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**Environment, Transport and Works Bureau**  
**Technical Circular (Works) No. 53/2002**

**Manual for Technical Audits on Works Contracts**

**Background**

One of the major duties of Contract Advisers is to carry out Technical Audits on works contracts. A technical manual was first issued in 1993 to serve as a guide to the conduct of audits. The manual was updated in 1995. In view of the introduction of new requirements and technical circulars since then, a review on the manual has been completed.

**Scope**

2. This Circular promulgates the Technical Audit Manual on Works Contracts, which provides guidelines for a consistent approach for conducting audits and reporting the findings.

**Effective Date**

3. This Circular takes immediate effect.

## **Effective on Existing Circular**

4. This Circular shall be read in conjunction with WBTC No. 15/2002 on Contract Advisers and Technical Audits on Works Contracts.

## **Manual for Technical Audits on Works Contracts**

5. The manual describes the audits at various stages of a contract and outlines the procedures to be followed. The manual provides guidelines on the procedures and report formats. Departments may impose additional requirements or amend the pro-forma audit reports to suit their particular needs. Checklists and standard pro-forma audit reports are also included. The distribution of audit reports, implementation of follow-up actions and reporting of these actions are detailed in WBTC No. 15/2002.

**( W S Chan )**

**Deputy Secretary for the Environment,  
Transport and Works (Transport and Works) W2**

**Manual for**  
**Technical Audits**  
**On**  
**Works Contracts**

**Environment, Transport and Works Bureau**

**December 2002**

**This Manual** is intended for use in the technical auditing of architectural, civil, electrical and mechanical engineering capital works and maintenance contracts carried out in works departments. It covers the tendering and construction stages of contracts. This Manual serves as a guide only and does not purport to be exhaustive.

**This Manual** consists of two parts:

#### PART I - INTRODUCTION

This gives a brief description of the definition, types and objectives etc. of audits, and is particularly useful to officers who have not received any formal audit training.

#### PART II - THE AUDIT PROCESS

This describes technical audits at various stages of a contract and outlines the procedures to be followed. Checklists and standard pro-forma Technical Audit Reports are given at appendices.

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# **PART I – INTRODUCTION**

Subsumed

## Definition of Audit

1. An audit can be defined as a systematic and independent examination of specific activities carried out by an individual or a group of individuals, in order to determine whether such activities and related results comply with planned arrangements, and whether these arrangements are implemented effectively and are suitable to achieve objectives.

## Internal and External Audits

2. An internal audit is an audit carried out by one organisation on itself. It is also called a first party audit.
3. An external audit is an audit carried out by one organisation on another. A second party audit is an external audit carried out by one organisation, working on its own behalf, on another (e.g. an audit carried out by a contractor on its material supplier). A third party audit is an external audit carried out by an independent organisation on another organisation (e.g. an audit carried out by an accredited certification body on a contractor for the purpose of ISO 9000 certification).
4. *Procedures laid down in this Manual are applicable to internal audits only.*

## Types of Audit

5. There are two main types of audit:

### *Adequacy Audit*

6. This is also known as a system or management audit. Its objective is to determine the extent to which the documented system and the associated procedures adequately meet the requirements of the organisation or the applicable quality standard.

## *Compliance Audit*

7. This is an audit which seeks to establish the extent to which the relevant standards, the documented system and the associated procedures are implemented and observed by the staff.
8. *Procedures laid down in this Manual are mainly for compliance audits.*

## **Technical Audit**

9. A technical audit is an internal audit which concentrates on the technical aspects only. For works contracts, a technical audit essentially examines whether the project staff have observed laid down procedures/requirements and exercised reasonable and adequate professional skill in carrying out their duties.

## **Objectives of Technical Audits**

10. The following objectives should be borne in mind when carrying out technical audits on works contracts:
  - a) to check whether laid down procedures/requirements are strictly complied with by project staff, and if not, the reasons for non-compliance (Note that if any laid down procedures are found out-dated or no longer practicable during the course of the audit, such procedures should be brought to the attention of the authorities which laid down the procedures together with suggestions, where applicable);
  - b) where appropriate, to check objectively whether reasonable skill and care have been exercised by project staff in carrying out their technical duties (for example, no over-certification or under-certification of payments, prompt issuance of site instructions etc.); and
  - c) where laid down procedures/requirements are not being followed by project staff, to recommend measures which may be applied to prevent future repetition.



11. A positive attitude of mind should always be adopted by officers carrying out audit work (hereinafter referred to as audit officers). However, it carries no implication that audit officers shall not report any malpractice by project staff that clearly surfaced from the audit findings.

### **Handling of Classified Documents**

12. When an audit process touches on classified documents, such documents and hence the Technical Audit Report should be properly handled in accordance with the procedures set out in the Security Regulations and the prevailing circulars.

### **Audit Officer**

13. Audit officers shall obtain complete and accurate information about specific activities they are auditing.

14. Apart from being objective and independent, audit officers should also be:

diplomatic	observant	interested
unbiased	inquiring	industrious
open minded	analytical	patient
resilient	trained	able to communicate well

15. On the other hand, the following are attributes unfavourable to the work of audit officers:

gullible	opinionated	nit picking
cynical	argumentative	accepts things at face value

## **PART II - THE AUDIT PROCESS**

Subsumed

## **Technical Audit Programme**

16. Each Contract Adviser should submit quarterly Activity Reports on technical audits in accordance with WBTC No. 15/2002. The contracts chosen to be audited should, as far as practicable, be of different sizes and types of works and be managed by different officers.

## **Technical Audits at Various Stages of a Contract**

17. Technical audits of works contracts shall, as far as practicable, cover various stages of a contract. These stages include:
  - a) tender documents preparation;
  - b) tendering;
  - c) tender assessment;
  - d) construction; and
  - e) final account including claims settlement.
18. Where it is impracticable to audit all the above stages, the Contract Adviser shall determine which work stage(s) should be audited.

## **Planning and Preparing for Technical Audit**

19. Before conducting the technical audit on a chosen contract, the Contract Adviser shall:
  - a) review the last Technical Audit Report (if any) on the contract, and note the areas of non-compliances and any follow up actions required to be taken;
  - b) define the scope of the audit, whether it will cover all or some of the stages of the contract;
  - c) prepare a time schedule indicating the dates on which the audit will take place. Preliminary contacts with the project staff concerned may be helpful in fixing mutually convenient dates;

- d) determine the number of audit officers required to carry out the audit, and nominate a leader (hereinafter referred to as an audit leader) if more than one audit officer are required;
  - e) notify in writing the project staff of the contract to be audited. Such notification shall include the time schedule of the audit, name(s) of the audit officer(s) and the relevant documents (e.g. project files, tender documents, contract documents, payment certificates, measurements and valuations of variations etc.) required to be made available for pre-audit reading by the audit officers; and
  - f) ensure that audit officers are informed of the details of the contract to be audited, the scope and time schedule of the audit, and the standards to be used as a basis of the audit.
20. The following documents shall, where applicable, be the standards to be used as the basis of the technical audit:
- a) Environment, Transport and Works Bureau Technical Circular (Works);
  - b) Works Branch Technical Circulars/Works Bureau Technical Circulars;
  - c) Financial Circulars;
  - d) Departmental Technical Circulars/Instructions;
  - e) Relevant Building/Engineering Manuals and/or Handbooks;
  - f) Relevant General Conditions of Contract;
  - g) Relevant General Specifications and Standard Drawings;
  - h) Relevant Standard Method of Measurement;
  - i) Contract Documents and Supplementary Agreements (if any);
  - j) Consultancy Agreements; and
  - k) Any other relevant written policies, circulars, instructions or procedures which the Contract Adviser considers appropriate.

### **Opening Meeting**

21. The technical audit shall start with an Opening Meeting. It serves as an introductory meeting and shall be chaired by the audit leader

(if any) and attended by all audit officers and project staff of the contract to be audited. (If there is only one audit officer carrying out the audit, that audit officer shall assume the duties of the audit leader.)

22. At the Opening Meeting, the audit leader shall:

- a) introduce himself/herself and the audit officers;
- b) briefly describe the scope and time schedule of the audit, the relevant standards to be used as the basis of the audit, the meaning of a non-compliance, and the method of reporting;
- c) ascertain which project officer is responsible for which parts/aspects of the contract to be audited, including the arrangement of guides for touring the site (if necessary);
- d) explain that before the preparation of the Technical Audit Report, the project staff will be informed at the Closing Meeting of any major non-compliances found during the audit, and will be asked to give their views and/or explanations for such non-compliances; and
- e) invite and answer any questions the project staff may have about the audit.

### **Conducting Technical Audit**

23. For contracts in Architectural Services Department, audit officers shall audit, as far as applicable but not necessarily restricted to, the items in the Checklist at Appendix A. For contracts in other departments using the Project Administration Handbook for Civil Engineering Works, audit officers should audit, as far as possible but not necessarily restricted to, the items in the Checklist at Appendix B. For other contracts, audit officers should prepare a similar checklist with reference to the corresponding laid down procedures/requirements in the department. The Contract Adviser should be consulted in case of doubt.

24. It is usually necessary to carry out file perusals, staff interviews and site visits during the course of the audit. These works shall be so arranged as to minimize disruption to both the project staff and the construction works.
25. Personal checklists and aides-memoire are useful tools to audit officers. However, care must be taken to ensure that they do not restrict enquiry. Audit officers shall always be prepared to follow up other lines of enquiry which could lead to information discovery.
26. All notes, checklists, aides-memoire together with other information found during the audit should be properly kept by the audit officers for future reference when necessary.
27. The following are some useful auditing skills:
  - a) let project staff talk freely. Unless the talk diverts from the topic, audit officers should avoid interrupting as more information may be gathered from the talk;
  - b) do not argue with the project staff or criticize their work. This will only cause ill feelings and could be obstructive to later auditing work;
  - c) do not initiate to tell project staff how to do their work as this may cause ill feeling. However, audit officers when requested by the project staff, should advise the correct procedures to be followed when carrying out their duties;
  - d) ensure that questions are put at the right level. For example, questions about operations are directed to the working level whereas questions about management and control are directed to the management level. This will ensure that the correct answers are obtained and time is not wasted;
  - e) be polite in delivering questions. A rude or suspicious attitude will not generate cooperation from project staff;
  - f) avoid asking leading questions (i.e. questions in the form of a statement and will only require a simple answers of "yes" or

"no"). The project officer who answers such questions may give answers that he/she thinks will best protect him/her, whether or not they are true answers. Instead, audit officers should ask open questions wherever possible. Open questions normally begin with the words: "where.....; what.....; when.....; how.....; why.....; who.....; please show me .....";

- g) distinguish between facts and *opinions* in statements expressed or answers provided by project staff;
- h) be cautious of inefficient use of time by following false trails or attention on the minor and unimportant many;
- i) carefully monitor progress of the audit so that the entire scope of the audit is covered as scheduled. Unless new issues with significant implications or non-compliances are found, departure from the original schedule should be avoided; and
- j) try to programme interviews and site visits to fit the project staff's working hours, e.g. lunch break at a particular site may not be the same as that at head office.

### **Closing Meeting**

- 28. At the end of the technical audit but prior to the preparation of the Technical Audit Report, the audit leader shall arrange a Closing Meeting with the project staff. The Meeting should be chaired by the audit leader and, whenever possible, involve the same people who attended the Opening Meeting.
- 29. Before holding the Closing Meeting, the audit leader should carefully review the findings of the audit to ensure that the entire scope of the audit is covered and that all non-compliances found are based on sound and objective evidence.

30. At the Closing Meeting, the audit leader shall:
- a) recapitulate the scope of the audit, the relevant standards used as the basis of the audit and the meaning of a non-compliance;
  - b) state that although many things were found to be in compliance with the standards, only non-compliances and findings of significance will be reported;
  - c) give a disclaimer that it is possible that not all non-compliances which exist were identified during the audit;
  - d) describe the major non-compliances and/or other findings of special interest, and ask project staff to give their views and/or explanations on such non-compliances and/or findings;
  - e) state that all audit findings will be submitted to the Head or Deputy Head of Departments, or equivalent, in the form of a Technical Audit Report; and that appropriate recommendations will be included in the Report; and
  - f) invite and answer any questions that the project staff may have.

### **Technical Audit Report**

31. After the Closing Meeting, the audit leader shall prepare and submit the Technical Audit Report as soon as practicable to the Contract Adviser for endorsement and onward submission to the Head or Deputy Head of Department, or equivalent.
32. For technical audits in Architectural Services Department, the standard proforma Technical Audit Report at Appendix C shall be used. For technical audits in all other works departments, the standard proforma Technical Audit Report at Appendix D shall be used. The items listed in "Part III - Audit Findings" of these Reports follow the same sequence as the items listed in the corresponding Checklists at Appendices A and B.



33. In preparing the Technical Audit Report, care should be taken to avoid minor non-compliances being reported out of proportion.

#### **Follow up Actions**

34. Upon perusal of the Technical Audit Report, the Head or Deputy Head of Department, or equivalent, shall determine the follow up actions in accordance with WBTC No. 15/2002.

Subsumed

# **APPENDICES**

Subsumed

## **LIST OF APPENDICES**

**APPENDIX A** - Checklist for Architectural Services Department contracts

**APPENDIX B** - Checklist for contracts of works departments except Architectural Services Department

**APPENDIX C** - Proforma Audit Report for Architectural Services Department contracts

**APPENDIX D** - Proforma Audit Report for contracts of works departments except Architectural Services Department

# APPENDIX A

Subsumed

## Checklist for Architectural Services Department Contracts

### Abbreviations

AOTI	Architectural Office Technical Instruction
Arch SD	Architectural Services Department
ASDTI	Architectural Services Department Technical Instruction
BSB	Building Services Branch
FC	Financial Circular
GCC(BW)	General Conditions of Contract for Building Works, 1999 Edition
PWDTC	Public Works Department Technical Circular
QSTI	Quantity Surveying Technical Instruction
SPR	Stores and Procurement Regulations
WBTC	Works Branch Technical Circular/Works Bureau Technical Circular
ETWB TC(W)	Environment, Transport and Works Bureau Technical Circular (Works)

### A. PRE-CONTRACT

#### ITEMS

#### REQUIREMENTS

##### A.1 Contract Documents

Contract documents and drawings together with the selection and specification of equipment and materials should be prepared with proper care, skill and good professional practice in accordance with the Arch SD Manual and appropriate technical instructions. Bills of Quantities are to be measured in accordance with Hong Kong Standard Method of Measurement of Building Works and Hong Kong Standard Method of Measurement for Building Services.

## ITEMS

## REQUIREMENTS

### A.1 Contract Documents (cont'd)

BSB Instruction No. 6 of 1999 is to be followed on the selection and specification preparation of BS equipment and materials.

The project team are required to keep proper records of the following:

- (1) selection of contract types;
- (2) selection of contract form for Specialist Works;
- (3) assessment of contract period and liquidated damages;
- (4) use of Dispute Resolution Advisor.

### A.2 Project Estimates

The estimate of the project should be reasonably accurate, especially for upgrading projects to Category 'A'. ASDOI 3/93 is relevant.

### A.3 Tender Procedures including prequalification, press release, gazette notice, restricted tendering and tender reports

SPR, FC, Arch SD Manual, other relevant WBTC and ASDOI are to be followed.

### A.4 Execution of Contracts

Contract signing procedures PWDTC No. 83/73 and WBTC No. 22/85 are to be followed.

## **B. SITE AUDIT (During construction)**

<u>ITEMS</u>	<u>REQUIREMENTS</u>
B.1 Statutory notifications	Check notifications to CITA, PCFB and Labour Department.
B.2 Original programme chart	The approval of the original and any subsequently updated works programme bar charts are to be recorded in the Site Record Book.
B.3 Schedule of	The schedules are to be included in the Site Record Book in accordance with ASDOI 6/79.
a. Contract drawings	
b. Approved Contractor's drawings	
B.4 Architect's Instructions	The issue and the authority to raise Architect's Instructions is to be in accordance with Arch SD Local Manual No. 6 Chapter 4 and No. 12 Chapter 3 as well as GCC(BW) 60. The financial consequences of late changes in project scope should be particularly noted. All Architect's Instructions issued are to be recorded in the Site Record Book.
B.5 Additional information, drawings/documents issued to Contractor	All documents (other than the Contract Drawings) issued to the Contractor should be recorded in the Site Record Book in compliance with ASDOI 6/79. GCC(BW) 5(2) should also be followed.

## ITEMS

## REQUIREMENTS

B.6 Store requisition and delivery notes, allocated and combined requisition vouchers

All Government stores are to be issued to the Contractor in compliance with ASDOI 14/84 and 15/85.

B.7 Samples

All samples should be recorded in the Site Record Book in compliance with ASDOI 6/79. The procedure relating to the approval of samples of materials is set out in Arch SD Local Manual No. 6 and ASDOI 19/78.

B.8 Materials

Materials should be recorded in the Site Record Book in accordance with ASDOI 6/79. The requirements of ASDTI 1/90, as supplemented by 14/90 and 16/90, regarding acceptable materials for use in projects should be followed.

Alternative BS equipment and materials submitted by contractor should be approved by project engineer as set out in BSB Instruction No. 2/96.

The BS equipment and materials delivered and installed on site are to be checked against the approved equipment/materials as set out in the BSB Instruction No. 2/00.

Check compliance with WBTC No. 3/94 on quality assurance for structural concrete.



## ITEMS

## REQUIREMENTS

- |   |   |
|---|---|
| B.9 Concreting                                      | The progress of pouring concrete is to be recorded in the Site Record Book in compliance with ASDOI 6/79. The procedure for accepting non-complying concrete under ASDTI 14/87 should be followed.  |
| B.10 Use of Public Works Laboratories               | Check compliance with WBTC No. 14/2000.   |
| B.11 Test results, reports and certificates         | The test results are to be recorded in the Site Record Book in accordance with ASDOI 6/79. If any unsatisfactory material or works have been instructed under GCC(BW) 46 to be removed check that the Contractor has met the expense involved. Also, check whether under GCC(BW) 42(3) that the expense has been taken under GCC(BW) 46 to see if the expense has been borne by the Contractor in the event that any tests show that the Contractor has failed to comply with the Contract. |
| B.12 Explosives                                     | The requirement for Explosives Supervisors is set out in ASDOI 29/83. The procedures for blasting set out in PWDTC No. 21/73 should also be followed.   |
| B.13 Contractor's labour return and weather records | The Contractor is to provide daily labour returns in accordance with GCC(BW) 32(3). Inclement weather is to be properly recorded in the Site Record Book in compliance with ASDOI 8/80.   |

## ITEMS

## REQUIREMENTS

- B.14. Qualified tradesman and intermediate tradesman Check compliance with WBTC No. 13/2002.
- B.15 Trip ticket system Check compliance on the disposal of public fill and C&D waste detailed in WBTC No. 21/2002, including implementation of follow-up actions for non-compliance.
- B.16 Contractor's plant The Contractor's and any Sub-contractor's plant, hired plant, plant brought onto the Site not for the Works should each be recorded separately in the Site Record Book in accordance with ASDOI 6/79. Documented records should be available for checking compliance with GCC(BW) 71, 73 & 74.
- B.17 Site diary The Clerk of Works is to make daily entries in the Site Diary. The Contractor's authorized agent is required to sign the Site Dairy in accordance with GCC(BW) 32(2). The daily site activities should be recorded in compliance with ASDOI 6/79. Any defects and short-comings of the Contractor in respect of the Works together with any Contractor's queries should be recorded in the Site Record Book in accordance with ASDOI 8/80.
- B.18 Site visitor's records Any comment or instruction given by the supervisory staff, or other senior staff visiting the Site, should be recorded in the Site Record Book in accordance with ASDOI 8/80.

## ITEMS

## REQUIREMENTS

- |   |   |
|---|---|
| B.19 Works order records<br>(Term Contract only)      | Any Works Order for works associated with the Term Contract are to be recorded in the Site Record Book in accordance with ASDOI 6/79.   |
| B.20 Sundry records,<br>handover/test<br>certificates | Handover should be in accordance with Arch SD Local Manual No. 6 Chapter 4 and Manual No. 12 Chapter 3. Other sundry records are to be recorded in the Site Record Book in accordance with ASDOI 6/79.  |
| B.21 Site meetings                                    | All Site Meetings are to be confirmed by minutes in compliance with Arch SD Local Manual No. 6 Chapter 4. Communications between site supervisory staff and Consultants should be recorded either in the Site Record Book or in the minutes of Site Meetings in accordance with ASDOI 6/80. |
| B.22 Revised programme charts                         | A copy of the approved programme and/or revised programme is to be kept on Site. If the rate of progress of the Works or any Section is unsatisfactory, check whether the Architect has informed the Contractor in writing to revise the Programme in accordance with GCC(BW) 51(1).        |
| B.23 Site measurement book                            | It shall be kept and maintained by the Clerk of Works.  |

## ITEMS

## REQUIREMENTS

### B.24 Site safety

Site staff are to ensure that the SCC for the site safety requirements and relevant sections of the Construction Site Safety Manual are strictly complied and proper records of all safety matters are maintained. WBTC Nos. 14/98 and 21/99 are relevant.

### B.25 Possession of site record

The Contractor is not allowed to enter the Site prior to the Date of Commencement. Arch SD Manual No. 12 Chapter 3 on early handing over the Site to the Contractor should be followed.

### B.26 Setting out records

The procedures for setting-out are laid down in Arch SD Local Manual No. 6 Chapter 4.

### B.27 Existing services records

The existing services affecting the Works should be removed or diverted without delay as required by ASDOI 14/77.

### B.28 Piling records and pile test records

Piling records and pile test records are required to be maintained. When unsatisfactory caisson or other piling work is rectified by the superstructure Contractor, the cost of remedial work and any consequential costs is to be charged against the defaulting piling contractor. Check compliance with particular specifications introduced in WBTC No. 22/2000.

## ITEMS

## REQUIREMENTS

B.29 Progress of the Works and payment

If the rate of progress of the Works or any Section is unsatisfactory, the Architect should inform the Contractor in writing to expedite the completion of the Works under GCC(BW) 51(1). The procedures set out in ASD Local Manual No. 12 Chapter 3 should be followed. Spot checks on the valuation of interim certificates should be made.

B.30 Record photographs

In accordance with ASDOI 13/83, photographs are to be taken as a record of the Works and the installation of equipment.

B.31 Security on site, records of theft, break-in, etc.

The obligations for Site security, damage, loss or injury to the Works or any Specialist Works, etc. is placed on the Contractor under GCC(BW) 20 & 21.

B.32 Nominated sub-contractors and domestic specialist sub-contractor

To ensure a contractually enforceable chain of responsibility between the Government through Main Contractor to Nominated Sub-contractors and Domestic Specialist Sub-contractors, management of Nominated Sub-contractors should follow the Arch SD Local Manual No. 12 Chapter 3. Check compliance with requirements to employ listed specialist contractors for specified works.

## ITEMS

## REQUIREMENTS

### B.33 Site cleanliness

The Contractor is required to remove rubbish and keep the Site clean and tidy in compliance with GCC(BW) 38 and GS Clause 1.60. Under GCC(BW) 35, he should also clear away and remove from the Site all surplus materials and rubbish as soon as practicable after the issue of the completion certificate.

### B.34 Obvious violation of statutory acts

The Contractor is required to conform with enactments and regulations in compliance with GCC(BW) 30. Particular attention shall be directed to the hours of piling, employment of illegal labour, etc.

### B.35 Record of work by other departments

The Contractor should provide attendance for works carried out by Government departments in compliance with GS Clause 1.42. Records of works carried out by other departments shall be referred to when checking the extension of time awarded to the Contract.

### B.36 Extension of time

Check whether the Contractor's notice has been given to the Architect in writing and whether the Architect has responded in accordance with GCC. The Practice Note of Arch SD Local Manual No. 12 Annex 3-JA should be followed.

## ITEMS

## REQUIREMENTS

### B.37 Liquidated damages

In the event of the Works has not been completed on the completion date or extended completion date check whether the Liquidated Damages has been imposed or the reason for not imposing the Liquidated Damages. Refer to GCC(BW) 52. Check whether the procedure for imposing Liquidated Damages has been carried out in accordance with Practice Notes of Arch SD Local Manual No. 12 Annex 3 - NA.

### B.38 Claims

Check whether any notice of claim has been served in writing to the Surveyor in accordance with GCC(BW) 64. Check whether the substantiation of the Contractor's claim is justified and whether the project team has been responded expeditiously to the claim.

## **C. ASSESSMENT OF CLAIMS AND VALUATION OF VARIATIONS**

### ITEMS

### REQUIREMENTS

#### C.1 Extension of time

See Section B Item 36.

#### C.2 Measurement of variations

The dimensions and the items measured in the variation account should be checked. Ensure that the adjustment for any omissions item has not been missed.

- C.3 Authority for the issue of variations
- Check that variations have been ordered in writing. Under the General Conditions of Contract, no variation should be made by the Contractor without an order in writing by the Architect. Refer to Arch SD Local Manual No. 12 Chapter 3.
- C.4 Valuation of variations
- Variations are required to be valued in accordance with GCC(BW) 61. Check the rates for valuation with the contract rates. Pro-rata rates, “star” rates, percentage adjustment, prolongation cost, profit and attendance items on P.C. Sums shall also be checked. The valuation of variation orders issued after completion should be fair and reasonable. Where alternative materials have been used the SCC regarding approval of materials should be noted when checking the valuation of variations.
- C.5 Daywork
- Under GCC(BW) 62(1) the Architect may order in writing that the variation work is to be executed on a daywork basis. Check to see that the variation order has been valued on the basis of daywork. The daywork sheets are required to be endorsed by the Clerk of Works/Building Services Inspector. The rates for daywork should be reasonable where there are no rates set out in the Contract.



## ITEMS

## REQUIREMENTS

### C.6 Contractual claims

In accordance with GCC(BW) 64, the notice of claim is to be given to the Surveyor in writing within 28 days. The Contractor is required to submit the accounts and details as required by the Surveyor in accordance with GCC(BW) 64(4). The assessment of claims (all extension of time, loss and expense/disruption) should be checked to see whether they have been assessed reasonably in accordance with the relevant GCC Clauses and Practice Notes. The causes, justification and substantiation of the claim should be checked. The adequacy of site records in connection with claims should also be checked.

Note: The acceptance of ex-contractual claims (Common Law Claims) should only be made on the advice of Legal Advisory Division of Works Bureau. Check to see why common law claims have arisen and review the assessment of these claims.

### C.7 Ex-contractual claims

Check compliance with SPR.

## **D. CONTRACT FINAL ACCOUNTS**

### ITEMS

### REQUIREMENTS

#### D.1 Variations

See Section C Items 1 to 4 inclusive.

#### D.2 Remeasurement of provisional quantities

Remeasured quantities should be spot checked against “as constructed” drawings. The rates should also be checked.

## ITEMS

## REQUIREMENTS

- |   |   |
|---|---|
| D.3 Nominated Sub-contractor's Accounts         | The statement of sums payable to the Nominated Sub-contractors should be checked to see whether the Nominated Sub-contractors' accounts have been prepared properly.  |
| D.4 Claims                                      | See Section C Item 5.   |
| D.5 Contract Price Fluctuations                 | Price fluctuations are required to be calculated in accordance with GCC(BW) 89, relevant SCC and WBTC Nos. 15/95 and 15/95A.  |
| D.6 Adjustment of P C & Provisional Sums        | Check the adjustment of P C & Provisional Sums including the Contingency Sum as well as profit and attendance items. Refer to GCC(BW) 65, 66, 67 & 68.  |
| D.7 Retention money and maintenance certificate | Retention money is to be adjusted in accordance with GCC(BW) 79(1) and SCC. In compliance with GCC(BW) 79(3) the Surveyor is required to issue a certificate for the payment of Retention Money within 14 days of the date of issue of the maintenance certificate. Check also compliance with GCC(BW) 80 on maintenance certificate. |
| D.8 Liquidated damages                          | If the Contractor fails to complete the Works within the time for completion or such extended time, the Employer is entitled to impose the Liquidated Damages in accordance with GCC(BW) 52. Refer to Practice Note of Arch SD Local Manual No. 12 Annex 3 - NA.  |

## ITEM

## REQUIREMENTS

- D.9 Reconciliation of stores items
- The quantities of stores items issued to the Contractor should be checked against the actual requirement in accordance with ASDOI 14/84 and 15/85. Any discrepancies including any surplus items which the Contractor has failed to return are required to be charged to the Contractor at the value of the stores + 20% on cost.
- D.10 Other deductions e.g. charges for remedial works
- The cost of remedial work and any consequential costs should be charged against the defaulting Contractor. Refer the SCC for piling contracts.
- D.11 Authority to increase the Contract Sum
- The necessary approval for any increase in contract sum should follow the Arch SD Local Manual No. 12 Chapter 3 and SPR. The prior approval of S for Tsy is required where an increase in a Contract Sum is required for additional works outside the scope of the Contract but within the approved scope of the Project.
- D.12 Final Account for Re-entered Contracts
- Final accounts for re-entered contracts should be prepared in accordance with GCC(BW) 81. Any necessary action to recover amounts owed to the Employer should be checked to see if it has been carried out expeditiously.

## **APPENDIX B**

Subsumed

## **Checklist for contracts of works departments except Architectural Services Department**

Note: For contracts not using the Project Administration Handbook for Civil Engineering Works, the corresponding laid down procedures/requirements of the department should be used as a basis for auditing.

### **Abbreviations**

ER	Engineer's Representative
ETWB TC(W)	Environment, Transport and Works Bureau Technical Circular (Works)
FC	Financial Circular
GCC(CE)	General Conditions of Contract for Civil Engineering Works, 1999 edition
GS(CE)	General Specification for Civil Engineering Works, 1992 Edition
LWBTC	Lands and Works Branch Technical Circular
PAH	Project Administration Handbook for Civil Engineering Works
PS	Particular Specifications
PWDTC	Public Works Department Technical Circular
SPR	Stores and Procurement Regulations
WBTC	Works Branch Technical Circular/Works Bureau Technical Circular

## **A. PRE-CONTRACT**

<u>ITEMS</u>	<u>REQUIREMENTS</u>
A.1 Contract Documents	Contract documents and drawings shall be prepared with proper care, skill and good professional practice in accordance with Chapter 5, Volume 2 of PAH and appropriate technical instructions. Bills of Quantities shall be measured in accordance with the Standard Method of Measurement for Civil Engineering Works 1992 Edition published by the Hong Kong Government.
A.2 Tender Procedures including prequalification, press release, gazette notice, restricted tendering and tender reports	Chapter 6, Volume 2 of PAH and appropriate technical instructions shall be followed.

## **B. CONTRACT ADMINISTRATION**

<u>ITEMS</u>	<u>REQUIREMENTS</u>
B.1 Statutory notifications	Check notifications to CITA, PCFB and Labour Department.
B.2 Joint venture	Check submission of joint venture guarantee from incorporated jointed ventures in accordance with WBTC No. 27/2001.

## ITEMS

## REQUIREMENTS

B.3	Engineer's site staff organisation	Check Engineer's site staff to ensure it is the same as that indicated in the organisation chart. For contracts involving pile foundation works, the resident site staff should comply with WBTC No. 22/2000.
B.4	Letter of delegation of Engineer's power to ER	The duties and powers which the Engineer will delegate to the ER should be identified and communicated in writing to the Contractor (PAH 7.4.1) and in compliance with the guidelines established in the relevant WBTCs and ETWB TC(W).
B.5	Contractor's superintendence	Check compliance with requirements in GS(CE)/PS on Contractors' staff (PAH 7.4.2).
B.6	Correspondence and files	An overall check on records and correspondence of matters arising under the Contract (PAH 7.5.11), including compliance with WBTC No. 19/93 on Filing Practice.
B.7	Minutes of meeting	Records maintained in accordance with PAH 7.5.11 and 7.9.4.
B.8	Site instructions	Site instructions should be issued by the Engineer or ER on the standard form shown in PAH Appendix 7.3 (PAH 7.5.8) (check also letter of delegation of power to ER).
B.9	Works programme chart	Requirements under GS(CE) 1.08. Programme of Works prepared and updated in accordance with PAH 7.6.1 and 7.6.2, and GCC(CE) 16.

## ITEMS

## REQUIREMENTS

B.10	Works progress chart	Actual progress marked on Works programme, to comply with PAH 7.5.6.
B.11	Programme and progress of work on utilities	Check compliance with GS(CE) 1.08(4) and 1.24.
B.12	Monthly progress report	Compliance with PAH 7.6.3. Standard form given in PAH Appendix 7.16.
B.13	Site cleanliness	Compliance with requirements on general site cleanliness, prevention of mosquito breeding, prevention of dust (GS(CE) 1.32 to 1.34)/PS and WBTC No. 6/2002 and ETWB TC(W) 6/2002A.
B.14	Lighting, signing and guarding of road works	Compliance with procedures on temporary traffic arrangements and control (GS(CE) 1.14 and 1.15)/PS.
B.15	Conditions of Excavation Permits	Compliance with the conditions stipulated in the Excavation Permits.
B.16	Claims for extension of time	<p>(a) Check whether notice in writing had been served by the contractor on the Engineer (GCC(CE) 50(1)(a)).</p> <p>(b) Check whether general principles in assessment of claim are followed (PAH 7.8.1.1).</p> <p>(c) Follow the requirements in WBTC No. 20/2000 or WBTC No. 13/92, where applicable, on Independence of the Engineer and Referral of Variations and Other Commitments.</p>



## ITEMS

## REQUIREMENTS

B.17 Liquidated Damages	In the event of the Works has not been completed on the completion date or extended completion date check whether the Liquidated Damages has been imposed or the reason for not imposing the Liquidated Damages. Refer to GCC(CE)52. Check whether the procedure for imposing Liquidated Damages has been carried out in accordance with PAH 8.2.
B.18 Report on Contractor's performance	Compliance with Contractor Management Handbook.
B.19 Completion Certificate	<p>(a) Follow standard forms given in PAH Appendices 7.34 to 7.36.</p> <p>(b) Check release of security deposit or surety bond (GCC(CE) 12). Standard form for release of surety bond given in PAH Appendix 7.37 (PAH 7.18.2.4).</p> <p>(c) Compliance with GCC(CE) 53.</p>
B.20 Retention money and maintenance certificate	<p>(a) Standard form given in PAH Appendix 7.38 (PAH 7.18.3.3).</p> <p>(b) Compliance with GCC(CE) 79.</p> <p>(c) Compliance with GCC(CE) 80.</p>
B.21 Report on completion of contract	To be issued within one month of the issue of the final payment certificate. Standard form given in PAH Appendix 7.41 (PAH 7.18.3.5).

## ITEMS

## REQUIREMENTS

### **C. GENERAL RECORDS**

C.1	Surety bond	Compliance with GCC(CE) 12.
C.2	Insurance Policies <ul style="list-style-type: none"><li>- Care of the Works</li><li>- Third Party</li><li>- Professional Indemnity Insurance</li></ul>	Compliance with relevant Special Condition of Contract and WBTC No. 10/2002, as appropriate.
C.3	Sub-contracting	Compliance with the requirement to employ listed specialist contractor for specified works and the requirements in SETW's memo dated 22 August 2002.
C.4	Possession of site records	Relevant details of the handing over of the Site should be confirmed in writing to the Contractor (PAH 7.3.1).
C.5	Site survey before the commencement of the Works	The survey results should be agreed by the Engineer and the Contractor, and recorded in the form of drawings (PAH 7.3.2).
C.6	Setting out records	The Dimensioned Plan, with records on control points and bench marks, should be issued as a contract drawing to the Contractor (PAH 7.3.2).
C.7	Sets of contract documents	One certified true copy of the signed contract documents including one set of original contract drawings should be kept in the site office. Standard documents forming part of the contract but are not bound in the signed documents should also be kept in the site office (PAH 7.5.2).

<u>ITEMS</u>	<u>REQUIREMENTS</u>
C.8 Supplementary agreement	Compliance with PAH 7.13.4.
C.9 Labour returns and wages	<p>(a) The Contractor should provide a daily return of labour on standard form GF 527, of which the wage columns should be completed by the Contractor at the end of each month. Three copies of the form should be prepared.</p> <p>(b) Carry out spot checks on actual numbers of labourers employed by cross-reference to the site diary.</p> <p>(c) Records should be kept up-to-date.</p> <p>(d) Compliance with GS(CE) 1.28/PS, PAH 7.5.16 and GCC(CE) 32(3).</p>
C.10 Labour strength chart	Daily record, in graphical form, of the total number of Contractor's workforce on site (PAH 7.5.18(1)).
C.11 Qualified tradesman and intermediate tradesman	Compliance with WBTC No. 13/2002.
C.12 Site safety records and safety plans	<p>(a) Check whether the Contractor had employed a safety officer or safety supervisor (PAH 7.11.2).</p> <p>(b) Check safety reports, if any.</p> <p>(c) Compliance with GCC(CE) 20 – adequate lighting, fencing, etc.</p> <p>(d) Compliance with Construction Site Safety Manual.</p>

<u>ITEMS</u>	<u>REQUIREMENTS</u>
C.12 Site safety records and safety plans (cont'd)	(e) Check submission and updating of safety plans, if any.
C.13 Accident records	(a) Check and record the number of accidents since last visit and since commencement of Works.  (b) Accident records prepared in accordance with PAH 7.11.5 and GCC(CE) 27.
C.14 Noise control, Construction Noise Permit and prevention of air and water pollution	Compliance with PAH 7.12.
C.15 Blasting records	(a) Compliance with PAH 7.21.7 and GS(CE) 6.09.  (b) Standard form for Shotfirers Charging Details given in PAH Appendix 7.44.
C.16 Diver's report, marine work quantity record	Compliance with PAH 7.5.18.
C.17 Checking of Temporary Works	(a) The ER is to carry out all necessary checks to ensure that the proposed temporary works do not have a detrimental effect on the permanent works, if necessary in consultation with the project engineer (PAH 7.11.4 and WBTC No. 3/97).

## ITEMS

## REQUIREMENTS

- |   |   |
|---|---|
| C.17 Checking of Temporary Works (cont'd) | (b) The ER is to ensure that those temporary works subject to an independent checking are so checked by a qualified person and the requisite certificates obtained (WBTC No. 3/97).   |
| C.18 Designs by Contractor                | Check strict compliance with procedures laid down in PAH 7.20 and WBTC Nos. 2/2001 and 10/2002.   |
| C.19 Trip ticket system                   | Compliance with procedures for disposal of public fill and C&D waste detailed in WBTC No. 21/2002, including implementation of follow-up actions for non-compliance.  |
| C.20 Waste management plan                | Submission and monitoring of waste management plan and related records in accordance with WBTC No. 29/2000.   |
| C.21 Record drawings                      | <p>(a) A set of drawings comprising the contract drawings, all revised drawings and additional drawings issued to the Contractor should be designated for record purposes (PAH 7.5.3).</p> <p>(b) As-constructed details deviated from the drawings should be marked in red ink on the above set of drawings (PAH 7.5.3).</p> <p>(c) Record survey on finished works should be incorporated into the above set of drawings (PAH 7.5.3).</p> |

## ITEMS

## REQUIREMENTS

- |                                     |   |
|-------------------------------------|---|
| C.21 Record drawings<br>(cont'd)    | (d) On completion of the Works, the set of record drawings checked and endorsed by ER and passed to the drawing office for production of 'as-constructed' drawings (PAH 7.5.3).   |
| C.22 Site diary                     | <p>(a) Standard form GF 536, which is bound in a book, shall be used. For contracts which are exceptionally large or complex in nature, a special diary format may be devised for use after consultation with the Contract Adviser (PAH 7.5.4).</p> <p>(b) The site diary shall contain an accurate and concise record of the progress of Works, plant and labour employed, etc, all in accordance with PAH 7.5.4.</p> <p>(c) The Inspector of Works and the Contractor's authorised agent or representative should sign the site diary daily. The ER should check and initial the site diary at least once a week (PAH 7.5.4 and GCC(CE) 32(2)).</p> |
| C.23 Inclement weather daily report | Inclement weather daily report completed by a member of the site staff of rank of Assistant Inspector of Works or above, and countersigned by the ER. Standard form in PAH Appendix 7.2 to be used. Records should be kept up-to-date (PAH 7.5.7).  |

<u>ITEMS</u>	<u>REQUIREMENTS</u>
C.24 Inventory of furniture and equipment records	Standard form in PAH Appendix 7.6 should be used (PAH 7.5.10).
C.25 Record photographs	<p>(a) Requirements under GS(CE) 1.55.</p> <p>(b) Photographs should be taken before commencement of the works and regularly during the course of the Contract (PAH 7.5.12).</p> <p>(c) The back of each photograph should contain information on the date the photograph was taken, exact location and description of the subject photographed and purpose of the photograph. (PAH 7.5.12).</p> <p>(d) Select prints shall be authenticated by the Contractor and the ER by signing and dating on the back of the prints (PAH 7.5.12).</p> <p>(e) Where CCTV or video records are required in the Contract, such records should be properly kept.</p>
C.26 Log books for contract transport	Standard log book GF 100 should be properly maintained (PAH 7.5.17) and regularly checked in accordance with LWBTC No. 11/84.
C.27 Request for inspection and survey check	Standard form in PAH Appendix 7.7 should be used. (PAH 7.5.13 and GCC(CE) 44).
C.28 Earthwork quantity record	Compliance with PAH 7.5.18.

## ITEMS

## REQUIREMENTS

- |      |  |  |
|------|--|--|
| C.29 | Records of vesting, removal and hiring and hire-purchase of constructional plant | Documented records should be available for checking compliance with GCC(CE) 71, 73 & 74. |
|------|--|--|

### **D. MATERIAL AND TESTING RECORDS**

## ITEMS

## REQUIREMENTS

- |     |   |   |
|-----|---|---|
| D.1 | Use of Public Works Laboratories                        | Compliance with WBTC No. 14/2000.   |
| D.2 | Metallic site hoardings and signboards                  | Compliance with WBTC No. 19/2001.   |
| D.3 | Record of material and equipment provided by Government | Standard record book GF 537 should be used (PAH 7.5.14).  |
| D.4 | Material on site records                                | <p>(a) Check whether the materials on site records are up-to-date by reference to the delivery notes/records (PAH 7.5.18(k)).</p> <p>(b) Check whether the materials on site are properly certified in interim payment taking into account of the wastage factor (PAH 7.5.18(k)) and GCC(CE) 79(1)(c)).</p> |
| D.5 | Piling records and pile test records                    | Examples of forms for pile driving records and pile loading test records are given in GS(CE) Appendix 8 (PAH 7.5.18(a)). Compliance with particular specifications introduced in WBTC No. 22/2000.  |



## ITEMS

## REQUIREMENTS

D.6	Soil and rock conditions records	Full records on such should be kept as Works progress (PAH 7.5.18(b))
D.7	Soil compaction test record and summary	Standard form in PAH Appendices 7.9 and 7.10 should be used (PAH 7.5.15(d)).
D.8	Settlement and movement records	Compliance with PAH 7.5.18(c).
D.9	Quality assurance for structural concrete	Compliance with WBTC No. 3/94.
D.10	Concrete casting records	Record maintained in accordance with PAH 7.5.18(d).
D.11	Concrete test cube register	One register should be kept for each grade of concrete with the same mix design used in the Contract. Standard form in PAH Appendix 7.8 to be used (PAH 7.5.15(b)).
D.12	Concrete compression test requests and certificates	Request forms for the test should be checked by the Inspector of Works and delivered to the Public Works Laboratory with the concrete cubes to be tested (PAH 7.5.15(a)).
D.13	Site crushers monthly return	Compliance with WBTC No. 11/2002.
D.14	Bar bending schedules	(a) Prepared on standard form shown in PAH Appendix 7.11.  (b) Updated in same manner as record drawings (PAH 7.5.18(e)).
D.15	Reinforcement test records	Compliance with PAH 7.5.15.

## ITEMS

## REQUIREMENTS

- |      |  |  |
|------|--|--|
| D.16 | Tensioning record for pre-stressed concrete      | Suggested format given in PAH Appendix 7.12 (PAH 7.5.18(f)).   |
| D.17 | Bearing and expansion joint records              | A clear record of the performance of the bearings and expansion joints should be kept using the form shown at PAH Appendix 7.15 (PAH 7.5.18(j)). |
| D.18 | Record of bituminous materials delivered to Site | Compliance with PAH 7.5.18(g) and GS(CE) 9.58 to 9.61. Suggested format given in PAH Appendix 7.13.  |
| D.19 | Test records of bituminous materials             | Proper test records are kept.  |
| D.20 | Water and drainage pipeline test records         | Compliance with PAH 7.5.18 (h) and (i).  |

## **E. FINANCIAL ADMINISTRATION**

### ITEM

### REQUIREMENTS

- |     |   |  |
|-----|---|--|
| E.1 | Site measurement book                                 | The standard site measurement book to be used is GF 534. Entries should be made by the site supervisory staff or Survey Officer (Quantity) and signed by authorized representatives of both the Contractor and the Engineer (PAH 7.5.5). |
| E.2 | Curves of expected expenditure and actual expenditure | Prepared and updated in accordance with PAH 7.6.5.   |

<u>ITEM</u>	<u>REQUIREMENTS</u>
E.3 Interim payment record book; payment certificate; interim payment abstract sheets	<p>(a) The date of certifying interim payments and the due date for payment to the Contractor should be in accordance with GCC(CE) 79(1).</p> <p>(b) the format of Contractor's statement should be clear and well organised (e.g. payment on-account should be clearly indicated showing rates/prices).</p> <p>(c) The ER should check and sign the Contractor's submitted accounts (PAH 7.7.2.2).</p> <p>(d) The percentage of certified value retained, the limit of retention money and the minimum amount of interim certificate stated in the Appendix to Form of Tender should be correctly applied (GCC(CE) 79(1) &amp; (2)).</p> <p>(e) The calculation of contract price fluctuations should be in order (WBTC No. 14/95 and GCC(CE) 89).</p> <p>(f) Check whether liquidated damages should be deducted from the payment certificate by making reference to the extended completion date. (PAH 7.8.2 and GCC(CE) 52).</p>

<u>ITEM</u>	<u>REQUIREMENTS</u>
E.3 Interim payment record book; payment certificate; interim payment abstract sheets (cont'd)	<p>(g) Standard forms for Engineer's interim payment and final payment certificates and contract price fluctuations shown at PAH Appendices 7.17 and 7.18 should be used (PAH 7.7.2.2 and 7.7.3).</p> <p>(h) the number of items paid on-account is recorded. The Engineer should assess the rates for these items as soon as practicable.</p> <p>(i) Payment on preliminaries items should be properly certified and substantiated. (e.g. insurances, etc.)</p> <p>(j) Payment for measured items should be supported by measured quantities or if not possible, at least by rough measurement.</p> <p>(k) Issue of certificate for the payment of retention money should be in accordance with GCC(CE) 79(3). Standard form in PAH Appendices 7.39 and 7.40 should be used.</p>
E.3 Interim payment record book; payment certificate; interim payment abstract sheets (cont'd)	<p>(l) Issue of final payment certificate should be in accordance with GCC(CE) 79(6).</p>

<u>ITEM</u>	<u>REQUIREMENTS</u>
E.4 Variations	<p>(a) Prior approval from directorate officer should be sought for variations estimated to exceed the value stated in WBTC No. 20/2000 or WBTC No. 13/92, where applicable. For values less than that stated, no prior approval is required provided that no increase in contract sum is resulted (PAH 7.13.1 and WBTC No. 13/92).</p> <p>(b) Variations ordered in accordance with GCC(CE) 60. Standard form in PAH Appendix 7.20 should be used (PAH 7.13.2).</p> <p>(c) For approval for increase in contract sum, requirements laid down in SPR shall be followed (PAH 7.13.1.).</p>
E.5 Valuation of variations ordered	<p>(a) Valuation of variations should be in accordance with GCC(CE) 61 in a timely manner.</p> <p>(b) Administrative procedures under PAH 7.13.3 shall be followed. Standard forms for valuation of variations and current financial statement as shown at PAH Appendices 7.21 and 7.22 respectively should be used (PAH 7.13.3).</p> <p>(c) Check letter of delegation for issue of variation orders and their valuation.</p>

<u>ITEM</u>	<u>REQUIREMENTS</u>
E.6 Daywork	<p>(a) Site instructions standard form or variation order standard form should be used for ordering work paid on daywork basis (PAH 7.5.8, 7.13.1 and 7.13.2).</p> <p>(b) Standard forms on Dayworks Daily Record and Dayworks Monthly Summary should be used. (PAH 7.5.9 and Appendices 7.4 and 7.5 and GCC(CE) 62(5)).</p> <p>(c) Dayworks Daily Records should be agreed, or rejected with stated reasons and signed by the ER (GCC(CE) 62(4)).</p>
E.7 Monetary claims records	<p>(a) Check whether notice in writing had been served on the Engineer (GCC(CE) 64(1) and (2)).</p> <p>(b) First interim account and further up-to-date accounts should be submitted by the Contractor (GCC(CE) 64(4)).</p> <p>(c) Check whether major principles in assessment of claims are in order (PAH 7.14.2).</p> <p>(d) Authority to settle claims (SPR and PAH 7.14.3).</p> <p>(e) Follow reporting system in WBTC No. 20/2000 or WBTC No. 13/92, where applicable.</p>

<u>ITEM</u>	<u>REQUIREMENTS</u>
E.7 Monetary claims records (cont'd)	(f) Standard letter in PAH Appendix 7.24 for certifying claims should be used, as far as practicable.
E.8 Request for mediation	Compliance with GCC(CE) 86(1), WBTC No. 4/99 and PAH 7.21.4.
E.9 Request for arbitration	Compliance with GCC(CE) 86(2) and PAH 7.21.4.

Subsumed

## **APPENDIX C**

Subsumed



# TECHNICAL AUDIT REPORT No. xx/200v

## Architectural Services Department

## PART I - CONTRACT DETAILS

- |  |   |  |                    |              |
|--|---|--|--------------------|--------------|
| 1. Programme No.                                 | : |  |                    |              |
| 2. Contract No.                                  | : |  |                    |              |
| 3. Contract Title                                | : |  |                    |              |
| 4. Nature of Work                                | : | Capital/maintenance work*  |                    |              |
| 5. Branch managing contract                      | : | Architectural/Building Services/Structural Engineering/Quantity Surveying/Property Services* |                    |              |
| 6. Consultants, if any<br>(please specify role)  | : |  |                    |              |
| 7. Architect for the Contract                    | : |  |                    |              |
| 8. Surveyor for the Contract                     | : |  |                    |              |
| 9. Architect's Representative(s)                 | : |  |                    |              |
| 10. Surveyor's Representative(s)                 | : |  |                    |              |
| 11. Contractor                                   | : |  |                    |              |
| 12. Brief description of the Works               | : |  |                    |              |
| 13. Date for commencement of<br>the Works        | : |  |                    |              |
|  |   | <u>Section 1</u>   | <u>Section 2**</u> | <u>Whole</u> |
| 14. Original date of completion of<br>the Works  | : |  |                    |              |
| 15. Extended date for completion of<br>the Works | : |  |                    |              |
| 16. Extension of time granted                    |   |  |                    |              |
| - for inclement weather                          | : |  |                    |              |
| - for variations                                 | : |  |                    |              |
| - others (please specify)                        | : |  |                    |              |
| Total  | : | (days)   | (days)             | (days)       |

\* *Delete whichever is inappropriate*

\*\* *Add additional Sections where applicable*

	<u>Section 1</u>	<u>Section 2**</u>	<u>Whole</u>
17. Anticipated date for completion of the Works :			
18. Certified date of completion :			
19. Original Contract Sum : \$			
20. Approved Revised Contract Sum (if any) : \$			
21. Estimated Final Contract Sum : \$			
22. Gross amount certified in last payment certificate (Certificate No. _____ ***) : \$			

\*\* Use separate sheet if more than two sections

\*\*\* Insert Certificate No.

## PART II – SITE VISITS AND PROJECT OFFICERS INTERVIEWED

23. This is the 1<sup>st</sup>/2<sup>nd</sup>/3<sup>rd</sup>/4<sup>th</sup>/.....\*\*\*\* audit on the Contract.  
Site visits for this audit were made on \_\_\_\_\_ (dates).
24. Site visits of the last audit were made on \_\_\_\_\_ (dates).
25. Project officers interviewed for this audit:

<u>Name</u>	<u>Grade</u>
-------------	--------------

\*\*\*\* Delete or insert as appropriate

## PART III – AUDIT FINDINGS

23. The following work stages were audited:

- |  |     |
|--|-----|
| a) tender documents preparation              | [ ] |
| b) tendering                                 | [ ] |
| c) tender assessment                         | [ ] |
| d) construction                              | [ ] |
| e) final account including claims settlement | [ ] |

Item	Compliance with Requirements			Remarks
	Yes	No	N/A	
<b>PRE-CONTRACT</b>				
27. Contract documents				
28. Project estimates				
29. Tender procedure				
30. Execution of contract				
<b>SITE AUDIT</b>				
31. Statutory notifications				
32. Original programme chart				
33. Schedule of :				
a) contract drawings				
b) approved contractor's drawings				
34. Site instructions				
35. Additional information, drawings or documents issued to Contractor				
36. Store requisition and delivery notes; allocated and combined requisition vouchers				
37. Samples				
38. Materials :				
a) general				
b) concrete				
c) cement				
d) sand				
e) reinforcement				
f) structural				

Item	Compliance with Requirements			Remarks
	Yes	No	N/A	
g) electrical				
h) air-conditioning				
i) fire services				
j) lifts				
k) other BS installations				
39. Concreting				
40. Use of Public Works Laboratories				
41. Test results, reports and certificates				
a) concrete cubes				
b) concrete cores				
c) steel reinforcement				
d) structural steel				
e) drains & stacks				
f) asphalt & membrane				
g) density in compact fill				
h) electrical				
i) air-conditioning				
j) fire services				
k) lifts				
l) other BS installations				
42. Explosive				
43. Contractor's labour return and weather records				
44. Qualified tradesman and intermediate tradesman				

Item	Compliance with Requirements			Remarks
	Yes	No	N/A	
45. Trip ticket system				
46. Contractor's plant				
47. Site diary				
48. Site visitor's records				
49. Works Orders records				
50. Sundry records, handover/test certificates				
51. Site meetings				
52. Revised programme charts				
53. Site measurement book				
54. Site safety diary				
55. Possession of Site records				
56. Setting out records				
57. Existing services records				
58. Piling records and pile test records				
59. Progress of the Works and payment situation				
60. Record photographs				
61. Security on site, record of theft, break-in, etc.				
62. Sub-contracting				
63. Site cleanliness				
64. Violation of statutory acts				
65. Records of work carried out by other departments				
66. Extension of time				

Item	Compliance with Requirements			Remarks
	Yes	No	N/A	
67. Liquidated damages				
68. Claims				
<b>ASSESSMENT OF CLAIMS AND VALUATION OF VARIATIONS</b>				
69. Extension of time				
70. Measurement of the variations				
71. The authority for ordering the variations				
72. Valuation of variations				
73. Daywork				
74. Contractual claims				
75. Ex-contractual claims				
<b>CONTRACT FINAL ACCOUNTS</b>				
76. Variations				
77. Remeasurement of provisional quantities				
78. Nominated sub-contractor's accounts				
79. Claims				
80. Contract price fluctuations				
81. Adjustment of P.C. & Provisional Sums				
82. Retention money and maintenance certificate				
83. Liquidated damages				
84. Reconciliation of store items				
85. Other deductions e.g. charges for remedial works				

Item	Compliance with Requirements			Remarks
	Yes	No	N/A	
86. Authority to increase contract sum  Others (please specify)				

**PART IV - COMMENTS ON CORRECTIVE ACTIONS TAKEN SINCE THE LAST AUDIT**

Subsumed

## PART V - GENERAL REMARKS, CONCLUSIONS AND RECOMMENDATIONS

Audit Officers: (1) \_\_\_\_\_ (signed) \_\_\_\_\_ (2) \_\_\_\_\_ (signed) \_\_\_\_\_  
(name and title) (name and title)

Date : \_\_\_\_\_ Date : \_\_\_\_\_

Endorsed by:

\_\_\_\_\_  
(signed)  
(name and title of Contract Adviser)

Architectural Services Department

Date: \_\_\_\_\_

c.c. AS(TS)1, Environment, Transport and Works Bureau  
(and others as appropriate)



# APPENDIX D

Subsumed

# TECHNICAL AUDIT REPORT No. xx/200y

\_\_\_\_\_ Department

Note: For maintenance contracts or contracts not using the Chapter 7 of Project Administration Handbook for Civil Engineering Works, the items in Part III may be revised appropriately to tie in with the laid down procedures/requirements of the department. The Contract Adviser should be consulted in case of doubt.

## PART I - CONTRACT DETAILS

1. Contract No.	:	_____		
2. Contract Title	:	_____		
3. Nature of Work	:	Capital / maintenance work*		
4. Division managing contract	:	_____		
5. Engineer for the Contract	:	_____		
6. Engineer's Representative	:	_____		
7. Consultants (to be completed if different from 5 above/please specify role)	:	_____		
8. Contractor	:	_____		
9. Brief description of the Works	:	_____ _____ _____ _____		
10. Date for commencement of the Works	:	_____		
		<u>Section 1</u>	<u>Section 2**</u>	<u>Whole</u>
11. Original date of completion of the Works	:	_____		
12. Extended date for completion of the Works	:	_____		
13. Extension of time granted				
- for inclement weather	:	_____	_____	_____
- for variations	:	_____	_____	_____
- others (please specify)	:	_____	_____	_____
Total	:	_____ (days)	_____ (days)	_____ (days)

\* Delete whichever is inappropriate (Note that term contracts are not included here as they can be for capital or maintenance works)

\*\* Add additional Sections where applicable

	<u>Section 1</u>	<u>Section 2**</u>	<u>Whole</u>
14. Anticipated date for completion of the Works :			
15. Certified date of completion of the Works :			
16. Original Contract Sum :	\$		
17. Approved Revised Contract Sum (if any) :	\$		
18. Estimated Final Contract Sum :	\$		
19. Gross amount certified in last payment certificate (Certificate No. ***)	:	\$	

## PART II – SITE VISITS AND PROJECT OFFICERS INTERVIEWED

Name \_\_\_\_\_

## PART III – AUDIT FINDINGS

- |    |   |     |
|----|---|-----|
| a) | tender documents preparation              | [ ] |
| b) | tendering                                 | [ ] |
| c) | tender assessment                         | [ ] |
| d) | construction                              | [ ] |
| e) | final account including claims settlement | [ ] |

Item	Compliance with Requirements			Remarks
	Yes	No	N/A	
<b>PRE-CONTRACT</b>				
24. Contract documents				
25. Tender procedures including pre-qualification, press release, gazette notice, restricted tendering and tender reports				
<b>CONTRACT ADMINISTRATION</b>				
26. Statutory notifications				
27. Joint venture				
28. Engineer's site staff organization				
29. Letter of delegation of Engineer's power to ER				
30. Contractor's superintendence				
31. Correspondence and files				
32. Minutes of meeting				
33. Site instructions				
34. Works programme chart				
35. Works progress chart				
36. Programme and progress of work on utilities				
37. Monthly progress report				
38. Site cleanliness				
39. Lighting, signing & guarding of roadworks				
40. Conditions of excavation permits				
41. Claims for extension of time				
42. Liquidated Damages				

Item	Compliance with Requirements			Remarks
	Yes	No	N/A	
43. Report on Contractor's performance				
44. Completion certificate				
45. Retention Money and maintenance certificate				
46. Report on completion of Contract				
<b>GENERAL RECORDS</b>				
47. Surety bond				
48. Insurance Policies <ul style="list-style-type: none"> <li>- Care of the Works</li> <li>- Third Party</li> <li>- Professional Indemnity Insurance</li> </ul>				
49. Sub-contracting				
50. Possession of site records				
51. Site survey before the commencement of the Works				
52. Setting out records				
53. Sets of contract documents				
54. Supplementary agreement				
55. Labour returns and wages				
56. Labour strength chart				
57. Qualified tradesman and intermediate tradesman				
58. Site safety records and safety plans				
59. Accident records				
60. Noise control, Construction Noise Permit and prevention of air and water pollution				

Item	Compliance with Requirements			Remarks
	Yes	No	N/A	
61. Blasting records				
62. Diver's report, marine work quantity record				
63. Checking of Temporary Works				
64. Designs by Contractor				
65. Trip ticket system				
66. Waste management plan				
67. Record drawings				
68. Site diary				
69. Inclement weather daily report				
70. Inventory of furniture and equipment records				
71. Record photographs, CCTV and video record				
72. Log books for contract transport				
73. Requests for inspection and survey check				
74. Earthwork quantity record				
75. Records of vesting, removal and hiring and hire-purchase of Constructional Plant				
<b>MATERIAL AND TESTING RECORDS</b>				
76. Use of Public Works Laboratories				
77. Metallic site hoardings and signboards				
78. Record of material and equipment provided by the Employer				
79. Material on site records				

Item	Compliance with Requirements			Remarks
	Yes	No	N/A	
80. Piling records and pile test records				
81. Soil and rock conditions records				
82. Soil compaction test record and summary				
83. Settlement and movement records				
84. Quality assurance for structural concrete				
85. Concrete casting records				
86. Concrete test cube register				
87. Concrete compression test requests/certificates				
88. Site crushers monthly return				
89. Bar bending schedules				
90. Reinforcement test records				
91. Tensioning record for prestressed concrete				
92. Bearing and expansion joint records				
93. Record of bituminous materials delivered to Site				
94. Test records of bituminous materials				
95. Water and drainage pipeline test records				
<b>FINANCIAL ADMINISTRATION</b>				
96. Site measurement book				
97. Curves of expected expenditure and actual expenditure				

Item	Compliance with Requirements			Remarks
	Yes	No	N/A	
98. Interim payment record book; payment certificate; interim payment abstract sheets				
99. Variations				
100. Valuation of variations ordered				
101. Daywork				
102. Monetary claims records				
103. Request for mediation				
104. Request for arbitration				
<u>Others</u> (please specify)				

**PART IV - COMMENTS ON CORRECTIVE ACTIONS TAKEN SINCE THE LAST AUDIT**



## PART V - GENERAL REMARKS, CONCLUSIONS AND RECOMMENDATIONS

Audit Officers: (1) \_\_\_\_\_ (signed) \_\_\_\_\_ (2) \_\_\_\_\_ (signed) \_\_\_\_\_  
(name and title) (name and title)

Date : \_\_\_\_\_ Date : \_\_\_\_\_

Endorsed by :

\_\_\_\_\_ (signed) \_\_\_\_\_  
(name and title of Contract Adviser)  
\_\_\_\_\_ Department

Date : \_\_\_\_\_

c.c. AS(TS)1, Environment, Transport and Works Bureau  
(and others as appropriate)