

Ref : WB(W) 276/32/04  
Group: 5, 8, 11, 15

WORKS BRANCH  
GOVERNMENT SECRETARIAT  
MURRAY BUILDING  
GARDEN ROAD  
HONG KONG

5 February 1997

**Works Branch Technical Circular No. 3/97**

**Independent Checking of the  
Design, Erection, Use and Removal of Temporary Works**

(This Circular replaces Works Branch Technical Circular No. 15/96 which is hereby cancelled with immediate effect.)

**Introduction**

This Circular replaces LWBTC No. 4/88 which is hereby cancelled and supersedes SCC 16 of WBTC No. 2/96.

2. A Special Condition of Tender (Appendix 1), Special Condition of Contract (SCC) (Appendix 2), and a Particular Specification (PS) item (Appendix 3) have been prepared to enable officers responsible for preparing tender documents to require the Contractor to provide for independent checking of the design, erection, use and removal of selected Temporary Works.
3. Sub-clause (1) of the SCC at Appendix 2 of LWBTC No. 4/88 absolved the Architect/Engineer from examining and approving the Contractor's proposals. The SCC at Appendix 2 clarifies the Architect/Engineers' duty. The Architect/Engineer is required to examine the Contractor's design details concerning the design, erection, use and removal of the Temporary Works and shall satisfy himself that it contains no obvious deficiency and that the independent checking engineer has carried out his duties with reasonable skill and care in certifying that the Temporary Works have been properly and safely designed. The responsibility for the Temporary Works remains with the Contractor but no work shall be commenced until the Architect/Engineer has issued his consent in writing upon making such verification.
4. Under the revised SCC, the Contractor is additionally required to provide to the Architect/Engineer certified method statements in connection with the erection, use and removal of the designed Temporary Works.

**Guidance**

5. The decision to incorporate any of the appendices in tender documents is a matter for the professional judgement of the Architect/Engineer and it is recognised that the type and complexity of Temporary Works to be used by the Contractor cannot always be accurately foreseen at the design stage. The following guidelines may be of assistance at tender documentation stage :

- (i) The appendices shall only be used where the design of the Temporary Works is the responsibility of the Contractor, and not the Architect/Engineer.
- (ii) Where no part of the Temporary Works is assessed as requiring the particular submission of drawings or calculations or design checking, none of the appendices need to be included in the tender documents. During construction the Architect/Engineer will be able to call for details under Clauses 7 and 16 of the General Conditions of Contract (GCC), but will have to pay for any additional independent checking, being beyond the scope of merely providing details.
- (iii) If the project designer wishes to examine tenderers' proposals for undertaking more complex or extensive Temporary Works at tender assessment stage, then use of the Special Condition of Tender at Appendix 1 may be considered together with the SCC at Appendix 2. During construction, the Architect/Engineer will be able to call for more details under GCC 7 and 16.
- (iv) Use of the SCC and/or the PS item (Appendix 2 and 3) should be considered if it is thought likely the Temporary Works will be extremely complex or innovative, or the potential consequence of any failure is likely to be severe.
- (v) Temporary cut or filled slopes and excavations and access platforms may require method statements. These can be called for under GCC 16.
- (vi) It is a matter of judgement for the Architect/Engineer as to when to require certificates for the erection, use or removal of Temporary Works.

6. Many failures of Temporary Works have been the result of insufficient consideration of ground conditions. The design of Temporary Works must take this into account.

7. The Special Condition of Tender may be used independently of the PS item and the SCC.

8. In respect to Temporary Works generally, designers may find the following publications useful :

- (i) Technical Report TRSC 4, issued by the Concrete Society and the Institution of Structural Engineers; provides useful guidance where Temporary Works are classified as falsework.

(ii)BS5975:1982 (Code of Practice for Falsework).

(iii)Appendix B in the Structures Design Manual for Highways and Railways for the design of protective measures for Temporary Works.

9. Should the Architect/Engineer be dissatisfied with the independent checking engineer, the Architect/Engineer, having given reasonable notice of dissatisfaction, may order the dismissal and replacement of the independent checking engineer by the Contractor.

10. Sub-clause (5) of GCC 7 affords basic protection to the Architect/Engineer from taking over responsibility for the Contractor's design of Temporary Works. Sub-clause (5) of the SCC limits the involvement of the Architect/Engineer to seeing that the required certificates are in place and examining the design of the Temporary Works for obvious defects.

11. In addition, GCC 54(2)(d), as amended by WBTC No. 2/96, gives the Architect/Engineer the right and the power to suspend any work discovered by the Architect/Engineer to be dangerous or potentially dangerous and the Architect/Engineer must do so. Sub-clauses (2) and (4) of GCC 7 further underline this power.

12. For Contractor designed Temporary Works that do not involve an independent checking engineer, the Architect/Engineer can similarly make use of the GCC clauses referred to in paragraphs 10 and 11 above, without taking up any of the design responsibility. The duty to suspend also applies.

( M J Byrne )  
Deputy Secretary (Works Policy) (Ag)

Special Condition of Tender No.

(1) The tenderer shall submit with the tender a method statement of proposals for (which shall include proposals for the foundations and support of) the following Temporary Works :

- |    |   |                                    |
|----|---|------------------------------------|
| 1. | ) |                                    |
|    | ) | Particular attention shall be paid |
| 2. | ) | to the lateral stability of the    |
|    | ) | Temporary Works                    |
| 3. | ) |                                    |

These proposals shall be used for the purpose of tender assessment only and shall not form part of the Contract.

Subsumed

Special Condition of Contract

(1) When considered necessary by the Contractor or specified in the Contract or subsequently ordered by the \*Engineer, the design of any Temporary Works shall be checked and certified by an engineer independent of the Contractor and not associated with the design of the Temporary Works.

Independent  
checking of  
Temporary  
Works

(2) The design so certified shall be referred to as the certified design. The independent checking engineer shall be a professionally qualified engineer and a member of the Hong Kong Institution of Engineers or the Institution of Civil Engineers, UK or equivalent, whom the Contractor considers has suitable experience and be acceptable to the Engineer.

(3) The independent checking engineer before certifying the design of any Temporary Works in the checking certificate shall:

- (a) examine the Contractor's detailed design and method statements concerning the design, erection, use and removal of the Temporary Works, and
- (b) consider the ground conditions, the adequacy of foundations and support of the Temporary Works and any other factors which may affect the stability and safety of such Temporary Works during their erection, use and removal

so that he shall be able to certify that the Temporary Works are properly and safely designed using all reasonable skill and care

(4) Before commencing construction of any such Temporary Works identified as requiring independent certification, the Contractor shall submit to the Engineer in sufficient time for the Engineer to comply with sub clause (5) of this Special Condition of Contract :

(a) design details and method statements concerning the design, erection use and removal of the Temporary Works, and

(b) the original checking certificate signed by both the independent checking engineer and by or on behalf of the Contractor.

(5) Further to the provisions of the General Conditions of Contract Clause 7, the Engineer shall examine the documentation referred to in sub clause (4) of this Special Condition of Contract and shall satisfy himself that it contains no obvious deficiency and that the independent checking engineer has carried out his duties set out in sub clause (3) of this Special Condition of Contract. Upon being so satisfied the Engineer shall issue his consent in writing for such work to commence, which shall be issued with due regard to the Contractor's programme and the Contractor's actions under sub clause (4) of this Special Condition of Contract.

(6) The Contractor shall ensure that such Temporary Works are erected, used and removed in accordance with the certified design and method statements. If the Contractor wishes to deviate from the certified design, the Contractor shall submit to the Engineer further certification that any change has been properly and safely designed and has been checked and found satisfactory by the independent checking engineer, in accordance with his duties set out in clause (3) of this Special Condition of Contract, prior to the commencement of construction of such Temporary Works in accordance with sub-clause (4) of the Special Condition of Contract.

(7) In all cases where the loading of such Temporary Works is applied as a separate operation after completion of their construction, before such loading is applied, the Contractor shall submit to the Engineer a further certificate signed by or on behalf of the Contractor and by the independent checking engineer confirming that the same has been constructed in accordance with the certified design. In all cases where the loading is an integral part of the construction of such Temporary Works, the Contractor shall submit

to the Engineer such a certificate as soon after the construction of the same as is reasonably possible.

(8) No checking certificate certified by the independent checking engineer, with or without amendment, shall absolve the Contractor from his liability under the Contract for the design, erection, use or removal of the Temporary Works.

(9) Where any Temporary Works are specified in the Contract or considered necessary by the Contractor to be independently checked, the Contractor shall bear the Cost of such independent checking. However, should the Engineer subsequently order any Temporary Works to be independently checked, then the Engineer shall ascertain the additional Cost incurred and shall certify such Cost in accordance with General Condition of Contract Clause 79.

Subsumed

(10) Where the Engineer requires, the Contractor shall provide a method statement for any Temporary Works not subject to an independent check and including but not limited to excavation and temporary access structures.

(11) If at any time and for any reason related to the work of the independent checking engineer, the Engineer is dissatisfied with the performance of the independent engineer, the Engineer shall notify the Contractor in writing giving reasons for such dissatisfaction. If the independent checking engineer does not remedy the situation within a reasonable time, the Engineer may, by a further notice in writing, require the Contractor to dismiss the independent checking engineer and the Contractor shall do so with immediate effect and not re-employing him again in connection with the Works and shall replace the independent checking engineer with a replacement selected in accordance with sub clause (2) of this Special Condition of Contract.

\*For 'Engineer' substitute 'Architect' throughout when appropriate



Particular Specification

(1) Pursuant to SCC No. \_\_\_\_\_, the design of the following Temporary Works shall be certified by the independent checking engineer -

(a) .....

(b) .....

(c) .....

(2) In addition, method statements certified by the independent checking engineer shall be provided for the erection, use and removal of the following Temporary Works -

(a) .....

(b) .....

(c) .....

(3) Any Temporary Works erected in close proximity to traffic shall be protected against impact from vehicles by suitably designed protective measures. The Contractor shall design such protective measures with regard to the conditions prevailing on the Site and the effect of any such impact. Such protective measures are to be designed as part of the Temporary Works and included in any requirement for independent checking.