Parliamentary Standing Committee on Public Works

REPORT

relating to the proposed

CONSTRUCTION OF A NEW LABORATORY COMPLEX FOR CSIRO DIVISION OF FOOD SCIENCE AND TECHNOLOGY WERRIBEE, VIC.

(Fifth Report of 1995)

THE PARLIAMENT OF THE COMMONWEALTH OF AUSTRALIA
1995

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Senator Paul Henry Calvert (Vice-Chair)

Senate	House of Representatives
Senator Bryant Robert Burns	Mr John Neil Andrew MP
Senator Shayne Michael Murphy*	Mr Raymond Allen Braithwaite MP
	Mr Russell Neville Gorman MP
	Mr Robert George Halverson OBE MP
	Hon. Benjamin Charles Humphreys MP

* replaced Senator John Devereux on 10 February 1995

SECTIONAL COMMITTEE ON THE CONSTRUCTION OF A NEW LABORATORY COMPLEX FOR CSIRO DIVISION OF FOOD SCIENCE AND TECHNOLOGY, WERRIBEE, VICTORIA

Mr Colin Hollis MP (Chair)
Senator Paul Henry Calvert (Vice-Chair)
Mr Robert George Halverson OBE MP
Senator Bryant Robert Burns

Committee Secretary:	Peter Roberts
Inquiry Secretary:	Peter Roberts
Secretarial Support:	Mahesh Wijeratne

EXTRACT FROM THE VOTES AND PROCEEDINGS OF THE HOUSE OF REPRESENTATIVES

No. 97 dated Wednesday, 12 October 1994

PUBLIC WORKS–PARLIAMENTARY STANDING COMMITTEE–REFERENCE OF WORK–CONSTRUCTION OF A NEW LABORATORY COMPLEX FOR CSIRO DIVISION OF FOOD SCIENCE AND TECHNOLOGY, WERRIBEE, VIC.

Mrs Crosio (Parliamentary Secretary to the Minister for Social Security), for Mr Walker (Minister for Administrative Services), pursuant to notice, moved–That, in accordance with the provisions of the *Public Works Committee Act 1969*, the following proposed work be referred to the Parliamentary Standing Committee on Public Works for consideration and report: Construction of a new laboratory complex for CSIRO Division of Food Science and Technology, Werribee, Vic.

Papers:Mrs Crosio presented plans in connection with the proposed work.

Question - put and passed.

PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS

CONSTRUCTION OF A NEW LABORATORY COMPLEX FOR CSIRO DIVISION OF FOOD SCIENCE AND TECHNOLOGY, WERRIBEE, VICTORIA

By resolution on 12 October 1994, the House of Representatives referred to the Parliamentary Standing Committee on Public Works for consideration and report to Parliament the construction of a new laboratory complex for CSIRO Division of Food Science and Technology, Werribee, Victoria.

THE REFERENCE

1. The proposal to relocate the Victorian based activities of the CSIRO's Division of Food Science and Technology (DFST) from Highett to the Werribee technology precinct is part of a program of integrating food research activities in Victoria. The new facilities will be constructed in an area immediately adjacent to those of the Victorian Government's Australian Food Research Institute (AFRI).

2. The proposed development consists of the following works:

- construction of a 2 160m^2 two storey building accommodating research laboratories, support, instrumentation and office facilities
- construction of a 1 200m^2 process bay building for general wet processing, cheese making and spray drying activities
- construction of a 600m^2 management/administration link building between the laboratory and process bay buildings
- construction of a 240m^2 auditorium to accommodate an audience of 150 with a shared link between CSIRO and the AFRI
- associated services, roads, car parking and landscaping.

3. The complex has been designed to accommodate a staff of 82, which includes 59 in research work, 23 in management, administration and support and was designed recognising the need to develop a close working relationship with the AFRI. Buildings have been sited to encourage staff interaction between the two organisations.

4. The estimated cost of the project is $10.1m at September 1994 prices.

THE COMMITTEE'S INVESTIGATION

5. On 8 December 1994 the Committee appointed a Sectional Committee comprising Mr C Hollis (Chair), Senator P Calvert (Vice-Chair), Mr R Halverson MP and Senator B Burns to undertake this inquiry. The Sectional Committee received a written submission from the CSIRO and took evidence from its representatives at a public hearing in Werribee on 16 December 1994. Evidence was also taken from the following:

- Hon Barry Jones MP
- Dairy Research and Development Corporation (DRDC)
- Victorian Department of Agriculture
- Victorian University of Technology
- Wyndham City Council
- Community and Public Sector Union (CPSU)
- Dr Martin Playne

6. On 15 December 1994 the Sectional Committee inspected existing facilities at Highett, AFRI facilities at Werribee and the proposed CSIRO site at Werribee.

7. Written submissions regarding the project were also received from the following and incorporated in the Committee's proceedings:

- Hon K Coghill, MLA
- Environment Protection Agency

- Royal Melbourne Institute of Technology
- Minister for Planning (Victoria)
- Commonwealth Department of Primary Industries and Energy
- Construction Industry Development Agency
- EFFEM Foods Propriety Ltd
- Energy Conservation Systems Propriety Ltd
- National Food Authority
- Commonwealth Fire Board

8. A list of witnesses who gave evidence at the public hearing is at Appendix A. The Sectional Committee's proceedings will be printed as Minutes of Evidence.

BRIEF OVERVIEW OF CSIRO

9. CSIRO is one of the largest and most diverse national institutions in the world. It has a staff of 7000 working in some 150 laboratories and field stations throughout Australia.

10. Since its inception in 1926, CSIRO has played a vital role in shaping Australia and generating the nation's wealth. CSIRO and its scientists have established an international reputation for excellence and achievement in basic and applied research. Its work contributes to the ongoing prosperity of Australia's primary and secondary industries, to the creation of new technology and products and techniques for the continuing development of Australian manufacturing and service-based industries.

11. About 2500 scientists are employed by CSIRO. Collectively they provide expertise in almost every major scientific discipline so that CSIRO can draw on a large and diverse pool of individual skills to meet just about any scientific or technological challenge.

12. CSIRO's major objectives are to:

- carry out strategic research that can be applied by Australian industry or government for community benefit
- collaborate with other institutions and industry to strengthen the research effort and ensure its transfer and application
- lead and promote an expanded science and technology effort in Australia.

13. In achieving its objectives CSIRO collaborates with industry and maintains close and mutually profitable relationships with universities and other tertiary education bodies. Many joint research projects are undertaken.

14. In 1993/94 the CSIRO budget was $705m. Of this amount $459m was provided directly to CSIRO by the Parliament. Another $207m came from industry and other sponsors of research. The remaining $39m came from revenue earned by CSIRO and from the Department of Primary Industries and Energy for its half-share of the operation of the Australian Animal Health Laboratory at Geelong, Victoria.

DIVISION OF FOOD SCIENCE AND TECHNOLOGY

History

15. The Council for Scientific and Industrial Research (CSIR), which later became CSIRO, identified food research among its priority activities in 1926. An outcome of this was the establishment in 1931 of the Section of Food Preservation. The program of the new unit was initially in the areas of export of chilled beef, storage and transport of apples and pears, citrus and passion fruit studies, and improving grape varieties and methods for exporting them.

16. By 1940 the work program and staff of the Section had expanded considerably, and it was given Divisional status. It had laboratories in Brisbane and Sydney, and these soon made substantial contributions to the war effort with applied research covering many aspects of food processing.

17. CSIR had attempted to establish a dairy research group as early as 1928, but industry and State interests were resistant to a Commonwealth role in the field at that time, and CSIR was limited to funding a dairy research studentship. It was not until 1939 that the Section of Dairy Research was created. The staff of two were first accommodated in the Victorian Government's School of Dairy Technology at Werribee. By 1945, the Section had a staff of nine, working in laboratories shared with the Division of Industrial Chemistry at Fisherman's Bend. During the Second World War, the Section distinguished itself by developing special dairy products for tropical conditions.

18. In the immediate post-war period, the Section worked for the modernisation of the Australian dairy industry through process development, cost reduction and quality improvement. Work on cheese commenced in 1951 with staff initially stationed at the Victorian School of Dairy Technology at Werribee as there was by then a severe shortage of space at Fishermen's Bend.

19. Accommodation difficulties were soon overcome with the construction of a new building at Highett in 1955. Factors influencing the timing and location of this facility was the desire to expand the activities of the Division of Industrial Chemistry at Fishermen's Bend, and the availability of vacant land at Highett. In retrospect CSIRO believes it is apparent that even then Werribee would have been a more logical choice (especially in view of the location of the Section's cheese research group) had CSIRO owned or been able to purchase land adjacent to the School of Dairy Technology.

20. With levied industry funds, the Dairy Research Section expanded rapidly from 1959, and was accorded Divisional status in 1962. The next few years were very productive, and staff of the new Division were responsible for major innovations in cheese mechanisation, recombining, and protein products. Despite this, doubts about the wisdom of separating dairy and food research persisted in the CSIRO Executive, and the Divisions of Dairy Research and Food Preservation were eventually amalgamated in 1970, forming the Division of Food Research.

21. The new Division of Food Research was later successively re-named the Division of Food Processing and then the Division of Food Science and Technology. Its three laboratory structure (food at North Ryde, meat at Cannon Hill, and dairy at Highett) remained unchanged from 1970 until 1994. However, by perpetuating a sector-based operation CSIRO believes

that the full benefits of amalgamation were not realised, and to overcome this deficiency, the Review of the Division of Food Processing which reported in August 1992 recommended a program-based structure. This recommendation has recently been implemented with the introduction of a new structure based on 7 research programs. Most of the programs are multi-site, and are designed to maximise scientific synergies and minimise costs.

22. CSIRO believes that the new structure will also allow ready links with other CSIRO programs and other research providers such as the AFRI. It is designed on the basis of a distinction between internal structure (line management/resource providing) and external project focus. The new programs are:

- food safety and hygiene
- food quality
- cheese and cultured foods *
- food ingredients *
- meat technology
- food process engineering and manufacturing
- packaging and distribution technology
- commercialisation, liaison and information services
- research support services. *

* Most Melbourne-based divisional staff are in one of these three programs.

Strategic Realignment

23. A three-phase strategic realignment process is being undertaken to improve the capacity of the Division to add value to the operations of its customers through providing appropriate research and development expertise.

24. A five year Strategic Plan is being developed. It will be based on priorities determined in consultation with corporate partners and rural industry research corporations, and upon evaluation of cost-benefit analyses. The key goals include meeting selected external funding targets, meeting all customer milestones (quality, cost, speed) and minimising non-value-adding activities. Non-value-adding resources will be minimised and efficiency maximised by reducing physical infrastructure and support service costs to

a minimum, including the sharing of facilities on the Werribee and North Ryde sites.

National Importance of Research in the Division

25. The Australian food processing industry accounts for 21% of national manufacturing production and employs more than 160 000 people. Current exports of highly processed foods are valued at $3.5 billion, and exports of lightly processed foods at about $6 billion. The Agri-Food Council has set a target for exports of highly processed foods of $7 billion per annum by the end of the decade.

26. In March 1994, the Government invited a working group of leading industrialists, researchers and academics to review the agri-food industry, and in particular to consider opportunities in Asian markets. The working group reported to the Prime Minister's Science and Engineering Council in June 1994, with the following general findings:

- substantial opportunities exist for the Australian agri-food industry in Asia
- industry must develop the ability to exploit these opportunities
- specific actions by industry and government needed to enable the industry to achieve its full potential in Asia

27. Among the specific actions recommended were:

- R&D to be targeted at cost effectiveness, product differentiation, quality of design and technological innovation
- continued government support for relevant R&D
- more effective use by industry of public sector food manufacturing R&D resources and increased investment by industry in this area
- adequate resourcing of a limited number of world-class university departments in food science and technology, and encouraging their participation in "technology clusters".

Relationship with Industry

28. The 1992 Review of the Division of Food Processing noted a widespread industry view that there was a need for closer liaison between the Division and its stakeholders. CSIRO advised the Committee that this need is being addressed through the strategic alignment process outlined above.

29. Industry relationships are reflected in the level of external funding of the Division which has risen in recent years, reaching 43% in 1993/94. This has been due to development of closer relationships with both food processing companies and with rural R&D corporations, notably the Meat Research Corporation and the DRDC. For example, funding provided by the DRDC rose from 6% of the Dairy Research Laboratory's budget in 1988/89 to 19% in 1993/94 (in which year external funding by industry to the Laboratory was 29%). The funding trend reflects the development of a much closer working relationship between the Laboratory and the DRDC than had existed previously for some time.

Relationship with Australian Food Research Institute (AFRI)

30. Despite early linkages, the relationship between the AFRI and the Division has not been close for most of their history. To some extent AFRI and the Division have been competitors, although AFRI was generally seen as focusing more on tactical research, while the Division put more emphasis on strategic research.

31. In recent times, work on forging a much closer relationship has commenced. The Department of Agriculture, Victoria, and CSIRO are close to concluding a Joint Venture (JV) Agreement which provides the framework of collaboration between AFRI and the Division with special reference to operation on the Werribee site. The first joint R&D program which will operate within the terms of the JV Agreement is the joint cheese program. It is expected that further joint programs will be developed. Also to operate under the terms of the JV Agreement will be several joint bodies, including an Executive Board, an Advisory Council, a Management Committee, and a Joint Staff Consultative Committee. Measures have also been taken to develop closer relations between AFRI and the Highett staff. To date, these measures have included a joint workshop for all staff, reciprocal staff visits, exchange seminars, and a joint senior staff dinner/change management seminar.

THE NEED

32. The CSIRO Division of Food Science and Technology Melbourne Laboratory, formerly known as the Dairy Research Laboratory (DRL) has occupied the Highett site since 1955. The CSIRO complex at Highett comprises buildings of the Division of Building, Construction and Engineering and the DRL. The DRL buildings are old being constructed between 1955-1968 but in sound condition as they have been refurbished, and well-maintained.

Options Considered

33. CSIRO advised the Committee that the following options were considered.

Remain at Highett

34. This was not considered to be sustainable because of:

- the continued fragmentation of research for the dairy industry whilst occupying different sites
- increasing costs of support activities are detracting from research funding
- the potential for reduced support from the DRDC
- the need for a capital injection of approximately $5.8m for refurbishment of the laboratory
- some facilities at Highett are cramped and even with a half-life refit the continuing location of the laboratory at Highett will isolate it from other food activities at Werribee and reduce industry focus and support.

Relocate all the Division of Food Science and Technology's Melbourne activities to consolidate in Sydney (or all its activities in Melbourne)

35. This was not considered appropriate given the Division's need to maintain a major focus on the population and industry centres of both Melbourne and Sydney.

Collocation with the Australian Food Research Institute at Werribee

36. This is the preferred option because it:

- enhances research synergies
- facilitates jointly-funded research projects
- reduces recurring support costs
- shares common facilities
- retains support of the major industry client
- places the Division in a developing technology park which has received significant Federal and State Government funding
- affords greater opportunities for collaboration with other research bodies on the site
- attracts significant industry sponsorship for pilot plant facilities.

CPSU reaction to the proposal

37. The CSIRO Division of the CPSU in a submission to the Committee on behalf of its members at the DFST Highett, indicated that it believes that the CSIRO proposal would result in the unnecessary expenditure of more than $7m of tax-payers money. CPSU believes the submission by CSIRO neither relates to the real costs of the proposal, nor portrays accurately the alleged economic and scientific advantages. The CPSU also proposed to the Committee an alternative proposal for consideration. The CPSU made the following comments regarding aspects of the Werribee proposal.

Library

38. CPSU understands a review was undertaken of the library services to be provided for the Department of Agriculture and CSIRO at Werribee showing a maximum saving of $75 000 per annum ($40 000 in salaries and $35 000 in subscription savings). The CPSU believes that the maximum saving would appear to be inflated as the savings in subscriptions could not be achieved.

39. The CPSU believes that the CSIRO proposal fails to acknowledge the extra salaries required in the short term due to the need to employ additional staff in establishing the library. The amalgamating libraries have very different operating systems which will require considerable time and effort to merge into a service of suitable standard and efficiency. It also believes that additional capital cost will also be incurred in establishing the second library "store" or alternatively an extension to the proposed library.

Workshops

40. The CPSU believes that the amalgamation of the workshops will have little impact on cost effectiveness associated with the proposal. A review of all support services of DFST is presently being undertaken. A major consequence of this may be some contracting out of workshop services. This may bring some savings, but not as a consequence of relocation. These changes will undoubtedly be activated while DFST Melbourne Laboratory is located at Highett, and leaves up in the air the question of how much would be saved by the relocation of the Laboratory.

Canteen

41. CPSU concedes that there will be some savings made in the sharing of the AFRI canteen due to the reduction in rental paid for floor space by DFST. However CPSU believes this will be a minimal saving as CSIRO will be required to pay a share of the running costs.

Other Facilities

42. DFST will be constructing process bay facilities capable of providing for all the needs of the laboratory. These will be larger than those presently at Highett. CPSU believes that the need for sharing facilities with AFRI will be limited as DFST will be self sufficient and not reliant on AFRI for any major facilities.

43. DFST will be constructing meeting/seminar rooms These rooms will be available for use by AFRI as will theirs by DFST. CPSU believes any cost savings to be inconsequential.

Collaboration

44. CPSU does not believe that improved collaboration automatically follows collocation. DFST and AFRI have very different cultures and levels of expertise. CPSU believes that the purported enhancement of research synergies will be a long time bearing any fruit due to reliance on 'forced collaboration' as opposed to collaboration on a needs basis.

Quantifiable Costs

45. CPSU believes that the construction cost of $10.1m is not a true reflection of costs involved in relocating from Highett to Werribee.

46. Quantifiable costs which CPSU believes have not been counted in the proposal include:

- disassembly, transport and establishment of equipment (especially the pilot plant). Approximate cost: $250 000

- CPSU estimates that redundancy costs could total more than $1.36m

- the average cost of relocating a staff member and family is estimated to be $25 000. If, as could conceivably happen at Highett, 10% ie. seven staff members elect to relocate, this would add another $175 000

- transport and associated entitlements for the remaining 46 members of staff not moving house at $15 000 per person would add a further $690 000.

47. In summary the CPSU believes that additional, easily quantifiable costs could total some $2.475m.

Effect On Staff

48. Of major concern to CPSU is the effect of the proposed relocation on staff.

49. CPSU believes that the greatest impact can be seen in the productivity of staff in general but more specifically in the loss of client confidence in

DFST's ability to deliver outcomes on time during an extended period. The CPSU believes that if the proposal is proceeded with, there will be significant loss of productivity over five or more years from the proposal's initiation in 1992 through to at least the end of 1997. The fact that this cost is difficult to quantify does not mean it is not significant.

50. Loss of intellectual capital from the departure of those staff who decline to relocate is another cost which is difficult to quantify, but CPSU believes it will prove to be significant.

Alternative proposal by CPSU

51. The members of the CPSU at Highett have put forward an alternative proposal based on the DFST Melbourne laboratory remaining at Highett and forming a multi site CRC style research institute. This would necessitate a half life refit of the present facilities to bring them up to world standard at a cost of approximately $3m. The construction of a new laboratory wing consisting of four laboratories and 8 offices would complement present and projected staff increases and projects. This would need a capital input of approximately $2m. To facilitate the linkage of the Highett site to all Australian food research locations the installation of state of the art electronic conference facilities could be considered.

CSIRO response to CPSU

52. In response to the CPSU, CSIRO stressed that the cornerstone of its proposal is the strategic gains from collocation with AFRI at Werribee. These include:

- shift of emphasis of the current Highett Laboratory to a more generic food-based focus
- strengthening the Laboratory's core expertise and complementing the skills of the AFRI
- becoming an integral part of a dynamic food industry technology park with increased exposure to the food industry
- continued and stronger support from the DRDC

- improved staff morale and productivity through provision of new laboratories and facilities

- improved cost efficiencies are important complementary factors to the proposal.

53. CSIRO will be utilising AFRI facilities including process bays and associated services, meeting/seminar rooms, staff amenities, workshops and library facilities. Accordingly CSIRO's requirements for these facilities have been minimised in the interests of cost efficiencies. CSIRO advised the Committee that it has estimated indicative capital cost savings of approximately $1.66m as a result of the sharing of facilities with the AFRI. CSIRO will be relocating the library, books and journals as well as workshop equipment for the same cost efficiency reasons. CSIRO provided the Committee with the following comments on the issues raised by the CPSU:

Library

54. Both CSIRO and AFRI are committed to a jointly-managed and serviced library with consequent savings in infrastructure costs for both parties. Should any extension of existing buildings be required this will be done on a shared basis between AFRI, the State Chemistry Laboratory and CSIRO.

Workshops

55. Relocating equipment from Highett to Werribee will enhance the capacity of the existing workshop to serve the research needs of DFST and AFRI. CSIRO will be contracting out some workshop services which will enable some savings to be made.

Canteen

56. CSIRO staff will access the AFRI canteen for all food service needs. Limited local tea making facilities will be available to CSIRO staff in the new facility.

Other facilities

57. The DFST process bay facilities will not serve all the needs of the laboratory. The proposed bay is larger than the Highett facility due to overcrowding at Highett. The bay is being designed specifically for dairy

manufacturing operations and has specially designed areas for cheese and powder manufacturing, which will also be used by AFRI. The AFRI process bay is a more general purpose facility especially suited for short-term contract work. It uses relocatable equipment and temporary plumbing which are not ideally suited to CSIRO's ongoing needs. Utilisation levels of the AFRI facility are such that it would be unable to accommodate DFST operations and the CSIRO facility will therefore be essential. However the joint cheese program will be able to operate in AFRI module 2 until the CSIRO facility is built.

58. DFST staff will utilise AFRI equipment when required including the spray drier, the large ultra filtration plant for larger-scale trials, and the scraped-surface UHT plant. AFRI facilities will also be used for meat processing and grains processing work, and other specialist operations such as chocolate manufacture. The sharing of meeting and seminar rooms will allow cost savings for CSIRO through minimisation of these infrastructure costs. The proposed joint venture will generally allow both parties to minimise their infrastructure costs.

Collaboration

59. In addition to the strategic considerations for collocation with AFRI to facilitate the delivery of customer support infrastructure, the proposal has been sanctioned by the Agri-Food Council as the first of its technology clusters involving Commonwealth, State and industry co-operation.

60. A Joint Venture Agreement (JVA) between DFST and AFRI is being progressed with a pilot cheese program as the lead example. Further developments towards a joint venture agreement will follow from this example of collaboration.

61. CSIRO stressed that the proposed relocation to Werribee is based on the benefits that a joint facility can provide for the food industry in general including dairy industry interests. CSIRO believes that this will be reflected in increased industry funding for both DFST and AFRI at Werribee.

Quantifiable Costs

62. The CPSU submission states that the estimate of $10.1m does not include the cost of relocating staff and equipment from Highett.

63. The CPSU submission assumes that redundancy payments will be provided to staff who elect not to relocate with this move. Provision for redundancy packages for staff electing not to transfer is not required for intra-city transfers under CSIRO's agreement with the CPSU. Notwithstanding this CSIRO is negotiating an enhanced relocation package for staff to encourage their relocation to Werribee.

64. CSIRO disputes the figures provided by CPSU and provided the Committee with a detailed breakdown of costings which indicate a nett two year impact of $1.5m.

Effect on Staff

65. CSIRO believes that the CPSU submission is based on the convenience of existing DFST staff at Highett. CSIRO's aim is to pursue enhanced delivery of research results and the proposed relocation to Werribee is an important part of this mission. CSIRO management has taken particular care to discuss with staff the reasons for the relocation and have established a Relocation Committee to ensure full consultation on all aspects of building design and the entire relocation process.

66. CSIRO advised the Committee that the relocation to Werribee will be managed to minimise disruptions to ongoing research programs. Existing experience with CSIRO's relocation of the McMaster Laboratory from Glebe to Prospect indicates a much greater acceptance of staff for such moves than is being suggested by the CPSU. CSIRO's relocation of its Leather Research Group from Parkville to Clayton and the Divisions of Fisheries and Oceanography from Sydney to Hobart in 1985 provide experience of smooth transitions. CSIRO believes it is worth noting that in the case of the Division of Fisheries 90% of staff indicated that they would not move. However 60% of the staff did relocate to Hobart and research activities were quickly re-established.

67. CSIRO will attempt to minimise the loss of intellectual capital from such a relocation through its management process and through enhanced packages for relocating staff which are already under discussion with the CPSU.

Alternative proposal by CPSU

68. CSIRO's Board and Executive Committee have endorsed the use of the vacant laboratories at Highett by another CSIRO Division, resulting in

considerable savings to CSIRO's capital investment plan. CSIRO rejects the CPSU proposal for enhanced collaboration through remaining at Highett.

Dairy Research and Development Corporation (DRDC)

69. The DRDC is the major single funder of the Melbourne laboratory of the CSIRO Division of Food Science and Technology (DFST). The DRDC in turn considers the laboratory to be the major provider of manufacturing research services to the dairy industry.

70. The DRDC sees this relationship essentially continuing albeit in a different form given the recent changes in the DFST's organisation to widen its role to encompass the whole food industry. The DRDC considers that a wider food industry role will enhance the facility's value for the dairy industry by better integrating the specifically dairy research elements into the food research program. This will benefit the industry because the end use of the majority of manufactured dairy products that the industry produces is used as an ingredient in other foods.

71. The DRDC and the wider industry, through the Australian Dairy Industry Council has consistently supported the relocation of the Highett laboratory to Werribee since it made its submission to the review of the DFST in 1990.

72. The basis of the industry's support for the relocation is that there are advantages to be gained from creating a critical mass of researchers and facilities on the one site. The industry believes there are clear economic advantages from avoiding duplication of laboratory and pilot processing equipment, and having them readily available to the researchers. The collocation of researchers in the technology precinct at Werribee is seen as facilitating the interchange of information and ideas that is the lifeblood of scientific and technological progress.

73. Cooperation between the DFST and the AFRI, which is the other main manufacturing research provider to the dairy industry, is seen as essential by the DRDC to maximise the potential benefits from research conducted by the two organisations. The DRDC has strongly supported the joint venture between the two organisations and as well as offering ongoing support, has approved a capital grant of $4m to encourage the joint operation.

74. DRDC believes that cooperation in the past between the two institutes has not been good, to the detriment of the industry research effort, with location being one of the factors that has allowed this situation to continue. Collocation is considered essential to breaking down these barriers.

75. The DRDC believes that location within the technology precinct at Werribee also means obtaining these same advantages with respect to the other institutions already there or to be located there in the future. These include:

- Academy of Grain Technology
- Victoria University of Technology
- Victorian College of Agriculture and Horticulture - Gilbert Chandler
- Australian Food Industry Science Centre (a soon to be established consortium by the University of Melbourne, Victoria University of Technology and the Royal Melbourne Institute of Technology which will conduct post-graduate food research in association with the public research institutes).

76. Location at the Werribee site is also considered important to interaction with the industry. The industry favours a "one-stop-technology-shop" where it can establish research employees for shorter or longer periods, and where it can visit and conduct its public research interaction conveniently. The dairy industry has three centres that are located at Werribee or about to be located there - the Australian Starter Culture Research Centre, the Australian Ingredients Centre and the Dairy Industry Quality Centre. The former two are stand-alone companies owned by dairy companies and the DRDC, and the latter is a DRDC funded operation. All three are focussed on technology transfer from the public research institutes to the industry and are essential to the industry realising the commercial potential of research being conducted at DFST and AFRI.

77. The DRDC noted in its submission that many of the staff at the Highett laboratory have made it plain that they object to relocation of the laboratory to Werribee. It sees this as a natural and understandable reaction to the disruption that such a move represents. The DRDC fully expects there to be resignations and some consequent dislocation of the dairy research program.

78. However, the DRDC considers that the longer term benefits will far outweigh any disadvantage that might result from this effect. The DRDC is determined that the industry research centre of gravity shifts to Werribee and if the DFST laboratory does not relocate, the DRDC will pursue its research objectives through the AFRI or an expanded range of industry-owned resources.

Victorian Government

79. In a submission to the Committee, the Victorian Department of Agriculture indicated that the Victorian Government strongly supports the relocation of the DFST Melbourne laboratory to Werribee to form with the Department's Australian Food Research Institute (AFRI) and the Victorian Government's recently announced Food Industry Science Centre, possibly the strongest concentration of food science in the nation.

80. The Victorian Government believes that the increasingly competitive market for food products will require industry to harness technological change and capture market opportunities. In the AFRI, the Victorian Government has created the base for a strong and vibrant centre for undertaking industry wide basic and applied research.

81. A further dimension will be added to the centre's capacity to support industry requirements with the development of the Victorian Government's recently announced Australian Food Industry Science Centre within the Werribee Technology Precinct. With this centre the Victorian Government aims to establish Australia's premier centre for food industry research, education and training. It is anticipated that the CSIRO Division of Food Technology and Science will make an important contribution to the centre, together with the AFRI, the State Chemistry Laboratory and research facilities operated by a number of universities. In addition to its already substantial investments at Werribee (including the Commonwealth's $20m investment in the AFRI through the Better Cities Program), the Victorian Government has committed a further $10m to develop the Food Industry Science Centre over the next five years.

Committee's View

82. Having carefully considered all the evidence presented to it in relation to the proposal the Committee is of the view that relocation to Werribee is the most viable long term option. The Committee believes that collocation at Werribee with the AFRI will lead to advantages in research collaboration and in reduced infrastructure costs through the sharing of common facilities such as

the library, canteen, auditorium and workshops. In addition relocation to Werribee offers to the DFST the opportunity for collaboration with a wide range of both public and private research bodies which are or will soon be established in the Werribee area. The Committee is also aware that the DRDC has offered CSIRO a grant of $4m towards equipment for pilot plant facilities at Werribee.

83. While the Committee accepts and understands the reluctance of staff to relocate to Werribee and also agrees that the relocation will have some temporary adverse impact on the research effort the Committee believes that the relocation will have a positive long term impact on the work of the laboratory. In particular the project provides opportunity to develop a coordinated research and development centre for the food industry.

Committee's Conclusions

84. The Committee agrees that the continued location of the Division of Food Science and Technology's Melbourne laboratory at Highett is undesirable as it would continue to fragment research for the dairy industry and isolate the laboratory from the developing food research activities at Werribee.

85. There is a need to relocate the Highett laboratory of the Division of Food Science and Technology to Werribee to enable greater collaboration with other research bodies and to reduce infrastructure costs through the sharing of common facilities.

Committee's Recommendation

86. The Committee recommends that CSIRO continue to liaise with and involve staff in the relocation process to ensure minimum disruption to the laboratory's research program.

THE PROPOSAL

Architectural

87. Site planning for the CSIRO laboratory complex has been influenced by the need for CSIRO to develop a close working relationship with the existing AFRI facilities. The CSIRO buildings have been sited to provide physical pedestrian links which are as direct as possible between the two organisations and which will encourage staff interaction between CSIRO and AFRI.

88. Site planning provides for visitor parking at the front of the site from Sneydes Road and for staff parking and heavy deliveries to be accessed at the rear of the site via a ring road which links the two organisations. Vehicular traffic is generally limited to the perimeter of the site.

89. The CSIRO development consists of two main buildings - a two storey laboratory building and a single storey process bay building, each with an east-west axis, linked by an administration wing to the east and by stores, plant and ancillary spaces to the west. This arrangement of buildings will allow the maximum flexibility for future growth and is an efficient orientation with regard to passive sun control.

90. The auditorium, which will be shared between CSIRO and the AFRI, has been designed as a linking element between the two complexes. The design of the complex will comply with the Building Code of Australia and the laboratories will comply with AS 2982 - 1987 Laboratory Construction Code.

Laboratory Building

91. This building provides research laboratory accommodation for the Division's four main areas of research. The building with a gross floor area of approximately 2 160m^2, is of a simple rectangular plan form oriented east-west to take advantage of north and south natural lighting to office areas and laboratories respectively. Laboratory suites are generally located on the south side of the building, with support, instrumentation and related office areas along the north side. The laboratories have been planned to allow the maximum degree of future flexibility and adaptability, to enable programs to be changed while minimising disruptive building works. Open planning principles have been adopted wherever possible to facilitate staff communication and interaction.

92. Facilities to be accommodated in this building include laboratories, instrument suites, media preparation areas, autoclaving and sterilisation areas, a test kitchen, cool rooms, cold rooms, offices and open plan office areas.

93. The building will be a reinforced concrete structure, with external walls of insulated light weight pre-finished panels combined with a maximum amount of glazing to provide pleasant working conditions. Particular consideration will be given to the working environment to maximise natural lighting through the building's favourable orientation and its optimal depth. Sunscreening will be provided to external windows where required.

94. Roofing will be pre-finished steel deck on steel structure. Internal walls will be painted plasterboard lined metal stud partitions. Construction of laboratory benching and fittings, as well as reticulation of services will allow for the maximum degree of flexibility of operation. Floor finishes will generally be welded sheet vinyl to laboratories and support areas, carpet to office areas and ceramic tiles in wet areas. Ceilings to office areas and selected laboratory/instrument areas will be acoustic tile or plasterboard, while in general ground floor laboratory areas the ceilings will comprise the painted soffit of the concrete floor slab.

Management/Administration

95. The management/administration area, with a gross floor area of approximately 600m^2, has been designed as a linking element between the laboratory building and the process bay building, relating to the main reception area. Meeting rooms to be shared with the AFRI are also located in this area and within easy access of the auditorium. Offices will be provided for executive staff of the Division and open-plan office space for general administrative activities.

96. Administration spaces will generally comprise carpeted floors, acoustic tile ceilings and painted plasterboard walls. Spaces will generally be designed to give a pleasant outlook.

Auditorium

97. The shared auditorium has been designed to accommodate an audience of 150. The gross floor area is approximately 240m^2. The building has been sited to provide a shared link between both CSIRO and the AFRI and to ensure easy access for visitors to both complexes.

98. The building will be suitable for formal lectures, presentations and industry seminars, using a variety of visual aids and media. Shared meetings rooms will be easily accessible from the auditorium for syndicate use during seminars. The auditorium will be visually identifiable to attract visitors to both complexes and will be of similar construction to the laboratory building.

Process Bay Building

99. The process bay building, totalling approximately 1 200m^2 gross floor area,

will comprise three main process areas:

- general wet processing bay
- cheese making bay
- spray drying bay.

100. The building will be designed in accordance with the requirements of the Department of Primary Industry Code of Practice for Dairy Factories-June 1986, and Export Control (Processed Food) Orders, to enable CSIRO to operate the building as a registered food production facility, if so desired.

101. The building is basically of single storey construction, but with some mezzanine areas and trafficable service space above two of the process areas. Construction methods, materials and finishes will be chosen to comply with industry standards and facilitate cleaning and operational activities.

102. The building will be of reinforced concrete floor slab construction, structural steel framing and roof structure, with walls clad with light weight insulated pre-finished panels. Roofing will be pre-finished steel deck.

103. As well as the three main processing bays, this building will contain support areas such as cool and warm rooms for cheese maturing, a quality control laboratory, staff showering, change and toilet facilities, stores and goods receiving areas. Care has been taken with the design of this building to arrive at the most efficient arrangement of space to suit the process activities.

Energy Conservation and Management

104. In addition to passive energy conservation measures incorporated in the building design, the mechanical and electrical services will include the following active energy conservation systems:

- full fresh air economy cycles to all air handling plants to make full use of the cooling effect of outside air when available

- variable air volume air conditioning to laboratories with fume cupboards to limit the quantity of air conditioned air lost to outside when cupboard sashes are raised

- natural gas for heating, steam and domestic hot water provides minimum running costs and minimum life cycle costing compared to

other fuels

- separate air handling plant for the laboratories and office spaces to allow independent running out of hours

- water cooled refrigeration systems for chilled water and brine chillers which provide substantial energy savings over air cooled equipment

- provision of a Building Management System which allows energy management by optimum stop-start, night purge for free cooling, remote thermostat adjustment, alarm and fault indication, and status of all major items of plant

- high efficiency fluorescent lamps with low loss ballasts

- power factor correction.

Access for people with disabilities

105. The complex will be designed for access by people with disabilities. A combined goods/disabled lift will be provided for first floor access and toilet facilities will be provided in accordance with regulatory requirements.

106. Construction details are at Appendix B.

WERRIBEE SITE

107. CSIRO is negotiating a long term lease with the State of Victoria for approximately 2.7ha of land on Sneydes (West) Road, Werribee within the State Government Werribee Technology Precinct. The area of CSIRO land will provide for up to 30% expansion in research laboratories and up to 50% in the pilot process bay facilities. The Werribee Technology Precinct is cleared rural land, gradually being alienated from agricultural and horticultural use to research and technology activities, health and education.

108. The proposed CSIRO site and adjacent properties occupied by the AFRI and other State agriculture research establishments is flat, without indigenous native vegetation and has no natural water courses. The State facilities have been used continuously since 1939 for research and development with laboratory and pilot plant operations similar to those which will be undertaken

by CSIRO.

109. The principal services necessary for operation of the CSIRO laboratory complex, (ie electricity, natural gas, water, stormwater and sewerage) are adequate and available at, or adjacent to the site.

110. CSIRO has sought, and the Victorian Government is anxious to provide, long term tenure over the site. Although the Premier has agreed to the Minister for Agriculture's recommendation that long term tenure be provided, the Crown Lands (Reserves) Act 1978, the legislation governing transaction of this type, provides a maximum lease period of 21 years.

111. In recognition of CSIRO's desire for 50 year tenure, the Secretary Department of Agriculture, who has authority to lease the land on behalf of the Minister for Conservation and Environment, has written to CSIRO agreeing to review the lease under Section 137 AA(4) of the Lands Act, which allows for a longer term lease in the case of land which has been substantially improved. In order to constitute land which has been "substantially improved", a lease under Section 137 AA (4) of the Lands Act could only be considered after the CSIRO building has been constructed.

Committee's Conclusion and Recommendation

112. The Werribee site is suitable for the establishment of facilities for the Division of Food Science and Technology's Melbourne laboratory.

113. The Committee recommends that CSIRO continue to negotiate with the Victorian Department of Agriculture to obtain a 50 year lease for the Werribee site.

FUTURE DEVELOPMENT

114. The design of the CSIRO complex and disposition of buildings will allow for future expansion. Site planning will allow for a staff growth of up to 25% and future area increases of up to 30% in the research laboratories and 50% in process bay space. Such growth will not be initiated for at least five years after initial occupation of the complex.

Committee's Conclusion

115. The Committee is satisfied that the design of the proposed complex will allow for future expansion in both staff numbers and research and support activities.

ENVIRONMENTAL CONSIDERATIONS

116. Materials and products used for research in the CSIRO complex are those commonly associated with the indigenous or local food industry and the bi-products are benign. All materials and chemicals will be stored, handled and disposed of in accordance with the requirements of the Victorian and Commonwealth Governments, and with the relevant standards and codes of practice, and to the satisfaction of local authorities.

117. The complex is on a site previously cleared of native vegetation and is adjacent to other research establishments. No native fauna or flora will be affected.

118. The proposal has been discussed with the Commonwealth Environment Protection Agency (EPA) which has advised that from the information provided by CSIRO it appears that the proposal will not have a significant effect on the environment.

CONSULTATIONS

119. The following organisations have been consulted by CSIRO during the development of the proposal:

Commonwealth Government:

Department of Industry, Science and Technology
Department of Finance
Department of Primary Industries and Energy
Department of Administrative Services
Department of the Environment, Sport and Territories
Department of the Prime Minister and Cabinet
Department of the Treasury
Attorney General's Department
Department of Housing and Regional Development
Department of Human Services and Health

Department of Industrial Relations
Commonwealth Fire Board
National Food Authority

State Government:

Department of the Premier and Cabinet
Department of Conservation and Natural Resources
Department of Agriculture
Australian Food Research Institute
Environment Protection Agency (Victoria) (Western Metropolitan Region)
Victorian Fire Brigade
Country Fire Authority
Melbourne Water
Vic Roads
Electricity Services Victoria (Western Melbourne Customer Service Business)
Gas and Fuel Corporation

Local Government:

City of Werribee

Union:

CSIRO Chapter of Public Service Union (CPSU)

Others:

Dairy Research and Development Corporation
Telecom
ACROD Ltd
Royal Melbourne Institute of Technology
University of Melbourne
Victorian University of Technology
Better Cities Program
Victorian Institute of Animal Science
Victorian College of Agriculture and Horticulture
Werribee Mercy Hospital
Western Metropolitan College of TAFE

TIMETABLE

120. It is expected that construction will take 12-15 months with completion targeted for late 1996.

COST

121. The cost estimate for this proposal is $10.1m at September 1994 prices, inclusive of all professional fees.

Committee's Recommendation

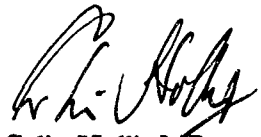
122. The Committee recommends the construction of a new laboratory complex for the CSIRO Division of Food Science and Technology at Werribee, Victoria at an estimated cost of $10.1m at September 1994 prices.

CONCLUSIONS AND RECOMMENDATIONS

123. The conclusions and recommendations of the Committee and the paragraph numbers in the report are set out below:

		Paragraph
1.	The Committee agrees that the continued location of the Division of Food Science and Technology's Melbourne laboratory at Highett is undesirable as it would continue to fragment research for the dairy industry and isolate the laboratory from the developing food research activities at Werribee.	84
2.	There is a need to relocate the Highett laboratory of the Division of Food Science and Technology to Werribee to enable greater collaboration with other research bodies and to reduce infrastructure costs through the sharing of common facilities.	85
3.	The Committee recommends that CSIRO continue to liaise with and involve staff in the relocation process to ensure minimum disruption to the laboratory's research program.	86
4.	The Werribee site is suitable for the establishment of facilities for the Division of Food Science and Technology's Melbourne laboratory.	112
5.	The Committee recommends that CSIRO continue to negotiate with the Victorian Department of Agriculture to obtain a 50 year lease for the Werribee site.	113
6.	The Committee is satisfied that the design of the proposed complex will allow for future expansion in both staff numbers and research and support activities.	115

7. **The Committee recommends the construction of a new laboratory complex for the CSIRO Division of Food Science and Technology at Werribee, Victoria at an estimated cost of $10.1m at September 1994 prices.** 122



Colin Hollis MP
Chair
30 March 1995

WITNESSES

APLIN, Mr Gregory Malcomson, Director, Economic Development and Special Projects, Wyndham City Council, 2 Duncans Road, Werribee, Victoria

BAIRSTOW, Mr Robert Stanley, Business Development Executive, Australian Construction Services, Casselden Place, 2 Lonsdale Street, Melbourne, Victoria 3000

BAISTOW, Mr John William, Manager Resources, CSIRO Institute of Animal Production and Processing, 104 Delhi Road, North Ryde, New South Wales 2113

CLARK, Professor Paul Ernest, Deputy Vice-Chancellor, Victoria University of Technology, Ballarat Road, Footscray, Victoria 3011

CLARKE, Mr Phillip Terence, Site Delegate, Community and Public Sector Union, Graham Road, Highett, Victoria

CLIFFORD, Mr Roger, Project Manager, Australian Construction Services, Casselden Place, 2 Lonsdale Street, Melbourne, Victoria 3000

DONALD, Dr Alan David, Director, CSIRO Institute of Animal Production and Processing, 104 Delhi Road, North Ryde, New South Wales 2113

EGAN, Dr James Kevin, Director, State Chemistry Laboratory, Department of Agriculture, 166 Wellington Parade, East Melbourne, Victoria 3002

HASSALL, Mr Colin John, Mechanical Engineer, Australian Construction Services, Casselden Place, 2 Lonsdale Street, Melbourne, Victoria 3000

JAMESON, Dr Graeme William, Program Manager, Food Ingredients, CSIRO Division of Food Science and Technology, Graham Road, Highett, Victoria 3190

JONES, Mr Barry Owen, MP, Parliament House, Canberra, Australian Capital Territory

MALLETT, Dr Christopher Patrick, Chief, CSIRO Division of Food Science and Technology, Riverside Corporate Park, Gate 1, Delhi Road, North Ryde, New South Wales 2113

MARKS, Mr William Michael, Manager, Budget and Commercial Services, Department of Agriculture, 166 Wellington Parade, East Melbourne, Victoria 3002

MOODY, Mr Trevor Laurence, Assistant General Manager, CSIRO Corporate Property, Limestone Avenue, Campbell, Australian Capital Territory 2602

PLAYNE, Dr Martin John, 1 Lorraine Street, Hampton, Victoria 3188

SANDERSON, Dr Wayne Barry, Executive Director, Technical Services-R&D, Murray Goulburn Cooperative Co. Ltd, and Board Member, Dairy Research and Development Corporation, 140 Dawson Street, Brunswick, Victoria 3056

SULLIVAN, Dr John Joseph, Program Manager, Dairy Technology, Dairy Research and Development Corporation, 3 Glenarm Road, Glen Iris, Victoria 3146

SUTHERLAND, Mr Brian James, Program Manager, Cheese and Cultured Foods, CSIRO Division of Food Science and Technology, Graham Road, Highett, Victoria 3190

TAYLOR, Mr Michael John, Secretary, Department of Agriculture, 166 Wellington Parade, East Melbourne, Victoria 3002

CONSTRUCTION DETAILS

Mechanical Services

General

1. Mechanical services for the project will include:

   - air conditioning for comfort conditions in laboratories, offices, and equipment rooms
   - heating and ventilation in the Process Bay generally, with some air conditioning
   - exhaust ventilation for toilets, fume cupboards, hoods, special exhausts and process equipment
   - piped services for laboratories including gases such as compressed air, vacuum, natural gas, steam, and various special laboratory bottled gases and liquid services such as domestic hot water, chilled brine and purified water
   - special rooms such as cool and freezer rooms, warm rooms, dark room, negative pressure rooms

2. The mechanical services will comply with all relevant codes, regulations and standards.

Central Plant

3. The Central Plant area will house plant associated with the Laboratories, Process Bay, and Administration Buildings. Plant will include the following:

   - steam generators to supply steam for laboratory benches and Process Bay equipment
   - brine chillers for ethylene glycol brine
   - compressed air plant

- vacuum plant
- reverse osmosis plant for purified water
- domestic hot water plant

4. Boilers, hot water units and steam generators will be natural gas fired. The existing underground street gas main will provide gas to the facility via a new fitting line to the Plant Room. Special precautions will be taken in the design and siting of the cooling towers to avoid the occurrence of Legionella bacteria, and the relevant industrial standard will be followed. Maintenance and operating instructions will be provided to ensure precautions are taken to maintain cleanliness and water quality.

Electrical Services

High Voltage Supply

5. The complex will be supplied from a substation on the west end of the main mechanical plant room. The substation will be connected to the ESV system by extending the existing 22,000 Volt overhead spur line along Sneydes Road supplying the AFRI substation. The substation and Main Switchboard (MSB) will be located remote from the complex ensuring no magnetic field effects on sensitive electronic equipment.

Distribution Boards

6. Distribution boards throughout the buildings will be supplied from the MSB. Every laboratory and process will have its own distribution board. These boards will provide the light and power through the complex. There will be separate mechanical services distribution boards.

Light and Power

7. In the offices and laboratories the lighting will be from low brightness fluorescent fittings to reduce the glare on computer screens. In the process bays the fittings will be a using high pressure discharge lamps, to provide the required lighting level at the working plane. Movement detectors controlling the lights will be provided in the common rooms in the administration area and the auditorium. Most general power circuits are to be protected by Residual Current circuit breakers.

8. Low energy lamps will be provided in the fittings mounted on the wall around the building to provide security lighting. Pole mounted luminaries will provide illumination of the carpark areas and the roadways. All these fittings will be controlled by a photo cell to turn them off in daylight hours.

Communication

9. Category 5 level data and voice outlets will be provided throughout the complex. The PABX will have the capacity for ISDN (Integrated Services Digital Network) and video conferencing.

Hydraulic Services

10. Hydraulic services will include:

- sanitary plumbing and sewerage drainage
- laboratory plumbing and trade waste treatment
- external water supply
- internal cold water reticulation
- stormwater drainage

11. All hydraulic services will be designed and constructed in accordance with relevant Australian Codes of Practice, Standards and Authorities' requirements.

Sanitary Plumbing and Sewerage Drainage

12. Sewer drainage from amenities area will be connected to the existing sewerage reticulation system.

Laboratory Plumbing and Trade Waste Treatment

13. Drainage from the laboratories and process bay will connect to grease interceptors and acid neutralisers prior to connection to the site sewerage reticulation. An automatic effluent monitoring system, complying with Melbourne Water requirements, will be installed. A trade waste application to Melbourne Water will be submitted to cover the laboratory and process bay drainage.

External Water Supply

14. The existing water mains supplying the AFRI will be extended to serve the new building. The new mains will supply sprinkler, fire hydrant/hose reels and domestic water services.

Internal Cold Water Reticulation

15. Internal cold water supply will be reticulated to all sanitary plumbing fixtures, laboratory equipment and mechanical plant (where required). Laboratory cold water service will be supplied from a internal non-potable water reticulation system.

Stormwater Drainage

16. Stormwater will be piped and discharged into the existing Sneydes Road system.

Fire Protection

17. Fire hydrants, hose reels and extinguishers will be provided in accordance with the Building Code of Australia and local fire authority. Fire sprinklers will be provided to the Laboratories Building. Smoke detectors will be provided at exits and in the air handling ducts. The fire indication board will be connected to the Country Fire Authority (CFA).

Security

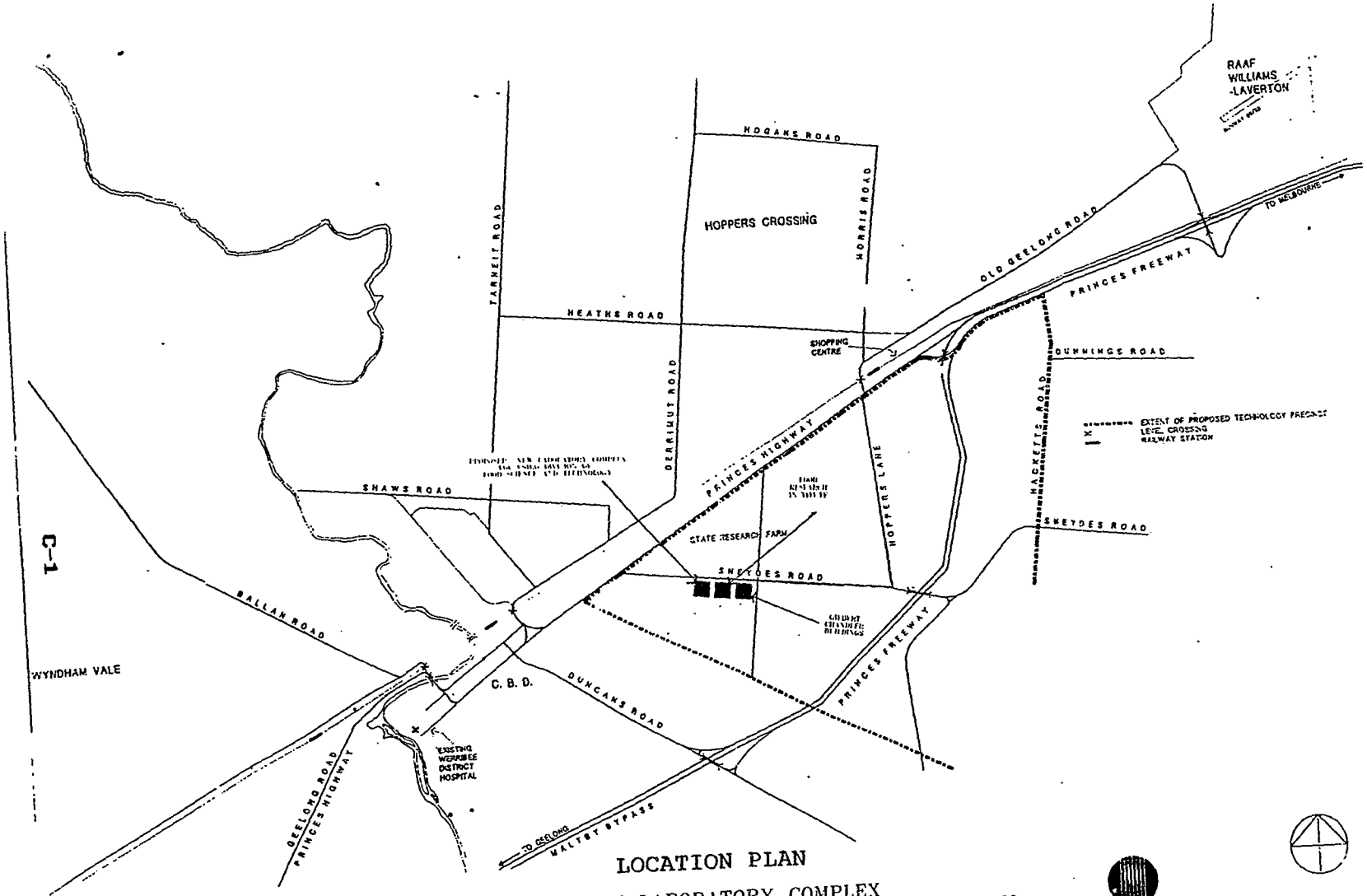
18. An access control system compatible with that used by the adjacent AFRI will be fitted. This will prevent unauthorised access while facilitating movement of staff between the two establishments. Access control will be arranged to enable after hours functions to be held in the auditorium and related meeting rooms without breaching laboratory and process bay security perimeters. Intruder detection will be provided.

Civil Engineering, Siteworks and Landscaping

19. The existing road west of the AFRI will be partially removed and replaced immediately west of the CSIRO complex. Existing car parking will be extended to provide additional parking for 84 staff and visitors. Landscaping will be compatible with the present site landscaping.

APPENDIX C

PROJECT DRAWINGS

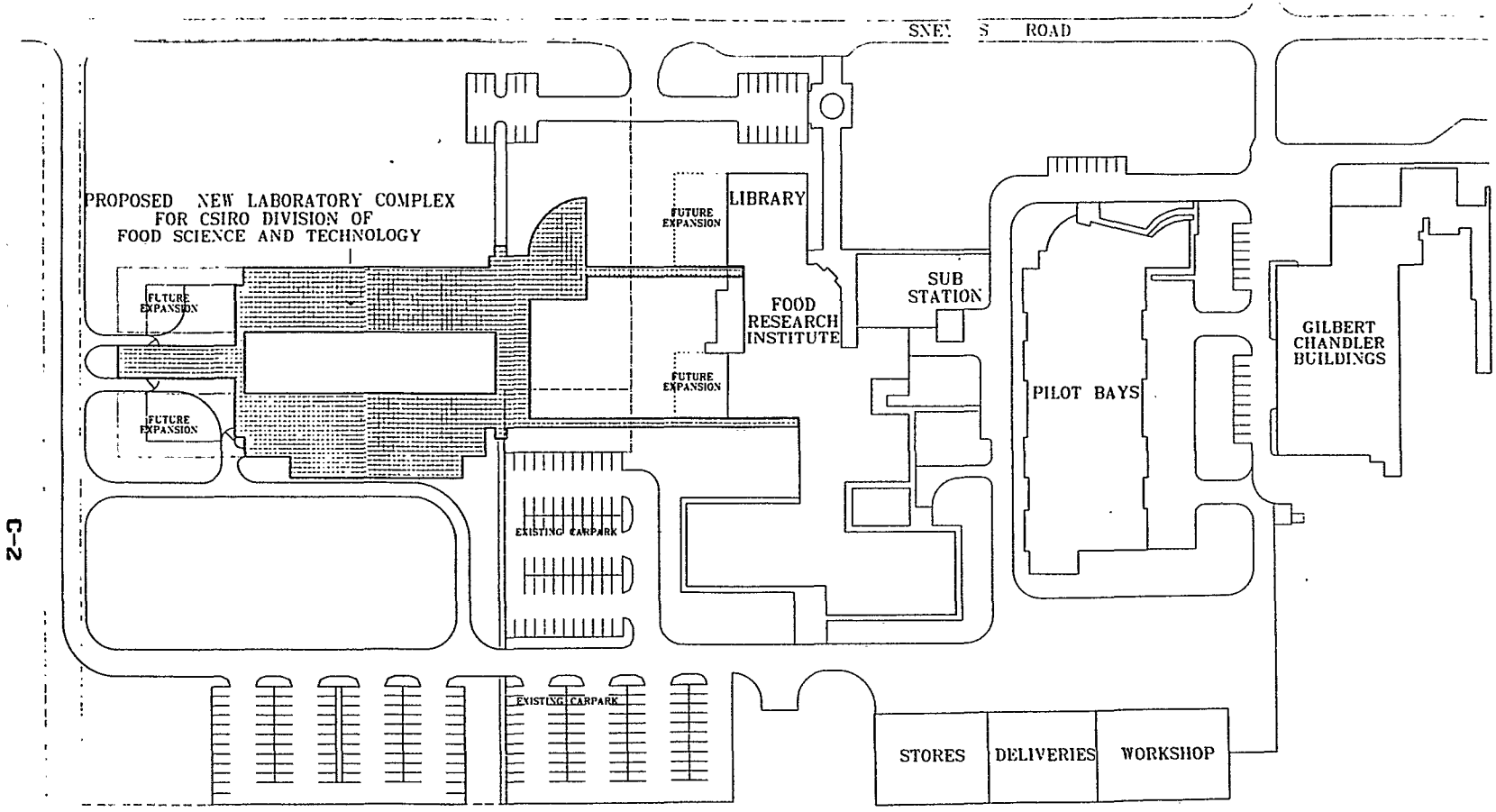


LOCATION PLAN

NEW LABORATORY COMPLEX
CSIRO DIVISION OF FOOD SCIENCE AND TECHNOLOGY
WERRIBEE , VICTORIA

AUSTRALIAN CONSTRUCTION SERVICES

CSIRO AUSTRALIA



C-2

SITE PLAN

NEW LABORATORY COMPLEX
CSIRO DIVISION OF FOOD SCIENCE AND TECHNOLOGY
WERRIBEE , VICTORIA

AUSTRALIAN CONSTRUCTION SERVICES

CSIRO AUSTRALIA

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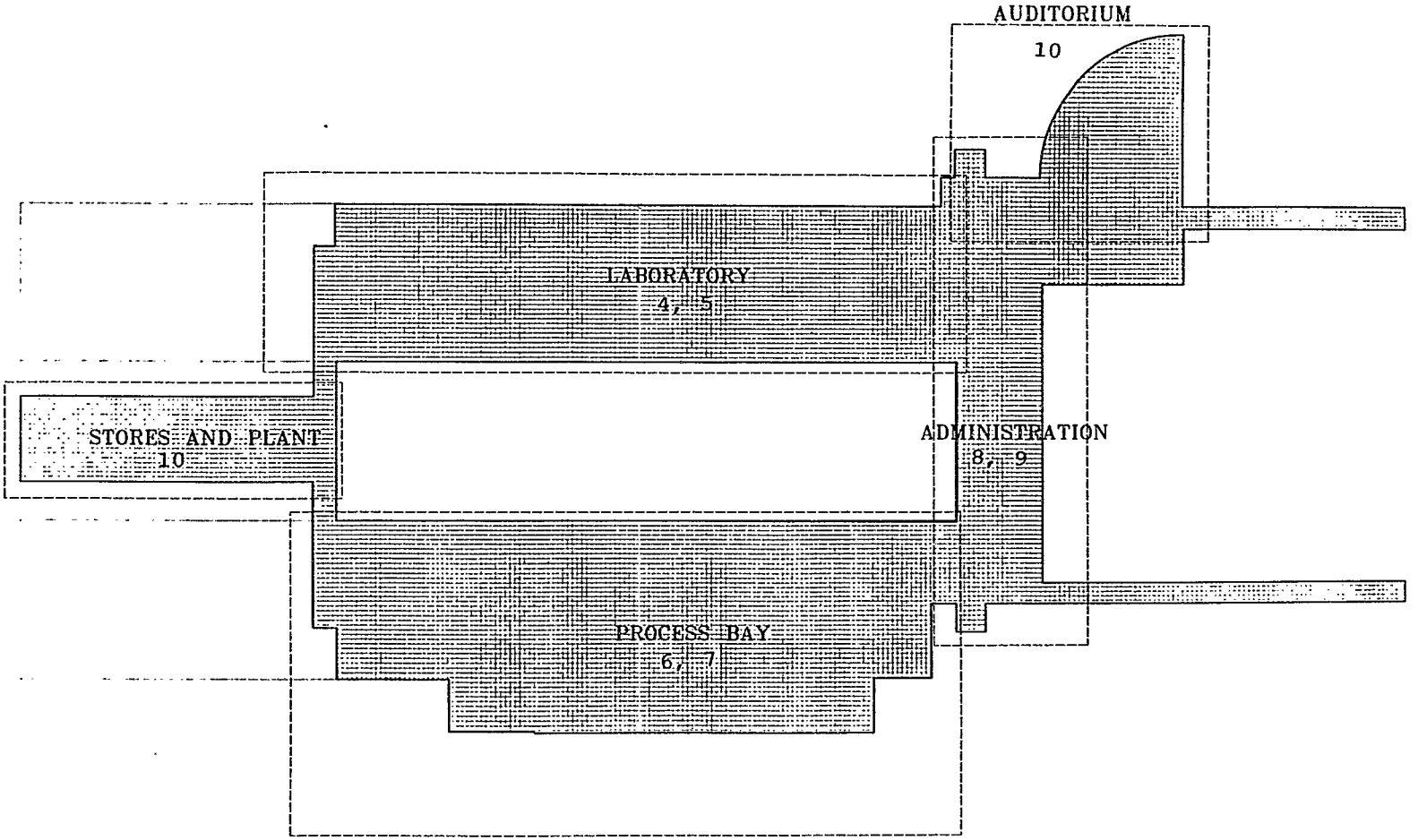


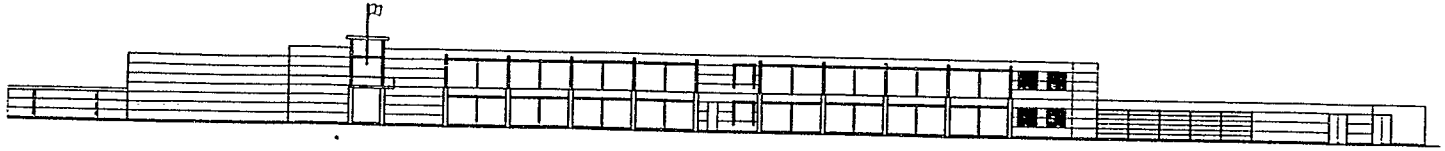
KEY PLAN

C-3

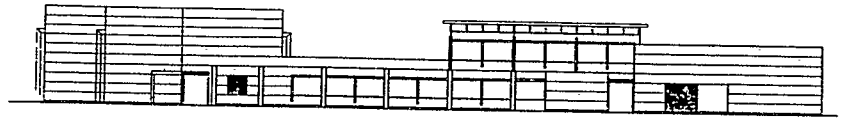
AUSTRALIAN CONSTRUCTION SERVICES

NEW LABORATORY COMPLEX
CSIRO DIVISION OF FOOD SCIENCE AND TECHNOLOGY
WERRIBEE , VICTORIA

CSIRO AUSTRALIA



NORTH ELEVATION



EAST ELEVATION

SOUTH ELEVATION

C-4

WEST ELEVATION

ELEVATIONS

NEW LABORATORY COMPLEX
CSIRO DIVISION OF FOOD SCIENCE AND TECHNOLOGY
WERRIBEE , VICTORIA

AUSTRALIAN CONSTRUCTION SERVICES

CSIRO AUSTRALIA

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