

# **CHAPTER 1**

## **Architectural Services Department**

### **Administration of consultancies for school improvement works**

**Audit Commission  
Hong Kong  
23 October 2006**

*This audit review was carried out under a set of guidelines tabled in the Provisional Legislative Council by the Chairman of the Public Accounts Committee on 11 February 1998. The guidelines were agreed between the Public Accounts Committee and the Director of Audit and accepted by the Government of the Hong Kong Special Administrative Region.*

Report No. 47 of the Director of Audit contains 11 Chapters which are available on our website at <http://www.aud.gov.hk>.

Audit Commission  
26th floor, Immigration Tower  
7 Gloucester Road  
Wan Chai  
Hong Kong

Tel : (852) 2829 4210  
Fax : (852) 2824 2087  
E-mail : [enquiry@aud.gov.hk](mailto:enquiry@aud.gov.hk)

# ADMINISTRATION OF CONSULTANCIES FOR SCHOOL IMPROVEMENT WORKS

## Contents

	<b>Paragraph</b>
<b>PART 1: INTRODUCTION</b>	1.1
Background	1.2 – 1.8
Audit review	1.9
General response from the Administration	1.10 – 1.11
Acknowledgement	1.12
 <b>PART 2: SELECTION OF CONSULTANTS</b>	 2.1
SIP Final Phase	2.2 – 2.3
Procedures for selection of consultants	2.4 – 2.7
Selection of consultants in SIP Final Phase	2.8 – 2.10
Performance of SIP Final Phase consultants	2.11 – 2.14
<b><i>Audit observations</i></b>	2.15 – 2.21
<b><i>Audit recommendation</i></b>	2.22
Response from the Administration	2.23
 <b>PART 3: REMUNERATION OF CONSULTANTS</b>	 3.1
Basis of consultancy fees	3.2 – 3.4
Estimated value of works	3.5 – 3.10
Updated value of works	3.11 – 3.12
Consultancy fee adjustments	3.13 – 3.15
<b><i>Audit observations</i></b>	3.16 – 3.31
<b><i>Audit recommendations</i></b>	3.32
Response from the Administration	3.33

	<b>Paragraph</b>
Fee-adjustment mechanism for change in value of works	3.34 – 3.37
<b><i>Audit observations</i></b>	3.38 – 3.41
<b><i>Audit recommendations</i></b>	3.42
Response from the Administration	3.43
 <b>PART 4: MONITORING OF CONSULTANCY SERVICES</b>	 4.1
Mechanism for monitoring consultancy services	4.2 – 4.3
Tender documentation for SIP Final Phase works	4.4 – 4.7
Measurement errors in two works contracts	4.8 – 4.9
Implementation of improvement measures	4.10 – 4.13
<b><i>Audit observations</i></b>	4.14 – 4.18
<b><i>Audit recommendations</i></b>	4.19
Response from the Administration	4.20
	 <b>Page</b>
 <b>Appendices</b>	
A : Selection of SIP Final Phase consultants	37
B : Acronyms and abbreviations	38

## **PART 1: INTRODUCTION**

1.1 This PART describes the background to the audit and outlines the audit objectives and scope.

### **Background**

#### ***Architectural Services Department's role in facilities development***

1.2 One of the roles of the Architectural Services Department (ArchSD) is to provide architectural and associated professional and project management services for facilities development (Note 1). The work involves:

- (a) assisting user departments in developing their requirements;
- (b) designing the facilities to meet users' requirements and the Government's needs; and
- (c) appointing contractors and inspecting works to ensure that the facilities are up to standard.

1.3 In 2005-06, of the \$1,381 million departmental expenditure of the ArchSD, \$495 million (36%) was spent on facilities development. Owing to the need to supplement the ArchSD resources or to provide specialist expertise not available within the ArchSD, from time to time the ArchSD engages consultants to provide professional services for facilities development projects. For projects funded under the Capital Works Reserve Fund, the consultancy fees are met from the related project votes of the Fund. In 2005-06, such consultancy fees amounted to \$227 million.

#### ***School Improvement Programme***

1.4 In February 1993, the Executive Council endorsed the recommendations of the Education Commission Report No. 5 on improving the physical environment of schools. To implement the recommendations, in 1994, the then Education Department (hereinafter referred to as the Education and Manpower Bureau (EMB) – Note 2) launched the School Improvement Programme (SIP) to upgrade progressively to the prevailing standards as far

---

**Note 1:** *The ArchSD has two other roles, namely: (a) providing professional and technical advice on building-related issues to the Government and quasi-government organisations and overseeing subvented and joint-venture projects; and (b) providing professional and project management services for the maintenance and refurbishment of buildings and facilities.*

**Note 2:** *The Education Department was merged with the EMB on 1 January 2003.*

as possible the learning and teaching environment of all government and aided primary, secondary and special schools. The SIP aims at providing additional space and facilities for teaching, out-of-class activities and supporting services for teachers and students. The SIP includes renovation works and provision of new annex buildings.

1.5 At the inception of the SIP in 1994, the EMB appointed the ArchSD as the works agent to provide services for project management, cost estimation and contract administration. Due to in-house resource constraints, the ArchSD engaged consultants to provide services for the feasibility study, design, contract administration and project management of the SIP projects. The ArchSD monitored the progress of the SIP projects and oversaw the work of the consultants.

1.6 As at 30 June 2006:

- (a) there were 692 schools in five phases of the SIP under the project administration of the ArchSD;
- (b) the estimated cost of the SIP works for schools administered by the ArchSD was \$13,303 million. The cost was funded under the Capital Works Reserve Fund; and
- (c) there were 51 schools which had opted for the self-delivery mode in the SIP Final Phase (Note 3). As the works for these 51 schools were not administered by the ArchSD, they were outside the scope of this audit review.

1.7 In the 2000 Policy Address, it was stated that the SIP would be completed before the end of the 2004-05 school year. Audit noted that, up to 30 June 2006:

- (a) works for the 504 schools in the SIP Phases 1 to 4 had been substantially completed;
- (b) for the 188 schools in the SIP Final Phase which commenced in 2001, the works for 175 schools had been substantially completed. The works for the remaining 13 schools were in progress; and
- (c) the estimated cost of the SIP Final Phase works was \$5,198 million, including consultancy fees of \$706 million.

---

**Note 3:** *Under the self-delivery mode, the schools received government funding and employed their own consultants to carry out the improvement works, subject to the requirements and guidelines set by the Government. As at 30 June 2006, the estimated cost of the works for the self-delivery mode schools was \$1,869 million. Up to that time, the works for 48 schools had been substantially completed and those for 3 schools were in progress.*

1.8 Photographs 1 and 2 show the SIP Final Phase works for two participating schools.

**Photograph 1**

**New annex for a school**



*Source: ArchSD records*

**Photograph 2**

**External renovation works for a school**



*Source: ArchSD records*

## **Audit review**

1.9 The Audit Commission (Audit) has recently conducted a review to examine the economy, efficiency and effectiveness of the ArchSD in administering the SIP consultancies. Of the five phases of the SIP, Audit selected the Final Phase for review. The audit review focused on the following areas:

- (a) selection of consultants (see PART 2);
- (b) remuneration of consultants (see PART 3); and
- (c) monitoring of consultancy services (see PART 4).

Audit has found that there are areas where improvements can be made by the ArchSD in administering the SIP consultancies.

## **General response from the Administration**

1.10 The **Director of Architectural Services** accepts the recommendations in this audit report. He has said that the audit recommendations are in line with the goal of the ArchSD in seeking self-perfection of its operational systems so as to enhance its services to the public.

1.11 The **Secretary for Education and Manpower** welcomes this audit review. He has said that the EMB would give its full support to the Director of Architectural Services in implementing improvement measures for maintaining a high standard of consultancy services in both the school improvement works to be concluded this year and all capital works to be carried out by the ArchSD serving as the EMB's works agent.

## **Acknowledgement**

1.12 Audit would like to acknowledge with gratitude the full cooperation of the staff of the ArchSD and the EMB during the course of the audit review.



## **PART 2: SELECTION OF CONSULTANTS**

2.1 This PART examines the selection and appointment of consultants for the SIP Final Phase works.

### **SIP Final Phase**

2.2 In the 2000 Policy Address, the Administration set the following SIP targets:

- (a) to complete the feasibility studies for the works of the remaining schools under the SIP within two years; and
- (b) for schools where improvement works were feasible, to complete the works before the end of the 2004-05 school year.

2.3 In February 2001, the Finance Committee of the Legislative Council approved \$1,045 million for engaging consultants to carry out pre-construction works (Note 4) at 342 aided schools in the SIP Final Phase.

### **Procedures for selection of consultants**

#### ***Architectural and Associated Consultants Selection Board***

2.4 Under the Government Stores and Procurement Regulations, the Secretary for Financial Services and the Treasury has established the Architectural and Associated Consultants Selection Board (AACSB) to:

- (a) approve the selection and appointment of architectural and associated consultants for projects undertaken by the Government;
- (b) advise the Secretary for the Environment, Transport and Works on selection procedures, conditions of employment and remuneration of architectural and associated consultants and to recommend changes as necessary;

---

**Note 4:** *The pre-construction works included feasibility studies, detailed designs, contract documentation and project management works.*

- (c) promulgate pertinent guidelines on selection and appointment; and
- (d) review the performance of architectural and associated consultants.

2.5 The AACSB is chaired by the Director of Architectural Services with members from the ArchSD, Housing Department and the Environment, Transport and Works Bureau (ETWB). The AACSB has published a Handbook on Selection, Appointment and Administration of Architectural and Associated Consultants (hereinafter referred to as the AACSB Handbook) for compliance by government departments.

### ***ArchSD Consultants Appointments Panel***

2.6 The ArchSD Consultants Appointments Panel (CAP) was established to make recommendations on selection of consultants to the AACSB. The ArchSD CAP is chaired by the Deputy Director of Architectural Services. Its members are senior officers of the ArchSD.

### ***Consultant selection procedures for SIP Final Phase***

2.7 As laid down in the AACSB Handbook applicable at the time of selecting the SIP Final Phase consultants (hereinafter referred to as the 2001 AACSB Handbook), in selecting architectural and associated consultants for works projects, the ArchSD responsible officers should:

#### ***Shortlisting procedures***

- (a) prepare a shortlist of consultants by reference to the AACSB approved lists of consultants (Note 5). **The selection criterion should be a qualitative assessment of their past performance and current company profile (Note 6);**
- (b) based on the information available, if it was not possible to prepare a suitable shortlist, send an invitation letter to consultants considered acceptable, requesting them to express an interest for the assignment;

---

**Note 5:** *The ArchSD maintained the following lists of consultants approved by the AACSB: Architectural, Building Services, Structural Engineering, Quantity Surveying, Landscape Architectural, and Specialist.*

**Note 6:** *For consultants on an AACSB approved list who had had a large quantity of work in the past three years, they might be accorded a lower priority in the shortlisting process.*

- (c) for consultants not included in the AACSB approved lists, request the consultants to provide information on:
  - (i) their staff, and their qualifications and experience;
  - (ii) their history and experience in the local context;
  - (iii) the local facilities used by their practice; and
  - (iv) their past performance in the public or private sector;
- (d) make a submission to the AACSB to seek approval for the shortlist. The submission should include a comparative assessment of each shortlisted consultant and give reasons for selecting or rejecting a consultant;

***Final selection procedures***

- (e) following the approval of the shortlist by the AACSB, request the shortlisted consultants to submit technical and fee proposals;
- (f) conduct an assessment of each consultant with reference to his staffing, approach to cost-effectiveness and experience relevant to the project;
- (g) submit a report summarising the assessments on the technical proposals and fee proposals of the consultants, with a recommendation on a preferred consultant to the AACSB for approval;
- (h) following the AACSB's approval of the appointment of a consultant, notify the unsuccessful consultants of the results; and
- (i) sign an agreement with the approved consultant.

**Selection of consultants in SIP Final Phase**

2.8 In 2001, in view of the large number of schools (about 290 numbers at that time) involved in the SIP Final Phase, the ArchSD decided to engage 23 consultants for the SIP works, comprising:

- (a) **14 lead consultants (hereinafter referred to as Consultants A to N).** They were responsible for providing architectural services. In addition, they employed building services sub-consultants and structural engineering sub-consultants in carrying out the works;
- (b) **8 quantity surveying (QS) consultants (hereinafter referred to as Consultants P to W).** They were mainly responsible for the measurement of the works; and
- (c) **1 project management consultant (hereinafter referred to as Consultant Y).** He was responsible for the overall monitoring of the scope, progress, and financial and programming aspects of the works.

For letting contracts for schools in the SIP Final Phase, the ArchSD subsequently grouped the works under 51 works contracts.

2.9 Between February and April 2001, due to the need to employ 23 consultants for the SIP Final Phase, the AACSB approved the ArchSD proposals to invite:

- (a) all the pertinent and qualified consultants on the AACSB approved lists of consultants (38 architectural consultants and 15 QS consultants) by mail to submit technical and fee proposals for the lead and QS consultancies; and
- (b) eligible project management consultants to submit technical and fee proposals, by Gazette Notice and advertisement in the local press because the ArchSD did not keep an approved list of project management consultants.

2.10 In the first half of 2001, the ArchSD conducted the consultant selection exercise (see pertinent dates at Appendix A). A total of 53 consultants submitted technical and fee proposals. Upon the AACSB approval, the ArchSD awarded the consultancies to 23 consultants between May and July 2001.

## **Performance of SIP Final Phase consultants**

### ***Performance reporting and regulating actions***

2.11 The ArchSD formed a Consultants Review Committee to manage the performance reporting of consultants and take regulating actions against poor performers, such as suspension from bidding. As laid down in the 2001 AACSB Handbook, in monitoring an ArchSD consultant's performance, the ArchSD should:

- (a) prepare assessment reports on a three-monthly basis, and on completion of each stage of the assignment. The overall assessment should be either “acceptable” or “adverse”; and
- (b) take into consideration a consultant’s past performance when recommending him for an assignment. A consultant who, in the immediate past assessment period, had received three consecutive adverse reports in an assignment should not be recommended to undertake a new assignment. The period of suspension was at the discretion of the AACSB. Normally, it would not exceed 12 months.

2.12 Under Works Bureau Technical Circular (WBTC) No. 29/2001 of December 2001 on Reporting and Management of Consultants’ Performance, with effect from 1 January 2002, a consultant should be suspended from bidding for a minimum period of three months after receiving two consecutive adverse reports in an assignment. The period of suspension should be extended to a minimum of twelve months, counting from the first day of the suspension, after receiving the third consecutive adverse report in the same assignment.

### ***SIP Final Phase consultants’ performance***

2.13 Up to 30 June 2006, of the 23 consultants engaged in the SIP Final Phase assignments, the ArchSD had taken actions against 3 lead consultants and a QS consultant due to their unsatisfactory performance (see Table 1).

**Table 1**  
**Actions taken against SIP Final Phase consultants**  
**(30 June 2006)**

Consultant (Note)	Adverse reports issued		Actions taken
	Number	Period	
(I) Lead consultant			
B	3	2nd quarter 2003 4th quarter 2004 1st quarter 2005	After receiving 2 consecutive adverse reports, Consultant B was suspended from bidding for three months from June 2005.  In 2005, due to another unsatisfactory instance, Consultant B was removed from the approved list of consultants and banned from applying for inclusion in the list within three years from the date of removal.
F	3	2nd quarter 2004 4th quarter 2004 1st quarter 2005	After receiving 2 consecutive adverse reports, Consultant F was suspended from bidding for three months from May 2005.
N	2	1st quarter 2002 4th quarter 2004	The adverse reports were not consecutive. However, due to the failure in meeting the requirement of employing a minimum of two qualified architects as Authorised Persons, Consultant N was suspended from bidding for twelve months from November 2002.
(II) QS consultant			
P	2	February 2004 (Special report) 1st quarter 2004	Due to a measurement error, Consultant P was issued with an adverse special report and was suspended from bidding for six months from February 2004.  Due to another similar measurement error, Consultant P was suspended from bidding for six months from May 2004. The suspension period was imposed concurrently with that for the first incident.

Source: ArchSD records

Note: For a full list of the consultants, see Tables 3 and 4 in paragraph 3.10.

2.14 In its assessments, the ArchSD found that the four consultants had unsatisfactory performance, as follows:

- (a) **Consultant B.** The consultant's performance was considered unacceptable on aspects such as supervision of contractors, quality of works, competency and adequacy of staff, and adherence to programmes. The ArchSD expressed concern over the consultant's inadequacy and inexperience of staff deployed, poor supervision of contractors, and insufficient coordination with schools resulting in delays and abortive works;
- (b) **Consultant F.** The consultant's performance was considered unacceptable on aspects such as achievement of objectives and targets, competency and adequacy of staff, and adherence to programmes. The ArchSD expressed concern over the consultant's failure in providing timely reports of the financial status of the project, failure in observing the provisions and requirements of statutory requirements, slow progress in the assessment of extensions of time, and insufficient involvement and lack of responsiveness of senior management;
- (c) **Consultant N.** The consultant's performance was considered unacceptable on aspects such as administration of contracts, appreciation of government requirements, and responsiveness of key staff. The ArchSD expressed concern over the consultant's late submission of drawings, failure to answer queries in time which resulted in delays in completing the project; and
- (d) **Consultant P.** The consultant's performance was considered unacceptable on aspects such as competency and adequacy of staff, administration of contracts, and lack of effectiveness in problem-solving. In February 2004, an adverse report was issued to the consultant due to a measurement error in the provisional quantities for some works items in a works contract. In March 2004, a similar error made by the consultant was identified in another works contract. The consultant was assessed as technically incompetent in both incidents.

## Audit observations

### *Need to consider consultants' past performance in selection process*

2.15 Audit noted that:

- (a) as laid down in the 2001 AACSB Handbook (applicable at the time of selecting the consultants), **in the shortlisting stage, the criterion for selection of consultants should be a qualitative assessment of their past performance and current company profile (see para. 2.7(a));**

- (b) in June 2000, in a discussion among the parties concerned on the way forward for implementing the SIP Final Phase works, the ArchSD informed the EMB, the then Works Bureau and the then Finance Bureau that, in order to prevent deterioration of the standard of services from consultants, **the ArchSD intended to implement measures to strengthen the selection and management of consultants, including more critical technical assessments in the final selection stage with stronger emphasis on their past performance;** and
- (c) in late March 2001:
  - (i) in preparing a summary of the technical markings of the tender submissions of the lead consultants for the SIP Final Phase, the ArchSD considered that the past performance of the consultants would have a bearing on the technical markings; and
  - (ii) the ArchSD compiled a summary of the past performance of those consultants to whom it had issued adverse reports in the past three years.

2.16 **However, as far as Audit could ascertain, there were no records showing that, when seeking recommendation from the ArchSD CAP and approval from the AACSB for appointment of the 23 consultants between April and July 2001, the ArchSD staff had provided the ArchSD CAP and the AACSB with information about the previous adverse reports issued to these consultants for consideration (Note 7).**

2.17 ***ArchSD's views on consultants' past performance.*** In May 2006, in response to Audit's enquiry, the ArchSD informed Audit that:

- (a) the past performance records of the consultants were retrieved in the technical assessment stage for checking to ascertain if any consultant should be rejected due to his recent poor performance in other projects. It was revealed that no consultants tendering for the SIP consultancies were subject to suspension due to adverse reports issued. Hence all these consultants were eligible for the ranking assessment; and
- (b) the ranking assessment was conducted based on the technical submission and fee proposal of each consultant. At that time, the past performance of a consultant was not a factor for assessing his technical proposal. However, if there was evidence indicating that a consultant had done poorly in other projects at the time

---

**Note 7:** *Adverse reports were issued to some of the consultants during the past three-year period prior to the SIP Final Phase consultant selection exercise (see Table 2 in para. 2.18).*



of the consultant selection, this should be taken into consideration when assessing the ranking of the consultant. A poorly performed consultant should be rejected if the AACSB also endorsed this action.

2.18 ***Consultants' past performance prior to the selection exercise.*** Audit conducted an examination of the past performance records of the 23 consultants in the three years prior to the commencement of the selection exercise in early 2001. **Of the 23 consultants, Audit found that 6 consultants (26%) had received adverse reports during the said period (see Table 2).**

**Table 2**  
**Consultants with adverse reports**  
**prior to the selection exercise in early 2001**  
**(1998 – 2000)**

Consultant	Consultancies		Year and number of adverse report(s) issued			
	No. of consultancies undertaken	No. of consultancies with adverse report(s)	1998	1999	2000	Total
B	3	2	6	3	1 (4th Quarter)	<b>10</b>
F	3	1	–	1	2 (2nd Quarter) (3rd Quarter)	<b>3</b>
N	2	1	2	2	–	<b>4</b>
P	5	1	–	1	–	<b>1</b>
Q	6	1	–	–	1 (1st Quarter)	<b>1</b>
V	3	1	4	–	1 (1st Quarter)	<b>5</b>

Source: ArchSD records

Remarks: As stated in the assessment reports, the major reasons for issuing adverse reports to the consultants included unsatisfactory performance on aspects of organisation of works (Consultants B, F, N and V), methodology and analysis (Consultants B, N, P and V), adherence to procedures (Consultants N and Q), foresight (Consultants B, F and V), and application of professional knowledge (Consultants B, N, P and V).

2.19 **Audit considers that the responsible ArchSD staff should have provided the ArchSD CAP and the AACSB with information about the consultants' past performance (see Table 2) when recommending them for the SIP Final Phase consultancy assignments. It transpired that (as revealed in Table 1 in para. 2.13), in the SIP Final Phase consultancies, Consultants B, F, N and P were later found to have performed unsatisfactorily. They were suspended from bidding for consultancy assignments for a period of time.**

***Consultant selection procedures after SIP Final Phase consultants selection***

2.20 Under WBTC No. 28/2001 of December 2001 and the current ETWB Technical Circular (Works) No. 19/2004 of June 2004 (these circulars were issued after the award of the SIP Final Phase consultancies), the then Works Bureau and the ETWB promulgated that **past performance should be one of the quality criteria in the final selection of consultants** (Note 8). Therefore, after the issue of WBTC No. 28/2001 of December 2001, **the works department concerned should assess a consultant's past performance (Note 9) in both the shortlisting stage (see para. 2.7(a)) and the final selection stage.**

2.21 According to ETWB Technical Circular (Works) No. 19/2004:

- (a) the assessment panel shall assess a consultant, in both the shortlisting stage and the final selection stage, taking into account the consultant's past performance rating (indicated by the weighted average of the performance scores of the consultant over the immediate past three years); and
- (b) if serious default or non-performance of a consultant has been made known to the assessment panel, it shall carefully consider whether the proposals of this consultant should be further processed, although the consultant has not been suspended from bidding. If the assessment panel decides not to further process the bid of such a consultant, it should seek endorsement from the relevant consultants selection board on the decision before continuing with the consultant selection exercise.

---

**Note 8:** *WBTC No. 28/2001 was superseded by ETWB Technical Circular (Works) No. 20/2003, which was subsequently superseded by the current ETWB Technical Circular (Works) No. 19/2004. The requirement to take into consideration consultants' past performance in selection exercises remained unchanged in these circulars.*

**Note 9:** *The works department concerned should establish an assessment panel, chaired by a directorate officer with other pertinent officers as members, to discuss and agree on matters relating to AACSB submissions and consultant selections. In doing so, the department should assess the past performance of a consultant by making reference to the consultant's performance reports in the immediate past three years.*

### **Audit recommendation**

2.22      **Audit has recommended that the Director of Architectural Services should remind ArchSD staff that, in accordance with ETWB Technical Circular (Works) No. 19/2004, in recommending consultants for selection, they should provide the ArchSD CAP and the AACSB with information incorporating the consultants' past performance (see paras. 2.19 to 2.21).**

### **Response from the Administration**

2.23      The **Director of Architectural Services** accepts the audit recommendation in paragraph 2.22. He has said that the ArchSD has been following, and will continue to follow, the rules established in the Technical Circulars or the AACSB Handbook to ensure a fair and transparent process in the selection of consultants for government projects.

## **PART 3: REMUNERATION OF CONSULTANTS**

3.1 This PART examines the remuneration of consultants for the SIP Final Phase works.

### **Basis of consultancy fees**

#### ***ArchSD methods of remunerating consultants***

3.2 The ArchSD has three main methods of remunerating consultants, namely:

- (a) ***Percentage-of-value-of-works method.*** By this method, consultants are remunerated according to the value of works managed under the consultancy at the agreed fee percentages;
- (b) ***Lump-sum-fee method.*** By this method, consultants are remunerated on a lump-sum fee independent of the value of works. This method would be used where the scope and duration of the services could be clearly defined; and
- (c) ***Time-charge method.*** By this method, consultants are remunerated according to the time spent by them at the agreed rates.

#### ***Methods of remunerating SIP Final Phase consultants***

3.3 For the SIP Final Phase consultants, the AACSB decided to remunerate them by:

- (a) ***the percentage-of-value-of-works method*** for the lead consultants and the QS consultants; and
- (b) ***the lump-sum-fee method*** for the project management consultant.

3.4 In the consultancy agreements for the lead consultants and QS consultants, it was stated that:

- (a) the remuneration of the consultant should be on the basis of a percentage of the appropriate value of the works; and
- (b) the appropriate value of the works should be the agreed final-account value of the construction works to be managed under the agreement.

## Estimated value of works

### *Budget ceiling on SIP works*

3.5 In January 2001, in a paper submitted to the Public Works Subcommittee (PWSC) of the Legislative Council for engaging consultants to carry out pre-construction works for the SIP Final Phase, the Administration informed the PWSC that:

- (a) it would carry out site investigations and feasibility studies for 342 schools (118 secondary, 184 primary and 40 special schools) in the SIP Final Phase to ascertain which schools could proceed to the detailed-design and contract-documentation stages;
- (b) based on the experience in the earlier SIP phases, it was estimated that about 85% of the 342 schools would be able to proceed to the detailed-design stage after the feasibility studies; and
- (c) it proposed to upgrade the facilities of each school within a budget ceiling set at 42% of the average cost of a new school of the same type and size. For example, the budget ceiling was \$36.5 million (inclusive of consultancy fees and furniture and equipment cost) for a primary school with 30 classrooms.

3.6 On 21 February 2001, the ArchSD informed the AACSB that:

- (a) based on the budget ceiling stated in the PWSC paper, the estimated average SIP construction cost (hereinafter referred to as the SIP cost) of each school was \$30.3 million (excluding consultancy fees and contingency costs); and
- (b) of the 342 schools in the SIP Final Phase, it was estimated that 52 schools (Note 10) would opt for the self-delivery mode (see para. 1.6(c)). The works for the remaining 290 schools would be under the management of the ArchSD.

3.7 Based on the budget ceiling of 42% of the average cost of a new school, in February 2001, the ArchSD estimated that the average SIP budget ceiling on each school was \$36.7 million, inclusive of the cost of \$6.4 million of consultancy fees, furniture and equipment and contingency. **Therefore, the net estimated average SIP cost was \$30.3 million for each school.** The estimation was based on the tender prices for the construction of new aided secondary schools, aided primary schools and special schools at that time.

---

**Note 10:** *Up to 30 June 2006, 51 schools had participated in the SIP Final Phase under the self-delivery mode.*

***Estimated value of works for 14 lead consultants***

3.8 In March 2001, when inviting prospective lead consultants to submit technical and fee proposals, the ArchSD informed them that:

- (a) 210 schools would be under the management of 6 lead consultants. (Eventually, Consultants A to F were appointed.) Each lead consultant would be managing not more than 35 schools. The total estimated SIP cost of these schools was not more than \$1,060.5 million (\$30.3 million  $\times$  35 schools); and
- (b) 80 schools would be under the management of 8 lead consultants. (Eventually, Consultants G to N were appointed.) Each lead consultant would be managing not more than 10 schools. The total estimated SIP cost of these schools was not more than \$303 million (\$30.3 million  $\times$  10 schools).

The total estimated value of works for the 14 lead consultants amounted to \$8,787 million (\$30.3 million  $\times$  290 schools).

***Estimated value of works for 8 QS consultants***

3.9 In April 2001, in response to the ArchSD's enquiry, the EMB confirmed that only 278 schools (instead of 290 schools – see para. 3.6(b)) would be under the management of the ArchSD. In May 2001, when inviting prospective QS consultants to submit technical and fee proposals, the ArchSD informed them that:

- (a) the estimated average SIP cost of each school was \$30 million (Note 11);
- (b) 152 schools would be under the management of 2 QS consultants. (Eventually, Consultants P and Q were appointed.) Each QS consultant would be managing not more than 76 schools. The total estimated SIP cost of these schools was not more than \$2,300 million (\$30 million  $\times$  76 schools = \$2,280 million, say \$2,300 million);
- (c) 86 schools would be under the management of 2 QS consultants. (Eventually, Consultants R and S were appointed.) Each QS consultant would be managing not more than 43 schools. The total estimated SIP cost of these schools was not more than \$1,300 million (\$30 million  $\times$  43 schools = \$1,290 million, say \$1,300 million); and

---

**Note 11:** *This sum is slightly less than the \$30.3 million in paragraph 3.7, as a result of rounding.*

- (d) 40 schools would be under the management of 4 QS consultants. (Eventually, Consultants T to W were appointed.) Each QS consultant would be managing not more than 10 schools. The total estimated SIP cost of these schools was not more than \$300 million (\$30 million  $\times$  10 schools).

The total estimated value of works for the 8 QS consultants amounted to \$8,340 million (\$30 million  $\times$  278 schools).

### ***Consultants' fee percentages***

3.10 Between May and July 2001, the ArchSD awarded the consultancies to 14 lead consultants and 8 QS consultants taking into account, among other things, the fee percentages quoted in their tenders (see Tables 3 and 4).

**Table 3**  
**Lead consultants' fee percentages**

<b>Consultant</b>	<b>On cost of new building (%)</b>	<b>On cost of renovation works (%)</b>
A	5.93	5.93
B	5.00	5.00
C	4.20	4.20
D	8.15	9.10
E	5.28	5.33
F	5.85	5.70
G	5.80	5.20
H	4.85	4.85
I	6.30	6.80
J	6.10	7.10
K	6.45	7.15
L	6.55	7.05
M	5.58	5.58
N	4.30	6.10

*Source: ArchSD records*

**Table 4**  
**QS consultants' fee percentages**

<b>Consultant</b>	<b>On cost of construction works (%)</b>
P	0.59
Q	0.68
R	0.69
S	0.77
T	0.65
U	0.88
V	1.20
W	0.78

*Source: ArchSD records*

### **Updated value of works**

3.11 As at 30 June 2006, the total estimated SIP Final Phase construction cost was \$4,344 million. Audit noted that this amount was only:

- (a) 49% of the original total estimated value of works of \$8,787 million (see para. 3.8) indicated in the 14 lead consultancies; and
- (b) 52% of the original total estimated value of works of \$8,340 million (see para. 3.9) indicated in the 8 QS consultancies.

3.12 In August 2006, the ArchSD informed Audit that there were two main reasons for the significant reduction in the value of works, namely:

- (a) as informed by the EMB, some schools were removed from the SIP administered by the ArchSD, as follows:
  - (i) of the 290 schools originally included in the lead consultancies (see para. 3.8), 102 schools (35%) were later removed from the programme; and



- (ii) of the 278 schools originally included in the QS consultancies (see para. 3.9), 90 schools (32%) were later removed from the programme; and
- (b) from 2001 to mid-2003, the related tender price index had fallen by 16.1%.

## **Consultancy fee adjustments**

### ***Fee adjustment for lead and QS consultants***

3.13 Between 2001 and 2003, the lead consultants and the QS consultants notified the ArchSD of their intention to claim for adjustment of fees due to the substantial reduction in the value of works over the period. They said that they would have stated higher fee percentages in their tender submissions if the lower value of works had been known.

3.14 Between October and December 2003, taking legal advice into account, the ArchSD negotiated with the consultants and offered them a set of adjustment factors to be applied to the consultants' contract fee percentages for the full and final settlement of their claims (Note 12). The adjustment ranged from no increase to increasing the consultancy fee by 28%. By the end of 2005, all the lead consultants and QS consultants had accepted the ArchSD's fee-adjustment offers. The ArchSD estimated that, subject to the final-account value of the works, the upward adjustment of consultancy fees would amount to:

- (a) \$22 million for the 14 lead consultants; and
- (b) \$1.8 million for the 8 QS consultants.

### ***Fee adjustment for project management consultant***

3.15 In November 2003, as a result of the substantial reduction in the number of schools in the SIP Final Phase (see para. 3.12(a)), the project management consultant agreed with the ArchSD to reduce the lump sum fee by 7% (i.e. \$4.2 million).

---

**Note 12:** *A claim from one of the QS consultants had been settled in 2002.*

## **Audit observations**

### ***Need to provide better estimation of value of works to tenderers***

3.16 As at 30 June 2006, the total estimated SIP Final Phase construction cost was \$4,344 million. This amount was:

- (a) \$4,443 million (51%) less than the original total estimated value of works of \$8,787 million for the lead consultants; and
- (b) \$3,996 million (48%) less than the original total estimated value of works of \$8,340 million for the QS consultants.

3.17 **Audit found that the total estimated value of works could have been more accurately assessed if the ArchSD had taken into account the following factors before tendering of the consultancies:**

- (a) **the updated information on the number of participating schools (see paras. 3.18 to 3.20);**
- (b) **the lower cost of the SIP works for the rural schools (see paras. 3.21 to 3.26); and**
- (c) **about 85% of the schools would proceed to the construction stage (see paras. 3.27 to 3.30).**

### ***Updated information on number of participating schools***

3.18 On 20 February 2001, the EMB informed the ArchSD that 251 schools would be managed by the ArchSD in the SIP Final Phase, whilst 27 schools had not yet decided whether they would opt for the self-delivery mode or use the ArchSD's consultants. Audit noted that, before the issue of the tender invitation for the lead consultancies on 2 March 2001, the EMB had informed the ArchSD that at most 278 schools (251 schools + 27 schools) would be under the management of the ArchSD. On 18 April 2001, the EMB confirmed to the ArchSD that 278 schools opted for using the ArchSD's consultants.

3.19 In August 2006, the ArchSD informed Audit that:

- (a) for the lead consultancies, it was not able to update in time the number of schools in the tenders in March 2001; and

- (b) when preparing the tenders in May 2001 for the QS consultancies, the basis was 278 participating schools.

**3.20 Audit considers that there was scope for improvement. In the event that the ArchSD had uncertainties about the number of schools under its management, it should have sought clarification from the EMB before tendering of the consultancies in early March 2001.**

***Lower cost of SIP works for rural schools***

3.21 In July 2000, the EMB informed the ArchSD that:

- (a) the budget ceiling on a small-scale primary school with nine classrooms was about \$15 million;
- (b) there were about 40 small-scale primary schools (mostly rural schools), each with nine or fewer classrooms; and
- (c) given their small sizes and limited facilities as compared to the full range of facilities normally provided to a standard-size school, the EMB would work out a cost ceiling on the SIP works for these small-scale schools on a pro-rata basis.

3.22 Audit noted that, in the tender documents issued on 2 March 2001 for the lead consultancies and on 4 May 2001 for the QS consultancies, the ArchSD included therein estimates of value of works based on the estimated average budget ceiling of \$36.7 million (Note 13) on each school. This amount was close to the budget ceiling of \$36.5 million on a 30-classroom primary school, as stated in the PWSC paper of January 2001 (see para. 3.5(c)).

3.23 On 4 April 2001, in a memo issued to the EMB, the ArchSD:

- (a) said it had noted that, prior to the briefing sessions given to the schools in February 2001, the EMB had issued a letter to all the schools indicating the individual budget ceiling on each school based on the number of existing registered classrooms; and

---

**Note 13:** *The estimate was based on the school construction costs of aided primary schools, aided secondary schools and special schools at that time.*

- (b) requested the EMB to provide urgently the budget ceiling on each school in the SIP Final Phase.

3.24 On 18 April 2001, the EMB advised the ArchSD that:

- (a) the total budget ceiling on the 278 schools was \$8,134 million; and
- (b) of the 278 schools, 69 were rural primary schools. The budget ceiling on each rural school was \$15 million.

3.25 In August 2006, the ArchSD informed Audit that, as the EMB had only confirmed the budget ceilings on the schools involved on 18 April 2001:

- (a) for the lead consultancies, it was not possible to incorporate the information in the tenders which had been returned on 22 March 2001; and
- (b) for the QS consultancies, although the tender invitation was issued in May 2001, the tender documents had been prepared which were similar to those for the lead consultancies. It would have been chaotic if the budget ceilings on the schools had been revised in the tender documents.

3.26 **Audit considers that there was scope for improvement. If the ArchSD had sought confirmation from the EMB on the number of small-scale rural schools involved in the SIP Final Phase before inviting tenders for the consultancies in early March 2001, the ArchSD's estimates of the value of works for the lead consultancies and those for the QS consultancies could have been made more accurate (i.e. reductions of 13% and 14% for the lead consultancies and QS consultancies respectively).**

***About 85% of schools would proceed to construction stage***

3.27 In the PWSC paper of January 2001, the Administration informed the Legislative Council that, based on the experience in the earlier SIP phases, it was estimated that about 85% of the schools would be able to proceed to the detailed-design stage after the feasibility studies (see para. 3.5(b)). However, as far as Audit could ascertain, there were no records showing that the ArchSD had taken into account this factor in preparing the cost estimate of the SIP Final Phase.

3.28 In August 2006, the ArchSD informed Audit that:

- (a) it was a common practice to allow 10% to 20% contingencies in the cost estimate to allow for unforeseen problems in implementing projects;
- (b) consultants would not be entitled to claim for fee adjustments if the variation of the final value of works fell within the above percentage range; and
- (c) it would be misleading to inform the consultants that an estimated 15% of the schools would not proceed to the detailed-design stage, before the completion of the feasibility studies.

3.29 Audit noted that, during the feasibility studies between mid-2001 and mid-2003, 57 schools were removed from the SIP Final Phase. These comprised:

- (a) 4 schools which were found not feasible for the SIP works; and
- (b) 53 schools as informed by the EMB.

3.30 **Audit considers that there was scope for improvement. There was merit for the ArchSD to take into account the estimated number of schools that would proceed to the construction stage in estimating the value of works in the consultancies. This could have reduced the chances of the consultants lodging subsequent claims due to a significant reduction in the value of the works (see para. 3.13).**

***ArchSD's operational instruction***

3.31 As laid down in the ArchSD Operational Instruction No. 3/93 revised in June 2000:

- (a) it is the ArchSD's objective to maintain the accuracy of estimates prepared for the PWSC submissions and those prepared prior to the invitation of tenders; and
- (b) in preparing project estimates, ArchSD staff are required to ensure that the latest project information is considered.

**Audit considers that the ArchSD should have taken into account the factors in paragraphs 3.18 to 3.30 so as to estimate more accurately the value of works in the tender documents of the SIP Final Phase consultancies.**

## **Audit recommendations**

3.32 **Audit has recommended that, in estimating the value of works in consultancy tender documents, the Director of Architectural Services should:**

- (a) **take measures to ensure that the estimates are prepared as accurately as possible by taking into account all major factors, such as:**
  - (i) **the latest information provided by client departments regarding the number of participating project units (see paras. 3.18 to 3.20);**
  - (ii) **the size (e.g. the number of classrooms in a school) of different project units (see paras. 3.21 to 3.26); and**
  - (iii) **the number of project units (e.g. number of schools) that would proceed to the construction stage after the feasibility study (see paras. 3.27 to 3.30); and**
- (b) **confirm the accuracy of the ArchSD's estimates with client departments (see para. 3.31).**

## **Response from the Administration**

3.33 The **Director of Architectural Services** accepts the audit recommendations in paragraph 3.32. He has said that:

- (a) the ArchSD agrees that there is scope for improvement in working out estimates of value of works while endeavouring to meet the tight time frame of project implementation; and
- (b) in this case the confirmed budget ceilings on the schools concerned were not available before the tendering of the lead consultancies.

## **Fee-adjustment mechanism for change in value of works**

### ***ArchSD's guidelines before award of SIP Final Phase consultancies***

3.34 As laid down in the 2001 AACSB Handbook, under the percentage-of-value-of-works remuneration method, if a percentage scale (i.e. different fee percentages for different ranges of works value) was to be used for remunerating consultants, the ArchSD should adopt a mechanism allowing for an adjustment of the consultancy-fee percentages which reduced inversely in proportion to the cost of works.

***ArchSD's guidelines after award of SIP Final Phase consultancies***

3.35 In January 2002, in view of the claims from the consultants for adjustment of fees due to the substantial reduction in the value of works, the ArchSD proposed that the Schedule of Fees in future consultancy tender documents should be revised to allow for a mechanism for adjustment of fees for different pre-determined ranges of value of works. A pre-fixed percentage (in addition to the fee percentage quoted by a consultant) would be used to adjust the fee percentage if the actual value of works fell below a certain range. In June 2002, the ArchSD used this mechanism for adjustment of fees for remunerating consultants in six QS consultancies for works in 19 cooked food centres and markets for the Food and Environmental Hygiene Department.

3.36 In September 2003, as proposed by the ArchSD, a detailed mechanism for adjustment of consultancy fees for inclusion in future consultancy tender documents was promulgated in the AACSB Handbook, as follows:

- (a) if the value of works fell into any of the pre-determined ranges, the fee (calculated based on the consultancy-fee percentage) should be adjusted by multiplying it by the relevant pre-fixed adjustment factor;
- (b) the pre-fixed adjustment factors were to be provided by the ArchSD project officer;
- (c) the adjustment factors should be based on the recognised scale of fees of accepted professional bodies for the relevant disciplines; and
- (d) no adjustment should be allowed where the change of value was within plus or minus 20 per cent of the total estimated value of the works at the time of invitation for fee-proposal submissions.

3.37 In May 2006, in response to Audit's enquiry, the ArchSD said that it expected that the fee-adjustment mechanism would help avoid claims from consultants if the actual value of works differed from the project estimate at the time of inviting tenders for the consultancies.

## Audit observations

### *Need to adopt fee-adjustment mechanism*

3.38 In the tender documents for the SIP Final Phase consultancies, it was stated that the remuneration of each lead consultant and QS consultant should be on the basis of a percentage of the appropriate value of the works (see para. 3.4(a)). Accordingly, the ArchSD awarded the consultancies to 14 lead consultants and 8 QS consultants based on, among other things, the fee percentages they submitted. Notwithstanding that there was a guideline in the 2001 AACSB Handbook on a fee-adjustment mechanism for the percentage-of-value-of-works method (see para. 3.34), Audit noted that the ArchSD did not incorporate such a mechanism into the said tender documents. Subsequently, due to the substantial reduction in the value of works, the consultants claimed for adjustment of fees. After negotiations, the ArchSD made adjustments to the fee percentages, resulting in an upward adjustment of the consultancy fees (see para. 3.14).

3.39 Audit considers that if the ArchSD had incorporated the fee-adjustment mechanism in the tender documents for the SIP Final Phase consultancies, the likelihood of the consultants claiming for adjustment of fees due to the reduction in the value of works might have been less. **Audit considers that there was merit in incorporating the fee-adjustment mechanism into the tender documents because:**

- (a) **ArchSD staff resources and costs in handling consultants' claims could be minimised; and**
- (b) **consultants (including consultants not appointed) would have an opportunity to submit bids based on the pre-fixed adjustment factors under the fee-adjustment mechanism.**

3.40 **Audit noted that the guideline in the 2001 AACSB Handbook (see para. 3.34) on a fee-adjustment mechanism was not as clear as that promulgated in 2003 in the AACSB Handbook (see para. 3.36).** This could have resulted in not including the fee-adjustment mechanism in the SIP Final Phase consultancies. The ArchSD had promulgated a clearer fee-adjustment mechanism in 2003.

3.41 As stated in paragraph 3.31, the ArchSD should endeavour to make the estimate of the value of works as accurate as possible by taking into account all relevant information available at the time of the estimation. **However, there may be factors arising subsequent to the tendering which change the value of works (see para. 3.12). Under the circumstances, the fee-adjustment mechanism would provide a basis for assessing a reasonable remuneration for the consultants without having to go through the claim process.**



**Audit recommendations**

- 3.42      **Audit has recommended that the Director of Architectural Services should:**
- (a)      **remind ArchSD staff to submit clear administrative guidelines to the AACSB for consideration and for promulgation in the AACSB Handbook in future (see para. 3.40); and**
  - (b)      **remind ArchSD staff to comply with the requirement promulgated in 2003 in the AACSB Handbook that a fee-adjustment mechanism should be incorporated into the tender documents for consultancies remunerated on the percentage-of-value-of-works basis (see paras. 3.40 and 3.41).**

**Response from the Administration**

3.43      The **Director of Architectural Services** accepts the audit recommendations in paragraph 3.42. He has said that:

- (a)      the ArchSD agrees that the inclusion of the fee-adjustment mechanism in tender documents will help adjust more efficiently the consultancy fees in case of changes in the value of works. This would avoid spending resources in the claim process. However, the fee-adjustment mechanism may not be effective if the value of works of a project changes significantly as is in the SIP Final Phase; and
- (b)      the requirement for the inclusion of a fee-adjustment mechanism in tender documents for consultancies remunerated on the percentage-of-value-of-works basis was promulgated in 2003 in the AACSB Handbook. The ArchSD has complied with this requirement since then.

## **PART 4: MONITORING OF CONSULTANCY SERVICES**

4.1 This PART examines the ArchSD's monitoring of the SIP Final Phase consultancy services.

### **Mechanism for monitoring consultancy services**

#### ***General Conditions of Employment of consultancy agreement***

4.2 The General Conditions of Employment of the consultancy agreement for the SIP Final Phase stated that the consultant should:

- (a) exercise all reasonable professional skill, care and diligence in the performance of the consultancy services;
- (b) follow the Employer's procedures as far as possible and obtain the prior approval in writing of the Director's Representative (DR – Note 14) for major departures from such procedures. The DR should issue to the consultant general instructions on procedures and supply such additional information and standard government printed forms as might be required (see para. 4.3(a));
- (c) report to the DR any errors, omissions and shortcomings of whatsoever nature of which the consultant became aware in the performance of the services; and
- (d) indemnify the ArchSD against all claims, damages, losses or expenses arising out of or resulting from any negligence in or about the conduct of and performance by the consultant.

#### ***Monitoring guidelines in 2001 AACSB Handbook***

4.3 As laid down in the 2001 AACSB Handbook (applicable at the time of selecting the SIP Final Phase consultants):

- (a) at the commencement of a consultancy agreement, the DR should give the consultant an up-to-date list of all relevant manuals, instructions, reports, policy guidelines, design standards, technical circulars and other technical

---

**Note 14:** *The DR is the person designated in the consultancy brief by the Employer for managing the consultant. The DR is authorised by the Employer to give instructions to the consultant.*

requirements, and provide the consultant with such documents if he did not have them;

- (b) the DR was responsible for ensuring that the consultant complied fully with the terms and conditions of the consultancy agreement, and with all procedures and requirements relevant to the works;
- (c) ArchSD staff needed to carry out different types of checking of the consultant's work during different works stages according to their specialty (architectural, building services, structural engineering and QS). The levels of checking included:
  - (i) **“Face check”**. This referred to a broad but not detailed check;
  - (ii) **“Spot check”**. This referred to a detailed check of specific areas or items selected by the ArchSD staff; and
  - (iii) **“Full check”**. This referred to a complete and detailed check covering the whole of the consultant's work in specific tasks; and
- (d) if deficiencies were observed, the ArchSD staff should step up the level of checking, such as from a face check to a spot check.

## **Tender documentation for SIP Final Phase works**

### ***Lump sum specifications and drawings contract***

4.4 The works contracts in the SIP Final Phase were “lump sum specifications and drawings” contracts (Note 15). Under such contracts, the Employer may specify that the extent of works of some items is tentative. The Employer may provide the provisional quantities of such items which may be subject to re-measurement during the carrying out of the works. In the General Conditions of Contract for Building Works for such a SIP works contract, it was stated that:

- (a) the quality and quantity of work included in the contract were deemed to be those shown on the contract drawings or described in the specifications; and
- (b) the contractor should provide a fully priced and detailed Schedule of Rates with approximate quantities showing the build-up of the tender.

---

**Note 15:** *Lump sum specifications and drawings contracts are mainly used for minor building projects and repair works where the measurements are simple and easily defined.*

4.5 In the tender documents for the SIP Final Phase works contracts, the Employer included provisional quantities for some works items (e.g. piling works) in the Schedule of Rates for pricing by the tenderers.

### ***Roles of consultants in tender documentation stage***

4.6 In the tender documentation stage, the lead consultant was responsible for checking and verifying all designs and drawings, and the QS consultant was responsible for preparing the tender documents with measurement of the works items. Following the industry practice of the Association of Consultant Quantity Surveyors, the QS consultant would adopt a bulk-checking procedure for verifying the measurement of the works items in the tender documents (see para. 4.13(a)).

4.7 According to the ArchSD, the bulk-checking procedure included:

- (a) read-over of the measurement of the works items a second time;
- (b) drawing up of summaries showing the total quantities of major works items; and
- (c) validating the total quantities against the quantities shown in the drawings or works items having well-recognised quantity ratios.

### **Measurement errors in two works contracts**

4.8 In early 2004, a QS consultant (Consultant P) informed the ArchSD that he had made measurement errors in the contract documents of two SIP works contracts, namely Contract I and Contract II. In these two cases, Consultant P had significantly understated the quantity of some works items in the contract documents. The contractors concerned had stated higher rates for such items in the contracts. In view of the measurement errors, the ArchSD instructed Consultant P to negotiate with the contractors with a view to reducing the rates. Up to August 2006:

- (a) for Contract I, the negotiations had not yet been completed; and
- (b) for Contract II, the ArchSD had agreed with the contractor to revise the rates for the works items to reflect the actual quantities involved.

### ***Regulating actions***

4.9 In the light of the errors made in Contracts I and II, the ArchSD took the following regulating actions against Consultant P:

- (a) in February 2004, the ArchSD issued to him an adverse special report for the measurement error in Contract I. He was suspended from bidding for new consultancies for six months from February 2004; and
- (b) in April 2004, the ArchSD issued to him an adverse quarterly performance report for the measurement error in Contract II. He was suspended from bidding for new consultancies for six months from May 2004. The suspension period was imposed concurrently with that in (a).

## **Implementation of improvement measures**

### ***ArchSD review of the error cases***

4.10 In March 2004, in view of the measurement errors in the two contracts (see para. 4.8), the Performance Management Committee (PMC – Note 16) of the ArchSD asked the QS Branch of the ArchSD to conduct a review of the two cases with a view to suggesting improvement measures. In June 2004, the QS Branch submitted a report to the PMC, stating that Consultant P did not:

- (a) adopt the industry practice of conducting bulk-checking of the measurement of the works items included in the tender documents (see para. 4.6); and
- (b) report the measurement error in Contract I to the ArchSD at the earliest possible time. Had he done so, the ArchSD could have taken timely steps to minimise the damage.

4.11 In June 2004, the PMC endorsed the following improvement measures proposed by the QS Branch:

- (a) ***Bulk-checking.*** The bulk-checking procedure should be implemented as a mandatory practice for QS consultants; and
- (b) ***Reporting of errors.*** The AACSB Handbook and the quality manual should be updated to include provisions that would require all QS consultants to immediately report Bills of Quantities (BQ) errors and omissions as soon as they became known, failing which action would be taken against the consultants concerned.

---

**Note 16:** *The PMC is chaired by the Deputy Director of Architectural Services with members comprising Heads of Branches of the ArchSD. It is responsible for developing, maintaining and reviewing systems to monitor and evaluate the performance of consultants and contractors.*

***Improvement measures in QS Branch Technical Manual***

4.12 In January 2006, the ArchSD incorporated the following new measures in the QS Branch Technical Manual:

- (a) ***Bulk-checking.*** At the documentation and tendering stage, in preparing the BQ or specifications, to avoid errors in quantities, the consultant should carry out bulk-checking of quantities of major items against information shown on drawings or specifications, or against the quantities of other related items (i.e. items with quantities comparable, or bearing a well recognised ratio, to the quantities of the items being checked); and
- (b) ***Reporting of errors.*** At the construction stage, in preparing the financial statement for the works, the consultant should assess cost implications of the anticipated variations, possible claims and errors identified in the BQ. The consultant should record the receipt of the contractor's claim, including any claim relating to errors identified in the BQ.

***ArchSD's views on improvement measures***

4.13 In March and June 2006, in response to Audit's enquiry, the ArchSD informed Audit that:

- (a) in December 2004, at a meeting between the ArchSD and the Association of Consultant Quantity Surveyors, the ArchSD urged the Association to remind its members to carry out bulk-checking of the quantities of major items in the tender documents against information shown on drawings and specifications, and against the quantities of other related items. In response, the Association said that bulk-checking was the standard practice of all QS consultants and agreed to draw its members' attention to this issue;
- (b) thereafter, the ArchSD had discussions with its QS consultants about bulk-checking and other better alternatives on several occasions;
- (c) towards the end of 2005, in a monthly QS Branch Directorate Meeting, it was concluded that there was no better alternative method that could replace bulk-checking;
- (d) in January 2006, the ArchSD incorporated improvement measures on bulk-checking and reporting of errors in the QS Branch Technical Manual (see para. 4.12);

- (e) consultants should be aware that bulk-checking was a mandatory step in tender document preparation. They could use the Consultant Information Centre Website to gain access to new and updated information regarding manuals and handbooks; and
- (f) bulk-checking had become one of the items for review in the ArchSD's annual assessment of its QS consultants. In May 2006, the QS Branch found that the QS consultants had carried out bulk-checking after the preparation of BQs.

## **Audit observations**

### ***Need to implement the bulk-checking procedure on a timely basis***

4.14 The ArchSD review in June 2004 found that Consultant P had not adopted the industry practice of conducting bulk-checking (see para. 4.10(a)). **However, Audit noted that the bulk-checking procedure was only made mandatory (by including it in the QS Branch Technical Manual) in January 2006 (see para. 4.12(a)). This was 18 months after the PMC's endorsement of the improvement measure in June 2004 (see para. 4.11(a)).**

### ***Need to require consultants to immediately report errors***

4.15 The ArchSD review in June 2004 also found that Consultant P had not reported the measurement error in Contract I to the ArchSD at the earliest possible time (see para. 4.10(b)). The ArchSD considered that if the error had been reported in time, the ArchSD could have taken timely steps to minimise possible additional payments to the contractor. In June 2004, the PMC endorsed an improvement measure to require all QS consultants to immediately report BQ errors and omissions to the ArchSD (see para. 4.11(b)). **Audit noted that, up to June 2006, the ArchSD had not implemented this improvement measure. Audit considers that the ArchSD's measure in paragraph 4.12(b) does not specifically address this issue.**

### ***Need to adopt a risk-based approach to checking consultants' work***

4.16 In March 2004, in response to the EMB's enquiry about the measurement errors made by Consultant P, the ArchSD informed the EMB that the ArchSD would step up the checking of QS consultants' work. However, in the QS Branch's review report submitted to the PMC in June 2004 (see para. 4.10), it was stated that:

- (a) there was no evidence to suggest that the existing ArchSD monitoring, vetting and approval procedures were not adequate; and

- (b) until there was evidence suggesting otherwise, further tightening of the monitoring and vetting procedures was considered not necessary.

4.17 As set out in QS Branch Practice Note No. 24 of August 2004, the ArchSD would conduct “face checks” (see para. 4.3(c)) of BQ items in the tender documentation stage. In addition, the AACSB Handbook stipulated that the extent of supervision and checking of consultancy services would vary according to the size, scale, sensitivity and complexity of the service.

4.18 **As errors made in tender documentation may lead to additional payments by the Government, Audit considers that the ArchSD should take measures to step up its monitoring of the work of consultants by adopting a risk-based approach, taking into account the frequency of the occurrence of material errors.**

### **Audit recommendations**

4.19 **Audit has recommended that the Director of Architectural Services should:**

- (a) **implement improvement measures (such as bulk-checking) on a timely basis (see para. 4.14);**
- (b) **expedite action to incorporate into the AACSB Handbook and the ArchSD quality manual the improvement measure that consultants are required to immediately report to ArchSD BQ errors and omissions as soon as they become known (see para. 4.15); and**
- (c) **step up the monitoring of consultants’ work by adopting a risk-based approach, taking into account the frequency of the occurrence of material errors (see para. 4.18).**

### **Response from the Administration**

4.20 The **Director of Architectural Services** accepts the audit recommendations in paragraph 4.19. He has said that the ArchSD will follow up on implementing the improvement measures on a timely basis in consultation with the industries where appropriate.



**Appendix A**  
(para. 2.10 refers)

**Selection of SIP Final Phase consultants**

<b>Consultant</b>	<b>Date of tender invitation</b>	<b>Date of approval by AACSB</b>		<b>Date of award of consultancy</b>
		<b>Technical assessment</b>	<b>Final selection (Note)</b>	
Lead consultants	2.3.2001	25.4.2001	27.4.2001	4.5.2001
Project management consultant	9.3.2001	10.5.2001	17.5.2001	8.6.2001
QS consultants	4.5.2001	12.6.2001	17.7.2001	31.7.2001

*Source: ArchSD records*

*Note: In the final selection, the fee proposals from tenderers would be considered.*

## **Appendix B**

### **Acronyms and abbreviations**

Audit	Audit Commission
AACSB	Architectural and Associated Consultants Selection Board
ArchSD	Architectural Services Department
BQ	Bills of Quantities
CAP	Consultants Appointments Panel
DR	Director's Representative
EMB	Education and Manpower Bureau
ETWB	Environment, Transport and Works Bureau
PMC	Performance Management Committee
PWSC	Public Works Subcommittee
QS	Quantity surveying
SIP	School Improvement Programme
WBTC	Works Bureau Technical Circular