該範圍內安全，適宜移動起重機械。

委任管工：

姓名	簽署	日期
＿＿＿＿＿＿	＿＿＿＿＿＿	＿＿＿＿＿＿

VI. 操作員

本人明悉，作為操作員，本人必須對起重機械移動時的安全負責，同時亦明悉移動範圍內的潛在危險及指定路徑圖。本人滿意已採取所需的安全預防措施，並認為起重機械能安全地移動。

操作員：

姓名	簽署	日期
＿＿＿＿＿＿	＿＿＿＿＿＿	＿＿＿＿＿＿

VII. 准予根據起重機械的指定路徑圖移動有關機械

本人已檢查及確認地面狀況適合該起重機械按指定路徑圖移動和運作, 並已通知委任管工在該起重機械上張貼此指定路徑圖。

承建商流動式起重機代表：

姓名	簽署	日期
＿＿＿＿＿＿	＿＿＿＿＿＿	＿＿＿＿＿＿

ANNEX 4.B

PERMIT TO OPERATE FOR LIFTING APPLIANCE (Tick ☑ in the appropriate box)

I. Description — Separate Permit to Move Certificate is required to move the Lifting Appliance

Contract No: _____ Date of Operation from: _____ to _____

In force until: (Maximum 3 days validity period including the day of issue) This permit shall be voided upon change of site conditions listed in Section II or occurrence of adverse weather.

Time of Operation from: _____ to _____

Location: _____ Description of works : _____

Type: ☐ Crawler ☐ Hydraulic ☐ Piling Rig ☐ Other: _____ Serial No.: _____

II. Hazards in the area to be taken into account

☐ Excavations	☐ Public areas	☐ Other cranes
☐ Slopes	☐ Roads	☐ Culverts
☐ Soft areas of ground	☐ Railways	☐ Other work in the vicinity
☐ Uneven ground	☐ Schools	☐ Other: _____
☐ Overhead lines	☐ Public footpaths	☐ Other: _____
☐ Underground services	☐ Buildings	☐ Other: _____

III. Load to be lifted (This Section is not applicable to piling rigs)

-	Is the lifting appliance capable of lifting the load	☐ Yes	☐ No	

IV. Checklist

-	Check the statutory certificates of the lifting appliance (form 1 and 5)	☐ Yes	☐ No	
-	Check the setting up of the lifting appliance including ground conditions	☐ Yes	☐ No	
-	Check that the outriggers are fully extended	☐ Yes	☐ No	
-	Check that the free fall mode of the lifting appliance is off and measures are in place to avoid unintentional activation of free fall mode	☐ Yes	☐ No	
-	Check that measures are in place (e.g. barriers and warning signs) to prevent workers from entering into the manoeuvring area of the lifting appliance	☐ Yes	☐ No	
-	Other _____	☐ Yes	☐ No	

V. Additional Checklist (This Section not applicable to piling rigs)

-	Check the statutory certificate of the lifting appliance (form 3)	☐ Yes	☐ No	
-	Check the license of the operator	☐ Yes	☐ No	
-	Check the colour coding and capability of the lifting gear	☐ Yes	☐ No	
-	Other _____	☐ Yes	☐ No	

VI. Appointed Foreman

I have assessed the hazards in the area of the operation. I am satisfied that the safe working loads of the lifting appliance are sufficient for lifting the load at the * *front / back / side / all* quadrant(s) and addressing the needs of the operation. I am satisfied that the lifting appliance can complete the operation safely.

Appointed Foreman: _____ _____ _____

Name Signature Date

VII. Operator

I am aware that as the operator, I am responsible for the operation of the lifting appliance and I am aware of the hazards in the area of the operation and that the safe working loads of the lifting appliance are sufficient to lift the load at the * *front / back / side / all* quadrant(s) and that all safety measures have been implemented. I am satisfied that the lifting appliance can complete the operation safely.

Operator: _____ _____ _____

Name Signature Date

VIII. Permit is given to operate the lifting appliance

I have checked and confirmed that the safe working loads of the lifting appliance are sufficient for lifting the load at the * *front / back / side / all* quadrant(s). I have also communicated with the appointed foreman the permitted lifting quadrants.

Contractor's Mobile Crane Representative _____ _____ _____

Name Signature Date

ANNEX 4.B

起重機械操作許可證 (在適當空格內填上剔號)

I. 基本資料 移動起重機械須另持有移動許可證

合約編號：_____ 起重機操作日期：由 _____ 到 _____

有效期至： 有效期最長三天(包括簽發日), 在此期間如第二部份所載潛在危險的地方有所變化或遇惡劣天氣則此許可證即告無效 起重機操作時間：由 _____ 到 _____

位置：_____ 有關工程的說明：_____

種類： ☐ 履帶式 ☐ 液壓式 ☐ 打樁式 ☐ 其它：_____ 編號：_____

II. 須顧及的潛在危險的地方

☐ 挖掘工程	☐ 公眾地方	☐ 其它起重機
☐ 斜坡	☐ 道路	☐ 暗渠
☐ 地面軟土	☐ 鐵路	☐ 鄰近的其他工程
☐ 凹凸不平的地面	☐ 學校	☐ 其它: _____
☐ 架空電纜	☐ 公眾行人徑	☐ 其它: _____
☐ 地底設施	☐ 樓宇	☐ 其它: _____

III. 負載物 (此部不適用於打樁式機械)

-	起重機械能否起吊負載物	☐	能	☐ 否

IV. 檢查項目

-	檢查起重機械的法定合格證書 (表格 1 和 5)	☐	妥當	☐	不妥當
-	檢查起重機械是否架設妥當 (包括檢查地面情況)	☐	妥當	☐	不妥當
-	檢查支撐腳撐是否完全撐開	☐	妥當	☐	不妥當
-	檢查是否已關閉起重機械的自由落鉤模式及已設立措施防止該模式在不經意間被啟動	☐	妥當	☐	不妥當
-	檢查是否已設立措施(例如圍欄和警告標誌)防止工人進入起重機械運作範圍	☐	妥當	☐	不妥當
-	其它 _____	☐	妥當	☐	不妥當

V. 其它檢查項目 (此部不適用於打樁式機械)

-	檢查起重機械的法定合格證書 (表格 3)	☐	妥當	☐	不妥當
-	檢查操作員的執照	☐	妥當	☐	不妥當
-	檢查起重設備的顏色識標誌及負載量	☐	妥當	☐	不妥當
-	其它 _____	☐	妥當	☐	不妥當

VI. 委任管工

本人已評估作業範圍內的潛在危險，認為這起重機械的安全操作負荷足以應付在**前面／後面／側面／所有方位*的吊運工作和作業需要。本人認為這起重機械能夠安全地完成有關作業。

委任管工：

姓名	簽署	日期
_____	_____	_____

VII. 操作員

本人明白，本人作為操作員，須對這起重機械的操作事宜負責。本人知悉作業範圍內的潛在危險；這起重機械的安全操作負荷足以應付在*前面/後面/側面/所有方位的吊運工作；以及所有安全措施均已落實。本人認為這起重機械能夠安全地完成有關作業。

操作員：

姓名	簽署	日期
_____	_____	_____

VIII. 准予操作

本人已檢查並確認這起重機械的安全操作負荷足以應付在**前面／後面／側面／所有方位*的吊運工作，並已通知委任管工已獲批准的吊運方位。

承建商流動式起重機代表：

姓名	簽署	日期
_____	_____	_____

PART 5 – PERMIT-TO-WORK SYSTEM AFTER ENERGISATION OF PERMANENT POWER SUPPLY

1. Planning stage

(1) Upon the energisation of the permanent electricity supply in full or partially, all electrical and other works with potential electrical hazards or chances of coming into contact with live electrical parts ("Electrical and Other Works") shall be subject to a permit-to-work system as described in this Part.

(2) The *Contractor* shall establish a permit-to-work system for Electrical and Other Works and obtain the approval of the *Supervisor* before implementation. The permit-to-work system shall include the permit application procedures, submission checklist and issue of permit-to-work certificate for each type of Electrical and Other Works to be carried out. The *Contractor* shall be responsible for the overall control of the permit-to-work system. The *Contractor* shall employ Registered Electrical Worker(s) (REW) of the appropriate grade under the Electricity Ordinance for the implementation of this permit-to-work system. The *Contractor* shall inform and update the *Supervisor* of the names of his appointed REW.

(3) Prior to energisation of permanent electricity supply in full or partially, the *Contractor* shall conduct a comprehensive risk assessment for identification of the types of Electrical and Other Works to be carried out in the Contract and evaluation of the risks associated with each type of Electrical and Other Works identified, and recommendation of necessary safety precautionary measures. The types of Electrical and Other Works shall include, but not limited to the following:

(a) Works inside ceiling void with energised installations/ equipment;
(b) Wet trade works near energised installations/ equipment;
(c) Electrical works in wet environment;
(d) Works in area where it is uncertain that there is no live conductor / electrical installation/ equipment nearby.

(3a) For works inside ceiling void of existing buildings or premises with energized installations / equipment, prior to the commencement of the *works*, the Supervising Person of the work shall arrange the appointed REW, with appropriate personal protective equipment including electrician's gloves being worn, to conduct a survey on the existing electrical installations and equipment inside ceiling void or fixed under ceiling within the works area, and provide a report on the survey findings, with layout and schematic diagram, as appropriate, for the conduction of risk assessment and recommendation of necessary safety precautionary measures for any electrical hazards. Electrical hazards due to failure to isolate the power supply source as planned such as turning off the wrong switch or working on the wrong circuit, unaware of any electrical energy storage device in an electric circuit etc. should be avoided. Where necessary, the *Contractor* should liaise with the maintenance agent / building owner to obtain relevant information, e.g. as-fitted drawing, operation and maintenance manual, etc., for the existing electrical

installations and equipment as reference for conducting the survey. The report on the survey findings shall be copied to the *Supervisor* for record before commencing the *works*, when required. The Supervising Person of the work concerned shall communicate the survey findings and the recommended safety precautionary measures to the workers concerned.

(4) The findings and recommendations of the risk assessment shall be included as appropriate in the permit-to-work certificate. A sample permit-to-work certificate for works inside ceiling void after energisation of the permanent electricity supply is attached in Annex 5.A of this Part for the *Contractor*'s reference only. The *Contractor* shall prepare their form of permit–to-work certificate, which forms part of their permit-to-work system

(5) The Supervising Person of the work concerned shall obtain the permit-to-work certificate accepted by the REW and the Safety Officer before commencing the Electrical and Other Works. No Electrical and Other Works shall be commenced without a properly signed and issued permit-to-work certificate. The Supervising Person of the work shall have minimum 5 years relevant working experience and shall be either the Site Agent under the contract or the engineer involved or equivalent, and shall be accepeted by the *Supervisor*.

(6) The REW and the Safety Officer shall check that the required safety precautionary measures are in place and satisfy themselves of the safety of the Electrical and Other Works to be carried out before approving any permit-to-work.

(7) If live work is unavoidable as assessed by the REW and the Safety Officer, the conditions and safety precautions for live work and the issue of permit-to-work in accordance with Clause 4G(1)(d) & (e) of the Code of Practice for the Electricity (Wiring) Regulations shall be followed.

2. Operation Stage

(1) Each permit-to-work certificate shall be completed by the Supervising Person of the work concerned and approved by the REW and the Safety Officer.

(2) Such permit-to-work certificate shall be copied to the *Supervisor* for record before commencing the related Electrical and Other Works.

ANNEX 5.A
PERMIT-TO-WORK CERTIFICATE
FOR WORKS INSIDE CEILING VOID WITH ENERGISED INSTALLATIONS (see Note 1)
工作許可証 (在裝有帶電設備的假天花內工作) (請參閱註 1)

PART 1: WORK DETAILS (To be completed by Supervising Person of the work approved by the Maintenance Surveyor's/ Supervising Officer's Representative (see Note 2))
第一部份: 工作細節 (由獲監督人員批准的工程主管(請參閱註 2)填寫)

Contract No. /W.O. No. 合約編號/工作通知單編號		Subcontractor 分判商	
Location of Work 工作位置		Description of Work 工作內容	
Date & Time of Work 工作日期及時間		Duration of Work 工作持續時間	

Workers Assigned (Input trade of work. For REW, input registration no. & grade)
工人姓名 (須填寫工種。如是註冊電工，須填寫註冊號碼及級別)

1.		3.	
2.		4.	

Name of Supervising Person of the work (Post) (see Note 2) 工程主管姓名(職位) (請參閱註 2) _____ ( )	Signature 簽署 _____	Date & Time 日期和時間 _____

PART 2: ASSESSMENT (To be completed by Registered Electrical Worker and Safety Officer)
第二部份: 評估 (由安全主任及註冊電工填寫)

1.	The work is necessary and at the right place 已確定該位置正確及需要進行工作	☐ Yes 是 ☐ No 否
2.	Safety Officer has checked that the facilities for working-at-height is appropriate 安全主任已檢查高處工作的設備為合適	☐ Yes 是 ☐ No 否
3.	Safety Officer has checked that the personal protective equipment is appropriate 安全主任已檢查個人防護裝備為合適	☐ Yes 是 ☐ No 否
4.	Safety Officer has checked that the working place and ceiling void have adequate lights and temporary lighting/ electric tool is operated at 110V (centre-tapped to earth) or below (see Note 3) 安全主任已檢查工作地點與假天花內有充足的光線, 及臨時照明/電動工具操作電壓不超逾 110V (中心抽頭接地) (請參閱註 3)	☐ Yes 是 ☐ No 否
5.	REW has checked that the testing instrument is working in order 註冊電工已查證測試儀器正常運作	☐ Yes 是 ☐ No 否
6.	REW has checked that the risk of worker inadvertent contacting with live conductor/ live part of energized installation in the vicinity of work (say 1.5m) has been eliminated and confirm that there is no electrical hazard 註冊電工已查證工人在有關工作範圍附近(如 1.5 米)意外接觸到帶電導體/帶電設備的帶電部份的風險已被消除，並確定沒有電力危害	☐ Yes 是 ☐ No 否
7.	For works inside ceiling void of existing buildings or premises, REW has conducted a survey of the existing electrical installations and equipment, and the recommended safety precautionary measures have been implemented and informed the workers concerned (see Note 5) 在現有建築物或處所假天花內進行的工程，註冊電工已勘察假天花內的電力裝置及器具，並已採取相應安全預防措施及通知有關工人(請參閱註 5)	☐ Yes 是 ☐ No 否 ☐ NA 不適用
8.	The following safety measures have been implemented if there is any live conductor/energized installation at the working area:- 如工作範圍有任何帶電導體/帶電設備，已採取以下安全措施: ☐ The concerned power supply has been switched off & locked up and warning sign displayed; or 已關掉有關電源、把電掣上鎖及展示警告牌; 或 ☐ The safety requirements in Clause 4G(1)(d) & (e) of the Code of Practice for the Electricity (Wiring) Regulations have been complied with (see Note 4) 已符合《電力(線路)規例工作守則》內條款 4G(1)(d)及(e) 的安全要求(請參閱註 4)	☐ Yes 是 ☐ No 否

Based on the assessment above, permit-to-work application is: ☐ Approved 獲批准 ☐ Not approved 不獲批准
根據上述評估，工作許可証申請

Name of Safety Officer (Registration no.) 安全主任姓名 (註冊號碼) _____ ( )	Signature 簽署 _____	Date & Time 日期和時間 _____
Name of Registered Electrical Worker (Registration no. & Grade) 註冊電工姓名 (註冊號碼及級別) _____	Signature 簽署 _____	Date & Time 日期和時間 _____

( )		

PART 3: UNDERTAKING (To be completed by Supervising Person of the work approved by the Maintenance Surveyor's/ Supervising Officer's Representative(see Note 2)) **第三部份: 承擔** (由獲監督人員批准的工程主管填寫(請參閱註 2))		
I acknowledge receipt of this permit-to-work certificate. I certify that the requirements in Part 2 have been followed and adequate safety preventative measures have been implemented for the work. 本人確認收到此工作許可証，並證實是項工作已符合上述第二部份的要求，及已採取足夠的安全措施。		
Name of Supervising Person of the work (Post) (see Note 2) 工程主管姓名(職位) (請參閱註 2) _____ ( )	Signature 簽署 _____	Date & Time 日期和時間 _____

☐ *Please tick(✓) the appropriate box(es)請於合適選項格內加上(✓)*

Note 1: The permit-to-work shall be displayed on spot for checking, and copied to the *Supervisor* for record before commencing the work.
註 1: 許可証須展示於工作地方以供查閱，並在施工前向監督人員提交許可証副本作記錄用途。

Note 2: Supervising Person of the work shall have minimum 5 years relevant working experience and shall be:-
either the Site Agent under the contract or the engineer for the work involved or equivalent,
and shall be accepted by the *Supervisor*.
註 2: 工程主管須具有至少 5 年有關工作經驗及必須為:-
本合約的工地代表或本工程項目的工程師或同等人士
並且得到監督人員的批准。

Note 3: If temporary lighting is to be used, it should be operated at 110V or below. Lighting fittings using 220V electricity supply shall not be deployed unless adequate safety arrangement has been made and prior approval of the Supervising Officer has been obtained.
註 3: 如使用臨時照明，操作電壓不得超逾 110V。除非已得到監管人員准許及已採取適當的安全措施，不可使用 220V 的照明工具。

Note 4: If live work is unavoidable as assessed by the REW and the Safety Officer, the conditions and safety precautions for live work and the issue of permit-to-work in accordance with Clause 4G(1)(d) & (e) of the Code of Practice for the Electricity (Wiring) Regulations shall be followed.

The safety requirements in Clause 4G(1)(d) & (e) of the Code of Practice for the Electricity (Wiring) Regulations include but not limited to:-

1. Live work should not be performed unless:
   (i) it is necessary in the interests of safety, whether or not electrical safety, for the work to be performed while the electrical equipment is energized (e.g. work on hospital equipment); or
   (ii) a supply of electricity is essential for the proper performance of the electrical measurement (e.g. testing and fault finding); or
   (iii) there is no reasonable alternative to perform the electrical work by live work (e.g. widespread outages of a building would occur if live work is not allowed); or
   (iv) it is justified and approved by the registered electrical worker, registered electrical contractor and owner of the installation (e.g. serious public inconvenience would arise from isolating the circuits).
2. Where live work is unavoidable, adequate precautions should be taken to avoid danger for work involving the handling of energized parts of or working within touchable distance, direct or indirect, of energized parts at low voltage. The following precautions are to be taken:
   (i) work on energized low voltage electrical equipment should be done only by registered electrical workers who are by virtue of knowledge and training competent to be allowed to carry out live work;
   (ii) electrical safety assessment should be carried out by responsible assessor on the performance of the live work;
   (iii) personal protective equipment (including insulating gloves, safety shoes and insulating mat) and testing equipment appropriate to the performance of the live work should be properly used by the person performing the electrical work;
   (iv) screen or other means to avoid danger from inadvertent contact with energized conductor should be provided;
   (v) fixing of warning notices for repair, barriers and screens;
   (vi) the duration and the extent of the live work should be minimized as far as practicable; and
   (vii) the isolation point of the electricity supply for the subject electrical equipment has been clearly identified.
3. Where danger cannot be avoided for work on energized equipment, the electrical equipment should be isolated and verified dead with a voltage indicator; a permit-to-work should be issued.

註 4: 如果經註冊電業工程人員及安全主任的評估不能避免"帶電工作"，則須根據《工作守則》內條款 4G(1)(d)及(e) 實施有關帶電工作的條件、安全預防措施及簽發工程許可證。

《電力(線路)規例工作守則》內條款 4G(1)(d)及(e) 的安全要求包括但不限於:-

1. 不應進行帶電工作，除非:
   (i) 從安全的角度(不論是否從電力安全的角度)來看，有需要在電力器具帶電時進行工作(例如就醫院設備進行電力工作);或
   (ii) 有必要提供電力，以便適當地進行電力量度(例如進行測試及故障探測);或
   (iii) 除了在器具帶電的情況下進行電力工作外，沒有其他切實可行的選擇(例如不獲准進行帶電工作，樓宇會出現廣泛停電);或
   (iv) 註冊電業工程人員、註冊電業承辦商及電力裝置擁有人均認為進行這類工作理由充份(例如隔離電路會為公眾帶來嚴重不便)，並批准進行這類工作。
2. 若帶電工作不可避免，則在帶電部分工作或在可直接或間接觸及低壓帶電部分的範圍工作時，應採取足夠的預防措施以免生危險。預防措施如下:
   (i) 對帶電低壓器具進行的工作，應由具備知識及訓練的註冊電業工程人員進行;
   (ii) 應由負責評估員就進行帶電工作一事預先進行電力安全評估;
   (iii) 適合進行帶電工作的個人防護裝備(包括絕緣手套、安全鞋及絕緣蓆) 及測試設備由進行電力工作的人妥為使用;

(iv) 必須設置屏障或其他設備，以防任何人無意觸及帶電導體而引起危險;
(v) 豎立修理警告告示、障礙物及屏障;
(vi) 應盡量減少帶電工作的時間及範圍;及
(vii) 有關電力器具的供電隔離點已清楚識別。

3. 如在帶電部份進行工作難以避免產生危險，便須隔離電力器具，並使用認可電壓顯示器確定器具已不帶電，以及發出工程許可證。

Note 5: For works inside ceiling void of existing buildings or premises with energized installations / equipment, prior to the commencement of the works, the Supervising Person shall arrange the appointed REW to conduct a survey of the existing electrical installations and equipment inside ceiling void or fixed under ceiling within the works area, and provide a report on the survey findings, with layout and schematic diagram, as appropriate, for the conduction of risk assessment and recommendation of necessary safety precautionary measures for any electrical hazard. The Supervising Person of the work concerned shall communicate the survey findings and the recommended safety precautionary measures to the workers concerned.

註 5: 在裝有帶電設備/器具的現有建築物或處所假天花內進行工程，工程主管須於工程進行前安排註冊電業工程人員勘察工地中安裝在假天花內或天花底的電力裝置及器具，並呈交勘察報告及附上所需的佈局和電路圖，以進行風險評估及擬訂預防電力危害的安全措施。工程主管須通知有關工人勘察結果及相應的安全預防措施。

PART 6 - AUTOMATED EXTERNAL DEFIBRILLATORTECHNICAL REQUIREMENTS

1. Functional Set of Automated External Defibrillator (AED)

(1) General

(a) The AED shall be:-

- accepted by the Food and Drug Administration of the United States or European Resuscitation Council;
- CE marked;
- in compliance with electrical safety requirement of IEC 60601-1 and IEC 60601-2-4;
- registered under the Medical Device Administrative Control System (MDACS);
- configured in compliance with the latest guidelines for resuscitation of the American Heart Association or European Resuscitation Council;
- accurate, fully automatic and ease to use by layperson;
- portable and lightweight with weight no more than 5kg (battery and pads included);
- suitable for use on patient of any age, including children;
- isolated electrically for all patient connections;
- battery operated with battery level indicator and automated self-tests to ensure readiness;
- able to deliver a variable energy levels for a broad range of patient impedances (between 150 – 350 joules);
- able to detect a pacemaker and remove the pacemaker signal for rhythm analysis; and
- able to automatically analyze the patient's heart rhythm and recognize a rhythm that requires a shock and advise rescuer if and when shock is required.

(b) The AED shall permit minimum 20 minutes of electrocardiography (ECG) storage time for the current patient.

(2) Operation

The operation of the AED shall provide the following functions:-

(a) Voice prompt in Cantonese is available to guide the rescuer step by step throughout the resuscitation procedure. The voice prompt should be in compliance with the latest guidelines for resuscitation of the American Heart Association or European Resuscitation Council.

(b) The AED can automatically analyze patient ECG and signal quality to determine if a shock is appropriate and alert the rescuer of the condition accordingly.

(c) The defibrillator shall deliver therapy using a Truncated Exponential

Biphasic waveform and the waveform parameters will be automatically adjusted as a function of the patient impedance during delivery of each waveform.

(3) Self Tests

(a) The AED shall perform daily automatic self-tests including circuitry tests, waveform delivery system self-test, checking of battery capacity and confirming the connection and functionality of electrode pads.

(b) The AED shall warn user with audible alert and visual signal if the system fails any of the automated self-tests and is not ready for use.

(4) Electrodes Pad

(a) Electrodes shall be supplied in a sealed package that contains one pair of self-adhesive electrodes with attached cables and a connector.

(b) Electrode placement is not restricted to any specific side of the body, as specified on the package and the electrode.

(c) Electrode pad shall be disposable.

2. Accessories

The following accessories shall be provided with the functional set of AED:-

(1) Two spare adult electrode pads.
(2) One pediatric electrode pad.
(3) One carrying case.
(4) One ready kit includes nitrile gloves, razor, scissors, 4” gauze, antiseptic wipes, one-way filter mask.
(5) One resuscitator.

PART 7 - SAFETY PRECAUTIONARY MEASURES FOR FLOOR OPENINGS AND FREE EDGES AT BUILDINGS AND STRUCTURES AND CONTROL ON CONVEYING DEBRIS THROUGH FLOOR OPENINGS

(1) Safety Precautionary Measures for Floor Openings and Free Edges at Buildings and Structures

(a) The *Contractor* shall fully cover all floor openings or erect railings around them. The *Contractor* shall post warning notices at the floor openings to alert site personnel of the floor openings.

(b) Covers to all floor openings shall be constructed with solid material of sufficient strength and securely fixed in position to prevent fall of persons, materials and article. All covers to all floor openings shall be clearly and boldly marked to show their purpose.

(c) The *Contractor* shall erect rigid and secure railings around the floor openings and at the free edges of a building or structure. They shall include but not be limited to the following –

(i) top railing at a height of 900 mm to 1150 mm;
(ii) intermediate railing at a height of 450 mm to 600 mm;
(iii) toe board of 200 mm high above the floor surface where no permanent upstand exists; and
(iv) brightly coloured safety meshes mounted on the top railings and down to the toe boards.

(d) On top of the provisions in sub-clause (c) of this Clause, for floor openings with considerable risks or safety concerns of falling persons or objects, the *Contractor* shall provide safety nets of suitable size and sufficient strength covering the floor openings. The safety nets shall be clear of any debris.

(e) Where the erection of railings or provision of covers to prevent fall from a floor opening or a free edge is considered impracticable, the *Contractor* shall provide suitable fall arrest system to workers with reference to the Guidance Notes on Classification and Use of Safety Belts and their Anchorage Systems published by the Labour Department.

(f) The *Contractor* shall develop and implement an effective and safe system of work to ensure that the above safety measures are properly implemented and maintained.

(g) For the avoidance of doubt, this Clause is applied to all buildings or structures, irrespective of whether they are permanent or temporary in nature.

(2) Control on Conveying Debris through Floor Openings

(a) Debris generated in the works shall be regularly removed to prevent excessive stockpiling that could –

(i) affect the integrity of the building or structure;
(ii) affect the access to and egress from the workplaces;
(iii) result in a risk of fire;
(iv) cause health and safety hazards.

(b) The *Contractor* shall only convey debris through floor openings with suitable chutes, full enclosures or shafts.

(c) The *Contractor* shall define designated areas for conveying debris through floor openings with chute, full enclosure or shaft for acceptance by the *Project Manager*. The designated areas shall have an enclosed structure to contain the falling debris where the hazard of workers or the public being struck by falling objects/rebounding debris is eliminated. The designated areas shall be clearly identified, and fenced off or barricaded to prevent unauthorized entry. Overhead conveyance of debris through designated areas shall be suspended during removal of debris therein. All site personnel involved shall be unequivocally informed of the suspension of overhead conveyance of debris through the designated areas. Warning notice shall be posted at all entry points of the designated areas to warn site personnel of the potential hazards.

(d) The *Contractor* shall ensure that all chutes, full enclosures or shafts installed at the floor openings –

(i) shall be of adequate strength and securely fixed and supported to allow safe and free falling of debris therein;
(ii) shall be fully enclosed at every entry point to prevent a person from falling therein;
(iii) shall be adequately secured having regard to the weight of the chute, full enclosure or shaft and the weight of possible accumulated load therein;
(iv) shall prevent escape of materials and dust; and
(v) shall be able to minimise the noise while debris is passing through.

(e) The *Contractor* shall ensure that every entry point for the designated area mentioned in sub-clause (c) of this Clause, and all chutes, full enclosures or shafts mentioned in sub-clause (d) of this Clause shall be adequately protected by barriers during the removal of debris by mobile plant, and suitably guarded by barriers with adequate strength at all times. Barriers shall be high enough to prevent mobile plant from riding over them, and strong enough to halt a fully loaded mobile plant.

(f) Where the compliance of any provision in sub-clauses (b), (c), (d) and (e) of this Clause by the *Contractor* is considered impracticable, the Contractor shall submit an alternative proposal for conveying debris through floor openings, with due consideration and mitigation of hazards including, but not limited to falling from height and struck by falling objects, for acceptance by the *Project Manager* before the commencement of conveying debris through floor openings.

(g) For the avoidance of doubt, this Clause is applied to all buildings or structures, irrespective of whether they are permanent or temporary in nature.