The Parliament of the Commonwealth of Australia

AN EFFICIENT ORGANIZATION, OR, AN EFFICIENT AUDIT ?

Review of the Auditor-General's efficiency audit report into construction project management practised by the Department of Housing and Construction

Report from the House of Representatives
Standing Committee on Expenditure

February 1987

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Foreword

This report is a review of an efficiency audit by the Auditor-General on construction project management practised by the Department of Housing and Construction. The audit report examined two major projects, the National Acoustics laboratory and Ultrasonics Institute in Sydney and the Australian Defence Force Academy in Canberra.

The Department of Housing and Construction rejected the major audit recommendations and, in other cases, claimed to accept recommendations which it clearly rejected. The disdain with which the Department treated the Audit report flowed into its initial submission to the Committee and this, when added to the disagreements between auditor and auditee, increased significantly the complexity of the inquiry, as Members of the Sub-committee were then required to adjudicate on conflicting claims and to carry out analytical work which would normally be beyond the scope of this sort of review.

The results of our deliberations are summarised in the Findings and Recommendations and are detailed in the body of the Report. It is with regret that we have concluded that the quality of the Audit Report was inadequate, partly because the arguments in the audit report supporting the major recommendations were unconvincing, superficial and sometimes confusing. Furthermore, in a more serious vein, the Committee was disturbed that some of the evidence given by the Australian Audit Office to support statements in its report lacked any credibility.

It is to be hoped that both the Secretary to the Department of Housing and Construction and the Auditor-General will carefully note these observations.

The Sub-committee found it necessary to spend a considerable period of time sifting evidence and recording views. My thanks go to my fellow Sub-committee Members - John Langmore, Ross Free, Stephen Martin and Warwick Smith, and particularly the Expenditure Committee Chairman,

John Mountford, for their support.

The Sub-committee thanks those who made submissions to the inquiry and also thanks the Secretary of the Expenditure Committee, Phil Bergin and inquiry staff Malcolm Aldons and Ron Newton. It pays particular tribute to Malcolm Aldons who dedicated much of his time as Acting Secretary of the Expenditure Committee to resolving the conflicting positions that arose as a result of this inquiry.

Julian Beale, MP
Sub-committee Chairman
25 February 1987

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Chairman:	Mr J.G. Mountford, M.P.
Deputy Chairman:	Hon. I.B.C. Wilson, M.P.
Members:	Mr J.H. Beale, M.P. Mr R.J. Brown, M.P. Mr M.R. Cobb, M.P. Mr D.B. Cowan, M.P. Ms W.F. Fatin, M.P. Mr R.V. Free, M.P. Mr D.P.M. Hawker, M.P. Mrs R.J. Kelly, M.P.* Mr J.V. Langmore, M.P. Mr L.B. McLeay, M.P. Mr S.P. Martin, M.P. Mr D.W. Simmons, M.P. Mr P.N. Slipper, M.P. Mr W.L. Smith, M.P. (from 2.6.86) Mr C.W. Tuckey, M.P. (until 2.6.86)
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*The nominee of the Chairman of the Joint Committee of Public Accounts who, in accordance with clause (2) of the resolution of appointment of the Expenditure Committee, is a member of the Expenditure Committee.

Members of the Sub-Committee

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Secretary:	Mr M. E. Aldons (8.9.86 to 23.1.87) Mr P.F.Bergin (from 27.1.87)
Inquiry Staff:	Mr R. Newton Mr P. Ratas

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The Committee's findings relate to the major Audit recommendations the Department disagrees with and the recommendations will expect the Department to take necessary action on Audit recommendations, development of Audit recommendations by the Committee or other developments initiated solely by the Committee.

Findings

The Committee finds that:

1. In respect of Audit recommendation 4.8.7 on essentiality testing of client initiated variations not requiring additional funds, the Audit case is unconvincing because –

(a) the cost analysis is not related to the recommendation;

(b) no attempt has been made to assess the adequacy of existing procedures; and

(c) the total project approach described by the Department of Finance appears to be a sensible and simple approach for testing the essentiality of such variations.
(Paragraph 3.12)

2. In respect of Audit recommendations 3.9.4 and 4.8.11 on guidelines to contract variations, the Audit case is unconvincing because–

(a) Audit has failed to assess the adequacy of procedures used by the Department of Housing and Construction, and

(b) it is impractical to have a guidelines document that reaches encyclopaedic proportions as each human error is covered by a separate guideline.
(Paragraph 3.16)

3. In respect of Audit recommendations 3.9.5 on formalised and tighter controls for contract variations and recommendation 4.8.12 on the monitoring of variations against standards, the Audit case is both confusing and unconvincing because–

(a) one is uncertain about the need for 2 similar recommendations given a recommendation on essentiality testing and Audit's views of this testing undertaken by the Department of Finance;

(b) Audit has failed to assess the adequacy of the procedures used by the Department of Housing and Construction; and

(c) Audit has based its case on general impressions and thus has been unable to counter effectively the Department's response that recommendation 4.8.12 is not practical.
(Paragraph 3.23)

4. In respect of Audit recommendation 4.8.2 which asks the Department to assess the extent to which construction management (CM) has contributed to the cost increases of ADFA, the Committee having undertaken such an assessment concludes that–

(a) no useful purpose is served by a more detailed assessment because the relevant question is whether the selection of CM was the best option in the circumstances; and

(b) such an assessment (of CM's contribution to ADFA cost increases) is of limited value for future decision-making.
(Paragraph 4.13)

5. In respect of Audit recommendation 4.8.3 which requires choice of a particular delivery method to be preceded by evaluation of options which would take into account the comparative costs (administration) of each option, the Audit case is unconvincing because the AAO has failed to–

(a) recognise the difficulties of introducing unquantifiable benefits into comparative cost analysis;

(b) realise that factors other than identifiable costs may determine the choice of a particular delivery system; and

(c) counter effectively the Department's claim that the recommendation is not practical.
(Paragraph 4.17)

6. In respect of Audit recommendation 3.9.2 which asks for the evaluation of selective tendering, there is no need for the Department to do any further work on this recommendation because the Audit case is superficial and unconvincing.
(Paragraph 6.11)

Recommendations

The Committee recommends that:

1. In its annual report for the year ended 30 June 1987 the Department of Housing and Construction should–

(a) discuss the concept of post occupancy evaluations;

(b) describe the managerial processes used;

(c) identify the criteria to be applied in such evaluations; and

(d) more importantly, detail the effectiveness measures to be applied to each of the criteria.
(Paragraph 5.12)

2. In the interests of good management the Department of Housing and Construction should undertake reviews, not necessarily in-depth, of all major construction projects where there has been a significant lack of achievement in respect of timeliness, suitability or cost.
(Paragraph 5.14)

3. The Department of Housing and Construction review its response to Audit recommendation 4.8.4 on the calculation of construction management fees by examining the approach adopted by the National Capital Development Commission.
(Paragraph 7.10)

4. With regard to all Audit recommendations the Department of Housing and Construction has accepted and in respect of which action is incomplete, particularly recommendations 3.9.9, 4.8.14, 4.8.15, 4.8.22 and 4.8.23, the Department report progress that it has made in implementing these recommendations in its annual report for the year ended 30 June 1987 and in subsequent annual reports.
(Paragraph 8.5)

5. The Department of Housing and Construction undertake a post occupancy evaluation of NALUI which will, among other things, specify the causes for the 'real' cost increases and indicate, for each of the causes identified, whether the cost increase was within the control or influence of the Department.
(Paragraph 8.16)

6. The Department of Housing and Construction undertake a post occupancy evaluation of ADFA which will, among other things, explain the escalation/market influences figures provided to the Committee, specify the causes for the 'real' cost increases and indicate, for each of the causes identified, whether the cost increase was within the control or influence of the Department.
(Paragraph 8.21)

7. The Department of Housing and Construction (DHC) consult with the Department of Finance on the need to develop for major construction projects a *cost performance indicator that measures increases in 'real' costs* based on both contract price and limit of cost estimates (indexed where necessary); and if development of the indicator is accepted, DHC publish the relevant information in its annual reports and thereby show, for each major project and the total number of major projects completed for a particular year, the percentage increases in 'real' costs.
(Paragraph 8.30)

Chapter 1

Introduction

Background

1.1 This is the 8th review by the House of Representatives Standing Committee on Expenditure of an efficiency audit report of the Auditor-General and the 12th efficiency audit report the Committee has examined. The 6th review covered 5 efficiency audit reports into the Australian Taxation Office.

1.2 The inquiry/review report objectives of the Committee have remained unchanged from 1981 when the Committee reported on the Auditor-General's first efficiency audit report. The objectives are to:

- examine the responses of the audited organisation; and
- assess the substantive content of the Audit exercise and the quality of the efficiency audit report.

1.3 Examination of the responses of the audited organisation can be grouped into 3 broad categories. First, where the audited organisation agrees with Audit recommendations the Committee may not have to do much more than to check implementation. Second, where the audited organisation disagrees with recommendations the Committee could be placed in the position of stating which party has the stronger case. And finally, suggestions/recommendations made in an efficiency audit report can be developed by the Committee.

1.4 The Committee's report is a review of the Auditor-General's efficiency audit report on construction management practised by the Department of Housing and Construction (DHC).[1] The efficiency audit report (the EA report) examined the management by DHC of 2 major construction projects, namely, the National Acoustics Laboratory and Ultrasonics Institute (NALUI) at Chatswood, NSW, and the Australian Defence Force Academy (ADFA) at Campbell, ACT. The audit concentrated on administrative processes whose end product was a payment to or a claim upon a contractor or a construction manager. The audit also addressed DHC's approach to tendering systems and its review of project management performance. In broad terms the audit inquiries were directed towards assessing the quality of these processes and the extent to which they contributed to the efficiency and economy of Commonwealth outlays on the 2 projects. [2]

1.5 The EA report is presented in 4 chapters - introduction, major findings and recommendations, NALUI and ADFA. The second chapter (major findings and recommendations) which summarises the major features of the EA report can be sub-divided into 2 parts. In the first part this chapter shows that Audit examined the efficiency of DHC's administration procedures by concentrating on contract variations and choice/application of project delivery methods. Examination of these procedures led Audit to conclude that 'a recurring theme of the Report' is the need for standards, guidelines and manuals.[3] In the second part of the chapter on major findings and recommendations Audit assessed the quality of DHC's processes that review its operating procedures by concentrating on project review and tendering.

1.6 The results of the audit were applied to all major public works managed by DHC, defined as those with a limit of cost estimate (LOC) of $6 million or more, which is the current statutory limit for examination of public works by the Parliamentary Standing Committee on Public Works.[4] The Auditor-General informed the Committee that it was a reasonable expectation that 'the Department would take steps to ensure that its administration of future projects would be so managed as to avoid the deficiencies exposed in the two audited projects'.[5]

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[1]Report of the Auditor-General on an Efficiency Audit, Department of Housing and Construction - Construction Project Management: The National Acoustics Laboratory and Ultrasonics Institute and the Australian Defence Force Academy, November 1985, PP. 374/1985. Further references to this report will call it the EA report.

[2]EA report, paragraphs 1.1.1 and 1.1.2

[3]EA report, paragraph 2.6.2

[4]Department of the House of Representatives Annual Report 1985–86, PP. 253/1986, p.22

[5]Australian Audit Office (AAO) submission, Evidence p.228

1.7 The deficiencies that the EA report identified and exposed were, for the most part, not accepted as deficiencies by the Department of Housing and Construction. Rejection by DHC of the major Audit recommendations and the majority of the recommendations has required the Committee to undertake a comprehensive examination of both report and responses.

Responses to recommendations

1.8 Of the 42 Audit recommendations, DHC has rejected over 50%. (see Appendix III), including virtually all the major recommendations. Table 1.1 summarises DHC responses to Audit recommendations.

Table 1.1: DHC RESPONSES TO AUDIT RECOMMENDATIONS

Recommendations classified according to categories -	No. of recommendations which DHC -			Comments
	Accepts	Rejects	Total	
Contract variations	5	5	10	Major recommendations rejected
Project delivery	0	2	2	-
Project review	1	3	4	-
Selective tendering	1	0	1	Acceptance inconsequential
Other	13	12	25	-
Total	20(a)	22(b)	42(c)	

Notes: (a) includes 6 recommendations implementation of which would be difficult to monitor and 3 recommendations which DHC, in accepting, implies it is already doing what Audit asks it to do.
(b) includes 11 recommendations interpreted as being rejected.
(c) excludes recommendation 4.8.6 of the EA report.

Source: See Appendix 1.

1.9 Appendix 1 contains the detail of the Audit recommendations, the DHC response and, where appropriate, Committee comment which interprets the response as being accepted or rejected. Of the 20 recommendations accepted by DHC, the implementation of 6 are difficult to monitor. For example, Audit asks DHC to pursue with greater vigour the recovery of costs associated with errors and omissions of the Department's consultants. While the Committee does not dispute the value of such a recommendation it points out that it may be difficult to check whether this recommendation has been implemented.

1.10 The inadequate quality of some DHC responses has required the Committee to interpret these responses and in some cases to classify a response as a rejection although DHC has 'accepted' the recommendation. The clearest example of this is the Audit recommendation on progress payments. The recommendation (3.9.12), the DHC response and the Committee comment are as follows:

Recommendation :	In the interests of improving control over progress payments consideration should be given to introducing smaller work categories.
Response :	Accepted - but introduction of smaller work categories not considered to be cost effective.
Comment :	Acceptance of this recommendation is clearly misleading because acceptance relates only to DHC 'consideration' of this recommendation when its application has been rejected.

1.11 The Committee's examination of the responses of the audited organisation (see paragraph 1.3) has been made unnecessarily difficult because of the diffuse nature of DHC responses. The Department's responses were scattered in its initial submission (dated 18 August 1986) and the Committee had to give DHC a consolidation prepared by the Committee for DHC to check.[6] Even after this there have been difficulties in identifying the nature of the response, demonstrated amply in Appendix 1. The Committee believes that DHC's evasiveness is the product of bureaucratic politics in that the Department did not want to sour too much its relations with the Australian Audit Office (AAO) and thus adopted the pretense of 'accepting' recommendations. This approach has resulted in time consuming work by the Committee and is no credit to an organisation which prides itself on its professionalism.

Structure of report

1.12 The remaining sections of this report will examine, mostly but not solely, the Audit recommendations DHC disagrees with in the major areas

[6] Evidence, pp.78, 125

identified in the second chapter of the EA report, as identified in paragraph 1.5. In addition there will be another section which picks up some of the Audit recommendations in the column 'Other' of Table 1.1.

1.13 This analysis will be preceded by a section on cost overruns. There have been significant increases in the apparent 'real' costs of both NALUI and ADFA which should have been known to Audit at the time it wrote its report. Information on cost overruns puts both the Audit and Committee reports into efficiency contexts. Ascertaining the reasons for the increases in apparent 'real' costs, and the extent to which DHC management was responsible for such increases, then becomes the overriding issue for those interested in the efficiency of DHC's management of major public works.

1.14 The analysis referred to in paragraph 1.12 will be followed by conclusions in which the Committee will assesses the quality of the EA report by commenting on its contribution to improving the efficiency of DHC project management and to public accountability. This final section of the Committee report will also attempt to round off comments on 'real' cost increases.

1.15 The conclusions the Committee reaches in its report will be represented by findings and recommendations. The findings will relate mostly to Audit recommendations DHC disagrees with and the recommendations will expect the Department to take necessary action on Audit recommendations, development of Audit recommendations by the Committee or other developments initiated solely by the Committee. Taken together, the recommendations attempt to increase either DHC's administrative efficiency or its public accountability.

1.16 Information on the conduct of the inquiry (submissions, witnesses, hearings) is at Appendix 2. The Committee sent its preliminary findings on a confidential basis to the AAO and the DHC and took in-camera evidence on these findings. Both organisations were told that the evidence would be published when the Committee's report is presented to the Parliament. It should be noted that these preliminary findings did not constitute a draft report. The purpose of that procedure was to give both the AAO and DHC the opportunity to respond to these findings so that the responses could be taken into consideration in the preparation of the Committee report.

Chapter 2

Cost Overruns

Background

2.1 At the commencement of the inquiry the Committee was interested in finding a way to cut through the mass of detail provided in the EA report and the submissions. The intention was to find out if there were realistic ways to evaluate the performance of management after a project has been completed and whether such work could be fitted into the development and use of performance indicators.[1]

2.2 In October 1985 the Minister for Finance announced the Government's intention to introduce program budgeting in all Commonwealth departments and budget-dependent agencies. The move to program budgeting is being made progressively with most departments and agencies expected to introduce program budgeting for the 1987–88 budgetary process. The Government has stated that the presentation of information in program format accords with the major recommendations of the 1979 report of the Expenditure Committee entitled 'Parliament and Public Expenditure'. One of the features of program budgeting will be a program statement for each program including indicators of program performance.[2]

2.3 Evaluation of management performance and the associated development of performance indicators has also interested the Committee because of significant increases in the apparent 'real' costs of NALUI and ADFA

[1] *Sub-committee chairman's opening statement*, Evidence, pp.80, 81.
[2] Portfolio Program Statements 1986-87, PP.249/1986,pp.iii, 1, 3.

which are out of kilter with the average cost performance of DHC on major construction projects for the period 1980–81 to 1985–86.[3]

2.4 Although Audit says that significant cost overruns were not the reason that attracted it to these 2 projects,[4] the EA report has some important references to cost escalation. The report stated that contract variations accounted for a significant portion of the 'real' increases in the costs of NALUI and ADFA and later used comparative figures of increases of the ADFA project (of over $25 million or a 51% increase on tender amount) to ask the Department to assess the extent to which construction management (a type of project delivery method) had contributed to this increase.[5]

NALUI and cost overruns

2.5 The EA report assisted indirectly in pointing the Committee in the direction of 'real' cost increases and, at the initiative of the Committee, DHC supplied a detailed financial reconciliation of the costs of the 2 projects. After piecing together the information in the EA report and that provided by DHC, the reasons for cost increases for NALUI are shown in Table 2.1.

Table 2.1: COST INCREASES FOR NALUI

Audit December 1984 $ m		DHC December 1984 $ m
12.0	a. Limit of cost (July 1980)	12.0
–	b. Indexation/market influences	3.7
6.1	c. Rise and fall	6.1
–	d. Increase in scope	0.1
–	e. Design additions	0.7
4.0	f. Variations	2.7
1.2	g. Prolongation claims	0.2
2.2	h. Balancing item	–
25.5	TOTAL	25.5

Sources: EA report and DHC submission, Evidence, p. 186.

[3]Major construction projects costing $2 million or more which was an earlier statutory limit for public works referred to the Public Works Committee.

[4]Evidence, pp.239, 240.

[5]EA report, paragraphs 2.4.1 and 4.2.8. – see paragraphs 4.1 and 4.2

2.6 The limit of cost estimate (LOC) is based on detailed sketch plans and represents the cost limit (at current prices) which DHC considers it can complete a major public work. Indexation, that is the application of an industry-wide index to the LOC, in effect updates the LOC to take account of price changes when there is progressive commitment of a project. Indexation is then applied to the uncommitted part of the project. Market influences, according to DHC, is the result of the index lagging behind actual prices. Escalation/rise and fall are one and the same thing and represent all changes to awards both in *conditions and wage rates after the contract is let.*

2.7 These factors, that is indexation, escalation/rise and fall and arguably market influences represent cost/price increases after the LOC estimate (or the tender amount estimate if it was not possible to construct a LOC) and therefore should be excluded from calculations of 'real' cost increases. When indexation/market influences and rise and fall are excluded so as to omit inflationary factors, the increase in apparent 'real' costs is \$3.7m (that is the sum of (d) to (g) in Table 2.1), or a 31% increase on the limit of cost estimate (see Appendix III). This is a significant increase in costs.

ADFA and cost overruns

2.8 The ADFA project had a limit of cost estimate of \$65m (July 1980) and a forecast cost of \$146.8m at June 1986. The EA report concentrated its analysis on the second construction management package (CM2) which represented a significant portion of total cost. The EA report did not include many details of cost types but the DHC data on reasons for cost increases of the CM2 package of ADFA is shown in Table 2.2 on page 9.

2.9 When escalation/market influences are excluded so as to omit inflationary factors, the increases in apparent 'real' costs are \$10.9m at November 1984 costs and \$23.7m at June 1986 costs, or, increases of 22% and 48% on tender amount respectively(See Appendix III). These again are significant increases in costs.

Table 2.2: COST INCREASES:CM2 COMPONENT OF ADFA

DHC November 1984 $ m		DHC June 1986 $ m
49.0	a.Tender amount (December 1982)	49.0
14.4	b.Escalation/market influences	24.0
0.2	c.Increase in scope	0.2
3.8	d.Defaulting subcontractors	6.8
0.8	e.Expedition costs	2.7
3.5	f.Claims, including prolongation	7.3
2.6	g.Contingency/variations	6.7
74.3	TOTAL	96.7

Source: DHC submission, Evidence, p. 185.

Conclusions

2.10 The Committee questioned DHC on the 'atypical' nature of the 2 projects. As a result of the Department's response the Committee believes that the overriding issue in its review of the EA report is whether factors outside the control or influence of DHC contributed to the significant increases in the 'real' costs of ADFA and NALUI. [6]

2.11 It is proposed to defer examination of this overriding issue until the conclusions section of this report. A close examination of the major features of the EA report and DHC's disputes with Audit may, among other things, throw some light on this overriding issue as well and it is to these major features that we now turn.

[6] Evidence, 243.

Chapter 3

Variations To Contracts

Background

3.1 A variation is a change to an existing contract which can result from a number of factors. Contracts can be varied because of changes in client requirements (the client is the organisation for which the project is being built), design errors or omissions, unforeseen construction conditions or what DHC calls 'market price variations'. Some variations, such as the last mentioned one, do not represent any physical change to the work. For all large contracts, a Maximum Permissible Contingency Allowance (MPCA) is established for the funding of variations. It may be used to fund relatively small variations but may not be used to change the approved scope of the work. [1]

3.2 Almost all major construction projects (valued at $2m or over) managed by DHC have a steering committee on which the client is represented. Client variations surface at this committee. The State directors of DHC have unlimited delegation to approve variations which are found to be unavoidable and which do not modify significantly the approved budget. They also have unlimited delegation to approve variations where the client is prepared to pay for it and is prepared to accept delays. All other variations over $20,000 have to receive Central Office (Canberra) approval. [2]

3.3 In respect of ADFA, an ADFA Steering Committee was formed (along with specialist sub-committees on buildings and works) on which

[1] mainly EA report, pp.43, 44
[2] Evidence, pp.133, 137

the Department of Defence and military and academic interests were represented together with DHC technical experts to monitor design development and control project costs. ADFA variations were considered by both sub-committees. [3]

3.4 The major Audit concern on variations, expressed at paragraph 2.4.1 of the EA report was that "(v)ariations to contracts accounted for a significant portion of the 'real' increase in the costs of the NALUI and ADFA projects". There are 10 recommendations on contract variations and as Appendix 1 shows, the 5 major recommendations have been rejected - those on essentiality testing, guidelines and formalised controls and standards. [4]

Essentiality testing of variations

3.5 The Audit case for essentiality testing of variations that do not need additional funds is contained in paragraphs 4.4.3 to 4.4.7 of the EA report. This case is based on cost analysis, and, the application of 2 implicit criteria to DHC's administrative processes.

3.6 For the ADFA project (essentiality testing is based on ADFA) there were some 228 variations and the cost increases attributable to variations were $lm. Audit analysis of variations showed that about 12% of variations tested (15% by value) related to changes initiated by the Department of Defence. Additional funds of $115 796 were provided for a variation for additional power stabilisers and an emergency generator. Another variation for $16 705 was approved to incorporate changes to the electrical system. [5]

3.7 Audit has applied 2 implicit criteria to test DHC's processes, namely that there should be written guidelines to test essentiality and that there should be 'comprehensive' records of the reasons for approving variations. Obviously, DHC's processes did not accord with these criteria and this, together with the cost analysis (and perhaps the number of variations), forms the basis for Audit recommendation 4.8.7 that '(i)n the interests of better controlling client initiated variations not requiring additional authorisation of funds the Department might consult the Department of Finance on the question of essentiality testing...'.

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[3]Department of Finance submission, Evidence, p.196

[4]See Appendix 1 for responses to Audit recommendations 3.9.4, 3.9.5, 4.8.7, 4.8.11 and 4.8.12

[5]EA report, paragraph 4.4.3

3.8 The Committee was informed by Audit that it wanted to distinguish between variations that required additional funds and those that did not. The former were vetted by the Department of Finance 'and therefore an essentiality test would be applied externally to the department'. In respect of the latter type of variation DHC told Audit that DHC was not responsible for testing essentially of client initiated variations that are funded from within the project. The conclusion Audit drew was that essentiality was tested more rigorously in one circumstance than in another. [6]

3.9 Although the Committee appreciates and shares the underlying Audit concern about the cost implications of variations to contracts, Audit has made a weak case for consideration of essentiality testing. First, the cost analysis does not relate to the Audit case because the essentiality of the variations cited in paragraph 4.4.3 of the EA report is tested by the Department of Finance. Second, the Committee remains unconvinced of the practicability of guidelines and uncertain of the meaning of 'comprehensive'. Finally, one of the problems about variations is not necessarily their number but the need for variations and whether this need could have been anticipated at the design stage of the project. This type of essentiality testing goes beyond administrative procedures and can be done only by persons who have the necessary technical expertise.

3.10 The Department of Finance says that from its point of view 'provided net additional funds are not required the ultimate test of essentiality of variations is that they are accorded a higher priority than other elements of the works which have been deleted as full offsets'. [7] This is a total project approach which seems to the Committee to be eminently sensible and simple.

3.11 In the case of ADFA, Finance said client- initiated variations not requiring additional funds are considered by the ADFA sub-committees (see paragraph 3.3) and, if found to be essential, are funded from either the construction reserve or from offsets. [8] To this extent client initiated variations are tested for essentiality, and Finance suggested that 'judgements on the essentiality of variations affecting the functional integrity of academic and military facilities are best left to the experts'.[9]

[6] Evidence, pp.265, 266

[7] Department of Finance submission, Evidence, p.200

[8] The construction reserve is the surplus difference between program provision and tender price

[9] Department of Finance submission, Evidence, p. 200

3.12 The Department of Housing and Construction informed Audit of the work of the ADFA sub-committees (paragraph 4.4.4 of EA report) but it appears that Audit has chosen to either ignore or not to assess this information because of its preoccupation with 'written guidelines' and 'comprehensive' documentation. Not only is the Audit case weak but in the opinion of the Committee there are adequate procedures, if followed, to test the essentiality of variations.

> **Finding No 1: In respect of Audit recommendation 4.8.7 on essentiality testing of client initiated variations not requiring additional funds, the Committee finds that the Audit case is unconvincing because -**
>
> **(a) the cost analysis is not related to the recommendation;**
>
> **(b) no attempt has been made to assess the adequacy of existing procedures; and**
>
> **(c) the total project approach described by the Department of Finance appears to be a sensible and simple approach for testing the essentiality of such variations.**

Guidelines

3.13 There are 2 Audit recommendations on guidelines, one based on the study of NALUI, the other on ADFA. On NALUI the EA report states that 320 issued variations added $4m to the cost of the project. The report pays particular attention to 2 variations on hydraulic and mechanical drawings which added $416 410 to cost and was the result of DHC taking a 'management risk' to go out to tender with unchecked drawings. Audit found no documented assessment of the financial implications of this risk. More importantly, Audit could find no guidelines (e.g. case studies) that could be used to assist decision-making in such situations. Thus, the presence of guidelines is the implicit criteria applied to test the quality of DHC's processes for controlling variations. Their absence leads Audit to recommend in 3.9.4 their development and use. [10]

3.14 In the case of ADFA, the EA report noted that 228 variations were approved and the cost increases attributed to variations were about $lm.

[10] EA report, paragraphs 3.2.1 to 3.2.14

A significant portion of the variations were due to errors and omissions in design specifications and the report gives some examples of these and their costs. Audit say the incidence of such errors and omissions could be reduced by better checking; however, it did not find relevant guidelines or standards. Once again, the presence of guidelines became the implicit criteria used to test the quality of DHC's processes for controlling variations. Their absence leads Audit to recommend in 4.8.11 that DHC review the possibility of developing guidelines to check design specification and documentation. [11]

3.15 The Audit recommendations on guidelines have been rejected by DHC on the grounds that existing guidelines contained in a range of departmental documents are sufficient and that the system of review by experienced professionals is effective (see Appendix 1). A weakness of the Audit analysis is a virtual absence of assessment of DHC's procedures for controlling variations. Audit should have assessed whether the errors it identified were the result of inadequate procedures, lack of compliance with existing procedures or the result of human error associated with lack of supervision. There is inconsistency in a logic which uses an implicit criteria of guidelines to test the quality of administrative procedures when guidelines and other institutional procedures are known to exist.

3.16 An even greater weakness of the Audit analysis is its unshakeable belief that each mistake should be covered by a guideline. For example, in its submission dated 11 December 1986 Audit gave as an example for document specifications a guideline that would require the thickness of fire doors to be specified. This was intended to correct the error in the AFDA project where the thickness of the fire doors was increased at a cost of $4 240. Even if one puts to one side the obvious question of whether the solution (the guideline on fire doors) solves the problem (not changing the thickness of the doors), the mind boggles at the prospect of a guidelines document reaching encyclopaedic proportions as each human error is covered by a separate guideline. This problem was put to Audit at the 27 November 1986 hearing but there was no satisfactory response. [12] It raises the broader issue of the purposes of guidelines, whether they are intended to provide a framework within which administrators operate or whether in their thousands they should cover every conceivable eventuality.

[11] EA report, paragraph 4.4.2 and 4.4.14 to 4.4.17

[12] Evidence, pp.270, 271

Finding No. 2: In respect of Audit recommendations 3.9.4 and 4.8.11 on guidelines to contract variations the Committee finds that the Audit case is unconvincing because -

(a) Audit has failed to assess the adequacy of procedures used by the Department of Housing and Construction, and

(b) it is impractical to have a guidelines document that reaches encyclopaedic proportions as each human error is covered by a separate guideline.

Formalised Controls and Standards

3.17 The Audit recommendation on tighter and more formalised controls over the administration of contract variations (3.9.5) is contained in paragraphs 3.2.27 to 3.2.30 (and 3.2.23 to 3.2.26) of the EA report. Audit was concerned at both the number of variations to large building contracts and their total cost. Other than some exceptions, Audit considered that in ideal circumstances variations can be averted, that the variations process is non-competitive, that processes to control excessive quotations did not apply always in practice and that there were doubts as to what was a reasonable quotation. In view of all this, the recommendation on tighter controls was made. It is apparent that what Audit meant by tighter controls was guidelines for contract administration which could perhaps include standard scales of variations (with tolerances) and a formal certificate of reasonableness for each variation.

3.18 The recommendation on the monitoring of variations against standards is developed in paragraphs 4.4.18 to 4.4.22 of the EA report, and is based on the application of 2 implicit criteria. The first is that the frequency and value of variations should be monitored 'for the purpose of comparative analyses of the levels of variations between projects or between different delivery methods employed on the one project.' The second implicit criterion is that there should be a method of determining the level of variations for a range of situations. Audit appreciated the difficulties in developing standards and making comparisons but 'considers such a move would be desirable in the interests of allowing effective retrospective project review and improving the cost effectiveness of Commonwealth expenditures.' [13]

[13] EA report, paragraphs 4.4.18 and 4.4.21

3.19 The report also refers to a regional office view that there is value in monitoring variations but that comparisons between projects would be very difficult because of varying circumstances. The Department said the Audit recommendation was impractical but this view Audit found to be 'not entirely consistent' with the regional office view (paragraph 4.4.22).

3.20 The Department has rejected the Audit recommendation on formalised controls (3.9.5) because DHC considered its current procedures to be adequate and although the recommendations on standards (4.8.12) has been 'accepted' the language of acceptance is deceptive in that DHC rejected numerical standards and considered the recommendation to be impractical (see Appendix 1).

3.21 There is no doubt that contract variations add to the total costs of a project. An examination of information provided in DHC's annual reports from and including the report for the financial years 1980–81 to 1985–86 *shows that with the exception of cost increases for rise and fall (i.e. inflation)* variations are the only other reason for cost increases for major construction projects. This is a fact that has eluded the auditors. Yet, the Audit analysis is quite confusing. The reader has to work out the differences and similarities between recommendations on contract variations, particularly those on tighter and more formalised controls, monitoring against standards and essentiality testing. The ones on controls and standards look similar but one is left to ponder the need for these 2 recommendations (3.9.5 and 4.8.12) given the recommendation on essentiality testing. Perhaps standards constitute *the means for testing essentiality but it is quite inadequate for one to have* to guess.

3.22 A weakness of the Audit analysis is once again a virtual absence of assessment of DHC's procedures for controlling variations. The Audit case for standards and controls is based on the general view of the number of variations and their costs. There is, in respect of recommendations 3.9.5 and 4.8.12 of the EA report, no analysis of what caused these variations and therefore no explanation as to whether the cause could be explained by inadequate procedures, lack of compliance with existing procedures or the result of human error associated with lack of supervision. In other words, because the problem has been identified in the vaguest of terms it is just not possible to see the connection between the solutions (the recommendations on controls and standards) and the problem.

3.23 This lack of precision has placed Audit in a difficult position in countering DHC's responses. In respect of 3.9.5 the Department says its existing procedures are adequate but Audit does not tell the reader whether they are; and in respect of 4.8.12 Audit does not counter the DHC view that the recommendation is impractical. Rather, Audit appears to rely (4.4.20) on the Department's regional office agreement that there is value in monitoring variations on projects, and contents itself with the observation that the views of the regional office and presumably central office are 'not entirely consistent'.

Finding No. 3: In respect of Audit recommendations 3.9.5 on formalised and tighter controls for contract variations and 4.8.12 on the monitoring of variations against standards, the Committee finds that the Audit case is both confusing and unconvincing because –

(a) one is not certain about the need for 2 similar recommendations given a recommendation on essentiality testing and Audit's views of this testing undertaken by the Department of Finance;

(b) Audit has failed to assess the adequacy of procedures used by the Department of Housing and Construction; and

(c) Audit has based its case on general impressions and thus has been unable to counter effectively the Department's response that recommendation 4.8.12 is not practical.

Conclusions

3.24 Reference has already been made to the confusing analysis related to some of the major recommendations on contract variations. It appears to the Committee that this confusion is the result of the 2 chapters on NALUI and ADFA being treated in isolation despite the recognition of overlap by Audit in paragraph 2.1.7 of the EA report, so that there has not been much of an attempt to look at the total picture by, for example, assessing the impact of each of the major recommendations on contract administration. Thus there are 2 recommendations on guidelines for checking specifications and documents (overlap), a recommendation on controls, another of monitoring variations against standards which appear to be similar, and yet another recommendation on essentiality testing which appears to make redundant some, if not all, of the other recommendations.

3.25 The confusion does not end there. Audit treatment of the site allowance dispute (NALUI) is not connected to any recommendation and stands in splendid isolation. [14] Briefly, because site allowances were the subject of arbitration, the sub-contractors refused to enter into contracts unless the Department agreed to reimburse them for the possible payment of site allowances. Such an agreement would have been contrary to existing government policy. Faced with a situation not of its own choosing, DHC negotiated with the main contractor for incorporation of the sub-contracts into the main contract and this added $0.391m to the cost. Audit observed that 'the Department's approach on this occasion resulted in Commonwealth payment of site allowance plus further significant costs' and that it did not attempt 'to review the broader effects'. [15]

3.26 When it was put to Audit that it was difficult to understand why it was taking DHC to task the response was that Audit was not doing this and that it 'would have to agree that the Department had to do what it did.' Audit went on to say that the purpose of the comments on the site allowance dispute was to draw to the Parliament's attention the significant financial results of the Department's actions. Audit considered it was necessary for public servants to inform Ministers of the expensive unintended consequences of policy. The Department informed the Committee that the Minister for Housing and Construction was advised on problems including cost implications associated with the site allowance issue on the NALUI project. [16]

3.27 The EA report description of DHC's handling of the site allowance dispute is in the context of a critical audit and leaves the Committee with no doubt that the AAO was critical of the Department. Audit now qualifies this criticism by introducing new material to support the inclusion of these paragraphs in its report but even this is not convincing. It expected DHC to do (inform the Minister) what the Department had done and to inform Ministers of the expensive unintended consequences of policy. In respect of

[14] There are no references to the paragraphs on the site allowance dispute in recommendations page 23

[15] EA report, paragraphs 3.2.15 to 3.2.22

[16] Evidence pp. 263–265, 305

the latter the Department said that the matter of site allowance always goes to arbitration and if the unions and the contractors agree that becomes the site allowance agreed by arbitration. In these circumstances, if the Commonwealth agreed to pay the allowance there would be no financial control over what would then be an open-ended system which in turn would apply to all Commonwealth construction projects. [17] Given this explanation of longstanding policy on site allowances, the Committee finds it difficult to understand what are the AAO's *expensive unintended consequences* of this policy.

3.28 In short, whether one looks at the paragraphs on site allowance in the report or Audit's subsequent explanations for these paragraphs, their inclusion in the EA report remains a mystery.

3.29 A more serious shortcoming of the Audit analysis on variations is that, apart from a few examples, it is guided by generalisations based on big numbers - the number of variations and the additions to total cost. The Department says that the level of variations on ADFA is high but adds that one cannot draw any meaningful conclusions on the performance of management from the number of variations. [18]

3.30 The big numbers are certainly a valid reason for the AAO to show interest but this in turn should have entailed careful analysis to find out cause and effect. Some classification of variations would have provided a sharp focus for such an analysis. Commencing with its annual report for 1980–81 the Department has provided cost information on variations which have been classified into design variations, client variations and construction variations. Analysis of the figures show that in the 6 year period 1980–81 to 1985–86 variations accounted for a 6% ($45m) increase on contract price for major projects – for 91 projects with a contract price of $710m. Design variations accounted for 30% of the $45m increase and client variations and construction variations for 35% each. (see Appendix III)

3.31 Variations divided into these types of categories based on work undertaken by DHC at Audit's request or by consultants hired by Audit could have provided the springboard for careful analysis and would have guided Audit on the matter of emphasis. For example, if the major problem was client initiated variations this would have given added strength to the Audit recommendation (4.8.6) on this matter.

[17] Evidence p. 264 and EA report, paragraphs 3.2.16 to 3.2.21
[18] Evidence, pp 93, 124

3.32 If, on the other hand, the major problem was design variations, this should have propelled the auditors into a cause and effect analysis. The EA report does indicate that in respect of ADFA, documentation by consultants and briefs prepared by DHC for consultants left something to be desired. Such recommendations (4.8.8 and 4.8.9), incidentally accepted by DHC, made against the background of the total cost picture of design variations may have placed in sharper focus the matter of design variations and may have provided the necessary link between the problems identified and the solutions offered.

3.33 In short, what is lacking is a sound method of analysis. Such a methodology is clearly superior to impressions and suspicions founded on big numbers.

3.34 Some of the big numbers themselves are open to challenge and do suggest that Audit has miscalculated the cost importance of variations in its report. Audit said that variations accounted for a significant portion of 'real' cost increases. Paragraph 3.2.1 of the EA report appears to give some support for this conclusion because it refers to the 'real' increases of variations representing a 35% increase on the original contract sum for NALUI (limit of cost estimate of $12m). There are no references to 'real'cost increases for ADFA, only that cost increases attributable to variations were of the order of $1m. When expressed as a percentage increase on tender amount this $1m represents a 2% increase in 'real' costs. For NALUI the Committee used the costs identified in the EA report to calculate that variations represented a 12% increase in real costs (see Appendix III). It should be noted that both calculations were expressed as a percentage increase on the base year figure, as indeed was the 35% calculation in the EA report.

3.35 The Committee informed Audit that it had not produced evidence to support its conclusion on the significant 'real' cost increases of variations. The Audit response made at the 27 November 1986 hearing was that 'using now the benefit of more recent information that the Department has provided' it calculated variations as a percentage of 'real' cost increases as 72% for NALUI (December 1984 figures) and 24% for ADFA (November 1984 figures). [19]

3.36 The Committee is disturbed at this response. What the AAO has done is to use cost information not contained in its report and a method of calculation different to that used at paragraph 3.2.1 of its report to support

[19] Evidence, pp. 253, 253A

a conclusion of the report (see Appendix III). This depressing display of arithmetical somersaults puts at risk the credibility of the AAO and the confidence one can place in its statistical work.

3.37 The work of the Committee has been made unnecessarily difficult by this type of response, by both auditor and auditee. Reference was made in paragraph 3.13 of this report to the 'management risk' taken by DHC on drawings for NALUI. The Department's initial response was that the variations were caused in part by a change of mind by the Sydney Metropolitan Water, Sewerage and Drainage Board. The Department maintained this position but finally said 'we certainly took a management risk ... on the drawings' because of time constraints. [20] To get to the bottom of a simple factual matter has been time consuming because of the need to find a way through the labyrinth of arguments.

3.38 In explaining the variations on NALUI the Department said there was an increase of $1.047m because of adjustment of the provisional sums for mechanical and electrical lifts and fire protection in the original tender documents. These were called 'market price variations.' When the Committee informed DHC that the term market price variations was an euphemism for poor estimating its response was that '(y)ou cannot always be right.' [21]

3.39 The difference between this provisional sum and the variation represents an increase of close to 40%. [22] Such estimating errors if widespread present difficulties for governments to keep public sector expenditure within budget figures. Further, if the client department has to rearrange its priorities to pay for this increase, this in turn would result in a less than optimal use of resources.

3.40 In passing the Committee notes that any problem with market price variations cannot be solved by guidelines, and that insofar as variations are concerned, this variation alone accounts for 8.7% of the real cost increase of NALUI (see Appendix III) and can hardly be said to be a factor outside the control of DHC.

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[20] Evidence, pp. 122, 259, 260

[21] Evidence, pp. 116-118, 257

[22] Paragraph 3.6.4 of the EA report indicates that the provisional sum was $2.815 so the increase of $1.047m is a 37% increase

Chapter 4

Choice and Application of Project Delivery Methods

Background

4.1 The Department says there are a range of project delivery methods which are used depending on the task to be performed. These include a single lump sum contract between client/proprietor and constructor, a series of similar sequential contracts, contracts based on provisional quantities and/or schedules of rates, turn-key and design/construct contracts, construction management or other 'project management' arrangements and direct labour engaged by the proprietor.

4.2 The traditional single package method requires completion of design and documentation before calling for tenders, tendering by public invitation and open competitive methods, and project management by officers of the Department of Housing and Construction. Under the construction management (CM) method, DHC contracts with an individual or an organisation to manage and co-ordinate the construction of the project. The role of the construction manager may include leading the construction team, advising on construction alternatives, calling for sub-contract tenders, letting contracts, co-ordinating construction, and arranging contract payments. The construction manager does not normally perform significant design or construction work with his own resources.

4.3 This section of the EA report (paragraphs 4.2.1 to 4.2.14) deals almost exclusively with the AAO view that CM could have contributed to the cost increases of ADFA and the other view that choice of a particular project delivery should be preceded by evaluation which should include estimated comparative costs (of administration) of each option (recommendations 4.8.2 and 4.8.3). The Department rejected both recommendations.

Contribution of CM to ADFA construction costs

4.4 The traditional project delivery method was used for NALUI while at ADFA a combination of the traditional and CM methods was used. Initially, several packages were let as traditional lump sum contracts. In 1981 CM was used as the first construction management contract (CM1) and in November 1982 it was decided to use CM again for the remaining uncommitted work on ADFA. This resulted in the second construction management contract (CM2) being let for $49m in February 1983. Audit focused attention on CM2 because it was the largest component of the ADFA contracts. [1]

4.5 The AAO wanted to find the reasoning for the selection of CM as the project delivery method for the remaining parts of ADFA. The Department listed a number of factors where CM was said to offer better prospects than other options. What the AAO expected to find was documentary evidence to show that DHC had taken into consideration the comparative costs of other options in the selection of CM 'because information as to relative cost should always be taken into account when such issues are being decided'. They did not find this. What they found was that the cost of the CM2 package had increased by $25m (or 51% - see Appendix III). The Department had not assessed the extent to which CM contributed to this increase and it is such an assessment that Audit calls for in its recommendation at paragraph 4.8.2 of the EA report, because it would assist DHC to make better informed decisions in the future. The Department said the assessment cannot be made with any reasonable degree of accuracy and would be of little value for future decisions because factors other than costs normally determine choice of a particular delivery system. [2]

4.6 The information collected by the Committee enables it to test the validity of the DHC position. It should be noted that the CM2 contract was awarded in February 1983 and that according to DHC the hiatus in cash flow meant that the ADFA project was slowed down in 1983-84, and was then undertaken in an overheated local construction economy.

[1] EA report, paragraphs 4.2.1 to 4.2.3

[2] EA report, paragraphs 4.2.1 to 4.2.9

4.7 *The cost information in Table 2.2 shows that at June 1986 the cost* of CM2 had almost doubled. Of the total increase of $48m, half (50%) was attributed to escalation/market influences or, in other words, the effects of an overheated local construction economy. One can hardly attribute such cost increases to CM. Similarly, it would appear that expedition costs which accounted for $2.7m or 6% of the increase would have been incurred irrespective of the delivery method selected particularly in the circumstances of the 1983–84 slow-down. Contract variations accounted for $6.7m or 14% of the increase and the EA report attributes some of the design variations to the overlapping of design and construction, a feature of CM but not of the traditional method. The report identifies the cost increases of several variations but these are in respect of errors and omissions in design specifications and client initiated variations. It would be difficult to attribute such variations to CM (see Appendix III).

4.8 Claims including prolongation which accounted for $7.3m or 15% of the increase were explained by DHC as being caused by the delays attributed to the slowing down of the project in 1983–84, defaulting sub-contractors and variations. The additional costs ($6.8m or 14% of the increase) of defaulting sub-contractors was attributed by DHC to the overheated local construction economy but the Department of Finance said that under the traditional method the head contractor and not the Commonwealth would carry the costs of defaulting sub-contractors so that this cost to the Commonwealth should be counted as a cost of CM. Finance added that ADFA is expected to run some 12 months over target date for completion, that the construction manager has claimed additional costs for this and, arguably, these additional costs would not have fallen to the Commonwealth if the traditional method had been used. [3]

4.9 In short, the Committee has identified that 14% plus of the cost increases of the CM2 package of ADFA can be attributed to the use of construction management - defaulting sub-contractors (14%), the costs of prolongation claims attributable to this default, some portion of variations and perhaps the additional costs associated with delays in completion. But one cannot conclude from this that DHC chose the wrong delivery system which is the implicit Audit criticism, because the relevant question is whether DHC, without the benefit of hindsight, could have anticipated the problems of overheating caused by slowing down the project in 1983–84 when the decision was made to use CM some months before the slowing down.

[3] DHC submission and Finance submission, Evidence pp. 306, 307 and 197 respectively

One cannot futher conclude that the head contractor would have absorbed those additional costs.

4.10 This raises the question of whether CM was the most appropriate project delivery method. At the request of the Committee the Department supplied a DHC minute dated 30 September 1982 and entitled 'Australian Defence Force Academy: Review of Contractual Arrangements'. The purpose of the minute was to review contractual arrangements in the light of industrial relations issues and their effect on the completion of works for an academy opening of January 1986. The minute said the overriding issue on the ADFA site would be industrial and the appointment of a single construction manager will provide the avenue through which industrial relations can be negotiated. There was a need for DHC to remain remote from industrial negotiations and if it did not use the traditional method then CM was the only other method that could be entertained because any other system would not distance the Department from issues over which it could have little or no influence on the solution. [4]

4.11 In evidence DHC elaborated on the factors used for selection of CM. First, it emphasised timely completion (ADFA had to be ready for the 1986 academic year) which required overlap of design and construction and thus ruled out the traditional lump sum contract. The second determining factor was overall site control particularly in the industrial relations area and the Department's experience of contractors on multi-contractor sites being forced to bargain for available labour. The Department considered that a construction manager could better handle industrial relations and overall site co-ordination than the DHC project manager.[5] Thus, according to the Department, the circumstances made CM the most suitable project delivery method for the latter stages of ADFA.

4.12 The relevant question is not how much CM has contributed to cost increases of ADFA (no purpose is served in being wise after the event) but rather whether in the circumstances CM was the best choice. The Department believes it was and Audit says it does not have the professional expertise to make a judgement [6]. The Department gave the Committee documents and explanations as to why it chose CM but one does not know how much DHC told Audit or how much of what it was told the AAO took

[4] Evidence pp. 312 - 318
[5] Evidence, p. 158
[6] Evidence pp. 274, 275

into consideration. The Audit view is that analysis of comparative costs of other options should be taken into account. It is a view that ignores both the unquantifiable benefits of particular systems and the matter of whether, for example, time constraints rule out particular options.

4.13 Impressions and suspicions are probably a necessary starting point for investigation but a dangerous finishing point on which to base conclusions and recommendations.

> **Finding No. 4: In respect of Audit recommendation 4.8.2 which asks the Department to assess the extent to which construction management (CM) has contributed to the cost increases of ADFA, the Committee, having undertaken such an assessment, finds that -**
>
> **(a) no useful purpose will be served by a more detailed assessment because the relevant question is whether the selection of CM was the best option in the circumstances and;**
>
> **(b) such an assessment (of CM's contribution to ADFA cost increases) is of limited value for future decision-making.**

Evaluation of alternative delivery methods

4.14 Audit recommendation 4.8.3 calls for an evaluation of project delivery methods. When one puts together Audit recommendation 4.8.3, the paragraph on which it is based (4.2.11) and the other paragraph on this matter (2.3.3) we find that the AAO wanted DHC to do 3 things. First, Audit believed that the selection of a particular delivery method should be preceded by an evaluation of alternatives and the choice made on the basis of this evaluation. The evaluation should include estimated comparative costs (of administration) and the complexities of each option. Second, at the completion of the project, there should be a review of the results of the option chosen. And finally, there should be full documentation of both the evaluation and the review.

4.15 The major issue is whether analysis of the relative costs of options is practical or feasible. The Department said the first cab off the rank is the traditional method and that it only departs from this method when it believes the method will not produce the desired results. Therefore, to compare one method with another does not seem to have much to recommend it. Audit was told by DHC that recommendation 4.8.3 would be of 'no practical assistance' and found this DHC attitude to be 'inconsistent with appropriate recognition of the importance of accountability in the management of Commonwealth undertakings'. [7]

4.16 This AAO comment on inconsistency is difficult to fathom. It is difficult to understand how work described as being of no practical value can be justified on the basis of some unspecified test of accountability.

4.17 But even if the costs of each option can be estimated, these costs have to be matched against the benefits of each option so as to obtain nett benefits or nett costs. Belatedly, the AAO recognises that 'there may be some difficulties' in placing dollar signs on benefits such as meeting time targets or controlling industrial relations. Audit considers that these matters can be assessed after the event but the recommendation wants selection of a particular project delivery method to be preceded by evaluation. [8]

> **Finding No. 5: In respect of Audit recommendation 4.8.3 which requires choice of a particular delivery system to be preceded by evaluation of options which would take into account the comparative costs (administration) of each option, the Committee finds the Audit case to be unconvincing because the AAO has failed to -**
>
> **(a) recognise the difficulties of introducing unquantifiable benefits into comparative cost analysis;**
>
> **(b) realise that factors other than identifiable costs may determine the choice of a particular delivery method ; and**
>
> **(c) counter effectively the Department's claim that the recommendation is not practical.**

Conclusions

4.18 The AAO fixation on comparative cost analysis and its suspicion that CM was the villain of the ADFA piece has contributed to a poor quality

[7] Evidence, p. 278 and EA report, paragraph 4.2.12
[8] Evidence, pp. 281-283

of analysis. Audit's concern about CM does not take into consideration the cost performance of this project delivery method as reported by DHC in its annual reports. From this information (1980–81 to 1984–85) for the 7 projects for which CM was used, the Committee has calculated that they had a total contract price of close to $200 m and were brought in at around 4% above contract price (excluding rise and fall - see Apppendix III). [9]

4.19 An apparent 'real' cost increase of 4% for 7 projects can be and should have been compared with the increase of 22% for ADFA (see paragraph 2.9). Whatever limitations one places on these figures they give some indication of cost performance and underline the dangers of applying to all projects so-called deficiencies that result from the study of a single project.

4.20 Further, it was open to Audit to seek explanations for the cost increases of CM2 (ADFA) and then to draw at least some preliminary conclusions. This lack of content in analysis has not placed the AAO in a position to counter effectively the DHC response of lack of practical value of recommendations. Instead, Audit has had to rely on its emphasis on the need for relative cost analysis and inconsistencies of DHC statements (paragraph 4.2.9).

4.21 At the 27 November 1986 hearing the AAO supported its position by claiming that DHC agreed to some extent with Audit ideas because the Department had appointed a consultant to look into many aspects of construction management. The Department said the appointment was not a reaction to the EA report but developed out of an earlier consultancy. [10]

4.22 This consultancy report of February 1986 after saying that it had examined an Audit report on certain construction management projects and the DHC response went on to say that the 'Department's selection of the construction management pattern for project delivery appears to us to have been reasonable and indeed innovative'. The consultancy's call for an in-depth review of the critical functional areas of construction management was based on 3 factors, namely, that the desirability and suitablility of CM is not recognised uniformly throughout the Department, there is confusion about DHC's proper role in the administration of CM contracts and a need to ascertain the suitability of CM documentation in terms of the desired

[9] Derived from information contained in DHC's annual reports and a correction to figures on one project, Evidence, p. 311

[10] Evidence, pp. 283, 284

allocation of risks. Several of the consultancy reports' requirements were incorporated in the terms of reference of DHC's CM consultancy. [11]

4.23 This CM consultancy is more wider ranging than what the EA report deals with but what the AAO appears to be claiming is that the first term of reference gives effect to what Audit wanted on choice of a project delivery method. That term of reference referred to the 'circumstances under which Construction Mangagement should be considered or selected as the preferred delivery system'.[12] The AAO felt that this sort of exercise would be consistent with its comment at the end of paragraph 4.2.11 of the EA report 'which recommends the introduction of documented studies and reviews in relation to construction management'.[13]

4.24 Leaving aside the different meanings of the recommendations in 4.2.11 and that of 4.8.3, it is quite clear that what the AAO wanted was for the choice of the project delivery method for each major construction project to be preceded and based on evaluation which took into account comparative costs. Further at the completion of each major project there would be a retrospective review of the 'success' of the delivery method chosen. The CM consultancy is quite different. It entails a general study of CM to find out under what conditions or circumstances it should be used.

4.25 The Committee would like to see this study or any examination of it to examine also whether there are any conditions which make CM unsuitable. For example, it is possible that CM may not be able to handle as well as other systems the inevitable problems that flow from a slowing down of a project. If this is so, it is a requirement for the client organisation to consider before it accepts the employment of this method of project delivery.

4.26 The Committee reiterates that the overriding issue is not whether CM was responsible for cost increases of ADFA but rather what caused the significant increases in apparent 'real' costs and whether these were outside the control or influence of DHC.

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[11] Exhibit A, pp. 17-21
[12] Evidence, p. 283A
[13] Evidence, p. 286

Chapter 5

Project Review

Background

5.1 The EA report examines project review in the 2 sections dealing with NALUI and ADFA. There is some overlap in the arguments and recommendations in the 2 sections, so the Committee proposes to describe and discuss them together. The broad purpose of Audit reviewing project management performance was to assess the quality of these processes of review and the extent to which they contribute to efficient administration(EA report, paragraph 1.1.2). This evaluation of the processes DHC uses to assess efficiency constitutes part of the definition of efficiency auditing under Section 2(4) (b) of the *Audit Act 1901*.

5.2 The Audit recommendations appear to flow from a particular line of argument. First, that the devolution of responsibility to the regions was intended to be balanced by the introduction of independent project review and quality assurance functions at the Central Office level. Second, that as advised by DHC management, operational statements about project review were not being observed and that the whole question of project review was being re-examined. Third, a DHC senior management conference (February 1985) agreed to a number of key principles for management and delivery of public works, including the extensions of performance measures with early attention to reporting mechanisms associated with project reviews. It appears that it is from this analysis that the EA report draws the conclusion that there are no programmed, independent, retrospective reviews of project management carried out by Central Office in accordance with settled guidelines - a requirement that would satisfy the dual demands of efficient project delivery and public accountability. From this conclusion the EA report develops 4 recommendations - 2 on the development and implementation of independent, retrospective reviews of project management performance along the lines suggested by Audit, one recommendation on a later evaluation of this system of review and another on strengthening the role of internal audit in the review process.[1]

5.3 The Department said that it has 'accepted' these recommendations but the Committee finds it difficult to understand exactly what is being accepted. In respect of the 2 major recommendations on retrospective project reviews DHC says they already occur through post occupancy evaluation, procedures for which are being further developed and the use of which is increasing (see Appendix 1). In reality, DHC has ignored the recommendations which asked the Department to adopt a new procedure which it believed to already exist. In written advice DHC gave the AAO on the EA draft report the Department said it was 'well in advance of the recommendation in paragraph 4.7.9'. [2]

Retrospective reviews of project management

5.4 These sections of the EA report are confusing and are attributed to the contributory negligence of both the auditor and auditee. This confusion has arisen because for the AAO, project review and independent retrospective project review are one and the same thing and in asking for them Audit is asking for something new. For DHC, the 2 terms are different and what Audit is asking for is not new.

5.5 After discussing problems associated with project review in paragraphs 3.7.1 to 3.7.6 Audit goes on to recommend (3.9.16) the developement and implementation 'of a system for independent, retrospective project review'. And, after discussing the absence of programmed retrospective reviews in 4.7.2.Audit asks DHC to 'develop and implement a system for the review of project management performance' (4.8.24).

5.6 This interchange of words and phrases would not have presented any difficulties but for the terminology used by DHC. In written advice the Department gave the AAO on its draft report, DHC said project review is the progressive review of projects as they are developed through the design and

[1]EA report, paragraphs 3.7.2, 3.7.3, 4.7.1, 4.7.2, 4.7.6, 3.9.16, 4.8.24, 4.4.29, 4.8.25 and 3.9.17.

[2]DHC submission, Evidence p.38.

construction phases.[3] The reader thus faces the daunting task of finding out what meaning (DHC or Audit) to attach to this term. In respect of retrospective project reviews DHC told Audit at the EA draft report stage that such reviews are an evolving process undertaken under the term 'post occupancy evaluations' which the AAO said at the 27 November 1986 hearing was a term new to them.[4]

5.7 But perhaps there is some light at the end of the tunnel, if we interpret the broad intention of Audit as requiring in 3.9.16 and 4.8.24 independent (by other than those that managed the project), retrospective (after the completion of the project) review carried out or reported to Central Office with later dissemination of relevant information to the regional offices. This intention is present partially in 4.8.24 but not in 3.9.16. Presumably then, the Department's post occupancy evaluations did not meet all the implicit criteria used by Audit.

5.8 However,in the light of this confusion the Committee does not propose to make any findings on the 2 major recommendations. Instead, we will develop our own conclusions and recommendations on post occupancy evaluations.

5.9 The purpose of these evaluations is to assess how well DHC has managed a project. Three criteria are used in such assessments, namely, timeliness, suitability and delivery cost which are said to be the real measures of effective performance. The Department says that if it has all these things right then, ipso facto, it has a very effective performance. [5]

5.10 All this begs the question of what is 'right'. A consultant's report on program budgeting said or implied that timeliness should measure whether client expectations are being met at the project level and that the relevant measure would be 'beneficial occupancy dates'. The report also said that such dates are not set for all projects. This same report also said that the assessment of quality (suitability of completed project) presented a difficult task for it. The report said assessment of quality is one which the Department is debating and attached a discussion paper on the concepts of quality as it is currently being applied in manufacturing and service industries. [6]

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[3] DHC submission, Evidence p.37.

[4] Evidence, p.289.

[5] DHC submission, Evidence p.37 and p.143.

[6] Exhibit D, pp. 30-35.

5.11 The Committee has received little information on how delivery costs are used as a measure of effective performance. One must presume that the emphasis could be on increases of the 'real' costs of a project analysed in terms of the need for increases in components such as design variations, client variations and construction variations.

5.12 Both DHC and the AAO have spoken in generalities about post occupancy evaluations (or retrospective reviews). There is the need for specific information including that on the managerial processes of such evaluations as referred to in the EA report. Accordingly, the Committee recommends that:

> **Recommendation No.1: In its annual report for the year ended 30 June 1987 the Department of Housing and Construction should -**
>
> **(a) discuss the concept of post occupancy evaluations;**
>
> **(b) describe the managerial processes used;**
>
> **(c) identify the criteria to be applied; and most importantly**
>
> **(d) detail the effectiveness measures to be applied to each of the criteria.**

5.13 In its 1985-86 annual report DHC said that by the end of the year 20 post occupancy evaluations had been completed and a detailed analysis of 10 of them were used to revise the approach. The results are to be documentated in a user manual. [7]

Other reviews

5.14 The Department says post occupancy evaluations are selected on the basis of benefits to DHC of such reviews. It does not propose to select NALUI for evaluation because 'we are not going to build another National Acoustics Laboratory'.[8] The Committee disagrees. A project should not be excluded from examination on the grounds of unique design. In the interests of good management there should be some review, not necessarily in-depth, where there has been a significant lack of achievement of timeliness,

[7] Annual Report 1985-86, Department of Housing and Construction, PP. 412/1986, p.12.

[8] Evidence p.141

suitability or cost for all major projects managed by DHC. Therefore, the Committee recommends that:

> **Recommendation No.2: In the interests of good management the Department of Housing and Construction should undertake reviews, not necessarily in-depth, of all major construction projects where there has been a significant lack of achievement in respect of timeliness, suitability or cost.**

Chapter 6

Tendering Procedures

Background

6.1 The EA report discusses tendering procedures at paragraphs 2.2.1 to 2.2.14.The tendering system favoured by DHC is open competitive tendering which entails public invitation to tender without any restrictions, the decision to tender thus resting with the firms concerned. Audit wanted DHC to evaluate selective competitive tendering. Selective tendering offers to the entire construction industry the opportunity to submit credentials for consideration and registration as firms from which tenders will be accepted. The registers are divided into parts.

6.2 Audit said that selective tendering has been used by 2 State Public Works Departments over recent years and by the National Capital Development Commission (NCDC) recently for housing contracts.

6.3 The AAO argument for DHC to evaluate selective tendering rests on the 'proponents' case. Proponents of selective tendering claim that experience shows that the lowest tender obtained in open competition will not necessarily result in the lowest final cost. Those that have used selective tendering say that it offers more protection against contractors of doubtful financial and/or technical viability and that it delivers public works at less cost and with fewer administrative problems and disputes than are encountered with open tendering. The specific objections proponents had to open tendering were that it encouraged low prices based on poor standards thus leading to disputes, delays and increased costs, that low prices lead to bankruptcies, delays and increased costs and ,because of the large number of tenderers, costs which are eventually passed on in higher prices.The EA report also referred (at paragraph 2.2.9) to research which indicated that projects selected by a form of restricted tender or following negotiation had a better cost performance than those selected by open competitive tendering.

6.4 The Department said that selective tendering is costly to set up and administer. The Australia-wide costs would be 'some millions of dollars with an annual maintenance cost exceeding one million dollars...' The maintenance costs are apparently due to the need to keep contractor registers up to date to reflect changes in the financial and technical status of firms. The Department added that it receives generally only about 6 responses to advertisements inviting tenders and that it is improbable that selective tendering offers any advantages by way of identifying potential bankrupts before they become contractors.[1]

6.5 Thus, Audit says there are 2 schools of thought on the merits of selective competitive tendering. Based on this conclusion the AAO recommends that DHC undertake an evaluation of selective tendering using the experience of the States and the NCDC.

6.6 In its initial submission to the Committee the Department said it 'has evaluated selective tendering and considers this involves substantial establishment and continuing costs without demonstrated benefit in project delivery performance and costs.' Audit told the Committee that the report of the consultant referred to in paragraph 2.2.14 of the EA report barely touched on selective tendering which the AAO thought was still worth studying.[2]

The need to evaluate selective tendering

6.7 Before examining the various arguments which amount to less reliance on open competitive tendering, it is necessary to gain a better appreciation of this system. The Department says that under open tendering the tenderer who submits the lowest price gets his tender considered first. That tender has to meet the requirements of the specifications and the tenderer is checked for financial viability, physical capacity, past performance and current commitments and has to pass all these tests before being selected as the contractor. Thus DHC denies categorically the view of The Master

[1] EA report, paragraphs 2.2.11 and 2.2.12

[2] DHC submission, Evidence p.7 and p.295.

Builders' Federation of Australia that performance is not a criterion in the open tendering process.[3]

6.8 The AAO case for evaluation is superficial because it is selective in the information it presents. The reference in the report to the relative poor performance of open tendering is to research published in 1971, some 14 years before the presentation of the EA report! [4]

6.9 The major basis for the Audit case is the 'apparently happy experience' of 2 State public works departments, and the NCDC on housing contracts. The fact is that the NCDC did not use selective tendering. It used a pre-registration system, which it terms prequalification. No attempt was made to find out why the public works departments of the other States did not use selective tendering. One can presume that had Audit asked it may have been told that they were 'happy' with open tendering and this in turn would have given the AAO some food for thought.

6.10 Neither did the AAO attempt to find out why the NCDC decided not to use open tendering for housing contracts. The Commission's submission indicated clearly that the move to prequalification for housing contracts was caused by a number of contract failures because of the difficulties experienced by contractors with large fixed price contracts in a period of soaring sub-contract prices. Prequalification was the means of restricting those bidding to those with requisite skills and financial resources. [5] The submission does not indicate why open tendering cannot weed out, in the selection process, tenderers without the requisite skills and financial resources. But even if one accepts the NCDC explanation, what it does show is that a particular circumstance can dictate a change of tendering procedure.

6.11 Further, the AAO also ignores the DHC comments which at least in part counter those that the proponents have advanced. Evaluations/studies have their costs and their opportunity costs (the alternative uses to which resources can be put). The AAO case for evaluation of selective tendering is both superficial and unconvincing.

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[3] Evidence pp.83-85.

[4] The reference is to a submission which is based on an article by Dr F J Bromilow in the Building Economist Vol. 9 1971.

[5] NCDC submission, Evidence, p. 210.

Finding No.6: In respect of Audit recommendation 3.9.2 which asks for the evaluation of selective tendering the Committee finds that because the Audit case is superficial and unconvincing there is no need for the Department of Housing and Construction to do any further work on this recommendation.

Pre-registration

6.12 The Master Builders' Federation of Australia (MBFA) considers tendering to be a waste of resources and a cost borne by the client when many contracting firms tender for the same project. The Federation says the tendering system is justified in terms of public accountability and whether the lowest cost tender is the cheapest should be weighed against the public accountability requirement.The Federation believes that the open tendering system ought to be the exception rather than the norm for the building industry. It prefers selective tendering, or, pre-registration - a system which first asks firms to register for a job, investigates these firms and then invites those considered suitable to tender. The MBFA adds that these 2 systems do not exhibit suggestions of favouritism or bias (some of the tests of public accountability) and recommends that a system of pre-registration be used by DHC in appropriate projects and that a cost/benefit analysis be undertaken in respect of selective tendering. [6]

6.13 The difference between pre-registration and selective tendering is that the former is limited to a specific project or group of projects whereas the latter applies to all construction projects the client/proprietor or his agent may manage. Thus the large administration costs that DHC attributes to selective tendering do not apply to pre-registration and had this fact not escaped the attention of the auditors the EA report may well have recommended that DHC evaluate pre-registration or perhaps both tendering systems!

6.14 The Department says that under open competitive tendering it is normally only necessary to check the credentials of the lowest price tender. A pre-registration scheme will result in additional work of checking out every firm that has applied. [7] Thus, although this system will reduce the costs of some contractors it will increase the costs of administration which must

[6] MBFA submission, Evidence, pp.47 - 50.

[7] Evidence, p.96.

then be borne eventually by the taxpayer. Pre-registration, like selective tendering, may also have the tendency to restrict competition by making it more difficult for new firms to enter the industry. In short, the Committee is not attracted to pre-registration schemes unless it can be demonstrated that special circumstances make open tendering inappropriate.

Conclusions

6.15 What both the MBFA and the AAO appear to have lost sight of is the public accountability objective. The Finance Directions state that government procurement procedures should be, and be seen to be, beyond reproach. Briefly, this underlying intention is best achieved by the public invitation of tenders and later publication of the details of the contracts arranged. It is not always possible to publicly invite tenders but the underlying intention has to be kept in mind when assessing alternatives.

6.16 The Committee is of the opinion that because of this underlying intention, the onus is on those who want change to prove or show cause as to why there should be departures from open tendering. The EA report attempts to reverse this onus of proof by expecting DHC to have undertaken studies on selective tendering.

6.17 The MBFA says that tendering wastes resources (of the unsuccessful tenderers) and it may well be that its members, who could have a vested interest in selective tendering or pre-registration schemes, see it this way too. But competition requires more than one supplier and restrictions to competition, a by-product of restricted tendering, can by restricting entry into the industry, result in prices being higher than they would otherwise be. In the area of government procurement, the costs of restricted competition will be borne eventually by the taxpayer.

Chapter 7

Other Matters

Background

7.1 This report has examined so far the Audit recommendations DHC *has rejected in the major areas identified in the second chapter of the* EA report. Table 1.1 shows that several other recommendations have also been rejected and it is some of these that this chapter will examine.

Prolongation claims

7.2 In general, claims for prolongation of work may be admitted under the contract to remunerate contractors for additional site expenses that have been or will be incurred because the completion date of the contract is extended by some act or omission on the part of the Department. In respect of NALUI, the EA report identified $1.2m allowed to the contractor in settlement of claims for prolongation of work caused by such acts or omissions. *The claims related to 7 variations and arose out of the interference with* the contractor's critical path program and an adjustment to a provisional (estimated) quantity provided for in the contract.

7.3 The AAO concern was at the large sums of money spent which *do not add to the nature or scope of the work and the apparent lack of* clearly defined written policies, guidelines and procedures on how best to avoid the circumstances that give rise to such claims or how to assess and negotiate prolongation claims with a minimum of administrative effort and a maximum chance of a satisfactory outcome. Audit recommendation 3.9.6 thus asked for the development of written policies and guidelines to cover these matters. The Department rejected the recommendation saying that

Audit did not acknowledge the extensive guideline framework that existed and had discounted the importance of experience and professional judgement (see Appendix 1).

7.4 The Committee asked Audit how guidelines can stop or reduce acts or omissions on the part of the principal, the superintendent or their agents, mistakes by consultants or any other fault identified in the EA report. In its response in respect of prolongation claims, the AAO said the best way to avert such claims is to avoid variations. The response then gave examples of 'appropriate guidelines' to control problems with variations identified in paragraphs 3.2.23 and 4.4.14 of the EA report.[1]

7.5 The Department said that all the prolongation claims of NALUI were associated directly with variations. It is thus clear that these claims are a by-product of variations and a cost of variations. They thus fit in somewhere in the section on variations and the recommendation (excluding that part on the resolution of claims) is yet another one that deals with variations. But once again Audit has not produced sufficient information on the causes of variations nor given adequate reasoning of how these particular types of variations can be eliminated or reduced by guidelines.

Extensions of time

7.6 Each contract entered into by the Department includes a due date for completion. In addition, most contracts provide for 'liquidated damages' which are compensation for damages incurred by the client/proprietor due to the non-availability of the asset at the contract completion date. The General Conditions of Contract make provision for the Department to approve extensions to the due date for completion where the contract has been unavoidably delayed by factors outside the contractor's control such as industrial action and bad weather. Extensions of time approved in this way have the effect of deferring the commencement of the application of liquidated damages.

7.7 Audit reviewed the delays on the NALUI contract to assess the reasonableness of departmental decisions in agreeing to extensions of time. An in-depth examination of a small sample of claims revealed a number of errors in the contractor's favour which, if not adjusted, would cost the Commonwealth $15 680 in lost liquidated damages. Because of this the AAO

[1] AAO submission, Evidence pp.301, 302

asked the Department to undertake a full check of extensions on the NALUI project. The EA report attributed one cause of error to a departmental form and asked DHC to redesign the form. Some of the errors resulted from inconsistencies in methods of calculation which were attributed to the absence of instructions. Thus Audit called for a comprehensive set of instructions.

7.8 The Department accepted the first two recommendations (3.9.7 and 3.9.9) but rejected the one on instructions (3.9.8). The Committee asked Audit how guidelines can stop or reduce each of the errors it identified, referred to in a general way above. The AAO response was the the errors can be stopped or reduced if, in effect, there was a guideline for each of the errors identified.[2] The Committee has previously commented on the impracticality of such an approach in Finding No. 2 because a guidelines document could reach encyclopaedic proportions as each human error is covered by a separate guideline. *Control of such problems, is more a reflection of the competence of* departmental management rather than the need for guidelines, instructions and so forth.

Provisions of construction management agreement

7.9 One of the provisions of the construction management agreement (ADFA) is for the construction manager to receive 1.572% of the tender prices of works by sub-contractors. Audit formed the view that the existence of this commission provided the opportunity for collusion which did not exist under normal tendering processes. An appropriate recommendation (4.8.4) was made. The Department said it does and will continue to seek the most favourable approaches to CM fees and thus again brushed aside a recommendation.

7.10 In response to a Committee query the AAO said it identified the risk of collusion which, because of the nature of the arrangements, was greater under CM. The Committee refers to its previous comments that procurement procedures should be, and should be seen to be, beyond reproach. It also notes that the NCDC does not give the construction manager a commission on sub-contracts and negotiates a fixed fee which is not altered during the course of the contract unless the scope of the project is changed.[3] In these circumstances the Committee recommends that:

[2] AAO submission, Evidence, p.302

[3] NCDC submission, Evidence, pp.209,210

Recommendation No.3: The Department of Housing and Construction review its response to Audit recommendation 4.8.4 on the calculation of construction management fees by examining the approach adopted by the National Capital Development Commission.

Chapter 8

Conclusions

The quality of the EA report

8.1 Assessment of the quality of an EA report is tied up with the contribution it has made to improving the efficiency of the area under examination and its contribution to public accountability. The former is no easy task, particularly when the benefits of the audit cannot be quantified and thus cannot, in this case, be compared with the costs of the audit of $106 570.[1]

8.2 To a large extent, assessment of the quality of the EA report will be determined by views on the value of recommendations the auditee accepts or, where there is disagreement, a committee supports or rejects. The Department has accepted many Audit recommendations but as Table 1.1 and Appendix 1 shows for close to a third of such recommendations it is difficult to monitor whether or not they have been implemented.

8.3 This is not to decry the value of these recommendations. In respect of the use of consultants the AAO recommended that the quality of DHC's briefings should be improved so as to rule out this factor as a possible cause of unsatisfactory performance by consultants(4.8.9) and that the Department pursue with greater vigour the recovery of costs associated with errors and omissions of consultants appointed by DHC (4.8.8). The latter is a worthwhile recommendation not only because of its intrinsic value but also because there could be circumstances where, if these costs are not recovered, the Commonwealth could be liable in cases of litigation. Similarly, because 'fast-tracking'(overlap of design and construction) increases the margin of

[1] The Auditor-General, Annual Report of the Australian Audit Office 1985-86, PP 310/1986, p.11.

error the AAO recommendation on the need for adequate time and resources to check documentation (4.8.10), although difficult to monitor, is also worthwhile.

8.4 Worthwhile though these recommendations may be (there are 6, implementation of which is difficult to monitor) it is difficult to monitor implementation and therefore difficult to know whether the audited organisation in accepting them is only paying lip service to the recommendation. For example, in respect of Audit recommendation 4.8.8, the Department says it has reissued its guidelines but unless someone can introduce some tests of acceptance it is just not possible to know what effect the Audit recommendation will have.

8.5 On the other hand, there are other recommendations also accepted by DHC which also make a useful contribution to improving efficiency and where implementation can be monitored. The recommendation on redesign of a form (3.9.9) should have the effect of improving the accuracy of calculations on payments to contractors and the recommendations on cost recovery from construction managers for unsatisfactory performance (4.8.22 and 4.8.23) should make clear the Department's resolve in this area. The Committee recommends that:

> **Recommendation No.4: With regard to all Audit recommendations the Department of Housing and Construction has accepted and in respect of which action is incomplete, particularly recommendations 3.9.9, 4.8.14, 4.8.15, 4.8.22 and 4.8.23, the Department report progress that has been made in implementing these recommendations in its annual report for the year ended 30 June 1987 and in subsequent annual reports.**

8.6 There are also 3 recommendations which DHC accepted but, in doing so, implied that the AAO was asking DHC to do what it had been already doing. For example, Audit asked DHC to strenghten the role of internal audit in project review (3.9.17) but the Department's response, communicated to Audit at the draft EA report stage, was that the Department had been proceeding in the direction recommended by Audit since 1984. The Committee expects that such apparent conflicts be resolved prior to its review of an efficiency audit report.

8.7 The recommendations DHC has accepted are, in terms of the second chapter of the EA report, not the major recommendations. The major ones have either been rejected or, because of the diffusiveness of DHC responses, have been treated as being rejected by the Committee. Examination of the EA report and the evidence has led the Committee to conclude that it cannot support these Audit recommendations. In short, the outcome of this efficiency audit on construction project management as practised by the Department of Housing and Construction has been less than satisfactory.

8.8 There are several other comments the Committee makes on the report. It appears that the foundations for the audit were not laid carefully. Selection of NALUI and ADFA for efficiency auditing did not comply with the criteria laid down in the Auditor-General's 1985–86 annual report or in the General Audit Manual (September 1984). The former lists the main standards for efficiency audits. One of these is a preliminary diagnostic study to establish whether there is a sufficient basis for an efficiency audit. The manual refers to prospects of an audit resulting in recommendations which, if implemented, will lead to significant improvements in auditee administration.[2] Yet, none of these selection criteria appear to have been applied to the 2 projects. The AAO said that cost overruns did not attract it to the project. It started off not knowing a great deal about the construction methods of DHC, it chose 2 projects that were not completed, were of a significant size and in different locations. Having thus selected NALUI and ADFA it found 2 different delivery methods so it suited the Audit purpose to examine these methods.[3]

8.9 The general impression the Committee is left with is that the Audit analysis is superficial. For the most part, the analysis on variations is confusing, and is based on the impressions and suspicions of big numbers (costs and the number of variations) with a general absence of the causal connection between the problem identified and the solution offered. The recommendations on guidelines and standards overlook what exists. The site allowance dispute is in no-man's land. The 'significant' increases in the 'real' costs of variations referred to in the EA report are exaggerated. The choice of delivery system based on comparative cost analysis fails to recognise the benefits (and the difficulties of quantifying the benefits) of particular options or the 'horses for courses' method of selection. Terminology problems

[2]Auditor-General's 1985-86 annual report, p.18 and the General Audit Manual (September 1984), p.10.2

[3]Evidence, pp.239,240

add to the confusion of project review and the superficial analysis of selective tendering is compounded by the inaccurate identification of selective tendering as the system used by the NCDC for its housing contracts. The absence of a clearly identified methodology which establishes criteria and assesses performance against these criteria may have assisted in eliminating some but not all of the deficiencies of the EA report.

Cost overruns of NALUI and ADFA

8.10 The EA report applies corrections of the deficiencies it identified in NALUI and ADFA to all major projects managed by DHC. It thus assumes that the 2 projects are 'representative'. It can be argued that deficiencies in administrative processes if found in 2 projects must also be present in other projects because the same or similar processes are used. But there is a dilemma for the auditors if the 2 projects are not representative. The EA report is heavy in its emphasis on costs and cost increases. Yet, from information provided in DHC annual reports the Committee has calculated that variations accounted for a 6% increase (excluding rise and fall) on contract price (See paragraph 3.30). Projects where construction management was used were brought in at around 4%(excluding rise and fall) above contract price. These figures contrast sharply with the relevant comments in the EA report and underline the dangers of applying to all projects the so-called deficiencies found in 2 projects without attempting to look at the broader picture.

8.11 In fact, as mentioned in paragraph 2.3 the increases in the apparent 'real' costs of NALUI and ADFA are out of kilter with the figures referred to in the previous paragraph. This brings this report back to the overriding issue, namely, to find out whether factors outside the influence or control of DHC contributed to the significant increases in the apparent 'real' costs of these 2 projects (See paragraph 1.13).

8.12 Table 2.1 and paragraph 2.7 show an increase of apparent 'real' costs of 31% for NALUI which is a significant increase when compared with the average performance of 6% for 1980–81 to 1985–86. It is 5 times greater and thus requires some explanation. The Department said that special factors beyond its control or influence were significant contributors to this increase. The Committee asked DHC to use the information it had provided (Table 2.1) and explain how special (or atypical) factors accounted for the cost increases.

8.13 The Department attributed the atypical nature of NALUI to 3 factors- complex facilities which required design and development and testing and adjustment after construction, a difficult cliff-face site adjacent to a surburban area which placed restrictions on the order of the work and the hours for work and numerous and extensive delays because the project was targeted for a high level of industrial action. Excluding certain items in Table 2.1 (indexation/market influences and rise and fall) DHC said the atypical nature of the project resulted in design development additions ($300 000) variations to the main contract ($532 000) and variations outside the main contract ($55 000).[4]

8.14 It may be difficult to quantify the effect of extensive delays caused by industrial action but the figures attributed to special factors hardly change the conclusion of significant increases in 'real' costs. Instead of being 5 times greater than the average NALUI is now close to 4 times greater (see Appendix III).

8.15 The Committee has identified 2 causes for the increases which it attributes to deficiencies in DHC project management. They are the management risk of the drawings(EA report) and the error in estimating which together added about $1.3m to costs and which represents an increase of about 11% in apparent 'real' costs (see Appendix III). The estimating error has also crept into the DHC reconciliation figures (See Table 2.1) as 'market influences'. It appears to the Committee that this is a soothing term for the difference between tender cost and limit of cost/provisional sums as adjusted by indexation. 'Market influence' thus balances the books!

8.16 The reasons for the increases in the remainder of the costs are not known. For example, one does not know whether the prolongation claims identified in the EA report and which were a by-product of variations were the result of special factors, the unsuccessful attempt of management risk by DHC, client initiated or what. Because the significant increases in the 'real'costs of NALUI are largely unexplained at the moment the Committee recommends that:

> **Recommendation No.5 : The Department of Housing and Construction undertake a post occupancy evaluation of NALUI which will, among other things, specify the causes for the 'real' cost increases and indicate for**

[4]DHC submission, Evidence, p.309

each of the causes identified, whether the cost increase was within the control or influence of the Department.

8.17 The Committee is aware of the fact that such evaluations themselves have their costs and their opportunity costs. However, a very large amount of information is already available in the submissions made to the Committee and the evidence it has taken. Such an evaluation will also give the AAO, if it so chooses, the opportunity to follow-up this recommendation and perhaps to get to the bottom of the basic and overriding issue concerning the Department's management of this project.

8.18 Table 2.2 shows an increase of close to 50% in the apparent 'real' costs of ADFA (the CM2 package). This is an exceptionally significant increase being more than 8 times greater than the average cost performance for 1980–81 to 1985–86 (see Appendix III). The Department said that special factors beyond its influence or control were significant contributors to this increase. The Committee asked DHC to use the information it had provided(Table 2.2) and explain how special(or atypical) factors accounted for the cost increases.

8.19 The Department said that initially the ADFA project was slightly in advance of other major building projects in the ACT but a restriction in the cash allocation in 1983–84 delayed the project with the result that it competed with the new Parliament House project, particularly for structural trades and subsequently for finishing and building service trades.This position was compounded by rapid growth in private sector office development in the ACT. The result was an overheated local construction economy, with ADFA being undertaken 'in the worst industry climate you can get...', which was characterised by an extreme shortage of trade resources, a high level of industrial disputation, a rapid increase in building costs well in advance of the consumer price index and a considerable number of bankruptcies and defaults of subcontracting organisations.[5]

8.20 The Department said escalation, rise and fall (not identified by DHC in Table 2.2) and market influences reflected the overheating. Apart from these factors, it attributed 3 types of cost increases to the overheated local construction economy-defaulting sub-contractors ($6.8m), expedition costs ($2.7m), and claims including prolongation ($7.3m).[6]

[5]DHC submission, Evidence pp.306,108

[6]DHC submission, Evidence, p.307, CM2 component

8.21 The figures attributed to special(atypical) factors do not change the conclusion of there being significant increases in the 'real' costs of ADFA. Although the Committee does not necessarily accept DHC's claim that all these cost increases could be attributed to the overheated construction scene, nonetheless, when we exclude the figures in the immediately preceding paragraph from the calculations we find that instead of being 8 times greater than the average, ADFA is now twice as great (see Appendix III). Because these increases are unexplained in part at least at the moment the Committee recommends that:

> **Recommendation No. 6: The Department of Housing and Construction undertake a post occupancy evaluation of ADFA which will, among other things, explain the indexation/market influences figures provided to the Committee, specify the causes for the 'real' cost increases and indicate, for each of the causes identified, whether the cost increase was within the control or influence of the Department.**

8.22 The comments made in paragraph 8.17 (NALUI) apply to ADFA as well. It is apparent that the slowing down of ADFA in 1983–84 put pressure on the achievement of the completion date and contributed to the overheating. The apparent 'real' cost increases of NALUI and ADFA are greater, to a significant extent, than the Department's average performance. The Committee has found that in respect of NALUI part of this increase can be attributed to factors within the control and influence of DHC but the position on ADFA is not clear. Post occupancy evaluations, as recommended by the Committee, should assist in locating the factors responsible for the cost increases. If these evaluations are scrutinised by the AAO and reported to the Parliament then the circle of accountability will be completed.

Performance indicators

8.23 Paragraph 2.1 of this report referred to the development and use of performance indicators as a means of evaluating the performance of management after a project has been completed. The next paragraph spoke of the Government's commitment to program budgeting one of the features of which will be a program statement for each program including indicators of program performance.

8.24 One can assume that major construction projects managed by DHC will constitute a program and each major project a sub-program. Performance measures/indicators, which DHC has yet to develop, will have to be related to the program objectives which the Department says are to provide facilities within agreed time and cost, that offer convenience, amenity and convenience to users, that protect the environment and conserve energy, that cater to the needs of particular groups such as persons with disabilities, women and youth and that provide a safe and stimulating work environment for staff. [7]

8.25 In evidence the Department said, in respect of post occupancy evaluations, that the assessment criteria are timeliness, suitabililty and delivery costs. The Committee has noted in paragraph 5.11 that it has received little information on how delivery costs are used as a measure of effective performance. The succeeding paragraphs take up this matter.

8.26 The starting point in this search for a cost performance indicator is the information provided in DHC's annual reports- a response to an earlier Expenditure Committee report.[8]This cost information (contract price, completed cost and so forth) has permitted calculations of apparent increases in 'real' costs (1980–81 to 1985–86) which have then been used as a yardstick to test the performance of NALUI and ADFA.

8.27 The AAO wondered whether the Committee's 'broad figures' would allow one to draw substantiated conclusions in relation to cost performance. Audit also said an examination of cost performance would extend beyond the completed cost of a project and would cover a number of cost items, which the Committee calls the 'in-house' costs of the project.

8.28 The Committee would not dispute the usefulness of an examination of 'in-house' costs. This information too is published in the Department's annual reports. For the 10 major construction projects listed in the 1985–86 annual report, these costs,when expressed as a percentage of completed costs ranged from less than one percent to over 30%.[9] This wide range may present difficulties for auditors interested in examining such costs by, for example, comparing movements of costs over time, or, by comparing these

[7]DHC 1985-86 annual report,p.12

[8]Alternative Delivery Systems for Commonwealth Public Works, Report from the House of Representatives Standing Committee on Expenditure, PP 88/1980,recommendation 1,p.viii

[9]Figures derived from DHC 1985-86 annual report,p.121

'in-house' costs with say those of the private sector unless one can compare like project with like project.

8.29 Particularly because of this, the Committee believes that a cost performance indicator that measures increases in 'real' costs is required and is something more than a broad figure. It is a 'litmus test' indicator, perhaps one of the closest bottom line indicators one can get to test the cost performance of management.

8.30 The figures derived from DHC's annual report have been based on contract price, not on the limit of cost (LOC). Because the LOC estimate is an integral part of the budgetary process (it provides the link between the budget estimate and actual expenditure) the Committee has formed the view that the cost performance should also be based on the LOC estimate (as indexed). The cost in money terms of the completed project can be compared against the contract price or the LOC estimate by using an accepted price deflator.All this should be considered in the context of program budgeting and program statements and accordingly the Committee recommends that:

> **Recommendation No.7: The Department of Housing and Construction (DHC) consult with the Department of Finance on the need to develop for major construction projects a cost performance indicator that measures increases in 'real' costs based on both the contract price and the limit of cost estimate (indexed where necessary); and if development of the indicator is accepted, DHC publish the relevant information in its annual reports and thereby show, for each major project and the total number of major projects completed for a particular year, the percentage increases in 'real' costs.**

8.31 This cost performance indicator could be one of the factors to be considered when decisions are made on post occupancy evaluations or other types of reviews. When allied with indicators on timeliness and suitability the cost performance indicator should permit a worthwhile examination of the effectiveness of DHC project management. In fact, it could also be productive if, as a general practice, the AAO also examined the development and use of such indicators in the course of an efficiency audit.

John Mountford, M.P.
Chairman
25 February 1987

Appendix I

Audit Recommendations, DHC Responses, Committee Comments

Variations to contracts

Nalui

Recommendation 3.9.3 :	The Department should document its assessment of considerations leading to decisions on documentation checks.
Response :	Accepted as being appropriate and necessary. (DHC submission, Evidence, p.183)
Comment :	

Recommendation 3.9.4:	Guideline material should be developed and implemented for the use of officers making such decisions.
Response :	Rejected- the system of review by experienced professionals is more effective. (DHC submission, Evidence, p.183)
Comment :	

Recommendation 3.9.5 :	Tighter and more formalised controls over the administration of contract variations should be introduced.
Response :	Rejected-current procedures of formal delegations and approvals considered appropriate. (DHC submission,Evidence, pp.29,183)
Comment :	

Adfa

Recommendation 4.8.6:	Client organisations should comprehensively review planning documentation at an early stage and ensure its conformity with their functional requirements.
Response :	None.
Comment :	This recommendation should be transmitted by DHC to client organisations. Implementation of the recommendation difficult to monitor.

Recommendation 4.8.7 :	In the interests of better controlling client initiated variations not requiring additional authorisation of funds the Department might consult the Department of Finance on the question of essentiality testing. The Department could also develop a more comprehensive approach to documentation of the reasoning behind approval of such variations.
Response :	Rules, developed in association with the Department of Finance, for the use of contingency allowances for minor scope variations have been reissued. (DHC submission, Evidence, p.184)

Comment :	The response does not deal with the recommendation. However, Finance says judgements on essentiality testing are best left to the experts. Treated as rejection.

Recommendation 4.8.8 :	The recovery of costs associated with errors and omissions by the Department's consultants should be pursued with greater vigour.
Response :	Accepted- guidelines have been reissued. (DHC submission, Evidence, p.184)
Comment :	Implementation of recommendation difficult to monitor.

Recommendation 4.8.9 :	The quality of the Department's briefing of consultants should be reviewed and improved as necessary to more clearly rule out this factor as a possible cause of unsatisfactory performance by consultants.
Response :	Accepted as a necessary and appropriate ongoing action. (DHC submission, Evidence, p.184)
Comment :	Implementatation of recommendation difficult to monitor.

Recommendation 4.8.10 :	Especially with the use of 'fast-tracking' the Department should provide adequate time and resources to check documentation to reduce the need for later design amendments and to ensure conformity with the detailed brief and local government authority standards.

Response :	Accepted but Audit was advised that its example in 4.4.14 was inappropriate. (DHC submission, Evidence, p.184)
Comment :	Implementation of recommendation difficult to monitor.

Recommendation 4.8.11 :	The Department should review the possibility of developing guidelines and standards for specification and documentation checks.
Response :	Rejected- existing guidelines and standards contained in a range of departmental documents is sufficient. (DHC submission, Evidence p.184)
Comment :	

Recommendation 4.8.12 :	Variations to contracts should be monitored against standards developed for a range of construction types and situations.
Response :	Accepted as an appropriate practice for broad assessment performance and adjustment of practices and procedures on future projects. The Department disagreed with the recommendation proposing numerical standards or norms. (DHC submission, Evidence, p.184)
Comment :	DHC's rejection of standards or norms is a rejection, not acceptance, of the recommendation. The Department's advice to the AAO on its draft report was that this recommendation was impractical. (DHC submission, Evidence, p.39)

Recommendation 4.8.13 : Improved procedures introduced by the Department for processing and recording contract variations at ADFA should be applied, with modifications to fit changed circumstances, to other projects.

Response : The Department will proceed with its process of continuing review and include the matters in this recommendation and in paragraphs 4.4.23 and 4.4.29.
(DHC submission, Evidence, p.39)

Comment : Interpreted as acceptance.

Choice and application of project delivery methods

Adfa

Recommendation 4.8.2 : The Department should assess the extent to which adoption of CM as a project delivery method has contributed to ADFA construction costs.

Response : Rejected - assessment of cost contribution could not be undertaken with sufficient accuracy, and would be of little value because other factors normally determine the decision on the delivery system.
(DHC submission, Evidence, pp.38, 184)

Comment :

Recommendation 4.8.3 : Alternative project delivery methods should be evaluated and the results used in making decisions on delivery methods to be adopted for individual projects. The reasoning behind such decisions should be fully documented and take into account the administrative costs and complexities involved in each option.

Response :	Accepts that documentation of reasons for choosing a particular delivery system is important and complies with this. Rejection was related to a perceived lack of benefit of costs at end of project for reasons given in response to 4.8.2. (DHC submission, Evidence, p.184)
Comment :	DHC has rejected the major thrust of the recommendation.

Project Review

Nalui

Recommendation 3.9.16 :	In the interests of improving the quality of management accountability, development and application of a system of independent retrospective project review with reporting to the Secretary should be given high priority.
Response :	Accepted - current performance reporting and post occupancy evaluation procedures are being further developed. (DHC submission, Evidence, p.183)
Comment :	In reality DHC has ignored the recommendation which asked for a new procedure which the Department believes already exists. Treated as rejection.

Recommendation 3.9.17:	The Department should consider strenghtening the role of Internal Audit in the review of project management.
Response :	Accepted - since the Department has been proceeding in this direction since 1984. (DHC submission, Evidence, pp.29,183)

Comment :	DHC appears to be saying that the AAO is asking DHC to do what it has been doing.

Adfa

Recommendation 4.8.24 :	The Department should develop and implement a system for the review of project management performance along the lines suggested by Audit.
Response :	Accepted - retrospective project reviews already occur through post occupancy evaluations. (DHC submission, Evidence, pp.14,184)
Comment :	In reality DHC has ignored the recommendation which asked for a new procedure which the Department believes already exists. Treated as rejection.

Recommendation 4.8.25 :	The performance of the system referred to in recommendation 4.8.23 should be evaluated after the completion of three or four major reviews.
Response :	Accepted - DHC sees its current initiatives for post occupancy evaluations and other retrospective performance reviews as an evolving process. (DHC submission, Evidence, p.184)
Comment :	The reference in the recommendation to 4.8.23 should be to 4.8.24. Since 4.8.24 has been treated as being rejected, so has this recommendation.

Tendering Procedures

Recommendation 3.9.2 :	Selective tendering should be thoroughly evaluated and the results of the evaluation documented.

Response : Accepted - DHC has evaluated selective tendering.
(DHC submission, Evidence, p.183)

Comment : Acceptance of the recommendation is inconsequential. Audit says there has hardly been an evaluation which it considers to be still worthwhile.
(Evidence, p.295)

Other

Nalui

Prolongation claims and extensions of time

Recommendation 3.9.6 : Written policies and guidelines should be developed and introduced showing how best to avert circumstances in which prolongation claims may arise and how best to resolve them in a satisfactory manner.

Response : Rejected- Audit does not acknowledge the extensive guideline framework that exists and discounts the importance of experience and professional judgement.
(DHC submission, Evidence, pp.15, 183)

Comment :

Recommendation 3.9.7 : The Department should develop and apply consistent methods in a full check of extensions of time allowed on the NALUI contract together with a check of extensions granted in respect of other contracts being administered concurrently within the same project group.

Response : Accepted and implemented.
(DHC submission, Evidence, p.183)

Comment :

Recommendation 3.9.8 :	A comprehensive set of guidelines should be introduced to assist project clerks/managers in addressing all consider points when assessing extension of time claims. Such guidelines should be adapted for use Australia-wide.
Response :	Rejected- same reasons as for 3.9.6.
Comment :	

Recommendation 3.9.9 :	The relevant departmental form (W73) should be redesigned to provide for times to be expressed in working days and hours.
Response :	Accepted - the form is being reviewed. (DHC submission, Evidence, p.183)
Comment :	

Progress payments

Recommendation 3.9.10 :	In appropriate circumstances the Department should act quickly to reduce progress payments where sub-standard or defective work is in evidence.
Response :	Accepted. (DHC submission, Evidence, p.183)
Comment :	Implementation of recommendation difficult to monitor.

Recommendation 3.9.11:	Consideration should be given to the use of the computer system known as 'PPAY' on all major contracts administered by the Department.
Response :	Accepted - but wider use of 'PPAY' not considered warranted. (DHC submission, Evidence, p.183)
Comment :	Acceptance is misleading because it relates only to 'consideration' and DHC has rejected application of the recommendation. Treated as rejection.

Recommendation 3.9.12 :	In the interests of improving control over progress payments consideration should be given to introducing smaller work categories.
Response :	Accepted - but introduction of smaller work categories not considered to be cost effective. (DHC submission, Evidence, p.183)
Comment :	Acceptance is misleading because it relates only to 'consideration' and DHC has rejected application of the recommendation. Treated as rejection.

Rise and fall

Recommendation 3.9.13 :	The Department should consider proposing a single inflation factor such as the average adult male weekly wage for calculating rise and fall.
Response :	Rejected - present method accepted by National Public Works Conference and is general practice. (DHC submission, Evidence, p.183)
Comment :	

Cost escalation

Recommendation 3.9.14 : Consideration should be given to examining, with the Department of Finance, the possibility of modifying the rules for approval of construction costs.

Response : Rejected - current rules provide appropriate flexibility.
(DHC submission, Evidence, p.183)

Comment :

Recommendation 3.9.15 : The maximum permissible contingency allowance provided in Civil Works Memorandum No 1981/1 should be reviewed and updated.

Response : Accepted - discussions with the Department of Finance have not resulted in any change to existing scales.
(DHC submission, Evidence, p.183)

Comment : The purpose of the recommendation was to increase existing scales, so in effect the recommendation has been rejected.

Management support systems

Recommendation 3.9.18 : Improvement of the DAIS system to overcome deficiencies identified by Audit should be given high priority.

Response : Accepted and is being implemented.
(DHC submission, Evidence, p.183)

Comment :

Recommendation 3.9.19 :	In the interests of encouraging a consistent approach to project administration, a centrally undertaken rationalisation of manuals and instructions should be considered.
Response :	Accepted in that the development and issue of manuals and instructions is co-ordinated by Central Office. (DHC submission, Evidence, p.183)
Comment :	Implementation of recommendation difficult to monitor.

Adfa

Provisions of construction management agreement

Recommendation 4.8.4 :	Alternative approaches to the calculation of CM fees which provide incentives for cost reductions and reduce scope for collusion should be sought and implemented.
Response :	DHC does and will continue to seek the most favourable approaches to the calculation of CM fees. (DHC submission, Evidence, p.32)
Comment :	The Department has brushed aside the Audit recommendation. Treated as rejection.

Recommendation 4.8.5:	The Department should develop and implement guidelines for CM agreements, including the extent to which General Conditions of Contract should be included in such agreements.
Response :	Rejected - because of the requirement to document guidelines. CM agreements already standardised to a large extent. (DHC submission, Evidence, p.184)

Comment :

Expenditure control

Recommendation 4.8.14 : The Department should develop and document checks undertaken to ensure that progress payments to sub-contractors and the Construction Manager do not exceed the value of the work completed. The procedures developed should be included in the administrative guidelines for departmental staff.

Response : Accepted- consultation between DHC and the Department of Finance has led to the latter seeking an amendment to Finance Regulation 56 which will enable oversighting of construction managers.

(DHC submission, Evidence, p.184)

Comment :

Recommendation 4.8.15 : Departmental procedures for administration of CM agreements should make clear the project management implications of Finance Regulations.

Response : Accepted - consultation between DHC and the Department of Finance has led to the latter seeking amendments to Finance Regulation 56.
(DHC submission, Evidence, p.17)

Comment :

Recommendation 4.8.16 : The work necessary for the application of proper financial controls should be completed in a timely manner.

Response :	Accepted. (DHC submission, Evidence, p.35)
Comment :	Implementation of recommendation difficult to monitor.

Recommendation 4.8.17 :	The costs of special administrative procedures necessitated by CM should be recognised and taken into account when project delivery options are being considered.
Response :	Accepted- as DHC must necessarily consider the resource requirement placed on it by the administrative procedures of CM. (DHC submission, Evidence, p.184)
Comment :	The response is not a sufficient answer to the recommendation which is really a part of 4.8.3. The Department also said, in respect of 4.8.17, that decisions to use CM will be determined by other than the costs of administrative procedures of CM. The recommendation is treated as being rejected. (DHC submission, Evidence, pp. 39)

Recommendation 4.8.18 :	Development of guidelines for administration of CM agreements should be given high priority.
Response :	Rejected - DHC believes that its current guidelines are appropriate for a professional organisation. (DHC submission, Evidence, pp.39, 184)
Comment :	

Project management

Recommendation 4.8.19 :	Prompt clearance of amounts in dispute between the Department and the Construction Manager should be preferred to increasing the advance account and administrative procedures for this purpose should be developed for use on later CM contracts.
Response :	Accepted. (DHC submission, Evidence, p.184)
Comment :	

Recommendation 4.8.20 :	In considering future CM agreements the Department should take into account the role of the Construction Manager in checking the competence and financial viability of sub-contractors. Future CM agreements and administration should be structured to clearly reflect the role of each party.
Response :	Accepted - is being done already. (DHC submission, Evidence, pp.36, 184)
Comment :	According to *DHC*, Audit is asking *DHC* to do what it is doing.The Committee notes that the second part of this recommendation is covered by the terms of reference of the CM consultancy that DHC has entered into. (Evidence, p.283A)

Recommendation 4.8.21 :	Before approving tenders, the Department should check and document the technical and financial standing of tenderers or implement monitoring procedures to provide assurance that this function is performed properly by the Construction Manager.

Response :	Accepted - is being done already. (DHC submission, Evidence, pp.36, 184)
Comment :	According to DHC, Audit is asking DHC to do what it is doing.

Recommendation 4.8.22 :	Consideration should be given to seeking financial redress for expedition costs due in part to the Construction Manager's unsatisfactory performance in construction programming.
Response :	Accepted - will be a factor considered in the financial completion of the project. (DHC submission, Evidence, p.184)
Comment :	

Recommendation 4.8.23 :	Any financial settlement with the Construction Manager should take into account areas mentioned by Audit in which the firm's performance has led to an increase in the Commonwealth's costs.
Response :	Accepted - will be a factor considered in the financial completion of the project. (DHC submission, Evidence, p.184)
Comment :	

Appendix II

Conduct of the inquiry, witnesses and evidence

Conduct of the inquiry

A procedural arrangement exists between the House of Representatives Standing Committee on Expenditure and the Joint Committee of Public Accounts under which it is decided which committee examines a particular efficiency audit report of the Auditor-General. As a result of agreement that the Expenditure Committee should examine this efficiency audit report, on 9 April 1986 the Committee resolved to inquire into and report on the Auditor-General's efficiency audit report on construction project management as practised by the Department of Housing and Construction. On 20 August 1986 the Committee appointed a sub-committee consisting of Mr Beale (Sub-committee chairman), Mr Langmore and Mr Smith to undertake the work, and later, on 8 October 1986, added Mr Free, Mr Martin and Mr Mountford to the Sub-committee.

Submissions were called for from a number of interested organisations and on 10 October 1986 the Sub-committee took evidence from the Department of Housing and Construction. After examining and deliberating on the information generated at this hearing and the additional information the Sub-committee obtained, the Sub-committee sent its Preliminary Conclusions on a confidential basis to the Australian Audit Office and the Department and then took in-camera evidence from these organisations on 27 November 1986. They were both informed that this evidence would be published after the Committee report had been presented to the Parliament. It should be emphasized that the Sub-committee did not issue a draft report. The purpose of the Preliminary Conclusions procedure was to give both organisations the opportunity to examine and respond to some preliminary views the Sub-committee had formed and for it to seek elucidation of the responses, so that all this could be taken into consideration in the preparation of the Committee report.

Witnesses

Evidence was taken from the following witnesses:

Australian Audit Office

Mr Anthony St.John Minchin
Assistant Auditor-General

Mr Russell Charles Coleman
Acting Assistant Auditor-General

Mr Colin Richard Mason
Director

Department of Housing and Construction

Mr Keith James Rodda
Deputy Secretary

Mr Richard John Roennfeldt
Director
Australian Capital Territory region

Mr Kevin Henry Cole
Director
New South Wales region

Evidence

The submissions received, all of which have been authorised for publication, are as follows:

Submission from the Department of Housing and Construction, dated 18 August 1986

Submission from the Master Builder's Federation of Australia,
dated 19 August 1986

Submission from the Department of Health,
dated 22 August 1986

Submission from the Australian Federation of Construction Contractor
dated 30 September 1986

Submission from The Royal Australian Institute of Architects,
dated 1 October 1986

Submission from Telecom Australia,
dated 6 October 1986

Submission from the Australian Audit Office,
dated 22 October 1986

Submission from the Department of Housing and Construction,
dated 23 October 1986

Submission from the Department of Finance,
dated 28 October 1986

Submission from the Building Industry Specialist Contractors
Organisation of Australia Limited,
dated 4 November 1986

Submission from the National Capital Development Commission,
dated 14 November 1986

Submission from the Australian Audit Office,
dated 26 November 1986

Submission from the Department of Housing and Construction,
dated 26 November 1986

Submission from the Australian Audit Office,
dated 11 December 1986

Submission from the Department of Housing and Construction,
dated 12 December 1986

Submission from the Department of Local Government and Administrative Services,
dated 6 January 1987

Submission from the Department of Housing and Construction,
dated 9 January 1987

Appendix III

Calculations of figures used in report

1.Paragraph 1.8

DHC rejected 22 of the 42, or, 52.38% of the recommendations.

2.Paragraph 2.7

The total cost increase is \$25.5m (total) - \$12.0m (limit of cost) = \$13.5m. From this is excluded indexation/market influences (\$3.7m) and rise and fall (\$6.1m) to give an apparent 'real' cost increase of \$3.7m - \$13.5m - (\$3.7m + \$6.1m) = \$3.7m. When expressed as a percentage increase on limit of cost, this is 3.7 x 100 divided by 12.0 = 30.83%.

3.Paragraph 2.9

The total cost increase (November 1984 costs) is \$74.3m (total) - \$49.0m (tender amount) = \$25.3m. From this is excluded escalation/market influences (*\$14.4m*) to give an apparent 'real' cost increase of *\$10.9m*, that is \$25.3m - \$14.4m = \$10.9m. When expressed as a percentage increase on tender amount this is 10.9 x 100 divided by 49.0 = 22.25%.

When the June 1986 figures are used the percentage increase in apparent 'real' costs is \$96.7m - \$49.0m = \$47.7m - \$24.0m = \$23.7m x 100 divided by \$49.0m = 48.37%.

4.Paragraph 3.30

Derived from information in DHC annual reports. The total contract price was \$708.67m and the total cost of variations was \$44.51m, or, a 6.28% increase on contract price. The cost distribution of the variations was design variations (*\$13.49m*), client variations (\$15.45m) and construction variations

($15.56m). The percentage figures then are 13.49 x 100 divided by 44.51 = 30.32% for design variations, 15.45 x 100 divided by 44.51 = 34.72% for client variations and 15.56 x 100 divided by 44.51 = 34.97% for construction variations.

5.Paragraph 3.34

The EA report says the costs attributable to variations (CM2 package) was of the order of $1m (paragraph 4.4.2). The tender amount for the package was $49.0m so when expressed as a percentage increase on tender amount variations accounted for an increase of 1.0 x 100 divided by 49.0 = 2.04%.

Although the EA report says that variations have added $4m to the cost of NALUI only $1.45m have been identified - $0.416m for hydraulic and mechanical drawings(ignoring offsets), $0.391m for the site allowance dispute and $0.643m the Committee has identified as being the difference between the provisional sums and tender price for mechanical, electrical, fire protection and elevator sub-contracts. When expressed as a percentage increase on the limit of cost of $12.0m this $1.45m represents a percentage increase of 1.45 x 100 divided by 12.0 = 12.08%.

6.Paragraph 3.36

The 35% figure in the EA report (paragraph 3.2.1) was the percentage increase of variations ($4.041m) on the limit of cost estimate; thus $12.0 - $4.041 x 100 divided by 12.0 = 33.68%.

The information presented by the AAO at the 27 November 1986 hearing was different to that contained in the EA report. The costs of variations for NALUI were lower than that shown in the EA report but the costs for ADFA were higher. Further, the basis for the calculation was different. It was not the percentage increase of variations on the limit of cost as used in the EA report for NALUI (or the percentage increase on tender amount) but the percentage increase of variations on the total increase in 'real' costs.This method of calculation uses a smaller denominator (total increase in 'real' costs) than that used in the EA report (limit of cost), so obviously the percentage increase will be greater.

The method of calculation used should be related to its purpose.It may well be that both methods of calculation are relevant. But the fact is that the AAO has used a different method of calculation to that used in its report and information not contained in its report to support a conclusion of the EA report.

7.Paragraph 3.40
$1.047m x 100 divided by $12.0m = 8.73%.

8.Paragraph 4.5
$74.267m - $49.036m = $25.231m x 100 divided by $49.036m = 51.45%.

9.Paragraph 4.7
Total cost increase of $96.7m - $49.0m = $47.7m. Escalation/market influences are $24.0m or 24.0 x 100 divided by $47.7 = 50.31%.

Expedition costs of $2.7m = 2.7 x 100 divided by 47.7 = 5.66% of the increase. Variations costs of $6.7m = 6.7 x 100 divided by 47.7 = 14.05%. Claims, including prolongation of $7.3m = 7.3 x 100 divided by 47.7 = 15.30%. The costs of defaulting sub-contractors were $6.8m = 6.8 x 100 divided by 47.7 = 14.26%.

10.Paragraph 4.18
The 7 projects (one in 1982–83, two in 1983–84 and four in 1984–85) had a total contract price of $192.82m and were brought in at $199.96m (less rise and fall) and this represented an increase above contract price of 199.96 - 192.82 = 7.14 x 100 divided by 192.82 = 3.70%.

11.Paragraph 8.14
As shown in note 2 the 'real' cost increase is $3.7m. When one subtracts the $0.887m in paragraph 8.14, the reduced figure is $2.813m which represents 2.813 x 100 divided by 12.0 = 23.44%. This percentage is 3.91 times greater than the average.

12.Paragraph 8.15
$1.3m x 100 divided by $12.0m = 10.83%.

13.Paragraph 8.18
$96.0m - $24.0m = $72.7m - $49.0m = $23.7m x 100 divided by $49.0m = 48.37%, or, when divided by 6 (the 6 year average) = 8.06 times greater than the average.

14.Paragraph 8.21

\$96.0m - (\$24.0m + \$17.3m) = \$54.7m - \$49.0m = \$5.7m x 100 divided by \$49.0m = 11.63%, or, when divided by 6 (the 6 year average) = 1.94 times greater than the average.