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## PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS.

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### FURTHER REPORT

TOGETHER WITH

MINUTES OF EVIDENCE

RELATING TO THE PROPOSED

### ALTERATIONS AND ADDITIONS TO THE CUSTOMS HOUSE, SYDNEY.

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MEMBERS OF THE PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS.

(First Committee).

EDWARD RILEY, Esquire, M.P., Chairman.

<i>Senate.</i>	<i>House of Representatives.</i>
Senator the Honorable John Henry Kenting,	James Edward Fenton, Esquire, M.P.,
Senator Patrick Joseph Lynch (Vice-Chairman),	William Fyfe Finlayson, Esquire, M.P.,
Senator William Harrison Story.	The Honorable Henry Gregory, M.P.,
	Sydney Sampson, Esquire, M.P.,
	William Henry Laird Smith, Esquire, M.P.

INDEX.

	Page
Report ... ..	v
Minutes of Evidence ... ..	1

LIST OF WITNESSES.

	Page.
Harkley, William Henry, Collector of Customs, New South Wales ... ..	23
Burckelman, Adolphus, Secretary and Executive Member, Store Supply Committee, New South Wales ... ..	18
Hackett, William Arthur Morley, President, Royal Victorian Institute of Architects ... ..	24
Griffin, Walter Burley, Federal Capital Director of Design and Construction ... ..	20
Kirkpatrick, John, Architect, Sydney ... ..	14, 17
McConnell, Andrew Stanley, Manager, John Howie & Sons, Builders, Sydney ... ..	23
Murdoch, John Smith, Architect, Department of Home Affairs ... ..	7, 19, 27
Oakeshott, George John, Works Director for New South Wales, Department of Home Affairs ... ..	1
Owen, Percy Thomas, Director-General of Works, Department of Home Affairs ... ..	11
Smith, Edwin Evan, Metropolitan Inspector, Department of Home Affairs ... ..	5

PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS.

ALTERATIONS AND ADDITIONS TO THE  
CUSTOMS HOUSE, SYDNEY.

R E P O R T.

THE PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS, to which the House of Representatives referred for further consideration and report the question of the proposed alterations and additions to the Customs House, Sydney, has the honour to report as follows:—

INTRODUCTORY.

1. On the motion of Mr. Archibald, then Minister of State for Home Affairs, the House of Representatives on 10th September, 1915, referred to the Committee the question of certain alterations and additions proposed to be effected to the Customs House, Sydney. The Committee visited Sydney for the purpose of taking evidence and inspected the existing building, and carefully scrutinized the plans which had been prepared showing the proposed work.

2. It was represented to the Committee that the estimated cost was £37,500, and the time fixed for completion was two years from date of commencement. It was stated in evidence, however, that this estimate was made having in view the fact that the work was to be carried on without the removal of the staff or serious disturbance to Customs business, but that if the building were vacated it would be possible to complete the work in about one year, at an estimated cost of £29,500.

3. The Committee accordingly recommended that this course be taken and the work be proceeded with in accordance with the designs submitted. By this means it was hoped to save an amount of £8,000, less cost of removal expenses and rent of temporary premises.

4. The Committee's report was completed on the 20th October, 1915, and laid on the Table of the House on the 4th November, 1915.

Acting on the Committee's recommendation, all the Departments, with the exception of the Shipping Master, who is under State control, were removed from the Customs House during the Christmas and New Year holidays, 1915-16.

5. When the Committee visited Sydney in February, 1916, it was discovered that although the building had been vacant about six weeks no steps had been taken to carry out the alterations. Further, the attention of the Committee was drawn to a report in the Sydney *Sunday Times* of 13th February, 1916, of an interview with the Honorable King O'Malley, who had taken over the duties of Minister of State for Home Affairs as from 27th October, 1915, in which he was represented as stating in regard to the Sydney Customs House:—

The plans of that building must be magnificent. I have in my mind's eye a splendid building of the American skyscraper style with splashes of Hellenic art about it as a fitting portal to the Empire City of the South.

6. The Committee, therefore, deemed it its duty to point out to the Acting Prime Minister on the 21st February, 1916:—

(a) that the saving proposed to be effected by the Committee would be diminished in proportion to the time which elapsed before the work on the building was undertaken and to the extent of the amount paid for accommodation in leased premises:—

EXTRACT FROM THE VOTES AND PROCEEDINGS OF THE HOUSE OF REPRESENTATIVES.

No. 108 OF 22ND MAY, 1916.

19. CUSTOMS HOUSE, SYDNEY—ALTERATIONS, &c.—FURTHER REMISSION TO PUBLIC WORKS COMMITTEE.—The Order of the Day having been read for the resumption of the debate on the following motion of Mr. O'Malley, That the Parliamentary Standing Committee on Public Works having reported to the House the result of their inquiries into the proposed alterations and additions to the Customs House, Sydney, and the Minister having obtained estimates of cost, £51,481 7s. 11d., tabled herewith, more closely calculated than those upon which the Committee reported, involving virtually double the Committee's estimate of cost, £29,000, the House resolves that their report be remitted to the Committee for further consideration, and report as to the expediency of the work.

Question—put and passed.

(b) that the proposal for a tall building mentioned by the Minister for Home Affairs was shown by the evidence attached to the Committee's report to be inadvisable owing to the nature of the foundations; and

(c) that the Committee was unanimously of opinion that no proposal should be made to alter the design of any building reported upon by the Committee until a further reference had been made to the Committee.

7. The attitude taken up by the Committee was challenged by the Minister for Home Affairs and a request was sent by him to the Crown Law officers for advice. The opinion given was—

I do not think that anything in the Act deprives the Minister of the power to make alterations in the construction of the work after the Committee has reported on it, provided that such alterations do not make it a different work altogether from that which was submitted to the Committee.

8. The Minister for Home Affairs then, on the 22nd May, 1916, submitted to the House of Representatives a motion:—

That the Parliamentary Standing Committee on Public Works having reported to the House the result of their inquiries into the proposed alterations and additions to the Customs House, Sydney, and the Minister having obtained estimates of cost, £51,481 7s. 11d., tabled herewith, more closely calculated than those upon which the Committee reported, involving virtually double the Committee's estimate of cost, £29,000, the House resolves that their report be remitted to the Committee for further consideration, and report as to the expediency of the work.

9. It should be made clear that the amount of £29,000 mentioned in the reference was not, as the wording would seem to imply, an estimate arrived at by the Committee. As stated in paragraph 2 above, the departmental estimate of cost was £37,500, which it was stated in evidence could be reduced to £29,500 if the building were vacated before the work was put in hand.

10. In the course of its inquiries the Committee learned that subsequent to the presentation to Parliament of its earlier report on this subject two conferences were arranged by the Minister for Home Affairs between the Works Director, New South Wales, the Chief Architect, Department of Home Affairs, Melbourne, and Mr. W. B. Griffin, the Federal Capital Director of Design and Construction, acting in his capacity as a private architect. As a result of these conferences some minor alterations were agreed upon, but the general design of the building or the accommodation to be provided was not varied. The Committee, therefore, endeavoured to arrive at an explanation of the difference in the estimates furnished in respect of what was virtually the same work.

11. It was ascertained that the original estimate of £37,500 furnished to the Committee was arrived at by a system of cubing, a practice usually resorted to by both Government and private architects in furnishing preliminary estimates in respect of new buildings, though this is admitted to be a somewhat inexact method when applied to alterations.

12. The Works Director, New South Wales, was further examined as to the statement made to the Committee that a saving of £8,000 could be effected in the estimated cost of the work if he were given a vacant building to work upon, and admitted that in naming that amount he had been unduly sanguine, but explained that he had placed a monetary value on the inconvenience, delay, &c., which would be occasioned, although, properly speaking, such items could not actually be reduced to a cash basis, and asked that he be allowed to amend his estimate to an actual cash saving of £1,000.

13. The Committee further ascertained that the estimate of £51,481 7s. 11d. mentioned in the reference by Parliament, was obtained by the Minister for Home Affairs from his department in Sydney and had not been reviewed at head office, so that it cannot properly be considered a departmental estimate.

14. Evidence obtained from departmental officers and from architects in private practice went to show that since the estimate of £37,500 was submitted to the Committee in September last, considerable increases have taken place in the price of many important building materials, to such an extent that it is generally admitted that an estimate given in September last could not be accepted as a fair criterion of what the work could be done for at the present time. However, by calculating on present prices and working to a complete schedule of quantities

which has now been prepared, the Committee is assured that the whole of the work comprised in the alterations and additions to the Customs House, Sydney, omitting certain items and substituting certain cheaper materials in cases where the rise in prices for those originally specified has been considerable, can be carried out for the sum of £41,000, and at this price the Committee recommends that the work be proceeded with forthwith.

15. The decision arrived at by the Committee is shown in the following extract from its Minutes of Proceedings:—

Senator Story moved—That the alterations and additions to the Customs House, Sydney, be carried out in accordance with the plans submitted to the Committee, at the estimated cost of £41,000.

Seconded by Mr. Finlayson.

Carried unanimously.

*Edward Riley*

Chairman.

Office of the Parliamentary Standing Committee on Public Works,  
120 King-street, Melbourne, 31st May, 1916.

# CUSTOMS HOUSE, SYDNEY.

## MINUTES OF EVIDENCE.

(Taken at Sydney.)

WEDNESDAY, 24th MAY, 1916.

Present:

Mr. RILEY, Chairman;

Senator Lynch,	Mr. Finlayson,
Senator Story,	Mr. Sampson,
Mr. Fenton,	Mr. Laird Smith.

George John Oakeshott, F.I.A., Works Director for New South Wales, Department of Home Affairs, sworn and examined.

1. To the Chairman.—When the Committee previously took evidence with regard to the proposed alterations to the Sydney Customs House, I furnished certain plans and estimates. Since then some suggested alterations have been made, and for the information of the Committee I would like to read the letter which I sent to the Director-General of Works, Melbourne, under date 16th May, 1916. It is as follows:—

For the further information of the Minister, I have to report that I have gone very carefully into the matter of the increased estimate of the Customs House, Sydney.

In order to arrive more exactly at the increase of cost of building between September, 1915, and April, 1916, I have prepared a copy of the quantities, and carefully carried out each item at the price ruling in September, 1916. This totals out at £41,413, as against £51,481 according to prices in April, 1916. It is, therefore, seen that an increase of 25 per cent. has occurred during this period in the cost of work, that is, the estimate in September, 1915, of £37,500, should now be quoted as £46,875.

As prices are still rising, I am of opinion that a further allowance should be made for increased prices before the work is completed. This can, of course, be only conjecturally but I do not consider it will be safe to put this down at less than 10 per cent. extra. This increases the amended estimate of £46,875 to £51,662. The above estimate is based on the assumption that the Customs officers would be in possession of the building during building operations. I was asked by the Public Works Committee what deduction could be made if the whole of the occupants were removed, and thus leave the building entirely free for the workmen. I demurred about giving an estimate, but, on being pressed, I stated that, roughly, about £3,000 could be saved. But on going into the matter closely, and working out the different stages of the work, I find that the actual cost of moving the officials from one part of the building to another during the progress of the work would not amount to more than £1,000. This amount does not include the cost to the Customs House officials owing to the temporary dislocation of business, nor the great inconvenience caused to the public, &c.

The estimate of September, 1915, was made from pencil sketches before the working drawings were prepared, and, therefore, had to be based upon a price per foot cube—a more or less rough-and-ready method for a new building, but more so for alterations and additions to an existing structure. Also, when the working drawings were in progress, small additional works were found to

be necessary that had not been taken into account in the original estimate. These were estimated at about £1,930.

The above may be summarized thus:—	
Estimate in September, 1915	£37,500
Add 25 per cent. for increase in cost of building from September, 1915, to April, 1916	9,375
	£46,875
Add 10 per cent. for conjectural increase during the ensuing 18 months	4,687
	£51,562
Net deduction for reduction of construction in the revised set of working drawings, say	£1,000
Deduct for removal of all Departments during building operations	1,000
	£49,562
Add for additional works found necessary during preparation of working drawings	1,910
	£51,472

I sent the above letter to the Director-General of Works, because Colonel Owen rang me up and wanted to know why the increase in the cost of the building was likely to be so much. I should like to say that the estimate of £51,481 was prepared in a very great hurry, although I am prepared to stand by the rates in it. Mr. O'Malley and Mr. Griffin had arranged to come over during the Easter holidays, and the work of taking out the quantities occupied some considerable time, because the building is a big one, and the prices and quantities ought to be checked and rechecked. I was away on sick leave during Easter week, and the Minister was asking every day for the information from Mr. Smith, who was representing me at the time. I should like to have seen the final estimate before it went to the Minister, but the Minister and Mr. Griffin took it away to Melbourne, so I had no opportunity to revise it finally. Colonel Owen had no opportunity either, and to my knowledge he has not seen the later estimate. Speaking generally, I am prepared to stand by it, but if I had had the opportunity of revising it, there are several items which I would probably have criticised, and perhaps eliminated. The Minister arranged that Mr. Murdoch, Mr. Griffin, and myself should consult on 21st and 22nd January, in Sydney, with regard to proposed alterations. I had instructions from the Minister to meet Mr. Griffin, and explain to him the scheme we had in view, and to see if it could be reduced in some way. Mr. Murdoch and Mr. Griffin also met on the 16th and 22nd February in Melbourne. When Mr. Griffin came to Sydney we went over the whole plan in detail, and we made certain suggestions. So far as I can recollect, Mr. Griffin made no suggestion at all, but he took the plans away with him, undoubtedly, under authority from the Minister. The next step in the proceedings was the meeting in Melbourne between Mr. Murdoch and Mr. Griffin, and it was

after this interview that we had instructions from the Minister to prepare a fresh set of plans of the revised scheme which has been estimated to cost £31,481. Had the original design been adhered to, I think the work could have been carried out then for £36,000, provided the occupants of the building had been removed. In my previous evidence I estimated that if the building were clear there would be a saving of £8,000 in the cost of the alterations, but after further consideration, I feel sure that I made a mistake, and that the saving to be effected by that course would represent £1,000 and not £8,000. I had unconsciously in my mind the great inconvenience that would result to the public and the officials of the Customs Department should the latter occupy the building during alterations, and I put a monetary value upon it which I should not have done. The alterations in the amended scheme are not very material as compared with the sketch plans which were before the Committee when evidence was previously taken in Sydney, but there has been a considerable rise in the price of material, especially in steel required for buildings. These prices I have set out as follows:—

	September, 1915.	January, 1916.	April, 1916.
Steel joists, scantlings (not including erection)	£14 10s. ...	£23 ...	£26 to £30
Compound girders and stanchions (not including erection)	£18 to £20 ...	£24 ...	£30 to £33
Roof trusses (including erection)	£20 ...	£28 ...	£35
Fire stairs (including erection)	£35 ...	£40 ...	£54

The increase of steel joists, scantlings, is about 100 per cent., girders and stanchions about 50 per cent., roof trusses about 75 per cent., and fire stairs about 75 per cent. I have the quantities prepared from the original plan, and also the quantities taken out from the revised plan. The cost of the smith work in the original plan is placed at £2,561, and on the revised plan £4,847, the increase being not quite 100 per cent. This increase would not be due altogether to the advance in price in materials, as we have made some slight alterations to the plan. I have given instructions that the total weight of steel work should be prepared, and priced according to the time at which the estimates were made, namely, September last, and April this year. This information will be furnished to the Committee. Other materials used in building alterations have also advanced in price, as the following figures will show:—

	September, 1915.	April, 1916.
Oregon (per 100 super. feet)	19 1/2	25, 6d.
Maple (per foot super.)	4 1/2	5 1/2
White (per ton)	£28 10s.	£41 10s.
Whitewood (per cwt.)	£2 7s. 11d.	£3
Corrugated iron (per cwt.)	£1 1s.	£1 7s.

There has been an increase of from 22 to 25 per cent. in marble slate, but no alteration in the price of cement. In September last the wages of builders' labourers was 1s. 4 1/2d. per hour, and in advance to 1s. 5 1/2d. per hour. Masons' wages have 1s. 10d. per hour in April. Carpenters' wages have not advanced, but carters (horse and man) had, in September, to 20s. per day in April. On 1st June next the builders' labourers will get an other 1d. per hour increase. I have worked that out, and I have found that it will mean an addition of £200 to the cost of the alterations to the Customs House. The carpenters and joiners have a claim before the Court for 4s. extra per day.

They probably will not get that, but if they get 2s.—which is very likely—that also will increase the cost of the alterations by £1,000. There is a certain amount of mason work on the job, which includes the putting down of stone walls.

2. To Senator Lynch.—I have allowed 10 per cent. for these conjectural increases.

3. To the Chairman.—I have suggestions to make with the idea of reducing the cost of the work on the revised plan, without affecting the utility or accommodation of the building. For instance, the steel work could be reduced, and the marble could be replaced by some less costly material. By the alterations I have in my mind, that is a saving of £4,769 could be effected. I estimate a saving on the revised estimate of £51,481.

4. To Mr. Sampson.—The revised estimate of £51,480 includes 10 per cent. for conjectural increases; but in the earlier estimate of £37,500 no such allowance was made because the position with regard to cost of material and labour was not so acute then as it is now.

5. To the Chairman.—The saving in cost of £4,769 could be effected by certain alterations in the revised plan, chiefly in the vestibule and the public lobby. At present there is provision for marble work right up to the ceiling, but a marble dado up to a height of 5 feet would be sufficient, although the vestibule would not look quite so well. The original plan provided for marble work in the vestibule and in the public lobby. I also propose now to put in plaster instead of metal ceilings. On those two items alone I estimate the saving will be £2,356. Then there is the elevator framing in the front hall, which it was proposed to do in what we call metal-over-wood work. We propose now to leave that out and use maple only thus effecting a saving there of £40. I further propose to omit one of the fire escapes. This can be done without greatly affecting the safety of the building, because we have a staircase in the middle of the building, and there will be the western fire escape. The saving here will be about £185. Then there is a lump sum of £2,400 in the bills of quantities for electrical work, which includes electrical clocks throughout the building. These clocks, totalling about £810, are cut out in the revised plan. There are certain other smaller alterations, including an alteration in the construction of the ceiling to the public lobby, in the light area between the eastern and western wings. On these we estimate we can effect a saving of £400. Marble mosaic work is provided for on the first floor, but we can omit it, and have instead a cement floor which would save about £82, or better still, we can put in wood blocks. We have also a vacuum cleaner, which I did not allow for in the earlier estimates. The elimination of that item will save £896. I admit it would be sanitary to have a vacuum cleaner, but it was not contemplated in the original estimate. Then there are some alterations which would slightly increase the cost. For instance, a marble floor for the public lobby would make it noisy and slippery, so I think it would be better to have wood-block floors, which will cost about the same. The plans upon which I gave evidence formerly were the pencil-sketch plans, and the plans now before the Committee are the working details, plans, specifications, and detailed quantities prepared from those sketch plans. I feel that I am on solid ground in my estimates now. I should like the Committee to realize what an estimate is. If I had these plans, specifications, and quantities, and wished to make alterations, instead of doing the work by day labour, I should not be surprised if, when the quantities came in, there was a great difference

between the first and last tenders although the contractors making the estimates for the work might be keen business men. An estimate is merely an individual opinion as to the price of a job. An estimate is more or less unreliable. There is always a certain amount of risk about it, but on our level best to make it absolutely correct. We could only go on what the actual prices are on the day when an estimate is made. It might be shown later on that we were speculating on steelwork, because, as in the present instance, war might have broken out, and iron might have gone up tremendously in price.

6. To Senator Story.—It is usual when we have in view the construction or alteration of a building, like the Customs House, to get quotations beforehand from the people who supply the material, but it was not done in this case, because I had not the authority to go on with the work. When I gave evidence before, and furnished an estimate of £37,500, I had not obtained quotations for any material then, but I was going on the current prices. If I had been instructed to go on with the building as soon as the report of the Committee had been accepted by Parliament, my first step would have been to call for tenders for the ironwork straightway. In fact, we did call for tenders in Sydney. These were forwarded to Melbourne, where a delay occurred, because steel could be obtained cheaper in Melbourne than in Sydney. There was no proceeding with the work, because I had not the authority from the Minister to go on when the building was vacated at the end of the year. I was then preparing the working drawings, which were signed 16th December, 1915. In September last, when I gave an estimate, we had not then the knowledge that we have now of the upward move of the metal for the expenditure of a penny more for the Customs House, further than the instructions to go on with the demolition of the central wing. I have reduced the possible saving of £28,000, which I estimated would be effected if the building were vacated, to £1,000, which I now think represents the actual cash monetary value of the work I should have to do in moving the people about from one part of the building to another, and the erection of dust-screens. There would also be a saving in time, because we shall be able to organize our forces better than if we were doing the job piecemeal. Although, in September last, I estimated a saving of £8,000 and now think £1,000 would cover the cost of moving the officials, the amount of £8,000, I think, would not be extravagant from a contractor's point of view; but I am dealing with day labour, and, therefore, I have to put down what I think is the actual cash value of the inconvenience if the alterations were carried out while the building was occupied by the Customs officials. It is a difficult thing to estimate what saving might be effected by having the building vacated. But I could not do the work done in about eighteen months, and so would probably save six months' time, which also means six months' rent for the Customs Department. It is difficult, in a job like this, to decide what should be provided for contingencies. As a matter of fact, I put estimates down under this heading in the estimate of £37,500. It was the custom, when I was in the State Works Department, to provide for contingencies, but, later on, this practice was abolished altogether. In my opinion, however, so, in this case it is abused very much by the officials, who are inclined to add a large sum to cover contingencies in their plans, and this leads to overruns in the

drafting. It is not right to provide substantial sums for contingencies, and I discourage the practice as much as possible. I have allowed 10 per cent. under this heading in the revised estimate of £51,481, because in my opinion, prices will rise 10 per cent. before the building is finished. If prices do not rise, as I fear they will, the work should be done for less than £51,000.

7. To Mr. Laird Smith.—If I had been a contractor contemplating tendering for this work, I would not have been prepared to do so on the plans which were before the Committee in September last, because they were only sketch pencil plans, and without particulars of quantities, and there were no working plans and specifications. Members of the Committee are not justified, however, in assuming that the estimate was misleading in regard to the cost of the work, because that estimate was based on the system of cubing. That is to say, we cubed up the building and priced it according to our experience of prices. This is a perfectly legitimate method, and it is the custom that is generally followed. The working drawings and quantities are usually prepared afterwards. For a tentative scheme, the system of cubing is usually adopted. If I were in private practice, and submitted a sketch to my client, with an estimate of the probable cost based on the system of cubing, and if the tenders came out higher than I expected, I should have to go along to my client and arrange with him, just as I have now to go to my Minister if the estimate is exceeded. It is very unusual to prepare working drawings for a tentative scheme. As a rule, when we are asked for an estimate, we submit plans such as members of the Committee had before them in September last, in connection with the alteration of the Customs House. It is natural that the Minister should expect work to be carried out for a sum approaching the estimate. In connection with this matter, I would draw the attention of the Committee to my letter to the Director-General of Works, under date 5th January, 1916, as follows:—

With reference to the proposition No. C 15, 2886 for additions and alteration to the Customs House, Sydney, at an estimated cost of £37,500, I forwarded to His Office on 22nd October last, I shall be glad if you will kindly expedite approval for the necessary expenditure as much as possible.

At that particular time I had gone into the matter, and on the data I had then at my disposal I called Mr. Murdoch's attention to the fact that I was rather afraid the estimate would be exceeded. I told Mr. Murdoch then that I thought the job would come out at about £40,000 before it was finished; at that time I was not prepared to carry it out for £37,500. This decision had been arrived at before my consultation with Mr. Murdoch and Mr. Griffin. I had gone into the matter, and was rather uneasy owing to the increase in prices of material. At the conference with Mr. Griffin, both Mr. Murdoch and I made suggestions about certain alterations. I cannot say anything with regard to the conference which Mr. Murdoch had with Mr. Griffin, because I was then in the hospital. At the first conference, at which three of us were present, we made no definite alterations, because Mr. Griffin would not say anything then. I should say that the increase in the cost of material is responsible for the higher estimate rather than any alteration in the material or in construction. If anything, the alterations in the revised set of plans have been in the direction of decreasing the cost. The total accommodation is not

altered at all. I do not know whether there was any consultation with the Customs authorities to see if they approved of the alterations, but I did consult them before I prepared the sketch plans which I submitted to the Committee on the last occasion. Owing to the abnormal conditions due to the war, I find it very difficult to frame estimates for future contracts because of the uncertain state of the market for material.

8. To Senator Lynch.—I remember in my earlier evidence I said I could not say whether the present foundation would carry any more stories, and that I could not be certain unless I had an opportunity of examining the foundations. It was originally intended to be a two-storied building. When I was Chief Draughtsman in the State Public Works Department, I prepared the plans for the two additional stories that were placed on the building, and I know that it was not intended originally that the building should be increased in height. We had an examination of the foundations then, but I do not know what was the result. Those who carried out the exploratory work of the foundations might have stated in their report that the foundations would carry a skyscraper, for all I know. I did not intend in my earlier evidence to convey the impression that there was a doubt in my mind whether another story could be erected on the building. The foundations might be on the solid rock; but I should make sure of the foundations before I added another story to the building. When I furnished the Committee with an estimate in September last, I based it on information at that time (25th September). It would not be correct to say that the estimate was two years old. I know how the impression has been created that the information was old. Mr. Smith, who will be called later on, will be able to tell you that he gave the Minister that impression under a misapprehension. Mr. Smith has only recently arrived from Melbourne, and is not acquainted with the history of the building. He was asked on the spur of the moment, and remembering that there was a sum of £25,000 on the Estimates in 1914-15, he concluded that that was the figure which the Minister had in mind. However, I prefer you should get these particulars from Mr. Smith himself. When I was called upon, in April, to furnish a revised estimate, I placed the cost at £51,481, which included 10 per cent. for conjectural increases in labour and material. The earlier estimate of £37,500 did not include this provision. If it had, the figure would have been £40,150. On the other hand, if you take off 10 per cent. from the £51,481 estimate, the amount will be brought down to £46,330. This latter figure (£46,300) would not include £1,000 for putting up dust-screens, because in my estimate of £51,481 I have deducted the cost of removing all the departments. The savings which I estimated would be effected by the adoption of my recommendations will bring the cost of the alterations down to £46,300. The difference between the estimate of £37,500 and the revised estimate of £46,300 is not entirely accounted for by the difference in the cost of material and labour, because I have provided for additional works totalling £1,920. When I was preparing the plans, I found that these were necessary. It may be taken, therefore, that the difference between the two sums is accounted for by the increased cost of labour and material, plus the £1,920 mentioned.

9. To Mr. Sampson.—In my previous evidence I said—

I am not prepared to start building immediately if the work is approved, because the first thing I should do would be to remove the King's Bond and shipping-

master. Negotiations to secure premises for that purpose would have to be begun. As far as my Construction Branch is concerned, I could start to-morrow.

By that, I meant that I could start at once in the preparation of the drawings, but not on the actual construction, until I had got rid of the King's Bond and the shipping-master. If those two branches could have been cleared out in twenty-four hours, I could have started on the demolition of the building. The drawings were signed on the 10th December, and if they had been approved I could have started the work during the Christmas holidays. I could not say exactly at what date the Minister intervened with Mr. Griffin for the first time. Undoubtedly, there was intervention on behalf of the Minister that impeded us in our work of starting the construction at the earliest possible moment. I had not the money and, on 6th January, I wrote asking for approval of the construction. My letter of 6th January showed that I was ready to start, but had not the money to do so. That letter was sent to the Director-General of Works. In order to get the money, I prepared a requisition, in October, stating that I wanted authority to go on with the work. At that time I wrote asking from the Director-General to proceed with the drawings. This authority was given to me shortly after the report of the Committee was adopted by Parliament. I could not say that delay in replying to that requisition impeded the progress of the work, because the plans were not signed till the 10th December, and these had the colouring, and specifications got out, and quantities prepared. I realized, however, that I should be held up on account of money, and so I wrote that reminder in the requisition on 6th January. If I had had an immediate reply to my requisition of the 20th October, I could have started the next day on the demolition of the building. That work takes time, because in a job involving alterations to a building one has to be very careful not to pull down too much of the old structure. Up to the 6th January, the delay in replying to my requisition of 20th October did not impede the progress of the preparatory work, but, on the 6th January, I was prepared to go on. I did not wait for the adoption of the report by Parliament, but got ahead with the work of preparing the detailed plans. In January, I became uneasy about the prospect of carrying out the work for £37,500, as prices had been rising rapidly. I realized, when I gave evidence before, that it would take about three months to get everything ready for the work, but I did not think that prices would be rising so rapidly. It is usual for the Department to make purchases of material for works if there is a possibility of an increase in price, but this practice was not followed in regard to the Customs House alterations, because I had no money, and could not enter into contracts without the approval of the Minister for the expenditure. I had called tenders for steel work, and these were sent to Melbourne, but they were held up, as it was thought we could get steel work much cheaper in Melbourne. In any case, we could not have accepted those tenders without authority to spend the money. Between 20th October and 6th January I could not do anything except prepare for the steel work. It would not have been practicable to obtain any steel work before the 6th January. My amended estimate for the work, which includes 25 per cent. for increase in cost of building from September, 1915, until April this year, is £46,376. I now propose further to amend it, and save £4,769, thus bringing it down to £41,606. If the materials were purchased at present prices, I think we could do the work for this amount. Even if there had been

no intervention by the Minister, the plans would not have been ready until the 6th January, so it would have been necessary to revise the estimates owing to the increase in the cost of materials.

10. To Mr. Finlayson.—I hope members of the Committee were not misled when I said that the original estimate was arrived at by a rough-and-ready method of cubing. Unless we have the quantities taken out, this is the only method by which we can arrive at an estimate of the cost of a work. The estimate of September last was made on pencil sketches, and the working drawings were based on that sketch. It is the regular thing for architects to base their estimates on the cost of alterations on the cubo system, or else allow a lump sum for the work. In normal times you can get a very fair approximate estimate by the cubo system, but in all alteration work it is necessary that there should be some give and take. I estimated on the prices current in September, and made no allowance for extras. I had the quantities for the job taken out in December for the first or original scheme, and the quantities for the revised scheme were finished during the Easter holidays, when Mr. King O'Malley and Mr. Griffin came over. On the 6th January, I was prepared to start the work of demolition, but not the other work, although there would have been no delay if I had been given authority to go on. At that date, I suppose the increase in prices over those ruling in September would have been about 14 per cent. I received instructions to proceed with the demolition of the central wing, on the 18th February, and the actual work of demolition commenced on the 7th March. My illness did not delay the quantities for the revised specifications and quantities, because Mr. Smith represented me, and the work went on as usual. I do not know how the Minister could have said that he was unable to get on with the work because he could not get the specifications and quantities. So far as I am aware that was not the case at all. It is quite a departure to submit quantities and specifications in detail, the detailed plans to the Minister before approval is obtained. Very rarely indeed up till now have we submitted working drawings at all. It is the custom to submit sketch plans with an estimate based on the cubo system, and subsequently, when authority is obtained for the work, departmental officers carry out the plans in detail, but they are not necessarily referred to the Minister. This would be done only where a matter of policy was concerned, although, of course, if the cost exceeded the estimate the matter would go before the Minister. That position would have arisen in this case if the work had been gone on with, as I was already on the track of a revised estimate, and had told Mr. Finlayson of it. The alterations I have suggested with the idea of reducing the cost by £4,769 would not affect the accommodation or the utility of the building in any way, though I regret the necessity for all the economies except the electrical clocks. In the revised scheme we intend to replace steel with reinforced concrete so far as possible. It would be much more expensive to carry out the additions in stone, because the walls would have to be 12 inches thick, and that would include heavy supports on the ground floor.

11. To Mr. Fenton.—Prior to my appointment as Commonwealth Works Director in 1903, I was engaged since about 1899 as chief draughtsman in the State Works Department, and I had to do the estimating for buildings for the State. Members of the Committee were perfectly justified in assuming that my estimate of £37,500, given in

September last, would have covered the cost of the alterations. I think we will be able to save about six months in the execution of the work now that the building has been vacated, because we will be able to put, say, 24 men, on a particular work instead of twelve, and we can work on both east and west wings at once, whereas if the Customs officials occupied the building we would be able to do only one at a time. I think that if I could have gone on with the work in September it could have been carried out for £36,500 with the Customs authorities out of the building, whereas now, owing to the increased cost of material and labour, the estimate, including 10 per cent. for contingencies, is £51,481.

(Taken at Sydney.)

THURSDAY, 26th MAY, 1916.

Present:

Mr. RILEY, Chairman;

Senator Lynch, Mr. Finlayson,  
Senator Storey, Mr. Sampson,  
Mr. Fenton, Mr. Laird Smith.

Edwin Evan Smith, Metropolitan Inspector,  
Department of Home Affairs, sworn and examined.

12. To the Chairman.—In Mr. Oakeshott's absence from the Department through illness, I acted in his stead, and during the Easter holidays I had the quantities for the Sydney Customs House alterations taken out for Mr. O'Malley. I want to make it clear that I have not been consulted at any time with regard to the plans, &c., but I was consulted about carrying out the work. About 18th February, I received the first instructions to proceed with the demolition of the central wing. At that time I was Acting Works Director. In December, in my capacity as Metropolitan Inspector I suggested to Mr. Oakeshott that the quantities for the steel work and the specifications for the steel should be taken out early in view of the rising market. This was proceeded with straightaway in the draughting room, and towards the end of December, tenders, returnable on 10th January, were called for steel work. Three tenders were received, as follows:—Sydney Steel Co., £8,460; R. L. Scrutton and Co., £8,586; The Structural Steel Co., Sydney, £10,980. Tenders were called only in New South Wales. On 15th January, they were referred to the Head Office with a recommendation that they be treated as urgent, in view of the steadily rising market. On 26th January, the Director-General of Works gave an instruction to return deposits with a view to calling fresh tenders, including Victoria, because it was considered that the steel could be obtained more cheaply in the Victorian market. No further action was taken on that. Tenders were not called in Melbourne. Speaking from memory, I think that the departmental estimate for the steel was about £8,500, or just a fraction below the lowest tender. The Minister came over during the Easter recess, and I was in charge while Mr. Oakeshott was away on leave for a week following. The Minister repeatedly called for the quantities which were being prepared as hurriedly as possible. Officers concerned were working on the holidays and at night, but the information could not be obtained in a very short time because the job was a large one. I explained the position to the Minister,

and told him that I would let him have the quantities as soon as they were ready. These were supplied to him on 28th April, and showed that the price of the alterations would be £51,481—the information being based on the working drawings of the sketch plan which had been submitted to the Committee, with certain modifications evolved through a consultation of Mr Murdoch and Mr Griffin. A new set of drawings resulted from that conference, from which the set of quantities was prepared. I had nothing to do with the amended plan beyond handing the details over to the Minister. This work did not come within my province, except during the time I was acting for Mr. Oakeshott. I have a general idea what the alterations were, and I know that the object was to cheapen the work without altering the accommodation. When the Minister received the revised estimates, he expressed some surprise that it was such a large amount, and I explained to him that the original estimate of a job like this is usually based on sketch plan with very little information, and could not be compared with the detailed specifications and quantities. The Minister asked me how long ago it was that the original estimate was prepared, and I said it was two years old. He then asked me the sum had been placed on the 1914 Estimates, and I concluded that that was the original estimate for the work. I was not aware of the subsequent alterations to that estimate, because I had just come over from Victoria, and did not know the history of the building. It would not be correct, therefore, to say that the estimate was submitted to the Public Works Committee in September last, two years old. I know now that the information was prepared for the Committee just prior to the evidence being given in September last.

13. *To Mr. Senator Lynch.*—It is quite possible that the Minister obtained the impression from the plans two years ago that I have not gone into the plans, but I should say that the estimate of £51,481 is a reasonable one. The quantities are fully priced out. It is as complete a set of quantities as any one could wish for. It has been my feeling all along that in a fluctuating market there should be a set of quantities before any job is started. We really ought to get all the material priced out correctly before we start on the work. I have gone over the proposed amendments of the plan with Mr. Oakeshott, and I agree that the suggested alterations are quite reasonable, especially the proposed substitution of plaster for metal ceilings. The amended plan, if adopted, will give general satisfaction.

14. *To Mr. Watson.*—When an estimate is given for a job such as this, we usually go into the matter carefully, and provide for all contingencies. It is usual to cube it, and find how much it is going to cost per cubic foot. That is the basis upon which we work. If we have two post-offices to build, we can price No. 1 over against the cube price, and use that as the basis for an estimate of No. 2 to-morrow, plus the usual contingencies of a rising market. The alterations to the Sydney Customs House present difficulties, and, unless you go very thoroughly into the question with a schedule of quantities before you, it would be hard to say exactly what it would cost. The answer is the only one to go upon is information on the spot. As far as practicable, we provide for every contingency in a preliminary estimate, and it might be assumed that we would err on the side of liberality. The quantities of steel are not quite the same in the amended plan as in the first scheme. I understand Mr. Oakeshott will supply you with the return giving these

particulars. I know nothing about the first set of plans, but I know something of the second set, because I was Acting Works Director then. When we called tenders for the steel there was a considerable reduction in the quantities asked for. The return, which Mr. Oakeshott has promised to supply, will show the difference in the price to-day and the price at which tenders were received in January.

15. *To Mr. Finlayson.*—I came from Melbourne to Sydney in August last, during last month I had a conversation with the Minister, as the result of which the Minister had a misunderstanding about the original estimates, because I was referring to the sum placed on the 1914 Estimates, and evidently the Minister had in mind the estimate furnished by Mr. Oakeshott to the Public Works Committee in September. I regret the misunderstanding exceedingly. I did not arrive at the estimate of £8,200 for the steel for which tenders were called, but I noticed that amount was indorsed on the front of the tenders. That estimate was based on the original plan, because at that time there was no amended plan in existence. The amount of steel required under the amended plan was less, but there was an increase in price. The amount was furnished by Mr. Oakeshott will show whether the increase in price is counterbalanced by the reduction in quantity of steel required, but I should think there would be a saving. Steel would be a large item, but there are many other items in the whole schedule upon which it is estimated, there will be an increase in price, if compared with the September values. It is usual when preparing estimates on the cube system to allow something for extras, but the amount will depend on the state of the market. It might be 10 per cent., and, if the markets were even, it might be a lump sum, the amount depending on the extent of the work. At present, the steel is rising. There is a great difference between estimating for a job involving alterations and for a new building. In the latter case, there is a clear-cut issue, with not the same chance of fluctuation. You would be surprised at the variations in prices by different contractors. The amount to be allowed for contingencies in a work like this could only be ascertained when it was completed. We might save a good deal of money, and, instead of the building costing £51,481, we might be able to do it for considerably less. To give an illustration of the variation in estimates, I might tell the Committee that only a month ago we received tenders for steel work (roof trusses) for a departmental work like that it might be assumed that there would be little variation, as the plans were quite clear. We received four quotations. The first was £195; the second, £290; the third, £299, and the fourth, £341. I cannot say if the lowest tender was too low, but I do know that the work is being done at that price. It has been four years in the Commonwealth Works Office, and I can say that the cubing system for the probable cost of a work has proved fairly satisfactory, but at our office now we have adopted the system of taking out the quantities carefully, so that we will then know if we have enough money for a particular work. We do this because in some cases the estimates are preliminary, and in some cases, as much as five years previous, and it would be foolish to go on without getting out the details of present cost. We can then be reasonably sure, when we estimate on the working plans and specification, and know the builders' prices, that we are down to bedrock. I think that is a reasonable course to take, because it is much

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"better to ask approval for an extra £1,000 on the work before it is started than to make the request when the work is done, and you find you are £1,000 short of funds."

16. *To Mr. Laird Smith.*—I had no active contact with the working plans, because Mr. Oakeshott returned to the office, and he was in charge. I am not responsible for the reduction in the quantity of steel, as shown in the amended plan. So far as I know, there has been no material difference in the size of the building or the accommodation as shown in the original plan.

17. *To Senator Lynch.*—When the Minister came over here during the Easter holidays and had a conversation with me about the cost of the work and the previous estimate, it appears now that the Minister was referring to the estimate furnished to the Committee in September last, while I was referring to the original cost as provided for in 1914 Estimates. I fell into this error because in all such works there is what we call an "original estimate" got out, and that was the original estimate I had in my mind at the time. I was not at all clear then that that scheme was not the one referred to, because I had no information about the plans having been prepared, and I was not in a position to see the material before him. Our interview was a very brief one. I suppose the conversation did not last ten minutes altogether. I had the bill of quantities for £51,481, and I handed this document to him. The statement about the estimate being two years old is therefore due to misunderstanding, and probably the Minister came over to the Minister's meeting, but I had no knowledge then that Mr. Oakeshott had prepared an estimate later than the sum which was placed in the 1914 Estimates. I do not think that there was any clear-cut price given for the steel work in September, but the working drawings were put in hand from the sketch plans submitted to the Committee, and the Minister's meeting, in the month of January. The plans were completed in December, and we called tenders for the steel as early as possible, as the market was rising. These tenders were called on the working drawings, based on the sketch plan which the Committee had before them. In the sketch plan there was no special item for any distinct service. When tenders were called for the steel the departmental estimate of £8,200 (I am speaking from memory) was based on steel at £26 per ton, which was the ruling price in New South Wales at that time, and the lowest tender was £8,460. It came very close to the departmental estimate. Since then prices have gone up.

In September the price was £14 10s per ton, and the quantity of steel required would be the same. I cannot say if Mr. Griffin had anything to do with the plan for which the estimate is £51,481, but I think Mr. Murdoch will be able to explain the position in regard to that plan.

18. *To Mr. Sampson.*—When we called tenders for the steel we did not take into account the cost of the other material. The position with regard to steel was urgent on account of the rising market. We were ready to go on with the work then, and the quantities were being worked out, so we were in a position to make an estimate of the total cost of the building. I relieved Mr. Oakeshott about the 23rd December, and he returned to duty on the 24th. When I relieved Mr. Oakeshott the plans were complete, and he was making all preparations for shifting the offices out of the building, while at the same time the quantities were being worked out. I was responsible for carrying out the removal work. We did not do anything with regard to other materials, for we had no authority; but I had arranged for an extra clerk of works, and had made the dispositions of our staff so that the work could be started without delay. The quantities for the other material were not fully priced out, because we had only recently obtained the services of a quantity surveyor. The work of preparing the quantities could have been gone on with because the demolition of the old building would take a week or two. We could have accepted tenders for the other materials, but they would not have been required for a month or two. We were in a position to make an estimate by builders' quantities and taking the cost out on prices at that date. I did not make the estimate in January. Mr. Oakeshott was away from the office on sick leave, he came back during January to consult with Mr. Murdoch.

19. *To Senator Storr.*—I think it is a reasonable assumption that there has been an increase of 25 per cent. in building material between September of last year and April of this year.

20. *To the Chairman.*—It is not customary when we are carrying out a work to call tenders for all the material. There is a State contract for material, and the Federal Government Departments work on that.

John Smith Murdoch, architect, Department of Home Affairs, sworn and examined.

21. *To the Chairman.*—I had a slight knowledge of the plans which were submitted to the Committee when evidence was taken in September last. Mr. Oakeshott came over to the Minister in about August, I think, with the pencil drawings, to consult with Colonel Owen. I saw the plans, and generally approved of the lines that Mr. Oakeshott had taken. The plans were drawn up as a result of a consultation between the Customs authorities here and the officers of the Home Affairs Department in Sydney. The pencil sketches shown to the Committee and also to Colonel Owen were the result of this series of consultations, which had been going on for a month or two previously. The plans were drawn up to meet the requirements of the Customs Department. I did not see the estimate at that stage, and I did not consult with anybody about carrying out the work after the report of the Committee had been adopted by Parliament. I came into this matter as a result of a suggestion by Mr. Griffin that it would be a good thing if Mr. Griffin were consulted about the alterations to the building. That was about in December last. The Minister said to me, "I think you and Mr. Griffin and Mr. Oakeshott should have a talk over this matter and see what you all think about it." I said, "Yes, very well," and I mentioned that it had been passed by the Public Works Committee; but he said that would not matter. He then asked that we should arrange a meeting, and I suggested that the meeting should be in Sydney so that we could refer to the building itself and arrive at an agreement. This point was decided upon. A week or two went by, and I think the Minister said to me, "When are you going to meet?" and after I made inquiries, I suggested that Christmas time would be a good time to meet Mr. Oakeshott; but I discovered that Mr. Oakeshott was going on sick leave for a week, and his doctor had said that he had to undergo an operation, and that it would be necessary for him to have leave so as to get up his strength. I found, therefore, that he would not be available for the first fortnight or so in January. I told the Minister, and he said it would be all right, that we could meet between the time that Mr. Oakeshott had his recuperative rest and his leave to undergo the operation. We made our



arrangements accordingly. Mr. Oakeshott was to be back in Sydney on the 20th January, and it was arranged that Mr. Griffin and I should meet him there. I believe the Minister thinks that a good deal of delay occurred between the time his first instructions were given and the date of the actual meeting. No doubt a good deal of delay did occur, but at that time I did not think it mattered a great deal, because I did not foresee the outcome of the suggestion. I anticipated that we would meet for a day, have a talk over it, and make mutual suggestions for the improvement of the scheme, and that the work would go on smoothly. Instead of that, the whole business seems to have been blocked. I thought that it would assist matters if I had a preliminary look at the plans before Mr. Griffin came over, so I came to Sydney on the 20th January and went over the plans with Mr. Oakeshott. That was the first time I had seen the completed drawings. I approached the subject practically as a stranger, and felt free to criticise the scheme in every possible way. I could see that the main principles of the scheme were perfectly sound, but I made some suggestions in regard to details such as, for instance, reducing the number of urinals and putting some water basins in the different rooms, taking out the slate roofs, and so on. I considered also that as the old building was not fireproof it was rather extravagant to have the two new annexes of fireproof construction. Mr. Oakeshott agreed with me on a good many points, though, of course, there was room for a difference of opinion about them. However, I prevailed upon him that it might be a good thing to consider suggestions, especially as he then considered his estimate at the time the Committee took evidence on the matter was on the low side. Mr. Griffin came along next morning and we went over the scheme again. I explained to Mr. Griffin the suggestions that I had made, and that Mr. Oakeshott was in accord with the agreement. Mr. Griffin thought it was not a good thing to have the fireproof construction, seeing that the building itself was not fireproof, and he asked whether we could not substitute concrete for the present wood floors so as to make the existing building more fireproof. I did not think that practicable, because timber work will move and concrete will not, so it is bound to crack. Mr. Griffin hardly expressed any opinion with regard to the plans, but said he would have to think the matter over. That night he asked to be given the plans and specifications, on the understanding that we would meet next morning. However, he had an engagement with somebody in the morning and could not wait. I said, "Well, Mr. Griffin, I expected to see some settlement on this matter, because the Customs House has been vacated for over a fortnight, and we should be getting on with the work or we shall be losing a lot of money. Mr. Oakeshott is going into the hospital on Monday, so we ought to come to some agreement about the plans." Mr. Griffin replied, "Well, Mr. Murdoch, I will see you when I go to Melbourne, but I am going to say, 'When will that be?'" And he replied, "On Tuesday next. We will then be able to fix it up." Mr. Griffin did not come to see me in Melbourne. Mr. O'Malley came over to Sydney and I saw something in the papers to the effect that the scheme was to be abandoned and that a new skyscraper worthy of the democracy of Australia was to be put on the Circular Quay site. Beyond what I saw in the papers I knew nothing about this proposal, but concluded that the whole scheme for the Customs House alterations had been abandoned by some arrangement with the Minister. I heard no more of the business until on the 14th February I received the following telegram

from the Minister of Home Affairs from Narrabri, New South Wales:—

Confer with Griffin settle Customs House, Sydney, nearest possible to wait any longer recovery of Oakeshott. Would like to have his opinion of it. This was 22 days after Mr. Griffin had promised to confer with me. I immediately showed the telegram to Mr. Bingle, and said that I would get into touch with Mr. Griffin at once. I rang up Mr. Griffin on the 10th, the same day as I received the wire, and he promised to see me the following morning to give me his opinion. He did not come as promised, so in the afternoon I rang up again and said, "Mr. Griffin, you did not see me as you promised," and he said to me, "You promised to come and see me." I told him, however, that I understood he was coming to see me, but that that did not matter, as I would go to his office to see him. He replied that he was then just about to leave for the Federal Capital, but he obtained a cab and saw me at about 4 o'clock. He had to catch a train at 5, so that there was not much time. He showed, and left with me, pencil tracings of the various floor plans, showing what he thought ought to be done, but he could not wait, as he had to leave by train for the Federal Capital to meet his Minister, so he said "I will see you when I come back." That was on the 16th February. I looked at the plans he left with me, and I must say I felt very much disappointed that the time had been lost, because I considered that in a day's conversation we could have arranged everything quite amicably and sensibly, especially as the plans he left with me opened up a new controversy altogether. I felt the position to be very serious, but, in order to further negotiations, I thought the best thing I could do was to see the Minister and show him exactly what I proposed as the result of the conference with Mr. Oakeshott. I wired to Sydney for Mr. McCreadie, the draughtsman who had made the original plans, and was familiar with all the details of the building. Mr. McCreadie came over at once, and I showed him the plans that Mr. Griffin had left with me. I indicated also how I viewed the matter, adding, "I am going to get out fresh plans to put before the Minister indicating what I think should be done." When I say fresh plans, I did not mean plans differing in principle from those upon which evidence was given before the Committee in September last, but plans covering a lot of detail that could have been settled in an interview. I have settled many more serious things than this during my career, and without any trouble whatever. In fact, I have made and commented frontally as the result of such interviews, but in the present case we seemed to drift further apart. Altogether, I was very disappointed. However, Mr. Griffin is at Canberra, and I could not see him again, but on the day I received the tracings from him I wrote the following letter to the Secretary of the Department of Home Affairs:—

I have seen Mr. Griffin to-day, and obtained his general views respecting the alterations which would coincide with Mr. Oakeshott's and my own. Broadly, they are that these alterations should be carried out as economically as may be consistent with converting the existing building into a structure of similar class to the present, and conveniently suitable for the probable needs of the Department of Trade and Customs for a fair period of from 20 to 25 years, after which, of course, it may be expected that the main walls and hardwood floors can be regarded as having fulfilled a fair period of usefulness, and might then, with economy, be allowed to make way for an entirely new and larger building embracing all modern ideas.

I strongly recommend that approval be given to commence the work forthwith. The demolition of those portions of the building which have to be taken down will occupy several weeks, during which time details of

minor rearrangements of the scheme which, after the discussion that has taken place, will be of consideration, can be debated with the Department of Trade and Customs, in this way no delay to the progress of the work need occur.

On the 17th February, Mr. Bingle sent the following telegram to Mr. O'Malley, at Canberra:—

Murdoch reprints agreement with Griffin and Oakeshott that Sydney Customs building be altered to suit Customs requirements for a probable period of 20 to 25 years, on lines as outlined with probable rearrangements, certain detail in direction of economy. I strongly recommend you to wire approval to commence work immediately.

On the 18th February, the Minister wired to me, personally, as follows:—

Proceed demolition middle wing, Sydney Customs House, preserving stone and fittings.

On the same day I wired to Mr. Oakeshott asking him to begin the demolition work, and he complied straightway. On the 22nd February, Mr. Griffin saw me again, and went over the changes as proposed by him in his tracings. I explained to him that, generally, I could not agree with them in detail, though I agreed with the main principles, and that it was wise to go ahead and alter the Customs House. Mr. Griffin had a long talk with me, and he tried to meet my objections by suggested modifications of his own plans, but, from my point of view, these were not very practical, and we parted for the night. The next morning, the Minister sent for me. Mr. Griffin was with him at the time. I took down the plans that Mr. McCreadie had prepared for me, and explained my ideas to the Minister, and remarked, "Of course, in a big work like this, if different men come into it, it is easy for one to disagree with the other on small points." I told him I thought it was wiser to go ahead with the work, and also that I was sure that Mr. Griffin's suggestions afterwards informed him that Mr. Griffin's suggestions afterwards appeared to have been made rather with the object of finding fault than with the idea of putting forward useful propositions. Mr. Griffin said to me, "Do you say that?" and I replied, "I do suggest that you interfered rather for the love of interfering than with the object of finding a solution of the problem." However, I showed the Minister what I thought ought to be done, and the Minister said to Mr. Griffin, "This seems to be a good plan," and Mr. Griffin replied, "Yes, it is a good plan," whereupon the Minister said, "All right, get ahead with it." On the 26th February I got a note from the Minister to the following effect:—

I desire to be supplied with quantities, specifications, and accurate estimate of the cost of the reconstruction of the Customs House, Sydney. The preparation of this work to be put in hand at once.

I gave instructions accordingly to the Works Director, New South Wales, to have the information prepared for the Minister.

22. To Mr. Sampson.—I think the plans which the Minister approved contained suggestions from Mr. Griffin, the main suggestion being that two strong-rooms should be on the ground floor of the Customs House. The strong-rooms, I understand, were placed in the basement at the request of the officials of the Customs Department. Mr. Griffin suggested that these strong-rooms should be on the ground floor, so as to be on the working level, and thus save time. I agreed, and I give Mr. Griffin every credit for making the suggestion, and, subject to its being agreeable to the Customs officials, I think this alteration ought to be adopted. There will not be a very great deal of difference in the cost. Mr. Griffin mentioned something about underpinning, but the building does not require to be underpinned for these strong-rooms. Another proposal was

that the new wings should be fire-resisting and not fireproof, and, in view of the fact that the rest of the building is not fireproof, I think the new construction, if made fire-resisting, should meet the needs of the Department. I contend, however, that this economy would have been effected by the Department even if the conference with Mr. Griffin had not taken place, because when I saw Mr. Oakeshott prior to our conference with Mr. Griffin, he disclosed to me the fear that his estimate to the Committee in September last was on the low side, and showed me a schedule estimate that he had made out more in detail than was given to the Committee. As far as I can recollect, the amount was about £40,000. I remarked that it was pretty serious, and he said that the best thing we could do was to cut it down. The plan is a very complete one. I remarked to Mr. Oakeshott at the time that we would have to go into the question of economies, and I contend that, on account of the later estimates being so high, the savings now mentioned would have been effected in any case. I am sure that when Colonel Owen was made aware of the position this would have been done. The information which the Minister asked for was supplied by Mr. Oakeshott's office direct to the Minister, on the 28th of April. That was two months afterwards, but the work of demolition was going on all the time. The Minister has not seen me about this matter. The quantities were given to the Minister in Sydney. I think Mr. Griffin was with the Minister, and the latter handed over the particulars to Mr. Oakeshott. Colonel Owen did not see them.

The instructions to Mr. Oakeshott to prepare the information went through our office in Melbourne, but we did not get the results, and knew nothing about it until we heard through the press that a later estimate of £51,481 had been given. The following is a copy of the telegram sent by the Minister of Home Affairs to Mr. Oakeshott, on the 17th April last:—

Sydney, Customs House. Kindly telegraph when will quantities and estimates be ready. When will you be in a position to go on with reconstruction, and how much money do you anticipate will be required this financial year?

This is the first time I have seen the telegram. Mr. Oakeshott replied as follows:—

Reply your wire, Customs House. Precise quantities will probably be sent to you on Wednesday next. Prepared to go on with reconstruction immediately your approval received. £10,000 required this financial year if approval given immediately. The Minister then wired back to Mr. Oakeshott:—

Sydney.

Oakeshott, Works Director. Your wire yesterday re construction Customs House. Until information asked for to hand, I cannot, of course, give necessary authority. Send plans, specifications, and quantities immediately. There has been delay enough over this.

Then Mr. Oakeshott replied, as follows:—

Reply your wire, Customs House. Quantity-surveyor working overtime, Sundays and holidays. Will send you set of blue, specifications, and priced quantities immediately after.

The Minister thereupon telegraphed to Mr. Oakeshott as follows:—

Sydney Customs House. Hold plans, specifications, and quantities in Sydney. I will bring Mr. Griffin, examine them there. Do not work on Sabbath.

Then on the file there is a minute by Mr. Smith, Mr. Oakeshott's assistant, to the Minister, under date 20th April, as follows:—

Acting on instructions, I have made arrangements for your room on Saturday morning, also for submission of plans and specifications of Customs House. The work of quantities for same is urgently being pushed on, and officers will be at work on same on sixth floor throughout

the holidays, Sabbath excepted. Should you desire to inspect quantities at this stage I have instructed officers concerned to attend to you and furnish all available information. In any case, meaning, you desire further information, I shall be on telephone No. 1109, North Sydney.

Then there is this minute by the Minister's secretary—

Plans, specifications, quantities, and estimates submitted by Mr. Owen Smith and Mr. Griffin have been handed to-day to Mr. W. B. Griffin for his consideration. 23.4.10.

This is the first time that this information has been before me up to the present, except unofficially. I wrote to Mr. Oakeshott and asked him what he knew of the estimate £51,481, and said that I would like very much to have a look at the quantities unofficially. Mr. Oakeshott sent them over, and I had a look through them. I also got one of our best clerks of works in Melbourne to check them, particularly the rates, as I know the matter was coming before the Public Works Committee again, and I felt that it would be called to give evidence about them. I thought it would be better, therefore, to get the views of this particular clerk of works in Melbourne as to the prices. This gentleman very kindly, last Sabbath, had a look over them. He pointed out some items on which he thought the rates were high; but, of course, it is not very reliable to put one's opinion of Melbourne prices against the opinion of people in Sydney on Sydney prices. But the officer to whom I referred the quantities is a very good man, and I have great faith in his opinion. Since coming here I have been enlightened by Mr. Oakeshott's evidence, in which he says that he is making provision for a promotional rise of 10 per cent. I think this is a ploy, as the future should look after itself. In a matter like this we should only estimate on the day's prices; but Mr. Oakeshott is cautious, and evidently would like to be sure of having enough money to carry out the work.

23. To the Chairman.—Speaking of the estimates generally, I would like the Committee to understand that estimating this particular job is very difficult. If tenders were called to-morrow for this work I would not be surprised if they varied 80 per cent. to 100 per cent. We have this experience every day. After all, what is an estimate? The Melbourne clerk of works to whom I referred these quantities last Saturday fortified my own views. He thinks the prices too high; but when I came over to Sydney Mr. Oakeshott referred to his men, who assured me that they are not too high.

24. To Mr. Finlayson.—In some respects work can be done cheaper in Melbourne than Sydney. I am quite sure that we get steel work cheaper in Melbourne than in this city. Some Melbourne manufacturers are doing steel work all over Sydney even now. The steel work for the Commonwealth Bank was carried out by Melbourne contractors, as also the steel work for the Lithgow factory.

25. To Mr. Fenton.—In my opinion, when Mr. Oakeshott gave evidence last September, he was pretty nearly right as regards price. If, as is now contended, there has been an advance of 25 per cent. in building, that would bring the cost of the job up to about £45,000, and Mr. Oakeshott's further precautions against a probable increase in the future brings the total up to about £50,000. I think, however, we should disregard the future; but I believe that we can make still further economies on the finished drawings without interfering with the accommodation of the building in any way. Mr. Oakeshott is in agreement with me on this point. I think the cost of the work can be brought down to something like £41,000. For that sum we should be able to put

up a building that will meet the needs of the Customs Department for the next twenty or thirty years.

26. To Mr. Laird Smith.—The proposed alterations in the plan involve merely the question of construction and will not affect the accommodation in any way. I would not claim that either Mr. Oakeshott or Mr. Griffin entirely made them. What troubles me is the great delay that has occurred in the execution of this work, and I think that if the matter had been approached in another spirit the whole difficulty could have been settled in two or three days. There is no need to get the approval of the Superintendent of Fire Brigades with regard to the alteration of the building from fireproof to fire-resisting construction. A man is entitled to erect a building that is not fire proof so long as he makes proper provision for escape. The proposed economy in steel for the building will be effected by having lighter sections. We will not substitute wood for steel girders.

27. To Mr. Finlayson.—I am the architect attached to head office, and had nothing to do with the preparation of the estimate for this building. The usual procedure when work is proposed is for the Department concerned to send to head office, through our branch in the State, a request that a sum be placed on the Estimates for a certain work. Then it becomes Colonel Owen's duty, before recommending the Minister to put a sum on the Estimates, to inform the Minister whether a particular scheme is a good one or a bad one; and in arriving at this opinion Colonel Owen consults me about building works. In the circumstances, I think the manner in which Mr. Oakeshott arrived at his first estimate was quite fair and regular. If time had permitted I would rather have the estimates looked through more fully. By cubing a particular work it is nearly always possible to get within 10 per cent. of the cost; but there is another way, intermediary between cubing and preparing detailed quantities. This way is very extensively employed in Melbourne and in the State Works Department in Queensland. Quantities for day labour works, when execution begins, are taken out in detail, so as to be a guide for the ordering of material. Mr. Oakeshott in preparing his estimate followed the recognized course, which has been found to be moderately successful. It is impossible to lay down hard-and-fast rules for the preparation of an estimate. One should really be guided by the kind of work to be undertaken. The alteration in the Customs House is a particularly hard job to estimate; and in such a case I think reasonably complete quantities should have been taken out. However, I would not like to have this done too often before it was definite that work was actually to go on, because we would have to increase our staff. It is only fair to the Minister to say that no delay has occurred by having these quantities taken out, because the work of estimating has been going on. Up to the present I think the only serious delay was in the first fortnight, on account of Mr. Oakeshott's illness, and then the hiatus between the meeting with Mr. Griffin and the obtaining of his definite opinion. We lost about three weeks there. To provide for unforeseen contingencies in a rough estimate would be liberal and probably allow an extra 10 per cent. which I think should be enough. Mr. Oakeshott's 10 per cent. allowance for conjectural increases should be left out of the estimate, because it is purely a problematical contingency. I am satisfied that the alterations, as shown on the amended plans, could be carried out advantageously and without interfering in any way with the utility of the building. I have given consideration to the

suggestion that if the new wings were higher than the main building, the light gave the structure an ugly appearance from the harbor; but we will use the old stone to front the wings with, so that objection will be met. I understand that Mr. Griffin told the Minister that his suggestions would mean a saving of about £3,000. The principal saving in the amended plan will be in the alteration from fire-proof to fire-resisting construction, and the question is: was this Mr. Griffin's proposal? I doubt whether it was, but perhaps Mr. Oakeshott can speak more definitely on that point. Mr. Griffin certainly did make the suggestion about the strong-rooms. I understand the Committee were of the opinion that the old building should be vacated while the work was going on, but in my opinion it would have been better to have carried out the work while the building was in occupation by the Customs officials, so as not to inconvenience the people of Sydney. I think £1,000 would have probably covered the difference in cost. Of course, now we shall be able to get along more quickly with the work, and consequently we will be able sooner to enjoy a return from the capital expended in the alterations. I have gone into the question of spending so much money on a building which is forty years old, and I know the wisdom of this course has been challenged. But I would point out that the building will afford all the accommodation required; and if you put up a new building of similar capacity its value would be about £110,000, whereas we are going to meet the needs of the time for an expenditure of only £41,000, and the value of the building will be something like £60,000. There is another way of looking at it. A person might say that the life of this reconstructed building will not be equal to the life of a new structure of similar capacity. That is also true; but still we must remember that Australia is developing rapidly, and the life of a building is measured more by its suitability to requirements than by its structural life. We might reasonably expect that this building fifty years hence will be no longer convenient, and that it will then be sound policy to demolish it. At present I am strongly of opinion that it is too good to demolish. Then there is something to be said from the aesthetic aspect. I regard the Sydney Customs House as one of the most refined and scholarly buildings in Australia, from an architectural stand-point, demonstrating what Sydney was capable of producing at the time of its creation. If the building were taken away and a new one erected, from the architectural and educational point of view, it would probably fall very far short of the present structure. In my opinion the expenditure on alterations and improvements is very well warranted. We have not approached anywhere near the time when this building should be replaced by a new one. The foundations are apparently sound, for there is no indication of settlement anywhere. It is one of the soundest buildings I have seen, and the fact that it has stood for so many years without cracking is a true criterion that it is built on a sound foundation. I cannot give the Committee any evidence concerning the increases in cost of building in Sydney, but I can speak with regard to Victorian conditions. During nine months the price of building at Westernport went up 184 per cent., and the engineer there informed me recently that it has now gone up 25 per cent. This agrees with the opinion expressed by Mr. Oakeshott.

28. To Mr. Sampson.—Up to the time that tenders were called for the steel, in January, nothing had intervened to interfere with the progress of the work, and if it had proceeded the original estimate would, of course, have been exceeded. In January Mr. Oakeshott had a sugges-

tion in command table detail showing the work would cost about £30,000, so that any further delay meant a further increase in the cost to the extent that the cost of materials had increased since then. I think the original estimate of £37,500 in September increased to £41,000 in January owing to the increased cost of building, could be further revised so that the savings would neutralize the increase in price estimated up to April of this year.

29. To Senator Lynch.—The Department of Home Affairs are carrying out some works under contract, and since the war began we have had applications for consideration on account of the increases in price in labour and material. For our day labour work we rely, when found advantageous, on the State annual standing contracts, but these contractors take up the position that they are not now willing to supply the Commonwealth with material at the State contract prices, and, of course, we cannot compel them, as they are only applying to us as a matter of courtesy. The State contracts do not cover Commonwealth contracts, but hitherto we have always been welcome to use such contracts to obtain our material. I informed the Minister that Mr. Griffin's plans would interfere too much with the proposals of Mr. Oakeshott's scheme, and the Minister took my plan. I made no special effort to induce him to do so. He did not have Mr. Griffin's plan before him at all, and I do not think he saw it. Mr. O'Malley did not urge the adoption of any special features of Mr. Griffin's plans.

Pervez THIRMA Owen, Director General of Works, Department of Home Affairs, sworn and examined.

30. To the Chairman.—Partly owing to my absence in India and my subsequent absence from the Department in my capacity as President of the Arsenal Committee, I have not been quite so closely in touch with the projected alterations of the Customs House in Sydney, as otherwise I would have been, but I was in touch with the matter in the earlier stages of the work, about five years ago. There were successive projects, embracing larger works, until finally a solution was come to in the latter end of 1915. At about the time the drawings were being prepared, I went away to India, and, to the best of my recollection, I gave evidence briefly. When I came back from India, I was still acting as President of the Arsenal Committee, but when I was in Sydney I saw Mr. Oakeshott, and asked him about things generally, especially mentioning the Customs House. He told me that he had given evidence and an estimate based on cubing. He gave me the amount of the estimate, and I told him then that I thought it was very low, especially in view of the reduction he had made for the vacation of the building. As Director-General of Works, that is about all I had to do with the matter, and I wish to submit to the Committee that it was definitely taken out of my hands on Easter Tuesday. I was here on Good Friday, when the Minister was going to investigate the drawings with Mr. Griffin, but this matter was postponed till the following Tuesday. I was in Sydney again on the Tuesday—the day on which the plans were left in Mr. O'Malley's room for investigation by him and Mr. Griffin—and sent my name down two or three times with an inquiry if I were wanted, if the Minister did not wish to see me. It is possible, of course, that the Minister did not have this project in his mind when he said he did not want to see me. However, the fact remains, I was not wanted. It might be said that I had been detailed for duty elsewhere, but when the Government were good enough to ask me, after my return from India, to do further work as President of



Decision by MINISTER OF HOME AFFAIRS AS TO PROVISIONAL APPROVAL.

To the Inspector-General of Works, Secretary of Home Affairs, Date 19.

To the Works Director, Works Registrar, For working drawings, specifications, and estimates, to be prepared by— (Signed)

Inspector-General of Works, Date 19. Information has been prepared as stated below. (Signed) Works Director or Works Registrar, Date

Drawings	...	...	...
Specifications	...	...	...
Estimated time required for construction	...	...	...
Estimated expenditure, 19	...	...	...

I claim that the revised estimate did not go through that regular channel. The quantities, at the request of the Minister of Home Affairs, were sent direct from the Quantity Surveyor to the Minister's office, and to my knowledge have not been seen by any officer of the Department since. As Director-General of Works I have not been consulted in connection with this work at all, although before I went to India I was called in at the office. Some of the materials required for the building come within the State contracts and for others we get quotations, or perhaps we might call them a special tender, and the quantities for steel and ceiling tanks, because the steel market was unsettled, and there was a possibility of not being able to get steel in the country at all. The usual practice of the Department is to order or purchase material at such a time that it will fall into its proper place as the construction proceeds. I think it would have been a reasonable precaution to make provision for some of the material in the 20th October for some 5th January, but we have to bear in mind that if the material is ordered too soon there will be the question of storage. So long as we are reasonably sure of getting materials under the annual

contract we could arrange for delivery when required.

35. To Mr. Fenton.—In a preliminary estimate for such a work, based on the cubo, we expect to get pretty near to the cost.

36. To Senator Story.—The Minister was in error in his statement to the House that the new estimate of £51,481 had come from me from Mr. Mackintosh, from Mr. Murdoch, and Mr. Egan Smith. So far as I am concerned, I did not see it, but the Minister might have said that it came from the Director-General of Works, though I never heard of the estimate.

37. To Mr. Fenton.—As a general rule, in carrying out works of this nature, we endeavour to meet the wishes of the Department concerned. In this particular case several schemes were suggested, and in each case we consulted the Comptroller-General of Customs and the Collector of Customs. Mr. Lockyer was Comptroller-General at first, and afterwards Mr. Mills.

John Kirkpatrick, architect, Sydney, was seen and examined.

38. To the Chairman.—I have been in practice as an architect in Sydney for thirty-five or forty years. I have seen the plans for the alterations of the Customs House, but I have not made an exhaustive survey or examination of them yet. I came here at very short notice, and I have not had time to scrutinize the plans as closely as I would wish, though I devoted several hours to their study last night. I am prepared, however, to give information with regard to the increase in the cost of material from September last year up to May this year, and I have prepared a schedule showing the hours of the workmen in the various trades, together with the rates of pay per hour. In some of these cases the increases are not very great, and in the majority of trades there have obtained no increases at all. Masons in trachyte have increased an increase of 6 per cent.; masons in freestone 10 per cent.; metal workers an increase of 11.4 per cent.; and watchmen are now paid 26.9 per cent. more than they received in September last. Bricklayers, carpenters and joiners, labourers, plasterers, plumbers, bricklayers' labourers are being paid the same rate now as they received in September last. The total average increase over all these trades, excluding watchmen, is only 2.9 per cent. The particulars I have prepared are set out as follows:—

WAGES PAID TO WORKMEN EMPLOYED IN THE BUILDING TRADES FROM SEPTEMBER, 1915, TO MAY, 1916.

	September	October	November	December	January	February	March	April	May	Rate per hour	Remarks
	Per hour, s. d.	Per hour, s. d.	Per hour, s. d.	Per hour, s. d.	Per hour, s. d.	Per hour, s. d.	Per hour, s. d.	Per hour, s. d.	Per hour, s. d.	Per hour, s. d.	
Masons—											
Trachyte	1 8	1 8	1 8	1 8	1 8	1 8	1 8	1 8	1 8	1 8	
Freestone	1 8	1 8	1 8	1 8	1 8	1 8	1 8	1 8	1 8	1 8	
Bricklayers	1 7 1/2	1 7 1/2	1 7 1/2	1 7 1/2	1 7 1/2	1 7 1/2	1 7 1/2	1 7 1/2	1 7 1/2	1 7 1/2	
Carpenters and Joiners	1 6	1 6	1 6	1 6	1 6	1 6	1 6	1 6	1 6	1 6	
Plasterers	1 7 1/2	1 7 1/2	1 7 1/2	1 7 1/2	1 7 1/2	1 7 1/2	1 7 1/2	1 7 1/2	1 7 1/2	1 7 1/2	
Slaters	1 7 1/2	1 7 1/2	1 7 1/2	1 7 1/2	1 7 1/2	1 7 1/2	1 7 1/2	1 7 1/2	1 7 1/2	1 7 1/2	
Plumbers	1 7 1/2	1 7 1/2	1 7 1/2	1 7 1/2	1 7 1/2	1 7 1/2	1 7 1/2	1 7 1/2	1 7 1/2	1 7 1/2	
Painters	1 6	1 6	1 6	1 6	1 6	1 6	1 6	1 6	1 6	1 6	
Bricklayers Labourers	1 4 1/2	1 4 1/2	1 4 1/2	1 4 1/2	1 4 1/2	1 4 1/2	1 4 1/2	1 4 1/2	1 4 1/2	1 4 1/2	
Metal Workers	1 7 1/2	1 7 1/2	1 7 1/2	1 7 1/2	1 7 1/2	1 7 1/2	1 7 1/2	1 7 1/2	1 7 1/2	1 7 1/2	
Dress and Shoemakers	1 6 1/2	1 6 1/2	1 6 1/2	1 6 1/2	1 6 1/2	1 6 1/2	1 6 1/2	1 6 1/2	1 6 1/2	1 6 1/2	
Metal Workers	1 6 1/2	1 6 1/2	1 6 1/2	1 6 1/2	1 6 1/2	1 6 1/2	1 6 1/2	1 6 1/2	1 6 1/2	1 6 1/2	
Iron and Steel	1 6 1/2	1 6 1/2	1 6 1/2	1 6 1/2	1 6 1/2	1 6 1/2	1 6 1/2	1 6 1/2	1 6 1/2	1 6 1/2	
General Labourers	1 4 1/2	1 4 1/2	1 4 1/2	1 4 1/2	1 4 1/2	1 4 1/2	1 4 1/2	1 4 1/2	1 4 1/2	1 4 1/2	
Watchman	0 8 1/2	0 8 1/2	0 8 1/2	0 8 1/2	0 8 1/2	0 8 1/2	0 8 1/2	0 8 1/2	0 8 1/2	0 8 1/2	

Total average increase of wages, excluding watchman, equals 2.9 per cent.

As a general rule I work on the cubo for estimates, but cubing is not advisable for a great number of estimates. You want to know your number of estimates. For instance, if I were to cube this job, I would get an idea of the class of work he gets in the office and the basic building opposite, I could work on the same basis, but I could rely upon the same specifications and the same quality of work in both buildings. In cubing it is necessary to take into account the different alone used in construction, and therefore cubing is not in a reliable method for the average person to adopt. As the result of my experience I could look at a set of plans and in a few seconds, on the cubing method, I could arrive at the cost of a building—that is, if I know the architect who was doing the work. It is unusual to give my work out to give prices, and I always have been very far astray. For instance, I have never seen the Mutual Life Building to America and my estimate on the cubo worked out at £78,000. I was very nearly going to put on another couple of thousand pounds to make sure, but when the design was approved in America I was asked to invite tenders for the work. These varied from £70,000 to £88,000. We accepted a tender at £71,000. It is not unusual for contractors to vary considerably in their prices, because one man will estimate at a different price to another, and one man might want to make more profit than another. Sometimes, also, they work a little together, and the architect then finds that there is only one real "runner" on the job, just as at a race-course one does not get a fair price. When we got tenders out for the Commonwealth Bank we had about thirty quotations, but we only considered about eighteen, because we knew it was a waste of time to look at the others. Six or seven were £30,000 above everybody else. Even the State Government tendered, and they were £22,000 above the lowest tenders, but they apologized for being £20,000 too high, explaining that this was due to hands, and he had shoved up the price £20,000 on what was accepted happened to have a little corner of "therefore the Bank building" is costing £20,000 less than otherwise would have been the case.

39. To Mr. Fenton.—I invariably adopt the cubo system for estimating, because it would be a waste of time and money if I had to prepare a detail plan at that stage for my work. An architect should be competent enough to know what he is doing and what his building is going to cost as he draws his plans. I could estimate the cost of a building without any plans at all. If a man tells me he is going to spend £40,000 on a building, I can then tell him that a building of that design will cost so much money. Then, if my client approves of the scheme, I got tenders out. I would have a plan then to the quarter inch to the foot members of the Committee have before them in regard to the Customs House alterations. The building surveyor would take out the quantities for me, and I would go over them in the rough pick out half-a-dozen places and analyse the quantities. If I find him correct in that particular place, I might pick another place, and if I find him wrong I call attention to the fact, and he

corrects it. There is no absolute guarantee that any bill of quantities will be correct. In all my quantities always vary, I do not care what quantity surveyor does the work. I have no fault to find with the cubo system, because it suits my requirements and I have the cubical contents of great many very building in Sydney as well as a great many buildings in Melbourne.

40. To the Chairman.—Generally speaking, the plans do not appear to be well prepared; as to the treatment of a particular building, most of the requirements of the Customs authorities as an expenditure of £50,000, I should vary them slightly in the internal arrangement. Perhaps the architects of the Department experience the same trouble as we do with our clients sometimes. I suppose the head of the Department advises the architect as to how he wants to conduct his business in the office, and perhaps he knows what is the best way; but I have had a great deal of experience in the remodelling of buildings and I know the architect can very often suggest improvements. In this particular case it appears that the architects attempted an economical and clever work, but it does not like the idea right in the centre of the building, because with a great crowd of people rushing about there is likely to be congestion, and in my opinion the most valuable space in the building will be occupied by the fact that at the time the plans were drawn it was understood the Customs officials would remain in occupation of the building; but after all, the question of reconstruction is only the ABC of the work. Now that the building is empty there is no reason on earth why these plans should be adhered to at another attempt at remodeling the building they felt they would be trammelled in their work alteration by people working all round them, but I have done work much more intricate than that without moving people out of a building. In the alterations to the Bank of New South Wales, for instance, we took every wall out and the people were not inconvenienced in any way, although at first it was thought there would be a great deal of trouble in carrying out the work. In my opinion the staircase and lift shown in the centre of the Customs House building could be placed where the invoice room is shown and there could be a staircase over where the longroom is shown. It would then be possible to have all the space in the centre for the use of the clerks so that there would be no crushing or pushing in the front entrance. In the warehouse branch there is only one row of people to work there, and for lighting and ventilation arrangements could also be altered and greatly improved. The training of an architect is such that once he gets an idea how people run their businesses very often in the way they are run on the wrong lines. I had some work to do for Gibbs, Bright, and Co.'s place once. I found that their clerks were working on the top floor, but I brought them down to the ground. At first they said it would never do, but now they are very pleased with the arrangement. I had the same experience at Lynght's, and the result of alterations there, the place was revolutionized. I guarantee that if I submitted a scheme for the alteration of the Customs House to the Customs

authorities and explained it properly to them, it would prove acceptable. Alterations such as I suggest would not be more expensive than the present design.

41. *To Senator Lynch.*—My suggestion would make for economy in space, because it would not take up so much of the landing as at present. An architect really wants to go and live on the place for a week or two to see how the business is carried on. In a properly constructed building there ought to be no need for all the rushing about by the clerks which one sees in so many Government Departments.

42. *To Mr. Fenton.*—In my opinion it would be an advantage to get the officials who are most required on the ground floor, and by my suggested alterations, which would make for more ground space, some of the departments at the top could be brought down. On the departmental plan the warehouse branch seems to be rather cramped, and if we had a building with passages at the side wo

could utilize all the back space, which is at present wanted to a large extent. We could also have the longroom in the centre of the building. In the Customs House in New York the longroom and the lavatory room are right in the centre, so that the people can go all round the department, and we have worked out the same idea in the new Commonwealth Bank in Sydney. According to my judgment the space in the centre is more valuable than elsewhere. If we were putting a new building on this block of land where the Customs House now stands we would not design a structure with a staircase and lift in the middle, and now that the officials are out of the building it would be better to pull the staircase and lift right out and put them on each side of the wings.

43. *To the Chairman.*—According to the figures which I have prepared as the result of careful inquiries, the average increase in the price of materials from September, 1916, to May, 1918, is 18.4 per cent. The details are set out in the table as follows:—

Material.	Cost September, 1916.	Cost May, 1918.	Increase.	Per cent. Increase.
Kanslons, dressed .. .. .	7s. 6d. per cubic foot	8s. 6d. per cubic foot	1s. per cubic foot	14
Kanslons, rubbled .. .. .	8s. per cubic foot	9s. per cubic foot	1s. per cubic foot	12½
Trachyte, squared, ash .. .. .	16s. 6d. per cubic foot	17s. 6d. per cubic foot	1s. per cubic foot	6
Trachyte, polished .. .. .	6s. 6d. per super foot	7s. 6d. per super foot	1s. per super foot	15
Brickwork in cement, per rod, including hoop iron and scaffolding .. .. .	£21 per rod	£20 per rod	£2 per rod	8½
Brickwork in mortar, per rod .. .. .	£10 per rod	£11 per rod	£2 per rod	20
Steelwork, cut, drilled, and ready for erection .. .. .	£24 per ton	£30 per ton	£6 per ton	25
Slates .. .. .	£12 per 1,000	£11 per 1,000	1s. 6d. per 100	14
Oregon timber .. .. .	21s. per 100	22s. 6d. per 100	1s. 6d. per 100	7
H.W. timber .. .. .	11s. per 100	12s. per 100	2s. per 100	22
Pine timber .. .. .	27s. per 100	30s. per 100	3s. per 100	11
Cement .. .. .	6s. 6d. per bag	6s. 4d. per bag	2d. per bag	—
Nails .. .. .	2s. 6d. per cwt.	3s. 6d. per cwt.	9s. per cwt.	31
Corrugated iron .. .. .	£11 10s. per ton	£12 10s. per ton	£2 per ton	16
Wire .. .. .	14s. per cwt.	30s. 6d. per cwt.	12s. 6d. per cwt.	69
Plaster .. .. .	21s. per cask	21s. per cask	6s. per cask	28
Ornamental steel work .. .. .	.. .. .	.. .. .	.. .. .	.. .. .
Steel reinforcements .. .. .	4s. 6d. esp. steel, per yard	6s. 2d. per yard	6d. per yard	4
	£20, base, per ton	£28 per ton	£8 per ton	40

Total average increase in price of materials is 18.4 per cent.

I would like to have another look at the plans to-night, and perhaps in the morning I will be able to give the Committee a tracing of my suggestions. If I were designing such a building for a competition—and I do not lose many competitions—I would never think of putting the staircase and the lift in the centre, but would place them somewhere on the side, where I could let the people in. In my opinion, it is quite wrong to bring people into the centre of a building for the purpose of reaching the upper story.

44. *To Mr. Sampson.*—The staircase and lift should be easily accessible from the street, and if a subsidiary staircase is required for the clerks, it can be put anywhere to suit their convenience. I notice that, according to the initials on the corner of some of the plans, Mr. Griffin has made some suggestions, but I think he has done more harm than good. His alterations are trifling and fiddly—not broad-minded in conception at all—and they are not worth a snap of the finger. All he appears to have done has been to mark the removal of a V.C. position and a few such minor matters. Here is another point. All the woodwork on the top roof should be eliminated and concrete, which is really cheaper by the time you have done it substituted. Concrete can be done in half the time, and time is money. Moreover, it is difficult to get seasoned timber in these times, so concrete should be substituted.

45. *To Senator Lynch.*—In a great many cases in which there is a difference of opinion between the architect and his client, the views of the architect prevail. I should say that this would be the experience in about 75 per cent. of the cases. I have not seen Mr. Griffin's tracings. I have seen only the plans before the Committee, and I notice that some of them contain his initials in the corners, showing his alterations in pencil. The increase in the cost of materials has taken place during the past couple of months. Most of the contractors on my work, with the exception of the bank contractor, have finished, and, in the case of the bank, the successful tenderer contracted for all his materials at an early stage. It appears, therefore, that the suppliers, owing to the increased cost of material, are losing some of their profits, but at the outside it is not 18 per cent.

46. *To Mr. Sampson.*—When the Governor of the Commonwealth Bank decided to put up the new building now in course of erection, he asked me to come across and have a look at the site. He then requested me to get out a design. I did so, and showed him the skeleton with the main staircases at the side of the room. He questioned the wisdom of this course, and when he told me where he wanted his room, we made an alteration in the plan. He then said, "I will leave the rest of the construction to you." Accordingly, I finished the plans and put the staircase where he wanted

it, but after the work had started I went to him and said, "I think this staircase is in the wrong place. We had better put it at the side. We can do it now for exactly the same money as when you signed the contract, but if it is altered afterwards it will cost probably £2,000 to remove it." He argued for two or three days with me, but finally he agreed with my proposals. That is the only matter about which we had an argument. I designed all the bank chambers and strong-room without any special instructions from the Governor of the Bank, but he saw every one of them in progress, and made very few alterations. In my experience of the remodeling of buildings, the owners very rarely think out a scheme for themselves, but give an architect an idea of what is wanted with an instruction to design a building to meet requirements. Very often, when an owner advances his own views with regard to details of a work, he is persuaded after argument that his own idea was not so good, and realises that the architect's plan is better. I learn from an office-boy sometimes, or from women whose duty it is to sweep an office out. The man in the street can very often give an architect an idea that is worthy of consideration. My idea with regard to the Customs House building is to have the staircase and lift readily accessible to the people, and to effect an economy in space. I am sure that if a new building were asked for, no architect would put the staircase in the centre, as shown on this design.

(Taken at Sydney.)

FRIDAY, 26th MAY, 1918.

Present:—  
Mr. RILEY, Chairman;  
Senator Story, Mr. Finlayson,  
Mr. Fenton, Mr. Laird Smith,  
John Kirkpatrick, architect, Sydney, further examined.

47. *To the Chairman.*—I am sorry to say that I had not time to prepare the skeletons embodying my suggestions with regard to the Customs House, but I have carefully considered the quantities and specifications. In my opinion, the specifications are ambiguous, and not sufficiently concise. I find that there are considerable lump sums allowed for certain services, as, for instance, lighting and vacuum cleaning. All such things should be detailed in specifications. I have analyzed the plans carefully, and I am very sorry to say that I think they have been prepared very carelessly. I have not had time to analyze the quantities, but I reached the conclusion that the prices allowed are higher than we allowed in many cases in connexion with the bank construction. I handed the quantities over to the clerk at the bank building, and this morning the clerk says that some of the prices are put down in different amounts, and that, taking the quantities as a whole, the prices are higher than we allow. The work, I think, should be done for less than £51,481.

48. *To Senator Story.*—I think there exists the same need for exactitude in plans and specifications if the work is being carried out departmentally by day labour and by contract. I am carrying out a good many thousands' pounds' worth of work in the country by day labour, and I know exactly what the cost is going to be. If there is an impression that the Government have an unlimited purse, and if officers are allowed to

spend money unnecessarily, you will never know where you are going to be landed. When a man is going into building operations, he should know within a reasonable amount what the cost will be, but, unless the specifications are concisely drawn, it would be difficult to supply such information. As an illustration of the ambiguity of some of these specifications, I draw attention to the fact that "details hereafter" appears in them, and also "partitions to be moved as may be pointed out." Why should not the details be given? The plans, in my opinion, if designed for a private building, would not be passed by the fire brigade and civic authorities, for they would not allow a staircase and lifts in the centre of a wooden floor building, but would require them to be placed near the exterior walls, so as to be readily accessible. I notice also that there is only one staircase from the ground floor upwards, so that the whole of the people will have to enter and leave by the central stairway. How would they get out in case of fire? I am sure if I sent the plans along to the Sydney Council they would not be passed, and I contend that the Government have no right to do anything which a private individual is not allowed to do. The Government should set an example in such matters as buildings. This question of the staircase and elevators is vital, and the plans will have to be altered. That staircase and lifts must come out from the centre of the building. If the Government build it, they will be doing wrong, and, in case of fire, will be endangering the lives of the occupants.

49. *To Mr. Finlayson.*—In my opinion, the overhead lighting arrangements of the long-room and invoice-room are faulty, because of the wide ledge on each side of the skylight scheme, and the officials will probably have to work by gas or electric light all day.

50. *To Mr. Fenton.*—The ventilation system also appears to be faulty.

51. *To Mr. Finlayson.*—In the new bank building, the lifts and the main staircase are easily accessible from the street, and the same principle has been followed in the construction of the Daily Telegraph office and all modern buildings. Now that the Customs House is not occupied, there is nothing whatever to prevent the lifts and staircase being placed at the side, so as to be easily accessible from the street, and this would lead to economy too, because I notice, in the design before the Committee, there is provision for new walls being built all round the staircase.

52. *To Mr. Fenton.*—If I were doing the work I would persuade the Customs authorities to have the staircase moved so as to provide more ground-floor space for the working of the Department.

53. *To Mr. Laird Smith.*—I should be glad to undertake these alterations at a cost of £35,000, even at the present time, and not £51,481. Perhaps this is an "eye-opener" to the Committee.

54. *To Mr. Finlayson.*—I will guarantee to do the work on an infinitely better design, and one which will be approved of by the Customs authorities, for about £35,000. Cubing for an estimate of alterations to a building such as this is not satisfactory. The only way to get the cost is by taking the different sections of the work in detail. I notice that in the estimate there is provision for £760 to pull down the old building, whereas in the money going to the Customs to arrive at a reliable estimate is to go through the building, measure it up, and make plans, and, having obtained your prices, allow experience to guide in making an estimate. It is practically impossible, however, in a work involving extensive operations to get absolute and definite details, and

In such a case an allowance of about 10 per cent. in the cubing system would be permissible. In the alterations to the Bank of New South Wales we reckoned the cost would be increased by about £10,000 if the building remained in occupation while the work was in progress. They preferred to remain, however, and I do not think they were put to the expenditure of £10,000 after all. An estimate of the saving to be effected by the Customs House being vacated while the work was in progress could be arrived at, but it is rather an intricate calculation to make. I should think it would be about £4,000. The workmen would not be delayed, as they would have access to all parts of the building, and the work could be carried out more quickly and more effectively. Considering the character and age of the present building, I think the proposed alterations are warranted. The building is a good one. It is as fine a piece of stonework as you will find in any part of the world. The character of the design is excellent, and the exterior treatment is very good. I know of no better example of architecture of the period, but, unfortunately, it has been cut about by people with amateurish ideas. The expenditure of £50,000, or even £150,000, on such a building would be justified, for it will carry another couple of storeys, and with a Mansard roof and steel and fireproof construction, it could be made a very handsome building; but it wants to be scientifically handled. It would be necessary, of course, to exploit the foundations before any additional storey were erected. It is probable that the foundations are on the rock, but in any case it would not cost very much to underpin. I built the Paragon Hotel—a big three-storied building—on the quay, and it has never cracked. For the proposed alterations of the Customs House I do not think that any underpinning would be necessary. The present building is fire-resisting, but not fireproof, and some of the proposed additions are fireproof. I think it is wise to make the building fireproof as much as possible by putting in concrete floors with magnesite covering, such as is employed in some parts of the new Commonwealth Bank. There is no technical or professional objection to the addition of a fireproof section to a fire-resisting building. In my opinion, the proposed new wings, which will be carried above the present front of the building, will not be a disfigurement when viewed from the harbor. Unfortunately, there are so many disfigurements around the harbor that one more or less will not matter. Detailed drawings, specifications, and quantities should be taken out accurately before a work is authorized, so that the Government, whether work is done by day labour or contract, would be in a position to know what it is going to cost, and if the cost exceeds the amount provided, some reasonable inquiries should be made. All particulars should be furnished. Even the furniture should be shown. The proportion which the expenditure in the preparation of plans and specifications bears to the total cost of a building varies a great deal, according to the class of building contemplated. In a wool warehouse, for instance, not only the same details are required as for a building of an ornate character. Architects, who have to pay their rents, provide their own paper and make a profit of 5 per cent. for all the work, whether times are had on good. In the case of the Customs House, I think the proportion of expenditure for the preparation of the details would be about 2½ per cent. of the cost of the work. I am sure the adoption of this system would be an advantage, because careful specifications would be prepared, and the Government would be saved hundreds of thousands of pounds every year. I have lived in

Sydney for over 35 years, and twice I was offered the position as Government Architect, but I refused, because I could not get what I wanted, and because of the manner in which the office work was conducted. There was too much carelessness and extravagance everywhere, without any good play of good taste or good workmanship. There was a time, however, when we had good work done in New South Wales. For instance, the Post Office was badly designed; there was a lack of education in the planning of the general arrangement of the office, but the workmanship was superb. Better work could not be found in any part of the world.

55. *To Senator Story.*—For £22,000 I am prepared to carry out the work of remodeling the Customs House, and give all the accommodations provided in the departmental plan. My scheme would include the staircase and lifts which I suggest they should be placed, and it would give far more superficial area for the clerks on the ground floor. The building would also be fireproof, for I would have no woodwork in it, and all the roof principles would be of steel and iron, at £30 per ton, the present price. I would be prepared to carry out this work by day labour also, but I should require the right to select my own men. I am in favour of day labour, and the next best I build will be by day labour, but I want first-class men. Of course, I will pay full union rates. I think that every man on the bank is getting from 7d. to 1s. per day above union rates. As a result of this policy we get the pick of Sydney men, and it means, for I find that if a man is treated well he will do very much more work. The system worked very satisfactorily in Brisbane, where Mr. Macrow carried out extensive works for the American Beef Trust. He had a doctor always on the job, and if a man said that he could not come to work because of illness in the family the doctor was sent away at once to give the necessary medical attention. Then, again, there were boys constantly going round with drinks for the men, so that the latter would not have to knock off to get a drink. There were the regular breaks for "smoko," and I understand that, as a result of the introduction of that system, the men did from 15 per cent. to 20 per cent. better work than under contract. In the demolition of a building, the material removed very often more than pays for the cost of removal. I have pulled down hundreds of buildings in Sydney, and have got from £200 to £500 for the material. In the course of a few months I will be pulling down a building in Pitt-street, for the Australian Mutual Provident Society, and I estimate to get about £600 or £700 for the material.

56. *To Mr. Fenton.*—The increased cost to the Home Affairs Department by the preparation of detailed plans for all proposed work would not be very great. It would not be more than 1 per cent. or 1½ per cent. on the cost. Outside architects would be pleased to get that amount. If I were in charge of the Home Affairs Department, I would expect the responsible works officials to be able to give me a rough sketch plan, together with a good idea of what the total cost of a building will be.

Adolphus Berckelman, secretary and executive member of the Store Supply Committee, New South Wales, sworn and examined.

57. *To the Chairman.*—I deal with all State and Federal contracts and tenders. The first contract period of the war started on 1st July, 1914, and in that year we decided not to give any increases for higher prices caused by the war, but

recouped contractors to the extent of any extra expense incurred in freight, ordinary insurance, and war-risk insurance. That, however, only applied from two months after the war had broken out, because it was thought that contractors should have had stocks on hand to keep them going for two months. During the year a number of applications was made for increases, but generally they were turned down. Only in exceptional cases was approval given for the payment of higher rates. One such case was in respect of galvanized iron. In January, 1915, the market price was £20 10s. per ton, and, in June, 1915, it had jumped to £28 10s. per ton for 24-gauge iron. We knew, however, that the contractor would not lose very much with Lysaght's people, who were going to stand by him. In the matter of electrical supplies, applications were made for an increase, but the contractors were told that they could only get the extra freight and insurance, though the Departments were instructed to be as reasonable as possible, and that if a contractor could not supply a particular article, but was able to get a substitute, they were to take it if it would suit the purpose. We also had applications for an increase in regard to cotton waste, but that was turned down. A big firm of engineers had that contract, and, as they could not get English waste, they obtained a very good quality article from Japan, though they lost money on it.

58. *To Mr. Fenton.*—The contract for galvanized iron was with Fox Brothers, of Sydney, and we decided, when it was completed, that we would have no more contracts, but would see if we could arrange with Lysaghts, in Sydney, to supply the Government on the same terms as the trade. They agreed to supply us, and to charge on the list of prices current, less 5 per cent. discount. That list has changed considerably. For 24-gauge iron the price in July, 1915, was £30 10s.; on the 7th January, 1916, it was £31 10s.; on the 4th February, it was £33 10s.; on the 26th February, it was £34 10s.; and, on the 7th April, £34 10s. The cost of this iron before the war was £17 3s. per ton. We could not buy at a lower price than under this arrangement, as we are now on bedrock prices. The Federal Government have bought largely under this arrangement. For our timber supplies we have, of course, been buying from the State Timber Yard. We get shipments ourselves. All our ore and iron redwood come from America, through our representative, Mr. Neilson, and the shipments turn out very well. We always get prices from the timber brokers in Sydney and compare them with Mr. Neilson's quotations, and find we are always able to buy better than in Sydney. I have brought along the list of the State Timber Yards for 1915 and for 1916, so that the prices in the two years may be compared. Extracts from the list are as follows:—

	1915.	1916.
30 feet long 2 x 2 to 12 x 12, per 100 super.	19 0	22 6
30 feet to 40 feet long 2 x 2 to 12 x 12, per 100 super.	20 0	23 6
42 feet to 50 feet long Oregon spars, per 100 super.	25 0	29 6
62 feet to 70 feet long per 100 super.	28 0	31 6
72 feet to 80 feet long per 100 super.	30 0	34 6
<i>New South Wales Hardwood.</i>		
4 feet x 6 feet x 1, per 100 super.	19 0	21 6
5 feet x 6 feet and 6 x 6, per 100 super.	24 0	27 6
3 feet x 2 feet, per 100 lineal feet	0 10	0 10
3 feet x 3 feet, per 100 lineal feet	14 6	16 0
<i>Victorian Colonial White Pine.</i>		
1-inch thick, 12 inches wide, per 100 super.	16 0	17 6
2-inch thick, 12 inches wide, per 100 super.	22 0	23 6

¾ inch thick, 12 inches wide . . .	23 0	24 6
1 inch thick x 11 inches wide, per 100 super.	24 0	27 6
1 inch thick x 10 inches wide . . .	25 0	28 6
1 inch thick x 18 inches wide . . .	27 0	30 6
<i>Hardwood.</i>		
1-inch thick, per 100 feet surface	21 0	24 0
2-inch thick, per 100 feet surface	29 0	31 6
1 inch thick and upwards, per 100 feet super.	30 0	35 0

There has been a corresponding increase in several other lines. Comment has not advanced very much. The price per cask in 1914 and 1915, was 12s., and for this year the price is 12s. 6d. Steel, of course, has gone up very much, and great difficulty is experienced in getting it even at the present time. We have been helping our contractors as much as possible by advising the Agent-General to get in touch with the Imperial authorities, with the idea of facilitating shipments by guaranteeing that all shipments allowed to leave England for Australia will be used wholly for Government purposes. The price is considerably above what we had to pay before the war. The advance might be anything from 50 per cent. upwards. White lead is also a big item, and we have no contract at present. The market price has gone up over 50 per cent., and is still rising. We do not buy much lead, and we have no contracts. We have been turning down applications for increases on contract prices this year, because such contracts were made when war conditions were ruling, and, therefore, we have now set our faces against giving compensation.

John Smith Murdoch, architect, Department of Home Affairs, further examined.

59. *To the Chairman.*—I was present when Mr. Kirkpatrick was examined, and noted what he said with regard to the plans and specifications of the Customs House. Mr. Kirkpatrick said that the specifications had been slowly drafted, and that, instead of setting out in detail the amounts for electric lighting and vacuum services, lump sums were introduced to cover these services. After 36 years' continuous experience of building matters, I am of opinion that the specifications are as complete as any that are drafted in the office of a private architect, and, personally, I would like to have a look at Mr. Kirkpatrick's specifications to compare them with these. I have never known services, such as Mr. Kirkpatrick mentioned, to be provided for in any other way but a lump sum, and I have had extensive experience here and in Great Britain. Then he said that the plans appeared to be the work of amateurs, that they had been insufficiently considered, and in many ways were unsatisfactory. My opinion with regard to the plans is that, from the point of view of draftsmanship, they are more complete indeed. I have seldom seen a more complete set of drawings. As to the manner of dealing with such a problem, I could only say that it will vary in the same ratio to the number of men who are asked to give an opinion upon it. You can get no two men to think alike. By this I give my opinion as to the best way to deal with this matter. Mr. Oakeshot might have another, and Mr. Kirkpatrick another, and if we were to consult the decision would be more or less a compromise of opinions. In a consideration of this problem, we might spend days over it, giving a little here and taking a little there, but a "give-and-take" we arrive at the best possible scheme. In my opinion, the plans are capable of very little improvement indeed. I approached this problem in January last with Mr. Oakeshot and Mr. Griffin, and I gave it thorough consideration then. In the position I occupy I have had a great

deal of experience in analyzing other men's work with the idea of effecting improvements, and, with the exception of certain details, I am satisfied to recommend the Committee to allow the work to go on as it is planned. One or two features have been introduced into the plans by Mr. Okeshott since I saw them last, and these I am going to ask Mr. Okeshott to be good enough to amend. I have no doubt I will be able to get him to see with me that it would be a good thing to do so. It is not easy to follow in detail the statement made by Mr. Kirkpatrick, who in an emphatic manner objected to the position of the staircase and, in a less detailed way, referred to some other methods he would adopt to get over this difficulty. The Committee will see, however, that the main entrance is shown to be 11 feet wide, and that, 10 feet from the entrance, the public will be able to commence business with the officials by entering doors either to the east or the west, or go straight ahead along continuous counters—the total length of which is about 300 feet. The space in the centre occupied by the staircase and lift is, I contend, practically useless for public purposes, and, as in the New York Customs House, where there is a similar huge space, it is likely to become merely a landing place for the public. The public never use the central space, and it serves no purpose except giving an improved æsthetic appearance to the interior. I maintain that with a continuous counter, as designed in this scheme, the public will be able to get quickly in touch with their work in any particular branch.

60. *To Senator Story.*—From the elevator wells to the counter of the warehouse branch, the distance is 11 feet, and that is the narrowest public space in front of the counters on the ground floor. A great many important branches conduct their business upstairs.

61. *To Mr. Finlayson.*—In my opinion, the means of access to the upstairs department should be through the main entrance to the building. Mr. Kirkpatrick suggested that there should be staircases at the side entrances, from Loftus-street and Young-street. At one period in the study of this problem, the Department considered that proposal also, but the Customs authorities objected, I understand, to having more than one entrance, because they wished to have control of the building, so that after hours an official will be able to see all who go in or come out of the place. In my opinion, that is a sound view to take, and entrances at the side would constitute a weakness in the plan, viewed from this standpoint. As at present designed, the officials of the Department will be in continuous touch with one another behind the counters, which run all round the building, but if two entrances are made, and two staircases built, there will be a break in this continuity of work which is so desirable. I maintain that the provision made for access to the branches upstairs is quite sufficient. Many huge buildings in America, twenty times the size of the Customs House, have only one great public door.

62. *To the Chairman.*—When the Customs House closes for the day, the glass doors at each side of the entrance, and the door at the back of the elevator-hall, giving access to the lounge and invoice-room, will be locked, so that the Customs officials will be cut off entirely from the other part of the building, the staff having means of egress at the rear. I do not think there could be a better elevator arrangement than is provided for in this design, and I am sorry that Mr. Kirkpatrick did not furnish a tracing embodying his

idea, as he promised. It is all very well to talk lightly about what could be done. I know exactly the suggestion by Mr. Kirkpatrick, and I can assure the Committee that there is nothing novel in his idea, because we considered that arrangement ourselves, and the Customs authorities objected to it. Mr. Kirkpatrick also said that people upstairs would be trapped in case of a fire. We have to remember, however, that the building is fairly fire-resisting, and that the work to be carried out will not increase risk of fire. Any fire that did occur would be likely to break out in the day time, and with people working all round it should easily be checked. But, even if it were not checked, they would have the main staircase and elevators to escape by, as well as the two fireproof steel escape stairs, though I think that one of these is unnecessary. Mr. Kirkpatrick said that the plan would not be approved by the civic authorities, but I think he is wrong, because I have never seen any building better safeguarded against fire than this will be. Another point mentioned by Mr. Kirkpatrick was the necessity for complete quantities and specifications on works done by day labour. My opinion is that it would be a waste of money to get out these documents in any very elaborate detail. On contract works the contractor must be safeguarded by being able to base his price on complete quantities, and that is always done; but on day labour this is unnecessary. The ordinary skeleton quantities are all that is required. Of course, builders' quantities, which we must have for the ordering of our material, are necessary, but I maintain that the taking out of quantities for making preliminary estimates on for day labour works is unnecessary and would mean considerable expense to the Department. Mr. Kirkpatrick has said that he could carry out this work for £25,000 in fireproof construction, though along different lines. I have nothing to say to that, except that I cannot understand how any man could make such an assertion without going into the details. I have every respect for Mr. Kirkpatrick, because he is a man of wide experience, but on such a superficial examination of these drawings as he has made I should hesitate myself to give such opinions as he has done. My chief anxiety is to get the work in hand without further delay, and, as far as I am concerned, I am prepared to advocate the general lines of this plan, with some slight alterations, which I hope Colonel Owen will get Mr. Okeshott to carry out.

Walter Burley Griffin, Federal Capital Director of Design and Construction, sworn and examined.

63. *To the Chairman.*—At the request of the Minister I inspected the plans for the Customs House and I had conferences with Mr. Murdoch and Mr. Okeshott, as the result of which some alterations were suggested. A set of the plans bearing my initials indicates suggestions which appeared to me to be advisable in the interests of economy, because the cost of the alterations seemed to be large in proportion to the value of the building. I estimate that the alterations I proposed would effect a saving of about £4,500. These suggestions were made apart from those of the officers of the Department who had already adopted, and some were not. I suggested omitting the steelwork largely, and substituting for it reinforced concrete in the walls and piers, and substituting wood construction, as far as possible in the floors for steel and concrete. I made this suggestion owing to the enormous increase in the cost of steel, and also

because it does not seem advisable to make alterations, which constitute a small proportion to the total cost of the building, of different or better character constructionally than the balance of the building, because the life of a structure and the value of the investment will be determined by the major part of the building. I suggested also leaving some floors at the present level, instead of moving them as indicated in the plan, and the substitution of galvanized iron and wired glass for prismatic pavement lights in the skylights, the substitution of plaster for metal ceilings, as well as various arrangements and detail alterations. The building with the modifications I suggested would be quite as substantial, but not fireproof. It would not be fireproof in any case.

There were no quantity surveys in existence when I saw the plans, but I went into the quantities for the items I have mentioned; my idea being to cut the cost of the alterations down as much as possible consistent with the character of the building and the purposes for which it was intended. Up to the present, I have not had an opportunity to make an estimate to see whether the work could be carried out for the estimate. I have seen the quantities and estimate prepared by the Department, and I should say that the estimate of £61,481 is quite ample, based on a comparison with private work. I have several works in course of construction, and I know there has been an increase in the cost of material since before the war, but the average increase, from September last, I should say is something less than 7½ per cent. I am referring to the Victorian figures, but I have seen the Sydney price-lists, and they seem to be very much the same. I have not carried out any works in New South Wales during the last six months, but I can quote from practical builders in New South Wales showing that the average increase is, as I mentioned, a little less than 7½ per cent. I have carefully checked the price-lists of material in order to arrive at the change in cost of building. During that period, the only increase in the price of labour has been 2d. per hour to the masons. In a work such as the alteration of the Sydney Customs House, labour would constitute a larger proportion of the work than in the case of a new building. Sydney contractors tell me, however, that the average increase in the cost of building is from 5 per cent. to 7 per cent., which seems to be lower than my estimate. I made my estimate on the actual material in these quantities, as listed, item by item. I remember the conference which I had with Mr. Murdoch and Mr. Okeshott over the alterations of these plans, but I do not recollect having promised to communicate further with Mr. Murdoch or Mr. Okeshott. The suggestions that I made were all taken before the Minister and discussed, and, so far as I know, they were settled. There was a period of three weeks between a conference in Sydney and when next I saw Mr. Murdoch in Melbourne, but this is a short time in which to go over the details of a big building like this. I made my recommendations as definitely as it seemed necessary for me to do.

64. *To Senator Story.*—When I left Mr. Murdoch in Sydney, I may have said that I would see him in Melbourne in two or three days, but I had no intention, when I went back to Melbourne, to make up my mind as to what was best to be done. We conferred in Sydney on the Friday and Saturday, and I returned to Melbourne on the Tuesday following (25th January, 1916). I immediately wrote to the Minister, as follows:—

In regard to your request that I should consider the plans for rebuilding the Customs House, I find the

building has been unoccupied since about Christmas, but owing, I believe, to the absence of Mr. Okeshott and the sick leave, the necessary particulars have only just been referred to me. These are being given my close attention, but some little time must necessarily be allowed for that.

I made no promise to Mr. Murdoch to report to him on the Monday or Tuesday following our interview in Sydney. I was to see him further if anything rendered that course necessary, but, instead of an interview, I put my views in writing. There was nothing to see Mr. Murdoch about. The letter I wrote to the Minister was a sufficient reply to Mr. Murdoch's request. It might be as well to point out that I had not seen the plans until the Friday and Saturday preceding the Tuesday on which I wrote the letter to the Minister, and I am sure Mr. Murdoch did not expect me to come to a final conclusion between the Saturday and the following Tuesday. If Mr. Murdoch says that, when I took the plans away in Sydney, I promised to see him on my return to Melbourne, all that I can say is that I had no recollection of it. I had no intention of giving a final decision at such short notice. We thrashed the matter out in Sydney as far as we could, but a technical man would not care to express a definite opinion on a snap judgment. Such things as the consideration of these plans have to be gone into carefully. My reason for writing to the Minister was that the Minister, not being a technical man, might become impatient at a decision being apparently delayed, whereas Mr. Murdoch, being a technical man, would take it for granted that consideration was necessary over such a problem. If I had been in Mr. Murdoch's position and he in mine, I would not think it peculiarly desirable a delay of three weeks and if he wrote direct to the Minister I was in the position of the adviser to the Department, and if Mr. Murdoch is asked he will be able to tell you we thrashed the matter out in Sydney, and that I asked for time for further consideration. If he thought that I would be ready to report to him on the Tuesday following, he was jumping at conclusions. I went to Mr. Murdoch as soon as I had a definite recommendation to make, and that was on the 16th February, three weeks later. I am not aware that I agreed to see Mr. Murdoch immediately on my arrival in Melbourne. I gave the Minister the information that the average increase in prices of building from September to April was 7½ per cent., because the Minister had asked me to advise him of any advance that had taken place during that period.

65. *To Mr. Finlayson.*—My connexion with this matter of the alteration of the Sydney Customs House dates from the early part of November, 1915, immediately after Mr. O'Malley came into office. He tried to arrange a conference with Messrs. Murdoch, Okeshott, and myself that was to take place in Sydney, and, on the 18th December, he finally wrote me to consult with them. Prior to that, I had talked the matter over with the Minister and the architects; but only from the Minister's point of view of arranging for the conference. I did not discuss with the Minister at that stage the question of costs. The Minister asked me to consult with the departmental officers in my private capacity as a consulting architect. Immediately I had knowledge of the request from the Minister, I rang up Mr. Murdoch, on the 18th December, and he explained to me that Mr. Okeshott was leaving on his vacation, so that the conference could not take place until the 14th January. I telegraphed Mr. Murdoch on the 11th January, saying I was coming to Sydney; but he had left Sydney before

my wire reached him. Afterwards, I received word that Mr. Oakeshott would not be available for another week. I was ready on the 14th of January in Sydney, so that the delay was not due to my inability to attend the conference. I did all I possibly could. I received the drawings on 22nd January, and took them back with me to Melbourne, and the delay of three weeks was due to the fact that I wanted to make up my mind as to what I would recommend. I had to go through the plans in detail. After studying them carefully, I arrived at a decision that additions, as small a cost as possible, was the correct policy, so I went through the plans to find out where I could effect changes in the direction of economy. I was occupied in this work during the three weeks intervening between the time of the conference in Sydney and my letter to the Minister. I do not consider the time occupied on that work was unreasonable, and I notified the Minister that time would be required, though I did not state definitely what time would be necessary. I conferred again with Mr. Murdoch on the 17th February, just before I left for Canberra to meet the Minister. I told the Minister the result of our conference. He also received a telegram from Mr. Murdoch to the same effect, and he then wrote instructions to Mr. Murdoch to proceed with the work of demolition, but wished us to explain the matter more fully to him on his return to Melbourne, so, on the 22nd February, we spent the forenoon with him, and gave him all the particulars in order that he might be cognizant of the whole matter. At that time, the quantities were more or less indefinite, and I understand the Minister then asked the Department to prepare the quantities in the ordinary way. After the conference with the Minister, on the 22nd February, the matter passed out of my hands altogether until 22nd April. At that time the quantities were submitted to me for examination. I went through the specifications and noticed that a number of the suggestions I had made at the conference with the departmental officers had not been adopted, and again suggested reductions aggregating £4,500. I am satisfied that my suggestions will not reduce the floor space available. I have no complaint to make with regard to the manner in which the plans have been prepared, the specifications drawn up, or the quantities set out. It would depend upon the character of the work whether, before a proposal was brought before the Minister, and through the Minister before the Committee, it was necessary to have detailed working drawings with specifications and quantities. In the case of the alterations to the Customs House, I think the system of cubing the quantities and a sketch plan were not sufficient, but in a proposal for a new building that system ought to give sufficient data. I think an allowance of 10 per cent. as a contingency against a probable rise in prices is somewhat misleading, because there should be no further contingencies when once the work is started. If the market then indicates a rising tendency, the proper thing to do is to close on all contracts for materials at the price adopted in the estimate. The only other element would be the labour, and it would not be wise to encourage a feeling that the labour market should rise, whereas the net cost of labour is not necessarily affected by rise in wages. It is natural to expect some variation in the cost of materials and in the labour market from the time that the matter first came before the Minister to the time when the working drawings were completed, because such changes come monthly now, but there ought to be very little difference in cost from the final estimate based on the working plans. I cannot agree at all with Mr.

Oakeshott that there has been an increase of 25 per cent. in the cost of building since last September, and Mr. Oakeshott's further allowance of 10 per cent. for problematical increase should not be taken into account, because this increase need not occur in the building. A very considerable saving might be effected in the cost of the work now that the building has been vacated. I notice that, in September last, Mr. Oakeshott estimated this saving at £8,000. It might possibly be as much as that. The saving would be effected in the organization and management of the labour—thus avoiding delay and consequent wastage. I consider that the addition of concrete construction to a building that is only fire-resisting is not warranted, because the alteration is only a small proportion of the total size of the building, and consequently will not materially improve the character of the structure. I suggest, therefore, that the alteration work should be carried out in the same construction as the original building. In arriving at a decision with regard to a work of such a nature, the practical course is to estimate, if possible, the anticipated life of the building, and write the building off at that period. Changes in construction method are going on all the time. This building was valued at £91,000 in 1901, and half of that amount should not have a retained value, after the alterations are completed, of more than £60,000 at utmost. My recommendation to the Department is to carry out the alterations in the construction as to the original building. A more expensive alternative would not be advisable, because it would not improve the character of the structure as a whole. The two new wings will be taken a story above the level of the existing front of the building, and it is advisable to finish them off in a style in agreement with the present building. This will not cost a great deal, because the stone can be recovered from the work of demolition. The provision for escape in case of fire is all right as the plan stands now. I understand that objection has been taken to the stairway and lifts being in the centre of the building, and, in answer to that, I would say that I advocated the plan now before the Committee. We have to bear in mind the fact that we have to suit the convenience of the departments upstairs, and I agree that the situation of the staircase and elevators is suitable according to the character of the building.

66. To Mr. Laird Smith.—I do not say that timber for the flooring would be better than concrete. I merely suggested the use of wood in the interests of economy. I look upon this building as an investment which should return more than the money expended on it. A concrete floor in a wooden building would scarcely be justified above the ground floor, and a building that is not fire and vermin proof is not made fire or vermin proof by the addition of concrete. In my view, the character of construction in my proposal, the saving in the amount of steel is not to be introduced by lighter material or wooden beams, but change in the spacing of the piers and the use of more wooden joists. The spans are reduced. It is proposed to use reinforced concrete rods instead of rolled steel. In other words, we reduce the amount of the steel without affecting its strength or fire-proof quality. I have not the departmental data for examination, so I cannot say whether the estimate of £51,481 is excessive or not. I could only compare it with the cost of private construction. I think the work would cost more than £35,000.

67. To Mr. Fenton.—Mr. Murdoch and I, although we disagreed in regard to many points, did not take our dispute before the Minister. I agreed with the major portion of the plans, and only tried to introduce changes that would effect economy. Mr. Murdoch agreed with me on many points. Speaking generally, I agree with the plans submitted by the departmental officers, and I believe the Customs House authorities were consulted as to their requirements. I understand that, while Mr. Oakeshott estimated the increase in the cost of building from September last at 25 per cent., Mr. Murdoch's figure has put it down to 18½ per cent. I, however, think 7½ per cent. is too high for Sydney. This is the information I have obtained from men in the building trade. On the average, Melbourne building prices are higher than Sydney. In my estimate to the Minister I took Melbourne prices, and immediately got information from Sydney corroborating my opinion. I took note of all the materials to be used in this building, and found that the average increase has been 7½ per cent. One might reasonably expect the increase to be not so great in alteration work, because this class of work involves a greater proportion of labour than a new building. In only one trade has there been an increase, and that increase is 24 per cent.

68. To the Chairman.—Steel for girders has increased about 25 per cent. and, in order to get over that difficulty, I suggest that the Government should use rods, which have not gone up in price proportionately to rolled steel sections.

William Henry Barkley, Collector of Customs, Sydney, sworn and examined.

69. To the Chairman.—I have not had an opportunity of considering the plan of the proposed alterations as now before the Committee, but, so far as I can judge, it will suit requirements. I do not see that much advantage is to be gained by retaining one of the steel staircases, as the main vestibule, staircase, and elevators should be ample for all requirements. My experience is that the people who come to do business at the Customs House want to get out again as quickly as possible, and the provision made to transact business seems to be suitable. In the London Customs House, the long-room is like a great bar upstairs, and I should say that the proposed provision in Sydney would be a great improvement upon the position in London. Moreover, we shall have the warehouse-room and the invoice-room in a convenient location. I agree with the principle that there should be only one entrance, but, before expressing myself definitely on the plans as a whole, I would like to have a further opportunity of considering them.

70. To Mr. Finlayson.—In my opinion, there should be some provision for internal communication for the officers of the different departments, and I think a spiral staircase might be provided.

Appendix to Mr. Barkley's Evidence.  
With the consent of the Committee the following communication is added to Mr. Barkley's evidence:—

Customs House,  
Sydney, 29th May, 1916.

Sir,  
Pursuant to the Committee's request at the sitting held on Friday, 12th inst., and after careful examination of the revised plans of the new Customs House and consultation with my principal officers, I desire to report as follows for the information of the Committee.

In my opinion the public entrance on the northern front, as shown in the plan finally approved by this Department, is adequate for all departmental and public purposes.

Additional entrances on the eastern and western fronts are not only unnecessary, but would seriously encroach on the available counter space, every foot of which will be required for the transaction of public business.

Such entrances would, moreover, destroy the continuity of the working space behind the counters, and thus seriously interfere with the movements of officers. I would, therefore, strongly urge that the provision for a single entrance on the northern front be adhered to.

It is also very desirable that the strong iron and roller-work be sunk in the basement, as shown in the plan finally approved by this Department. The location of these rooms on the ground floor, as appearing in the plan now under notice, would be a serious waste of most valuable space.

I might add that I concur in the suggestion made by Mr. Finlayson that stairway communication, for the use of officers only, be provided between the invoice-room and the first floor.

Yours obediently,  
W. H. BARKLEY,  
Collector of Customs.

The Chairman,  
Commonwealth Parliamentary Standing Committee  
on Public Works, Melbourne.

Andrew Stanley McConnell, builder, Sydney,  
manager for Messrs. John Howie and Sons,  
sworn and examined.

71. To the Chairman.—We are building contractors in a large way of business, though we have slackened down a little bit during the last six or seven months. During the past two years we have completed many contracts—Burt and Co.'s building at the Bank of North Queensland, and the substitution at the rear of the Town Hall and Dall and Welch's premises in George-street. We are always in touch with steel prices, and we would not venture to estimate for work unless we were. I suppose, on an average, we tender for about ten jobs per week. Steel has gone up about £5 per ton, but there has been no increase in labour. Howie and Sons are interested in the steel business, and we call an allowance of about £1 per ton for our building contracts. For instance, if the price is £20 per ton, we get it for £19. We quote for the Federal and State Governments at various times, and treat them like any other purchaser. Steel prices vary somewhat, according to the sizes wanted. If we had a lot of 18 x 7 girders, and the Government made an inquiry, they might get them for £21, or thereabouts; but, on the other hand, if they inquired for short lengths, which would mean cutting off short sections, and if there were not a good stock, the price might go up to £30 per ton. During the last six or seven months the only increase in labour has been in the case of masons, though the labourers last week got an advance. In timber, Oregon has advanced 1s. 6d. per 100 super. feet, or about 7 per cent., and the increase in other items are as follows:—Hardwood and Colonial pine, 1s. per 100 super. feet; New Zealand flooring, 1s. per 100 super. feet; sheet lead, lead pipes, £2 10s. per ton; roof slates, per square, about 15s.; double slates, damp course, 2d. per super. foot; slate in steps, slabs, &c., marble in steps, slabs, &c., 15 per cent.; galvanised iron, corrugated, flat, £6 per ton; ironmongery, imported basins, basins, sanitary ware, about 20 per cent.; steel work and iron castings, £2 per ton; Neuchâtel asphalt, 15 per cent. to 20 per cent.; malthoid roofing and damp course, 10 per cent. to 15 per cent.; white lead, 12s. 6d. per cwt.; linseed oil, 1s. 2d. per gallon; glass, 20 per cent. Some lines have not increased at all, as a lot of the suppliers have been using up old stocks. There is a tendency to charge more on the imported lines. Bricks, drainage pipes, terra-cotta ware, fibrous plaster, mostly all local



material, and blue metal for concrete have not been increased, and, as a matter of fact, there is a tendency the other way, for recently we have had a better "cut" since the war. Bricks have not increased. All these articles of local manufacture constitute a big proportion of building work. Steel is, perhaps, 10 per cent. on a city job, and has risen about 20 per cent. I have made an estimate on the bill of quantities of what the increased cost in building would be over the period of the last nine months, and I find it to be between 5 per cent. and 7 per cent. Imported material might go up a little, but I do not think it will go much higher.

72. To Mr. Fenton.—It would not be correct to say that steel for a building cost £14 in September as against £30 to-day. The increase has been £5 per ton, from £20 to £25.

(Taken at Melbourne.)

TUESDAY, 30th MAY, 1916.

Present:

Mr. Riley, Chairman;  
Senator Story, Mr. Gregory,  
Mr. Fenton, Mr. Sampson,  
Mr. Finlayson.

William Arthur Morday Blackett, F.R.V.A., I.R.B.A., President of the Royal Victorian Institute of Architects, sworn and examined.

73. To the Chairman.—I have been in business as an architect in Melbourne for the last eighteen years, and have built various warehouses, churches, and at a theatre, and as well as residences. I studied last night and this morning the departmental plans for the alterations of the Sydney Customs House. I understand that the scheme of the plan embraces additions to and the re-modelling of an existing building with consideration to be given to the desirability of preserving a noted public building without detriment to its architectural type. After looking through the drawings, specifications, and quantities as closely as possible in the little time at my disposal, I formed the opinion that the drawings generally are fully and carefully worked out, and clear and definite in their drafting. They are a complete set of working drawings from which the building could be erected, amplified by the necessary further details and instructions. The specifications are generally thorough and explanatory, though in some minor details they should be more definite. I think the access for the public is good, and that ease of supervision and communication are well provided for. There is also good day lighting. The architectural treatment and details are in harmony with the present building, and of dignified simple treatment, expressive of its national use. The question arises as to whether it would be advisable to substitute reinforced concrete for the steel frame construction. That is a controversial point. There is much to be said on both sides. Generally, there is more expedition with steel frame construction than with reinforced concrete; but, having regard to present circumstances, I think reinforced concrete might be preferable. There is always a great difficulty in making criticisms on designs for alterations to a building with which one is not thoroughly conversant. Estimating such alterations may be said to be the architect's bane. One is inclined to take a too

optimistic view of the work at the commencement, and then, as one goes further into the scheme, one finds many things which one has not taken into account. Invariably one finds that the cost is more than his estimate, even with the extra loading which one would naturally allow. On the whole, the plans disclose a scheme which should result in an excellent building. I should like to ask whether the accommodation provided has been valued by a property agent accustomed to dealing with the letting of office space in the centre of a State Capital of the first class, and rental compared with capital cost, &c. Of course, a Government building is generally carried out on a better scale than an ordinary commercial building. I think that is quite right, otherwise architecture would deteriorate very much. I should like to add that the profession is of opinion that the architectural work under the Commonwealth is reaching a very high standard, both as regards class of work and design. That fact has been frequently commented upon. I agree with the opinion that it would be a pity to alter the design of the existing buildings. That difficulty has been well overcome, and the alterations will be of no detriment to the front. I realize the difficulties in designing an alteration on these lines. But the plans appear to be a very good solution of the problem.

74. To Senator Story.—I gave only cursory attention to the quantities. It is difficult to compare Sydney prices with Melbourne prices; but, on the whole, I think the pricing shown on the papers is on a fair scale, being neither too high nor too low. I should think that the estimate of £51,000 is rather on the high side. Of course, at the present time it is difficult to estimate costs. We are at sea with regard to all our estimates, as every private practitioner knows. Many materials have risen in cost by 200 per cent. and 300 per cent. The development of a scheme of alterations and additions such as is proposed in these plans would certainly become more costly as the requirements and construction were thought out in detail. Any one who drew out a sketch of a building as large as the one under consideration would almost certainly discover, on going into details, that he had minimized the expenditure. Probably the departmental officers who prepared the original estimate had not gone into the whole of the data. Nevertheless the increase from the original estimate to the revised estimate does seem somewhat excessive. In regard to the placing of the stairs and elevators in the centre of the main vestibule, it must be borne in mind that the people entering the vestibule will be principally those having dealings with the Customs Department. If the public are not separated on the ground floor they can hardly be separated on the upper floors. To have other elevators and other staircases would be a waste of space. In a large building like Collins House, Melbourne, for instance, the public find no difficulty in separating themselves and finding their way to the right floors. The arrangements on the plan might lead to congestion at the entrance if there were a rush of Customs business at any particular time; but, on the whole, the arrangement of the stairs and the elevator in the centre of the hall is good. The Customs Department may grow to such an extent as to absorb the whole accommodation of the building, in which event any initial difficulty would disappear. Another advantage in the design is the simplicity of supervision. No doubt, if one were designing a new building in toto, a bigger entrance would be provided. But it is not as if

this building were like an auditorium, from which all the people depart together in the space of a few minutes. The traffic is distributed throughout the day, and for that reason I think the entrance accommodation is adequate. The architect seems to have made an excellent solution of the problem. The lighting also is very good. I do not think that it could improve on the design.

75. To Mr. Finlayson.—Having regard to the fact that the main communication between the ground floor and the upper floor, so far as the Customs business is concerned, will be between Customs officers rather than between the public and certain branches of the Department, it would be preferable, if possible, to have a separate communication to the present provision, in addition to the present provision. For instance, a private elevator for inter-communication would be an advantage in order to keep the officers from the public. I notice that an internal staircase at end of a wing which appears on the plan is marked to be omitted. The alterations proposed are very excellent, but I think the plans are sufficiently detailed. However, to give a definite opinion on that point one would require to check the whole proposal, and that would involve a considerable amount of time. I feel safe in saying that the plans are sufficiently detailed to enable a satisfactory carrying out of the work. The vacation of the building during the progress of the alterations must mean economy. There is always a waste of labour in carrying on work while the building is tenanted. The actual savings effected by vacating the building are largely hypothetical, but I do not hesitate to say that there should be economy in that course. In carrying out alterations of this character, the cube system of measurement is not safe or satisfactory. A more detailed measurement is better. Cube measurement is safe enough for new buildings, but in alterations of this character the safest plan to adopt is to take detailed measurements and then thought out a considerable margin.

76. To Mr. Fenton.—My experience in Melbourne is that the cost of building material has risen between, say, March, 1915, and March of the present year, by from 30 to 35 per cent. Steel work has shown a bigger increase, and I think that 30 per cent. may be regarded as the increase on the total cost of a building. Of course, some local products have not risen in price at all. I have not worked out any percentage increase for the last three months, but I know that there has been an almost continuous rise in prices since the beginning of the war. Steel prices have been hardening; that is inevitable, because Australia is not yet able to supply itself. Structural steel work has practically ceased in Melbourne, reinforced concrete being used instead. I prefer a steel frame construction for a building of this class; but, having regard to the difficulty of obtaining structural steel at this time, I see no reason why reinforced concrete, if the work be properly carried out, should not be equally as serviceable. Of course the objection to reinforced concrete is that it takes longer to build. Steel framing is more expeditious and the reduced time occupied in building is a money factor to be taken into consideration, because it means that supervision and waste interest are saved, and the proprietor is able to get use of the accommodation at an earlier date. I would not say that the saving thus effected would compensate for the increase in cost of structural steel as compared with reinforced concrete. The width of the approach to the Auditorium in

Collins-street is about 18 feet, that to the Sydney Customs House 17 ft. 6 in. The main foyer entrance to a theatre which I designed to seat 2,000 people is 24 feet wide. It is possible that passage one has to provide for in designing a theatre in the theatre coming out through the foyer in a few minutes. In regard to fire-escapes and other safeguards, assuming that the number of people employed in the building will be about 200, the provision made on the plan is ample. The people on the lower floors of a building are always reached the main exits, so that the whole of the occupants do not meet at any one point in the building. A feature that struck me in the specifications is that only 26-gauge iron is to be used on the roof. I never use less than 24-gauge iron, and on a Government building which is erected practically for all time, 26-gauge iron is rather a cheap sort of roofing. I should think that a fire-proof roof would be an advantage in a building of this kind.

77. To Mr. Sampson.—I considered the possibility of having a smaller staircase at each side of the building, instead of the large staircases in the centre. Two sets of staircases and elevators would mean confusion to the public, and as it would be necessary for both sets of staircases and elevators to communicate with the whole of the building a lot of space would be wasted upstairs. I am convinced that the central arrangement is the best for all purposes. There is an advantage too in having both elevators together. If they were separated there might be congestion at one while the other was practically idle.

George John Oskeshott, Works Director for New South Wales, Department of Home Affairs, recalled and further examined.

78. To the Chairman.—Contradictory evidence having been given in regard to the prices of material last year and at the present time, I have prepared a comparative list of prices of the principal items that are likely to be used in the alteration of the Customs House—

	Sept., 1915.	April, 1916.	Per-centage increase.
	£ s. d.	£ s. d.	
24-gauge Corrugated Iron, per ton	30 10 0	24 10 0	13
Oregon, per 100 sq. feet	1 0 0	1 3 0	12½
2½-gauge Guttering, per length	0 1 0	0 2 2½	25
Wide Capping, Down Pipe, &c.	—	—	25
Leadline Damp-course, 6 inches wide, per 100 feet	0 4 0	0 5 0	25
Damp-course, other sizes	—	—	37½
Iron Rods for Reinforcing, per ton	12 15 0	21 7 6	67½
Christiana's White Lead, per cwt.	3 3 11	3 2 0	42
Sheet Lead, per ton	29 10 0	42 0 0	43½
Hardwood, per 100 sq. feet	0 16 0	0 18 0	3
¾" Pine Lining, per 100 sq. feet	0 16 6	0 17 0	4
Asphalt, per sq. yd.	0 9 0	0 10 0	10
Montpelier, per roll of 72 ft.	1 17 6	2 2 0	12
Glass, 3/16" sheet, per 44" foot	0 0 7	0 0 8½	21½

While it is true that there has been little rise in the cost of local material such as blue metal, freestone, trachyte, sand, cement, bricks, and fibrous plaster, it must be remembered that the carters' wages have risen considerably. The cartage of building material has risen from 6s. to 5s. 9d. per ton, equal to 15 per cent. The result is that although the price of sand, for instance, has not

rise in the quantities, it has risen at the building. This list of percentages increases supports my previous evidence that there has been a rise of 25 per cent. in the total cost of building and especially as regards metals, which form a large proportion of the material to be used in a work such as that which is now under consideration. As to whether the cost will continue to increase, the war is the determining factor, and one does not prophesy in regard to it. My estimate of a 25 per cent. increase was arrived at in this way: I obtained two copies of the quantities which were taken out in detail from the drawings. I priced one as accurately as possible from the prices current in September last, and the other from the prices ruling in April of this year. Then I compared the two totals, and the result was an increase of 25 per cent. It is therefore a fair inference that the cost of a building of this description rose 25 per cent. in the last nine months. There has been much discussion as to the actual increase in the prices of steel and iron. A great deal of the difference of opinion is due to the difficulty of obtaining any iron at all from foreign markets, and to the fluctuation in freights. I can quote the record of an actual experience in my own office. In September last we called for public tenders for steel roof trusses for the drill halls at Marrickville, Neutral Bay, and Liverpool camp, and in each case the lowest tender was £26 per ton. The only tenders for that class of article called in April of this year were those for Waterloo drill hall, and the lowest price was £32 10s. per ton, showing an increase of about 25 per cent. Even that price was very low, as will be understood from the fact that the highest tender was £57, and the average £47. I may mention that a considerable amount of smaller iron scancellings come into use in built-up work, and, as the Sydney market was very short of them tenders were very capricious. In reply to an inquiry by me, Brown and Brown, of the City Iron Works, Pyrmont, have submitted the following particulars:—

	September, 1915.	April 1916.
Steel joists ..	18s. per cwt.	24s. per cwt.
Compound girders ..	18s. per cwt.	28s. per cwt.
Stanchions ..	19s. per cwt.	28s. per cwt.
Roof trusses ..	23s. per cwt.	29s. to 32s., according to stocks.
Fire stairs ..	30s. per cwt.	42s. per cwt.

One witness before the Committee said that there was a rise of only 25 per cent. in steel work, but Brown and Brown's quotations show that no item increased by less than 20 per cent. The manager of Scrutton and Company has given me a signed letter in which he states that between January last year and April of this year the rise in steel prices was fully 15 per cent. to 20 per cent. The rise between September and April would naturally be more. I have asked two leading firms in Sydney, namely, Wm. Williamson and Loveridge and Hudson, to give me particulars of the increase in the general cost of building, and with the permission of the Committee I shall submit that information to-morrow. The next information I have to place before the Committee is not very pleasant for me. At the same time, I must beg indulgence for my officers in Sydney on account of the way in which they were rushed when they were preparing the quantities. They made out the quantities of steel work on separate sheets, and by an accident they mislaid one of the most important, with the result that most of the simple girders were omitted from the bill of quantities placed before the Minister and the Commit-

tee. The steel work thus omitted amounted to £3,204. My revised estimate is as follows:—	
Estimate according to revised working drawings, &c.	£61,481
Add extra steelwork, omitted from quantities in error .. .. .	3,204
	£64,685
Deduct 10 per cent., which was added to cover probable increases in prices .. .. .	6,468
	£58,217
Deduct for work suggested to be omitted .. .. .	4,770
	£53,447

Estimate, £54,600.

It seems to be recognised that I was largely justified in adding 10 per cent. to cover the probable further increases in prices during the progress of construction, and I have accordingly deducted that 10 per cent. from my estimate. The revised estimate of £54,600 makes provision for everything, and I am prepared to recommend that the work be proceeded with at that figure. The details of the work which it is suggested should now be omitted are as follows:—

	Reduction.
1. Public Lobby: Solid floor, covered with Jarrish blocks instead of marble, as shown on N1.	N1.
2. Vestibule and Public Lobby: Marble dado to height 5 feet, plaster above in imitation stone; vestibule ceiling to be plaster panelled instead of metal.	£2,350
3. Elevator Framing: To be in wood in lieu of Kalamoni, with metal panels ground floor.	40
4. Omit eastern fire escape .. .. .	165
5. Omit electrical clocks, wiring, &c., from lamp room for electrical services .. .. .	810
6. Ceiling glass, Public Lobby: Single-panched glass roof, concrete spandrels filled over steel beams .. .. .	400
7. Omit marble mosaic on 1st floor landing .. .. .	895
8. Omit vacuum cleaner .. .. .	47,600

There is one point in Mr. Griffin's evidence which I should like to refute. He stated that he suggested the omission of one staircase, plaster ceilings instead of Muntz metal, cement instead of marble walls, the levels of the long room not to be altered, a skylight over the long room instead of prismatic lights, and a wooden floor instead of concrete. Every one of those alterations was discussed by Mr. Murdoch and myself before Mr. Griffin had seen the plan, and was suggested to Mr. Griffin at the conference. If he will amend his evidence so that it will read that he recommended that those alterations should be made, I shall be prepared to endorse his statement. But he is not correct in saying that they were originally his suggestions. At the conference at which I attended he made no suggestions at all, but was engaged in studying the plans and having them explained to him. If the revised plan is agreed to, I shall be prepared to proceed with the work at once, and the Customs Department can be in occupation of the building from fifteen to eighteen months hence. I shall try to complete the work earlier, but I may not be able to get the material.

79. To Mr. Finlayson.—The elevator frame is only for the purpose of protecting the public against the operation of the lift, and the substitution of wood for metal would not be detrimental from a fire point of view. The extra staircase provided in the original plan for fire escape purposes is perhaps extravagant, but if the decision were left to me I should retain it. I still consider that my estimate of £37,500 in September was a fair one for the work at that time. That estimate

included the £3,204 worth of steel work which has been omitted from the quantities placed before the Committee. My calculation of the cost of the revised scheme on the September prices is valuations for anything else than to arrive at the increase in the cost of building. If I gave you an estimate of the rise in the cost of building a suburban villa, a country town hall in stone and brick, and a structure in which ironwork is used, the percentage of increase in each case would be different, because of the difference in the material used. Steel and metal work enter very largely into the Customs building, and, therefore, the percentage rise in cost is much greater than it would be in regard to a villa or a small town hall, in which very little metal was to be used. There was no complete set of quantities prepared for the first set of plans. What I did was to take the quantities for the revised scheme, and got them out in full detail. I priced them, and gave them to the Minister at current prices plus 10 per cent., which brought the total to £61,481. In order to arrive at the increased cost of building I took those same quantities and priced every item at the prices ruling in September last. Having thus arrived at the percentage increase in cost, I discarded the calculation of £41,000, because it was valueless for any other purpose. I have estimated the saving effected by having the building vacated during operations at £1,000. I think that is a fair estimate of what would have been the actual cash outlay had the operations been carried on whilst the buildings were occupied. That £1,000 is not to be deducted from the estimate I am now submitting. That £1,000 was taken into consideration by me in my explanation of the estimate of £51,481. I started with the original estimate of £37,500, and then I added 25 per cent. to cover the increased cost of building materials, and a further 10 per cent. to provide against possible further increases in cost. Then I deducted an amount due to the revision of the plans, and a further amount for the removal of all Departments. Then I added the additional work found necessary during the preparation of working drawings, and so I justified the net result of £51,481.

80. To Senator Story.—I am very keen on reinforced concrete, but it costs much more to execute in Sydney than it does in Melbourne. In fact, if I were going to use reinforced concrete I would ask the Minister for permission to call for tenders which should be open to Melbourne as well as Sydney firms. I am sorry to say that Melbourne is ahead of Sydney in regard to reinforced concrete, and the result is that builders' labourers and skilled artisans are not so smart at the work in Sydney. I suppose it would be possible to obtain skilled men from Melbourne or Adelaide, but we should have to pay their fares. After all, our steel requirements are comparatively small, and I do not anticipate difficulty in getting the material. My first action after getting approval to start the work will be to call for tenders for the steel. I cannot say offhand what would be the difference in cost of reinforced concrete as against steel framing. Our experience in Sydney with reinforced concrete is small, and Australia generally is much behind the times in regard to concrete work compared with European countries. I estimate that I can erect the steel framing cheaper than reinforced concrete. If the Minister would not allow me to call for a contract, I am sure that the reinforced concrete would cost more. Of course, if I found that I could not get the steel framing, reinforced concrete could be substituted at short notice. The sum of £100 allowed for the value

of material resulting from the demolition work is an under-estimate. If I had seen the quantities before they were sent to the Minister I would have increased that sum very largely. Included in the material is a lot of good stone. If a contractor happened to be in need of that stone we could get a good price for it, but I do not think a quarryman would buy it. Bids of old material are always capricious. Sometimes we are offered comparatively nothing for good material, and at other times we get almost the full value of the new articles, less about 5 per cent. for wear and tear. I shall endeavour to use a good deal of the old material in the new works.

81. To Mr. Sampson.—My original estimate of £37,500 was a fair one at that time. If the Minister had given me permission to go ahead with the work I should have undertaken to do it, but I would not have known what increase in prices was in prospect. My estimate was supposed to have included everything, but we found in working out the plans that items totalling £1,200 had to be included.

82. To Mr. Feuton.—I have not seen the wages sheet in connexion with the work of demolition, but I should think the cost will be within the estimate. I am prepared to proceed with the work on the revised scheme and quantities at £44,500. Deducting 25 per cent. from £44,500, to represent the increased cost of material since September last, makes the cost for the revised work £33,375, on September prices. I would not say that I could have carried out the work for £33,375, unless I could buy all my materials straight away, and that would not have been practicable. Naturally I would complete my contract for steel as soon as possible, and as I found that materials were rising in price very quickly, I should have bought all I could get. Another witness stated that the increase in cost of material has been only 12½ per cent., and on that basis the building which I am now estimating to cost £44,500 would have cost about £39,000 on September prices. Had I been allowed to proceed with the building in September, the Commonwealth would have saved several thousands of pounds. Prices are still rising, and the longer the building is delayed the higher the cost will be.

83. To Mr. Sampson.—The estimate of £51,481 is based on the actual prices in April. It is fairer to start on that absolute basis than to add a percentage increase to the problematic cost in September.

(Taken at Melbourne.)

WEDNESDAY, 31st MAY, 1916.

Present:

Mr. RILEY, Chairman:	
Senator Story	Mr. Gregory
Mr. Feuton	Mr. Sampson.
Mr. Finlayson	

John Smith Murdoch, architect, Department of Home Affairs, recalled and further examined.

84. To the Chairman.—I am prepared to accept Mr. Oakeshott's amended estimate, and endorse and recommend the reductions that are proposed to be made. The estimate is amply high. In fact, I anticipate that, under a good foreman, we will be able to carry out the work at a considerable reduction on Mr. Oakeshott's estimate.

85. To Mr. Sampson.—The estimate that 25 per cent. represents the increased cost of material and wages is high. My impression is very that the officers in the Sydney branch were very timid as

to the prospect of having to do this work by day labour. They have never done such a big work by day labour, and this work would involve a considerable amount of difficulties—men would be brought on different parts of the work out of sight, and so on. So far as I was able to learn in Sydney, the clerk of works whom Mr. Oakeshott had in his mind to take charge of this work was very largely the author of the prices put in the schedule; in other words, the schedule was, to a large extent, his idea of what the values would be, and my impression is that he was anxious to be on the safe ground, so that he would not need to face the ordeal of having to ask for more money to carry out the work. Colonel Owen's principle always is that it is dangerous to have too much money. He has rather ridden it to an extremity at times, but he would rather face the Treasurer and get more money than have too much money, or more than is necessary. It is a sound policy, but it has not always worked out very pleasantly for the officers. He considers that having too much money leads to slackness, for when an officer in charge of a work has plenty of money to work on he may overlook things that are going on, and it is not pleasing to have to dismiss men; but that principle is not too good for the employer. It is far better that the officers should be striving and struggling to make the most out of the money, as a contractor would do. I think that 25 per cent. is a most ample margin. I have already given evidence that the cost of the work will be something like £41,000. Of course, an estimate is an estimate. No one can say to a fraction what any work will cost; it is very largely a matter of opinion. In my previous evidence I pointed out that if tenders were called for the work it would not be surprising to me to find expert builders differ to the extent of 50, 60, or even 100 per cent. That sort of thing happens every day even in normal times. I would be rather surprised to be told that we would not have a tender for £50,000. Tenders would probably vary from £30,000 or £40,000 to £50,000 or £60,000. In the case of the Perth Post Office, there was a vast difference in the tenders. It shows the value of estimating. One can only give an opinion. I have already gone into the estimated rates and, to the best of my belief, the work can be carried out for £41,000, after allowing £4,000 for reductions and the £1,000 put down as the cost of carrying on work in a building under occupation. That is, if we put a man of requisite experience in charge of the work, and I am going to try to have that done. The reductions can be made without affecting the stability. The building will not be spoilt; it will be quite a presentable structure. The only difference will be that it will not be so extravagant looking inside.

56. *To Mr. Finlayson.*—I arrive at my estimate of £41,000 on the basis of the quantities now before the Committee. I have been through them with an officer in Melbourne, whose practical knowledge of these matters is greater than mine. We spent some time in going through the items, and the impression I gained was that they are on the safe side. I do not say this in condemnation of the Sydney office, but the trouble is that just lately, more particularly in regard to works in country districts, many buildings, which were estimated before the present Government came in, are running over the original estimates—they are all being done by day labour now—and our officers have been getting rated so much lately in regard to half-a-dozen of these jobs that I

think the men under Mr. Oakeshott, who compiled this estimate, have been over careful to put themselves on the right side. In regard to the previous estimates, and the recommendation that the work could be done for £29,500, I never could see where £8,000 was going to be saved by the building being vacated while alterations were carried on. Therefore, I assume that the value of the work in September last was something like £30,000, reckoning on the basis that the building was to be vacated. Taking 20 per cent. as the rate of increase in costs since that date, representing £7,200, the value would be £43,200 at the present time; but as we are making reductions amounting to £4,000, the cost would be brought down to £39,200. Mr. Oakeshott claims that work estimated to cost £2,000 became disclosed during the preparation of the working drawings, but that was to include matters that properly belong to furnishings. The buildings should not be loaded with such things as clocks and vacuum cleaners. I never include those things in a preliminary estimate of the cost of a building, unless I am asked to do so, or unless there is some reason for doing so. Always recognizing that an estimate is only an estimate, I consider that we can do the work for something between £40,000 and £41,000, so long as we have in charge a business-like man, who is not frightened of the workmen—no man can put his foot down and get the best out of the workmen. I can find nothing tangible on which to arrive at an estimate as to the additional cost involved in carrying on the alterations should the Collector of Customs have remained in the building. It is almost impossible to do anything but guess at it. The Collector of Customs could have come out of his office some day and said, "Stop that frightful row." Such objections or differences of opinion as to adequacy of the temporary protection afforded would, if they arose, of course materially affect the cost of the work. We expect to save money through having the building empty during the progress of our works, but if the job had been mine, and I had been left to do it in my own way, I would have kept the Customs Department and the Home Affairs Department in the building all the time. I admit that the work will cost less by their vacation of the building, but I am talking of the matter from the aspect of public convenience. The public of Sydney have been accustomed to do their work in that building, and it is not a good thing to upset a long-standing convenience of that sort. The difference between my estimate and that of Mr. Oakeshott is partly accounted for by the items that Mr. Oakeshott omitted from his previous estimate, but I desire to submit a price for which I honestly think the work can be done, at the same time fixing a round sum in order to cover unforeseen contingencies, of which there are plenty no one can dream of.

57. *To Senator Story.*—I should like to have more knowledge of Mr. Oakeshott's clerk of works before answering the question as to whether I would stand by my estimate if he were to carry out the work. He may be a very excellent man.

58. *To Mr. Peaton.*—The trouble is the uncertainty of arriving at the value of doing the work in a vacated building as compared with doing it whilst still in occupation. I confess I would not like to say what that difference will be. When Mr. Oakeshott was questioned by the Committee, I do not think he had very much time to think over it. I can accept his present estimate of £1,000 as one which can be relied upon with moderate safety. It is as good an estimate as can be given in regard to a very uncertain matter.