| MS Reference Number: | CSHK | CET | MS | C | 2024 | 000037 |
|---|---|---|---|---|---|---|
| ACC Reference Number: | 1701 | W | 000 | CSC | 760 | 000186 |

| METHOD STATEMENT TITLE | Rev. - |
|---|---|
| Condition Survey of Existing Building Structures (EBS) | |

| | Prepared by: | Checked by: | Reviewed by: | | | Approved by: |
|---|---|---|---|---|---|---|
| Signature: | | | | | | |
| Name: | Jack Wong | Ted Leung | Leung Kowk Fung / Hui Wai Kwan | MH Isa / ~~WH Lam~~ | ~~MH~~ Isa / Iris Ho | Eric Fong |
| Position: | Engineer | Construction Manager | SM/~~SO~~ | QM/QE | ~~EM~~/EO | Project Director |
| Date: | 07/03/24 | 7/3/24 | 07/03/24 | 7/3/24 | 7 Mar 2024 | 8/3/24 |

**CONTENT**

## 1. Introduction (Overview of the operation/works)

This method statement outlines the general method for condition survey of existing building structures (EBS) at Siu Ho Wan Depot including but not limited to survey inspection, survey result recording, defect photo-taking and inspection records analysis. This document shall be distributed to relevant parties to introduce the work scopes, to present the sequence of works and to define the associated responsibilities to ensure the health, safety, environment and quality issues addressed. The details of the procedures contained herewith shall be reviewed periodically and updated based on the actual site conditions. The principle methods as described in the following sections are subject to review during construction and may be amended if required.

The general working procedures outlined in this method statement are applicable to the following scopes of work:

- Carrying out condition survey within and around the Site and within all areas lying within a horizontal distance of 50m of the works, including the existing landscaping features, structures, utilities, road, pavements and the like prior to the commencement of the works.
- Carrying out condition surveys to establish the condition of the EBS and identify existing defects within the EBS before construction starts and provides a summary of the condition survey in the form of photos and reports to the Project Manager and advise the Project Manager of all implications arising from the condition surveys.

The location plan of the Siu Ho Wan Depot is shown in **Appendix A**.

## 2. Reference Documents (Identify relevant documents by name and reference number)

- General Specification for Civil Engineering Works (NEC4) (MTR Corporation Limited – 2023)

## 3. Details of Sub-Contractor/Specialist Sub-Contractor

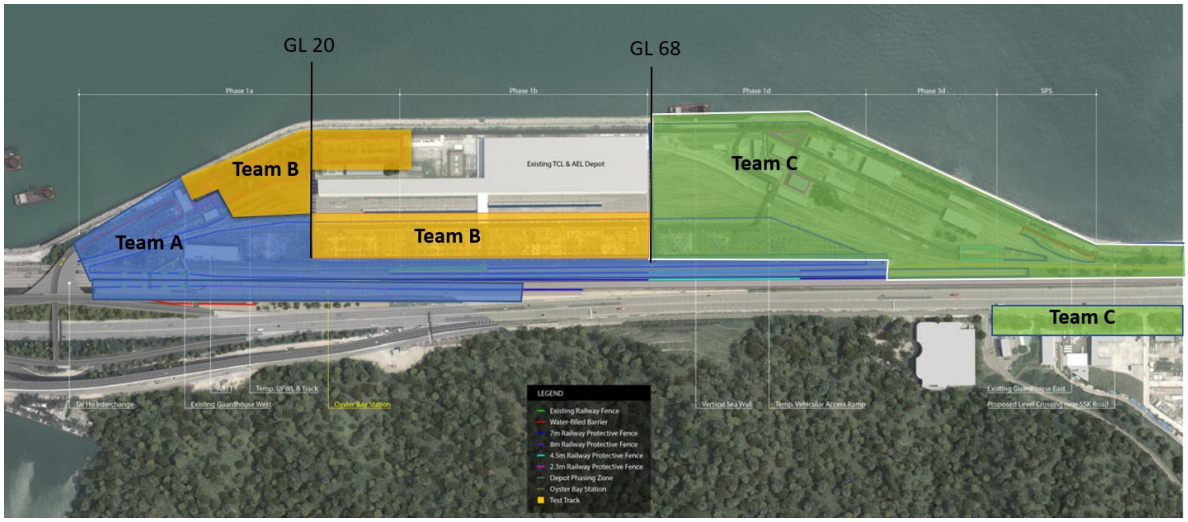
Alliance Professional Surveyors Company Limited

## 4. Responsibilities for Activities described within Method Statement

CSHK is responsible to inspect and carry out the construction works. The following persons, as listed in the table below, will attend the specific tool-box talk and be responsible for the activities:

| Company | Name | Position |
|---|---|---|
| CSHK (Team A) | Vincent Li | Construction Manager |
| | NaNa Chung | Assistant Construction Manager |
| | David Lam | Senior Engineer |
| | Johnson Chung | Senior Engineer |
| CSHK (Team B) | Ted Leung | Construction Manager |
| | Li Yuk Wa | Assistant Construction Manager |
| | Jack Wong | Engineer |
| | Andy Lo | Engineer |
| CSHK (Team C) | Howard Siu | Construction Manager |
| | CF Chan | Construction Manager |
| | Anthony He | Assistant Construction Manager |
| | Kanson Woo | Engineer |

| | | |
|---|---|---|
| CSHK (Supporting Team) | Leung Kwok Fung | Safety Manager |
| | Hui Wai Kwan | Safety Officer |
| | Ernest Young | Assistant Safety Officer |
| | Lau Yu Tat | Surveyor |
| | Cheung Siu Kei | Superintendent |




(a) Construction Manager
Responsible for overall administration, monitoring, controlling progress and quality of works in a safe manner.

(b) Engineer
Responsible for developing works procedures, controlling progress and quality of works in a safe manner. They also have to implement safety at works area for workers via guidance from safety officers.

(c) Safety Manager/ Safety Officer
Responsible for assessing working conditions of work areas in safety means.
To prepare risk assessment before works, enforce safety works practice and environment in the workplace and work site.

(d) Surveyor
Responsible for a condition survey of existing buildings in the vicinity of the site, survey result recording, defect photo-taking and inspection records analysis shall be carried out prior to commencement of the works.

(e) Site Supervisor/Site Foreman
Person in charge of the work in the works areas, which are located at various positions of site. Site Supervisor/Site Foreman is also responsible in implementing works control checklist.

(f) Competent Person [(CP)(T)/CP(NT)]
CP(T)/CP(NT) shall provide pre-work briefing to all workers and anyone work within the working zone. List of attendance, with name, contact and worker's ID shall be recorded on site and ready for

inspection after briefing.

CP(T)/CP(NT) shall be responsibility to identify any hazard and defective found on working area and report to construction manager/ engineer to review and confirm the work to carry on. Work shall follow the railway safety rules, MTR standard and work descripted by CP during briefing.

(g) Workers
Workers who have completed MTR RSI training and obtain qualification, selected by our Construction Manager or his delegate from our employee.

## 5. Programme and Working Hours (Start & finish date of operation/works)

- The work is tentatively scheduled on May 2024 to July 2024.
- The general working hours will be from 08:00 – 19:00 daily, from Monday to Saturday. However, it may be required to carry out works from 19:00 to 23:00 and Sunday and Public Holidays in case of essential speeding up of the working process. CSHK would check internally to fulfil the Construction Noise Permit Requirement.

All the works shall be led by CP(T)/CP(NT) during the approved working period at different areas, details are summarized in the below table.

| Location of Works | Allowed Working Period | Remarks |
|---|---|---|
| Mainline | Non-Traffic Hour (02:00 – 04:00) | 3 days per week |
| Test Track | Night Shift (Exact time to be coordinated) | 3 days per week |
| Depot tracks | Non-Peak Hour (11:00 – 15:00)<br>Night Shift (Exact time to be coordinated) | |

## 6. Plant, Equipment & Material (Identify type, model and specification of MAJOR plant & equipment)

All equipment will be inspected prior to the mobilization on site to ensure that they are in good working condition and comply with the current regulations. The major equipment will be deployed to carry out the works are as follow: -

- Laser meters
- Construction Total Stations
- Accessories for Measuring Tools
- Camera
- Tape

## 7. Construction Methods / Construction Sequence

### 7.1 Methodology for the works

1. The structural condition survey shall include but not limited to survey inspection, survey result recording, defect photo-taking and inspection records analysis.

2. The structural condition survey shall be carried out to all structural elements of the building and civil engineering structures and retaining structures within the specified structures such as beams, slabs, columns, internal walls, external walls, base slabs, joints, structures and compounds above ground.

**7.2 Visual Inspection**

1. Visual inspection by systematic visual structural checking and recording will be carried out with the aid of measuring tapes, cameras, torches, binoculars, thickness measuring devices to all the above-mentioned structural elements of every specified structure, so that the general conditions of all these structural elements can be assessed and recorded.
2. A standard survey sheet shall be devised to record any structural defects observed during the inspection, such as cracking, spalling, bulging, leakage, deterioration, corrosion / rust, settlement, etc. and to produce the defects record. Location and extent of the defects shall also be recorded. A sample standard survey sheet is attached for reference.
3. The terms used in describing defects shall be defined as follows (but not limited to):

| | | |
|---|---|---|
| 1 | Hairline crack | Crack below 0.3mm wide, and not being structural unless otherwise stated. |
| 2 | Minor crack | Crack from 0.3mm to 2mm wide, and not being structural unless otherwise stated. |
| 3 | Severe crack | Crack wider that 2mm, and not being structural unless otherwise stated |
| 4 | Minor spalled concrete | Spalling up to 0.1m2 and sporadic. No reinforcement bar exposed unless otherwise stated. |
| 5 | Major spalled concrete | Spalling greater than 0.1m2 and extensive. No reinforcement bar exposed unless otherwise stated. |
| 6 | Water stain | Stain on surface caused by past water penetration. The surface is dry. |
| 7 | Damp patch | Moisture saturated surface with no significant trace of water. |
| 8 | Water seepage | Water oozing out from surface. The surface is wet. |
| 9 | Water leakage | Water oozing out from surface. The surface is wet and/or with running water. |
| 10 | Verticality | A visual assessment of verticality of the building. |
| 11 | No corrosion / Rust | No visible corrosion / rust. |
| 12 | Partly corrosion / Rust | Corrosion less than 10% / between 0.5 m² - 1m² of the structural element. |
| 13 | Mild corrosion / Rust | Corrosion between 10% - 30% / between 1m² to 2m² of the structural element. |
| 14 | Moderate corrosion / Rust | Corrosion between 30% - 50% / between 2m² to 3m² of the structural element. |
| 15 | Severe corrosion / Rust | Corrosion over 50% / over 3m² of the structural element. |
| 16 | Deformation | Deflection, distortion and / or torsion observed on structural element. |

| | | |
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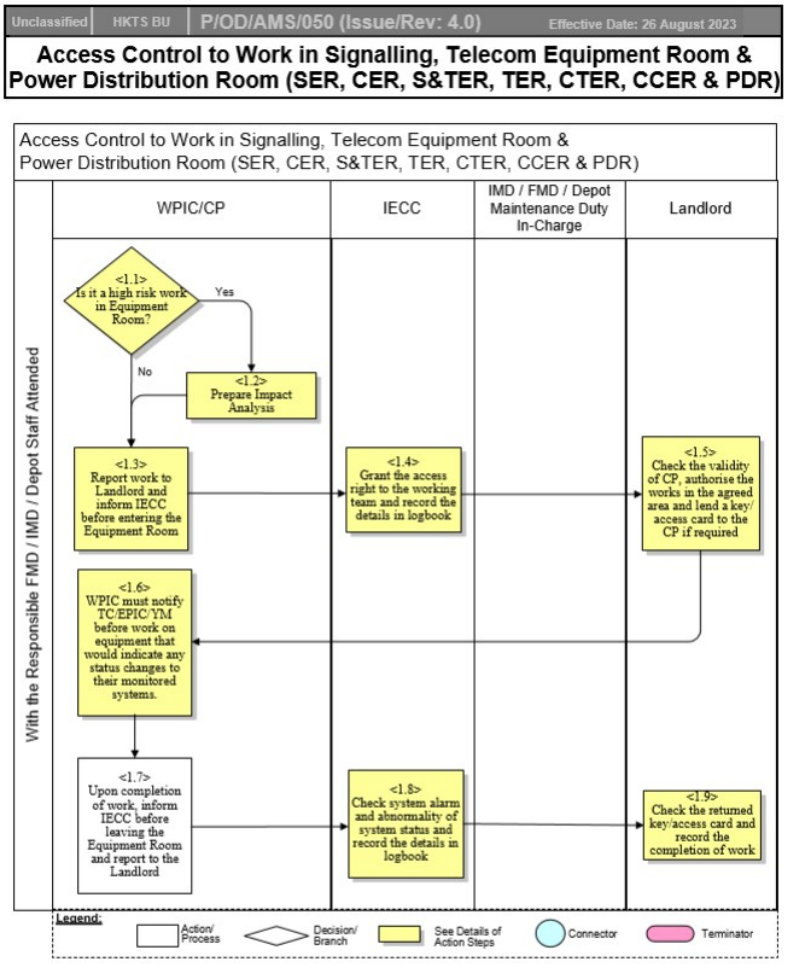
| 17 | Discontinuity | Differential (vertical and horizontal) displacement of movement joint / welding / bolted connector / two adjacent structural elements. |
| 18 | Contamination | Visual Indication of chemical or biological contamination. |

4. If serious defects, such as serious structural cracks, excessive deformation of structural elements, global movement of building structure and extensive spalling or serious corrosion of reinforcement and structural steel are identified, spotted shall be reported to MTR for further discussion and consent shall be obtained from MTR before commencement of work in the correlated area. Photo record of the defects and proposed repairment work shall be kept by CSHK and MTR for reference. Instruction and approval of the repairment method shall be obtained before work. If applicable, separate submission of the method statement of reinforcement/ repairment/ constructional control/ risk analysis shall be carried out.

**7.3 Access to Work inside Existing Building**

We shall liaise and request authorization with the Depot Yard Master. The works shall be input in the Equipment Room Access Request Form. The work procedure is strictly followed as below.




## 8. Safety (Risk Assessments)

Risk Assessment attached in **Appendix B** has been prepared for all general activities. Specific safety procedures and precautions have been developed for all site operatives to follow. The Construction Team Leader together with the RSO, will supervise the implementation and make adjustment according to the actual site operations, in order to maintain a safe and amicable working environment.

**8.1 General Site Safety**

With reference to the Project Safety Plan, the following items need to be instituted through the course of the works described within this method statement.

(a) All site personnel shall possess a valid Green card issued by CITA or an accredited organization. All workers on site shall obtain an approved "Mandatory Basic Safety Training Certificate". All workers shall attend a site-specific induction course conducted by the Safety Department. The Safety personnel shall explain the necessary safety requirements and the Site Agent/Foreman/Engineer in charge of the work shall explain the system of work to his supervisors and workers.

(b) All workers shall complete MTR RSI training and obtain qualification.

(c) All workers shall be equipped with reflective vests and safety helmets during operation. All workers must go through a briefing by the Construction Manager / Engineer / Safety Officer / Safety Supervisor before commencement of any works.

(d) A pre-meeting will be arranged before commencement of the work among Survey Team, Construction Team and Safety Team to brief the nature of works, the safety aspects and the requirements.

(e) Safety helmets fitted with chin straps must be worn within the site, safety boots, hearing protectors (if needed), high visibility jackets / sashes, reflective vests, goggles, gloves and full body harnesses for work at height will be provided to all staff working on site. Warning signs and barriers will be erected where necessary.

Any emergency situation shall be reported to site supervisors (i.e. Construction Manager/ Engineer/ Foreman, etc.) and Safety Department for prompt response. The emergency contact list is shown in Section 3.

**8.2 For Works within or interfacing with Operations Areas (OAs)**

1. CP(T) escort for all vehicles and all staff within or interfacing with operations areas (OAs).
2. For surveyors who carried out condition survey works within or interfacing with OAs, should have railway qualification of RSI and be supervised by CP(T) on site at all times.
3. CP(T)/ CP(NT) shall be appointed to provide pre-work briefing to all workers and anyone work within the operation zone.
4. All site staffs should wear the required PPE such as safety helmet, reflective vest and safety boots.
5. Demarcate and barricade the operation zone with reflective cone and work within the barricaded area.
6. For works within live track, authority shall be sought in prior commencement of any operation.

| | |
|---|---|
| | 7. Any works within live track shall be carried out in Non-Peak hours (NPH).<br>8. CP(T)'s instruction shall be obtained for west levelling crossing.<br>9. 4m Height restriction for all transportation crossing west levelling.<br>10. For trackside works. Pedestrian Access (PA) will be applied on ETMS.<br><br>**8.3 For Works within Construction Areas (CAs)**<br>1. CP(T) escort for all vehicles and all staff from or to construction areas (CAs).<br>2. For surveyors who carried out condition survey works at CAs, should a valid Green card issued by CITA or an accredited organization.<br>3. The Site Agent/Foreman/Engineer in charge of the work shall explain the system of work to his supervisors and workers.<br>4. All site staffs should wear the required PPE such as safety helmet, reflective vest and safety boots. |
| **9.** | **Environmental** (Environmental aspect & impact identification as well as mitigation measures) |
| | ● The works shall follow relevant mitigation measures as required under the Environmental Permit (EP) / EP submission and *Contractor*'s Environmental Management Plan (EMP).<br>● General works shall be carried out during normal working hours (08:00 to 19:00). However, should the progress demand for the works to be undertaken from 19:00 to 07:00 next day or on public holidays, construction noise permit shall be obtained as necessary. |
| **10.** | **Quality Control** (Inspection and Test Plan including hold points) |
| | Refer to **Appendix C** for Inspection and Test Plan.<br><br>● Construction works shall be fully complied with Quality Plan<br>● Inspection and Test Plan (ITP) has been developed for quality control by submitting RISC form for inspection by MTR's inspectorate under iSuper system.<br>● For work activity which is classified as "Quality Hold Point", no subsequent work can be started unless the former work activity was inspected and accepted by MTR's inspectorate.<br>● Following the Inspection & Test carried out, inspection and / or test records are to be prepared to indicate whether the specified requirements have been met. Records of Inspection and testing will be maintained and kept available for inspection and final handover as appropriate. |
| **11.** | **Appendices** (Identify and include additional information in the submission package) |
| | Appendix A – Location Plan<br>Appendix B – Risk Assessment<br>Appendix C – Inspection and Test Plan (ITP)<br>Appendix D – Emergency Contact List |