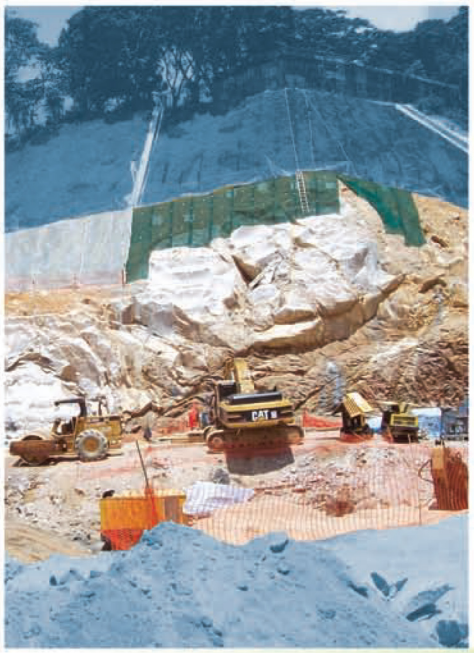
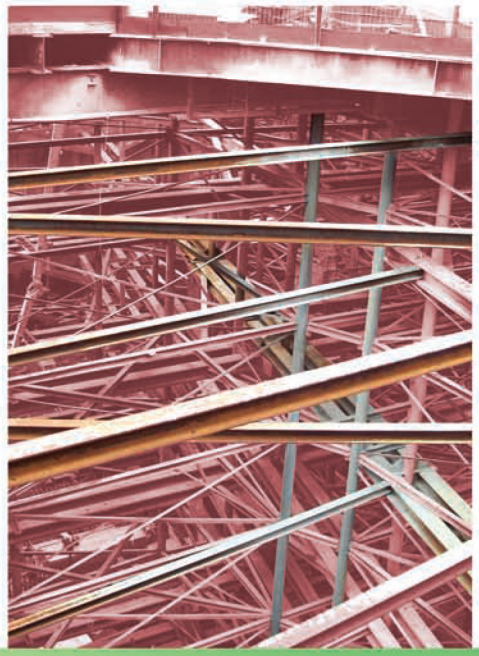




屋宇署
BUILDINGS DEPARTMENT

Code of Practice for Site Supervision 2009

(2024 Edition)

CODE OF PRACTICE

FOR

SITE SUPERVISION

2009

(2024 Edition)

FOREWORD

The supervision plan system has been implemented since December 1997 with the issuance of the Technical Memorandum for Supervision Plans and the Draft Code of Practice for Site Safety Supervision. The draft code was refined and adopted as Code of Practice for Site Safety Supervision in November 2000 with some clarifications on the principles and requirements and some simplifications on the procedures.

Pursuant to the enactment of the Buildings (Amendment) Ordinance 2004, the Technical Memorandum for Supervision Plans 2005 and the Code of Practice for Site Supervision 2005 came into effect on 31 December 2005. The revisions covered inclusion of the requirements for quality supervision and the qualified supervision requirements for geotechnical works, deletion of the details on assessment of degree of complexity and class of supervision, and updating of the qualification and experience requirements for technically competent persons and the additional supervision requirements for critical stages of building works.

With the introduction of the Minor Works Control System and a new register of minor works contractors under the Buildings (Amendment) Ordinance 2008, a new regime to control the carrying out of building works that are designated as minor works is established. The Code of Practice for Site Supervision 2009 has covered supervision requirement for the carrying out of minor works and other minor refinements of the Supervision Plan System.

The Code of Practice for Site Supervision 2009 (September 2021 Edition) incorporated various corrigenda and amendments made in May 2015, June 2016, May 2019, September and December 2020, and March and September 2021.

The Code of Practice for Site Supervision 2009 (2024 Edition) (Code) incorporates various amendments made in December 2023 and August 2024 as summarised below:

Date of Amendment	Reference
December 2023 by PNAP APP-157 (December 2023 Amendment)	https://www.bd.gov.hk/doc/en/resources/codes-and-references/code-and-design-manuals/OldVersions/COP_Site_Supervision_ov.zip
August 2024 by PNAP APP-157 (Code of Practice for Site Supervision 2009 (2024 Edition))	

This Code gives guidance to authorized persons, registered structural engineers, registered geotechnical engineers, registered contractors and other personnel in the building industry for the preparation of supervision plans, carrying out their respective supervision duties and other site supervision matters.

This Code is available for viewing in the Buildings Department website www.bd.gov.hk under the "Codes, design manuals and guidelines" page of the "Resources" section. It may be downloaded subject to the terms and conditions stipulated in the website.

First issue : December 2010
This revision : August 2024

CONTENTS

1 *Scope*

1.1 Safety management of building works or street works addresses two types of supervision:

(a) *Quality Supervision*

This means ensuring that the building works or street works are carried out in general accordance with the provisions of the Buildings Ordinance (BO) and Regulations, and with the plans approved in respect of them by the Building Authority (BA) or the plans submitted to the BA in respect of minor works which are carried out in accordance with the simplified requirements (submitted plans for minor works), and with any order made or condition imposed, pursuant to any provision of the Ordinance or regulations in that behalf, by the BA; and

(b) *Site Safety Supervision*

This means controlling hazards from building works or street works so as to minimise the risk to :

(i) the workers on site;

(ii) all persons around the site; and

(iii) adjoining buildings, structures and land.

1.2 The Technical Memorandum for Supervision Plans (Technical Memorandum) sets out the principles, requirements and operation of supervision plans. This Code of Practice for Site Supervision 2009 (2024 Edition) (Code) provides detailed guidance to the practitioners on the application of the Technical Memorandum in the preparation of supervision plans and in the adoption of good practices for site supervision.

1.3 Apart from the Technical Memorandum, reference should be made to the BO, Practice Notes for Authorized Persons, Registered Structural Engineers and Registered Geotechnical Engineers (PNAP), Practice Notes for Registered Contractors (PNRC) and any other relevant documents issued by the BA.

2 *Interpretation*

2.1 Unless specified otherwise, the terms and expressions used in this Code should have the same meaning assigned to them under the BO and the Technical Memorandum. Any additional terms and expressions used are explained in the text of this Code.

3 *Objective and General Principles*

Objective

3.1 This Code sets out and explains :

(a) the procedures for establishing site supervision requirements for various types of building works or street works;

(b) the deployment of technically competent persons (TCPs) and the combination of their duties;

(c) the principles of safety management structure within each functional stream (stream) and the responsibilities and duties of the head, representative and TCPs of each stream;

(d) the specific tasks of TCPs in carrying out site supervision;

(e) the division of responsibility for temporary works;

(f) the qualification and experience requirements for each grade of TCP;

(g) the procedures for dealing with non-conformities and major/serious site incidents relating to building works; and

(h) the procedures for application for inclusion in a list of TCPs (TCP List) for the purposes of the BO.

Principles for Assessing Supervision Requirements

3.2 The site supervision requirements relate to the type of building works or street works and the scale of the works involved.

3.3 Other than the supervision requirements in accordance with paragraph 3.2, additional site supervision requirements should be provided during the critical stages of various types of building works or street works.

3.4 The BA may review and adjust the supervision requirements, taking into consideration the prevailing state of technology and methods of construction.

3.5 The BA may also review and upgrade the qualifications and experience requirements for the TCPs and adjust their site inspection frequencies in order to further improve the standard of supervision, after taking into consideration their supply in the market.

4 *Safety Management and Responsibilities of Relevant Personnel*

General Principles

4.1 The authorized person (AP), registered structural engineer (RSE), registered geotechnical engineer (RGE) and authorized signatory (AS) of the registered contractor (RC) should jointly submit a supervision plan, specifying the name of the TCPs appointed and frequency of inspection and/or extent of supervision, and carry out inspections and supervisions in accordance with the plan. The plan should be submitted prior to or at the same time as consent application for the building works or street works. However, no prior approval of the TCPs is required before commencement of the building works or street works. The AP/RSE/RGE/AS are responsible to ensure that their TCPs satisfy the qualification and experience requirements specified and should notify the BA of any subsequent changes of TCPs. The plan should be kept on site for the inspection of the BA when required.

Safety Management Structure

4.2 The AP, RSE, RGE and AS are the heads of the safety management structure of the respective streams. Other than the head, each of the supervision streams should consist of a representative of the head (Representative), TCPs responsible for routine safety supervision, i.e. T1 to T3 and TCPs responsible for engineering safety supervision, i.e. T4 to

T5 as appropriate for a particular type of works. The Representative should be the highest grade TCP within their respective stream and should take the senior role in the management structure. Alternatively, the AP, RSE, RGE and AS may act as the respective Representative themselves to carry out such safety management functions (subject to their inspection frequency be not less than that required of the highest grade TCP within their respective stream). A typical example of the safety management structure for a job site is illustrated in Figure 4.1.

Responsibilities of Relevant Personnel

4.3 The head of the management structure should have overall responsibility and accountability for their respective stream. The Representative is directly accountable to the head (i.e. AP, RSE, RGE or AS, as the case may be), whereas all other safety management personnel are accountable to the head through the Representative. Responsibilities and duties of the heads, Representatives and TCPs regarding the preparation and execution of supervision plans are set out in Tables 4.1 to 4.4.

4.4 The supervision plan, if required to be submitted under the Technical Memorandum, should be lodged with the BA by the AP prior to or at the same time as the application for the first consent for commencement of building works or street works. For minor works carried out according to the simplified requirements, the supervision plan, if required to be submitted under the Technical Memorandum, should be submitted to the BA not less than 7 days before commencement of the minor works. A standard form of supervision plan is set out in Appendix I.

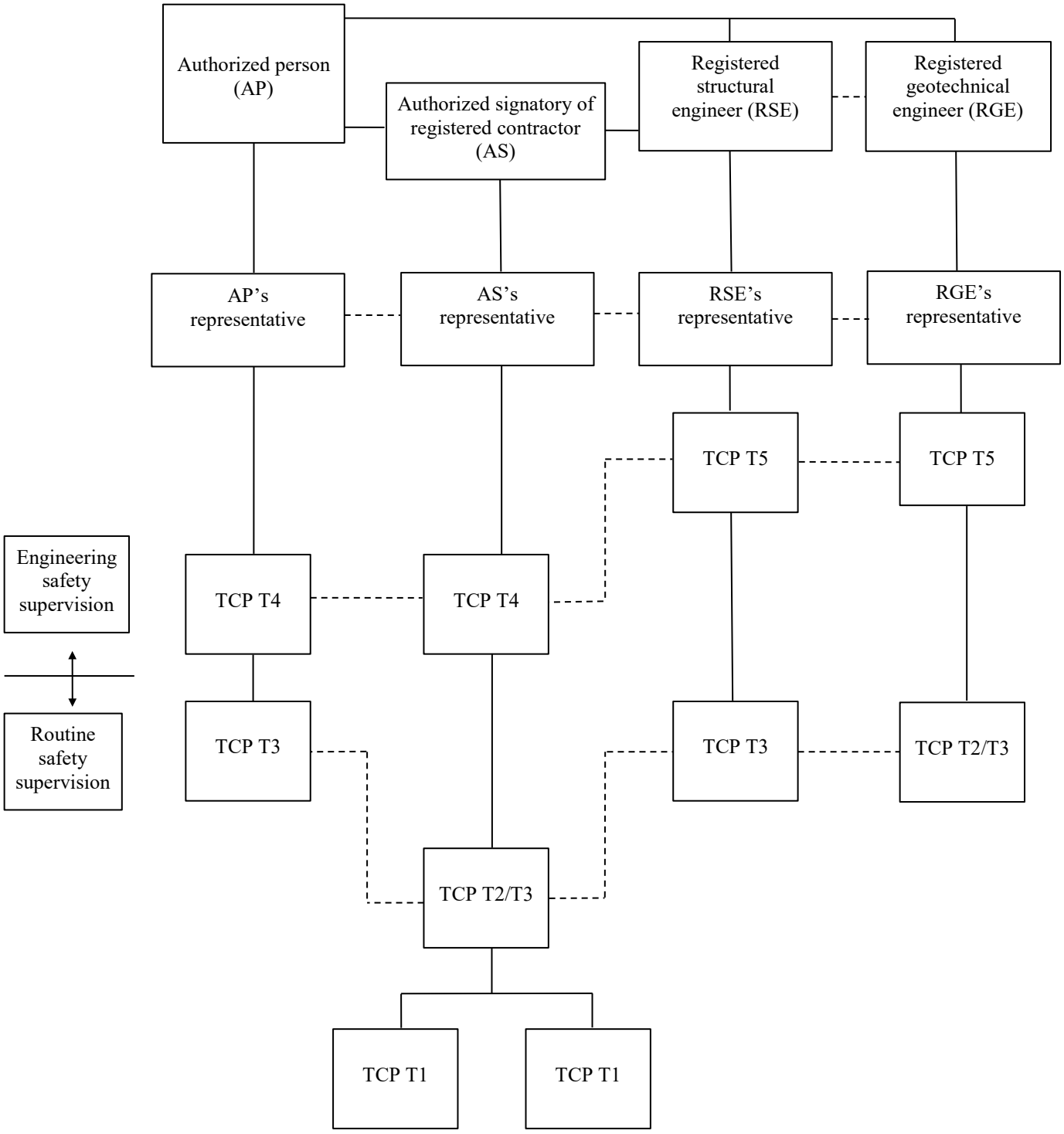
4.5 The AP, RSE, RGE and AS should also submit the confirmation of appointment of TCPs as an annex to the supervision plan or within 7 days from the date of commencement of works as indicated in the Form BA10/ notice of commencement of minor works. The AP, RSE and RGE should ensure that the RC is fully aware of any task specific requirements shown on the approved plans and/or imposed by the BA as conditions of plan approval or granting of consent for commencement of works

pursuant to any provision of the BO or its subsidiary legislations. The respective heads of the safety management structure should be responsible to ensure that their Representatives and TCPs in their stream are fully aware of such task specific requirements and/or conditions.

4.6 The AP, RSE and RGE are deemed to satisfy the minimum qualifications and experience required for each grade of TCP set out in Table 2 of the Technical Memorandum within their respective streams. They may take up the supervision duties of all grades of TCPs within their respective streams provided that their frequency level of inspection for that particular grade of TCP is not less than that required under Table 1 of the Technical Memorandum and this Code.

4.7 TCPs of higher grades may take up the responsibilities of those of lower grades and the duties of TCPs may be combined. For combination of the duties of TCPs, reference should be made to paragraphs 8.12 to 8.17.

Figure 4.1 Example of Safety Management Structure



---------- Line of communication

_____ Line of reporting

Table 4.1 Responsibilities and Duties under AP's Stream	
	AP
Responsibilities	• Assuming overall responsibilities in the appointment of his Representative and TCPs. • Ensuring the full implementation of the supervision plan regarding his own stream. • Overseeing the full implementation of the supervision plan regarding the RC's stream. • Establishing an efficient and effective mechanism for dealing with non-conformities.
Duties	• Assessing the scale for each type of works relevant to the project. • Compiling his own part of the supervision plan. • Coordinating and submitting the supervision plan to the BA. • Devising checklists of specific tasks for his TCPs. • Supervising his Representative and TCPs. • Notifying the BA and following up any non-conformities which pose an imminent danger, or cause a material concern for safety and the RC fails to rectify, and any major/serious site incidents relating to safety and/or quality of works. • Carrying out site inspections as necessary.
	AP's Representative
Responsibilities	• Accountable to the AP for the implementation of the AP's supervision plan. • Representing the AP as the formal point of contact in communication with other streams. • Taking overall responsibility to check on site if the safety measures required under supervision plans are implemented. • Accountable to the AP for the satisfactory execution of the specific tasks, and for the responsibilities of junior TCPs including checking of the essential items for specific tasks provided in this Code. • Ensuring that the RC's safety management structure complies with the supervision plan.

Table 4.1 Cont'd

Duties	• Assisting the AP in carrying out safety management functions. • Coordinating and compiling reports on supervision activities including reports on non-conformity. • Dealing with non-conformities and site incidents.
	T4
Responsibilities	• Accountable to the AP, through the AP's Representative, for the implementation of the supervision plan. • Taking up relevant responsibilities as set down in the Technical Memorandum and this Code.
Duties	• Carrying out specific tasks as per checklist devised by the AP. • Checking that specified aspects of works comply with approved plans, design requirements and method statements, precautionary and protective measures are in place and followed. • Dealing with non-conformities and site incidents, making referral to the AP's Representative and notifying TCPs in other streams.
	T3
Responsibilities	• Accountable to the AP through the AP's Representative. • Taking up relevant responsibilities as set down in the Technical Memorandum and this Code.
Duties	• Carrying out specific tasks as per checklist devised by the AP. • Checking that the works comply with the approved plans (or submitted plans for minor works), method statements, precautionary and protective measures. • Monitoring the work of the RC's TCPs. • Maintaining on site registers of all relevant site supervision plans together with all reports, documents and correspondence relating to the supervision plan. • Dealing with non-conformities and site incidents, making referral to the AP's Representative and notifying TCPs in other streams.

Table 4.2 **Responsibilities and Duties under RSE's Stream**	
	RSE
Responsibilities	• Assuming overall responsibilities in the appointment of his Representative and TCPs. • Ensuring the full implementation of the supervision plan regarding his own stream. • Overseeing the full implementation of the supervision plan regarding the RC's stream. • Giving permission to the RC for carrying out temporary works categorised as Case 3 under paragraphs 4.9, 4.11 and 4.12 of this Code.
Duties	• Compiling his own part of the supervision plan. • Devising checklists of specific tasks for his TCPs. • Supervising his Representative and TCPs. • Notifying the AP and following up any non-conformities which pose an imminent danger, or cause a material concern for safety and the RC fails to rectify, and any major/serious site incidents relating to safety and/or quality of works. • Carrying out site inspections as necessary.
	RSE's Representative
Responsibilities	• Accountable to the RSE for implementing the RSE's supervision plan. • Representing the RSE as the formal point of contact in communication with other streams. • Taking overall responsibility to check if the safety measures on site meet with the requirements of supervision plans. • Accountable to the RSE for the satisfactory execution of the specific tasks, and for the responsibilities of junior TCPs including checking of the essential items for specific tasks provided in this Code. • Checking and satisfying that the RC's safety management structure complies with the supervision plan.
Duties	• Assisting the RSE in carrying out safety management functions. • Coordinating and compiling reports on supervision activities including reports on non-conformity. • Dealing with non-conformities and site incidents.

Table 4.2 Cont'd

	T5
Responsibilities	• Accountable to the RSE through the RSE's Representative, for the implementation of the supervision plan. • Taking up relevant responsibilities as set down in the Technical Memorandum and this Code.
Duties	• Carrying out specific tasks as per checklist devised by the RSE. • Dealing with non-conformities and site incidents, making referral to the RSE's Representative and notifying TCPs in other streams. • Checking that site works comply with the approved plans, design requirements including those of the method statements, precautionary and protective measures. • Validating conditions on site which relate to design assumptions for temporary or permanent structures.
	T3
Responsibilities	• Accountable to the RSE through the RSE's Representative. • Taking up relevant responsibilities as set down in the Technical Memorandum and this Code.
Duties	• Carrying out specific tasks as per checklist devised by the RSE. • Checking that the works comply with the approved plans (or submitted plans for minor works), method statements, precautionary and protective measures. • Monitoring the work of the RC's TCPs. • Dealing with non-conformities and site incidents, making referral to the RSE's Representative and notifying TCPs in other streams.

Table 4.3 **Responsibilities and Duties under RGE's Stream**	
	RGE
Responsibilities	• Assuming overall responsibilities in the appointment of his Representative and TCPs. • Ensuring the full implementation of the supervision plan regarding his own stream. • Overseeing the full implementation of the supervision plan regarding the RC's stream. • Giving permission to the RC for carrying out temporary works categorised as Case 3 under paragraphs 4.9, 4.11 and 4.12 of this Code.
Duties	• Compiling his own part of the supervision plan. • Devising checklists of specific tasks for his TCPs. • Supervising his Representative and TCPs. • Notifying the AP and following up any non-conformities which pose an imminent danger, or cause a material concern for safety and the RC fails to rectify, and any major/serious site incidents relating to safety and/or quality of works. • Carrying out site inspections as necessary.
	RGE's Representative
Responsibilities	• Accountable to the RGE for implementing the RGE's supervision plan. • Representing the RGE as the formal point of contact in communication with other streams. • Taking overall responsibility to check if the safety measures on site meet with the requirements of supervision plans. • Accountable to the RGE for the satisfactory execution of the specific tasks, and for the responsibilities of junior TCPs including checking of the essential items for specific tasks provided in this Code. • Checking and satisfying that the RC's safety management structure complies with the supervision plan.
Duties	• Assisting the RGE in carrying out safety management functions. • Coordinating and compiling reports on supervision activities including reports on non-conformity. • Dealing with non-conformities and site incidents.

Table 4.3 Cont'd

	T5
Responsibilities	• Accountable to the RGE through the RGE's Representative, for the implementation of the supervision plan. • Taking up relevant responsibilities as set down in the Technical Memorandum and this Code.
Duties	• Carrying out specific tasks as per checklist devised by the RGE. • Dealing with non-conformities and site incidents, making referral to the RGE's Representative and notifying TCPs in other streams. • Checking that site works comply with the approved plan, design requirements including those of the method statements, precautionary and protective measures. • Validating conditions on site which relate to design assumptions for temporary or permanent structures.
	T2/T3
Responsibilities	• Accountable to the RGE through the RGE's Representative. • Taking up relevant responsibilities as set down in the Technical Memorandum and this Code.
Duties	• Carrying out specific tasks as per checklist devised by the RGE. • Checking that the works comply with the approved plans (or submitted plans for minor works), method statements, precautionary and protective measures. • Monitoring the work of the RC's TCPs. • Dealing with non-conformities and site incidents, making referral to the RGE's Representative and notifying TCPs in other streams.

Table 4.4 **Responsibilities and Duties under RC's Stream**	
	AS
Responsibilities	• Assuming overall responsibilities in the appointment of his Representative and TCPs. • Ensuring the full implementation of the supervision plan regarding his own stream. • Ensuring that non-conformities are immediately acted on and that rectification is carried out forthwith.
Duties	• Compiling his own part of the supervision plan. • Devising checklists of specific tasks for his TCPs. • Supervising his Representative and TCPs. • Preparing plans, method statements, precautionary and protective measures for temporary works categorised as Case 2 and/or Case 3 under paragraphs 4.9, 4.11 and 4.12 of this Code. • Preparing an implementation plan for the adoption of the mobile plant alert system and/or the tower crane alert system for building works, and ensuring that the implementation plan is properly executed on site as detailed in paragraph 4.14 of this Code. • Notifying the AP and following up any non-conformities which pose an imminent danger, or cause a material concern for safety, and any major/serious site incidents relating to safety and/or quality of works. • Carrying out site inspections as necessary.

Table 4.4 Cont'd

	AS's Representative
Responsibilities	• Accountable to the AS for the implementation of the RC's supervision plan. • Representing the AS as the formal point of contact in communication with other streams. • Taking up overall responsibilities in carrying out site safety measures and actions in accordance with the supervision plan. • Ensuring that the line management, including sub-contractors, are conversant with the supervision plan, and that good coordination and communication exists between his TCPs.
Duties	• Directing staff and sub-contractors on safety related matters. • Coordinating and compiling reports on supervision activities. • Ensuring the implementation plan for the adoption of the mobile plant alert system and/or the tower crane alert system for building works is properly executed on site. • Dealing with non-conformities and site incidents. • Assisting the AS in the investigation of the causes of each non-conformity and taking measures to prevent further occurrence.

Table 4.4 Cont'd

	T4/T5
Responsibilities	• Accountable to the AS, through the AS's Representative, for the implementation of the supervision plan. • Taking up relevant responsibilities as set down in the Technical Memorandum and this Code.
Duties	• Checking that assumptions made in the design of temporary works, method statements and precautionary and protective measures are validated on site. • Checking that actual site conditions and works being carried out agree with the approved plans, design requirements, method statements and precautionary and protective measures. • Carrying out specific tasks as per checklist devised by AS. • Dealing with non-conformities and site incidents, making referral to the AS's Representative and notifying TCPs in other streams.
	T1-T3
Responsibilities	• Accountable to the AS through the AS's Representative. • Taking up relevant responsibilities as set down in the Technical Memorandum and this Code.
Duties	• Checking on routine basis that site works comply with general site safety requirements. • Checking specialist aspects of work to see that they comply with the submitted supervision plans. (T2 & T3 only) • Checking that the works comply with the approved plans (or submitted plans for minor works), method statements, and precautionary and protective measures. • Checking that the temporary works comply with the plans, construction drawings, sequence of construction, method statements, and details of precautionary and protective measures. • Checking that the mobile plant alert system and/or the tower crane alert system are properly installed and operating. • Checking that subordinate TCPs have carried out routine checks at the correct frequency and that records are prepared and filed on site. (T2 & T3 only) • Carrying out specific tasks as per checklist devised by AS. • Dealing with non-conformities and site incidents, making referral to the AS's Representative and notifying TCPs in other streams.

Division of Responsibility between AP/RSE/RGE and RC for Temporary Works and Working Procedures

4.8 The AP/RSE/RGE/RC have the responsibility to ensure the integrity of the temporary structure itself and the associated fixing methods.

4.9 The division of responsibilities between AP/RSE/RGE and RC for temporary works and working procedures is detailed below:

(a) Case 1 - When the prescribed plans stipulate the temporary works, and the sequence of construction or method statements are also shown on prescribed plans, both the AP/RSE/RGE and the RC have their own responsibilities to supervise the carrying out of the works in accordance with the approved/prescribed plans and the BO and Regulations.

(b) Case 2 - When the temporary works, the sequence of construction or method statements are not required to be shown on prescribed plans and have no effect on the permanent structures by way of overstressing or overloading, the RC should prepare plans and construction drawings[1] with design justifications[2] for the temporary works. The RC has the sole responsibility of ensuring the integrity of the temporary works and that the carrying out of temporary works should be safe and should not endanger the workers on site, the public and adjoining buildings and lands. For temporary works providing support to a tower crane, additional requirements as described in paragraph 4.12 of this Code should also be followed.

(c) Case 3 - When the temporary works, the sequence of construction or method statements are not required to be shown on the prescribed plans but may have effect on the permanent structures, the adjoining buildings or lands, by way of

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1 Construction drawings include all necessary construction details and specifications of the temporary works, sequence of construction, method statements, details of precautionary and protective measures.

2 Design justifications include design calculations of the temporary works and the assessment on the effects on the permanent structures, the adjoining buildings and lands.

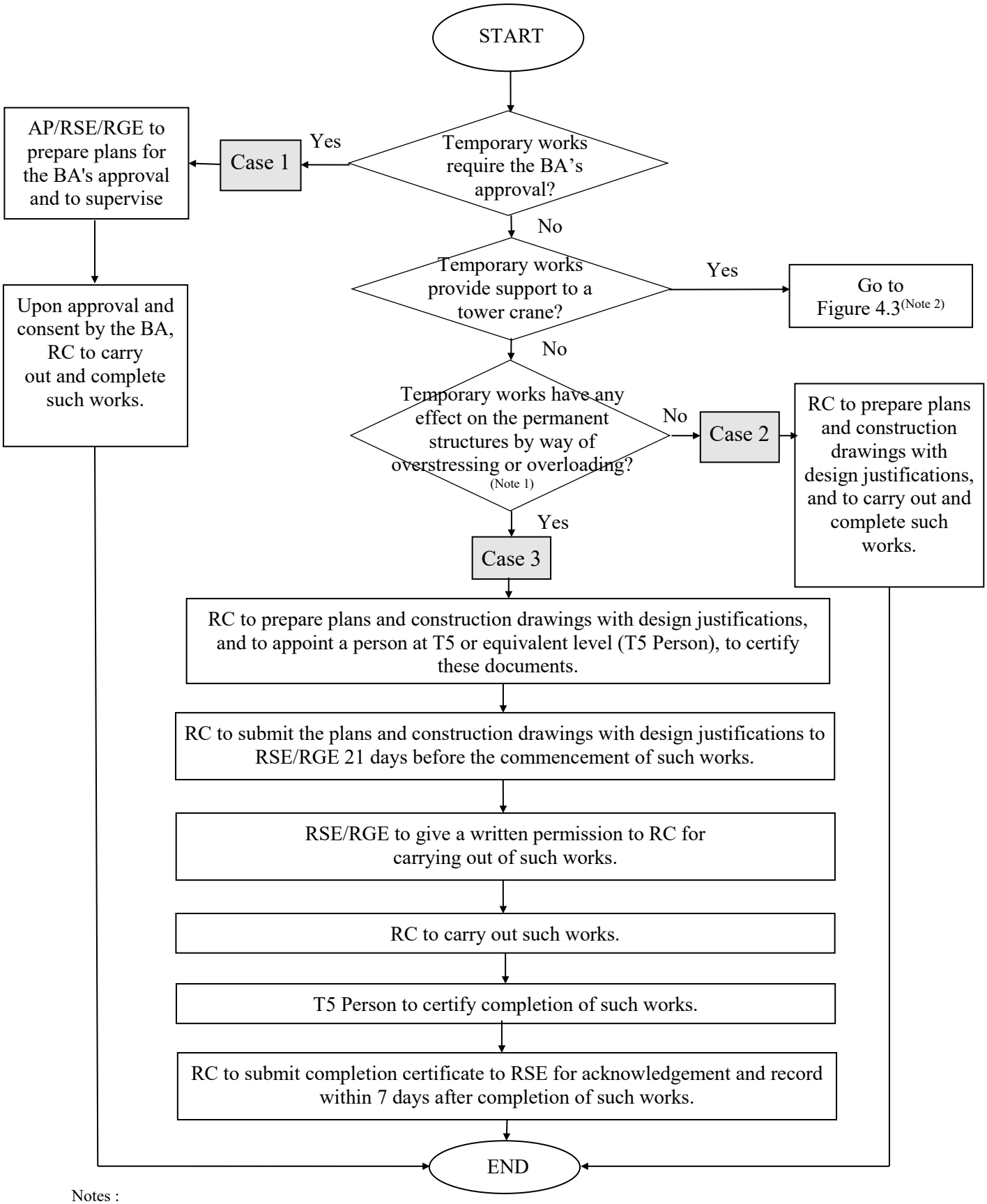
overstressing or overloading, the RC should prepare plans and construction drawings with design justifications for the temporary works. RC should appoint a person whose qualification and experience are not inferior to a TCP of grade T5 (T5 Person[3]) to certify these documents, which should then be submitted to the RSE/RGE [4] 21 days before the commencement of works, and a completion certificate should be submitted to the RSE for acknowledgement, as further described in paragraph 4.11 of this Code. The RC has the sole responsibility of ensuring the integrity of the temporary works and that the carrying out of temporary works should be safe and should not endanger the workers on site, the public and adjoining buildings and lands. For temporary works providing support to a tower crane, additional requirements as described under paragraph 4.12 of this Code should also be followed.

Figure 4.2 illustrates the general procedures for dealing with temporary works.

[3] For temporary works providing support to a tower crane, the appointed T5 Person may also be either the design engineer or independent checking engineer as required under paragraph 4.12 of this Code.

[4] RGE should ensure that the temporary works, sequence of construction or method statements have no adverse effect on the geotechnical elements of the permanent structures, adjoining buildings and lands by way of overstressing or overloading.

Figure 4.2 Flow Chart Showing the General Procedures for Dealing with Temporary Works



Notes :

1. In case of doubt, RC should consult RSE/RGE and submit the design of the temporary works to substantiate the effect of the temporary works on the permanent structures/adjoining buildings/lands, following the working procedures of Case 3.
2. Additional requirements for temporary works providing support to a tower crane as described under paragraph 4.12 of this Code should also be followed.

4.10 For Case 2, plans and construction drawings with design justifications are required for, but not limited to, the following works :

(a) Falsework erected for the concrete casting of
    (i) transfer plate and vehicular ramps
    (ii) cantilevered slab exceeding 1.5m
    (iii) beam with span exceeding 12m
    (iv) deep beams with depth exceeding 3m
    (v) elevated water tank
    (vi) space frame
    (vii) vehicular bridge and footbridge
    (viii) prestressed structure
(b) Formwork and shoring for the concrete casting of
    (i) columns and walls with height exceeding 6m
    (ii) retaining wall higher than 4m
(c) Temporary working platforms for the operation of plant and machinery
(d) Lifting operation of plant and machinery.

4.11 For case 3, in order to ensure that the temporary works will not impose an adverse effect on the permanent structures, adjoining buildings and lands, the following additional requirements should be complied with:

(a) In addition to the RC's overall responsibility to prepare plans and construction drawings with design justifications, the RC should appoint a person whose qualification and experience are not inferior to a TCP of grade T5 (T5 Person[3]) to certify these documents. These documents should then be submitted to the RSE/RGE not later than 21 days before the commencement of works.

(b) The RSE/RGE[4] should check if the proposed temporary works have any effect on the permanent structures, adjoining buildings and lands, or the geotechnical elements of the permanent structures/lands, by way of overstressing or overloading. The RSE/RGE may require the RC to submit further information to substantiate the effect of the temporary works on the permanent structures, adjoining buildings and lands as necessary. Upon verifying that the safety and integrity of the permanent structures, adjoining buildings and lands will not be adversely affected by the temporary works, RSE/RGE should give a written permission to the RC for carrying out the works.

(c) The RC should ensure that the temporary works are carried out in accordance with the certified plans and construction drawings and are structurally safe. In addition, upon completion of the temporary works, the appointed T5 Person[3] should personally inspect and sign a completion certificate to certify that the temporary works have been carried out in accordance with the certified plans and construction drawings and are structurally safe. The completion certificate should be submitted to the RSE for acknowledgement[5] and record within 7 days after completion of the works.

[5] RSE should check the completeness of the certificate, e.g. the T5 Person had certified in writing that the temporary works had been completed in accordance with the certified plans and construction drawings for the development project concerned and were structurally safe.

4.12 For temporary works providing support to a tower crane, the following additional requirements should also be complied with:

(a) A design engineer (DE) who possesses a minimum qualification of a registered professional engineer (civil/structural) with a minimum of 5 years relevant working experience should be appointed by the RC for the design of the temporary works. The DE should prepare and duly sign the plans and construction drawings with design justifications for the temporary works and certify in standard form (Form TW1 at Appendix XI) that the temporary works supporting the tower crane including the connections between the tower crane, the temporary works and the permanent structures (if applicable) are designed in compliance with the BO, the regulations made thereunder and the relevant codes of practice.

(b) An independent checking engineer (ICE) who possesses a minimum qualification of a registered professional engineer (civil/structural) with a minimum of 5 years relevant working experience should be appointed by the RC to check and duly sign the plans and construction drawings with design justifications for the temporary works prepared by the DE as mentioned in item (a) above. The DE and ICE, including their employing companies, should be independent from each other and have no holding, subsidiary, employer/employee or any other relationship. The ICE should certify in standard form (Form TW2 at Appendix XI) that the design of the temporary works has been checked by him/her and that the temporary works supporting the tower crane including the connections between the tower crane, the temporary works and the permanent structures (if applicable) are designed in compliance with the BO, the regulations made thereunder and the relevant codes of practice;

(c) For Case 2 temporary works providing support to a tower crane, upon receipt of duly signed Forms TW1 and TW2 from the DE and ICE respectively, the RC should submit the certified plans and construction drawings with design justifications for the temporary

works together with the duly signed Forms TW1 and TW2 to the AP for record and the RSE for acknowledgement[6] before the commencement of works;

(d) For Case 3 temporary works providing support to a tower crane, the RC should submit the certified plans and construction drawings with design justifications for the works together with the duly signed Forms TW1 and TW2 to the RSE for acknowledgement[6] and the RSE/RGE[4] for review, not later than 21 days before the commencement of works. The RSE/RGE should check if the proposed temporary works have any effect on the permanent structures, adjoining buildings and lands, or the geotechnical elements of the permanent structures/lands, by way of overstressing or overloading. The RSE/RGE may require the RC to submit further information to substantiate the effect of the temporary works on the permanent structures, adjoining buildings and lands as necessary. Upon verifying that the safety and integrity of the permanent structures, adjoining buildings and lands will not be adversely affected by the temporary works, RSE/RGE should give a written permission to the RC for carrying out the works. Upon obtaining such written permission, the RC should submit the certified plans and construction drawings with design justifications and the duly signed Forms TW1 and TW2 to the AP for record before the commencement of works;

(e) Similar to all types of temporary works, the RC should provide continuous supervision of the works in accordance with this Code and the supervision plan. The AP/RSE/RGE should check to ensure that RC has followed the above requirements and provide periodic supervision of such works in accordance with this Code and the supervision plan;

(f) For temporary works involving welding of structural steel works, welding should be carried out by qualified welders in accordance

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[6] RSE should check the completeness of the documents, e.g. whether the documents have all been submitted in an orderly manner and the relevant forms are properly filled in and duly signed by DE and ICE.

with clause 14.3 of the Code of Practice for the Structural Use of Steel 2011 (2023 Edition) (Steel Code). The RC should appoint a laboratory accredited by the Hong Kong Laboratory Accreditation Scheme (HOKLAS) or by other laboratory accreditation bodies which have reached mutual recognition arrangements with HOKLAS for the carrying out of the required non-destructive tests on both on-site and off-site welds in accordance with clause 14.3.6 of the Steel Code. The test methods, sampling rates and criteria of testing of materials and workmanship of the temporary works providing support to the tower crane should also comply with the BO, the regulations made thereunder and the relevant codes of practice. The test results[7], with the joint locations clearly specified, should be reviewed by TCP T4 in RC's stream;

(g) The RC should ensure that the temporary works are carried out in accordance with the certified plans and construction drawings and are structurally safe. In addition, upon completion of the temporary works, and irrespective whether it is of Case 2 or Case 3, TCP T4 in RC's stream and the T5 Person[8] should personally inspect and certify in standard form (Form TW3 at Appendix XI) for the completion of the works by making a statement to confirm that (i) the temporary works have been inspected by them and found satisfactory in accordance with the certified plans and construction drawings; (ii) the results of the associated testing of materials and workmanship (including on-site and off-site welds) have been reviewed by them and found technically acceptable, and (iii) the temporary works including the connections between the tower crane, the temporary works and the permanent structures are structurally safe. The duly signed Form TW3 should be submitted

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7 Test results should be reported on a HOKLAS Endorsed Certificate or equivalent Certificates/Reports issued from other laboratory accreditation bodies which have reached mutual recognition agreements/arrangements with the HOKLAS in order to ensure the test is carried out by an accredited laboratory that should be within its scope of accreditation.

8 For temporary works providing support to a tower crane, the DE or ICE can be the T5 Person for certifying completion of such works as required under paragraph 4.9 of this Code.

to the AP for record and the RSE for acknowledgement[9] and record within 7 days after completion of the works;

(h) Any load test or examination of the tower cranes[10] should not be conducted prior to acknowledgement of Form TW3 by the RSE;

(i) The certified plans and construction drawings with design justifications, duly signed Forms TW1 and TW2, test reports, TCPs' supervision records and RSE's acknowledged Form TW3 should be properly kept at the site office for the inspection by the BA; and

(j) In the case of a free-standing tower crane that relies solely on the support at its base, and irrespective whether it is of Case 2 or Case 3, the RC should submit the relevant documents of the temporary works providing support to the tower crane, including the certified plans and construction drawings with design justifications, prepared by the DE and checked by the ICE, the duly signed Forms TW1, TW2 and TW3 to the RSE within 7 days after the completion of the works. The RSE should submit them to BD for record within 14 days after the completion of the works for both Case 2 and Case 3. The submission should be appended with a statement signed by the RSE to confirm that (i) he/she is satisfied with the completeness of documents including the plans, construction drawings, design justifications, duly signed Forms TW1, TW2 and TW3; and (ii) the temporary works, sequence of construction or method statements have no adverse effect on the permanent structures, adjoining buildings and lands, by way of overstressing or overloading.

Figure 4.3 illustrates the specific procedures for dealing with temporary works providing support to a tower crane.

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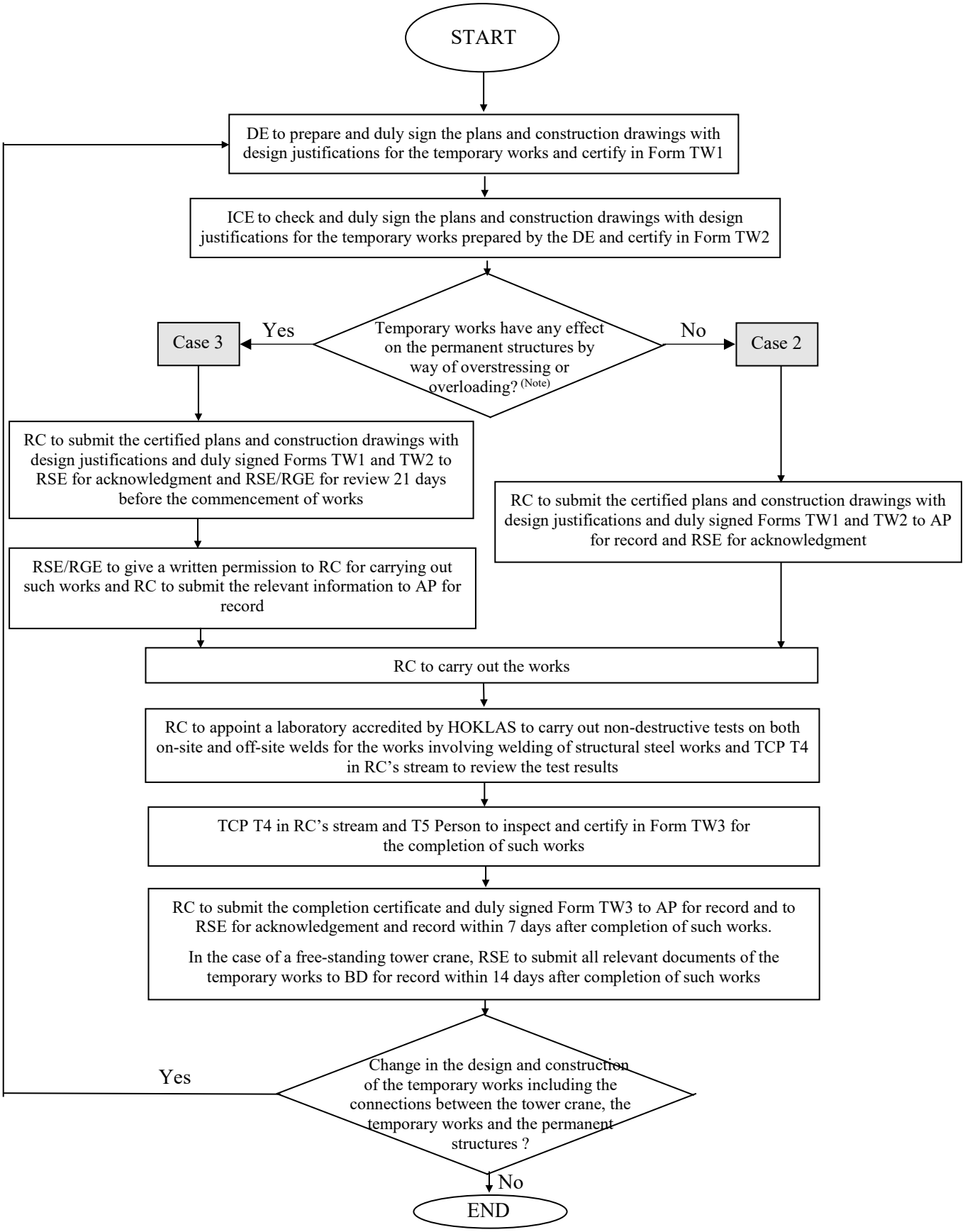
[9] RSE should check the completeness of the TW3, e.g. whether the relevant HOKLAS Endorsed Certificate had been obtained, the form is properly filled in and duly signed by the TCP T4 in RC's stream in accordance with paragraph 4.12(g) of this Code.

[10] Required under the Factories and Industrial Undertakings (Lifting Appliances and Lifting Gear) Regulations.

Figure 4.3 Flow Chart Showing the Specific Procedures for Temporary Works Providing Support to a Tower Crane



Note: In case of doubt, RC should consult RSE/RGE and submit the design of the temporary works to substantiate the effect of the temporary works on the permanent structures, following the working procedures of Case 3.

4.13 For all Cases 1, 2 and 3 above, the RC should maintain on site a set of plans, construction drawings, design justifications, method statements, details of precautionary and protective measures, etc for the reference of the TCPs and the inspection of the BA, which should be listed out in a register on site.

Qualified Supervision of Building Works Involving Mobile Plants and Tower Cranes[11]

4.14 For building works with an estimated cost exceeding $30 million, qualified site supervision of the building works involving the use of mobile plants[12] and tower cranes should be provided by RC to ensure that the works are carried out in such a manner that it does not cause, or is not likely to cause a risk of injury to any person or damage to any property, as detailed below:

(a) Where a mobile plant is used for the building works, it should be equipped with a mobile plant alert system[13] under the Smart Site Safety System[14] (4S);

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11 Applicable to projects with conditions imposed under section 17(1) of the BO for superstructure works involving mobile plants and/or tower cranes.

12 "Mobile plant" generally includes all heavy-type mobile plants, such as bulldozer, compactor, crawler crane, dumper, excavator, gantry crane, grader, loader, scraper, truck-mounted crane and wheeled telescopic mobile crane. Vehicles or mechanical equipment commonly used for conveying materials and/or personnel such as fork-lift truck, lorry, power-operated elevating work platform and truck, or plants which are stationed on site for less than one day such as concrete mixer, shotcrete truck and water pump truck are excluded. The list of mobile plants may be reviewed from time to time when more experience is gained taking into account the development of the related technology.

13 The system should alert the mobile plant operator and any site personnel encroaching the mobile plant danger zone perimeter of the risk of being run over or hit by the plant moving components. The automated warning system should include adequate number of sensors installed on the mobile plant chassis and movable superstructures to ensure full 360° coverage around the mobile plant danger zone perimeter. The danger zones of the mobile plant operation should be determined by the safety officer employed pursuant to the Factories and Industrial Undertakings (Safety Officers and Safety Supervisors) Regulations (Safety Officer) according to risk assessment but in general, the extent of the danger zones should be not less than 2m from any part of the mobile plant.

14 Smart Site Safety System (4S) generally comprises three components, namely smart safety devices for monitoring activities and identifying safety hazards; a communication network for transmitting data collected from smart safety devices; and a centralised management platform for providing a one-stop hub for data analysis and alerts generation, as well as facilitating follow-up actions. Reference materials on 4S are provided in the "Guide to Smart Safety-Related Technologies for Use in Construction Works" issued by the Construction Industry Council.

(b) Where a tower crane is used for the building works, it should be equipped with a tower crane alert system[15] under the 4S;

(c) The alert systems described in items (a) and (b) above aim to effectively mitigate any potential hazards or unsafe situations that may arise during the operation of the mobile plants and tower cranes. The alert systems should be capable to immediately alert both the plant operators and any site personnel encroaching the danger zones, where there is a potential risk of being run over or hit by the plant moving components and/or the moving load;

(d) The responsibilities and duties of AS/AS's Representative and TCP for site supervision under the RC stream are as follows:

(i) An implementation plan should be prepared by the AS or under the supervision of the AS for the adoption of the alert systems. The plan should include, but not limited to, the types of mobile plants and/or tower cranes to be used, the automated alert systems to be used, the definition of danger zones, a brief description of their operation, and the fallback measures for special circumstances (e.g. system failure);

(ii) The AS and the AS's Representative should ensure that the implementation plan described in item (i) above is properly executed on site; and

(iii) The TCP T1 and TCP T3 should check that the alert systems are properly installed and operating to alert the plant operators and any site personnel encroaching the danger zones. They should report according to the implementation plan for any necessary repairs/rectification whenever a malfunction is identified.

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[15] The system should alert tower crane operator and any site personnel encroaching upon the tower crane loading/unloading danger zone perimeter of the risk of being hit by the moving load under the crane hook. The automated warning system should include adequate number of sensors installed on or around the tower crane to ensure full coverage of all loading/unloading areas danger zone perimeter at all floor levels involved. The loading/unloading danger zones of the tower crane operation should be determined by the Safety Officer according to risk assessment but in general, the extent of the danger zones should be not less than 7m radius from the crane hook. The minimum clearance between the load being lifted and the loading/unloading area activating the automatic warning system should be determined by the Safety Officer according to risk assessment but in general, should be not less than 3m.

Communication Procedures

4.15 Successful implementation of the Supervision Plan System requires effective and efficient within-stream and interstream communications. Lines of within-stream communications should be established between the engineering safety supervision level and the routine safety supervision level whereas interstream communications should usually take place between stream counterparts. Typical lines of within-stream and interstream communications are illustrated in Figure 4.1.

5 *Typical Items for Specific Tasks by TCPs*

General Requirements

5.1 The AP, RSE, RGE and AS should devise checklists for their TCPs by making reference to the typical items listed in Tables 5.1 to 5.4 of this Code and to include any other particular items considered appropriate and necessary for their projects and surrounding conditions.

5.2 The TCPs should carry out their duties as per the checklists devised by their own heads of stream and all the checklists and inspection records should be completed contemporaneously and kept on site for the inspection of the BA.

5.3 A typical checklist suggested for use, Form A, is shown in Appendix II to this Code.

Recording of Non-conformities

5.4 Recording of non-conformities mainly serves two purposes :

(a) to ensure the non-conformities would be rectified readily, and

(b) to provide a lesson learning opportunity so as to prevent recurrence.

5.5 Other than the non-conformities under paragraphs 5.6 to 5.8 below, all non-conformities detected during the checking of typical items for specific tasks by the TCPs must be properly recorded in the Non-Conformity and Rectification Reports, Form B at Appendix III to this Code. Detailed procedures for the completion of Non-conformity and Rectification Reports are specified in paragraph 10.5 of this Code.

5.6 Non-conformities that do not have material concern for safety and could be confirmed to have been rectified satisfactorily by re-inspection before being covered up are not required to be recorded in the Form B.

5.7 Particulars of the non-conformities mentioned in paragraph 5.6 above, including the remedial actions taken and the re-inspection results, should be properly recorded by the TCPs in their site supervision reports. Detailed requirements of site supervision report are specified in paragraphs 10.2 to 10.4 of this Code.

5.8 Non-conformities that are very minor in nature (for example, minor irregularities in temporary works or work procedures such as misplaced spacers for reinforcement fixing, debris inside the formwork before concreting) and have been readily rectified to the satisfaction of the TCPs at the same inspection are not required to be recorded in the Form B, nor in the TCPs' site supervision reports.

5.9 Contemporaneous inspection records should be kept by each member of the supervision teams who should record all non-conformities based on the principles set out in paragraphs 5.5 to 5.8 and report the situation to the AP, RSE, RGE or AS, as the case may be.

5.10 A flow chart showing the procedures for dealing with non-conformity is shown in Figure 5.1.

Figure 5.1 Flow Chart for the Procedures for Dealing with Non-conformity

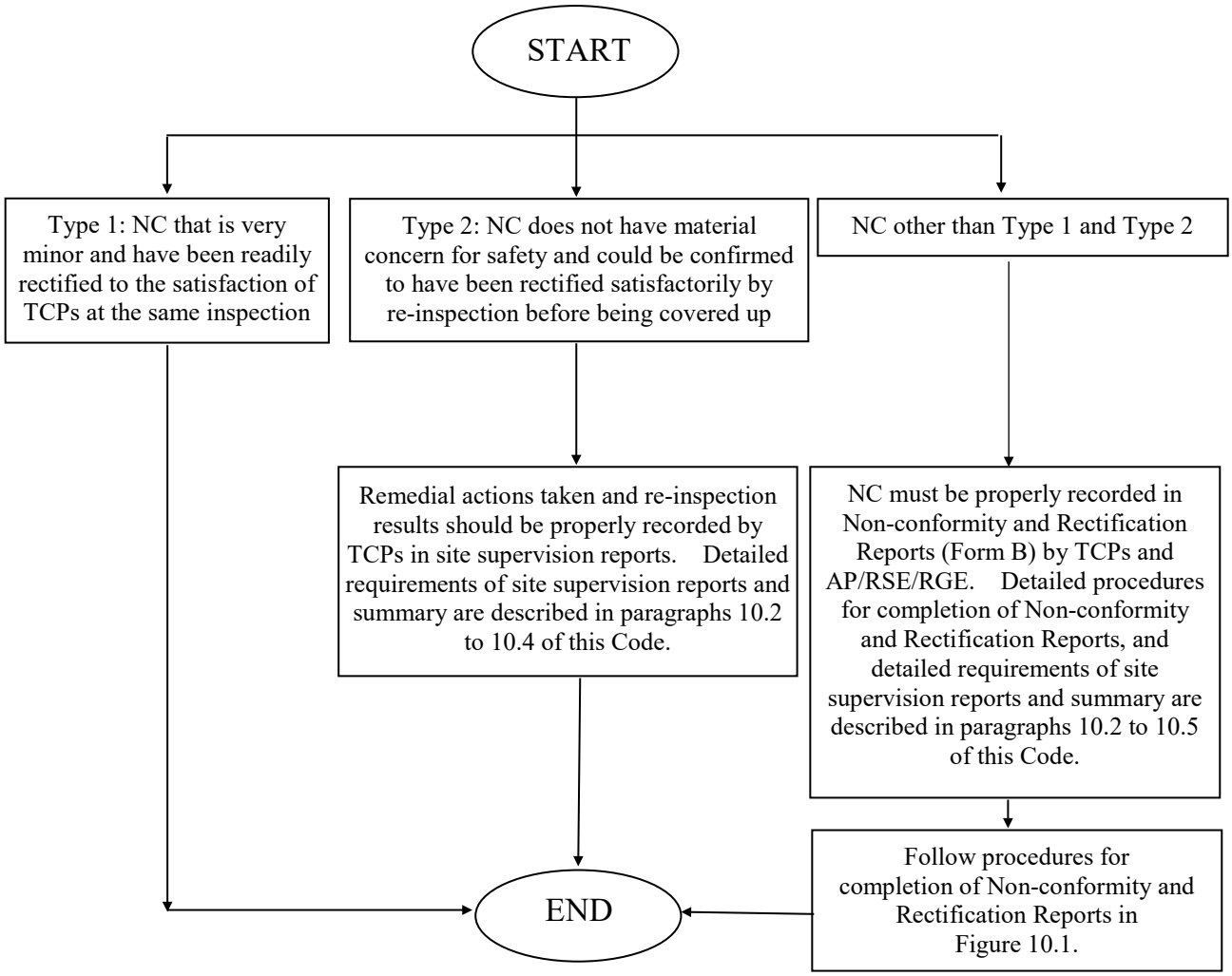

Table 5.1 Typical Items for the Checklist of Specific Tasks for AP's TCPs		
Item No.	**Description**	
A1	Establish systems for co-ordinating, compiling and filing of reports, maintaining filing systems; and forwarding reports to AP in case of non-conformity.	Routine items
A2	Check that the hoarding and/or covered walkways are erected to ensure public safety in accordance with the hoarding plan accepted by the BA.	
A3	Check that the provision and condition of scaffolding, catch fans, matscreens and heavy duty nylon mats, as appropriate, are satisfactory.	
A4	Check that monitoring checkpoints are installed and readings are taken in time.	
A5	Register reports of non-conformity and site incident, verify non-conformity and site incident and instruct rectification works, notify all relevant parties in respect of non-conformity and site incident and monitor that rectification measures are properly carried out.	Routine and Engineering items
A6	Report to the AP if the non-conformity is considered to pose an imminent danger, to be a significant risk or a source of danger or the RC does not comply with rectification instructions, or if the site incident is considered as a major/serious site incident relating to safety and/or quality of works.	
A7	Check that all lower grade TCPs and RC's TCPs are making inspections no less than the required frequency and carrying out duties in accordance with the Technical Memorandum and the Code.	
A8	Check and satisfy that a copy of approved plans (or submitted plans for minor works), method statements, precautionary and protective measures proposals and all related drawings is kept on site; and that they are followed, including checking the video record for demolition works.	
A9	Check and satisfy with the completeness of documents including plans, construction drawings, design justifications, standard forms, test reports and completion certificate of the temporary works providing support to the tower crane; and check that they are properly kept on site by the RC; and that the procedures are followed by the RC.	
A10	Check and monitor that lateral supports are installed in accordance with approved/agreed working sequence and not to be removed in advance of adequate propping or restraint.	Engineering item
An	**Any other items considered essential by the AP, including those for quality supervision and other conditions imposed by the BA at approval and/or consent stage.**	

Table 5.2
Typical Items for the Checklist of Specific Tasks for RSE's TCPs

Item No.	Description	
E1	Establish system for communicating with other TCPs.	Routine items
E2	Check that all monitoring checkpoints are installed and readings are being taken in time.	
E3	Verify non-conformity and site incident, and instruct rectification works. Notify all relevant parties in respect of the non-conformity and site incident and monitor that rectification measures are properly carried out.	Routine and Engineering items
E4	Report to the RSE if the non-conformity is considered to pose an imminent danger, to be a significant risk or a source of danger or the RC does not comply with rectification instructions, or if the site incident is considered as a major/serious site incident relating to safety and/or quality of works.	
E5	Check that all lower grade TCPs and RC's TCPs are making inspections no less than the required frequency and carrying out duties in accordance with the Technical Memorandum and the Code.	
E6	Check and satisfy that a copy of approved plans (or submitted plans for minor works), method statements, precautionary and protective measures proposals and all related drawings is kept on site; and that they are followed, including checking the video record for demolition works.	
E7	Check and satisfy with the completeness of documents including plans, construction drawings, design justifications, standard forms, test reports and completion certificate of the temporary works providing support to the tower crane; and check that they are properly kept on site by the RC; and that the procedures are followed by the RC.	
E8	Check that there is no over-excavation and temporary cut slopes will not cause any instability to adjoining ground/structures/buildings.	Engineering items
E9	Check that enclosing walls for top down construction show no signs of defect or lack of soundness.	
E10	Check and monitor that lateral supports are installed in accordance with approved/agreed working sequence and not to be removed in advance of adequate propping or restraint.	
E11	Check that the design and supports of formwork, shoring and temporary working platform are adequate to support all intended loads.	
E12	Check that there is no risk of artesian conditions for excavation and lateral support works.	
E13	Check that stability and integrity of nearby buildings and ground are not adversely affected.	
E14	Check that the groundwater table is consistent with design of excavation and lateral support works.	

Table 5.2 Cont'd

Item No.	Description	
E15	Check that before excavation takes place, the highest new deck level for top down construction is in place and has achieved sufficient strength to provide lateral support.	Engineering items
En	**Any other items considered essential by the RSE, including those for quality supervision and other conditions imposed by the BA at approval and/or consent stage.**	

Table 5.3 Typical Items for the Checklist of Specific Tasks for RGE's TCPs		
Item No.	**Description**	
G1	Establish system for communicating with other TCPs.	Routine items
G2	Check that all monitoring checkpoints are installed and readings are being taken in time.	
G3	Verify non-conformity and site incident, and instruct rectification works immediately. Notify all relevant parties in respect of the non-conformity and site incident and monitor that rectification measures are properly carried out.	Routine and Engineering items
G4	Report to the RGE immediately if the non-conformity is considered to pose an imminent danger, to be a significant risk or a source of danger or the RC does not comply with rectification instructions, or if the site incident is considered as a major/serious site incident relating to safety and/or quality of works.	
G5	Check that all lower grade TCPs and RC's TCPs are making inspections no less than the required frequency and carrying out duties in accordance with the Technical Memorandum and the Code.	
G6	Check and satisfy that a copy of approved plans (or submitted plans for minor works), method statements, precautionary and protective measures proposals and all related drawings and geotechnical documentation is kept on site; and that they are followed, including checking the video record for demolition works.	
G7	Check and satisfy with the completeness of documents including plans, construction drawings, design justifications, standard forms, test reports and completion certificate of the temporary works providing support to the tower crane; and check that they are properly kept on site by the RC; and that the procedures are followed by the RC.	
G8	Check that there is no over-excavation/over-loading and temporary cut and fill slopes will not cause any inadequate margin of safety against instability to adjoining ground/buildings/structures/utility services or any harm to members of the public and workers on site.	Engineering items
G9	Check and monitor that the sequence of work and necessary protection works and supports are installed in accordance with approved plans/agreed method statements/precautionary measures proposals and that the supports are not to be removed or loaded in advance of adequate propping or restraint.	
G10	Check that there is no risk of hydraulic failure causing ground collapse or excessive deformation.	
G11	Check that there is adequate margin of safety against instability and integrity/functionality of nearby ground/buildings/structures/utility services and members of the public and workers on site are not adversely affected/harmed.	
G12	Check that the ground and groundwater conditions, ground deformations/vibrations and geotechnical hazards/risks are consistent with the design of excavation and lateral support works.	

Table 5.3 Cont'd

Item No.	Description	
G13	Check that the geotechnical assumptions (i.e. ground model, surface water regime, ground water regime, ground deformations/vibrations, geotechnical hazards/risks, etc.) are consistent with the geotechnical assessment/study/works design, and to assess their compatibility/adequacy taking into account the actual geotechnical conditions encountered on site and the original method statement and precautionary and protective measures proposed, and update the method statement, precautionary and protective measures and advise the RGE accordingly.	Engineering items
Gn	**Any other items considered essential by the RGE, including those for quality supervision and other conditions imposed by the BA at approval and/or consent stage.**	

Table 5.4 Typical Items for the Checklist of Specific Tasks for RC's TCPs		
Item No.	**Description**	
C1	Establish system for communicating with other TCPs.	Routine items
C2	Check that the erection of hoarding, covered walkway and catch platform has been erected to ensure public safety in accordance with the hoarding plan accepted by the BA.	
C3	Check and ensure that there are arrangements for access and egress of vehicles which are satisfactory and do not endanger the public or other road users.	
C4	Check that scaffolding is adequately secured to the building to prevent collapse; catch fans, catch platforms and protection screens are adequately installed so as to secure safety against falling objects.	
C5	Check that restraining guy ropes and/or nets are provided before removal of external walls for demolition works.	
C6	Check that there is no excessive debris on floor slabs and against external walls for demolition works.	
C7	Check that refuse chute and refuse openings are properly located.	
C8	Check and ensure that all monitoring checkpoints and other geotechnical instrumentation have been installed and are regularly monitored; the results are kept on site; and that abnormal readings are reported to AP/RSE/RGE and the BA.	
C9	Check that all monitoring checkpoints are installed and the readings are taken in time.	
C10	Check that loose materials, boulders, construction plants or temporary stockpiles of materials are not present at the crest or intermediate benches of slopes.	
C11	Check that the mobile plant alert system[13] and/or the tower crane alert system[15] for building works involving the use of mobile plants and/or tower cranes are properly installed and operating to alert the plant operators and any site personnel encroaching the danger zones, and report according to the implementation plan for any repairs/rectification whenever a malfunction is identified.	
C12	Check that if excavation plants and piling rigs are operated on ground, the state of the ground is fit for use; and if the plants are operated on an elevated working platform, the platform is adequate to support the plant and all other imposed loads.	Routine and Engineering items
C13	Check and satisfy that a copy of approved plans (or submitted plans for minor works), method statements, precautionary and protective measures proposals and all related drawings is kept on site; and that they are followed.	
C14	Check that mechanical plant is operating safely and in accordance with method statements and proppings are provided in accordance with approved demolition plans.	

Table 5.4 Cont'd

Item No.	Description	
C15	Check that plant and machinery for lifting building material and equipment for construction is operating in accordance with method statement or safety procedures; that site constraint, proximity to hazards, space limitation and suitability of the support for plant and machinery have been considered and checked properly; that safety inspections, safety measures and appointment of competent persons as required by relevant Ordinances have been implemented/carried out.	Routine and Engineering Items
C16	Check that the temporary works providing support to the tower crane are constructed, altered and dismantled in accordance with the certified plans and construction drawings.	
C17	Check that the plans, construction drawings, design justifications, standard forms, test reports and completion certificate of the temporary works providing support to the tower crane are properly kept on site.	
C18	Check that permit to work has been obtained and safety measures implemented if public street is to be occupied/affected for lifting operation.	
C19	Check that procedures for the excavation and lateral support works are carried out in accordance with the approved/submitted plans/agreed working sequence.	
C20	Check that falsework for elevated structure is erected in accordance with the design proposal.	
C21	Check that during site formation works, existing nullahs and watercourses are properly diverted.	
C22	Inspect slopes to check that temporary drainage is adequate and that unexpected channels or conduits do not develop prior to forecast heavy rainstorms and during rainfall events,	
C23	Check that protective measures for blasting operation are in place and maintained.	
C24	Check that all lower grades TCPs are carrying out their duties in accordance with the Technical Memorandum and the Code and records are properly kept on site.	
C25	Set up procedures to ensure that safety measures and safety actions are checked and recorded by the TCPs.	
C26	Instruct rectification of non-conformity and site incident, and monitor rectification measures.	
C27	Report to relevant parties when non-conformity or site incident is observed and rectified.	

Table 5.4 Cont'd

Item No.	Description	
C28	Check that stability and integrity of nearby buildings and ground are not adversely affected.	Engineering Items
C29	Check that enclosing walls for top down construction show no signs of defect or lack of soundness.	
C30	Check that before excavation takes place, the highest new deck level for top down construction is in place and has achieved sufficient strength to provide lateral support.	
C31	Check that during excavation for top down construction, there is no unexpected deflection on the highest deck level and subsequent new floor levels.	
C32	Check that the angle of cut slopes is within specified limits.	
C33	Liaise with AP's, RSE's and RGE's TCPs as applicable to check and satisfy that design assumptions, method statements and precautionary and protective measures are validated on site.	
C34	Check that the design and supports of formwork, shoring and temporary working platform are adequate to support all intended loads.	
C35	Check that the deck and formwork are adequate for all applied loads.	
C36	Investigate and identify causes for non-conformity or site incident and set up systems and procedures to avoid recurrence.	
Cn	**Any other items considered essential by the AS, including those for quality supervision and other conditions imposed by the BA at approval and/or consent stage.**	

6 *Quality Supervision Requirements*

Guidance on Quality Supervision

6.1 This Code provides guidance on quality supervision for ground investigation field works (GIFW), soil nailing works and foundation works. Further guidance on quality supervision for superstructure works, excavation and lateral support works and site formation works are provided in PNAP APP-158 and PNRC 77.

Principles of Quality Supervision

6.2 For quality supervision, the principles described in paragraphs 6.3 to 6.6 below will be followed.

6.3 In accordance with regulations 37(1) and 37(2) of the Building (Administration) Regulations (B(A)R), the AP, RSE and RGE should each give such periodic supervision and make such inspections as may be necessary for building works. For such purpose, they should each have a team of TCPs to inspect the works at a specified frequency and supervise the carrying out of a specified percentage of the works. The AP, RSE, RGE and their TCPs should all be respectively accountable under the BO for the quality of building works but in accordance with their respective responsibilities as specified.

6.4 As the AP, RSE and/or RGE have overall responsibility for the works, they should personally inspect and supervise the works at such frequency and extent as they consider appropriate in the circumstances of each case.

6.5 The RC, represented by their AS, should have a similar system of supervision as that of the AP, RSE and/or RGE above, but they should give continuous supervision in accordance with regulation 41(1) of the B(A)R. Even if some of the building works are carried out by their sub-contractors, it remains the responsibility of the RC to ensure that the building works and continuous supervision are properly done in accordance with the provisions of the BO and the system of supervision described above.

6.6 Contemporaneous inspection records should be kept for each member of the supervision team who should record and report all non-conformities in accordance with the requirements set out in paragraph 5.9 of this Code.

Quality Supervision for GIFW

6.7 All GIFW, in both scheduled and non-scheduled areas, should be carried out by a registered specialist contractor (GIFW) (RSC(GIFW)) under proper supervision. To ensure quality of the works, supervision for the different stages of pre-design GIFW, such as drilling/coring, sampling, instrumentation and field testing, should comply with the requirements set out in Table 6.1.

Table 6.1
Stages of GIFW

Item No.	Stage	Description
I1	Drilling/coring	Check that drilling techniques/methods adopted are suitable for the ground conditions encountered. In Scheduled Areas, check that drilling techniques/methods comply with the approved plans.
I2	Sampling	Check that the sampling techniques adopted are appropriate to the quality of samples required and ground conditions encountered; ensure that the samples are properly extruded, sealed and stored and that they are not contaminated and their natural moisture content is maintained; and properly record the depths and locations at which the samples are recovered.
I3	Instrumentation	Check that the field instruments are installed in accordance with the standard of good practice or the manufacturer's recommendations. In Scheduled Areas, check that the field instruments are installed in accordance with the standard of good practice or the manufacturer's recommendations, and in accordance with the approved plans.
I4	Field Testing	Check that the tests are carried out in accordance with the standard of good practice (excluding field density tests which are to be carried out by laboratories accredited under the Hong Kong Laboratory Accreditation Scheme).

Note: Extent of works inspected should be shown in the checklist by each member of the supervision team.

6.8 All GIFW should be carried out in accordance with the guidelines in Geoguide 2 published by the Geotechnical Engineering Office (GEO) of the Civil Engineering and Development Department. The drilling works should be carried out by experienced drillers under proper supervision.

6.9 Accurate and detailed borehole logs should be prepared to describe properly the materials encountered so that checks of the logs can be made, and to allow comparison with materials revealed during construction. Logging of samples and preparation of borehole logs should be carried out by a competent person. All drillhole cores and samples obtained during ground investigation (GI) are to be kept in good conditions for testing or for the inspection by the BA, and if necessary GEO, until acknowledgement of the satisfactory completion of the site formation, foundation or other related works has been given. The required qualifications of competent person for logging are defined in Appendix VII.

6.10 All GIFW should comply with the administrative procedures set out in Appendix VIII. A supervision plan should be submitted specifying the name of the TCPs appointed and the frequency of inspections and/or extent of supervision as required.

6.11 A GI report submitted in support of a plan for approval must contain a certificate by the RGE and AS of the RSC(GIFW) confirming the standards of GI works (refer to details in item 6 of Appendix VIII).

6.12 The requirements specified above apply to GIFW in both scheduled and non-scheduled areas.

6.13 Foundation plans, site formation plans, excavation and lateral support plans and general building plans accompanied by geotechnical assessment will be approved only when the BA is satisfied that the GIFW have been undertaken by a RSC(GIFW) in compliance with the requirements specified and the results satisfy the design assumptions.

Quality Supervision for Soil Nailing Works

6.14 Quality supervision of soil nailing works should be provided by the RGE and his TCP T5 and T3, as well as by the AS of the RSC (Site Formation) (RSC(SF)) and his TCP T4 and T1.

6.15 For all soil nailing works, at least one TCP T3 of the RGE and one TCP T1 of the RSC(SF) are required to be resident full-time on site during every stage of the works for each soil nail. The RSC(SF) is required to notify the RGE's TCP T3 before the commencement of any stage of the works. The RSC(SF) is also required to prepare detailed inspection, measurement and testing records for each soil nail as per the approved plan requirements.

Table 6.2
Stages of Soil Nailing Works

Item No.	Stage	Description
N1	Pull-out test and any specified site trial	Check whether the test nails are being constructed and the test/site trial procedure is in accordance with the approved plans or as specified by the RGE, and the acceptance criteria for the test/site trial are met.
N2	Setting out of soil nails	Check whether the positions of the soil nails agree with the approved plans.
N3	Drilling of soil nail holes	Check whether the drillhole diameter, length, inclination and bearing are in accordance with the approved plans and any anomalies on ground and groundwater conditions and to report to the responsible person if necessary.

Table 6.2 Cont'd

N4	Assembly of soil nail reinforcement	Check whether the assembly is in accordance with the approved plans, in particular, the length, type and corrosion protection provisions of the reinforcement, adequacy and tightness of any couplers used, adequacy of centralisers to ensure minimum grout cover and the grout pipes are not twisted and free from blockage and are extended to the bottom of the soil nail holes in accordance with the approved plans.
N5	Insertion of soil nail reinforcement	Check whether: - cleaning of the hole, e.g. by air flushing is needed to remove any blockage or collapse, or there is any groundwater, which may require a change in construction method, and - the assembly is sufficiently rigid and the correct assembly of soil nail reinforcement is inserted.
N6	Grout and preparation of grout	Check whether the grout used, grout mix, preparation of grout and grout test results meet the requirements of the approved plans.
N7	Grouting of soil nail hole	Check whether: - grouting of soil nails is carried out on the same day as insertion of the soil nail reinforcement assembly, - grout is injected into the drillhole through the grout pipe with sustained grout return of satisfactory cleanliness and viscosity from the top of the drillhole, - grouting operation is carried out according to the approved plans, and - excessive grouting time or excessive grout volume consumed in any drillhole to maintain sustained grout return of satisfactory cleanliness and viscosity, or other anomalies such as excessive 'settlement' of grout (as measured along the length of the nail) on cessation of grouting, are reported to the responsible person and recorded.
N8	Construction of soil nail heads and structural supports between nail heads	Check whether the soil nail heads and structural supports are constructed in accordance with approved plans, including the dimensions, materials used, structural detailing and workmanship.

6.16 Key records on supervision of soil nailing works (Appendix IX) should be prepared and certified by the RGE's TCP T3 who carries out the inspection, measurement or check. A full set of all certified records should be kept on site for the inspection by the BA.

6.17 The RGE's TCP T5 should verify the design assumptions and carry out design review during construction. He should check whether there are any anomalies that may invalidate the functional requirements of the design during his periodic site inspections and follow them up. He should also follow up any anomalies reported to him by the RGE's TCP T3. If necessary, the RGE should make amendment submissions for the approval of the BA.

6.18 The extent of supervision required for different stages of soil nailing works is shown in Table 6.2. Actual supervision requirements will be imposed at plan approval stage by the BA on a case-by-case basis depending on the scale and complexity of the slope and the soil nailing works, and the anticipated construction difficulties. The RGE should nominate to the BA, an adequate number of qualified supervision personnel with suitable experience, taking into account the site conditions and the number of soil nails proposed and their lengths. During the construction stage, the RGE should review the adequacy of the supervision team taking into account the likelihood of concurrent construction requiring close supervision under the construction programme.

6.19 The RGE's TCP T5 should provide supervision as necessary during all stages in Table 6.2. Moreover, he is required to provide the following supervision personally :

(a) pull-out test and any specified site test – at least 1 nail each of pull-out test and site trial;

(b) insertion of soil nail reinforcement – at least 2 working nails at early stage of nail construction;

(c) grouting of soil nail hole – at least 2 working nails at early stage of nail construction; and

(d) construction of soil nail heads and structural supports between nail heads – at least one soil nail head.

6.20 The RSC(SF)'s TCP T4 should also provide supervision as necessary during all stages in Table 6.2. Moreover, he is required to provide the following supervision personally:

(a) pull-out test and any specified site test – at least 1 nail each of pull-out test and site trial;

(b) insertion of soil nail reinforcement – at least 2 working nails at early stage of nail construction;

(c) grouting of soil nail hole – at least 2 working nails at early stage of nail construction; and

(d) construction of soil nail heads and structural supports between nail heads – at least one soil nail head.

6.21 On completion of installation of soil nails, the RGE should submit to the BA key supervision records in the form of Appendix IX certified by his TCP T3. Upon review of the supervision records, if the BA considers that there is cause for concern in relation to the quality of soil nailing works, the BA will require the RGE to carry out non-destructive testing (NDT) of at least 1% of soil nails with a minimum of 2 nails per slope (including wall) to verify the length of the installed soil nails.

6.22 Several NDT methods for checking the length of installed soil nails are described in GEO Report No. 133 "Non-destructive Tests for Determining the Lengths of Installed Steel Soil Nails". Alternatively, the RGE may propose other methods for BA's agreement at the design stage of the project. A test report with the test results and their interpretations together with re-assessment of the adequacy of the installed soil nails (if needed) should be submitted to the BA for acceptance.

Quality Supervision for Foundation Works

6.23 Quality supervision of foundation works should be provided by the RSE and his TCP T5 and T3, as well as by the AS of the RSC (Foundation) (RSC(F)) and his TCP T4 and T2. Depending on the nature of the various stages of foundation works, TCPs should either be full-time on site or inspect certain percentage of the works as specified in this Code.

6.24 The stages of the various types of foundation works are shown in Table 6.3. Actual supervision requirements will be imposed by the BA at plan approval and consent stage on a case-by-case basis depending on the scale and extent of the foundation works.

Table 6.3
Stages of Various Types of Foundation Works

Item No.	Stage	Description
	(a) <u>Driven Piles</u>	
F1	(i) Setting out of piles	Check that the locations of piles agree with approved plans.
F2	(ii) Driving test	Check that design assumptions agree with actual site conditions during driving tests.
F3	(iii) Driving of piles	Check that the accepted working procedures of pile driving are followed and anomalies rectified during pile driving.
F4	(iv) Splicing of piles	Check the accuracy of design details during pile splicing.
F5	(v) Final sets	Check that the required final set has been achieved and the capacity of each pile complied with approved plans.
F6	(vi) Proof test (Verification on the performance of the as-constructed piles by the imposition of test load)	Check that the testing procedures and acceptance criteria of proof tests are in accordance with PNAP APP-18 and measurements are properly recorded during the test.

	(b) Large Diameter Bored Piles, Barrette Piles and the like	
F7	(i) Setting out of piles	Check that the locations of piles agree with approved plan.
F8	(ii) Pre-drilling (To determine the proposed founding levels of piles)	Supervise the pre-drilling operation; the logging of soil/rock samples, and to measure the depth of drillholes. Ensure that the retrieved samples are not tampered.
F9	(iii) Verification of founding stratum	Measure the depth of excavation and check the quality of retrieved materials at the founding stratum.
F10	(iv) Installation of piles (Grouting operation when required)	Check that proper working procedures of pile installation are followed and anomalies rectified. Check the correct grout mix, grout pressure and grout volume are being used and the adjacent building structures are not adversely affected.
F11	(v) Preparation of pile base	Ensure that pile base is clean.
F12	(vi) Fabrication and installation of rebar cage and placing of concrete	Check that sufficient and correct amount of rebars are provided and proper concreting method is used.
F13	(vii) Interface proof drilling	Check that the quality of concrete and foundation rock conforms with that specified in the approved plan and that concrete and rock are in good contact at the interface.
F14	(viii) Proof core-drilling test (Verification on the performance of the as-constructed piles)	Supervise the core drilling operation of the proof test and the logging of concrete/rock samples and measure the depth of drillhole. Ensure that retrieved samples are securely stored and delivered to laboratory for testing.
	(c) Mini-piles, Socketed Steel H-piles and the like	
F15	(i) Setting out of piles	Check that the locations of piles agree with approved plan.

F16	(ii)	Pre-drilling (To determine the proposed founding levels of piles)	Supervise the pre-drilling operation; the logging of soil/rock samples, and to measure the depth of drillholes. Ensure that the retrieved samples are not tampered.
F17	(iii)	Verification of founding stratum	Measure the depth of drilling and check the quality of retrieved materials at the founding stratum.
F18	(iv)	Installation of piles (Grouting operation when required)	Check that proper working procedures of pile installation are followed and anomalies rectified. Check the correct grout mix, grout pressure and grout volume are being used and the adjacent building structures are not adversely affected.
F19	(v)	Installation of rebar and grouting	Check that sufficient and correct amount of rebars are provided and proper grouting method is used.
F20	(vi)	Proof test (Verification on the performance of the as-constructed piles by the imposition of test load)	Check that the testing procedure and acceptance criteria of the proof tests are in accordance with PNAP APP-18 and measurements are properly recorded during the test.
F21	(vii)	Post-installation borehole drilling	Verify the rockhead profile and socket length of piles during post-installation borehole drilling.
	(d)	<u>Rafts and Spread Footings</u>	
F22	(i)	Setting out of rafts and spread footings	Check that the locations and sizes of rafts and spread footings agree with approved plan (or the submitted plans for minor works).
F23	(ii)	Inspection of bearing stratum	Check the compliance of ground bearing stratum with approved plans (or the submitted plans for minor works), site investigation reports and design assumptions.
F24	(iii)	Fixing of rebars and checking of concrete covers	Check that sufficient amount of rebars and good workmanship are provided.
F25	(iv)	Placing, compaction and curing of concrete	Ensure the quality and workmanship of concrete works.
F26	(v)	Plate loading test (where required) (To verify the adequacy of ground bearing stratum)	Check that the accepted testing procedures of plate loading test are followed and measurements are correctly recorded.

Note : Foundation unit inspected should be shown in the checklist by each member of the supervision team.

6.25 The RSE should provide supervision as necessary during all stages in Table 6.3.

6.26 The AS of the RSC(F) should provide supervision as necessary during all stages in Table 6.3.

6.27 Pre-drilling, interface proof drilling, post-installation drilling and proof core-drilling test for foundation works must be carried out by a RSC(GIFW) and be supervised by the site supervisors responsible for the quality supervision of foundation works. There is no need to submit a separate supervision plan for the pre-drilling and post-installation drilling works.

7 *Building Works with Significant Geotechnical Content*

7.1 Building works with significant geotechnical content include the following types of geotechnical works:

(a) site formation
- blasting
- prestressed ground anchors
- prestressed ground anchors in sensitive sites* (see para 7.3)
- soil nails
- cut slopes (in rock or soil) (height > 3m)
- stabilisation works on rock slopes
- fill slopes (compaction and installation of such surface filter/drainage layers) greater than 5m high, or less than 5m high which pose a direct risk to life, i.e. Consequence-to-life Category 1 or 2 in PNAP APP-109
- reinforced fill slopes
- natural terrain hazard mitigation

(b) excavation and lateral support, and temporary retaining structures
- depth > 4.5m (depth > 7.5m in sensitive sites* - see para 7.3)

(c) permanent retaining structures
- diaphragm walls and bored-pile walls

- reinforced fill structures
- cantilever/gravity retaining walls (height > 5m) and screen/basement walls (height > 7.5m)

(d) ground treatment
- vertical drains, horizontal/raking drains
- grouting and dewatering for cut and cover excavation and tunnel/shaft/cavern construction
- ground water drainage works in Scheduled Area No. 1

(e) demolition works affecting slopes and retaining walls
- ground stabilisation works using soil nails or anchors

(f) foundation
- foundation for buildings in Scheduled Area No. 1
- deep foundation for buildings in Scheduled Areas Nos. 2 & 4 and in Designated Area of Northshore Lantau
- foundation that could affect an existing tunnel/cavern or that could be affected by tunnel works

(g) water wells
- well yield test and the effect of proposed water extraction.

(h) tunnel works* (tunnels/caverns/shafts/associated underground facilities - see para 7.3)
- cut and cover construction methods
- drill and blast methods
- soft ground tunnel construction techniques
- tunnel boring machine, micro-tunnelling (including directional drilling) and pipe jacking methods
- associated ground support, ground treatment and groundwater control works

7.2 The list above is not intended to be exhaustive as it only contains the common types of geotechnical works encountered.

7.3 In normal circumstances, a TCP T3 and a TCP T5 are required to be provided by the RGE to supervise building works with significant geotechnical content. However, a Directorate Site Supervisor (DSS)

may be required for geotechnically difficult or sensitive sites marked * in the above list or any other sites as considered appropriate by GEO and the BA.

7.4 Sensitive sites are sites where the works could pose adverse impact to life and/or property. These include sites where works could affect old buildings with shallow foundations, old tunnels/caverns, major roads, railways, water mains, gas mains, slopes, retaining walls or sites with history of instability.

7.5 The requirements for the provision of a DSS, if considered necessary by GEO and the BA, will be conveyed to the AP/RSE/RGE in the approval and consent letters. The name of the DSS should also be given in the supervision plan.

7.6 A DSS should be a registered professional engineer in geotechnical discipline who holds the position of a partner/director in the firm which prepared the geotechnical content of the submission. The RGE who is responsible for the project can also be accepted as the DSS.

8 *Supervision Requirements*

Determining the Required TCPs and Their Frequency Level of Site Inspections

8.1 The grades of TCP and their minimum frequency level of site inspections required for each stream for various types of building works or street works are set out in Table 1 of the Technical Memorandum. More frequent supervision requirements during critical stages are specified in paragraph 9 of this Code.

8.2 For building works with significant geotechnical content, the RSE would only be required to provide a team of site supervisors where there was structural works.

8.3 For foundation works in Scheduled Areas Nos. 1, 2 and 4 and in Designated Area of Northshore Lantau, additional supervision from the RGE's stream is required on top of the supervision requirements for foundation works given in Table 1 of the Technical Memorandum. Note 5 to Table 1 of the Technical Memorandum refers.

Scale of the Works

8.4 The effect of the scale of the works should be considered in determination of supervision requirements. It should be assessed by a scale factor of the works.

8.5 A measurable item and a basic value of which are assigned for each type of building works or street works. The scale factor of a type of works is the ratio of the estimated value of the measurable item of the works to the basic value. The scale factor is capped at 2.

8.6 The measurable items and their basic values to be used for the assessment of the scale factor of various types of building works or street works are set out in Table 8.1. Unless otherwise specified, the measurable items represent the total cost, average cost per month, or quantity of the respective type of building works or street works to be carried out. The BA may review and amend the measurable items and their basic values from time to time.

Table 8.1		
Measurable Items and Basic Values for Assessment of the Scale of Works		
Type of Building Works/ Street Works	**Measurable Item**	**Basic Value**
demolition	maximum floor area of the building to be demolished per storey	750m^2
GIFW	number of drilling rigs (irrespective of the number of trial pits, coreholes and slope surface strippings)	6
	number of trial pits, coreholes and slope surface strippings concurrently carried out on site (only applicable when no drillholes are proposed)	20
site formation	total cost[#]	$40M
repair of slope/retaining wall/buried services	total cost[#]	$12M
excavation & lateral support	average cost per month[#]	$8M
pile wall	average cost per month[#]	$8M
tunnel works	total cost[#]	$47M
large diameter bored piles and barrette piles	average cost per month[#]	$19M
piles other than the above types of pile	average cost per month[#]	$9.5M
cap/footing/basement	total cost[#]	$47M
superstructure	total construction floor area	20 000m^2
curtain wall/cladding	total aggregated surface area	10 000m^2
alteration & addition	total cost[#]	$17.5M
minor works	total cost[#]	$11M
street works	total cost[#]	$12M

[#] The total cost and average cost per month should be based on the Estimated Total Value of Construction Operations submitted to the Construction Industry Council for the assessment of the Construction Industry Levy under the Construction Industry Council Ordinance (Cap. 587). If applicable, the following items can be deducted:

(a) Contingency and Contract Price Fluctuation subject to submission of revised supervision plan once a revised estimated contract sum is available to the AP in case such change would have implication on the scale factor resulting in amendments to the required supervision resources;
(b) Electrical and mechanical works not under the control of BO; and
(c) Fitting out works falling within the scope of exempted building works under the BO.

8.7 For the purpose of scale assessment, for a scale factor of one, a full day inspection by a TCP on each occasion is assumed. The TCP should have discharged all his duties in inspecting all essential items required for him on each occasion.

8.8 A scale factor of less than one would allow visits of duration of less than one full day but at the same frequency level. The minimum frequency level of site inspections as set out in Table 1 of the Technical Memorandum should not be reduced. For full time TCPs, they should be stationed on site to provide continuous supervision[16]. The RC should allocate sufficient resources to provide continuous supervision on site when the building works or street works are underway, in order to ensure that :

(a) safety management measures and actions are implemented during the course of the above works to meet the objectives of section 4.3 of the Technical Memorandum;

(b) the building works and street works (including the associated temporary works) are carried out properly in accordance with the specifications, method statements, plans approved by the BA and any order made / condition imposed by the BA in respect of such works, or submitted plans for minor works;

(c) any problems encountered are timely resolved before being covered up or proceeded to the next stage of works; and

(d) any non-conformity identified is properly handled in accordance with paragraphs 5.5 to 5.9 and 10.5 of this Code, and any major/serious site incidents relating to building works identified are properly handled in accordance with paragraphs 11.2 to 11.8 of this Code. For any task specific qualified supervision requirements imposed by the BA as conditions of plan approval

[16] The manner of continuous supervision may vary from task to task and should be commensurate with the scale and complexity of the individual task concerned. It also depends on the specific types / stage of the works being carried out and whether any non-conformity could be readily identifiable and rectifiable during and after completion of a particular working procedure or stage of the works. In other words, any intermittent absence of a TCP from a task must not be of such nature and duration as to cause any interruption to the continuous supervision of the works or there should be any chances for improper performance to arise or serious consequence to occur.

or granting of consent for commencement of works pursuant to any provision of the BO or its subsidiary legislations, they would be specified at the time of imposing the conditions where appropriate.

8.9 A scale factor of more than one should require extra supervision input. The scale factor should be applied to increase the level of supervision input over the minimum frequency level required in Table 1 of the Technical Memorandum in the following manner :

(a) to upgrade the frequency level of inspection of the heads and TCPs of grades T2 to T5 as specified in Table 1 of the Technical Memorandum for that type of works; and

(b) to increase the number of TCP of grade T1, and grade T2/T3 in some cases, required to carry out full time supervision.

8.10 For the purpose of assessing the manpower input required for a specified frequency level of inspection, the minimum frequency levels of inspection, Levels 1 to 5 as specified in Table 1 of the Technical Memorandum, are quantified in terms of man-days per month as shown in Table 8.2. As there is a significant difference in input between levels 4 and 5, further subdivision of level 4 is given in Table 8.3 to take into account circumstances where more frequent inspections than weekly are required.

Table 8.2

Table Showing Frequency Levels of Site Inspection in Terms of Man-days Per Month For Works of Scale Factor of One

Level	Description	Notional Supervision Input (Equivalent Man-days per Month)
Level 5	Full time	25
Level 4	Weekly visits	4
Level 3	Fortnightly visits	2
Level 2	Monthly visit	1
Level 1	As and when required	0.5

Note: The notional supervision input of 0.5 is applicable when AP/RSE/RGE/AS also performs TCP's supervision duties.

Table 8.3		
Table Showing Supervision Input for Works Requiring More Frequent Visits than Weekly		
Frequency Level of Site Inspection	**Description**	**Notional Supervision Input (Equivalent Man-days per Month)**
Level 5	Full time on site	25
Level 4.4	Five visits every week	20
Level 4.3	Four visits every week	16
Level 4.2	Three visits every week	12
Level 4.1	Two visits every week	8
Level 4	One visit every week	4

8.11 The adjusted supervision input for a scale factor exceeding one should be calculated by multiplying the scale factor to the notional supervision input corresponding to the minimum frequency level of inspection required for the respective type of works. The upgraded frequency level corresponding to the adjusted supervision input should then be found from Table 8.2 and 8.3. For full time TCPs, the supervision input should be increased by either increasing the number of TCPs or combining the required supervision input extra over that of one full time TCP with that of other higher grade TCPs.

Combination of Supervision Resources

8.12 To facilitate the deployment of TCPs under different resources situations, a higher grade TCP may take up the duties of a lower grade TCP in his stream provided that the requirements for relevant qualifications and experience of the lower grade are satisfied.

8.13 Combination of supervision resources is only permitted for those types of works that are to be carried out concurrently on site.

8.14 In order to combine the resources required for one or more types of building works, or to combine the duties of TCPs, the application of scale factors as specified in paragraphs 8.4 to 8.11 should be followed and Form C at Appendix IV should be used for the calculations. Form C should be appended to the supervision plan submitted to the BA.

8.15 In using Form C to calculate the combination of TCPs, the following steps should be followed :

(a) List those types of building works or street works for which supervision resources are to be combined.

(b) Group the types of works into concurrent and non-concurrent works (Column 1). Only TCPs under concurrent works may be combined.

(c) Obtain the notional supervision input (Column 5) corresponding to the frequency level of site inspection from Table 8.2.

(d) The adjusted supervision input (Column 6) is the product of the scale factor (Column 2) and the notional supervision input (Column 5).

(e) List the grades of TCP that are to be combined in Column 7.

(f) List the grades of TCP with combined duties in Column 8.

(g) Sum up the supervision input required for those TCPs who are to be combined as the supervision input required for the TCP with combined duties (Column 9).

(h) Derive the number of TCP with combined duties (Column 10) and frequency level of site inspection required after the combination of TCPs (Column 11) using Tables 8.2 and 8.3. The derived frequency level of site inspection should not be less than the minimum inspection frequency as set down in Table 1 of the Technical Memorandum.

8.16 The AP, RSE and RGE, after calculating the supervision input in accordance with paragraph 8.15, may further combine TCPs of the three streams in accordance with the same principles.

8.17 If the different types of works are not to be grouped and that the duties of TCPs are not to be combined, the adjusted supervision input for different types of works with a scale factor of more than one should also be calculated in Form C by using columns 1 to 6 and 11.

TCP Qualifications and Experience

8.18 The minimum qualifications and experience required for each grade of TCP are set out in Table 2 of the Technical Memorandum. Experience, wherever mentioned in this Code, means relevant working experience as defined in Note (1) in Table 2 of the Technical Memorandum.

8.19 Academic qualifications required for each grade of TCP are recognised in accordance with the following principles :

(a) Diplomas and certificates must have been awarded by the Institutes of Vocational Education (IVE), or the previous Technical Institutes (TI), operated under the Vocational Training Council (VTC);

(b) Higher diplomas and higher certificates must have been awarded by universities funded by the University Grants Committee (UGC), or the IVE or the previous TI operated under the VTC;

(c) Bachelor degrees and higher degrees must have been awarded by universities funded by the UGC or currently recognised by the Hong Kong Institute of Architects (HKIA), the Hong Kong Institution of Engineers (HKIE) or the Hong Kong Institute of Surveyors (HKIS);

(d) Degrees awarded by universities or institutes other than those mentioned in (c) above are classified as higher diplomas;

(e) Non-graduate vocational qualifications awarded by institutions other than those mentioned in (a) and (b) above are subject to the acceptance of the BA;

(f) Notwithstanding (d) above, other overseas degrees or higher degrees may be recognised by the HKIA, HKIE or HKIS and, if so, will be accepted under (c) above. Evidence of such recognition should be produced to the BA by the AP, RSE, RGE or AS when appointments of TCPs with such qualifications are proposed in the supervision plans; and

(g) Overseas or other local diplomas/certificates or higher diplomas/ higher certificates may be accredited by recognised accreditation bodies such as the Hong Kong Council for Accreditation of

Academic and Vocational Qualifications (formerly Hong Kong Council for Academic Accreditation) if their qualifications are equivalent to that conferred by institutes operated under the VTC. Evidence of such accreditation should be produced by the AP, RSE, RGE or AS to the BA for acceptance before making proposals on appointments of TCPs with such qualifications.

8.20 Details of the professional and academic qualifications and the relevant disciplines that are acceptable for TCPs of grade T1 to T5 should be as set out in Tables 8.4 to 8.8 respectively.

8.21 Other acceptable criteria in qualifications and experience for TCP prescribed in this paragraph are recorded at Appendix X.

Table 8.4

Minimum Qualifications and Experience Required for TCP T1

Type of Building Works or Street Works	AP's Stream		RSE's Stream		RGE's Stream		RC's Stream	
	Qualification	Relevant Experience	Qualification	Relevant Experience	Qualification	Relevant Experience	Qualification	Relevant Experience
GIFW	N/A		N/A		N/A		(a) Certificate in civil/ geotechnical engineering; or (b) Degree in geology which covers the specified engineering related subjects (refer Item 2 of Appendix VII) or Degree in civil/geotechnical engineering; or (c) Geotechnical Field Technician already accepted under the Development Bureau's List of Approved Suppliers of Materials and Specialist Contractors for Public Works in the Category of GIFW; or (d) Passed specified TCP T1 training course.	2 years in GI 1 year in GI N/A see Appendix X

Type of Building Works or Street Works	AP's Stream		RSE's Stream		RGE's Stream		RC's Stream	
	Qualification	Relevant Experience	Qualification	Relevant Experience	Qualification	Relevant Experience	Qualification	Relevant Experience
Building works with significant geotechnical content	N/A		N/A		N/A		(a) Certificate or diploma in civil/ structural/geotechnical engineering; or (b) Passed specified top-up courses / TCP T1 training course.	2 years see Appendix X
Foundation works	N/A		N/A		N/A		(a) Certificate or diploma in civil/ structural/geotechnical engineering; or (b) Certificate or diploma in building studies (except for piling works); or (c) Passed specified top-up courses/ TCP T1 training course.	2 years 2 years see Appendix X
Street works or all building works (other than the above types of works and minor works)	N/A		N/A		N/A		(a) Certificate or diploma in civil/ structural/geotechnical engineering, building studies, building surveying or architectural studies; or (b) Passed specified top-up courses/ TCP T1 training course.	2 years see Appendix X
Class 1 minor works	N/A		N/A		N/A		(a) Certificate or diploma in civil/ structural/geotechnical engineering, building studies, building surveying or architectural studies; or (b) Passed specified top-up courses/ TCP T1 training course; or (c) Passed specified TCP T1 (Minor Works) training course.	2 years see Appendix X see Appendix X

Table 8.5

Minimum Qualifications and Experience Required for TCP T2

Type of Building Works or Street Works	AP's Stream		RSE's Stream		RGE's Stream		RC's Stream	
	Qualification	Relevant Experience	Qualification	Relevant Experience	Qualification	Relevant Experience	Qualification	Relevant Experience
GIFW	N/A		N/A		N/A		N/A	
Building works with significant geotechnical content	N/A		N/A		N/A		(a) Higher certificate or higher diploma in civil/structural/ geotechnical engineering; or (b) Passed specified top-up courses.	3 years see Appendix X
Foundation works	N/A		N/A		N/A		(a) Higher certificate or higher diploma in civil/structural/ geotechnical engineering; or (b) Higher certificate or higher diploma in building studies (except for piling works); or (c) Passed specified top-up courses.	3 years 3 years see Appendix X
Street works or all building works (other than the above types of works and minor works)	N/A		N/A		N/A		N/A	
Class 1 minor works	N/A		N/A		(a) Higher certificate or higher diploma in civil/geotechnical engineering.	3 years	N/A	

Note : Holders of a degree in the relevant professional discipline with 2 years relevant working experience may also take up the duties of a TCP T2 for a certain type of building or street works under the RC's Stream.

Table 8.6

Minimum Qualifications and Experience Required for TCP T3

Type of Building Works or Street Works	AP's Stream		RSE's Stream		RGE's Stream		RC's Stream	
	Qualification	Relevant Experience	Qualification	Relevant Experience	Qualification	Relevant Experience	Qualification	Relevant Experience
GIFW	(a) Higher certificate or higher diploma in civil/structural/ geotechnical engineering, building studies, building surveying or architectural studies; or (b) Degree in civil/ structural/geotechnical engineering, building studies, building surveying or architectural studies; or (c) Degree in geology which covers the specified engineering related subjects (refer Item 2 of Appendix VII); or (d) Degree in geology which covers the specified engineering related subjects (refer Item 2 of Appendix VII) or Degree in civil/ geotechnical engineering, and has attended and passed specified geotechnical top-up course (refer paragraph 4 of Appendix X).	5 years 2 years 2 years in civil/ geotechnical engineering 1 year in civil/ geotechnical engineering	N/A		(a) Higher certificate or higher diploma in civil/ geotechnical engineering; or (b) Degree in geology which covers the specified engineering related subjects (refer Item 2 of Appendix VII) or Degree in civil/geotechnical engineering; or (c) Degree in geology which covers the specified engineering related subjects (refer Item 2 of Appendix VII) or Degree in civil/ geotechnical engineering, and has attended and passed specified geotechnical top-up course (refer paragraph 4 of Appendix X).	5 years (including 1 year in GI) 2 years in civil/ geotechnical engineering 1 year in civil/ geotechnical engineering	N/A	

Type of Building Works or Street Works	AP's Stream		RSE's Stream		RGE's Stream		RC's Stream	
	Qualification	Relevant Experience	Qualification	Relevant Experience	Qualification	Relevant Experience	Qualification	Relevant Experience
Building works with significant geotechnical content	(a) Higher certificate or higher diploma in civil/structural/ geotechnical engineering, building studies, building surveying or architectural studies; or (b) Degree in civil/ structural/geotechnical engineering, building studies, building surveying or architectural studies; or (c) Degree in civil/ structural/geotechnical engineering, and has attended and passed specified geotechnical top-up course (refer paragraph 4 of Appendix X).	5 years 2 years 1 year	(a) Higher certificate or higher diploma in civil/structural/ geotechnical engineering; or (b) Degree in civil/structural/ geotechnical engineering; or (c) Degree in civil/structural/ geotechnical engineering and has attended and passed specified geotechnical top-up course (refer paragraph 4 of Appendix X).	5 years 2 years 1 year	(a) Higher certificate or higher diploma in civil/structural/ geotechnical engineering; or (b) Degree in civil/ structural/ geotechnical engineering; or (c) Degree in geology which covers the specified engineering related subjects (refer to Item 2 of Appendix VII) or degree in civil/structural/ geotechnical engineering, and has attended and passed specified geotechnical top-up course (refer paragraph 4 of Appendix X).	5 years 2 years 1 year	N/A	

Type of Building Works or Street Works	AP's Stream		RSE's Stream		RGE's Stream		RC's Stream	
	Qualification	Relevant Experience	Qualification	Relevant Experience	Qualification	Relevant Experience	Qualification	Relevant Experience
Foundation works	(a) Higher certificate or higher diploma in civil/structural/ geotechnical engineering, building studies, building surveying or architectural studies; or (b) Degree in civil/ structural/geotechnical engineering, building studies, building surveying or architectural studies; or (c) Degree in civil/ structural/geotechnical engineering and has attended and passed specified geotechnical top-up course (refer paragraph 4 of Appendix X).	5 years 2 years 1 year	(a) Higher certificate or higher diploma in civil/structural/ geotechnical engineering; or (b) Degree in civil/ structural/geotechnical engineering; or (c) Degree in civil/ structural/geotechnical engineering and has attended and passed specified geotechnical top-up course (refer paragraph 4 of Appendix X).	5 years 2 years 1 year	N/A		N/A	
Street works or all building works (other than the above types of works and minor works)	(a) Higher certificate or higher diploma in civil/structural/ geotechnical engineering, building studies, building surveying or architectural studies; or (b) Degree in civil/ structural/geotechnical engineering, building studies, building surveying or architectural studies; or (c) Passed specified top-up courses.	5 years 2 years See Appendix X	(a) Higher certificate or higher diploma in civil/structural/ geotechnical engineering; or (b) Degree in civil/ structural/geotechnical engineering; or (c) Passed specified top-up courses.	5 years 2 years See Appendix X	N/A		(a) Higher certificate or higher diploma in civil/structural/ geotechnical engineering, building studies, building surveying or architectural studies; or (b) Degree in civil/ structural/geotechnical engineering, building studies, building surveying or architectural studies; or (c) Passed specified top-up courses.	5 years 2 years See Appendix X

Type of Building Works or Street Works	AP's Stream		RSE's Stream		RGE's Stream		RC's Stream	
	Qualification	Relevant Experience	Qualification	Relevant Experience	Qualification	Relevant Experience	Qualification	Relevant Experience
Class I minor works	(a) Higher certificate or higher diploma in civil/structural/ geotechnical engineering, building studies, building surveying or architectural studies; or	5 years	(a) Higher certificate or higher diploma in civil/structural/ geotechnical engineering; or	5 years	N/A		(a) Higher certificate or higher diploma in civil/structural/ geotechnical engineering, building studies, building surveying or architectural studies; or	5 years
	(b) Degree in civil/ structural/geotechnical engineering, building studies, building surveying or architectural studies; or	2 years	(b) Degree in civil/ structural/geotechnical engineering; or	2 years			(b) Degree in civil/ structural/geotechnical engineering, building studies, building surveying or architectural studies; or	2 years
	(c) Passed specified top-up courses.	See Appendix X	(c) Passed specified top-up courses.	See Appendix X			(c) Passed specified top-up courses.	See Appendix X

Table 8.7

Minimum Qualifications and Experience Required for TCP T4

Type of Building Works or Street Works	AP's Stream		RSE's Stream		RGE's Stream		RC's Stream	
	Qualification	Relevant Experience	Qualification	Relevant Experience	Qualification	Relevant Experience	Qualification	Relevant Experience
GIFW	N/A		N/A		N/A		(a) Degree in geology which covers the specified engineering related subjects (refer Item 2 of Appendix VII) or Degree in civil/geotechnical engineering; or (b) Registered professional engineer (Geotechnical).	4 years in civil/ geotechnical works (including 2 years in GI) -
Building works with significant geotechnical content	(a) Degree in civil/structural/ geotechnical engineering, building studies, building surveying or architectural studies; or (b) Registered professional engineer (Civil, structural, geotechnical or building); or (c) Registered architect; or (d) Registered professional surveyor (Building surveying).	4 years - - -	N/A		N/A		(a) Degree in civil/ geotechnical engineering; or (b) Registered professional engineer (Civil or geotechnical).	4 years -

Table 8.7

Minimum Qualifications and Experience Required for TCP T4

Type of Building Works or Street Works	AP's Stream		RSE's Stream		RGE's Stream		RC's Stream	
	Qualification	Relevant Experience	Qualification	Relevant Experience	Qualification	Relevant Experience	Qualification	Relevant Experience
Foundation works	(a) Degree in civil/structural/ geotechnical engineering, building studies, building surveying or architectural studies; or (b) Registered professional engineer (Civil, structural, geotechnical or building); or (c) Registered architect; or (d) Registered professional surveyor (Building surveying).	4 years - - -	N/A		N/A		(a) Degree in civil/ structural/geotechnical engineering; or (b) Degree in building studies (except for piling works); or (c) Registered professional engineer (Civil, structural or geotechnical); or (d) Registered professional engineer (building) (except for piling works).	4 years 4 years - -
Street works or all building works (other than the above types of works and minor works)	(a) Degree in civil/ structural/geotechnical engineering, building studies, building surveying or architectural studies; or (b) Registered professional engineer (Civil, structural, geotechnical or building); or (c) Registered architect; or (d) Registered professional surveyor (Building surveying).	4 years - - -	N/A		N/A		(a) Degree in civil/ structural/geotechnical engineering, building studies, building surveying or architectural studies; or (b) Registered professional engineer (Civil, structural, geotechnical or building); or (c) Registered architect; or (d) Registered professional surveyor (Building surveying).	4 years - - -
Class I minor works	N/A		N/A		N/A		N/A	

Table 8.8								
Minimum Qualifications and Experience Required for TCP T5								
Type of Building Works or Street Works	**AP's Stream**		**RSE's Stream**		**RGE's Stream**		**RC's Stream**	
	Qualification	**Relevant Experience**	**Qualification**	**Relevant Experience**	**Qualification**	**Relevant Experience**	**Qualification**	**Relevant Experience**
GIFW	N/A		N/A		(a) Registered professional engineer (Geotechnical).	5 years	N/A	
Building works with significant geotechnical content	N/A		(a) Registered professional engineer (Civil/ structural/geotechnical).	5 years	(a) Registered professional engineer (Geotechnical).	5 years	N./A	
Foundation works	N/A		(a) Registered professional engineer (Civil/ structural/ geotechnical).	5 years	N/A		N/A	
Street works or all building works (other than the above types of works and minor works)	N/A		(a) Registered professional engineer (Civil/structural/ geotechnical).	5 years	N/A		N/A	
Demolition works	N/A		(a) Registered professional engineer (Civil/ structural/building).	5 years	N/A		(a) Registered professional engineer (Civil/ structural/building).	5 years
Alteration and addition works to a heritage building	N/A		(a) Registered professional engineer (Civil/ structural/geotechnical).	5 years	N/A		(a) Registered professional engineer (Civil/ structural/geotechnical/ building).	5 years
Class I minor works	N/A		N/A		N/A		N/A	

8.22 Unless otherwise specified, the total relevant working experience of different grades of TCP should be aggregated as follows :

(a) for T1 - The relevant experience must have been gained within the previous 5 years and at least 1 year must be local site experience[17].

(b) for T2[18] - Similar to T1 but the experience must be closely related to the type of works concerned.

(c) for T3[18] - The relevant experience must have been gained within the previous 8 years and at least 1 year must be local experience[19]

(d) for T4[18] and T5 -The relevant experience must have been gained within the previous 8 years and at least 1 year must be local experience[19].

8.23 Unless otherwise specified, relevant working experience of a TCP may be considered as the number of years of relevant working experience gained post-qualification plus half the number of years of relevant working experience gained pre-qualification but subject to the conditions in paragraph 8.22. However, for registered architects, registered professional engineers and registered professional surveyors, relevant working experience obtained before the professional qualification is acceptable.

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[17] Local site experience refers to experience gained in Hong Kong construction sites. The qualified supervision experience gained from factories outside Hong Kong may be recognised as local site experience, provided that such qualified supervision are requirements and conditions imposed under the BO upon plan approval.

[18] Any person possessing the respective minimum qualifications and experience for TCP of grades T2, T3 and T4 pursuant to paragraphs 8.26 and 8.27 except lacking 1 year local experience, may apply for inclusion in the TCP List described in paragraph 8.25, of a lower grade in the respective types of TCP categories set out in Table 8.9. Persons accepted for inclusion in the TCP List are deemed to possess the equivalent minimum qualifications and experience required for the relevant TCP grades for the purpose of paragraph 8.29.

[19] Local experience refers to experience gained in Hong Kong working in local projects including design, administration and site supervision work relevant to the duties of a TCP of appropriate grade under each stream of supervision. It also includes qualified supervision experience gained from factories outside Hong Kong provided such qualified supervision are requirements and conditions imposed under the BO upon plan approval.

8.24 From time to time the BA may give guidance on top-up training which allow competent persons without the specified qualifications to become the designated grades of T1 to T3 TCPs on a permanent basis.

TCP List Recognised by BA

8.25 The Construction Industry Council has administered a TCP List via a registration system. From time to time, the BA may give guidance on the administration of the registration system and the TCP List.

8.26 Any person possessing the minimum qualifications and experience as set out in paragraphs 8.18 to 8.24 for TCPs and Appendix VII for Competent Person (Logging) may apply for inclusion in the TCP List.

8.27 Based on the qualifications and experience requirements set out in Tables 8.4 to 8.8 and Appendix VII, application for inclusion in 33 different types of TCP categories are defined in Table 8.9.

Table 8.9

Different Types of TCP Categories

AP's stream	**RSE's stream**	**RGE's stream**	**RC's stream**
AP-T4-BW(G)/FW/BW(O)	RSE-T5-DW	RGE-T5-GIFW/BW(G)	RC-T5-DW
AP-T3-GIFW	RSE-T5-BW(G)/FW/BW(O)/A&A(H)	RGE-T3-GIFW	RC-T5-A&A(H)
AP-T3-BW(G)/FW	RSE-T3-BW(G)/FW	RGE-T3-BW(G)	RC-T4-GIFW
AP-T3-BW(O)	RSE-T3-BW(O)	RGE-T2-MW	RC-T4-BW(G)
AP-T3-MW	RSE-T3-MW		RC-T4-FW
			RC-T4-FW(O)
			RC-T4-BW(O)
			RC-T3-BW(O)
			RC-T3-MW
			RC-T2-BW(G)
			RC-T2-FW
			RC-T2-FW(O)
			RC-T1-GIFW
			RC-T1-BW(G)
			RC-T1-FW
			RC-T1-FW(O)
			RC-T1-BW(O)
			RC-T1-MW
			RC-CP-GIFW

Legends:

Stream-Grade-Type of Works

GIFW – Ground investigation field works
BW(G) – Building works with significant geotechnical content
FW – Foundation works
FW(O) – Foundation works (except for piling works)
BW(O) – Street works or all building works (other than the above types of works and minor works)
MW – Minor works
DW – Demolition works
A&A(H) – Alteration and addition works in a heritage building
CP – Competent Person (Logging)

8.28 The validity period for inclusion in the TCP List is 5 years. An application for retention of name in the TCP List should be submitted within a specified period prior to the expiry of the validity period. A TCP may apply for restoration of his name in the TCP List after expiry of the validity period. Applications for retention and restoration will be assessed based on the criteria as specified in paragraph 8.26 above.

8.29 Any person who is accepted for inclusion in the TCP List is deemed to possess equivalent minimum qualifications and experience required for the relevant grades of TCPs and Competent Person (Logging) as specified in Table 2 of the Technical Memorandum and this Code during the validity period of inclusion in the TCP List. The curriculum vitae (CV) for the academic qualifications and relevant working experience of the appointed TCPs is not required when submitting supervision plans for individual projects if these TCPs are on the TCP List for the relevant categories of works.

8.30 For the appointed TCPs who are not AP/RSE/RGE and not on the TCP List, the CV for their academic qualifications and relevant working experience should be provided as required in paragraphs 5, 6, 9, 10, 13, 14, 17 and 18 of Appendix I upon submission of the supervision plan for different types of works for individual projects. Their contact information should be provided on page 2 of the annex to the supervision plan to facilitate communication between BD and TCPs.

8.31 The requirements for submission of CV and contact information mentioned in paragraph 8.30 are not applicable to those TCPs who are AP/RSE/RGE.

9 *More Frequent Supervision Requirements*

Critical Stages of the Works

9.1 Table 1 of the Technical Memorandum specifies that higher grade TCP and/or more frequent site inspections up to full time may be required at critical stages of the works. Such more frequent site inspections at critical stages are set out in Table 9.1.

9.2 The RC should notify the AP, RSE and RGE of the commencement date and estimated time for completion of the critical stages of works in sufficient time before commencing the critical stages to ensure that the respective TCPs would perform their supervision roles during the carrying out of the critical stage of works on site.

9.3 In addition, the AP, RSE, RGE, or AS may determine that certain sections of the works are particularly difficult or risk prone or that the consequences of a non-conformity may be serious. In these cases any party may notify his counterparts that he considers the section of works to be a critical activity and be included in the supervision plan.

Table 9.1 Supervision Requirements for Critical Stages of Building Works (Notes 1, 2 & 3)			
Type of Building Works	**Critical Stages of Work**	**Inspection Frequency**	
		RC's T5	**RSE's T5**
Demolition; Addition and alteration works	Demolition of complex structures, such as flat slab, prestressed concrete, transfer plate, hanger, long span beam greater than 10m, steel framed construction, and cantilevered structure over street with span greater than 1.2m.	Full Time	Twice a week
	Demolition of buildings which also act as earth-retaining structures supporting adjacent ground with a ground level difference exceeding 1.5m – additional inspection at twice a week by RGE's T5 is also required.	Full Time	Twice a week
Alteration and addition works to a heritage building (Note 4)	Works (Note 5) that would involve alteration and addition to or temporary removal of an existing loadbearing structural members such as foundation, wall, pier, column, hanger, beam with span greater than 6m, cantilevered structure and roof truss.	Full Time	Twice a week
Type of Building Works	**Critical Stages of Work**	**Inspection Frequency**	
		RC's T4	**RSE's T5**
Foundation	(a) Driven Piles		
	(i) Driving test	First test pile	First test pile
	(ii) Final sets	5%	5%
	(iii) Proof load test	At least one proof load test	At least one proof load test
	(b) Large Diameter Bored Piles, Barrette Piles and the like		
	(i) Pre-drilling	Twice a week	N/A
	(ii) Verification of founding stratum	5%	5%
	(iii) Interface proof drilling	At least one post construction proof drilling	At least one post construction proof drilling
	(iv) Proof load test, if any	At least one proof load test	At least one proof load test
	(c) Mini-piles, Socketed Steel H-piles and the like		
	(i) Pre-drilling	Twice a week	N/A
	(ii) Verification of founding stratum	5%	3%
	(iii) Proof load test	At least one proof load test	At least one proof load test

Table 9.1 Cont'd

Type of Building Works	Critical Stages of Work	Inspection Frequency	
		RC's T4	RSE's T5
	(d) Rafts and Spread Footings		
	(i) Inspection of bearing stratum	20%	First batch of footings with each value of bearing pressure
	(ii) Plate loading test (where required)	At least one plate loading test	At least one plate loading test
	(e) Other Cases		
	(i) Piling near the crest of retaining wall within a zone contained by a 45º line from the toe of wall	Twice a week	Twice a week
	(ii) Piling works within 5m of railway structure, highway structure or building completed more than 40 years ago	Twice a week	Twice a week
Excavation and lateral support; Site formation; Repair of slope/retaining wall/buried services (not building works with significant geotechnical content)	Presence of a water main with diameter exceeding 200mm, gas main, building on shallow footing or railway structure within a zone contained by a line measured at 60º to the horizontal from the base of excavation	Twice a week	Twice a week
	Construction of diaphragm wall/bored pile wall or installation of sheet pile/pipe pile/soldier pile wall within 5m of railway structure, highway structure, water main with diameter exceeding 200mm, gas main, building founded on shallow footings or slope/retaining wall	Twice a week	Twice a week
	Preloading of struts	During preloading of the first batch of struts and then every 2 days	During preloading of the first batch of struts
	All related works when movement of ground or building or groundwater drawdown has exceeded the allowable limit	Twice a week	Twice a week
Superstructure	Construction of cantilevered structure over street	Full Time	Twice a week
	Construction of elevated structure, like podium deck, over street	Full Time	Twice a week

Table 9.1 Cont'd

Type of Building Works	Critical Stages of Work	Inspection Frequency	
		RC's T4	RGE's T5
	Works that could affect a water main with diameter exceeding 200mm, gas main, building on shallow footing, tunnel, railway structure (e.g. within a zone contained by a line measured at 60º to the horizontal from the base of excavation/invert of tunnel)	Twice a week	Twice a week
Excavation and lateral support; Site formation; Repair of slope/retaining wall/buried services; Tunnel works (building works with significant geotechnical content)	Construction of diaphragm wall/bored pile wall or installation of sheet pile/pipe pile/soldier pile wall within 5m of railway structure, highway/drainage/sewerage structure, water main with diameter exceeding 200mm, gas main, building founded on shallow footings, tunnel or slope/retaining wall	Twice a week	Twice a week
	Preloading of struts	During preloading of the first batch of struts and then every 2 days	During preloading of the first batch of struts
	All related works when movement of ground or building or groundwater drawdown has exceeded the allowable value	Twice a week	Twice a week
	Pumping test or other ground treatment performance testing or operation of recharging well	Daily for first 7 days and at least twice a week thereafter	Daily for first 7 days and at least twice a week thereafter
	Removal of structural support in the absence of permanent support	During the removal process	During the removal process
	Confirmation of founding level of retaining wall	First batch of retaining wall footings with each value of bearing pressure	First batch of retaining wall footings with each value of bearing pressure
	Blasting within sites which have been the subject of genuine blasting - related complaints or are in close proximity to land and properties which have to be protected	Every blast	Every blast
Foundation	Foundation works adversely affecting stability of adjoining sloping ground and in sensitive sites (critical stages to be defined in the approved plan)	Full Time	Weekly

Notes to Table 9.1

1) The supervision requirements for various grades of TCPs for various types of building works or street works as specified in paragraph 8 of this Code should also be complied with during critical stages of work.

2) If the frequencies of inspection for certain grades of TCPs during critical stages of work have been specified, these TCPs should carry out inspections for the specific tasks at such frequencies as specified or at such frequencies as derived under paragraph 8 of this Code (which takes account of the scale of works and allows combination of supervision resources), whichever is higher.

3) The RSE, RGE or AS may require its respective TCP to carry out more frequent inspections to suit the site conditions.

4) It refers to a building covered in paragraph 2.1 of the Practice Guidebook for Adaptive Re-use of Alteration and Addition Works to Heritage Buildings (2019 Edition). It includes a declared monument or a proposed monument defined under the Antiquities and Monuments Ordinance (Cap. 53), a graded historic building accorded by the Antiquities Advisory Board (AAB) or a proposed graded historic building identified by the Antiquities and Monuments Office (AMO). Where a building has not been declared under Cap. 53 nor graded by the AAB / proposed to be graded by AMO and yet possesses a cultural significance in terms of aesthetic, historic, scientific, social or spiritual value, etc., the AP should consult AMO on whether the building is a heritage building.

5) They include Cases 1 and 3 temporary works categorised under paragraph 4.9.

10 *Communication and Reports*

Interstream Communications

10.1 Interstream communications are as important as within-stream communications in order to facilitate effective supervision. TCPs should take all reasonable and practical steps to inform their counterparts of any aspects of the works or any task specific requirements shown on the approved plans and/or imposed by the BA pursuant to any provision of the BO or its subsidiary legislations, which have concern or may cause concern on matters relating to safety or quality.

Site Supervision Reports

10.2 Site supervision reports are required to be completed by all TCPs whenever they carry out site safety or quality supervision activities. Each TCP should have his/her own copy of site supervision report with identities recorded (e.g. full name, post and signature). These reports should be filed and maintained at the site office for the inspection of the BA. AP/RSE/RGE/AS are required to keep their inspection records at site such as notes/photo records and the works items inspected on site, particularly during the critical stages of works. All the above inspection records and site supervision reports should be completed contemporaneously.

10.3 The site supervision report should include but not limited to the following items :

(a) the items of works that have been inspected;

(b) the results of inspection;

(c) the notes of non-conformities as recorded in Form B and also as required in paragraph 5.7 of this Code, if applicable; and

(d) a summary of non-conformities by the Representative of each head of the safety management structure as required in paragraph 10.4 of this Code.

10.4 For the purpose of lesson learning as mentioned in paragraph 5.4 of this Code, TCPs should be aware of the non-conformities recorded through the

interstream and within-stream communications established in the safety management structure. A summary of non-conformities recorded in site supervision reports as mentioned in paragraph 10.3(c) above should be compiled monthly by the Representative of each head of the safety management structure as part of his/her site supervision report, so as to facilitate the regular refreshment of the cases by all TCPs in different streams.

Non-conformity and Rectification Reports

10.5 Other than those non-conformities described in paragraphs 5.6 to 5.8 of this Code, if a non-conformity arises and comes to the attention of a TCP, the following procedures should be initiated :

(a) The TCP informs the Representative of his/her own stream (who will in turn inform the AP, RSE, RGE and AS of the non-conformity) and completes Part 1 of Form B;

(b) If the non-conformity is considered to pose an imminent danger[20], the AP reports the non-conformity to the BA as soon as practicable and in any event within 48 hours of discovery[21]. In the event that the non-conformity is discovered by RSE/RGE/AS, the Representatives of AP/RSE/RGE/AS, or TCPs under their streams of supervision, they should report the non-conformity to the AP within 12 hours of discovery[21] to enable the AP to report to the BA within the time frame. Alternatively, the AS may report direct to the BA and copy to the AP within 48 hours of discovery[21]. In any event, the AP should ensure the non-conformity posing an imminent danger is to be reported to the BA within the time frame;

(c) AP/RSE/RGE issues Instruction to the RC to rectify the non-conformity;

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[20] In the event that urgent work is required for any accident or emergency, notice in the specified form (Form BA7) for such work is required to be given to the BA pursuant to section 19(1) of the BO, either before such work is authorised by the building owner or within 48 hours after it has been commenced whichever is the earlier.

[21] "Discovery" means when the non-conformity is discovered by the AP/RSE/RGE/AS, or the Representatives/TCPs under their streams of supervision, whichever is the earlier.

(d) AS or his/her Representative should coordinate and take all necessary and reasonable steps promptly to rectify the non-conformity and consult the AP/RSE/RGE in case of doubt;

(e) AP/RSE/RGE's Representative will ensure that the rectification works are completed promptly and satisfactorily;

(f) If the non-conformity is considered to cause material concern for safety and the RC fails to comply with the rectification instruction, the AP will coordinate further action and report the non-conformity to the BA within 48 hours upon knowing the RC fails to comply with the rectification instruction;

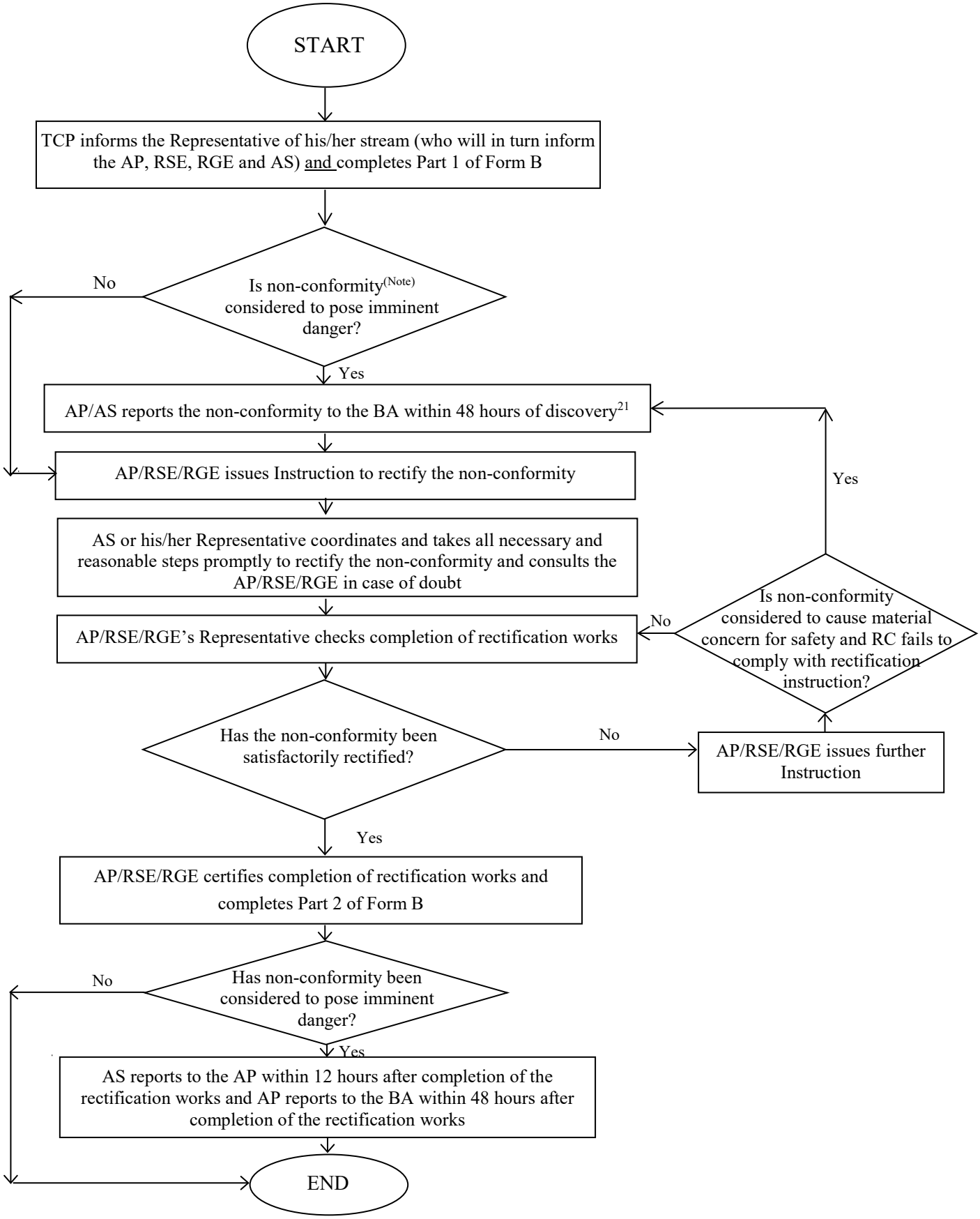
(g) Otherwise, AP/RSE/RGE certifies the completion of the rectification works and complete Part 2 of Form B;

(h) If the non-conformity has been considered to pose an imminent danger[20], AP reports to the BA within 48 hours after completion of the rectification works. The AS should report to the AP within 12 hours after completion of the rectification works to enable the AP to report to the BA within the time frame;

(i) If the non-conformity is also considered as a major/serious site incident under paragraph 11 of this Code, the requirements for reporting as described in paragraph 11 of this Code should also be followed.

A flow chart showing the procedures for completion of non-conformity and rectification reports is shown in Figure 10.1.

Figure 10.1 Flow Chart for Procedures for Completion of Non-Conformity and Rectification Reports



Note: If the non-conformity is also considered as a major/serious site incident under paragraph 11 of this Code, the requirements for reporting as described in paragraph 11 of this Code should also be followed.

11 *Reporting of Major/Serious Site Incidents Relating to Building Works*

Timely Reporting of Major/Serious Site Incidents Relating to Building Works

11.1 A site incident is considered as a major/serious site incident relating to safety of works or quality of works as set out in paragraphs 11.2 and 11.6 of this Code respectively. The AP should timely report such major/serious site incidents to the BA at an early stage in accordance with the requirements set out in paragraphs 11.2 to 11.7 of this Code. If a major/serious site incident is also considered as a non-conformity under paragraph 5.5 of this Code, the requirements for completion of Non-conformity and Rectification Report as specified in paragraph 10.5 of this Code should also be followed.

Major/Serious Site Incidents Relating to Safety of Works

11.2 For a major/serious site incident relating to safety of works mentioned in paragraph 11.4 of this Code, the AP should report the incident to the BA as soon as practicable and in any event within 48 hours of discovery[22]. In the event that the incident is discovered by RSE/RGE/AS, the Representatives of AP/RSE/RGE/AS, or TCPs under their streams of supervision, they should report the incident to the AP within 12 hours of discovery[22] to enable the AP to report to the BA within the time frame. Alternatively, the AS may report direct to the BA and copy to the AP within 48 hours of discovery[22]. In any event, the AP should ensure all reportable cases are to be reported to the BA within the time frame. Notwithstanding the reporting to the BA, the AP, RSE, RGE and AS should carry out assessment, investigation, urgent works[20] or rectification works as considered appropriate and necessary to ensure building and public safety immediately.

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[22] "Discovery" means when the major/serious site incident is discovered by the AP/RSE/RGE/AS, or the Representatives/TCPs under their streams of supervision, whichever is the earlier.

11.3 Such reporting requirement does not preclude any person to report emergency incidents to the Police for assistance. Simultaneously, the AP, RSE, RGE and AS should take immediate actions[20] to remove or mitigate any imminent danger resulting from the incident to ensure building and public safety. AP should also report to the BA within 48 hours after completion of the rectification works.

11.4 A site incident is considered as a major/serious site incident relating to safety of works if the incident:

(a) may cause or has caused loss of life, serious bodily injury[23] or damage to property;

(b) may cause or has caused imminent danger to any buildings, structures or land; or

(c) may cause or has caused material concern relating to safety of any building works or street works.

11.5 The major/serious site incidents described in paragraph 11.4 of this Code may involve either one or a combination of site safety related issues. Examples of site safety related issues, which are not meant to be exhaustive, are given below for reference:

(a) Collapse of permanent structure or part of permanent structure;

(b) Collapse of temporary steel platform/falsework/formwork/propping/ excavation and lateral support;

(c) Collapse of plant or equipment such as tower crane, material hoist and passenger hoist;

(d) Sign of distress of a slope and/or notable landslide is observed;

(e) Any reading of monitoring checkpoint reached or exceeded the trigger value of the "Action Level" specified in the monitoring scheme;

(f) Undue settlement, sign of distress or damage has been observed in any adjacent structures, ground and/or services;

---

[23] Resulting in a loss or an amputation of a limb, or being categorised as in critical condition in the hospital.

(g) The safety of railway facilities or railway operation has been so affected by the building works concerned requiring suspension of the building works;

(h) Sign of distress or instability to any permanent structure or part of permanent structure is observed;

(i) Any incident that may turn into the above situation if the RC fails to carry out the rectification works.

Major/Serious Site Incidents Relating to Quality of Works

11.6 For major/serious site incidents other than those mentioned in paragraphs 11.4 and 11.5 of this Code but relating to quality of works, the AP/RSE/RGE/AS may require additional time to review and assess the situation to determine the cause and detrimental effects to the structure concerned. The AP should report this kind of incident to the BA within 14 days of discovery[22]. In the event that the incident is discovered by RSE/RGE/AS, the Representatives of AP/RSE/RGE/AS, or TCPs under their streams of supervision, they should report the incident to the AP within 5 days of discovery[22] to enable the AP to report to the BA within the time frame. Alternatively, the AS may report direct to the BA and copy to the AP within 14 days of discovery[22]. In any event, the AP should ensure all reportable cases are to be reported to the BA within the time frame. Notwithstanding the reporting to the BA, the AP, RSE, RGE and AS should carry out assessment, investigation or rectification works as considered appropriate and necessary to ensure building and public safety without delay.

11.7 Examples of major/serious site incidents relating to quality of works, which are not meant to be exhaustive, are given below for reference:

(a) Any building works which are in material deviation from an approved plan or may cause or have caused material concern on quality of works;

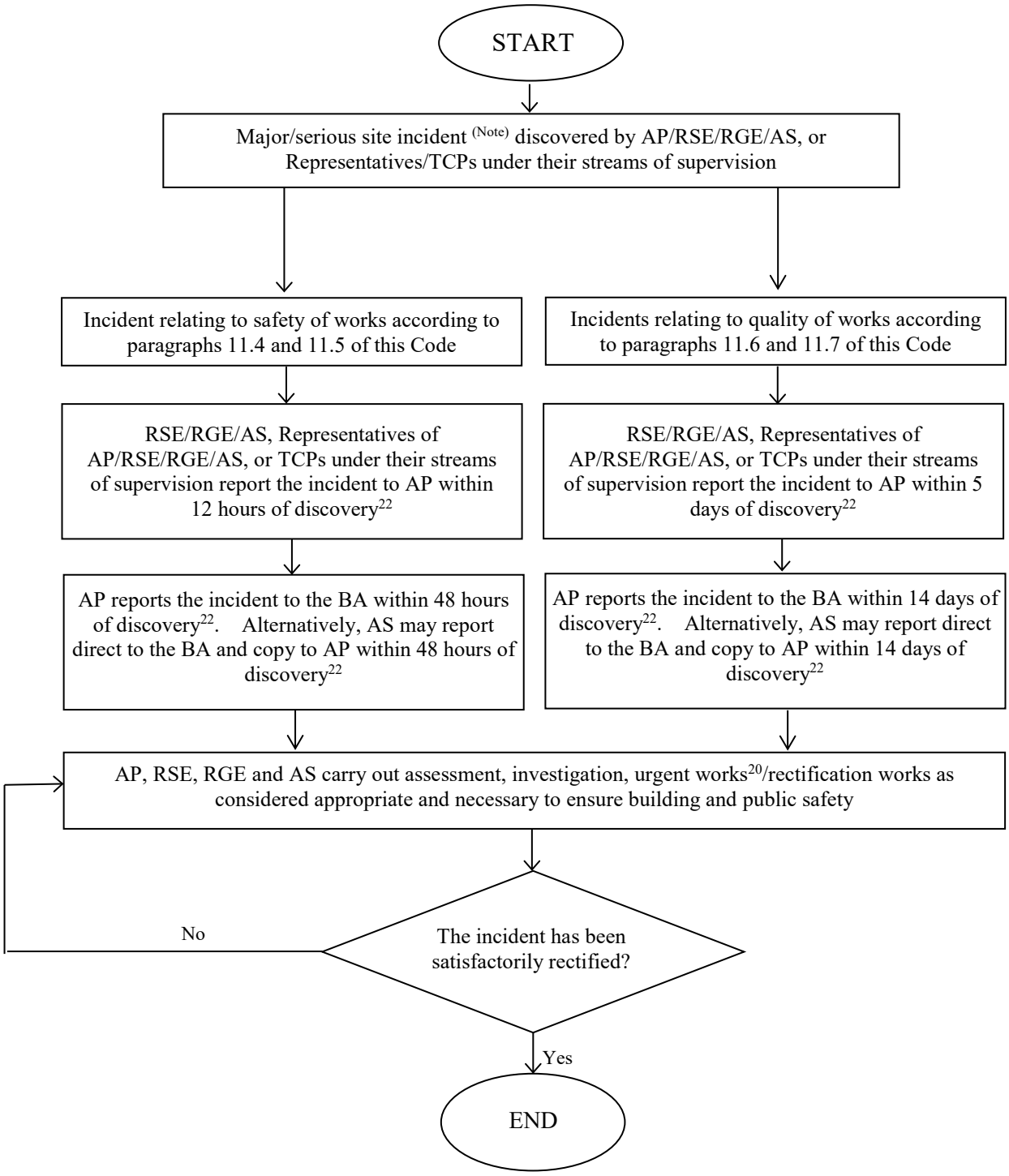
(b) Substandard building works requiring rectification/demolition works which may affect the sequence of works, have effect on the

permanent structures, or require prior approval and consent before commencement;

(c) Extensive concrete defects e.g. deformation, extensive honeycomb or exposure of reinforcement, etc. revealed after striking of formwork and RC fails to comply with the rectification instruction.

11.8 A flow chart showing the procedures for reporting of major/serious site incidents relating to building works and follow-up actions is shown in Figure 11.1.

Figure 11.1 Flow Chart for Procedures for Reporting of Major/Serious Site Incidents Relating to Building Works and Follow-up Actions



Note: If a major/serious site incident is also considered as a non-conformity under paragraph 5.5 of this Code, the requirements for completion of Non-conformity and Rectification Report as described in paragraph 10.5 of this Code should also be followed.

12 *Report to the Building Authority*

12.1 The AP should report to the BA in writing the non-conformity as required under paragraph 10.5 of this Code or major/serious site incidents as required under paragraphs 11.2 to 11.7 of this Code to the designated email address: siteincident@bd.gov.hk. The following essential information should be provided in the report:

(a) Address of the site;

(b) Location, date and time of discovery[21 or 22] and happening of the non-conformity or incident;

(c) Contact details including name, phone number and email address;

(d) Type of building works involved and other relevant information;

(e) Any injury, death or damage to property involved;

(f) Any remedial action/rectification works being taken/carried out; and

(g) Plans, site photos, test reports and documents relevant to the non-conformity or incident (if available).

Appendix I

Standard Form of Supervision Plan

with

Annex:

Confirmation of Appointment and

Contact Information of TCPs

BUILDINGS ORDINANCE
(Chapter 123)
Section 39A
TECHNICAL MEMORANDUM FOR SUPERVISION PLANS
Supervision Plan

To the Building Authority,

Preamble

In accordance with the Technical Memorandum for Supervision Plans (Technical Memorandum) issued under section 39A of the Buildings Ordinance, we submit this supervision plan for the _____ works at the site located at (address of site) _____

_____

on (Lot No.) _____.

2. We have signed under Part I, II, III and IV respectively of this supervision plan. Our signatures indicate our undertaking that the supervision at this site will be carried out in accordance with this supervision plan, the Technical Memorandum and the Code of Practice for Site Supervision (Code). We also undertake that the management and execution of both site safety and quality supervision of the works covered by this supervision plan will be carried out in the manner prescribed by the provisions of the Buildings Ordinance and Regulations.

Part I - Supervision plan of the authorized person (AP)

3. The works covered by this supervision plan are :

Type of building works or street works	Date of Approval	Cost/Area/Quantity	Scale Factor

4. Details of adjustment/combination of supervision resources (Form C) are attached at Appendix 1A.*

5. The Technically Competent Persons (TCPs) for site supervision under the AP's stream required under the Code for the type of works identified are :

	Name in English^	Name in Chinese^	I.D. No.^/Passport No.^/AP Registration No.**/ TCP No.**	Expiry Date of AP Registration~/TCP Validity Period~ (if applicable)	Frequency Level of Site Inspection
AP					
Representative					
T4					
T3					

The CVs showing their relevant experience and academic qualifications are attached at Appendix 1B. If more than one supervisor is proposed for a TCP post, the demarcation of their responsibility should be provided.

^ In accordance with the Hong Kong Identity Card record / Passport record
** CV is not required if AP Registration No./TCP No. is provided
~ In accordance with the registration / inclusion record

6. The TCPs for site supervision under the AP's stream during critical stages of the works are :

Critical Stages of Works	Grade of TCP	Name#^ (I.D. No.^ / Passport No. ^ /AP Registration No.** /TCP No.**)	Expiry Date of AP Registration~/ TCP Validity Period~ (if applicable)	Inspection Frequency

CV showing relevant qualifications and experience need to be included in Appendix 1B if the TCP is different from those listed in paragraph 5 above
^ In accordance with the Hong Kong Identity Card record / Passport record
** CV is not required if AP Registration No./TCP No. is provided
~ In accordance with the registration / inclusion record

7. I (name in full) _____ (Chinese) _____, AP, certify that Part I (paragraphs 3 to 6) of this supervision plan is prepared by me and complied with the Technical Memorandum, the Code and the requirements of the Buildings Ordinance and Regulations. I have also read and hereby confirm paragraphs 1 and 2 in the Preamble of this supervision plan. Confirmation for appointment and contact information of TCPs (Annex) is submitted with this supervision plan/shall be submitted within 7 days from the date of commencement of works as indicated in the Form BA10 or notice of commencement of minor works*.

Date _____ _____

Signature

Any false certification or declaration may be subject to legal action

Certificate of Registration No. : _____

Date of expiry of registration : _____

Part II - Supervision plan of the registered structural engineer (RSE)

8. In accordance with the type of works specified in Part I of this supervision plan, details of adjustment/combination of supervision resources (Form C) are attached at Appendix 2A.*

9. The TCPs for site supervision under the RSE's stream required for the specified type of works are :

	Name in English^	Name in Chinese^	I.D. No.^/ Passport No. ^ / RSE Registration No.**/ TCP No.**	Expiry Date of RSE Registration~/ TCP Validity Period~ (if applicable)	Frequency Level of Site Inspection
RSE					
Representative					
T5					
T3					

The CVs showing their relevant experience and academic qualifications are attached at Appendix 2B. If more than one supervisor is proposed for a TCP post, the demarcation of their responsibility should be provided.

^ In accordance with the Hong Kong Identity Card record / Passport record
** CV is not required if RSE Registration No./TCP No. is provided
~ In accordance with the registration / inclusion record

10. The TCPs for site supervision under the RSE's stream during critical stages of the works are :

Critical Stages of Works	Grade of TCP	Name#^ (I.D. No.^ / Passport No. ^ / RSE Registration No.** /TCP No.**)	Expiry Date of RSE Registration~/ TCP Validity Period~ (if applicable)	Inspection Frequency

CV showing relevant qualifications and experience need to be included in Appendix 2B if the TCP is different from those listed in paragraph 9 above
^ In accordance with the Hong Kong Identity Card record / Passport record
** CV is not required if RSE Registration No./TCP No. is provided
~ In accordance with the registration / inclusion record

11. I (name in full) _____ (Chinese) _____, RSE, certify that Part II (paragraphs 8 to 10) of this supervision plan is prepared by me and complied with the Technical Memorandum, the Code and the requirements of the Buildings Ordinance and Regulations. I have also read and hereby confirm paragraphs 1 and 2 in the Preamble of this supervision plan. Confirmation for appointment and contact information of TCPs (Annex) is submitted with this supervision plan/shall be submitted within 7 days from the date of commencement of works as indicated in the Form BA10 or notice of commencement of minor works*.

Date _____ _____

Signature

Any false certification or declaration may be subject to legal action

Certificate of Registration No. : _____

Date of expiry of registration : _____

Part III - Supervision plan of the registered geotechnical engineer (RGE)

12. In accordance with the type of works specified in Part I of this supervision plan, details of adjustment/combination of supervision resources (Form C) are attached at Appendix 3A.*

13. The TCPs for site supervision under the RGE's stream required for the specified type of works are :

	Name in English^	Name in Chinese^	I.D. No.^/ Passport No.^/ RGE Registration No.**/ TCP No.**	Expiry Date of RGE Registration~/TCP Validity Period~ (if applicable)	Frequency Level of Site Inspection
RGE					
Representative					
T5					
T3					
DSS*					

The CVs showing their relevant experience and academic qualifications are attached at Appendix 3B. For DSS, a CV must be submitted. If more than one supervisor is proposed for a TCP post, the demarcation of their responsibility should be provided.

^ In accordance with the Hong Kong Identity Card record/ Passport record

** CV is not required if RGE Registration No./TCP No. is provided

~ In accordance with the registration / inclusion record

14. The TCPs for site supervision under the RGE's stream during critical stages of the works are :

Critical Stages of Works	Grade of TCP	Name#^ (I.D. No.^/ Passport No. ^ / RGE Registration No.**/ TCP No.**)	Expiry Date of RGE Registration~/ TCP Validity Period~ (if applicable)	Inspection Frequency

CV showing relevant qualifications and experience need to be included in Appendix 3B if the TCP is different from those listed in paragraph 13 above
^ In accordance with the Hong Kong Identity Card record/ Passport record
** CV is not required if RGE Registration No./TCP No. is provided
~ In accordance with the registration / inclusion record

15. I (name in full) _____ (Chinese) _____, RGE, certify that Part III (paragraphs 12 to 14) of this supervision plan is prepared by me and complied with the Technical Memorandum, the Code and the requirements of the Buildings Ordinance and Regulations. I have also read and hereby confirm paragraphs 1 and 2 in the Preamble of this supervision plan. Confirmation for appointment and contact information of TCPs (Annex) is submitted with this supervision plan/shall be submitted within 7 days from the date of commencement of works as indicated in the Form BA10 or notice of commencement of minor works*.

Date _____ _____

Signature
Any false certification or declaration may be subject to legal action

Certificate of Registration No. : _____

Date of expiry of registration : _____

Part IV - Supervision plan of registered contractor (RC)

16. In accordance with the type of works specified in Part I of this supervision plan, details of adjustment/combination of supervision resources (Form C) are attached at Appendix 4A.*

17. The TCPs for site supervision under the RC's stream required for the specified type of works are :

	Name in English^	Name in Chinese^	I.D. No.^/ Passport No. ^ / TCP No.**	Expiry Date of TCP Validity Period~ (if applicable)	Frequency Level of Site Inspection
AS					
Representative					
T5					
T4					
T3/T2*					
T1					
CP (Logging)*					

The CVs showing their relevant experience and academic qualifications are attached at Appendix 4B. If more than one supervisor is proposed for a TCP post, the demarcation of their responsibility should be provided.

^ In accordance with the Hong Kong Identity Card record / Passport record
** CV is not required if TCP No. is provided
~ In accordance with the registration / inclusion record

18. The TCPs for site supervision under the RC's stream during critical stages of the works are :

Critical Stages of Works	Grade of TCP	Name#^ (I.D. No.^ / Passport No. ^ / TCP No.**)	Expiry Date of TCP Validity Period~ (if applicable)	Inspection Frequency

CV showing relevant qualifications and experience need to be included in Appendix 4B if the TCP is different from those listed in paragraph 17 above
^ In accordance with the Hong Kong Identity Card record/ Passport record
** CV is not required if TCP No. is provided
~ In accordance with the registration / inclusion record

19. I (name in full) _____ (Chinese) _____, the person appointed to act for the registered general building contractor (RGBC)/registered specialist contractor (RSC) in the _____ category/registered minor works contractor (RMWC)*, certify that Part IV (paragraphs 16 to 18) of this supervision plan is prepared by me and complied with the Technical Memorandum, the Code and the requirements of the Buildings Ordinance and Regulations. I have also read and hereby confirm paragraphs 1 and 2 in the Preamble of this supervision plan. Confirmation for appointment and contact information of TCPs (Annex) is submitted with this supervision plan/shall be submitted within 7 days from the date of commencement of works as indicated in the Form BA10 or notice of commencement of minor works*.

Date _____ _____

Signature

Any false certification or declaration may be subject to legal action

Name of RGBC/RSC/RMWC* :_____

(Chinese)_____

Certificate of Registration No. :_____

Date of expiry of registration : _____

Enclosures: Appendix 1A, 1B, 2A, 2B, 3A, 3B, 4A and 4B*

Annex to supervision plan*

* Delete if not applicable

Personal Data

Purposes of Collection

1. The personal data provided by means of this supervision plan will be used by the Buildings Department for the following purposes:
   (a) activities relating to the processing of your submission in this supervision plan;
   (b) activities relating to the above proposed building works; and
   (c) facilitating communication between the Buildings Department and yourself.
2. It is obligatory for you to provide the information as required in the supervision plan. If you fail to provide the required data, delay may be caused in processing of your submission or even result in rejection of the application.

Classes of Transferees

3. The personal data you provided by means of this supervision plan may be disclosed to other government departments, bureaux, organisations or any persons for the purposes mentioned in paragraph 1 above.

Access to Personal Data

4. You have the right of access and correction with respect to the personal data as provided under the Personal Data (Privacy) Ordinance. The Buildings Department has the right to charge a reasonable fee for the processing of any data access request. Request for personal data access and correction should be addressed to the Site Monitoring Section of the Buildings Department.

Confirmation of appointment of TCPs under AP/RSE/RGE/RC stream*

(submitted by the heads of respective streams to the BA with the supervision plan or within 7 days from the date of commencement of works as indicated in the Form BA10/notice of commencement of minor works*)

BD Ref. _____ **Project** _____

Type of Works _____ **Date of Commencement of Works** _____

Name in English/Chinese[1]	Head & Grade of TCP	Frequency Level of Inspection[1]	Signature by Representative/TCP[2,3,4]
	Representative		
	TCP – T		
	TCP – T		
	TCP – T		
	TCP – T		

Remarks

[1] The heads of respective streams should ensure that the name of the TCP and the frequency level of inspection are the same as that shown on the supervision plan submitted to the BA. TCP for critical stage, if any, should be included. If there is a change of TCP in future, the heads of respective streams shall submit the revised supervision plan, with new TCP's confirmation, to the BA within 7 days as per section 8.3 of the Technical Memorandum.

[2] Signature of TCP in this confirmation indicates the TCP's acknowledgement of appointment and availability for the job, and he is not overloaded with engagement in other construction sites. If there is any change subsequently, he should notify his head of stream and the BA. For those TCPs without AP/RSE/RGE Registration No. or TCP No., please provide contact information on page 2 of this Annex to facilitate communication between BD and TCPs.

[3] Signature of TCP in this confirmation indicates that the TCP has read, understood and agreed with the notes for "Personal Data" attached to this Annex.

[4] Signature of TCP in this confirmation indicates the TCP's acknowledgement of all information given in the CV submitted with this supervision plan being true, complete and accurate.

_____	_____	_____
Date	Name** of AP/RSE/RGE/AS*	Signature

* Delete if inappropriate

** In accordance with the registration record

Any false certification or declaration may be subject to legal action

Contact information of those TCPs without AP/RSE/RGE Registration No. or TCP No.
Functional stream: AP / RSE / RGE / RC*

Name^ in English/Chinese	Grade of TCP	Telephone Number	Email Address	Signature by Representative/TCP (Please tick the box below to indicate your consent to be given for the purpose stated in Note 5 on "Personal Data" below)
	Representative			☐
	TCP – T			☐
	TCP – T			☐
	TCP – T			☐
	TCP – T			☐

Personal Data

Purposes of Collection

1. The personal data provided by means of this Annex will be used by the Buildings Department for the following purposes:
   (a) activities relating to the processing of your submission in this Annex;
   (b) activities relating to the above proposed building works; and
   (c) facilitating communication between the Buildings Department and the TCPs.
2. It is obligatory for you to provide the information as required in the Annex. If you fail to provide the required data, delay may be caused in processing of your submission or even result in rejection of the application.

Classes of Transferees

3. The personal data you provided by means of this Annex may be disclosed to other government departments, bureaux, organisations or any persons for the purposes mentioned in paragraph 1 above.

Access to Personal Data

4. You have the right of access and correction with respect to the personal data as provided under the Personal Data (Privacy) Ordinance. The Buildings Department has the right to charge a reasonable fee for the processing of any data access request. Request for personal data access and correction should be addressed to the Site Monitoring Section of the Buildings Department.

Use of Personal Data by Construction Industry Council (CIC)

5. Subject to your consent as so indicated by ticking the checkbox "☑" above, your personal data provided in the table and your CV submitted with this supervision plan may be transferred to CIC for use on activities relating to registration and continuous technical development of TCPs under the "Technically Competent Persons Registration Scheme".

* Delete if inappropriate

^ In accordance with the Hong Kong Identity Card record/Passport record

Appendix II

Form A

Record of Specific Tasks Performed by TCP

Record of Specific Tasks Performed by
TCP under AP / RSE / RGE / RC* Stream

BD Ref. _____

Building Project _____

Type of Works _____

Name of TCP[1] _____

Grade of TCP _____ **Frequency of Inspection** _____

Date DD/MM/YY	(Mon)	(Tue)	(Wed)	(Thu)	(Fri)	(Sat)	(Sun)
Item No.[#]	S/NS	S/NS	S/NS	S/NS	S/NS	S/NS	S/NS
Signature							

Legend:

S - Satisfactory[2]

NS - Not satisfactory (It should be recorded in the site supervision report and, where applicable, **Form B**[3])

***** Delete if inappropriate

Descriptions of the items listed are attached in separate sheet(s)

---

1 Full name of the TCP as provided in the supervision plan.

2 If a non-conformity is very minor in nature and has been rectified to the satisfaction of the TCP at the same inspection, it would be recorded as "satisfactory".

3 Completion of **Form B** is **Required** for a non-conformity that (a) has material concern for safety; or (b) does not have material concern for safety but the works item/rectification works cannot be verified due to the areas have been covered up during inspection or re-inspection.

Appendix III

Form B

Non-conformity and

Rectification Reports

Non-Conformity and Rectification Reports

PART 1

Site Address : _____

Record of Non-Conformity

Date discovered : _____

Details : _____

_____

Signature : _____

Name of TCP[1] : _____

Grade & Stream : _____

Date : _____

PART 2
Record of Rectification Works

Instruction for rectification given to : _____(name[1])

(Stream : _____, Grade of TCP _____) on _____(date).

Details of Instruction : _____

_____

Rectification works certified completion on _____(date).

Signature : _____

Name of AP/RSE/RGE* : _____

Date : _____

c.c. Building Authority

* Delete if inapplicable

[1] Full name of the TCP as provided in the supervision plan.

Appendix IV

Form C

Calculation Sheet for Combination of TCPs

Calculation sheet for combination of TCPs for one or more types of buildings works or street works under a supervision plan prepared by AP/RSE/RGE/AS *

Building Works / Street Works		Supervision Input Before Combination				Combined Supervision Input				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Types of Building Works / Street Works to be Combined	Scale Factor (*S*)	TCP Grade	Frequency Level of Site Inspection	Notional Supervision Input (man-day/month)	Adjusted Supervision Input (2) x (5) (man-day/month)	TCP Grades under Combination	TCP Post with Combined Duties	Summation of Supervision Input under the Combined TCP	No. of Combined TCP	Required Frequency Level of Site Supervision

Note: 1. Delete if inapplicable as marked *.
2. All types of building works or street works covered by the supervision plan should be listed under column (1). They should be grouped in such a way that any portion of works under one group will not be carried out concurrently with any works under other groups.

Appendix V

Samples of

Calculation Sheet for Combination of TCPs

Sample 1

Code of Practice for Site Supervision
Form C

Calculation sheet for combination of TCPs for one or more types of buildings works or street works under a supervision plan prepared by AP/~~RSE/RGE/AS~~ * (where AP also acts as T4)

Building Works / Street Works		Supervision Input Before Combination				Combined Supervision Input				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Types of Building Works / Street Works to be Combined	Scale Factor (*S*)	TCP Grade	Frequency Level of Site Inspection	Notional Supervision Input (man-day/month)	Adjusted Supervision Input (2) x (5) (man-day/month)	TCP Grades under Combination	TCP Post with Combined Duties	Summation of Supervision Input under the Combined TCP	No. of Combined TCP	Required Frequency Level of Site Supervision
(Concurrent works) Spread Footings	0.5	T3	4	4	2	T3	T3	3.6	1	4
		T4	2	1	0.5					
		AP	1	0.5	0.25	T4 AP	T4 &AP	1.35	1	3
E & L S (with significant geotechnical content)	0.4	T3	4	4	1.6					
		T4	2	1	0.4					
		AP	1	0.5	0.2					

Note: 1. Delete if inapplicable as marked *.
2. All types of building works or street works covered by the supervision plan should be listed under column (1). They should be grouped in such a way that any portion of works under one group will not be carried out concurrently with any works under other groups.

Sample 2

Code of Practice for Site Supervision
Form C

Calculation sheet for combination of TCPs for one or more types of buildings works or street works under a supervision plan prepared by ~~AP~~/RSE/~~RGE/AS~~ *

Building Works / Street Works		Supervision Input Before Combination				Combined Supervision Input				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Types of Building Works / Street Works to be Combined	Scale Factor (*S*)	TCP Grade	Frequency Level of Site Inspection	Notional Supervision Input (man-day/month)	Adjusted Supervision Input (2) x (5) (man-day/month)	TCP Grades under Combination	TCP Post with Combined Duties	Summation of Supervision Input under the Combined TCP	No. of Combined TCP	Required Frequency Level of Site Supervision
(Concurrent works) Spread Footings	0.5	T3	5	25	12.5	T3	T3	14.1	1	5
		T5	4	4	2					
						T5	T5	2.8	1	4
E & L S (with significant geotechnical content)	0.4	T3	4	4	1.6					
		T5	3	2	0.8					

Note: 1. Delete if inapplicable as marked *.
2. All types of building works or street works covered by the supervision plan should be listed under column (1). They should be grouped in such a way that any portion of works under one group will not be carried out concurrently with any works under other groups.

Sample 3

Code of Practice for Site Supervision
Form C

Calculation sheet for combination of TCPs for one or more types of buildings works or street works under a supervision plan prepared by ~~AP/RSE/RGE/~~AS *

Building Works / Street Works		Supervision Input Before Combination				Combined Supervision Input				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Types of Building Works / Street Works to be Combined	Scale Factor (*S*)	TCP Grade	Frequency Level of Site Inspection	Notional Supervision Input (man-day/month)	Adjusted Supervision Input (2) x (5) (man-day/month)	TCP Grades under Combination	TCP Post with Combined Duties	Summation of Supervision Input under the Combined TCP	No. of Combined TCP	Required Frequency Level of Site Supervision
(Concurrent works) Spread Footings	0.5	T1	5	25	12.5	T1	T1	22.5	1	5
		T2	5	25	12.5					
		T4	4	4	2	T2	T2	14.1	1	5
						T4	T4	3.6	1	4
E & L S (with significant geotechnical content)	0.4	T1	5	25	10					
		T2	4	4	1.6					
		T4	4	4	1.6					

Note: 1. Delete if inapplicable as marked *.
2. All types of building works or street works covered by the supervision plan should be listed under column (1). They should be grouped in such a way that any portion of works under one group will not be carried out concurrently with any works under other groups.

Sample 4

Code of Practice for Site Supervision
Form C

Calculation sheet for combination of TCPs for one or more types of buildings works or street works under a supervision plan prepared by AP/~~RSE/RGE/AS~~ *

Building Works / Street Works		Supervision Input Before Combination				Combined Supervision Input				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Types of Building Works / Street Works to be Combined	Scale Factor (*S*)	TCP Grade	Frequency Level of Site Inspection	Notional Supervision Input (man-day/month)	Adjusted Supervision Input (2) x (5) (man-day/month)	TCP Grades under Combination	TCP Post with Combined Duties	Summation of Supervision Input under the Combined TCP	No. of Combined TCP	Required Frequency Level of Site Supervision
(Concurrent works) Spread Footings	1.0	T3	4	4	4	T3	T3	8	1	4.1
		T4	2	1	1					
						T4	T4	2	1	3
E & L S (with significant geotechnical content)	1.0	T3	4	4	4					
		T4	2	1	1					

Note: 1. Delete if inapplicable as marked *.
2. All types of building works or street works covered by the supervision plan should be listed under column (1). They should be grouped in such a way that any portion of works under one group will not be carried out concurrently with any works under other groups.

Sample 5

Code of Practice for Site Supervision
Form C

Calculation sheet for combination of TCPs for one or more types of buildings works or street works under a supervision plan prepared by ~~AP/RSE/RGE/~~AS *

Building Works / Street Works		Supervision Input Before Combination				Combined Supervision Input				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Types of Building Works / Street Works to be Combined	Scale Factor (*S*)	TCP Grade	Frequency Level of Site Inspection	Notional Supervision Input (man-day/month)	Adjusted Supervision Input (2) x (5) (man-day/month)	TCP Grades under Combination	TCP Post with Combined Duties	Summation of Supervision Input under the Combined TCP	No. of Combined TCP	Required Frequency Level of Site Supervision
(Concurrent works) Spread Footings	1.0	T1	5	25	25	T1	T1	50	2	5
		T2	5	25	25					
		T4	4	4	4	T2	T2	25	1	5
						T2	T4	12	1	4.2
E & L S (with significant geotechnical content)	1.0	T1	5	25	25	T4				
		T2	4	4	4					
		T4	4	4	4					

Note: 1. Delete if inapplicable as marked *.
2. All types of building works or street works covered by the supervision plan should be listed under column (1). They should be grouped in such a way that any portion of works under one group will not be carried out concurrently with any works under other groups

Sample 6

Code of Practice for Site Supervision
Form C

Calculation sheet for combination of TCPs for one or more types of buildings works or street works under a supervision plan prepared by ~~AP/RSE/RGE~~/AS *

Building Works / Street Works		Supervision Input Before Combination				Combined Supervision Input				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Types of Building Works / Street Works to be Combined	Scale Factor (*S*)	TCP Grade	Frequency Level of Site Inspection	Notional Supervision Input (man-day/month)	Adjusted Supervision Input (2) x (5) (man-day/month)	TCP Grades under Combination	TCP Post with Combined Duties	Summation of Supervision Input under the Combined TCP	No. of Combined TCP	Required Frequency Level of Site Supervision
Class I Minor Works Item 1.1 Erection of an internal staircase	0.2	T1 T3	5 4	25 4	5 0.8	T1 T3	T3	5.8	1	5

Note: 1. Delete if inapplicable as marked *.
2. All types of building works or street works covered by the supervision plan should be listed under column (1). They should be grouped in such a way that any portion of works under one group will not be carried out concurrently with any works under other groups.

Appendix VI

Samples of

Checklist and Record of Specific Tasks

Performed by TCP

Sample 1 Checklist and Record of Specific Tasks Performed by TCP T4 under AP stream

P.1 Typical Items Checklist
P.2 Form A

Sample 2 Checklist and Record of Specific Tasks Performed by TCP T5 under RSE stream

P.1 Typical Items Checklist
P.2 Form A

Sample 3 Checklist and Record of Specific Tasks Performed by TCP T3 under RGE stream

P.1 Typical Items Checklist
P.2 Form A

Sample 4 Checklist and Record of Specific Tasks Performed by TCP T1 under RC stream

P.1 Typical Items Checklist
P.2 Form A

Sample 5 Checklist and Record of Specific Tasks Performed by TCP T5 under RSE stream

P.1 Typical Items Checklist
P.2 Form A

Sample 6 Checklist and Record of Specific Tasks Performed by TCP T3 under RSE stream

P.1 Typical Items Checklist
P.2 Form A

Sample 7 Checklist and Record of Specific Tasks Performed by TCP T1 under RC stream

P.1 Typical Items Checklist
P.2 Form A

Sample 8 Checklist and Record of Specific Tasks Performed by TCP T4 under RC stream

P.1 Typical Items Checklist
P.2 Form A

Sample 1

BD Ref. *SM/0000/11*

Building Project *ABC Centre*

Type of Works *Excavation & Lateral Support Works*

Typical Items for the Checklist of Specific Tasks for AP's TCP T4

Item No.	Description
A4	Check that monitoring checkpoints are installed and readings are taken in time.
A5	Register reports of non-conformity and site incident, verify non-conformity and site incident and instruct rectification works, notify all relevant parties in respect of non-conformity and site incident and monitor that rectification measures are properly carried out.
A6	Report to the AP if the non-conformity is considered to pose an imminent danger, to be a significant risk or a source of danger or the RC does not comply with rectification instructions, or if the site incident is considered as a major/serious site incident relating to safety and/or quality of works.
A7	Check that all lower grade TCPs and RC's TCPs are making inspections no less than the required frequency and carrying out duties in accordance with the Technical Memorandum and the Code.
A8	Check and satisfy that a copy of approved plans, method statements, precautionary and protective measures proposals and all related drawings is kept on site; and that they are followed.
A10	Check and monitor that lateral supports are installed in accordance with approved/agreed working sequence and not to be removed in advance of adequate propping or restraint.
An	*Any other items considered essential by the AP, including those for quality supervision and other conditions imposed by the BA at approval and/or consent stage.*

Sample 1

Form A

Record of Specific Tasks Performed by TCP under AP ~~/ RSE / RGE / RC~~* stream

BD Ref. *SM/0000/11*

Building Project *ABC Centre*

Type of Works *Excavation & Lateral Support Works*

Name of TCP[1] *Mr Chan Tai-man*

Grade of TCP *T4* **Frequency of Inspection** *monthly*

Date DD/MM/YY	*17/1/00* (Mon)	*17/2/00* (Thu)	*17/3/00* (Fri)	*17/4/00* (Mon)			
Item No.#	S/NS	S/NS	S/NS	S/NS	S/NS	S/NS	S/NS
A4	*S*	*S*					
A5	*S*	*S*					
A6	*S*	*S*					
A7	*S*	*S*					
A8	*S*	*S*					
A10	*S*	*S*					
An	*S*	*S*					
Signature							

Legend:

S - Satisfactory[2]

NS - Not satisfactory (It should be recorded in the site supervision report and, where applicable, **Form B**[3])

* Delete if inappropriate

Descriptions of the items listed are attached in separate sheet(s)

[1] Full name of the TCP as provided in the supervision plan.

[2] If a non-conformity is very minor in nature and has been rectified to the satisfaction of the TCP at the same inspection, it would be recorded as "satisfactory".

[3] Completion of **Form B** is **Required** for a non-conformity that (a) has material concern for safety; or (b) does not have material concern for safety but the works item/rectification works cannot be verified due to the areas have been covered up during inspection or re-inspection.

Sample 2

BD Ref. *SM/0000/11*

Building Project *ABC Centre*

Type of Works *Excavation & Lateral Support Works*

Typical Items for the Checklist of Specific Tasks for RSE's TCP T5

Item No.	Description
E5	Check that all lower grade TCPs and RC's TCPs are making inspections no less than the required frequency and carrying out duties in accordance with the Technical Memorandum and the Code.
E6	Check and satisfy that a copy of approved plans, method statements, precautionary and protective measures proposals and all related drawings is kept on site; and that they are followed.
E8	Check that there is no over-excavation and temporary cut slopes will not cause any instability to adjoining ground/structures/buildings.
E10	Check and monitor that lateral supports are installed in accordance with approved/agreed working sequence and not to be removed in advance of adequate propping or restraint.
E12	Check that there is no risk of artesian conditions for excavation and lateral support works.
E13	Check that stability and integrity of nearby buildings and ground are not adversely affected.
E14	Check that the groundwater table is consistent with design of excavation and lateral support works.
E15	Check that preloading of struts is properly carried out.
En	*Any other items considered essential by the RSE, including those for quality supervision and other conditions imposed by the BA at approval and/or consent stage.*

Sample 2

Form A

Record of Specific Tasks Performed by TCP under ~~AP /~~ RSE ~~/ RGE / RC~~* stream

BD Ref. *SM/0000/11*

Building Project *ABC Centre*

Type of Works *Excavation & Lateral Support Works*

Name of TCP[1] *Mr Lee Tai-man*

Grade of TCP *T5* **Frequency of Inspection** *fortnightly*

Date DD/MM/YY	*17/1/00* (Mon)	*31/1/00* (Mon)	*14/2/00* (Mon)	*28/2/00* (Mon)	*13/3/00* (Mon)	*27/3/00* (Mon)	*10/4/00* (Mon)
Item No.#	S/NS	S/NS	S/NS	S/NS	S/NS	S/NS	S/NS
E5	*S*	*S*					
E6	*S*	*S*					
E8	*S*	*S*					
E10	*S*	*S*					
E12	*S*	*S*					
E13	*S*	*S*					
E14	*S*	*S*					
E15	*S*	*S*					
En	*S*	*S*					
Signature							

Legend:

S - Satisfactory[2]

NS - Not satisfactory (It should be recorded in the site supervision report and, where applicable, **Form B**[3])

* Delete if inappropriate

\# Descriptions of the items listed are attached in separate sheet(s)

---

1 Full name of the TCP as provided in the supervision plan.

2 If a non-conformity is very minor in nature and has been rectified to the satisfaction of the TCP at the same inspection, it would be recorded as "satisfactory".

3 Completion of **Form B** is **Required** for a non-conformity that (a) has material concern for safety; or (b) does not have material concern for safety but the works item/rectification works cannot be verified due to the areas have been covered up during inspection or re-inspection.

Sample 3

BD Ref. *SM/0000/11*

Building Project *ABC Centre*

Type of Works *Excavation & Lateral Support Works*

Typical Items for the Checklist of Specific Tasks for RGE's TCP T3

Item No.	Description
G1	Establish system for communicating with other TCPs.
G2	Check that all monitoring checkpoints are installed and readings are being taken in time.
G3	Verify non-conformity and site incident, and instruct rectification works immediately. Notify all relevant parties in respect of the non-conformity and site incident and monitor that rectification measures are properly carried out.
G4	Report to the RGE immediately if the non-conformity is considered to pose an imminent danger, to be a significant risk or a source of danger or the RC does not comply with rectification instructions, or if the site incident is considered as a major/serious site incident relating to safety and/or quality of works.
G5	Check that all lower grade TCPs and RC's TCPs are making inspections no less than the required frequency and carrying out duties in accordance with the Technical Memorandum and the Code.
G6	Check and satisfy that a copy of approved plans, method statements, precautionary and protective measures proposals and all related drawings and geotechnical documentation is kept on site; and that they are followed.
Gn	*Any other items considered essential by the RGE, including those for quality supervision and other conditions imposed by the BA at approval and/or consent stage.*

Sample 3

Form A

Record of Specific Tasks Performed by TCP under ~~AP / RSE /~~ RGE ~~/ RC~~* stream

BD Ref. *SM/0000/11*

Building Project *ABC Centre*

Type of Works *Excavation &Lateral Support Works*

Name of TCP[1] *Mr Leung Tai-man*

Grade of TCP *T3* **Frequency of Inspection** *full time*

Date DD/MM/YY	*17/1/00* (Mon)	*18/1/00* (Tue)	*19/1/00* (Wed)	*20/1/00* (Thu)			
Item No.#	S/NS	S/NS	S/NS	S/NS	S/NS	S/NS	S/NS
G1	*S*	*S*					
G2	*S*	*S*					
G3	*S*	*S*					
G4	*S*	*S*					
G5	*S*	*S*					
G6	*S*	*S*					
Gn	*S*	*S*					
Signature							

Legend:

S - Satisfactory[2]

NS - Not satisfactory (It should be recorded in the site supervision report and, where applicable, **Form B**[3])

* Delete if inappropriate

Descriptions of the items listed are attached in separate sheet(s)

[1] Full name of the TCP as provided in the supervision plan.

[2] If a non-conformity is very minor in nature and has been rectified to the satisfaction of the TCP at the same inspection, it would be recorded as "satisfactory".

[3] Completion of **Form B** is **Required** for a non-conformity that (a) has material concern for safety; or (b) does not have material concern for safety but the works item/rectification works cannot be verified due to the areas have been covered up during inspection or re-inspection.

Sample 4

BD Ref. *SM/0000/11*

Building Project *ABC Centre*

Type of Works *Excavation & Lateral Support Works*

Typical Items for the Checklist of Specific Tasks for RC's TCP T1

Item No.	Description
C1	Establish system for communicating with other TCPs.
C2	Check that the erection of hoarding, covered walkway and catch platform has been erected to ensure public safety in accordance with the hoarding plan accepted by the BA.
C3	Check and ensure that there are arrangements for access and egress of vehicles which are satisfactory and do not endanger the public or other road users.
C8	Check and ensure that all monitoring checkpoints and other geotechnical instrumentation have been installed and are regularly monitored; the results are kept on site; and that abnormal readings are reported to AP/RSE/RGE and the BA.
C9	Check that all monitoring checkpoints are installed and the readings are taken in time.
C10	Check that loose materials, boulders, construction plants or temporary stockpiles of materials are not present at the crest or intermediate benches of slopes.
C13	Check and satisfy that a copy of approved plans, method statements, precautionary and protective measures proposals and all related drawings is kept on site; and that they are followed.
C19	Check that procedures for the excavation and lateral support works are carried out in accordance with the approved/submitted plans/agreed working sequence.
Cn	*Any other items considered essential by the AS, including those for quality supervision and other conditions imposed by the BA at approval and/or consent stage.*

Sample 4

Form A

Record of Specific Tasks Performed by TCP under ~~AP / RSE / RGE /~~ RC* stream

BD Ref. *SM/0000/11*

Building Project *ABC Centre*

Type of Works *Excavation & Lateral Support Works*

Name of TCP[1] *Mr Lo Tai-man*

Grade of TCP *T1* **Frequency of Inspection** *full time*

Date DD/MM/YY	*17/1/00* (Mon)	*18/1/00* (Tue)	*19/1/00* (Wed)	*20/1/00* (Thu)	*21/1/00* (Fri)	*22/1/00* (Sat)	*23/1/00* (Sun)
Item No.[#]	S/NS	S/NS	S/NS	S/NS	S/NS	S/NS	S/NS
C1	*S*	*S*	*S*	*S*	*S*	*S*	*S*
C2	*S*	*S*	*S*	*S*	*S*	*S*	*S*
C3	*S*	*S*	*S*	*S*	*S*	*S*	*S*
C8	*S*	*S*	*S*	*S*	*S*	*S*	*S*
C9	*S*	*S*	*S*	*S*	*S*	*S*	*S*
C10	*S*	*S*	*S*	*S*	*S*	*S*	*S*
C13	*S*	*S*	*S*	*S*	*S*	*S*	*S*
C19	*S*	*S*	*S*	*S*	*S*	*S*	*S*
Cn	*S*	*S*	*S*	*S*	*S*	*S*	*S*
Signature							

Legend:

S - Satisfactory[2]

NS - Not satisfactory (It should be recorded in the site supervision report and, where applicable, **Form B**[3])

* Delete if inappropriate

Descriptions of the items listed are attached in separate sheet(s)

[1] Full name of the TCP as provided in the supervision plan.

[2] If a non-conformity is very minor in nature and has been rectified to the satisfaction of the TCP at the same inspection, it would be recorded as "satisfactory".

[3] Completion of **Form B** is **Required** for a non-conformity that (a) has material concern for safety; or (b) does not have material concern for safety but the works item/rectification works cannot be verified due to the areas have been covered up during inspection or re-inspection.

Sample 5

BD Ref. *SM/0000/11*

Building Project *ABC Centre*

Type of Works *Driven Steel H-Pile Works*

Typical Items for the Checklist of Specific Tasks for RSE's TCP T5

Item No.	Description
E5	Check that all lower grade TCPs and RC's TCPs are making inspections no less than the required frequency and carrying out duties in accordance with the Technical Memorandum and the Code.
E6	Check and satisfy that a copy of approved plans, method statements, precautionary and protective measures proposals and all related drawings is kept on site; and that they are followed.
E13	Check that stability and integrity of nearby buildings and ground are not adversely affected.
En	*Any other items considered essential by the RSE, including those for quality supervision and other conditions imposed by the BA at approval and/or consent stage.*
F1	Check that the locations of piles agree with approved plan.
F2	Check that design assumptions agreed with actual site conditions during driving tests.
F3	Check that the accepted working procedures of pile driving are followed and anomalies rectified during pile driving.
F4	Check the accuracy of design details during pile splicing.
F5	Check that the required final set has been achieved and the capacity of each pile complied with approved plans.
F6	Check that the testing procedures and acceptance criteria of proof tests are in accordance with PNAP APP-18 and measurements are properly recorded during the test.

Sample 5

Form A

Record of Specific Tasks Performed by TCP under ~~AP /~~ RSE ~~/ RGE / RC~~* stream

BD Ref. *SM/0000/11*

Building Project *ABC Centre*

Type of Works *Driven Steel H-Pile Works*

Name of TCP[1] *Mr Lee Tai-man*

Grade of TCP *T5* **Frequency of Inspection** *weekly*

Date DD/MM/YY	*5/6/02* (Wed)	*12/6/02* (Wed)	*19/6/02* (Wed)	*26/6/02* (Wed)	*3/7/02* (Wed)	*10/7/02* (Wed)	*17/7/02* (Wed)
Item No.#	S/NS	S/NS	S/NS	S/NS	S/NS	S/NS	S/NS
E5	*S*	*S*					
E6	*S*	*S*					
E13	*S*	*S*					
En	*S*	*S*					
F1	*S*	*S*					
F2	*S* *P12*	---					
F3	*S*	*S*					
F4	*S*	*S*					
F5	*S* *P12*	---					
F6	---	---					
Signature							

Legend:

S - Satisfactory[2]

NS - Not satisfactory (It should be recorded in the site supervision report and, where applicable, **Form B**[3])

* Delete if inappropriate

Descriptions of the items listed are attached in separate sheet(s)

[1] Full name of the TCP as provided in the supervision plan.

[2] If a non-conformity is very minor in nature and has been rectified to the satisfaction of the TCP at the same inspection, it would be recorded as "satisfactory".

[3] Completion of **Form B** is **Required** for a non-conformity that (a) has material concern for safety; or (b) does not have material concern for safety but the works item/rectification works cannot be verified due to the areas have been covered up during inspection or re-inspection.

Sample 6

BD Ref. *MWXXXXXXXXX*

Building Project *XYZ Centre*

Type of Works *Class I Minor Works – Item 1.1 (Erection of Internal Staircase)*

Typical Items for the Checklist of Specific Tasks for RSE's TCP T3

Item No.	Description
E1	Establish system for communicating with other TCPs.
E3	Verify non-conformity and site incident, and instruct rectification works. Notify all relevant parties in respect of the non-conformity and site incident and monitor that rectification measures are properly carried out.
E4	Report to the RSE if the non-conformity is considered to pose an imminent danger, to be a significant risk or a source of danger or the RC does not comply with rectification instructions, or if the site incident is considered as a major/serious site incident relating to safety and/or quality of works.
E5	Check that all RC's TCPs are making inspections no less than the required frequency and carrying out duties in accordance with the Technical Memorandum and the Code.
E6	Check and satisfy that a copy of submitted plans for minor works, method statements, precautionary and protective measures proposals and all related drawings is kept on site; and that they are followed.
En	*Any other items considered essential by the RSE.*

Sample 6

Form A

Record of Specific Tasks Performed by TCP under ~~AP /~~ RSE ~~/ RGE / RC~~* stream

BD Ref. *MWXXXXXXXXX*

Building Project *XYZ Centre*

Type of Works *Class I Minor Works – Item 1.1 (Erection of Internal Staircase)*

Name of TCP[1] *Mr Chan Tai-man*

Grade of TCP *T3* **Frequency of Inspection** *weekly*

Date DD/MM/YY	*7/6/10* (Mon)	*14/6/10* (Mon)	*21/6/10* (Mon)	*28/6/10* (Mon)	*5/7/10* (Mon)	*12/7/10* (Mon)	*19/7/10* (Mon)
Item No.#	S/NS	S/NS	S/NS	S/NS	S/NS	S/NS	S/NS
E1	*S*	*S*	*S*	*S*	*S*	*S*	
E3	*S*	*S*	*S*	*S*	*S*	*S*	
E4	*S*	*S*	*S*	*S*	*S*	*S*	
E5	*S*	*S*	*S*	*S*	*S*	*S*	
E6	*S*	*S*	*S*	*S*	*S*	*S*	
En	*S*	*S*	*S*	*S*	*S*	*S*	
Signature							

Legend:

S - Satisfactory[2]

NS - Not satisfactory (It should be recorded in the site supervision report and, where applicable, **Form B**[3])

* Delete if inappropriate

\# Descriptions of the items listed are attached in separate sheet(s)

---

1 Full name of the TCP as provided in the supervision plan.

2 If a non-conformity is very minor in nature and has been rectified to the satisfaction of the TCP at the same inspection, it would be recorded as "satisfactory".

3 Completion of **Form B** is **Required** for a non-conformity that (a) has material concern for safety; or (b) does not have material concern for safety but the works item/rectification works cannot be verified due to the areas have been covered up during inspection or re-inspection.

Sample 7

BD Ref. *MWXXXXXXXXX*

Building Project *XYZ Centre*

Type of Works *Class I Minor Works – Item 1 (Erection of Internal Staircase)*

Typical Items for the Checklist of Specific Tasks for RC's TCP T1

Item No.	Description
C1	Establish system for communicating with other TCPs.
C4	Check that scaffolding is adequately secured to the building to prevent collapse; catch fans, catch platforms and protection screens are adequately installed so as to secure safety against falling objects.
C6	Check that there is no excessive debris on floor slabs and against external walls for demolition works.
C13	Check and satisfy that a copy of submitted plans for minor works, method statements, precautionary and protective measures proposals and all related drawings is kept on site; and that they are followed.
C26	Instruct rectification of non-conformity and site incident, and monitor rectification measures
C27	Report to relevant parties when non-conformity or site incident is observed and rectified.
Cn	*Any other items considered essential by the AS.*

Sample 7

Form A

Record of Specific Tasks Performed by TCP under ~~AP / RSE / RGE /~~ RC * stream

BD Ref. *MWXXXXXXXXX*

Building Project *XYZ Centre*

Type of Works *Class I Minor Works – Item 1 (Erection of Internal Staircase)*

Name of TCP[1] *Mr Lee Tai man*

Grade of TCP *T1* **Frequency of Inspection** *full time*

Date DD/MM/YY	*7/6/10* (Mon)	*8/6/10* (Tue)	*9/6/10* (Wed)	*10/6/10* (Thu)	*11/6/10* (Fri)	*12/6/10* (Sat)	*13/6/10* (Sun)
Item No.#	S/NS	S/NS	S/NS	S/NS	S/NS	S/NS	S/NS
C1	*S*	*S*	*S*	*S*	*S*	*S*	
C4	*S*	*S*	*S*	*S*	*S*	*S*	
C6	*S*	*S*	*S*	*S*	*S*	*S*	
C13	*S*	*S*	*S*	*S*	*S*	*S*	
C26	*S*	*S*	*S*	*S*	*S*	*S*	
C27	*S*	*S*	*S*	*S*	*S*	*S*	
Cn	*S*	*S*	*S*	*S*	*S*	*S*	
Signature							

Legend:

S - Satisfactory[2]

NS - Not satisfactory (It should be recorded in the site supervision report and, where applicable, **Form B**[3])

* Delete if inappropriate

Descriptions of the items listed are attached in separate sheet(s)

[1] Full name of the TCP as provided in the supervision plan.

[2] If a non-conformity is very minor in nature and has been rectified to the satisfaction of the TCP at the same inspection, it would be recorded as "satisfactory".

[3] Completion of **Form B** is **Required** for a non-conformity that (a) has material concern for safety; or (b) does not have material concern for safety but the works item/rectification works cannot be verified due to the areas have been covered up during inspection or re-inspection.

Sample 8

BD Ref. *SM/0000/11*

Building Project *XYZ Centre*

Type of Works *Excavation & Lateral Support Works*

Typical Items for the Checklist of Specific Tasks for RC's TCP T4

Item No.	Description
C1	Establish system for communicating with other TCPs.
C2	Check that the erection of hoarding, covered walkway and catch platform has been erected to ensure public safety in accordance with the hoarding plan accepted by the BA.
C3	Check and ensure that there are arrangements for access and egress of vehicles which are satisfactory and do not endanger the public or other road users.
C8	Check and ensure that all monitoring checkpoints and other geotechnical instrumentation have been installed and are regularly monitored; the results are kept on site; and that abnormal readings are reported to AP/RSE/RGE and the BA.
C9	Check that all monitoring checkpoints are installed and the readings are taken in time.
C10	Check that loose materials, boulders, construction plants or temporary stockpiles of materials are not present at the crest or intermediate benches of slopes.
C12	Check that if excavation plants and piling rigs are operated on ground, the state of the ground is fit for use; and if the plants are operated on an elevated working platform, the platform is adequate to support the plant and all other imposed loads.
C13	Check and satisfy that a copy of approved plans, method statements, precautionary and protective measures proposals and all related drawings is kept on site; and that they are followed.
C19	Check that procedures for the excavation and lateral support works are carried out in accordance with the approved/submitted plans/agreed working sequence.
C24	Check that all lower grades TCPs are carrying out their duties in accordance with the Technical Memorandum and the Code and records are properly kept on site.
C28	Check that stability and integrity of nearby buildings and ground are not adversely affected.
Cn	*Any other items considered essential by the AS, including those for quality supervision and other conditions imposed by the BA at approval and/or consent stage.*

Sample 8

Form A

Record of Specific Tasks Performed by TCP under ~~AP / RSE / RGE /~~ RC * stream

BD Ref. *SM/0000/11*

Building Project *XYZ Centre*

Type of Works *Excavation & Lateral Support Works*

Name of TCP[1] *Mr Chan Tai Man*

Grade of TCP *T4* **Frequency of Inspection** *weekly*

Date DD/MM/YY	*29/1/20* (Wed)	*5/2/20* (Wed)	*12/2/20* (Wed)	*19/2/20* (Wed)	*26/2/20* (Wed)	*4/3/20* (Wed)	*11/3/20* (Wed)
Item No.[#]	S/NS	S/NS	S/NS	S/NS	S/NS	S/NS	S/NS
C1	*S*	*S*	*S*	*S*	*S*	*S*	*S*
C2	*S*	*S*	*S*	*S*	*S*	*S*	*S*
C3	*S*	*S*	*S*	*S*	*S*	*S*	*S*
C8	*S*	*S*	*S*	*S*	*S*	*S*	*S*
C9	*S*	*S*	*S*	*S*	*S*	*S*	*S*
C10	*S*	*S*	*S*	*S*	*S*	*S*	*S*
C12	*S*	*S*	*S*	*S*	*S*	*S*	*S*
C13	*S*	*S*	*S*	*S*	*S*	*S*	*S*
C19	*S*	*S*	*S*	*S*	*S*	*S*	*S*
C24	*S*	*S*	*S*	*S*	*S*	*S*	*S*
C28	*S*	*S*	*S*	*S*	*S*	*S*	*S*
Cn	*S*	*S*	*S*	*S*	*S*	*S*	*S*
Signature							

Legend:

S - Satisfactory[2]

NS - Not satisfactory (It should be recorded in the site supervision report and, where applicable, **Form B**[3])

* Delete if inappropriate

\# Descriptions of the items listed are attached in separate sheet(s)

[1] Full name of the TCP as provided in the supervision plan.

[2] If a non-conformity is very minor in nature and has been rectified to the satisfaction of the TCP at the same inspection, it would be recorded as "satisfactory".

[3] Completion of **Form B** is **Required** for a non-conformity that (a) has material concern for safety; or (b) does not have material concern for safety but the works item/rectification works cannot be verified due to the areas have been covered up during inspection or re-inspection.

Appendix VII

Qualifications of Competent Person (Logging) and TCPs with Academic Background in Geology

Qualifications of Competent Person (Logging) and TCPs with Academic Background in Geology

1 (a) The Competent Person (Logging) should either be (a) a degree holder in geology [(1)] or a cognate subject [(2)] in which at least 50% of the course content comprises geological based subjects [(3)] with not less than 3 years of post-qualification experience in ground investigation (GI) which must include logging of samples; or (b) a degree holder in geology or a cognate subject in which at least 25% of the course content comprises geological based subjects with not less than 5 years of post-qualification experience in GI which must include logging of samples.

New applicants for Competent Person (Logging) will be required to submit documentary evidence in support of their core logging experience (e.g. submission of logs that the applicant has produced, including a brief statement of 2-3 pages explaining the technical aspects in preparing such logs and the reasons for choosing the submitted logs to support his/her application).

Note [(1)] Examples of degree in geology are applied geology, earth science, engineering geology, geological sciences, geology, mining geology and petroleum geology. The degree should be awarded by universities funded by the University Grants Committee. Otherwise the academic qualification should be assessed by the Hong Kong Council for Accreditation of Academic and Vocational Qualifications (formerly Hong Kong Council for Academic Accreditation) as up to a local degree level.

Note [(2)] Examples of cognate subjects are environmental science, geography, geomorphology, geotechnical engineering, mining and soil science.

Note [(3)] Examples of geological based subjects are applied geology, earth dynamics, earth systems,

economic/mining geology, engineering geology, environmental geology, field camp/field school/field mapping, geochemistry, geomorphology, earth/surficial processes, landform/quaternary geology, geophysics, historical geology, hydrogeology, mineralogy, palaeontology, petroleum geology, petrology (igneous, metamorphic and sedimentary), physical geology, physics of the Earth, plate tectonics, regional geology, rock mechanics, sedimentology/principles of sedimentation, stratigraphy, soil mechanics and structural geology. An applicant who holds a degree in geology or a cognate subject in which at least 25% but less than 50% of the course content comprises geological based subjects is considered to have topped up the geological based subjects in his/her degree to at least 50% if he or she has obtained a recognised relevant post-degree qualification (e.g. Post-graduate Diploma in Earth Sciences at the University of Hong Kong or equivalent).

(b) A person who has already been accepted as a Logging Geologist under the Development Bureau's List of Approved Suppliers of Materials and Specialist Contractors for Public Works in the category of GIFW may also be a competent person for logging of samples and preparation of borehole logs.

Definition of degree in geology which covers the specified engineering related subjects

2 TCPs with academic background in geology should hold a degree in geology (see Note 1 of Item 1 above) which covers the specified engineering related subjects. Such degree in geology should have at least three of its modules covering any three or more of the following subjects: soil mechanics, rock mechanics, engineering geology, hydrogeology, applied geoscience and foundation engineering, or other relevant subjects. An applicant who holds a degree in geology which has less than three of its modules covering the above subjects is considered to have topped up the specified engineering related

subjects in his/her degree to at least three modules if he/she has attended and passed relevant post-degree courses (e.g. relevant courses of MSc in Applied Geosciences programme organised by the Department of Earth Sciences of the University of Hong Kong).

Other equivalent post-degree courses may be acceptable and details of such courses should be submitted by the AP, RSE, RGE or AS to the BA for acceptance.

Appendix VIII

Administrative Procedures for

GIFW

Administrative Procedures for GIFW		
Item	**Procedure**	**Detailed Requirements**
1.	Appointment of AP/RSE/RGE	AP is required to be appointed as the co-ordinator of the works by the submission of specified Form BA 4. RSE/RGE may also be appointed as necessary. The geotechnical consultant responsible for preparation of the geotechnical content of the future submission of foundation, site formation, excavation or other plans or geotechnical assessments should be involved at this stage and work under the direction of the AP and/or RSE/RGE.
2.	Submission of GI plans for approval and consent	GI plans, indicating the extent of works to be carried out, are required to be submitted in all cases. In the case within scheduled areas, approval and consent under the BO will be followed whereas in the non-scheduled areas, approval and consent is not required by virtue of section 41(3) of the BO. Nevertheless the GI plan will be useful for BA's record and for the assessment of level of supervision required.
3.	Submission of Form BA 10 notifying the commencement of work	The RSC(GIFW) is required to submit Form BA 10 which has been signed by AS of the RSC(GIFW) and endorsed by the AP. Form BA 11 and a new Form BA 10 are required if there is a change of contractor during the course of the work.
4.	Submission of site supervision plan	<u>For Scheduled Areas</u> A supervision plan is required to be submitted prior to or at the time of consent application for commencement of GIFW. The plan should specify the name of TCPs and Competent Person (Logging) appointed and the frequency of inspection and/or extent of supervision for GIFW. <u>For Non-Scheduled Areas</u> Prior to or at the same time of submission of Form BA 10, a supervision plan is required to be submitted, specifying the name of TCPs and Competent Person (Logging) appointed and the frequency of inspection and/or extent of supervision for GIFW. No prior approval of the supervision plan is required before the works are commenced. The AP/RGE/AS should ensure that their TCPs satisfy the specified qualification and experience requirements, and should notify the BA of any subsequent changes of supervisors.

Item	Procedure	Detailed Requirements
5.	Submission of Form BA 14 notifying the completion of work	Form BA 14 is required to be submitted by the RSC(GIFW), AP and RGE upon completion of the GIFW.
6.	Submission of GI reports in support of the approval of foundation, site formation, excavation or other proposals or geotechnical assessments	The GI report shall include the following: (a) a certificate from the AS of the RSC(GIFW) confirming that: (i) the RSC(GIFW) is responsible for the works stated in the report and that the works have been conducted according to Geoguide 2 and Geoguide 3; (ii) the works have been carried out under supervision in accordance with the requirements stipulated and the supervision plan submitted; (iii) the logging of samples and preparation of borehole logs in accordance with Geoguide 3 have been carried out by a Competent Person; and (iv) the field density tests and other tests of samples have been conducted by a HOKLAS accredited laboratory. (b) a certificate from the RGE that he has provided supervision in accordance with the requirements stipulated and the supervision plan submitted. (c) copies of the Form BA 10 and BA 14 previously submitted for BD's information in view of possible time lapse between the completion of GI and the submission of foundation plans etc. for approval; and (d) a proper surveyed record of the boreholes. The relevant foundation, site formation, excavation or other plans may be disapproved if the GI report is found not acceptable or not including the above information.

Certificate of Compliance/Certificate of Supervision

(for inclusion in ground investigation report)

Project name & No. : .....
Contract name & No. : .....
Works Order No. : .....
Client : .....

Part 1 : Certificate of Compliance *(to be completed by authorized signatory)*

I, the person appointed to act for the registered specialist contractor (ground investigation field works) (RSC(GIFW)) (name in full) _____ (Chinese) _____, certify that :-

(i) we are responsible for the works stated in the report and that the works have been conducted according to Geoguide 2 and Geoguide 3;

(ii) the works have been carried out under our supervision in accordance with the requirements stipulated and the supervision plan for GIFW submitted to the Building Authority;

(iii) the logging of samples and preparation of borehole logs in accordance with Geoguide 3 have been carried out by a Competent Person; and

(iv) the field density tests and other tests of samples have been conducted by a laboratory accredited under the Hong Kong Laboratory Accreditation Scheme. (*)

Name of the RSC(GIFW) : .....

Certificate of Registration No. : .....

Date of expiry of registration : .....

Signature (date) : .....

Part 2 : Certificate of Supervision *(to be completed by registered geotechnical engineer)*

I, the registered geotechnical engineer (name in full) _____ (Chinese) _____, certify that I have provided supervision in accordance with the requirement stipulated in the supervision plan for GIFW submitted to the Building Authority.

Certificate of Registration No. : .....

Date of expiry of registration : .....

Signature (date) : .....

* Delete where appropriate

Appendix IX

Key Records on Quality Supervision of Soil Nailing Works

Key Records on Quality Supervision of Soil Nailing Works

BD File Ref.	Slope No./Ref.
Location	
Name of RGE	Name of RSC(SF)

Nail no.	Total length of reinforcement (m)		Actual diameter at mouth of hole (mm)	Date & Signature	Grout volume (litre)			Anomalies observed during nail installation and action taken. (All observed anomalies must be reported to RGE or TCP T5 immediately.) (Please use separate sheet to give details)
	Design	Actual			Design	Actual	Date & signature	

Note : Prior to installation of the soil nail head, photographic records of the condition of the grout at the top of the soil nail should be taken; a scale or measuring tape should be included to show the as-built diameter of the installed nail.

Name[1] of TCP T3 nominated by RGE: _____

Specimen Signature: _____

[1] Full name of the TCP as provided in the supervision plan.

Appendix X

Other Acceptable Criteria in Qualifications and Experience for TCP

Other acceptable criteria in qualifications and experience are listed as follows:

1. During the early implementation stage of the Supervision Plan System before 22 December 2005, site supervisory personnel who did not meet the required academic qualifications as specified in the Technical Memorandum, but had sufficient years of relevant experience as per part (a) of Table 1 (with Notes) below, attended top-up training courses organised by Vocational Training Council (VTC) or the Construction Industry Council Training Academy (CICTA) (formerly the Construction Industry Training Authority (CITA)) and acquired an Equivalent Certificate would be accepted to possess equivalent qualifications as specified in the Technical Memorandum on a permanent basis. He can be appointed as TCP of grade T3 to T1 in the respective streams in accordance with part (a) of Table 2 below.

2. As the industry has raised that there is shortage in the supply of TCP T1, there is a need for organising a "Technically Competent Person T1 Training Course", similar to previous top-up courses, to enhance the technical ability of site supervisory personnel working in the industry but do not meet the required academic qualifications as specified in the Technical Memorandum, so that they can perform the duties of TCP T1. A person who has relevant prior experience of not less than 5 years is eligible to attend the "Technically Competent Person T1 Training Course" offered by the HK Institute of Vocational Education (HKIVE) or the CICTA and upon acquiring the "TCP T1 Certificate" will be accepted to possess equivalent qualifications required for a TCP T1 on a permanent basis. He may be appointed as TCP of grade T1 in accordance with part (b) of Table 1 (with Notes) and Table 2 below.

3. With the introduction of minor works as a type of building works different from the major works in the Technical Memorandum, to facilitate site supervisory personnel working in the industry who do not meet the required academic qualifications as specified in the Technical Memorandum but would like to continue their current role to supervise minor works only, if they have relevant prior experience of not less than 5 years, they would be eligible to attend the "Technically Competent Person T1 (Minor Works) Training Course" offered by the HKIVE or the CICTA and upon acquiring the "TCP T1 (Minor Works) Certificate" will be accepted to possess equivalent qualifications required for a TCP T1 for supervision of minor works only on a permanent basis. Any such person may be appointed as TCP of grade T1 for supervision of minor works only in accordance with part (b) of Table 1 (with Notes) and Table 2 below.

Table 1				
(a) The Equivalent Certificate acquired in the top-up training course organised by VTC or CITA for TCP T3 to T1				
Topping-up Training Courses to be completed		**Certificates Awarded**	**Relevant Working Experience (counted in full)**	**Grades of TCP for types of works in Table 2**
Module No.	**Subject**			
Module 3 Module 4	Construction Supervision (I) Construction Supervision (II)	Equivalent Certificate (1)	5[(1)]	T1
Module 3 Module 4 Module 5.1 Module 5.2 Module 5.3	Construction Supervision (I) Construction Supervision (II) Specialist Works (Demolition)[(4)] Specialist Works (Foundation)[(4)] Specialist Works (Site Formation & Slope Repairs)[(4)]	Equivalent Certificate (2)	8[(2)]	T2[(4)]
Module 3 Module 4 Module 6.1 Module 6.2	Construction Supervision (I) Construction Supervision (II) Introduction to Specialist Works Administration and Management	Equivalent Certificate (3)	12[(3)]	T3[(5)]
(b) The certificate acquired in the TCP T1 or TCP T1 (Minor Works) Training Course organised by HKIVE or CICTA				
(i)	Technically Competent Person T1 Training Course	TCP T1 Certificate	5[6]	T1
(ii)	Technically Competent Person T1 (Minor Works) Training Course	TCP T1 (Minor Works) Certificate	5[6]	T1 (Minor Works)

Notes [(1)] : 5 years relevant working experience must have been gained within the previous 8 years and at least 1 year must be local site experience.

Notes [(2)] : 8 years relevant working experience must have been gained within the previous 11 years and at least 1 year must be local site experience.

Notes [(3)] : 12 years relevant working experience must have been gained within the previous 15 years and at least 1 year must be local site experience.

Notes [(4)] : A TCP T2 can only supervise the type of specialist works (Demolition works, Foundation works, or Site Formation & Slope Repair Works) when he has duly completed the training module in the Module 5.1/5.2/5.3 series corresponding to the specialist works and obtained the relevant certificate.

Notes [3] : If a TCP T3 wishes to take up duties of any of the T2 specialist works mentioned in Note 4, he must also complete the training module corresponding to the specialist works and obtain the Equivalent Certificate (2).

Notes [4] 5 years relevant working experience must have been gained within the previous 8 years and at least 1 year must be local site experience. For GIFW, relevant experience shall be confined to ground investigation works only.

Table 2

(a) Eligibility of site supervisory personnel as TCP T3 to T1, with Equivalent Certificate in top-up training course, organised by VTC or CITA						**(b) Eligibility of site supervisory personnel as TCP T1 or TCP T1 (Minor Works), with certificate in the training course, organised by HKIVE or CICTA**	
						(i) TCP T1 Certificate	**(ii) TCP T1 (Minor Works) Certificate**
Type of Building Works or Street Works	**TCP T3 in AP's Stream**	**TCP T3 in RSE's Stream**	**TCP T3 in RGE's Stream**	**TCP T3 in RC's Stream**	**TCP T2 to T1 in RC's Stream**	**TCP T1 in RC's Stream**	**TCP T1 (Minor Works) in RC's Stream**
GIFW	No	N/A	No	N/A	No	Yes	No
Building Works with significant geotechnical content	No	No	No	N/A	Yes	Yes	No
Foundation Works	No	No	N/A	N/A	Yes	Yes	No
Street Works or all Building Works (other than the above types of works and Minor Works)	Yes	Yes	N/A	Yes	Yes	Yes	No
Class I Minor Works	Yes	Yes	N/A	Yes	Yes	Yes	Yes

4. A person, who holds a relevant degree and with not less than one year relevant experience, attended / passed the "Top-up course for TCP T3 on GIFW and Building Works with Significant Geotechnical Content", which is run by the Hong Kong Polytechnic University, the University of Hong Kong, the Hong Kong University of Science & Technology, School of Professional Development in Construction under Hong Kong Institute of Construction or Geotechnical Division of the HKIE, is accepted to possess equivalent qualification as that in the Technical Memorandum for TCP T3.

5. A list of courses which are recognised as acceptable academic qualifications for TCP T1 to T3 under this Code has been uploaded to BD website.

Appendix XI

Standard Forms TW1, TW2 and TW3

Form TW1 – Certificate of Compliance and Confirmation of Appointment of Design Engineer for Temporary Works Providing Support to a Tower Crane

Form TW2 – Certificate of Compliance and Confirmation of Appointment of Independent Checking Engineer for Temporary Works Providing Support to a Tower Crane

Form TW3 – Certificate of Completion for Temporary Works Providing Support to a Tower Crane by Registered Contractor

Certificate of Compliance and Confirmation of Appointment of Design Engineer for Temporary Works Providing Support to a Tower Crane

Project name : _____

BD reference no. : _____

Address of site : _____

Tower crane no. : _____ (with layout plan)

Stage of works[1] (if any) : _____

Part 1 : Certificate of Compliance *(to be completed by design engineer and the employing company)*

I, (name in full)_____ (Chinese)_____ (I.D. No.^ / Passport No.^)_____ (Telephone No.) _____, and my employing company (employing company name) _____ confirm that I have been appointed by the registered contractor (RC) (Name)_____ as the design engineer (DE) in respect of the temporary works providing support to a tower crane at the subject site, and I hereby certify that :

(a) I have prepared and duly signed all the plans and construction drawings[2] (drawing number _____) for the temporary works providing support to the tower crane at the subject site, and the associated design justifications[3] (report reference number_____);

(b) the temporary works including the connections between the tower crane, the temporary works and the permanent structures (if applicable) are designed in compliance with the Buildings Ordinance, the regulations made thereunder and the relevant codes of practice and are structurally safe; and

(c) (i)* the temporary works are under Case 2 that have no effect on the permanent structures, adjoining buildings and lands by way of overstressing or overloading.

or

(ii)* the temporary works are under Case 3 that may have effect on the permanent structures, adjoining buildings or lands by way of overstressing or overloading and submission to the registered structural engineer/registered geotechnical engineer* is required for their review on the effects to the permanent structures. *

1 Stage of temporary works providing support to a tower crane (e.g. free-standing stage, climbing stage or extension of height of the tower crane etc)

2 Construction drawings include all necessary construction details and specifications of the temporary works, sequence of construction, method statements, details of precautionary and protective measures.

3 Design justifications include design calculations of the temporary works and the assessment on the effects on the permanent structures, the adjoining buildings and lands.

2. I declare that I am a registered professional engineer (RPE) (civil/structural*) with a minimum of 5 years relevant working experience.

Name of DE	:	Employing Company Name	:
RPE No.	:	Business Registration Certificate No.	:
Date	:	Signature of Authorized Representative	:
Signature of DE	:	Employing Company Chop	:

Any false certification or declaration may be subject to legal action

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Part 2 : Confirmation of Appointment *(to be completed by RC)*

I (name in full)_____ (Chinese)_____, the person appointed to act for the RC in the subject project, hereby confirm that the above DE has been appointed in respect of the temporary works providing support to the tower crane for the subject site and undertake that the temporary works will be carried out in accordance with the certified plans and construction drawings designed by the DE and will be properly maintained to ensure that they are structurally safe and intact.

Name of RC	:	
Certificate of Registration No.	:	
Date of expiry of registration	:	
Date	:	
Signature	:	

Any false certification or declaration may be subject to legal action

^ In accordance with the Hong Kong Identity Card/Passport record

* Delete where appropriate

Certificate of Compliance and Confirmation of Appointment of Independent Checking Engineer for Temporary Works Providing Support to a Tower Crane

Project name : _____

BD reference no. : _____

Address of site : _____

Tower crane no. : _____ (with layout plan)

Stage of works[1] (if any) : _____

Part 1 : Certificate of Compliance *(to be completed by independent checking engineer and the employing company)*

I, (name in full)_____ (Chinese)_____ (I.D. No.^ / Passport No.^ *)_____ (Telephone No.) _____, and my employing company (employing company name) _____ confirm that I have been appointed by the registered contractor (RC) (Name)_____ _____as the independent checking engineer (ICE) in respect of the temporary works providing support to a tower crane at the subject site, and I hereby confirm that I take up the role of the ICE in respect of the above temporary works. I certify that :-

(a) I have checked and duly signed all the plans and construction drawings[2] (drawing number _____) for the temporary works providing support to the tower crane at the subject site, and the associated design justifications[3] (report reference number_____), prepared by the design engineer (name in full) _____;

(b) the temporary works including the connections between the tower crane, the temporary works and the permanent structures (if applicable) are designed in compliance with the Buildings Ordinance, the regulations made thereunder and the relevant codes of practice and are structurally safe; and

(c) (i)* the temporary works are under Case 2 that have no effect on the permanent structures, adjoining buildings and lands by way of overstressing or overloading.*

or

(ii)* the temporary works are under Case 3 that may have effect on the permanent structures, adjoining buildings or lands by way of overstressing or overloading and submission to the registered structural engineer/registered geotechnical engineer* is required for their review on the effects to the permanent structures.*

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1 Stage of temporary works providing support to a tower crane (e.g. free-standing stage, climbing stage or extension of height of the tower crane etc)

2 Construction drawings include all necessary construction details and specifications of the temporary works, sequence of construction, method statements, details of precautionary and protective measures..

3 Design justifications include design calculations of the temporary works and the assessment on the effects on the permanent structures, the adjoining buildings and lands.

2. I declare that I am a registered professional engineer (RPE) (civil/structural*) with a minimum of 5 years relevant working experience.

3. I confirm that the design engineer and I, including both employing companies, are independent from each other and have no holding, subsidiary, employer/employee or any other relationship.

Name of ICE	:	Employing Company Name	:
RPE No.	:	Business Registration Certificate No.	:
Date	:	Signature of Authorized Representative	:
Signature of ICE	:	Employing Company Chop	:

Any false certification or declaration may be subject to legal action

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Part 2 : Confirmation of Appointment *(to be completed by the RC)*

I (name in full)_____ (Chinese)_____, the person appointed to act for the RC in the subject project, hereby confirm that the above ICE has been appointed in respect of the temporary works providing support to the tower crane for the subject site.

Name of RC	:	
Certificate of Registration No.	:	
Date of expiry of registration	:	
Date	:	
Signature	:	

Any false certification or declaration may be subject to legal action

^ In accordance with the Hong Kong Identity Card/Passport record

* Delete where appropriate

Certificate of Completion for Temporary Works Providing Support to a Tower Crane by Registered Contractor

Project name : _____

BD reference no. : _____

Address of site : _____

Tower crane no. : _____ (with layout plan)

Stage of works[1] (if any) : _____

Part 1 : Certificate of Completion *(to be completed by technically competent person (TCP) T4 in registered contractor (RC)'s stream)*

I, (name in full)_____(Chinese)_____ (I.D. No.^/Passport No.^/TCP No.^*)_____ (Telephone No.) _____, the person appointed as TCP-T4 in RC's stream in the supervision plan submitted to the Building Authority on (date)_____ (submission ref. no. _____), hereby certify that:

(a) the temporary works providing support to the tower crane have been completed and I confirm that I have personally inspected the temporary works on (date)_____ and found satisfactory that the works have been completed in accordance with the certified plans and construction drawings (drawing number _____);

(b) the results of the associated testing of materials and workmanship (including on-site and off-site welds) have been reviewed by me and found technically acceptable; and

(c) the temporary works including the connections between the tower crane, the temporary works and permanent structures are structurally safe.

Name of TCP :

Date :

Signature of TCP :

Any false certification or declaration may be subject to legal action

[1] Stage of temporary works providing support to a tower crane (e.g. free-standing stage, climbing stage or extension of height of the tower crane etc)

Part 2 : Certificate of Completion

(to be completed by the appointed T5 person (T5 Person)/ Design Engineer (DE)/ Independent Checking Engineer (ICE))*

I (name in full) _____ (Chinese) _____, the person appointed by the RC as the T5 Person/ DE/ ICE* in the subject project, hereby certify that:

(a) the temporary works providing support to the tower crane have been completed and I confirm that I have personally inspected the temporary works on (date)_____ and found satisfactory that the works have been completed in accordance with the certified plans and construction drawings (drawing number _____);

(b) the results of the associated testing of materials and workmanship (including on-site and off-site welds) have been reviewed by me and found technically acceptable; and

(c) the temporary works including the connections between the tower crane, the temporary works and the permanent structures are structurally safe.

Name of T5 Person/DE/ICE*	:	Employing Company Name	:
RPE No.	:	Business Registration Certificate No.	:
Date	:	Signature of Authorized Representative	:
Signature of T5 Person/DE/ICE*	:	Employing Company Chop	:

Any false certification or declaration may be subject to legal action

^ In accordance with the Hong Kong Identity Card/Passport record/ TCP No.

* Delete where appropriate