Code of Practice for Foundations 2017

The Buildings Department has set up a Technical Committee (TC) to, among others, collect and consider the views and feedback from the building industry arising from the use of the Code of Practice for Foundations 2017 (the Code). Taking into account the advice of the TC, amendments were made to the Code in February 2021, July 2022, August 2023 and June 2024[1], which have been incorporated in the Code (2024 Edition) promulgated in October 2024.

2. On the advice of the TC, the following amendments to the Code (2024 Edition) have been promulgated with immediate effect.

(a) Appendix A – September 2025

3. Complying with the requirements of the Code will be "deemed-to-satisfy" the relevant provisions of the Building (Construction) Regulation. Authorized persons (AP), registered structural engineers (RSE) and registered geotechnical engineers (RGE) should observe the requirements stipulated in the Code as well as the latest supplementary guidelines and requirements in relation to foundation works stipulated in other relevant Practice Notes for Authorized Persons, Registered Structural Engineers and Registered Geotechnical Engineers issued by the Building Authority (BA) listed in Appendix B.

4. AP/RSE/RGE should also observe the design, construction, administrative and procedural requirements relating to foundation works as listed in Appendix C. To facilitate the construction progress and early submission of foundation plans, the following streamlining arrangements have been introduced:

(a) two-stage pile foundation plan submissions with details given in Annex C1; and

/(b) ...

[1] All previous amendments are summarised in the attached link: https://www.bd.gov.hk/doc/en/resources/codes-and-references/code-and-design-manuals/OldVersions/CoP_FC_ov.zip

(b) foundation plan submissions in non-scheduled areas with deferred site-specific ground investigation as detailed in Appendix C.

(HO Chun-hung)
Building Authority

Ref. : BD GP/BREG/C/11 (V)

First issue	February 1980	
Last revision	October 2024	
This revision	September 2025 (AD/NB2)	(Paragraphs 1, 2 & 4 and Appendix C amended, Appendix A added, and Appendices A1, A2, A3 & A4 deleted)

Appendix A
(PNAP APP-18)

Amendments to the Code of Practice for Foundations 2017 (2024 Edition)

(September 2025)

Legends:

New/Amended

Deleted

(9/2025)

Amendments to the Code of Practice for Foundations 2017 (2024 Edition)

Item	Current version	2025 Amendments
1. Clause 2.2.4[1]	**Allowable Vertical Bearing Pressure of Shallow Foundation founded on Soil** The allowable vertical bearing pressure of foundations founded on soils derived by bearing capacity equation may be taken as: $$q_a = \frac{q_u - q_o}{F} + q_o$$ where q_a = allowable vertical bearing pressure q_u = ultimate bearing capacity of the granular soil, which should be limited to 3 000 kPa q_o = effective overburden pressure at the base of the foundation, i.e. qo = γ s' Df , where γ s' and Df are respectively the effective unit weight and depth of the soil that originally exists above the base of the foundation F = factor of safety not less than 3	**Allowable Vertical Bearing Pressure of ↓ Foundation Founded on Soil** The allowable vertical bearing pressure of foundations founded on soils derived by bearing capacity equation may be taken as: $$q_a = \frac{q_u - q_o}{F} + q_o$$ where q_a = allowable vertical bearing pressure q_u = ultimate bearing capacity of the granular soil, which should be limited to 3 000 kPa. For foundations supporting building(s) with basement(s) on granular soil, this limit should be increased to 4 500 kPa. q_o = effective overburden pressure at the base of the foundation, i.e. $q_o = \gamma_s' D_f$, where γ_s' and D_f are respectively the effective unit weight and depth of the soil that originally exists above the base of the foundation F = factor of safety not less than 3

[1] Revision of the maximum value of ultimate bearing capacity.

Item	Current version	2025 Amendments
2. Clause 2.2.4 Note 1[2]	Notes: (1) q should not include any overburden pressure that may be temporarily or permanently removed during the design life of the foundation. In its derivation, the maximum effective overburden depth of subsoil should not be greater than 3 m or B_f, whichever is the lesser, and suitable adjustments should be made to discount any voids that may be allowed for underground utilities.	Notes: (1) q should not include any overburden pressure that may be temporarily or permanently removed during the design life of the foundation. In the derivation of q for shallow foundation, the depth of subsoil should not exceed 3 m or B_f, whichever is the smaller. For foundations supporting building(s) with basement(s) on granular soil, the effective depth of subsoil, defined as the minimum overburden depth around the basement perimeter, should not exceed 10 m or B_f, whichever is the smaller, in the derivation of q. Suitable adjustments should be made to discount any voids that may be allowed for underground utilities.

[2] Revision of the maximum effective overburden depth of subsoil.

Item	Current version	2025 Amendments
3. Clause 2.3.1(4) paragraph 2[3]	**(4) Young's Modulus** ... Care should be taken in determining the Young's modulus of soils by the use of empirical correlations with the SPT N-value as it can be unsafe in some cases and over-conservative in others. For shallow foundations with design allowable bearing pressures not greater than 250 kPa, in the absence of more accurate data, the Young's modulus Es (in MPa) of granular soils may be taken as one time the SPT N-value.	**(4) Young's Modulus** ... Care should be taken in determining the Young's modulus of soils by the use of empirical correlations with the SPT N-value as it can be unsafe in some cases and over-conservative in others. For shallow foundations ↓, in the absence of more accurate data, the Young's modulus E_s (in MPa) of granular soils may be taken as ↓ 1 times the SPT N-value. For raft foundation on granular soils derived from in-situ rock weathering (e.g. saprolites and residual soils) with SPT N-value > 30, in the absence of more accurate data, the Young's modulus Es (in MPa) may be taken as 1.5 times the SPT N-value.

[3] Revision of the requirement for determination of Young's modulus.

Item	Current version	2025 Amendments
4. Clause 4.2.2(2)(c)[4]	**(2) Testing Requirements** ... (c) the Young's modulus, E_s (in MPa), of the bearing strata used in the estimation of settlement is greater than one time the SPT N-value.	**(2) Testing Requirements** ... (c) the Young's modulus, E_s (in MPa), of the bearing strata used in the estimation of settlement is greater than ↓ 1 times the SPT-N value or 1.5 times the SPT N-value (for granular soils derived from in-situ rock weathering (e.g. saprolites and residual soils) with SPT N-value > 30) as appropriate.
5. Table 7.2	**Table 7.2 Typical Values for the Three Triggering Levels on Nearby Buildings, Structures or Services that are not Sensitive to Settlement** ...	**Table 7.2 Typical Values for the Three Triggering Levels on Nearby Buildings, Structures, Land or Services that are not Sensitive to Settlement** ...

[4] Revision of the requirement for plate load test.

Item	Current version	2025 Amendments
6. Clause 8.10 paragraph 4[5]	**TENSION LOADING TEST** ... The maximum test load should not result in the test pile or anchor being stressed beyond the yield stress. Where the design uplift capacity of the test pile is based on bond and tensile stresses which are taken as 50% of the corresponding values in compression, the test load may be 1.5 times the design uplift capacity of the pile under working load.	**TENSION LOADING TEST** ... The maximum test load should not result in the test pile or anchor being stressed beyond the yield stress. Where the design ↓ tension capacity of test pile is based on bond ↓ or friction between rock/soil and concrete/grout for pile and is taken as not exceeding 50% of the corresponding ↓ allowable bond stress in compression, the test load may be set at 1.5 times the design ↓ tension capacity ↓.

[5] Refinement of the wording.

Appendix B
(PNAP APP-18)

List of Practice Notes for Authorized Persons, Registered Structural Engineers and Registered Geotechnical Engineers in relation to Foundation Works

(a) Practice Note for Authorized Persons, Registered Structural Engineers and Registered Geotechnical Engineers (PNAP) APP-22 on Dewatering in Foundation and Basement Excavation Works;

(b) PNAP APP-24 on Railway Protection under Railways Ordinance, Mass Transit Railway (Land Resumption and Related Provisions) Ordinance and Area Number 3 of the Scheduled Areas in Schedule 5 to the Buildings Ordinance;

(c) PNAP APP-30 on Geotechnical Control on Developments in Mid-levels Scheduled Area;

(d) PNAP APP-49 on Site Investigation and Ground Investigation;

(e) PNAP APP-61 on Geotechnical Control on Developments in Area Numbers 2 and 4 of the Scheduled Areas;

(f) PNAP APP-62 on Protection of Sewage and Drainage Tunnels;

(g) PNAP APP-97 on Consent Procedures for Building Works and Street Works;

(h) PNAP APP-134 on Development in the Designated Area of Northshore Lantau; and

(i) PNAP APP-137 on Ground-borne Vibrations and Ground Settlements Arising from Pile Driving and Similar Operations.

(8/2023)

Appendix C
(PNAP APP-18)

Design, Construction, Administrative and Procedural Requirements relating to Foundation Works

Design and Construction of Foundations

Pile Foundations

When a registered structural engineer (RSE) intends to apply a piling system which is not commonly adopted in local practice for foundation construction or not complied with the requirements/conditions set out in the Code of Practice for Foundations 2017 (the Code), the design principles involved should be settled with the Building Authority (BA) prior to the submission of foundation plans using such pile system for approval, whenever possible. This would facilitate the RSE to proceed with confidence and avoid abortive work.

2. A pre-submission enquiry and conference as recommended in Practice Note for Authorized Persons, Registered Structural Engineers and Registered Geotechnical Engineers (PNAP) ADM-19 should be made to the BA in advance.

3. All technical details of the system should be submitted to the BA, including material specification, manufacturing process, method of installation, method of assessing pile capacity, applicability relating to ground conditions and selected examples of uses of the system elsewhere, if applicable. A demonstration of the performance of the system is usually required.

4. Pile sections used in socketed steel H-pile or driven steel bearing H-pile may require demonstration of the compliance with section 3 of the Building (Construction) Regulation (B(C)R). The following information should be submitted to the BA for consideration prior to seeking approval of foundation plans using such type of pile section whenever possible:

(a) A brief description of the manufacturing process of the piles;

(b) Samples of pile identification and mill label;

(c) Samples of mill certificates;

(d) Sectional properties of the piles including tolerances checking;

(e) Chemical and mechanical properties of the piles including general specification, maximum carbon equivalent values (CEV) and satisfactory test results from a laboratory accredited under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) or other laboratory accreditation bodies which have reached mutual recognition agreements/arrangements with HOKLAS;

(f) Welding specification including welding procedure test specifications, sample welding procedure test results and electrode specification;

(g) Pile capacity;

(h) Pile design;

(i) Quality assurance and quality control schemes including a brief description of the manufacturing process and product inspection and quality management system certificate; and

(j) Test reports by a laboratory accredited under the HOKLAS or other laboratory accreditation bodies which have reached mutual recognition agreements/arrangements with HOKLAS.

5. A list of steel H-pile sections with the required information as listed in paragraph 4 above which had been submitted to the BA and found satisfactory is available on the Buildings Department's (BD) website (www.bd.gov.hk) under the "Deemed-to-Satisfy" page of the "Resources" section. These pile sections are considered to have "deemed-to-satisfy" section 3 of the B(C)R concerning the design and construction of foundations. If the proposed steel H-pile section is not on the list, the BA may require all information listed in paragraph 4 to be included in the foundation plans submission for consideration.

Technical Guidance Note No. 53 issued by Geotechnical Engineering Office

6. The Geotechnical Engineering Office (GEO) of the Civil Engineering and Development Department (CEDD) issued the Technical Guidance Note No. 53 (TGN 53) on 19 January 2023. Subject to the conditions given in the notes to Table 1 of TGN 53, if the presumed allowable values of the founding stratum as given in TGN 53 are adopted in the design of the foundation system, the BA will impose the following conditions under item 6 of section 17(1) of the Buildings Ordinance (BO) when granting the approval of the foundation plans:

(a) Settlement analysis of the foundation should be performed to take due account of the as-constructed pile lengths/founding levels and the soil-structure interaction;

(b) Assessment of the structures supported by the foundation should be carried out to confirm that the structures can tolerate the settlements determined at (a) above;

(c) Upon completion of the foundation works, a report containing the analysis and assessment conducted in (a) and (b) above should be submitted to the BA;

(d) A settlement monitoring scheme should be implemented to monitor the performance of the foundations throughout the construction period of the superstructure. The monitoring scheme should be submitted to the BA for agreement before the commencement of pile cap/superstructure works; and

(e) A final performance review report on the settlement behaviour of the structure with consideration of settlement records in (d) above should be submitted prior to the application of occupation permit or the submission of Form BA14 for alteration and addition works as appropriate. Occupation permit will not be issued or Form BA14 will not be acknowledged until the final performance review is found satisfactory by the BA.

Shallow Foundations

7. Mass concrete fill is often applied for benching uneven or sloping rock surface for construction of shallow foundation. However, mass concrete fill of significant size (i.e. with a maximum depth greater than 1 m) placed beneath the footing or raft foundations should be regarded as a structural element and designed in accordance with the Code of Practice for Structural Use of Concrete 2013.

Registered Specialist Contractor for Pre-drilling, Post Construction Proof Drilling and Proof Core-drilling Test

8. All pre-drilling, post construction proof drilling and proof core-drilling test must be carried out by a registered specialist contractor in the Ground Investigation Field Works category. The contractor who is appointed to carry out proof core-drilling test required under section 20 of the B(C)R should make declaration on its relationship with the foundation contractor, including whether or not it is a holding, subsidiary, or an associated company of the foundation contractor, or has financial relationship with it e.g. cross-directorship, or has financial interest in such foundation works.

Interface Proof Drilling for Large Diameter Bored Pile

9. For large diameter bored piles, barrettes and the like, the concrete should be in good contact with the bedrock at the interface and the rock should be consistently of the required grade beneath the pile base. To facilitate successful proof drilling at the interface, a pipe of not less than 150 mm diameter may be left in and stopped at about 1 m above the interface. Minor imperfection observed during the interface proof drilling, such as a thin layer of sediment, segregated concrete at the interface or weathered seam in the rock beneath the pile base, may be considered acceptable provided that the RSE/registered geotechnical engineer (RGE) can demonstrate the acceptance with justifications and additional proof drilling, if required. As an alternative, the RSE may include in the foundation plans the proposed remedial works for rectifying any such imperfections. The proposals should provide details of the method statement and the supervision required by the RSE.

Plan Submission and Consent Application

Division of Responsibilities

10. When geotechnical reports and supporting documents are required for submission of foundation plans or records, such reports and documents should be prepared and signed by the RGE. Reference should be made to PNAP APP-141.

Alternative Arrangement of Two-stage Plan Submission

11. Taking into account the design and construction process of a building development, RSE may choose to divide a pile foundation submission into two stages (i.e. Stage 1 and Stage 2). For Stage 1 submission, the plans should include the physical properties of the proposed pile foundations based on the maximum pile capacity in vertical compression, vertical tension and lateral load. The submission of detailed structural analysis of the foundation through rigorous pile cap analysis is not required and hence the presumed wall and column/wall load schedule and the pile load schedule are not required at this stage of submission. For Stage 2 submission[1], the entire conceptual design of the foundation works covering the load path should be provided in the submission, including the pile and column/wall load schedules and structural analysis of the foundation through rigorous pile cap analysis. The details of essential information to be included in both stages of submission are listed in Annex C1.

12. After obtaining the BA's approval of Stage 1 foundation plans, RSE may apply for consent to the commencement and carrying out of pile foundation works or test pile installation works as necessary. The consent application should be accompanied with the required documents (e.g. site supervision plan) in accordance with the conditions imposed under item 6 in section 17(1) of the BO.

13. Since structural analysis of the foundation loads through rigorous analysis of the pile caps and foundations is not required in Stage 1 submission, an amendment solely involving the numbers of piles (for pile foundations) and the layout of the foundations is not considered as major revision unless the amendment affects materially the fundamental issues set out in Appendix D to PNAP ADM-19.

14. When adopting the alternative arrangement of two-stage pile foundation plan submission, the RSE should ensure Stage 1 foundation amendment plans and Stage 2 foundation plans have been submitted to the BA for approval and consent[2] before certifying completion of the foundation works (Form BA14).

Alternative Arrangement for Foundation Plan Submissions in Non-Scheduled Areas with Deferred Site-specific Ground Investigation (GI)

15. Given the general unchanging nature of geology and continuity of geological profile, the existing GI information of a site may serve as a useful reference for the planning and design of foundation works. In order to facilitate early submission of foundation plans and to shorten the foundation construction period, as well as to reduce the cost for pre-drilling works, alternative arrangement for submission of foundation plans in non-scheduled areas with deferred submission of site-specific GI information is set out in paragraph 16 below.

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[1] For the avoidance of doubt, for the first submission of Stage 2 foundation plans, regulation 30(3)(a) of Building (Administration) Regulations is applicable.

[2] If no building works are involved in Stage 1 foundation amendment plans or Stage 2 foundation plans/amendment plans, there is no need to apply for consent for carrying out the works.

16. Foundation plans for non-scheduled areas may be submitted for the BA's approval based on the existing GI information[3] within 20 m from the site boundary, obtained from the Geotechnical Information Unit of GEO of CEDD, or from the previous development of the site. Site specific GI works could be carried out after the approval of the foundation plans according to the proposed borehole locations as indicated on the approved foundation plans. The site-specific GI information, together with an assessment report of the foundation design verifying the original design assumptions, could be submitted to the BA concurrent with the application for consent for commencement of the foundation works. If the assessment report is not compatible with the approved foundation plans, revised foundation plans should be submitted to the BA for approval before the consent application. Otherwise, the consent application will be refused under section 16(3)(ba) of the BO.

Foundation Works near Site Boundary

17. Installation of pile walls and grout curtain along the site boundary would provide additional precautionary measures for safeguarding settlement sensitive structures, roads or underground services against possible adverse effects imposed upon them during the installation of the socketed steel H-piles at close proximity. In this respect, the consent for the commencement of works for those piles located within 10 m from the site boundary may not be granted unless the record plans and assessment report for the installation of related pile wall and grouting works have been submitted. To facilitate the processing of such consent application, the RSE may submit the Form BA8 for the piles together with the record plans and assessment report for the related pile walls and grouting works concurrently. In the case of large sites where consent application for those piles may be submitted in stages, the RSE/RGE should submit an additional assessment report to justify the adequacy of the precautionary measures at the time of consent application.

Concurrent Approval and Consent

18. Except in cases where there are imposed conditions to be met first, for example, pre-construction condition survey to sensitive buildings, shoring to adjoining buildings, etc, BD may grant approval of plans for foundation works and consent for the commencement of such works at the same time. If the authorized person (AP)/RSE wishes to take advantage of the streamlined procedures for concurrent applications for approval and consent, the application for consent for the commencement of works should not be submitted before the 32nd day after the date of submission of the corresponding foundation plans for approval, so as not to cause unnecessary administrative complications.

Consent for Installation of Working Piles for Driven piles

19. Regarding the trial piles and their load tests for steel H-piles driven to bedrock mentioned in Section 5.4.11 (4) of the Code, consent for the installation of working piles for driven pile works may be granted without completion of proof load test on trial piles, provided that the results of Pile Driving Analyser (PDA) with Case Pile Wave Analysis Program (CAPWAP) analysis of the trial piles for driven pile works are found satisfactory and the relevant conditions for granting consent are fulfilled. Proof

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[3] Existing GI information collected from GI works conducted before or after promulgation of the Code of Practice for Site Supervision may be adopted.

load test on trial piles may be carried out concurrently with the working pile installation and the load test reports/performance review report of trial piles should be submitted within 14 days after completion of tests.

Initial Stage Excavation and Lateral Support Works

20. To minimise the idling time on construction sites, earth-retaining elements such as sheet/pipe pile walls may be installed and, if applicable, initial stage excavation and lateral support works[4] may be carried out concurrently with the foundation works. Once the earth-retaining elements have been satisfactorily installed, a consent application may then be made and the corresponding supervision plan be submitted for the commencement of the remaining excavation works for substructures prior to the final completion of foundation works. This would allow excavation works for substructures be carried out while foundation record plans are being scrutinised and proof tests are being arranged.

Pile Cap and Superstructure Works

21. Consent to the commencement and carrying out of the pile cap and superstructure works will not be given until:

(a) the foundation records have been submitted and found satisfactory;

(b) the Form BA14 certifying the completion of foundation works has been submitted;

(c) the required proof tests have been satisfactorily carried out; and

(d) all relevant imposed conditions including material testing requirements have been complied with.

Form BA14, Foundation Record Plans and Reports

22. Upon completion of the foundation works, a Form BA14 certifying the completion of the foundation works should be submitted according to regulation 25 of the Building (Administration) Regulations. For exceptionally large sites, foundation works may be suitably phased and separately considered for proof testing. BD should be consulted as early as possible on such phasing arrangement. To expedite the selection of piles for proof tests, foundation record plans and reports may be separately submitted prior to the submission of the Form BA14.

23. If sufficient information is available in the submitted record plans and reports, BD would within 14 days of the receipt of the Form BA14 for foundation works inform the AP/RSE of the representative piles identified for proof tests. To avoid unnecessary delay, the AP/RSE should ensure that full information on the completed piles is included in the foundation record plans and reports.

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[4] The initial stage excavation and lateral support works refers to the excavation down to bottom of the first layer of struts but not exceeding 1.5 m below the existing ground level and the erection of the first layer of waling and struts as shown in the approved plans.

24. Review of piling design with back-analyses and submission of foundation plans to amend the pile loading schedule would be required in the following circumstances:

(a) the difference between the as-built pile lengths and the approved tentative pile lengths by more than ± 5%; or

(b) the difference in as-built pile lengths among piles within close proximity results in significant redistribution of pile loads or implies the existence of a steep bedrock profile.

If the variation is significant, additional GI may be required to justify the deviation. Such requirement of additional GI will be determined by BD on a case-by-case basis. For foundation works in Area Numbers 2 and 4 of the Scheduled Areas, attention should be drawn to the requirements stipulated in clause 7.8 of the Code and PNAP APP-61.

25. The review of piling design with back-analyses and the updated pile loading schedule plans can be submitted together with Form BA14 certifying completion of the piling works and the corresponding piling record plans. BD will proceed to select piles for load test and process the pile loading schedule plans concurrently, so as to speed up the processing of Form BA14.

26. If the alternative arrangement of two-stage pile foundation plan submission is adopted, the Form BA14 certifying completion of the foundation works will not be acknowledged by the BA until the Stage 1 foundation amendment plans[5] (if any) and Stage 2 foundation plans/amendment plans have been approved.

27. For large diameter bored pile foundations, AP may submit Form BA14 to BD after completion of interface proof drilling at the concrete and rock interface for at least 85% of the completed piles. In addition, the submission of all test result for concrete cubes at 28 days is not necessary if sufficient justification is available at this stage. Provided that other information as required in the approval of the foundation plans has been submitted and found satisfactory, BD would select representative piles for proof core-drilling tests while the remaining interface proof drilling and concrete cube testing are still in progress. In case there are irregularities found thereafter, BD may require additional proof core-drilling tests. Form BA14 would only be acknowledged when the results of all the interface proof drilling, proof core-drilling tests and required documents are submitted and found satisfactory.

(Rev. 9/2025)

[5] Stage 1 foundation amendment plans may involve changes in the number of piles installed, pile layout, pile founding level, etc. according to the as-built conditions.

Annex C1
(PNAP APP-18)

Essential Information to be included in Two-stage Pile Foundation Plan Submission

1. It is not unusual to have foundation plan amendment submissions throughout the design stage of a development project due to changes of the layout of columns, walls and piles, as well as their loads arising from the revised building design. The extent of changes in the foundation amendment plans may sometimes be so substantial that may constitute a major revision and require a fresh consent application for the commencement and carrying out of the foundation works. To facilitate the construction process and reduce the number of amendment submissions due to design changes, the RSE may choose to separate a pile foundation plan submission into two stages.

Stage 1 Submission

2. The plan submission at this stage should include the essential construction information (e.g. layout, structural details, materials, installation specification, schedule of the proposed pile foundations including their sizes and tentative founding levels) and design assumptions of the proposed pile foundation (e.g. the allowable bearing capacity of founding stratum, the design strength of the proposed materials and the estimated loading effects from adjacent and nearby buildings, structures, lands, streets, utility services, slopes, nullahs and retaining walls, to the proposed foundation or vice versa). The detailed structural analysis of the foundation loads through rigorous analysis of the pile caps and foundations is not needed and can be provided at Stage 2 submission.

3. The following essential information should be included in a Stage 1 submission:

(a) Plans

(i) items (1)(a) to (1)(d), (1)(f), (1)(g), (1)(i) to (1)(l) in clause 2.7 of the Code of Practice for Foundations 2017 (the Code);

(ii) assumed design loads from adjacent and nearby buildings, structures, lands, streets, utility services, slopes, nullahs and retaining walls for structural analysis in Stage 2; and

(iii) assumed design loads of the proposed foundations for assessment on the effects on adjacent and nearby buildings, structures, lands, streets, utility services, slopes, nullahs, retaining walls, etc.

(b) Supporting Documents:

(i) items (2) (a) and (2)(d)[1] in clause 2.7 of the Code;

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[1] Alternatively, the public relations plan may be submitted after approval of pile foundation plans but prior to the consent application for the commencement of the pile foundation works.

(ii) design calculations to justify the pile load carrying capacity based on recognized foundation engineering principles;

(iii) assessment on the estimated loading effects from adjacent and nearby buildings, structures, lands, streets, utility services, slopes, nullahs and retaining walls to the proposed foundations; and

(iv) assessment on the effects of the proposed foundation works on adjacent and nearby buildings, structures, lands, streets, utility services, slopes, nullahs, retaining walls, etc. based on the assumed temporary loads during the course of construction.

Stage 2 Submission

4. The plan submission at this stage should include the presumed column/wall load schedule and the pile load schedule substantiated by structural analysis of the foundation loads through rigorous computer analysis of the pile caps and foundations. Conceptual design of the foundation system with illustration of the vertical and lateral load paths should also be demonstrated to prove the compatibility of the superstructure and foundation system in the submission.

5. The following essential information should be included in a Stage 2 submission:

(a) Plans

(i) items (1)(a), (1)(e) and (1)(h) in clause 2.7 of the Code; and

(ii) the assumed design loading schedule at pile cap level with a plan showing the column/wall layout.

(b) Supporting Documents:

(i) the plans approved in Stage 1 submission;

(ii) detailed structural analysis on the pile load and compatibility checking on the pile capacity approved in Stage 1 foundation plans; and

(iii) compatibility checking on the assumed load approved in Stage 1 submission for the assessment on the effects of the proposed foundation works on adjacent and nearby buildings, structures, lands, streets, utility services, slopes, nullahs, retaining walls, etc.