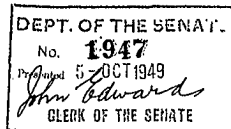


THE PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS.



R E P O R T

relating to the

proposed erection of a

WOOL TEXTILE RESEARCH LABORATORY

at

GEE LONG, VICTORIA.

For Senator Lamp -

I bring up the Report of the
Parliamentary Standing Committee on Public Works,
relating to the following work :-

Proposed erection of a Wool Textile Research
Laboratory at Geelong, Victoria -

and I move that the Report be printed.

5 OCT 1949

Passed

WOOL TEXTILE RESEARCH LABORATORY, GEELONG.

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THE PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS.

WOOL TEXTILE RESEARCH LABORATORY, GEELONG.

R E P O R T.

The Parliamentary Standing Committee on Public Works to which the House of Representatives referred for investigation and Report the question of the erection of a Laboratory Building at Geelong, Victoria, for Wool Textile Research, has the honour to report as follows :-

INTRODUCTION.

1. Following upon the passing of the Wool Use Promotion Act in 1945, the Council for Scientific and Industrial Research was given responsibility for initiating and developing research to assist the wool industry. This research falls into two main categories : biological research concerned with the actual production of wool on the sheep's back, and textile research dealing with the subsequent treatment of the wool and its textile products.

2. The Council for Scientific and Industrial Research had already in hand a considerable programme of research on the biological side, and steps have been taken to expand this still further. Some information in regard to these activities is contained in this Committee's Report on the proposed erection of a Wool Biology Laboratory at Prospect, New South Wales. Now it is desired to provide facilities at Geelong, Victoria, for the implementation of the second category of research on the wool textile side.

THE PRESENT PROPOSAL.

3. The present proposal is to erect on a site acquired at Belmont, a few miles from the centre of Geelong, a factory type structure which, temporarily, can be utilised as a multi-purpose building for all facilities required at the moment, and subsequently be embodied in a group of buildings envisaged for the ultimate development of the project.

ESTIMATED COST.

4. The estimated cost of this first building is set down at £68,500 including all contingencies but excluding the roof insulation.

ESTIMATED TIME FOR COMPLETION.

5. Upon receipt of approval it is estimated that tenders could be returned within four months, and that completion of the building would be approximately eighteen months from the date of acceptance of tender.

COMMITTEE'S INVESTIGATIONS.

6. The Committee visited Geelong, traversed the area selected, and inspected the quarters now occupied by the Commonwealth officials doing research work in portion of the Gordon Institute of Technology in that City. Evidence was taken from representatives of the Commonwealth Scientific and Industrial Research Organisation, officials of the Department of Works and Housing, and from the Managing Director of one of the Woollen Mills at Geelong as representing the textile industry.

Reasons for the Proposal.

7. The sheep industry is the backbone of our economy. A large amount of effort has been put into the production of wool in quality and quantity, but so far not a great deal in respect of the wool after it leaves the sheep. Now, through the medium of research, it will be possible to tell the grower of wool what the manufacturer of textiles wants.

8. It is considered that Australia should do everything possible in the way of research to enable wool to hold its own against synthetics, and to ensure that all by-products are utilised and the maximum value obtained from them. Our secondary industries as they are developed should be based as far as possible upon primary products, and it should be our aim, for example, to treat our sheep skins here, instead of allowing so many of them to go out of the country to be processed elsewhere, so that the wool and the pelts return to Australia in the form of fabrics and tanned leather respectively.

8. One project that has been set down for the new laboratory is an investigation into the carbonising of wool, which is concerned with the removal of burr. As far as is known the process of carbonising has not been thoroughly investigated elsewhere. Later, scouring investigations will be undertaken with a view to reducing the cost and lessening the proportion of damaged fibres.

9. Work is in progress upon the chemical nature of wool wax and the production of derivatives. The production and utilisation of wax should become a very important factor in our sheep industry as some materials that can be produced from wax are very important in pharmacy.

10. Further, a group of scientists is investigating the effect of synthetic resins upon wool fibres in an attempt to ascertain whether the incorporation of a small amount of these plastics into the fibre will reduce elasticity so that there will be a greater resistance to wear and a lessening of the tendency to shrinkage.

11. With a greater knowledge of the fibre of wool suggestions may be given to the textile industry of ways of improving its use and also how to treat the fibre chemically to enhance its properties. It may be possible to prevent shrinkage, make fabric wear longer, make it brighter, crease resisting, suitable for light-weight fabrics, etc. Then a lot more can be learned about the physical characteristics of wool. A great deal has been done upon cotton and upon synthetic fabrics but not much upon wool to learn of its elasticity, its warmth, and its physical and physiological characteristics.

12. These are a few of the investigations in prospect and other lines of inquiry may suggest themselves as these are being followed, or as problems encountered in practice by textile manufacturers are brought to the Organisation for help in their solution.

Temporary Quarters.

13. At the time of acquisition of the Belmont site it was not possible to proceed with the erection of a permanent building on the site, but steps were taken to provide temporary accommodation. Four Army huts, 80 feet by 18 feet, were procured and transferred to the site. Difficulty was experienced in obtaining a Contractor to convert these huts into laboratories and, in the meantime, the huts were damaged in a storm and one had to be dismantled.

14. Arrangements were eventually made with the Department of Works and Housing to undertake the fitting out of the remaining three huts - two of them as laboratories, and one to house a small administrative unit, library, and store, but it is not expected that the work will be completed before the end of 1949. About 4,300 square feet of space will be provided at a cost of approximately £10,000, and will house a staff of about thirty. That is to say that the accommodation which will be provided by the huts at Belmont will just about be sufficient for the present staff which will be transferred from the Gordon Institute and other centres of work.

Need for Urgency.

15. Because of the importance of the work and the responsibility imposed on the Commonwealth Scientific and Industrial Research Organisation by the Wool Use Promotion Act, it is represented to be essential that additional and more permanent accommodation should be provided as soon as possible for the greatly augmented staff which will be necessary to implement the Organisation's technical research plans. So far it has not been possible to increase staff because of lack of accommodation. At present work is being carried on under considerable disadvantage; as has been mentioned some research workers are housed in the Institute of Technology at Geelong by the courtesy of the Victorian Government; in addition, some are accommodated in the Munitions Factory at Maribyrnong and some in temporary quarters in Sydney. These workers are doing their best to improve the industry by their researches

but research is best conducted by a cohesive unit rather than by scattered groups, and they could do much better work if they had better facilities and were able to pool their ideas and work in the one building.

For this reason the Committee considers that an effort should be made to provide the building now asked for with the least possible delay.

Further Buildings Required.

16. The building asked for now is the first stage of what may later become a much bigger plan. Consideration has been given to the ultimate development of the site at Belmont and the Committee examined a sketch plan showing six more buildings that may be eventually required. It should be emphasised, however, that this is only an estimate of the possibilities, and that a final plan cannot be put forward until a later stage in the development of the programme of work.

Why Geelong was Selected.

17. Before starting on a programme of textile research the Council for Scientific and Industrial Research invited four overseas experts to visit Australia to examine the need for such work and the problems involved, and to report on the best means of undertaking research. These four advisers were Professor J.B. Speakman, Professor of Textile Technology of the University of Leeds, Mr. B.H. Wilsdon, Director of the Wool Industries Research Association, Torridon, Leeds, Dr. A.C. Goodings, Director of Textile Research, Ontario Research Foundation, Canada, and Dr. F.T. Peirce, Director of Research of the School of Textiles, North Carolina State College of Agriculture and Engineering. Each of the Advisers wrote a lengthy report setting out the lines of work which they would recommend and the means of organising such work. It was recommended that a Division of Wool Textile Research be created; this Division to have its headquarters at Geelong. The selection of Geelong was recommended, because, in the opinion of the Advisers, it was a centre of the wool textile

industry and it had the Textile College of the Gordon Institute of Technology. This textile College was rapidly building up very considerable facilities for the teaching of Textile Technology, and it was felt that the presence of a large research centre under the auspices of the Council for Scientific and Industrial Research in Geelong would mean a considerable degree of collaboration between these two bodies. This would have two desirable effects, firstly, that the textile research would profit in having contact with the industry and the facilities available, and secondly, that the more modern principles of wool textiles which were discovered in the research laboratories of the Council for Scientific and Industrial Research would be introduced into the industry through the teaching that would take place at the Textile College.

Under these circumstances the Committee considers that the selection of Geelong as the location of the laboratory is a wise one.

Site.

18. The site selected, situated at Belmont, about three miles from the centre of Geelong and comprising an area of approximately fifteen acres, was acquired on the 13th November, 1947, at a cost of £1,500. It has a north-east frontage of 420 feet 7 $\frac{1}{2}$ inches to Prince's Highway and is bounded on the north side by Henry Street, an unmade road, to an extent of 2,015 feet 5 inches, on the west by Colac Grove, for 360 feet 7 inches, and the length of the southern boundary is 1,796 feet 5 inches. The land has a good cross fall and a gradual downward slope towards Prince's Highway and is well drained. The tram terminus is within about a mile of the site and is expected to be extended to run past the site as the area is being rapidly developed as a residential district.

19. From personal observation and from the evidence received the Committee is satisfied that the area is good building land and is suitable for the purpose for which it is intended.

The Building.

20. The Committee studied the design of the building proposed, and the site plan showing the position such building will occupy in relation to the general scheme of development. This building is to measure 240 feet long by 80 feet wide and will provide an area of 19,200 square feet of floor space subdivided to provide accommodation for offices, laboratories, stores and essential associated services. It has been designed as a saw-tooth lit factory type structure in eight units or bays and is considered suitable for its present function and future use to house a pilot plant when the ultimate scheme develops.

21. The foundations are to be of concrete, the external walls of 11" brick with strengthening piers at 30 feet centres supporting the saw-tooth trusses, and the roof will be covered with corrugated cement sheets. Floors will be of concrete with granolithic finish to Boiler Room, Air-conditioning Plant Room, Switch Room, Cleaners' Room, Toilets and General Store. Workshops, degreasing and textile machinery room will be covered with bituminous felt; other floors will be finished with linoleum with felt underlay.

22. Internal subdivision generally will be of timber and glass partitions, external windows to brick walls will be of timber frame glazed with wired glass and with controlled inlet and outlet ventilators incorporated. All saw tooth lights will be glazed with wired glass: double glazed to Constant Temperature Room and Dark Room.

Engineering Services.

23. The Committee scrutinised the details of the engineering services proposed which, briefly, comprise :-

Fire and Domestic Water Supply which will be obtained from an extension of the existing 4 inch cast iron main now serving buildings on the area;

Stormwater Drainage will be necessary, involving concrete pipes and stormwater sumps;

Cylinder Gas Service. As gas is not available in the locality, reticulation of three laboratories and dark room will be installed, using compressed gas cylinders;

Extension of existing Road. It is proposed to extend the existing bitumen surfaced access road to and around the building. This road will be 20 feet wide between concrete kerbs and gutters.

Electrical Installation will provide incandescent lights in all rooms and corridors excepting in the Library and Constant Temperature and Humidity Rooms where provision has been made for fluorescent lighting. Power points will be installed where required in accordance with general practice. Supply is available from the State Electricity Commission by means of an extension of the existing reticulation of the area.

Mechanical Services cover hot water installation, central hot water heating system, air-conditioning installation, exhaust fans and fume cupboards, laboratory and dark room and a compressed air service.

Details of Estimate.

24. During examination of officials of the Department of Works and Housing it was ascertained that the estimated cost of the project was made up as follows :-

Building Engineering Services -		£43,950
General -		
Water Supply.	£1,040	
Sewerage.	1,300	
Stormwater Drainage.	1,110	
Extension of Roads	2,650	6,100
Electrical Services.		2,750
Mechanical Services -		
Hot Water Installation.	750	
Central Hot Water Heating System.	8,000	
Air-conditioning Installation	6,500	
Cylinder Gas Service.	100	
Exhaust Fans.	100	
Compressed Air Service.	250	15,700
Total	...	£68,500.

Housing of Staff.

25.

It was stated in evidence that the staff to be employed in this building would probably number about 80, and the Committee made inquiries as to what steps were being taken to obtain domestic housing for them. It was explained that a proportion of the staff will be recruited from residents of Geelong for whom no provision will be necessary, but it was admitted that the housing position in Geelong is bad and, to assist those officials who have to come from other cities Ministerial approval has been obtained to erect twelve cottages.

26.

It was at first suggested that all the houses for members of the staff should be built as a group on the site acquired at Belmont, but that would mean extending the water, sewerage, and electricity services, as well as constructing roads to the far end of the area. It is now considered preferable to build them on various sites and it is intended to invite tenders for six cottages as a first stage as soon as the sites shall have been selected and acquired.

Use of Bricks.

27.

It was stated in evidence that approximately 137,000 bricks would be used in the structure or about the number required to construct five brick houses. The opinion was expressed that this number would not seriously affect the availability of bricks in Geelong for housing purposes. Bricks for use in Geelong are imported from Melbourne or Ballarat. Cement bricks could be used but in that case the building would have to be rendered or otherwise treated and involve additional expense. Ordinary bricks are preferred from the aesthetic point of view and their cost is no greater than cement bricks.

As previously indicated this structure is to form one of a group and the Committee considers that under the circumstances, bricks should be used in its construction.

Effect on Housing.

28. The timber to be used in the construction of this building will be mostly of the scantling type; the timber that is mainly in short supply is kiln dried timber. These facts and the relatively small number of bricks to be used suggest that the erection of this structure should not materially affect the housing position. In any case the importance to Australia of the work to be carried out in this laboratory warrants the Committee in recommending that an endeavour be made to push on with this work with the least possible delay.

Amenities for Staff.

29. The Committee made inquiries as to what provision was to be included in the plan for amenities for the staff but was informed that there were so many difficulties in the way of securing laboratory facilities that the Executive of the Commonwealth Scientific and Industrial Research Organisation felt justified in not including special provision for amenities in the present building. It was stated, however, that provision for them will be made in the eventual plan, and, in the meantime a Library and Common Room have been provided in one of the initial hut buildings complete with sinks, cupboards, and hot water urn. The Committee considers this quite satisfactory for the present.

Air Conditioning.

30. It is not suggested that the proposed building should be air-conditioned throughout. The laboratory in the centre of the building will be air-conditioned because it is imperative that experiments on wool, and tests of the strength of fibres should be undertaken under constant conditions of temperature and humidity.

Fire Precautions.

31. The Committee was informed that adequate precautions have been taken against possible outbreak of fire. It is the practice to refer plans of buildings to the local fire authorities and to ask for their recommendations regarding fire escapes, extinguishers, etc. The proposal is to ring

the building with a fire main and provide fire hydrants around it; provision will also be included internally for extinguishers and other appliances. In the opinion of the Committee this should prove satisfactory.

Revenue.

32. It is ascertained that no revenue will be derived from the work undertaken which is purely experimental.

COMMITTEE'S RECOMMENDATIONS.

33. Briefly summarized the recommendations of the Committee are :-

	Paragraph in Report.
(a) That in view of the importance of the work to be carried out an effort be made to provide the building asked for with the least possible delay.	15
(b) That the selection of Geelong for location of the Laboratory is a wise one.	17
(c) That the site is suitable for the purpose for which it is intended.	18
(d) That the type of building proposed is suitable for its present function and prospective future use.	20
(e) That the building should be erected in brick.	28
(f) That the amenities to be provided for the staff are satisfactory.	29
(g) That the fire precautions to be taken will prove adequate.	31.

CHARLES A. LAMP
CHAIRMAN.

The Office of the
Parliamentary Standing Committee
on Public Works,
Parliament House,
CANBERRA. A.C.T.

29th September, 1949.