

The Parliament of the Commonwealth of Australia
Parliamentary Standing Committee on Public Works

DEPARTMENT OF THE SENATE
PAPER No. 2306
DATE
PRESENTED
17 NOV 1993
<i>Henry Evans</i>



Report Relating to the

Redevelopment of CSIRO site
at Prospect, NSW

(Fourth Report of 1993)

Australian Government Publishing Service
Canberra



Parliamentary Standing Committee on Public Works

REPORT

relating to the

REDEVELOPMENT OF CSIRO SITE AT PROSPECT, NSW

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TABLE OF CONTENTS

	Page
Members of the 31st Parliamentary Standing Committee on Public Works	vi
Executive Council Minute	vii
THE REFERENCE	1
THE COMMITTEE'S INVESTIGATION	1
BACKGROUND	2
THE NEED	2
University of Sydney, Glebe	3
North Ryde	4
Prospect	4
Committee's Conclusion	5
THE PROPOSAL	5
Options considered for McMaster Laboratory	6
Option 1 – Remain at the Glebe Campus of the University of Sydney	6
Option 2 – Relocation to CSIRO site at Parkville, Vic.	6
Option 3 – Relocation to CSIRO site at Armidale, NSW	7
Option 4 – Relocation to Camden, NSW	8
Option 5 – Relocation from Glebe to Prospect, NSW	8
Staff Loss	10
Committee's Conclusions	10
THE SITE	10
Committee's Conclusion	11
Committee's Recommendation	11

CONSTRUCTION DETAILS	12
Design Philosophy	12
McMaster Laboratory	12
Library Extension	13
Committee's Conclusion	14
Lecture Theatre	14
Animal Housing	15
Renovations to Building no. 6	15
Extension to Post Mortem Building	16
Poultry Research Complex	16
Mechanical Services	17
Electrical Services	17
McMaster Laboratory	18
Library Extension and Lecture Theatre	18
Animal Housing	18
Renovations to Building no. 6	18
Extensions to Post Mortem Building	19
Poultry Research Complex	19
Hydraulic Services	19
Sanitary Plumbing and Drainage	19
Laboratory Plumbing and Trade Waste	19
General Water Supply	20
Hot and Cold Water	20
Animal House Plumbing and Drainage	20
Safety Equipment	20
Gas Service	20
Fire Protection	21
Civil Engineering, Siteworks and Landscaping	22
ENERGY CONSERVATION AND MANAGEMENT	22
Airconditioning - McMaster Laboratory	23
Fume Cupboards	23
Electrical Services	23
ENVIRONMENTAL CONSIDERATIONS	23
CONSULTATIONS	24

LIMIT OF COST ESTIMATE	25	
TIMETABLE	25	
Committee's Recommendation	25	
CONCLUSIONS AND RECOMMENDATIONS	26	
APPENDICES		
Appendix A	- List of Witnesses	A1-A2
Appendix B	- Project Drawings	B1-B15
Appendix C	- CSIRO Organisational Structure	

**MEMBERS OF THE PARLIAMENTARY STANDING COMMITTEE
ON PUBLIC WORKS**

(Thirty-First Committee)

Mr Colin Hollis MP (Chairman)
Senator Paul Henry Calvert (Vice-Chairman)

Senate

Senator Bryant Robert Burns
Senator John Robert Devereux

House of Representatives

Mr John Neil Andrew MP
Mr Raymond Allen Braithwaite MP
Mr Russell Neville Gorman MP
Mr Robert George Halverson OBE MP
Hon. Benjamin Charles Humphreys MP

Committee Secretary: Peter Roberts

Inquiry Secretary: Denise Denahy

Secretarial Support: Sophia Konti

COMMONWEALTH OF AUSTRALIA

PUBLIC WORKS COMMITTEE ACT 1969

ORDER UNDER SUBSECTION 18(4)

I, William George Hayden, Governor-General of the Commonwealth of Australia, acting with the advice of the Federal Executive Council and under subsection 18(4) of the Public Works Committee Act 1969 hereby declare that the public work described in the Schedule be referred to the Parliamentary Standing Committee on Public Works for consideration and report.

SCHEDULE

Redevelopment of CSIRO site at Prospect, New South Wales

Signed and sealed with the
Great Seal of Australia on
13 July 1993

Bill Hayden
Governor-General

By His Excellency's Command
(Signed) Bob McMullan
Minister for the Arts and
Administrative Services

PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS
REDEVELOPMENT OF CSIRO SITE AT PROSPECT, NSW

By resolution on 13 July 1993 His Excellency the Governor-General in Council referred to the Parliamentary Standing Committee on Public Works for consideration and report to Parliament the proposed Redevelopment of CSIRO site at Prospect, NSW.

THE REFERENCE

1. It is proposed to redevelop the Ian Clunies Ross Laboratory complex at Prospect to provide upgraded research facilities for the existing staff of the Division of Animal Production (DAP) at the Prospect site; replacement facilities for staff of the Division of Animal Health (DAH) to be relocated from Glebe and replacement facilities for DAP staff of the Poultry Research Unit to be relocated from North Ryde.

THE COMMITTEE'S INVESTIGATION

2. The Committee received a written submission from the CSIRO and evidence was taken from representatives of the CSIRO, the Wool Research and Development Corporation (WRDC) and the University of Sydney at a public hearing at Blacktown, NSW on Thursday 9 September 1993. Prior to the public hearing the Committee inspected the DAH at the McMaster Laboratory at the University of Sydney, Glebe, the DAP Poultry Unit at North Ryde and the proposed site at Prospect.

3. The following organisations also presented submissions and appeared before the Committee at the public hearing:

- . University of Western Sydney, Nepean (UWS)
- . Biotech Australia Pty Ltd
- . SmithKline Beecham Animal Health
- . Greater Western Sydney Regional Chamber of Commerce.

4. A number of written submissions were also received from other organisations and these are incorporated in the Minutes of Evidence.

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

BACKGROUND

6. CSIRO is one of the largest and most diverse national research institutions in the world, with some 150 laboratories and field stations across the country and a staff of approximately 7000 of whom about 2500 are scientists. CSIRO targets research programs to meet national priorities through six institutes, each of which relates to a defined industry sector. The Institute of Animal Production and Processing has six Divisions of which two are directly involved with this project. They are Animal Health and Animal Production. The other Divisions in the Institute are Tropical Animal Production, Food Science and Technology, Wool Technology and Human Nutrition.

7. The major objectives of CSIRO 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.

8. CSIRO's organisational structure as well as the history of DAH and DAP may be found at Appendix C.

THE NEED

9. CSIRO requires appropriately designed and equipped research facilities which will provide safe, healthy and efficient working conditions for its skilled staff, who direct and undertake a wide range of research to meet national priorities and approved programs. Therefore, CSIRO is progressively replacing or upgrading many old, unsafe or inefficient

laboratory buildings as funds become available and constructing new facilities as required.

10. The redevelopment is a priority in CSIRO's strategic planning and follows CSIRO's philosophy of providing suitable accommodation for all its staff. It is also consistent with the CSIRO accommodation strategy which aims to progressively consolidate CSIRO research activities at a limited number of major regional centres, for operational and economic benefits which include enhanced cooperative research, sharing of scarce and costly resources and reduced operating costs and overheads.

11. This proposal is concerned with three sites, namely the McMaster Laboratory located at the University of Sydney at Glebe, the DAP poultry facilities at North Ryde and the Ian Clunies Ross Laboratory complex at Prospect.

University of Sydney, Glebe

12. DAH currently occupies two buildings on 0.4 hectares of land on the campus of the University of Sydney, Glebe.

13. The McMaster Laboratory is occupied under permissive occupancy and consists of a two-storey masonry laboratory, administration and amenities building constructed in 1931. This building provides minimal standards of accommodation for research and research support at approximately 17.7 m² per person, (as opposed to the CSIRO preferred 27-30 m² per person), administration, library and amenities. The building is quite inflexible due to load bearing internal walls, has inadequate mechanical ventilation and limited low quality temperature control. Laboratory accommodation is dated and congested and there is insufficient laboratory, office and write-up space.

14. In November 1989 the University of Sydney expressed an interest in taking over CSIRO's occupancy. A 1990 feasibility study of the Glebe site undertaken by CSIRO indicated :

- a 17 per cent shortfall in research and research support accommodation which could not be provided in a new building or an extension of the existing laboratory because the confined CSIRO site had insufficient space for any additional structures

- upgrade of the principal building, which accommodates most of the research and support facilities, all administration and the library, to an acceptable, but hardly optimal standard of occupational health and safety and utility, would cost in the order of \$3.1m. Upgrading would take two years, significantly interrupt research and necessitate temporary relocation of staff at an additional cost of \$0.15m.
- the multistorey annex building is substandard and inefficient and falls short of modern standards for the accommodation of laboratory animals. The facility cannot be upgraded effectively or economically.

15. In February 1992, following negotiations with the University, CSIRO formally agreed to accept a settlement of \$3m for vacation of the McMaster laboratory as soon as possible after June 1994.

16. The second building consists of a three-storey, 52 year old masonry and concrete annex building, providing a low standard of accommodation for animals in pens, and for workshops, stores and control laboratories. The load bearing walls negate flexibility, vertical hoisting facilities for goods are inadequate and dead corners represent an escape hazard. Utility areas are congested.

North Ryde

17. The DAP poultry facilities at North Ryde occupy a 1.3 hectare portion of the CSIRO North Ryde site. Three two-storey masonry-framed structures provide accommodation for poultry, service and support rooms and control laboratories. Two buildings were constructed in 1965 and the third in 1972. Relocation of the poultry unit was scheduled as part of the North Ryde redevelopment proposal which was examined by the Committee in 1991 and endorsed in its report to Parliament in March 1992 (refer First Report of 1992).

Prospect

18. Since 1946, CSIRO has occupied the Prospect site which now contains forty-one major and minor buildings. Several older buildings have reached the end of their useful life and require replacement. Building no. 1 is a single storey masonry and curtain wall laboratory and library building and two-storey administration and amenities wing, including site canteen, which

can accommodate approximately 150 personnel and the Pye display centre (a conference facility and seminar room). The building is 34 years old and research accommodation is provided at 20.2 m² per person. There is a shortage of laboratory, office and write up space. Buildings nos 4 and 7 are the principal animal houses and are approximately 40 years old. Although satisfactory for the purpose, the dated design makes animal handling labour intensive. Building no. 3 is a single storey laboratory building constructed in 1953 and clad in magnesium aluminium alloy which is highly supportive of combustion. The building has been condemned for research activities. Building no. 35 is a two-storey masonry laboratory building constructed in 1982. It is used for biotechnological research and provides modern research facilities for 28 persons in crowded conditions. Working space is equivalent to 18.3 m² per person.

Committee's Conclusion

19. A need exists to provide safe and efficient working conditions for CSIRO staff currently employed at the McMaster Laboratory Glebe, the Poultry Research Unit North Ryde and at Prospect.

THE PROPOSAL

20. The proposal is to redevelop the Ian Clunies Ross Laboratory complex at Prospect for the Divisions of Animal Production and Animal Health.

21. It is proposed to:

- construct a two-storey building with research laboratories, division management and services for DAH and histology laboratories for DAP
- construct large animal facilities for DAH
- construct poultry facilities for DAP
- upgrade one existing DAP facility to replace old and substandard research accommodation which cannot be effectively or economically brought up to modern standard
- construct a 126 seat lecture theatre as a common facility
- extend the existing library as a common facility

- . extend the existing post mortem facility
- . construct a small animal facility within an existing building for DAH
- . carry out associated demolition, roadworks, car parking and landscaping
- . provide additional site services and upgraded services.

22. The Committee was advised that co-ordination of the move of the poultry facilities at North Ryde within this project will minimise costs and overcome potential cost penalties of a separate development.

Options considered for McMaster Laboratory

23. The Committee was advised that five options were considered.

Option 1 – Remain at the Glebe Campus of the University of Sydney

24. CSIRO advised the Committee that it did not consider upgrading the facilities at Glebe due to:

- . continued pressure from the University of Sydney to vacate the site, which led to the agreement to sell to the University in 1992
- . inflexibility and limitations of the existing buildings which do not lend themselves to upgrading
- . shortfall of research laboratory and office space
- . lack of land available to CSIRO at Glebe for any future construction of extended or new accommodation.

Option 2 – Relocation to CSIRO site at Parkville, Vic.

25. The Veterinary Precinct at Parkville is leased from the University of Melbourne and suffers from similar drawbacks to those of the Glebe site. This option was therefore not deemed viable, even though it would combine two of the DAH laboratories.

26. Disadvantages included:

- . potential loss of skilled and experienced staff
- . higher construction costs
- . higher relocation and redundancy costs.

Option 3 – Relocation to CSIRO site at Armidale, NSW

27. The University of New England saw advantages in relocation of staff and activities to the CSIRO Pastoral Research Laboratory, "Chiswick", Armidale, as elements of DAH and DAP are already located there. However, CSIRO disagrees with this view, claiming that the work of the McMaster Laboratory is not region-specific and the outcomes of its work are most relevant to the manufacturing industry and commercial collaborators in biological and pharmaceutical industries based in Sydney. CSIRO claims that areas of strategic research and new technology will benefit from collaboration between complementary activities in the McMaster Laboratory and those in DAP predominantly located at Prospect. To retain these collaborative benefits, any relocation of DAH to Armidale or away from Prospect would need to be accompanied by a relocation of the DAP Prospect operations.

28. Other reasons for rejection by CSIRO included:

- . the magnitude of cost being in the order of \$25m
- . regionalisation of DAP research of Australia-wide significance to the extreme locations of northern NSW and WA and vacating a centrally-located presence such as Prospect
- . significant disruption to research programs through the potential loss of key staff unwilling to relocate
- . potential loss of skilled and experienced staff
- . higher construction costs
- . higher relocation and redundancy costs.

Option 4 – Relocation to Camden, NSW

29. Two non CSIRO sites in the region were considered, namely the Elizabeth MacArthur Agricultural Institute (EMAI) campus of the NSW Department of Agriculture (NSW Agriculture), Menangle and the University of Sydney campus at Camden. Dr A Lascelles, (former Chief Research Scientist DAH 1983-1989) in his submission advocated the move of the McMaster Laboratory to the EMAI site as that laboratory complex is not being fully utilised to its planned potential. CSIRO, however, advised that neither of these sites offers significant advantages in research collaboration over the Prospect site and both are reasonably accessible from Prospect.

30. CSIRO raised with NSW Agriculture the possibility of relocating the entirety of the McMaster and Ian Clunies Ross Laboratories of DAH and DAP to the Menangle site of EMAI and was advised that NSW Agriculture did not intend to carry out significant animal production work at that site. There would also be substantial problems with effluent disposal. A major initiative of this kind would take much longer to achieve than the timetable required for CSIRO to vacate the McMaster Laboratory. CSIRO advised that it sees no benefit in scattering components of the McMaster Laboratory into other institutions such as the EMAI, at the expense of its own strategic plans, which see the Ian Clunies Ross laboratory as an ideal long-term centre for strategic animal research.

31. Disadvantages included:

- . potential loss of skilled and experienced staff
- . higher construction costs
- . higher relocation and redundancy costs.

Option 5 – Relocation from Glebe to Prospect, NSW

32. CSIRO believes that Prospect is the logical place for relocating staff of DAH due to:

- . complementary, multi-disciplinary research skills and enhanced collaboration in strategic research for the livestock industry as a whole, which are most effectively pursued at that location between both the Divisions

- . availability of land and support facilities at no additional cost
- . support of the WRDC which is a key stakeholder of both Divisions
- . strengthened links with companies in the Sydney region producing new manufacturing inputs to animal health and production
- . maintenance of existing and development of new interactions with four universities in the Sydney region with activities in all the relevant basic and applied sciences, including the University of Sydney's Veterinary Faculty at Camperdown and Camden in animal health research
- . maintenance and strengthening of links with the EMAI at Camden
- . economic advantages of collocation producing savings in capital and running costs
- . expectations that loss of key and experienced staff would be minimal
- . part of a long-term redevelopment and refurbishment program for Prospect.

33. CSIRO rejected the claim made by Dr Lascelles that the relocation of staff of the McMaster Laboratory to Prospect cannot be justified. CSIRO claims that its capital maintenance and replacement program adheres to modern standards of occupational health and safety, animal welfare and efficient laboratory design. As there is no suitable existing accommodation for these staff on the Prospect site, the proposed works will include redevelopment/refurbishment of existing facilities and will provide a new laboratory to accommodate McMaster and some Prospect staff.

34. CSIRO believes that relocation of McMaster activities to Prospect is in the national interest in terms of the research synergy between McMaster and Prospect programs and is in a metropolitan location appropriate to research outputs for the manufacturing sector.

Staff Loss

35. Possible loss of expertise through staff loss, should the McMaster Laboratory relocate outside the Sydney area was emphasised by CSIRO. However, the Committee believes that the possible extent of staff loss cannot be determined conclusively until such proposals are put to the staff and they have elected whether to relocate or not. Therefore, this issue was not a factor considered by the Committee when coming to its conclusion concerning the transfer of the McMaster Laboratory.

Committee's Conclusions

36. **Transfer of the McMaster Laboratory from the University of Sydney, Glebe to Prospect is the preferred option and will result in complementary activities being carried out with the staff of the Division of Animal Production currently located at Prospect. Available land and support facilities will also be available at Prospect at no additional cost.**

THE SITE

37. The site comprises 47.98 hectares at Prospect and was acquired by the Commonwealth under the *Lands Acquisition Act 1906-1936* on 5 September 1946. Compensation for the land was provided through funds made available under the *Wool Use Promotion Act 1946*. In 1952 construction of buildings commenced with the erection of a brick and concrete fleece analysis laboratory. This was followed in 1953 by two prefabricated laboratory and office buildings and two animal houses. Between 1953 and 1959 further building took place when the main laboratory block was completed. A further 14.97 hectares of land was purchased by the Australian Wool Corporation in 1963 bringing total land holdings to 62.95 hectares. The two-storey Molecular Genetics building was completed in 1982. This resulted in a substantial refocussing of research towards molecular biology and its application to the animal industries. In 1990, 5.8 hectares from the northern section of the property were resumed by the NSW Roads and Traffic Authority for construction of the F4 Motorway, so the current area of the Prospect site is 57.15 hectares.

38. The site adjoins the F4 Motorway to the north; an operational brickworks to the west (which will be expanded to manufacture concrete blocks); an operating quarry to the south and residential land to the east. The nearest houses adjoining the CSIRO site are about 500 metres from non-residential buildings and are effectively separated by a Water Board

flood mitigation basin, part of the Toongabbie Creek Mitigation Scheme. Water from the basin is periodically used for irrigation paddocks, replacing the original dam on the property.

39. CSIRO advised the Committee that the site at Prospect is entirely suitable for the sorts of functions that are being performed there and are planned to be performed there. This is the area of fastest growth of Sydney and is centrally located in relationship to a range of institutions with which this particular laboratory will collaborate. It is well placed geographically for interaction with four universities including both campuses of the only veterinary school in NSW, the EMAI and a number of important companies supplying manufactured inputs to the livestock industries. There is sufficient open space for the type of work to be done and ready access to the metropolitan area of Sydney. Prospect is near Kingsford Smith Airport which provides access to towns and cities to which research results are despatched. Because of its geographic location CSIRO does not believe that urban expansion will be a problem in the future, and this is supported by local authorities.

40. The WRDC has a 100 per cent equity in the land at Prospect. However, CSIRO advised the Committee that it would be interested in acquiring this equity. The Committee believes that the Government should give consideration to transferring the WRDC's equity in the site at Prospect to CSIRO.

Committee's Conclusion

41. **The site at Prospect is suitable for providing upgraded and new research facilities for staff of the Division of Animal Production as well as replacement facilities for staff of the Division of Animal Health.**

Committee's Recommendation

42. **The Committee recommends that the Government should give consideration to transferring the Wool Research Development Corporation's equity in the site at Prospect to CSIRO.**

CONSTRUCTION DETAILS

Design Philosophy

43. The first design principle for the redevelopment was to achieve the most economical solution with the need to balance capital expenditure against future maintenance and running costs.
44. The second principle, particularly in the design of the new laboratory building, was to accommodate the user group's requirements in a rational building plan which maximised flexibility for future alterations.
45. The existing buildings are grouped together and surrounded by paddocks which isolate the establishment from neighbouring development. The siting of the new buildings has been chosen to maximise functional relationships with existing facilities, and to economise on the existing roads and engineering services.

McMaster Laboratory

46. This two-storey building will house research laboratories, support facilities, amenities and management area for DAH in a gross floor area of approx 2 200 m². It will also accommodate the Histology Unit of DAP which will relocate from an existing building (no. 3) which has reached the end of its useful life and will be demolished. The building is sited south of building no. 35 (Genetics) on a clear area with good access, space for related car parking and proximity to the library, canteen and other shared facilities.
47. This rectangular building will be oriented along the east-west axis so that all principal areas will enjoy good north or south light. The main entrance will be identified with a port-cochere.
48. On the ground floor the management area, meeting room and main entry will be grouped together. Laboratories and the DAP Histology Unit, together with central services, stores, amenities, media preparation, autoclaves, glass washing services and lift, occupy the remainder of the floor. The first floor accommodation comprises laboratories and laboratory offices.
49. A central corridor leads to the laboratory suites which occupy a continuous perimeter zone on each side of the building with support areas

arranged along the corridor including cold room, freezer, hot room, data capture, write-up spaces and a series of laboratory offices.

50. The building will have two full height plant rooms, one at each end of the building for economy in plant design, service distribution, operation and to provide future flexibility.
51. The design will comply with the Building Code of Australia. The buildings generally are Class 8 (laboratory buildings) and Type C construction. The Laboratory Code AS2982 (1987) has also been adopted for laboratory functions.
52. External walls will be of insulated light weight construction, clad with pre-finished panels and incorporating window walls of double glazed units at each level and with external sun protection to the north elevation. Internal walls will be insulated plasterboard metal stud partitions with generous glazing for amenity and observation.
53. Floor finishes will mainly be welded seam vinyl sheet, with ceramic tile in wet areas. Ceilings will be plasterboard or acoustic tile as appropriate.
54. Benches will have free-form laminate finish and will comprise loose fit standardised units with independent under-bench modules which can be located wherever needed. Laboratory services will be run independently of bench units.
55. Particular consideration will be given to the working environment in the building and natural lighting will be maximised by building orientation, use of continuous glazing, restricted depth of the building and borrowed light to internal spaces including the roof light over the central circulation and meeting area.

Library Extension

56. The existing library book stack area in the eastern wing of building no. 1 (Administration) will be expanded. The extension will have a gross floor area of approximately 115 m² and will match the existing building as far as practicable. There will be a reinforced concrete floor at the same level as the existing floor with external walls of face brick and an insulated metal skillion roof. Internal finishes will be floor carpet, painted render wall and acoustic tile ceiling. Minor internal modifications of the existing space

will be undertaken concurrently with the extension to integrate the old and new areas in order to improve library efficiency and services.

57. The UWS Nepean supported the move of the DAH from Glebe to Prospect. CSIRO advised that the University currently has access to the library facilities at Prospect. The proposed extension to the library facilities will ensure a greater diversity of material, especially journals, is available. CSIRO believes that the proposed redevelopment works will enhance its current inter-institutional links.

Committee's Conclusion

58. The Committee commends CSIRO on its inter-institutional links with the University of Western Sydney Nepean, and believes that these links will be strengthened once library facilities at Prospect are extended, thus providing access to a greater range of research material.

Lecture Theatre

59. This 250 m² extension to building no. 1 will provide a 126 seat lecture and meeting facility for the groups at Prospect. The adjacent Pye Centre and canteen will be able to be used in conjunction with the lecture theatre for displays, assembly space and ante-rooms. Access for the disabled will be provided in the design.

60. The construction will be reinforced concrete and masonry with an insulated metal roof to match the existing building, and the floor will be tiered to achieve optimum sight lines with provision for audio-visual equipment.

61. The facility is essential for the increasing collaboration between CSIRO and commercial companies. The room, currently used for seminars, which was originally planned as a joint seminar and display centre for interaction with industry, is no longer available for this purpose. The need for more formal presentations to industry groups has increased dramatically over recent years, so that the space must now be fully dedicated to presentation and display.

62. As there is a lack of suitable lecture facilities in the region it is envisaged that the theatre could be used by local professional and community groups.

Animal Housing

63. A large animal house is to be located to the south of the existing sheep barn and shearing shed. The floor will be approx 520 m² with a galvanised expanded metal floor raised approx 2.5 metres above a drained concrete undercroft of similar area for waste management. The building will house sheep in adjustable pens together with general work area and specific work areas for resistant cultures and susceptible cultures procedures.

64. Construction is steel frame with insulated and vented roof and metal cladding. The construction allows continuous and natural ventilation through the expanded metal floor for all animal areas.

65. Housing for a small animal colony will be provided by retro-fitting 34 m² of space in building no. 5 previously used for this purpose.

Renovations to Building no. 6

66. This two-storey masonry structure building is 32 years old. Approximately 600 m² gross floor area will be provided for biology laboratories and associated offices for DAP, replacing space lost through the demolition of building no. 3, and accommodation in building no. 1 lost through the relocation of poultry research staff from North Ryde. The renovations will consist of converting redundant plantroom space and climate control rooms in the eastern section of this two-storey building.

67. At ground floor level, laboratory offices will be provided and existing amenities and first aid areas will be upgraded. At first floor level, a suite of biology laboratories will be built and safe egress will be achieved by substantial modifications to an existing steel external stair.

68. The existing building is of brick construction with a reinforced concrete ground floor and steel-framed timber first floor. It is structurally sound and therefore practicable to fit out redundant space with laboratory accommodation and to install a new concrete floor slab on the existing steel frame. The retro-fitting will include new finishes and services throughout, as well as replacement of a number of windows and stripping out of old services.

Extension to Post Mortem Building

69. Eighty square metres gross floor area of post mortem facilities will be provided for DAH as an extension of the existing facility used by DAP. Although the divisions have different post mortem requirements, the design will provide common yarding, freezer and disposal facilities.

70. The extension has been designed to match the existing building with concrete floor, brick walls, metal deck roof and with a canopy roof with internal finishes to laboratory standards.

Poultry Research Complex

71. This project will establish an integrated poultry research complex comprising:

- . a research laboratories and amenities building of 415 m² gross floor area
- . six discrete poultry sheds totalling 1895 m² gross floor area to house a total of 3760 adult and growing birds

72. All buildings in the complex will be sited within a compound west and south of building no. 29 (covered sheep yards) with appropriate separation of sheds and bird groups.

73. The research and amenity building will be designed to achieve secure and environmentally controlled access to working areas to prevent cross contamination. It will be constructed of metal clad insulated panels and roof on a concrete slab with epoxy and vinyl finishes, laboratory standard services and fitout.

74. The poultry sheds will be constructed to "best industry practice" and will include racking and caging together with appropriate systems for feeding, watering, waste removal and lighting control. The two sheds housing cockerels will be suitably sound proofed to eliminate any potential disturbance to the local residents. Systems for the control of the internal environment - control heating, cooling and ventilation will be designed and installed by expert contractors and suppliers to the poultry industry. During documentation alternative systems will be evaluated to ensure that the most cost-effective and reliable system is selected.

Mechanical Services

75. Mechanical services for this project will include:

- . airconditioning for comfort conditions in administrative areas, laboratories and equipment rooms
- . humidity control in specific areas
- . heating and ventilation of ancillary areas
- . exhaust ventilation systems including toilet exhausts, fume cupboards and special exhaust systems
- . piped gas services such as vacuum, compressed air, natural gas, and compressed gases
- . special services including instrument cooling water, de-ionised water and cool and freezer rooms

76. The principal standards which apply to the mechanical services are:

- . AS 1668 Part 2 - 1990 Ventilation Requirements
- . AS 2982 - 1987 Laboratory Construction
- . AS 2243 Part 1-10 - 1982-87 Safety in Laboratories
- . Guidelines for small Scale Genetic Manipulation Work - Dec. 1989
- . Building Code of Australia - 1990.

Electrical Services

77. Generally, wiring and installation of lighting and power will be in accordance with AS 3000, the Supply Authority requirements and the CSIRO brief. General purpose outlets will have earth leakage protection (using residual current devices) in accordance with AS 2243.7. Internal lighting will be in accordance with AS 1680, and emergency lighting with AS 2293 part 1. Emergency isolating switches in laboratories will be in accordance with AS 2982. New kiosk substations will be connected to the existing underground HV reticulation.

McMaster Laboratory

78. Mains power from a new outdoor kiosk substation will supply the main switchboard located in a dedicated ground floor room. Power outlets to laboratories, will generally be mounted on above bench, 3 channel cable ducts, and emergency isolating switches will be provided. Other power outlets will be strategically located throughout the building. Emergency and exit lighting will be provided to public areas, stairs and fire escape routes and car park lighting will also be provided.

79. Telecommunications cabling will be provided in accordance with Austel requirements and connected to the existing PABX in building no. 1. A multi-purpose passenger/goods lift will be installed to serve both levels. The building will have a lightning protection system.

Library Extension and Lecture Theatre

80. The library extension will be provided with lighting and power supplied from building no. 1 to suit the existing installation. Power outlets will be provided with earth leakage protection. The Lecture Theatre will include emergency and exit lighting as well as dimming controls. Basic projection facilities will be provided.

Animal Housing

81. The large animal house will be supplied with mains power to a main switchboard from a new kiosk substation. The substation will also serve the poultry complex. Light and power will be provided to suit the particular requirements of each area, power outlets will have earth leakage protection.

82. For the small animal colony, the mains power to the building will be upgraded to meet the increased electrical load. Light and power will be provided to suit the particular requirements of each area, power outlets will have earth leakage protection where appropriate.

Renovations to Building no. 6

83. Light and power will be provided to suit the particular requirements of each area and consistent with the McMaster Laboratory. Power will be provided to laboratory areas and earth leakage protection will be provided for general purpose outlets as for the McMaster Laboratory.

Extensions to Post Mortem Building

84. Light and power will be provided to suit the particular requirements of each area, and power outlets will be provided with earth leakage protection where appropriate.

Poultry Research Complex

85. Mains power to the buildings will be supplied from a new outdoor kiosk substation to the respective main switchboards. The substation will also serve the proposed large animal house.

Hydraulic Services

86. Hydraulic services will include:

- . sanitary plumbing and drainage
- . laboratory plumbing and trade waste
- . general water supply
- . domestic hot and cold water
- . hot and cold water
- . animal house plumbing and drainage
- . safety equipment
- . natural gas service

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

Sanitary Plumbing and Drainage

88. Sewer drainage from areas other than laboratories will connect to the existing sewer reticulation.

Laboratory Plumbing and Trade Waste

89. Drainage from laboratories will connect to existing arrestor pits prior to discharge to the Water Board sewer. The laboratory waste from the McMaster Laboratory will connect to an existing neutraliser pit prior to discharge to the Water Board sewer.

90. A new trade waste application to the Water Board will cover the current and projected increased rates of discharge from the redevelopment.

General Water Supply

91. The existing water service is provided from a main in Clunies Ross Street supplying fire hydrant and domestic water supplies. The service currently also extends to an existing storage tank to the south of the site which supplies non-potable water for animal and laboratory needs. The potable and non-potable water services are currently reticulated around the site to the various buildings.

Hot and Cold Water

92. The cold water service to each building will be extended from the existing external potable water reticulation where required. Hot water within each building will be provided by extension of the existing service or by local gas fired or electric heated units. The laboratory cold water service will generally be supplied from the existing external non-potable water reticulation where required. In the McMaster Laboratory a break tank and pressure unit will be provided. The laboratory hot water will be supplied from local gas fired or electric hot water units supplied from the non-potable water supply.

Animal House Plumbing and Drainage

93. The solid and liquid animal wastes from the large animal house will be reticulated to the existing screening plant which has sufficient capacity to handle the additional load.

Safety Equipment

94. Safety showers and eye wash facilities will be provided to each laboratory compartment.

Gas Service

95. The existing natural gas reticulation will be extended as required.

Fire Protection

96. Water supply to fire hydrants will be extended from the existing external hydrant service. Hose reels will be connected to the existing service. From this connection the service will extend to all hose reels within the building. A pressure boosting unit will be installed in the McMaster laboratory to ensure that required pressures are available within the system. Fire extinguishers will be provided in areas where required to code requirements.

97. The Committee was advised that, although the Commonwealth and its authorities are not bound to meet all State legislative requirements, CSIRO will submit an application to NSW Fire Brigades for an assessment of fire mains/water supply, hydrant and hose reel systems for the Prospect site. CSIRO confirmed its intention to maintain consultation with the NSW Fire Brigades during design development and construction of the proposed redevelopment.

98. The Commonwealth Fire Board (CFB) suggested that the non provision of automatic sprinklers should be reviewed. The Committee was advised that CSIRO considers the need for sprinkler systems in its buildings on a case by case basis, weighing the risk of fire against the damage and risk that could follow the accidental or deliberate discharge of water. It does not normally seek to install sprinklers in buildings where it determines that the activities conducted have a low flammability hazard rating. The Committee was advised that an automatic fire sprinkler system will be installed in the McMaster Laboratory. The existing sprinkler system in building no. 1 will be extended into the library extension.

99. A fire risk analysis report recently completed for the CSIRO recommended that automatic sprinkler systems be installed in the poultry laboratory and the small animal house. CSIRO has advised that it will further consider this issue during the design development stage of these buildings.

100. The potential risks associated with the dispersal of biological agents into the environment or the storm water system, which may follow an accidental or deliberate discharge of water within and from a laboratory, is a major OH&S consideration. CSIRO advised the Committee in a response to a submission from the Division of building, Construction and Engineering that the isolated storage of flammable reagents has been carefully considered so as to reduce to a minimum the quantities of such materials

maintained in the open working laboratory. CSIRO is aware of the potential risks associated with the dispersal of biological agents into the environment or the storm water system which may follow an accidental or deliberate discharge of water within and from a laboratory.

Civil Engineering, Siteworks and Landscaping

101. Provision has been made in the design and the estimate for the following items, to be undertaken concurrently with the various building and engineering works:

- . demolition of building no. 3 and other minor sheds no longer suitable or necessary, which would impede the economic redevelopment of the site and prevent construction of modern research accommodation to meet present and future needs at Prospect. Turf will be planted on this vacant site
- . internal roads and car parking to replace those affected by the new works, and to provide an additional 50 parking spaces for the new laboratory
- . modifications to ramped trolley access, necessitated by the library extension to building no. 1 will maintain this important link
- . extension and modifications to existing site services
- . limited landscaping to the perimeter of the redevelopment areas consistent with the present site landscaping.

ENERGY CONSERVATION AND MANAGEMENT

102. Engineering services in research laboratories constitute a substantial proportion of capital and ongoing operational cost, and it is important that active, passive and operational management strategies are adopted in a co-ordinated energy management plan to achieve low energy consumption.

103. In addition to passive energy conservation measures incorporated in the building design, the design of the engineering services will include the following active energy conservation features:

Airconditioning - McMaster Laboratory

104. Separate air handling plants to independent laboratory areas to allow out-of-hours operation, if required. Variable volume systems to office areas with changeable internal loads. System controls incorporating operational efficiency features including optimisation of start/stop times and set point scheduling. The use of outside air cycles for all air handling plants to allow "free cooling" during favourable outdoor conditions. Low velocity duct systems with short run lengths and plant rooms close to the areas they serve.

Fume Cupboards

105. The fume cupboard design will incorporate variable volume exhaust to minimise loss of conditioned air and reduce energy consumption.

Electrical Services

106. Light fittings will generally have high efficiency fluorescent lamps and low loss ballasts. External lighting will be automatically controlled using daylight switches. Lights in areas which are used for short periods only, such as store rooms, will be automatically switched off by time switch. In addition to energy conservation, power factor correction will be applied to new substations to reduce electrical energy costs.

ENVIRONMENTAL CONSIDERATIONS

107. Research at Prospect does not involve exotic diseases or agents and all materials and chemicals are stored, handled and disposed of in accordance with the requirements of the Commonwealth and NSW Governments and with the relevant standards and Codes of Practice and to the satisfaction of the local authorities.

108. The Committee was advised that the proposal has been discussed with officials of the Commonwealth Environment Protection Agency (CEPA) of the then Department of the Arts, Sport, the Environment and Territories (DASET) and CSIRO has been advised that no action is required under the *Environment Protection (Impact of Proposals) Act 1974*. CEPA expressed concern that the visual impact of the proposal should be minimised from nearby recreational or residential areas. CSIRO advised that, following a public meeting with residents and local authorities, it agreed to modify its tree planting program to plant more trees between the poultry unit and the residential areas. The redevelopment will continue the existing landscaping,

all of which has been carried out by CSIRO. There are no old-growth areas of indigenous flora on the site. CSIRO will also pay particular attention to avoiding any increase in odour reaching residential areas, monitoring washdown water and ensuring quality of runoff from the site.

CONSULTATIONS

109. The proposal has been discussed with the following authorities and departments:

- . Commonwealth Government
 - Department of Industry, Technology and Regional Development
 - Department of Finance
 - Department of Primary Industries and Energy
 - Department of the Arts and Administrative Services
 - Department of the Prime Minister and Cabinet
 - Department of the Treasury
 - Attorney-General's Department
- . State Government
 - NSW Fire Brigade
 - NSW Water Board
 - NSW Roads and Traffic Authority
 - Work Cover Authority
- . Local Government
 - Holroyd City Council
 - Prospect Electricity
 - Blacktown Council
- . Union
 - CSIRO Chapter of Public Service Union
- . Other Authorities and Organisations
 - Wool Research and Development Corporation
 - ACROD Ltd
 - University of Sydney - particularly the Camden Campus

University of Western Sydney - Kingswood, Hawkesbury
and MacArthur Campuses
Westmead Hospital

The immediate neighbours and the local Councillors have also been consulted.

LIMIT OF COST ESTIMATE

110. When referred to the Committee in July 1993 the estimated cost of the project was \$11.6m at August 1992 prices. CSIRO advised the Committee that as at June 1993 the estimated cost remained at \$11.6m inclusive of all professional fees. The estimate does not include the cost of relocating staff and equipment from other sites.

TIMETABLE

111. Construction is expected to take 12-15 months. CSIRO has obtained Cabinet and Committee approval to concurrent documentation on the grounds of urgency, as CSIRO is required to honour its commitment to the University of Sydney to vacate the McMaster Laboratory as soon as possible after June 1994.

Committee's Recommendation

112. The Committee recommends redevelopment of the CSIRO site at Prospect, NSW at an estimated cost of \$11.6m at August 1992 prices.

CONCLUSIONS AND RECOMMENDATIONS

113. The conclusions and recommendations of the Committee and the paragraph in the report to which each refers are set out below.

	Paragraph
1. A need exists to provide safe and efficient working conditions for CSIRO staff currently employed at the McMaster Laboratory Glebe, the Poultry Research Unit North Ryde and at Prospect.	19
2. Transfer of the McMaster Laboratory from the University of Sydney, Glebe to Prospect is the preferred option and will result in complementary activities being carried out with the staff of the Division of Animal Production currently located at Prospect. Available land and support facilities will also be available at Prospect at no additional cost.	36
3. The site at Prospect is suitable for providing upgraded and new research facilities for staff of the Division of Animal Production as well as replacement facilities for staff of the Division of Animal Health.	41
4. The Committee recommends that the Government should give consideration to transferring the Wool Research Development Corporation's equity in the site at Prospect to CSIRO.	42
5. The Committee commends CSIRO on its inter-institutional links with the University of Western Sydney Nepean, and believes that these links will be strengthened once library facilities at Prospect are extended, thus providing access to a greater range of research material.	58

6. The Committee recommends redevelopment of the CSIRO site at Prospect, NSW at an estimated cost of \$11.6m at August 1992 prices.

112


Colin Hollis
Chairman
21 October 1993

APPENDIX A

WITNESSES

ANDERSON, Mr Ian Maxwell, Managing Director, Bassett-JPG Consulting Engineers, Level 10, 50 Miller Street, North Sydney, New South Wales 2060

BLACK, Dr John Langtree, Assistant Chief of Division, Division of Animal Production, CSIRO, Clunies Ross Street, Prospect, New South Wales 2149

CHAMPION, Mr Ian Russell, General Manager Australia and New Zealand, SmithKline Beecham Animal Health, Cnr Allambie & Warringah Roads, Frenchs Forest, New South Wales 2086

COBON, Dr Gary Stewart, Senior Project Manager, Biotech Australia Pty Ltd, 28 Barcoo Street, Roseville, New South Wales 2069

COOK, Mr Peter James, Director, Collard Clarke and Jackson Pty Ltd, Level 3, 165 Walker Street, North Sydney, New South Wales 2060

DEANE, Dr Elizabeth Margaret, Head, Biological Sciences, University of Western Sydney, Nepean, Building P, Westmead North Campus, Hawkesbury Road, Westmead, New South Wales

DONALD, Dr Alan David, Director, Institute of Animal Production and Processing, CSIRO, Gate 4, 105 Delhi Road, North Ryde, New South Wales 2113

GIBB, Mr Maxwell Woolridge, President and Executive Director, Greater Western Sydney Regional Chambers of Commerce and Industry Inc., Margaret Farm, 52 Wilson Street, St Marys, New South Wales 2760

HARLEY, Mr George Johnston, General Manager, Corporate Property Branch, CSIRO, Limestone Avenue, Campbell, Australian Capital Territory 2601

MAYO, Dr Oliver, Chief of Division, Division of Animal Production, CSIRO, Clunies Ross Street, Prospect, New South Wales 2149

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

PINCUS, Mr David Klaus, Senior Strategic Planner, Corporate Property Branch, CSIRO, 314 Albert Street, East Melbourne, Victoria 3002

RICKARD, Professor Michael Desmond, Chief of Division, Division of Animal Health, CSIRO, Cnr Park Drive and Flemington Road, Parkville, Victoria 3052

STEEL, Dr John Winston, Assistant Chief and Head of McMaster Laboratory, Division of Animal Health, CSIRO, Opp. 56 Parramatta Road, Sydney University, Glebe, New South Wales 2037

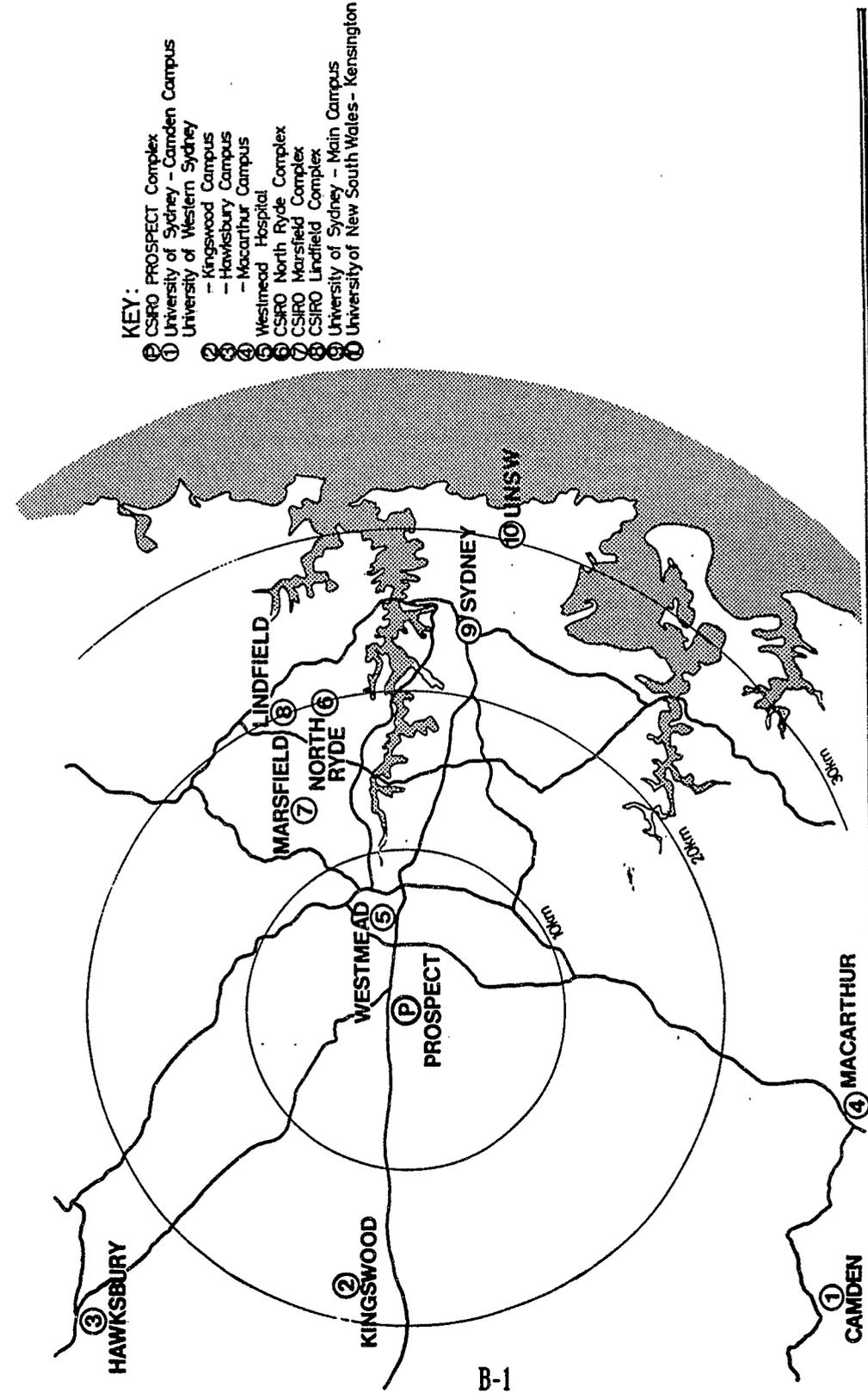
THIESSEN, Dr Roger Bennett, Manager, On-Farm Research, Wool Research and Development Corporation, Wool House, 369 Royal Parade, Parkville, Victoria 3052

THOM, Professor Bruce Graham, Pro-Vice-Chancellor (Research), University of Sydney, New South Wales 2006

APPENDIX B

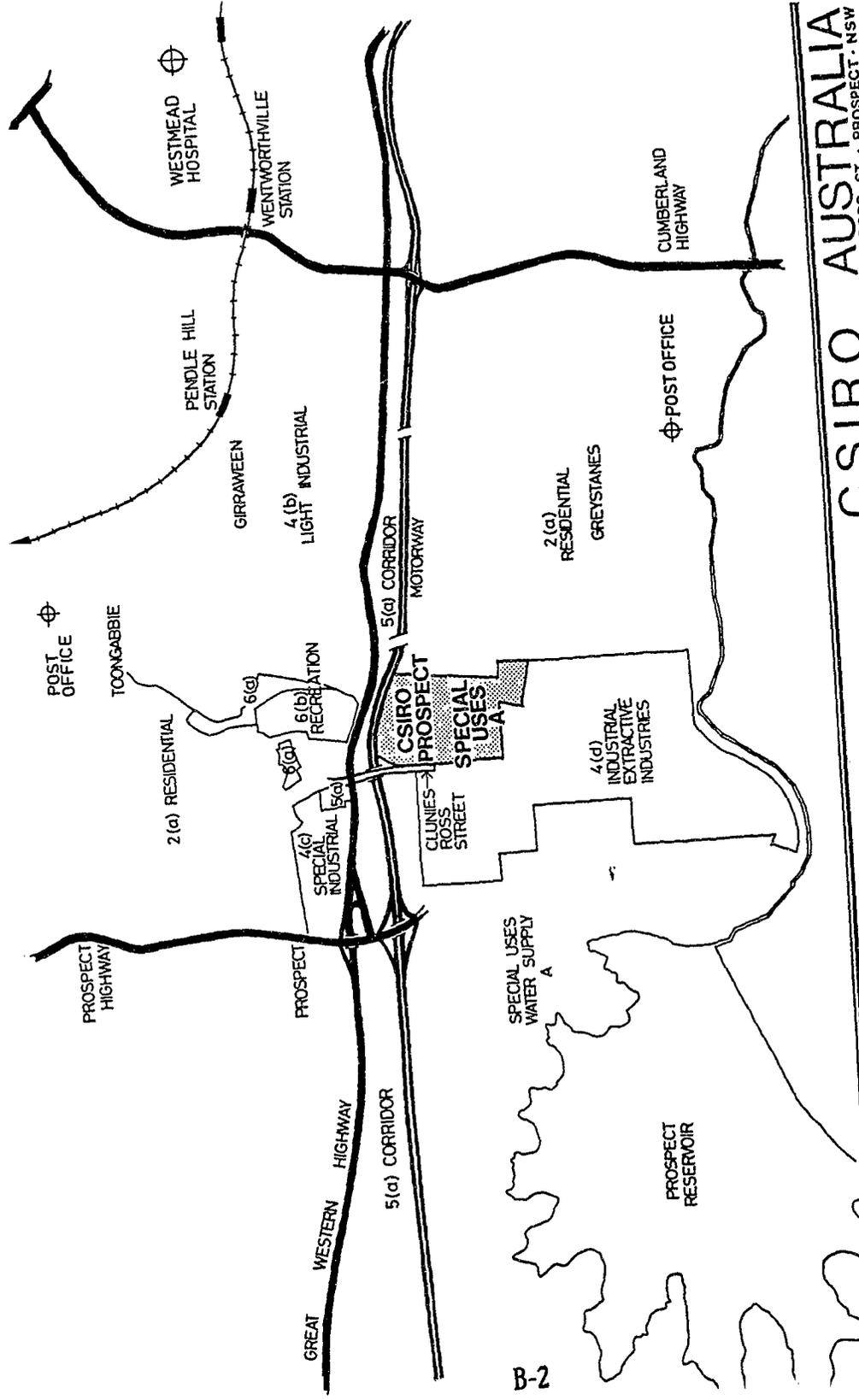
PROJECT DRAWINGS

	Page
Location Plan	B-1
Environmental Plan	B-2
Site Plan	B-3
McMaster Laboratory – Ground Floor Plan	B-4
McMaster Laboratory – First Floor Plan	B-5
McMaster Laboratory – North and South Elevations	B-6
McMaster Laboratory – East and West Elevations	B-7
Library Extension	B-8
Lecture Theatre	B-9
Large Animal House	B-10
Large Animal House Elevations	B-11
Alterations to Building No. 6 – Ground and First Floor Plan	B-12
Extension to Post Mortem Facility	B-13
Poultry Research Building and Transgenic Poultry Housing	B-14
Poultry Housing	B-15



B-1

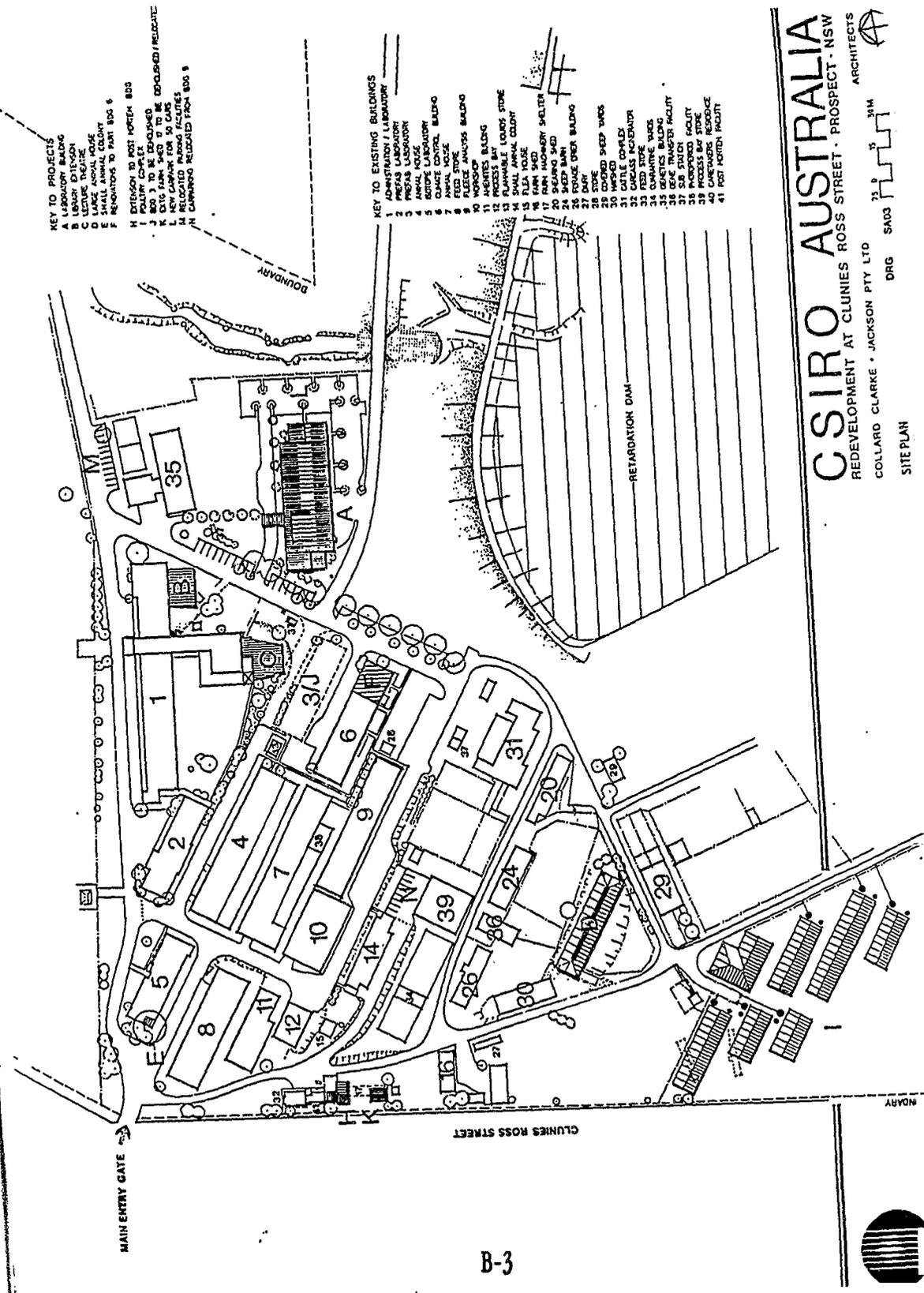
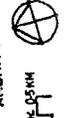




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CSIRO AUSTRALIA
 NEW ACCOMMODATION · CLUNIES ROSS ST · PROSPECT · NSW
 ARCHITECTS
 COLLARD CLARKE · JACKSON PTY LTD
 ENVIRONMENTAL PLAN DRG SA02



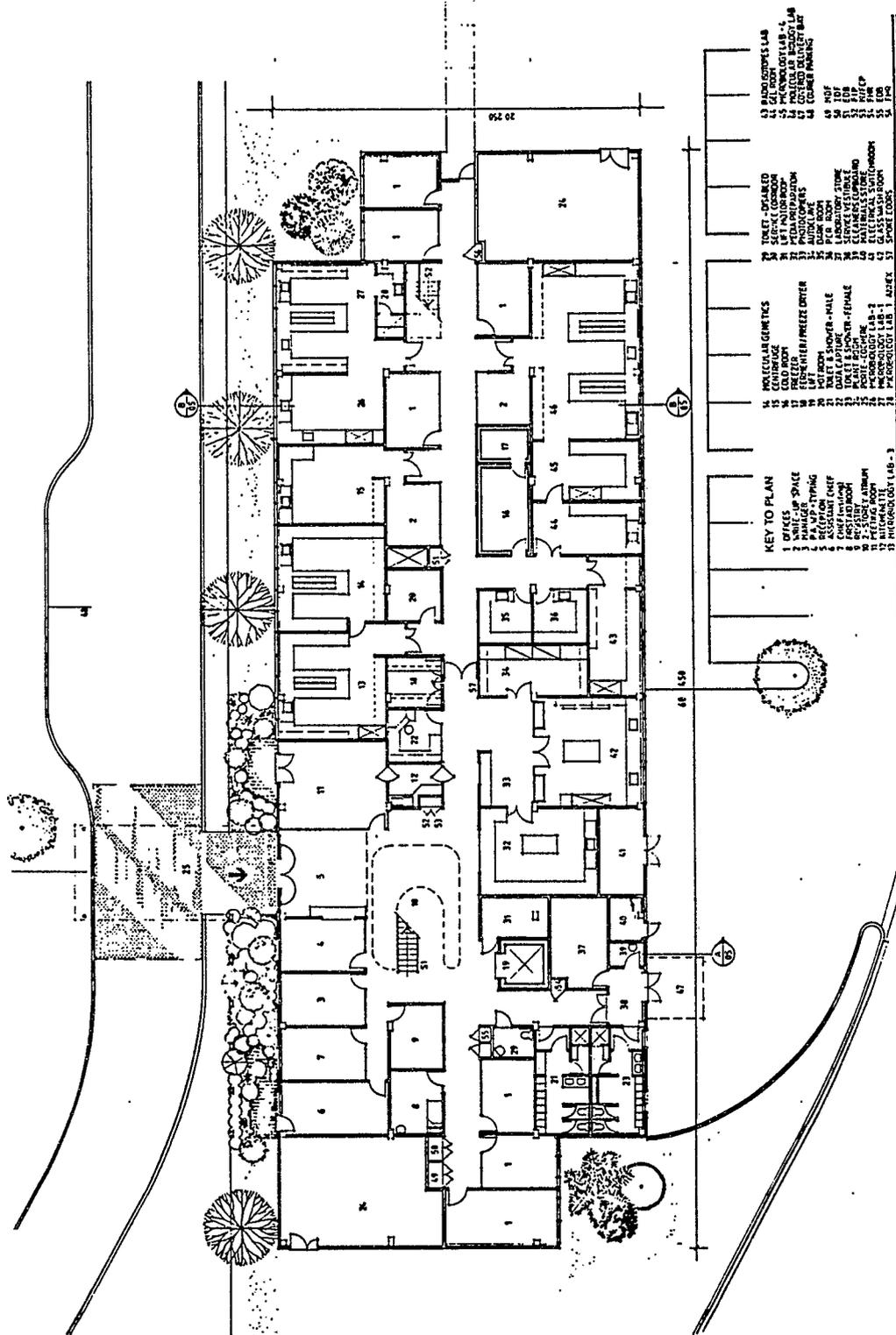
- KEY TO PROJECTS
- A LABORATORY BUILDING
 - B LABORATORY BUILDING
 - C LABORATORY BUILDING
 - D LARGE ANIMAL HOUSE
 - E SMALL ANIMAL COLONY
 - F REPOSITORIES TO PART B00 1
 - H DESIGN TO POST FOREN B00
 - I POLYMER COREX
 - J B00 3 TO BE DELETED
 - K B00 4 TO BE DELETED
 - L B00 5 TO BE DELETED
 - M RELOCATED PARKING FACILITIES
 - N CARPARKING RELOCATED FROM B00 1

- KEY TO EXISTING BUILDINGS
- 1 ADMINISTRATION LABORATORY
 - 2 ADMINISTRATION LABORATORY
 - 3 PREPARATION LABORATORY
 - 4 ANIMAL HOUSE
 - 5 BODICE LABORATORY
 - 6 ANIMAL HOUSE
 - 7 ANIMAL HOUSE
 - 8 FEED STORE
 - 9 FEED STORE
 - 10 FEED STORE
 - 11 LABORATORY BUILDING
 - 12 PROCESS BAY
 - 13 PLAYABLE LOUIS STORE
 - 14 SMALL ANIMAL COLONY
 - 15 SMALL ANIMAL COLONY
 - 16 RAIN HARBOR SHED
 - 17 RAIN HARBOR SHED
 - 18 SEWING SHED
 - 19 SEWING SHED
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 - 21 SEWING SHED
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 - 25 SEWING SHED
 - 26 SEWING SHED
 - 27 SEWING SHED
 - 28 CONCRETE SHED
 - 29 CONCRETE SHED
 - 30 WATTLE COMPLEX
 - 31 WATTLE COMPLEX
 - 32 WATTLE COMPLEX
 - 33 FEED STORE
 - 34 FEED STORE
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 - 40 FEED STORE
 - 41 FEED STORE

B-3



CSIRO AUSTRALIA
 REDEVELOPMENT AT CLUNIES ROSS STREET · PROSPECT · NSW
 ARCHITECTS
 COLLARD CLARKE · JACKSON PTY LTD
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 SITE PLAN



B-4

- KEY TO PLAN**
- 1 OFFICES
 - 2 WAITING SPACE
 - 3 PAINT TYPING
 - 4 RECEPTION
 - 5 ASSISTANT CHIEF
 - 6 CHIEF ASSISTANT
 - 7 CHIEF ASSISTANT
 - 8 RECEPTION
 - 9 WAITING AREA
 - 10 WAITING AREA
 - 11 MICROBIOLOGY LAB-3

- MOLEKULE GENETICS**
- 15 COLLECTOR
 - 16 COLD ROOM
 - 17 FREEZER
 - 18 FREEZER/FREEZE DRYER
 - 19 LEFT HAND
 - 20 TOILET
 - 21 TOILET & SHOWER - MALE
 - 22 DATA CAPTURE
 - 23 PLANT ROOM
 - 24 MICROBIOLOGY LAB-2
 - 25 MICROBIOLOGY LAB-1
 - 26 ASSISTANT LAB-1
 - 27 ASSISTANT LAB-2
 - 28 MICROBIOLOGY LAB-3

- 30 PLANT OPERATED**
- 31 SURVEILLANCE ROOM
 - 32 LEFT HAND ROOM
 - 33 PLANT OPERATED
 - 34 PLANT OPERATED
 - 35 PLANT OPERATED
 - 36 PLANT OPERATED
 - 37 LABORATORY STORE
 - 38 PLANT OPERATED
 - 39 ELVATORS LUMINA
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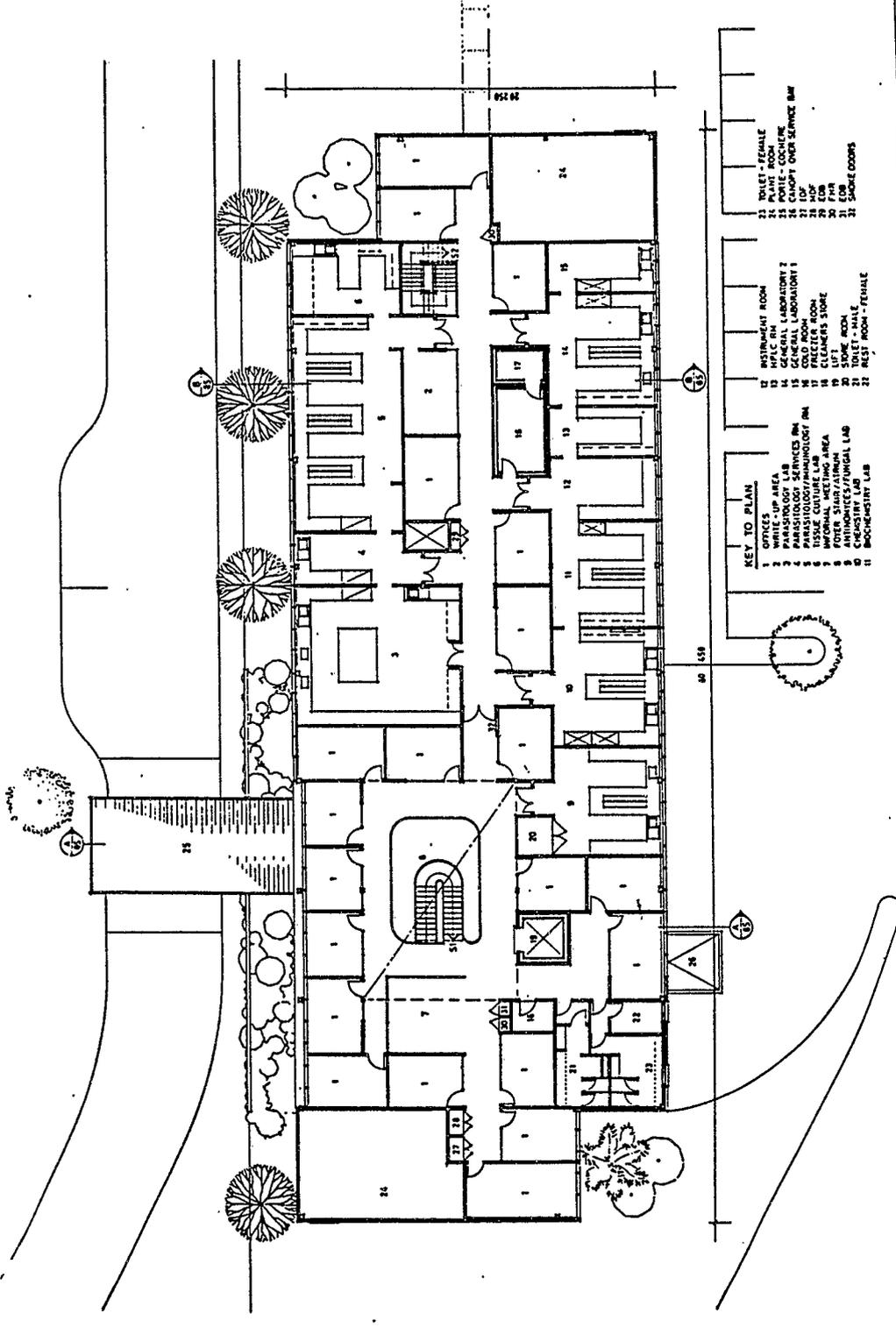
CSIRO AUSTRALIA
REDEVELOPMENT AT CLUNIES ROSS STREET - PROSPECT - NSW

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MC MASTER LABORATORY
LABORATORY BUILDING
GROUND FLOOR PLAN - LAYOUT

PROJECT

DRG A402

ARCHITECTS



B-5

- KEY TO PLAN**
- 1 OFFICES
 - 2 OFFICES
 - 3 PARASITOLOGY LAB
 - 4 PARASITOLOGY SERVICES RM
 - 5 PARASITOLOGY LAB
 - 6 TISSUE CULTURE LAB
 - 7 TISSUE CULTURE LAB
 - 8 INFORMAL MEETING AREA
 - 9 FOSTER STAGE/STAIRWELL
 - 10 FOSTER STAGE/STAIRWELL
 - 11 MICROBIOLOGY LAB
 - 12 MICROBIOLOGY LAB

- HISTOLOGY LAB**
- 13 HISTOLOGY ROOM
 - 14 OFFICE RM
 - 15 GENERAL LABORATORY 2
 - 16 GENERAL LABORATORY 1
 - 17 GENERAL LABORATORY 1
 - 18 PRECINCT ROOM
 - 19 CLEANERS STORE
 - 20 KITCHEN
 - 21 STORE ROOM
 - 22 TOILET - MALE
 - 23 REST ROOM - FEMALE

- TOILET - FEMALE**
- 24 PLANT ROOM
 - 25 PORTIE - COCHERE
 - 26 SHOPT OVER SERVICE BAY
 - 27 LOBBY
 - 28 LOBBY
 - 29 LOBBY
 - 30 LOBBY
 - 31 LOBBY
 - 32 SHOCK DOORS



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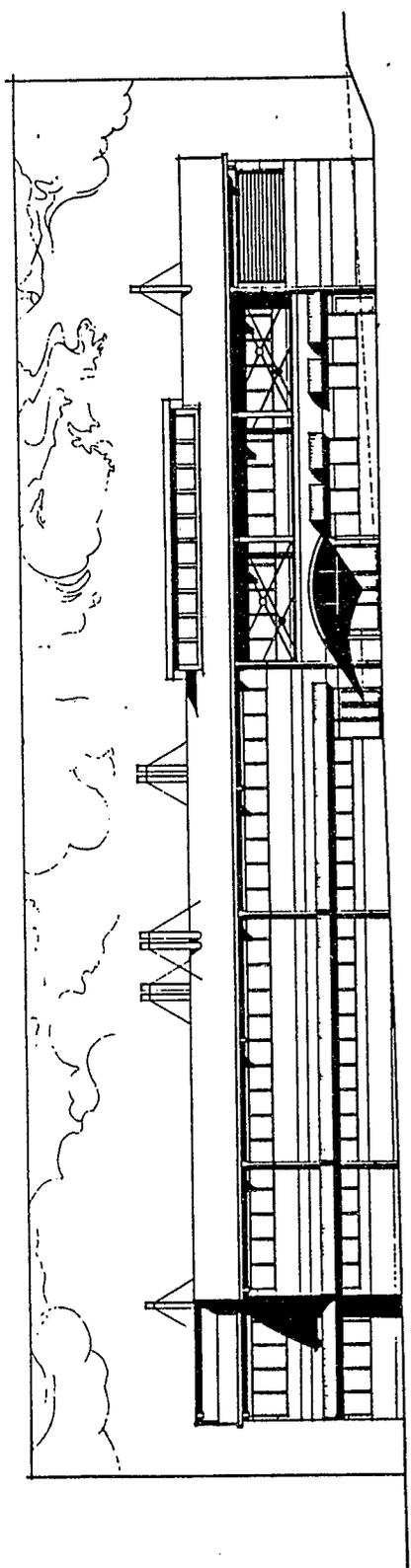
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REDEVELOPMENT AT CLUNIES ROSS STREET - PROSPECT - NSW

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LABORATORY BUILDING
FIRST FLOOR PLAN - LAY 11

PROJECT

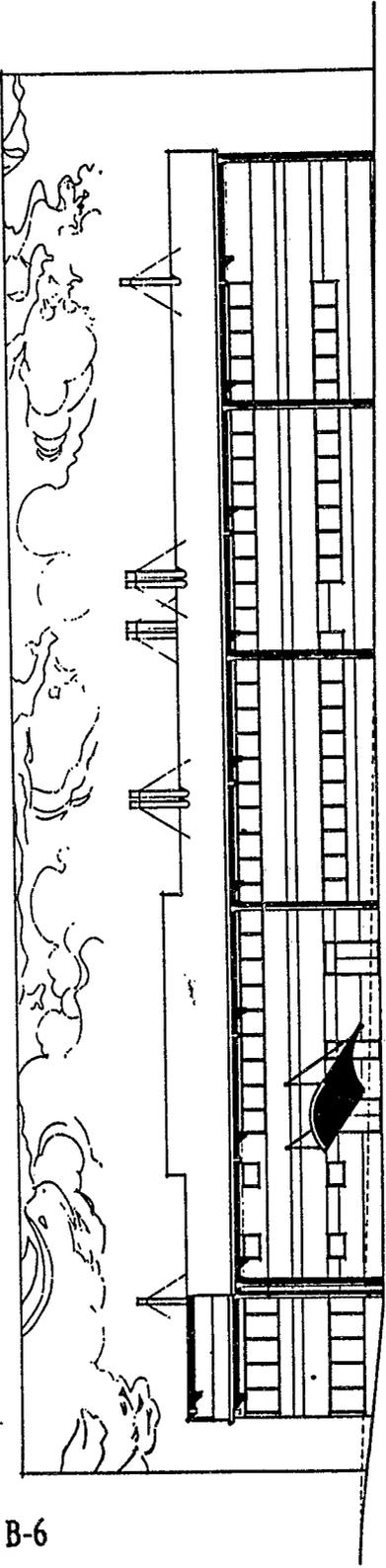
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ARCHITECTS



NORTH ELEVATION

B-6



SOUTH ELEVATION

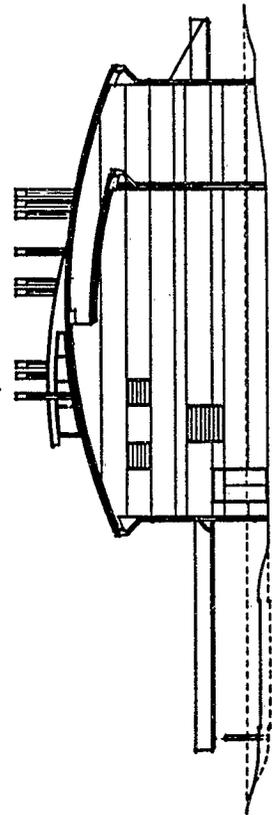


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PROJECT

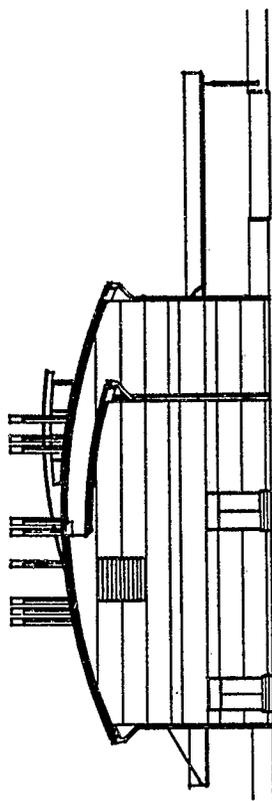
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 ARCHITECTS

COLLARD CLARKE · JACKSON PTY LTD
 MC MASTER LABORATORY
 LABORATORY BUILDING A
 NORTH & SOUTH ELEVATIONS
 DRG AM04 1:100

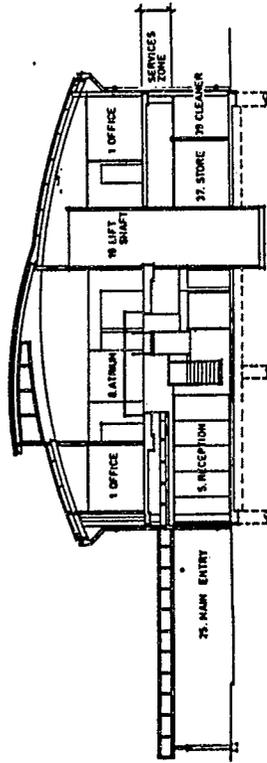


WEST ELEVATION

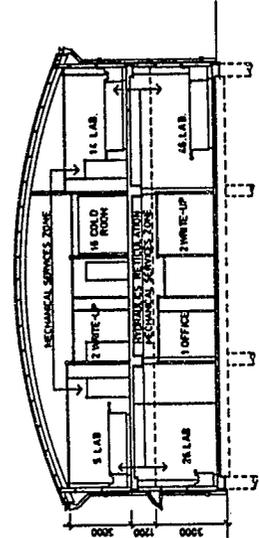
B-7



EAST ELEVATION



SECTION A-A



SECTION B-B

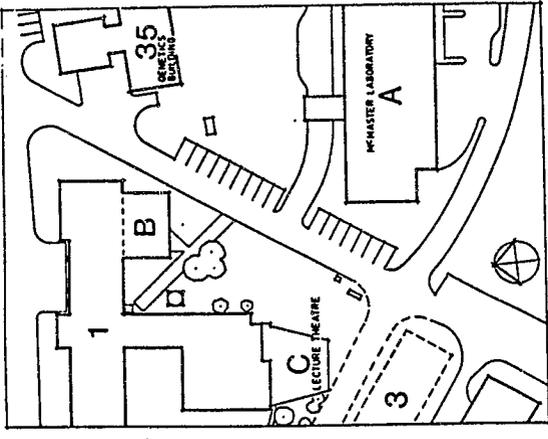


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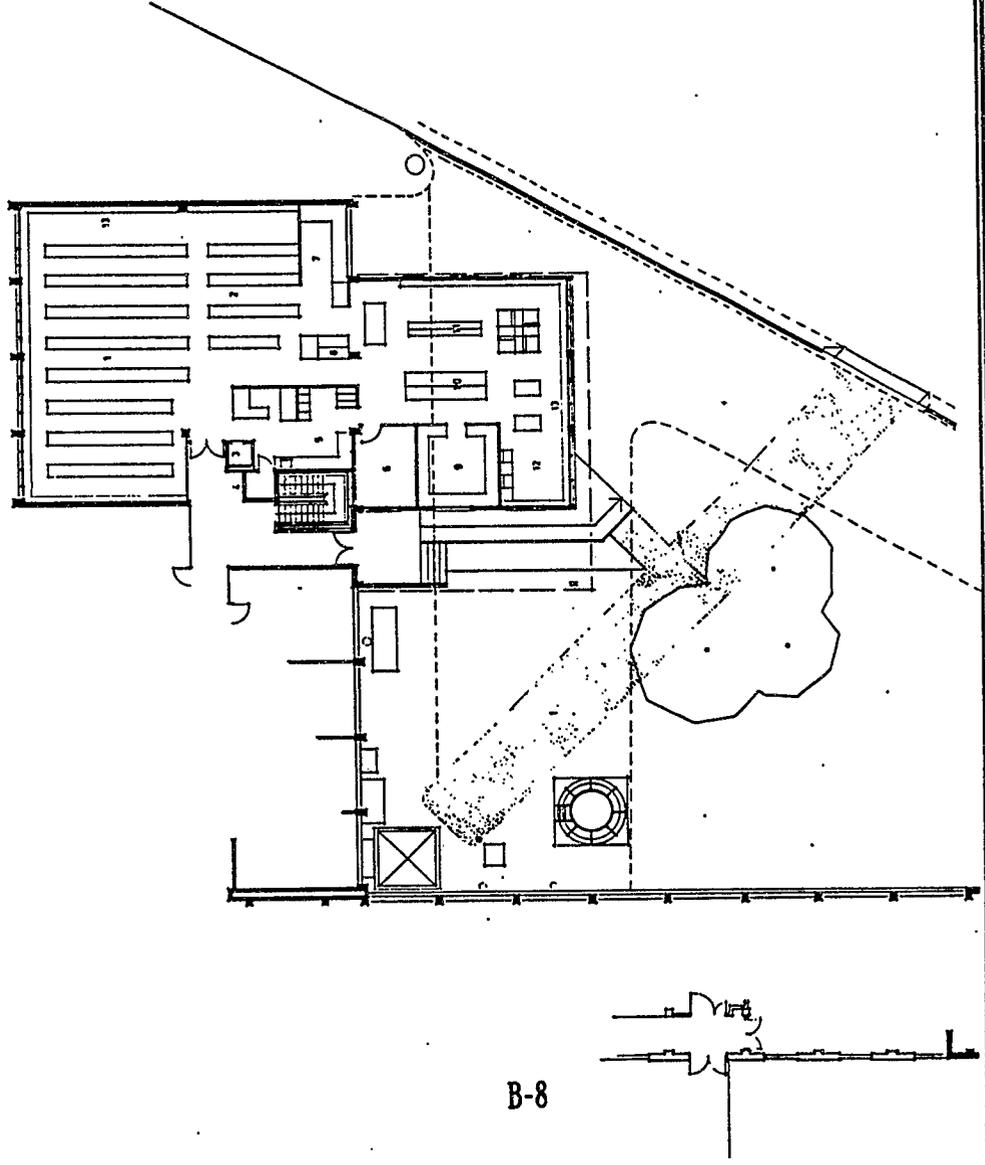
PROJECT

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 REDEVELOPMENT AT CLUNIES ROSS STREET · PROSPECT · NSW
 ARCHITECTS

COLLARD CLARKE · JACKSON PTY LTD
 MC MASTER LABORATORY
 LABORATORY BUILDING A
 EAST & WEST ELEVATIONS
 DRG AM05 1:100



- LIBRARY EXTENSION
KEY TO PLAN**
- 1 MAIN STACK
 - 2 HOST
 - 3 PHOTO-COPYER
 - 4 READING AREA
 - 5 LIBRARIAN OFFICE
 - 6 RESEARCH READING
 - 7 CATALOGUES
 - 8 JOURNALS
 - 9 MASTER CATALOGUES
 - 10 READING AREA
 - 11 WALL SHELVES



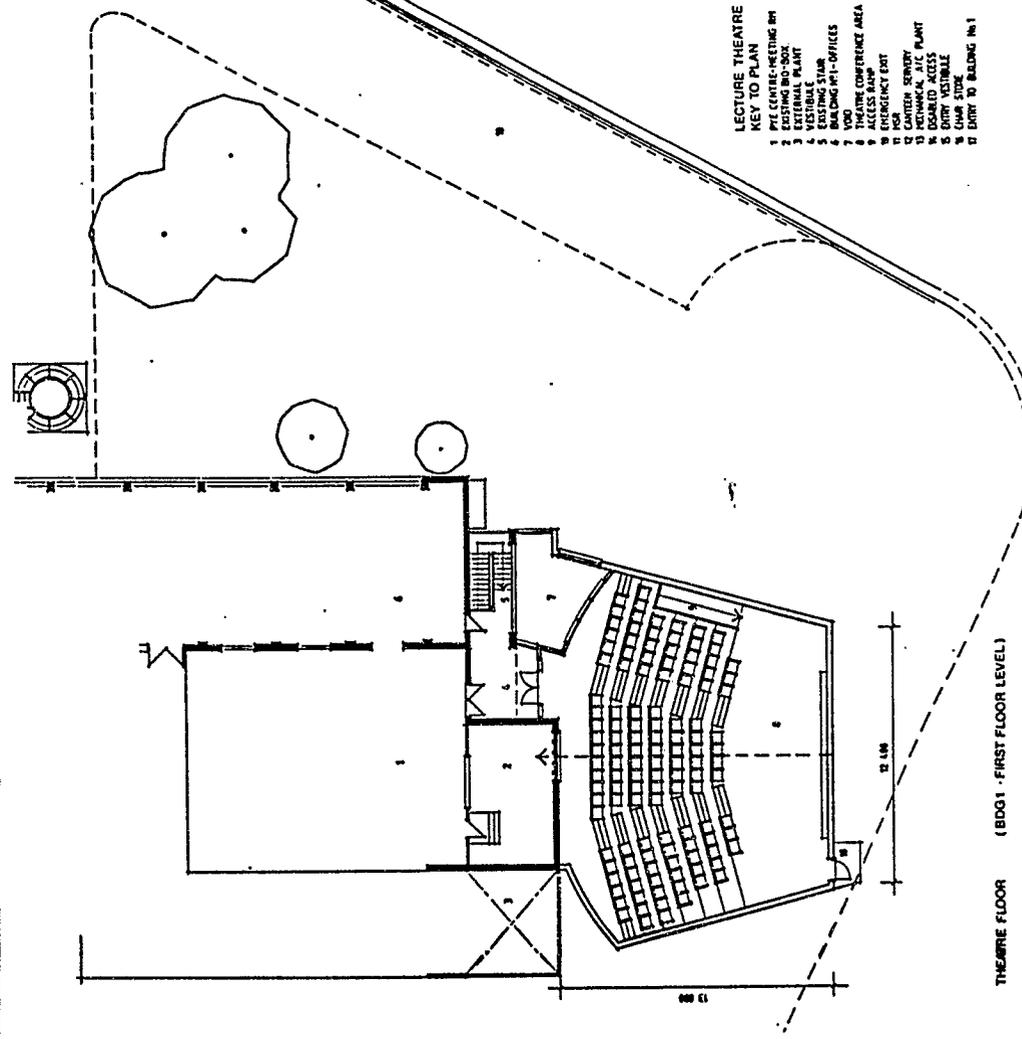
B-8



CSIRO AUSTRALIA
 REDEVELOPMENT AT CLUNIES ROSS STREET - PROSPECT - NSW
 COLLARD CLARKE - JACKSON PTY LTD ARCHITECTS
 LIBRARY EXTENSION DRG BAO1 1 2 3 4 M

B

PROJECT



- LECTURE THEATRE
KEY TO PLAN**
- 1 FILE CABINETS
 - 2 MEETING RM
 - 3 EXTERNAL PLANT
 - 4 VESTIBULE
 - 5 EXISTING STAIR
 - 6 EXISTING RT-OFFICES
 - 7 VOID
 - 8 THEATRE CONFERENCE AREA
 - 9 ACCESS BAMP
 - 10 EMERGENCY EXIT
 - 11 CANTEN SERVOY
 - 12 RECEPTION, JIC PLANT
 - 13 RECEPTION
 - 14 ENTRY VESTIBULE
 - 15 CHAIR STACK
 - 16 ENTRY TO BALDING No 1

B-9



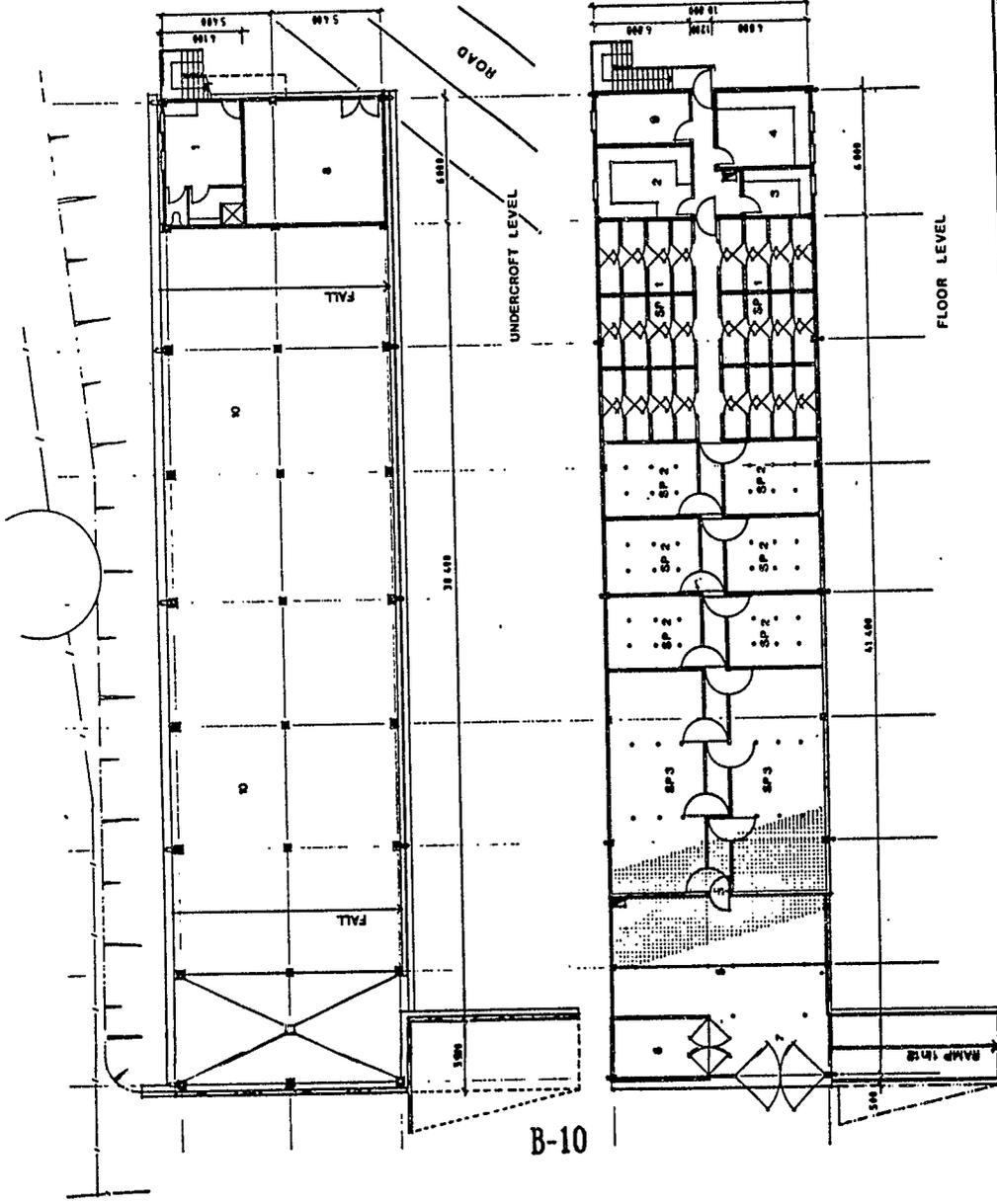
CSIRO AUSTRALIA
 REDEVELOPMENT AT CLUNIES ROSS STREET - PROSPECT - NSW
 COLLARD CLARKE - JACKSON PTY LTD ARCHITECTS
 LECTURE THEATRE DRG CA01 1 2 3 4 M

C

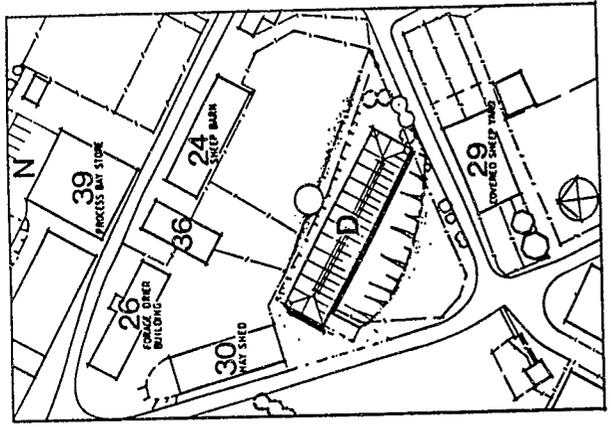
PROJECT

THEATRE FLOOR (BDG1 - FIRST FLOOR LEVEL)

GROUND FLOOR



B-10

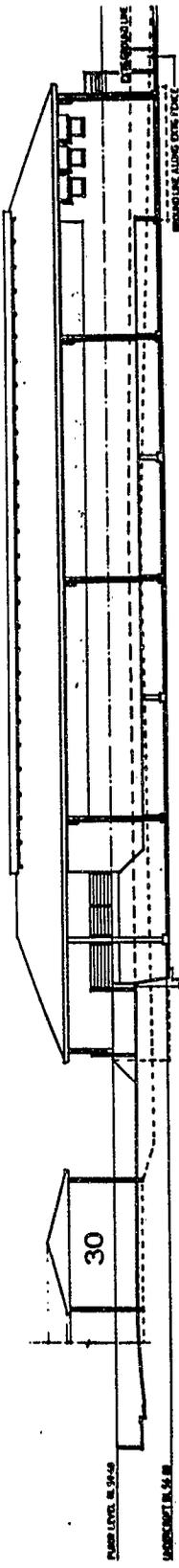


- KEY TO BLANK
- 1 WASH FACILITIES
 - 2 RESISTANT CULTURES
 - 3 WASH UP
 - 4 SUSCEPTIBLE COUNTRIES
 - 5 CLEANING WORKING AREA
 - 6 DOCK AREA & SHEARING STAND
 - 7 TOOL STORE
 - 8 UNDERCROFT AREA
 - 9 SP1 INDIVIDUAL SHEEP PENS
 - 10 SP2 SMALL GROUP PENS
 - 11 SP3 LARGE GROUP PEN

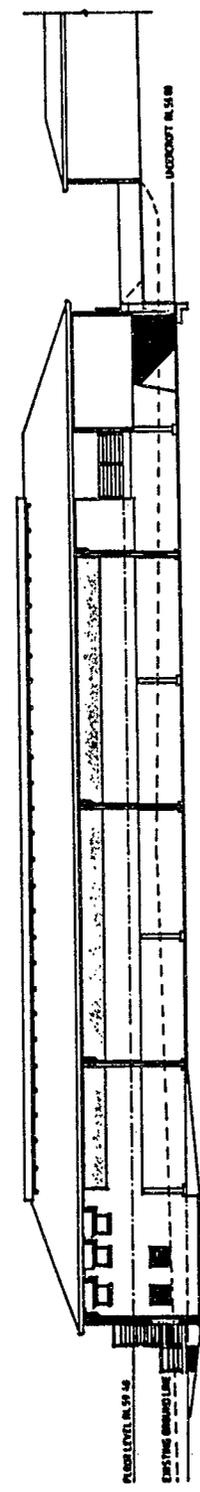


D PROJECT

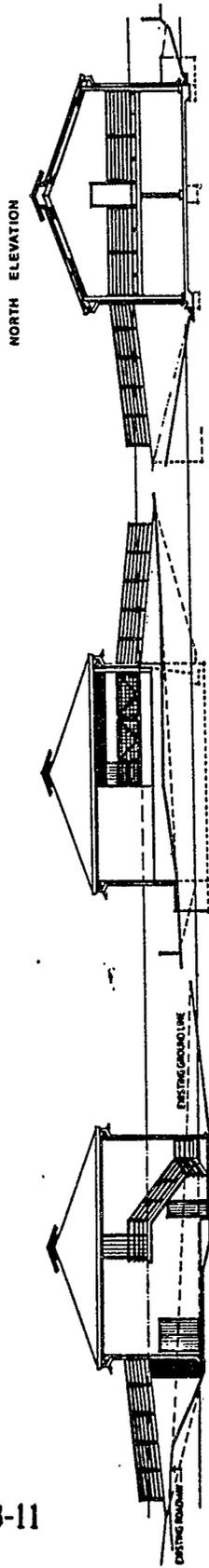
CSIRO AUSTRALIA
 REDEVELOPMENT AT CLUNIES ROSS STREET · PROSPECT · NSW
 COLLARD CLARKE · JACKSON PTY LTD ARCHITECTS
 LARGE ANIMAL HOUSE
 PLANS
 DRG DA01



SOUTH ELEVATION



B-11



NORTH ELEVATION

EAST ELEVATION

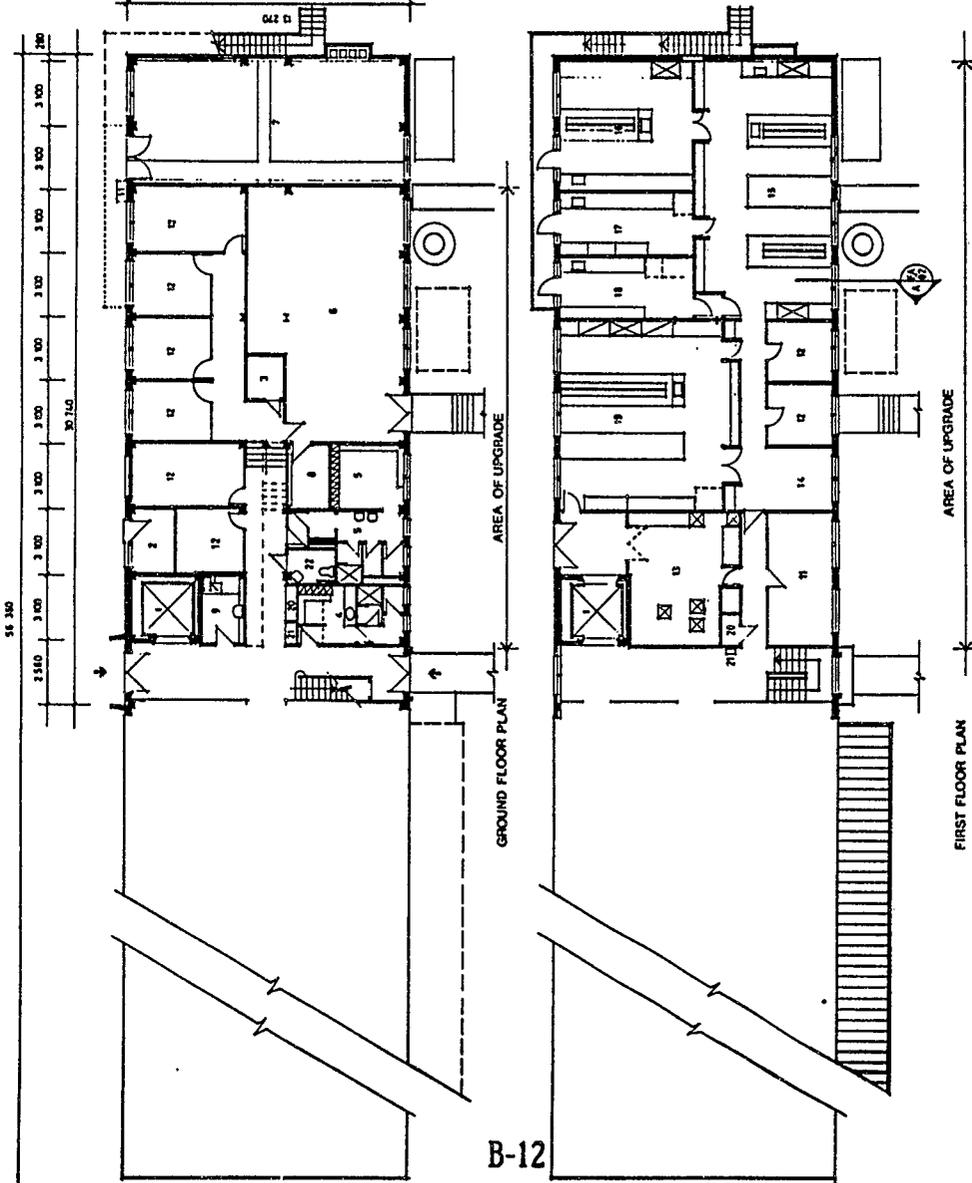
WEST ELEVATION

CROSS SECTION

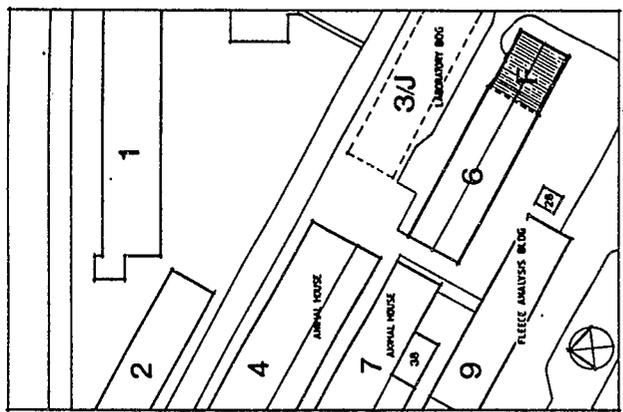


D PROJECT

CSIRO AUSTRALIA
 REDEVELOPMENT AT CLUNIES ROSS STREET · PROSPECT · NSW
 COLLARD CLARKE · JACKSON PTY LTD ARCHITECTS
 LARGE ANIMAL HOUSE
 ELEVATIONS
 DRG DA02



B-12



- BIOLOGY LABORATORIES/OFFICES
- KEY TO PLAN
- 1 OFFICES
 - 2 WORK AREA
 - 3 LIFT MOTOR ROOMS
 - 4 TOILET - ROYAL (UPGRADE)
 - 5 TOILET - ROYAL (UPGRADE)
 - 6 PLANT ROOM (UPGRADE)
 - 7 BEILER ROOM (UPGRADE)
 - 8 PLANT ROOM (UPGRADE)
 - 9 PLANT ROOM (UPGRADE)
 - 10 PLANT ROOM (UPGRADE)
 - 11 TOILET - ROYAL (UPGRADE)
 - 12 OFFICE
 - 13 OFFICE
 - 14 OFFICE
 - 15 OFFICE
 - 16 OFFICE
 - 17 OFFICE
 - 18 OFFICE
 - 19 OFFICE
 - 20 OFFICE
 - 21 OFFICE
 - 22 TOILET - DISABLED



F

PROJECT

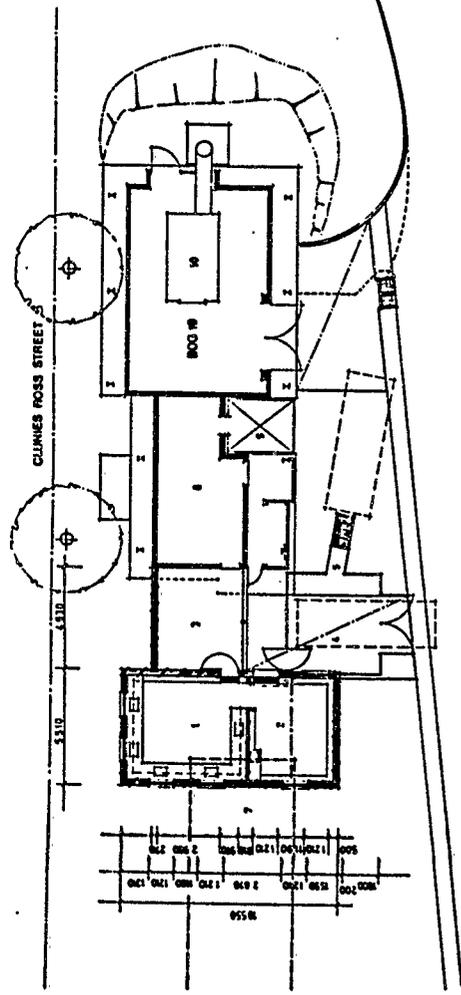
CSIRO AUSTRALIA
 REDEVELOPMENT AT CLUNIES ROSS STREET · PROSPECT · NSW

COLLARD CLARKE · JACKSON PTY LTD

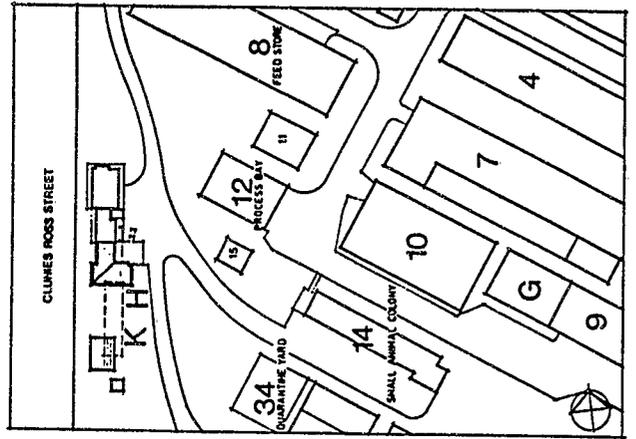
BUILDING No. 6, UPGRADE
 GROUND & FIRST FLOOR PLAN

DRG FA01 HHH™

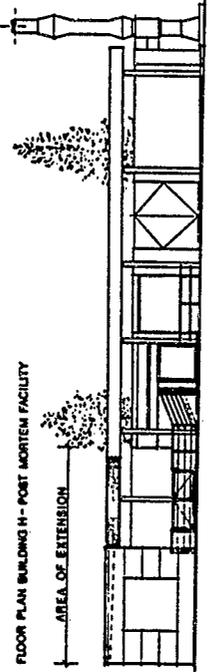
ARCHITECTS



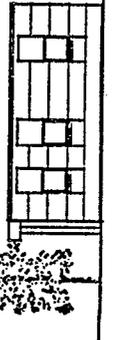
B-13



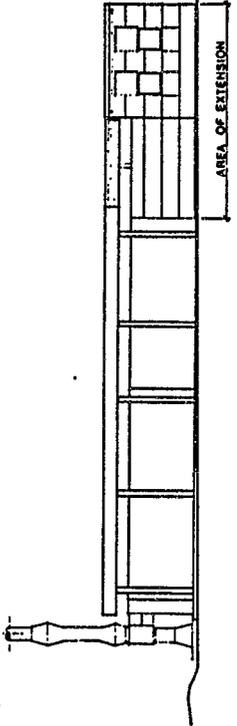
- POST-MORTEM EXTENSION
- KEY TO PLAN
- 1 POST-MORTEM
 - 2 EQUIPMENT STORE
 - 3 NEW SHEEP PEN
 - 4 BELGATED LOADING RACE
 - 5 IMPROVED VEHICLE ACCESS
 - 6 EXISTING POST-MORTEM
 - 7 COLD ROOM
 - 8 INCINERATOR



EAST ELEVATION



SOUTH ELEVATION



WEST ELEVATION



H

CSIRO AUSTRALIA
 REDEVELOPMENT AT CLUNIES ROSS STREET · PROSPECT · NSW

COLLARD CLARKE · JACKSON PTY LTD

POST-MORTEM FACILITY
 PLAN ELEVATIONS & SECTION

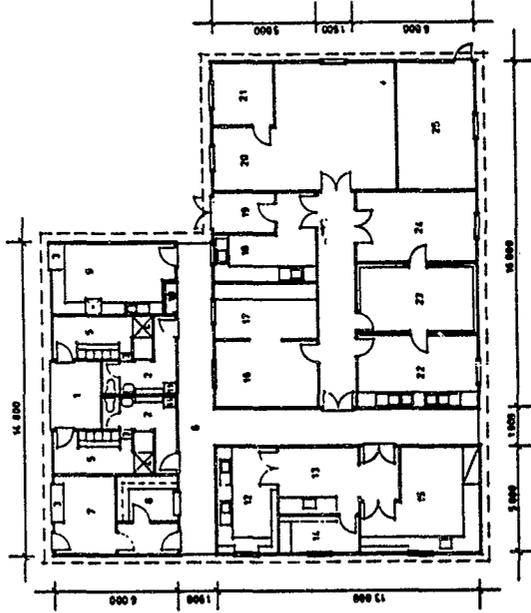
DRG MA01 HHH™

ARCHITECTS



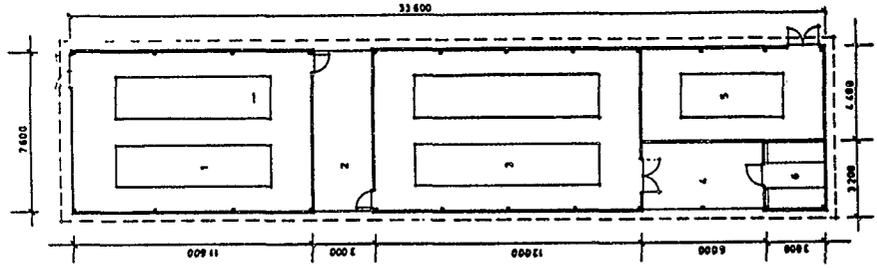
- RESEARCH & AMENITIES BUILDING**
KEY TO PLAN
 1 COVERED ENTRY
 2 CLEAN CHANGE ROOMS
 3 BREEZEWAY
 4 SHOWER
 5 SECONDARY CHANGE AREAS - LOCKERS
 6 BREEZEWAY
 7 STERILE STONE
 8 AMENITIES ROOM
 9 LAUNDRY ABOVE
 10 AMENITIES ROOM
 11 WASH ROOM (TRANSGENIC)
 12 MATCHET/INCUBATION ROOM (TRANSGENIC)
 13 CANDLING ROOM (TRANSGENIC)
 14 GENERAL OFFICE
 15 DATA PROCESSING
 16 WASH ROOM
 17 WASH ROOM
 18 MATCHET/INCUBATION ROOM
 19 CANDLING ROOM
 20 COR. WAITING ROOM
 21 EGG HANDLING
 22 EGG PROCESS ROOM

B-14

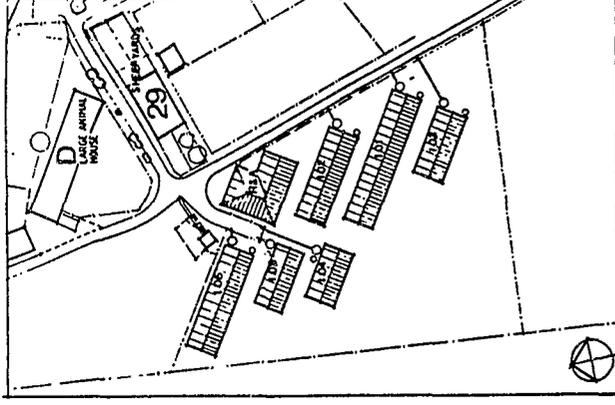


RESEARCH & AMENITIES BUILDING

- TRANSGENIC HOUSING (No. 105)**
KEY TO PLAN
 1 BREEZEWAY
 2 BROODING - GROWING
 3 WORK AREA
 4 BROODING - GROWING



TRANSGENIC HOUSING



- KEY TO PLAN**
 01 BREEZEWAY
 02 BROTHERS ADULT HENS
 03 ADULT COCKERELS
 04 BROTHERS BROODING - GROWING
 05 LAYERS BROODING - GROWING
 06 TRANSGENIC BIRD HOUSING
 07 R & A RESEARCH - AMENITIES BUILDING



CSIRO

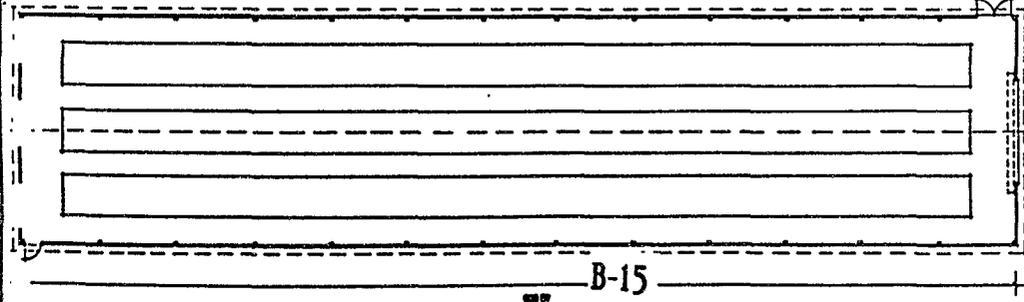
CSIRO AUSTRALIA
 REDEVELOPMENT AT CLUNIES ROSS STREET - PROSPECT - NSW

COLLARD CLARKE - JACKSON PTY LTD
 PROJECT 1 POULTRY RESEARCH BLDG DRG 1A01
 & TRANSGENIC POULTRY HOUSING

PROJECT



ARCHITECTS



B-15

HOUSE No. 102 BROTHERS
 -ADULT HENS

HOUSE No. 101 LAYERS
 -ADULT HENS

HOUSE No. 103 ADULT COCKERELS
 -BROTHERS
 -LAYERS

HOUSE No. 104 BROTHERS - GROWING
 -0-3 WEEKS
 -3-18 WEEKS

HOUSE No. 105 LAYERS
 BROODING - GROWING
 -0-5 WEEKS
 -5-18 WEEKS



CSIRO

CSIRO AUSTRALIA
 REDEVELOPMENT AT CLUNIES ROSS STREET - PROSPECT - NSW

COLLARD CLARKE - JACKSON PTY LTD
 POULTRY HOUSING - FLOOR PLANS DRG 1A02

PROJECT



ARCHITECTS

APPENDIX C

CSIRO ORGANISATIONAL STRUCTURE

Institute of Animal Production and Processing

The Divisions in the Institute of Animal Production and Processing undertake research which benefits Australia over the whole of its animal-based food and fibre business systems. It conducts research to improve the global competitiveness and sustainability of Australia's livestock production systems and rural-based manufacturing industries, and the general health of all Australians by influencing both food production systems and consumption choices.

The Institute comprises six divisions concerned with research into Australia's livestock (extensive and intensive), food and leather processing, global wool processing, veterinary pharmaceutical and preventive health industries. The Institute's Divisions are: Animal Health, Animal Production, Tropical Animal Production, Food Science and Technology, Wool Technology and Human Nutrition.

The Institute's mission is to enhance the global competitiveness of Australia's animal-based and food industries, the health and well being of its people, and the wise long-term use of its natural resources for these purposes by:

- performing research of the highest quality directed at the most significant problems and opportunities
- fostering the adoption of our research results
- working with others in CSIRO, the funders of CSIRO research, and users of CSIRO research results, and other research providers to do these things most effectively.

The Institute's total expenditure in 1992/93 was \$133.7m of which \$50m (37%) was from external funds. This is the largest sum and percentage of external funding of Institutes throughout the Organisation.

Collocation of the McMaster Laboratory with the Ian Clunies Ross Animal Research Laboratory will assist the vertical integration of the Institute's activities towards the development of products by CSIRO livestock industries.

Division of Animal Health (DAH)

History

DAH is one of the oldest Divisions within CSIRO. It had its origin in 1927, at the inaugural meeting of the Council for Scientific and Industrial Research (CSIR), when it was decided that work should be concentrated primarily on five major research areas, the first being designated as "Animal Pests and Diseases".

DAH was established in 1930 and since then has undergone two distinct name changes before reverting to its original title. On amalgamation with the Division of Animal Nutrition in 1936, it became known as the Division of Animal Health and Nutrition, and then in 1944 it was split into the Division of Animal Health and Production, and the Division of Biochemistry and General Nutrition. Finally in 1959, the Division of Animal Health and Production was divided into three Divisions, namely Animal Health, Animal Physiology and Animal Genetics.

Initially, the Division had no accommodation of its own and research work was often undertaken in association with the Veterinary Schools of the Universities of Sydney and Melbourne. In 1931, as a result of a gift of 20,000 pounds to CSIR by a New South Wales grazier, Mr (later Sir) Frederick D. McMaster, the McMaster Laboratory was built within the grounds of Sydney University in the Veterinary precinct. Some 5 years later, the Government provided funds for a laboratory to be built at Melbourne University, again in the Veterinary precinct, and this laboratory currently houses the Divisional Headquarters.

Currently the Division consists of four laboratories, namely, the McMaster Laboratory, the Animal Health Research Laboratory in Parkville, the Pastoral Research Laboratory in Armidale (in which the Division shares facilities with DAP), and the Australian Animal Health Laboratory in Geelong.

Research Activities

The objective of DAH is:

To discover and develop methods and products for the diagnosis, control or eradication of the major endemic diseases of farm livestock in temperate Australia, enhance Australia's capability and preparedness to combat exotic livestock disease outbreaks, and to improve the quality and marketability of livestock products.

The Division has had a long tradition of serving the rural industry and since its inception has directed its research effort towards the control or eradication of those diseases of farm livestock that are of significant economic and national importance. There have been some notable successes including the eradication from Australia of pleuropneumonia and brucellosis in cattle, the development of commercial vaccines and efficient diagnostic tests and programs for the control of parasitic diseases of sheep.

The work currently carried out by the Division on endemic diseases is subdivided into five research programs:

- . Control of Parasitic Infections
- . Control of Bacterial Diseases
- . Avian Diseases
- . Effective Vaccine Development
- . Plant Associated Toxins

For over 60 years the research at the McMaster Laboratory has concentrated particularly on the internal and external parasitic diseases of sheep and cattle. The Division's current work on development of sustainable control strategies is carried out predominantly on this site with strong complementary linkages at the Pastoral Research Laboratory and at Prospect. The McMaster Laboratory has a substantial Australian and international reputation for research and technology transfer in the control of gastrointestinal parasites of sheep.

Research at the Parkville laboratory is directed mainly toward the development of vaccines and diagnostic tests to control or eradicate important bacterial diseases of farm animals including poultry. Complementary research at this site

aims to develop the technology needed to enhance the efficiency of current vaccines and to assist in the design and delivery of a new generation of veterinary vaccines. Work on devising methods for the diagnosis, prevention or treatment of poisoning diseases of livestock is also undertaken at Parkville. More recently, the incorporation of the Australian Animal Health Laboratory into the Division has resulted in an expansion of its role to include exotic as well as endemic animal diseases.

At June 1993 DAH had a staff of 404 plus 20 "non-payroll" positions (e.g., students and post-doctoral scholars) with about half being located at the Australian Animal Health Laboratory (AAHL) at Geelong (200 plus 7) and the other half at the laboratories in Armidale (24 plus 2), Melbourne (120 plus 6), Sydney (57 plus 5) and at Badgery's Creek (3). The professional expertise available within the Division encompasses a wide range of fields including the various branches of microbiology, parasitology, epidemiology, immunology, molecular biology, genetics, veterinary science and chemistry including analytical, pharmaceutical, organic and protein chemistry.

The Division is funded through Commonwealth Government Appropriation, Rural Industry Research Funds and collaborative research with industry and other Government departments. Of the \$16.2m allocated to the Endemic Diseases part of the Division (i.e., excluding AAHL) for 1992/93, approximately 41% is derived from non-appropriation sources. The need to capture a steadily increasing proportion of research funds from external sources presents a challenge, and the success attained by the scientists in attracting these funds represents a healthy endorsement of the ability of the Division by the rural and manufacturing industries.

National Importance of Research at DAH.

Animal production and primary products contributed 2.5% of the nation's GDP and generated 17% of Australia's total exports in 1988-89. Wool and meat dominate with high proportions of production exported (\$3500m wool and \$2900m beef, mutton and lamb). The principal disease problems affecting the livestock industry are gastrointestinal worm parasites, blowfly strike, lice, ticks, and footrot. Recent estimates for the sheep industry indicate the total annual costs of control and production loss for worms at \$337m, blowflies \$218m, lice \$314m and footrot \$81m. A small number of Australian companies produce vaccines for the livestock industry with current sales of \$25m annually of which some 30% are for prevention of a range of diseases in the poultry industry

which produces almost 500,000 tonnes of poultry meat for domestic consumption.

There is an urgent need to reduce the use of chemicals for disease control in livestock production systems. Much of the Division's research is targeted at this goal through development of vaccines, selection of disease resistant animals, and improved diagnostic and delivery techniques which reduce chemical residues in livestock products and in the land and water environment.

Relationship with Industry

National expenditure on R&D in the animal production and primary products sector was \$262m in 1986/87 with CSIRO expenditure representing around 18% of the total.

The DAH 1992/93 budget for the endemic diseases laboratories is \$16.2m with 41% being obtained from external funds. These include the rural industry research funds (\$2.5m wool, \$800K meat, \$250K others), Australian international aid and collaborative agencies (\$1.2m) and Australian manufacturing industry (\$1.4m).

The Division has collaborative R&D arrangements with 25 Australian and international companies. Scientists from the Division are actively collaborating with colleagues in 45 institutions including Australian universities, departments of agriculture in all States and other CSIRO Divisions, and internationally with institutions in Indonesia, India, Malaysia, Fiji and the Pacific Islands, New Zealand, People's Republic of China, United Kingdom, USA, Eire, Austria and Sweden.

Division of Animal Production (DAP)

History of Division

The *Wool Use Promotion Act, 1945* and the *Wool Industry Fund Act, 1946*, of the Commonwealth of Australia, made provision for additional funds to be devoted to the expansion of sheep and wool research. Although considerable progress had been made in the control of diseases in sheep, relatively little had been achieved in the improvement of productivity and fertility in the healthy animal.

Consequently, a site of 47 hectares was selected at Prospect, New South Wales, and acquired in 1946 to become a primary field station for the Sheep Biology Laboratory of the CSIRO, Division of Animal Health and Production.

Initial research was directed mainly towards understanding wool biology, reproductive physiology and ruminant digestion and physiology. The aim of this research was to examine the fundamental biology of the sheep so that procedures could be developed for enhancing the efficiency of wool production through improved nutrition, reproduction and sheep selection procedures based on wool fibre characteristics.

In 1959, the Prospect site was renamed the Ian Clunies Ross Animal Research Laboratory. In the same year, the Division of Animal Health and Production was reorganised and the Ian Clunies Ross Laboratory became the headquarters of the Division of Animal Physiology.

The fundamental research into sheep biology was integrated with research on pastures at the Pastoral Research Laboratory, Armidale, to develop new pasture management systems for wool production enterprises. Research from the Division was of the highest standard and the Division enjoyed an excellent international reputation, particularly for its achievements in improving lamb survival and developing feeding and reproductive strategies for sheep and cattle.

In 1975, the Divisions of Animal Physiology and Animal Genetics were amalgamated to become the Division of Animal Production. This created a very large Division with laboratories in Townsville, Rockhampton, Perth, Armidale, North Ryde and Prospect. Hence, in 1982, the Division was split into two sections with the Queensland laboratories joining parts of DAH to become the Division of Tropical Animal Production.

Currently DAP has four primary locations and at June 1993 280 staff members plus 29 "non-payroll" positions - at Prospect (164 plus 16), conducting poultry research at North Ryde (13 plus 1), at Armidale (66 plus 7), and at Perth (37 plus 5) concentrating on improving the productivity of sheep raised in Mediterranean environments.

Research Activities

DAP's goal is to deliver products, processes and information to its customers through creative science and innovative technology. The activities are directed especially towards improving product quality and diversity, ensuring sustainability of agricultural systems and increasing the efficiency of animal production. Customers are wool and meat producers and processors, agribusiness and the scientific community.

Work currently carried out by the Division is in five research programs:

- . Sustainable Grazing Systems for Livestock Production
- . Systems for Improving Enterprise Profitability
- . Breeding for Improved Wool Quality and Production Efficiency
- . Manipulating Skin Function for Quality Wool
- . Livestock Growth and Meat Quality.

Major activities are directed towards improving the quality of wool through superior breeding programs, molecular biology techniques and improved nutrition. This research is aimed at controlling fibre diameter, both within and between fibres, eliminating pigmented fibres and reducing the need for insecticide administration either to sheep for blowfly and lice protection or to wool for moth and beetle proofing. Other research is directed towards reducing the cost of wool production through the breeding of worm resistant sheep, restructuring shearing shed operations based on the new biological wool harvesting technology and use of slow release capsules for more efficient administration of minerals, anthelmintics and other medication.

Research at Armidale and in Western Australia is directed particularly towards developing sustainable grazing systems through the use of satellite technology to monitor degradation of pasture systems, the adoption of pasture regeneration procedures, and the development of superior pasture management systems. Another major advance has occurred through the use of a technology developed within the Division over many years to protect nutrients from breakdown within the rumen of sheep and cattle. This technology is now being developed for improving the efficiency of growth and the meat quality of feedlot cattle. The Division's poultry research has resulted in the adoption by industry of hens with superior rates of lay, whereas the research into pigs has

culminated in the widespread uptake by industry of the AUSPIG software for improving the management of commercial piggeries.

The Division is funded through Commonwealth Government Appropriation, Rural Industry Research Funds and collaborative research with industry. The Division expended \$23.34m in 1992/93 of which 64.9% was derived from Appropriation, 12.9% from the WRDC and the remainder primarily from commercial industry.

National Importance of Research of DAP

Animal industries are major export earners for Australia with sales in the year 1988-89 of \$3500m for wool and \$2900m for beef, lamb and mutton. It is essential for Australia to expand the export of these commodities and increase the unit returns. The Division's activities are directed towards enhancing the international competitiveness of our animal industries by reducing costs of production and improving product quality and market specification. The Division also has achieved direct export earnings through sale of products and through royalties. The AUSPIG program is expected to return up to \$20m to Australia in the year 2000 and the controlled release technology has been registered for use in several overseas countries. Furthermore, it is expected that the protected nutrient technology will be adopted in USA in the foreseeable future, generating substantial revenue to Australia through royalties.

Relationship with Industry

DAP is supported heavily by the WRDC which provides substantial financial support to research programs (\$3m in 1992/93). The Division also receives support from the Meat Research Corporation and the Pig and Poultry Research and Development Corporations.

The Division has collaborative R&D arrangements with 22 Australian and international companies. Efforts to expand these associations are being pursued actively at present and it is hoped to raise the Division's income from these sources to well above the current 8%.

Health and Safety

The *Occupational Health and Safety (Commonwealth Employment) Act, 1991* has been fully implemented. The Laboratory has been registered by The Australian Quarantine Inspection Service and complies with all requirements for the acquisition, use and disposal of imported biological materials.