



Australian Post Office  
research laboratories



PROPOSED  
research laboratories  
MONASH, NORTH CLAYTON, VICTORIA, STAGE 1.

*The cover symbolizes the  
Golden Jubilee of the  
Research Laboratories.*

*Solar Radiometer developed by  
the Research Laboratories for  
rain attenuation measurements in  
satellite communication studies.*



Submitted to the  
Parliamentary  
Standing Committee  
on Public Works  
by the  
Australian  
Post Office,  
1973





POSTMASTER-GENERAL'S DEPARTMENT  
RESEARCH LABORATORIES COMPLEX  
MONASH, NORTH CLAYTON - VICTORIA

INDEX TO TEXT

| <u>Section</u> | <u>Subject</u>  | <u>Page</u> |
|----------------|---|-------------|
| 1              | INTRODUCTION  | 1           |
| 2              | ROLE OF RESEARCH IN THE POST OFFICE                       | 2           |
| 3              | EXISTING ACCOMMODATION LEADING TO<br>REASONS FOR PROPOSAL | 6           |
| 4              | CHOICE AND SUITABILITY OF SITE                            | 10          |
| 5              | PROJECT STAGING   | 12          |
| 6              | ACCOMMODATION PROPOSED IN THE FIRST STAGE                 | 14          |
| 7              | AMENITIES AND STAFFING                                    | 15          |
| 8              | VEHICLE ACCOMMODATION                                     | 16          |
| 9              | SECURITY  | 16          |
| 10             | FINANCIAL ASPECTS   | 16          |
| 11             | CONCLUSION  | 17          |



POSTMASTER-GENERAL'S DEPARTMENT

RESEARCH LABORATORIES COMPLEX

MONASH, NORTH CLAYTON - VICTORIA

1. INTRODUCTION

1.1 The project before the Committee is a proposal by the Australian Post Office to erect Research Laboratories at North Clayton, Victoria. This proposal covers four major low-rise buildings which will form part of a multi stage development, designed to meet the short and long term laboratory needs of the Post Office.

1.2 Subject to Parliamentary approval, the buildings will form a complex of specially designed structures, in a campus style setting, close to Monash University, with which a strong professional affinity exists.

1.3 At present the Laboratories are accommodated in eight old buildings in the inner city area of Melbourne. The lack of adequate space for orderly growth and the limitations imposed by these sub standard buildings and services places severe restrictions on the operational efficiency of the Research Laboratories.

1.4 The need to establish the Laboratories in a modern, stimulating and expanding environment has been recognised for some time. Approval of this proposal will lay the foundations for the development of a modern telecommunications research complex. The project has been designed so as to provide the facilities and accommodation needed to meet the needs of the Department in respect of postal and telecommunications technology.

2. ROLE OF RESEARCH /....



## 2. ROLE OF RESEARCH IN THE POST OFFICE

### 2.1 Development of the Laboratories

2.1.1 The work of Research Laboratories commenced in a modest way in 1923 when a Departmental Engineer was given the responsibility of providing specialist advice on the introduction of the thermionic tube and other newly developed electronic devices into the Australian telecommunication network. This work commenced in some 300 square feet of space in the attic of the old Commonwealth Offices building in Treasury Place, Melbourne. The Laboratories were more formally established as a part of Headquarters in 1925 with a staff of five. This small group was charged with the responsibility of studying "the latest discoveries, inventions and developments in electrical communications" and advising the Chief Engineer of "those which are promising and likely to benefit the Departments' telephone and telegraph services".

2.1.2 In the intervening years of rapid technological advance the Research Laboratories has grown to the status of a Headquarters Sub-Division and in this year of the Laboratories Golden Jubilee, now employs a total staff of about 520. These are made up largely of professional engineers, physicists, chemists, metallurgists and technical officers, with support staffs consisting of tradesmen, programmers, trainees and administrative officers. The replacement value of the test equipment now used by the Laboratories staff is about \$7.0 million, comprising some 7,000 items.

2.1.3 Since 1923 the Laboratories have played a leading role in the development of new telecommunication systems and the adaption of overseas inventions and techniques to match Australia's own particular needs. Some of the major national projects which were initiated and developed in the Laboratories, and which are now an established part of the Australian

communications network /...



communications network, include :-

- \* the introduction of carrier telephony over land lines and, later over broadband microwave bearer systems;
- \* improved transmission and exchange switching standards;
- \* the development of high capacity long line coaxial cable systems;
- \* transmission of television and high quality broadcasting signals over the National Broadcasting Service;
- \* the establishment and maintenance of the high precision standard Time and Frequency broadcast service.

## 2.2 Importance of Research in Australia

2.2.1 Telecommunications technology is international in nature and in the past Australia has derived great benefits from developments in Britain, the European countries, USA and Japan. Australia, however, has particular geographic and climatic problems which require different technological solutions to others being developed elsewhere. For this reason a clear need exists for an Australian capability for research and development in telecommunications which can be directed towards the solution of problems peculiar to Australia.

2.2.2 The Laboratories exercise a significant impact on the telecommunications industry as a whole. In this regard, encouragement and active assistance is given to manufacturers by either direct or indirect approaches in respect of specifications and the useage and develop-

development of local /...



ment of local materials of high quality. Additionally, product testing, assessment of systems and material suitability is undertaken with a view to assisting local industry. The Laboratories are a recognised National Standards Authority.

2.2.3 Recently the Laboratories have become associated with the C.S.I.R.O. in the proposal to test products associated with "Consumer Protection". This work was initiated by the Prime Minister through the Minister of Science.

2.2.4 If the Australian telecommunications manufacturing industry is to prosper and be commercially effective, innovation and access to new techniques is essential. In short the establishment and maintenance of a viable and expanding Australian research capability in telecommunications is of vital importance.

## 2.3 Role of the Research Laboratories

2.3.1 This role remains substantially unchanged from that applying in its earlier days. As a part of the P.M.G.'s Headquarters Administration, the main objective of the Research Sub-Division is to maintain a position at the forefront of knowledge in the science and technology of telecommunications. More specifically the Laboratories role may be defined as the provision of consultant advice and technical guidance on the adoption of advances in science and technology in the telecommunications and postal networks, and to assist in the solution of technical problems by conducting appropriate research and development projects and problem solving investigations. The Laboratories also perform a specialist function in maintaining and applying the precision scientific reference standards required by the Department in its responsibilities under various Acts, notably the Posts and Telegraph Act, the Wireless Telegraphy Act and the Weights and Measures Act.

2.3.2 As part of /...



2.3.2 As part of its function the Research Sub-Division seeks to encourage industry, universities and other Government sponsored research organisations to conduct research and development into projects of relevance to its own field of interest. The pursuance of this policy ensures that supporting industry is technically viable and that trained staff are attracted to careers in communications technology.

2.3.3 Formal relationships are established with outside organisations through research contracts and co-operative agreements and through the Department's participation in the activities of the Radio Research Branch. By these means the Research Sub-Division has guided telecommunications research in a number of Australian Universities and has also jointly participated in projects of national significance with bodies such as the Overseas Telecommunications Commission (O.T.C.), the Weapons Research Establishment (W.R.E.) and the Defence Standards Laboratories (D.S.L.) of the Department of Supply, the Meteorological Bureau of the Department of Science, and a number of Divisions of the Commonwealth Scientific and Industrial Research Organisation (C.S.I.R.O.).

2.3.4 Informal staff relationships also exist, in particular with Universities and Colleges of Advanced Education, Learned Societies and professional associations. These relationships, although largely on personal levels, are seen as an important contribution to the Departmental participation in the field of telecommunication research and development.

## 2.4 Foreseeable developments in Communications Research

2.4.1 The further development of long-life solid-state devices, including microminiature integrated circuits and special semiconductor components for telecommunications systems,

will have profound / . . .



will have profound effects on future communications systems throughout the world. The recent spectacular development of these devices will in turn lead to further and even more accelerated achievements in computer, satellite and overall communications technology, which when combined, will make a striking contribution to the economic prosperity and general quality of life to the Australian people.

2.4.2 Current investigatory projects in which the Laboratories are deeply involved and which have great potential in the future development of Australia and in the planning of Post Office operations include:-

- \* the development of semiconductor and microelectronic telephone exchange technology.
- \* the investigation of ways to exploit optical fibre transmission media as potential high traffic density channels of the future.
- \* the technical improvement of the network to the standards required for the transmission of high speed data and other forms of "pulse modulated" telephony signals.
- \* the investigation of radio transmission phenomena associated with broadband radio bearer systems - and particularly with the use of satellites in communications.
- \* the investigation of electronic optical character recognition techniques for the mechanisation of mail exchange sorting processes.

### 3. EXISTING ACCOMMODATION LEADING TO REASONS FOR PROPOSAL

#### 3.1 Present Accommodation and Limitations

3.1.1 The Research Laboratories of the Post Office are presently housed in eight buildings located in the city area of Melbourne. These buildings are old, having been especially erected

for various purposes /...



for various purposes such as factories, display rooms and warehouses in the 1880's through to the early 1930's. More particularly they lack the desired provision and flexibility of mechanical, hydraulic and electrical services essential to present day research laboratory activities.

3.1.2 These old buildings are relatively costly to lease, and inordinately expensive to renovate and maintain. Over the past 10 years an estimated \$850,000 has been spent in fitting out these buildings with the minimal services and partitioning for the Laboratories more immediate needs. The resultant accommodation falls far short of that needed for a present day research activity. The funds outlaid on leased premises are largely irrecoverable.

### 3.2 Leasing Problems

3.2.1 Of the eight Research occupied city buildings, only one, 59 Little Collins Street, is Departmentally owned; the remaining seven are leased.

3.2.2 The tenures of five of the eight buildings are the cause for immediate concern. Two buildings at 140 Exhibition Street and 31 Flinders Lane have leases terminating at 31.5.1973 and 18.1.1974 respectively and indications are that they will not be renewed. The continued occupation of these premises will probably be on a monthly rental basis until accommodation is available in Lyon Park, Clayton early in 1974.

3.2.3 The Lyon Park project became necessary as the short term Research accommodation problem could not await building development on the Post Office site at Monash. Arrangements have therefore been made with Ronald Lyon (Australia) Pty. Ltd. for the erection of two buildings, largely to Post Office specifications, totalling some 90,000 square feet to accommodate

sections of the /...



sections of the Research Laboratories. This arrangement which has Executive Council approval is based on a ten year lease with a further five year option. The Laboratory Sections to occupy these buildings will form the vanguard of the transfer of the Laboratories to the Clayton area. Final consolidation of these Sections on the Monash site would take place some 10-15 years later.

3.2.4 The tenures of three buildings at 10 Lonsdale Street, 28 Little Leichardt Street and 262 Exhibition Street are also limited. These buildings are located on the southern half of the Australian Government Offices site and will be demolished to make way for redevelopment of the area, proposals for which are presently under review by the Government. The tenures of the remaining leased city buildings at 1007 Rathdowne Street and 117 Lonsdale Street are more secure and would be available to the Laboratories beyond 1980 if required. The Laboratory Sections occupying 117 Lonsdale Street and the Departmentally owned building at 59 Little Collins Street will be located at Monash in the second stage to complete the Laboratories evacuation from the existing city buildings.

### 3.3 Managerial Problems

3.3.1 The fragmentation of laboratory activities into a number of poor-quality buildings has brought about many managerial problems. In particular it has been difficult to maintain the necessary degree of liaison between inter-related sections involved in projects requiring co-ordination of activities in two or more buildings. The combination of unsuitable buildings and poor working conditions has also introduced problems in the recruitment and retention of the highly trained professional and technical personnel, so vital to the operations of a research establishment.

3.3.2 Growth rate / . . .



3.3.2 Growth rate in laboratory staffing over the past twenty year period has averaged about 6% per annum and it is this rate that has been used to forecast the building accommodation requirements for the various stages of this project.

3.3.3 The rate at which the Department has been able to obtain and renovate old city buildings has never been able to match the 6% rate and consequently the Research Laboratories now face chronic overcrowding problems. This condition has been aggravated in recent times by the increasing rate at which the older city buildings are being demolished to make way for high-rise office structures, which would be no more flexible in design for research purposes than the older buildings and would involve prohibitively higher rentals.

3.3.4 The rate of growth over the past three years has been 2% and an examination of the likely growth over the forthcoming three year period up to 1976, which particularly affects the buildings on the Australian Government Offices site, shows that the growth rate is more likely to be about 11%. This is largely due to the expected additions to the scientific, technical and administrative staff during this period.

#### 3.4 Long Term Planning for Laboratories Accommodation

3.4.1 Because of the unsatisfactory nature of the existing accommodation and the problems foreseen in attempting to cater for growth by the existing policy of leasing and adapting existing city buildings, a comprehensive review was made in the late 1960's of present and expected accommodation requirements for the Laboratories. As a result of this review it was concluded that continuation of the present policy was unsatisfactory and that the Laboratories should be re-established in consolidated accommodation provided by new and specially designed buildings on a Departmentally owned site, which could provide for future expansion to the turn of the

century. /...



century. This recommendation has since been the policy of the Department and has culminated in the proposal now before the Committee.

#### 4. CHOICE AND SUITABILITY OF SITE

4.1 The nature of the Research Laboratories affinities and activities posed problems in choosing the most suitable location for this project. On the one hand it was necessary to consider the maintenance of the Laboratories day-to-day contacts with other Headquarters organisations and in particular the Planning and Engineering Works Divisions. On the other hand, from the viewpoint of fostering creative research in Post Office operations, it was highly desirable that at least the Advanced Techniques Sections of the Laboratories be located near a University which has other research oriented enterprises and authorities as part of its academic environment. From the general environmental point of view it was considered desirable that these activities should be in a location well away from the inner city area.

4.2 After numerous site investigations and studies, a  $2\frac{3}{4}$  acre lot in South Melbourne, was allocated by the then Department of the Interior to the Post Office on which to establish its Research Laboratories. This site proved too restrictive and would have involved high rise structures, which, if proceeded with, would have contravened local building by-laws. Accordingly to reduce the South Melbourne accommodation requirements to a suitable size, a second site of 17.5 acres in Blackburn Road Clayton, was purchased for the purpose of establishing the Advanced Techniques Sections of the Laboratories, close to Monash University.

4.3 An inter-departmental steering committee was established in 1970 with representatives of the Department of Works and the Post Office to handle the Research Laboratories accommodation pro-

proposals. /...



posals. At the request of the Committee, the Department of Works conducted a series of three feasibility studies to re-establish the Laboratories in new accommodation. These studies, based on long term development showed that :-

- \* utilisation of both South Melbourne and Monash sites developed separately would cost \$42.2m. This had the restraint that the South Melbourne site could at best, be developed in three costly stages;
- \* development of the Monash site (17.5 acres) to house the whole of the Laboratories activities on the one site would cost \$34.4m. This study was based on the construction of comparatively high and medium rise buildings;
- \* enlargement of the Monash site by utilizing the adjacent Drive-In Theatre site (approx 30 acres) to permit the development of a low rise building complex in a "campus" style setting would accommodate the long term requirements of the Laboratories on a single site. It was estimated that such buildings would cost \$30.0m.

4.4 The recommendation by the Department of Works was that the scheme for the combined Monash sites be adopted. This would permit the development of a master plan to cater for a multi-staged construction with comparatively small but regular funds commitments. Accordingly, in 1971, negotiations commenced to purchase the Drive-In Theatre site. Executive Council approval was given to this action in January 1973. The South Melbourne site has since been relinquished to the Department of Services and Property for re-allocation.

4.5 In choosing the site, fundamental advantages were seen in a location close to Monash University which is approximately 12 miles from the inner city area. Moreover, the immediate area around

Monash University /...



Monash University was the only location available in Melbourne which fully satisfied the need for a site with adequate space in which to develop a campus style complex in close proximity to a University, with faculties devoted to pure and applied research in telecommunications engineering. Additionally, Monash University has a positive policy of collaboration with industry and a number of fruitful mutual relationships have existed for some time.

4.6 Under the Melbourne and Metropolitan Board of Works zoning plan, the area on the immediate eastern boundary of Monash University, in which it is proposed to erect the Research Laboratories buildings, was designated as "Special Use Zone No. 11". This reserved the use of the land for the development of a "Research Community" which, it is envisaged, will interact with the University in scientific research, educational and cultural fields. Future development of this zone can only take place with the concurrence of the University. The Vice Chancellor has welcomed the project as precisely the type of development which the University wishes to see established in the area.

4.7 A further important consideration in choosing this site was that it should cause minimum disturbance to the staff of the Laboratories and from this viewpoint Monash is well situated in relation to most staff residences. A diagram showing the residential distribution of the Laboratories staff is provided in the Environmental Impact Statement.

## 5. PROJECT STAGING

5.1 The buildings to be provided in Stage 1 at Monash are designed to accommodate those Laboratory Sections which are presently housed in three buildings on the Australian Government Offices site. The move will also include the Environmental Physics activity of the Physics and Polymer

Section currently /...



Section currently located in part of the building at 1007 Rathdowne Street. This will then consolidate all the applied sciences activities in the Monash complex in the first stage. These activities require the most extensive range of building services and hence, to conserve capital, are most suited for the earliest transfer to permanent Post Office owned buildings. This stage is scheduled for completion in 1976.

5.2 The buildings to be provided in Stage 2 will accommodate those Sections remaining in the City after 1976. This stage is scheduled for completion in 1979. The Department of Works preliminary building estimate for this stage is \$6.0m. The city buildings involved are 117 Lonsdale Street, the lease of which will be relinquished and the other, 59 Little Collins Street, which is Departmentally owned, will be retained and utilized for other Post Office activities.

5.3 The third stage will involve the transfer of sections of the Advanced Techniques and Transmission Systems Branches from Lyon Park. The Department of Works preliminary building estimate for this stage is \$4.5m. This will permit expansion of the Sections remaining at Lyon Park for about the following five years.

5.4 Stage 4 will see the commencement of the development into the Drive-In section of the total site with the transfer of the remaining Laboratory Sections from Lyon Park to finally terminate the Laboratories occupation of leased buildings. The Research Laboratories will then be consolidated in a suitably designed complex on a permanent site. The completion date of this stage is planned for about 1985. Further development will occur in planned stages as growth needs dictate.



## 6. ACCOMMODATION PROPOSED IN THE FIRST STAGE

6.1 Erection of the four major buildings on the Monash site is proposed in Stage 1 of the development. Buildings 1 and 2 comprise 3-storey laboratory blocks, Building 3 will be single storey, specially designed to accommodate the Environmental Physics activity, and a single storey Building 4, housing centralised mechanical and electrical plant.

6.2 All the Laboratory buildings have been designed to provide the optimum flexibility for electrical, mechanical and hydraulic services to benches and work areas. Flexibility has also been provided in the two general purpose laboratory buildings, for the creation of various sized laboratory elements to a modular design.

6.3 Building 1 will accommodate activities of the Applied Sciences Sections. A section of the ground floor of this building will also be used as interim accommodation for part of the Design (Special Projects) Section. The building to be provided for the Environmental Physics activity, Building 3, requires special consideration in that it must accommodate relatively large items of equipment, including high and medium voltage test apparatus and a number of large environmental test chambers.

6.4 Buildings 1 and 3 are to be connected by a ground floor laboratory and office link to form an integrated structure to meet the needs of the applied science activities, over the next 10-15 years.

6.5 Building 2 is to accommodate the Solid State and Quantum Electronics, Guided Media and Visual Communications Sections of the Advanced Techniques Branch. These Sections will be the ultimate permanent occupants of the building, which will be used as the interim accommodation for the executive and administrative staff, a cafeteria and a branch technical library. The administrative

and special service /...



and special service functions are expected to remain in the building until development on the Drive - In Theatre section of the site commences about 1983. Adequate space for the expansion of the Laboratory sections in this building, over the ten year period, has been provided and the long term expansion of the Advanced Techniques Sections would take place when the administrative functions and cafeteria are transferred to their permanent locations.

## 7. AMENITIES AND STAFFING

7.1 The buildings have been designed to incorporate amenities facilities in accordance with the relevant ordinances, the Amenities Code and to the standard adopted by the Post Office as being commensurate with that necessary to provide suitable conditions for its staff. Present planning provides for 264 sq. metres (2834 sq. ft.) of space to be allocated on the ground floor of Building 2 as a lunch room and food services area, providing refreshment and light meals. Its overall area is scaled to the needs of the staff in the Stage 1 development.

7.2 A proposal concerning the provision of Food Services facilities for this and three other Post Office projects in the vicinity is presently being prepared for submission to the Inter-departmental Committee on Food Services.

7.3 The total staff in the Stage 1 buildings when completed and fully operational will be 177, comprising 137 males and 40 females. It is expected that most of these will be on duty simultaneously with no provision for permanent shift work being required. The projected staff figures for Stages 2 and 3 are 456 and 648 respectively.

## 8. VEHICLE ACCOMMODATION /...



## 8. VEHICLE ACCOMMODATION

8.1 Parking space has been provided for 121 vehicles in the Stage 1 development, to cater for official vehicles, visitors and staff. As the stages develop, more parking spaces will be made available as the need then exists.

## 9. SECURITY

9.1 Because of the role played by Research Laboratories in the development of the National Communications System, particular emphasis has been placed on the integration of security features into the basic building designs.

## 10. FINANCIAL ASPECTS

10.1 The Research Laboratories were created to perform a service function for the Post Office as a whole and the value of its contribution is inextricably moulded into the total Post Office efficiency and service. It is therefore not possible to assess the extent of revenue derived from the services it provides. However, the following indicates the Capital and Annual Charges involved in Stage 1 of the project.

### 10.1.1 Capital

(a) The site consists of two parcels with a present book value of \$1,715,000.

(b) The capital /...



- (b) The capital expenditure as estimated by the Post Office at current costs of laboratory and other research equipment, and the cost of constructing the building as estimated by the Department of Works is -

|                                 |        |
|---------------------------------|--------|
|                                 | 1976   |
| Buildings and Building Services | \$4.5m |
| Technical Equipment (Stage 1)   | \$2.7m |
|                                 | <hr/>  |
| Total                           | \$7.2m |

#### 10.1.2 Annual Costs

The annual charges to finance and service the building and the equipment which will be installed in Stage 1, including interest on capital, depreciation, maintenance and operating costs would be -

|  |         |
|--|---------|
| Buildings and Building Services        | \$0.43m |
| Establishment and equipment in Stage 1 | \$2.07m |
|  | <hr/>   |
| Total                                  | \$2.50m |

## 11. CONCLUSION

11.1 The building proposal now under examination is considered by the Post Office to be the most satisfactory and economic means of providing accommodation for its Research Laboratories.

11.2 Stage 1 of this accommodation is required to be available by September 1976, to permit the re-housing of these Laboratories to proceed in carefully planned and timed stages, having regard to termination dates of leases and the resources available at those times.

11.3 The Post Office /...



11.3 The Post Office is confident that the buildings as designed will meet the technical needs of Stages 1 to 3 and would suggest the Committee give consideration in its Recommendations to Parliament to the approval of all three Stages, on the 17.5 acre site, subject to the Department resubmitting the project to the Committee if any significant changes occur to the principle or scope of the present concept.

11.4 The Post Office proposal is recommended to the Committee.

A handwritten signature in dark ink, appearing to read 'E. C. A. Brown', written in a cursive style.

(E. C. A. Brown)

Australian Post Office

Headquarters



21  
AERIAL VIEW OF  
SITE & IMMEDIATE  
SURROUNDINGS

LOCATION OF  
EXISTING RESEARCH  
BUILDINGS IN THE  
MELBOURNE CITY  
AREA (left)

LABORATORIES SITE  
IN RELATION TO THE  
GREATER MELBOURNE  
AREA (right)

SITE PLAN  
(STAGE ONE)  
(left)

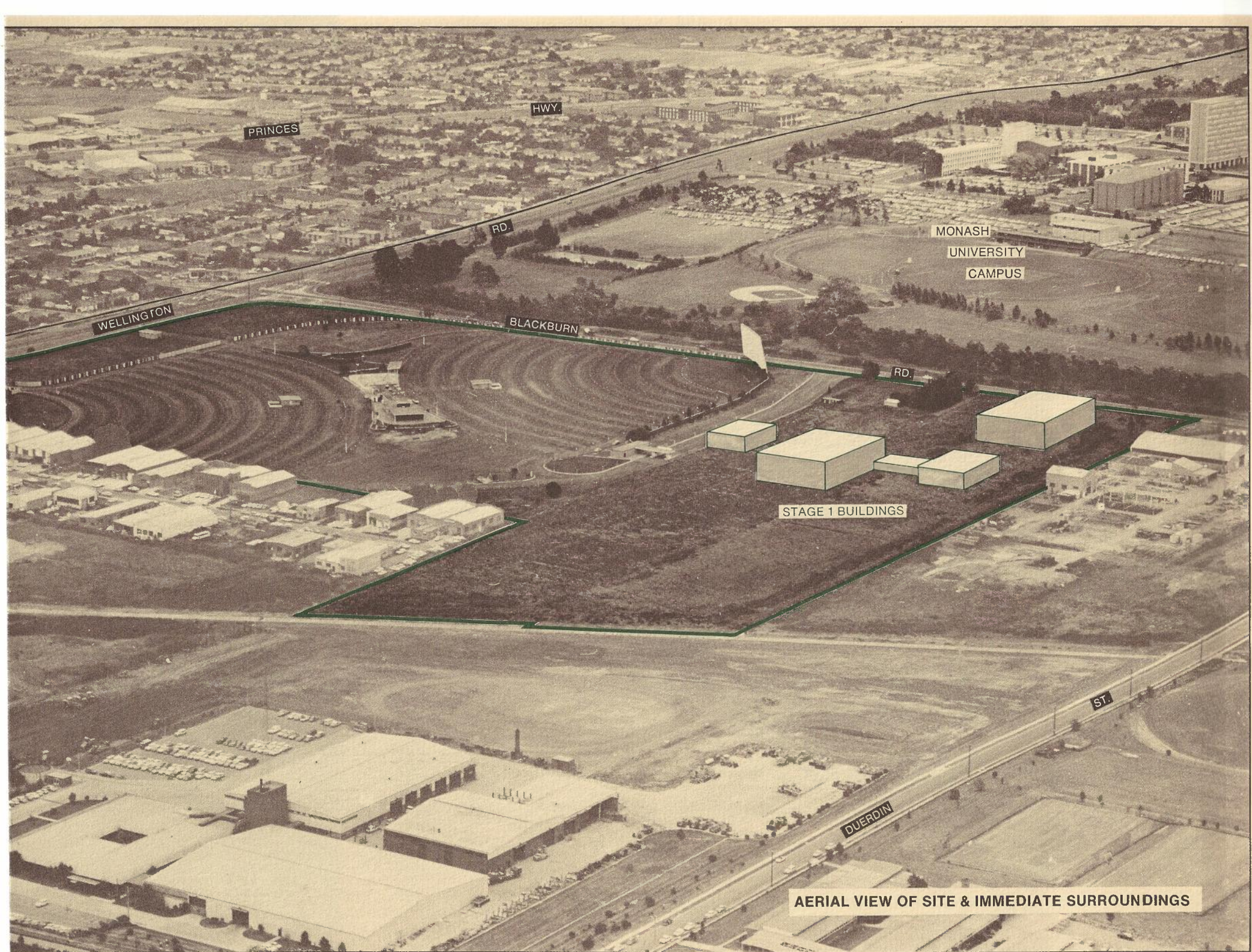
TOTAL SITE  
DEVELOPMENT  
(right)

LABORATORIES  
ORGANISATION &  
STAGES OF TRANSFER  
TO MONASH (left)

OPERATIONAL  
AFFINITIES DIAGRAM  
(right)

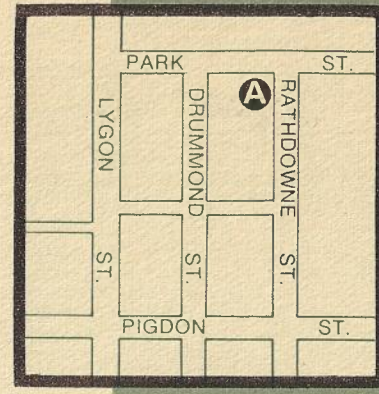
DIAGRAMMATIC  
SECTIONS OF  
BUILDINGS (left)





AERIAL VIEW OF SITE & IMMEDIATE SURROUNDINGS



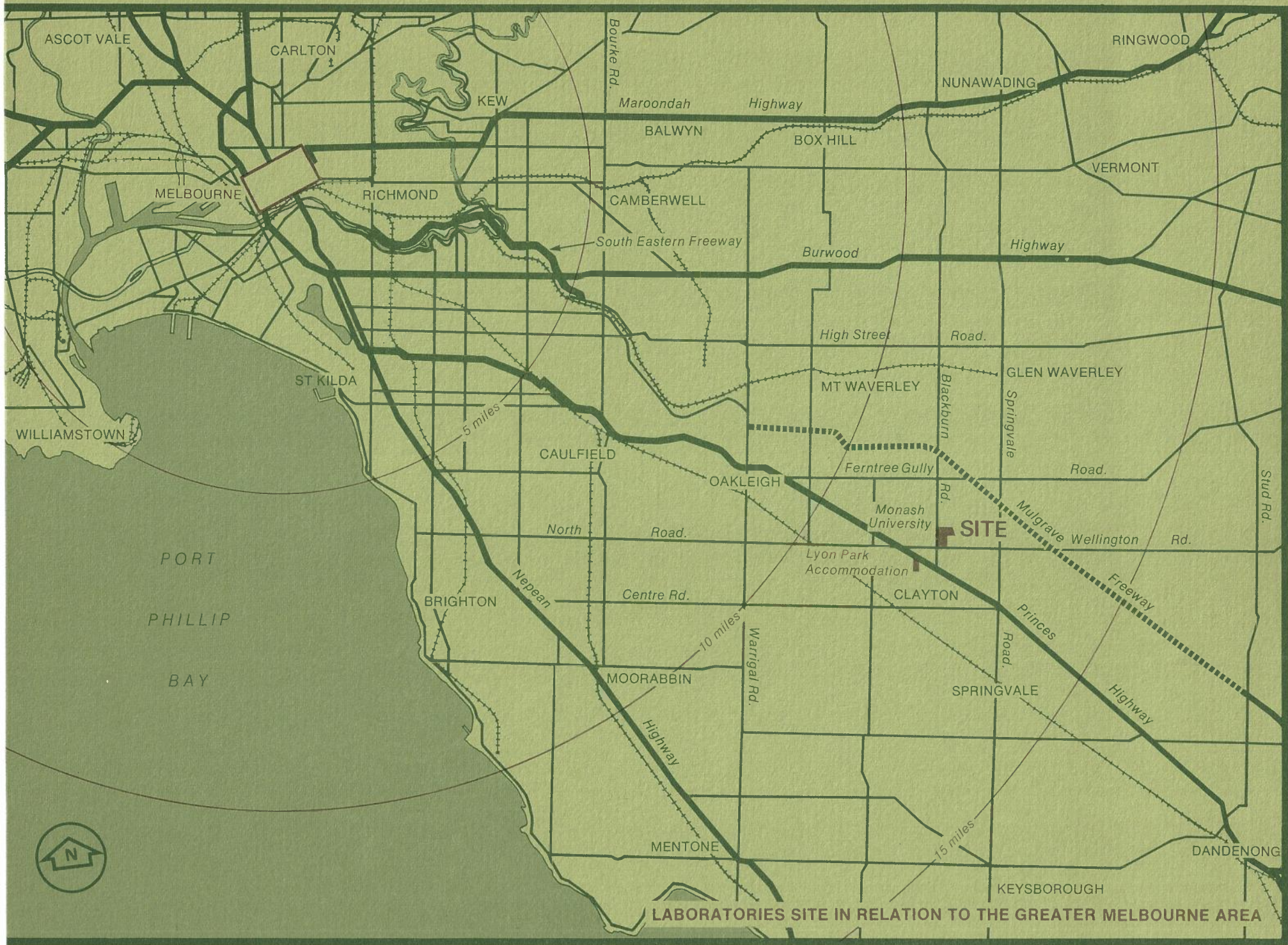


### LEGEND

- A** 1007/9 RATHDOWNE ST.  
ENVIRONMENTAL PHYSICS;  
EQUIPMENT STORES.
- B** 10 LONSDALE ST.  
SOLID STATE & QUANTUM ELECTRONICS;  
VISUAL COMMUNICATIONS;  
GUIDED MEDIA.
- C** 28 LITTLE LEICHARDT ST.  
DESIGN SPECIAL PROJECTS (PART);  
TRAINING.
- D** 262 EXHIBITION ST.  
MATERIAL, RELIABILITY AND POLYMER  
PHYSICS; CHEMISTRY; METALLURGY;  
DESIGN SPECIAL PROJECTS (PART).
- E** 117 LONSDALE ST.  
LABORATORY INSTRUMENTATION;  
CUSTOMER APPARATUS;  
LINES AND DATA SYSTEMS.
- F** 140 EXHIBITION ST.  
SYSTEMS DEVELOPMENT; NETWORK  
STUDIES; DEVICES & TECHNIQUES; RADIO  
SYSTEMS; TIME & FREQUENCY  
STANDARDS; ELECTRICAL STANDARDS.
- G** 59 LITTLE COLLINS ST.  
LIBRARY; ADMINISTRATIVE; EXECUTIVE;  
DESIGN SPECIAL PROJECT (PROTOTYPE  
WORKSHOP); LABORATORY DESIGN;  
INDUSTRIAL PROPERTY & INFORMATION.
- H** 31 FLINDERS LANE  
NETWORK THEORY; UNGUIDED MEDIA;  
SATELLITES; COMPUTER APPLICATIONS &  
TECHNIQUES.

LOCATION OF EXISTING RESEARCH BUILDINGS IN THE MELBOURNE CITY AREA





LABORATORIES SITE IN RELATION TO THE GREATER MELBOURNE AREA



25

MONASH UNIVERSITY  
CAMPUS

BLACKBURN ROAD

383.425 m (1257' 11")

160.675 m (527' 13/4")

410.480 m (1346' 8 1/2")

2

3

1

4

86.525 m  
(283' 10 1/2")

90.220 m  
(295' 11 1/2")

GATES

LIGHT INDUSTRIAL



EXISTING TWIN DRIVE-IN  
A.P.O. OWNED

383.425 m (1257' 11")

LIGHT INDUSTRIAL

HENDERSON ROAD

SITE PLAN (STAGE ONE)

316.845 m (1039' 6")

476.630 m (1563' 8 3/4")

WELLINGTON ROAD



MONASH UNIVERSITY  
CAMPUS

BLACKBURN ROAD

544.100 m (1785' 1")



LEGEND

- This Proposal
- Stage 2
- Stage 3
- Future Stages

TOTAL SITE DEVELOPMENT

WELLINGTON ROAD





**STAGES OF TRANSFER OF SECTIONS**

- FIRST BUILDING STAGE
- ▲ SECOND BUILDING STAGE
- THIRD BUILDING STAGE
- ★ FOURTH BUILDING STAGE



**TELECOMMUNICATIONS DIVISION**

*Customer needs.*

**PLANNING SUB-DIVISION**

*Planning of overall development of Australian telecommunications network and services.*

**A.P.O. STATE ORGANISATIONS**

*Regional planning, network operations control, installation and maintenance.*

**ENGINEERING WORKS**

*Design, construction, operation and maintenance of network.*

**POSTAL SERVICES**

*Planning and operation of postal network and services.*

**UNIVERSITIES**

*Fundamental and applied research projects of particular interest to the A.P.O.  
Post graduate training of Post Office staff.*

**OTHER COMMONWEALTH AND RESEARCH DEVELOPMENT ORGANISATIONS**

*Joint research and development projects.*

**PRIVATE INDUSTRY**

*A.P.O. contracts for advanced development and manufacture. Investigation of manufacturing problems to improve product lines.*

**PROFESSIONAL INSTITUTES & LEARNED SOCIETIES**

*Participation in activities, conferences etc.*



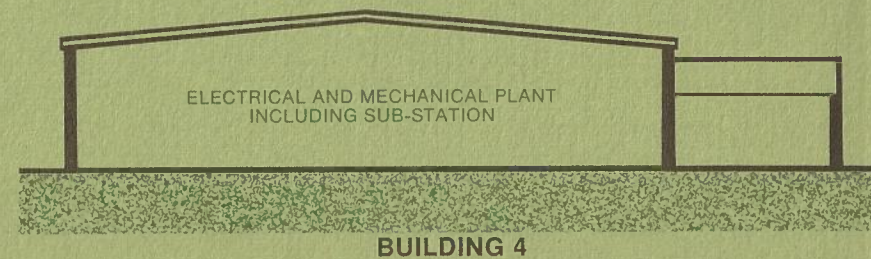
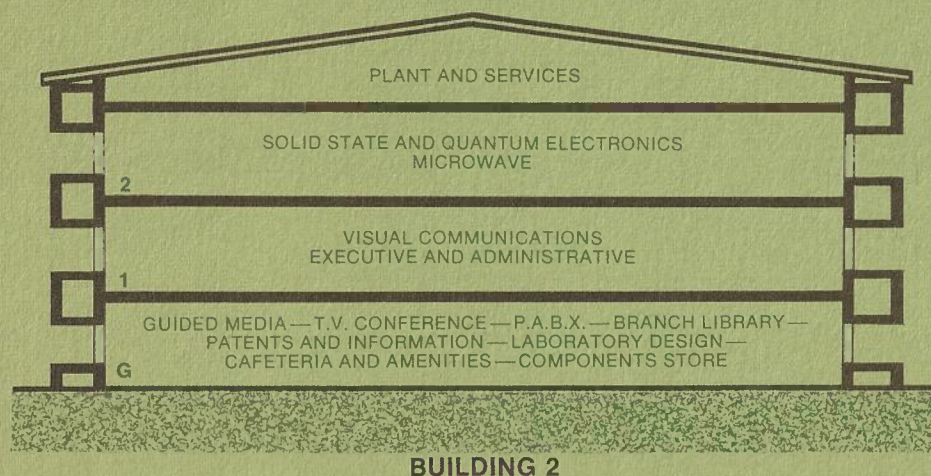
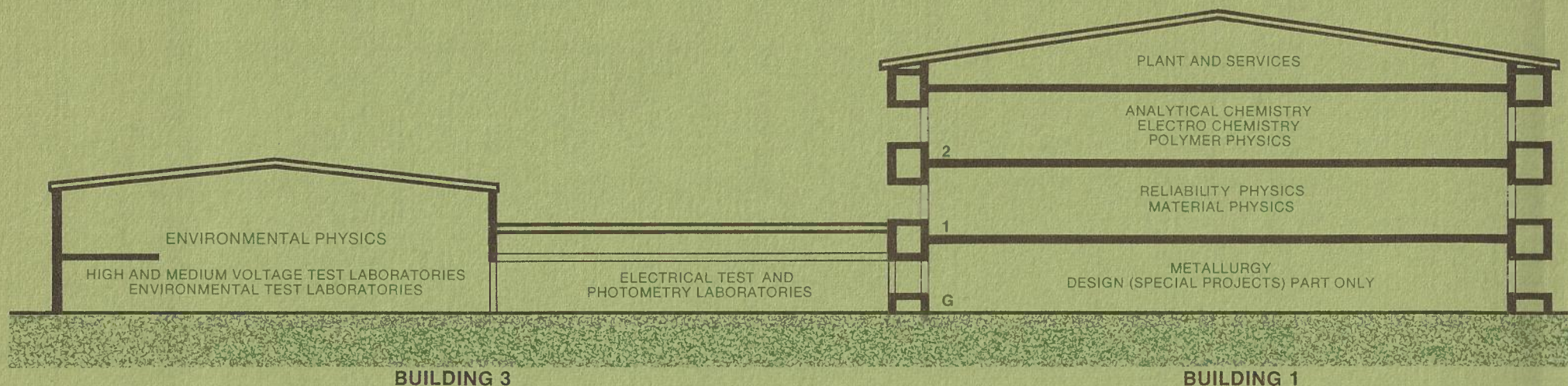
**RESEARCH SUB-DIVISION**

**Research, advanced development and scientific investigations.**

▼ Strong affinity

**OPERATIONAL AFFINITIES DIAGRAM**





DIAGRAMMATIC SECTIONS OF BUILDINGS



