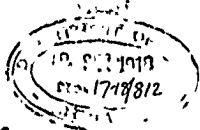


Brought up by  
Senator Newland  
in the Senate  
19-9-18

PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS



P A P E R S

to be laid on the Table of the Senate.

R E P O R T

together with Minutes of Evidence  
relating to the proposed

SCHEME FOR HOUSING COMMONWEALTH WORKMEN AT LITHGOW.

## MEMBERS OF THE PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS.

(Second Committee.)

The Honorable HENRY GREORY, M.P., Chairman.

Senate.

Senator George Henderson.  
 Senator Edward Needham.  
 Senator John Newland, Vice-Chairman.

House of Representatives.

William George Mahony, Esquire, M.P.  
 James Mathews, Esquire, M.P.  
 Sydney Sampson, Esquire, M.P.  
 Hugh Sinclair, Esquire, M.P.  
 The Honorable William Henry Laird Smith, M.P.

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

No. 76 of 15th JUNE, 1918.

10. PUBLIC WORKS COMMITTEE—REFERENCE OF WORK—HOUSING WORKMEN, LITHGOW.—Mr. Groom moved, pursuant to notice, That, in accordance with the provisions of the *Commonwealth Public Works Committee Act 1913* 1914, the following work be referred to the Parliamentary Standing Committee on Public Works for their report thereon, viz., Scheme of housing workmen and others engaged in connexion with the Commonwealth Factories at Lithgow, New South Wales.

Mr. Groom having laid on the Table plans, &c., in connexion with the proposed work—  
 Question—put and passed.

## PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS.

HOUSING OF COMMONWEALTH WORKMEN AT LITHGOW,  
NEW SOUTH WALES.

## REPORT.

THE PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS, to which the House of Representatives referred for investigation and report the question of housing workmen and others engaged in connexion with the Commonwealth Factories at Lithgow, New South Wales, has the honour to report as follows:—

## INTRODUCTORY.

1. The suggestion that the Commonwealth should enter upon a scheme to house the employees of the Commonwealth Factories at Lithgow arose from representations made to the then Minister for Works and Railways (Hon. W. A. Watt) that the residential condition of the employees at Lithgow was bad.

2. The Minister for Works and Railways, accompanied by the Minister for the Navy, thereupon visited Lithgow in February, 1918, and received a deputation from the employees of the Small Arms Factory, at which it was represented that it was very hard to retain experienced and competent men owing to the difficulty which existed in securing accommodation. It was stated that some of the employees had to pay 25s. per week for board and lodging at Lithgow, in addition to maintaining their families elsewhere. It was also pointed out that the loss of every employee meant a direct loss to the Commonwealth, as well as materially interfering with the economical working of the Factory.

3. While in Lithgow the Ministers received another deputation, which was introduced by the Hon. J. Ryan, M.L.C., and included the Mayor and representative residents of the town. This deputation corroborated the statements made as to the pressing necessity for the provision of adequate housing accommodation, and cited instances of several men occupying one room, of families renting one or two rooms in a cottage at exceedingly high rentals, and of two men occupying the same bed, one during the day and the other at night.

## PRESENT PROPOSAL.

4. The proposal under consideration is that the Commonwealth should erect on an area of land almost touching the south-west boundary of the Small Arms Factory, Lithgow, cottages to house the employees. It is suggested that these cottages be built of brick with tiled roofs, and be of the following sizes, viz.:—

Two rooms, kitchen, bathroom, laundry, and pantry;

Three rooms, kitchen bathroom, laundry, and pantry;

Four rooms, kitchen, bathroom, laundry, and pantry;

to meet the varying requirements of different employees.

5. It is proposed that in the first instance the Commonwealth should confine itself to the erection of 100 cottages, but be prepared to extend its operations to the erection later of 200 cottages should the demand warrant it. No further cottages beyond 200 would be erected by the Commonwealth, but land is available for the erection of an additional 200 cottages by private enterprise.

## ESTIMATED COST.

6. The types of buildings comprised in the first 100 houses proposed to be erected and their estimated costs are as follows:—

Type	Quantity	Unit Cost (£)	Total (£)
A 1 Detached,	3 at £426 =	.. ..	1,278
A 2 "	6 at £397 =	.. ..	2,382
A 3 "	3 at £406 =	.. ..	1,218
A 1 Semi-detached,	6 at £409 =	.. ..	2,454
A 2 "	6 at £381 =	.. ..	2,286
A 3 "	6 at £392 =	.. ..	2,352
B 1 Detached,	25 at £464 =	.. ..	11,600
B 2 "	10 at £513 =	.. ..	5,130
B 3 "	15 at £489 =	.. ..	7,335
C 1 Detached,	5 at £617 =	.. ..	3,085
C 2 "	10 at £596 =	.. ..	5,960
C 3 "	5 at £620 =	.. ..	3,100
<b>Total</b>	<b>100</b>	<b>.. ..</b>	<b>£48,180</b>

48,180

To this must be added the cost of—

Storm-water connexions	.. ..	804
Sewerage connexions	.. ..	1,000
Water connexions	.. ..	1,000
Fencing and gates	.. ..	3,404
Special supervision and contingencies	.. ..	2,478
Cost of area acquired	.. ..	600
Cost of forming footpaths, kerbing, channelling, storm water	.. ..	5,850
		<b>£64,362</b>

£64,362

7. In addition to this amount, however, the scheme involves the laying down of water mains from the present source of supply to the boundary of the Commonwealth area, estimated by the State Public Works Department of New South Wales to cost	.. ..	2,560
the laying of mains within the area at an estimated cost of	.. ..	1,090
the construction of a main sewer outside the Commonwealth area at an estimated cost of	.. ..	2,100
the sewerage reticulation of the area at an estimated cost of	.. ..	2,900
and a proportion of the cost of the extension of the present treatment works at Lithgow estimated at	.. ..	750
		<b>£9,400</b>

£9,400

8. Although the items enumerated will not necessarily be borne by the Commonwealth, and will be subject to arrangements made with the Municipality, it will be seen that the total cost of erecting the first 100 houses at Lithgow will involve an estimated expenditure of

£73,762

The time set down for the completion of this work is six months from the date of commencement.

## COMMITTEE'S INVESTIGATIONS AND RECOMMENDATIONS.

9. The Committee inspected the area at Lithgow upon which it is proposed to erect the cottages, visited the garden suburb of Daceyville, near Sydney, and the districts occupied by workmen's and clerks' homes at Glenhuntly and Malvern, Victoria, and by the examination of witnesses and the perusal of reports informed itself generally of the ideals of town planning and the efforts being made in other parts of the world to cope with the difficulty of providing adequate housing at cheap rentals for the operatives engaged in large factories.

10. In addition to examining Departmental officials, evidence was obtained from the Manager of the Housing Board controlling Daceyville, from architects, builders, and town planners, as well as from representatives of the Trades and Labour Council, Sydney, and the men employed at the Small Arms Factory.

11. Owing to the expressed intention of the Government to establish a workman's settlement adjacent to the proposed arsenal at Tuggeranong, more than usually exhaustive inquiries have been made as occasion offered in the hope that the information obtained might be of value in connexion with the construction of such arsenal town.

12. The soundness of the principle of providing reasonable accommodation for the employees of any large industrial enterprise has been conclusively proved in almost every part of the world and is generally conceded.

13. One witness made the following statement in regard to the condition of living at Lithgow:—

Families at present living in one room, but who would rent a house, 148; families living in houses that are unsuitable, 146; married men whose homes are outside the Municipality, but who are boarding in Lithgow, 103; single men boarding, more than one in a room, 118; more than two in a room, 76; more than three in a room, 24. In one place seven boarders sleep in one room.

The Committee, therefore, having received ample evidence of the paucity and inadequacy of the accommodation available at Lithgow, and its prejudicial effect upon the employees of the Factory, and consequently upon the economical management and output of that establishment, is unanimously of opinion that something should be done with the least possible delay to alter the present state of affairs.

## SITE.

14. The general consensus of opinion is that the area acquired as a site for the settlement was obtained at a reasonable price, is admirably suited for the purpose for which it is intended, and readily lends itself to a scientific system of town planning on modern lines.

## RESERVATION.

15. The Committee was, however, informed of the existence of a two-foot reservation along the northern boundary of the area, which at present precludes direct access to Bayonet-street from the roads on the Commonwealth property. In the best interests of the settlement, the Committee considers that this strip of land should be acquired by the Commonwealth.

16. It was also stated in evidence that a small triangular piece of private land at the south-western corner of the Commonwealth property prevents direct access at that point to the Bowenfels-road, and would necessitate the construction of an indirect road on a difficult grade to junction with the Bowenfels-road. If necessary, the Commonwealth could acquire this block, but as it apparently gives easy access to the Bowenfels-road from certain private property to the south of the Commonwealth area, it is hoped that arrangements can be made to obtain the necessary right of carriage-way over the block without expense to the Commonwealth.

## DRAIN.

17. Attention was drawn to the existence of a cement drain through the Cooverwill Estate to the north of the proposed settlement, into which the storm waters from the Commonwealth property will probably flow, but it was stated to be of such a size that the extra volume of water thrown into it by reason of the existence of the Commonwealth settlement would not necessitate any enlargement of the drain.

## QUESTION OF COMPENSATION.

18. It was stated in evidence that it was the intention of the owner of the adjoining private land to obtain some compensation from the Commonwealth in respect of the acquisition of the strip of land along the southern side of Bayonet-street, the cost of forming and making Bayonet-street, and the use by the Commonwealth of the cement drain previously mentioned.

Several witnesses expressed their opinion that as Bayonet-street and the drain in question were now the property of the Municipality, any claim regarding them was unlikely to be sustained at law, while, as a matter of equity, any advantage gained by the Commonwealth was considerably more than counterbalanced by the greater value which would be given to the adjoining land by the action of the Commonwealth in arranging for the laying of water and sewerage mains through the Cooverwill Estate to the Commonwealth area, the creation of a model settlement with large allotments, good streets, and ample reserves, and the erection on the estate of a superior class of building.

Under the circumstances the Committee is strongly of opinion that the only claim that should be considered is that for the intrinsic value of the strip of land along Bayonet-street, based upon the price paid for it by the present owner.

## LAY-OUT.

19. The Committee carefully considered designs for the lay-out submitted by Mr. J. C. Morrell, of the Victorian State Public Works Department, and by the Chief Surveyor, Department of Home and Territories, both of which contained features which were excellent. The Committee also obtained, through the courtesy of Mr. John Sulman, President of the Town Planning Association of New South Wales, a design prepared by his Association on the basis of Mr. Morrell's design.

This design, though following closely the lines adopted by Mr. Morrell, introduced several features which commended themselves to the Committee—it reduced the length and cost of roads, and consequently, the cost of water and sewerage mains; increased the effective building frontages; and provided more suitable reserves. As the Committee feels that without any depreciation of Mr. Morrell's reputation, it may safely be guided by an Association whose members comprise some of the most eminent architects, engineers, surveyors, and Government and Municipal officials, it recommends that Mr. Morrell's design be modified in accordance with the suggestions of the Association.

## SIZES OF ALLOTMENTS.

20. Particular attention was paid to the question of the area to be allotted to each dwelling. It was ascertained in evidence that at Daceyville the allotments vary from 50 feet by 150 feet to 30 feet or 40 feet by 130 feet—the latter sizes being now more frequently provided as the 50 feet frontage was considered too large. While agreeing that this may have been so in the case of Daceyville, which is a suburban proposition, the Committee considers that the Lithgow scheme must be regarded from the point of view of a country town where more space would be desirable. Whilst recognizing that the size of the allotments must necessarily vary with their position in the lay-out, the Committee recommends that the minimum size of each block be 50 feet frontage by a depth of 125 feet.

## WIDTH OF ROADS.

21. Careful consideration was given to the question of the widths of the various streets to be provided.

The Committee's own observation of certain wide but little used streets at Glenhuntingly, Victoria, and Daceyville, New South Wales, confirmed the principle laid down by modern town planners, that the width of streets should not be of uniform size, but vary in accordance with anticipated requirements. The Committee recommends, therefore, that while the main traffic avenues of the settlement be 66 feet wide, the remaining residential roads be of widths of 50 and 40 feet. In every case the footpaths will be flanked by parking, sown with grass, shrubs, &c., while the amount of made road in the centre will be kept down to actual traffic requirements.

## BUILDING LINE.

22. While recommending the provision of narrow streets where traffic necessities do not warrant wide ones, it is not desired to bring about anything in the nature of restricted air space, and to that end residences should be erected at varying distances from the street to avoid the monotony of an even building line, but should in no circumstances approach nearer than 15 feet to the street alignment.

## RESERVATIONS.

23. Before commencing building operations it is recommended that steps be taken to set aside ample areas suitably situated for parks, recreation grounds, and children's playgrounds. This was one of the items in which Mr. Morrell's plan was considered to be somewhat deficient, and it is suggested that the more ample provision included in the plan of the Town Planning Association of New South Wales be adopted.

24. It is also recommended that sites should be reserved for churches, shops, assembly hall, and places of amusement. Some of these reserves may not be needed for some years, and could, in the meantime, be utilized as small parks; but it is thought that it would be wise to make the necessary reservations at the present time to avoid interfering with the harmony of the lay-out when the expansion of this part of the town demands requirements of the nature indicated.

## CONSTRUCTION.

25. Careful consideration was given to the question of the constructing authority and the method of erection of these cottages, in view of the success which it has been pointed out has resulted at Daceyville from the establishment of a Board to carry out the work at that place.

After some discussion, it was eventually decided to recommend that tenders be called by the Department for the erection of the cottages by contract in units of not less than ten cottages each, and that the Commonwealth Department of Works and Railways and the New South Wales Housing Board be invited to submit tenders.

The decision arrived at is shown in the following extract from the Minutes of Proceedings:—  
Mr. Mahony moved—That the cottages to be provided be erected by the Department of Works and Railways by day labour.

Seconded by Senator Needham.

Mr. Sinclair moved as an amendment—That the cottages be erected by contract in units of a minimum of ten

Seconded by Mr. Laird Smith.

The Committee divided on the amendment—

Ayes (4).

Senator Henderson.

Mr. Gregory.

Mr. Sinclair.

Mr. Laird Smith.

Noes (4).

Senator Needham.

Senator Nowland.

Mr. Mahony.

Mr. Mathews.

And the Chairman having given his casting vote in favour of the amendment it was resolved in the affirmative.

## CLASS OF BUILDINGS.

26. Bearing in mind that from its position and altitude, Lithgow is subject to falls of snow in winter, while the temperature frequently approaches 100 deg. Fah. in summer, the Committee is unanimously of opinion that under existing circumstances the most suitable buildings from all points of view would be of brick with tile roofs.

## COST OF SMALLEST HOUSE.

27. In view of the high cost of labour and building material at the present time, the Committee experienced considerable difficulty in determining the type of house the rental of which, while paying interest and sinking fund on the capital cost, would yet be within reach of the lowest-paid employee of the Factory. The cheapest house proposed by the Department, with accommodation restricted to one bedroom, living room, kitchen, &c., was estimated to cost £381 if semi-detached, and £397, if detached. Investigation showed, however, that this estimate did not include its proportion of the—

	£	s.	d.
Stormwater connexions	..	..	8 0 0
Water and sewerage connexions	..	..	26 0 0
Fencing	..	..	24 15 0
Special Supervision	..	..	3 10 0
	62	5	0

which brings the totals to £443 5s. and £450 5s. respectively. These amounts the Committee considers too high, as it had evidence that the Housing Board has provided at Daceyville brick cottages containing two bedrooms, living room, kitchen and laundry combined, for £300, inclusive of the above costs. The Committee inspected several of these houses at Daceyville and, eliminating what in its opinion is the objectionable feature of combining the kitchen and laundry, considers that a number of cottages approximating this type would be very suitable for Lithgow.

28. It was stated in evidence that cost of materials and construction at Lithgow would exceed that at Daceyville, and conceding that, the Committee is of opinion that the cost of the cheapest house erected at Lithgow should be restricted to an amount of £350. It is considered that a limited number of this type of cottage should be provided, and the Committee recommends that steps be taken to erect six of the detached type and three pairs of the semi-detached.

The decision arrived at by the Committee in connexion with this matter is shown in the following extract from the Minutes of Proceedings:—

Mr. Mahony moved—That the cost of the smallest cottage to be erected should be limited to an amount of £500, inclusive of all charges. That a return of 8 per cent. on cost of building should be obtained—6 per cent. to be charged to the tenant as rent and 2 per cent. to be borne by the Small Arms Factory, Lithgow.

Seconded by Senator Needham.

The Committee divided on the motion—

Ayes (3).

Senator Needham.

Mr. Mahony.

Mr. Mathews.

Noes (5).

Senator Henderson.

Senator Nowland.

Mr. Gregory.

Mr. Sinclair.

Mr. Laird Smith.

And so it passed in the negative.

Senator Needham moved—That the minimum accommodation to be provided in any cottage erected in the settlement be two bedrooms, living room, kitchen, &c., as shown on Plan B 1 submitted.

Seconded by Mr. Mahony.

Senator Newland moved as an amendment—That a limited number of cottages of three rooms and offices as shown on Plan A 2 submitted be erected.

Seconded by Mr. Laird Smith.

The Committee divided on the amendment—

Ayes (8).

Senator Henderson.

Senator Newland.

Mr. Gregory.

Mr. Mathews.

Mr. Sinclair.

Mr. Laird Smith.

Noes (2).

Senator Needham.

Mr. Mahony.

And so it was resolved in the affirmative.

Mr. Mathews moved—That of the cheapest class of house to be erected there shall be three pairs of semi-detached and six detached cottages.

Seconded by Senator Newland. Carried unanimously.

#### COST OF LARGEST HOUSE.

29. The size and number of the various cottages to be erected should be governed by the applications received, but with a view to precluding the possibility of erecting expensive houses which, if vacated, might be difficult to re-let, the Committee recommends that the cost of the largest house to be erected within the settlement be limited to £600.

The decision arrived at by the Committee in connexion with this matter is shown in the following extract from its Minutes of Proceedings:—

Mr. Laird Smith moved—That approved plans of various types of buildings, the maximum cost of which, exclusive of overhead charges, should not exceed £600, be submitted to the various applicants accompanied by a schedule showing the rental for each based on 8 per cent. of cost of buildings and overhead charges—such 8 per cent. to include interest and sinking fund, maintenance, insurance, water, sewerage and general rates. The determination, however, of the most suitable types to be erected to be arrived at by the Minister after receiving the applications.

Seconded by Senator Needham. Carried unanimously.

#### LIGHTING.

30. In taking evidence in regard to the supply of gas available at Lithgow, it was stated by the Mayor that the Council would guarantee the lighting of the settlement, and in the absence of any statement to the contrary, it has been assumed that the Council will defray the cost of laying the necessary gas mains. In a scheme of this character, however, the Committee considers that if at all possible it would be much preferable to have the settlement lighted by electricity generated at the Factory, provided that current could be supplied to the settlement at a rate which, while enough to cover cost of installation and all overhead charges, would compare favorably with the rate which would be charged for gas.

#### NUMBER OF COTTAGES.

31. In regard to the number of cottages which should be erected, the manager of the Small Arms Factory mentioned in evidence that applications had been received from 110 of the employees. Representatives of the men stated, however, that applications were invited at a time when the Factory was practically closed down, and that under normal circumstances there would have been a much larger response. The Committee is, therefore, of opinion that at least 150 cottages should be erected as early as possible, and feels sure there will be no lack of tenants.

The decision arrived at is shown in the following extract from the Minutes of Proceedings:—

Senator Needham moved—That in order to meet the housing requirements of the employees of the Factory, this Committee recommends the construction of at least 150 houses.

Seconded by Senator Newland.

The Committee divided on the motion—

Ayes (7).

Senator Henderson.

Senator Needham.

Senator Newland.

Mr. Mahony.

Mr. Mathews.

Mr. Sinclair.

Mr. Laird Smith.

No (1).

Mr. Gregory.

And so it was resolved in the affirmative.

#### INSURANCE.

32. In the matter of insuring the properties against loss by fire, the Committee is unanimously of opinion that the Commonwealth should carry its own insurance.

#### DISPOSAL OF PROPERTIES.

##### TENANCY OR FEE SIMPLE.

33. Considerable discussion took place as to the advisability of allowing any employee who so desires to purchase his home on extended terms. The majority of the Committee was, however, beset with the fear that to prevent the gradual alienation of the properties to persons unconnected with the Factory, such conditions would have to be imposed as might operate inequitably against the original purchaser or his beneficiaries, while if such conditions were not imposed, the very attractiveness of the settlement might lead to the purchase of the homes by persons outside the Factory and defeat the very object of the scheme, namely, to provide comfortable homes for the workmen engaged at the Factory at a reasonable rental.

It was, therefore, decided that the workmen's cottages be let on a fortnightly tenancy only, although any shops which might be established in the area would be available for leasing. The decision arrived at by the Committee is shown in the following extract from its Minutes of Proceedings:—

Mr. Gregory moved—That any employee of the Factory of or over the age of 18 years who is not the owner of any land having any building thereon within 10 miles of Lithgow be eligible to obtain a fortnightly tenancy of a cottage in the settlement, or at his request, purchase same on extended terms: Provided that business premises may be leased to persons other than employees, but shall be inalienable.

Seconded by Senator Henderson.

Mr. Mahony moved as an amendment—That the words "or at his request purchase same on extended terms" be omitted.

Seconded by Senator Needham.

The Committee divided on the amendment—

Ayes (5).

Senator Needham.

Senator Newland.

Mr. Mahony.

Mr. Mathews.

Mr. Laird Smith.

Noes (3).

Senator Henderson.

Mr. Gregory.

Mr. Sinclair.

And so the amendment was carried.

The motion thus amended to read as follows:—

That any employee of or over the age of 18 years who is not the owner of any land having any building thereon within 10 miles of Lithgow be eligible to obtain a fortnightly tenancy of a cottage in the settlement: Provided that business premises may be leased to persons other than employees, but shall be inalienable. was then submitted and carried unanimously.

#### BASIS OF RENTAL VALUES.

34. After careful consideration the Committee is of opinion that the rental to be charged for the cottages to be erected should be based on a return of 8 per cent. on the actual cost of the building including all services, plus overhead charges consisting of cost of land, say £20 per block, and the estimated average cost of the roads, footpaths, and stormwater drainage. This 8 per cent. would cover interest and sinking fund on capital outlay as above, maintenance, water and sewerage rates, and insurance.

As previously mentioned, the cost per cottage of these services will, on the average, amount to—

Land .. .. .	£ s. d.
Forming footpaths, kerbing, channelling, storm water, &c. .. .. .	20 0 0
	38 10 0
which added to the price fixed as the maximum for the smallest cottage	58 10 0
amounts to .. .. .	350 0 0
	408 10 0

At 8 per cent., the annual return on this amount would be £32 13s. 7d., or approximately 12s. 6d. per week.

### COST OF WATER AND SEWERAGE MAINS.

35. To permit of the rent being reduced to this figure it was necessary to eliminate from consideration the cost of—

- Water mains from nearest point of supply to the boundary of the Commonwealth area;
- Water mains within the settlement area;
- Sewerage mains within the settlement area;
- Sewerage mains from the boundary of the Commonwealth area to the treatment works;
- Enlargement of treatment works.

The estimated cost of these services, as supplied by the Chief Engineer for Water Supply and Sewerage, New South Wales, was as follows:—

#### WATER SUPPLY.

Proposal.	Estimated Capital Cost.			Annual Cost, with Interest at 5 per cent.				Revenue at 10s per Acre etc.
	New Mains outside the Area.	New Mains inside the Area.	Total.	Outside Area, Interest and Sinking Fund.	Inside Area, Interest and Sinking Fund.	Working Expenses, Administration, and Maintenance.	Total.	
For 100 houses ..	£ 2,560	£ 1,090	£ 3,650	£ 140	£ 60	£ 35	£ 235	£ 50
For 200 houses ..	2,560	2,040	4,600	140	112	45	297	109
For whole area ..	2,560	3,490	6,050	140	191	65	396	225

Estimated costs are for new mains only, nothing being allowed for existing head works and mains, and no allowance is made in estimated revenue for any sales of water at, say, 6d. per 1,000 gallons. The total annual cost includes repayment of capital cost in 50 years, renewal fund, and administration and maintenance charges, and does not provide for any profit to the Lithgow Council.

#### SEWERAGE.

Proposal.	Estimated Capital Cost.				Estimated Annual Cost, with Interest at 5 per cent.				Estimated Revenue at 20s per Allotment.
	Treatment Works.	Main Sewer.	Reticulation.	Total.	Treatment Works and Main Sewer, Interest and Sinking Fund.	Reticulation, Interest and Sinking Fund.	Working Expenses, Administration and Maintenance.	Total.	
For 100 houses ..	£ 750	£ 2,100	£ 2,800	£ 5,650	£ 160	£ 159	£ 140	£ 459	£ 130
For 200 houses ..	1,500	2,100	4,800	8,400	197	279	160	636	260
For whole area ..	3,000	2,100	10,400	15,500	250	570	185	1,005	585

Estimated annual cost includes repayment of capital cost in 50 years, renewal fund, pumping costs, administration and maintenance charges, and does not provide for any profit to the Lithgow Council.

Present Lithgow rate, 2d. in the pound on the Unimproved Capital Value, with minimum charge of 26s. per annum. This is equivalent to 8d. in the £1 on Assessed Annual Value, and maximum rate allowable under the Country Towns Water Supply and Sewerage Acts is 2s. in the £1 on Assessed Annual Value.

It is understood the valuations for water supply rates are those of the year 1905, and for sewerage those of 1914. Assuming that all the houses will pay only the minimum rate per allotment, as estimated by Mr. de Burgh, it will thus be seen that the difference between annual cost and estimated revenue would involve a loss of

	Water Supply.	Sewerage.
for 100 houses ..	£ 185	£ 355
For 200 houses ..	197	376
For whole area ..	171	450

36. The Committee considers that it is unreasonable to expect that the Commonwealth should bear these charges, and in order to thoroughly discuss the matter has been instrumental in arranging a conference between the Minister for Works and Railways, the Commonwealth Director-General of Works, the Mayor and Town Clerk of Lithgow, and the Chief Engineer for Water Supply and Sewerage, New South Wales, at which it is hoped a fair and reasonable working agreement will be arrived at.

It was stated in evidence by the manager of the Small Arms Factory that by reason of the non-existence of reasonable living accommodation at Lithgow he had lost the services of about 700 men during the year ended 30th June, 1916, which, in his opinion, represented a capitalized loss of about £14,000 to the Factory for that year. Seeing that the successful outcome of the

present scheme will prevent the loss of employees through the cause stated, it is considered reasonable that, should it be agreed at the conference that the Commonwealth is to bear any part of the annual loss involved in providing water and sewerage services, the Committee is strongly of opinion that such sum, which should be a diminishing amount annually, should not be added to the cost of the settlement, but be borne by the Factory, bearing in mind also that the provision of comfortable housing conditions with attractive surroundings will make for a happier and more contented body of workmen, and add to the efficiency and economical working of the Factory.

The decision arrived at by the Committee in connexion with this matter is shown in the following extract from its Minutes of Proceedings:—

Senator Needham moved—That the settlement be not charged with the cost of constructing the water and sewerage mains outside or inside the Commonwealth area.

Seconded by Senator Newland.

The Committee divided on the motion—

Ayes (7).

No (1).

Senator Henderson.

Mr. Sinclair.

Senator Needham.

Senator Newland.

Mr. Gregory.

Mr. Mahony.

Mr. Mathews.

Mr. Laird Smith.

And so it was resolved in the affirmative.

### MUNICIPAL ARRANGEMENTS.

37. During the course of its inquiries the Committee learned that portion of the area upon which the settlement will be formed is within the Municipality of Lithgow and portion within the Shire of Blaxland. To facilitate the provision of municipal services, the Committee, during its visit to Lithgow, discussed the advisability of the whole area being brought within the Municipality of Lithgow, and an intimation has since been received from the Town Clerk to the effect that such action is now being taken.

### CONTROL.

#### BOARD OF MANAGEMENT.

38. Impressed with the success which has resulted from the decision to place the Daceyville Housing Scheme under the control of the Housing Board, which both constructs the buildings and manages the estate, the Committee felt inclined, if the Lithgow Scheme had been on a larger scale, to favour the establishment of a similar Board in this instance.

In view, however, of the distance of the settlement from Melbourne or Sydney, and the difficulty of obtaining a satisfactory Board locally, the Committee is unanimously of opinion that the best interests of the Commonwealth would be served by having the settlement established under the control of the Department of Works and Railways, subsequent to which it should be placed in charge of a Board of Management.

#### COMPOSITION OF BOARD.

39. This Board of Management should, it is thought, be composed of one departmental representative, who should be Chairman; one nominee of the Government, preferably an officer of the Small Arms Factory; and one representative, chosen by those applying for houses within the settlement.

#### POWERS OF BOARD.

40. In the opinion of the committee the duties devolving upon the Board should, subject to Ministerial approval, include the following:—

- To arrange with the Department of Works and Railways for the carrying out of work on any land within the settlement for the purpose of rendering it fit for the use for which it was intended;
- To dedicate reserves for public recreation or for other public purposes, and to arrange for the fencing, planting, and improvement of such reserves;
- To set apart land as sites for buildings or for religious or municipal or other purposes;
- To allot houses amongst applicants, and arrange and determine tenancies;
- To conduct dealings with the Municipality;
- To fix rentals on a basis laid down;
- To collect rents;
- To advise the Department of Works and Railways of necessary repairs, &c.;
- To deal with disputes or complaints of tenants;
- To be responsible generally for the order and good government of the settlement.

## LEGISLATION NECESSARY.

41. In dealing with a proposition of this kind it may be found necessary on further examination to obtain authority to take such action as establishing a Board of Management, disposing of the properties by tenancy agreement or lease, paying the equivalent of rates, &c. The Committee is of opinion that the necessary inquiries in this direction should be entrusted to the Commonwealth legal authorities, and any necessary legislative or other action required taken forthwith.

## SUMMARY OF COMMITTEE'S RECOMMENDATIONS.

42. Briefly summarized, the recommendations of the Committee in connexion with this matter are—

- (i) that the erection of housing accommodation should be proceeded with;
- (ii) That the 2-ft. reservation on the south side of Bayonet-street should be acquired;
- (iii) That necessary right of carriage-way should be obtained over private property at the south-western corner of the area;
- (iv) That the design for lay-out submitted should be modified in accordance with recommendations of the Town Planning Association of New South Wales;
- (v) That the minimum size of blocks should be 50 feet frontage by 125 feet depth;
- (vi) That the streets should be of varying widths of 66 feet, 60 feet, and 40 feet.
- (vii) That the buildings should be 15 feet or more back from the street alignment;
- (viii) That necessary reservations should be made for churches, parks, play-grounds, assembly hall, places of amusement, and shops;
- (ix) That the cottages should be constructed under the control of the Department of Works and Railways;
- (x) That the cottages should be erected by contract in units of not less than ten;
- (xi) That the cottages should be erected of brick with tile roofs;
- (xii) That three pairs of semi-detached and six detached houses should be erected, and that the maximum price to be paid for these houses should not exceed £350.
- (xiii) That the maximum price of the largest house should not exceed £600;
- (xiv) That the settlement be lighted by electricity from the Factory, if possible;
- (xv) That the first section of the settlement should consist of 150 cottages;
- (xvi) That the Commonwealth should carry its own insurance against loss by fire;
- (xvii) That the cottages should be let on a fortnightly tenancy; business premises to be leased;
- (xviii) That the rental to be charged be fixed on a basis of 8 per cent. on cost;
- (xix) That any annual loss resulting from the provision of water and sewerage mains be borne by the Small Arms Factory;
- (xx) That the area be brought wholly within the Municipality of Lithgow;
- (xxi) That the Commonwealth should contribute to the Municipality an amount equivalent to what would be chargeable as rates, if Commonwealth property were rateable;
- (xxii) That a Board of Management be appointed to control the settlement when established;
- (xxiii) That legislative or other necessary action to give effect to recommendations be taken forthwith.

*H. Gregory*  
H. GREGORY,  
Chairman.

Office of the Parliamentary Standing Committee  
on Public Works,  
Melbourne, 1st August, 1918.

## MINUTES OF EVIDENCE.

(Taken at Melbourne.)

TUESDAY, 18th JUNE, 1918.

Present:

Mr. GREGORY, Chairman;  
Senator Henderson, Mr. Mathews,  
Senator Needham, Mr. Sinclair,  
Senator Newland, Mr. Laird Smith,  
Mr. Mahony,

Percy Thomas Owen, Director-General of Works,  
Department of Works and Railways, sworn and  
examined.

1. To the Chairman.—I am familiar with the terms of the reference by the House of Representatives to this Committee. The scheme suggested by the Works Department for the housing of workmen employed at the Small Arms Factory, Lithgow, arose out of representations made to the then Minister for Works and Railways (Mr. Watt) that the conditions of the employees there in relation to housing was very bad. The Minister thereupon decided to visit Lithgow and to look into the matter himself. He did so, accompanied by the Minister for the Navy, in February last. He visited the Small Arms Factory, and received a deputation from its employees, who represented that it was very hard to retain experienced and competent men, owing to the difficulty which existed in securing accommodation. They urged that some of the employees had to pay 25s. per week for board and lodging in Lithgow, and simultaneously to maintain their families in Sydney. Incidentally, the deputation pointed out that the Commonwealth lost from £30 to £40 for every employee who left the factory, and that this circumstance materially interfered with its economic working. They stated that 46 men employed in the tool room alone had left the factory during 1917. They considered that 200 houses were required immediately. Whilst in Lithgow, the Ministers also received a deputation which was introduced by the Hon. J. Ryan, M.L.C., and which included the mayor and representative residents of the town. The mayor and Mr. Ryan called upon several gentlemen to give Ministers information regarding the conditions which obtained in respect of housing accommodation, and these put forward some very deplorable instances. They cited cases of seven men occupying one room, of families renting one or two rooms in a cottage at exceedingly high rentals, and of two men occupying the same bed, one during the day and the other at night. It was urged by Mr. Ryan and the mayor that a few hundred houses should be at once erected. It was stated that 200 men had signified that they were willing to take houses. The fact was also stressed that the lack of any assurance that the Commonwealth would continue to manufacture small arms at Lithgow seriously retarded the building of houses by private enterprise. Some of the employees of the Factory stated that if they were sure that the Small Arms Factory would continue there, they would build houses for themselves. The mayor and leading residents then accompanied Ministers to an area of land adjoining the Factory compound, which they suggested was a very suitable site for the Commonwealth to acquire for a housing proposition. Before leaving Lithgow, the Minister for Works and Railways (Mr. Watt) promised that he would bring the matter

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under the notice of the Government. Subsequently, a piece of land was placed under offer to the Commonwealth, and the Department of Home and Territories was invited to look into the matter, with the result that it acquired the area in question. A definite pronouncement has been made by the Government in regard to the retention of the Small Arms Factory at Lithgow. But I can deal with that matter only from the stand-point of the advice tendered by me to the then Minister for Works and Railways. When Mr. Watt saw the factory at Lithgow, with all its plant, shafting, and accessories, he remarked to me that it seemed bad business that such plant should have to be removed to the general Arsenal, and he asked whether I could make any suggestion which would obviate the necessity for the adoption of that course. That evening, I saw Mr. Ratcliffe, the manager of the Factory, and put to him a proposition which I had put years ago, but which, in the light of the experience and knowledge available at that time, was not accepted as a good one. Briefly, the scheme was that the Lithgow Factory should become a daughter factory, the parent factory being at the Arsenal, and that the general principle in view should be that the parent factory should undertake all the barrel-making, sighting, rifling, and assembling. In other words, it should make the rifle. The object, of course, was to co-ordinate it with the production of ammunition for the rifle, so as to bring the whole thing under one management. If that were done, the parent factory could have a daughter factory, whose business it would be to make certain parts. Those parts would be made to gauge, and if accurately made they could be sent along to the parent factory and assembled there with such portions of the rifle as were made at the parent factory. I made a similar suggestion some years ago, but it was not adopted, because it was considered that the whole process of manufacture should be under one control. I mentioned this matter to Mr. B. T. McK. a few days ago, and his opinion of it was that it was a perfectly feasible plan, and one which could be carried out. He added, "I, too, would have said that it could not be done some years ago." The suggestion was prompted by the circumstance that during the war the authorities in England have adopted a similar scheme. They farm out parts to factories in various portions of the country, and these parts are subsequently brought to the parent factory to be assembled. It is war experience, therefore, which has crystallized the suggestion that I originally made. Under this arrangement, the parent factory would do the rifling, barrels, sighting, testing and assembling, and the daughter factory would make the body pieces. The latter might also make the trigger guards and such other portions of the rifle as would be of most assistance to the parent factory. Under this scheme, on the increased production at Lithgow, Mr. Ratcliffe came to the conclusion that the number of men required to keep the machines for body-making going would be about 800. I believe that at the present moment the Factory employees are engaged in altering a lot of rifles to the mark which has recently been adopted by the Imperial Government, namely, mark 7. In connexion with the scheme I have outlined, it must be remembered that the Commonwealth has expended a large sum upon the Lithgow Factory, and that that sum must carry interest. If this factory be abandoned, the interest will have to be carried by the parent factory. Consequently, it is a

need to be increased. To the best of my recollection, it was not at all possible the Commonwealth would be able to facilitate the corporation in getting abated iron pipes to increase the capacity of the gasometer. But, as I understood the position then, the Commonwealth was merely to enable the corporation to secure the necessary instructions under war conditions. Acting as Chief Engineer of Water Supply and Sewerage, Mr. (Mr. du Burgh), in Sydney, told him the nature of the project of the Commonwealth Government, and asked him how the question of water supply and sewerage should be approached. I also told him that as the matter had to be referred to the Minister of Public Works Committee as soon as possible, the consideration would be glad if he could execute the normal way was to send a plan of the subdivision to the municipal council, which would then order it and refer it to the State Department of Public Works. That Department would partition the scheme "if it go into its cost and advise whether it was financially sound. With the Minister's concurrence, I then forwarded to that Department the preliminary sketch plan of the lay-out. At the same time, it was arranged that a detailed contour plan should be carried out to spirit level, and that the State Department of Public Works should be given reduced levels along the lines of sewers, and any borings that it might desire. The State Public Works Department soon afterwards sent over the preliminary drawings of water supply and sewerage, which are before the Government today. I may explain that the subdivision plan on which that Department prepared its drawings, has been slightly amended since, but not to an extent that will appear dangerous. When the official contour survey to spirit level was carried out, it was found that the preliminary contour survey was not accurate. As a matter of fact, it was not expected to be. In the action which I have mentioned was proceeding, the action which I have mentioned was given as to the Department acted on the information prepared plans for a number of houses required, and the prepared plans for a number of types of cottages—plans which are now submitted for consideration of the Committee. These plans relate to three classes of cottage, viz.: Two rooms and a kitchen, with the possibility of adding a third room, three rooms and a kitchen, and four rooms and a kitchen. One plan shows a cottage of two rooms and a kitchen detached, and another shows a cottage of two rooms and a kitchen semi-detached. There is another plan showing a third type of cottage containing two rooms and a kitchen detached, and an alternative plan showing a same class of cottage semi-detached. In class B, which consists of three rooms and a kitchen, there are also three types of cottages. Each type differs in one or more objects being to provide designs which are applicable to sloping ground. For instance, if the cottage is to be built on the side of a hill, the main entrance is to be on the contour, and long narrow space may not be occupied from front to back. Class C comprises cottages containing four rooms and a kitchen, and of these there are also three types. Drawings have also been made of a special class of cottage containing five rooms and a kitchen, in the estimate submitted to the Committee this type of dwelling has not been included. I have suggested to the Minister that a cottage should be erected only for a special arrangement between the Commonwealth and any employee of the Small Arms Factory, who particularly desired to have a dwelling containing five rooms and a kitchen. The cottages referred to as containing two rooms and a kitchen would, in ordinary business dealings, be generally described as four-room cottages, because they contain a living room, bedroom, bathroom, pantry, and water closet as a living room, bathroom, pantry, and water closet. They are, therefore, equivalent to a four-roomed cottage. It is proposed by the Government that cottages should be erected solely for the use of employees

at the Small Arms Factory. It is further intended to encourage these employees to purchase their homes, either by instalment or by a rent charge, or of instalments, or by purchase outright—whichever may be approved by the Commonwealth. It is also intended that a man shall not be at liberty to sell his cottage until he has paid one-third of its purchase price, and that then he shall be entitled to sell only to an approved purchaser. The Commonwealth, I take it, will not allow him to sell to any person outside the Small Arms Factory save in very exceptional circumstances. The employees would also be allowed to purchase lots, and to erect their own houses upon them, provided that such erection were subject to conditions prescribed by the Commonwealth. Of course, the idea in view is that if a house is to be erected by any employee, it must be of a decent and attractive type. In regard to water supply and sewerage, the State Government and the Public Works Department have been asked to forward a scheme, and it is pointed out that this scheme would not be financial. That is to say, the rates of 10s. per annum for water, and 26s. per annum for sewerage, would not be sufficient to cover interest and sinking fund on the capital outlay. The Department suggested that the Commonwealth should finance the State Government to the extent of the capital cost involved. The matter was then referred to the present Minister for Water and Railways (Mr. Groom), and his decision was as follows:—"With regard to those services, water and sewerage, lighting and road-making, negotiations are pending with the municipality of Lithgow in pursuance of the deputation which waited on the Honorary Minister." When Mr. Watt and Mr. Cook visited Lithgow, and received the deputation, I understood the supply of water and sewerage would present no difficulty. In other words, the deputation did not point out that the ordinary municipal services would not be provided. Therefore, the amount which has been put before the Committee in the estimated cost of providing housing accommodation there, does not include any capital sum for the carrying out of those municipal services. During the visit of the types of houses which are intended to be constructed, the chief architect has prepared drawings of cottages which it is thought will prove sufficiently attractive to encourage men to purchase them. The cost has been kept down as low as is compatible with providing sound little structures. The type of cottage which contains two rooms and a kitchen is smaller than that asked for by the men of the town, but the cottages are put forward after consultation by the architectural section of the staff and myself, as the smallest one that it is possible for a young couple without children, where the bread-winner is not drawing a high wage, to live in. It is also designed to admit of an extra room being added in the future. The material to be used in the construction of these dwellings is brick with tiled roofs. Yet another question has been considered, namely, the possibility of erecting concrete cottages with tiled roof. But as the result of our inquiries, the Department thinks that the best proposition is likely to be one of brick. In calling for tenders for these cottages, however, alternatives will be open so as to permit of concrete cottages being put in tenders, as well as cottages of construction or construction of the ordinary pouring method. In preparing the drawings, doors, windows, sinks, and all fittings which can be standardized, have been standardized. Thus if thirty or forty cottages were tendered for at once, the number of doors involved would lead to the type of door shown on the drawing being the standard in the manufacturing of the building. In designing these cottages the cost and economy is to be effected in the selection of all timbers and in every detail of construction, the fact being realized that a saving of £1 per cottage means a saving of £100 on the project. I have every reason to believe that they have faithfully observed that in-

struction. With regard to the proposed method of execution I have submitted to the Minister, in conversation, that this undertaking appears to be one which should be carried out in contracts of not less than thirty cottages at a time, and that with this standardization, it is a job which, to a great extent, should rely upon the factories and mills of large contracting firms so as to avoid the local labour effort for which it is very desirable a higher rate would have to be paid. As I have already remarked, it is probable that any other method of construction of concrete brick may be tendered for. In respect to the cost of brick as compared with concrete, I instituted certain inquiries and got into touch with a gentleman who came over from Sydney, and who is associated with a concrete construction company there. I suggested to him that if a representative of that company cared to call at my office, I would show him the drawings of the cottages, and he would show me his opinion as to whether such dwellings are suitable for concrete construction. But after he had returned to Sydney he wrote to me saying that at Lithgow he did not think concrete could compete with brick. However, I still advise the Minister that in calling tenders for this work, concrete constructors should be invited to tender if they can. Each tender should be submitted to the Committee bearing upon it an estimate of its cost. Those estimates were given on the first page of the schedule submitted. The cost of two rooms with kitchen and offices is set down at £380, three rooms with kitchen and offices at £464, and four rooms with kitchen and offices at £596. The last mentioned type of cottage is equivalent to a cottage of six rooms with kitchen, three bedrooms, a bathroom, a kitchen, a bath, a bathroom, a back verandah, kitchen, pantry, and water closet. In getting out these estimates of cost I was confronted with considerable difficulty by reason of the fact that prices fluctuate so much, and that, in my opinion, the prices of some materials at the present time are unreasonably high. For instance, the New South Wales cost of ordinary hardwood scantlings 4 in. x 2 in. is 25s. per lineal foot, and the cost of the Committee decided to get information from the quantity surveyor who took out the quantities for these cottages, his evidence will be available. In reporting to the Committee upon a matter of this kind it would not be right for me to be unduly sanguine, and to make a low estimate. I should rather make a high estimate so that members of the Committee would be able to see what the work will cost, and that they would endeavour to do this as far as it was possible for me to do it. In arriving at my estimates the total quantities were taken out for one of each class of building, and on these quantities the building was priced. From that price the cubic rate for the building was worked out, and that cubic rate was then applied to the remaining types of the same class, and in comparing an estimate of the cost of the other types. I have arbitrarily adopted the certain number of cottages in each type of class as a basis. Thus in class A—two rooms and kitchen—there are three types of semi-detached cottages and an equal number of detached cottages. In the semi-detached cottages I have taken six of each type, and in the detached cottages I have taken six of the same type, and three of each of the other types. In class B—three rooms and a kitchen—I have estimated twenty-three rooms and a kitchen, ten at £454 each, and fifteen at £489 each. In class C I have estimated the cost of ten of the cheapest cottages and of five of each of the others. Summarizing the position, there will be thirty cottages with two rooms and a kitchen, fifty cottages with three rooms and a kitchen, and twenty cottages with four rooms and a kitchen. Before leaving this section of the question I may mention that among the reasons for adopting different types of buildings in a class is the desire to obviate monotony. The locality will thus be rendered more attractive, quite apart from the question of providing for various slopes



of ground. Variety ought to be introduced, if possible. In this connexion I notice that in a newspaper which I received a few days ago from the Local Government Board in England upon the housing of the working classes, it is stated—"Long rows are open to objection, not only because the overcrowding of houses

on the site may be the result, but also because they give a monotonous and depressing appearance." The total cost of 100 cottages, according to my estimate, would be £48,150. The details in connexion with this scheme are plainly set out in the following table:—

#### LITHGOW SMALL ARMS FACTORY HOUSING SCHEME.

#### MINIMUM RENTALS FOR THE LOWEST COST HOUSES, ONE IN EACH CLASS—A, B, C.

Table of Costs and Rentals.

Class	Type	Construction Costs.							Rental Analysis per Fortnight.						
		House	Services	Paths and Roads	Fencing	Land	Special Super-Wharf	Total	Interest and Sinking Fund.	Maintenance, at 15 per cent.	Water and Sewage.	General Rate.	Insurance.	Rent per Fortnight	Total
		£	s	£ s. d.	£ s. d.	£	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
"A"	2	380	34	38 10 0	23 15 0	20	3 10 0	499 15 0	1 2 6	6 0	1 4	5	7	1 10 10	
"B"	1	464	24	38 10 0	25 0 0	20	4 12 0	580 2 0	1 6 5	0 0	1 4	5	11	1 16 0	
"C"	2	606	34	38 10 0	23 0 0	20	0 0 0	719 10 0	1 12 5	8 4	1 4	5	11	2 3 5	

The aggregate cost on account of engineering services amounts to £3,850. There are other storm water connexions and other connexions to the houses, which would cost £3,404, making a total of £7,254. The fencing for the semi-detached cottages aggregates £427 10s., and for the eighty-two detached cottages £2,050, or a total of £2,477 10s. A further item has been included for the supervision and contingencies, namely, £600. Thus the total cost of the works coming within the province of the Department of Works and Railways would be £8,511 10s. That estimate does not include the cost of the land, but I informed the Minister that I estimated from the price paid for the land that the land and survey charges would aggregate £6,350. I hope the Committee will be satisfied with the way in which I have given the estimates for the engineering services, fences, and gates. Necessarily these could only be generalized at an average per allotment. To have taken out the cost per actual allotment would have been well nigh impracticable. The area of land that has been resumed is 130 acres, and its cost, I understand, was £45 per acre. In relation to the subdivision, Mr. Watt thought that we should erect about four or five houses to the acre. As a result of that plan being adopted, there would be a considerable portion of ground covered by the subdivision, over which the Commonwealth proposes not to build. In carrying out the subdivision the desire was to apportion for the Commonwealth construction 220 lots, the idea being that if the Commonwealth built 100 houses on the basis suggested by the employees of the Factory, ten men would want to buy lots to build thereon. That meant that 220 lots would be required for Commonwealth construction. Out of that arose the necessity to economically deal with the disposal of sewage and with the laying on of water. In other words, if that could be accomplished with one district reticulation of sewerage and one lot of mains for water supply, a great economy would be effected. For instance, if portion of the lands to the west were built upon by the Commonwealth it would involve running the main sewers and the water mains to that location. The allotments of the subdivision which it is proposed to include in the first scheme of 100 houses is tinted pink on the plan, and the area covered by those lots can all be drained into the one branch sewer. The drainage from the total area entails a main sewer which leads from the

boundary of the subdivision down to the Lithgow sewer. From the point where the main sewer would enter the boundary to carry out the sewerage over the western portion, a further sewerage district would have to be opened up. However, the estimates which have been given by the Works Department cover the eastern portion of the subdivided area into one district. The area that is coloured grey on the sketch plan of the lay-out does not come under consideration in the first scheme, except in so far as it discloses how the subdivision will be continued in the event of the Commonwealth constructing more than 100 houses. The sewerage plan shows how the sewerage would be extended over the second 100 houses. Provision has also been made for parks and gardens, but Mr. Merrell will be able to give the Committee much fuller information about that matter than I can possibly do. I worked out, in conjunction with the Chief Surveyor, that the cost of an allotment to the purchaser for rental should be £20. That makes an allowance for the land that would be allotted for parks and roads. The price that will be put on each allotment for the purposes of sale I do not know. That would be entirely a matter of policy for the Department of Home and Territories. I note that the reference made by the House of Representatives is to a scheme for housing workmen at the Commonwealth "factories" at Lithgow. I am aware that at present we have only one factory there. I suppose that the word "factories" was used with a view to embracing any other activity which the Commonwealth may undertake at Lithgow. My estimate of the cost of the engineering services covers the cost of connecting the service pipes with the mains. It includes, not only the formation of the roads, but the cost of channelling, kerbing, and guttering, the construction of footpaths and the making of provision for storm-water disposal. The Commonwealth is under an obligation to get rid of its storm water just as is any other property-owner.

2. To Mr. Mathews.—There is a sewerage system in existence at Lithgow. There is a small connexion with the main from the Commonwealth Small Arms Factory. But the septic tank there will need to be enlarged.

3. To the Chairman.—I have made a suggestion to the Minister that the making of parks and the planting of trees is really communal, but that the Commonwealth might assist in these matters by supplying the

trees free of cost. In determining the rental of the cottages I have taken the sum of £20 as the average price per block. I think that the actual purchase price per acre represents about half of that. The blocks vary in size, but they mostly have a 50-ft. frontage by a depth of 150 feet. Mr. Merrell submitted an alternative plan of his own volition, showing that a smaller lot was preferable. I have merely put forward the plan before the Committee on the general decision of the Minister that four or five lots should go to the acre. I have a statement here from the Arsenal Department showing the wages earned by the employees. The smallest wage is £3 3s. per week, and the average of that labouring wage is £3 9s. per week. My difficulty was to provide a small house in which a man receiving that wage could afford to live, bearing in mind the high cost of construction at the present time, and also the high rate of interest. Consequently I took the cost of the cheapest cottage at £380. I added to it, on account of services, £34; for footpaths and roads, £38 10s.; for fencing, £25 15s.; and, £20; and special supervision, £3 10s., making a total of £499 15s. I then took the interest and sinking fund upon that basis at 5 per cent. redeemable over a period of forty years. That represents £1 2s. 6d. per fortnight. The maintenance at 15 per cent. amounts to 6s. per fortnight. In the matter of rates I have taken only the amount which is charged to the Lithgow residents under the Country Towns Water and Sewerage Act, namely, 1s. 4d. per fortnight. The general rate is 6d. per fortnight, and insurance represents 7d. per fortnight. This brings the total out at £1 10s. 10d. per fortnight, or 15s. 6d. per week. I quite recognise that the amount is a large one for a man receiving 63s. per week, but that result is due to the abnormal conditions which now obtain. Personally I am of opinion that the cost of the cottages that are mentioned would command that rental anywhere. I may add that I prepared the table which has been submitted without any authority to say that the Commonwealth will charge rates and taxes, but for the purposes of comparison I assume that those rates ought to be included. Coming to the next class of house, it contains three rooms and a kitchen, which is pretty well the equivalent of a five-roomed dwelling. Its cost works out at £1 15s. 6d. per fortnight, or 17s. 9d. per week. The estimated cost of a cottage containing four rooms and kitchen, which is equivalent to a six-roomed house, is £2 3s. 5d. per fortnight, or £1 1s. 9d. per week. I quite recognise that this rental represents about one-fourth of the workmen's income. But I have recently read a report on the Bridgport housing scheme in America, in which it is laid down as a basic principle that if a man draws 16 dols. a week, he is capable of paying 16 dols. a month for his house. I mention this matter merely to illustrate the trend of events in the United States. In dealing with this matter, the first point that cropped up was whether we should erect detached houses or dwellings with single stories. I recognise that a certain economy can be effected by building dwellings of two stories from the point of view of the foundation and the roof. But my view is that the Australian housewife prefers to have the single floor. It makes a good deal of difference in the conduct of the household.

4. To Mr. Mahony.—At Daceyville the cheapest cottages contain a very small kitchen, which is provided with boilers and wash tubs. But under our plan the kitchen will become a living room, and in these small households it will probably be used as such. The inmates will then have two rooms as living rooms. I do not like the idea of bringing the laundry into the same room as that in which the cooking is done. That is why we are proposing a more expensive cottage than is to be seen at Daceyville. The Chief Engineer for Water Supply and

Sewerage has suggested that the Commonwealth should finance the cost of the whole of the sewerage system to the point of its connexion with the main sewer. He points out that our branch sewer would pass through subdivided property which does not belong to the Commonwealth. I submitted to the Minister for Works and Railways (Mr. Groom) that whatever may be done, the Commonwealth cannot possibly finance the full cost of the main sewer through a lot of property which will be used by other residents of Lithgow, and that the most which can be contemplated is that it should bear half the cost of the sewer from our boundary to the other main. The same remark is applicable to water supply. To get the water into the subdivision will entail a considerable length of 8-in. and 6-in. pipes outside the boundary of the Commonwealth property. Those pipes will also run through subdivisions to other parts of Lithgow, and consequently the whole of the cost should not fall upon the Commonwealth, especially as if the scheme were successful we should practically be adding a new suburb to that centre.

5. To Mr. Mathews.—In my estimate nothing has been put down for office expenses and administrative charges. Whether the rentals would be collected by the Department for Home and Territories or by the Small Arms Factory, I cannot say. I have put down 14 per cent. on account of maintenance. In view of what is being done by the Board of Munitions in England, the gain to the Commonwealth might not be in interest upon these cottages, but it would probably be in the increased efficiency and productiveness of the Factory. The Ministry of Munitions in England carries out works upon which it sustains fairly large losses in order to attain a beneficial result in regard to the output of different factories.

(Taken at Melbourne.)

WEDNESDAY, 19th JUNE, 1918.

Present:

Mr. Groom, chairman;	
Senator Henderson,	Mr. Mathews,
Senator Needham,	Mr. Sinclair,
Senator Newland,	Mr. Lord Smith.
Mr. Mahony,	

Thomas Hill, Engineer, Department of Works and Railways, sworn and examined.

6. To the Chairman.—I have had to do with the proposal to build cottages for workmen at Lithgow only to the extent of advising the Director-General of Works in connexion with that portion of the schedule of estimates and costs covering road formation, disposal of storm waters and drainage. I have studied the general lay-out of the land for the purpose of the necessary treatment of storm waters, channelling, and necessary roads. I may explain that the sewerage and water supplies are dealt with by the New South Wales Public Works Department and the Lithgow Municipal Council. When you are taking evidence in Sydney the Chief Engineer of the New South Wales Public Works Department will be able to submit his reports. I submit plans and estimates for formation of roads and for connexions with existing sewerage and water supplies. I have to deal with the method of disposal of storm waters, the formation of roads, kerbing, and necessary footpaths. I understand that the proposal submitted to the Committee is presented on a basis of 100 houses and 200 houses. The Commonwealth has taken over 130 acres of land for housing accommodation at Lithgow. Under one scheme provision is made ultimately for over 500 allotments, I think £33; and under another for something like 400 allotments. Matters connected with the gas and water supply have not been before my

branch of the Department for recommendation up to the present stage. In preparing my designs I have understood that the proposal is first for 100 houses and then for 200 houses, keeping in view the ultimate occupation of the whole area and all the necessary services for that. I believe it is assumed that all other services are to be supplied by the Lithgow Municipal Council or the State Government in just the same manner as the Metropolitan Board of Works would lay out the necessary mains and sewerage for a subdivision of the City of Melbourne. I have no knowledge as to whether the proposal is intended to secure the permanency of the Small Arms Factory at Lithgow. I have prepared a small plan of the work I have undertaken in connexion with the proposal. The 24-inch pipes for the storm water are shown on the plan in red. The general slope of the country is shown by the contours on the plan, and the treatment proposed is by using the street channels for the greater part of the storm water in the ordinary way until it reaches the lower end of the land acquired, where it will be gathered in the 24-inch pipes and discharged into the existing 3-ft. drain at Bayonet-street. The actual length of the 24-inch piping will be approximately 1,000 feet. It is a simple and inexpensive scheme which is proposed. Provision is made only for the formation of roads and not metalling them. Provision is made for 1,200 feet of 24-in. pipe and 630 feet of channels with connections for the first 100 allotments. The pipes to be laid will be sufficient to deal with the discharge of the whole area. There is a slope of 1 in 40 in the country, which naturally drains due north. There are slight ridges running north and south, dividing the country into two water sheds, one on the eastern side of about 50 acres, one in the centre of about 50 acres, and the remaining 30 acres on the western side sloping easterly into the existing channel. Provision is made for the forming of roads at a cost, roughly, varying with the width of the road, from 25s. a chain to 10s. a chain, and there are about 2 miles of roads to be formed. The channelling and kerbing, as shown on the schedule, will be 157½ chains, at a cost of £11 per chain. The channelling will be of concrete, the bottom 3 inches thick with a width of 2 ft. 6 in. It is intended to use the local sandstone and cement for the concrete channels. A staff of four men will be sufficient to make the channels. I suggest that arrangements should be made with the Lithgow Municipal Council to carry out the work as they will have the maintenance of it later. Failing that, we should put on a small gang to do the road forming, channelling and footpaths. The idea is at first to provide for sufficient roads for the allotments and then to keep down the capital cost. The roads and kerbing provided for will meet the requirements of the reserves. The area is generally suitable for building. The cottages nearest to the Small Arms Factory will be within a quarter of a mile of the factory.

7. *To Senator Newland.*—The proposition is to form the roads with the material on the spot, and not to metal them at present. The soil is a detritus of sandstone, and seems to be very fair for road formation. In adjacent subdivisions the roads are not cut up, and there is no metalling on them to speak of. They are simply formed with the ordinary surface, so as to carry the water into the channels. The natural soil provides a road good enough for the light traffic of a suburban area. The footpaths are to be constructed of tar paving. We are proposing to do one half the tar paving. We will tar pave one half the width of the footpaths, leaving the Lithgow Municipal Council to do the other half later. That is in accordance with the usual Commonwealth practice, under which we pay one-half the cost of any new formation of footpaths and kerbing. The width of the half of the footpath to be tar paved

will vary from 7 feet to 5 feet. There are to be no back entrances to the houses, and I have had nothing to do with provision for front entrances. The idea is that the cost of the land, the cost of the cottages, and the cost of all the items mentioned in the schedule, including road formation, kerbing, and half the cost of footpaths, are to be added to make the total cost of the cottages to the occupant. In the schedule you will find that the cost of the cottages, the cost of the engineering services, and the cost of the land are given separately. The aggregate cost of the engineering services for 100 houses is put down at £7,254, and for fencing and gates at £2,377. The expense of the work with which I have to deal is to be added to the capital cost of the cottages. The cost of forming footpaths, kerbing, channelling, provision for storm water, connexions with sewerage and water mains, and formation of roads, will represent, roughly, an addition of £73 10s. to each of 100 cottages. The storm water is to be delivered into the existing storm-water channel in Bayonet-street. At the northern end of the property in Bayonet-street there is a 3-ft. storm-water channel, taken over by the Lithgow Municipal Council, and we deliver the storm water into that channel, which runs for a distance of nearly a mile into Farmer's Creek, which is the main creek for draining Lithgow. I cannot imagine any objection being taken to the proposal so long as the water is in no way polluted.

8. *To Mr. Sinclair.*—The proposed subdivision has not yet been submitted to the Lithgow Council for approval. The Government of New South Wales will not in all cases insist upon metalled roads being provided in any subdivision where metalled roads are already in existence. There are other subdivisions in Lithgow in which the roads are not metalled. There is one subdivision directly to the north of the land acquired by the Commonwealth which was recently taken over by the Lithgow Municipal Council, and there are no metalled roads to speak of in that subdivision. It has not been considered necessary that the roads should be metalled before being taken over by the local municipal council, but they can ask that the road should be formed and provision made for the discharge of the storm water. It is not considered necessary at the present stage that the roads provided for on this property should be metalled. If it is found that they require to be metalled, it is thought that that should fairly be one of the obligations of the municipality of Lithgow. I understand that it is the intention of the Department to sell the allotments to workmen, but I cannot speak authoritatively on that matter. The idea is to provide some footpaths straight away, and in accordance with the usual practice the Commonwealth will bear half the cost and the municipality the other half. The cost of providing footpaths in parks will be added *pro rata* to the cost of the cottages, but the amount will be very small. The matter is somewhat difficult to deal with, because the first 100 cottages will have to bear the cost of some services the cost of which ought fairly to be distributed over the 400 or 500 allotments. Perhaps the Public Works Committee will be in a position to make a recommendation to overcome that difficulty. The only suggestion that I could make to meet it would be to load the whole of the allotments with the cost of the services.

9. *To Senator Needham.*—I personally think that it would be better for the Lithgow Municipal Council to carry out the work of the forming of roads and provision for storm water, as they will have the maintenance of the work afterwards, and they would not be in a position to reflect upon the character of the construction if they carried out the work themselves. It would be a comparatively small municipal work.

10. *To Mr. Laird Smith.*—Ordinarily a municipal council has powers in regard to the supervision of

building construction, but it is the practice where work is done by the Government to accept it as of good quality, and the municipal councils do not exercise their powers of supervision. The work as carried out will be quite equal to any requirements of the Lithgow Municipal Council. It is not suggested that there should be a separate sewerage and water supply in connexion with so small an undertaking. All that is needed is the extension of the water mains and sewers to this area, just as would be done in the case of an area of land subdivided in a suburb of Sydney or Melbourne. The Director-General of Works advised me this morning that the proposition is, as he understands it at present, that the Lithgow Municipal Council, or the State Government of New South Wales, will extend the sewers and water mains to this area at their own cost. The properties will be rated for sewerage and water rates in the same way as other properties in Lithgow. The owners of the property will have to pay these rates in the same way as private persons. In many other cases the Commonwealth Government pay a sum equivalent to ordinary rates. This will not involve the Commonwealth becoming a taxpayer of a municipal council for the first time, as at present in the case of post-offices and other public buildings the Commonwealth pays a sum equivalent to rates to sewerage and water authorities in the same way as a private owner. What is proposed here will not be an innovation. No scheme is proposed for the lighting of the cottages. It is presumed, in accordance with the evidence given by the Lithgow people, that the municipality will lay its gas mains in this area, and treat it in this respect in the same way as any other part of Lithgow. There is an electric plant connected with the Small Arms Factory sufficient to provide for the lighting of the cottages by electricity, but I would not suggest that it be utilized for that purpose, as it would involve the running of the plant with three continuous shifts. A secondary battery there would be very expensive and not very desirable. Batteries are very difficult to obtain at the present time. I understand that gas is cheap at Lithgow, and as it could be used for cooking and heating, a gas scheme for lighting from the existing supply is considered preferable.

11. *To Mr. Mathews.*—This area will be taken over by the Lithgow municipality in the same way as a subdivision held by a private individual for rent, and will be assessed and taxed in the same way as private land. The idea is not that this area should be treated as Commonwealth property. The Commonwealth in this case will be in the position of a private owner having a piece of land and cutting it up to build, to assist in building, or to lease, and it should be treated in the same way as a building society, or similar company. The proposition is a rent-producing one for purposes of public utility, and the idea is that it should be treated in the same way as a private ownership.

12. *To Mr. Mahony.*—I do not regard this as an innovation under which the Commonwealth will agree for the first time to pay municipal rates. It will pay only a sum equivalent to the ordinary rates for water and sewerage purposes. The Commonwealth Government do not pay municipal rates in respect to the Victoria Barracks, but the idea in this case is that this area should not be treated as Commonwealth property, because the proposal is one to assist a number of people to become owners of the allotments, and in carrying out the scheme the Commonwealth Government assume the ordinary obligations of ownership. I am not in a position to say whether it is the purpose of the Commonwealth to retain Lithgow as a place for the permanent establishment of a Small Arms Factory.

13. *To Senator Henderson.*—I do not know what powers are possessed by the Lithgow Municipal Coun-

cil to regulate the distances of buildings from the street and from each other.

14. *To Senator Newland.*—I am not aware of any negotiations so far with the Lithgow Municipal Council in regard to the payment of rates. I am dealing with the proposal as submitted to the Committee, and it is assumed that the rates I have referred to will be paid. Whoever is the owner of one of the cottages proposed to be built will pay the ordinary municipal rates, whether it be the Commonwealth Government or a private individual. The Commonwealth will not pay rates where a property has been sold to a workman. Where the allotments have not been sold, some arrangement will have to be arrived at whereby some one will pay rates in respect to it; otherwise we could not expect the municipal services to be carried on. In the case of buildings occupied by country postmasters, the Commonwealth at present pays water and sewerage rates, but not municipal rates for road cleaning, and that kind of thing. The idea is not to regard this proposal as one of the functions of the Commonwealth under the Constitution, but in the light of assistance by the Commonwealth Government to relieve a situation by undertaking a work which would ordinarily be undertaken by a private company or building society. I have not heard it suggested that employment in the Lithgow Small Arms Factory is to be made conditional upon the workmen agreeing to occupy one of these cottages. That would not be possible, because there would not be nearly a sufficient number of them to accommodate the whole of the men employed at the factory. The sewerage system at present provided at Lithgow is a gravitation system, discharging to an area near Bowenfels railway station. There they have treatment by septic tanks and filter beds, and the effluent flows on to the soil. I think that Mr. de Burch will, in this case, recommend a connexion with the existing sewerage system, which is a fair distance from this site. There is a fair population at Lithgow, and its requirements are fairly met by the present sewerage system. This proposal will make only a small additional demand upon the system.

James Charles Morrell, Architect, Public Works Department, Victoria, sworn and examined.

15. *To the Chairman.*—I have prepared plans in connexion with the proposal for housing accommodation at Lithgow. I have studied the question of town planning for about fourteen years. About four years ago the State Government of Victoria sent me abroad through Great Britain and America to study the question particularly. On my return I furnished a report which is now a Parliamentary Paper, and I see that you have that report before you. No work has yet been carried out upon my designs, as there has been no occasion for anything of the kind in connexion with works by the State Government. I have been to Lithgow, and have seen this land. It is one of the most ideal sites for housing purposes that I have seen. The view is good, and the undulating character of the ground offers excellent facilities for drainage. It is possible to place every house in such a way as to command a good view and natural drainage. Under the plan I have submitted most of the houses will face to the east. The remainder will face in different directions. There is an excellent view from the hill right up the Lithgow Valley. In laying out the area the main factor influencing the form of the plan was the topography of the site. All the main roads follow the natural valleys. The portions coloured on the plan represent areas less suitable for building. Considering the scheme as a housing one, it was necessary to provide certain recreational features to make the place attractive for people living there. The hill facing the east, and up the Lithgow Valley, is very steep,

and is consequently somewhat difficult to subdivide for housing purposes. The course adopted has been to provide for narrow streets, with footpaths on one side only, and to have the whole of the houses facing in one direction. This system has been considered most successful, and is frequently used in hilly districts of other countries. If you had streets with houses facing both sides, every second row would show the backs of the houses standing up 14 or 15 feet above the houses of the next row below. Under the plan I have proposed, every house will face to the east, and will have a fine view. Broadly speaking, the lay-out proposed utilizes the natural features in the best possible way from a housing point of view. Parks are provided on the low lying ground, and a community centre is provided for. I have suggested a community hall for social functions, picture theatre, and so forth. Accommodation is suggested for single men in the form of an apartment house. Provision is made for a corner store sufficiently large to supply the whole settlement, and also for a post office, bank, and administrative offices. These are all grouped around the community centre, which will form an attractive approach to the whole subdivision. I did not make provision for a store at the request of the Department of Works and Railways, but merely to carry out my idea of a necessary group of community buildings around the Village Green. The drift of the population will be towards Lithgow, and the Small Arms Factory, and it will be seen that the main roads tend in that direction. A small reserve, shown on the plan, is intended to utilize a rocky outcrop, which can be better used in that way than in any other. No provision has been made for rights-of-way, as the allotments are sufficiently large to provide for access past the houses to the back yards. It is not considered advisable in modern practice to include rights-of-way. They have their advantages, but their disadvantages more than counterbalance their advantages. They are costly to construct, and are frequently somewhat neglected. The facilities of access they afford are unnecessary where, as in this case, there is sufficient room around the houses. The allotments proposed have a frontage of 50 feet with a depth of 150 feet. I do not altogether approve of this, because, where you are dealing with a mixed community, you require to have different types of allotments. It has been found, especially in connexion with workmen's homes, that a man employed in heavy work during the day is not inclined after his day's work to work at a garden. If you have allotments 50 feet by 150 feet in such cases, the probability is that a large percentage of them will be neglected. In the early garden suburb movement in Great Britain and in America, quite large areas were provided, but it was found that they were neglected, and subsequently smaller areas were decided upon. It has been found that these are kept in much better order. That was the experience in Daceyville. There, when the allotments were 140 feet or more in depth, it was found that they were not kept in order nearly so well as when the back yards were reduced to 35 feet square. It was then found that the workmen laid down lawns and made small gardens. All that is required is a sufficient area to give plenty of sunshine, light, and ventilation. In order to provide for men who have families and desire to have gardens, provision is made for them by establishing garden allotments, which can be hired and used for cultivation purposes. I have submitted an alternative scheme showing allotments varied in size from 50 feet by 150 feet in the main avenues to 40 feet by 100 feet, and in some cases of smaller area. This alternative scheme would necessitate four streets instead of three running east and west, but it would make very little difference in regard to the general lay-out of the area.

16. *To Mr. Mathews.*—It is not, I think, generally laid down that an allotment 50 feet by 150 feet is necessary from a health standpoint. In the case of one of the most successful schemes completed in England, in connexion with the Woolwich Arsenal, the majority of the allotments are 70 feet by 20 feet. The value of the land has, of course, to be taken into consideration, but this area has not been found too small. The houses are built in terrace formation, and two rooms in depth, so as to provide for direct light and air. By this method it is possible to have fourteen houses to the acre, and to build them at such a cost that they may be let at a rent which will not be too high in view of the wages earned. The wages earned have a very direct bearing on the type of house to be constructed. If workmen can afford to pay only 10s. per week in rent, it will not do if the houses provided would, on a 5 per cent. basis, require to be let at 14s. per week. It is not the old terrace system that is adopted, of a building, two rooms in depth, with wings going out at the back. Under the terrace system now adopted the houses do not have projections at the back, and are never more than two rooms in depth. If I had known that I would be examined this afternoon I should have been prepared with plans and photographs showing the types of houses now being constructed by the British and Canadian Governments.

17. *To Senator Henderson.*—The houses to which I refer have sometimes four rooms and sometimes six rooms. The buildings are two stories high, and those at the ends of the terrace, where light can be obtained from the ends, as well as from back and front, may have six rooms, whilst the intervening houses will have four rooms. In the majority of cases four rooms are sufficient to meet the requirements. The buildings are two stories in height, and this leads to economy in construction.

18. *To Mr. Mathews.*—This system is adopted partly because of the value of the site and partly to meet the wages that can be earned by those occupying the buildings. Of course, in connexion with any housing system the ideal, if it can be realized, is to have single detached houses.

19. *To Senator Newland.*—I understood from the Director-General of Works that it is the intention of the Department to put up five or six different types of buildings. He spoke of the method of grouping, but so far as I know nothing has been definitely decided as to the manner in which the houses will be grouped. Any uniform standardization is likely to be a failure when you are dealing with a mixed community. The standard allotment throughout the whole subdivision is 50 feet by 150 feet. In discussing the matter with Colonel Owen, I mentioned my views, and the second plan was drawn to illustrate them. It provides for a variety of depths and sizes in the allotments. The average depth provided for is 100 feet, but some, as frontages increase, run only to 80 feet or 60 feet. In the second plan, the average depth is 100 feet instead of 150 feet, and the average width in the case of half the allotments is 50 feet, and in the case of the remaining half 40 feet. It is important to develop the community spirit, and for that reason it is considered better to group the larger houses on the main avenues with the smaller houses adjacent, and not to have all the best houses in one place. Whilst the various types of houses should be close together, and while the smaller houses should not be placed so as to interfere with the development and appearance of the larger ones, they should be so grouped as to develop the community interest without interfering with the general appearance.

20. *To Mr. Sinclair.*—The alternative scheme I have proposed would make provision for, speaking from

memory, about eighty allotments more than the number provided for in the original scheme. It need not be necessary to have the parks developed right away, but the reservations should be made permanently. Possibly as the area became settled, there would be some Development Committee or league formed to develop the parks from revenue derived from the citizens. Under the alternative plan I have submitted, the total cost of the proposal would be spread over eighty additional allotments. Under ordinary conditions where land is held as a business proposition, it is laid down that the parks and open spaces should occupy about 7½ per cent. of the total area. The increased price obtainable for the allotments would more than equalize the loss on the reservations. Under my second scheme I provide for some parks or recreation reserves that are not provided for in the first scheme. There is a small reserve in the centre on the main road between two valleys, the intention being to create a point of interest, and secure proper ventilation for the whole group of houses that would surround it. The end of the valley is somewhat badly drained, and I thought it might possibly be utilized as a small park. I have made provision for the utilization of one part for gardens, in which vegetables might be grown for the needs of the surrounding population. I do not know whether the Commonwealth Government have purchased the mineral rights of the area. That is a question which may be answered by Mr. Goodwin.

21. *To Mr. Laird Smith.*—In my plan I have given careful consideration to the width of proposed streets in order that they may be maintained at a minimum of cost. In the lay-out it is suggested that the roads should be of only sufficient width to carry the anticipated traffic, and for the particular needs to be served. The majority will be 40 feet wide, but the probability is that only 20 feet width will be actually constructed into a roadway, the balance being reserved for footpaths and parking. The buildings will be set back at least 35 feet from the centre of the roadway. I prefer side entrances against lanes for a dwelling house, because land reserved for lanes is usually unenclosed, and the cost of maintenance is excessive. In all modern practice, back lanes are being dispensed with, because, in addition to the extra cost, lighting is required for them, and possibly some extra police supervision. I think it is rather early yet to endeavour to bring about the American system of dispensing with fences in front of the allotments, and I think it would be better to have something like cyclone fencing and dwarf hedges, because the introduction must be gradual, and the American system will make necessary a number of local by-laws to prevent the straying of cattle, and to insure the proper care of front lawns, and so on.

It is probable that just at present it would be difficult to introduce the American system, although it is undoubtedly a success in America. Personally, I prefer electricity for lighting and domestic services, because it insures the minimum of work in a household, is less dangerous, absorbs no oxygen, and altogether has many advantages over gas. While in California I saw an excellent type of house in general use, illustrations of which are set out in my report, at page 60, dealing with the development of the Torrance City. House construction is much more economical in California than in Australia, owing to the cheapness of lumber, cement, and roofing materials. The roofs are generally constructed of galvanized iron or malthoid, and houses of the type I speak of are usually five-roomed dwellings, and are rented at about 17s. 6d. a week to the workers. The climate of California, like that of Australia, is variable. In San Diego, and in the southern portion of the State, there is a variation of 10 degrees between summer and winter, but further north the

climatic conditions would be similar to those in Victoria and New South Wales. In the early history of Australia house construction followed much on the lines of English dwellings, due, no doubt, to the fact that architects were governed by the practice in England, but we are gradually approaching towards better ideals for Australian conditions, and I think have been influenced by the increasing amount of literature on this subject from America. In Californian houses the ceiling height is usually limited to 8 ft. 6 in., and sometimes 8 feet, and with the ceiling packed with a good insulating material, such as slag wool, and properly ventilated, they are very comfortable. Up to the present I do not think we have evolved an ideal house for Australian conditions, but improvements are being gradually effected. It would be possible under certain circumstances to have an entire town heated by a central service, as is done in the case of the Gerard estate in Philadelphia. The Gerard estate about thirty blocks of land, about as big as Melbourne city blocks, and the whole area was designed for residential purposes on a rental basis, with central power stations for heating and electric lighting, and a common scavenging system, the whole cost for the upkeep of these services being included in the weekly rental. In the case of small areas with a very limited population, it is probable that the charge for maintenance and power under this system would be excessive. I think the Gerard estate carries a population of between 3,000 and 4,000 people. In America each house usually has a small installation of its own, and is heated at about the same rate, or, perhaps, less, than the cost of an ordinary kitchen range. I think the responsibility for the maintenance of city parks should rest on the municipal authorities instead of upon the people themselves. Generally, the municipal authorities induce the community to form Committees for the purpose of city beautification, but actual responsibility in regard to the care of parks should rest with the authorities. In my plan for the lay-out of Lithgow there is provision for a park belt to protect the residential area from the prevailing winds. The development of park areas has an important bearing upon land values, and I know that where areas have been set apart for this purpose in America the increased price obtained for the remaining portion of the land more than compensated for any loss that might have been incurred by the reservation referred to. I have not given special attention to the type of cottage proposed for housing the workmen at Lithgow, but I may say that the houses should be more or less designed for the situation they are to occupy, and in many places should be specially designed for the situation. Before giving any opinion as to the kind of house most suitable, one would naturally require to know the type of people who will live in them, the size of the families, and the income of the tenant. In America special attention is given to domestic labour-saving conveniences, because the difficulties in regard to domestic service are as great there as in Australia, and it seems to me that we should give special attention to this matter in any housing scheme.

22. *To Mr. Mathews.*—In all modern town-planning schemes the health of the citizens receives as much consideration as the picturesque of their environment. Larger blocks of land do not necessarily mean a more satisfactory health condition, that is to say, blocks larger than are necessary to insure a sufficiency of sunlight and air to the dwelling house. Larger blocks are no more necessary than is a 20-foot high ceiling to a room. I do not think a ceiling 20 feet high is any better than a ceiling 10 feet high. For health purposes every person should have so many cubic feet of air space, but this does not mean an additional height in

the walls. Because all the area above the ventilators contains dead air, and consequently that space may be eliminated in a calculation for the cubic area of a room from this particular point of view. In calculating the capacity of hospitals, the authorities never take a greater height than 10 feet. It does not necessarily follow that, because the ceilings of a dwelling are high, it is more adapted to a hot climate than a house with low ceilings. Everything depends upon the nature of the ventilation. If a house is properly insulated and protected against the radiation of heat from the roof, there can be no objection to a lower ceiling level. Under the British Act the minimum height is fixed at 7 ft. 11 in., but I do not advocate that for Australia. In California 90 per cent. of the small houses have ceilings not more than 8 feet high. They are properly insulated with slag wool, are properly ventilated, and are very comfortable. In company with members of the State Housing Committee I visited a number of congested areas in Collingwood, South Melbourne, and Port Melbourne. In my scheme for Lithgow there is provision for frontages of 40 feet, and a maximum of 80 feet. The dwellings should be designed to give at least 12 feet clear space for a side entrance to each area. This arrangement would give 10 feet between the houses, and allow for an angle of 45 degrees from the eaves of one house to the wall of the next at the ground line. Narrow and deep allotments are objectionable from many points of view, but the drawback to wide frontages is the extra cost of utility services, sewage, water supply, and so on, though, with proper legislation to enable economic road construction, increased frontages and numbers of allotments could be provided for, and these probably would double the value of the land. Narrow and deep blocks lead to unhealthy buildings due to insanitation, want of air, and dark and damp rooms, but the subdivision of allotments is generally governed by cost of road construction. I have gathered information on this subject of town planning in various countries. In mining towns where employment is more or less intermittent, there is not the same incentive for the permanent development of residential areas as in agricultural areas. The evidence given before the Victorian Commission was against the creation of pocket-handkerchief allotments, but there is a great difference between that state of affairs with blocks 40 feet by 80 feet, and conditions which would follow the adoption of areas of, say, 40 feet by 100 feet. I think that a block of land 40 feet by 100 feet is large enough for three out of every four workmen. If the area is larger it is likely that it will not be properly utilized and cared for. It is the experience of authorities in England, America, and Canada, and especially in areas connected with industrial concerns, that after a man has done seven or eight hours' manual work he has no inclination to take up gardening. I shall be pleased to supply members of the Committee with some literature on this subject.

28. To the Chairman.—I have been to Lithgow and I have read the evidence given by Mr. H. A. Hunt, the Government Meteorologist, on the climatic conditions at that place. I have only superficially examined the drawings for the proposed dwellings at Lithgow, so I would not care to express an opinion just now as to their suitability. Personally, I think a wooden house is quite habitable for any person, but, of course, the maintenance charges are much heavier than in a house built of brick or concrete. I would prefer the latter on the score of permanence and economy in maintenance. Under present conditions I think the difference in cost of construction of a wooden house as against a brick house, is not more than 10 per cent. Against any reduction in the height of walls in the proposed dwellings for Lithgow, there would have to be set off the cost of proper insulation. I cannot say what this would

cost, but I doubt if a proper insulating material could be obtained at the present time. Slag wool is usually employed in California, but cork filling, or any insulating material would serve the same purpose. Under present conditions it has not been found possible to build houses profitably for workmen earning £3 per week for purchase on a rental basis, and private enterprise has ceased to do it. In England and America housing accommodation has been provided for the munition workers, but this work has been carried out at a loss. The Government recognises that in order to keep a man efficient he must be properly housed and properly fed, and so they put down any loss on housing accommodation as part of the manufacturing cost. It is very doubtful whether single or semi-detached houses could be built under present conditions on a payable basis for men earning £3 per week; because the maximum outgoing for rent from a man's wages should not be more than 20 per cent. In order to get the best results from any town-planning scheme, particular attention should be paid to the location of dwellings in order to secure the greatest benefit from sunlight and air. Thus, if they are all placed on the same alignment the conditions would not be so desirable as if the houses were recessed, that is, some placed nearer the street alignment, and some further back, because in the latter case more air and sunlight would get into the houses.

29. To Senator Newland.—Slag wool is a by-product of the iron industry. It is something like cotton, but more fibrous, and is a non-conductor of heat. I think a material of somewhat similar character, is obtained in Australia from basalt, but I have not seen it. The slag wool is packed between the outside wall and the plaster, the material being used in much the same way as in a refrigerating chamber.

30. To Mr. Sinclair.—I did not see slag wool used in any houses with tiled roofs in California, except, perhaps, in case of houses with attic rooms. I have heard of fumes from certain factory undertakings poisoning vegetation, but in all modern town-planning schemes manufacturers are not permitted to encroach on the residential areas.

31. To Senator Needham.—In my opinion, every room of a house should be healthy to live in, but if one room more than another should be designed with this object in view, it should be the sleeping room, which should be provided with plenty of light and air. I do not believe in uniform wide streets. If streets are intended for traffic they should be made just sufficiently wide for that traffic; and if intended for residential areas they should be narrow, and the houses set back at least 35 feet from the centre of the roadway. The adoption of this principle would insure economy in the cost of road construction, and provide for economic widening, if necessary. My lay-out for the Lithgow areas will insure sufficient land for any workmen to grow vegetables for his own use, and if he desired to grow for adjacent property owners, there will be land available at an annual rental for this purpose.

32. To Mr. Mathews.—If the ceiling height were reduced from 10 feet to 8 feet, the saving would be in the difference, that is to say, 2 feet of wall all round, plus the cost of insulating, which, I think, would not be greater than the saving effected. Personally, I do not think the Australian people would care, at the present time, to live in houses with a low ceiling, but if they experienced the comfort of such houses as at Torrance, they would overcome any objection they might have to this kind of house, because they are well ventilated, and are very cosy.

33. To Senator Henderson.—If a room is sublet up for the purpose of getting the area to be provided for each person, and compared with the standard laid down by health authorities, it will be found that the

average room gives space in excess of requirements, so the area above the ventilators is not taken into account. To Senator Needham.—I have only a superficial knowledge of the Workmen's Homes Act of Western Australia. I will read the Act to ascertain how it compares with the proposal of the Federal Government with regard to Lithgow, so far as rental and purchase are concerned. I will also supply the Committee with information as to the methods adopted by American manufacturers for financing their housing schemes.

(Taken at Melbourne.)

THURSDAY, 30th JUNE, 1918.

Present:

Mr. GAZDOOKY, Chairman;

Senator Henderson, Mr. Mathews,

Senator Needham, Mr. Sinclair,

Senator Newland, Mr. Laird Smith,

Mr. Mahony,

John Smith Murdoch, Architect, Department of Works and Railways, sworn and examined.

30. To Senator Newland.—I understand that the Director-General of Works has explained the general idea of the whole scheme of housing accommodation at Lithgow to the Committee. That is, as to the number of cottages which the Government propose to erect, the several types, embracing different sizes of accommodation, and the costs of these cottages. The smallest type of cottage, which has been designated Class A, will contain two rooms and kitchen, with the usual pantry, bath room, and laundry. A second class of cottage, designated Class B, is proposed to contain three rooms and kitchen, also with pantry, bathroom, and laundry. And the next grade of cottage, designated Class C, is proposed to contain four rooms and kitchen, with bath-room, pantry, and laundry. Of these classes there are three different types of cottage submitted for each class. That is for the sake of variety in the general appearance of the villages. It is probably a good thing to vary the architectural expression of the houses; and the cottages themselves are also of different shapes, so that they can be constructed economically to the individual natural condition of the allotments on which they are to be placed. That is, the cottages should not be erected against the natural levels of the site, thus creating extra work in foundations, and so on. Of the smaller class of cottage, it is proposed to erect 30 altogether. As to twelve of these, it is proposed that they shall be entirely detached, and that eighteen shall be semi-detached. Taking the detached cottages first, it is proposed to erect three of type 1, at a cost of £248 each; six of type 2, at a cost of £397 each; and three of type 3, at a cost of £406 each, making twelve detached cottages of that class altogether. As to the cottages in the semi-detached form, it is proposed to erect six each of types 1, 2, and 3. Type 1 is estimated to cost £409; type 2, £381; and type 3, £392. It will be observed that by attaching the cottages the estimates are reduced slightly—not so very much, of course—since one of the side walls of the attached cottages will be saved. That is to say, one wall will be made, as it were, a party wall between the two cottages. Then, of the Class B type, it is proposed to erect 80 in all; 25 of type 1, estimated to cost £244 each; 10 of type 2, at an estimated cost of £313; and 45 of type 3, estimated to cost £480 each. It is not proposed to have any semi-detached cottages in Class B. For Class C, the proposal is to erect 20 cottages; 5 of type 1, estimated to cost £317 each; ten of type 2, estimated to cost £398 each; and five of type 3, at £380 each. So that the total suggested expenditure on these cottages would be, in the case of Class A, detached cottages, £24,876, and Class A, semi-detached, £7,092; Class B, a total of £24,065; and Class

C, the 20 cottages to total £12,145. That would make a total aggregate for the 100 houses of £48,160. Detailed estimates of the cottages have been submitted to the Committee, and have been prepared in this way. Complete quantities were taken out of one cottage of each class, and the data arrived at from these detailed estimates supplied a rate per cubic foot, upon which we thought it accurate enough to estimate all the various types under the several classes of cottages, without having to take out complete quantities for each. Personally, I am reasonably certain that this method of estimating will be very close. I will now explain the size of the rooms and the construction proposal for each type of cottage. Coming to the smallest type—Class A—of two rooms and kitchen, with the necessary accommodation, the accommodation afforded is rather less than was contained in the views of the operatives who are to be housed in this village. But, having regard to the very high cost of building at present, the Department considered it advisable to bring the smallest type of cottage down to two rooms and kitchen, so that a young married couple, beginning life, could take up those houses; and, as their financial condition improved and their families increased, a room could be added to bring the total to three rooms and kitchen, with necessary accommodation. The Class A types of small house have all been planned with a view to convenient extension by at least one room. By adopting this course it was the opinion of the Department that as the rent per week would be reduced in this way, the whole scheme would make itself more attractive to the occupiers of the cottages. That, I say, no doubt, is debatable, and is one which the Committee—I suggest with all respect—might give attention to. That is, that the houses proposed to be supplied are smaller than the operatives themselves suggested; but the probabilities are that the suggestions were made without having been very deeply considered. To make the scheme attractive to the people who will occupy the houses, the first essential is to cut the rent down to bedrock. The way in which the operatives were induced to voice their views was through the manager of the Factory being requested to ask for the men's opinions; and these are contained in papers which can be put before the Committee. I will now take seriatim the different types of cottages under each class. Under Class A, in the detached form, there are three types. Class A, type 1, contains front entrance, verandah 7 ft. 6 in. wide by 14 feet long. That verandah gives access to a living room 14 feet x 12 feet. Off the living room there is a small lobby, which gives access to the bedroom 14 feet x 10 ft. 6 in., the kitchen 11 feet x 10 feet, and to the bathroom 6 feet x 6 feet. There is a small extension of the bathroom, in which the water-closet is placed. Off the kitchen is a pantry 5 feet x 3 feet. Behind the kitchen is a back verandah 9 feet x 5 ft. 9 in. Off that verandah is the laundry 6 ft. 6 in. x 6 ft. 6 in. In this type of house, a young married couple will largely use the kitchen for their meals as well as for cooking, and on a summer's day they will be able, instead of using the kitchen for eating, to have their meals on the back verandah. This type is a perfectly good little house for a young couple, and, as their family grows, the home can be extended also. The type 2 cottages of Class A, contains approximately the same accommodation. Its form, however, is varied for the sake of architectural variety, and to give elasticity in applying the plans of the cottages to the varied nature of the allotments. The third type in this class contains also the same accommodation, with the exception that it has not got the small back verandah. This could be added at a future time, with the extra room. The Committee will observe that it is of a different form from the other houses. It is not so square, and is therefore suitable for an allotment, the contours of which are running

across the land instead of from back to front. The main entrance will be at the front, of course, the same as with the other cottages. The back entrance is behind the kitchen and the laundry. These cottages, in the semi-detached form have the same lines preserved, only that they are put together so as to use the one dividing wall for the two homes. Thus one wall is saved. Also, there is another valuable feature, that, instead of the village having the appearance of being made up of a lot of tiny houses, with the semi-detached buildings dotted here and there, in positions carefully studied for the general effect, the two together will mass up into considerable buildings, and so will give the village a better appearance, while at the same time saving money in construction cost. The partition wall in the case of the semi-detached houses will be 11 inches. The hollow in the brick wall will be sufficient to prevent all but unusually loud noises from going through from one house to another. I will not say that the 11-inch hollow wall will prove an entire non-conductor of sound, but it will retard sound; and, certainly, I do not think ordinary conversation, or similar sounds, in a home, will penetrate from one cottage to another. I do not say, either, that very much money will be saved with respect to each of the semi-detached cottages. The type A in the detached form is estimated to cost £242, and, in the semi-detached form, £400—a saving of £17. With respect to type B, the detached form will cost £397, and the semi-detached £381—a saving of £16. As to type C, detached cottages will cost £406, and semi-detached £392—a saving there of £14 each. As to the question of the construction in semi-detached form lessening the selling value of those cottages, I should say that it would do so, but the assumption that the Department makes is that, for, at least, these first 100 houses will probably be a more payable investment for the Government to regard them as properties that will never be alienated. Among the operatives employed at the factory, it is expected that there will always be sufficient to take these places as rented cottages—at any rate, for the first 100 houses. The intention at present is to construct sufficient only to meet that demand, but if it ever came to the alienation of any of these first 100, I think the houses which would be preferably purchased by the operatives will be those built in the detached form. In the semi-detached form, it is proposed to build eighteen houses, and there is very little doubt but that they can always be let. In round figures every £20 saved in the construction of a house means a saving of about 9d. a week in rent to the occupier. To operatives receiving a wage of about £3 6s. a week, every 6d. weekly in the matter of rent saved is a consideration. Therefore, the little reduction possible in the rent of the houses will probably counteract any unpopularity that there might be with regard to these cottages being joined together. In fact, in the garden city movement all over the world, attaching houses is a favoured and general principle. The chief idea, of course, is to save land—or that is one of the chief ideas; but it is a consideration which does not come so closely into the problem at Lithgow. But the semi-detached type also means a reduction of rent to the lowest possible figure. Then again, with some people—I do not think it prevails very much in Australia—there is always a tendency, and it is growing considerably in other parts of the world, to become more and more gregarious. People are living close up to each other for preference, in many cases; and we note the tendency in our larger Australian cities for people to reside in flats, rather than in their own detached homes. The proposal of the Government with respect to these cottages is that, out of the thirty cottages of this type, there is to be erected eighteen semi-detached and twelve standing by themselves. Proceeding now to the accommodation in class B—the type

that we call the three rooms and kitchen class—there are also three types here. Type 1 has a front verandah, 7 ft. 6 in. wide by 15 ft. 6 in. long. This is a good verandah. I tried to avoid the idea of having very narrow and long verandahs. Such forms of construction are practically useless for family purposes—either for meals, or for sitting about, or for sleeping purposes. So I have preferred the model of shorter and wider verandahs, that some amount of family life, at any rate, can be lived upon them. The verandah opens into the living room, which is 13 ft. 6 in. by 12 feet, and into the bedroom 13 feet by 11 feet. These two rooms open on to a small lobby beyond, which gives access to a small bedroom 10 feet by 6 feet, and to the bathroom 6 feet by 5 feet, containing a bath and a water closet; and to the kitchen, which is 10 feet by 10 ft. 6 in. Beyond the kitchen is a washhouse, which is 7 feet by 6 ft. 6 in., a small pantry, and a small back verandah, in which, no doubt, some members of the family might sleep in the open air. It is not proposed to enclose the back verandah, but if the property became the possession of an employee, he could have various little alterations made to suit his own views. In no type of cottage do we propose to enclose the back verandah. As for the size of the kitchen being considered small, there is a marked modern tendency that way. The modern idea of housewives is to prefer the more compact kitchen, so that everything is handily within reach. In the larger houses, constructed for naval officers by this Department, the kitchen has become a much smaller apartment than it would have been had it been built some years earlier.

31. To Mr. Mathews.—While I realize, of course, that the operatives at Lithgow will be living more in their kitchens than would naval officers in the kitchens of their homes, I do not think I would suggest to make the Lithgow kitchens larger. That could be done only by increasing the cost of the homes, and, after all, these smaller types of cottages are intended for a man and his wife, and, at most, a couple of young children. When the family grows larger they will look out for a bigger house. I think this scale of accommodation will be quite satisfactory for a small family. I only wish we had similar accommodation available for the same class of families whose wages earners received about the same weekly pay throughout our big Australian cities generally. If operatives in these circumstances could be accommodated similarly in places like Sydney and Melbourne, they would be well satisfied.

32. To Senator Newland.—Passing to type 2 of these class B cottages, I think the Committee will realize that this is a fine little home. It contains practically the same accommodation, but in another form. It is very square and very simple, and, consequently, it is cheap to build. It has all the accommodation of type 1, with the addition that there is a better back verandah. In these cases the back verandah is sufficiently large for sleeping out, as well as for having meals. Its size is 14 feet long and 7 feet wide. Personally, I regard this as a very convenient little home. The front verandah is 7 ft. 6 in. by 18 ft. 6 in. The back verandah is protected by the bathroom on one side, and the laundry on the other, so that it is well sheltered. The third type of class B contains the same accommodation, in a modified form again. There are a front and back verandah, a living room, two bedrooms, kitchen, bathroom, pantry, and laundry. Now to deal with class C—the four-room and kitchen class. The Committee will see by the plan that it is a more ambitious proposal. It contains a front entrance verandah 8 feet wide by 10 feet long. The entrance door opens into a hall 4 ft. 6 in. by 11 feet. Opening out of the hall, there is a living room 15 ft. 6 in. by 13 ft. 6 in., a bedroom 12 feet by 11 feet, another bedroom 11 feet by 11 ft. 6 in.; and still another 11 feet by 10 ft.

6 in. Behind the living room is a vestibule, really in the form of a back verandah, in which meals can be taken, and from the back vestibule a kitchen, 11 ft. 3 in. by 11 feet, opens out, and the laundry, 7 feet by 8 ft. 6 in., with a pantry, off the kitchen, 6 feet by 3 ft. 6 in. The bathroom is 6 feet by 6 ft. 6 in.; and in this case the water closet is built outside. It is a larger house, and, therefore, the water closet will be more used. For that reason we have gone to the expense of having it access from the outside rather than from the inside of the house. The accommodation in the next class, C, type 2, is very similar in all respects, but for the purposes of variety the house is entered at the side instead of from the front; but the rooms are approximately the same, and the accommodation is the same. The whole of this type is entered from the verandah, and you pass into the hall which is wider—7 feet by 11 feet. The third type of house in class C again contains the same accommodation in yet another form. The entrance is at the front, off the verandah, and giving access in the same way as described with respect to type 1, opening into the various rooms. The chief bedroom is a little larger—14 feet by 13 feet. I do not think there is much to choose between class 2 and class 3 of this type. Each has its little features slightly differing; but, generally speaking, they are all about equally suitable little homes, and should be very convenient for domestic life. As to the types to be adopted, they will be largely dictated by the nature of the allotment on which the house is to be constructed. There is a special class of house known as type D, of a larger size still. We have placed this type before the Committee, but, as the schedule of our proposals shows, we do not propose to build any of these, unless, perhaps, some employee with a very large family, or a foreman or some other such official, desires to rent a bigger class of house, when probably it might be arranged upon advantageous terms for the Government to build such a place, and to let the employee have it, say, on time payment, or some other method. However, I have prepared three types of this special D class, in case the necessity arises. They are a very much larger type of house, and it is doubtful whether more than one or two may be required to be built. This kind of house has a front verandah the same size as in the case of Class C. There is a hall 6 feet wide of L. form. It has a sitting-room 14 ft. 3 in. x 12 ft. 9 in., living room 15 feet x 14 ft. 3 in., bedroom 14 ft. 3 in. x 11 feet, a smaller bedroom 10 ft. 9 in. x 10 ft. 6 in., and a still smaller bedroom 9 ft. 6 in. x 10 ft. 6 in. The kitchen is 14 ft. 3 in. x 9 ft. 3 in., the laundry is 11 feet x 7 feet, and this type of house has a larger pantry 7 feet x 4 feet, and there is the water-closet outside. The estimated cost is £715. It would be a good thing, if we desired to erect these houses, to go along until the estimates of costs can be reduced somewhat. The rent for that class of house would be rather high. There are three types in Class D. Of course, it would be well for the general effect of the village to have a few of them. As to the plans of Class D, it is possible that the Committee may find them of some assistance in considering the whole scheme. That is why they are submitted in conjunction with the three other classes. As to the houses generally, opinions will vary with the number of persons who may criticise them; and, beyond putting them forward as a possible means of meeting requirements, I do not say they are the beginning and end of what may be the best. There are details no doubt which are capable of refinement here and there, but I hold that the designs are simple and effective and sufficient for the purposes intended. The roofs are not unduly cut up; and, generally speaking, there is a fair proportion of the introduction of such things as cupboards, presses, and so on, which go a considerable way in saving residents in their outlay on furniture

and the like. One considerably controversial point about the houses is with respect to the laundries. Each house has a laundry. As to whether it is a good thing regarding houses of this kind, to have the laundry built in with the house, or in a detached form in the shape of a shed in the back yard, my inquiries and personal views on the subject lead to the idea that the better method is to have the laundry attached to the house, and in such a way that on washing day the steam arising from the boiler does not get into the house itself. In no case should it ever get past the kitchen. If there is a baby in the family, the infant can be put to sleep in an open part of the house while the mother is washing, and thus she is able to hear it when it awakes, whereas, if the laundry were down in the yard, she would not be in a position to hear it when it awakes, and began crying. Also, for the appearance of the village, it is better to have the laundry within the house rather than to have a lot of little sheds dotted about the yards. The modern idea is to have the laundry connected with the house. I do not claim that the plans are absolutely the last word. They are my ideas of what I think a fair solution of the problem, and if they can be refined or improved in any way, nobody will be better pleased than myself. As to the construction, we considered brick, concrete, and wood. At Lithgow all the information available pointed to the economy of construction either with brick or concrete, and not of timber at present prices; and, having regard to upkeep also in respect to timber buildings, the idea of construction with that material was not favoured. Then, as between brick and concrete, the conditions there in the matter of material pointed to the advantage of brick. One large concrete constructing company, which builds in a wholesale manner, was consulted, but the firm said that they did not care to go into the question, as it was apparent to them that brick construction at Lithgow would be cheaper than concrete. However, if the Committee, by their investigations, conclude that concrete would be as cheap as or cheaper than brick, there is no reason why tenders should not be called for construction either of brick or of concrete. Materials can be conveniently obtained near Lithgow. One of the best brands of concrete produced in Australia is contiguous. That is the cement manufactured at Portland by the Commonwealth Cement Company; but metal for concrete would have to be carried a considerable distance. The Department has already had the experience of brick construction at Lithgow, when we built the Factory. It is a good and cheap brick that is manufactured there. The bricks are made at Lithgow, so that either concrete or metal or bricks could be procured in the immediate neighbourhood; but we consider that brick buildings will be slightly cheaper than if we attempted to construct with concrete. As to the roofing material, we carefully considered what would be the best; and, under ordinary conditions, we would naturally favour galvanized iron. Roofing with asbestos was reckoned to be dearer than tiles. Our investigations showed that the cheapest roofing would be tiles. Tiles are procurable. They have certainly gone up in price, like everything else, but not in the same proportion as galvanized iron.

33. To the Chairman.—The cost of bricks obtainable at Lithgow, from memory, 46s. We secured that information only the other day. We built the factory at a cost of 38s. for the bricks, I believe, but now the quotation is 46s. I will supply a copy of the information secured from Lithgow, giving the quotations. Only general consideration has been given to the communal system of providing laundries, hot water service, and the like. I know something of the communal system, but I do not think it fits in very well with Australian family ideals. Each family in this country prefers to be in

individual. I would not recommend the communal system. Before applying it to Lithgow, I would prefer to see the method experimentally tried elsewhere in Australia. I know that it is largely employed in America, and rather extensively in England also. But here the prevailing preference is for each family to have its individual house. As to the matter of the height of the buildings, I am aware that evidence has been given to the Committee favouring the construction of the cottages with a height of about 8 feet or 8 ft. 6 in., providing, of course, for insulated ceilings. Personally, I like a low room. It is very much a matter of taste, but I hold that a lower-bulky room makes a cottage of this type outwardly more attractive in appearance. It is low, and flat, and domestic looking; and, with insulated ceilings provided, it is perfectly hygienic. On the other hand, there is a strong prevailing opinion with many people in this country that high rooms make cool rooms, and are therefore preferable. Making concession to that popular idea, I consider that the height of ceilings at about 9 feet would be ample; but, to please the people who will probably reckon that even 10 feet might be too low, we have decided upon a medium, and have made the rooms 9 ft. 10 in. That unusual size is arrived at simply by the courses of bricks. Either that size, or a course lower, would be a workable medium. That same height applies to the heights of all the cottages. The Building Act of New South Wales, regulating domestic properties, prescribes a minimum height of 10 feet, I believe; and, although the Commonwealth Government is not strictly under the control of a State Act, yet in all our works we try to respect those Acts unless there is some very grave reason for doing otherwise. At Daceyville, the garden suburb of Sydney, the plans of the cottages show a minimum height of 10 feet for all the rooms, even in houses considerably smaller than the smallest house proposed for Lithgow. Scientific thought agrees that it is a mistaken policy to build rooms very high in order to secure coolness. In that respect any height, even in a large apartment, exceeding 11 feet or so, would be useless. In reckoning the cubic air capacity in Hospitals per bed, let us suppose that a ward is 100 feet long by 30 feet wide. That ward, to be proportioned, would require to be 15 feet or 16 feet high—that is, looking to appearances. But to allot the requisite cubic capacity per patient, the local board authorities of England would not calculate upon a greater height than 13 feet; anything beyond that height would be ineffective except for appearance. I have already described to the Committee how the designs make for variety in each class of cottage. We have proposed three types for each class, so as to vary the appearance of the houses, and also to have full regard to economy in construction upon the varying conditions of the sites. As to the Committee scouring further alternative designs, my views in respect to houses are that they cannot be constructed too simply. I do not expect every man to agree with my ideas, however. Views will vary with every individual who may be consulted, and no one will be happier than myself to secure any good suggestions. As to constructing with wood, I do not think the cottages would cost anything less to-day. Timber is very dear, and in view of future upkeep, I hold that it would not be the best plan to build with wood. I have not computed the approximate amount of hardwood that would be necessary for a cottage. As to whether it would be worth while for the Committee to recommend a Government shipment of hardwood from Western Australia, I would sincerely favour that. The ordinary course of supply and demand would probably provide timber just as cheaply in the ordinary way—especially in quoting for large quantities—as if the Government were to secure a shipment direct. The

state of the building trade in New South Wales to-day is such that there will be keen competition from builders and from existing organizations for the supply of timber. The Department proposes to place everything required upon a basis which will facilitate low tendering and cheap building. In all the designs for doors the same size will hold good. Thus, joiners, when they secured a contract, would be able to supply material for so many houses; and, by furnishing a standard door and window, they could tender on the lowest practicable basis. As to the question of the future sale to employees of the semi-detached buildings, I have already touched upon that. It would be always unpopular to attempt to sell semi-detached buildings; and there is no idea with the Department that those at Lithgow would ever be sold. There is no doubt that with respect to the eighteen semi-detached houses proposed to be constructed, the Government would always be able to let them. I have indicated that there is a small saving in each case through building in semi-detached form. In every instance it is a loss than £20, but every £20 saved in construction means a specific reduction in rent. Naturally, it would be reasonable to provide conditions by which the semi-detached houses could be sold. That kind of transaction goes on every day; but my own idea is that the Government will not attempt to sell any of the semi-detached houses, and will not seek to sell many of the first 100 at all.

34. To Mr. Mathews.—It is a fact that Australian timber is considerably dearer in New South Wales than in Victoria or Western Australia. I would not like to express an opinion as to the reason for that. There may be many contributing reasons; but one is, perhaps, that the Victorian workman works a bit harder than a man in New South Wales. Hardwood in Victoria at present is about 18s., and for similar material in New South Wales the quotation is about 26s. to 28s. I am informed that in Western Australia the price is about 16s. I think I could put through a big deal in hardwood just now at under 18s. here. I do not take the market quotations too seriously. If you are doing business in a big way you can get better prices; and I think that will hold for New South Wales as well. As to whether I can supply the Committee with the proportionate percentages with respect to upkeep of wood, brick, and cement buildings, I would remind the Committee that there is more in it than merely the upkeep. There is the question of the life of a building, on the cost of a building would keep a brick or a concrete building in good repair for the length of its life. Nominally that would be, say, sixty years; but there is no reason why it should not be 75 or 100 years. As to a wooden building, the upkeep cost would probably be 4 per cent. Every four years, depending on the climate, it would be necessary to repaint a wooden building. That would hold good at Lithgow. To paint the outside of an average wooden house, the cost would be something like £30, while the cost for painting the outside woodwork of a brick or concrete house would not be more than £7 or £8. Moreover, one could not safely estimate the life of a wooden house at more than forty to fifty years. In fact, on the basis taken in connexion with the transfer of properties from State to Commonwealth, we assign to wooden buildings a life of about forty-four years. That, I think, however, is rather an under-estimate. The life of a hardwood building might be fairly reckoned at about forty to fifty years. With respect to the height of rooms there are plenty of people, having some scientific knowledge, who would say that a 12-ft. room is preferable for living purposes to one 10 feet in height; but, for ordinary dwelling houses, from the view-point of hygiene, anything over

10 feet is superfluous. That is the scientific opinion at present.

35. To Senator Newland.—The facilities to be provided in the way of fixtures include baths, tubs, copper, cupboards, washing troughs, and sinks. We allow for gas fittings. We also propose to put in wood stoves. The reason for that is that gas for cooking purposes cannot be secured at Lithgow. Full consideration was given to that aspect. The gas works at Lithgow are taxed to the utmost capacity at present, and, I understand, that they would not be in a position to supply gas for cooking purposes. If the gas could be secured at a reasonable rate, I would certainly propose the installation of gas stoves.

(Taken at Sydney.)

FRIDAY, 21st JUNE, 1918.

Present:

Mr. GAGGON, Chairman;

Senator Henderson,

Mr. Mathews,

Senator Needham,

Mr. Sinclair,

Senator Newland,

Mr. Laird Smith.

Mr. Mahony,

Ernest Macartney de Burgh, M.I.C.E., Chief Engineer for Water and Sewerage, Department of Public Works, New South Wales, sworn and examined.

36. To the Chairman.—The New South Wales Department of Public Works has made inquiries into the sewerage and water supply of Lithgow, and has furnished information on the subject to the Commonwealth Director-General of Works. I place before the Committee plans of the original sewerage scheme for Lithgow, as submitted to the State Government, and we have added to them the information in our possession regarding the proposal that is before this Committee. The area acquired by the Commonwealth for workers' homes at Lithgow is situated about 1½ miles to the south-east of the township proper. The present water supply of Lithgow is sufficient for present needs, even during a dry season, and is of excellent quality; but it might need extension if the population were much increased beyond the present figure of about 10,000. There are two dams, of a combined capacity of

110,000,000 gallons. The average rainfall is 33 inches. Adopting our invariable system of basing a water scheme upon the catchment, and requirements during a period of extreme drought, we estimate that these reservoirs would be capable of delivering 350,000 gallons per day during a dry period, and allotting to the population of 10,000 a daily consumption of 35 gallons per head, for railway requirements, 150,000 gallons per day, and for industrial requirements, 100,000 gallons per day, that supply would be exhausted. We calculate that 30 gallons per head per day would be sufficient for an industrial population such as that of Lithgow, even if the ownership were completely severed. The consumption of water varies with different classes of people. Sydney uses 48 gallons per head per day; Melbourne, a little over 60 gallons. There are towns in America which use over 200 gallons per head per day; but my experience is that a population like that of Lithgow does not require more than 30 gallons per day. If the Small Arms Factory develops into a large concern, employing, say, a couple of thousand workmen, and bringing to Lithgow an extra 10,000 of population, the water supply would need extension; but, apart from any development of the Small Arms Factory, my Department has had in view the probable increased requirements of Lithgow. There is no practical or financial difficulty in the way of getting a larger supply. In order to serve the area acquired by the Commonwealth for workers' cottages, my Department proposes to lay an 8-in. main from the corner of Albert-street and Main-road, along Main-road up Martini-parade to Melbourn-street, and then a 6-in. pipe along Martini-parade and Haydon-street to the housing area, with 1-in. and 3-in. pipes for reticulation within the area; also a short 6-in. connexion from the junction of Martini-parade and Melbourn-street to Ordnance-avenue, in order to connect in with the general circulation of the system. For the convenience of the Committee, I have, in estimating the cost, separated the portions which are inside the Commonwealth area from those which are outside it. At the request of the Director-General of Works, I have also divided up the Commonwealth area into three sections, with separate estimates for each. Those sections are shown in different colours on the plans, and my estimates of capital cost, annual cost, and revenue, for each are set out in detail in the following table:—

PROPOSED LITHGOW WATER SUPPLY EXTENSION.  
WATER SUPPLY EXTENSION FOR COMMONWEALTH SMALL ARMS FACTORY HOUSING PROPOSAL.

Proposals.	Estimated Capital Cost.			Annual Cost with Interest at 4 per cent.				Annual Cost with Interest at 5 per cent.				Revenue at 10s. per Acre.
	New Mains outside the Area.	New Mains inside the Area.	Total.	Outside Area, Interest and Sinking Fund.	Inside Area, Interest and Sinking Fund.	Working Expenses, Administration and Maintenance.	Total.	Outside Area, Interest and Sinking Fund.	Inside Area, Interest and Sinking Fund.	Working Expenses, Administration and Maintenance.	Total.	
No. 1 Water Supply for 100 houses (portion tinted pink)	£ 2,500	£ 1,000	£ 3,500	£ 110	£ 61	£ 35	£ 205	£ 140	£ 60	£ 35	£ 235	£ 60
No. 2 Water Supply for 200 houses (portion tinted pink and blue)	2,500	2,040	4,540	110	95	45	250	140	112	45	297	100
No. 3 for whole area	2,500	3,400	5,900	110	163	65	347	140	191	65	396	225

Estimated costs are for new mains only, nothing being allowed for existing head works and mains, and no allowance is made in estimated revenue for any sales of water at, say, 6d. per 1,000 gallons. The total annual cost includes repayment of capital cost in 50 years, renewal fund, and administration and maintenance charges, and does not provide for any profit to the Lithgow Council.

The Committee will notice that in each proposal I have kept the estimates for the outside area constant, the reason being that, in serving a smaller population area,

it is assumed that a larger area will be ultimately served. The estimate of capital cost outside the area provides for a main sufficiently large to meet the requirements



under any of the three schemes. Under the Country Towns Water Supply and Sewerage Act, works are carried out by the Department of Public Works. On completion, they are gazetted over to the municipal council for maintenance. The capital debt is proclaimed, and the council is liable to the Government for interest and a sinking fund which will repay the capital cost in a specified number of years. Similarly, when extensions are applied for, if they are approved by the Minister for Works, they are carried out by the Department of Public Works, and are added to the capital debt of the council. Under that arrangement, the money required for the carrying out of works is provided by the State Government, and charged against loan fund. If pipes were laid for the purpose of serving the Commonwealth lands at Lithgow, we should require to make a separate arrangement with the Federal Government. If private persons subdivide an estate which is within a municipal area, it is competent for the municipal authorities to approach the Department of Public Works and ask for extensions to the subdivision to be carried out. If it can be shown that the undertaking is financially sound, the Department may undertake the work. That practice applies to any extension whatsoever. Rarely does the Department make a special agreement in regard to a proposal that is not likely to be a financial success in its early stages. We might take an individual or joint guarantee from the owners to make up any deficiency in rates if we were satisfied with the security they offered. But nearly always we prefer to make sure that the community to be served will be in a position to make the system pay under the ordinary rating. The Department wants to show an immediate return on all these works, the interest and sinking fund must be paid. In considering the provision of a water supply for a town, we assure ourselves that the revenue to be received immediately will at least meet the interest and sinking fund on the outlay, and each extension of the scheme is treated on its own merits. In regard to the position of the housing area at Lithgow, we have to consider whether the municipality has any power to do so to Commonwealth property. Assuming that this area did not belong to the Commonwealth, but was a

private subdivision, and assuming the matter to be brought before the Department in the ordinary way of business, we should not be prepared to carry out the work, because, on the basis of 100 houses, and a minimum rate of 10s. per allotment—which the Lithgow Council is at present charging—there would be a serious deficiency in revenue. The revenue that would be assured would be only £50 per annum, whereas, charging interest at 5 per cent., and allowing fifty years for repayment, we should require an income of £235 per annum. I should say that 5 per cent. would be the proper rate of interest to charge. Certain amendments of the Act have been proposed; but, in any case, although the Act at present stipulates 4 per cent., it would be competent for the Minister of Works to refuse to proceed with a scheme unless he received a higher rate of interest. If we saw a possibility of revenue from the private properties that will be served by the extension of the pipes to the Commonwealth area, we should regard it as a credit to the scheme; but, at present, such revenue appears to be prospective and not immediate. I cannot say to what extent the new private subdivisions are likely to be settled. I have not been to Lithgow recently, but the reports I have received show an increase in population over the whole town. In regard to the sewerage scheme, I should like to preface my evidence with an explanation. In writing to the Director-General of Works, we included the annual charges upon the treatment works; but, through a misunderstanding, we did not include the first cost of the extension of the treatment works. The present treatment works at Lithgow are over-charged. They are carrying a greater burden than they were designed for, and, apart from the proposal that is before the Committee, it will be necessary to increase the size of the treatment works when the council is able to finance the scheme, and funds are available for it. In preparing estimates for the sewerage of the Commonwealth area, we have now included an extension of such portion of the treatment works as would be directly chargeable to this area, and that makes a difference in the capital cost laid before the Committee by Colonel Owen. The amended estimates, in detail, are—

## LITHGOW SEWERAGE.

## COMMONWEALTH SMALL ARMS FACTORY HOUSING PROPOSAL.

Proposals.	Estimated Capital Cost.				Estimated Annual Cost with Interest at 4 per cent.				Estimated Annual Cost with Interest at 5 per cent.				Estimated Revenue at 25s. per Allotment.
	Treatment Works.	Main Sewer.	Retention.	Total.	Treatment Works and Main Sewer (Interest and Sinking Fund).	Retention (Interest and Sinking Fund).	Working Expenses, Administration and Maintenance.	Total.	Treatment Works and Main Sewer (Interest and Sinking Fund).	Retention (Interest and Sinking Fund).	Working Expenses, Administration and Maintenance.	Total.	
No. 1. Sewerage for 100 houses (portion limited pink and blue).	750	2,100	2,000	4,750	133	133	140	408	155	153	140	455	130
No. 2. Sewerage for 200 houses (portion limited pink and blue).	1,500	2,100	4,000	8,500	188	228	160	556	107	270	160	633	250
No. 3 for whole area.	3,000	2,100	10,000	15,500	221	474	185	899	260	470	185	1,035	585

Estimated annual cost includes repayment of capital cost in 50 years, renewal fund, pumping costs, administration and maintenance charges, and does not provide for any profit to the Lithgow Council.

Present Lithgow rate is 2s. in the £1 on the U.C.V., with minimum charge of 26s. per annum. This is equivalent to 8d. in the £1 on A.A.V., and maximum rate allowable under the C.T.W.S. and S. Act is 2s. in the £1 on A.A.V.

It is an error to value the water supply at 10s. in the £1 of the year 1905, and for sewerage those of 1914.

Summarized, the works within the Commonwealth area would cost for water, £1,000; and for sewerage, £1,000, including the main sewer and treatment works, £2,000 for 100 houses. The reticulation

does not include the house connexions, but we have planned the lay-out of the sewers in such a way as to reduce the cost of the house connexions to a minimum. The working expenses

in connexion with sewerage includes pumping, upkeep of treatment works, and administration. I do not consider that the annual charges of £730, namely, £155 for sewerage and £575 for water supply, are prohibitive, but, of course, the first 100 houses are handicapped by having to bear the burden of certain capital cost that would serve either of the larger schemes. Lithgow has the cheapest water supply that I know of in this State; the charge for water is very low, and the people are able to pay for their sewerage with a rate far below what the Act allows the council to charge. In fact, if the water and sewerage schemes were amalgamated, they would represent the cheapest proposition in the State. But the Commonwealth area is situated at a considerable distance from the existing system, and, at present, is isolated to a certain extent. A main sewer must be built to the site at a cost of £2,100, and a water main must be laid at a cost of £2,500. A charge of 3s. per week for water and sewerage is not unreasonable. The minimum rate in Lithgow for sewerage is 26s. per annum. The municipality has struck a water rate of 1d. in the £1 on the unimproved value, with a minimum of 10s. per allotment.

37. To Senator Newland.—The present catchment cannot be extended. The reservoir has been extended; the principal one was built recently. The two together have a holding capacity sufficient for the catchment area they are situated upon. If a greater quantity of water is required, we shall have to go to another catchment. Assuming a daily consumption of 30 gallons per head, and basing our calculation on the worst rainfall on record during the last 35 years, the extension of the town as proposed would bring the present water supply very close to its limit. The adoption of another catchment area might result in a water rate being raised for the time being, but with the extension of the town the rate would probably re-adjust itself. The length of the proposed new pipe line is 105½ chains, and we propose to use cast-iron pipes. If wooden pipes were to be employed, the financial side of the scheme would require re-estimating. There is a wooden pipe line at Tamworth, and another on the South Coast, but in no scheme in connexion with which repayment is extended over 50 years would we use wooden pipes. The Broken Hill supply is a Government undertaking controlled by the Department, and we expect it to pay 5 per cent. interest and return the capital cost in ten years. Wooden pipes are very useful, but the experience of them is not yet very extended. Their cost has increased a great deal. They are bound with wire, which is very scarce at the present time, and that fact adds to the cost. In advancing money we would assume only a limited life for the wooden pipes as against the known life of a cast-iron pipe, and if you are concerned only with the annual charges which the consumers would have to pay, you would probably prefer the latter. On the other hand, if you are concerned only with the first outlay, you would probably use the cheaper article and replace it when it was worn out. The Lithgow water rate is 1d. in the £1 on the unimproved value, with a minimum of 10s. per allotment. Under the Act the council has a right to rate up to 2.69d. in the £1, so that the present rate is less than a quarter of the maximum. When the council sells water, the charge is at the rate of about 2d. per 1,000 gallons. In return for the rates, the council supplies all water required for domestic purposes. In Sydney, if a man has only a small garden and does not use a hose or sprinkler, he is allowed to water it, but if he has a large garden and uses a hose a meter is put in, and he is charged at not per 1,000 gallons. At present, the septic tanks are overloaded, and to overcome the trouble that results therefrom we must enlarge the tanks as soon as funds can be made available for the purpose. There are only two troubles in connexion with the Lithgow system—one is the over-

loading of the tanks, which results in imperfect purification, and the other is that the lower levels of the town are situated along a creek bed, and a great deal of water gets into the sewerage mains, which increases the volume of pumping. Before the proposed Government settlement can be linked up with the sewerage system, the treatment works must be extended. The Commonwealth share of that cost is included in the estimates I have given to the Committee. We consider capital expenditure of about £8 per head a fair thing in connexion with a sewerage scheme.

38. To Mr. Sinclair.—The water requires no special treatment. The catchment is in mountainous and uninhabited country. The first 100 houses in the Government scheme would be loaded with the cost of the main sewer in addition to the reticulation of the area itself. The present Act fixes a maximum sewerage rate of 2s. in the £1 on the assessed annual value, but an amendment is proposed which will levy the rate on the unimproved value without any limit.

39. To Senator Needham.—I do not know of any place where the Commonwealth is paying rates to a municipality. The Under-Secretary for Works has pointed out to the Commonwealth Director-General of Works that the legal position of the Commonwealth, the municipality, and the New South Wales Department of Works in regard to this matter will need to be inquired into. I do not think there is any present need to increase the water supply. Even if 200 or 300 houses were built by the Commonwealth, I think the supply would still be equal to requirements. We may come to a pinch in a dry season, but that is unlikely. We do not expend a lot of capital in the extension of water supplies unless it is absolutely necessary to do so. But we have satisfied ourselves that there are other sources of supply which can be tapped when the necessities arise. If we saw that the population was increasing very extensively, we should have to enlarge the water scheme, and the rate at present charged for water is so low as to allow of an increase which would insure that the new scheme would pay.

40. To Mr. Laird Smith.—If we had to go to the other catchment which we have in view the expenditure involved would double the rate on the present rated area. But even then the rate would only be half of the maximum prescribed in the Act. If a man owns an unimproved block within a certain measured distance of both the sewerage and water pipes he must pay a minimum rate of 10s. for water and 26s. for sewerage, irrespective of whether he uses either. The earthenware sewerage pipes are made at Lithgow. The cast-iron water pipes are made in Sydney; and the rates quoted in my estimates are those stipulated in a contract which the Government has entered into with Hoskins and Co. As to the possibility of effecting economies by carrying out the sewerage and water supply road making, and other works in the Commonwealth area by one authority instead of two, I think that if Colonel Owen were handling the scheme for the Commonwealth, and I were acting for the Government of New South Wales, we should make arrangements at once so as to insure the work being done in the cheapest and most effective way. I should only wish to be satisfied that the sewerage and water supply works were being carried out according to the requirements of the State authorities.

41. To Mr. Matthews.—The area resumed by the Commonwealth is partly within and partly without the municipal area of Lithgow. If this proposition would pay right from the jump as a municipal undertaking, we might assume that the work would be undertaken by somebody, and a rate struck. And that rate would pay all costs if the capital expenditure was not too high. If the rate was not enough to pay off the capital expend-

dituro as well as the interest, the Department would not carry out the work. It is quite clear, from the figures I have quoted, that, until the land along the main sewer is all built upon, the sewerage scheme is not likely to be a paying proposition. There will be a deficit, and if the scheme came before the Government as an ordinary business proposition, we would have nothing to do with it. Some authority would have to guarantee the deficit. There is the further difficulty that the area acquired by the Commonwealth may not be rateable. The Committee has a proposition to build workmen's cottages for a particular purpose, and whatever expense is incurred must become a charge against the undertaking. Suppose the Commonwealth lays water pipes inside its own area, and places a meter at the boundary, and then says to the Lithgow Council, "You cannot rate us, but for how much per 1,000 gallons will you sell us water through that meter?" The council may offer to sell the water at 3d. per 1,000 gallons. That would be a good bargain. The capital cost of the pipes inside the area would be added to the cost of your buildings, and no question of rating need arise. The cost of water could be added to the rent, or the water could be charged for by quantity, or the Commonwealth could strike a rate within their own area. Inside the pink area, you have to spend £1,000 on pipes, and then you must make the house connections, and you have to pay interest on that money. You would have to have many persons consuming water at a rate of 30 gallons per head per day, for which you would be liable to the council at 3d. per 1,000 gallons. That would be perfectly easy if the Lithgow water mains came to the boundary of the Commonwealth area; but, unfortunately, they do not, and somebody has to lay 10½ chains of water main, at a cost of £2,500, and must get interest on the outlay. It is certain that the Lithgow Council cannot find the capital, and could not get the interest on the outlay if it did undertake the work. It would not pay the Government to do the job. A population of 400, consuming 30 gallons per head per day, at 3d. per 1,000 gallons, would give a revenue of only £55, and that would not pay interest on the £2,500 expended on the main. In addition to that, the council would require some interest on the capital cost of its water scheme. The estimate of the sewerage includes all the working expenses in connexion with siphon tanks and the pumping; in fact, all the expenses which the council have to pay. If the Commonwealth provided the capital, and the council had not to pay any interest on it, I should say that the council would not charge the Commonwealth any rate. I do not think that the municipal council would object to the Commonwealth supplying its own area, and adding the cost on to the rents paid by the tenants. But there might be a jealousy between those workmen and others. On the other hand, if the conditions within the Commonwealth area were better than those outside, it would be easier for the Commonwealth to get a good class of tenant. The Commonwealth would require to make an arrangement with the council that, as water was sold to other people along the proposed water main, the Commonwealth should get a rebate. The same argument applies to the sewerage mains. Wooden pipes are still, to some extent, at the experimental stage. We have reports from American cities regarding small lengths of wooden pipes having been in use for fifteen years and more, but my own experience of them does not cover more than seven or eight years. The main sewer to the Commonwealth area would be underground along its whole extent. The present sewer main is below the level of Farmers' Creek, and delivers into a low pumping well, whence the sewage is lifted into the treatment tanks. I do not think that the municipality could be compelled to render services to

the Commonwealth without receiving payment. If there were a Commonwealth undertaking in a town, the water supply of which was in the State Government's hands, and the Commonwealth would not pay for the water, we should simply cut off the supply.

42. *To Senator Newland.*—We do not use concrete pipes for water supply at the present time; but lately we have been considering the use of centrifugally-made pipes, with which the South Australian Government have been experimenting. We have been making experiments as to the pressure they will stand, and the cost of making them in factories in New South Wales. No such pipes have been laid in this State yet. Reinforced concrete pipes have been used extensively for sewerage purposes. There is a good factory in Lithgow for the production of glazed earthenware pipes, but the usual practice at present is to use concrete pipes made in the Government factory in Sydney, or a branch of the factory erected for the purpose. The smaller pipes are not reinforced. I do not think that it would pay to use concrete pipes at Lithgow, where the earthenware pipes are procurable, but we would use whichever pipe was the cheaper and the better.

43. *To Mr. Mathews.*—In places, we have carried sewerage over tressels. If the platform is at all shaky, we use cast iron pipes. But where there is a specially built aqueduct, we use concrete pipes. In a swamp, we would use either concrete or cast-iron pipes, which ever was the more economical.

44. *To Mr. Sinclair.*—From what I know of the Lithgow housing scheme, I cannot recommend the State Government to carry out the water supply and sewerage of the Commonwealth area in the ordinary way of business. It is not within the province of my Department to find funds to assist the Commonwealth in a manufacturing undertaking.

45. *To the Chairman.*—The Lithgow septic-tank system is both aerobic and anaerobic.

(Taken at Lithgow.)

TUESDAY, 25th JUNE, 1918.

Present:

Mr. GRANGE, Chairman;  
Senator Henderson, Mr. Mahony,  
Senator Needham, Mr. Mathews,  
Senator Newland, Mr. Sinclair,  
Mr. Laird Smith.

Frederick Russell Ratcliffe, Manager, Lithgow Small Arms Factory, sworn and examined.

46. *To the Chairman.*—I have been at the factory since its inception. I was the engineer on construction, then assistant manager, and am now manager. Prior to coming to Australia I was connected with a firm which was building machinery for making small arms and laying out small arms factory plants. I was not a member of the Commonwealth Arsenal Committee, but during the last two years I have been consulted by that body, and have done a good deal of work for it. At the instance of the Minister for Defence I was sent to England and America, and visited a great many munition plants of all descriptions to gather data and information for the Commonwealth Government. In that mission I was assisted by the British Ministry for Munitions and the Government of the United States of America. During the eleven months I was on tour I had an opportunity of making acquaintances with the latest devices and requirements in connexion with munitions. The Arsenal

Committee has recommended the establishment of an arsenal near Canberrra, and it is expected that rifles, amongst other munitions, will be manufactured there. In fact, I have been engaged in preparing plans for the rifle factory at the arsenal. To meet the future requirements of the Commonwealth in rifles, it is necessary to have a factory, perhaps, two and a half to three times as large as this one, and the Government have decided that, instead of extending this factory, it would be preferable to build another at Tuggeranong. Although rifles may not be manufactured there immediately, that ultimately will become the main manufacturing establishment. I agree with Colonel Owen that the factory at Tuggeranong will become the parent factory and the Lithgow factory will be utilized to make certain parts. I think it would be very advantageous to do all the work in one place. But a large number of components is required by the Defence Department, and the manufacture of them would keep this factory going for a good many years. If Lithgow ceases to manufacture rifles when the arsenal is in operation, it can be used for the manufacture of component parts for a great variety of munitions; and, in view of the time which must elapse before the Commonwealth can establish a factory to meet the entire munition requirements of Australia, I foresee that this factory will be of great service to the Commonwealth for many years. In fact, I think the Government will be able to profitably utilize this factory indefinitely for the manufacture of munitions. Such a variety of parts will have to be made at the arsenal that all the manufacturing facilities of the country will be required to meet future requirements, and I feel certain that the Lithgow factory will be a valuable asset to the Commonwealth for a good many years. I think it would be quite possible to have a factory at Lithgow large enough to supply the Commonwealth rifle requirements, but that would necessitate large extensions of plant, buildings, and power, entailing a considerable expenditure. The capital cost of the factory to date has been:

	£	s.	d.
Land .. .. .	2,912	0	0
Buildings .. ..	82,308	10	0
Power, heat, and light plant (one-third) .. ..	6,647	0	1
Total .. .. .	91,867	17	4
Machinery and plant .. ..	127,005	19	0
Power house and light plant .. ..	19,941	18	4

I do not think it would pay the Commonwealth to remove more than 25 per cent. of the Lithgow plant to Tuggeranong. I should say that the number of men employed at this factory would never be less than 1,000, in war time, at any rate, even after the arsenal is established and in full operation. At present, the factory employs about 1,100 hands. I have no doubt of the necessity for more housing accommodation, but, on account of the fear that the factory may be removed, private enterprise has been unwilling to expend capital in providing accommodation for the workmen. Undoubtedly, improved housing will be to the advantage of the factory by enabling us to retain men who will regard factory work as steady employment, and will stay here long enough to become thoroughly efficient. Practically all the employees live within a 10-mile radius of the factory. It is unfortunately a fact that some of them have to go 10 miles to get accommodation, and many men have left the district on account of the lack of proper accommodation. Shortly after we started the second shift there was a proposal to run special trains to Mount Victoria, but when the workmen figured out the early hour of departure and the late hour of return to their homes, they opposed the idea. I believe that the building

operations would have been much more vigorous but for the uncertainty that existed in regard to the future of the factory. During my recent trip abroad I investigated the manner of dealing with the housing problem at Gretna Green, Port Sunlight, and Bournville. Although those are separate settlements, they are not very distant from large centres of population, probably not more than 20 miles in the case of Sunlight City, and the majority of the workers travel to and from those large centres daily. For instance, at Gretna Green more than half of the workers travelled to and from Carlisle, and a number of those at Bournville travel to and from Birmingham. From the experience I have gained on my travels, I strongly recommend the establishment of workmen's homes at Lithgow, particularly for the sake of the improved working of the factory. Perhaps about 7 per cent. of the employees own their own homes. At present, the factory has barely sufficient electric power for its own requirements, but I do not think there would be any difficulty in the way of installing a plant capable of supplying the factory and lighting the Commonwealth settlement, but I should be opposed to saddling the factory with the responsibility of lighting the settlement. Of course, it would be necessary to instal additional power plant. We have not been able to get sufficient gas from the council to meet the requirements of the factory. On several occasions we have approached the council, and have been informed that the council would increase the gas plant if it were assured that the factory would remain at Lithgow. But it did not feel inclined to incur any expense while uncertainty as to the future of the factory continued. I see no reason why the Lithgow Council should not instal a gas plant large enough to meet all requirements. I admit that at the present time there is a difficulty in getting plant of this kind. I am sure that the council would be able to do that. If the Government had a factory on the arsenal site large enough to supply all requirements, I would sooner make all the rifles there and utilize the Lithgow factory for the manufacture of other munitions. I have been in nearly all the large works in Britain and America, and I found that, as a general rule, they do not carry out manufacture in its entirety in the one establishment to the same extent as we do in Australia. I found that a number of the fuse, shell, and machine-gun factories draw on a large number of subsidiary factories for their parts. For instance, I found a large fuse factory making only half-a-dozen components out of, perhaps, 30. All the small parts are farmed out to any little factory or machine shop that can make them. It was an extremely rare thing to be able to go into any British factory and trace the entire course of manufacture of an article. One might find the greater portion of a machine gun made in one factory, and the tripod made somewhere else. The same practice was noticeable in connexion with the large gun factories. The breech mechanism is made in one place, and the barrel at another. It would be extremely difficult under present conditions to obtain the necessary plant to increase the electric power at the factory. We have been trying to get water-tube boilers for some time, and have experienced great difficulty. Steam engines and generators are very hard to get. Occasionally one can purchase a plant that has fallen into disuse elsewhere in Australia. There were on sale some electrical generating sets that had formerly been employed in connexion with some of the Western Australian mines.

48. *To Senator Needham.*—I should think it would be comparatively easy to obtain plates with which to build a gasometer. I have been informed that



it is easy to get plates for riveting up cylindrical boilers, but it is very difficult to get tubes. At present there are employed in the factory 170 returned soldiers. Some of the soldiers are very good workmen, but a large number are broken in health, and are apt to be nervous. Some of them require a good deal of leave of absence on account of sickness. Many who were offered positions in the factory stayed here for a day or two and then departed. In fact, soldiering seems to unfit many men for a steady routine job. Generally speaking, a great deal more consideration is shown to the returned soldier if he is a little out of sorts than is extended to any other workers. From the factory employees, I have received 110 applications for houses, as follows:—For 3 rooms and kitchen, 58; 4 rooms and kitchen, 35; 5 rooms and kitchen, 12; size not stated, 7. In addition to those, six applied for financial assistance to build houses on pieces of land which they owned. I recommended to the Arsenal Committee that the Lithgow factory should be utilized for the manufacture of certain parts. I do not think that there is any good reason for discontinuing the use of this factory. From a defence point of view, the manufacture could be carried on as well here as at Canberra, provided that the necessary plant and machines were here. But the requirements of the Government are likely to be so large that it will be necessary in time of war for every factory in the country

Stations.	Miles from Sydney.	Coal.	Per ton Timber.	Steel, iron, &c.
Sydney to Lithgow ...	97	7s. 7d. 10s. per truck purchased locally.	9s. 6d.	13s. 11d., 22s. 2d., 30s. 11d., 42s. 8d., 52s. 10d.
Queanbeyan ...	108	12s. 3d.	15s. 4d.	24s., 30s. 8d., 50s., 75s. 2d., 93s. 1d.
Tuggeranong ...	235	12s. 6d.	15s. 8d.	24s. 10d., 41s. 1d., 57s. 10d., 78s. 6d., 96s.

49. To Mr. Laird Smith.—As a factory or arsenal grows larger, it really becomes a collection of factories each manufacturing certain components, and that development involves the employment of a number of sub-managers under a general manager. It has been said that 1,000 men is about as many as one manager and an assistant can look after. Of course, in larger places general managers are appointed above the other managers. The establishment at Lithgow could be utilized as a special factory for tool-making. At the arsenal there would require to be tool repair shops, and also a tool shop for making new tools. Either tools or machines could be made at this factory. Owing to the difficulty of getting machines, we are already making in this factory about 60 rifle-making machines of a type formerly imported. It is proposed to utilize the tool-making facilities of this factory for the next few years in making tools for other manufacturing factories that would be carried out at the arsenal. In the Woolwich Small Arms Factory, about 70,000 hands are employed. No special provision is made for their housing, because the factory is in the midst of a big centre of population. I know that the workers at Bourneville prefer the model settlement to Birmingham, on account of its superior accommodation. It was supplied with statistics which show that children had better physical measurements and development than children of the same age reared under less favorable conditions. The managers assured me that the men who lived in the model settlement worked much better, and were happier and more contented. Moreover, the drink trouble was practically unknown in Bourneville. Both at Port Sunlight and Bourneville, I was told that if the town project were viewed solely from a landlord's point of view, it was not a paying proposition, but taking a broad view of its effect in im-

proving the efficiency of the factory, it was a very profitable undertaking. The indirect benefits derived by the management justified the expenditure they had incurred in improving the accommodation for the workers. At Bourneville, the superior physical and mental development of the children was greatly stressed. On the day I visited Port Sunlight the manager was arranging a picnic for the employees; occasional holidays in the country are arranged for them. These conditions undoubtedly make the work men more contented. The electrical plant at the factory is kept running continuously while it is necessary to light the premises for the military guard. Probably nine-tenths of the employees are married men.

50. To Mr. Mathews.—In stating that the Commonwealth will require a factory of two and a half times the capacity of the Lithgow establishment, I meant that we should so design our factory as to be able to get a rapid extension of it in war time. The larger the output of a factory the more efficient it becomes. In other words, you can manufacture to much greater advantage in one large factory than you can in two small factories, unless, of course, the work of the two factories is split, portions being done in one factory and the remainder in the other. I think the requirements of Australia could be more advantageously attended to in one factory than in two or three small factories. I know that the production would be a great deal cheaper in a large factory than in two factories of medium size. In the United States of America there are several establishments for the production of rifles. I would not advocate the establishment of two self-contained factories in this country. If I had two factories I would make experts in one factory and other parts in the second factory. Even after the establishment of the arsenal at

Tuggeranong, the plant at Lithgow could be kept fully occupied in the production of certain parts.

51. To the Chairman.—Most of the machines in the factory are semi-automatic, and it is desirable to have available a supply of unskilled labour. The most important factor in manufacture is a good supply of labour of all kinds. Clover lads would be the ideal workers for the bulk of the operations in this factory. We have not attempted to hinder the manufacture of machine guns, although we have made some machine gun barrels. The manufacture of machine guns would require additional machinery. At present we cannot make machine guns without interfering with the production of rifles. It would be necessary, also, to make a tremendous quantity of tools and special appliances. When I was at Port Sunlight I was shown over the village by Mr. Austin, of the architectural department of Lever Brothers, and I wrote a special report of my visit, which I will furnish to the Committee. During the year ended 30th June, 1916, we engaged 1,771 men in order to maintain an average employment of 1,040. In other words, 700 employees left the factory during the year after working there for a brief time. I believe that if we had some such scheme as that at Port Sunlight, the workmen would be induced to remain with us for a longer time. We do not pay the railway fares of men coming to or going from the factory. Many firms capitalize the amount of money which they reckon it costs them to engage a man, train him for a week or two, and then lose him. They estimate the loss at from £10 to £20 per man. When a new man is taken on, another has to be set to work alongside him for a while. Thus the one job is loaded with the wages of two men. According to these estimates, the departure of 700 men from the factory in the course of a year will represent a capitalized loss to the factory of about £14,000. I think a general manager could effectively supervise the arsenal at Canberra and the factory at Lithgow. There are general managers who control factories much further apart than Lithgow and Canberra.

Robert Pillans, mayor of the municipality of Lithgow, sworn and examined.

52. To the Chairman.—The population of Lithgow is between 15,000 and 16,000. In regard to housing accommodation, there has been great congestion during recent years. On several occasions the local sanitary inspector, who is an officer subsidized by the State Government, as well as paid by the council, has pointed out that as many as three families are living in the one house. On account of the congestion of population, we have had on more than one occasion outbreaks of disease which otherwise would not have occurred. There have been several reasons why the accommodation required by the people has not been provided. One factor has been the increased cost of material and another has been the uncertainty as to the future of the Small Arms Factory. We have never been certain whether the factory would remain at Lithgow or be shifted elsewhere, and, naturally, men who had money to invest hesitated before putting capital into a proposition which might not be profitable in the event of the industrial life of the community being interfered with by the removal of the factory. But even had there been assurance as to the permanency of the factory, it is doubtful whether houses would have been erected in sufficient number to meet the requirements. The Coorwull Estate has been cut up into building blocks and submitted to auction. The blocks vary in size. The first proposition from the vendor was for blocks with 50-ft. frontage and no lanes. The council thought that a 50-ft. frontage without lanes was a better proposition than a 25-ft. frontage with lanes at the back. An appeal was made to Mr.

Justice Scholes in regard to the drainage work to be done on the estate, and subsequently the vendor altered his plan of subdivision by cutting a large number of the blocks in half, with the result that some of them have frontages of only 25 feet. The council was inclined to oppose that proposal, but we found that under State law we had no right to interfere. The local government we have is such only in name. When we try to force a vendor to provide a reasonable subdivision, we are so hedged about by regulations that we cannot insist upon even a 33-ft. frontage. Only portion of the area resumed by the Commonwealth comes within the municipal boundary. It is as good a site for building as any that has been cut up in recent years. The rising ground on which the Commonwealth proposes to erect the first buildings contains better sites than those on the flats of the two latest subdivisions in Lithgow. From a brief glance at Mr. Murrell's lay-out, I judge that ample provision has been made for drainage, that is the main consideration. But until I have looked into the matter more closely I will not commit myself to say that the proposed drainage will be satisfactory. In my opinion, a man with a wife and two children should have a house with not less than four rooms and the necessary conveniences. At the present time workmen are paying from 10s. to 25s. per week in rent, but the 10s. houses are old ones that were erected thirty or forty years ago. I do not think that any workman should be asked to pay more than one-sixth of his weekly earnings in rent. I admit that with the present cost of building you probably could not afford to provide a man with more than two rooms and a kitchen for 10s. a week. The existing water supply should be ample even if the population of Lithgow increased by a few thousand, and in order to provide for future requirements, the State Government has spent a large sum of money on the Murrumbidgee River, where there is an almost inexhaustible supply. There is not the slightest doubt about the council being able to supply the people with water. The gas supply is limited only by the fact that we cannot get further gasometers and pipes at a reasonable price. At present the gas supply is at its limit. The Small Arms Factory was responsible for a sudden increase in the consumption at a time when we could not get additional gasometers and pipes. Recently the council bought a block of land at a cost of £1,200, to provide for future extensions of the gasworks, and the coal is obtainable practically on the ground. An additional 100 houses would not make a very great difference to the gas scheme. Probably we should be able to meet the additional demand by installing another bed of retorts and keeping the holders at full pressure. At present, after the big demand on Friday night, we allow the holders to go down, and on Sunday and Monday they are filled again. In order to extend the gas mains to the Commonwealth area, the council would require to borrow money. We have done a lot of extensions from revenue in the past, and we are doing some now, but our capacity in that way is limited. We should have to borrow money from some recognised financial institution, there should be no difficulty in that if the money were available. Not many cokers are used in Lithgow, because of the cheapness of coal. I think the Committee may rest assured that the council will guarantee the lighting of the Commonwealth settlement. In regard to sewerage, the septic tanks are now at their limit, and if 100 additional houses were built, an extension of the plant would be necessary, in fact, the Works Department is drafting plans for the extension of the septic tanks at the present time. So far as the water supply is concerned, before we can pledge ourselves to extend our main to the Commonwealth estate, we should have to be certain as to the position we occupy in regard to the rating of the Commonwealth

property. We cannot tax Government property; therefore, it would be necessary to make some arrangement whereby people using the water, sewerage, and the street lighting would pay for them in the same proportion as private owners. Before the whole of the Commonwealth property can be brought within the municipal area, it will be necessary to take a poll of the ratepayers of Lithgow and then obtain the consent of the ratepayers of the shire. On a previous occasion the shire council offered no objection to our taking over a big reserve, but in that case there was no chance of collecting any rates from it. I do not know what attitude the shire would adopt in regard to a subdivision, portion of which was within the shire boundaries. I do not think there would be any objection on the part of the Lithgow Council to taking over the whole of the subdivision provided the conditions were the same as in the case of a private estate. We should not care about having a big subdivision thrown upon our hands without our being able to get any revenue from it. The council spent £300 in making the reserve a factory, but because the factory was Government property we could not get a penny of revenue from it. At the time that expenditure was incurred, there were only about two houses on the subdivision through which the road passed. It is not correct to say that at the deputation to Mr. Watt an assurance was given that the Lithgow municipal authority would provide ordinary municipal services, such as water supply, sewerage, and gas, for the Commonwealth area. I said that the Commonwealth would be treated in the same way as any other vendor of a subdivision is—that, as far as water and gas were concerned, they could be attended to by the council. The council would have to go upon the market for a loan, lay the pipes, and supply the Commonwealth subdivision with water as long as the present supply is sufficient. When that supply becomes inadequate, we shall have to go upon the market again. But in a normal season we could supply a much larger population than the Commonwealth at present proposes to find accommodation for. Speaking for myself, and subject to the approval of the council, I do not think there would be much doubt about the council carrying out the extension of the sewerage and water mains at costs of £5,750 and £3,650 respectively, provided that we can raise the money. If the Committee will supply me with Mr. de Burgh's report, I will bring the matter before the council at its first meeting, and let the Committee have, at the earliest opportunity, a definite statement as to what the council is prepared to do in regard to water supply and sewerage. We could not ask the Government to find money for extending the septic tanks and sewerage mains, which will serve Coorwarrill Estate as well as the Commonwealth area.

63. To Mr. Sinclair.—The site acquired by the Commonwealth is better for building purposes than much of the private estate recently subdivided. There is not so much flat country in the Government area; but I do not think that even the flat portions are as damp as portions of the Coorwarrill Estate. The latter was practically a bog before the drain was cut. The portion of the private estate along the ridge is higher than parts of the town, but the estate also contains a big flat, across which a creek used to run. That flat is not as good for building purposes as the area that the Commonwealth has acquired, but it is good enough when it is drained. Regulation 70A under the Local Government Act defines the powers of municipalities in regard to buildings. There are no stringent conditions as to the foundations for a one-story building. All that is required is the usual brick or concrete foundation with the necessary damp courses and air spaces. The only failure in connexion with the septic tank has been due to the manner in which the sewerage pipes were made

in the first instance. The system was installed by the Works Department, but, unfortunately, the man in charge was not qualified or experienced, and the job was bungled. At present, we do not get a perfect decomposition of the sewage because the tanks are too small, and they are not given enough rest to allow the bacteria to work. In consequence, we have sometimes to remove the scum from the top of the tank. We do not allow the tanks to become a nuisance, and they never give off any offensive smell. The sewage reaches the tanks by gravitation, but the effluent is pumped from the tanks on to the filter beds. The sewage from the Commonwealth area also would reach the tanks by gravitation. If at any time the tanks become congested, we should have to put men into them to clear them out. The tanks are not big enough to serve the whole of the town. About 3,000 dry pans are shifted every week for a charge of 7½d. per week. I do not recommend the dry-pan system for permanent use, but it may be necessary to use it temporarily on the Commonwealth area. I am certain that the extra advantages of the sewerage system fully compensate for the extra cost. Those persons who are within a sewered area and do not connect their houses with the system are obliged to pay a sewerage rate as well as the pan rate. The minimum width of a street is 60 feet, and of a right-of-way, 20 feet. The aim of the council is to have the frontages of future subdivisions large enough to frontage the provision of back lanes. If any private individual submitted a subdivision, we should insist on a minimum width of 60 feet for a street. Unfortunately, the vendors can make the allotments of any size they choose, but we discourage them from providing back lanes.

64. To Senator Needham.—The council has not asked the State Government for any assistance in procuring sheet iron to increase the gasometers. The holders are built to a size, and we have been in the habit of importing plates and putting them together on the ground. The gasometer last purchased by the council has a capacity of 100,000 cubic feet, and we made a contract with a firm to supply and erect it. It is questionable whether we could build a holder even if we had the sheet iron. Plates for these holders are standardized and curved so that they fit exactly into position. The council was hopeful of being able to purchase a second-hand gasometer from some town that was acquiring a larger holder. If the Coorwarrill property were being disposed of at a satisfactory rate, it might be worth while for the council to apply to the Commonwealth Government for assistance in getting the material for increasing our gas-holding capacity. But that estate is hanging fire. The Commonwealth's 100 houses will not make much difference to the demand upon the gas supply, and we can cope with them. In regard to water supply, in a normal season we could supply another 3,000 or 4,000 people. There will be no difficulty in supplying the 400 or 500 persons who may reside in the Government's cottages.

65. To Mr. Laird Smith.—The council has not given consideration to any scheme whereby the Commonwealth should sewer its own area, and carry the main to our boundary, and then ask the council to supply water at a bulk price through a meter, and accept compensation for the sewerage from the Government area being allowed to run into the septic tanks. When the State Government approach us in a reasonable spirit we always try to meet them. The Railway Department pays to the council at a lump sum of £60 per month for water; we reckon that as a payment of about 3d. per 1,000 gallons. I would ask the council to consider the possibility of some such arrangement as you have suggested. It may be possible to make an arrangement whereby the Commonwealth can control its own affairs

within its own boundary and pay the council for services or utilities rendered outside the boundary. Of course, we could not surrender any control of the sanitary arrangements within the municipal area. The Commonwealth settlement, to the extent that it is within the municipal boundary, would have to be controlled by our sanitary inspector, who is also a servant of the State. If the municipality does not take over the Commonwealth area it will be necessary for the Commonwealth to approach the shire council for consent to certain things. Before the municipality can incorporate the area resumed by the Commonwealth, the content of the shire ratepayers must be obtained. There would be no likelihood of trouble between the council and the shire, because the council would not extend its services beyond its boundary until a definite arrangement had been made. But I think it would be a pretty strong council or shire which would attempt to interfere with the Commonwealth Government in making provision for the housing of its workmen. The newly-built area near the factory is not sewered. One man in that area has a small septic tank, and we have no power to prevent such an installation so long as no offensive effluent is run into the streets. The effluent from the municipal tanks is run into the adjoining reserve of 40 acres, and thence finds its way into Farmer's Creek.

66. To Mr. Mathews.—There has been very little opposition to the Commonwealth undertaking a housing scheme. On the contrary, most people have been crying out for the work to be done. Very few landlords have growled, because they recognize that the construction of more houses is a public necessity. There is certainly no opposition to the scheme on the part of the council, and I believe that if the Commonwealth will meet the council in a fair spirit, everything will be all right. We should make no attempt to drive a hard bargain with the Government. On the contrary, we will probably treat the Commonwealth more leniently than we would treat a private individual.

67. To Senator Newland.—Some time ago when the congestion became more acute, on account of a large number of extra men having been brought into the town, the sanitary inspector was very busy. There were a few more cases of typhoid and diphtheria, most of which, in our opinion, were caused by overcrowding. Many of the men working at the Small Arms Factory, and elsewhere, had their homes in Sydney, to which they used to return at the week-end. The inspector was of the opinion that those men brought the contagion back with them. Whereas, if houses had been available at Lithgow they would have remained here, and besides escaping the contagion in the city, would have benefited by the superior climate of Lithgow. The congestion has been relieved to some extent, but it will take years and years at the present rate of growth to undertake the housing requirements. Some relief has been afforded by men leaving because they could not get houses for their families. For some time there was a standing advertisement in the local newspaper, calling for men for the iron works. Men came here, worked one shift, and, being unable to get decent accommodation, left. There are several cases in the town of more than one family living in the same house. The State Government pays rates to the council in respect of all but unoccupied lands. We rate occupied State properties on the unimproved value, in the same way that we rate private property. The only exception is the Railway Department, which does not pay rates. In the case of the Commonwealth property, a lump sum contribution would have to be agreed upon, because that property would not pay rates. The council does not use water meters. Householders can draw an

unlimited quantity of water, but if they use a hose they must pay 10s. for water for household purposes and 10s. as a garden rate. We have no idea of what quantity of water we supply the householder for the ordinary payment of 10s. per allotment. If the council were to supply water to the Commonwealth area through a meter placed at the boundary, we should charge for the water at 6d. per 1,000 gallons for household purposes and 3d. per 1,000 gallons for industrial purposes. The present price of gas is 3s. 9d. per 1,000 feet if paid within seven days, or 5s. if paid after seven days.

Thomas Evans, town clerk of the municipality of Lithgow, sworn and examined.

68. To the Chairman.—Fifty-three acres of the area acquired by the Commonwealth is within the municipality of Lithgow, but the major portion of the proposed buildings would be outside the municipality. The council has no power to expend money outside the municipal area. Before effect can be given to the promise made to Mr. Watt, that municipal services would be extended to the Commonwealth area, that area must be incorporated within the municipality. I think it would be wise to do that. If there are no ratepayers in the Commonwealth area the shire could offer no objection to the whole of that area being brought within the municipal boundaries. Unless that is done, the council will have no power to control the roads or light the streets. The Council maintains all roads in subdivided estates that have been approved by the council. In the event of the Commonwealth area being included in the municipality, there would be no difficulty in the way of the council expending money on the extension of the sewerage and water mains, provided the Commonwealth would guarantee to the council the same payment as any ordinary ratepayer would make.

69. To Mr. Laird Smith.—When the State Government have completed the construction of sewerage or water supply works, they are handed over to the sole control of the council. The council has no power to regulate the size of allotments in any subdivision.

70. To Mr. Mathews.—The land acquired by the Commonwealth was offered for sale by Mr. Brown at £40 per acre, although the council had rated it at a higher figure. Some years ago, after the factory was established, but before there was any talk of the Commonwealth buying further land, we rated the Small Arms Factory site at £100 per acre. The extension estate was sold at £90 per acre. Coorwarrill No. 1 estate is rated at £90 per acre. I think the Commonwealth site is better all round for building purposes than Coorwarrill. We estimate that the Commonwealth land is worth £100 per acre, but, of course, if the factory were not situated near by there would be no sale for the land. The council rates on the unimproved value and the land is rated at 2d. in the £1 on the improved value and 1s. 6d. in the £1 on the assessed value together represent the maximum of the general rate.

71. To Mr. Sinclair.—Foundations are not expensive about Lithgow, the ground being fairly good for carrying weight. The sanitary inspector has control of all buildings in course of erection, and the powers of all municipalities in connexion with buildings are defined by Regulation 70A. A man who is about to build makes application to the council, and submits a plan. If the plan is approved, the sanitary inspector sees that the building is erected in accordance with the regulation. Subdivisions are subject to the approval of the council, but the council has no power to reject any plan because of the size of the allotment. All extensions of water supply and sewerage are carried out by the State Government, and the expenditure is repayable by the municipality in 50 or

100 years. Extensions of both water supply and sewerage have been under consideration by the council for some time. The council would not be agreeable to load itself up with an expenditure of £3,400—sewerage, £2,550, water £850—merely to supply 100 houses in the Commonwealth area. That expenditure would involve an annual repayment of £400, and the revenue would not be anything like that. But with the prospect of serving the Coerwull subdivision, and later, an extension of the Commonwealth building scheme, the council would have some inducement to incur that expenditure.

62. To the Chairman.—I was present at the sale of blocks in the Coerwull estate on the 25th May. The first block offered, No. 614, in Main-street, brought £3 17s. 6d. per foot. Of course, I am not sure that the sale was a genuine one. No. 436, at the corner of Martini-parade and Main-street, sold for £2 10s. per foot, and No. 438 at £3 6s. per foot. No. 610 Martini-parade, £1 per foot; Nos. 4, 5, 6, and 7 in Bowenfeld-road, passed in at £2 10s. per foot; Nos. 8, 9, 10, 11, no offer; Nos. 506 and 507, Martini-parade, passed in at £1 7s. per foot. All those blocks are 25 feet by 160 feet. The municipal rates are—Sewerage, 2d., the £1 on the unimproved value, with a minimum of 20s., water supply, 3d. in the £1 on the unimproved value, with a minimum of 10s.; lighting, 8 of a 1d.; two loan rates of 1d. each; and general rate, 4d., minimum 2s. 6d. Street cleaning is paid for out of the general rate.

David Owen, sanitary inspector of the municipality of Lithgow, sworn and examined.

63. To the Chairman.—I have been in my present position for nearly eleven years. My duties are to attend to the sanitation of the town and health matters generally. For the information of the Committee I have prepared the following memorandum upon the housing problem in Lithgow:—

For the purpose of comparison, I desire to place before you a few figures dealing with the population of this town and the number of dwellings available for the year 1909, which year may be safely regarded as normal, in contrast with the figures for the year 1917, when it may be fairly assumed that the conditions, as far as they relate to the housing question, were abnormal. On the 31st December 1908 the population of Lithgow was 8,157, and the number of dwellings was 1,547, equal to 5.25 persons to each dwelling. On the 31st December, 1917, the population was 14,133, the number of dwellings then available was 2,200, or equal to 6.45 persons to each dwelling. The increase in the population of the municipality during the period between 1908 and 1917 was precisely 6,000, or 73.5 per cent., whilst, on the other hand, the increase in dwellings erected was only 753, or 34.1 per cent. It will be observed, therefore, that during the normal conditions which prevailed in the year 1908, the population was equal to only 5.25 persons to each dwelling, but in the years 1915-16-17 the number of persons to each dwelling rose as high as 7.03, 6.84, and 6.45, notwithstanding the fact that during the last three years, the 31st December, 1917, no less than 408 dwellings were erected, which, to some little extent, relieved the situation by bringing the number of persons to each dwelling down from 7.03 to 6.45. Since that date there has been at least another 74 houses erected, bringing the total to 2,274 houses to date, which is still far below the sanitary requirements of the population of this municipality. In order to reduce the number of persons to each dwelling down to a level which is suitable as an absolute need for the erection of at least another 400 or 450 houses, and even then the conditions would not be normal, but at present the conditions are bad, and they call for prompt relief. They would certainly have been a great deal worse were it not for the following:—

1. The classes of dwellings which have been built during the last two years at least, generally speaking, have been of a larger and more modern type, and most of them were connected with the sewer. This was in itself some safeguard to the health of the people occupying, even if overcrowded, and reduced the risks of disease in some measure.

2. Then again there are at least 46 recognised boarding establishments in the town, these finding accommodation for 455 boarders, equal to 9.5 to each establishment.

3. Further, all the hotels in the town are taxed to their utmost capacity in finding accommodation for permanent boarders. Most of these are Small Arms Factory employees, many of whom are married men whose wives and families are compelled to live in other districts for the want of local housing accommodation, these men going to their homes at week-ends.

I would here point out one very undesirable feature that necessarily arises from this serious situation, and that is the subletting of houses, which is at present, I am sorry to admit, far too extensive to be conducive to the health and comfort of the community. In some instances as many as three or four families are huddled together in a six-roomed cottage, and it is common for two families to occupy a four or five-roomed cottage. This fact must speak for itself, and calls for speedy remedy in the best interests of the health and morals of the people. Again, there are not less than 80 families whose means have probably precluded them from paying the very high rents demanded, and who have been compelled to fend for themselves very indifferently, and temporary dwellings of canvas, bagging, and the like, on the outskirts of the town, on land for which they pay 1s. per week as ground rent, and they are compelled to live in these unsuitable and insanitary dwellings under severe climatic conditions, in the hope that sooner or later houses will become available such as their means will enable them to pay rent for.

With regard to the sanitary and health aspect of the situation, I have to state that during the year 1915, when the overcrowding was in its most acute stage, no less than 451 cases of infectious disease were notified in the municipality, being 32.1 per 1,000 of the population. These were principally cases of scarlet fever and diphtheria, which are spread by contact, several of them proved fatal. In the year 1916, there were 176 cases of infectious disease, and in 1917, 123 cases. There is not the slightest doubt that overcrowding was responsible for the very serious outbreak of these diseases in the town in 1915, and its effect is still seen and felt up to the present moment, and presents a very serious menace to the health of the whole community in the grave possibility of another outbreak of a similar character occurring at any time the climatic conditions are favorable. Further, I would emphasize the fact that under existing conditions there is a grave danger to public health arising from contact with communicable subjects, apart from the fact that overcrowding erects the want of sufficient cubic space and ventilation in living and sleeping apartments lowers the general tone of the people's health, and renders them susceptible to disease.

In view of the facts I have placed before the Committee, you will readily observe the urgent necessity of taking some steps that will tend in some measure to relieve a situation, brought about by a set of unavoidable circumstances, by the erection of a sufficient number of dwellings to meet the requirements of the Commonwealth employees at the Small Arms Factory.

The following table shows the total population in the municipality at the end of each year from 1908 to 1917 inclusive, together with the total number of houses available during those years:—

Year.	No. of Population.	Increase.	Decrease.	No. of Houses.	Increase.	Decrease.	No. per House.
1908	8,157	..	..	1,547	..	..	5.25
1909	8,233	100	..	1,577	30	..	5.25
1910	8,647	384	..	1,600	32	..	5.37
1911	8,232	..	353	1,608	..	3	5.15
1912	8,634	392	..	1,633	25	..	5.28
1913	9,410	782	..	1,716	80	..	5.49
1914	10,060	2,744	..	1,792	77	..	5.64
1915	12,403	2,743	..	1,905	113	..	6.50
1916	14,094	691	..	2,030	125	..	6.94
1917	14,133	60	..	2,200	170	..	6.43

From my knowledge of the country, I should say that the area resumed by the Commonwealth is suitable for residential purposes. The houses most in demand are on with about four rooms and a kitchen. In this climate houses should be built of brick. I calculate that the ordinary worker can afford to pay out of his present wages, from 15s. to 17s. 6d. per week in rent, or one-fourth of his income. I admit that a house with four rooms and a kitchen, bathroom, and conveniences, cannot be built at the present cost of material at such a figure as will allow of it being let profitably at 15s. per week. Two firms are manufacturing bricks at Lithgow, and the price is £3 5s. per 1,000 at the kiln. The sleeping accommodation at the hotels is taxed to its utmost.

64. To Senator Needham.—I should say that fully 80 per cent. of the employees at the Small Arms Factory are married men. Many young men were working at the Factory before the recent industrial dispute, but I believe that a number of them have migrated elsewhere. The minimum height from floor to ceiling should be 10 feet. It is a well-recognized fact that there is no advantage to health in carrying the ceiling higher than 12 feet. I feel certain that if the Government housing project is put in hand, there will be no difficulty in getting locally a continuous supply of bricks. The price of bricks four years ago was £2 per 1,000 at the kiln.

65. To Mr. Laird Smith.—As sanitary inspector, I have authority to order improvements outside as well as inside the houses. Some of the dirty drains which the Committee saw are accounted for by the fact that the houses from which the drainage comes are not yet within connecting distance of the sewerage system. The council has not the funds for the reticulation of the whole of that newly-built settlement. When the municipality took over that estate, there was little or no formation, and it is costing the council a considerable sum of money to put the streets in order. That work can be done only as the money is available. The reason for putting a concrete drain on only one side of the street is that the greatest body of surplus water runs on that side. I have no doubt that as soon as money is available, the council will improve the conditions of the drainage throughout that estate. I understand that the council is negotiating with the Works Department for the extension of the sewer so that the whole estate may be reticulated.

66. To Mr. Mathews.—Lanes are an abomination. They should be abolished.

67. To Mr. Sinclair.—The building conditions prescribed by Regulation 70a include 9-in. walls with a 2-in. cavity, and for the foundation 6-in. courses 18 inches in width, and two courses 14 inches in width. The wider the streets in a subdivision the better for the health of the community. Roads should be 90 feet wide, if possible, but they should certainly be never less than 66 feet wide. I should prefer allotments to have a frontage of not less than 40 feet to 60 feet, by a depth of 132 feet to 140 feet, so that plenty of air and sunlight may get round the building. I understand that the council builds gutting and kerbing out of revenue, and that the owners contribute nothing to the cost of that work. If the council were to strike a higher rate, no doubt more money would be available to remedy the drainage defects of which mention has been made, and that would lessen the liability to disease. In my opinion, the storm water drain through the Coerwull estate should be larger. After un-

usually heavy downpours the water may overflow the banks, but under normal conditions the drain will carry off the water all right. There is a sufficient fall in the ground for the efficient drainage of the Commonwealth area, provided the culvert under the rail way were cleared. I inspect the septic tank two or three times a week. The system is taxed to its utmost capacity at the present, but a duplication of the scheme is contemplated. The system has been entirely successful. At present it is treating the refuse from 1,500 houses. During four months of the year, when the temperature of the water does not exceed 45 deg. Fahr., putrefaction is very much slower, and the liquefaction is not so rapid as during summer. When oils and disinfectants have found their way into the tanks, the biological processes have been retarded, and we have been obliged to notify the people of a by-law which provides for a penalty to be imposed on any person who discharges disinfectant matter into the sewerage system. The storm-water drainage does not go into the tanks; therefore, the people are not prevented from using disinfectant about their houses.

John Burn, 1st class sergeant of police, Lithgow, sworn and examined.

68. To the Chairman.—I have lived in Lithgow for the last thirty-two years, and have a thorough knowledge of the conditions of the locality. Since 1908 there has been a large increase in population, and houses have not been built at a commensurate rate. In recent years there has been a dearth of housing accommodation, with the result that many dwellings have been overcrowded. Subletting has been prevalent, and not uncommonly two and three families live in one house. That has not been conducive to good health. I think the area acquired by the Commonwealth is most suitable for the erection of workers' homes. From 32 to 40 families are living in tents or one-room dwellings, and at least 200 houses are sublet. I am informed that in one street there are six houses, each of which accommodates three families. The uncertainty as to the future of the Small Arms Factory has been primarily responsible for the failure of private enterprise to respond to the demand for increased accommodation. People have not felt inclined to build while there was a risk of the factory being removed and the houses being left unoccupied. I know of two or three persons who were inclined to build, but would not do so owing to the unsettled conditions. Nearly all the hotels are full of permanent boarders, and it is difficult for the travelling public to get accommodation.

69. To Senator Newland.—Where three families are living in the one house the rooms are usually let to young couples. I do not know what rents are paid for these rooms, but I have heard that some persons have been subletting rooms to such an extent that they are living rent free. Some people are subletting rooms as much as the house is worth in rent.

70. To Mr. Sinclair.—If the permanency of the Factory were guaranteed, there would be a tendency for private enterprise to engage in building operations; but I am doubtful whether the requirements of the population would be met for a considerable period. I do not think that the people huddle together in one house for economical reasons, because the rent is so high. The real reason is that all the houses are occupied. I do not think that young couples without families would prefer to rent a room if they could rent a house for 14s. or 16s. per week.

(Taken at Lithgow.)

WEDNESDAY, 26th JUNE, 1918.

Present:

Mr. Gibson, Chairman;

Senator Henderson,  
Senator Needham,  
Senator Newland,  
Mr. Mathews,  
Mr. Sinclair,  
Mr. Laird Smith.

James Finlay, Employee at the Small Arms Factory,  
Lithgow, sworn and examined.

71. To the Chairman.—At an aggregate meeting of the factory employees I, Mr. Watson, and Mr. Jenkins were elected to state their views to the Committee. I am also president of the Small Arms Factory Employees Union. For three years I have been employed in the factory, and I know that the insufficiency of housing accommodation has been one of the chief difficulties in the way of retaining members of the union at Lithgow. The uncertainty which has prevailed during the last two years as to the future of the factory has caused a number of those who bought building blocks to refrain from building. But, even had they built, the additional accommodation would have relieved the position only to a slight extent. For the same reason, people have refrained from speculative building, although, since the visit of Mr. Watt on the 1st February, there has been a resumption of building operations. The shortage of housing accommodation is very acute. There are houses in which two or three families of husband, wife, and children are living. Men are compelled to board and keep homes going in the metropolitan area because they cannot get accommodation for their families in Lithgow. Four years ago, when I came to Lithgow to work for Hoskins and Co., my wife and six children were obliged to sleep in one room, and I slept in the kitchen for four years, and the rent I pay is not excessive, but in the majority of cases it is. I have lived in the one house for four years, and in that time the rent has been increased only by 6d., and that on account of the installation of the sewerage. I believe that between 160 and 200 employees of the factory have homes of their own. The house most in demand is one with three rooms, a kitchen, and conveniences. Mr. Watson and I took a rough census of three sections of the factory in order to ascertain the average size of the families of employees, and we came to the conclusion that 60 per cent. of them would require three rooms, a kitchen, and an outhouse, and the other 20 per cent. greater accommodation. The accommodation provided in design B2 would suit the 80 per cent. Design A1 would suit a man with a wife and one child. A proportion of the 60 per cent. would be married men without children or with only one child, and they could do with less than three rooms and a kitchen. I do not think the workers would object to a semi-detached house so long as it gives the same accommodation and comfort and there is a sufficiency of land about it. Design C3 would suit a foreman and his family. In this climate, houses should be built of brick or cement. Several cement houses are being built at the present time. Recently, a cement brick house, the bricks being made of sand, ashes, and cement obtained from Farmers' Creek, was built near the factory at a price less than a brick house would have cost. We are of opinion that a man should not pay more than one day's wage, or one-sixth of his income, in rent. A man who is earning £3 3s. per week and has to pay 10s. 6d. for rent has not much left with which to keep a wife and a big family. Three guineas is the minimum wage paid at the factory, and is received by about 40 of the employees. The others earn from £3 9s. 4d. to £5 2s. These figures include the war bonus. In asking

for the erection of houses, we have no desire to place an additional burden upon the Government. We do not want the houses if they are not a paying concern from the Government point of view. We want what we can pay for; we are not asking for charity. The area resumed by the Commonwealth is much more suitable for housing purposes than the majority of the residential sites about Lithgow. I have looked at the lay-out of the area, and, speaking as a man without knowledge on this subject, I think the scheme is a good one; and I believe that we could force the tenants to maintain their gardens and surroundings in good order. By resolution, the majority of the employees have decided in favour of the leasehold system in connexion with the proposed houses. All of us have a stake in this country, whether or not we own a foot of land. Some men are improved by owning a bit of property, but I foresee that if the Government sell these houses they will gradually fall into the possession of private landlords, and we shall be again approaching the Government to solve the housing difficulty. It may be possible to condition the freehold with a proviso that the property shall be sold only with the approval of the Government, and preferably to persons employed in the factory varies, as the men come and go. I certainly think that if the Government proceed with this housing scheme, preference should be given to the returned soldier.

72. To Senator Needham.—Knowing the conditions under which some persons are living at the present time, I say that we would be prepared to accept two rooms and a kitchen if by so doing we would make easier the Government task of providing the houses. Of course, we would prefer three rooms and a kitchen, even if we had to pay a little more for them in rent. The average wage in the factory is £3 9s., and the maximum £5 2s., which is received by the section hands. If a man is absent from work through an injury sustained at his work and he has been employed at the factory for not less than twelve months, he is allowed full pay during his absence. But he is not allowed pay for ordinary sickness, no matter how long he has been employed, unless holidays are due to him, and then he can draw his holiday pay. Sick leave on full pay was discontinued about four and a half years ago. My preference for leasehold over freehold is only for the reason I mentioned, namely, that under the freehold system the houses might in time become the property of private landlords. That is not the unanimous opinion of the employees; a few of them would prefer the freehold.

73. To Mr. Laird Smith.—Before the recent industrial trouble at the factory, between 70 per cent. and 80 per cent. of the employees were married men. We often have high temperatures during summer days, but I always sleep with a couple of blankets. Many people sleep out on verandahs. Therefore, wide verandahs on the Government cottages would be an advantage, because they could be used as bedrooms in the summer time. I suggest that the blocks should have a frontage of not less than 40 feet by a depth of 150 feet.

74. To Senator Henderson.—There are amongst the factory employees many newly married men, and others with only one child, who would be satisfied with a house of two rooms, a kitchen, and conveniences.

75. To Mr. Mathews.—A married couple with two small children could do with two rooms, a kitchen, and a back verandah until the family increased. Those of us who occupy houses which have any spare land do our utmost to grow our own vegetables. There is keen competition in gardening amongst many of the workers, and if any exceptionally good vegetables are produced they are exhibited in a window in Main-street. Thus

a spirit of emulation is stimulated. The stores provide the only opportunity of employment for the daughters of the workers, except that the tweed mill employs a few girls. Most of the young women go to Sydney for employment. The prices paid by those men who have bought their own blocks varied from £3 to £3 per foot on time-payment conditions. The majority of the frontages are about 88 feet, and the depth 130 feet. Some land higher up the gully, where neither water nor gas was laid on, was sold at £1 per foot. That would have been regarded as a very cheap price if water and gas had been laid on. Men who desire freehold properties can get them without waiting for the Government to provide them, although they may not get the same conditions from private vendors as they may get from the Government. We have a good sick and benefit fund. There are in the district five doctors and a public hospital, which is able to cope with all requirements, except special operations. If the housing disabilities were overcome, Lithgow would be one of the best places in Australia for a working man. As a body we have not given consideration to the question of abolishing back lanes, but I am of opinion that in a severed area the back lane is not of much importance. A right-of-way at the side of each house meets all requirements.

76. To Senator Newland.—A 40-ft. frontage would be sufficient to allow of a right-of-way at the side of each house. No doubt, a 60-ft. frontage would be an improvement. In buying land on time payment, a man makes a deposit of £2 for every £30 of the purchase price, and monthly instalments of £1 for every £20. A number of workmen have built with the assistance of the two Starr-Bowkett Societies in the town. Others have built with the aid of the Savings Bank, which advances 60 per cent. of the cost, and charges 4½ per cent. interest. Another objection to the freehold is that many of us have not the means to purchase a house. But there would be no objection on the part of the majority to any man who wished to do so being allowed to purchase his house on time payment. If the terms were sufficiently liberal, perhaps 10 per cent. of the men would go for the freehold. I see no disadvantages in the semi-detached house, so long as there is ample room at the side and the back. Practically all the lower-paid men are married, and the majority have grown-up families. The rent of a four-roomed cottage, with kitchen and conveniences, is between 22s. 6d. and 30s. Some single-fronted houses near the factory, containing three rooms, a kitchen, and conveniences, are let at 10s. per week. At one time, those houses were let at 14s. per week, but in the same week as the local press announced that we were to receive a war bonus the rent was raised 2s.

77. To Mr. Sinclair.—The overcrowding of houses is due solely to the shortage of accommodation. Employees of the factory have offered a kind agent a bonus of £5 to get them a house. Overcrowding would cease if sufficient houses were available. I do not think that people would still crowd together in order to get cheaper rent. I see little difference in comfort between the detached and the semi-detached house. I do not think that many of the latter would be empty. Probably nobody would object to paying an extra 6d. per week for a detached house. But we are so house hungry that we would take anything that was offered to us. If the Government are prepared to provide all the houses that are required, I say do not build any semi-detached houses if the difference in cost between them and the detached houses is only £18. Of course, a little variation in the houses would add notoriety in design and make the settlement look better. The Commonwealth area is 100 per cent. better than the Coorwall Estate; I have seen both properties during

wet weather. During the five years I have been in Lithgow, scarlet fever has been the only disease that has appeared in epidemic form, and even then the epidemic occurred out of the town. We do not desire the sanitary pan system. We would prefer to accept the additional load of capital cost that would be entailed by connecting the settlement with the sewerage system. I would pay an extra shilling per week in rent for a house that is sewered. We should like the streets to be a chain in width; we do not want them made too wide. A social hall would probably be provided, independent of any action by the Government. As soon as there are a few houses in the settlement, somebody will be enterprising enough to build a place for amusement on the Coorwall Estate. We do not ask for any picture-show to be provided on the settlement, although we should like a site for a hall to be left. We have discussed the advisability of dispensing with fencing about each house, and we have come to the conclusion that, in the present circumstances, each house should be fenced. There are straying cattle that would damage the gardens if they were not enclosed.

Albert Watson, Employee in the Small Arms Factory, Lithgow, sworn and examined.

78. To the Chairman.—I entirely concur in the evidence of the previous witness. I submit, for the information of the Committee, the following facts:—Families at present living in one room, but who would rent a house, 148; families living in houses that are unsuitable, 146; married men whose homes are outside the municipality, and who are boarding in Lithgow, 103; single men boarding—more than one in a room, 118; more than two in a room, 78; more than three in a room, 24. In one place seven boarders sleep in one room. In the opinion of the majority of the factory employees, back lanes are undesirable in a subdivision. We find from experience that a good deal of tinneat is eaten, and the tins are thrown into the lanes, which soon become a rubbish and dung heap. This congestion of refuse in the lanes may lead to epidemics of disease. I am a member of the municipal council, and in connexion with the taking over of every subdivision I have voted for the obliteration of lanes. The main road should be not less than a chain in width, but the others could be reduced to some extent, although we want no narrow lanes or alley ways. As far as I can gather from the men, I should say that 70 per cent. of them would prefer leasehold, and that the other 30 per cent. would be prepared to acquire the freehold upon favorable terms. I certainly think that a man who aspired to ultimately acquire the title of his block would be more inclined to improve it than if he were only a lessee. I am desired by my committee to make a reference to a statement that appeared in the press. It was stated by Colonel Owen that there were 103 applicants from amongst the factory employees for new houses. Those figures do not indicate the opinion of the men, because, at the time Mr. Matfield called for applications, the factory was practically closed down. If applications were called for to-day, the number would be nearer 300. On the Friday the majority of the factory employees were paid off. The last date for making application for houses was the following Monday. Many men did not know whether they would ever be employed at the factory again, and the outlook was so uncertain that there was no inducement for them to apply for housing accommodation.

79. To Senator Needham.—I do not think that the proposal to erect only 100 houses is adequate to meet the requirements. At least 250 houses should be built to make the conditions something like normal.

80. To Mr. Mathews.—I am of opinion that the majority of the men and their wives would be willing

to take an interest in their gardens if they were given fair-sized lots. Climatic conditions in Lithgow are favorable for gardening. Another incentive is the lack of entertainments in Lithgow. Men are driven to adopt some hobby, and it would be a boon to many of them if their blocks had a depth of 150 or 100 feet.

81. *To Mr. Sinclair.*—I do not think there is any necessity to cramp the streets in a place like Lithgow. When I said that the side streets might be reduced in width, I did not mean that there should be any alleys or back lanes. If the main streets were a chain wide, and the subsidiary streets about 45 feet or 50 feet wide, we should have an open healthy settlement. The only advantage in narrowing the streets is a saving in the cost of road formation. The principle of reducing the cottage allotment and providing separate plots for gardening purposes does not appeal to the people of this country, although it is in operation in England. A man would be spending a good portion of his time travelling between his block and his home, and for the greater portion of the week his garden would be unprotected. If a man has a narrow allotment about his home he can devote any spare ten minutes to it. I have not given any consideration to the design of the houses, except that I think they should be of brick or cement, and not of weatherboard. I personally favour the semi-detached cottage, for the reason that it provides more room for side entrances, and allows of the most being made of the land available. Another consideration is that Lithgow is subjected to severe westerly winds, and with semi-detached dwellings one house protects the other. In regard to the employment of returned soldiers, whilst there have been a few good ones in my section, the majority cannot stand the strain of the work. If, after the Government carried out the housing scheme, there were still a dearth of accommodation, I would be prepared to stand aside in favour of a returned soldier, because the majority of them have been wounded, and cannot stand confinement as well as ordinary able-bodied men. There are many positions in the factory at which returned soldiers could be employed until their health was sufficiently restored to enable them to undertake more arduous tasks. There are some jobs in the factory that men suffering from shell shock cannot do. Generally speaking, a fair number of returned soldiers could be employed in the factory if they were prepared to submit to the confinement.

Charles Vivian Roy Jenkins, foreman in the Small Arms Factory, sworn and examined.

82. *To the Chairman.*—If this factory is to be made a success, the men must be properly housed. In the opinion of the foreman, one of the reasons for the factory not being more successful is that the men have not been able to get decent housing accommodation. Senator Pearce asked me, as a foreman, on one occasion whether a double shift was practicable, and I told him that we could run a double shift if we could get decent labour. The double shift was forced upon us, but we never got efficient labour, because we were chopping and changing all the time, and we could not get the men accustomed to the work. They could not get decent housing accommodation. Three and five men were living in one room. When I came to this town as a foreman from America I nearly packed up my bag and returned to Sydney, because I could not get accommodation here. To the 30th June, 1915, 150 men had left the factory. By the 30th June, 1916, 470 additional men had left, and by the 30th June, 1917, 743 additional men. A big proportion of those men left on account of the unsatisfactory housing conditions. We do our best to get men to remain at the factory, but married men will not remain. Consequently, we are forced to employ single men. Men accustomed to outdoor work or mining are not suitable for employment in

this factory, where they have to do repettition work day in and day out. The best men for the factory are those who have been employed at indoor work in some other factory. This employment is too monotonous for men who have been employed out of doors. In order to get a suitable class of labour, we have to bring men from other towns, but as soon as they find that they can get no accommodation they leave. The next best thing we can do is to engage youths born in the district, and educate them up to the work. These men will generally remain. I feel certain that if the workmen were properly housed we should get a better class of work. Returned soldiers have told me that they had left Lithgow because they had to live three or four in a room. Some of them have open wounds, and they do not like stripping before other men, and in any case, it is not pleasant for the others to see those wounds being dressed. Such conditions of life are unwholesome and unhealthy. I should think that 100 houses is the minimum number that is required. The provision of houses will offer an incentive to men to establish homes, and there will be more room in existing houses, which are at present congested. Some men who are receiving £3 3s. per week are paying £1 in rent, but I think that 10s. is all that a man with that income should pay. I am not recommending that the housing scheme should be operated on benevolent lines; the Government should not lose on the proposition. I am sure that the proper housing of the men will conduce to the benefit of the factory. I have had experience of the state of mind of men who are living under unfavorable conditions. If two families are sharing a house, and the two wives have a quarrel over the use of the stove, the men come to the factory in such a state of mind that they do their work badly, and if they are reproved they simply leave. If a man were happy in his home he would be happy at his work. Living in Manly, I could never understand why industrial upheavals were so frequent in working class towns. But when I came to Lithgow I understood. There is not even a recreation ground in this town. If the men had good houses and opportunities for recreation they would be happier, and do their work more efficiently. As to the advisability of allowing the men to buy the freehold of the cottages, I fear that, after a man had bought his house, he might find work elsewhere, and the house would be sold, possibly to some person who was not employed in the factory. Let a man buy a house on the condition that if he wishes to sell he must sell to a factory employee. Every man will take more interest in a house that belongs to him than he will in a house that is the property of somebody else. I believe we should have a more permanent class of employee if they owned their homes, and were not merely tenants.

83. *To Senator Newland.*—The frequent changing of employees adds greatly to the cost of work. We may have a fast employee, and the next man we put on in his place may give an output of 100 parts per day less. One man working quite conscientiously was turning out 100 parts per day. But I proved to him that another man could do 400 parts. And, of course, it paid me to keep the man who could give the better result. He is a returned soldier, and married, and I could keep him in the factory if he could get proper housing accommodation. If he leaves, the factory sustains a direct loss. Another consideration is that when a new man is placed on a machine, another man has to be set to work alongside him. The foreman and the section hand must keep an eye on him all the time to prevent him spoiling the work. My experience is that the returned soldier is as good a workman as a civilian, and in some cases he puts more exertion into his work. But he will not remain at the factory. In the case of married men, their departure is attributable to the lack of accommodation. The single men leave because they

are not inclined to settle down. The worst result I find with the returned soldier is that he will not remain here. We get excellent results from returned soldiers who have had previous factory experience. I do not employ a returned soldier for sentimental reasons. I am very much in favour of giving him a fair chance, but I wish to see the factory pay.

84. *To Mr. Sinclair.*—So long as the requisite number of houses is provided, I do not think it will make much difference whether the leasehold or the freehold principle operates. If the freehold were given to a man on the condition that he could sell only to a factory employee, the house would still be attached to the factory. If a man were only paying a small rent he ought to take just as much interest in the house as if he owned it; his tenancy would be as secure as his job in the factory.

85. *To Senator Needham.*—I think the Government ought to provide at least 150 houses, every one of which would be occupied. I treat a returned soldier in the factory in the same way as I treat a civilian. If I did otherwise the union would be howling at my door. If a civilian and a returned soldier were both doing faulty work, I should probably be lenient to both. If I showed leniency only to the returned soldier, the union would consider that I had victimized the other man. The union is a business organization, and must stand by its members. I believe that most of the returned soldiers are unionists.

William Alfred Joley, architect, Lithgow, sworn and examined.

86. *To the Chairman.*—I have been practising in Lithgow for the last sixteen or seventeen years. There is at present a dearth of residential buildings, caused largely by the increase of local industries, notably the Small Arms Factory and the ironworks. I cannot say whether the difficulty has been accentuated by the uncertainty as to the future of the factory. For workmen's dwellings a frontage of 40 feet by a depth of 133 feet would be ample. If larger blocks are provided in industrial centres like Lithgow, they are, generally speaking, ill-kept. The average size of house required by working men is one with two or three bedrooms, a dining-room, a kitchen, and a laundry, and preferably a bathroom in the laundry. The advantage of having the bathroom in the laundry is that by heating the copper the family may get a hot bath. Gas is used for cooking in a great number of cases. From a brief glance at the lay-out of the Commonwealth area, I think it could not well be improved. Ample provision must be made to carry off the storm water, otherwise the land in the gullies will be useless. The area is sheltered from the westerly winds to a great extent, and nearly all of it gets the morning sun. According to the lay-out, all the houses will get the sun at all times of the day, and that is of great importance in a climate like that of Lithgow. Men earning £3 3s. a week are now paying about 17s. 6d. per week in rent. Fifteen shillings is about the limit they can afford. There would be a difficulty in erecting good houses that could be let profitably at less than 17s. 6d., but, of course, in building a great number of houses at the one time the capital cost can be reduced. I submit to the Committee plans of houses that I have erected in Lithgow. No. 1 design has brick cavity walls, a drawing-room, 12 feet x 15 feet; dining room, 12 feet x 15 feet; two bedrooms, 12 x 10 and 12 x 13 respectively; kitchen, 17 ft. 6 in. x 9 feet; laundry, bath, copper, washbasin, water closet, &c.; verandah 6 feet wide for more than half the frontage of the house, and a 4-ft. hall extending from the front door to the kitchen. The height of the walls from floor to ceiling is 10 feet. The walls are plastered, and the ceilings are of wood. The walls in the kitchen and laundry are struck and coloured.

The roof is iron. The approximate cost of that house would be £235. That includes the laying on of water, gas, and sewerage—everything in readiness for the tenant. Three years ago I had that design built for £175. I would not advise that walls should be higher than 10 feet from floor to ceiling, unless the rooms are extraordinarily large. First quality bricks, or the run of the kiln, cost £3 12s. per 1,000; sometimes you can get seconds for 42s. 6d. per 1,000. I reckon the proportion of seconds which would be used in a building would reduce the average cost of the bricks to about £2 12s. 6d. at the kiln. I have not had experience in Lithgow of building houses with cement bricks. It would break the monotony of the settlement if in building 100 houses the style and material were varied. On account of cement blocks being made with ashes, there is a danger of the walls becoming damp. I reckon the cost of brickwork faced on one side at £20 per rod. Solid brickwork would cost approximately the same, or if struck on both sides £25. A building of the character I have described would be let for about £1 per week, assuming the land to cost from 15s. to £1 per foot. Similar houses are being let for 25s. and 30s. per week, but these are abnormal times. In normal times the house would be worth £1 per week. My wife has a couple of cottages for which I have been offered 25s. and 30s. per week. But £1 is the rent received. They comprise three rooms, a kitchen, laundry, bath, and conveniences. No. 2 design is similar to No. 1, and a modification of it has been erected recently at a cost of £350. It has practically the same accommodation, but the hall runs right through the house. A tender for No. 3 design has been accepted for £300. The building regulations require that walls shall be not less than 10 feet in height from floor to ceiling. I would advocate 9 feet walls, provided there was the requisite air and lighting space. I think rooms with 8-ft. walls would be more comfortable. I read of Californian houses built with only 8-ft. walls, and being very comfortable. I think that in Lithgow 10 feet should be the maximum height, unless very large rooms are being built. In summer the temperature sometimes reaches 100 deg. in the shade; but I have never known the nights to be so hot that one could sleep without a blanket. The A1 design proposed to be erected by the Commonwealth, if detached, could easily be let for 17s. 6d. per week. I should say that that house would cost approximately £400. The majority of workmen require a house with two bedrooms, and as that design has only one bedroom, it would be useless to all but very few of the factory employees. I do not think any objection would be raised to semi-detached houses if the walls were carried right up into the roof. The council will not allow the building of semi-detached houses on new subdivisions. There is a great deal of economy in the lay-out of semi-detached dwellings. B1 design would be more in favour. The greatest demand is for houses with two bedrooms, a dining-room, a kitchen and laundry. C3 also would be suitable. That house ought to be built for £350, and let for 25s. per week.

87. *To Senator Newland.*—No roof tiles are being made in Lithgow yet, but experiments with the clay are being conducted. Cement is easily obtained. It is manufactured about 10 miles from Lithgow, near the railway. The prices compared with those in Sydney are very much to Lithgow's advantage. Timber is very much cheaper than in Sydney, and if big quantities were ordered, the local timber would be almost as good as that in Sydney. There is plenty of timber in the district. It is not as large as the coastal timber, but it is quite large enough for any of the local saw-mill to handle. There is no seasoned timber here, but I am sure that it does not take long to season, because it is not so close in the grain as the coastal timber. It can be seasoned in a few months, and is used for building

1s. 6d. per day extra.

Q1. To the Chairman.—If you were building 100 houses in blocks of 25, I think it would be better under existing conditions to do the work by day labour. Put a man in charge of each block, and have a certain amount of competition between them. Some of the buildings I have mentioned are being built by contract, and some by day labour. We find that there is very little difference in the cost.

92. To the Chairman.--The Housing Board consists of three members appointed under an Act of Parliament for a term of five years. The present personnel is--Mr. J. T. McGowan, M.L.C., ex-Premier (Chairman); Mr. Fitzgerald, M.L.C., Minister for Health and Local Government; and Mr. Hollmann, Under-Secretary for Finance and Trade. The Board comes under the control of the Premier's Department. Each year,

sums of money are voted by Parliament for expenditure by the Board in the building of suburbs. The Board is at present engaged in erecting houses at the garden suburbs of Murrumbidgee, and during the last twelve months has erected about £40,000 or £50,000 worth of houses for returned soldiers throughout the State. In late years the Board has also been engaged in remodelling "The Rocks" resumed area. The Government resumed the old Observatory Hill area and improved the streets, and are gradually rebuilding that locality. For the last four or five years I have been specially engaged in the housing problem. I am now principally engaged in the erection of houses at Murrumbidgee and cottages for returned soldiers. The Works Department was started about five years ago under the Board. The Board took over the power under the control of the Housing Board. That body took possession of about 350 acres, portion of which was swamp, and of that area 273 acres has been subdivided on modern lines. There was a very large initial outlay in forming what is practically the entrance to the estate. That portion was swamp, and had to be drained and levelled. In the building and letting of houses the policy of the Board is to get a revenue sufficient to pay for the interest, rent collecting, bad debts, interest, and sinking fund. In the lay-out we have taken as far as possible, to retain the present contour of the land. It is a sandy district, and we had to shift a certain quantity of the rising ground in order to fill in the swampy gullies, the settlement will ultimately be very nearly flat. We have tried to avoid flat monotony as far as possible. There is a central main avenue in which are the public buildings, and from it the subsidiary roads radiate. We are building 6.65 houses per acre, exclusive of parks and open spaces, but inclusive of roads. There are 21½ acres of parks and open spaces divided amongst 1,673 houses. A few common playgrounds. For the houses open spaces are provided. We have provided first class back yards, but we provided big back yards. But we found it better to reduce the size of the yards and to provide open spaces, which would be common to the children of each section. I would not advise a too liberal provision of that kind. A number of small scattered parks would be preferable. The special reason for adopting that style of lay-out was that we had narrow spaces between the two main avenues, and we had to cut them up. About Sydney, a worker's home does not require a block large as a gentleman's house. The land is collected. Very few of the tenants have full use of their ground. The house must be a small one. The demand is that usually for four or five rooms, including the kitchen. We usually provide a living room, a kitchen, and two or three bedrooms. The workers do not care to pay more than about 15s. or 18s. per week in rent. What we term a four-roomed house contains a living room, two bedrooms, a kitchen, a bathroom, and pantry. We place the laundry in the kitchen. Otherwise the kitchen is used as a living room. The living room as a parlour, which is desirable. The living room as a parlour, which is desirable. The kitchen prevents overcrowding of the laundry in the kitchen prevents overcrowding of the living in the room in which the two are cooked. The minimum size of our cottages is two bedrooms, living room, and a kitchen, and the minimum rental 12s. 6d. to 18s. The maximum rent for three bedrooms, a living room, kitchen, and separate laundry is 18s. 6d. Most of the houses are built of brick, and others of block concrete with cavity walls. The roofs are either of slate, terra-cotta, or fibro-cement shingles, or cement tiles. The ceilings and walls are plastered, and the floors of the houses are designed to provide a verandah that may be used as a sleeping porch, and without interfering with the room opening into it. We do not believe in providing rooms that depend on the verandah for light and ventilation

The average cost of two bedrooms, a living room, and kitchen, without a hall, is from £284 to £360 semi detached. These houses have pantries, bathroom, electric light, gas for cooking, and deep drainage. That cost includes the fencing and the asphaltting of the garden footpaths. The same accommodation in a detached house costs from £360 to £460. Those houses have entrance halls and better verandahs for sleeping out. The rental is from 15s. 3d. to 16s. 3d., inclusive, net of rates and taxes. The Board pays landlord, and all apportionment in the same way as a private landlord, and we get in return is the emptying of the garbage tins and the lighting of the streets. The area is governed by the provisions of the Health Act, but a Bill is being introduced in Parliament to give the Board entire control of the suburb, so that we shall pay rates to nobody.

We do not fence the houses in front. Instead we make a concrete kerb 9 inches high, and divide the allotments by an open wire fence. The back yard is fenced in with palings. We had trouble at first with the unfenced fronts owing to straying cattle, but that difficulty has been overcome. We do not give us many able tenants much quarter, because we have so many persons waiting for houses. We are governed by the same eviction laws as the private landlords. The prices I have quoted relate to work done prior to that the prices out within the last two years. Prior to that the prices were greater, because the main avenues are 100 feet Works Department. The original plan provided for secondary roads 60 feet wide. But I cut those down to 50 feet in order to save money. But I put those down to 50 feet in order to save money. But I put those down to 50 feet in order to save money.

With no less than 50 ft. thoroughfares the footpaths are 10 feet wide on each side, and the road and gutters 18 feet. The footpath has a strip of asphalt 4 feet wide, and the rest of it is planted with grass and trees. In the case of the footpaths the footpaths are 25 feet on each side. By putting the cottages 20 feet back from the building line you can get the same effect of width and make better use of the ground than if we were to put into roads. Such a lay-out is cleaner, healthier, and more economical. Some of the buildings we endeavour to get variety in the building lines of the buildings. Before I joined the Board competitive designs were called for, but the first-price design for a semi-detached cottage was the only one used, and it has been the biggest failure we have ever had in the settlement. It was too expensive to build, and it returns the least interest. No semi-detached cottage is let for less than 13s. per week, with the exception of a few which were built at a rate of under £80 per each for soldiers' widows, and were built by building two semi-detached cottages instead of two detached cottages, the two varieties having equal facilities, is not more than £10 or £20 per week for the semi-detached. In the first place, the bigger rooms of these cottages was carried out by the day-labour branch of the Public Works Department. But we found that method very expensive, and the result was too high. We felt that the scheme was not so successful its original purpose, namely, to provide a number of cottages at a cheap rent. Then the Board let a number of cottages to contract, one cottage at contract cost £375, and when built by the Works Department cost £440. The average reduction in cost by letting by contract as against the Works Department day labour was 20 per cent. Then the Board let a number of cottages to contract, and at the same time built others by day labour under our own supervisors. We found that we could build as cheaply as the contractor, and, therefore, we have continued our own day-labour system. Some of the cottages built by the Board under worst conditions have been

cheaper than those built under both Works Department day labour and contract in previous days, owing to the experience gained. We have gangs of men continuously employed. They can build these cottages without much stopping to think, and consequently they do most work rapidly. In undertaking the building of the cottages by day labour we stipulated that there should be no political interference, and the Labour leagues have ceased trying to interfere.

I think the Daceyville Garden suburb is the best attempt that has been made to overcome the housing problem. But our difficulty is that, owing to insufficient funds, we are not able to build as rapidly as we should like to do. If we could do some good. As the present rate the scheme would try to empty the sea with a spoon. All our residents pay into the Treasury, and we are allowed to use the revenue for further building operations. Of course, there is no profit. The Act prescribes certain restrictions regarding tenancy. No man may become a tenant if he owns other pieces of land with a house on it. The Board has power to sell the blocks, but, so far, has decided not to. Tenancy gives no right of purchase. The Act does pass before the war, and no special provision was made for returned soldiers. The Board had power to arrange the details of the letting, and I have given preference to returned soldiers who served in New South Wales, has rented about a dozen small cottages for soldiers' widows.

All these are the cottages to which I have already referred as being let at 12s. 6d. per week. I think that these should be not less than 10 feet from the street. The ceiling, if a room is to contain 1,000 cubic feet of air space, you build the walls only 9 feet high, there is too much floor space, and that leads to overcrowding. It is more difficult to overcrowd a high room than to overcrowd a low one containing the same cubic area. Water, sewerage, gas, and electricity are brought to the doors of the cottages, and the usual way by the authorities controlling the services. The roads and footpaths are made by the municipality to carry out any maintenance required. The municipal authorities promised to spend all our rates on our estate, less a fair deduction for overhead expenses. But they have never honoured that promise.

Q3. To Mr. Latet Smith.—The Board meets once a week in connexion with the Daceyville settlement, and once a week in connexion with various resumed areas. The members of the Board are paid fees. There are always persons willing to become tenants at Daceyville. All the cottages are let on a weekly tenancy; there are no leases. But the tenants are given to understand that their rents will not be raised, and say they will not be turned out so long as they pay the rent and keep their places in order. The assigning of a house followed to sell their goods-will. The designing of a house suitable for the Australian climate has been one of our chief aims. We try to provide sleeping-out verandahs, which is well overlooked by the windows of any rooms, so that blinds may be placed on the verandah without interfering with light and ventilation of other portions of the house. This design has proved a great success. Of course, we take care to prevent overcrowding. Our rent collectors are practically health inspectors, and if they notice anything undesirable they report it to the Board.

94. To Mr. Mathews.—The Board conforms to the Arbitration Court awards. All the building tradesmen receive about 14s. per day. We pay the train fares of workmen employed at Daceyville, but they are paid nothing for travelling time.



95. *To Senator Newland.*—Several applications to be allowed to purchase their houses have been made by tenants at Daceyville, but the Board has decided that it cannot entertain such applications at present, because it would lead to dual ownership in the same locality. If the freehold is ever given, it will be in respect of allotments in an area specially set apart. We do not think that it would be possible to maintain a garden suburb on a definite plan if we sold to the tenants and they were allowed to make what alterations they choose. The tenants are not allowed to erect any outbuildings or additions without the permission of the Board. Sometimes they do erect structures without knowing that they are doing wrong, and, unless they are very objectionable, we do not require them to be pulled down. The tenants are not allowed to keep horses or cows. We always provide a fuel space, either in the house or in a shed. All the later tenants are using gas for cooking, and many who use fuel stoves have also gas stoves. Only during the last twelve months have we been installing gas stoves. All the houses are loaded with the whole of the expenses of the estate, including the value of the land according to the municipal valuation and the cost of roads. The value we place on the land is the original price plus the improvements, such as levelling and drainage. We spent £13,000 in one main drain. The later tenants will not necessarily have an advantage over present tenants, because the latter occupy houses built more cheaply than probably houses will be built in future. Moreover, the portions of the estate to be developed later will have more public parks to support. If the later residences are built at a lower cost, we shall re-adjust the rents all round, but we could not do that if we sold any of the properties. The dwellings are loaded with all overhead costs, including repairs and fees to the Board. We allow so much per week for repairs on each house. The amount is based on a wide experience, and we find that we have a large money on the credit side, which may be used later on improving the buildings. Some of the houses have been built for five years, and have been already repaired and painted. Our idea is to paint the houses every four years. The costs of concrete and bricks are about equal. We built a number of cottages of sand-lime bricks. The State was making sand-lime bricks at a place adjacent to Daceyville, and we were able to get them for 50s. per 1,000. The cost of concrete blocks is about the same as that of sand-lime bricks. We built one concrete cottage in box frames, and the cost worked out at about the same as that of a brick cottage. We did not think the concrete was satisfactory. It requires more maintenance, and, in fact, is locked up as jerry built. It must have a good coat of flouting, with plenty of fat, to keep the rain out. During the last twelve months the Board has built out £40,000 worth of houses for returned soldiers at Inverell, Bathurst, Seven Hills, and Bankstown. We build the houses for the Returned Soldiers Settlement Branch, and hand them over. The Department repays the cost to us. We have nothing to do with the administration of those cottages.

96. *To Mr. Sinclair.*—We value the land at Daceyville at about £100 per cottage. The small cottages rented by the Lands Department for soldiers' widows give an annual return of about £32. That includes all rates and taxes, and I do not think that you could rent a similar cottage in Sydney for that amount. The same cottage as we let for 15s. per week could be sold on terms for about 12s. 6d. per week. But the purchaser will have to pay for repairs, taxes, and insurance. The Board may spend subject to Ministerial approval any unexpended balance at the end of the year reverts to the Treasury. The whole of the rents are paid into

the Consolidated Revenue fund. We use in making concrete only coke-breeze. We use the concrete for lintels. The concrete lintel is a little cheaper than the brick lintel. The foundations are of brick or stone. There is very little difference in the costs of stone, brick, and concrete respectively. Rubble foundations cost just about as much as brick foundations. The houses are built on sand, and there is no need to make special provision for the foundation. The cost of bricks is about 63s. per 1,000 delivered. It costs about 30s. per 1,000 in labour alone to lay bricks. Brickwork costs about £19 or £20 per rod. Roof tiles cost about £3 6s. per square without the battens. Cement tiles are about the same price. The tenants are not called upon to maintain the rights-of-way into the playground. These rights-of-way are asphalt paths, which are maintained by the Board. We have very little trouble through the accumulation of rubbish in the settlement. The tenants are so well satisfied with their conditions that they behave themselves a great deal better than they would in other circumstances. We employ two permanent gardeners on the estate, and they report any undesirable conduct.

97. *To Senator Needham.*—The allotments vary in size. Some of them are 50 x 160 feet. But we consider them too big. We are providing now for frontages of from 30 feet to 40 feet by a depth of 150 feet. Day labour suits the Board very well, because we must keep a staff for repairs, &c., and there is on the estate a lot of work that must be done by day labour. But we must have a thoroughly competent man in charge of the scheme. We find that the same body of men can attend to repairs and construction. Efficient supervision is a big factor in getting work done by day labour as cheaply as under the contract system. It is also desirable to have a capable supervisor and give him a free hand in engaging and dismissing men. The only disinclination for tenancy at Daceyville is that a man shall not own a block on which a house is built. We have a tenant who owns a motor car, and another who is a chimney-sweep. Tenants are allowed to keep fowls under approved conditions. For a charge of 3d. per week over the fixed rental, tenants have a right to water their gardens.

98. *To the Chairman.*—The method of control at Lithgow will depend very largely on the amount of money that the Government intend to expend, the number of houses they intend to erect, and the time that the work will occupy. If only 100 houses are to be erected, and they are to be completed within twelve months, there is no need for the appointment of a Board. The scheme could be administered as economically from the Sydney office as under a Board at Lithgow. I suggest the appointment of a good supervisor at Lithgow. But he must be a capable man—not an ordinary red-tape Government official who would not know on which end to lay a brick without consulting the head office. The man in charge of the job could decide better than anybody else whether he could build cheaper by contract than by day labour. It would not be necessary to give him extensive power to make purchases. Most of the purchases could be done under the Government's annual contract. But it would not be wise to bind a man absolutely to that procedure, because he might be able to buy some articles cheaper locally. There is no advantage in standardizing the windows and doors. We buy our joinery by tender. We get quotations from private firms and from the State joinery, and a contract is given to the lowest tenderer. We say that we intend to build so many cottages of certain types, and we ask for a quote for the joinery at so much per cottage. Standardization of joinery binds you down to hard and fast designs. A tenant who has made additions to his cottage does

not get compensation when he leaves unless he has spent the money with the approval of the Board and the succeeding tenant wishes to pay for the additions. If he had, with the approval of the Board, erected workshops in his yard, and the next tenant would not purchase them, he would have power to remove them. A site containing 2 acres has been set aside for a school site. I am doubtful whether a technical school will be provided at Daceyville, because the settlement is adjacent to the principal technical college in Sydney.

99. *To Mr. Sinclair.*—We do the plumbing, carpentering, bricklaying, and the plastering by day labour. We let the contract for the electric light installation, and recently we have been letting the tiling, because we cannot get tiles in any other way. The roof tiles have bought up the output from the manufacturers for many months ahead. The rest of the work, with the exception of the joinery, we do by day labour. Practically, we are our own contractors. If we thought that we could make the joinery cheaper than we can buy it from the joinery works we would make it. In adopting the day labour system, under our own supervision, we have been influenced entirely by considerations of cost. I should not care to express an opinion as to whether the work at Lithgow could be done cheaper by contract than by day labour. If the Commonwealth asked the Housing Board to do the work, we would probably carry it out by day labour.

100. *To Senator Newland.*—The appointment of the Housing Board has not involved the creation of another Department. There was a Resumed Properties Branch in the Treasury, which had control of the letting and maintenance of any property resumed in the State. Then the Housing Board was created, and the control of Dacey Garden Suburb and of resumed properties was given to it. In my opinion, design A1 has not suited the verandah spaces at Lithgow, but it would suit Daceyville fairly well. The verandah is not suitable for sleeping out. The living room is bigger than the corresponding room in a Daceyville cottage, but the other rooms are of about the same size. I do not approve of the provision on this plan for the erection of an additional room, because that room would have to be entered from the living room. A two-roomed cottage would be of no use at Daceyville. I do not think the Commonwealth should build houses with less than two bedrooms. There is a popular idea that a man should be able to pay a week's rent with one day's wages. But I do not think that many men do that. I do not think that a man receiving £3 a week can afford to pay more than 12s. per week in rent. The houses which we are letting for 12s. 6d. per week have two bedrooms, a living room, a kitchen, a bathroom, a pantry, electric light, gas, and sewerage. The lay-out of the Commonwealth area at Lithgow seems suitable for the site, except that I think some of the larger blocks should be intersected by paths or rights-of-way.

Arthur Frederick Pritchard, President of the Institute of Architects of New South Wales, sworn and examined.

101. *To the Chairman.*—I have been practising my profession for about 32 years, and have been President of the Institute for the last three years. I take great interest in town planning. I am an alderman of Woollahra, and the inauguration and carrying out of the great highway to South Head is largely due to my efforts in connexion with town planning. Undoubtedly there is a need throughout the State for a cheaper and better class of house. The lay-out of any subdivision should be treated according to the contour of the country, just as I would treat a house plan according to the features of the site. One of the chief considerations in the laying out of the ground at Lithgow should

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be that of aspect. Lithgow is subject to deadly westerly winds, and a westerly aspect on the slopes of the hills is very unfavourable. Protection from the westerly winds is one of the first things to be considered. So long as workers are given a comfortable area around their houses, there is no advantage in providing large blocks. I have time for the cultivation of gardens. One good feature about Mr. Morrell's lay out of Lithgow is the absence of back lanes. We are fighting strongly against lanes at the present time. I do not approve of the lay out on the westerly side, because the houses will be built close each other on rising ground, and some people will be looking into the back yards of others. There is nothing more objectionable in a lay out than to have one house above the other, and some persons able to look over the yards of their neighbours. There is no privacy, and the conditions are most objectionable to the women folk. Such conditions never give comfort or lead to a proper system of home life. In every home there is a certain amount of outside work which a woman does not like her neighbour to supervise. I prefer the lay-out in the centre of the plan. The portion which is to be built first is designed on approved lines. I think an allotment of 30 feet x 140 feet is a comfortable area—enough for a workman to keep in order, and have a nice garden. In Woollahra we try to keep the houses 15 feet back from the building line. I think the main avenue should be considerably larger than the secondary streets. The latter are merely for house-to-house traffic, and if the size of them is reduced the authorities can concentrate the work of beautification on the main avenue. No amount of work in small streets will give distinction to a town, or give the people pride in their settlement. A width of 40 feet is ample for the secondary streets, but the main avenue should not be less than a clinch in width. In fact, in Woollahra we are aiming at having the main avenue 100 feet wide. The South Head-road is to be 100 feet wide for the whole distance, with plantations on each side, and relatively narrow walks under the trees. In the Lithgow settlement you might have one main avenue 80 feet wide, and the other avenues 60 feet wide. I should like to see in all subdivisions one main avenue. It costs very little to get such an avenue before the town is built, but it is almost impossible to get it afterwards. The common playground has many good points, but I doubt whether the people are quite educated up to it. It represents the ideal arrangement, but I do not think that the mothers of to-day are capable of that common interest and common feeling which would make them appreciate it. The man earning £5 per week usually requires four rooms and a kitchen. A man earning £3 3s. might be satisfied with a living room, two bedrooms, and a kitchen. From a national point of view there should never be less than two bedrooms in a house. If there is sickness in the house, and only one sleeping apartment, the conditions are a menace to the whole family. I think a man can afford to pay one-fourth of his income in rent. One-sixth was all right some time ago, when tenants were not demanding the same conveniences. A man can well afford to pay a quarter of his income in order to have greater conveniences in his home, so that his wife may have relatively little work to do. The conveniences demanded nowadays include built-in washbasins, up-to-date washing arrangements, electric light, and gas. I have been wondering whether it would not be possible to build the Lithgow houses in concrete, and face them with disintegrated stones of arid colours. In America wonderful work is being done with reinforced concrete faced with disintegrated granite, so that the building has the colour and texture of granite. There is, however, a difficulty in getting reinforcing material, and under the circumstances you will be compelled to use brick. I do not think that concrete would be cheaper than bricks at

Lithgow. Nine-ft. walls would not be suitable there, because Lithgow is subject to great heat in the summer, and a high room in hot weather is preferable. The American houses have walls as low as 8 feet, but they are of the bungalow type. I am afraid that overcrowding would result if low ceilings were adopted. The ceiling should never be less than 10 feet from the floor, and then the tenants cannot block the cubic capacity, as they may do if they are given a wider floor space and lower ceilings. When giving evidence before the Public Accounts Committee I advocated that works such as these should be thrown open to competition. The Government would gain greatly by having competition for this class of work. You would get more variety of design, more skill in treatment, and probably economy. I should say that a brick house having two bedrooms, kitchen, living room, and convenience, and tiled roof—the four rooms averaging about 12 feet x 10 feet—would cost £350 each, if 100 were being erected at the same time. If a big number of houses is to be built, it would be advantageous to call for tenders. I would recommend the standardization of doors and windows, but with variation in the designs. You can standardize all the general windows, but possibly not the front windows, except in blocks. I should think that the control of the Lithgow houses should be given to a Board. That system would tend to better social arrangements. All you would require would be a sort of Advisory Board, which would not involve any great expense. It is necessary to maintain control over the social conditions and habits of the tenants, otherwise there would be a tendency to degrade the position of the town down to the level of the lowest occupant. I understand that in the model villages in England a committee of management is appointed by the residents. Undoubtedly the free-lease should be granted to the occupants. I do not think that you will achieve success on the leasehold principle, because men and women have no fixed interest in their homes. They would be more likely to care for and improve the houses if they had a chance of acquiring the title. I think you could fairly make a condition that those who bought their houses should sell only to employees of the factory. But I have never heard of any such condition having been made elsewhere. Nothing short of freehold will produce that home feeling which you are anxious to create. It should be possible to guard against the homes falling into the hands of speculators. Married couples start life with a small house, and they put labour and interest into it. As the children grow up, the family requires a larger house. The father and mother ought to have something coming to them for the work they have done in the smaller place, in order that they may make some advance in life. If that is not possible, the houses become a sort of lodging-house, such as we have in Sydney in thousands. A detached cottage is always preferable to a semi-detached one. The difference in cost between two detached houses and two houses semi-detached would be about £50. At the request of the Governor-General, I conducted, in connexion with the Royal Agricultural Society's Show, a competition for designs for houses suitable for agriculturalists and others. Between eighty and ninety designs were submitted. One feature that we stressed in connexion with that competition was a properly ventilated roof. I notice in the designs which have been prepared for Lithgow that the roofs are very low pitched. That means that in summer time the rooms become almost unbearable. The roofs in these houses should be given a greater pitch, or alternatively should be broken so that the air may get through. The cost would be a little greater, but would be compensated for in the greater health and comfort of the occupants. You do not get much good work out of men who are discontented and uncomfortable in their homes. I estimate

that houses such as you require, containing two bedrooms, a living room, kitchen, and conveniences, could be built in quantity at about £350 each. Built singly they would cost about £600 or £700 more. If the Commonwealth called for competitive designs for these cottages, it would be necessary to stipulate conditions as to the height of ceilings and the pitch of the roof. Brickwork in lime mortar costs in Sydney about 11s. Brickwork in lime mortar costs in Sydney about 11s. per rod. Of that sum £3 10s. represents wages. I have supervised houses lately in which the brickwork has cost that amount. There are 3,800 bricks in a rod, and they can be laid for less than 30s. per 1,000.

102. To Mr. Sinclair.—Bricks cost £3 12s. 6d. per 1,000 at the kiln. Buying in big quantities, the price would be less. I reckon that brickwork in cottages can be done for about £18 per rod, or in cement for about £20 per rod. One-story concrete houses could be built without reinforcement. The thickness of the walls would depend on the outside facing. If you did not intend to face against the weather, the wall would require to be thicker, or hollow. But with a very fine face to resist the weather, 9 inches would do. In order to get protection against the westerly winds, I would lay out the avenues so that the wind blow across them, and not with them. According to Mr. Morrell's lay-out, the westerly winds will blow into the back doors of the houses on the western side. With a rise of 1 in 16 on that western slope, one house would look into the back yard of another, and that is a fatal objection to the lay-out. The lay-out of the eastern and central portions of the plan is much better. I think it will be better to have a competition for the lay-out and the house designs. Rather than have any lane in the bigger blocks, I would intersect them with secondary streets.

103. To Mr. Laird Smith.—We invariably have to provide verandahs suitable for sleeping out. I think the Government should endeavour to get a design suitable for the Australian climate, and experiment with it. There is an absolute need for an Australian house. The Governor-General realized that when he inaugurated the competition to which I refer. I think it is inevitable that the ordinary meals will be eaten in the kitchen. Subletting could be guarded against by the control the Commonwealth would have over the houses in regard to either tenancy or purchase on time-payment. I would recommend the Government to make a regulation against subletting. I do not think a small kitchen is desirable. When the children come home from school the mother will not disarrange the living room in order to give them their meals. They will be fed in the kitchen. I recommend that the bath-house and wash-house should be independent of the kitchen.

105. To Senator Needham.—It is my mature opinion that the Government should not erect houses that have less than two bedrooms. I look at the matter from hygienic and utilitarian points of view. The Commonwealth is not building for any one person, for even if there are no children, an extra bedroom is necessary in the case of sickness, and it is worth a little extra rent. I do not think we get the same work out of men under the day-labour system, even with proper supervision, as we do under contract. We have had examples of Government undertakings which seemed most successful. But we found later that all the charges which a contractor would have to pay had not been included. As a business man, I do not believe it is possible to profitably employ the day-labour system to any extent. You may get good results in some instances, but, generally speaking, the contractor gets more work out of the men—possibly by working them harder—than a Government supervisor can. I think it will be necessary to have a local Advisory Board at Lithgow, even if you have good supervision. The control of the scheme should not be left to one man. The Board should be

nominated by the Government from amongst the most reputable citizens. Even if the members of the Board were paid a small honorarium, that would not be much of a load for the scheme to carry. The members of the Board should be paid, because they have a great responsibility to the people. The scheme could not be successfully managed from Sydney. Lithgow is essentially a place where local supervision is necessary.

106. To the Chairman.—If the Committee recommend that competitive designs should be called for, the Institute of Architects will be glad to help the Government by drawing up the conditions, as we did in connexion with the City Council's housing scheme competition, and that held at the instance of the Governor-General. Such a competition would mean not more than a fortnight's delay.

(Taken at Melbourne.)

TUESDAY, 2ND JULY, 1918.

Present:

Mr. GREGORY, Chairman;

Senator Henderson  
Senator Needham  
Senator Newland

Mr. Mathews  
Mr. Sinclair  
Mr. Laird Smith.

John Thomas Hill Goodwin, Chief Surveyor and Estates Officer, Department of Home and Territories, sworn and examined.

107. To the Chairman.—On the 7th March last, 130 acres of land were purchased at Lithgow for the purpose of erecting homes for employees at the Small Arms Factory. The average purchase price was £45 per acre, the total purchase money paid being £5,950. I inspected the area prior to the purchase being made, and I have also inspected it in order to ascertain its suitability for subdivision, and also as to whether or not it could be disposed of profitably. It is the only suitable land available near the Small Arms Factory at anything like a reasonable figure for residence purposes. All the adjacent land is very much higher in price. I believe that it is just as suitable for the purpose for which it was purchased as is any of the land adjacent. There is a good deal of low-lying ground now used for residence purposes, but it all has a fall. To the north of the area we have purchased the fall is nearly 1 in 60. I know the Cooper Estate adjoining. I have had several conversations with Mr. Morrell, who has submitted a sketch plan for the subdivision of the land which has been purchased. I do not agree with him in regard to the narrow streets he has provided, in regard to the location of the streets, or in regard to the small size of the blocks. He has provided some blocks of a very fair size, but they are badly located. The contours will be too steep, so that they will be wasted. I have prepared two subdivision plans. In No. 1 plan I do not make use of my drain reserves for road purposes. The drains showing on the plan are really the natural gullies, and my proposal is to keep right out of these gullies, except in regard to the westernmost one, which I think it is advisable to use for road purposes eventually. However, there is no necessity for doing that at the present time. The rainfall at Lithgow is very heavy during the winter. I have estimated it at 2 inches per hour, and allowed for a run-off of 60 per cent. That is to say, 40 per cent. will remain in the gully. On my plan, green stripes show the eastern gully, the central gully, and the western gully, and they are equivalent to the main roads provided in Mr. Morrell's design. Until the eastern portion of the area

becomes closely settled and the ground becomes impervious to water, I do not think that it will be necessary to make any provision to get rid of the storm waters beyond providing for pipes at crossing places. A 3 ft. 6 in. pipe along the eastern gully should carry away all the water. It will not be necessary to touch the central gully for quite a considerable time to come, because very little more water will go into it when the land is settled until the footpaths and yards are asphalted, which will prevent the water from soaking in. There is not sufficient water flowing into the gullies now to scour a channel. The central gully is merely a grassy valley for about two-thirds of the way through the area. The channel really commences just about where the eastern gully and the western gully join, and then it is only a narrow channel about 2 feet deep and about 3 feet or 4 feet wide, running on to the southern extent of the property. I am aware that a large drain has been provided for the purpose of draining the Cooperwell Estate. I have gone closely into the figures, and I believe that the drain I suggest will carry all the water that is likely to go down the gully owing to closer settlement. The eastern gully will not pass through any private property. The blocks back on to it or run alongside it. The blocks tinted green on the eastern side of lane D on No. 1 plan might be suitable for bachelor's quarters. They are too broken, the land is too steep; therefore they are better left alone for the present. The grade of the road on which they face is 1 in 11½. On my plan all roads are 60 feet wide, and the grading is quite good. In road A the cross-section shows that it is level for 500 feet, on a grade of 1 in 15 for 120 feet, on a grade of 1 in 50 for 300 feet, on a grade of 1 in 16 for 350 feet, in which strip there will be 18 inches of cutting, with a few feet of filling in the gully, on a grade of 1 in 16 for 50 feet—that is mounting towards the top of the hill—and then runs down on a grade of 1 in 16 to the level again. There is nothing steeper in that road than the 1 in 16 grade to be found in Collins-street, Melbourne, between Swanston-street and Russell-street. In regard to B road, the steepest grade is 1 in 12½, coming out of the main road, near the cemetery, and that could be avoided by simply cutting out the corner blocks and curving the road slightly to the western boundary. There is nothing in C road except at the junction of the two roads, where the grade is 1 in 12 for about 50 feet. D road starts with a grade of 1 in 11½. There is any quantity of roads in Australia with grades of 1 in 10. There will be no cutting or filling required in any of the roads except for a few patches here or there to a depth of 2 feet. The main centre road is graded for the whole distance, and it is on good hard ground. It will last a long time if simply formed up. In my opinion, we should make a road along Bayonet-street to the junction with the centre road, because it is inclined to be soft. It receives a certain amount of seepage from the hills, and, therefore, ought to be metalled as far as the centre road. We should metal the centre road and provide side drains. We should also form the side streets as required, putting culverts at the crossings over the eastern gully. About four culverts, with two 2-ft. pipes to take away any rush of water, would be all that would be required. A 3 ft. 6 in. pipe at the end of the drain would carry away all the water. The storm water is calculated on the assumption of 30 per cent. run-off from the areas A and B, and 60 per cent. from areas C to L. Areas A and B represent the unsubdivided area of 26,189 acres, and a gradient of 1 in 4, with a total run-off of 27.62 cubic feet per second. Portion A has an area of 50.3 acres and a gradient of 1 in 6, with a run-off of 1,618 cubic feet per second per acre, or a total of 81,027 cubic feet per second. It is



I have provided for 50-ft. streets on No. 2 design, but they are only short cross streets, with 6 blocks facing on each. The main blocks face the north and south roads, which are 60 feet wide. It is not the object to have narrow streets, but I see no reason for reducing the width of the main streets in order to have a few extra feet. The American practice now allows an allotment of 40 feet frontage, with a depth of 100 feet. It is not considered that such an area is the most desirable for Australian conditions. In my opinion, the minimum width should be 60 feet, and, as far as possible, the lots should be 50 feet to 60 feet by 150 feet to 160 feet. In support of the increased areas, which are at variance with American practice, I found that in America the working man works much longer hours than the Australian worker, and, therefore, does not have the same time to devote to his garden and the improvement of his home; that in most cases the American workman lives at some distance from his work, and that further curtails his spare time; and that in a great many of America the severity of the winter is a great check on outdoor operations. In Australia, where sufficient land is available, we should endeavour to guard against streets of insufficient width and to house the people on blocks of sufficient size to insure a reasonable measure of privacy, and to provide for all aspirations there may be towards the creation of lawns, gardens, &c. These arguments are strengthened by the experience of Mr. H. V. McKay, at Sunshine. There, after a good deal of experience in connection with the housing of employees at the Sunshine implement works, it has been found that the most desirable block has a frontage of not less than a depth of about 160 feet, and the frontages have been increased from 60 feet. In the latest subdivisions all the blocks are 60 feet wide. In Sunshine, gardens are a feature, and there is great rivalry between the house-owners, clearly showing that, when given increased area, the Lithgow workmen will turn them to good account. Nearly all the houses at Sunshine are being bought by the people on terms. The Lithgow scheme is for housing men who are moderately well off, earning from £3 3s. to £5 2s. per week, and many of them are tradesmen, who will devote a good deal of their time to their homes if they can purchase them on reasonable terms, and it will be a great shame to force them to live in small blocks. There is a great difference between men in rented homes and those who own their own homes. Although many people will not mind to improve one's own dwelling, I do not think that tenants are so likely to beautify their dwellings. I do not own the house I occupy, but I have a good deal of my time in the garden. There is a strong tendency to improve one's garden when one owns the property. I do not agree that if the men are in large areas they will not care for them. In the country many will keep a pony and a few fowls. The conditions at Lithgow are absolutely different from those in Sydney. There are no means of conveyance. On Sunday the men at Lithgow will not be able to make a train ride. He must provide his own means of getting about. He will, therefore, provide a pony and a car. A man should be able to keep a pony at Lithgow for 3s. a week. I have been all over Australia, and have found that any workman in regular employment will have his own jinker if he can, and he will have a few fowls, do a little gardening, and grow his vegetables. The Australian workman does not object to the spendthrift class, but with manure and a good land on this area will be sure to grow his garden. It is certainly a little clayey, but there are no sandy soils which are worse. I have not gone very closely into my No. 2 plan. The sewerage arrangements will practically be the same as the No. 1 plan. Before any

of the allotments on the eastern side of the subdivision can be utilized, it would be necessary to make a road, as the soil for a considerable depth is comprised of sand from the hills. As a matter of fact, I do not think that the ground in any of the gullies will stand traffic until it is metalled and side drains are put in. I estimate that the cost of making a road along the gully is about £1 per yard, including footpaths. The western treatment on No. 1 plan would be similar to the western treatment on No. 2 plan. On both plans I have made no reservation along the western boundary; the cemetery begins two-thirds of the way from the highway-street, and several of the blocks will face it. The highway road, which divides the area from the cemetery, is already formed, and the best building sites are adjacent to it on the top of the hill. But those blocks will not be required for our scheme for many a day. There are about 150 allotments on the eastern side of the area to the east of the central gully. There is more land to the east of that gully than the Commonwealth will require, it being understood that not more than 100 blocks will be needed at the outset. I do not think it will be necessary to extend the settlement beyond the pink area for many a day. A fence could be put round the balance of the area on the west, and that ground could be let for market gardens or growing purposes, or it could be planted with pinus insignis for timber. In South Australia a lot of money is being made out of pinus insignis of twelve years' growth. In Western Australia they are also selling pinus insignis from twelve to fifteen years old. We would need to make a road and a drain in the eastern gully; but the central gully and the western gully need not be touched for many years to come. I favour No. 2 plan. Although it is not so bold in design, every road on it is well graded and on good country.

108. To Senator Henderson.—If 320 blocks are required, about 150 subdivisions to the west of the central gully, and, if necessary, the 60-ft. blocks on the Bowdler-fence could be made smaller. We can get nearly 300 houses in that area. Mr. Morrell has cut up the land in the extreme north in small blocks; but I have cut up into large blocks for leasing purposes, and if land is wanted later on for residence purposes, it can be made use of in that way. The only thing affecting the number of allotments is the size of them. The size of the blocks in the lay-out of the area does not affect the size of the blocks. It should be determined to make the allotments smallest, and then to be made smaller by putting in one or two additional east-west roads.

109. To the Chairman.—If it is decided to make the blocks 40 feet by 150 feet, my design can be altered to do so. The north and south roads will stand, but additional east and west roads could be provided. I have provided the east and west roads in the best positions for crossing the gullies, but intermediate roads not crossing the gullies could be put in as often as required. The gulleys should not be crossed everywhere. The descent is quite abrupt in some places. It is only where the land falls down gradually that the gullies that a road can be provided to cross it. I have arranged my roads running from the central road to the central gully at the edge of the reservation; but, if necessary, they can be continued through the reservation on a good grade. At present a crossing can be obtained anywhere, where there will be no need to fence those reservations just now. Fencing is a heavy item, owing to the cost of wire. It will be necessary to put something in front of the cottages. I do not suggest high paling fences, but light fences should be put up sufficient to keep cattle and goats out. I have made no estimate as to the cost of my recommended lay-out of the area. I would not provide the kerbing such as can be seen in front of the cottages at Derbyville. It looks too much

In Perth the Commonwealth acquired a number of properties in connexion with the purchase of a site for the General Post Office. All these properties are not required at present, they are leased to various people, and the practice followed is for the municipality to assess the rates on them and for the Commonwealth to collect the rates from the tenants and pay them to the municipality. In the eyes of the law the occupant of a property as the person who is responsible for the payment of rates; in this Bill provision could be made to allow of the blacks at Lithgow being rated. At present the Commonwealth does not pay rates. It contends that the lesser power cannot charge the higher power. There is also an old State arrangement whereby the State cannot be charged rates, because very often it provides the municipalities with about half their incomes. However, the Commonwealth has not that excuse, because it does not subsidize any municipality, except in regard to any damage done to roads. In Sydney the Defence Department occupies a large area of ground, and uses the roads of the municipalities very considerably. It is the same in Melbourne.

(Taken at Melbourne.)

THURSDAY, 4th JULY, 1918.

Present:

Mr. GUNCOON, Chairman;

Senator Henderson	Mr. Mathews
Senator Needham	Mr. Sinclair
Senator Newland	Mr. Laird Smith.

John Melbourne James Tait, Assistant Architect, Department of Works and Railways, sworn and examined.

111. To the Chairman.—I have been in the service of the Commonwealth for about seven years. I have been acquainted with the Lithgow district for about twenty-five years. At one time I was practising in Bathurst. In connexion with the work of building cottages at Lithgow, I have assisted in the preparation of the plans, and I have also scrutinized the estimate of costs. I did not prepare them. The Director of Works in Sydney was communicated with, and asked to obtain quotations for bricks at Lithgow. The information came through his office. I understand that the same steps were taken in regard to obtaining quotations for cement. These quotations were obtained about eight weeks ago. The cement works are at Portland, about 20 miles from Lithgow. Cement should be a cheap item there in comparison with the cost in Sydney or Melbourne. The actual quotation for bricks has slipped my mind, but I had it before me at the time I scrutinized the estimates. I believe that the price was about 48s. per 1,000. I have had practical experience in regard to arranging contracts and carrying them out. The brick work in these cottages will be cavity walls externally—that is to say, two 4½-inch thicknesses of brick, with an air space of 2 inches between—and solid internal walls 4½ inches thick. The external walls will be struck on the outside only. The brickwork, labour and material, should cost not more than £24 per rod, basing the price of bricks on the quotation received by the Department. The labour should cost about £6 or £8 10s. per rod. If the external walls were solid, struck on one side only, the cost should be a little less, but not more than 10s. or 12s. per rod in the case of small buildings. We have standardized the doors and windows as far as possible, and by that means we anticipate getting the work carried out a little more cheaply. A contractor, if he has his own sawmill, need set up only two or three machines to do the whole of the work. If we had diversified doors and windows, he would need to set up different machines. My idea is to let a

straight-out contract for the whole of the work. It would probably induce men to tender who have their own joinery plants. The probability is that the work will be done more quickly, more reasonably, and with less overhead charges on account of supervision. The whole of this work would not mean a very big contract. I would not divide it into more than two lots. I think it is generally accepted that somewhere between one-fifth and one-sixth of a working man's weekly wages is a reasonable amount to ask him to pay for his housing. I do not agree with the contention of the American authorities that the proportion should be one-fourth. A man should not be asked to pay more than one day's wages per week for his housing. I have seen many attempts to construct concrete houses to compete with brick or timber, and I have seen them carried out under the very best conditions, where material has been on hand, and so forth, but the results have never been satisfactory from the monetary point of view. With the exception of the big reinforced concrete companies operating on large works, I have never known any concrete company to achieve success in dealing with small works. In Australia, where brick or timber is accessible, concrete buildings do not seem to be able to compete, from the point of view of price, with brick or timber buildings. I cannot say why this should be the case, because, working the matter out on paper, it would appear that concrete buildings should be able to compete with brick or timber buildings. There is something wrong somewhere which I cannot follow. In making out estimates of cost, we have taken into consideration the present uncertain state of the material market. There is practically no stable price for anything. Prices jump from one month to the other. The idea in submitting these estimates was to provide a margin so that it would not be necessary to come back afterwards and say that we have underestimated the cost of the job. Notwithstanding the difficult condition of the market at the present time, we believe that these houses can be built for the amount estimated. We have no desire to mislead the Committee by underpricing. I have found, from a fairly long experience in the country, that if you can say to a brick-maker that you will require 1,000,000 bricks from him, or as many as will keep him going for nine or twelve months, you will get a concession from him. I cannot say that we could save much money by the use of timber. Lithgow has never been a centre that has lent itself to securing cheap timber for building construction in comparison with brickwork; but, since these estimates were prepared, I have heard, though not officially, that there is a mountain timber which is being used at Lithgow, and which is giving fairly good results. The timber on the western slope of the mountains was generally regarded as not very desirable for building purposes. However, they may have discovered some new forests. Lithgow has the clay and everything suitable for the manufacture of bricks, whereas timber must be got from some distance away. From the photographs of the new method of concrete construction in use in Tasmania one cannot ascertain the thickness of the walls. They may be only 1½-inch or 2-inch slab. What might give satisfaction to a private individual in Tasmania might not be considered substantial enough for us. There is nothing to prove the life of places which are being built of concrete under this new process. It would not be a good proposition to build something which would need to be renewed in twenty years. Mass concrete work lends itself admirably to the construction of large buildings, and it is equally as lasting as brickwork is; in fact, provided the walls are of a reasonable thickness, and the material is of a certain quality, it should be more substantial. With the present price of steel, and so forth, reinforced concrete work, under any system with which I am acquainted, would not be as economical or as desirable as brickwork; and in a place like Lithgow, where the winter is very severe,

and where there is a considerable rainfall and a good deal of snow—I have seen the snow covering the ground there for several weeks to a depth of 6 or 8 inches. I am doubtful whether concrete walls 1½-inch thick would be at all desirable in a building which is supposed to furnish a man with a home for life. If we could put up concrete buildings with walls 6 inches thick as cheaply as we could put up brick buildings, they would be just as desirable. I think Lithgow is favorably situated so far as the sand and stone which would be required for concrete work are concerned. Sand would be the most expensive item, but there is an excellent sandy bottom in Cox's River, which is not far away. I have not seen the concrete bricks which have been made at Lithgow. I believe ashes form one of the principal constituent parts of them. I have known instances in New South Wales in which the damp has penetrated through the ashes. Cinder or coke concrete is not weatherproof. It is quite porous, and depends solely for its weatherproof qualities on the cement coating with which it is faced, and as that requires steel trawelling, of course it means a fair amount of labour. If railway cinders can be obtained at Lithgow for little or nothing, and if a good type of machine is used, the cost of making concrete blocks there should be quite low. However, I am very doubtful about the weatherproof quality of them. The height of the ceiling in a cottage depends upon the proportions of the room. In some cases a height of 9 feet would be quite ample, but the Local Government Act of New South Wales stipulates for a minimum height of 10 feet in a living room, and we naturally conform with any local governing Act or other Ordinance which we consider a reasonable one, although we are not actually bound to observe it. I would adhere to the height of 10 feet for a living room. We have to dispose of these houses by letting them or selling them, and, rightly or wrongly, there is a prejudice in the lay mind in favour of having a considerable height in a room. By reducing the height of the ceilings to 8 feet, we might unfavorably impress an intending purchaser or tenant. The laundry should be cut off from the kitchen in a small house. If a man has a couple of "bloys" well saturated with oil in the weekly wash, an undesirable smell would penetrate right through the house if the laundry were not kept separate. My experience is that people, especially when there are only two of them, like to take their mid-day meal in the kitchen. I join issue with Mr. Foggitt, of Daceyville, who says that his desire is to prevent people from making their kitchens into living rooms. It is a very nice idea to cultivate the instinct of sitting in the sitting room, but there is the domestic idea which has also to be considered. In winter, at Lithgow, there must be a fire in the room in which people are sitting for any time. Therefore, the living room must be kept warm. People should not be compelled to light fires in their living rooms to warm them at meal times. Most of the women's work, after she has tidied up the house, is confined to getting meals ready, unless it happens to be washing day. In any case, she spends most of her time in the back portion of the house. The kitchen is the really warm room of the house in the winter time, and it would save labour and expense if the building of a fire in the sitting room during the day-time could be avoided by allowing the breakfast and midday meal to be eaten in the kitchen. At night the fire can be lighted in the sitting room, and the kitchen fire can be dispensed with. It is a very important matter to allow meals to be taken in the kitchen. If a woman has sickly children on her hands, or is indisposed herself, she does not want to be bothered taking dishes from the kitchen to the living room. I am very emphatic in my contention that the laundry should be outside, but it should not be detached from the rest of the building. It

is unfair to expect a woman to go to and from a laundry outside in wet weather. I believe that hardwood timbers are more expensive in New South Wales than they are in Victoria. I can submit a list of prices which are now quoted for hardwood timbers in Victoria. I have seen fibre-cement tiles; in fact, they were put on the roof of the running sheds at Lithgow over 25 years ago, and seem to be as good as ever. I do not think that there would be any objection to using them instead of clay tiles. We have obtained prices for them for some of the buildings here, but we found that we could not save anything by using them. We might be able to get them cheaper in Sydney. It would add variety to have some of the buildings roofed with fibre-cement tiles, but, merely on the question of appearance, I would prefer to see them all roofed with clay tiles. My investigations in regard to town planning have not been sufficient to warrant my criticising the layout of the area at Lithgow, which is the work of recognized experts, but with regard to the size of the allotments there, although the area provided for each house might not be kept quite as we are accustomed to see gardens kept in Melbourne, it will be a very great benefit to the people at Lithgow to have a fair amount of ground at the rear of their cottages. It will give the children an ample playground, and keep them off the streets, and out of the common playgrounds, which are so much boasted by the town-planning people. Children in their own back yards are very often in better company than they will find on public playgrounds. Probably 60 per cent. of the men there may desire to keep a horse and finker. In the country, unless one has some sort of conveyance, he cannot get anywhere on the Saturday afternoon or Sunday. A decent area at the back of the house will help a great deal towards reducing the cost of feeding a horse. Many of the men will probably like to grow vegetables or keep fowls. In my opinion, the allotments should not be smaller than 50 feet by 150 feet. At any rate, that would be a fair average-sized block. The distance of the front of the house from the street line would depend upon the width of the street. With narrow streets the houses should be kept further back; but I would not like to see them kept too far back, because it will mean an extra area in the front, entailing a lot of work in keeping it in good order. Lithgow is not a place that lends itself to the easy cultivation of gardens. There are very few nice gardens there. I know that the American tendency is to keep the front yards open and unfenced, but in Australia nearly every man has a dog or an animal of some sort about the premises, and wandering animals are always a cause of trouble. If I had a bit of land, I would like to have it fenced off from my neighbour. It would tend to the comfort of both of us. My opinion is that front yards should be fenced off in a substantial way. A wire fence with a hedge would be an excellent provision. Ordinary cyclone fences are cheaper than picket fences, but goat and dog proof cyclone fences would be needed at Lithgow, and I do not think they would be cheaper than picket fences. There has been a big increase in the cost of cyclone-fencing material.

112. To Mr. Laird Smith.—I should say that the minimum thickness of a substantial concrete wall would be 4 inches. It is not customary to reinforce the concrete work in small cottages, unless it happens to be monolithic work. A house with three rooms would be sufficiently large for a married couple with two young children. Generally speaking, the working man asks for four rooms, but most often he occupies three rooms, or even two, because he cannot afford to pay the rent required for a four-roomed house. It has been impossible for the last few years to obtain a four-roomed house under 10s. or 17s. a week, and I think that rents are even higher than that in Sydney now. No provision

has been made in the estimates of the cost of the buildings for making footpaths. In self-contained houses such as these will be, it will not be essential to asphalt the yards. I believe in having self-contained houses, no matter how small they are, and in having the laundry in such a position as to prevent any smell going into the house. It would be a great mistake to have the whole of the houses of one design. A little differentiation would add to the appearance of the settlement, and to the comfort of the house-owners, and would not make any material difference in the aggregate cost. If solid brick walls are provided, there will be a likelihood of dampness on the weather side, which the cavity wall prevents. Cavity walls are absolutely necessary in a place like Lithgow. They make the houses warmer in winter and cooler in summer. Fibre-cement tiles would provide quite as substantial roofing as clay tiles will give. It is merely a matter of taste, but, for the sake of appearance, I prefer to use clay tiles. They can be obtained at £18 10s. per 1,000 in Sydney. The price is a reasonable one now, especially in comparison with the present cost of galvanized iron. Before the war, these tiles cost £6 or £7 10s. per 1,000. It would be preferable to have electric lighting in the houses, but I cannot say that it would be cheaper at Lithgow. Certainly coal is very cheap there. Electric lighting has great advantages over gas lighting.

113. To Senator Henderson.—Lithgow is essentially a brick-producing district, and in almost any circumstances, provided that a brick building is not prohibitive in the matter of price in comparison with a wooden building, it would be better to use brick as a material than to use wood. From a climatic point of view, it would be better to use bricks at Lithgow. If a proper damp-course is provided in a wall, no matter what it is made of, the wet can be prevented from rising. It all depends upon the efficiency of the material used in making the damp-course.

114. To Mr. Mathews.—If it is made light enough, a wooden house cools more quickly in summer than does a brick house. In Queensland, where they use one board only, the houses cool very much more quickly than do the brick houses, but in Victoria, where we build with the weatherboards outside and plaster on the inside, the houses do not cool so speedily as do the timber houses in Queensland, though they cool more speedily than do brick houses. On the other hand, a brick house built with a cavity wall does not heat up as does a brick house with a 9-inch solid wall. The cavity being ventilated at the top and bottom, allows the air to circulate all the time, so that the inside thickness of the walls does not get hot to anything like the same extent that the outside wall does. I have not seen the effect of wandering animals upon the front yards at Daceyville, but I do not think that the settlement can fairly be compared with a place like Lithgow, because it is in the metropolitan area, where there is stricter supervision over stray animals than is to be found in a country district. I am aware that it is all open country around Daceyville, but that is not like the open country around a country town. There can be no two opinions about the appearance of the front garden effect at Daceyville. I know that the views I have expressed are at variance with all the latest ideas on the subject of town planning, but I was not talking about a suburban area. I was speaking about a rural area, and I know that when a man's horse gets out—and where there are children that will always happen—it immediately chews up the neighbours' flowers, and that means that there are a couple of black eyes floating about the community before night time. I think it will be a pretty hard task to grow grass lawns at Lithgow. I believe that it will be necessary to plant them every spring, as has to be done at Orange. I was taking all these things into consideration when I said that I was in favour of dividing the front yards in some way or other. I was

in private practice, and was in the State Service in New South Wales before I joined the Commonwealth Service. I am strongly in favour of contract work as against day-labour work. If you could give the man in charge of this job life and death over it, so to speak; if he could buy where he liked and in any quantities he liked; if he could employ what men he liked, when he liked, and how he liked; if he could pay them what wages he liked, so long as he kept to the union rates; if he could pay over the union rates to some men to whom he wanted to give more, and if he could treat his men just as a contractor does, I do not know why he should not be able to do the work as cheaply as a contractor could do it, or even more cheaply. But, in order to satisfy the Auditor-General, the Accounts Branch, and parliamentarians, we have to keep so many records that our operations are to a certain extent hampered. If I am a contractor, and I hear that So-and-so has 150,000 feet of timber that will just suit me, I telephone to him and say that I want the timber delivered at once, and he sends it to me. I cannot do that when I am buying for the Government. I must first get approval to make the purchase, and by the time I obtain it some one else may have stepped in and secured the timber. There is no way of avoiding all this recording. It is necessary, because ten years hence some one may want the whole transaction explained, and if our records cannot show it in black and white, we are in the soup. These restrictions, although they are essential, make it hard for us to carry out the day-labour system. A man should be able to pay some workmen more than he pays to others. In other words, he should be able to get the most out of the men he employs. I do not mean to say that a man who is not as fast as another should be deprived of his employment. This is my meaning: Men are taken on for a Government job which is likely to last six or seven months, and they realize that when the job is finished, they may have no other job to go to; therefore they say, "We will not overwork ourselves." It is only human nature. They will not bustle themselves. On the other hand, men who are working for a contractor of any standing know that as soon as one job is finished the boss will have other work for them, and so they do not slow up towards the end. A contractor can give his employees more continuity of work than the Government can. Men will probably do good work on a place like Daceyville, because they realize that, when the half-dozen buildings now in course of construction are finished, others will be begun, and because they know very well that, if they do not give a reasonable service, the man who is in charge of the work will get others in their places. I am not advocating sweating. My experience is that continuity of work gets the most from the working man, and I am fairly convinced that the higher the wages are the better is the class of work that can be got out of the man. I would like to pay the highest wages for the highest class of work. It gives the best results. I would also like to pay over the union rates to any man I think is entitled to extra pay. I have known of cases in which contractors have put in imperfect material, but, speaking with 30 years' experience of contractors, I can say that I have found that the average contractor is as honest as the next man is. I have known one or two cases in which a man has been inclined to scamp a bit, but, generally speaking, from the smallest to the largest, the contractor is just as prone to give you a fair deal for your money as any other man is. Any contractor who is worth his salt likes to have a clerk of works on the job when he is putting in his concrete for foundation work, because, if at any time afterward there is a movement in the ground which causes the walls to crack, he can say that the foundation of the clerk of works. In one or two cases contractors have tried to beat me in regard to the quality of work. I have seen

men try to pile the gauges up, but that is a matter that any school-boy could detect 50 yards away. It is what might be called above-board swindling, and any man who allows it to be done does so with his eyes open. If I had the money to build 100 houses tomorrow, I would not hesitate one moment; I would let a contractor for it straight away. I do not say that I would get a better job if I employed my own staff, and carried out the work under my own supervision, perhaps I would save the contractor's profit, though against that I might not be able to handle the men as well as he could do it, and I might not be able to buy as well as he could buy. If Government officials were not restricted, I do not doubt that they would be able to do the same as the contractor could do in that regard.

115. To Mr. Sinclair.—The side of the house that is least used should face the prevailing winds. The blocks on the western side of the area at Lithgow will overlook the houses immediately to the east, and I do not consider that a good thing, because it means interference with the privacy at the rear of the houses to the east. Besides the prevailing winds, it is desirable to have bedrooms with an easterly aspect, in order to catch the early morning sun, and so that they may cool down in the evening. All these points have to be considered, and you must make up your mind which is the lesser evil. In small houses, it is advisable to have the floors level throughout. It would be very unusual to make the verandah floor on the same level as the floor of the house. The verandah being exposed catches a lot of dust, and by having a step down at the doorway it is prevented from blowing into the house. The windows are to be 3 feet above the floor-level. That is a convenient height, and allows for a piece of furniture being placed alongside. If they are made any higher, youngsters cannot look through them. A good deal of attention is paid to the matter of where furniture may be placed in living rooms. In our Department, no living room or bedroom is planned unless the chief articles of furniture likely to be used are plotted on the design. It is the only way of getting any satisfaction in planning a room. A concrete external wall 4 inches thick, well rendered on the outside, would be reasonably weatherproof in a place like Lithgow, provided the concrete was of good quality. Of course, it would depend upon the length of the wall as to whether that thickness would be stable. With extended walls, it might be necessary to thicken them with piers here and there. I know that 2-inch walls are provided in Queensland, but they are amply protected from the weather. Tiling, including rafters and battens, should cost £5 per square in the case of these houses at Lithgow. The ground in the district is patchy. There are certain sections where you come across a good deal of pipe-clay at a depth of a couple of feet, and that is an undesirable feature where foundations are concerned; but I understand there is no pipe-clay patch in the area upon which these buildings will be erected. It will be necessary to trench for the foundations of these cottages. We could not build on the surface. The footing would project right under the building line. I think we have allowed for going down to a depth of 18 inches below the surface. In making our estimates we have taken the present-day prices into consideration right through, and we have considered the possibility of a slight reduction for ordering large quantities. A rise of 1 or 2 per cent. in the cost of materials would not affect our estimates materially. I do not place any reliance on cubic costs for estimating the value of buildings such as are to be erected at Lithgow. They vary so much.

116. To Senator Needham.—Outside the Service I have had to do with day-labour jobs only on one or two occasions, and they were smallish jobs. In neither case was the result very satisfactory from the point of view of economy, though I cannot say that that was the fault of the system, because, by reason of the lapse of time, I

have not a clear recollection of the details; the fault may have been that of the men running the jobs. I have been about seven years in the service, and during that time have seen a considerable amount of work carried out with day labour. In my opinion, that work has been dearer than it would have been had it been carried out under contract. At the same time, I should say that I have not been in very close touch with the day labour jobs that have been carried out in Victoria, and I do not know that any tenders have been obtained from contractors against which the costs of the jobs could be checked. Therefore, in saying that day labour has been dearer than the contract system would have been, I am merely expressing an opinion. A great deal depends on efficient supervision. Putting aside the enormous amount of record keeping and costing work which is considered essential to departmental administration, I think that day-labour jobs could be done as cheaply as contract work, assuming, of course, that a reasonably free hand were given. It is not every man, however, who is able to supervise day-labour work properly. A man may be an excellent architect or engineer, and yet constitutionally unfitted for the supervision of day-labour work. As to doing without fences, it may be a workable proposition in many suburban areas, but, in my opinion, it would not be desirable in connexion with the Lithgow housing scheme. Where there are no fences, there is a certain lack of privacy. From the aesthetic point of view, it may be well enough to do without fences, but, personally, I should not like to leave my own property unfenced, and I do not think it would be satisfactory to leave these Lithgow properties unfenced. The important rooms of a house are those which are most used—those in which the occupants spend a greater part of their lives. The bedroom is one of these rooms, and another of them is the kitchen. Whether a woman employs domestic help or has to do her own work, she needs a good kitchen. I doubt that it will be possible to erect houses of the type proposed and lease them to workmen for from one-fifth to one-sixth of their weekly wages without losing on the transaction. In dealing with the scheme as a financial proposition, there must be taken into consideration the cost of buying the land, and the provision of a water supply, and various services, in addition to the actual cost of building the houses. If, as you tell me, the average rate of wages at Lithgow is £3 0s. a week, the small houses that are to be provided could be rented for just over one-fifth of that sum. But many of the workmen would probably wish for larger houses. The three-roomed houses have been designed with a view to the addition of another room. In my opinion, it is desirable to have at least two bedrooms to meet cases of sickness, and to provide sleeping quarters for others besides husband and wife. But I do not think that the workmen generally would be willing to pay the cost of providing an extra room. In my opinion, many of them would be content with three rooms. No doubt, if it could be done at a reasonable cost, an additional room would be desirable. But we must cut our coat according to our cloth. I would not say that the minimum accommodation should, under existing circumstances, be four rooms. The cost of an additional room would necessitate the increasing of the weekly rental by a little over 1s. 6d.

Torrington George Ellery, Town Clerk of Melbourne, sworn and examined.

117. To the Chairman.—Before coming to Melbourne, I was for nearly seventeen years Town Clerk of Adelaide, and during that time kept myself posted in the town-planning improvements of Europe, Great Britain, and America, and endeavoured to interest my own council and suburban councils in the subject. Adelaide was better laid out than most of the Australian capitals, although the original

plan is not free from faults, but its suburbs have grown without proper regard being paid to the provision of open spaces, and the requirements of a developing population. They were sprawling haphazardly in every direction, without the proper facilities and amenities desirable to a civilized community, and this fact directed my serious attention to the town-planning movement. Since I have been in Melbourne, I have followed the movement closely, and have been associated with various conferences arising out of it. Without undue egotism, I can say that the small statute which empowers the city of Melbourne to deal with its overcrowded areas is the outcome of my representations to my council. We are empowered, under certain conditions, to resume land in overcrowded, low-lying, or congested areas. The measure, however, is not perfect. We find that, if we resumed and re-created an overcrowded area, to the great improvement of the immediate district, we could not get back the money that the improvement would cost. It often happens that the area that we want improved is separated by a road from a much better area, the value of which is immediately enhanced by our improvements. But, unless we obtain an amendment of the law, we shall be continually saddling the municipality with debt, for work done for the benefit not only of the community as a whole, but in particular of the owners of the properties adjoining the areas that we improve. The Government of Victoria has promised that an amendment Bill shall be introduced to empower us to apply what is known as a betterment rate to property which has been appreciated in value by our expenditures in removing slums. In applying the betterment principle, we shall have to act largely by rule of thumb. The properties nearest to the area that has been improved will be charged more than the properties lying further back, the rate gradually diminishing to zero. That has been the practice in America, where the rate is known by the curious title, "excess condemnation." I think that the American method, which has been very successful, might advantageously be modified by the adoption in part of the London County Council's method, and allow for the hearing of evidence in regard to each property affected, with an appeal, in the event of dispute, to an official arbitrator. In the course of a few days I shall see the Parliamentary Draftsman, with a view to shaping a measure for the fair and equitable imposition of a betterment tax. Plenty of fresh air is essential to a modern city. By contrasting those parts of a capital where there is plenty of open space with the congested overcrowded areas, you can determine at a glance the value of fresh air and decent surroundings. At Lithgow there is a great opportunity for carrying out a proper housing scheme, because there you are starting from the beginning. No tearing down and rebuilding is required to repair the errors of a former generation. Whether the proposed accommodation is provided by the Commonwealth directly or by private enterprise, the public should be safeguarded from the nefarious practices of the jerry-builder and the land-jobber. Human greed must in this matter be restrained. Unless you commence with a good scheme, you will ultimately have at Lithgow—though in a minor degree—the evils that have grown up in the slums of the capitals. It must be remembered that it is not necessary to go to Sydney or to Melbourne to find overcrowded areas, or specimens of bad housing; you can find both in many country towns in New South Wales and in Victoria. Therefore, to commence with a proper plan for a town is to start on right lines. I observe that reasonable provision is made on the plan for open spaces. As to whether the provision is sufficient must be largely a matter of opinion, and as I have not gone into the matter closely, I am not prepared to say definitely that the provision is or is not sufficient. I notice that common back yards, or open

spaces at the rear of the lines of houses, are not provided on the plan, as they are at Daceyville. Personally, I like to see provision made for these open spaces. A city may have a great deal of park land, but unless this is close to the homes of the people, it will be little used. People, especially women with small children, will not walk half-a-mile, nor even a quarter of a mile, to get to a park. The American reports all insist strongly on the need for the proper location of parks and playgrounds. Adelaide is ringed with parks, but it is relatively badly served with interior open spaces. Melbourne is better off in that respect, though we might advantageously have still more open spaces and playgrounds. In advocating the common back yard, I have in view the needs of the little child, which is our most precious asset, and of the child's mother. The small back yard attached to a house fits with its amenities those who are continuously in the house, and, personally, I think that one of the most charming features of the Daceyville scheme is the common back yard, which provides a playground at the back of a number of houses. For the sake of diversity, the main avenues and cross roads might well differ a little in width. But I would not make the difference very marked. It is to be remembered that the wider the thoroughfare, the greater the cost of its upkeep. Three-chain roads are very well where the rates are sufficient to maintain and to beautify them, as the St. Kilda-road, the Sydney-road, and some of our other thoroughfares are maintained and beautified; but it would be a mistake to lay out roads of that width for a settlement which is never likely to grow to the size of a big city. On the other hand, I would not have the thoroughfares mere stretches of macadam roadway and footpaths; I would provide for the planting of trees in practically every street. I would make it compulsory, too, to build the houses back a certain distance from the street line. For ordinary purposes, a roadway 24 feet wide, with a strip on each side of 7 feet for two avenues, and footpaths of 8 feet wide, would be sufficient. Of course, in giving evidence on the Lithgow housing scheme, I am handicapped by not having seen the site on which the building is to take place. There are many suburban roads which, because of their width, are merely wildernesses of dust in the summer and muddy quagmires in the winter. All the traffic is carried over a strip of made road in the centre of the thoroughfare, and the unused portion could suitably and profitably be planted with trees. In my opinion, a width of 60 feet would be sufficient for the widest roads under consideration. As I am not an engineer, I cannot say whether a road which follows a semi-circular course creates constructional difficulties, but, personally, I greatly favour curving roads. Most towns in Australia suffer under the disadvantages of a rectangular lay-out. This makes the streets unsightly, and converts them into channels for dust. Radiating and curving roads have a charm in themselves, and cost no more to maintain, except that there may be a little more space occupied with roads where the lay-out is curving and radiating than where it is rectangular. Opinions are strongly divided on the subject of the common back yard. Some persons who have studied the subject scientifically do not like that arrangement, but I think that, having regard solely to the convenience of those living in the adjacent houses, it is a good arrangement. It seems to me that common playgrounds could be provided in the plan under the consideration of the Committee, though their provision would involve some modification, and the cutting out of one or two residential blocks. At Daceyville, most of the back yards are as good as the front yards. If, on the western side of the site, the land rises so steeply that, by the present arrangement of the plan, the houses in one street would look into the back yards in front of them, I think that some alteration should be made, because that would be very objectionable. As to the area which should be allotted

for each residence, the consideration of the question must depend on the rental that will be required. Having regard to the fact that what is contemplated is practically the construction of a country township, I would suggest a frontage of 60 feet, and, without a common playground, or common yard at the back, a depth of at least 100 feet. At Daceyville, the keeping of fowls is not encouraged; but in a country township fowls might be regarded as necessary. As to the control of the scheme, I think that it would be well to appoint a small local board, whose decisions would be subject to the review of the head office. The existence of such a board would give the residents more interest in the place, and would prevent the creation of a ruthless bureaucracy. There would be lots of little matters with which the local board could deal easily, without reference to head office. A board of three or five would be sufficient. Of course, its members would have to understand that they could not do exactly as they liked, because it would be Commonwealth property that they would be dealing with. The personnel of the board, and the idiosyncracies of its members, would have a great deal to do with the success or non-success of the scheme. Of course, you might have the affair controlled by a benevolent autocrat with whose administration the people concerned would be entirely satisfied, but his successor might be an autocrat of an altogether different type, who would set the tempers of the people on edge all the time. If I were bringing the scheme into existence, I would provide for a small board, which would be subject to review from head-quarters. In my opinion, the Commonwealth should pay rates to the municipality of Lithgow for the maintenance of streets within the proposed area, and for the other municipal services that will be required. Neither the Commonwealth nor the State authorities pays municipal rates in the ordinary way; but there is a great difference between the relations of a Government and a municipality when there are only a few Government buildings in that municipality, and when a Government creates a fair-sized township and asks the municipal authorities to look after it. Were the Commonwealth or State Government to purchase a large area within the municipality of Melbourne, and re-model it as an area for workers' residences, I would urge the payment of rates to the municipality for the upkeep of the streets and the various services which the municipality would be called upon to render. We should have to attend to the draining away of storm waters; to the lighting of the streets, their cleaning and repairing, and to a lot of other matters. When the Railway Department turns a portion of its premises into shops, it, like other Government Departments under the same circumstances, pays rates on the premises. It might be a fair thing to ask the Lithgow Council whether they would not provide for maintenance, lighting, sanitation, and other municipal services for a lump sum per house or group of houses. It must be remembered that the Lithgow Council will be benefited to this extent by the carrying out of the proposed scheme, that it will have more customers for the gas and for the water that it supplies. If I were an officer of that council in negotiation with the Commonwealth authorities, I would endeavour to get the council to meet the Commonwealth fairly. But, of course, a lot of hard-headed business councillors might insist on the Commonwealth property being rated like private property. As to whether the tenure of the houses that are to be built shall be wholly leasehold, or leasehold with the right to purchase, I can only say that most men are keen to get their own homes, and that by giving men the opportunity to make homes of their own, you will establish a contented class round about the factory. On the other hand, in the course of time, the workman who has bought his home from the Government may have to retire, or must die, and his wife and children may continue in the house without offer-

ing their services to the factory. How is that difficulty to be met? Broadly speaking, I should say, encourage people to purchase their homes. But it seems necessary to make some provision for insuring that these houses shall be occupied by workers connected with the Small Arms Factory. It should be possible to meet the difficulties that present themselves. Along the St. Kilda-road, beyond Domain-road, is a condition of the titles that only houses of a certain class may be built. You could obtain from the Lands Office the conditions under which the land is alienated. I certainly think that it would be a good thing to have an Act empowering the proper Minister to deal specially with areas such as this, and providing for the making of regulations. Without the power to make regulations, you will need many an amending measure, because during the first few years you will be feeling your way. The type of cottages suggested for the Lithgow housing scheme is a very nice one. A man getting only £3 9s. a week cannot afford to pay a very large sum for rent. I should say that if a man pays away one-fifth of his earnings in rent, it is as much as he can be expected to pay in that way. That being so, the Lithgow workers could not be expected to pay much more than 12s. or 13s. a week. I would not place the laundry arrangements of the houses in their kitchens; that I consider an obnoxious arrangement. From the point of view of comfort, it is better to have a separate laundry. Nor do I like the American practice of doing away with fences; and I know, from elms that I have had with them, that some householders in Daceyville are not in favour of the arrangements there in that respect. They would like inconspicuous little fences to divide their property from their neighbours. Personally, I like to be able to shut my gate, and to feel that I am at home. I do not like the American plan.

118. To Mr. Sinclair.—As I have not seen the site, it is difficult to express an opinion on the subject of drainage. Generally speaking, I would say, make the most of any drainage reserve by beautifying it, and do not attempt to run a road alongside it. As to whether the drainage is properly provided for in the plan, that is a matter that can be determined only by the calculations of an engineer, working on the proper data, and my evidence on the subject now would be worthless. Some few years ago I saw some excellent lantern slides showing what had been done outside an English town in the beautification of natural depressions that had been set apart for getting rid of flood waters. As to the location of a house in respect of the prevailing wind, my individual preference would be to have the house side on to the wind. It is very disagreeable to have a strong wind blowing directly into the front or back door. If, according to the plan, the houses in certain streets face the prevailing wind, I think that some alteration should be made to remove that objection. Where there is a reasonable frontage, back lanes are unnecessary. But they are essential where you are skimped for room at the front. Where possible, I should prefer to get rid of back lanes by increasing the frontages.

119. To Senator Needham.—I do not like the doing away with fences altogether. I think the grounds of a house should be surrounded with a small fence of light, neat design. As to the administration of the affairs of the settlement, I still think, even though the township may be a small one, that it would be best to have a board to control local matters. If there were only one man in charge, you might get in a man of the wrong type. Of course, the autocrat can always be removed; that is an advantage of the autocratic system. I discussed with Mr. Garlick, the New South Wales Under-Secretary for Local Government, the subject of the administration of Daceyville, and told him that, in my opinion, the people there would take more interest in the place—which is what is desired—if their affairs were managed by a board elected by themselves, and ap-

proved by a Minister or some official of sufficient standing, keeping the ultimate control at head-quarters. When everything is managed by an autocrat, there may be much to mar the administration of the scheme. The chief thing is to establish at Lithgow people who will be content with their job at the Factory, and with their homes near by. Of course, if provision is to be made for the keeping of a pony, a greater depth than 100 feet will be needed. A depth of at least 120 feet will be required, because a stable ought not to be near the back door. The Daceyville back yards are a little on the small side. I said that when I first saw the lay-out, and remained of the same opinion when I saw the place itself. They might well have been another 10 or 12 feet larger. I was met with the reply that the yards being small, the occupants of the allotments had less to look after, and kept them cleaner than larger yards would have been kept. Where you have a common playground, you can reduce the back yards. But, in any case, I think that the Daceyville back yards are on the small side. A betterment tax would be applied on an area basis. When a congested area covered with ramshackle buildings is improved, and clean, decent dwellings and factories built on it, the adjoining property is increased in value, and some of the increase should go to the council at whose expense the improvement has been carried out. If there were two properties adjoining or just across the street from such an area, one with a frontage of 200 feet and the same depth, and the other with a frontage of 100 feet and a depth of about 80 feet or so, the man with the bigger area would have to pay four times as much as the other man.

190. To Mr. Laird Smith.—Undoubtedly I recommend the adoption of the most modern methods of town planning for the lay-out of the Lithgow housing scheme, small though it be. I think that every endeavour should be made to get rentals which will pay interest on the expenditure, and a sinking fund of about 14 per cent. That would place the scheme on a commercial footing. If such rentals cannot be obtained, there is a good deal in your suggestion that consideration should be given to the indirect gain made by the Commonwealth by the settlement at Lithgow of a contented body of factory workers. The Commonwealth considers it necessary to have the Factory, and skilled men must be needed to work in it. There is justification, if men cannot be kept there under other conditions, for housing them, even at a little less than cost price. I would always choose electricity in preference to gas as an illuminant. It is more flexible, and with it you avoid the unpleasantness of too much heat and smell, and also the risk of fire from leakage, and the frequent use of matches. It is a source of surprise to me that we have not in Australia evolved a distinct type of domestic architecture, and have been content to slavishly copy English and other models. Within the last year or two, however, in the suburbs of the big cities, a change has been taking place, and it is in the direction of meeting climatic conditions. But the houses in the planning of which this is being done are for men who can pay from 30s. a week and upwards for rent; the common type of house being ugly, drab, and prosaic. It is a matter for architects to say whether, at Lithgow, a type of house which would meet the local climatic conditions more completely than the ordinary type could be erected for the price that you are prepared to pay. It is unquestionably my opinion that the ill effects of a slum reach far beyond the slum itself. If the facts could be driven into the minds of the people at large, they would shudder at them. Slums cost the community more than a war does. I would say, have the houses at Lithgow as diverse as possible. I do not mean that every type of architecture should be adopted, but I would not make each house the slavish copy of another.

191. To Mr. Sinclair.—If there is no desperate hurry, there might be some advantage in inviting competitive designs for the lay-out of the proposed settlement, and for the proposed buildings, offering something in the nature of a prize. But it would take some little time to adjudicate on the design. Probably the scheme is hardly big enough for that, however. The little drawbacks that have been mentioned could, I think, be easily adjusted. Generally speaking, Mr. Morrell's lay-out appeals to me. Speaking without any knowledge of the site, I say that the lay-out is workable, and would make a pretty town. The common playgrounds that I spoke of could be easily arranged for, and the objection that in one part of the area streets of houses would face the prevailing wind might be met, perhaps, by changing the direction of the streets there.

(Taken at Melbourne.)

FRIDAY, 6th JULY, 1918.

Present:

Mr. GAZDOOR, Chairman;

Senator Henderson	Mr. Sinclair
Senator Needham	Mr. Laird Smith.
Mr. Mathews	

John Thomas Hill Goodwin, Chief Surveyor and Estates Officer, Department of Home and Territories, recalled and further examined.

129. To the Chairman.—I have considered that No. 1 plan which I submitted would involve greater expense for road construction than I think is necessary, and I therefore desire to withdraw No. 1 plan, and substitute for it No. 2 plan. The Western Gully-road shown on my plan and on Mr. Morrell's plan touches the Bowenfels-road at about the same point. At that point between the Bowenfels-road and the Commonwealth property there is a small area of private property, which it is necessary to acquire for the purpose of access, to avoid the inconvenience of an existing cutting. It has been used for years for the purpose of access to the "College." It will be necessary for the Commonwealth to acquire this small strip of land, and it can be acquired under the Lands Acquisition Act. I might mention that the "College" referred to is not, as a matter of fact, a college, but a boarding-house, which is at present for sale. The land to be acquired is only about a quarter of an acre, and should not cost more than £25. The area is marked yellow on my plan. Along Bayonet-street there is a 2-ft. reservation, and none of the roads marked on the plan to the south of Bayonet-street can be carried on to that street until that 2-ft. strip has been acquired by the Commonwealth. The reservation was made by the owner of the adjoining property to prevent the owner of the property to the south of Bayonet-street subdividing it and using Bayonet-street in connexion with his subdivision, because that street was formed and constructed at an expense on the owner of the property making the reservation. In my view, the owner does not take up any unreasonable attitude in demanding that this 2-ft. strip should be paid for, because it is a fair thing, if the Commonwealth proposes to use that street, that it should pay something towards the cost of its formation. What the owner proposes is that the Commonwealth should pay half the cost of the land and formation of Bayonet-street. On that basis Mr. Halloran is willing to negotiate with the Commonwealth, and the cost to the Commonwealth of acquiring the 2-ft. reservation along Bayonet-street would be about £153. I do not know whether the 2-ft. strip would remain in the width of the road or not. That could be decided later. The cost suggested is on the basis of what Mr. Halloran paid for the land. He paid £100 an acre for it, and was at the cost of forming the road, and, in

my view, it is only a fair thing that the Commonwealth should make the proposed contribution to him on the cost of the land and the formation of the street. Mr. Halloran also constructed a cement drain to carry off the storm water at a cost of £1,237. Under the scheme proposed to deal with the property acquired by the Commonwealth, the storm water from that property is carried into the cement drain referred to. It is proposed to throw more water into that channel than would flow into it in the ordinary course of nature, and, therefore, the Commonwealth will undertake a certain liability in connexion with the cement drain. It is 2,850 feet long, is 5 feet wide at the top, 3 feet wide at the base, and 3 feet deep, and, as I have said, cost £1,237.

132. To Mr. Mathews.—I discussed with the owner the proportion of this cost which the Commonwealth should be called upon to pay, but I told him that I was not prepared to negotiate until the matter had been further considered.

134. To Mr. Laird Smith.—This cement drain will be quite sufficient for present purposes to carry off all the surplus water from the Commonwealth property. There is a fall of 1 in 60 in the drain.

125. To Mr. Mathews.—If the drain were raised 1 foot it would carry off a vastly greater volume of water than it could accommodate at present.

130. To the Chairman.—On the north-eastern corner of the plan provision is made for a park, and if that idea is carried out the effect will be to so enhance the value of the land along the north frontage to Bayonet-street as to approximate to the amount involved in the construction of the drain. The enhanced value of this land, in the circumstances, should be taken into consideration in estimating any allowance to be made in respect of the drain. I do not think that Mr. Halloran should be allowed any more than about £300 in respect of the drain. Between a portion of Bayonet-street and the rest of the estate there is private property (the 2-ft. strip) which will have to be acquired, and if it and the right to use the cement drain can be obtained for £450 the Commonwealth will be doing very well.

127. To Mr. Mathews.—The roads and drains no longer belong to Mr. Halloran; they are the property of the municipal council, but the 2-foot strip along the southern side of Bayonet-street is his property, and will have to be resumed to give access to that street from the roads on the Commonwealth property. By lodging his plan with the Titles Office the owner dedicated the roads as public roads. The drain referred to would naturally take the water from what I have been calling the Western Gully, but we propose to take the storm water from the extreme eastern boundary of the Commonwealth property, and throw it into the middle gully and the western gully. The moment we do so we throw more into the drain than would naturally flow into it, and so become liable.

128. To Mr. Sinclair.—The whole of the storm water from the Commonwealth property would not naturally find its way into the cement drain. The yellow colouring on the schematic plan shows low-lying ground. There is the eastern gully, the central gully, and the western gully. The water from the eastern gully does not naturally flow into the cement drain, but on to the allotments to the north, across Bayonet-street at a point further east than the drain.

130. To Mr. Mathews.—The drain would have had to be constructed even if the Commonwealth property were not subdivided, but as a matter of equity the Commonwealth should join in the cost of the drain when more water is thrown into it than would have reached it if the Commonwealth had not subdivided its land. Normally I estimate that 30 per cent. of the water would flow off the land, but when the property is subdivided and graded and the streets formed, I estimate that about 60 per cent. of the water will flow

off. The acquisition of the additional land and the contribution to the cost of the drain should not mean more than an additional expenditure of about £100 or £300.

130. To Mr. Laird Smith.—I do not know that if this claim were conceded it would create a precedent entitling the municipal Council to make a charge in respect of its expenditure to serve the Commonwealth property. I do not know whether the Commonwealth would not be under some legal obligation in respect of the cement drain. It was built to carry off the surplus water naturally flowing through certain gullies, and the flow was calculated on a liberal basis, otherwise the drain would not be sufficient to carry the additional storm water, which we propose to throw into it. It would not have to carry such a volume of water except in the case of abnormal rain, which no one is compelled to provide for.

131. To the Chairman.—The Commonwealth in this case is in the position only of an individual who would have been compelled to provide a storm water channel to take the water away from his property. The Commonwealth would have had to get an easement to do so.

132. To Senator Henderson.—I supplied the Director-General of Works with a copy of a report from the Meteorological Department, and as well as I can remember, the highest rainfall noted on any one day at Lithgow was nearly 4 inches. That, possibly, did not fall continuously during the day. It is not held that a municipal council must provide for a phenomenal rainfall, but the difficulty is to decide where an ordinary rainfall ceases and a phenomenal rainfall begins. Under fairly normal conditions we might not have within 24 hours more than 2½ inches of rain, but for two or three hours of the twenty-four it might rain very heavily. It is necessary, in the circumstances, to make a liberal allowance for storm water, and my calculations are based upon a run-off of 60 per cent. I wish it to be understood that I do not profess to be a drainage and sewerage expert. I mention these matters only to show that I have thought about them and the draining, and that sewerage of this area in the way I have suggested is quite practicable.

133. To the Chairman.—I am here to tell the committee about the 2-ft. easement to Bayonet-street and other matters I have mentioned. These will involve an addition to the cost of the area acquired by the Commonwealth, but that addition would be necessary whether Mr. Morrell's scheme, mine, or that of any one else were adopted. I do not suggest for a moment any proposal in opposition to those of the Works Department, but I consider it the duty of any one who subdivides land to consider the necessary road construction, how storm water is to be disposed of, and what the whole thing is likely to cost. Otherwise one might submit a purely fanciful plan. I have been engaged in connexion with the subdivision of land for 30 years. I was in private practice for eighteen years, and in making a subdivision I always considered it necessary to work out a scheme which would be reasonably practicable. It is absolutely essential that the Commonwealth should resume the 2-ft. strip fronting Bayonet-street. As Bayonet-street has been dedicated to the public there may be no legal obligation upon the Commonwealth to pay any proportion of the cost of forming that street, but I am dealing with the matter in an equitable way, and, apart from the strictly legal aspect, I say that it is a fair thing between owners who subdivide their property, to share the cost of a street of equal benefit to both properties. The 2-ft. reservation must be paid for to secure access to Bayonet-street. I believe that this practice of making such reservations to protect the interests of an owner in a street is illegal in Victoria. I do not pretend to give the



ing. I have made no estimate of the cost of such a road, but I have already said that to finish a suburban road properly costs, approximately, \$1 per foot. In this case, however, I think I am sure that there should be made for 18 feet, with a 3-ft. channel on either side. Then there would be the footpaths of, at first, not more than 4 feet in width, and 15 to 17 feet from the footpaths to the frontage of the blocks, which could be made into a garden or upon which trees could be planted. The building line should be 20 feet from the block frontage. This plan, if adopted, would provide the open air spaces, which, in my opinion, are necessary. I see no reason for the curves in the road suggested in Mr. Morrell's plan to change the monotony of the gridiron system. That

chase a block of land at a cost of \$50. He pays for it by instalments, or cash, as he pleases. When the purchase is completed Mr. McKay guarantees to a building society which advances the money necessary for the erection of the building. He has also another method by which he builds himself and sells on terms.

but generally the first method referred to is adopted.

To you are possibly aware that Mr. Melkay bought a large area of land near the wharves some distance from Melbourne, and established his factory there. He subdivided the same into workers' lots. He will sell a lot to any person, but he gives the guarantee referred to only in the case of employees in his factory. If in connection with the area under consideration the Commonwealth builds, I suggest that on a purchase basis the payment should be completed in five years or twenty years, and that the Commonwealth should recover the capital cost, with interest at 5 per cent. We have attached to your report submitted to the Committee a schedule showing the estimated fortnightly cost to an employee purchasing a house under this scheme. In the case of a house costing £500, including land, buildings, road and street formation, fencing, water and sewerage rates, and insurance, I estimate that it would take the employee time to pay off the loan by 7d. this scheme the cost to the employee would be 19s. 7d. per week. The actual payment necessary would be 16s. 8d. only would be a little over 15s. a week. I think a fair basis would be to take the life of a brick dwelling, probably would be estimated, at 40 years, and to charge a rental which would return the cost of erection in that time together with interest at 5 per cent., to which must also be added a charge for maintenance, water supply, sewage rates, and fire insurance. This estimate of the cost to the tenant under these conditions would be 15s. 5d. per week. These estimates are for a house of Class "A," containing only two rooms, kitchen, bathroom, laundry and so forth. I may mention that a Class "B" house with three rooms, kitchen, bathroom, pantry, and wash-house, would be the cheapest proposition, because it could be rented for an additional 2s. 4d. per week, or total cost of 17s. 9d. per week. This estimate is based on a cost of £454 for the "B" class house, but if built prior to the war it would probably come in at least £100 less. This is perhaps approximate time to stand building. I have indicated in my report a schedule showing the weekly payments required over a term of 4 years. If a term of 50 years were allowed in which to repay the capital cost there would be a difference of about 3d. in the weekly payments. I should like to mention that in New Zealand they have a Workers' Homes Act, which is administered by a Board. Their rents are based on 60 per cent. of the balance for depreciation, plus the cost of insuring the dwellings from fire to its full value, and the charges for rates. We are estimating on 5 per cent. interest, and 13 pence per annum for depreciation. It might be as well to mention some of the New Zealand conditions. There is no weekly or monthly tenancy. By agreement for one yearly or monthly tenancy at a rental of 5 per cent. per annum of the capital value (being the original value minus interest and the balance for depreciation), in addition to the cost of insuring. The estimated amount of rates to full value, and the estimated amount of a leasehold premium. There is provision for a renewal of a lease for at least for a term of 21 years, with right of renewal beyond under the lease to be the same as for a new or monthly tenancy. There is further provision in an agreement to purchase on the instalment system prescribed by the Act. No disposition of any worker's dwelling is valid without consent of the Housing Board. I provided that the Board shall not arbitrarily or reasonably refuse to give their consent, but shall be guided by the intention of the Act, to provide for the purpose and objects of the Act for workers and their families. But I do not propose giving consent to such disposition the Board must satisfy itself that no money or moneys worth is being paid for good reason. This applies to cases only where the whole price of a dwelling has been paid to the Board. Where a small sum of money has not been paid to the Board, I provided that for the purpose of this section,

a children's playground, and that is what is provided for in the reserves. What I suggest with regard to this subsidy, is that if the Commonwealth intend to sell the ground and make this settlement part of the town of Lithgow, which I understand is the intention, they should not lodge the whole of the plan with the Titles Office at first. They should lodge only the plan of the land which they intend to make use of at present. I suggest that only the plan of that part of the area lying to the east of the central gully, and as far south as the street marked "A" should be lodged at first. I would not, on that plan, show the reservations except as "Commonwealth Land." The Commonwealth would then have complete control over those areas and the residue of the land. With regard to the part of the area further south than I have indicated, if it were desired to sell that at a future date, the additional plans could be lodged when necessary.

137. To Mr. Sinclair.—With respect to the reservation of mineral rights, the land was acquired under Section 15 of the Land Acquisition Act of 1906, and under that section the Commonwealth claims to acquire everything from the centre of the earth to the heavens above. The legality of that claim has never so far been tested by law, but the Commonwealth maintain that all reservations, if any, in a Crown grant, become voided by acquisition under Section 15 of the Act. I propose to provide for the storm water from the hill by putting races along suitable contours to throw the water into the central gully. That scheme, I believe, has been adopted by Colonel Owen as well. It will be noticed that the central gully on my plan is marked as a reservation, upon which trees requiring a great deal of water might be planted. The area to the west of the western gully could be planted, and the water would do away with a great deal of water trouble, and perhaps be a source of income. The land on the Boucville Hill, in my mind, is not fit for habitation at all. I understand that people would not object to have their houses facing to the west, because the front doors are shut off from the back. I believe that the Department of Works and Railways estimate the run off at 30 per cent. That is a matter for the engineers, but I estimate that the run off will be 60 per cent. The more the streets are formed and the more footpaths are put down the greater will be the run off, and it might amount to 80 per cent. The greater the number of gardens and plantations the less the run off will be. The simplest way in which to deal with that portion of the estate outside the municipal boundary is to have it included in the municipality, and that is the course I recommend. I can supply the Committee with a tabulated statement showing the cost of the scheme, not including houses, but including the land, compensation for the 2-ft. easement to Bayonet street, drainage, sewerage, roads and footpaths.

James Charles Morrell, architect, State Public Works Department, Victoria, recalled and further examined.

138. To the Chairman.—I submit to the committee further particulars of the system adopted by American manufacturers for financing their housing schemes. I have selected the following companies as representing generally the ideas which are adopted by American manufacturers to cope with the housing problem:—

#### INDIAN HILL.

This is an industrial village established for the Norton Company, of Worcester, Mass. The area is 110 acres. Indian Hill Company—a subsidiary company of Norton Company—is entitled, under Massachusetts law, to acquire, develop, and dispose of real estate. 59 houses have been built, average, 5 to the acre.

Terms of purchase.—Purchaser makes initial payment of 10 per cent. of purchase price, for the balance purchaser gives two notes, one for \$200, payable in twelve years, at 5 per cent,

and another for the balance, payable on demand, with interest at 5 per cent. Purchaser signs supplementary agreement to purchase five shares in a co-operative bank, and to continue payments until his deposits amount to \$200, which, at prevailing interest, takes eleven years and ten months. This insures the payment of the twelve years note company's terms. In consideration of this agreement, the company agrees not to make demand upon the demand note as long as purchaser keeps his agreement with the bank. The company also agrees, if purchaser dies or becomes incapacitated within twelve years (provided purchaser is not over 60 years of age) to accept the surrender value of his co-operative bank shares in full payment of time-note, so that his estate will own a property free of all encumbrances, except the first mortgage for not over 60 per cent. of the value of the property. The company gives each purchaser a schedule, of which the following is a sample:—

Your total purchase is	\$3,851.20
You have made a first payment of 10 per cent.	385.12
You are borrowing on mortgage the balance	3,466.08
The amount due in 12 years, secured by time-note, is	1,000.00
The balance secured by demand-note is	2,466.08
Your monthly interest during first 12 years will be	14.46
Your monthly payments to co-operative bank will be	5.00
Your total monthly payments during first 12 years	19.46
Your monthly interest payments after 12 years will be	10.20
Total loan	3,466.08
Five per cent.	173.32
One-twelfth	14.46
Demand loan	2,466.08
Five per cent.	123.32
One-twelfth	10.30

Purchase price.—Actual cost of house and land, without profit, including development and utility services.

#### GOODYEAR TYRE AND RUBBER COMPANY, AKRON, OHIO.

Started with 100 acres, and built 350 houses. They then divided their employees in a few months. They bought additional 350 acres, and plotted 1,600 allotments, formed streets, planted trees, put in sewers, gas, water, &c. New building 825 houses, in contracts of 25.

Two mortgages on the property. An insurance company (Mutual Life of New York) took the first mortgage—about 60 per cent. of the real estate value. The real estate value represents the cost of the land and houses, plus 25 per cent. The 25 per cent. is returned, with interest, after five years if the property is not transferred or sold. The second mortgage is carried by the Goodyear Company for the balance. Both mortgages carry 5 per cent. interest. Originally no deposit was asked; now 5 per cent. must be paid down. Payment is made semi-monthly, including interest, and each payment reduces the principal. The second mortgage is to be paid off in twelve years, and the first mortgage in fifteen years. The purchaser has the option of taking a diminishing life insurance with the insurance company, which, in the event of death, will pay one or both mortgages, depending on the very low figure, and have made the purchasing plan very popular. An option on the property is retained by the company if the workmen wishes to sell or leave, in order to avoid speculation in real estate.

A two-story frame and stucco house of six rooms and bath costs \$200, and the allotment, 50 by 100, \$100; total, \$300.

The Massachusetts Homestead Commission advocates the payment of 20 per cent. of the purchase money before the deeds are handed over, and the payment of the balance in equal monthly payments, including interest, taxes, and insurance, in twenty years.

#### KENOSHA, WISCONSIN (60 MILES FROM CHICAGO).

Population increased 60 per cent. in ten years. Manufacturers formed a housing association called the Homes Company, because they lost hundreds of valuable operatives in a few months. The Homes Company was formed with capital stock of \$5,000, and subscription \$20,000; interest 5 per cent. A subsidiary Housebuilding Company was also formed. The company erected all houses for cost, plus 10 per cent. Local first mortgage for seven years. The Homes Company advanced 35 per cent. on second mortgage, which had to be paid back first, with 6 per cent. interest. Purchaser paid \$20, and minimum monthly rental of \$2 7s. 6d. was charged. Of the 20 erected, and the majority were sold before completion. The allotment was 40 by 130 and 50 by 100. The houses were of two stories, and contained six rooms and bath. The building cost \$400, and the allotment, \$100; total cost, \$500. The

houses were built in groups of 25. Some employees do not care to purchase. When properties are rented, rent, in many cases, for the last month of each year, is retained if no repairs are required, or balance of same if repairs are necessary. If repairs exceed monthly rent, the company pays for extra.

#### FAIRBANKS MOORE COMPANY, DELIST, WISCONSIN.

Company contemplates building 350 single family houses, all detached. Fifty houses have been completed. The allotment is 40, 40, 60, 60, and 60 feet by 80, 100, 100, and 110 feet. There are no trees on the land, and the houses are at least 150 feet apart; seven houses to the acre. They range in value from \$480 to \$620, and all are to be sold. The terms are 10 per cent. down, and so much per month.

#### ELMT, MICHIGAN.

One hundred and eighty houses, in lots of 50 by 100. Houses cost \$250 to \$300. Terms, 10 per cent. down, and 1 per cent. per month. This is a common practice.

#### WESTLEY GARDENS.

Rent only.

#### BOUND BROOK, NEW JERSEY.

Purpose.—To house well operatives; \$3,600 spent on road-making, &c.; \$10,140 spent on twenty houses, semi-detached, &c., for 42 families, total expenditure, \$13,740; average rent, \$3 per month. The total possible rent is 8.7 per cent. on the investment.

139. To Mr. Mathews.—In all cases the value of a house is repayable in full with interest. In the majority of cases the companies pay 5 per cent. interest for the money they employ, and charge 6 per cent. to the purchaser of the house.

140. To the Chairman.—Owing to the cost of material and labour many of the housing schemes are not paying propositions, except indirectly through increased efficiency, as money invested in housing produces less return than money invested for industrial production. The housing schemes for munition workers in England were intended in the first place to be of a temporary character. But it was found that water supply, lighting, sewerage, and fittings generally formed such a large percentage of the total cost that the buildings must be erected on a permanent basis. A little booklet, "Conservation of Life," issued by the Canadian Government, contains an illustrated article on Government housing during the war, and the following two paragraphs in reference to England, are of interest:—

The housing and social welfare branches of the Ministry are huge organizations, and are looked upon as important parts of the machinery of war; but, above all, they are being used to lay the foundations for industrial reconstruction after the war.

The British Government, in erecting these houses as a war measure, is unable to take into account the relation between their rental value and cost. Building materials and labour are so much dearer since the war that costs have gone up have also increased, but not sufficiently to enable people charged which will pay an adequate return on the capital employed in building. It is largely because of this situation that building by private enterprise has practically ceased.

The buildings cost so much that the Government could not fix their rent according to the cost. There is no direct relationship between the rentals charged and the actual cost of the building. This has been realized that have been built up. Granta Green is now 10 miles long, thousands of houses have been built, and recreation halls and other facilities have been provided in order to make the workers more contented. Of the alternative plans which I have submitted to the Committee for Lithgow, I prefer the lay-out which provides for blocks of variable sizes, with a minimum of 40 by 100 feet. All the buildings on the western hill would face the east, and others would face in various directions according to the directions of the streets in which they are situated. The semi-circular roadways would present no difficulties in the building of the settlement.

I do not anticipate that the undulating nature of the country will offer any difficulties in the making of cross roads, except that they may require, in some

places, a little levelling and filling. It may be necessary, in order to avoid the washing away of the roads and erosion generally, to lay underground storm drains along the main roads running north and south, unless the storm water is diverted from the south. If the storm water is diverted, open channels will be sufficient. That point will require to be decided, and provision made for underground stormwater drains, and before the roads are formed. I think it would be advisable to obtain from Parliament legislative powers and authority for the operation of the scheme. In other countries there are generally ordinances or declarations, which control the whole development. It is necessary to have some power to enforce control of the general scheme. I think that the control could be placed in the hands of the Works Department; it is not necessary to create a Board for the purpose. The buildings could be erected to the greatest advantage in contracts of 25 and 35. Lithgow is distant from the Sydney market, and if contracts of 25 and 35 buildings were let, they probably would be taken up by men who had both

land and employees behind them. There would be less likelihood of labour troubles, and probably the contracts would be completed to time more easily than if the construction were carried out by day labour. I think it would be advisable to provide for both freehold and leasehold. Provision must be made for the inevitable percentage of persons who will not purchase. But employees should be encouraged, as far as possible, to acquire their own homes. Manufacturers abroad, especially in America, have found that ownership of their homes not only prevents the drift of workmen, but makes them more contented. They also take a personal interest in their homes; therefore, the employers try to encourage them to purchase. I would undoubtedly advise that the cottages should be sold to any workmen who were willing to purchase. The Government should be prepared to make a loss in connexion with this scheme. It would not be to charge the employees rentals based on the cost per cent. at the present time. American manufacturers realize that it is necessary for them to house their workmen, and that housing represents a monetary value that they cannot show on their books. But they charge it to equipment, in the same way as they charge the cost of erecting a factory. I suggest that the Government should not base the rental on the actual cost at the present time, because of the abnormal charges for both labour and material. I see no objection to employees being financed to build their own homes, subject, of course, to the control of the officer or Board in charge of the scheme. The fact that a man wishes to have a house of his own choice and design shows that he has men are more or less unworkable, and usually they can be advised to make alterations which will render the plan acceptable. No buildings should be erected without the approval of the responsible officer. It would be no disadvantage if the Government were to call for competitive designs for the cottages. Quoting from memory, the American Housing Association lays it down that no man earning \$3 per week can purchase a house on a rental basis, because to do so he must deprive his family of certain necessities. The association considers that the lower-paid men should continue to pay rent, and it discourages purchases by them. The laundry ought not to be in the kitchen. The clothes of men who work in a factory, where they are forging and dealing with oil, must be boiled, and that operation would make the atmosphere of the kitchen very bad if the laundry operations were being carried on in it. Some houses built for the lower wage-earners combine a kitchen and dining-room, and an out-house is provided for laundry purposes and fuel. A large kitchen, which can be made into a living room,

is much more convenient than the laundry-kitchen. In my lay-out I have allocated a site near the village green as an accommodation house for single men. I recommend that a building suitable for that purpose be erected and leased. If separate accommodation is not provided for the single men, a number of the married workers will take to lodgers, and that system does not lead to the best housing conditions. The accommodation house for the single men is usually run by a married couple whose quarters are in the same building. All that is required is a common dining-room and a number of single bedrooms. The many evils of the lodger system cannot be unknown to the Committee. On my alternative plan I have made provision for a common playground, which will serve for recreation and for the ventilation of the blocks in the central area, where the allotments are only about 40 by 100 feet. In another block I have provided for two tennis courts and a pavilion, to be approached by a small right-of-way. The cost of providing and maintaining parks and tennis courts should be covered by the general rates.

141. To Mr. Laird Smith.—The multiplex or small unit house is practically an adaptation for cottage purposes of the system used in American apartment buildings. There they utilize what is known as the American wall-bed, which can be lowered at night time and raised in the morning, leaving the room free during the day for living purposes. In this way practically six rooms are contained in three. The convertible bed is a great convenience, and where there is a sleeping-out porch leading off the bedroom the bed can be lowered in either the porch or the bedroom. It saves a lot of space, and, as the recess into which it is built is properly ventilated, there is no detriment to health. The system could be adopted in Australia, where there is a sleeping-out porch adjacent to a bedroom, so that the bed could be used in either the porch or the room, according to the weather. I do not know that there would be any reduction in the cost of construction by the employment of that system. The extra cost of my lay-out, as compared with that suggested by Mr. Goodwin, would be probably 10s., certainly not more than 15s. per allotment. The grading of the roads presents no difficulty, and in no case is the cutting or filling more than about 2 feet. I have already said that all the houses on the western hill will face the east. The highest house will be 17 ft. 6 in. above the next one, which in turn will be 16 feet above the third. The ridges of the hill will be tree-planted on the western side, and the allotments will be fenced and tree-planted at the back, thus forming a natural screen, which will prevent the back yard of the house in front being overlooked from the verandah of the house behind. Any extra cost in the original survey of the land, as between a geometrical plan and one following the natural contours, should not be considered, because, in comparison with the advantages in appearance and economy of road construction, it is a negligible quantity. Even if the extra cost amounted to £1 per allotment, that would not counterbalance the economy in road construction and the pleasantness of the surroundings. Even if the roads were diverted a few feet from the natural contours, extra cutting and filling and more disturbance of allotment would be involved, which are avoided by allowing the roads to follow the natural valleys. There will be practically no addition to the cost of sewers and drains. There would be no great loss of land in the scheme I am proposing as compared with that suggested by Mr. Goodwin. If you visualize the effect of the two plans in their full development, you have in the one case a rather unattractive and uninteresting effect, and in the other a change of vista, variety in the orientation of

the buildings, and everything that leads to pleasantness of appearance. That, in itself, is a valuable asset.

142. To Senator Needham.—There is a chance of the lower-paid workman in America becoming the owner of his own house, but he is not encouraged to do that because of the deprivation that he will impose upon his family. If a man without a family is receiving £3 per week, he may be able to acquire a home, but it is generally recognized that a man with a family cannot afford to pay sufficient out of his income every week to enable him to purchase. Since I appeared before the Committee last I have perused the Workers' Homes Act of Western Australia. Its provisions seem to me very good. The majority of people like to own a block of land, but, on the other hand, if the revenue from a perpetual lease is devoted to the development and improvement of roads and parks, it is a very good system. I do not believe in the common playground for every block when the area surrounding the houses is sufficiently large. That system is usually introduced when the allotments are very small and the houses number thirteen and fourteen to the acre. I approve of the Chicago Parks system. There it is laid down that there should be a children's playground within a quarter of a mile of every home, and an adults' playground within three-quarters of a mile. The smaller playgrounds are utilized sometimes for the recreation of infants, in order to avoid the necessity of their crossing the roads. But there is not so much necessity for them where the allotments are large enough to provide playgrounds in themselves. Even with allotments of 50 x 150 there should be a playground within a quarter of a mile for the general association of the children. I suggest, as a minimum size, an allotment 40 x 100 feet. The allotments in my alternative plan vary from a minimum size of 40 x 100 feet to 180 x 50 feet. They vary in size in order to meet the differing requirements of a mixed community; the average size would be about 45 by 125. Only about one-third would be of the minimum size.

143. To Mr. Sinclair.—For protection against the westerly winds I have provided on the crest of the western hill a plantation 100 feet wide, which should give some shelter, not only to the houses on that hill, but also to the whole subdivision. It is preferable for houses, especially those which are semi-detached, to face either north or south, because they can then get the sun all round them at some time of the day. All the houses on the western hill have been made to face the east, in order to obtain suitable grades for the roads and make use of the natural features of the ground in providing a view up the valley. The fronts of the houses are protected from the prevailing winds, and the buildings will be sufficiently wide apart to enable the sun to get round the building every day. Always the main entrances should be on the lee side of the building, if possible. When the scheme is completed, it will be necessary to have some administrative authority, but I hardly think the settlement will be sufficiently large to justify the appointment of a Board. On the other hand, there might be some advantage in appointing a committee from amongst the tenants, in order to encourage them to take an interest in the settlement. In laying out the Commonwealth area, I did not take into consideration the reservation of 2 feet along Bayonet-street, made by the owner of the Coocorwall Estate, because I understood that that obstacle could be overcome. Probably that reservation was made in order that the owner of that estate might be able to get part payment for the making of Bayonet-street, or some other concession for the drainages he may have done, and which the Commonwealth settlement may desire to utilize. I think it only fair that some compensation should be paid for his road formation. After

abnormal rain there would be a very heavy rush of water from the mountain. Mr. Goodwin drew up a plan showing the quantity of water which would be required to be taken away after a maximum fall of 4½ inches in 24 hours. I understand that it is possible to divert a lot of the water from the mountains in an easterly direction. The pipe drains are shown on the plans. I do not know that this scheme would direct more water into the present concrete stormwater drain than would reach it under natural conditions. The soakage in the garden and the breaking of the surface by development would perhaps enable quite as much moisture to be absorbed as at the present time. If the water were diverted from its natural course and thrown into the concrete drain, the owner of it might claim compensation, but the Government could make a counter claim for the enhancement of his subdivision by the creation of parks which have a community value. Those parks would certainly increase the value of all property within a quarter of a mile of Bayonet-street. One of the advantages of legislation in America, Canada, and England is that compensation is largely neutralized by the betterment tax. I think that the enhanced value created by the park would be a sufficient offset to the 2-ft. reservation. It might be difficult, however, for the private owner to appreciate the value of the park to his adjoining property. When the Central Park of New York was purchased by the civil authorities, they created a zone of about four blocks on all sides of the park, and made a special assessment of one-third of the actual cost. The valuations in that district went up 300 per cent. Land operators in America provide park areas to the extent of 7½ per cent. of an estate, and they are content to give that area away, because the increased values they get for the frontages compensate them for the loss of land. My primary reason for placing the roads in the depressions was economy in the construction. The amount of cutting and filling is considerably reduced by having the roads in the gullies, although it is possible that they may require more macadamizing in the first place. The area of parks and reserves provided for in my lay-out is as follows:—

Reserves unit for building purposes—	
Mountain Park .. .. .	18 acres
Southern Park and park to drainage area .. .. .	4 acres
Other reserves .. .. .	22 acres
Churches .. .. .	7½ acres
Community and other buildings .. .. .	1½ acres
School .. .. .	1½ acres
Roads—70 feet wide, 300 feet length .. .. .	20 acres
60 feet wide, 2,050 feet length .. .. .	77 acres
50 feet wide, 1,150 feet length .. .. .	130 acres
40 feet wide, 12,200 feet length .. .. .	77 acres
30 feet wide, 4,000 feet length .. .. .	130 acres
20 feet wide, 720 feet length .. .. .	5 acres
Allotments 250 .. .. .	
Entrance park in existing property .. .. .	

I believe in semi-detached houses so long as they are facing north and south, so that the sun may get into each portion of the house at some time of the day. They are more economical in construction, and, therefore, can be let at a more reasonable rental than a detached house. Where you are making provision for the housing of workers who are earning about £3 per week, there should be a proportion of semi-detached dwellings. If semi-detached houses are facing east and west, portions of them do not get the sun at all. There should be a space of 15 feet between every detached house, so that the sun may always get between them.

144. To Mr. Sinclair.—If the whole development of this subdivision is to be handed over to the municipality, the parks also should be handed over, because the municipality could arrange with local committees or progress associations to develop them, and the residents would have a more direct interest in that work.

145. To the Chairman.—If, apart from the general rates, a special rate on the whole settlement were levied for the development of roads and parks, I would not hand the parks over to the municipality straight away. In normal conditions the parks would not be developed until the settlement was well built and a necessity arose for grounds for recreation purposes. The main consideration should be to make the reserves permanent, so that they will be there for all time for the benefit of the people. In most cities the difficulty is to get areas adjacent to residential districts for the recreation of the citizens. Sixty per cent. of the parks and reserves of Melbourne are within 3 miles of the General Post Office, but in Brunswick, Coburg, Northcote, and Preston there are 10,000 acres of residential area with only 200 acres of playground, because no reservations were made at the time of the subdivision. The reserves should be made permanent, and tree planting should be commenced as early as possible, but the general development of the playground area may be left in abeyance until it is required.

(Taken at Sydney.)  
WEDNESDAY, 10th JULY, 1918.

Present:

Mr. Gueson, Chairman.

Senator Henderson	Mr. Mathews
Senator Needham	Mr. Mahony
Senator Newland	Mr. Sinclair.

Algeron Peake, Deputy Chief Engineer, Water Supply and Sewerage Branch, Public Works Department, New South Wales, sworn and examined:—

146. To the Chairman.—I have made some inquiries recently in connexion with the housing proposition at Lithgow. Previously I had charge of the construction of the Lithgow sewerage works. The proposals for the water supply and sewerage of the area required by the Commonwealth for the housing of workers there were prepared under my supervision. They have already been submitted to the Committee by Mr. de Burgh. The sewerage can be dealt with by a sewer connecting with the main sewer of the Lithgow system running down a depression through the Coocorwall Estate to the railway line, and after crossing the line running northward and connecting with the main sewer laid down to the treatment works. These works will require enlarging in order to accommodate the additional quantity of sewerage. The Lithgow municipal council have already been notified that, owing to the rapidly increasing population, the treatment works are inadequate to deal with the sewerage of the population already connected. The growth of population at Lithgow has been very rapid. The treatment works were designed to cope with the sewerage of a population of 9,000, but there are already 7,000 persons connected with the scheme, and the total population of the town is 10,000. Therefore, without the additional sewerage from the houses in the proposed area, the works are already overcharged, and the sewerage from the Commonwealth area could not be discharged into them without additions to them. The sewer connecting the area with the main sewer, which Mr. de Burgh has estimated to cost £3,100, quite apart from the cost of reticulation of 100 houses, namely £2,900, will also serve the Coocorwall Estate when it is settled. There is no settlement on it now. In fact, the subdivision has only recently



been put on the market. The reticulation of the area will cost more than the main sewer. The amount of excavation will be much the same; the only difference will be in the cost of pipes. The approximate length of the main sewer will be 62 chains of 12-inch piping. The other piping will be 9-inch and 6-inch. There will be about 10 chains of piping inside the area for the reticulation of 100 houses. The excavation for smaller pipes will be about the same as that required for the larger pipe. We cannot have less than 2-feet trenches for 12-inch or 9-inch pipes. I do not think that there are many dwellings in Lithgow in the area in which the pipes are already laid which are not connected with the system. The pipes are not laid to the sparsely populated parts, because there would not be sufficient rates received to pay annual charges on the outlay that would be involved. In the statement submitted by Mr. de Burgh an amount of £750 for the treatment works is charged against the housing of workers on the Commonwealth area. It is worked out at the rate of £1 10s. per head, which is about the average cost of construction of such works. The water supply pipes, which are estimated to cost £2,500, would come under the same category as the main sewer, because they would probably serve the Coovervill Estate, in which case the total cost should not be a charge against the Commonwealth workers' cottages. It would be useless to continue the 6-inch main at present running to the Small Arms Factory, because it would not give a sufficient flow for the workers' men's area. A larger pipe would be required. The route adopted for the water main is the shortest that could be taken to reach the area. Nothing would be gained by going down some of the nearer streets which already have pipes. It is necessary to run west and south, it is impossible to go across diagonally. Although it is the most direct route for the main to take, the effect will be to serve the Coovervill Estate as well. The usual practice in New South Wales in dealing with such cases is for the municipal council to write to the Works Department, and ask for extensions to be made. Thereupon the proposed work is examined, and an estimate of the cost is prepared. An inquiry is made into the rateable value of the property to be served, and if it is found that the rates recovered from the area to be served will return an amount which will cover interest, sinking fund, and maintenance upon the cost of the work, the municipality is so advised, and it passes a resolution making the Minister for Works to carry out the undertaking under the provisions of the Country Towns Water Supply and Sewerage Act. When funds are made available from loan votes the work is carried out. We generally have a sinking fund in connexion with water supply and sewerage works which will return the capital expenditure in 50 years. The municipality annually repays sums of money to cover interest and sinking fund which will extinguish the debt in that period. The cost of the work is charged as a loan to the municipality to be extinguished in 60 years. I do not recollect a case in which an extension was to be provided to supply a private estate upon which it was anticipated that the rates receivable would not pay interest and sinking fund, in which an arrangement was made between the State and the owner of the property, but a municipal council has the power to make any extensions it likes. It frequently makes extensions without any application to the Minister when a work is handed over to it. Of course that is only when the council's water supply account is in funds. I do not recollect a case in which a work has been carried out on the guarantee of a private owner. If the Commonwealth find the money for the extension of the mains to the workers' block I suggest that when settlement is sufficiently advanced, and the rateable values have increased to such an extent that the rates collected will

pay interest and sinking fund on the capital expenditure, the cost should be charged to the municipal council, and the Commonwealth could be reimbursed. It would not be a slow process if Lithgow continues to grow as it has grown during the last ten years. I anticipate that the Coovervill Estate will be settled very quickly. As to whether the whole of the cost of a main, which ostensibly serves such a large proportion of the Commonwealth area, should be charged at the outset to the Commonwealth area, all I can say is that it depends upon how the Commonwealth Government propose to compensate the municipal council for the benefits derived from the service—that is to say, whether they propose to pay rates or give the municipal council some benefit in another way. In this respect what applies to the water supply will apply equally to the sewerage. The municipal council would undoubtedly wish to see the main sewer put down, so that the Coovervill Estate will also be served. However, they have not approached us in regard to the proposed extension to the Commonwealth area. In fixing the size of the mains, consideration has been given to the possibility of making use of them in the areas through which they passed. The difference in cost between a 12-inch and a 9-inch pipe sewer is not very much. Earthenware pipes are used for the sewerage at Lithgow. They were procurable locally when the work was undertaken, and they were fairly cheap. As a rule, the Department uses concrete pipes in places where earthenware pipes are not available, and have to be carried a considerable distance at the risk of a large percentage of breakages. We put up a concrete pipe plant in any town which we are sewerage, and make the pipes ourselves. Small drain pipes are not usually reinforced. Earthenware pipes would be used in the extensions to the Commonwealth area. We have calculated their cost upon the prices at which they are sold in Lithgow, where they are manufactured. Of course, as there is no competition those prices are fairly high. The manufacturers practically take the Sydney prices and add the freight. I have prepared the following comparison of prices of pipes as between Sydney and Lithgow:—

Cost of E.W. Pipes from Lithgow Pottery.				Cost of E.W. Pipes from Sydney.			
Dia.	Contract Price Lithgow Pottery.	Cuttings allowed, 2s. per ton.	Price delivered.	Dia.	Sydney Contract price.	Freight and Cartage.	Total Price at work.
4"	per foot. 0' 18d.	per foot. 0' 18d.	per foot. 7d.	4"	per foot. 6d.	1d.	7d.
6"	0' 24d.	0' 55d.	10' 6d.	6"	8d.	2' 6d.	10' 6d.
9"	1' 0' 6d.	0' 55d.	1' 7' 3d.	9"	1' 2' 6d.	0' 25d.	1' 5' 0d.
12"	2' 2'	0' 7d.	2' 9' 2d.	12"	1' 7' 0d.	0' 25d.	2' 0' 0d.

For all sizes except 9" local pipes are cheaper. The sizes for house connections are 6" and 4".

Therefore it will be seen that the Lithgow works are charging a fair price for their goods. We confine our use of earthenware pipes to pipes 18 inches in diameter. We very rarely use a larger earthenware pipe for sewerage works. If I can get a really good glazed earthenware pipe I prefer it to a concrete pipe. It has a better surface. The best earthenware pipes are made at Bendigo. I would never use a concrete pipe smaller than an 18-inch diameter if I could get earthenware pipes equal to the best Bendigo. The concrete pipes we get in Sydney cost as follows:—4-inch, 7d. per foot; 6-inch, 8d. per foot; 9-inch, 1s. per foot; 12-inch, 1s. 6d. per foot; 15-inch, 2s. 9d. per foot. It is necessary to add the cartage and railway freights to arrive at the Lithgow figures. It would not be economical to put down a plant at Lithgow to make concrete pipes for the houses on the Commonwealth area. There has been no talk of increasing the water

supply service at Lithgow. So far its capacity has not been taxed. The catchment area is not very large, but there is a good rainfall, and the district has not been subjected to long periods of drought. There are arrangements for extending the supply if at any time it should be considered necessary. If the people in the Government cottages carry on gardening to any extent it will tend to increase the average consumption of water at Lithgow; which Mr. de Burgh has computed as being 50 gallons per head, but the people at Lithgow are not a gardening populace and Lithgow is not what you would call a garden city. Since the outbreak of war the cost of house connections has gone up very considerably. I have had a statement prepared by a plumber showing the present value of making house connections in Lithgow. The cost of connecting a four-roomed cottage would be about £10 10s., and the cost of connecting a well-appointed eight-roomed cottage would be about £24. These connections comprise connections with the baths, water closets, galleys for kitchen waste, water closet pans, cisterns, flush pipes, and all internal fittings except baths or kitchen sinks. These costs cover sewerage connections only.

147. To Mr. Mathews.—When an estate is set up for sale the roads and drains which are constructed in order to comply with the Local Government Act become exclusively the property of the municipality which afterwards has to maintain them. The drain constructed through the Coovervill Estate has probably been taken over by the Lithgow Council. If an estate is subdivided below the Coovervill Estate the owner would not be required to contribute towards the cost of the drain provided by the person who has set up the Coovervill Estate, and I do not think that the latter can expect the Commonwealth Government to share in the cost of the drain that runs through his property. I know of nothing in the State law which gives a landowner a claim because water is brought down natural channels at a faster rate than formerly. If the Commonwealth diverted a creek from its natural course and threw it on to the Coovervill Estate, the owner of that property would have an undoubted claim upon the Commonwealth, but he would have no claim on the Commonwealth by reason of the fact that sewerage pipes were laid along the roads running through his property. These roads have become municipal roads. The total cost of providing water supply and sewerage connections for the whole of the Commonwealth area has been estimated at £21,500, namely £8,050 for water supply and £13,500 for sewerage. Mr. de Burgh has estimated that the annual contribution to meet interest and sinking fund, based on 5 per cent., will be £720. For the time being it is proposed that this amount shall be paid by the Commonwealth Government. As a set-off rates will be paid by the tenants of the houses. They will pay rates either to the Commonwealth or to the municipal council, according to the arrangement which may be made. An annual expenditure of £720, for interest and sinking fund on capital outlay for water supply and sewerage, would mean slightly over 2s. per annum for each of the 100 houses erected. Whether the houses will also pay municipal rates will have to be a matter of arrangement with the municipal council. I do not know whether the owners of the Coovervill Estate have applied to the municipality to be connected with the water supply and sewerage, but it is very evident that if people build on the estate they will need a water supply, and naturally they will make use of the pipes that will serve the Commonwealth area. Any other arrangement would mean a waste of material and labour. The one sewer pipe should serve the Coovervill Estate and the Commonwealth area. The Minister for Works in New South Wales might construct the sewer and hand it over to the municipality in the ordinary way, and then the council would

collect rates from the house-holders on the area, the Commonwealth reimbursing it for any loss, but that loss should gradually diminish until the sewer is a paying concern. It is quite certain that, at first, the council would sustain a loss which it would not be fair to ask it to bear.

148. To Senator Needham.—The population of Lithgow was 7,000 in 1907. To-day it is approximately 10,000, according to the last figures I have been able to obtain. For sewerage pipes there is nothing better than a good vitrified salt glazed earthen pipe. It is so impervious. If you weigh it dry and put it into water you will find that the weight is increased by not more than about 2 per cent. However, it is not often possible to get a high-class earthenware pipe. The Lithgow pipes will absorb 5 per cent. or 6 per cent. of their weight in water. Everything depends upon the quality of the clay. Some clays will not burn well. When the pipes are made and put into the kilns they lose their shape before they are properly vitrified. There is a splendid pottery clay at Bendigo which fires well. In pipes made from that sort of material you do not find fire cracks. It is quite usual to find cracks about the sockets of earthenware pipes, but not with those made of good material. The Bendigo clay is the best that I know of in Australia for pipe-making. I do not think there will be much difficulty in getting that portion of the Commonwealth area which lies outside the municipal boundary included within the area controlled by the Lithgow Council. There is a provision in the Local Government Act which provides for the amendment of the boundaries of municipalities. Section 15, sub-section (c) provides that the Government can alter a municipal area after giving certain notice to the people within the area. Every working man should have a family, and I do not see how any working man with a family can live in a house which has less than four rooms and a kitchen. I do not think that you will require to build many houses with smaller accommodation. Two rooms with a kitchen and the various offices should suit a newly-married couple. Houses of the "A" type are evidently very nicely designed and well fitted places, but they will not give a great deal of spare room even for a newly-married couple. They will not be too small for two persons, because they will have wide verandahs, which will be as good as rooms. I should say that a newly-married couple would consider themselves very well off in such dwellings. From the designs they appear to be rather expensively appointed for houses intended to be workmen's cottages.

149. To Senator Newland.—The water and sewerage pipes proposed to be taken to the Coovervill area have been designed to serve the Coovervill Estate as well. The Commonwealth Government will not be able to take up the attitude of insisting that the owners of the Coovervill Estate shall contribute towards the cost of the water and sewerage pipes. If they paid for the pipes and got the permission of the council to lay them they could prevent the Coovervill people from connecting with them, but it would mean that the municipality would have to put down another pipe to serve the Coovervill Estate. The power to construct sewerage in any street rests only with the municipality or the Minister for Works. We have used large quantities of concrete pipes in our sewerage works, particularly in western towns a long way from earthenware pipe factories, and where the percentage of breakages would be very large if we had to convey them the distance. Of course we have to get suitable material for making the pipes, and the number required must justify the establishment of a factory. We have done it at Wagga, Tamworth, Dubbo, Orange, and other towns. As long as the pipes are made of good material, and are washed with cement wash, the absorption is very

small. A good cement concrete pipe would be equal to the local Lithgow pipes. The concrete pipe made by Hume Brothers is a very excellent one. The process of manufacture by centrifugal force tends to make the concrete very dense. It gives the outside a better surface, as against the inside. The inside has to be tooled over as the pipe revolves. It is an excellent pipe for sewerage purposes, and for water supply where the pressure is small. I cannot say what pressure one of the pipes made by Hume Bros. will stand. I know that they have been laying them with very considerable heads upon them. You can make a pipe to stand any head. It is simply a matter of having a little greater thickness of concrete, and a little more reinforcing. The difficulty in regard to a very large head is the joint. So much depends upon the joint. No water supply pipes used in New South Wales are constructed of reinforced concrete. The matter is under consideration at the present time, and we have recently purchased Hume patent rights for the State. When we have our factory established we shall probably be using pipes made by the Hume process for water purposes up to a certain head. I cannot say what that head will be until we have carried out tests. A few wooden pipes have been used upon the Broken Hill water supply, at Tamworth, and other places. The Metropolitan Board of Water Supply and Sewerage has been using them at Camden and on the South Coast to a limited extent. It is pretty obvious that the life of a wood stave pipe is that of the binding wire, and the life of the binding wire cannot be more than a small proportion of that of a cast iron pipe whose life, when laid in ordinary soil, generally runs up to 50 years. Wire when exposed will not last very long. A cast iron pipe is subject to corrosion and damage both from within and without; but there is a skin formed over it which is very resistant to corrosion. Our experience shows that the life of a cast iron pipe is a very long one. Where these pipes have not lasted well is in places where the soil is impregnated with acids from trade wastes. My experience leads me to recommend the use of cast iron pipes for the water mains at Lithgow.

150. To Mr. Sinclair.—The estimate of the cost of reticulation was prepared from the sections on Mr. Morrell's plans. Any amendment of the layout of the area would necessitate an amendment of the estimate of cost of reticulation. In the interests of the town it will be advisable in dealing with the sewerage requirements of the area to put in an outfall pipe large enough to take off any possible connexions from the Coerwull Estate. It would be a great waste of money for the Commonwealth to put down a sewer through the Coerwull Estate, and then for the municipal council to come along and put down another. It would be far better for the Commonwealth Government and the municipal council to come to some arrangement for putting down a joint drain. The municipal council are legally the masters of the situation. The Commonwealth Government cannot construct a drain through the Coerwull Estate without the consent of the council. My suggestion for meeting the difficulty is for the municipality to stand the whole of the cost of the sewerage and water supply services, the Commonwealth Government meeting the annual loss until it is gradually wiped out by the extension of settlement on the Commonwealth area, and also on the Coerwull Estate, and by the rateable values of the municipality being considerably augmented. If the growth of Lithgow continues it will not be long before the rates collected in these two areas should meet the annual expenditure on interest and sinking fund on the capital cost of this undertaking. I cannot say what the position of the State Treasury is at the present time, but if funds can be obtained I do not think there will be any difficulty in

regard to securing the sanction of the State Government to a loan to the municipal council for the carrying out of this work if the Commonwealth Government give an undertaking to make good any deficiency in the revenue received by the council from these extensions.

151. To the Chairman.—If arrangements were made between the Commonwealth Government and the municipal council by which the latter body would extend their water supply and sewerage mains to the area on which the workers' houses are to be erected, and also increase the size of the septic tanks, the Commonwealth guaranteeing any loss in regard to the payment of interest and sinking fund on such expenditure, I take it the council would keep a special account showing the amount of rates derived annually from the Coerwull Estate, which would be deriving the benefit of these services, and also from the Commonwealth area. I understand that the council has no power to rate Commonwealth property, but if it was given that power it could rate the Coerwull Estate and the occupiers of the cottages on the Government area, and keep a separate account in regard to the sewerage and water supply rating. The Commonwealth accountant could examine the municipal account annually and ascertain what balance, if any, should be paid by the Commonwealth Government to the municipality to make good any deficiency. In laying out water mains, we always avoid dead-ends if possible. At present there is a dead-end close to the Small Arms Factory, and it is proposed to extend that pipe in order to connect it with the new pipe running to the Commonwealth area, so that the whole of the water in the mains will be in circulation. It will also tend to supplement the flow of water to the Commonwealth area. It is a necessary connexion. I would not put down a main to serve the Commonwealth area without making a connexion with another service in order to promote the circulation of water. It is necessary to consider the service to the Small Arms Factory as well as that which is to be given to the cottages. By making this connexion with the old main, we improve the quality of water supplied to the Small Arms Factory. An engineer abhors nothing more than a dead-end in a water pipe. The fact that there are no back lanes in the Commonwealth area would not affect the total estimated cost of the sewerage connexions. I should say that the items shown in Mr. Murdoch's estimate, namely, £1,000 for sewerage fittings for 100 cottages, do not include the cost of sewerage, but merely cover the cost of house fittings.

152. To Mr. Sinclair.—I do not know that there is anything in the Local Government Act preventing the imposition of differential rates on an area benefited by a particular water supply and sewerage service. It is only natural that people in a municipality will object to paying a higher rate in order to meet the cost of a service which suits only a portion of the municipality, and that is why we follow the practice of not extending sewerage services until we know that the rates which will be derived will meet the annual expenditure on interest, sinking fund, and maintenance. I do not think there is anything in the Act which will prevent the municipality from applying for the gazettal of a differential rate, but I rather doubt whether the council would do it. I can look into the matter if the Committee wish me to do so. At present the householders in Lithgow are taxed at about one-third of the maximum so far as sewerage is concerned. The sewerage rate at Lithgow is 2d. in the £1 on the capital value, equal to 8d. in the £1 on the annual value. The maximum rate is 2s. in the £1 on the annual value.

(Taken at Sydney.)  
THURSDAY, 11th JULY, 1918.

Present:

Mr. GRACEY, Chairman;

Senator Henderson.	Mr. Mahony,
Senator Needham,	Mr. Sinclair,
Senator Newland,	Mr. Laird Smith.
Mr. Mathews.	

Hon. James Ryan, M.L.C., editor and manager of the Lithgow Mercury, sworn and examined.

153. To the Chairman.—I have lived in Lithgow for thirty-two years, and I have a good general knowledge of the housing conditions there. I was the first to advocate the establishment of a Small Arms Factory at Lithgow. That was in 1895, prior to the establishment of Federation. I helped to keep the agitation going. When Mr. King O'Malley was Minister for Home Affairs in his first Administration he proposed a scheme for the housing of the workers at the Small Arms Factory, and had plans prepared for a model village in the neighbourhood of the factory, but I understand that Mr. Fisher, who was then Treasurer, objected to finding the money. The only effect of the promulgation of the scheme was to stop builders from proceeding for six or nine months. It can be understood that if the Government intend to build on an extensive scale speculative builders are likely to limit their operations. Another scheme was put forward by Senator Milten when he was Minister for Defence. I understand that he proposed to build a number of houses at a cost of £40,000 or £50,000. His scheme never went beyond the Cabinet stage. I understand that there was some difference in Cabinet on the question of the tenure, Senator Milten favoured the leasehold system. He told me that as the Government proposed to erect the cottages for their own workers they should retain the buildings in their own hands so that there would be no recurrence of the housing difficulty. Other members of the Cabinet did not favour the leasehold system, and his scheme came to nothing. The serious congestion at Lithgow began in 1915, when the double shift was established. I appeared before the Public Works Committee as a witness in April or May, 1915, in regard to the proposed transfer of the Small Arms Factory from Lithgow to Canberra, and I was asked whether in the event of the establishment of a double shift at Lithgow the people there would be prepared to accommodate the extra number of men who would be required at the factory. I replied substantially that I could not guarantee it, but that I would see that an effort was made to urge the people in the town to do so. That effort was made when I returned to Lithgow a week or so later. I requested the mayor to convene a public meeting, and the proposition was put before that meeting that the people should assist the Government to establish a double shift at the factory. The householders of the town were generally urged to provide accommodation for the extra number of men, even at personal inconvenience to themselves. The response was satisfactory. It was even generous. The people of Lithgow did go to considerable inconvenience in many cases in order to accommodate the extra number of men, which soon amounted to about 500. That was the beginning of the most serious stage of the congestion. It might have been reduced were it not for the fact that, coincident with this development, there was a proposal from the Government to shift the factory to Canberra. In a township of the size of Lithgow, it can readily be understood that with this threat hanging over them the people who were disposed to build would at once cease their operations. We fought the proposal as well as we could. The citizens of Lithgow fought it through the House and made representations to the Government and the Ministers and members of the Commonwealth Parliament. For over a year and a half the matter was in doubt. We did not know

whether the Government were going to transfer the factory to Canberra, or whether they could get parliamentary assent to it or not. In the meantime building was not going on. The threat of the transfer almost paralyzed building operations at Lithgow, and nothing could be done to relieve the congestion. All the time we had been urging the Government to take into consideration the question of housing their own workmen, and last year after the elections, both State and Federal, I interviewed several Federal Ministers, urging the serious position which had arisen, and which was directly attributable to Federal inaction. I asked that some definite plan should be instituted for building houses for the Commonwealth workmen with the least possible delay. The then Minister for Works and Railways promised me in June that he would visit Lithgow as soon as he returned from a trip which he then contemplated making to Western Australia. However, other things intervened. The second referendum was held, upsetting the whole of the operations of Parliament and politicians, and Mr. Watt was not able to carry out his promise until the 1st of February of this year, when he visited Lithgow in company with Mr. Cook and heard the statements of the Factory manager and foremen, representatives of the workmen, the sergeant of police, the representative of the returned soldiers, the municipal authorities, and others. The hearing took place in the municipal chambers. I was conducting the case on behalf of the citizens. I examined the witnesses and Mr. Watt cross-examined them. The proceedings lasted for a little over an hour, and apparently both Ministers were convinced in regard to the immediate necessity for doing something. Mr. Watt proposed to take the matter up at once, and submit a proposal to Cabinet. It was one of the few promises made by a Government which was promptly carried into effect. During the following six weeks Cabinet had decided to take action, the Government had resumed about 130 acres of land, and plans were in the course of preparation by the Department. In all my experience I have never known anything to be so promptly handled by a Government. However, under the provisions of the Public Works Committee Act this inquiry had to be instituted, and that is really the only delay which has occurred. The congestion in regard to the Small Arms Factory has reacted on the town generally. It is not only men employed at the factory who cannot get housed. Ironworkers, coal miners, and men engaged in various occupations are similarly affected. But the whole of the trouble has arisen from the congestion brought about by the Small Arms Factory, and the threat to shift it to Canberra. The present conditions at Lithgow are very bad. There are three married men employed in my office who cannot get houses. They are obliged to live in rooms, with their families, or to leave them in Sydney. No business can stand that sort of thing. It is liable to be deprived at any time of the services of its best employees. We have commenced the erection of four cottages for our workmen. We have bought a block of land 132 feet by 132 feet, and we propose to build four cottages on it, three of them with four rooms, kitchen, laundry, &c. Our architect tells me that he will be able to build these cottages in brick, with tiled roofs, for about £500 each. I have the assurances of Federal Ministers that the factory will be a permanent one, and in these circumstances the class of buildings erected for workers should be substantial and permanent. In connexion with the building of cottages for our own workmen, we have had to pay a higher rate for the land than the Commonwealth Government have had to pay, because we carry on business in the centre of the town. We had to buy a block within reasonable walking distance of the office. It is perhaps 100 yards nearer to our office than the area which the Commonwealth Government has acquired is in relation to the

**Small Arms Factory.** Some of our land is low-lying, and a drain had to be put in, the cost of which was borne partly by the owners and partly by the municipality. The block altogether has cost us £200. I am of opinion that the erection of cottages, costing £50,000 to £70,000, will tend to secure the permanency of the Small Arms Factory at Lithgow. Even if in 20 years' time it is found more economical to transfer the operations of the factory to the Federal Territory, or if it should be found expedient to do so for any other reason, I presume that the Lithgow Factory would be utilized for some other Government industry. No Government would abandon such a big property. After all, Lithgow is a natural centre for a manufacturing industry. The Commonwealth expenditure on the Small Arms Factory, and the number of people employed there, have increased the unimproved value of the whole of the Lithgow municipality. Whenever population increases land values must go up, but the municipal council at Lithgow has adopted the system of rating on unimproved values, which has a tendency to check increases on unimproved values. The Commonwealth Government should receive fair treatment from the municipality in connexion with the proposal to erect workers' houses, provided always that the tenants of the Commonwealth are prepared to pay the same rates as other occupiers in Lithgow pay for services rendered. There should be no privileged class in a small town such as Lithgow is. I do not think it would be reasonable for the Commonwealth to erect a large number of dwellings and escape the ordinary charges imposed by a municipal corporation through the land belonging to the Commonwealth. The State Government owns a State coal mine at Lithgow, and will probably develop it within a few years. There was a proposition some time ago for the State Government to resume the Lithgow iron works. If the State coal mine is developed, there will be two Government properties in Lithgow, State and Commonwealth, employing a large number of men, and if the iron works are also resumed by the State, two-thirds of the place will belong to the Government. Who will pay the rates if Government property is exempt from municipal rating? These rates are levied for services rendered, and every man, whether he is a Government employee or not, should pay the same to the council. I know the site of the land which has been resumed for these cottages. It is the only suitable land available, and it is a very fine building area. If the principle is adopted by both sides, that Government tenants should be placed on the same footing with respect to rates and charges for services rendered, as all other citizens of Lithgow, the question of the construction of water and sewerage mains is a matter of detail for a fair and equitable business arrangement, which ought to be arrived at within an hour if it is discussed by an officer of the Commonwealth Works and Railways Department and the Mayor of Lithgow. The municipality would have to borrow the money for the purpose of carrying out the extension of the mains through the Coopersville Estate to the Commonwealth area, and perhaps the Commonwealth Government would assist the municipality by furthering a loan from the Commonwealth Bank on a 6 per cent. basis. The credit of the municipality might be accepted as security. The municipality is one of the most financial bodies in the State. The Commonwealth Government might also be able to assist the municipality in regard to getting machinery for the gas works. I prefer brick houses with tiled roofs. I have no knowledge of fibro-cement roofing material. In creating this model village I hope that the Government to those people who put up jerry-built structures all over the place. Building is a matter that will have to be taken up by the Commonwealth and State Governments after the war. It is natural to expect an extension of

building operations when we will have so many men returning to Australia. I would like to see a variety of designs. The cottages that we propose to erect for our own workers will be on blocks with a 33-ft. frontage, but that is nearly twice the frontage that many landlords in Lithgow give now. There is a lane on one side of our block, and it faces streets on the western and northern frontages. If we had to cut a lane out of the aggregate frontage we could not build four houses. The question of what is a fair frontage for the blocks on the Commonwealth area is one that depends upon the cost of the land purchased. The Commonwealth Government has paid £45 per acre. It is a question to what extent the improvements in the direction of road making and the creation of reserves will increase the value of the land. Assuming that £20 is set down as the price for each block, the Commonwealth can afford to be much more generous than we can be in building cottages in the centre of the town. I suggest that the frontage of each block should not be less than 40 feet, but the Commonwealth might be able to be much more generous than that. If the Commonwealth is disposed to give men room for keeping gardens or having flower runs, they might give each occupier a quarter-acre block. It would not be too much. Not a great deal can be done at Lithgow in the way of gardening. The Irish labourers' houses have each a minimum of half-an-acre. At Daceyville a person is not allowed to remain in occupancy of a house if he lets the place run to ruin. A similar condition could be imposed at Lithgow. A man might be compelled to keep his house and its surroundings in good order by making it one of the conditions of tenancy. Three of the cottages which we are erecting in Lithgow for our own workers will have four rooms, a kitchen, laundry, and bathroom, and they will cost £500 each. The fourth house will have an extra room, and the architect estimates that it will cost £700. Adding £50 as the price of each block, the cost of these houses will not exceed £550 and £750. Design 3b is rather better than the class of house we propose to erect. In the first place, everything is enclosed in the main building. I will procure for the Committee a tracing of the houses which we propose to erect. We are not building by contract. Our architect is supervising the work, and subdividing sections of it. I have been divided in my mind as to whether the fencing or the freehold system should be adopted in regard to these workers' cottages, but I am inclined to think that, in the circumstances, the leasehold system would be the better one to adopt. You could build a house and let an employee have it on a limited freehold, with the safeguard that if he wishes to sell the property he cannot dispose of it to any one except a person who is employed at the Small Arms Factory, and that the Commonwealth Government should first have the option of buying it back. If the Government are prepared to do for their employees what my company is prepared to do for its workmen, that is, letting them have the houses at not cost, I see no difference between the freehold or the leasehold system if the conditions which I have suggested are imposed. If we accept  $\frac{1}{2}$  per cent. as the value of money—that is the rate given for Federal war loan moneys free of income tax—and if we add to that basic rate something to cover fire insurance and municipal rates, and an allowance for depreciation, we get an aggregate figure running from 7 per cent. to 8 per cent. If the Commonwealth Government are willing to base their rental on that 7 per cent. or 8 per cent., it does not make the slightest difference to the workman whether he has the freehold or the leasehold, because he cannot do any better than by getting a cottage based on the not cost; he cannot be benefited financially by having the freehold. In the case of our cottages costing £550, if we multiply that figure by the 7 per cent. allowance for the value of money, depreciation, and services, we

arrive at a weekly rental which is a shade under 15s. If we can do that for our men, the Government can do it for their men; and by giving the leasehold they will get over all the trouble about limited freehold, and will provide that the cottages shall not pass out of their own hands, which, if not prevented, might cause a recurrence of the present trouble. The Government will build according to the best modern designs, and provide a cottage at a rent which will cover depreciation, but they will expect their tenants to keep the houses in a decent condition. They can do it more effectively than an ordinary landlord can compel it, because, combined with the power of the landlord, they have also the power of the employer. If it is found that the tenant is reckless about the condition in which he keeps his dwelling, the Government will be in the position to say, "We will not stand this; you will have to go if you do not keep your house in a reasonable state of repair." The method of controlling these cottages will be a matter that will puzzle Parliament. The question involves one of big national policy, and I am not prepared off-hand to say whether a Board should be appointed for the purpose of controlling each area on which Commonwealth cottages are erected, or whether the whole scheme of Commonwealth houses could be more economically and better managed departmentally. I do not trust Government management very much. It is too cold-blooded, too official; there is too much red-tape about it. The Daceyville houses are controlled by a Housing Board. Mr. J. D. Fitzgerald, the Minister for Health in New South Wales, is recognised as the best political authority in Australia on housing matters. This morning I received by post the following sworn declaration from the President of the Returned Soldiers and Sailors League:—

There are 200 returned men at the Factory. Of these, 80 are married, the remainder being single men who are scattered in various boarding-houses and living three and four in one room; in one case they have five in each of three rooms. Most of the married men are renting rooms, in many instances three families are living in a four-roomed cottage; in one case four families are living in a four-roomed cottage, kitchen attached, each eating and sleeping in one room. In many cases the married man has to pay his board in Lithgow, and also support his wife and family in Sydney. We have had a definite statement from the manager at the Factory that married men shall have preference, because they were more likely to settle down, but owing to the lack of, and also bad housing accommodation, they cannot afford to pay double rent, although they are fairly well satisfied with the working conditions at the Factory. The single men are also badly placed owing to lack of decent lodgings, which causes them to be very unsettled. These conditions do not tend to assist returned men in civil life, especially the single man who has no decent home surroundings. There are about 60 men who require houses, and about 25 who want assistance to build houses. The number of returned men is increasing daily, and we fully anticipate any number, from 1,000 upwards, to settle in this district.

**154. To Mr. Mathews.**—The Government could manage the matter of municipal rating by charging the tenant a gross rental which would include the basic cost of money, depreciation, rates, and insurance, and by handing annually to the council a lump sum equivalent to the rates which the houses would pay if they were tenanted by people not under the Commonwealth scheme. If preferential treatment were given to the occupiers of the Commonwealth houses it would only add to the burdens of others having equal rights as citizens. The domestic utilities at Lithgow such as gas, water and sewerage are not quite sufficient for the

houses already in existence, and it is quite evident that they will need to be enlarged if the Commonwealth houses are erected. I suggest that a representative of the Government should meet the mayor of Lithgow and talk the matter over as common-sense men. If there is a margin of difference between the cost of ordinary extensions of water, sewerage and gas mains, and the cost of the pipes required to serve this particular area, it may be a far thing to ask the Commonwealth Government to give the municipality some financial help representing this margin of difference. However, I am not speaking for the municipal council. I know very little about their detail affairs. These matters of extensions are merely matters of detail, once the principle is agreed to that the Commonwealth tenants should pay the same rates and charges as the other citizens of Lithgow pay or an equivalent. The Commonwealth Government paid £21 or £22 per acre for the land on which the Small Arms Factory is built. There is a lot of interior land in the area. It is rather difficult to say what was the price of the Coopersville Estate prior to the establishment of the Small Arms Factory, because it was not in the market, but I believe the owners could have got £20 per acre for it twelve years ago if they would sell it to people who were prepared to subdivide it. However, they would not sell it. They were fairly independent people, who did not care whether they made the best use of the land or not, and they kept it out of the market for a long time until the municipal taxation based on unimproved values struck them. It does not do to hold municipal land lying idle when the rating is based on unimproved values. That was probably the cause of the first subdivision of the estate which has already been built on. There have been three or four subdivisions of it. I presume that a fairly good profit was made out of each subdivision. Taking everything into account, I consider that the £45 per acre paid by the Commonwealth was a moderate price for an area which is admirably suited for a village settlement.

**155. To Senator Newland.**—Our architect has put down 55s. per 1,000 as the price of the bricks we are putting in our cottages. Recently bricks cost 50s. per 1,000. Our architect has handed to me a complete list comparing the prices ruling for building material prior to the war in June, 1913, with the prices ruling to-day in Lithgow. The list is as follows:—

	June, 1913.	June, 1918.
Northern hardwood, per 100 super. feet	24/- to 25/-	35/- to 36/-
Mill dressing, per 100 super. feet	9/-	4/-
Local hardwood, per 100 super. feet	15/-	20/-
Oregon, per 100 super. feet	21 6/10 to 23/-	40/3 to 41/3
Redwood, per 100 super. feet	30/6	55/-
Hardwood flooring, 4" x 1", P. and G., per 100 super. feet	28/-	34/-
White pine and Kiam, 4" x 1", P. and G., per 100 super. feet	23/6	41/-
Battic weatherboards, per 100 super. feet	17/6	30/-
Rusticated hardwood, per 100 super. feet	28/-	38/-
White pine lining, 4" x 3", per 100 super. feet	17/6	27/6
Fascia board, 10" x 1", per 100	16/-	24/-
Lineal feet	17/-	21/6
Doors, 6' 8" x 2' 8" x 1 1/2", each	11/6	22/-
Sashes, 10" x 14" (4) light, per pair		
Hardwood pickets for fencing, per 100 counted	28/-	36/-
Galvanized iron, 24 gauge	4 1/2 foot	1/8 per foot
Guttering, 24 gauge, per length	1/3	4/6
10" ridge capping, per length	1/6	7/3
Tiles, per 1,000	£16/10/-	£21/10/-
Bricks, per 1,000	45/6	55/6
Nails, per packet	1/9	3/10
Rim locks, each	3/6	9/-
Sheet lead, per cwt.	38/6	45/6
White lead, per cwt.	60/-	65/-
Predental paint, each	10/-	30/-
Clyde bath, painted, enamel, each	£3/-	£3/13/-
Cast iron, each		

We are using local timber partly. We use it for flooring. Except where we require hardwood we use local timber. We are not using concrete for building our houses. We have accepted our architect's advice in the matter. He has had many years of experience at Lithgow. He advised the use of bricks though he was asked to build as cheap as possible consistent with durability. We are getting tiles from the Wunderlich firm. The Lithgow Valley Colliery Company have been making experiments recently to demonstrate the feasibility of making clay tiles for roofing, and I have gathered unofficially that the experiments have been so far satisfactory, and that it is likely that a tile-making industry will be established at Lithgow. In years gone by tiles and all sorts of pottery work were made there, but of late years the works have confined themselves chiefly to making bricks and pipes. I have had to beg for the supply of roofing tiles from the Wunderlich firm. Things are so congested on their order books that I had to make a personal visit to the office of the company some weeks ago to ask them to supply our tiles as an urgent matter so that we could house our men as quickly as possible instead of having to wait three or four months. The Commonwealth will have to take the common risk of getting unsuitable or careless tenants, but they will have the double power of landlord and employer, which should enable them to keep their tenants up to the mark better than the ordinary landlord can. I suppose that a man would be able to take better care of a smaller block than the quarter-acre allotment which I have suggested, but if a man has the instincts of tidiness it does not seem to make much difference whether he has a 40-foot or a 70-foot frontage. Although Lithgow does not lend itself to beautification there are many people in the place who take a pride in their little cottages. It is not unusual to see a pride displayed in regard to some of the places one finds in Lithgow. When I say that each of our cottages will cost £250 I am including £50 as the cost of the ground, after allowing for the improvements effected to it, and also for sewerage connections and gas connections and everything. I think that the rooms in our cottages will be smaller than are shown on the Commonwealth design of buildings giving the same accommodation.

158. *To Mr. Sinclair.*—The housing of workers is a vital social question in which I have taken a great deal of interest for many years past. I am not a landlord. At the interview with Mr. Watt, the mayor of the municipality made a statement, in which he referred to the financial difficulty that would face the corporation, and to a mechanical difficulty. The financial difficulty dealt with the problem of raising the money required for sewerage, gas, and water extensions. The mechanical difficulty dealt with the problem of increasing the capacity of the municipal gasworks. I remember the Minister saying, "I think we can help you in relation to the gas works." I did not quite understand how he proposed to do so. I presumed that the Commonwealth had some machinery which they might be able to let the corporation have. It is difficult to get machinery at the present time. That is all I can say in reference to the evidence given by Colonel Owen, to the effect that the deputation which waited on Mr. Watt left upon his mind the distinct impression that the municipality would provide the water supply and sewerage services. The mayor simply stated in general terms that the council would do its share, and do everything possible, and he alluded to those two difficulties which I have mentioned. I believe that the iron works will be a permanent industry in Lithgow. The place has all the natural facilities for iron works. I do not know that Hoskins' establishment at Lithgow is the only iron plates necessary for enlarging the gasometer. On an emergency, an iron works might make plates for ships, because that would be a large order, but it might not be feasible for them to carry out a small order on account of the excessive cost. I do not know whether

the coal seams run under Lithgow township. We know that there is enough coal there to last 100 years, and we do not worry about the direction in which the same runs. Drain pipes are made at Lithgow at the Lithgow Valley works, where they have the necessary clay and shale. I do not remember where the municipal sewerage works pipes were made. I see no difficulty about arriving at a fair agreement between the Commonwealth and the municipality in reference to the payment of a lump sum in lieu of rates, but whether it would involve a legal difficulty or not I do not know. An untidy man cannot be made tidy. The tenants might be notified that they will be looked to keep their cottages up to a certain standard, and I think that, on the average, you would succeed in getting them to do it so long as you give them cottages suitable, attractive, and at the lowest rent at which it is possible to let them have the places. A man's occupancy of the house could be made contingent on his continuity of employment at the Small Arms Factory. I see no immediate necessity for providing a recreation hall or a mechanics' institute on the area. There are picture shows in Lithgow nearly every night. There is a Workmen's Club there, and there is also a Literary Institute. If a large building were erected on the Government area, which, later on, could be utilized for a recreation hall, but which in the meantime could be used as a lodging-house for single men, it would not give much relief to the congestion at Lithgow which affects the married men. Single men can put up with inferior accommodation. For half the year they can sleep in a tent. In any case, I am more than unconsciously biased against anything that approaches the barracks system. It is certainly difficult for single men to get accommodation at Lithgow, but that arises from the congestion in regard to houses for married men. If you relieve the congestion in regard to married men you automatically relieve the congestion in regard to single men. Married men have to take two rooms, or whatever they can get in cottages, or they have to live in boardinghouses, and leave their families somewhere else. If Mr. Morrell's scheme of laying out the area is carried out, Lithgow will get something it has never had before, and something which it is badly in need of, namely, recreation centres, which every town should have, and which every town would have if we had civilized administration. The housing of the people has never received attention from Governments. It is a matter that has been left to settle itself. When you create a model settlement of this area, every man who has the right to live upon it will desire to do so. I hope it will have an educative effect on the owners of adjoining property. Wherever population increases, land values must increase. The provision of a large reservoir on the Coorowall Estate will have the effect of making the reserve available to the settlers on that estate, and it may increase the value of the Coorowall blocks, but if that should take place the corporation will reap the advantage of collecting higher rates.

157. *To Senator Needham.*—The old theory is that a workman should pay not more than one day's wages per week in rent, but under modern conditions I am afraid that he will get very few houses at that rate. Of course, present conditions are abnormal. I do not see how a man who is earning £3 3s. per week can keep a wife and family and pay a rent exceeding 12s. per week, or something like that. At any rate, that should be the maximum rent he should be called upon to pay, but he would not get a decent house for that rental. The value of the adjacent land will be enhanced by the settlement of the Commonwealth area, and by the fact that the large recreation reserve will front it. Increases in land values always arise from an increase in population, and if land values rise, the municipality derives more revenue in rates. I would not be in favour of the imposition of a

betterment tax on the adjoining land, whose values may be increased by reason of the large reservation on the Commonwealth area. I prefer a straight out flat rate on land values, on the ground that the community creates these values, and that they should revert to the community for communal purposes. Various sized houses must be built. A married couple with one child will be satisfied with three or four rooms, whereas a married couple with five or six children will require a much larger house. I would not consider it prudent to expend much money on the A type of house, with two rooms and a kitchen. It is too small. The natural expectation is that newly-married couples will have children, and provision should be made in advance for those children. The rooms in the cottages which we are building approximate those shown on the B designs.

158. *To Mr. Mahony.*—I believe that the erection of these houses will produce more economical work in the Small Arms Factory, and the Government should take this fact into consideration in arriving at the rents to be charged to the workers living on the area. The factory has lost during the last three or four years some of its best workmen, because they could not stand the living conditions at Lithgow. The factory must have suffered a financial loss by being deprived of the services of these expert workmen; and, as I presume the Commonwealth are not building these cottages as a business proposition, in fixing the amount of rent to be charged, the benefit derived by the factory in having men continuously at work should be taken into consideration. What we can do as a small trading concern, the Commonwealth could surely do.

159. *To Mr. Laird Smith.*—We propose to let our cottages at 15s. per week, as I have already explained. We could easily get £1 per week for them. That is the difference between building for one's own workers and building as landlords. Every employer should do as we are doing for his own workmen. The workmen contribute to build up his credit, and everything he has is attributable to their labours. Therefore he should assist them to live decent lives. I was in Great Britain about twelve years ago, and, being an Irishman by birth, I was particularly interested in the scheme for housing Irish labourers. At that time the scheme had reached about its middle stage of development. It was initiated by the Conservative Government led by Lord Salisbury about 1895, and had been further developed by succeeding Liberal Governments. Thousands of substantial cottages, generally four-roomed, had been erected on areas of land resumed from farmers, and varying from half an acre to one acre. By a combination of Imperial credit, which then stood at 2½ per cent. to 2½ per cent., and the credit of the County Council, and by borrowing, to some extent, on the rates, the Irish labourers were able to get those cottages at the very low rental of 1s. per week. The land was resumed at prices varying between £20 and £30 per acre. Of course, at that time labour was paid a very low wage, and the cost of erection would be very much less than it is here. Each cottage was surrounded by a nice piece of garden, in which cabbages and potatoes were grown. It was a complete contrast with the old housing conditions, when the Irish labourer was not housed, but was herded. The improvement in the social conditions of the Irish labourers was a revolution in housing. The occupants of the houses worked on neighbouring farms. The proposal was to put up 30,000 or 40,000 dwellings. I am not in favour of putting the expense in the kitchen. I would like to see variety in the designs of the cottages. Frederick Foster Hall, manager of the New South Wales Housing Board, and of Government Resumptions, was not examined.

160. *To the Chairman.*—The operations of the Housing Board are governed by a Statute. The pur-

pose of the scheme is to provide workmen with modern dwellings under healthy conditions at as low a rent as possible. The Housing Act of 1912 was passed to carry out that scheme. The Housing Board has power to acquire land, erect cottages on it, and let or dispose of them. Full powers are given by the Act to the Board of contracts with local authorities for the supply of water, gas, lighting, and sewerage. At present our buildings are under the Mascotte Council, but they have not treated us fairly. They collect rates from us, but do nothing beyond supplying light and removing garbage. We have now a Bill before Parliament withdrawing our area from the jurisdiction of the Mascotte Council, and vesting it in the Housing Board. The Housing Act gives the municipality power to rate our cottages. It also gives the Board power to sell, but, so far, we have not sold any cottage. The Board are opposed to the principle of selling the houses at Daceyville. I am strongly in favour of the principle that a man should have the freehold of his property; but we are endeavouring to make our area a garden suburb, and if we part with the freehold you can see our difficulty, not only in regard to the maintenance of gardens, but also through the possibility of an owner letting his cottage at an enhanced rental. That would defeat the very object the Government had in establishing the settlement. I am limiting my opinion to the Daceyville experiment, because, generally, I believe that the occupier who is in his own home is a better type of citizen. The Housing Act stipulates that the Daceyville area must earn a minimum of 4 per cent. on the loan moneys advanced, or over 4 per cent. if the average cost of those loan moneys exceeds that rate of interest. When we first commenced operations, the average cost of loan moneys was about 3.7 per cent. It is now about 4.2 per cent. At first there was a great deal of opposition to the scheme. Many of the public, and even members of Parliament, were under the impression that people would be getting cheap houses at Daceyville at the expense of the country generally, but that has not proved to be the case. Daceyville is still running at a profit, and if there were a number of Daceyvilles all over the State they would not cost the general public one penny. The class of cottages mostly in demand contains three rooms and a kitchen, or four rooms and a kitchen. Many people are anxious to get houses at a minimum rental, therefore they ask for the minimum accommodation they can do with. All of our houses include a laundry and bathroom. The minimum-sized house contains two bedrooms, a living room, and kitchen, and the usual extras. The minimum rental is 12s. 6d. per week; the maximum rental is 18s. 6d. per week for a house containing four rooms and a kitchen with extras. The rental covers rates and taxes, upkeep, repairs, management, and everything, including water. Some of the tenants complained of having to pay excess water charges, and, as a result, the Board has taken the matter over, and, by increasing the rent of each cottage by 3d. per week, has allowed the free use of water in every cottage. We shall sustain a loss in a few cases, and make a gain in others, so that the cost to the Board will not be heavy. There should be a compensating gain in the general appearance of the whole place. We pay for our water on the individual assessment. We are doing away with water meters, allowing individual cottagers to use the water as they please. We are endeavouring to get one meter for the whole suburb, but the Metropolitan Board of Water Supply and Sewerage has turned down that proposition. However, the Board is endeavouring to get Cabinet to persuade the Water Board to comply with the request. The minimum area supplied with each holding is about 35 feet by 125 feet. Larger blocks measure 45 feet by 150 feet or 50 feet by

175 feet. We gave larger areas to the first cottages erected, but we found that many of the tenants preferred smaller areas, which they could maintain in a procurable and proper condition. I would make the areas at Lithgow slightly larger. A man in the country expects a little more ground. It would be a wise plan to give a man carrying a small wago a sufficient area to keep fowls or maintain a kitchen garden. Speaking generally, I should think that the minimum block at Lithgow should be 50 feet by 200 feet. That would be a very nice block for an ordinary working man. If you give a larger frontage you increase the municipal rating on each place. Mr. Morrell's design for the Lithgow area is on good garden village lines. It is an objection to have too long a stretch of road without a right-of-way. We had to provide one or two right-of-way at Daceyville which were not on the original plan. I think that, so far as the western lay-out of Mr. Morrell's scheme is concerned, it would be advisable to provide an additional narrow street or right-of-way, or to have three blocks instead of four. If there is sufficient elevation on the western side of the area, it gets over the difficulty through having one house looking over the back yard of another. If the back yard of any house is up against the front of another, there is a certain amount of objection, but I can see the advantage of Mr. Morrell's lay-out in having all the houses in this portion of the area facing one way. It is simply a question of which is the greater, the gain or the loss. In some of our houses at Daceyville we combine the kitchen and laundry. In the larger houses the dining-room and the kitchen are combined. I do not remember any protest at Daceyville against putting the laundry in the kitchen. Mr. Forggitt's desire is to prevent the tenant utilizing the kitchen as the living room, and turning the living room into a bedroom, which would be a continuance of the overcrowding conditions we are endeavouring to prevent. The minimum cost of our houses, containing three rooms, a kitchen, and conveniences, and including sewerage, gas, and fencing, and everything up to the building line, is just under £300. We are letting these houses at 13s. 6d. per week, so that they cannot cost much more than £300. The cost is exclusive of the value of the land. I can supply the Committee with some of the plans. Costs should be slightly more at Lithgow. Some things might be got more cheaply there, but I should think that the additional cost will not exceed 10 per cent. I have not gone into the matter. I see no objection to plans of the A design, comprising two rooms, a kitchen, and a laundry. We have some houses of two rooms, with the kitchen and living room combined. In the majority of our cottages, the verandahs are equal to one bedroom, and in some cases they are equal to two. We are able to put up semi-detached cottages at a slightly cheaper cost. It makes a difference of 6d. or 1s. in the rent. Most people prefer detached houses. I think the minimum-sized house should have two bedrooms. A house of the B design should cost from £375 to £400 in Sydney. It is a larger house than the one we are providing at £300. I should think that 7d. per cubic foot will be a low rate for the cost of the smaller buildings proposed to be erected at Lithgow. I do not know that there is very much difference between day labour and contract work; provided the contractor works to the same specifications as the day-labour man, the same quality of work should be obtained. When our buildings were carried out by the Public Works Department they were rather expensive. We have saved at least £100 per cottage by building by day labour under our own supervision. We let sub-contracts for the roofing, because we cannot get it done in any other way. The roofing people have bought up all the tiles. If you go to a tile manufacturer for tiles, they tell you that they have none. If you go to a roofing man, he tells you that he will take a contract for putting on your roof.

Therefore, we are compelled to let contracts for the roofing. We employ our own men to do the plumbing. The contractor does not work for the love of the thing, and if day labour is carried out under proper conditions, something approaching the contractor's profit ought to be saved. I cannot account for the difference between the work carried out by the Public Works Department and ours at the present time. We gave their control a fair test. We afterwards tried the contract system. The unions were always opposing the Government, protesting against the work being carried out by contract. The secretaries of a good many of the unions were told that it rested with them to make a failure or success of the day-labour system, and that if they gave us a fair deal there was no reason why we should not make the latter a success. We built a batch of a dozen houses by contract, and a dozen exactly similar houses by day labour. The latter came out the cheaper. It was as good a test as one could make, and I am satisfied that we are getting our money's worth under the present system. Any one can go to Daceyville and see what we are doing. People are astonished at the prices of our cottages. We have to account for every penny we spend, and have to pay overhead charges, such as the fees of the architects and clerk of works. The Board fees and office charges are put down as administrative costs, which are paid for out of the revenue from the suburb. All capital charges are debited to capital account, but all administrative charges, such as cost of management, Board fees, rent collecting, and maintenance of buildings, come out of the rents received. Many working men say that a man should be able to give one day's wages for the rent of his house, but it is absolutely impossible, under present conditions, to give a man a cottage at Daceyville at 9s. per week. We have got as close to bedrock as we can with our minimum rental of 12s. 6d. per week. Some men can better afford to pay a quarter of their week's wages in rent than others can afford to pay a sixth of their week's wages. At Daceyville rents are fixed at about 8 per cent. on the total cost; this, after allowing for depreciation and all outgoings, gives a net return of some 5 per cent. At Lithgow you should get something approximating that figure. In the Rocks area we have 800 or 900 tenants, and a deduction of 10 per cent. from the rentals for maintenance has proved ample, even for the old buildings. We deduct 5 per cent. for management, 12½ per cent. for rates, taxes, and insurance, and 2½ per cent. for loss on rentals. We have always kept within those margins. We do not make any extra charge at Daceyville for the upkeep of parks, but we employ two gardeners. The surplus rentals pay their wages. We do not find any great assistance from the fact that there are picture shows at Daceyville. People are too comfortable in their homes to go out at night. The lessee of the theatre states that most of the lights are out at 9.30 p.m. I would give the management of the Lithgow area into the control of some competent person. It would mean less red-tape. I attribute the success of our day-labour system at Daceyville partially to the fact that there is no political pressure in the management of the scheme. The Housing Board accepts the responsibility for my actions. I submit any proposition to it, and the carrying out of the details of management rests on me. The Lithgow scheme could be administered from a head office in Sydney with a good local man in charge at Lithgow. If more than that is done, it means an increase in the overhead charges. Incidentally, that was one of the causes of the failure of the administration at Daceyville by the Public Works Department. The overhead charges were too great. If tenants are given a fair and honest deal, they appreciate it, even if the decision of the man in control is against them. We lease our premises at Daceyville to any person of

good character who does not own any land in New South Wales with a house on it. If a man owns a house elsewhere, he may let it at a good rent and take another at Daceyville, which would practically mean that he would be making a profit out of our area. We have all classes of trades represented at Daceyville. Considering that the Commonwealth would be dealing with one class of worker only, I feel quite sure that the administration of the area at Lithgow could be better controlled by a responsible officer than by a Board. Of course, there would be the right of appeal to a Minister. You must provide a safety valve, but the less interference there is with the officer, the easier it will be to make the thing go. When you are dealing with a big thing, it would be worth while appointing a Board, but it would not be a fair proposal to load 200 cottages with Board fees. On a revenue of £10,000, 5 per cent. for management would not give more than £500 per year.

161. *To Mr. Sinclair.*—I would not recommend the Commonwealth to withdraw the area at Lithgow from the local council's control, providing they do a fair thing. I would rather see the council carry out their own work. There is no inquiry in New South Wales at present dealing with the question of houses. With reference to complaints made at the Alexandra Council meeting that rents are too high, I can only say that we would like to lower them, but we cannot do so and make Daceyville pay. The remarks must have applied to the slum areas, where the highest rents are paid for minimum conveniences. We should be turning out one or two cottages a week at Daceyville if normal conditions prevailed. I cannot understand the reference at the Alexandra Council meeting to a further inquiry into the housing conditions. We have inquired into one or two proposals for other towns. I have reported on a scheme in connexion with the Walsh Island works, but the State Public Works Committee turned it down. One of the local aldermen, in giving evidence before the Committee, said that the rents proposed under our scheme were too high. We wrote and asked him how he could construct cottages at a less rental; but he did not reply until a reminder was sent to him, and then he wrote that the matter had been dealt with by the council, and they had decided to go no further in it. It is quite easy to criticise, but it is not easy to suggest any means of doing better. The distance of Daceyville from the centre of activities in Sydney may militate against the area to an extent, but many of the householders there are employed at the local tobacco works and in the adjacent tramway depot. A fair number are employed in Sydney. One was employed at Cockatoo Dock. The tram fare from Daceyville to Circular Quay is 3d., and to the station it is 2d. There is a concession on the early morning trams. With the concessions, a workman living at Daceyville would probably spend 3d. per day in tram fares.

162. *To Senator Needham.*—In a proposition such as that of Lithgow, I would like to see the freehold given. A provision could be made to circumvent the disposal of houses to any one. The Government should be given the first opportunity of buying at a valuation. It is a matter that would need to be gone into very minutely. At the first blush, I should say that the Government should buy the property back at cost, less so much for depreciation. I consider that the minimum house should have two bedrooms. That type of house should cost just under £300.

162a. *To Mr. Laird Smith.*—When we make a kitchen and wash-house combined, we provide a much smaller room than we would if the kitchen and living room were combined. It is practically so small that it cannot be turned into a living room. I have not asked people whether they had any complaints to make in this regard, but I do not think they would be very

backward if they had any to make. I do not think that they are afraid to make complaints through fear of not being able to get a house at Daceyville. We have had numerous instances in which houses have been offered to applicants on the list who have preferred to wait until others were available for their occupation. Even at a little extra cost, I would have variety of design. The increase in cost of construction since the outbreak of the war has been, roughly, about 25 per cent. We have not increased our rents to meet the loss. We have cheapened certain features of construction. We have a very good staff of workmen, and they get into the way of building the style of house we are erecting. I believe that less time is occupied in building a house now than was occupied in building a similar one some time ago. So far, we find that the rental is just sufficient. I see no objection to standardizing the windows and doors, but I do not think it would make much difference in the cost of construction. If you order two or three dozen of a gross, of one kind of door, the price would be very little cheaper if the order were for several gross of the same style. The head of my branch is responsible to the Premier of New South Wales. We are required to return interest and sinking fund on the loan monies advanced. In regard to sinking fund, 13s. 2d. invested at 4 per cent. compound interest will equal £100 in fifty years. I should think that the Committee would be justified in recommending the Federal Government to make allowance for the agreed value that will be given to the Commonwealth, due to the better conditions in regard to the housing of their employees. Sir William Lever, when he was out here, admitted that his output was improved to the extent of 25 per cent. by having healthily working conditions for his employees. Quite a number of the residents at Daceyville sleep out. The majority of the people there appreciate the opportunity to have vegetable and flower gardens. We allow them to make improvements to their houses, but we cannot very well pay for them, because another tenant may go into the house and say that the improvements effected are of no advantage to him. If a man does absolutely nothing to his garden we can terminate his tenancy. One provision of our agreement is that a tenant shall form and keep a garden in good order to the satisfaction of the Board. I prefer electric lighting in the houses, and I do not think any of our tenants would prefer to use gas. The cost of electric lighting is very small. The tenants have no right to keep fowls, but the Board does not interfere if they keep them under proper conditions. No stable is allowed except in connexion with shops. There are no back lanes to the cottages. Back lanes are provided for the shops. If a man wishes to keep a pony for recreation purposes, he must get special permission to do so, and must keep it under conditions which are not an annoyance to his neighbours. We have never been asked for that permission.

163. *To Mr. Mathews.*—We do not sell any of the property at the Rocks. Previous Governments did sell an occasional block there, but it was a bad policy to sell individual blocks which reaped the benefit of the improvements effected by the Government. The same principle applies to Daceyville. The Government should keep all the profits which result from their expenditure on the area. At Lithgow, I should like to see a man own his own freehold. You get a better type of citizen when a man owns his own property. Some private owners allow their property to get out of repair, and some tenants improve the property they are renting. However, my personal opinion is that you get a better type of citizen if you give a man his own little bit of land. Our object at Daceyville is to make a garden suburb. If we gave the freehold there, it would



mean that the rents would increase, and the whole object of the settlement would be defeated. At Lithgow you would need to make it a condition that if a man who bought his house was dismissed from the Small Arms Factory, the property would be bought back again by the Government. There would be a good deal of difficulty, but I do not think that it would be insuperable. The cottages could be sold on the time-payment system. There is an application before the State Government to build a garden suburb at Stockton. In addition to the Welsh Island proposal, we are also considering a proposal for Fairfield, near Liverpool. There is enough land at Daceyville to build about 1,700 houses. The progress of erection depends entirely on the money which the Government can provide. The greater the expenditure on the area, the better it will pay.

164. *To Senator Henderson.*—In regard to re-purchasing a house at Lithgow after many years' occupancy, if the policy is to give the occupier the unearned increment, provision can be made to do so. The main object of the scheme is to provide the employees of the Small Arms Factory with residences. Seeing that a man's occupancy of a house may be made contingent on his continuing employment at the Small Arms Factory, the freehold will have to be so lodged in that the man will be little more than a leaseholder.

165. *To the Chairman.*—The tenants at Daceyville pay for their gas and electric light. I approve of the system of communal playgrounds for children. There should be a small playground at Lithgow in the centre of the pink area on which the houses are to be erected.

(Taken at Sydney.)

FRIDAY, 12TH JULY, 1918.

Present:

Mr. GREGORY, Chairman;

Senator Henderson,	Mr. Mathews,
Senator Needham,	Mr. Sinclair,
Senator Newland,	Mr. Laird Smith.
Mr. Mahony,	

John Garlick, Under-Secretary for Local Government, New South Wales, sworn and examined.

166. *To the Chairman.*—I have no direct connexion with the Daceyville garden suburb, built by the Housing Board under a special Act. It is a sub-department of the Treasury. The first step taken was to pass an Act. Then funds were provided on the Estimates, land was resumed, and a Housing Board was appointed to have proper plans prepared showing what the design of the village would be. After the plan was finally approved, the Board set to work to build houses. My recollection is that the area was vested in the Housing Board. Experience has shown that the working of the operations of the Board has given thorough satisfaction. Rents are much lower at Daceyville than they are for similar buildings rented by private individuals. I have given a great deal of attention to town planning. I have been a member of the Town Planning Association since its formation. I was a member of the Council of the association until this year, and I was a member of the executive committee to the annual Australian Town Planning Conference last year. I am also a member of the New South Wales executive for the annual conference to be held in Brisbane this year, and a member of the Federal Executive of the Town Planning Conference. In regard to the control of the houses at Lithgow, I suggest that the Commonwealth should imitate our Housing Board. As an alternative, the whole matter might be given over to the local municipal council. So far as I know, there has been no attempt at political influence in regard to the operations of the Housing

Board. It decides everything for itself, but it must go to the Government for the money it needs for capital purposes. In considering the lay-out of the proposed settlement at Lithgow, I would like to see a plan of the surrounding land, because one of the first things to be considered is the arterial thoroughfare to the town to which it is attached. That arterial thoroughfare should be so designed as to form a direct connection with some of our existing arterial roads. However, knowing Mr. Morrell so well, and the principles by which he would be guided, I consider that a plan drawn up by him would almost certainly have that feature properly attended to. The width of the arterial road would depend upon whether it would be likely to carry a tramway eventually. If there was any such likelihood, the road ought to be at least 132 feet wide. In Australia tramways should be laid down within grass reserves off the carriage ways. If the tramways are laid on the carriage ways, even though they are wood-blocked or made of macadam asphalt or any other material, a considerable amount of dust is raised, and even if a tramway is taken off the road, and the ballast is uncovered, it is still dusty. If you want a healthy suburb, you should have it as free from dust as possible, and any road likely to carry a tramway should be sufficiently wide to enable the line to be laid down off the carriage way and to be enclosed in grass reserves, even though they may be only a few feet wide. I suggest that the tramway should be laid in the centre of the road, separated from the carriage ways on each side by grass reserves. I will even go so far as to grass between the rails where at present we put down wood blocks or ballast. That is done in America. It seems to me a splendid way of keeping down the dust. The roads at Daceyville are of sufficient width. As a matter of fact, some of the by-roads there could have a narrower carriage way. In some of the roads in the residential suburbs of Sydney or Melbourne, too much money is spent on road metal for carriage ways which have to carry light traffic only, such as the traffic of butchers, bakers, and milkmen's carts. For light traffic the carriage way should be just sufficiently wide to enable two vehicles to pass without danger. It reduces the cost of road construction, and of subsequent maintenance. When a carriage way is adjusted in width to suit the probable traffic, the rest of the thoroughfare can be thrown into the footpath and grass reserves. The actual portion of the footpath to be paved depends upon the length of the street and the amount of pedestrian traffic. It may vary from a width of 3 feet to possibly a strip of 6 feet or 9 feet wide. In a short street with very little pedestrian traffic a narrow strip of paving is sufficient. In a long street, where, possibly, there may be a picture show, or where there may be a lot of traffic, the pavement should necessarily be wider. The balance of the footpath between the paving and the gutter should be as wide as possible consistent with leaving sufficient width for the carriage way. In the past we have thought too much of giving space for vehicles, and we have not given sufficient thought to the cost of constructing or maintaining carriage ways, or to the endless nuisance created by dust in summer and mud in winter. Mr. Morrell's sections of roadways in the Lithgow area are ideal for the different circumstances to be dealt with. He gives an 18-ft. carriage way, a 6-ft. grass reserve, and a 6-ft. footpath for a residential street which will not have to carry much traffic. It is a splendid idea for a short residential street. In another section he gives a 24-ft. carriage way, a grass reserve of 7 feet, and a footpath of 6 feet. That is a better design for a long street in which there may be heavier traffic. The design of roads must be applied to the actual circumstances of the thoroughfares under consideration. That is the underlying principle of town planning. There should not be any cast-iron rule to be applied irrespective of local conditions.

In the future this area may develop, and the main thoroughfares may become very busy ones, on which shops may be erected. It is not possible under the State law to insist that areas must be used for residential purposes alone. We have included a provision in the Local Government Bill to insist upon it which has just been introduced into the Legislative Assembly, but there is another method by which space may be reserved for future widening of streets. It does not follow that you will allow people to build right up to the street alignment. You may have a street 40 feet wide, but you may still have the houses on each side 120 feet apart. In any case, you can fix the building line 20 feet back from the fence line, and if in the future you wish to widen the road, you will merely have to resume a piece of front garden, without the necessity of having to pull down houses, as we had to do in Sydney lately. I do not like to suggest a cast-iron rule that houses should be built 20 feet back from the fence line. As I have just hinted, town planning consists of applying general principles to the conditions of a particular case.

In some streets, owing perhaps to the deep slope of the ground, it may be desirable to permit of variation from the general rule that every house should be 20 feet back from the fence line. As a general rule, however, I would insist that every house should be kept that far back. Australia has so much land that we ought to be able to provide every house with a certain amount of free space on either side of it. Some houses might be semi-detached in residential districts, and I would make a concession in that regard, but I would go no further. As a matter of fact, I would prefer not to see any dwelling attached to another. In my opinion, each dwelling should be detached, so that there may be space for light and air on every side of it. Municipalities are content to have a minimum of 9 feet from the side fence, but I think it should be 6 feet, so that there will be 12 feet between houses in order to let the sunlight and air in. If you have 6 feet only on one side of a house, you may need 12 feet on the other side in order to allow a vehicle to get to the rear for the removal of garbage or the carriage of furniture, unless there is a back lane. Back lanes are not provided for in Mr. Morrell's lay-out. There is no principle in town planning which forbids them. Much depends upon how they can be kept, and on the local circumstances. In Sydney, subdivisions have been carried out on hillsides with a slope of about 45 degrees. Back lanes are impossible in such circumstances. If they were provided they would be useless, because it would be next door to impossible to drive a horse and cart along them. There are other cases in which back lanes are useful. However, it may be thought that, in view of the character of the population who may go into the houses in any particular area, it is undesirable to have back lanes, because of the difficulty of keeping them clean and sanitary. In some localities the people use the back lanes to throw all sorts of rubbish into them. Some municipalities strongly object to back lanes in certain portions of their districts because of the impossibility of keeping them clean.

To a workman who has to go away from his home each day and do manual labour, a large block in the majority of cases would be a mistake. In the case of Lithgow, I would provide a certain proportion of blocks with sufficient area for poultry farming and vegetable growing or fruit-growing. I would provide other blocks with less ground, yet still with sufficient area, to provide for something of the same sort. I would also provide still smaller blocks, with just sufficient space for a house, while giving plenty of light and air space around it, and with provision for a little front garden and a small lawn or drying ground at the back, with perhaps a 3-ft. garden around it. I would experiment in this way, and ascertain what proportion of the men would choose the small lots, the

medium lots, and the big lots, and, in making further subdivisions, I would be guided by the experience gained. In our Local Government Bill we are asking Parliament to give municipalities power to erect houses and let them or sell them with the proviso that if a person who has bought a house wishes to sell it he must first offer it to the municipality at the price he has been offered. If the council decline to re-purchase the house, the owner is permitted to sell it to an outsider. The clause dealing with this is 557, which reads as follows:—

(1) The council may erect dwellings, shops, and other buildings, sell such dwellings, shops, and buildings on extended terms of payment, or lease such dwellings, shops, and buildings.

(2) It shall be a condition of every sale or lease of a dwelling and its site under this section that any disposition of the premises by the purchaser shall be of no effect unless and until the written consent of the council is given thereon.

(3) Subject to this Act the council shall not arbitrarily or unreasonably refuse its consent, but in giving or withholding its consent shall be guided by the need to provide and protect houses for workers and their families, and especially workers who do not already own a home. Before giving its consent in any case where the whole of the purchase money has not been paid the council shall see that money or money's worth is not being paid for "goodwill."

(4) Instead of giving its consent to any disposition of the premises under the preceding provisions of this section the council may, within one month after application for consent is lodged, decide to purchase the premises or the lease thereof for a price or consideration equivalent to the price or consideration involved in the proposed disposition; and thereupon the council shall notify the owner of the premises or the lease and shall complete the purchase within one month.

(5) For the purposes of this section "disposition" includes sale, assignment, lease, and mortgage, whether made before or after the issue of a certificate of title for the premises.

No provision is made to meet the case of bogus offers to buy. A municipality might be misled by a bogus offer; but if it regards the price as being a good deal more than the house is worth, it need not re-purchase it, and can give consent to the sale. I do not think that there is any special provision to prevent buildings being converted into shops. Provision is made in the Bill to prevent the amenity of a residential district being disturbed by the erection of shops, factories, &c. Clause 343 of the Local Government Bill says:—

(1) The Governor may on the application of the council—

(a) declare by proclamation any defined portion of an area to be a residential district;

(b) prohibit the erection in such district of any building for use for the purposes of such trades, industries, manufactures, shops, and places of public amusement as may be described in the proclamation; and

(c) prohibit the use of any building in the district for any such purposes; and

(d) prohibit the erection or use of advertisement boardings in the district.

(2) Nothing in this section shall preclude the continuance of the use of any building for any purpose for which such building was used at the date of the proclamation aforesaid, or for such other purpose as the council may in the circumstances deem reasonable.

If this provision is passed, it will be possible to prevent any person who buys a property at the Small Arms village from building a shop on his block. Even without this provision in the Bill, the land could be sold on condition that it must not be utilized for shop purposes. It would be well for the Commonwealth Government to take power to sell its houses, or let them on perpetual lease, or at a weekly rental. The community is composed of very different individuals with divergent ideas. If a man desires in having a perpetual lease, why should he not have one? The main object in view is to give a man a decent house, and it matters not whether he acquires it on perpetual lease or pays for it in cash or on time-payment by way of rent. I can quite understand a condition being made that the occupants of these houses should be limited to employees at the Small Arms Factory. I am loth to criticise Mr. Morrell's lay-out, because I esteem his ability so highly; but I hardly think that the playground space for children is sufficiently distributed. Children, besides playing in their own yards, want to play with a neighbour's children, and the mother of the neighbour's children may not always be willing to have them on her premises. She may have a nice garden, which she may not wish to have injured by children playing about. In every block of buildings, there should be a children's playground, with facilities for play in it. I do not suggest that you should go to the expense of fitting up each of these playgrounds in the marvellous way they do in America; but if it were kept as a green field, with a few shade trees, with perhaps a sand heap with a coping, and a little pond for the children to paddle in and sail boats on, it would be sufficient. An allotment 50 feet by 100 feet would be quite big enough for the purpose. One plan of erecting communal playgrounds is to put them in the centre of each building block. I like that method, but I am not wedded to it. A number of people, by whose opinion I set great store, doubt very much whether such a lot may not become a place for the deposit of rubbish, seeing that it is so hidden from sight, and so hard to supervise. As the lots at Daceyville are not yet finished, it is hard to judge what the result of the experiment there may be. A little later, when the trees are better grown and the grass is firmer, and when a few seats are put in, making the place neat and tidy, the people will try to keep it in such a condition. I like the idea of providing playgrounds in separate allotments; but, by slightly swinging the sides of roads, playgrounds can be put in the centre, with the carriageway on either side. As some of the playgrounds provided for at Lithgow are not readily accessible, I make the suggestion that the residential roads should be treated as I have just mentioned, and I would endeavour to provide that the through traffic should not use those residential roads. If necessary, I would make blind roads. It seems to me that there is not sufficient reservation on the eastern side of the area. Mr. Morrell's design is a very fine one, and I have no doubt that it is thoroughly fitted to the site according to the contour; but I would like to see more playground space provided, especially for the children. If I were a workman I would not like to pay more than a day's wages for rent, and I would try to get as near as possible to that in building houses for workmen. The minimum-sized house depends upon the size of a man's family. It may be a year or two before a young married couple have any children, and in these days of high costs they can do with one room and a kitchen. It is not desirable, but there are cases in which people have to put up with this accommodation. In New South Wales we call a kitchen a room. A house with one bedroom, a living room and offices we regard as a three-roomed cottage. Houses of the A type would be regarded as

three-roomed cottages. There are plenty of people who rent one room in a house with the right to use the kitchen. If people are poor, under present housing conditions, they must share their house with others. I suggest that at Lithgow you should provide cottages of different kinds. If you provide two-roomed houses you would need to put them on allotments that would permit of subsequent extensions. I would try to meet the case of the person who is compelled to live to-day in one room, the case of others who can afford to pay more. For the man with a wife and one child, or with no children, the A houses would be admirable. I notice that the fireplace is on the right-hand side of the kitchen, and that the bathroom is on the left-hand side. In Lithgow, where the winter is very cold, I am not sure that the members of the family would not like to have a hot bath instead of a cold one. As the kitchen in the A houses is designed, it means that the woman will have to carry the hot water from the fireplace to the bathroom. Could not the fireplace be built next to the bathroom, and provision be made for supplying hot water into the bathroom? I do not think it would add much to the cost of the house. In regard to the A1 design, semi-detached, we insist in New South Wales that the dividing wall must go up through the roof. It prevents the spread of fire, disease, and bugs. Architects oppose the regulation. They contend that it spoils the appearance of semi-detached buildings, but if the dividing wall is just underneath the tiles it does not prevent the spread of fire or bugs. The only disadvantage I see in the A1 design is that the kitchen is so dark. It is lighted by a window under the verandah. Apart from that, I think it is a very excellent design, and I cannot see how it can be cheapened. Cottages of the B1 design would satisfy the majority of our workmen. What they borrow money to build for themselves they adopt that type of house. The design looks a good deal better than many of the houses workmen build for themselves. I would rather see the walls 12 feet high in our climate. As a set-off against the low height of the ceiling, there is plenty of air and sunshine on both sides. I do not agree with Mr. Morrell when he says that 8 feet is high enough for a ceiling. It is a very common thing for emergency use. In these designs it is the only W.C. provided for the house, and it is right alongside the kitchen and the living room. Every one in the house will hear when the chain is pulled. If you are to have only one W.C., I prefer to see it built alongside the washhouse. An emergency W.C. could be placed in the bathroom. If the wind happens to be blowing from one direction, the smell might be noticeable in the kitchen. I notice that Mr. Morrell has nicely rounded off nearly all the street corners. I suggest that they should all be rounded off to let the traffic flow with a full swing round each corner, and so that the traffic in one street may see what is approaching in another. There will be no difficulty in bringing the whole of the area under the Lithgow Municipal Council, provided the Blackland Shire Council do not object. If a proposal of that kind is made to the Minister, and he considers that a *prima facie* case has been made out, he is required to notify the fact, and allow a month in which the ratepayers of either the municipality or the shire may petition for a poll to be taken on the question. If a petition is received signed by the requisite number of persons, a poll must be taken in both the shire and the municipality. The poll is taken of the whole of the two areas, not merely of the little piece concerned. A change cannot be made unless both polls are favorable. If no demand for a poll is made, there will be no trouble in bringing the

whole of the area under the jurisdiction of the Lithgow Municipal Council. The Commonwealth should first get the land brought within the municipality. It should then approach the Government of New South Wales and the Municipal Council, and ask them to construct the necessary sewerage and water supply mains to the area as an extension of the existing sewerage and water supply schemes. That will be done under the Country Towns Water Supply and Sewerage Act. It may be necessary for the Commonwealth to agree to lend the money with which the work can be carried out. When the works are carried out, it seems to me that the Commonwealth would need to give a guarantee to pay rates or the equivalent of rates. As I am informed by your Committee it will not be possible for the rates receivable from the area to pay the interest and sinking fund on the capital expenditure on the extension, I am afraid the Commonwealth will need to guarantee to find sufficient money to cover the cost of carrying out the work. In that case, a special agreement may be necessary, and possibly an amendment of the Act may be needed to authorize it. The Commonwealth could meet the whole of the annual loss, and subsequently, when the Coopersville Estate began to be connected with the trunk mains, the municipality could give the Commonwealth credit for the revenue coming in from that estate. In the end, when the estate was filled up, the Commonwealth would be merely paying an equivalent of rates rate being struck on properties within a certain distance of a main which is laid in any street. All properties facing a street in which a main is laid at once become rateable. Therefore, as soon as the main is laid down to the Commonwealth area the municipality will derive a revenue from the property facing the street along which it is laid. It would be advisable for the Committee to ascertain from the municipality the estimated rates that would be receivable from the properties facing the thoroughfares along which the water supply and sewerage mains will be laid to connect the Commonwealth area with the Lithgow systems. As the municipal taxation is based on the unimproved values, the property through which the mains will pass will become rateable whether it is built on or not. It is quite possible that the settlement of the Commonwealth area may render necessary an enlargement of the sewerage disposal works, and the municipality may desire to take that fact into account in making any estimate for you or in arriving at any agreement with you.

167. To Mr. Sinclair.—In fixing the size of an allotment, the price of the land, the circumstances of the people who are going to live on it, and other matters must be taken into consideration. There are places where I would provide smaller minimum than I would allow for other localities. At Clifton, a mining centre in the Illawarra district, the mountains come very close to the sea, and there is very little land reasonably suitable for building on. A good portion of it is already taken up by the railway line. In such a place I would be prepared to allow a smaller-sized allotment than I would give where there was a lot of land and a smaller population available. In Lithgow, where you have the land available, the minimum allotment should be 50 feet by 100 feet. I would rather see more frontage and less depth. It allows you to build a reasonably square building instead of an oblong one, and permits of giving light and air on every side. The size of the allotment does not matter very much if there are not too many houses to the acre. The free ground might be used as a children's playground or for tennis courts or bowling greens, which provide a lot of space and relieve the

tenants of the responsibility of maintaining gardens. I would not like to see more than eight houses per acre.

168. To Senator Seccombe.—My idea is to have carriage-ways suitable for the amount of traffic that one can expect.

169. To Mr. Laird Smith.—I believe that one capable man responsible to the Minister would be sufficient to control the settlement. The only trouble is whether you can be sure that you can always get the right man. There should be a variation in architecture. It would not do to have all the houses turned out of the one mould. In housing schemes in England, municipalities in many cases have had to be content with smaller returns than were sufficient to pay interest, and principal on the capital that had to be expended, but they have done so because it is good for the community generally to take people out of bad housing conditions and put them into good housing conditions. Here you have not to resume and pull down bad houses before you build new ones. You are not loaded with that item of dead capital expenditure. On the other hand, you are about to undertake housing at a time when it is most expensive to do so, and with the probability that, when happier times arrive in the future, the buildings will depreciate in value because of the ease with which building materials can be secured. The rents you may be getting may not be the commercial rents for the expenditure you are incurring. In such a case you would be justified in recommending the Commonwealth to bear the consequent loss. Sleeping out is growing more and more popular in New South Wales. I prefer electricity for lighting purposes and for cooking purposes. A modern city must have both. There is room for both, and both should succeed. The working man's wife should have a choice of either.

170. To Mr. Mathews.—It is not my opinion that the real trouble of insufficient housing as it exists to-day is the outcome of private ownership, and the desire to gain money by letting properties to tenants. When a man owns his own house, he generally has it as nice as he can get it. The bad housing conditions seem to me to result from people being unable to buy their own homes, or from their being unwilling to buy them because they are not sure that they are going to remain long in one locality. Where houses are let, in a large proportion of cases the owners do it as a speculation, in order to earn interest on their capital, but in a great many cases houses are built by people who wish to live in them, but who, through changes in the labour market, have to leave to rent property, utilizing the rent received from their old homes to do so. The man who has property to let does not take any enjoyment in carrying out renovations or improvements. United action is necessary for the purpose of carrying out town planning, and if a community takes a financial risk in carrying out town planning improvements, it should certainly get the unearned increment. The man who has money will attempt to get all the desirable things in this world. If a settlement of desirable houses is created, the man with money will certainly want them, and in that way the old condition of landlordism may crop up in regard to the settlement. But it would not be very difficult to have reasonable provisions against the houses which the Commonwealth are building being sold so as to become units in somebody's aggregation of property. One protection would be the fact that the houses are to be occupied by employees of the Small Arms Factory. If the purchaser of a cottage could only sell back to the Government there would be a lot of room known beforehand that that is the condition under which he buys, he is hardly justified in expressing dissatisfaction. There are some men who would

be very dissatisfied to continue in the flats. They will want to own a house of their own and the Crown has to be satisfied with that. It is quite true that, even in the Commonwealth area, there is plenty of ground which a man can buy, and make a house for himself. The whole of the property in the area is held by the Crown, and it is difficult to get the people to buy their houses and their gardens in a nice estate. I do not think that if the occupiers of the houses on the area own them they will lose interest in the maintenance of the reserves. With proper leadership, a committee can be built up, and a civic pride, such as seems to be so much displayed in Melbourne. I agree that there would be difficulties in the way of giving the freehold, seeing that the householders' market will be circumscribed, and that the conditions laid down will cause discontent to some people; but there are other people who will not be discontented. I am rather catholic in my views. I would like to cater for all classes, for those who believe in renting property and those who believe in buying it. Of course, the latter could be accommodated elsewhere, and the scheme could be designed accordingly. I would resume the strip of land lying between Bayonet street, portion of the Cooverwill Estate, and the Commonwealth area, and I would refuse to pay any share of the cost of the drain put through that estate. It is questionable what can be put down as the value of a strip of land 2 feet in depth fronting a public road in the outskirts of Lithgow. The drain was put through a road, and when that road was dedicated to the public, the owners of the Cooverwill Estate lost all proprietary rights in it.

(Taken at Sydney.)

SATURDAY, 13th JULY, 1918.

Present:

Mr. Guescott, Chairman;	Mr. Matthews
Senator Henderson	Mr. Sinclair
Senator Needham	Mr. Laird Smith.
Senator Newland	
Mr. Mahony	

Miss May Matthews, Inspector in the State Children's Department, sworn and examined.

171. To the Chairman.—In Sydney the working classes are deplorably housed in old houses, for which they are paying high rents. These remarks do not apply to Daceyville, or to the houses which have been built by the municipality. Steps have been taken by the State Government with a view to bettering the housing conditions. The establishment of the garden suburb at Daceyville had that object in view, but it is contended by many workers that it is not a workmen's place. Middle class and professional people live there. The Housing Board has flats at Miller's Point, and the city council has flats at Chippendale. Something has also been done at Narrawong, but that is merely a temporary matter, and cannot be regarded as a permanent solution of the trouble. I have a fair knowledge of the conditions at Daceyville. A workman with a wife and at least two children would require a living room, two bedrooms, a good sized kitchen, a separate laundry, and the necessary out-houses. The houses at Daceyville, with two bedrooms, a living room, a kitchen, and conveniences have been found generally suitable. Houses of the A type, with only one bedroom, would be too small for the average workman. A married couple without children should always have a second bedroom to provide for the possibility of a family or sickness. The great need in Australia is population. The worker should not be penalized by making it difficult for him to have children and provide for them in the proper way. That is why I am very much opposed

to the flat system as homes for workers. In the flats which have been provided in Sydney, the rooms are of a fair size, and are well ventilated, but there is very little privacy. It is absolutely detrimental to family life to have crying children so close to one another. It is an inconvenience to people living in the flats. The worker should have his home on a separate piece of ground. I have no objection to semi-detached houses, but I prefer that each house should be separate. It is very necessary for a woman who has to do all her own work to have all the conveniences included within the building. Anything that can be done to assist her in the matter of conveniences should be provided. I do not think that it is wise to combine the kitchen and laundry. In the washing of clothes there is always unpleasantness arising from the sud, which is unhealthy in connection with cooking. It is possible that discomfort will arise in having the water-closet in the bathroom adjoining the kitchen. It would be better to have it outside. Wash-stands are almost eliminated now from private homes. A wash basin in the bathroom is mostly used. It is much more convenient. There should be a wash basin in each bathroom, and the water-closet should be put outside. A cupboard ought to be put in each kitchen, and the shelves should be so arranged that they are within reach of the housewife. They should not be put up near the ceiling. Wall beds have been used in some of the better classes of flats in Sydney, but I am opposed to them, because I consider that they are scarcely hygienic from a ventilation point of view. I should prefer the plain old iron bedstead. In the country a little more room should be allowed with each house than is given at Daceyville. There is a nice little plot is found in front of each house, and it is very ornamental, but at Lithgow the workmen may prefer to grow vegetables rather than flowers. If a man could have sufficient area on which to keep fowls and have a garden, his conditions might be better. One of the reasons why workers drift to the city is isolation combined with lack of amusement. They come to the city to get a little social life. Where provision is made for gardening and keeping poultry there is some interest in the home. At any rate, it would be a big factor in making the worker become more attached to his home. I believe that the workers at Lithgow will keep fowls and have gardens. The communal playgrounds at the back of the houses at Daceyville are a very good idea. I have noticed no appalling among the parents. In the city, at Miller's Point, in connexion with the kindergarten, there is a communal playground which is a very great success. The design of the Commonwealth area at Lithgow would be improved by having a reserve nearer the centre. The young children could not possibly go half-a-mile to their playground. If a workman pays £1 per week in rent, it is a very high rental. It leaves him very little out of £3 10s. or £4 per week with which to provide for his family and clothe himself. A man earning £3 3s. per week at Lithgow could not afford to pay more than 15s. per week in rent and live in decent conditions. If I were controlling the area at Lithgow, I would place it under a board of practical men with an understanding of the housing problem. The Housing Board in Sydney has looked after its affairs very well. Changes of Government bring about changes of Ministers, and a new Minister may upset all the good work done by his predecessor, who may have had a practical knowledge of housing work. As a rule, boards are composed of men who understand the work they undertake to do. A Minister of the Crown is not selected as an expert. Sometimes a man with a knowledge of building is placed in charge of education, or a painter is chosen to look after the Treasury. As far as I understand, the Housing Board in New South Wales has given satisfaction. Most workmen like to own their own homes. It is a great inducement to the workman to look after his

home and make the best of it, and if you can supply him with a home, taking his rent as part payment, I think you will get very good results. As these homes at Lithgow are to provide for the employees at the Small Arms Factory, there could be a clause in the conditions of sale providing that a house could not pass into the hands of any one but an employee of that factory. Subject to that provision, the employee should be permitted to own his own home.

172. To Senator Needham.—The only provision at Miller's Point for a playground for children is the ground conducted by the kindergarten, which is used extensively by the children who are the tenants of the Government Housing Board at the Rocks. I have seen nearly 100 children playing there. Every child in the area is welcome to go to it. There is always an officer of the kindergarten in charge. I do not know that there is any limitation on the age of the children, but they are mostly young children under five years of age. Each flat at Miller's Point has a separate entrance. In regard to the selection of a board to control the Commonwealth area at Lithgow, I would prefer to have it elected, and have it responsible to a Minister of the Crown. I would make the Board responsible for the whole management of the area. I would give each worker an area of land suitable for the size of his house, with the necessary yard and a small frontage. Lithgow is a manufacturing place, and a rather dirty town. If you build a type of house which is ugly, and which just looks like a place to sleep in, it will be very detrimental. The workman is entitled to a decent home, though not necessarily an ornamental one. I do not advocate the ornamental type of house that can be seen at Daceyville. I think that the workman should be given a decent home. It will make him a better householder. Environment has a tremendous effect on character.

173. To Mr. Sinclair.—There should be as few breaks as possible in the floor of a house. The housewife goes in and out about fifty or a hundred times a day, and steps add greatly to her work. Children frequently fall down steps. That is one of the objections to the flats at Miller's Point. I have seen houses where the cupboards are readily accessible from either the kitchen or the dining room. It is a great labour-saving idea. There should be a fireplace in each living room at Lithgow, and in at least one bedroom. Fires are of great assistance in clearing off any germs. The common or garden variety of window should be sufficient for all purposes, so long as it is of a fair size and works easily. I do not object to a window which works vertically, though swing windows may effect a saving in drapery. I do not like the idea of walking from the front door straight into a room. It is better to have a hall. Sleeping-out arrangements would hardly apply at Lithgow, where it is so cold.

174. To Senator Needham.—A block of 50 feet by 150 feet would not be too much to give with each cottage. It would provide an opportunity for gardening and allow a man to keep a sulky. The workman who occupies a house should have the opportunity of purchasing it. In the event of his death, the widow ought to be able to sell the house to another employee of the factory. If a new man is employed who is not prepared to pay for the house, I do not see why a good bargain could not be made with the widow to recoup her. If she is taken out of her house, provision must be made for her to go into another. If her husband has been nine or ten years in the employment of the Government, she has a right to be provided for to some extent. The Government can safeguard themselves by stipulating that the houses must not pass out of the hands of employees of the Small Arms Factory. There is not much difference between perpetual lease from the Government and freehold with conditions prohibiting the transfer. Probably the leasehold system would be

preferable at Lithgow, because there could not be such a thing as freehold with all sorts of conditions surrounding the title. A rental of 10s. per week for a man earning 50s. per week appears to be a little over the mark with the present high cost of living, but I was thinking of the increased cost of building material, and that the Government could not very well run the houses at a loss. A hot-water service is very handy where there is a family, but it is most uncommon in workmen's homes. I would recommend installing it in the Lithgow houses. A house of the A type is much too small. You must take into consideration the question of children. In workmen's suburbs you see far more children than in other suburbs. The general run of workers would prefer to pay a little more rent per week in order to have an extra room.

175. To Mr. Mahony.—In fixing the rent of these houses, the Commonwealth could undoubtedly take into consideration the loss it sustains through workmen leaving the Small Arms Factory on account of the lack of housing accommodation in Lithgow. As the factory is likely to be permanent, the Government should take into consideration the importance of putting a good class of home for their employees, and not think so much of the question of whether or not they are going to make a profit out of the houses.

176. To Mr. Laird Smith.—There is great competition to secure houses at Daceyville. An applicant for a house has to register his name and wait quite a long time before he can get one. People prefer to live at Daceyville, though they may have to pay a little more rent there. Just prior to the war there was a great shortage of houses in Sydney, and even now it still exists. In the city the worker who has a house almost invariably lives there. It helps him to pay the rent. Ninety per cent. of the workers in Woolloomooloo or Surry Hills do not fully occupy the houses in which they live. There is not a house obtainable there under £1 per week. I do not think that the housewife requires a large kitchen. I have seen some of the kitchenettes attached to the modern flats. They are very small, but still every convenience is provided. After all, the housewife does not want a lot of floor space. It only makes work. I prefer a medium-sized kitchen. What really tells is the way in which it is designed and the conveniences and shelves which are provided. Most of the stores which I have seen in kitchens are too low, requiring too much stooping. Undoubtedly there should be a variety of architecture in a village settlement. Monotony has a depressing effect. I do not think that there would be a tremendous amount of danger in having little playgrounds across a thoroughfare. There are no trams, and I do not suppose that there will be a great deal of traffic in the area at Lithgow. I prefer electricity for lighting houses. In the long run it is more economical. It causes less worry in the home. I see no reason why electricity cannot be used for cooking. There is a good deal of work attached to keeping a gas stove in order. A large-paned window is much more easily cleaned than one with small panes. I would like to see as much light and air as possible allowed to get into each cottage. The floors can be stained so many inches from the wall, leaving a space for a floor covering. Carpets are out of the question at the present time. They are too expensive. A certain amount of staining is a great advantage. It is much more easily kept clean, and it adds greatly to the appearance of the floor. The old idea of scouring boards daily is out of date. It is a waste of time and energy. The modern idea of polishing a floor is just as preferable, and it is just as clean.

177. To Mr. Matthews.—The amount which a workman can pay for rent depends upon the wages he receives. In estimating the amount of rent which I think a workman can afford to pay, I am possibly guided by my experience in Sydney, where a man has had to pay



170. To Senator Newland.—The flats at Miller's Point are of a uniform size. They are all built on the same plan in High street. The houses in Mount street are equally different. The cheapest rental is but 12s. per week. The maximum rental is about 18s. For the cheapest rental the authorities provide a good-sized kitchen, with an ordinary stove. Some of the houses are very dark, and the outside conveniences are bad, there being no laundry and the lavatory being detached. There is practically no yard space attached to the flats. There is a bathroom in each place. Generally the conveniences provided are of a satisfactory character. Each place has a large-sized verandah, but there is very little privacy. No hot water service is provided. The flats are very substantially built. There is an iron railing on the steps leading to the upper story, and in some instances there is wire netting for the protection of children. Some of the workers who were dispossessed of their flats during the recent industrial trouble were very loth to leave them.

South Wales, and even in London.

150. *To the Chairman*.—I have taken an interest in town planning ever since I was a young man and went to Paris after the Commune, and from my arrival in Australia in 1886. I have been president of the Town Planning Association of New South Wales since its formation. I am Chairman of the New South Wales State Executive in connexion with the Brisbane Conference, and I have to make all the arrangements for our State delegates who will attend that Conference. I was invited by the Voluntary Workers' Association to take over the chairmanship of the Board of Control of the soldiers' grange village along the La Crosse tram line. I organized the Board of Control, and my finding that it meant taking up almost the whole of my time, I had to resign and place the matter in the hands of the Government. I have been shown on Mr. Morrell's plan, and the contours of the land. Generally the main lines of roads shown are in their proper position to take the drainage from the higher ground down to the lower. I understand that it is intended to have a sub-surface underground drain through the lower part of the area to connect with a large open drain on an adjoining estate. There will probably be 400 houses on the area. Allowing an average of five persons in each house, that will mean a population of 2,000 people. At this point occurs to me whether some reservation should not be made a little more detailed than shown on the plan for public buildings, business premises, and other appurtenances to a settlement of this kind. A school is provided for, and two or three buildings are dotted about, but if there are to be a number of shops it is wise to provide them with back entrances. Of course, they should be in the most accessible positions for the whole community. There will probably be differences of religious opinion among the 2,000 people, and one or two small places will be needed. It is wise to keep the church in isolated positions. It is not desirable to put a church between cottages. The people in the adjoining townships might be churchgoers. It is the opinion of the town-planners that a public building of any kind requires a more definite situation than an ordinary residence requires. It is advisable to give an isolated block for a public building, and the government of Mr. Morrell's plan is the absence of back lanes for residential blocks. The width of roads for the main thoroughfares is sufficient for the amount of traffic. The sub-roads are narrower than the State Act of 1902 provides for, but they are not narrower than some are at Daceyville. I laid out the Daceyville area for the Government in conjunction with Mr. Fitzgerald and Mr. Townessey. Mr. Fitzgerald insisted that I must obey the law, and that all roads must be 66 feet wide, but he was chairman of the Housing Board for several years, and I am sure that it was not necessary to have a street 66 feet wide. It is not necessary to have a road 66 feet wide to serve a few cottages. I am glad to see that there is economy of widths in connexion with Mr. Morrell's lay-out, but there may be difficulty in connexion

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commenced, and until they are finished we will not know who the occupants are going to be, unless the Voluntary Workers' Association takes up a building for a special occupant. We are dealing with maimed and disabled soldiers or with dependants, possibly a mother and daughter. That is why we provide some buildings with only one bedroom. The minimum for a healthy workman should be two bedrooms. At Daceyville the architect has combined the laundry and kitchen in some cottages. His difficulty is to keep the cost down, so that houses can be let at a rent which tenants can pay. I do not like the idea of having to subsidize workmen in the shape of rent, but at present prices it is impossible to secure a living room, two bedrooms, a kitchen, and accessories for one day's wages as rent per week, even assuming money can be obtained at 4 per cent. Therefore I favour any method of building which will economize without being really detrimental. Semi-detached cottages can be built perfectly sanitary and healthy, with light for all the rooms. Therefore there is no objection to them. I suggested to the Victorian Housing Commission that, in order to meet the needs of those earning only a living wage, it might be necessary to build in blocks of four—that is, two dwellings below, and two above, with a common washhouse at the rear. This arrangement is quite a feature in the building of flats, and ought to answer in the case of cottages. There are plenty of two-dwelling cottages in Sydney—that is, one flat above the other, with separate staircases—and in order to produce dwellings at a rent which can be paid by the lowest-paid workers, it may be necessary to adopt some arrangement of that kind, especially if the houses are built of brick, as they ought to be in the climate at Lithgow. Plan A2, semi-detached, is a very good one, but the Commonwealth will be very fortunate if it builds a semi-detached cottage of that type under £450. In making inquiries into the matter of the soldiers' village, we found that the material for a brick cottage containing a living room, three bedrooms, a kitchen, and accessories, would cost £300. We have a number of practical builders on our Board, and I can congratulate the New South Wales Housing Board if they are able to build a living room, two bedrooms, and a kitchen, with accessories, at Daceyville for about £300. All along they have been endeavouring to bring down the cost to the lowest possible limit there. It is most difficult at present to estimate the cost of anything. One never knows whether materials will be available or not, or what the prices may be. Builders have told me that they do not know how to estimate for work. It is advisable to prepare beforehand an estimate of the cost of all material. Cement can be obtained cheaply at Lithgow, but the cheapest form of concrete building is in the form of concrete blocks. They have to be cemented outside in order to protect them against dampness. I think that the Committee would be well advised not to recommend the building of any cottage with less than two bedrooms. Such accommodation is essential for healthy workmen. The case is quite different at the soldiers' village, where we may have to make provision for a mother and daughter who are dependants. I would most decidedly prohibit any householder from taking in boarders. The letting of rooms is one of the greatest evils with which we have to contend. It might be as well to provide a hostel for single men in order to prevent it. If the taking in of lodgers is forbidden, provision should be made for decent accommodation for the single men who are working at the Small Arms Factory.

181. To *Senator Needham*.—I would build the roads according to the amount of traffic they will be likely to carry. In order to allow bedrooms to get the morning

sun, it is necessary to have the roads running approximately north and south. In the A1 cottages the bedroom is in the front. If a window is put on the east side it will get the morning sun, even if the front faces south. Each plan should be adapted to the location of the cottage. From a health point of view, it is certainly better to allow bedrooms to get the morning sun. The system of having a common washhouse for four separate dwellings, which I have suggested, is not a desirable one if it can be avoided, but it is a means of reducing costs, so that the lowest-paid operatives can pay the rent of their dwellings. It would make an appreciable difference in the cost of four dwellings. It would probably mean a saving of £200. There may be quarrels among the tenants, but that is a difficulty which is managed elsewhere.

182. To *Mr. Mahony*.—If there is a desire to give the lowest-paid workman a decent cottage, the saving the Small Arms Factory will make through having permanent employees should be taken into consideration. It is impossible to provide decent cottages for the rent that the lowest-paid men can pay.

183. To *Mr. Laird Smith*.—The more variety in architecture you have, the better it will be. Standardizing is most excellent in engineering work, but the appearance of a residential area has a great effect on the people. Standardization would become most monotonous, and monotony is the curse of all the Sydney suburbs. It is absolutely depressing, and is a great detriment to the physical and moral well-being of the people. The sordid surroundings of many of our working class homes drive men to drink. Details can be standardized, but let there be as much variation as possible in the general appearance. A living room should be used as such, and all kitchens should be of moderate size, in order to prevent their being used as dining-rooms. There is unfortunately a tendency among the working classes to insist, in imitation of those who are better off, on having a sanctum they call the parlour, which is used, perhaps, once a week. I can understand the good wife wanting a place in which to keep her *laces et penates*, but, in view of the cost of living we have to come down to the sensible idea of providing a living room that will be used as such. Plans of the B1 type are very compact. I do not see any waste room in it. One likes to enter a cottage without going through the living room, but for economy's sake a hall cannot always be provided. It is not desirable to have the water-closet in the bathroom, but it is done constantly in flats, and has to be done for economy's sake. However, even at a little extra cost, I would place the water-closet outside. The sleeping-out practice is not so prevalent among manual labourers as it is among those who like clerks and others, are confined during the day time. No doubt, it is a very healthy practice. It would not be unsightly to extend the verandah in the B1 plans for the purpose of providing room for sleeping out. A verandah 7 ft 6 in wide is not too large, and one which is to be used for sleeping out purposes must be fairly sheltered from the rain. It would be a very excellent idea to have hot water laid on to the bathroom, and it would be as well to make an entrance to the bathroom from the outside and not through the kitchen. A man who comes home grumpy from his work does not want to pass to the bathroom through the house.

184. To *Mr. Mathews*.—I do not know that I could get a cottage which is being built at Daceyville for £300 built by contract at that figure. If day-labour work can be carried out as cheaply as contract work, I do not see any cause for dissatisfaction with it. But my experience through a long career is that day-labour work is always dearer than contract work. On the whole, contract work is as good as day-labour work provided it is done under proper supervision. The experience gained

at Daceyville does not lead me to be adverse to the contract system. My desire always is to get the best result for the money spent.

185. To *Senator Newland*.—I do not think that it is necessary to carry the dividing wall of a semi-detached cottage through the roof. It is essential in the case of closely packed houses in order to prevent fire going through a series of buildings, but the risk is very slight in the case of two semi-detached cottages. There is liability to leakage where the roofs abut against the wall, and that is something which ought to be avoided; in addition to the extra cost entailed, I would carry the dividing wall up to the roof only. Cutting through the roof means that two lead flashings are required, and that a damp course must be put in in order to prevent the wet soaking down. It is very unsightly from an architectural point of view. However, it is a city regulation that it must be done as a precaution against the spread of fire.

186. To *Mr. Sinclair*.—I think that a building suitable for a workmen's club or a mechanics' institute could be erected and temporarily partitioned off to form a sort of barracks for housing single men at Lithgow. I have suggested in my evidence that a permanent hostel for single men should be provided. I am almost inclined to think that it would be well to build it straightaway. It is a suggestion that is well worthy of consideration.

(Taken at Sydney.)

TUESDAY, 16th JULY, 1918.

Present:

Mr. Gzozov, Chairman;	
Senator Henderson	Mr. Mathews
Senator Needham	Mr. Sinclair
Senator Newland	Mr. Laird Smith.
Mr. Mahony	

William Morley, President of the Labour Council of New South Wales, sworn and examined.

187. To the *Chairman*.—I have been in touch with the discussion that has been going on in Australia for some time relative to the housing of workers. Three or four years ago the Labour Council of New South Wales had a committee appointed for the purpose of securing better homes for the workers, and evidence was gathered, but I do not think anything came out of it. That was just prior to the inauguration of Daceyville. It is admitted that rents are too heavy a load for the working classes to carry to-day, not only in Sydney, but throughout the Commonwealth. The best method of getting over the difficulty requires serious and close thought. The Daceyville undertaking has been a success up to a given point, but it is a fair distance out of Sydney, and it has not been developed as extensively as one would have thought it would be. The houses are a little too elaborate from an exterior point of view for workmen's dwellings, as they are to be found in England, Germany, and other places where municipalities and local authorities have undertaken the building of workmen's cottages, aiming at providing a substantial cottage, though perhaps at the sacrifice of a certain amount of outer decoration, in order to give stability and comfort in the interior. In order to get a variety for the purpose of breaking the monotony to the eye, much depends upon the layout of the streets in planning towns. At Port Sunlight, Bournville, Stuttgart, and other places, they have gone in extensively for this. The houses at Bournville are set back so many feet from the street. Everything depends upon the depth of the allotment. If one house is set 10 feet further back than another along an avenue, it gives the advantage of

light and sun, and the occupants of one house are not overlooked by those in another. Furthermore, it breaks the monotony of the whole scheme. The disadvantage is that people whose cottage is set further back will have more ground in the front than they may need. It all becomes a question of how they propose to use their land, whether they prefer vegetable growing to the growing of flowers. In commencing what is going to be a fairly big proposition at a place like Lithgow, I would prefer something coming closely to this idea. I do not like the method of housing four families in one building, as is done in the flats built by the Harbor Trust at Darling Harbor. Each man's dwelling should be detached. However, the working classes have to adapt themselves to circumstances, and if semi-detached houses are provided I do not think the occupants will complain very much, because they will realize that they have to live in them. For hygienic reasons, for comfort, for keeping down the death rate, and for building up the physique and constitution of the coming race, all authorities show that the more air that can be got around a dwelling, and the more isolated the house can be, the greater are the chances for the improvement from a health point of view. I do not go so far as to say that semi-detached houses will altogether detract from that proposition, but it is giving the people a better opportunity for the further development of themselves, and of those who follow them, if they have as much air space, and light, and as much accommodation, as it is possible to get in their homes, always consistent with their ability to pay for it. If it is possible to provide a detached house at a rental which a workman can pay, the houses should not be semi-detached. I realize that the workers occupying the Harbor Trust flats live in a congested area, where land is very valuable, but that does not detract from my objection to the class of houses in which they live. I would have a regulation preventing these people from letting rooms. I would not have the same prohibition in regard to Daceyville or other schemes of housing workers. The occupants of the Harbor Trust's flats are in an extremely weakened state from an economic point of view, and they must look for a source of income, however small it may be, to supplement their very limited earnings. Therefore, they let one or more of their rooms. In some cases they get as many as three or four men in one room. They are forced to do it owing to their economic circumstances, and, while I object to it, and say that it is not good from a health point of view, I would not feel inclined to be a party to any law that would prohibit them from doing something they are absolutely forced to do. I do not think that the letting of a room should be prohibited, but there ought to be regulations governing it. If a man has purchased a house on the option-purchase system, and has paid off so much on it, and brought up a family in it, he may have a spare room or two when his family has married or drifted away. His financial responsibilities may be just the same as when he had the assistance of members of his family, because he may still be struggling to pay off the house, and it would be a great hardship to say that he should be prohibited from having any one in occupation of a spare room. No serious objection could be taken to a proposal to place the control of this matter in the hands of a Board. It would prevent overcrowding. I do not raise any serious objections to the distance of Daceyville from Sydney, but the cost of tram fares and the loss of time taken up in travelling are matters that seriously affect a working man. After all, the great factor is to get land at a price that will enable workers to get houses at fair rentals. I would not favour the erection of houses containing one bedroom, one living room, and one kitchen. There should be, at least, two bedrooms. Of course, I am keeping in view the cost and the possibility of the

occupants not being able to meet their financial obligations, but the great drawback to the one bedroom dwelling is the question of family life. In the ordinary course of things, children are born to married couples, and if they are occupying houses containing one bedroom only they must leave them and take other houses. The possibility is that others might not be available for them. From a sickness point of view also the one bedroom proposition is not a good one. I strongly advocate a minimum of two bedrooms with the ordinary conveniences. The laundry should be outside. If people are desirous of making a living room out of their kitchen, they are perfectly entitled to do so. Some housewives take a great pride in their homes, and their kitchens are quite as good and acceptable as any other parts of their houses. It is very awkward for a working man to wash under the bath tap. I think provision should be made for a corner hand-basin in each bathroom. There is no objection to having the water-closet in the bathroom so long as the flushing of water is all right. I have made many scores of wall-beds, but I do not know that their installation in these cottages would get over the difficulty of providing an extra bedroom in a two-roomed house. I am afraid that they would be always getting out of repair. Of course, it all depends upon the principle on which they work. They are used very extensively in Canada, but they have not come very much into the working-class arena there. They are used for the purpose of giving extra space in big tenements, and are installed in living rooms, which become bedrooms when they are pulled out. If there was any tendency on the part of the occupants of the house in which they are situated to make a room a living room by day and a sleeping room by night, I would have serious objections to it. However, I am inclined to think that the class of people who would be provided for at Lithgow would be more satisfied with the old-fashioned style of bedstead in bedrooms. I do not think that the wall-beds would appeal to them. They would nearly always be out of repair, especially if they were pulled out every night and pushed in every morning. In such a case there would be no economy through using them. At Lithgow, the minimum block should be 50 feet by 120 feet. I think that the house-holders there will be inclined to give a little more attention to their blocks, because they will not have so many counter attractions in the shape of amusements. The further one gets out of Sydney, the more that operates. It will be wise to encourage the workers to keep a few fowls and have gardens. The original idea was that a man should pay one day's wages for one week's rent, but it does not work out in practice. One man may get £8 per week and pay £1 a week as rent, yet his obligations may not come within 50 per cent. of those of a man who is only getting £3 per week and pays 10s. per week as rent, and has a bigger draw upon that which is left. The proportion of a man's wages that he can afford to pay in rent can only be determined by a public spirit being created by bodies who take to themselves the responsibility of housing the working classes, and make such provision, either by town planning on a very extensive scale, wherever land can be reclaimed to minimize the cost, or by a communal or co-operative system, that we may get down to actual bedrock in regard to the rental that an occupant of a house should pay. It is the most trying question that all house reformers have to contend with. There are so many varying interests, and so many different obligations. A man can afford to pay very little to-day in the way of rent. The increased cost of living leaves him very little for rent or anything else. In a general sense, the maximum rental that a man drawing £3 3s. per week at Lithgow can afford to pay is 8s. per week. In Sydney, brick houses, containing two bedrooms with a fine

verandah and a tiled roof, can be built for £320 each. That price includes water and sewerage connections, but not lighting. I like the system of communal playgrounds. It would be too far for the children at Lithgow to go to the reserve provided on the plan. If a playground could be conveniently provided in the centre of the area, it would be better for them. I do not think there is any more chance of parents quarrelling over their children's squabbles on a communal playground than there is between neighbours generally. I favour the appointment of a Board for the control of the workers' area. There should be Government representation on the Board. That which controls Daceyville has given satisfaction. At Lithgow, the departmental head should be the chairman of the Board. Another member of the Board could be chosen from the occupiers in the area. The municipality could appoint a third. Thus all interests would be represented on the Board controlling the area, and I think that it would give greater satisfaction to the tenants. It is not so much a matter of cut-and-dried administration. It is a question of having sympathetic administration. So many things can be done to encourage tenants in a scheme of this kind, and there is a possibility that if one man is placed in control he would not understand the requirements of the tenants. Quite unintentionally, and perhaps from lack of experience, he might be inclined to take the opposite view to that which is intended in promoting the scheme. I think tenants should have some representation on the Board of Control. The object of this scheme is to provide accommodation for employees in a given industry, and it is questionable whether an employee at the Small Arms Factory should occupy a house on this area on a weekly tenancy or on a perpetual lease, or whether he should be given the freehold of his property, with the right to sell it. In my opinion, a man should, of all, be given the opportunity to buy his home if he so desires, and the only condition I would attach to the sale is that no one man should own more than one cottage. I do not altogether agree that if he sells he must sell to an employee of the factory. It seems to me to be penalizing him. He would take on the contract with his eyes open, and would know exactly what he was doing, but, even so, I do not think I could agree to binding him down to selling in that direction only. If a man ceases to be an employee at the factory, and finds that it is absolutely necessary for him to leave the district, the Government might return to him the amount he has invested in his home, plus interest. The Government must have had the use of the money he has paid, and the house would be of little or no use to him in the event of his leaving the district. It is just as well to be practical and face the situation which may arise. Rightly or wrongly, a number of the men employed at the Small Arms Factory may go out of their employment. The Government may say, "You have left your employment; you have no further claim on this Department. We built these houses for the purpose of accommodating our own employees, therefore, you must clear out by such-and-such a date to make room for incoming tenants. We are going to get other people to fill your places." One of the men might be a long way on his journey towards completing the purchase of his home. What would be in the house, less depreciation and plus interest, so that he may not suffer through his efforts to become the possessor of his own dwelling. I am anxious to secure the worker against loss, while seeing that justice is done to the Government. I strongly favour every encouragement being given to the establishment of a co-operative store in the area. There is already a co-operative store at Lithgow, which has proved to be of great advantage to the workers there. I do not think that it will be

necessary to worry much about making provision for churches. I do not mean to say that the people who will live there will be less conscientious in regard to their theological beliefs, but where it is proposed to give ample room for gardening I do not think that you could very well water for both sides, and I hope there will be no by-law preventing a man from gardening on Sunday. Every man's home should be his own church. Reserves should be made for co-operative stores, but there is no immediate need for them.

188. To Senator Needham.—It is not advisable to have folding beds from a hygienic point of view. They are merely installed in houses for the purpose of making more out of them.

189. To Mr. Mahony.—I agree that the saving which can be effected by retaining the workmen at the Small Arms Factory should be taken into consideration in fixing the rents of the cottages.

190. To Mr. Laird Smith.—A two-roomed house, in the generally accepted meaning of the term, is a house with a bedroom, a living room, and a kitchen. As a rule, the kitchen is so small that one can scarcely turn round in it. I think that a medium sized kitchen should be provided. There is no doubt that ovens are usually set too low. People would be prepared to pay a little more in the way of rent if they could get the convenience of having hot water in the bathroom, so long as they were convinced that in making that provision there was no desire on the part of any person to make a profit on the supply of heat. I am sure they would welcome the convenience at the cost of a few coppers per week. It would be a great saving if labour to the housewife. A hand basin in the bathroom would also be a convenience. It is all a question of cost. I prefer electricity for lighting purposes if it can be supplied as cheaply as gas.

191. To Senator Henderson.—I do not see that any exception can be taken to an occupier of one of these houses investing his savings in purchasing it instead of putting them into a bank. Of course it would be necessary to safeguard the sale. I am quite aware that there is ample land available outside this area, where a man may have the opportunity of purchasing a freehold; but I think the impression will grow up in the minds of the employees of the factory that there will be greater security of continuity of employment if they live on this particular area. I do not think that the Government will find themselves without houses in which to accommodate their employees should the freeholders in the area discontinue working at the factory. The matter can be covered by regulation. If a man pays off his house and leaves his employment at the Small Arms Factory the Government can resume it and hand it to another employee. I would not allow the freeholders to go on the market with their properties. That would only mean creating another horde of landlords. If there is a clause inserted in the agreement of sale that, in the event of realizing, the purchaser must sell back to the State, the Government can tell a man what he has to do with his own property.

192. To Mr. Mathews.—Perhaps it would be just as well, and the easiest way out of the difficulty, simply to rent the houses to the occupiers. There may be a demand for houses containing two rooms and a kitchen, with conveniences, but whether that demand is beneficial to the people who would occupy them is another thing altogether.

193. To Senator Newland.—This is a new undertaking, and it should be an example to others that may follow in its wake. I admit that there may be newly-married couples, or couples who have been married for some time and still have no children, or elderly couples with no possibility of having children, who may wish

to occupy these cottages, and that they could be provided with smaller houses at a less rental. However, if a couple get married it should be one of their objects to have children. I am opposed to the one bedroom dwelling, on the ground of sickness and a hundred and one other things that may arise. I notice that provision is made for adding another room to the A1 design. I would not agree to charging the tenants with the cost of the extension of the water and sewerage mains through the area. They are generally charged with the cost of connecting with the mains. The usual practice is to fix the rent on the capital cost plus interest, but it would make it a very heavy charge on the tenants if they were to be called upon to meet the cost of the water and sewerage mains. Once the houses are built, the Commonwealth will secure a steady revenue in the shape of rentals from this area if the manufacture of small arms continues at Lithgow. The occupiers of houses at Bourneville can get the freehold, but they cannot sell to outsiders.

194. To Mr. Sinclair.—Provision must be made for the single employees as well as for the married employees. Some people take exception to single men lodging with other people. If a common lodging-house is established the object of building the cottages may be defeated. The object is to encourage the employees as well as to house them. If any little privilege they enjoy is endangered by the erection of a barracks, that object will be defeated to a certain extent. As a rule, the single man does not worry very much. He can knock about pretty well. I do not think that there is any Government inquiry in progress into overcrowding in Sydney. The Alexandra Council resolution may refer to an inquiry instituted three or four years ago. Most New South Wales inquiries run on until another one comes along. The remarks at the council meeting about the absence of bathrooms cannot apply to Daceyville. The working classes do make use of Daceyville. A clerk is one of the worst paid artisans. It is a wrong impression to create to say that the occupants of the Daceyville houses are middle-class people. The houses there are inhabited by decent, steady-going men of the artisan class. I know several who live there, and I do not think they can be termed middle-class people. I cannot say that the authorities have got down to bed-rock at Daceyville in the matter of providing houses for workmen at a minimum cost. The Commonwealth will have the advantage of the experience gained at Daceyville. The minimum street at Lithgow should be 40 feet wide in the cross streets, the main avenues should not be less than 60 feet wide. Land is fairly plentiful in Lithgow. There is no objection to one house overlooking the back portion of the terrace on the lower part of the street. I have no objection to the general layout on the western side of the area.

195. To the Chairman.—There seems to be ample room within the area for the purpose of providing homes for those who wish to get the freehold. It is the ambition generally speaking of a workman to provide a home for his wife and family, so that it will be secured to them in perpetuity in the event of his death, but there are so many unfortunate circumstances which discourage workers who have that object in view that they have to give up all hope of becoming possessed of their own homes. The desire is there all right, but so many circumstances override it. I would encourage it at Lithgow subject to the conditions which I have already mentioned, although it may be true that under those conditions a man could not look forward to his home there being his for all time.

Witness withdrew.

John Neale Breden, Controller of Assets, Municipality of Sydney, sworn and examined.

106. *To the Chairman.*—The housing conditions in Sydney were deplorable until a few years ago, before the council commenced resuming property. Daceyville has probably absorbed some of the city population who have been thrown out of their houses through our insanitary, and the Harbor Trust have a housing scheme in connexion with their new wharfage arrangements. I am in favour of the detached or semi-detached dwelling. I am not a believer in the flat system, although the council have adopted it in their efforts at housing. The council's scheme at Chippendale is larger than the Harbor Trust scheme. We have one huge building of three floors, extending from street to street, and containing eighty-four flats. There is no separate yarding, because we were confined to a limited space of very valuable ground. In housing schemes it is a mistake to build on valuable ground. Our scheme just about pays its way. It has been in existence since 1911. I submit a list showing the occupation of our tenants in the Chippendale flats—

Domestic duties.	Business, self.
Labourer.	Household, clerk.
Carpenter.	Musicalian.
Fish importer.	Attendant.
Fireman.	Salesman.
Domestic duties.	Domestic duties.
Household, tailor.	Seamstress.
Public servant.	Fish importer.
Ironmoulder.	Engineer.
Wireworker.	Iron turner.
Dressmaker.	Engineer.
Household, steward.	Railway employee.
Shop assistant.	Porter (railway).
Shop assistant.	Carpenter.
Shop assistant.	Wardinger.
Electrician.	Mechanic.
Caretaker.	Fitter.
Constable.	Carpenter.
Assistant accountant.	Fireman.
Watchmaker and jeweller.	Engineer.
Traveler.	Household, railway employee.
Steward.	Attendant.
Seaman.	Coal miner.
Accountant.	Bricklayer.
Factor.	Clerk.
Draper and mercer.	Clerk.
Household, foreman.	Household compositor.
Grocer.	Carpenter.

Our flats contain from two rooms up to six rooms. We have four flats, containing two rooms, which are rented at 12s. 6d. per week each. They are really attached to certain shops in Menghar street and Cleveland street. They are separate from the shops, but are immediately over them. Our shops are lock up shops. The two rooms consist of a living room and a bedroom. There is a kitchenette in the living room. In addition, each three rooms we let at a rental of from 15s. to 17s. per week. As a matter of fact, we are getting 17s. 6d. at the present time for some of them which are right opposite an open street. They command an extra 6d. per week in rental. The average rental for our flats of six rooms is 25s. per week. Our rentals are based upon the cost of £20 per foot for the land and £41,800 for the building. We work on a 5 per cent. basis as the cost of money. When we built the flats, money was very much cheaper, and we worked on a 50 years' basis. We are sinking fund payment amounts to £435 per annum. We allow 1½ per cent. for depreciation. The Council feel that we should get, at least, 8 per cent. in order to pay interest, sinking fund, depreciation, and management charges. That percentage allows us just sufficient to pay our way. The two-roomed flats are quite satisfactory from a hygienic point of view. We are very careful to whom we let them. Applicants must supply

us with certain particulars informing us whether they have any children or not, and stating the sexes of the children and their ages. From these particulars we judge the class of tenant we shall put in two rooms. We take the same precautions in regard to the three-roomed flats. We would not allow a family with children of different sexes to occupy three rooms. We are very careful in the matter of segregating the sexes of families. Our tenants are not allowed to take in lodgers, except relatives. We allow a mother and father to live with a married daughter and family in a six-roomed flat. Daceyville is the principal attempt made by the State Government to house people. I am not a great believer in wide streets in residential areas; that is to say, wide roadways, which would have to be maintained for traffic. The road space should be wide enough, but it is better to have narrow carriageways kept in good order rather than extended carriage ways kept in bad order. The proposed lay-out at Lithgow is better than attempting to keep an 80-foot roadway entirely for traffic. I do not think that it is a good idea to attempt to grow grass in the streets. An avenue of trees should be quite sufficient. I think that the roads in Melbourne are too wide. A 20-foot carriageway should be quite sufficient for the actual roadway at Lithgow. Each allotment in the area should have not less than 40 feet frontage. It is true that many men who have large areas neglect them, but a man with a family needs to have yard room or room for a garden, and the least depth I would give is 100 feet. I do not believe in communal playgrounds so long as plenty of yard space is provided and occasional parks are set out which can be kept under control. We have had to create playgrounds in Sydney because in many cases the dwellings have no yards, but unless these playgrounds are under the continual care of a supervisor they are a disadvantage. A bully gets in among the children and very often the use of the playground is confined to a few. If parks or common playgrounds are provided within a reasonable distance of the houses at Lithgow, and if good yards are provided for the houses, it will be better than having communal playgrounds for the use of each block of buildings. I do not think that the area can be controlled from Sydney. I should advocate the appointment of a local board. The Minister should lay down certain guiding principles for the board, and beyond that there should be no further interference on his part. The City Municipal Council had not the necessary powers to go in for town planning of the garden type. Mr. Morrell's plan seems to be a very nice arrangement, but I would reserve a further area towards the north end for public purposes, because you do not know what may crop up in the future if all the area becomes occupied. Brick will be the best class of cottage to erect. Some very nice reinforced concrete houses have been put up about Sydney during the last couple of years, and they have been found to be cheaper than brick. The City Council have not carried out any concrete buildings, but they have used concrete slabs in the internal walls of their buildings for the sake of economy and in order to save space. They would not use them for the outside walls. At the present time reinforced concrete work is very expensive. I approve of houses of the A I design, and I would recommend their construction, particularly as they give nearly an extra bedroom on the verandah. Cottages of this design should be much more convenient than some of our flats are. A semi-detached house is almost as good as a detached one. Of course, there is always the risk of annoyance from one's neighbour when there is no wall. I notice, however, that there would be a nine-inch dividing wall between semi-detached places. A rental of 12s. 6d. is not looked upon as a high one in Sydney. We have a system of distri-

buting disinfectant free to householders who are not paying under £1 per week in rent. Presumably the Council believe that those who pay £1 per week in rent find it difficult to make ends meet, and therefore cannot afford to pay for disinfectant. I think that everything should be done to induce people to use the kitchen as a kitchen, and take their meals away from the spot where the food is actually cooked. It is more comfortable to take one's meals anywhere but where they are cooked. If the placing of the laundry in the kitchen will bring about that result it will be a good idea to adopt. All you can do to induce people to keep their houses decent should be done. If people are permitted to use their kitchen as a living room they will have three bedrooms and a kitchen instead of two bedrooms, a living room, and a kitchen. The smell from washing clothes can easily be obviated. When we were building our Chippendale dwellings I looked into the merits of wall beds. Their use would have meant a great saving in space, but the council did not feel called upon to install them. I do not think that they would appeal to the average employee in a factory. I have no objection to providing a certain proportion of dwellings containing two rooms and a kitchen to suit applicants for such accommodation, particularly seeing that such a fine verandah is to be built. I would have all the cottages built 20 feet back from the street-line, and I would keep them all on the same alignment. I would also try to have variety in design. The Sydney Council have used a little fibro-cement for roofing. We have no complaint to make against it. I think we used it, not because it was cheaper, but because we could not obtain iron. A little fibro-cement roofing could be used at Lithgow in order to obtain variety. As you are building these cottages for the employees of the Small Arms Factory, I hardly think it is feasible to allow them to own their own buildings unless there is a clear condition that should they cease to be employees of the factory, they must sell back to the Government or to an incoming employee at a valuation. It would never do to have dozens of these men owning houses in the area when they have ceased to become the employees of the factory. It would defeat the object the Commonwealth Government have in view. The position is different at Daceyville. The householders there are not directly connected with any industrial scheme. I do not think it should be the policy of the Commonwealth Government to provide houses for the general public at Lithgow. A mistake the State Government made in connexion with the abattoirs was the neglect to build a residential block there. Half the complaints in connection with those abattoirs are due to the fact that the employees, who are scattered all over the place, waste a lot of time in reaching their work. The Commonwealth Government should control their cottages for all time in order to keep them wholly for their own employees.

197. *To Mr. Mathews.*—There are always plenty of people ready to take our flats when they become vacant. Quite a number of our tenants have been in their rooms since the building was erected, and they are only on a weekly tenancy. The rents are paid very regularly. We have not had more than half-a-dozen evictions during the five years. We have occasionally to settle family factions, but we have a good caretaker. He and his wife seem to be able to manage the tenants very well. A good deal depends upon the caretaker of flats like that. I can say that the council's experiment has been a success all through. One year we make £200 or £300, and the next year we drop £100, which we pick up again the next year. We can hardly avoid sustaining a loss, as the land was so dear. If we were building the flats on the same piece of ground at the present time, we could not make them pay on the rents we are receiving. I have reported to the council that if we are to

go in for further schemes of the same sort, we must see that the land is of less value. The Government could transform the slum areas in the neighbourhood of Waterloo and Redfern. I am asking the council to use another slum area in Commonwealth-street for flats. The land is worth about £12 per foot. The tightness of money has stopped us from doing anything in that matter. The rooms in our six-roomed flats are not smaller than those in the three-roomed flats. They are set in one part of the building only, whereas applicants for the three-roomed flats have the choice of several parts of the block as a whole. The six-roomed flats cost less to build than the three-roomed flats, comparatively speaking, which accounts for the difference in the relation between the rentals charged. There is no lift in the building. People on the first floor pay 6d. per week less than the people on the second and third floors. The preference is for the higher floors, where one can get better air. Each flat upstairs has a balcony. On the ground floor each flat has a verandah, but it is not of much use because of the dust.

198. *To Mr. Sinclair.*—The Harbor Trust's tenants do not pay municipal rates. Harbor Trust property is exempt from municipal rating. The municipal flats are rated as if they were privately owned. I think that the Commonwealth should pay rates, although, legally, it is not obliged to do so. The best way to get over the difficulty is to follow the example of the Commonwealth Bank in Sydney, which makes a contribution annually to the municipality that is a *quid pro quo* for rating, and gets all the services that the ordinary ratepayer gets. There is no binding agreement. It is quite a voluntary contribution on the part of the Bank, but it is as good as settled that the council will get the money every year. It would be pretty rough on the Lithgow municipality if the ratepayers generally were to be called upon to pay for the special advantages to be given to the Commonwealth area by the extension of the water and sewerage mains controlled by the council, or to make up any deficiency that might be incurred in carrying out the extensions. When we took over the Camperdown district some time ago, we did so on the condition that the residents of that area paid a rate of 6d. in the £1 more than was paid by the people in the original city area. They still pay that increased rate. The people in the Lithgow area can pay a differential rate. Rotorua is managed by a Government Board, quite independent of a municipality. Streets are maintained and services are rendered by the Board. It might be worth while maintaining the streets in the Lithgow area by a Commonwealth Board, and paying for the municipal services a bulk contribution drawn from the tenants by adding to their rentals, whatever may be deemed necessary. The Melbourne City Council's lighting is confined to the city boundaries, but the municipality sells to the adjacent suburbs in bulk, and those suburbs distribute the light and charge their own rates. The same thing could be done at Lithgow. There is no bulk water or sewerage service in Sydney. All of the water supplied comes under the Metropolitan Board of Water Supply and Sewerage.

199. *To the Chairman.*—The property adjacent to the Chippendale flats has been improved by the action of the council in removing the slum area. As the value of land in Sydney is re-assessed every two years, the municipality derives rates from the added value given by any work carried out by the council. The value of the Coorwvall Estate at Lithgow must be improved by the reserves on the northern portion of the Commonwealth area, and that improvement should be worth more than the value of the 2-ft. reservation made by the owners of the estate along the southern side of Laycock-street. Seeing that the municipality have taken over the roads running through the estate, any

claim for the payment of a share of the cost of making a drain through the estate which will also serve to take off the water from the Commonwealth area is a matter for the Lithgow municipality, and not for the owners of the estate. The latter have no right in equity to make any demand on the Commonwealth Government in regard to the drain. I do not consider that the 2-ft. strip of land along Bayonet-street has any value. If the owners of the Cooverwall Estate insist on keeping it there, they are only cutting off the people they are hopeful of settling on their blocks from going upon the reserves in the Commonwealth area. In any case, the Commonwealth could resume the strip. It would only mean paying for a 2-ft. strip of ground which practically has no value. Seeing that the Commonwealth scheme is going to improve the selling value of the Cooverwall Estate, surely the owners of that property will not quibble about a strip of land 2 feet wide. It seems to me that if the Commonwealth do not propose to allow shop premises in their area, the blocks on the Cooverwall Estate facing Bayonet-street will be snatched up for shop sites. The Commonwealth scheme should improve the housing facilities in the whole district, and the class of houses in other parts of Lithgow will have to come up to the standard set by the Government. The Harbor Trust do not pay rates for the buildings which they are letting to residents of Sydney so long as they are within the area controlled by the Trust; nor do they pay an equivalent of rates. Their tenants on their own property do not get our house-to-house collections. As to the equity of the system, the Harbor Trust give services to the municipality for which we do pay. I suppose it is a matter of *quid pro quo*. They are always doing things which otherwise the municipality would have to do. They have made their wari roads, and they have built weighbridges and other conveniences which we have taken over.

(Taken at Sydney.)

WEDNESDAY, 17th JULY, 1916.

Present:

Mr. GREGORY, Chairman;	
Senator Henderson	Mr. Mathews
Senator Needham	Mr. Sinclair
Senator Newland	Mr. Laird Smith.
Mr. Mahony	

Henry William Thompson, master builder, member of the firm of H. J. and H. W. Thompson, and Vice-President of the Master Builders' Association, sworn and examined.

200 To the Chairman. It is generally admitted that there is a scarcity of houses in Sydney for workers at a rental which they can afford to pay. Daceyville has achieved the object of providing good homes at a moderate rental. I prefer the Daceyville system to the block system at Darling Harbor. There is nothing much to choose between a detached house or a semi-detached. If there is any difference, it is in favour of the semi-detached on the score of cost. Obviously, the cost of one wall is saved. A house with two bedrooms or three bedrooms, and the necessary living rooms, would meet the requirements of most workers. I do not find that there is much demand for a house containing one bedroom, a living room, and conveniences. Broadly speaking, it is a mistake to build houses with less than two bedrooms. The saving effected by building one room less is almost negligible. A spare room is no burden to carry. The terms of tenancy ought to regulate the matter of taking in boarders, which tends to defeat the very object and those very conditions Governments aim at by housing schemes. Our firm

owns four houses in a workmen's locality, each with two bedrooms, a living room, and a kitchen and out-houses, and we have not ascertained that our tenants endeavour to make up their rents by taking in lodgers. I should consider that 15s. per week is quite enough for a workman to pay in rent. I like the proposed layout at Lithgow with the allotments facing in one direction only, and with its circular streets. I should not think that it would cost much more to handle such a layout. I should endeavour to make every block all frontages. The minimum-sized block should be 40 feet by 120 feet. A man who will not keep that area in good order cannot be interested in his home. Flats would have to be built to accommodate him. There should be variety in design within reason. Variety that is obviously uneconomical is not so pleasant to the eye as is economical variety. In view of the work which I have seen turned out by Mr. Foggitt in the office of the Housing Board, the Commonwealth Government would be well-advised to be guided by his experience at Daceyville. I think it is an objectionable practice to place the laundry in the kitchen. It always seems to me that the odours and steam arising from the boiling of clothes cannot be healthy, and if it can be economically managed, I prefer to see the laundry placed outside. I do not think that the water-closet should be placed in the bathroom. It depends upon the tenant whether or not a water-closet in the bathroom is objectionable; but even a bathroom itself can become objectionable. I have been in houses where the baths have been filled with pot plants. There should be a bathroom in every home. Houses of the "A1" type are very completely designed. I cannot see what more would be required by a tenant. I prefer to see the houses built of brick or cement blocks. I strongly recommend against the use of fibre-cement studding, and similar temporary material. The municipal by-laws insist on a minimum of 4,000 cubic feet in each bedroom. This limits the smallest room to 10 feet 6 inches on the floor, when the minimum height of the ceiling is fixed at 10 feet. I believe that a lower height would be no detriment in reason. I have dropped the ceiling in my own home in certain places for the sake of appearance. The height of a ceiling is governed largely by the area of the room. Taking the size of the rooms in the Lithgow plans, there would be no harm in dropping the ceilings to 9 feet. I would like to see a variety adopted in regard to roofing. Fibre-cement roofing is overlasting. I am strongly in favour of the fibre-cement shingle, not the ordinary diagonal one we see, but a square sheet of fibre-cement, put on just in the same way as tiles are placed on a roof. They have some at Daceyville. My father recently built four houses, and I built my own place, and all the houses are roofed in the way I have recommended. I suppose that fibre-cement sheeting is lighter, but in small buildings that fact would not count much. We have taken out the cost of the building on the cubic space, but our business does not bring us much into touch with the building of the smaller type of residences. I should think that 7½d. per cubic foot should cover the cost of a building of the "B" type. I am not a great believer in cubing. The only way to estimate the cost of a bricks has not jumped recently. They cost 68s. at the kiln, an increase of 5s. per 1,000 from the price which was ruling about two years ago. It was claimed at the time the rise took place that, had the whole of the increased cost of making bricks been passed on, the rise would have been 8s. 6d. per 1,000. With local bricklayers, and using common bricks for facing, the brickwork at Lithgow should cost not more than £18 12s. 6d. per rod. The labour would cost £5 14s. per rod. Bricks would be struck on the outside only,

and allowance would have to be made for 4-in. work in the interior walls. The outside walls would be hollow. I am assuming that the cartage would be 10s., and that you will get a full yard of sand for 7s. 6d. I am allowing 30s. per 1,000 for laying. If bricklayers are secured from Sydney, they will have to be paid an extra 1s. per day, and their fares. I think that fibre-cement roofing would be about equal to the cost of tile roofing. Prices have been soaring recently. If the Commonwealth Government could give business people some assurance that after the war they would not be flooded out by imports, there would be quite sufficient local competition to bring the price of materials to a fair level. The people who are at present engaged in the production of lines which in normal time are subject to competition from imports, are naturally inclined to make a harvest while they can do so. At least, I would expect them to do it. On the other hand, they are putting in expensive plants, which possibly might become scrap-iron if imported tiles and fibre-cement are allowed to come in on the old basis after the war. You should be able to get the roofing, including rafters, done for £9 5s. per square in tiles or fibre-cement. The work could be done more cheaply if corrugated iron were used. Some people do not care for this class of roofing on aesthetic lines, because it bears the appearance of corrugated iron. Fibre-cement shingles cost £1 12s. 6d. without battens. The corrugated material costs £3 18s. without battens. Tiles with battens cannot be purchased in Sydney for less than £4. I am quite at variance with Mr. Foggitt when he says that the cost of terra cotta tiles, including roof timbers, battens, and fixing, is £3 12s. at Daceyville. I have added something to cover hips and ridges. A house of the "12A" Daceyville type should cost about £420 at Lithgow, if built by local labour. Another £30 could be added if it is to be fitted at all lavishly with sanitary conveniences. Houses of the "B1" type, as proposed for Lithgow, should also cost about £420. If the labour has to be brought from other places, the cost would be increased by about £25. I am giving an outside estimate of the cost of one house only. In building 100 cottages, there would possibly be a reduction of 5 per cent. I have included no fencing in giving my estimate. It would seem to be unfair to load each house with a proportion of the cost of extending the water supply and sewerage mains to the area. I cannot see how you can afford to pay £500 for a cottage of the "B1" type if you have to add to the cost a sum of £30 in order to cover the price of the land, and a proportion of the water supply and sewerage extension. I am afraid that the rental would not provide sufficient to maintain the cottages and pay interest. The guiding principle in designing a cheap dwelling is to keep the whole thing within the four square. Projecting rooms are only adding to the cost. By making the building four square, you simplify the roof, and reduce the outside walls to a minimum. That is really the test of a plan as regards cheapness. In the "A1" plan, a pantry is built out on the verandah in brick. It might be very useful if the prevailing winds are such as would prevent the use of the verandah had there been nothing but an open end to it. I would not put the water-closet, the laundry, and the pantry at the end of the verandah with nothing but weatherboard work. I would not do away with the brickwork. By making the back wall straight right through without having a break at the intersection of the laundry and bathroom, by removing the washing sink to the outside wall of the house, by fixing the pantry anglewise in the corner where the sink is shown, and by putting the laundry on the side of the pantry, I think you would considerably economize in the cost of building the "A1" cottage. Mr. Foggitt's

plan gets back to any idea of economy. It approaches the four-square idea. If Mr. Foggitt is building these houses for £300, he must be doing pretty well for his roofing. Perhaps he is working on an old contract. We have been in the contract system. We claim that we have abundant facts to justify our belief. The system of standardizing doors, windows, and manholes is a good one to follow. In our business, if windows are about of varying sizes for one contract, we frequently make them larger for the sake of being able to make a number of them of the one size. Everything in the nature of joinery work should be standardized. I do not think that you could standardize much more, except the roofing. It would not be advisable to let one contract for the whole of the cottages. It would limit competition. I would recommend contracts of various sizes. It would give every one an opportunity of underbidding. It is not necessary to have the whole of the cottages in one contract, exactly similar, so long as the joinery is standardized. If that is done, it removes the biggest cost of close supervision. I would not let more than forty houses in one contract. If a contractor wants more houses, he can secure a couple of contracts. I would give the occupiers of the houses the right to purchase on the instalment plan. I do not think that the payment should run over more than twenty years. The Government should not do more than private capitalists have been in the habit of doing in regard to the sale of properties. The usual term is twelve and a half years.

201. To Mr. David Smith.—I would not set aside any thing for maintenance for the first ten years. After that, I think 3 per cent. should be set aside for that purpose. There is a great deal of difference between the maintenance of a brick building and the maintenance of a wooden building. I am strongly opposed to the erection of wooden buildings at Lithgow. I would use mortar in the brick work, and not cement, so that, if at any future time the buildings are abandoned, the bricks will still be of use. If cement is used, the wall will become one mass, and the bricks cannot be cleaned for future use. The difference in cost between the use of cement and mortar for bricklaying is about £2 15s. per rod. Houses are usually built in mortar, but Governments often do things extremely well. I thought there might be a possibility that cement would be used in the brick work at Lithgow. I prefer to see the houses lighted by electricity, although it should mean the use of fuel stores for cooking. A kitchen in a cottage suitable for a workman should be about 10 feet by 12 feet or 12 feet by 11 feet. Such a kitchen would be large enough for use as a dining room. A cupboard easily accessible to the living room and the kitchen would necessarily be large enough to carry practically all the crockery, and I reckon that it would cost about £8. It would cost a good deal to put a small copper at the rear of the stove and convey pipes into the bathroom to provide hot water. I have not had occasion to price anything of the kind lately but I do not think that it could be done under £25. In the case of the Eureka gas stove, which is a very popular line, I have removed the top plate and put the oven and the plates set by side on a table, so that the oven and the boiling plates were on the same level. This method has been very favorably received, because it has avoided so much stooping to the oven. In the case of a fuel stove, the oven is always under the hot plate and the stove cannot be separated. If you make the oven a convenient height you are inclined to make the place for the saucepans too high, so that, while you are giving help in one direction, you are making things very awkward in another. It is a good thing to keep the arch of the fireplace high. I would not make an opening in the front of the houses any larger than the laziest man could be expected to keep in good order,

which I would reduce to something like 20 feet. The matter of fencing depends upon how the local council deal with the stray-cattle nuisance. It would cost about £12 to extend the roofing on each side of the "B1" cottage in order to give the full extent of verandah. There is a general business among the people to sleep out. It would be an improvement to extend the verandah of the cottage, but it would necessitate an alteration in the hip of the roof.

202. To Mr. Mathew.—There is an objection to giving the freehold at Lithgow if the cottages can only be sold to other employees at the Small Arms Factory or back to the Government. Those conditions are likely to cause discontent. It might not be worth while for a man to purchase a freehold of such a limited character, but the Government would be relieved from criticism if they gave the tenant the opportunity to purchase.

203. To Mr. Sinclair.—A concrete building can be made impervious to the weather. The proneness to damp depends upon the type of concrete used. Poured concrete is just as impervious as any other material if it is built in a cavity wall. Water actually runs down the space between the inner and outer wall of a house built in brick. I have not had much experience in poured concrete work, but I should say that it would be a rather expensive method of construction. The State Brick Works are selling bricks cheaper than the private firms. Their price is £1 17s. 6d. per 1,000 at the kiln. If the Daceyville people are paying £3 3s. per 1,000 on the job, they must be using State bricks. I paid £3 4s. per 1,000 for a job nearer town. The brick-making companies, by an arrangement with their carters, have certain districts blocked out, and there are certain arbitrary lines drawn beyond which the bricks cost a certain fixed increased price. Bricks may cost 3s. per 1,000 less on one side of the street than they cost on the other side. If the bottom at Lithgow is clay which will not move in wet seasons, and if it will bear any amount of weight, the foundations need only go just below the surface of the ground. The turf could be cut off and the foundation could be built on the surface thus exposed. It is immaterial whether brick or concrete work is used in foundations. The only point to be considered is the cost of material for concrete as against the cost of bricks at that particular spot. Either method is perfectly satisfactory. The foundation work need not be unsightly if it is above the ground. It can be handled in such a way as to make it look right. Each verandah floor should be down one step from the floor of the house. There should be no step inside the house. I have not found that the verandah drop is dangerous to children. Pulp wall board is very satisfactory sheeting for temporary structures, and if I could get it similar to the sample shown at 25s. per 100, I would buy a stock of it, but if I could get a free gift of it I would not advise the use of it in cottages at Lithgow. It moves very much with the weather. A space of half-an-inch has to be kept between each sheet, and in certain weathers it bulges out considerably.

204. To the Chairman.—The Master Builders Association strongly urge the advisability of adopting the contract system in connexion with the building of these houses. If contracts are let, the Government will know beforehand what they are to pay. I do not think that any contractor can discover many loopholes for extras in a job like this. I have looked thoroughly into the question of wall beds. I think the people will have to be educated up to them a little more before they can be generally adopted. I do not recommend that they should be given serious consideration. They are quite as strong as ordinary beds.

The witness withdrew.

George John Oakeshott, Works Director for New South Wales, Department of Works and Railways, sworn and examined.

205. To the Chairman.—The work of preparing plans and specifications for workmen's cottages at Lithgow has been carried out under the personal supervision of the Director-General of Works in Melbourne. If it were a matter of building one cottage only the work would be done by me, as Lithgow is in my district; but, in the case of 100 cottages, the Minister may appoint a separate inspector to take charge of the work. If the work is entrusted to my care I have a staff which will be able to carry it out, either by day labour or by contract. I am acquainted with Lithgow. I superintended the erection of the Small Arms Factory. I know the area which has been resumed for the purpose of building these houses. It is a very admirable site for the establishment of an industrial village. Mr. Murdoch and I both prepared a scheme for the layout of the area, and we both accompanied Mr. Morrell to the site. In my opinion he has improved both of our plans. He went to the area and thoroughly examined it after he had considered our proposals, and his layout certainly meets with my approval. I think that 60 feet is ample width for the principal roads. Assuming that each house is set back 20 feet, it allows a total width of 100 feet from house to house. The cross roads need not be so wide, because the traffic in them will not be a very serious matter. Any traffic to Bowenfels would follow the main roads. For the cross roads I would recommend a width of 40 feet. The cost of macadamizing is a considerable item if the width of a road is 60 feet. Mr. Morrell's arrangement for the cross roads is an excellent one. The rounding off of the corners of streets, as shown on the plan, seems to me to be somewhat exaggerated from what it will be in actuality. The rough angle only will be taken off. I do not think that it will be necessary to round off the allotments at the corners of streets, but only the foot-paths. The frontage of each block should be sufficient to allow for a side path to enable people to get to the rear of the house conveniently. That enables us to do away with all back lanes, which are an abomination. The minimum frontage should be about 40 feet, and the average depth should be about 120 feet. Some of the allotments should have a greater depth, to enable men who have a taste for gardening to have a chance to indulge in it. I think that the majority of the men who are likely to become tenants of the Government cottages will go in for a little gardening and for keeping fowls. The area will lend itself to those occupations. Although I mention 40 feet as the minimum frontage, I advocate a frontage of 50 feet, so that there will be a good space between each house. I am not an advocate of building semi-detached cottages, because the saving is very small. The only difference is that one party-wall is saved, and the advantage gained is not in proportion to the inconvenience of the arrangement. I do not suppose that the saving would amount to more than £20 for the two houses. The Government will have to take care of the conditions of families. A man enter for all sizes and conditions of families. A man and his wife, or a man and his mother, may wish to live in a house by themselves. A house with one bedroom would be sufficient for a man and his wife if provision is made for adding another bedroom. As a general rule, however, I do not think that houses should have less than two bedrooms. I am quite in accord with having the laundry away from the kitchen. I cannot agree with Mr. Foggitt in his idea of putting the laundry in the kitchen. Washing day must be an abomination to the occupants of the houses in which he has carried it out. As a rule, working men take their meals in the kitchen, and it is not an ideal condition to have meals in a kitchen filled with

steam and the odours of washing. Although working men as a rule have their meals in the kitchen, they live in the living room. It is for the sake of economy in serving the dinner and washing up, and so on, that they take their meals in the kitchen. There should be an outside door to the laundry, so that the steam will not go into the house. People generally use the bathroom as a lavatory. I do not like the W.C. in the bathroom, but it is economical to place it there. There is always a certain amount of effluvia from it. I do not like to have the slightest suspicion of smell in a bathroom. In regard to securing cheapness of design, a square plan is always the cheaper, but it is very often so convenient. You must always have four angles to a room. Plans of the A1 type have an additional room compared with the Daceyville house, which is said to have cost £300. It has also two verandahs, a against one. The additional room is the laundry. On the other hand, the Daceyville house has two bedrooms, as against one in the Lithgow design. I am very loath to criticize plans without having the specifications before me, to see what Mr. Foggitt and Mr. Murdoch have arranged for the finish of the respective buildings. Economy could be effected in the A1 design. The width of the front verandah could be reduced to make it the same width as the brickwork, namely, 6 ft. 0 in., but that would not reduce the total cost very much. I do not see how economy could be effected without re-planning the whole thing. Mr. Foggitt has evidently obtained his lower costs in his specifications. They are not shown in his plans. I have gone very carefully into the matter of the cost of brickwork. I have prepared the following information for the Committee:—

There are two brick works at Lithgow, viz., Lithgow Valley Colliery Company, and The Vale of Clwydd Colliery.

The Lithgow Valley Colliery, run of kiln, 55s. per 1,000 (delivered on cart at company's works).  
The Vale of Clwydd Company, 47s. 6d. per 1,000, on carts at company's works. The cost of cartage to the job would be 10s. per 1,000.

Samples of each brick are submitted.  
The Lithgow Valley Colliery have the advantage of being nearer to the job, and therefore the cartage will be somewhat less.

The Vale of Clwydd Company will deliver broken brick for aggregate ballast at 1s. per load at company's works.

It will be noticed from the samples that the Lithgow Valley Company's bricks are slightly larger than their rivals. It has been stated that the smaller bricks would require 213 more for every 1,000 of the larger bricks.

Inquiries were made in each case of the price of "seconds" but no quotation would be given by either company.  
Price lists are attached for all sanitary ware manufactured at Lithgow, with bends, Duchan traps, and other fittings.  
Sanitary drain pipes, 21-inch inside diameter, 10s. per foot at company's works; 14-inch inside diameter, 1s. 2d.; 4-inch inside diameter, 6d.; 3-inch inside diameter, not made.

The standard size for Australian bricks is 9 inches by 4½ inches by 3 inches. In Sydney, it varies to the extent of one-eighth of an inch, being sometimes larger and sometimes smaller than the standard size; but the height, namely, 3 inches, does not vary. When the tunnels were being made on the deviation of the line connecting Clarence with Lithgow, Mr. Fraser, of the Railway Department, asked the Lithgow Valley Company to make bricks 9½ inches by 4½ inches by 3 inches, to suit his tunnels; and, since then, the company have not altered the size of the bricks they have turned out. It is a big, clumsy brick. The Vale of Clwydd people make a smaller brick—8½ inches by 4½ inches by 3 inches. If the larger brick is used in building cottages, it will entail unnecessary expense. I prefer the use of the smaller bricks for cottage work. We used the larger brick in building the Small Arms Factory. Common bricks cost 55s. and 47s. 6d. at Lithgow. I think that £22 per rod would be a fair cost for the brickwork there. The work would be done in mortar. Labour at Lithgow is working under an award, just as is the case in Sydney. We would not have to get labourers

from Sydney and pay them an extra 1s. per day. We can always get labourers at Lithgow. In any case, we would not pay a country allowance, although we might pay fares from Sydney. Bricks cost 38s. 6d. at the State brickworks, and 35s. at the Metropolitan. Brickworks factories are a job in the metropolitan area is 19s. for State bricks, and 13s. for the others. Thus, the total cost of bricks in Sydney is 57s. 6d. for State bricks, and 63s. for bricks supplied by private firms. The comparison, however, is not a fair one, because the State brickworks deliver their bricks in skips, and fling them down on the job wherever they choose. They do not unload them where they are directed to do so, and, therefore, it is practically necessary to unload them from the skips. For doing this, a certain allowance has to be made, and it is rather hard to determine the actual cost of handling the bricks out of their skips. It is difficult to estimate the cost of sand. It depends upon the situation of the sand in relation to the job. Sand varies from 5s. 6d. to 7s. in Sydney. At Lithgow, it should cost 6s. per load. Lime costs £3 per ton of ten bags. Cement costs 11s. 6d. per three bags. Allow 57s. 6d. per 1,000 as the price of State bricks delivered on the job, brickwork should cost, per rod:

Cement mortar.

	£	s.	d.
Bricks	..	..	10 16 0
Cement	..	..	4 7 0
Labour	..	..	0 0 0
Scaffolding	..	..	0 11 0
Builder's profit	..	..	2 9 0
Total	..	..	£23 17 6

Lime mortar.

	£	s.	d.
Bricks	..	..	10 16 0
Lime	..	..	2 5 0
Labour	..	..	0 0 0
Scaffolding	..	..	0 11 0
Builder's profit	..	..	2 0 0
Total	..	..	£21 12 0

Buying from the metropolitan brickworks, it is necessary to add about 22s. per rod to the price. In building hollow walls with lime mortar, it is necessary to add the following items to the cost:—Wall ties, 8s. 6d. per rod; extra labour, 10s. per rod; and builder's profit, 1s. Those items bring the cost of brickwork on hollow walls to £22 11s. 6d. per rod. The cost of striking joints of external walls is about 6d. per yard, meaning an extra 8s. per rod. For the roofing of these houses, I suggest the use of Marseilles pattern tiles, fibro-cement sheeting of 12 inches by 12 inches, corrugated cement sheeting. I do not recommend the use of makhoid, and corrugated iron is out of the question. I recommend a variety of roofing. The principal material should be the Marseilles tile. I always recommend it when there is plenty of green foliage about. The red tile contrasts splendidly with green trees. It is also very cheaply fixed to battens. No sarking is required. By sarking, I mean rough boarding. I do not recommend the use of big sheets of compressed fibro-cement. They did not give satisfaction at the Duntroon Military College. The boys cracked them by throwing stones on the roof; but there will be them by throwing stones who will do the same thing. Our great boys at Lithgow will do the same thing. The bitumen solution which is usually employed at the joints did not render the sheeting watertight, and we had to place sarking underneath in order to make any sort of a job. Where the fibro-cement is cut in sheets with laps, it is quite a



Stringy Bark, Black Butt, or Mountain Ash.  
W. Slattery.—10s. 6d. 100 ft. super., at Mill, Eakbank.  
Not delivered on the job.)  
Coed Llan.—Ordinary scantlings, timbers suitable for  
building purposes, from 2 x 1 to 6 x 6, 21s. per 100 ft. super.  
(Delivered on job.)  
4 x 1 T. & G. spruce flooring, 30s.  
5 in. sawn palling, 12s. per 100 (count).  
6 in. sawn palling, 2s. per 100 (count).  
Split posts, 7-in. ls. 6d. each.  
Split posts, 8-in. ls. 8d. each.

which is very high. In other words, local manufacturers are taking advantage of the increased cost of the imported article. Realizing the difficulty of obtaining freight to Australia, the person who happens to be in the fortunate position of being able to get goods from abroad can charge what price he likes, subject to the local manufacturers' prices, provided that he can sell any one to purchase his goods. I have had quotations for corrugated iron at £30 per ton, but I would want to know how much was charged for shipping it at that price. It would be extravagant to purchase at that price. We are building a hospital at Randwick, and the Minister for Munitions has granted permission to import some corrugated iron from America for that work, but it must be used for that work only. Mr. C. H. Sorrensen, who was formerly in the employ of the Home and Territories Department, has a mill at Mount Irvine. He told me that he was at Lithgow five days ago last night, and he came to supply me with a number of quotes, and asked me whether I clipped from him:—

Coachwood, a stronger wood, excellent in figure, close grained, finished with good surface, but will not stand buried in ground.

		each per	12 ft. per 100 ft. sq. (Surface measurement)
at	4 x 3, 4 x 2, 2 x 3, 3 x 3, and acutrices,	12 ft. per 100 ft. sq.	
at	Sassafras		
at	6 x 1 T. and O., Sassafras or Coach	30 ft.	
at	wood		
at	4 x 1 T. and O., Sassafras or Coach	31 ft.	
at	wood		
at	12 x 1 sheling, Sassafras, or plain	29 ft.	
at	3 sides	24 ft.	
at	6 x 4 (full) unplaned Siding, Sassafras		
at	4 x 1 (full) unplaned, Sassafras		
at	or Coachwood, T. and O. and		
at	V-jointed	25 ft. per 100 ft.	
at	4 x 1 (full) T. and G., planed, for		
at	laid floor, do.	27 ft.	
at	12 x 1 (full), planed all sides, Coach		
at	wood, for plancy, selected		
at	0 x 1 unplaned plain acutrices		
at	and shirling	31 ft.	

	Sassafras.	Oregon.	Rimu.
Scantling	26s.	37s.	30s. and 39s.
4 x 1 T. and G. flooring	31s.	...	34s.
4 x 1 lining	27s.	...	26s. 6d.
4 x 2 matchboarding	25s.	...	...
	Coachwood.	Maple.	Pine. Redwood.

Joinery, 7 x 1 1/2" planed	32s.	71s.	46s.	57s.
all sides "				

The local wood is excellent, so far as I saw it. The tallow, which will be required for cottages. If you cannot get it here, you will have to go to Sydney, because it is the only place where it is available in the district. For all joinery and cases there is no doubt that conchwood is the best and very economical wood. It would be an excellent timber for cupboards, and as it is so strong, I think it would not require to be painted. At the present time paint is a big item. It will not be necessary to do more than slightly varnish the wood. The great advantage of conchwood oil or varnish is that it is obtainable locally and cheaply. It is just as efficient as any other paint/paints in these cottages. It does, windows, and doors, and is a great deal of economy.

Sydney to the cost of their pipes. Their charges compare very favorably with Sydney charges. No one else makes pipes there, and I expect they charge just a little under what it would cost to get the pipes from Sydney. They make an excellent pipe, slightly better than the Sydney articles. The clay is good at Lithgow, and the glazing is done very well. I think their charge is a fair one. There is great competition in Sydney among the makers. The quotation I obtained for bricks from the Vale of Clwydd works was 47s. They will want 18s. per 1,000 for curbing. The quotation from the Lithgow Valley Colliery is 65s. per 1,000 at the kiln. That would mean 65s. on the job, because their kiln is much closer than the other is.

207. To Mr. Sinclair.—It is a desirable thing to have a fireplace in a bedroom in case of sickness, but my experience is that fireplaces in bedrooms are never used. I am very sorry that I put them in the bedrooms in my own house. I have sometimes come into personal contact with the use of sassafras for flooring. I do not know that it is subject to dry rot. All pines are subject to dry rot if there is no proper ventilation underneath. I have not heard that sassafras is more liable to it than any other

208. *To Senator Needham.*—The Chairman asked me to obtain firm quotes for bricks at Lithgow. Neither company would give its price. They say that the prices they have given will carry through this work, but they will promise nothing beyond the immediate present. You would be at their mercy to a certain extent, but competition is always a good thing to obtain that kind of treatment, and I do not anticipate any trouble in that regard, or any appreciable increase in the cost of bricks during the progress of the work.

in the cost of brackets during the program.

209. To Mr. Laird Smith. "An esthetic point of view the large brick would make the cottage appear out of scale. The wall would be unnecessarily thick. The larger bricks are clumsy to handle for cutting bats, and so on, and for fitting around windows. I prefer the use of electric light. It is cleaner. It does not heat the oxygen in the house. There is far less risk of fire in using it. There is no reason why the verandah on the B1 designs should not extend to the whole width of the front. It was probably limited in size for economy's sake. Such a verandah would cost 25s. per running foot.

210. *To the Chairman.*—On a rough calculation 3,000,000 bricks will be required for 200 cottages. It would not be a paying speculation to carry out the suggestion of Mr. Leley to establish a Commonwealth brickworks on this area. It would not pay at all. The brickworks at Cambern are a totally different proposition. They have been established to build a city.

estimate of £7 for bath, & with shower complete, comprises a galvanized iron rolled edge 5 ft. 6 in. bath with waste, prime cost £65, and with fixing, 70s., a galvanized iron 4 in. x 12 in. shower, with valve and fixing, 17s. 6d. and 4 in. x 1 in. trap with cap, screw, and joint, 8s.; or a 4 in. x 1 in. valve, 6s.; 6 feet run of 1½ inch galvanized iron waste, at 2s. 6d. per foot, 15s., one hole in wall and making good, 1s. 5d.; total, £65, 0s. 6d., or plus 12s. 6d. per cent. for overhead charges, or builders profit, £78 18s. 1d. I have put down the cost at £7. The bath would be 22 or 24 gauge iron, and would cost some considerable time, but a cast iron bath would have double the life. A good porcelain bath would cost £27 alone. In my estimate for W.C., I have allowed £3 5s. prime cost for the whole of the fittings, including closet pipe and trap in one piece, a 3-gallon cistern, waste pipe, cone, and brass connexion, seat and brackets, short lead service, and stop cock. Fixing, soldering joints, and making hole through wall would cost an additional £1 17s. 6d., making a total of £6 10s. 6d., and 12s. 6d. per cent. for overhead charges would make an additional 15s., bringing the total to £8 17s. 6d. Then again I have set down the cost of a bath complete for £4 10s. I would provide for the W.C. £7, and £7 for the bath. I certainly do not think the W.C. could be fitted complete for £4, although these are only cottages, I think

for \$2 10s. Although these are only cottages, and I desirable to put in a substantial cellar, and trap in one piece, which costs \$10. I have provided for a 3-gallon cast-iron, which costs about 30s. As to water-closets, I have allowed for a 4 foot run of 3-inch galvanized iron piping with hooks, &c., at 1s. 4d. per foot; 10 feet of 1-inch galvanized iron piping at 11d. per foot; two 1-inch taps to trough at 6s. each, and one to copper, 5s.; together with a 1-inch stop cock at 1s. 6d. making a total of \$2 7s. 6d. or, about 12s. 6d. I have also allowed for a 12-inch galvanized iron vent pipe, which I have allowed for a mushroom iron inlet for 4-in. drain pipe, including bend, connexion, and cemented surround, which I have priced at 12s. 6d. That is rather low. I have allowed also for an 18-ft. 4-in. galvanized iron extra pipe for 10s. and 10s. for 22 ft. of 2-in. galvanized iron pipe, at 10s. for 10 ft. of 1-in. galvanized iron pipe, in all, making, with other small installed provisions, a total of \$2 2s. 6d. for the water-closets. I have put down the cost, would allow, for the extra taps of which you spoke

and would allow for the extra taps at which you wish to  
212. To the Chairman.—I cannot say definitely, as  
to the estimate of £1,000 and £1,000 for sewerage and  
water connections respectively. I did not prepare  
them. £1,000 is a lot for laying on water. I can-  
not give the Committee an assurance that my estimate  
of £5 for house reticulation would include bringing  
the water to the main. We have only allowed for  
40 feet of 3-in. and 30 feet of 2-in. galvanized iron  
piping, which is only to provide for circulating water  
through each house. Taking the average width of the  
roadways at 60 feet you would require roughly 70 feet  
of piping to carry the water from the main to the  
kitchen. I think it is suggested, it would be an excel-  
lent plan to run the main alongside the footpath on the  
paved coloured ground on the plan rather than on the  
roadway. This provision of 70 feet of service pipe  
from the main to the kitchen, including the tapping of  
the main and the putting in of a stop cock, should not  
cost more than £7. If the roads were not made, £7 per  
house should well cover the cost. I do not know how  
the estimate of £1,000 for the 100 houses would cover.  
As to sewerage connections, my estimate is purely in  
respect of plumbing. It does not include the stone-  
ware pipes, and more allowance for what is known as inter-  
mediate plumbing. £10 per house would not be sufficient to  
cover the outside work in connection with the sewerage.

(Taken at Melbourne.)

THURSDAY, 18TH JULY, 1918.

**Present:**

Mr. Gregory, Chairman;	
Senator Henderson	Mr. Mathews
Senator Needham	Mr. Sinclair
Senator Newland	Mr. Laird Smith.
Mr. Mahony	

Alexander George Quibell, Quantity Surveyor, Department of Works and Railways, sworn and examined.

211. To Senator Nowland.—I have with me the papers showing all the figures on which my estimates of cost of building cottages at Lithgow are based. The

E.9550.—8

In my original estimate I included the outside work, but it was taken out. I estimated the work at £18 10s. per house. That cost included 84 feet of drains and excavating, including jointing, at 1s. 6d. per foot, which gives a total of £7 7s. three disconnecting traps, one for bath, one for the wash trough, and one for the sink, at 17s. 6d. each, £2 12s. 6d.; two extra junctions, 9s.; gully trap in the yard, 25s.; extra for inspection pipes, 7s. 6d.; making a total of £16 15s. 6d. All this is work done by a drainor as distinguished from a plumber. You ask whether it is not usual, when estimating costs, to include cost of sewerage outside as well as inside. I have always done so, but in this case my instructions were to deal with the buildings alone. In the case of Flinders Naval Base, the cost of sewerage and water supply were kept quite separate. In this case there is no provision for contingencies. A complete estimate for these houses must, as you say, include the cost of bringing in the water and carrying out the sewerage. My estimate for brickwork is £24 per rod. Mr. Onke-shott gave me two quotations for bricks at the kiln, one being 47s. 6d. and the other 55s. per 1,000. I worked on the quotation of 47s. 6d., and allowed 10s. per 1,000 for cartage, bringing up the cost to 57s. 6d. delivered on the site. I allowed for 3,750 bricks at 57s. 6d., £10 15s. 6d.; water, 2s. 6d.; and 2½ yards of mortar at 31s. £3 17s. 6d. Labour: Bricklayer, six days at 14s., £1 4s.; labourer, three days at 12s., £1 10s.; scaffolding, one day, 12s. 6d.; and use of scaffolding, 6s. 8d.; making £21 15s., or, plus 12½ per cent., £24 9s. The total labour cost for building brickwork is £3 12s. There is also the labour involved in making the mortar. My figures for the mortar are as follows: 4 cwt. of lime at 45s. per ton on the job, 9s.; 1 yard of sand, 6s.; labour (mixing), eight hours, 12s.; water, 4d.; total, £2 7s. 4d., or, plus 12½ per cent., £1 10s. 9d. per yard. I have put it down at 51s. per yard. The labour involved in mixing the mortar and laying the bricks is estimated to cost £3 5s. 8d. per rod of brickwork. My estimate of £24 9s. for brickwork includes facing and pointing, but does not include forming the cavities. I would expect brickwork at Lithgow to cost rather more than at Sydney; the probability is that some of the men would have to receive a country allowance. As to Mr. Foggitt's cost of brickwork at Daceyville, I can only say that I have allowed for a bricklayer laying 3,750 bricks per week, and have assumed that the work would be done under our usual conditions. Mr. Foggitt may have some piecework. There is fairly good clay country at Lithgow. I have allowed 2s. 3d. per yard for excavating for foundations, assuming that marl, light clay, and loam have to be dealt with. With a clayey sub-soil it is well to have cement concrete for the foundations. For 11-inch walls I would have concrete eight or nine inches thick. I should not pare down the foundations to six inches of concrete. Mr. Onke-shott, you tell me, has suggested only three inches of concrete. With only three inches reinforcing would be necessary, because in clayey soil there is a tendency for a building to settle. Just now reinforced work would be very expensive. I do not think that a foundation of four or five inches of concrete on a clayey bottom would be sufficient. If lime instead of cement were used a thickness of 12 inches would be required. I do not recommend lime concrete, it has no homogeneity and is easily disintegrated. The estimating cost of timber, I was influenced by the information that local timber merchants were likely to quote, and I did not add freight to the Sydney prices. I assumed local merchants would supply at Sydney rates. As a matter of fact I believe their rates are slightly lower. You asked whether a saving would not be effected by standardizing the doors, windows, and mantelpieces. The several designs for these houses show windows of

different sizes, but I have estimated the cost on the manufacturer's prices per super. foot for sashes and frames in large quantities, so that I have, so to speak, taken a standardized price. No doubt a saving could be effected by adopting standardized sizes for interior doors, and also standard mantelpieces. Where, as in this case, economic construction is absolutely essential, no doubt it would be wise from that standpoint that the plans should provide for standardized openings, but from an aesthetic point of view, the greater the variety the more picturesque the effect. You might have half-a-dozen cottages with the same sized openings and half-a-dozen with another standard size of openings. I should not like to attempt to build to-day a brick cottage containing living room, bedroom, kitchen, bathroom, &c., for £200 as you say Mr. Foggitt is doing at Daceyville. In the summary to our estimates provision is made for a discount of 5 per cent. off the estimated cost of labour and material. I think you could take at least 8 or 9 per cent. in respect of discounts of the costs shown by us. I do not think we hope to get down to Mr. Foggitt's price of £200 for the class of building shown on the plan you have put before me. Such a price suggests something approaching bad construction. Our design for a semi-detached house at £408 seems to be cut down to brick stock. Plan A1 has a little more brickwork than some of the others, owing to the formation of the verandah. To reduce the brickwork the whole design would have to be altered. I discussed the matter of costs with Mr. Murdoch, and we reduced the internal walls to 3 inches and the internal lining to the hollow walls to 3 inches thick. That reduction might be considered questionable, because bricklayers take longer to build a 3-inch wall than to build a 4½-inch wall. On the other hand, it undoubtedly means a saving of bricks and of some labour. A sloping roof at the back of the house is not good construction. It is not considered good construction to nail the ceiling joists on to the side of the rafters, as shown in the case of the type No. 12a, Daceyville cottages. As to building fairly square houses so as to save hips and valleys as far as possible and thus to secure greater economy, the question is one for the consideration of Mr. Murdoch. No doubt savings could be made in that way, but if all the houses were of the same type the settlement would not look very picturesque. I am aware that there are men at the Small Arms Factory whose wages amount to £3 per week. I have heard it contended that not more than 25 per cent. of a man's wages should go in rentals, but I should say that 20 per cent would be the proper proportion. Our estimate for the cheapest type of semi-detached house—plan A2—is £381. If we add to that cost £20 for the land, £34 for water and sewerage connections, and £23 15s. for fencing, we have a total of £468 15s. I suppose we should have to allow for interest at the rate of 5 per cent on capital cost, although the Hornsby Borough Council (England), when the market rate was from 3½ to 4 per cent, allowed only 2½ per cent. interest on the capital cost of its housing scheme. I think the Government should take a little less than the current rate in respect of this project. Allowing for depreciation and upkeep, I think that a fair rental for such a building as that to which we have just referred would be 19s. 6d. per week. Allowance would also have to be made for rates, which you say have been estimated to amount to 1s. 1d. per week. That would bring the rental up to 19s. 7d. per week, or 26 per cent. of the wages of a man earning £3 per week. I do not think it is possible to reduce the cost of the cottages shown on plan A2. Mr. Murdoch, however, would be better able to answer your question as to the possibility of cutting down the estimate by providing for cheaper class of roof, and practically no ornamentation. He would have to re-design the plan. I do not think we could

possibly reduce the cost of the cottage shown in plan A2 unless by reducing the height of the walls. We provide for tile roofing. I have tried fibre-cement roofing, but think that shingles would prove the cheapest roofing of all. The use of shingles would probably mean an increased fire insurance premium and increased cost of maintenance, although I do not think there is any great danger of fire from their use. They could be treated with a solution to reduce the fire risk. Good shingles might last 40 years, but I should say that 20 years would be the average life of a shingle roof. I estimate our tiles to cost £5 per square on the basis of a specially low quotation, by Goodlotts, of £15 per 1,000 at the works. The use of shingles would give a saving of about 15s. a square; fibre cement would cost practically the same as tiles. The cement tiles produced and made, you say, by returned soldiers, should weather well; they certainly ring well, and I fail to see why they should not be as good as the kiln tiles. Our plans have undoubtedly been designed with a view to economy. In the case of the lower-priced houses, some modifications might be made, but as to the others, I do not think you could hope for any material reduction. I see no objection to the placing of the W.C. in the bathroom. There should be no objection to a bathroom inside the house with W.C. combined. In the plans for the larger type of houses the W.C. is quite separate. I shall be able to speak more definitely on the question of cost after I have seen Mr. Onke-shott's figures.

213. To Mr. Mathews.—Mr. Foggitt, perhaps, makes no allowance for foreman's superintendence. The allowance of 10 per cent. is in respect of what are known as contractor's profits and depreciation of plant, while the additional 2½ per cent. is in respect of superintendence.

(Taken at Melbourne.)

FRIDAY, 10TH JULY, 1918.

Present:

Mr. GAZDOOR, Chairman;

Senator Henderson | Mr. Mathews  
Senator Needham | Mr. Sinclair  
Senator Newland | Mr. Laird Smith.  
Mr. Mahony

Hon. John Daniel Fitzgerald, Vice-President of the Executive Council, Minister for Health and Local Government, and Minister in charge of Town Planning, New South Wales, sworn and examined.

214. To the Chairman.—I am a member of the Housing Board of New South Wales, and was for five years chairman of it. Mr. Dacey was Treasurer at the time the housing problem in Sydney became somewhat acute, and I understand that on the suggestion of Mr. Carmichael the McGowan Government decided to build a model village. Mr. Dacey asked me if I would report on the matter, and I asked him to associate with me with regard to the plan Mr. John Sulman, since President of the Town Planning Association of New South Wales, and Mr. J. F. Kennedy, both of whom were architects. We drew up a hasty plan, and submitted it to the Minister. It had two main features following the lines of town planning. We decided to have three very broad streets, on the Paris plan, although in a sense that was not in consonance with industrial village planning. We thought, however, that we would get the two things together if possible. We have consequently at Dacey Garden Suburb four broad avenues of 100 feet each, which we shall try to beautify later on. An Act was passed, and a Board was created. The financial part of the scheme was, of course, the most important. Under it we had

to build and let the houses at such a rent as would produce a return of 4 per cent. per annum on the cost of the land and buildings, and provide for a sinking fund, and for all expenses of upkeep, repairs, empty houses, management, and so on. We were given power to sell the houses, but we have never sold. We can sell only to any one who does not own another house in any part of Sydney. The power to sell is an important feature of this scheme, and it would be important in regard to the proposal to build workmen's houses at Lithgow. Under our system we have to build a class of house that will last over our sinking fund period, that is fifty years. If you can sell, you do not require a sinking fund, because the new owner takes over all risks whether he buys outright or on terms. You have, therefore, not to add an allowance for the sinking fund on to the rent. If you have to build a workman's cottage that will last fifty years, and let it, you must get a return to cover all the things specified in the Act. If you built a cheaper house, say a wooden one that would last twenty-five years, you would have to get back your capital in half the time or less. Therefore, if you let a wooden house of that class you would have to charge the tenant a higher rent than you would charge for a more substantial and expensive structure. If you sell you can build the cheaper class of house; but if you keep your establishment at Lithgow, as the New South Wales Government now propose to keep Dacey Garden Suburb, as a model village for the purpose of instructing others and making experiments, it is bad policy to sell as all. I paid several visits to Europe, and among other things, examined the German and Austrian town planning and housing schemes. The municipalities there, if they sell at all, sell only with the condition, to prevent trafficking, that if the purchaser wants to re-sell he cannot sell to a private speculator without first offering the property back to the authority that sold it to him in the first case. Every municipal council in Germany, and I think in Austria, builds and sells on that principle. They believe in selling—that is, in giving the workman the ownership of his house. The number of rooms in the houses at Dacey Garden Suburb depends on the size of the family that wants the house. We keep control over overcrowding. We do not allow a lodger unless he is some relation, and then only with the approval of the Board. Our experience is that for a small family of father and mother and three children, the most suitable house is one of four rooms, with two sleeping-out verandahs, and a nice allotment of land, with a playground at the back. If you are getting the land at Lithgow for £45 an acre, that is remarkably cheap. The land at Dacey was debited to the scheme at £65 an acre. The ideal of the town planners is to have all the houses separate; even the semi-detached houses, although very good, are not ideal. At Dacey Garden Suburb the houses in the last circle built are all separate. When we began the place we put up semi-detached houses, but we made our mistakes in the early part of the undertaking, and gradually, as we gained experience, we were able to bring down the cost and increase the convenience. We have consequently been able to realize our ideal of the separate house. The plan now shown to me as prepared by Mr. Murdoch, and entitled "A1" (detached), is an excellent one. I see there is only one bedroom, but there is a sleeping-out verandah, which, in a climate like that of Sydney, would be equal to another bedroom. Lithgow would be colder than Sydney. I notice that in the plan numbered "B2" there is no hall. We have an admirable architect, who has been working six years on this scheme getting down to the irreducible minimum of cost and up to the maximum of convenience. We have had also

the assistance of many experienced women who have conferred with us in regard to conveniences inside the houses. We have put up our plans to public competition, and have used the ideas after paying for the designs. It would be extremely difficult for any one to experiment now on a new plan. I doubt if they would get anything equal to what we have on our plans. The last report of our Board shows the development of the houses right down to the present time. We now have a series of typical houses from the cottages occupied by soldiers' widows, small and convenient, and let at a rental of 12s. 6d. a week, up to houses that are bringing in 18s. 6d. a week, and contain six or seven rooms. I do not say that we have the last word on the subject, but I have seen housing in Germany, England, and America. I went round the world four times to study it, and have seen nothing like the conveniences in the types of the cottages that Mr. Foggitt has built for us. I would not erect a cottage for newly-married people with only one bedroom. The soldiers' widows' cottage has two bedrooms, a living room and kitchen, with sleeping verandahs at the back. I regard the accommodation in the soldiers' widows' cottage as the irreducible minimum for a small family. You should erect no building with less than two bedrooms. I would not allow overcrowding, and would not allow boarders or lodgers without approval. Single men and women should be accommodated in organized hostels as in the British munition villages. We also insist on gardening conditions. The tenants have to keep their gardens in order. It is a garden suburb, and I would strongly advise you to insist on gardening and beautification generally in any scheme you undertake at Lithgow. The moral effect is excellent. So far as the width of streets is concerned, one advantage you will have over us is that you need not be orthodox so long as you have the houses facing one another at a proper distance apart. With that condition you can do what you like with your roads. In a residential area where there is no through traffic, you do not need more than 14 feet of actual roadway. That is enough for two carts to pass each other. You do not want to load yourself or the rents with the expense of keeping up a 33-ft. road. We had to do that, because we had to be orthodox. Mr. Dacey would not alter the old-fashioned Local Government law to permit us to make roads of a less width than 33 feet with kerbing, guttering, and so on, but in our latest roads we have about 14 feet used for the roadway, which is on the line of the best town planning. At Hampstead, England, the space between the houses on opposite sides is, I think, 42 feet. Here we want 68 feet, which is quite right. We have abolished back lanes. In the business zone of a town you could make the streets as wide as necessary. If a street runs in either direction so as to command a vista, or if there is a chance of development, I should say, make it from 80 to 100 feet wide; but in the residential area you do not want a roadway of more than from 14 to 20 feet. The rest can be either grassed, as is the case in some of the beautiful suburbs around Adelaide, such as Unley, or you could have strips of grass with trees and flowers. As a matter of fact, we are finding some of our earlier roads too wide, and so we are putting garden patches right down the centre. I would not make the individual allotments larger than at Dacey. At first we gave them allotments 45 feet by 130 feet. That is the case with the semi-detached houses in Gardiner's road, but we gradually found that it is the woman of the house who does most of the gardening work, as the men are home only on Saturday afternoons and Sundays. Consequently, that area was too large. We still preserve the same proportion of houses to area—that is, not more than seven houses per acre—

but we are limiting the gardens and throwing the land that we save into a park behind. We find that works out very well. In the first little circular plot the Committee saw at Dacey we have made a nice area for a children's playground, and probably at Maig Park (another central recreation space in a circle of houses) we shall have a cricket pitch or football ground. However, we find it is a good idea in the interests of the people themselves to limit the size of their gardens. I would not allow them to keep fowls in a garden village. I would not advise it even at Lithgow. Any unnecessary noise should be prevented in a residential area, apart from the hygienic aspect. My own view, which did not prevail with the Board, was that we should give the tenants an area away at the back of the estate, where they could keep their fowl hutches if they wanted to, without creating a nuisance to their neighbours. I believe in the communal playground. We have found no trouble arising from it. We have tried to develop the communal spirit amongst the people. We got a branch of the Dalmian Co-operative Store established there. Our Board has been very satisfactory. You could not do better than have a Board of some kind to manage your scheme at Lithgow. You sometimes get undesirable persons in a village like this, and it requires an immense amount of tact to get rid of them, which a proper Board can exercise. It would be better to have the thing managed by a Board than by departmental officers. The conditions under which the tenancies are created should be well defined, and put in the form of a tenancy agreement. Unless the Commonwealth Government want to make this a model village to conduct experiments in, they ought to sell the houses to the workmen who are desirous of buying them, because they will be able to let the tenants have them at a cheaper rate per week, paying off the purchase money, than if they had to pay a rent based on the sinking fund period. A house for which a tenant now pays 15s. 6d. per week on lease we could sell to him at about 12s. a week, and the Government could recoup itself in, say, twenty-five years, although the tenant was becoming the owner all the time. I am not sure of those figures, but they can be easily checked.

215. *To Mr. Mathews.*—Of course the purchaser would have to pay rates, taxes, and insurance in addition, and as our rent includes everything, that would probably amount to the same thing.

216. *To the Chairman.*—If you sold, you should take power to prevent the vendee owner selling again to outside people. The managing authority could arrange, if necessary, to allow a sale to another employee, but personally I would not allow them to traffic at all. If you allowed them to sell, you will break your scheme down. You must clog the ownership to that extent. For a house for which we are now receiving 15s. 6d. a week at Dacey we could easily get from £1 to £1 5s. per week in the open market, and if a speculator were able to buy 100 houses there from persons who had the fee simple, the first thing he would do would be to raise the rents. If he bought them on a capital basis that would produce 15s. 6d. a week, he would have no difficulty in getting 25s. a week, and so would make an enormous profit on his transaction. Some time ago I made an offer, on behalf of the New South Wales Government, to Mr. Watt, that the New South Wales Housing Board would plan, build, and manage the village at Lithgow for the Commonwealth, but that if the Commonwealth wanted to control it themselves we would give them every possible assistance. All our information is open to the Commonwealth and the assistance of our officers is also available. I am an enthusiast on the housing question, and so far as I and the New South Wales State Government are concerned we will give you any assistance you want, and lend you any officer you would like to name.

217. *To Senator Henderson.*—If the houses are sold at Lithgow, some difficulty might arise when it came to the question of a man losing his employment. But from the stand-point of the State, if you give a man the fee-simple you are much more likely to make him contented, and he is much less likely to be a striker. If you want to make the working man contented, you must give him better housing conditions than he has hitherto had, and let him own his own house in addition. I was never a leasehold man myself, although I accepted the principle when I was a member of the Labour Party for the bigger things I could get. I do not think the perpetual lease is any good to a man. The perpetual lease clogs a man's power of sale to a certain extent. From that point of view there may be something to be said in favour of the perpetual lease, but human nature is in favour of the freehold.

218. *To Mr. Mathews.*—I understand that in law it is possible to clog a freehold. Germany has set a very fine example in regard to the planning of workmen's homes. In 1913 I saw the housing scheme at Ulm, on the Danube, in Wurtemberg. The burgomaster and the city architect took me round and showed me the houses. They have the most beautiful workmen's villages there, and the city of Ulm owns 80 per cent. of the land on which Ulm is built. The houses there are sold to workmen. This system gives satisfaction to the workmen, who do not want to sell again. There are very few offers to sell back to the authority that built and sold to them. Once they get into a nice little house of their own they are satisfied and contented.

I have seen some most beautiful gardens in the cottages at Ulm. The main reason why I favour selling to the tenant is the economic reason, and I have shown on what easy terms these cottages can be paid off. If we were selling the Daceyville properties, as we have power to do under the Act, we would sell so as to just clear expenses. We would not want to make a profit out of it, as the object of the State is simply to get the people housed in decent surroundings. I see no difference between the Daceyville proposition and the one at Lithgow. Although only a limited class of persons are to be allowed to take houses at Lithgow, you will never build enough houses there to supply all the people employed in your factory. If you are commencing with 100 houses, and can put up only 400 eventually, you will not have enough to supply all the workers at the factory, because you would require 800 or 900 houses. We have 300 houses built at Dacey so far. Although there was no power in the Housing Act to make Dacey a working man's village, it has passed out that way. No doubt if a person bought a house in one of these villages he would want to sell at the capitalized value of 35s. a week if he could get it, because that is human nature; but that tendency is checked in Germany by the proviso that they have to sell back to the authority at the price they paid for the house plus the value of any improvements they have made themselves. They are not allowed to make a profit out of the transaction.

219. *To Senator Needham.*—I do not say that we have found semi-detached houses unsuitable at Dacey, but we have tried to realize the ideal of the town planner by providing a separate house for each family, and for that purpose we are now building single houses only. For family life you should have two bedrooms. We try to accommodate the houses to the climate. If a man has five children, you try to give him a house with three bedrooms. If there is only a man and his wife, and there is no prospect of children, one bedroom would be sufficient, but for ordinary family life you must have two bedrooms at least. We do not supply a hot-water service. I would not like to give advice on the question of providing a hot-water supply

at Lithgow. It is a matter of cost, and all additional cost has to be added to the rent. Every additional £20 or £30 in the cost of construction puts about £10 or £15 on to the rent at Dacey. I do not think it would be worth the extra cost from a hygienic point of view to supply a hot-water service. It is not like a hospital. In our case the electric light is put on when the house is built. We put on the gas also, and put in a pipe for a gas stove, and the tenant can bring in his own gas stove if he wants it. We find there is a shortage of building material, and prices are very high. I would not like to say whether the high cost is due only to the war or to some other influence. The increased cost of labour must increase the cost of material, but there are other features which I suspect, but I should not like to express an opinion about them. There is a great shortage of roofing material, and in Sydney generally there is a dearth of workmen's houses. Hardly any have been built in the last two years, and the problem is becoming serious. The price of bricks has not been exploited because of the war. They are about the same price now as when the Combine raised the price to £3 per 1,000. It costs us about £3 per 1,000 on the ground to get bricks from the State Brick Factory.

220. *To Mr. Laird Smith.*—We ought to evolve an Australian house suitable to the Australian climate. We have tried that at Dacey, especially in the sleeping-out verandahs. I cannot express an opinion on the question of large or small windows, but the main consideration in modern life is the convenience of opening windows so as to thoroughly air the dwelling. Nominally we pay the rates and taxes, but we make the rent cover them, so that practically the leaseholder pays them. The question of whether a man really owns the land when the State has power to impose a land tax is one which I will leave the political economists to answer. I believe in wide verandahs, even if they mean a little more expense. In plan B1, as shown to me, it appears that the front entrance is through the verandah, and therefore that verandah could not be used for sleeping purposes. The verandah in B1 would in our scheme be regarded as economic waste. In our suburb we have the main hall entrance separate from the verandah, and the verandah is bricked up to about 4 feet in height so as to make it suitable for a sleeping apartment. I have no objection to the water-closet being in the bathroom. We investigated complaints that in some of the smaller houses the water-closet in the bathroom was too near the living room, but we found that there was not much ground for them. We have had no serious complaints about the copper being in the kitchen. I would favour that in the smaller houses, to save space and cost. If the manager of the Small Arms Factory at Lithgow states that last year he had to employ 700 more men than he really wanted, through men leaving the district because they were unable to get homes, and that this represented a capitalized loss of £14,000 for the year, I would strongly favour the Commonwealth Government erecting homes for the workmen and letting the tenants have them at a rate which would give perhaps a lower return on the money expended in their construction. The undertaking would have to be regarded in the same way as Lever Brothers regard their Port Sunlight scheme. The money you lose in that way must be looked at as an insurance. The Government want to keep the men in the locality, and in that sense it cannot expect to make the suburb a business proposition. It would pay the Government if it could make it a business proposition straight out, but if it could not, it should not hesitate to write off, say, £10,000 or £20,000 a year as an insurance for the purpose of keeping the wheels of the factory going. Lever Brothers have one of the most beautiful garden cities

in the world. The firm loses £25,000 a year in running it. They give cheap rents and conveniences, and Lord Leverhulme told me in Sydney that they do not hesitate to write off £45,000 a year, because they regard it as an insurance fund against disaffection, unemployment, and "going slow" tactics. The men are contented and the women are happier. There is a home atmosphere that makes the men satisfied, and therefore they do not strike. This is apart from the profit-sharing principle altogether. A workman is much more contented if he knows that his wife and children are in happy and healthy surroundings. Possibly people other than workers who could not get these dwellings might be discontented, but that cannot be helped. Perhaps it would be a very good thing. I have been trying for about twenty-eight years to make the workers of Australia discontented with their present housing conditions. The figures I gave as to the cost per week of rent and rent-purchase were approximate. The purchaser would nominally have to pay less per week for his house, but he would have to pay rates and insurance, and so on, and I do not suppose he would be much better off except that he was gradually becoming the possessor of the freehold, which is a distinct advantage. I do not know whether the Commonwealth could clog a man's freehold to the extent of stipulating that a purchaser of a house must keep it in good repair; but, of course, the Commonwealth could pass a law making any condition it liked. In England they have the co-partnership tenancy, which is a very good scheme. Instead of selling to one individual, they sell to a group of, say, 100, and the committee of that group make their own conditions. They choose their own members, and any one who offends against the communal sentiment or discipline of the group is turned out by the group. If a man allows his house to fall into disrepair, the group round him that he is not the sole owner, but that the whole group is the owner, and that he must bring it into repair or go out. Under the conditions at Lithgow, with a supply of electric power at the Factory, the electric lighting scheme would be better than gas lighting. But you must have both gas and electric light service in case anything goes wrong with the electric light, and in case gas is required for cooking. Coal may be cheap at Lithgow, but the gas is from 6s. to 7s. per 1,000 feet.

221. *To Mr. Mathews.*—I do not think the Lithgow Council is making much out of the gas there.

222. *To Mr. Sinclair.*—The newly-established Board of Trade in New South Wales is engaged in considering the question of the housing of coal miners on the South Coast. The Government have been making inquiries into the housing conditions in and around Sydney and suburbs, and have practically come to a decision with regard to the housing of the working classes in the metropolitan area and the Newcastle area, but I cannot tell you what the decision is. The Dacey Garden settlement has not solved the problem in a general way. We have only 300 houses there, but it is useful as an object-lesson. I do not think one effect of the scheme has been to check the construction of workmen's houses by private enterprise. All sorts of reasons are given for the checking of the building of workmen's houses. Some allege that the fixing of rents by the Fair Rent Court has been one of the reasons. I will not express an opinion either way. There has been an immense rise in the cost of building material, and it pays architects and builders to undertake the construction of bigger-priced houses. A great number of workmen's cottages are being built and sold at Newcastle by private enterprise, though nothing like the number required. I do not think the scheme at Dacey has reduced rents outside the area. The general effect of the scheme on the housing problem has been that the private speculator has studied the buildings and the conditions,

and has endeavoured to copy them. The same result was noticeable in England. It should be remembered that Mr. Richard Stanton built a model village at Ilberfeld 30 years before Dacey Garden suburb was built. That is a splendid scheme, but it is for people with good salaries. The latest report of the Auditor-General of New South Wales on State enterprises gives all the information about the working of the State Brick Works. It shows that they have not been such a failure as the public imagines.

Major Alexander James Gibson, Acting Chief Engineer for the Commonwealth Arsenal, sworn and examined.

223. *To the Chairman.*—The Defence Department has received a memorandum from your committee asking for certain particulars. The first question is, "What is the policy of the Department as to the retention of the Lithgow works on the completion of the Arsenal?" The answer is: The policy at present is that a certain portion of the machinery now in use will be transferred to the Arsenal as soon as we can get accommodation for it. But the original machinery will certainly not be transferred during the war, and the Minister has decided that before the original machinery is transferred the matter will be referred to Parliament. The second question is, "What is the nature of the work which will be carried on at Lithgow after the completion of the Arsenal?" The answer is: That, of course, is, to some extent, dependent on the policy. I can give the Committee my personal opinion as to what will happen there. The Factory at Lithgow is a fine one, and will be used either for making rifles or the components of rifles, for certainly six, seven, or eight years. You can take it that there will be practically no disturbance of that Factory for that period, and by that time it will be so much a fundamental part of the Arsenal that I think it will stay there indefinitely. The third question is, "What is the number of employees who, it is anticipated, may be profitably employed at Lithgow after the completion of the Arsenal?" Again, looking at it purely as a manufacturing proposition, and using the Factory for what we call minor components, there will be certainly 500 men employed there on our present programme. It is very hard for me to separate the departmental view from my own opinion. My own opinion is that we shall certainly employ, for the next eight years, 600 men at Lithgow. When the plant which it is intended to remove to Tuggerahong has been taken away from Lithgow, the output from Lithgow will be only about one-third to one-half of what it is at present. That will bring the labour down very nearly proportionately. The fourth question is, "When is it anticipated that the Arsenal will be so far advanced as to be able to manufacture small arms?" The answer is: That it depends entirely upon the vim with which the question is tackled. I anticipate being able to produce small arms at Tuggerahong within four years. I expect to begin to remove the machinery from Lithgow within two years.

224. *To Mr. Laird Smith.*—I do not intend to remove all the machinery.

225. *To the Chairman.*—The duplicate machinery that we have at present in use at Lithgow will be removed first. When that machinery is removed it will be possible to make a complete rifle at Lithgow, but not advisable. The installation of the machinery at Tuggerahong will begin in two years' time, but as that has to be done without unduly interfering with the output of rifles, the removal will have to be carefully spread over a considerable period. It is certain that no new machinery will be got at the present time. I agree with Mr. Ratchiff's evidence that "The Government will be able to profitably utilize the Lithgow Factory indefinitely for the manufacture of munitions." I also

agree with his statement that "Such a variety of parts will have to be made at the Arsenal that all the manufacturing facilities of the country will be required to meet future requirements, and I feel certain that the Commonwealth Factory will be a valuable asset to the Lithgow works for a good many years." With regard to his statement that "the number of men employed at this Arsenal will never be less than 1,000, even after the Arsenal is established and in full operation," I should say it will never be less than 500, and will vary between 500 and 1,000. With ordinary peace requirements, and the demand going up and down according to the requirements of the Government, I should not like to fix the number of workmen at 1,000. When the Arsenal is completed, there will still be the necessity for the Factory at Lithgow for making the component parts of rifles and other small manufactures. There are a thousand and one things in connexion with trench warfare material which have not yet been considered as part of the output of the Arsenal, in connexion with military requirements.

226. *To Mr. Mathews.*—I am not a military engineer. I am an engineer, and have the rank of major.

227. *To Mr. Sinclair.*—The Government could put 100 houses up at Lithgow as soon as they liked without taking any risk. That is looking at it from a purely manufacturing standpoint. The works at Lithgow will quite warrant an expenditure of from £20,000 to £70,000 for that purpose. Even if the Government gave up that Factory it would be a good business proposition to take it up and carry on the manufacture of some other lines. It is a good commercial undertaking to put the houses there, seeing that the Factory is there and that the steel industry is established at Lithgow. I do not think the Factory at Lithgow can be regarded as only a temporary proposition. From the point of view of reserves for the Commonwealth, my personal feeling is that the Factory should be kept going. Its relation to the steel industry in the town makes it a proper thing to keep that Factory in being, because in time of war it would be a tremendous asset. The expenditure of £70,000 on the housing scheme is quite warranted. It does not strike me as being a very big proposition as an ordinary business risk. I cannot see where the difficulty comes in about building 100 houses at Lithgow. There is a Factory employing, roughly, 1,000 men, and required certainly for six, seven, or eight years, and, assuming that everything went as well as it possibly could go, there would be no question of removing that Factory within that time, quite apart from any Government policy. That is quite a length of time for a Factory. The question of dismantling the Factory would have to be referred to Parliament, and my personal opinion is that the Factory will be needed. As a manufacturing proposition, I should have no objection to running the Factory as subsidiary to the Arsenal, and would be glad to have it there.

228. *To Senator Needham.*—I am only able to state the departmental policy on this question during the currency of the war. Even if the war ended to-morrow the houses would still be wanted at Lithgow, and they will be wanted certainly for eight years, quite irrespective of Government policy. I shall not be running the Arsenal, but, if I were, I should not have the Lithgow Factory broken up. It is too big an asset from the point of view of our war-time necessities. I am looking at it purely as a manufacturer.

229. *To Mr. Laird Smith.*—I am only an officer of the Defence Department in so far as I have been called up and detailed for the particular duty on which I am engaged. I have not been taken into the confidence of the Minister on the question of policy, and I am looking at the Lithgow Factory simply as a subsidiary Factory to the Arsenal. The only factory I know of at Randwick under Government control is the Shaw-Wireless

Factory, taken over by the Navy, but it is quite unsuitable for rifles. As an ordinary business proposition, if I were handling this matter as an outsider, and had a difficulty in getting labour properly settled round the Factory, I should put the houses up. In fact, I would not start the Factory unless I had the accommodation ready, so that I might be sure of getting the proper class of labour. Once you have the houses and the labour there, it will tie the Factory there, and there is no reason why it should not be tied there.

Percy Thomas Owen, Director-General of Works, Department of Works and Railways, recalled and further examined.

230. *To the Chairman.*—I have been informed with respect to the claim of an adjoining property-owner upon the Commonwealth for a share of the cost of the making a road, and also in connexion with a drain which carries storm water down to the creek. I was aware that there was a 2-foot reservation there. Mr. Goodwin told me that he thought there would be a claim. I believe he said that for the 2-feet there would be an amount of about £110 claimed. Viewing the whole circumstances, and having regard to the fact that the Commonwealth will be responsible for the cost of the main services, both sewer and water, and not forgetting that the establishment of a park should add to the value of the property generally, I would say that, as a matter of equity, the owner of the property in question will get more benefit by the very fact that there will be a park in his neighbourhood, which will naturally improve the value of the lots opposite. As to the cost of the services—the connexions with the main sewer and the water system—my suggestion to the Minister (Mr. Groom) was that the Commonwealth could not reasonably bear the whole of the cost. I pointed out that there would be a value to the adjoining properties as the result of both the services, and my suggestion to Mr. Groom was that the Commonwealth should not pay more than half the cost. Half the value of the sewer and the water mains will accrue to the properties which they traverse. As to the small piece of land connected with the college property, Mr. Goodwin pointed out that to secure proper access to the subdivision at the south-west corner, resumption should be made of a small triangular piece of ground. If that were resumed it would be of value to private people also. For the general utility of the subdivision, a junction on to the main road is more highly essential. As a matter of fact, it would be more traffic facility for people coming from the south-west into Lithgow. It is questionable whether having such a close connecting access as to make it a main avenue of traffic is advisable. As to the amount of accommodation required, I have no further knowledge than that expressed by the two deputations which waited on the Hon. Mr. Cook, when it was stated that 200 men will not obtain accommodation, that 200 men will require cottages, and that at least 100 of the employees would want them straightaway. One hundred and ten allotments are allowed on the plan for the first development, allowing for ten which would be built upon by the employees who would purchase a lot and put up their own houses. That would be ten over and above the 100 within the scope of the scheme. I do not think that the present basis of rating, we could reasonably ask the Lithgow Council to do the work to which you have referred, on the basis of what we would be able to pay in the way of rates only. It would not be financial time on the part of the Lithgow Council to go in for that. I understand that the Committee puts the suggestion for my consideration, namely, whether I think it would be a better scheme to go to the Lithgow Council and say that if the Government were to lend the council the money for the laying of the mains and for the connecting with the sewer, then, as occupancy makes the sewer and water supply payable for the time being for the estate to be charged with the interest; and, as the area begins to be

interest charged, and because of the capital amount involved in connecting with the mains. On the other hand, it is unfair that the Commonwealth should bear the whole of the cost of that sewer, whereas the occupants on the land along the side of the sewer and of the water mains would also derive benefit. I suggest that if the Commonwealth paid half the cost from its boundary to the main sewer, and half the cost from its boundary to the water main, that would be a reasonable thing—assuming that it has to pay at all. If it is to be a sewer, it must be connected with the water mains within the area. The general rate would then be the same. These arrangements would only be for water and sewerage. I am asked if it would not be more business-like to lend to the Lithgow municipality the money necessary to carry out the whole of the main laying, both sewerage and water, and for the Commonwealth to bear the whole of the interest charges, less rates collected, both within our own area and in the other area concerned. As to that, I repeat that the rate charged would have to be the same. Therefore, before the property could be sold, the rate would have to be covered by rates; and the capital cost would have to be covered by rates; and I am afraid that the rating would only pay for interest on the reticulation. At any rate, I think it is a business arrangement that the Department might be able to come to with the municipality. And I think it will eventually come to a question of policy with the Government—having in view the operation of the Factory—as to whether the Government will fund it. I will, of course, concur with the suggestion that the Commonwealth should be responsible to the ratepayers that it would be done as economically as possible. The Department would be in touch with Mr. de Burgh, and will be assured that the money is not wasted so far as the laying of the mains is concerned. I am informed that plans have been submitted to the Committee of typical dwellings at Daceyville, and that a house containing two bedrooms, a living room, and a kitchen and laundry combined, with all general conveniences, cost £100. In respect to the amount of rental which a workman should be able to pay in proportion to his wages, I hold that a man should not have to pay more than one-fifth. The only recorded exception to that, from a business point of view, so far as I am aware, is in America, where, in respect to a certain proposition, it is held that if a man gets £10 a week he should be able to pay £10 a month by way of rent. That is the basis of one-fourth. My own opinion is that it should be one-fifth. I agree that the minimum houses should contain two bedrooms, a bathroom, a kitchen and living room. That is what has been aimed at in the designs submitted. I am aware that in connexion with the Daceyville homes Mr. Eggitt believes in a kitchen-laundry. I am strongly adverse to that. It would be a great mistake to include it in the Lithgow constructions. The kitchen should be a place where the occupants can have their meals in comfort. If the kitchen were combined with a laundry, the desirable degree of cleanliness would be available, at any rate, on washing day—when with the washing in the room, so to speak, generally of wet clothing being in the room, where meals are partaken of. The ideal in such little homes is that the kitchen should be also a living room. As to the heating of these rooms for living purposes, I think that the cooking of the evening meal would comfortably heat up the room. The stores against the fireplace, I believe, are the Dorset. There are freplace stoves, and the stoves would be set in the wall. The stove gives a large amount of heat, and it is not suggested that the freplace should be turned on one. As to the estimated cost, generally, I did not wish to place before the Committee a cost which had been put down to an absolute minimum upon which the work might not possibly be done. Rather, it is possible that

tion of kitchen and laundry. I do not think it is very reasonable for the Lithgow Council to charge for the main drain. That deals with the surface water. This may be slightly increased as the result of the construction of a number of roofs in that neighbourhood, which would give a bigger run-off; but practically the same amount of water runs off the area now as will be the case when it is occupied. It will not much alter the quantity. If the matter were left to me, I would not combat the payment to the council for anything for that drain. As to the cost of the main drain, I would not make the council pay anything for it. I am inclined to say that if a claim were made the Commonwealth has very strong powers. If it requires land it can compulsorily acquire it. Of course, there is the question whether the cost of legal procedure would not be greater than the land is worth. The contour of the country at that particular point shows that the gradient, if we were to go in for an alteration of the road, would be probably on the level. That is rather steep, especially for a main drain. Then again, it is possible that the council might not accept the proposed alteration. I think the council would have the key to the position there. I do not think the main road to the west, through the subdivision, will be used as a main traffic road, at any rate unless the municipal council should make good the portion running through the Cooverool Estate; and I do not think the council is likely to do that.

232. To Mr. Sinclair.—I recall that I reported to the Minister, with respect to this scheme, on 14th March, 1916, and that I indicated my opinion that the establishment of a main drain at Lithgow would be costly and would not be very good. In 1915 I had in mind a suburb between the existing factory and Lithgow. That may have emanated from the first scheme prepared years ago. Mr. Scrivener and I looked into the matter and went into the question of the land available in the vicinity for cutting up into a subdivision. I had in mind a settlement of the men between the factory and Lithgow. I may have been wrong, but I thought that to make a small settlement it should be planned so that the houses would be close to the factory and the men would take the employees as far away as we are proposing to do now would not meet with popular approval. There were certain allotments left vacant, and I thought that the tendency of the workmen would be to go to closer into Lithgow rather than to go out a further half-mile. I cannot say what the cost of the whole project would be, more than what is contained in the estimate which I have just presented. Committee, namely, £58,511, that is, water supply, sewerage, water supply and sewerage, and water supply and sewerage. The water and sewerage, according to Mr. de Burgh, would roughly account for £3,400; but I believe his first estimate has been slightly increased. As to the whole scheme of housing, in addition to the cost of the houses there must be included for each home a total of £304 for storm water connections; £1,000—or a portion of it—for sewerage connections; and £1,600 for water supply connections. The £58,511 includes all those services, but the cost of electricity, as estimated, makes no allowance for that. I have added the cost of the whole scheme is £58,011 if you add the cost of water supply and sewerage mains. But the cost to be defrayed by the Commonwealth Government is £58,511. That includes all the services within the boundary, except the main sewers and the water supply mains. It includes the connections and reticulation. Beyond the £58,511, the cost of construction would be the water and sewerage mains inside and outside; and, as I have indicated, according to Mr. de Burgh, the amount of electricity. I have not included that, but am surrounded in the estimates at all. Gas fittings for the houses have been embraced, but the cost of gas mains has not been submitted as a charge against the Commonwealth Government. The total which I have given you



is just upon £69,000. I am asked whether, as a result of what I may know regarding the probable stability of the factory as a Government concern, the Committee would be warranted in recommending this expenditure of £69,000 to house 100 workmen? I submit that that is a question which is really not within my province. I am asked only to say what the scheme would cost. It did not emanate from me, and I submit that it is entirely a matter of policy. I am aware that one of the reasons why there has been a shortage of accommodation in the town of Lithgow is that the public have a suspicion that the factory may not be permanent. That has been put forward as an explanation, at any rate, why the erection of houses by private individuals for the tenancy of workmen has not been gone on with. As to the question whether, if it is not considered a good private speculation it may not also be a good Government speculation to build these houses, I think the security of the factory has been affected by the decision which the Government have given that they will continue the factory at Lithgow. I have experienced extremes of climate at Lithgow. I have been there both when it has been very hot and very cold. But I have not been in residence for any continuous length of time. As to whether the extreme cold may militate against good work in that vicinity, I am aware that it is, of course, a disadvantage, but it is one which applies to all cold countries. I am asked if it would be much more expensive to place a separate fireplace in the kitchens in view of the fact that they are to be considered as living rooms; that is, that there should be accommodation both for a cooking stove and for a fireplace. I can only say that I do not think it would be necessary. The cooking for the evening meal provides a good deal of radiation, and I think the room would be easily kept warm for the evening, during which the kitchen would be used as a living room. I have not put any value upon the mineral rights of the area. On the question of land values I was not much concerned, and had little to do with it. I am asked to consider whether if it were proved that the coal seams running under the property were likely to be a distinct asset, it would be a fair thing to put that down as a set-off against the cost of the housing scheme, so that the rents might be reduced a little. I can only say that I am ignorant as to whether it would be a working proposition to win the coal from that area. I do not know the depth at which the seams may run under the property. I presume that it would be all right to work sufficiently low under the area where the Lithgow Small Arms Factory is situated. But I really have no information, and would not care to make an authoritative statement.

233. To Senator Needham.—I would not recommend the erection of more than the hundred houses on a scheme until the absolute pressing necessity for further housing accommodation was made clear. If the evidence indicated the need for 150 houses, I am fully aware that it would be economical to build the greater number of houses. But I think that even so, I would advise the Minister to start off with the first hundred houses in groups of thirty, and to see how he got on with them, and then, if desirable, to go in for, say, another fifty. As to the inclusion of hot water services in the bathrooms of the houses, that is a matter of extra cost. Every cost that adds £5 to each home would mean £500 upon the whole scheme. I cannot give an immediate estimate of the cost of providing hot water services. I will present it to the Committee at a later stage. I recall that in giving evidence on the 18th June, I stated that definite pronouncement had been made by the Government with respect to the retention of the Small Arms Factory at Lithgow. That pronouncement was to the effect that the Factory would be definitely retained at Lithgow, and I took that as the basis of the whole proposition, because if there were

any doubt in that respect it would be absurd to go on with the scheme. I understand that to be the definite intention of the Government. I will endeavour to secure the exact wording of the pronouncement of the Government as to the retention of the Small Arms Factory at Lithgow, and will furnish it to the Committee; also an estimate for a separate hot water service.

234. To Mr. Laird Smith.—As to the lighting of the cottages, electricity would be preferable. It is only a question whether in normal peace times they would continue to run three shifts in the Factory—a matter which would affect the supply of electric current. The amount of current that would be consumed to run an all-night shift might become fairly expensive. I prefer the electric light for domestic use, provided it is within reasonable cost of the gas. There is one reservation, however, and that is that I think that for the small household where an early meal has to be provided each day, the gas stove becomes a desideratum. There is also something in favour of the cleanliness of the gas stove as against the wood. In respect to further clearing the cost of these constructions, there must be remembered the danger of adding at the same time to the cost of maintenance. Materials of construction might be introduced—for instance, the use of fibro-cement in portions of the structures where it would become broken. That would make an extra cost upon maintenance. Anything approaching jerry-building, of course, would increase the cost of maintenance. In making that remark, and having in mind the lower price of construction at Daceyville, I do not for a moment suggest that there has been jerry-building there. In connexion with the various costs mentioned in laying out the subdivision, if we obtain a better subdivision of the land at a slightly added cost, the difference would be really neither more nor less. In making that remark, and having in mind the estimates of the buildings the cost of fencing, of the water main running into the building, and of the sewer running out of the building—a total cost of £57 15s. on each house—has not been included. As a fact, it would only be fair that those items should have been included as part of the whole cost. I should add, however, that they were kept as a communal charge since it was impossible to give the details. It could only be averaged up. Of course, all these costs represented by the amount of £57 15s. must be considered as additional items, and would have to be considered by a person making a private purchase of a home, or privately building. But I have taken account of those costs in estimating the rentals. After all, estimating is only estimating. The real point is, is the house as economical as we can make it, and that is a matter, as I have indicated, which will be further gone into.

236. To Mr. Laird Smith.—I understand that there is a patent for constructing concrete buildings in Tasmania, and that a diagram has been submitted to the Committee. I have not seen it, but I think it is a good one. I have seen similar schemes, however, and am familiar with the general methods. It is a system which can be applied to the Lithgow cottages, as designed. I might remark in this connexion that I have put in a report as Chairman of a Committee connected with the Department of Repatriation. We had to go into the question of economies to be effected by concrete construction. I do not know whether the report has been approved by the Minister for Repatriation, but I think I am free to state that the conclusion to which we came was that where you have ten or fifteen cottages to erect at one time, in one place, the economies which may be effected—subject to the price of materials being close to normal in respect both to concrete and to bricks—may be up to 15 per cent. in walling. But we made it clear that the cost of material is fundamental, and that if bricks are cheap and if sand or aggregate is dear, then concrete would not do. If you have contractors who are used to handling concrete they will be able to erect at a low cost with that material

at Lithgow. There is, for instance, a Mr. Marchant, of Adelaide, whose principles of concrete construction impressed our Committee very much. He said he could effect a 15 per cent. saving, and I think it possible that he could do so.

(Taken at Melbourne.)

SATURDAY, 20TH JULY, 1918.

Present:

Mr. GRUBBY, Chairman;

Senator Henderson,

Mr. Mathews,

Senator Needham,

Mr. Sinclair,

Mr. Mahony,

Mr. Laird Smith.

Alexander George Quibell, Quantity Surveyor, Department of Works and Railways, recalled and further examined.

237. To the Chairman.—I have had an opportunity since I was previously before the Committee of examining the plans submitted by Mr. Foggitt; and I have seen a list of the prices at which he estimates he can get his work completed. I have also examined a list of the prices obtained by Mr. Oakeshott at Lithgow in connexion with timber and brick. Upon the latter prices, especially in regard to timber, I have been able to effect a slight reduction in the departmental estimate of the cost of erecting houses for workmen at Lithgow. But I have not been influenced by Mr. Foggitt's figures in that connexion. Mr. Oakeshott estimates the cost of hardwood locally at 10s. per 100 feet super, or 20s. per 100 feet super on the job. I had estimated it at 27s. 6d. per 100 feet super. It will be seen, therefore, that a saving of 6s. 6d. per 100 feet super can be effected there. I have gone into the question of the saving which might be made in the case of class A detached house and class B house, and I find that upon a hundred houses it represents £371 15s. The cost of bricks forbids a bigger saving being effected. The two prices for bricks supplied by Mr. Oakeshott were 55s. per 1,000 and 47s. 6d. per 1,000. I took the quotation of 47s. 6d. per 1,000, and added to it 10s. per 1,000 for cartage. Apparently, that was not sufficient. Mr. Oakeshott says that the cartage amounts to 15s. per 1,000. I am not aware that the 55s. per 1,000 brick is much larger than the ordinary brick. I think I would be quite safe in accepting the price of bricks at 47s. 6d. per 1,000 and allowing 16s. per 1,000 for cartage. This would increase the price of my estimate for brickwork somewhat. Mr. Foggitt sets down the price for plaster ceilings at 1s. 9d. per square yard. He says that he is getting his work done for that amount. I do not think it is possible for him to do so unless he secures his laths at a very low rate. I have here an estimate which I have prepared per 100 yards of lath and plaster and set ceilings. For this work, twenty bundles of hardwood laths would be required at 4s. 6d. per bundle, or £4 10s. in all. Then there would be 8 lbs. of lath nails at 9d., or 8s.; 3 yards of sand at 6s. per yard, 18s.; half-ton of lime, £1 2s. 6d.; 12 lbs. of putty at 3d. per lb., 3s.; plaster £1 2s. 6d.; and labour, 42 hours at 3s. 3d. per hour, £6 13s. 6d.; use of scaffolding, 3s. 9d.; a total of £13 19s. 3d.; plus 12s. per cent., or £1 14s. 11d.; an aggregate of £15 14s. 8d. This sum divided by 100 works out at 3s. 3d. per yard.

238. To Mr. Laird Smith.—I consider that a mixture of three or four of sand to one of lime would be sufficiently weak. Of course, Mr. Foggitt may use seven or eight, or even nine or ten, of sand to one of lime. I cannot say. But with the plaster for which I have allowed, when the lime is slack it would be in I have allowed, when the lime is slack it would be in the proportion of four to one. The labour employed would represent 1s. 6d. per yard.

239. To the Chairman.—Mr. Foggitt quotes 1s. 9d. per yard for the job completed. As a matter of fact, it will cost him 6d. per yard to put the laths up. In my opinion, the work cannot be done at the price he has submitted. The net result of my analysis of the figures supplied by Mr. Oakeshott is a saving of £371 15s. upon 100 houses. The use of asbestos flooring boards would not effect a reduction in my estimate of cost. I have knocked out all the Oregon and substituted coachwood for the beams. All the architraves, picture rails, &c., would be in coachwood. A slight saving might be made by dropping the roof in the kitchen of these houses for the carrying down of the gable, so as to cut off a portion of the room. But that point has been taken into consideration in our own plans, as will be seen by reference to plan A2. Then we have provided for a fireplace in each room. On the other hand, a sum of £57 10s. would have to be added to the cost of every one of our houses for bringing the water into them and taking the sewerage out. These services have been included in the price submitted by Mr. Foggitt, as have also the gas and electric lighting services. He is, therefore, supplying £60 or £70 more value in respect of each dwelling at £100 less than the departmental price. I cannot presume to know how other people manage their businesses, but from my experience I do not think it is possible to erect a building at that price unless supervision under Government inspectors is to be abolished. A rough estimate of the cost of houses planned by Mr. Isley, architect, of Lithgow, is £350. I know that he claims to have erected that type of house there for £325, but that was some time ago. I know, too, that his price included the cost of a water supply and sewerage. I will show his plans to Mr. Murdoch, and point out to him that in every instance, and they include the cost of sewerage water supply, and electric light. When our estimates were being prepared, I wrote to Mr. Oakeshott, through Colonel Owen, asking for prices of the leading items of material, and I received them. I should not attempt to make a big estimate without resorting to that course. In addition to that, I had the New South Wales Government schedule before me, and I also had prices which are sent to me periodically from Sydney. These prices would be somewhere in the region of the Lithgow prices.

240. To Mr. Sinclair.—It would not cost much more to put in a 4-in. pipe in connexion with the water supply than to install a 4-in. pipe. I have allowed for a 4-in. rivetulation through the houses, with 4-in. branches to valves. I will discuss with Mr. Murdoch the question of whether we could not install 3-in. connexions for bath purposes. The 18 feet extra vent-pipe for sewerage purposes, which I have estimated at 2s. per foot, is a galvanized-iron pipe. In nearly every instance the down-pipes are galvanized sheeting. Of course, my estimate of 2s. per foot included the cost of painting. The prime cost of the pipe itself would be 11d. per foot. If we substituted a different gauge of pipe, the saving effected would be infinitesimal. It must be remembered that galvanized iron costs two and a half times as much as it did prior to the war. In fact, the latest quotation for it in Sydney is £71 or £72 per ton. I have to estimate for contingencies like that. I do not know whether the cost will continue to rise. I scarcely think that it will. I will compare the Esk Bank bricks with the Lithgow Valley bricks with a view to determining which is the cheaper brick of the two. Firebricks, which are 10 inches long, require more handling than the ordinary bricks. From that standpoint, the smaller brick might be just as economical as a larger one. The Melbourne size of bricks is 9 inches x 4½ inches x 3 inches. My estimate of the brickwork is based upon a man laying 62½ bricks a brickwork is based upon a man laying 62½ bricks a day. Probably the men will not average that. The average bricklayer belongs to a trade union, and I



believe that his limit is 400 bricks per day. Apart from that, I think that, in connexion with small work like this, it would be difficult for him to lay more than 400 or 450 bricks per day. I do not care to say that my estimate was therefore about 50 per cent. too low. One must be guided by past experience. Upon piece-work it is quite possible for men to lay 600 bricks per day. Indeed, it is said that some have laid 1,200 bricks per day. Certainly, I have not seen them do it. I have seen illustrations of cement baths, but I do not know that this type of bath has been largely used. However, it seems to me to be one of those things which only require to be placed upon the market to be taken up. I have seen cement tubs at 45s. per pair. It would be a good thing to suggest the manufacture of cement baths to the makers of these tubs. Certainly, they would not cost so much as would porcelain baths.

241. To Senator Needham.—A bundle of laths, I have said, will cost 4s. 6d., but I have since been informed by Mr. Laird Smith that the latest quotation for laths of Australian timber and colonial cut is 6s. 9d. per bundle. That quotation makes Mr. Foggitt's figures look worse than ever. A bundle of laths will cover from 5½ to 7 yards of a wall. The hardwood laths will cover 5½ yards per bundle, and the American Oregon about 7 yards. So that practically the cost is 1s. per yard. I estimate the cost of a hot-water boiler and supply to bath, with provision for lavatory in bathroom, at £35 11s. 6d. That estimate is made up as follows:—One lavatory complete, as C3, £4 15s.; extra length of service-pipe, 6s.; allowance for extra value of cooking stores to accommodate boiler, and extra value of setting, £4 15s.; one copper boot boiler, with flange connections for 1-in. pipes, £1 15s.; one 10-gallon copper cylinder, with three flange connections for ¾-in. and two for 1-in., £2 17s. 6d.; 20 feet run 1-in. copper pipe and return pipes, including bends, clips, joints, flow and fixing, 4s. per foot, £4; 45 feet ¾-in. ditto, at 3s. per foot, £2 15s.; 10 feet of ¾-in. copper branch-pipes and joints, 2s. per foot, £2; holes through wall and making good, 6s. 6d.; one 20-gallon galvanized-iron storage tank, with copper ball valves and overflow, and fixing and including lead safe in roof, £2 10s. 6d.; 20 feet of ¾-in. galvanized-iron supply to cistern and cylinder, 11d. per foot, 18s. 4d.; 8 feet ¾-in. ditto (copper), jointed to cylinder and turn over tank, 1s. 4d. per foot, 10s. 8d.

(Taken at Melbourne.)

MONDAY, 22ND JULY, 1918.

Present:

Mr. GREGORY, Chairman;

Senator Henderson, Mr. Mathews,  
Senator Needham, Mr. Sinclair,  
Mr. Mahony, Mr. Laird Smith.

John Smith Murdoch, Architect, Department of Works and Railways, recalled and further examined.

242. To the Chairman.—I have seen the plans of the Daceyville houses which have been erected at a cost of £300, a price which I think is highly satisfactory; but I do not know whether that includes sewerage and other services, as I have not seen the specifications, nor have I had any particulars of the material used in construction, so, to that extent, my judgment is handicapped. I have since looked into the estimates for the A1 cottages for Lithgow at £400, and think that, to provide a house of similar size and simplicity to the Daceyville property, the cost of erection at Lithgow would be about 10 per cent. more in labour; about 12 per cent. more in foundations; and I should

say at least 5 per cent. more in materials. The natural features at Lithgow will require, it is assumed, about 18 inches additional brickwork under the ground level than is shown in the plans for Daceyville. This would mean that the cubic contents of the building would be increased and the cost to about 19 per cent. extra. Owing to the probability of having to introduce skilled labour to Lithgow for the erection of the cottages, I think we must be prepared to face a considerably higher outlay in this respect. Daceyville is a highly desirable locality for workmen. The conditions at Lithgow are somewhat different, and it is not likely that we will be able to obtain local labour in sufficient quantity to do the work. The bulk of the skilled labour will have to be brought from Sydney, and this being so, it may be assumed that the labour obtainable will not be of the very best quality. Then, again, allowances, also train fares, will have to be paid to the men, so that, looking at the whole position, we may expect an increase in the cost of labour, over and above that at Daceyville, to the extent, I think, of about 10 per cent. I would not be surprised if it were as much as 15 per cent. Bricks, lime, and cement can be obtained easily enough at Lithgow, but all joinery, tiles, ironmongery, paints, and glass will have to be brought there, thus entailing charges for freight, handling, and storage, which I assume would amount to about 5 per cent. The Committee must realize, however, that an estimate is always an estimate. No two men think alike in this respect. Contractors frequently vary to a great extent. I think the increased cost of houses similar to those erected at Daceyville would be over 20 per cent. I had a look at Mr. Foggitt's plan this morning, and I think we could build houses similar to those at Daceyville for about £300, but this would not include water supply or sewerage. In our estimates these services are provided for under different headings. We provide only for the actual shelling of a house, and do not include fencing, drainage, and the other services. I want the Committee to understand, however, that though we are going to do our very best at Lithgow to provide a cheap cottage, I would not absolutely guarantee that our estimates will not be exceeded, but I think they will be somewhere within 5 per cent. of the cost. On a superficial foot basis, Mr. Isley's costs for his Lithgow houses at £235 and £230, are about 2s. per superficial foot lower than our figures. It is impossible to say just how much excavation may be necessary for every cottage proposed to be erected on the area provided. All we can do is to make an average, and on this basis we have assumed that it would be necessary to have 3 feet of underbuilding from floor level to the bottom of the foundation.

243. To Mr. Sinclair.—After my inspection of the site I was satisfied it would be necessary to excavate for an average depth of 18 inches, but I hope it may not be necessary. I understand that Mr. Isley holds the view that it is not, but if I were furnishing an estimate again, I would not like to put forward a scheme providing for less than an average excavation of 18 inches, though I hope this may not be required. The additional amount of foundation in our plans, as compared with Mr. Isley's cottages, would represent about one-half of a rod of brickwork to 1 foot of the height. We have not taken cognisance of the local building regulations, but have provided for brick and concrete work to go down to the depth considered necessary. Concrete should project 6 inches on each side of the walls, this being the accepted rule, though whether it would be necessary in every instance would depend on the nature of building to be erected. If houses are built on sand, as at Daceyville, a very small area of resistance is required in the foundations,

because sand is incompressible, and at Daceyville Mr. Foggitt simply put in brick foundations, which are adequate for that locality. I do not think the conditions at Lithgow would permit of this being done there. Mr. Isley's plan shows a depth of only 6 inches of brickwork below the ground level, whereas we have assumed it to be necessary to have an average of 18 inches, though it is impossible to say, until each building is laid out, how much excavation may be required on any particular allotment. The bearing capacity of the soil must determine the thickness of foundation. If soil is faulty, a larger area of resistance would be necessary, whereas on a hard allotment there would be no reason whatever for wide foundations, and, as at Daceyville, we could put in brickwork with two or three courses stepped out.

244. To Senator Needham.—We have furnished several plans for cottages with two bedrooms. Personally, I would prefer to start with that type of building rather than a cottage of one bedroom. The idea underlying the preparation of estimates for one-bedroom houses was to lessen the cost and to make the plan in such a form that an additional bedroom could be added subsequently, when the family occupying the house thought the additional accommodation necessary. I do not anticipate that it would be possible to get, in Lithgow, all the skilled labour required for the erection of these cottages. I assume that it will be necessary to bring bricklayers, carpenters, and other skilled workmen from Sydney, so that allowances and train fares will have to be paid. At Flinders Naval Base, I understand, a separation allowance of 2s. a day is paid, but I believe a different award operates in New South Wales. I think that cottages similar to those at Daceyville, costing £300, could be built at Lithgow for £200. I take a broad view of the whole situation, and do not think that Mr. Foggitt can build any cheaper than I can, nor do I think I can build any cheaper than he can, except that he has now probably a highly organized body of men at Daceyville, a condition which would not obtain in the same way at Lithgow at least for some time. I would welcome any comparison in costs in order to throw light on the situation.

245. To Mr. Laird Smith.—For many years we have provided for an addition of one-fifth of Portland cement in lime mortar for building construction. This increases the hydraulic qualities of the mortar immensely, and the extra cost is almost negligible. We were thinking of contracts of twenty-five houses for the Lithgow scheme in order to bring down the cost, but there may be a disposition to make the unit of contracts smaller. If contracts were let in units of twenty-five, and if all doors and windows were standardized, the joinery contractor could reduce his costs; but, on the other hand, contracts of twenty-five would probably keep out the small contractors who are content with lower returns, so the situation must be looked at from several viewpoints. I think it is a good idea to have the stoves in the kitchen raised a few inches. This would not interfere with the cost. I am satisfied that local timbers such as oakwood, would prove quite satisfactory for flooring and other purposes.

246. To Mr. Mathews.—I do not think we could expect to get all the labour locally. I do not agree with the view that it is not necessary to excavate for the foundations. The amount of underbuilding required could only be determined when each cottage is laid out. The contractor would have his price on schedule rates, and if less foundation were required for certain buildings he would be paid less; and on the other hand, if more were required he would receive more.

247. To Mr. Mahony.—If an additional room were subsequently added to a cottage built on the A1 plan, the extra cost will be about £100, probably a little less.

248. To the Chairman.—I think it is very desirable that there should be a fireplace in one bedroom. On that plan this does not involve much extra, the total additional cost being about £13. We have provided for tiled roofs throughout, but if fibrous cement tiles were available they might be utilized with advantage, though the cost would be about the same. I have seen the cement tiles made by returned soldiers. The idea to use same seems to be a very good one. It is possible that these tiles could be made on the ground, and I think their use would have a very pleasing effect. The suggestion to use cement tiles made by returned soldiers is certainly worth investigation. In our estimates we have provided for galvanized-iron baths with 22-gauge bottoms and 24-gauge sides. Mr. Foggitt's estimates for water-closets complete is less than ours, but I notice that his plumbing costs are distributed over the whole of the building, and £4 13s. for plumbing is a very low figure. So far as possible, we intend to standardize doors, windows, cupboards, and mantelpieces in order to bring down the cost of the cottages. We fully realize how desirable it is to keep the price as low as possible, and the Committee may rest assured that careful study will be given to the proposal in this respect. I am hoping that, in the event of the scheme being authorized, the actual cost will not exceed our estimate. We will do our very best to reduce the cost where possible, seeing that the rent to be charged to the occupiers will be determined by the total cost of the building.

249. To Mr. Mathews.—I am afraid it will not be possible to build cottages at a cost which, on an 8 per cent. basis, will be available to workmen at 12s. 6d. a week; but if we do not include the cost of the various services and fencing, it might be possible to build two-bedroom houses at a cost, to the workman, of something like 14s. a week.

250. To Mr. Sinclair.—If register gates were eliminated from the specifications the cost would be reduced by about 35s. per gate. It will be necessary to provide living accommodation for workmen engaged in the erection of the cottages, but I do not think that the building of a large hall, which might subsequently be used as a clubroom or mechanics' institute, would help us very much, because such a building would only house thirty or forty men, and when work is in full swing it is quite probable we shall have between 300 and 400 men engaged. It is desirable, I think, that the work should be undertaken during the summer months and finished by about May or April.

(Taken at Melbourne.)

TUESDAY, 23RD JULY, 1918.

Present:

Mr. GREGORY, Chairman;

Senator Henderson, Mr. Mathews,  
Senator Needham, Mr. Sinclair,  
Senator Newland, Mr. Laird Smith,  
Mr. Mahony.

Hugh Victor McKay, manufacturer, sworn and examined.

251. To Senator Newland.—The provision of workmen's homes is a matter to which I have given special consideration. When we removed our factory from Ballarat to Sunshine began by securing a large area which was subsequently increased to 1,250 acres for the erection of workmen's homes. A comprehensive tree-planting scheme was in the first place initiated,

and we then subdivided about 50 acres. We sold allotments with a frontage of 60 feet for £25 each, making an addition in the case of corner blocks. For larger blocks we charged more. The foremen and workmen chose their own blocks, for which some paid cash, while others paid a deposit of £5, and agreed to pay the balance by instalments of £1 per month, with interest at 5 per cent. In several cases building operations at once commenced. Those of our employees who could provide one-third of the cost of building paid the money to me, and I had houses built for them to their own plans, or to plans which we were prepared to provide, according to their wishes in the matter. We adjusted the interest at 6 per cent. until a private lender was secured to lend them the money that they required for building purposes at from 4½ to 5 per cent. They paid one-third cash, and the remaining two-thirds was secured for them in this way. The title was handed over to the mortgagee—to the private lender—and the transaction was off our hands. Where an applicant has had insufficient means I have in many cases recommended him to a building society that secured a part of my subdivision. The applicant was then dealt with on building society terms, but in all cases the work of house erection was done through my office, so that the man as well as the society could be protected. Our office attends to all the collections and repayments on behalf of the society. The system has worked very well. On my first subdivision I lost a little money, but I established the town. In the case of subsequent subdivisions, I fixed the prices of allotments at from £45 to £85 each. These prices I considered would clear the cost of the land to me, as well as the cost of water mains, amounting, say, to £1,200, road-making, and a very much larger sum in respect of other outgoings, such as tree-planting and the tending and laying out of public gardens, bowling greens, tennis court, &c. The area of the allotments varies. About twenty of my managers and foremen have blocks with a frontage of 120 feet and a depth of 336 feet. Others have a minimum frontage of 60 feet, with depths varying from 210 feet to 150 feet. I would recommend that in the case of the Lithgow housing scheme, the allotments should be 60 x 150 feet. The minimum should be 50 x 150 feet. In connexion with our scheme I have offered prizes for the best kept private gardens. In this way competition has been stimulated, and some excellent private gardens are the result. I intend to pursue this system further. The public gardens involve me in an outlay of about £1,000 a year for upkeep. The bowling green cost £1,000 or more, and we have let it at a peppercorn rental; we receive 2s. 6d. a year for it, and I pay 2s. 6d. a year for a locker. The average rental paid at Sunshine is from 14s. to 17s. 6d. per week. I do not own many houses in the settlement, for the most part they have been readily sold or bought up by employees. There is one very important matter of which the Committee ought not to lose sight. Where the houses are owned by the occupiers themselves, very little encouragement will induce the owners to make nice gardens, to plant trees, look after them, and make their homes attractive. In Sunshine they do this gardening in their spare time. They have equalled the habits and enjoy it. In some cases gardening is an acquired taste on the part of workmen, but give a man the fee-simple of his property and he will set about making it attractive. On the other hand, in the case of rented houses, particularly where a large body of men are renting premises on the same estate, there is a strong inclination to allow the gardens to become overgrown with weeds. In many instances the men do not bother about a garden. Their plea is that they are not going to do anything to improve a property belonging to some one else, and the only result of which would be an increased rental. We tried the rental scheme right out with a big block of houses, but our experience was such that we sold every one of them, with the result

that they are all well kept to-day. Their appearance is certainly very much better than it was for some years while they were rented. It might be argued that where workmen are apt to be discharged, or to leave their positions for any reason, the purchase system is bad. That, however, has never been our experience at Sunshine. Every employee who has desired to sell his house has secured a buyer at short notice, and has usually made a good profit. That applies to-day more than at any other time, for the reason that building material is dear, and that with the increase in population the price of land has gone up. Land originally sold at £25 per block has been resold at £100 per block without any improvements. Sites in the business streets, sold at the beginning at 10s. per foot, have been sold lately at £10 per foot, and are very hard to get even at that price. I present for your information pamphlets setting forth the terms given by the Ballarat Land, Mortgage, and Agency Company, which was one of the first companies to buy a considerable area of our land at Sunshine and to resell for building purposes. I also submit the terms of the Australian Deposit and Mortgage Bank, and the State Savings Bank of Victoria. The Credit Foncier system associated with the State Savings Bank has done a great deal of business at Sunshine. It has an office there, and has advanced quite a considerable sum for the erection of workmen's homes. As to the interest paid by employees on loans made to them for building purposes our present system is to charge 1 per cent. in excess of the bank rate, whatever that may be. In this way we encourage the men not to owe us money. This addition of 1 per cent. covers the cost of the Australian Deposit and Mortgage Bank, and the State Savings Bank, and to private lenders we do so. Our first subdivision was sold direct to employees after we had provided for tree planting and the laying out of water. We paid about £1,200 to secure a supply from the Metropolitan Board of Works, and we also provided for electric lighting. We have our own electric light system. In the first instance we did not add to the price charged for our blocks the whole of the cost of laying out water and light, as well as road making. At the outset we lost a little, but subsequently we put out the blocks at a higher price, sufficient to cover the proper proportion of these expenses. Very few of my employees are now paying rent to me. Ninety per cent. of our employees who reside in Sunshine own their own houses. This is a far better system than that of allowing the employer to remain the landlord, since it means better-kept houses and gardens than are seen where the occupiers are merely tenants. Tenants are advised by some people not to do anything for the landlord. We have provided for large allotments to meet the requirements of managers, foremen, and others, who have the money to spare and use these larger blocks for depasturing a cow or a horse. Our men are encouraged to keep their houses and gardens in good order by the influence of our example, as well as by offering of prizes. I am going to increase the prize system. It enhances the value of the whole of the land in the settlement, and certainly adds to its appearance. I have been at Lithgow, but not for the last five years. The country there is, I should say, better for gardening purposes than is that at Sunshine. Our land is very rich, but the clay is very stiff, and there is plenty of stone. I do not know the particular area acquired by the Government for this housing system at Lithgow. So far, we have been building houses of weatherboard, with interior walls of lath and plaster, and tile roofs, and with electric light and water service laid on. The smallest houses consist of four rooms, with bathroom, wash-house, woodshed, paling fence, back, and picket fence at front, and they cost, approximately, at the present time, £380. That is the cheapest class of house we

allow. Most of the houses at Sunshine consist of five and six rooms. For the four-roomed house costing £380 we charge 14s. 6d. per week. In the earlier days such a house could be built for much less, and could be let for 10s. per week, or perhaps less. Our rents run from 14s. to 17s. 6d. per week. The house for which 17s. 6d. per week is paid consists of five rooms, with every convenience, including a bathroom and a wash-house, with a built-in copper. We often plough up the garden after the house has been built, so as to give the incoming occupier some help in preparing his ground. We have a few brick houses. We built a brick house of six rooms, with iron roof, for £550 some little time since, when the price of iron had advanced but had not reached the present exorbitant rate. We got a return of from 7½ per cent. to 10 per cent. on the capital expended. As to the rent that should be paid by workmen in receipt of £3 per week, I think it should be about 10s. per week. I should like to visit the site at Lithgow before answering your question as to whether the Government could build there a four-roomed house which it could afford to let at 10s. per week. It might pay to provide paling roofs until iron got cheaper and could be substituted for palings. If you fully studied the conditions of the district, ascertained the materials available locally, and so forth, you would soon be able to determine the lowest rental which the Government could afford to fix. I know of rubberoid roofing. We have had a malthoid roof—a similar material—on our block of offices, which have been built some eleven years. Malthoid as a roofing keeps a house reasonably cool. I would not say that it is very much cheaper than other roofing materials. It might be cheaper to use malthoid rather than iron at the present time, but the conditions of the district ought to be thoroughly investigated before you finally decide that question.

252. *To Senator Needham.*—We have a few brick houses as well as some rough cast and concrete houses on the Sunshine Estate. Most of our men are on piece-work, and are doing very well. Labourers are getting from 10s. to 12s. per day. The minimum would be about 10s. per day. I am speaking, of course, off-hand, but could give you definite information on application at my office, as to the minimum wages earned by any of my men. There might be an odd man or two earning £3 per week or a little less. The State Wages Board award, at all events, will show you the minimum below which we do not go, and, as a matter of fact, the wages earned on piece-work are generally very much above the minimum. The smallest house we build consists of four rooms, with conveniences, I have already described, and the average size of the rooms is 12 feet by 14 feet and 12 feet by 12 feet. The minimum height of the walls is 11 feet. Many are much higher.

253. *To Senator Henderson.*—The cost of our electric light to the consumer is 9½d. per unit for lighting and 3d. per unit for power.

254. *To the Chairman.*—You tell me that the manager of the Small Arms Factory states that his loss of workmen last year, owing to insufficient housing accommodation, resulted in a loss capitalized at £14,000 a year. You state further that water mains will have to be put in at a cost of £2,560, outside the estate, and £1,000 inside. The proposition is no bigger than ours. The cost in our case to-day would be much greater. As to the estimated cost of £2,100 for a sewer main outside the area, and £2,900 for sewers within the area, a proportion of the cost of an additional septicle tank, which the engineer estimates at £760, I should think it would be worth while to consider whether a separate scheme would not be practicable. I am not an expert, but should think it would be better to have

your own separate scheme. I may be quite wrong, but the cost in respect of sewerage seems high. I would put down water mains, and then consider what would be the best and cheapest sewerage system to adopt. I would not slavishly follow the first lay-out put before me. Owners of adjacent land which will be benefited by this expenditure should have to contribute something to the cost. The Government holds the cards. Those whose land is increased in value to a substantial extent by the making of these improvements, should be expected to bear some proportion of the cost. When trying to fix rentals, I think you would be justified in considering the loss the factory made owing to its inability to retain the services of men who could not secure suitable accommodation. I should look to the future saving. The past has gone, and if by this means the factory could make a saving—if it would be benefited just as would owners of adjacent land

then the factory should bear its proportion of the burden. The Government would be justified in asking the factory to bear some small proportion of the cost of providing these increased housing facilities for workmen. You tell me that these houses are being erected only for employees of the Small Arms Factory, that some ask for tenancy, others for right of purchase, and others, again, for advances to build their own homes. I consider the Government would be justified in giving the fee-simple to workmen, subject to the condition that they should be re-saleable only to another employee or to the controlling authority. I also approve of what you describe as communal playgrounds, or reservations within reasonable distance for the convenience of employees. The fact that an employee might be dismissed or leave of his own accord should not lead to any complications in regard to the sale of one of these houses to him. Supposing you sell an employee a house that cost £480 to build. As soon as you do you have £480 with which you can go on building for the next man. I would give the workman the fee-simple clear. You could have, if you wished, the condition just mentioned, but if it were my own proposition I would do exactly as I am at Sunshine. I admit that the sale of these houses straight out to one's employees has its disadvantages. In selling as I am doing to my employees, I am not keeping in step with the Lover Brothers and others who retain ownership of their workmen's houses and reap the advantage of doing so. The conditions may be different in their case, but I trust the men.

255. *To Senator Henderson.*—We do not restrict the sale of land and houses to our employees. We sell to an employee or any one else who is not an undesirable person.

256. *To the Chairman.*—You tell me that the Daceyville Housing Board at Sydney has a provision in its governing Act prohibiting a workman from owning more than one house in the settlement. We have no such condition. We encourage our men to buy as many as they can afford to buy. If your area at Lithgow is unlimited the Government should do the same. If it is limited I should say do not let a workman own more than one house.

257. *To Senator Needham.*—The £1,000 which I pay for the upkeep of public parks and gardens at Sunshine at the present time is added to the cost of the land. After the settlement has been fully established, we shall have sold a lot of the land, and ultimately we expect this cost of upkeep will come out of the profits so made. Meantime we are taking a business risk in spending £1,000 a year, because we believe that gardens, parks, bowling greens, and so forth have an uplifting influence on the people, and make them feel more satisfied than they are when the surroundings of their homes are dull and unattractive. I am absolutely certain that those of our employees who live at Sun-

shine are very much better men than they would be if we had no such settlement scheme, and they had to travel some miles to their homes. They are more contented as the result of the agreeable surroundings provided. That is an established fact for which I can vouch.

257A. To Mr. Sinclair.—You ask whether I find an improvement in the work of the men as the result of better housing conditions at Sunshine compared with the work done by our employees when we were at Ballarat. To be perfectly frank, I must say that we had a very contented staff at Ballarat. We were free from much agitation. The men were nicely under discipline, and I believe they were better off with the minimum wage of 8s per day with a maximum of 10s or 12s per day than they are to-day. Workmen to-day get more money for their labour, but they have to pay more for their goods. These all-round increases have simply depreciated the purchasing power of the sovereign; a sovereign will buy so much less labour and so much less goods. The men at our Ballarat works were contented, and were not so subject to agitators and others as they are down here. If we go to Sunshine without providing for this settlement system, I am satisfied that the whole scheme would have collapsed. I am absolutely satisfied that our men are more content than they would be if we had our works in Melbourne, and they were living all over the metropolis. As to your question whether the Committee would be justified in recommending the Government to provide for the housing of 100 workmen and their families at a cost of about £70,000, I recognise that it is a very important one. I should like before answering it to go over the ground—to see what you would get for your money, and what extensions you would get in the future. My expenditure on this settlement is very much greater than that, but it has always been made with an eye to the future, and in the belief that some day or other it will be repaid with interest. I should say that industry will go on for some time at Lithgow, and that house property there should prove a good thing, notwithstanding that the number of employees at the Small Arms Factory is likely to diminish rather than increase owing to the establishment of a central Arsenal at Canberra. If the Government can build and sell to the employees they will be doing very well. If I intended to embark on such a scheme I should be more inclined to build where the headquarters of the industry were likely to be. As to your question whether I think the Committee would be justified in recommending the Government to spend £70,000 on this housing scheme, when the Government have in mind a reduction of the present staff to the extent of 500 men, and the establishment of a parent Arsenal at Canberra, I would ask you, "What is the alternative?" If there is an alternative, by all means consider it. You say that one alternative is not to make rifles. I, for one, would not agree with that. An expenditure of £70,000 in these times is a large one, but we are spending a lot of money on war purposes, and the recommendation of such an expenditure on this scheme might be quite justifiable. I would be more inclined to recommend it than to oppose it, but I should like to know more about the facts before expressing a definite opinion. Even if the Arsenal is to be established at Canberra, some time must necessarily be occupied in shifting this Factory, and I do not think it would be wise to shift all the machinery from the present factory buildings, which have been so well prepared for it. I should not recommend any one to turn down this scheme on the information before me, but I am prepared to admit that there is much information I do not possess, and that I am therefore not fully qualified to give a direct answer to your question. Mr. Morrell's lay-out seems to me to be an excellent one. I have no objection to the curved streets for which it provides. They mean a little more expense, but they are very desirable. These curving streets do much to relieve the

monotony of a settlement. We have provided at Sunshine for all buildings to be at least 20 feet from the road alignment. We have a business street in our lay-out. Wherever a main street is laid out provision should be made for business houses, and too many private residences should not be allowed in it. I think the Government should provide land in this settlement for places of worship. It is a wise provision to make. As to Mr. Morrell's scheme, I think it is more desirable that the main roadways should follow the natural water channels as proposed by him than that they should be placed on the high land. I think his plan is a very good one.

258. To Mr. Mahony.—You say that evidence has been given that some eight years will elapse before the Small Arms Factory can be shifted. Meantime the workmen there must be housed, and I think the Government are justified in making such provision for them. Whether £70,000 should be spent on the scheme is, however, quite another question.

259. To Mr. Laird Smith.—Cheap coal means cheap gas and cheap electric light. If gas is installed at Lithgow I would use it. If not, I would install the electric light, which is being generated in the Small Arms Factory. Our electric light system at Sunshine has been very successful. It is very convenient, but I have nothing to say against the use of gas. I approve of a variation in the architectural designs of the buildings. Nothing would look worse than a settlement consisting wholly of the same class of houses. You could standardize your houses to a very great extent, and yet have much variation. In our case, we provide washhouses, and do not put the copper in the kitchen. As to the control of the scheme, I think a Board would be desirable. My manager, Mr. Small, is responsible for the proper control of our settlement. In the case of a Government settlement, I think the Board system would be better than the appointment of a manager, and that the Committee should carefully consider how that Board should be constituted. I am quite in favour of up-to-date town planning. Your suggestion that a lump sum payment should be made to the municipality for services in bringing up the water and making provision for sewerage might be worth pursuing, but a great deal would depend upon the negotiations.

260. To Mr. Mathews.—At the outset we lost a little on our scheme, but we hope to pick it up again. I think a workman would be less likely to pay a decent price for a house if numerous conditions or restrictions were imposed. If this land at Lithgow were my property, I would do as I have done at Sunshine. I would not confine the settlement to employees of the Small Arms Factory. It would be necessary, of course, in the first place to have a sufficient area to permit of that being done; and secondly you should permit the utmost freedom of commerce possible. At Lithgow there might be a little complication, such as I have not had, arising from the presence of competitors in the market. Some time would elapse before a man could pay off his house, and be able to sell. If it were my own property, I would give him the title in fee-simple. I do not know that I would if I were acting for the Government, but I am inclined to think that I would. If the owner of one of these houses had a restricted clientele—that is to say, if he could sell only to another employee of the factory—he would be less willing to pay a decent price for it than he would be if it were free from any such encumbrance. If the Government part with the fee-simple there should be no restrictions. The more absolute you can make the title, the more money you will get, and the less you will lose. My principal reason for desiring to sell rather than to let houses at Sunshine is that when a man owns his own place he will make it more attractive

and take more interest in it than he will as a tenant. When you have a large number of men renting houses on a settlement the majority of them will not make little gardens or attend to the outside appearance of their homes unless you compel them to do so by regulation, and I fail to see how that could be done. If, on the other hand, a man owns his own house, it is possible to induce him to acquire a taste for gardening, and to improve his own property, because he knows it will not mean an increased rental. There is a great deal also in the belief that where a man owns his own house he will be more satisfied from an industrial point of view. Where you have a contented population, the workmen are less likely to be fooled. When any one comes along to fool them, they are wiser and clearer headed than others less fortunately circumstanced. You say that, "In other words—a workman is not likely to give his employer so much trouble when he is tied down in this way." I do not mean anything of the kind. What I say is that when a man owns his own house in a settlement of this kind, his head is clearer, and he is far less likely to fall a prey to the man who wants to fool him than when he lives in uncongenial surroundings. You say that when I speak of a man who wants to "fool" a workman I mean the agitator. Very well. Some little time ago we were before Sir Alexander Peacock in regard to a contemplated strike. Mr. Chris. Bennett, who was then President of the Trades Hall Council, wanted a committee to be sent round the suburbs to see the deplorable condition of some of the workers. I was speaking on the other side, and I said that we would be glad if they would come along and see the "deplorable" condition of some of the workers at Sunshine. Every one on the other side replied, "No, no. We do not want to go to Sunshine." I thought no higher compliment could have been paid our settlement. It is absolutely incorrect to say that one of the real reasons why employers establishing these settlements wish to sell outright is that they desire to have their employees tied, to a degree, so that they cannot kick over the industrial traces. I have told the Committee the real motive actuating us in desiring to sell outright to the men. We want a contented people, and an employee who buys a house at Sunshine is no more tied down industrially than you are. If he wishes to sell

his house he has merely to advise our manager, Mr. Small, of that fact. He may call at the "ag" office, and say, "I want to sell my house and land which cost me £500," and probably on the following day he will get a buyer at £550. He has absolute freedom to sell to whomsoever he pleases. Every man who builds on our settlement may do that, so that he is not tied down in any way. I do not say that I would do at Lithgow what I have done at Sunshine, where the property is his own. If I were acting for the Government, I would, no doubt, have to take into consideration many circumstances. I have, however, taken big business risks where I have had an inclination to do a certain thing, and have succeeded. Many people have desired to establish an hotel at Sunshine, and I have offered no objection. I have told men who have come to see me on the subject that I would help them to build, but that we desired a good house, and that we would not support an application for a licence for an hotel costing less than £10,000. Before very long we shall want something even better. There is a good deal of misapprehension as to the position of employers and employees. If a workman does not like a job, he leaves it, and is not obliged to answer any question as to the reason for his going. If we do not approve of a workman, we sack him, and we do not tell him why. On the other hand, if a man wants to go he can go, and, although if he is a good man we may ask why he is leaving, he need not tell us. I think the Government would be justified in undertaking expenditure on a scheme of this kind, even if it would involve some loss, provided that it would tend to a more contented body of workers. I am aware that in up-to-date town planning the front gardens are not fenced in. I approve of that system. It certainly adds very much to the appearance of a street or avenue, and means a saving of thousands of pounds. There would not have been a fence in Sunshine to-day if we had had a Parliament with sufficient backbone to pass a by-law requiring every person to keep his stock locked up, and imposing a heavy penalty where a horse, cow, or other animal is allowed to wander.

261. To Mr. Laird Smith.—At Sunshine we do not build a house consisting of less than four rooms and conveniences. I do not say that that is the best thing to do, but we certainly do not permit of a smaller house being erected.