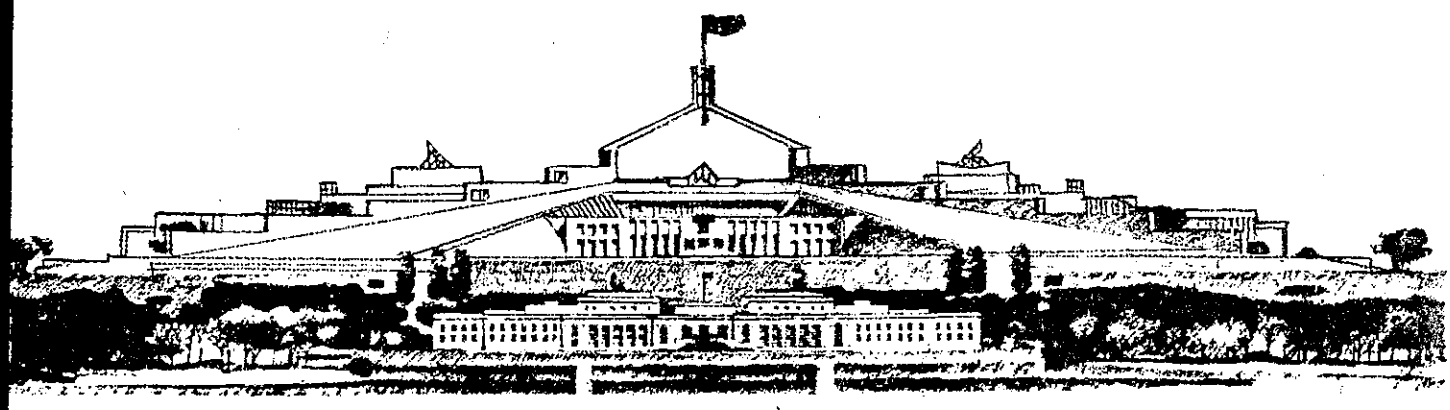
Parliament House Construction Authority

Parliament House Design Competition

Report by Construction Authority on Winner's Design

Canberra July 1980



PARLIAMENT HOUSE CONSTRUCTION AUTHORITY

REPORT ON WINNER'S DESIGN

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INTRODUCTION

The Parliament House Construction Authority Act 1979 establishes the Authority with the primary function to undertake and carry out the design and construction of Parliament House.

The Authority accepted the recommendation of the Joint Standing Committee on the New and Permanent Parliament House that a competition should be held to select a designer for the new Parliament House. The two-stage competition has now been conducted by the Authority and judged by a panel of assessors which comprised:

Sir John Overall (Chairman)
Senator Gareth Evans
Mr Barry Simon M.P.
Mr John Andrews
Mr I M Pei
Professor L K Stevens

The assessors selected the design concept submitted by the firm of Mitchell Giurgola and Thorp of New York as the winning entry. This decision was announced on 26 June 1980.

Under the competition conditions the Authority as the promoter of the competition is obliged to accept the assessors' decision. However, before the Authority can enter into an arrangement with the winning architect and commence design and construction, it is essential to obtain Cabinet and Parliament approval to proceed under the terms of the Parliament House Construction Authority Act 1979 and the Parliament Act 1974.

Since the announcement of the result of the competition the Authority has carried out an examination of the winner's design to satisfy itself that it can recommend to the Government that the project should proceed.

This report presents the results of that examination and discussions with the Architect. The examination is sufficient to enable the Authority to give an assurance that the winner's design is capable of being developed by the architect to meet all the objectives for the New Parliament House. Inevitably there are matters of detail which have not yet been fully resolved, but no insurmountable difficulties are envisaged.

The objective is to open the New Parliament House as a significant event in the celebrations of the Bicentennial of European Settlement in Australia. The Authority is satisfied that this can be achieved provided early decisions to proceed are taken.

The Authority sees this project as one of the most exciting public works ever undertaken in Australia and looks forward to working with the Government and the Parliament in translating the architect's vision into reality and to create what has been described by the assessors as a building for the 21st century and beyond.

Sir Bernard Callinan
Chairman

July 1980

SUMMARY OF CONCLUSIONS

1. The Authority has no hesitation in supporting the assessors' decision and recommending that the Government and the Parliament endorse proposals to proceed with design and construction.

2. The Authority is convinced that the winner's design concept shows such a clear understanding of the key functional issues that, in the further development of the design, any less than satisfactory functional aspects will be resolved.

3. There is no reason to be concerned about engineering aspects of the building as the concept uses conventional technology, materials and trade skills.

4. The traffic and parking arrangements proposed represent an excellent solution to potential problems created by such a large building.

5. The proposed design provides adequate flexibility to allow concurrent design and construction.

6. A reasonable degree of off-site fabrication is possible to assist with programming and resource planning.

7. Providing approval to proceed is not delayed, the project can be completed for opening on 26 January, 1988.

8. The appraisal of the winner's design submission clearly indicates that, in order to achieve such a fully integrated and thoroughly satisfying answer to an enormously complex problem, it became necessary to exceed the requirements of the brief in a number of areas.

These particularly include provisions for extra usable space and underground parking whilst other aspects affected involve much greater excavations and reinstatements; larger expanses of high quality finishes and the incorporation of energy saving devices.

While these items considerably enhance the original requirements of the notional building a cost penalty is inevitable.

The Authority believes it is essential to establish at this time, a realistic estimate of the cost of building the winner's concept. That estimate at May 1978 prices is $220 million.

9. The Authority is convinced that, when completed, the building would be an outstanding National Symbol of which all Australians could be justly proud.

AESTHETIC CONSIDERATIONS

"Our concept of the building is not as a monumental structure imposed on the landscape, but rather one which is closer in spirit to the Greek monumentalization of an acropolis, in which there is a continuity from the most minute elements of the architectural order to the massive forms of the building itself, yet all of which is congruent with the landscape."
(Winning architect's report.)

The Authority concurs with the views of the Assessors which are set out, in part, as follows:

"Like Griffin's plan, the winning design is a building of firm, clear geometry, not rigidly imposed on the terrain but sensitively adjusted to it. This design is not a monumental structure superimposed on the Hill. It derives its strong presence by merging built form with landform. The successful synthesis of these two essential elements has resulted in a design that is at once natural and monumental."

"The geometry of the plan accepts, moreover, the radiating road system and in doing so allows the Parliament to register visually from a distance as a simple element gradually revealing its complexities as one approaches. The building form visually extends these views beyond to the distant landscape, perpetuating the Griffin ideal of the domination of landform."

"The winning design does nonetheless recognise the fact that the Capital Hill site has an apex, and one that demands some reinforcement if the design scheme is to ultimately succeed. The more or less transparent mast structure supporting the National Flag is a simple and imaginative solution to achieve the visual climax required. This marking of the apex of Capital Hill successfully fulfils the intent and purpose of the original Canberra plan."

"A very important design constraint imposed by the Capital Hill site is the likely permanent retention of the existing Provisional Parliament building. The view along the land axis looking south positions the new Parliament House directly above the existing building. It is imperative, therefore, to unify the two buildings architecturally in order to avoid the impression of one building resting on top of the other. In the opinion of the Assessors, the winning design has resolved this immensely difficult contextual problem in a brilliant way."

"The most important visual characteristics of the existing building are its fenestration and its whiteness. The winning design achieves the essential unity by creating a screen wall in front of the entry which is perforated so as to relate to the rhythm of the fenestration of the provisional Parliament House. No other fenestration is visible from this important vantage point as the new Parliament House merges itself with the natural landscape, thus avoiding the appearance of two distinctly different buildings in a simple way. The transparent mast structure resting on top of the entire complex completes the visual and symbolic linking of the old and the new."

"The simplicity and elegance of the basic lines of the winning scheme conceals at first glance what is revealed on closer examination to be a complex collection of separate building pieces. This "explosion of parts" is equally crucial to the architectural success of the total scheme. It provides for easy identification and understanding of the pieces and produces an understated architecture in which all users can avail themselves of views and outdoor space, at the same time admitting light to occupied spaces. On the one hand working conditions are enhanced and on the other casual visitors can be sure of knowing where they are at all times. An explosion of parts can, moreover, accept expansion when and where necessary, without the need to reallocate space and without the danger of a change in symbolic form."

"We further commend the winning design on the variety of public spaces it provides, each of which is subtly animated and modulated by external light. As these spaces are designed to be experienced in a symbolic sequence, this intended variety heightens the visitor's sense of spacial experience. Vestibule, Foyer and Reception Hall lead to Members Hall or Forum, which in turn is visually linked to the space defined by the flag mast structure above. From this central point one enters into the Senate Chamber to the west, and the Members' Chamber to the east. As there are functional differences so are there spacial configurations."

FUNCTIONAL EFFICIENCY

Throughout the competition process the necessity of meeting the functional requirements, of building users, as identified in the competition documents, has been stressed. The documents issued to finalists in the competition included a very detailed functional brief as well as a summarised statement of key functional relationships. In addition, a Competition Steering Committee comprising the Presiding Officers, two Ministers, a Senator, a Member of the House of Representatives and two members of the Authority was established to advise finalists on functional aspects of the building.

As a part of the assessment process the Competition Steering Committee examined the floor plans of each of the five final design submissions and reported in some detail on their assessment of the functional efficiency of each. The report which was prepared without knowing the relationship between the name of the author and the entry he submitted, was passed to the assessors in accordance with the Competition Conditions.

The winner's design concept shows a clear understanding of the key functional issues and has grouped related functions in an efficient and logical way. Around each Chamber is grouped the accommodation most directly related to it - suites for the Presiding Officer, Whips and Senators or Members and the departmental offices supporting chamber activities. No Senator is more than one floor above and no Member more than two floors above Chamber level. Both Senators and Members are provided with a generous separate ground level entry to the building and a secure basement entry below it.

The Chambers and associated accommodation are located either side of a central core defined by the curving walls which form a distinctive architectural feature of the design. This core contains those elements which serve both Senators and Members - the Committee Rooms, Library and Refreshment Rooms. They are equally and conveniently accessible to both. In addition, the core, which lies on the main entry axis, contains the major ceremonial spaces of the building -

the Reception Hall and the Members' Hall - and areas for public use and access. These are organised logically to facilitate visitor orientation and comprehension and security control and are located only one floor above the main entry and two floors above parking areas so that visitor access is direct.

The Executive Government element is located in a clearly defined and self-contained area in the core of the building between the curving walls. This arrangement permits equal access to both the Senate and House of Representatives Chambers. In general, travel times between suites and the Chamber for members of the Executive appear to be satisfactory. However, this aspect will need further examination in detailed planning and some modifications may be necessary to overcome any particular problems which may emerge. Ministers have good access to other elements within the core - in particular the Committee Rooms and Library. The Executive element also is provided with its own external entry court which is of a scale and architectural treatment entirely appropriate for receiving dignitaries and other important visitors. There is also a secure and private basement entry below the entry court for exclusive ministerial use.

Of the five schemes, the Competition Steering Committee found the scheme ultimately selected as the winning entry to be the most functionally successful. The summary statement in the functional report reads: "very good. This scheme stands out in functional efficiency." The Committee approved of the clear and simple organisation of the plan and the containment of all but some service areas of the building on three floors, so that, vertical travel never exceeds two floors. The Committee also judged the public areas of the building to be clearly organised and delineated. While these areas are separated from the working parts of the building so that clear and positive control of the public can be achieved with a minimum number of control points, "public access and involvement in the building is encouraged to a very desirable degree".

The Committee identified three issues requiring further attention: indirectness in the circulation paths between some parts of the building, the need for detailed consideration of the security implications of locating parking and loading bays below the plaza and occupied parts of the building, and the location of enclosed public galleries and press rooms two levels above Chamber floors.

The Committee also noted the concern of its advisers from the press gallery that the location of the media element on the Senate side of the building and the consequent time required to reach the Representatives Gallery and the Executive Government element, was undesirable.

The assessors concur with the Steering Committee on those functional issues identified above requiring further attention. "We are clearly of the opinion, however, that any such design refinements and modifications that may prove necessary or desirable can be made relatively easily".

The assessors final report at the conclusion of the second stage of the competition devotes a section to the functional efficiency of the winning scheme. "It features, as does the existing Parliament House, a basically horizontal three-level working layout, but one in which the key elements of the building are so well located and co-ordinated in relation to each other that the massive increase in usable space which the design embodies is not accompanied by any significant new physical burdens on the building's residents and visitors".

The assessors identify the most significant features of the scheme as:

(a) key user groups have clearly and effectively designated working environments, each with its own point of address;

(b) movements of people in the building are generally very skilfully handled and made interesting by the design of common areas and provision of external views;

(c) visitors can penetrate the heart of the building without intruding on users' activities or compromising security;

(d) the mass of the building has been handled so that the individual is not overpowered and a light, pleasant and open working atmosphere is provided for the occupants of almost every office space;

(e) security should be able to be maintained with a minimum of overt "police presence";

(f) the relative flexibility of internal spaces should be able to accommodate future changes in user requirements and expansion can readily be achieved without compromising the basic design philosophy of the building.

In undertaking its own preliminary assessment of the winner's scheme, the Authority has taken particular note of those matters identified by the Competition Steering Committee as requiring more detailed investigation during the design and documentation stages. The Authority is convinced that the winner's scheme shows such a clear understanding of the key functional issues that in the further development of the design those less satisfactory functional aspects will be resolved.

ENGINEERING ASPECTS

Structure

The building structure is conventional with no unusual features, uncommon materials or unfamiliar technology.

A notable engineering aspect of the design is the use of large glass walls on the curved faces of the central section of the building. Although these walls are extensive there is adequate local experience in such work and the materials and methods used are tried and proven.

Particular attention will be necessary to ensure satisfactory water proofing of roofs. Although difficulties have been experienced in the past with certain kinds of flat roofs, modern techniques and materials provide dependable results.

Mechanical Services

The services engineering philosophy adopted is advanced, sound and economic in principle. The architect's proposals take account of developing trends in energy management, and provide flexibility of operation and the ability to keep pace with advancing practices. Although advanced ideas on energy utilisation are envisaged further detailed development will be required particularly with regard to the application of passive solar conditions applicable to the Australian climate.

Solar augmented low grade heating systems have been considered and a feasibility study will be undertaken to determine whether such provision should be incorporated now or allowance made for installation at a later date.

The modular nature of the mechanical plant system is consistent with minimum servicing costs, allows a shorter construction time and permits the application of off-site component fabrication. The services distribution space allocation, however, will require considerable further development but this can be readily catered for within the design.

Electrical Services

Electrical reticulation is conventional with adequate alternate high voltage feeders. Emergency power supply generation is allowed for.

Acoustics

Areas requiring acoustic treatment are being identified for early development, modelling and testing for the results to be incorporated early in the design phase.

Security

This design does not present insurmountable problems. Attention will, however, be required in the detailed design phase to prevent penetration behind the Senate and House of Representatives wings but there are a number of options for resolving this aspect. Overlook from the top of the central building is not considered to be a problem by the security advisers, although a low key Police presence is contemplated to ensure that the Executive is protected from sight and sound surveillance and for physical security reasons.

In summary, the preliminary examinations of the design which have been carried out by the assessors and their technical advisers and by the Authority's professional staff give no cause for concern about the engineering aspects of the building. As is normal in any building design at the sketch plan stage, the details of engineering services require further development. However, the Authority is satisfied that the approach taken by the architect will enable the introduction of services to the required standards without difficulty.

TRAFFIC, TRANSPORT AND PARKING

ROAD NETWORK

Access to Capital Hill as required by the winner's design is largely a reflection of the preferred road network previously developed by the National Capital Development Commission. Access is proposed via extensions to Commonwealth, Kings and Adelaide Avenues and via an extension to the existing eastern tourist road from State Circle. These links connect with an internal road system and will provide adequate capacity for the normal demands expected of Parliament House.

Internal Site Circulation

Internal circulation is effectively provided by the proposed "Parliament Road" which follows a rectangular route around the four sides of the building. Access to car parks, drop off points etc are conveniently provided from this road.

Land Bridge

The design provides for a land bridge linking Capital Hill with Camp Hill. It includes two roads which are virtual extensions to Parkes Place which link with the main circulation road (Parliament Road) for Parliament House. The land bridge as proposed will ensure convenient, efficient interaction between Parliament House and the Government Offices within Parkes. It will also provide an important link for tourist/ visitor traffic between Parkes and Capital Hill.

Ceremonial Access

The access roads to Capital Hill as proposed and including the land bridge will ensure high standard processional routes are available for ceremonial purposes. This applies regardless of which building entry point is the final destination.

Service Vehicles

The principal destinations for service vehicles are on the east beneath the House of Representatives and the design provides a convenient link via the existing eastern tourist road off State Circle. In the event that drivers are unfamiliar with the area, entry by any of the other access points, should not cause any difficulties.

PUBLIC TRANSPORT

Express Services

The design proposes a route for the express inter-town service via Adelaide Avenue, Parliament Road-West and Commonwealth Avenue. A stop is located in front of the Senate entry. This route would provide a reasonably good link with minimal delays for the express services. The stop as proposed, would ensure a very good service for the Senate and a good service for the main building. The House of Representatives involves a longer walk, but this is not considered excessive.

Local bus services can readily be routed on to the internal road system if required and stops can be located as appropriate adjacent to the building entry points.

Parking

The design provides for the Parliament House parking requirements in seven distinct areas. Two areas are provided to each of the south, east and west sides of the building and one large area is provided to the north. The provision of 1,900 parking spaces (including 30 for coaches) meets the requirements specified in the competition documents.

Parking Distribution

A very good distribution of parking is achieved by the provision of parking within all four sides of the building. The spaces allocated in these areas are also generally in the correct proportions for the demands which that particular part of the building generates.

Priority and lay-by parking spaces are provided in the South, East, West and Forecourt underground garages. Within the South, East and West garages, security control can readily be implemented. These garages are also very close to the areas of the building they serve. Within the Forecourt garage, security control will need to be implemented as part of the total control for this garage. If this area is primarily used for lay-by spaces and the less sensitive priority requirements, then no difficulties are envisaged.

Visual Impacts

The scale and location of the parking areas as proposed is such that minimal visual impact can be expected. Much of the parking is in fact in underground garages and not visible. Those few areas which are above ground are in small areas heavily screened with landscaping. The provision of a forecourt garage to house a total

of 650 cars plus 30 coaches is effective in ensuring the important views along the land axis towards the War Memorial are not encroached upon. The lack of any significant visual impact caused by the parking areas is considered a major advantage.

Pedestrians and Cyclists

The land bridge by virtue of its location along the land axis and connecting Capital Hill with Camp Hill will become a most important link and will undoubtedly be preferred by visitors, pedestrians and cyclists.

Summary

The Authority is satisfied that the traffic and parking arrangements represent an excellent solution to a potentially major problem for such a large building. The internal road system is simple, safe and effective, provides adequately for a public transport service and enables easy access to an egress from car parks which themsleves are strategically located in relation to the building entrances.

CONSTRUCTION FEASIBILITY

The chosen design although unique in architectural concept is simple from a construction point of view for such a large building. It can readily be divided into separate building zones allowing parallel documentation, tendering and construction of the components, with simplified programming, management and supervision of the project.

The basic elements of the building contain no requirement for unusually highly skilled or unique trades. Although the large curved window walls are uncommon, even with these, there is substantial experience and skill available.

The structure is of reinforced concrete, which can be designed and documented with minimum lead time and placed in the field much more quickly than other structural options. While the whole structure is suitable for conventional on-site construction, the wings have the flexibility to allow substantial off-site pre-casting and factory production. This provides flexibility in the programming, the opportunity to run many more activities concurrently as well as allowing the spread of employment opportunities more widely.

It is envisaged that the on-site construction work force will peak at about 800 and that a further 200 to 300 would be engaged in off-site trades and factory activities. In addition, the professional design team with management, administration, supervision, survey and other activities would require about 230 on-site, as well as an off-site back up by authorities such as the National Capital Development Commission, Department of Housing and Construction, ACT Electricity Authority, Telecom and others.

Although the design appears to retain the hill, almost as is, the building actually requires the shifting or the removal of a large volume of earth for the structure to proceed. Geological information indicates the occurrence of hard rock where blasting could be required and the heavy excavation expected to take about nine months has to be completed prior to the start of actual building construction. Consequently, during the first year the extent of earthwork and disturbances of the hill

may cause some adverse public comment. However, the appearance will quickly change as the building structure emerges and the shape of the hill is re-established in the built form of the design and as landscaping restores and enhances the hill.

In summary, the construction of the building is uncomplicated and uses conventional technology, materials and trades. The design provides the flexibility needed to allow concurrent design and construction of the project and allows a reasonable degree of off-site construction to assist in programming and resources planning.

Provided approval to proceed is not delayed, the project can be completed for opening in 1988.

COSTS

The initial estimate, which was prepared at May 1978 prices, was for a notional building containing a usable area of 58,000 square metres and totalled $151 million.

The winning architect's estimate prepared in response to the competition conditions amounted to $156.4 million at May 1978 prices.

The Authority considers it essential that a realistic estimate of the cost of the building be established at this stage which recognises the extent of the scope of work portrayed by the conceptual models and drawings submitted and endeavours to anticipate what will ultimately be required when those concepts have been developed for the final construction and presentation of the building.

To this end, during the last week, intensive examination and discussions have taken place between the winning architects, the Authority's Project Manager and the selected Construction Manager, Cost Planner and Project Planner. As a result, the Authority is convinced that a realistic estimate of the cost to build the winner's design concept is $220 million at May 1978 prices.

The main items where estimated costs exceed those used in 1978 for the notional building are:-

1 Usable Area - increase of $29,000,000

Not one of the finalists was able to contain usable area to the 58,000 square metres. The winner's design has usable area of 69,000 square metres which is about mean of the five submissions. The following are the principle areas involved:-

(a) The refreshment and dining areas of the central spine to allow for future expansion in an area where later alterations or additions would otherwise be severely limited.

(b) The central circulation space at chamber and gallery levels. The central area is seen as a major function of the design requiring dignity at both public and non-public levels. As such the risk of congestion and crowding should be avoided. Furthermore, adequate space is needed for public exhibitions and for placing artifacts, present and future as in Kings Hall.

(c) The basement and loading docks area etc. where provision for future expansion is necessary as these areas would be inaccessible when the building is completed.

2 Underground Car Parking - increase of $18,000,000.

Although not a requirement of the brief, underground car parking has been provided in the design concept. It is strongly felt that with the landscaped design approach envisaged, above ground parking would be unacceptable in the Capital Hill environment. Whilst this results in a considerable increase in costs, it would ultimately be far more expensive to incorporate at a later stage.

3 Site Works and Landscaping - increase of $13,000,000.

The whole concept is based on a landscaped solution rather than a predominantly architectural one. As a result the whole of Capital Hill within the ring road is required to be disturbed and later re-instated. This is of paramount importance to the whole concept and the estimated costs were considerably above those provided for in the initial estimate.

4 Energy Saving Devices - increase of $4,000,000

Energy saving devices have been incorporated and were seen as a highly desirable feature. Whilst such devices would achieve a substantial reduction in the annual operating costs of the building, they do involve an increase in the capital expenditure above that which had been allowed.

5 Standard of Finishes - increase of $5,000,000.

The winning architect's design concept involves a disproportionately higher area of space devoted to ceremonial spaces and public areas than had been called for in the brief. Inevitably such areas demand a much higher standard of finishes e.g. the floor finishes of circulation routes have been allowed to be hard surfaces such as terrazzo and polished stone; the Reception Hall has a hardwood parquetry; the Members Hall has polished marble and the Foyer polished granite.

6 Summary (in May 1978 prices)

Original estimate for a notional building	$151,000,000
Increased usable area	29,000,000
Underground car parking	18,000,000
Site Works & Landscaping	13,000,000
Energy Saving Devices	4,000,000
Standard of Finishes	5,000,000
TOTAL	$220,000,000

WINNING ARCHITECT

The nominated architect in the competition was Mr Richard Thorp, 38, formerly of Melbourne and now resident in New York. For the purposes of the competition, a partnership was formed with the long-established American firm of Mitchell Giurgola.

The architectural firm Mitchell Giurgola is one of the most highly respected practices in the world today. This was recognised by the granting of the American Institute of Architects "Architectural Firm Award" to them in 1976.

For twenty years the designs of Aldo Giurgola have been at the centre of American architectural thinking. The work is distinguished by its ability to draw inspiration from history and from adjoining buildings without losing its own creative momentum.

Clients range from the United States Capitol to universities and institutions throughout the country. Giurgola's captivating drawings have been translated into efficient and impressive buildings using characteristic American expertise.

Australia can regard itself as fortunate in having the services of such a distinguished firm. The winner's design continues the firm's long, world wide reputation for high quality, creative and functional architecture.

PROGRAMME

A programme of key activities is being prepared which envisages that the building will be completed to allow occupation to commence from mid-1987. Progressive handing over of parts of the building for furnishing and final fitout will be scheduled to occur from mid-1986.

To achieve this target, Parliamentary approval for the project is required in August 1980. The design and documentation phase is scheduled to commence in October 1980, which will allow the necessary two months for the architect to establish an office in Canberra and to put the design team together.

Bulk earthworks must commence not later than the beginning of 1981, and preferably earlier, in order to allow underground services and the building proper to begin in September 1981. During this period detailed design work will continue, and, for the programme to be achieved, there will be a need for confirmation of functional layout, space relationships and user requirements in February 1981 followed by progressive confirmation of detailed planning aspects up to mid-1982.

The Forecourt sub-structure and associated car parking will be developed early in the construction period to allow the associated approach roads and peripheral works to proceed and to provide early on-site parking, hard standing and under cover working areas.

Landscaping and road works will also commence early in the construction period. This will allow the establishment of the permanent circulation and service patterns and define the area selected for advanced tree planting.

In summary, the programme is achievable to allow occupation by January 1988 provided early approval is given to the project and that work be allowed to start as soon as practicable on the bulk earthworks, and associated servicing.