

Computer Programs for Use in Structural and Geotechnical Designs

An authorized person (AP) or a registered structural engineer (RSE) 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 Building Authority before submitting plans for approval under the Buildings Ordinance.

Prior Acceptance of Computer Program

2. Application for prior acceptance of a computer program should be accompanied by relevant documentation of the program including a user's manual giving 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) example(s) sufficient to illustrate the operation of every part of the program at all representative input data values.

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

3. An application for prior acceptance of structural computer program should be made by an RSE. An application for prior acceptance of geotechnical computer program should be made by an AP or RSE and a geotechnical consultant should be appointed to advise on the geotechnical content. A computer program accepted by BD will be assigned a BD reference number which should be quoted in submissions.

Use of Computer Program in Submission of Plans for Approval

4. When using the program to support structural or geotechnical designs, the AP or RSE is required to include a statement containing the following information, in the submission of plans for approval:

- (a) the name, version, developer's identification, BD reference number and validity period of the computer program;
- (b) the justifications on the simulation of the problems by the mathematical models used in the computer program;
- (c) an explanation of how the values are calculated for any parameters e.g. material properties and boundary conditions used in the model;
- (d) the preparation of the input data from the structural details and/or the ground conditions.
- (e) a brief description of the computer output; and
- (f) the application and interpretation of the computer output in the design.

5. For structural computer programs, the RSE should be responsible for the program execution. For geotechnical computer programs, a qualified geotechnical engineer (e.g. registered professional engineer in the geotechnical discipline) who is competent and conversant with the geotechnical application of the computer programs should be responsible for the program execution. In the latter case, the name and relevant CV of the person responsible for the program execution should be included in the statement required in paragraph 4.

6. When a submission is supported by a computer program which does not bear a valid prior acceptance, the BA may require all information listed in paragraph 2 to be included in the submission for consideration.

Renewal of Prior Acceptance and Changes to Pre-Accepted Programs

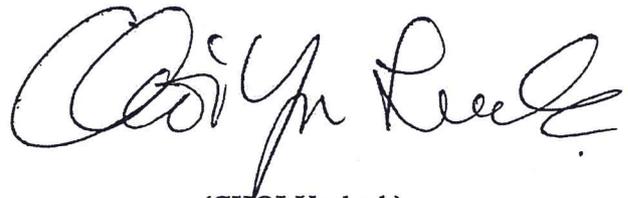
7. The prior acceptance of any computer program will be valid for a period of up to three years. In view of advances in science and technology, prior acceptance of any computer program given before 1 November 1997 will be considered to have expired on 1 May 1998 or a date three years from the date of last acceptance, whichever is later.

/8. Upon

8. Upon expiry, application for renewal of the prior acceptance should be made and such application 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 should be submitted to BD for approval before using the revised program.

10. A list of currently accepted computer programs is available for inspection in the Buildings Department.



(CHOI Yu-leuk)
Building Authority

Ref.: BD GR/OA/71

First issued December 1981

This revision October 1997 (AD/SE, GGE) - general revision

Index under : Computer Programs