Computer Programs for Use
in Structural and Geotechnical Design

An authorized person (AP), a registered structural engineer (RSE) or a registered geotechnical engineer (RGE) may use computer programs to produce calculations to support his design or to produce designs for submissions to the Building Authority (BA). Where he intends to do so, he should ensure that the program from which such calculations or designs are produced is acceptable to the BA before submitting plans for approval under the Buildings Ordinance.

Prior Acceptance of Computer Program

2. An application for prior acceptance of structural computer program and geotechnical computer program should be made by a RSE and a RGE respectively. A computer program accepted by the Buildings Department (BD) will be assigned a BD reference number (prefixed 'S' for structural and 'G' for geotechnical), which should be quoted in submissions.

3. Application for prior acceptance of a computer program (including the renewal of prior acceptance) should be made using the standard pro forma in Appendix A. The completed pro forma should be accompanied by relevant documentation of the program including a user's manual with the following information:

    (a)   mathematical modelling of the analysis and/or design;

    (b)   flow charts showing the analysis and/or design procedure;

    (c)   Building Regulations, codes of practice or other requirements which the analysis or design produced by the program will comply with;

    (d)   theory of analysis and mathematical basis of the computational algorithm which are used in the program including any references;

    (e)   limitations and applicability of the program;

    (f)   structure and method of data input and output;

(g) interpretation of results; and

(h) examples which are sufficient to illustrate the operation of every part of the program at all representative input data values and verified by the RSE or the RGE, as appropriate to the type of computer program.

Additional test examples may be required in order that the accuracy of the computer program can be fully demonstrated.

Use of computer Program in Submission of Plans for Approval

4.   When using an accepted computer program to support structural or geotechnical design, the AP or RSE or RGE is required to provide the information in the first part of the structural calculations as stipulated in paragraph 9(b) of PNAP ADM-8.

5.   For structural computer programs, the RSE should be responsible for the program execution. Similarly, a RGE should be responsible for the program execution for geotechnical computer programs. The AP/RSE/RGE is also required to complete the standard pro forma in Appendix B and/or C and include it in the submission.

6.   When a submission is supported by a computer program which does not bear a valid BD reference number, the BA may require all information listed in paragraph 3 to be included in the submission for consideration.

Renewal of Prior Acceptance and Changes to Pre-Accepted Programs

7.   The prior acceptance of any computer program will be valid for a period of up to three years. In view of advances in science and technology and periodic revision to Codes of Practice, prior acceptance of any computer program will be considered to have expired on a date three years from the date of the last acceptance.

8.   Application for renewal of the prior acceptance may be made upon expiry, but not earlier than four months from the expiry date. Such applications will be examined by BD in the light of the requirements set out in this practice note.

9.   If changes are proposed to an accepted program, details of the amendments and the updated user manual (if applicable) should be submitted to BD for acceptance before using the revised program.

10.   Lists of currently accepted structural and geotechnical computer programs, and program limitations are available for inspection at the Receipt and Dispatch Counter at the office of New Buildings Divisions of the Buildings Department on 7/F, Cityplaza 3, 14 Taikoo Wan Road, Taikoo Shing, Hong Kong or through the website of the Buildings Department (www.bd.gov.hk)

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(HUI Siu-wai)
Building Authority

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APPLICATION FOR PRIOR-ACCEPTANCE* / RENEWAL* OF STRUCTURAL* / GEOTECHNICAL* COMPUTER PROGRAM	Appendix A (PNAP ADM-6)

A. Details of Applicant (RSE for Structural Program; RGE for Geotechnical Program):

Name: ....(RSE* / RGE*) & Registration No: ....………..

Address: ....………………

....………………

B.

Program Name: ....………………

Program Version: ....………………

Program Developer:
(Name/Identification) ....……………..

BD Reference Number (for renewal case only): ....…..

C. The following Supporting Documents substantiating the application are enclosed (please tick box):-

(a) Structural Program:- One copy of Program Manual ....….. ☐ & Flow chart(s)......... ☐

(b) **Geotechnical** Program:- **TWO** copies of Program Manual …...☐ & Flow chart(s)......... ☐

D. Areas of application of the computer program (e.g. Space frame/space truss/core wall/seepage/slope stability/retaining wall stability analysis, etc.):

E. Brief description of program, assumptions and theory (e.g. linear/non-linear, static/dynamic analysis; method of data input and result output; modular ratio/finite element/stiffness method; etc.):

F. Program Limitations (e.g. number of elements/joints/nodes/material zones/struts/surcharges/load cases/end releases; load types/conditions; scope of analysis; compliance standards/codes; partial load factors; load combination factors; etc.):

[Use Additional sheets as required]

G. Other relevant information supporting the application (e.g. codes of practice or other requirements with which the program complies, sufficient self-verified examples to demonstrate the operation of every part of the program, etc.):

I confirm that I have carried out adequate assessment on the computer program and I consider it suitable to be used to support designs for submission to the Building Authority.

Signature of Applicant (RSE*/RGE*) : ....………................... Date : ....….........…………

& Full Name (in block letters) : ....……*/*…………*/*…………….......………...................

Certificate of Registration No. : ………………………..….…… Expiry date : ………….….………

Delete whichever is inapplicable.

Matters to Note (PNAP ADM-6 Appendix A)

PERSONAL DATA

Purposes of Collection
1. The personal data provided will be used by the Buildings Department for the following purposes:
    (a) activities relating to the processing of the submission; and
    (b) facilitating communication between the Buildings Department and the related personnel.

Classes of Transferees
2. The personal data provided may be disclosed to:
    (a) other Government departments, bureaux & relevant organizations for the purposes mentioned in paragraph 1 above; and
    (b) any person for the purpose mentioned in paragraph 1(b) above.

Access to Personal Data
3. You have a right of access and correction with respect to personal data as provided for in section 18 and 22 and principle 6 of Schedule 1 of the Personal Data (Privacy) Ordinance. Your right of access includes the right to obtain a copy of your personal data provided by this form.

(Rev. 6/2016)

Structural Computer Program Statement

BD file ref. no. : ....

Address of site : ....

....

Authorized Person : ....

Registered Structural Engineer : ....

Structural computer programs used :-

Program Name	BD Ref. No.
(1)†..	S........................
(2)†..	S........................
(3)†..	S........................
(4)†..	S........................
(5)†..	S........................

(Show against each program the Methodology Adopted e.g., Elastic Theory, Load Factor, Ultimate Limit State, etc.)

The above programs were used to perform the following († insert the appropriate number from table in brackets) :-

(   ) Foundation   (   ) Pile cap
               *Analysis/Design   *Analysis/Design

(   ) Footing   (   ) Superstructure
               *Analysis/Design   *Analysis/Design

(   ) Others (please specify) ....
                                    *Analysis/Design

I confirm that I have carried out adequate assessment on the above computer programs and I consider them suitable to be used to support design for the above structural submission to the Building Authority.

The information about the structural computer programs is also enclosed in pursuance of paragraph 4 of PNAP ADM-6.

Signature of RSE : .... Date : ....

& Full name (in block letters) : ....

Certificate of Registration No. : .... Expiry date : ....
   * *Delete whichever is inapplicable*

Matters to Note (PNAP ADM-6 Appendix B)

PERSONAL DATA

Purposes of Collection
1. The personal data provided will be used by the Buildings Department for the following purposes:
    (a) activities relating to the processing of the submission; and
    (b) facilitating communication between the Buildings Department and the related personnel.

Classes of Transferees
2. The personal data provided may be disclosed to:
    (a) other Government departments, bureaux & relevant organizations for the purposes mentioned in paragraph 1 above; and
    (b) any person for the purpose mentioned in paragraph 1(b) above.

Access to Personal Data
3. Data subject has a right of access and correction with respect to personal data as provided for in section 18 and 22 and principle 6 of Schedule 1 of the Personal Data (Privacy) Ordinance. Data subject's right of access includes the right to obtain a copy of his/her personal data provided by this form.

Responsibility of the RSE
4. The RSE should be responsible for disseminating of the above information to the relevant data subjects.

(Rev. 6/2016)

Geotechnical Computer Program Statement

BD file ref. no.: ....

Address of site: ....

....

Registered Geotechnical Engineer: ....

Geotechnical computer programs used :-

Program Name	**BD Ref. No.**
(1)†	**G**...........................
(2)†	**G**...........................
(3)†..	**G**...........................

Above programs were used to analyse the following designs († insert the appropriate number from table in brackets) :-

(   )   Earth-retaining Structures

(   )   Excavation and Lateral Support Works

(   )   Slope Works

(   )   Others (please specify) ....

I confirm that I am responsible for executing the geotechnical computer programs in respect of the above designs.

The information about the geotechnical computer programs is also enclosed in pursuance of paragraph 4 of PNAP ADM-6.

Signature of RGE : .... Date: ....…….............

& Full name (in block letters) : ....…

Certificate of Registration No. : ……………...………….. Expiry date : …………...…………

Delete whichever is inapplicable

Matters to Note (PNAP ADM-6 Appendix C)

PERSONAL DATA

Purposes of Collection
1. The personal data provided will be used by the Buildings Department for the following purposes:
    (a) activities relating to the processing of the submission; and
    (b) facilitating communication between the Buildings Department and the related personnel.

Classes of Transferees
2. The personal data provided may be disclosed to:
    (a) other Government departments, bureaux & relevant organizations for the purposes mentioned in paragraph 1 above; and
    (b) any person for the purpose mentioned in paragraph 1(b) above.

Access to Personal Data
3. You have a right of access and correction with respect to personal data as provided for in section 18 and 22 and principle 6 of Schedule 1 of the Personal Data (Privacy) Ordinance. Your right of access includes the right to obtain a copy of your personal data provided by this form.

(Rev. 6/2016)