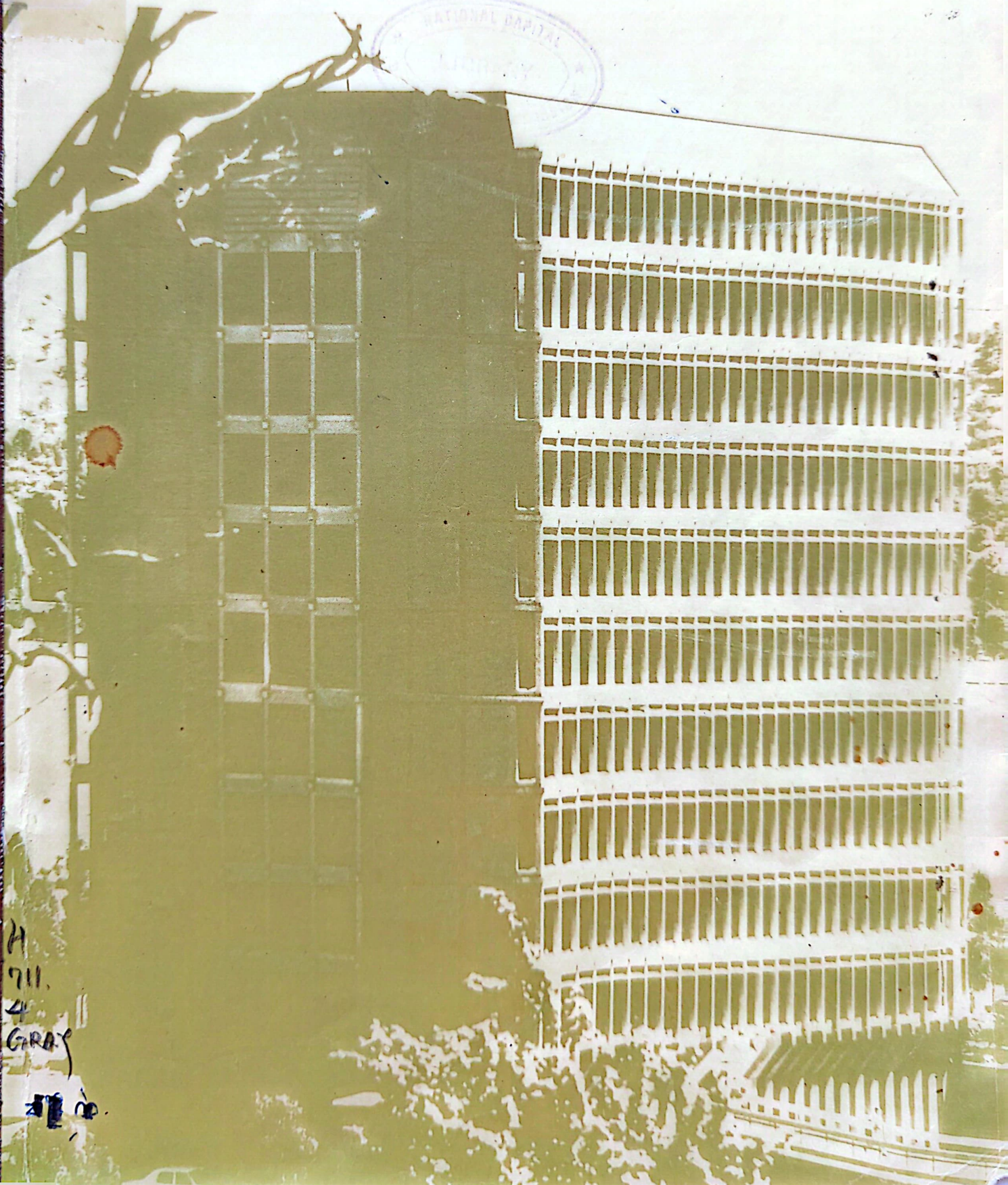


NATIONAL CAPITAL DEVELOPMENT COMMISSION BUILDING HEIGHT POLICY

A Report by RICHARD GRAY ARIBA. AMTPI.
April 1972



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BUILDING HEIGHT POLICY IN CANBERRA

INTRODUCTION

THE PURPOSE of this report is to provide in outline the basis of an established building height policy within the general framework of Tomorrow's Canberra. The Commission has asked for a tool that can be used in long-term planning, in civic design, and in the consideration of applications for development. In the particular circumstances of Canberra this exploration of the subject is a pioneer study. For a number of reasons Canberra has not as yet been exposed to the pressure to build upwards that dictates development in so many contemporary cities. Canberra seems to be almost unique in still having a choice. There need be no new buildings higher than those that exist at present. Or there could be much higher buildings in selected positions. The system of land tenure in the A.C.T. makes it possible for the authorities to say "no" to proposals that conflict with the pattern of the developing city. But whereas in other places a negative control is all that is necessary - or all that is possible, in Canberra the need is for a positive, creative, building height policy.

This study has been made under the auspices of the Architectural Division. It looks at the problems of building height primarily from the point of view of civic design. This is not to say that the effects of planning on height have not been considered as well as architectural height limitation. But in Canberra the indications are that the planning controls - plot ratio, density of population or employment, and traffic capacity of streets - will bite first. Planning considerations may in places preclude the desired or desirable height.

No amount of high building will alter the fact that Canberra is one of the world's horizontal cities. The cumulative effect of topography, Griffin's lay-out, and the Australian preference for low densities, will preserve this characteristic in perpetuity.

Canberra will also remain, in its central parts, traditionally axial. A combination of building regulations and height control with an architectural purpose has been the secret of success of the type of capital city from which central Canberra derives - the Paris of Napoleon III and Haussman; and the Washington of the MacMillan plan. They also are essentially horizontal cities in saucer-shaped sites. The even limitation of the height of ordinary building

has created in those places an artificial plateau which contrasts with, and sets off, the monumental buildings that rise above it. The object of building height control in Canberra could likewise be to establish strong horizontals and to make the most of deliberate vertical accents.

This report re-examines the topography of Canberra in relation to building height; reviews the underlying principles of the use of height in civic design; suggests appropriate height limits for the control of development; and proposes a logical building height policy to meet these conditions. This policy is set out in a series of specific recommendations for the consideration of the Commission. Some notes on current policies for the control of building height in other cities are added as an appendix.

Writing this report has been like attempting to dig up a wide-spreading tree. Only a little of the roots of the subject have been uncovered but already it is clear that they spread under almost everything within reach.

This report does not claim to dig deep or follow out any of the ramifications of the subject. It puts forward an approach to building height control which could repay further investigation. From the lessons of high-building in other cities it takes note of certain warning signals and suggests precautionary measures that might be prudently taken now.

To keep this report compact enough to be digested, the ground covered by last year's studies - BHI 1971 - has not been gone over again in detail. Much of the analysis made in those studies is still valid and a number of points mentioned there should not be lost sight of. Like this report they were concerned primarily with the central area of Canberra, not with the new towns of Woden, Belconnen and Tuggeranong.

BHI 1971 established the principle that in relation to the background hills in Canberra, low level views are the more important. This assumption is implicit throughout this report. The fact that no mention is made of higher view points, and views from look-outs, should not be taken to mean that high buildings are of no significance in these cases. But their relative height does not in general create design problems.

BHI 1971 also established the need for a list of set-piece views in Canberra deserving specific protection. This report assumes that the Commission will undertake the compilation of such a list when opportunity permits.

When this report was in draft the Commission asked for a paper amplifying the application of the proposed policy to the National Area; and for some further details on Woden and Belconnen. These papers have been added as supplements to the report.

DEFINITIONS

"a high building means any building
of which any storey is an upper storey"

LONDON BUILDING ACT 1930

ABSURD at first sight, this definition, on reflection, appears to be appropriate to Canberra, and useful for this report. Of Canberra's buildings, as many as 80%, may be safely estimated to be of one storey only. Single storey (SS) buildings can be assumed to be wholly hidden in the tree belt and can therefore, for present purposes, be ignored. It is with the buildings of two storeys or more that this report is concerned.

The non-single storey buildings can be divided for practical purposes into two categories: those that do not need lifts; and those whose height and form is affected by the necessity for lifts and alternative means of escape. For these two categories the terms LOW-RISE and HIGH-RISE are used in this report.

LOW-RISE (LR) buildings are walk-ups having 2 - 4 storeys. Though they are not necessarily hidden by trees, their roof-levels correspond roughly with the tree-top layer.

All the high-rise buildings are seen above the tree belt. They can be further sub-divided into categories, which are primarily architectural in purpose, based on existing types in Canberra:-

MEDIUM HIGH-RISE (MHR)	5 - 7 storeys
AVERAGE HIGH-RISE (AHR)	8 - 12 storeys
VERY HIGH-RISE (VHR)	12 - 24 storeys

In future there may be much higher buildings in Canberra. These are referred to as:-

EXTRA HIGH-RISE (XHR)	25 storeys and over
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For civic design purposes high-rise buildings can be usefully classified according to their proportions, regardless of the number of storeys, into:-

LONG BLOCKS (LB)	with dominant horizontal proportions e.g. New Trade Building.
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SLAB BLOCKS	(SB)	with length slightly greater than height. e.g. ACTEA Building.
HYBRID BLOCKS	(HB)	with height slightly greater than length. e.g. M.L.C. Building.
TALL BLOCKS	(TB)	with dominant vertical proportions, e.g. Lakeside Hotel.

The term TOWER is used in this report exclusively for buildings which have a regular square, circular, or polygonal plan, and a strong vertical character, e.g. Australia Square, in Sydney.

SPECIAL BUILDINGS are those with domed or other wide-span roofs, regardless of height and of number of storeys, e.g. the Academy of Science, or the War Memorial, and more complex modern structures.

MONUMENTS include vertical buildings of various kinds that do not consist of a number of stories, e.g. the Carillon and the Russell obelisk.

STRUCTURES include vertical features such as radio masts, generally of a functional kind, and unsubstantial in character.

HEIGHT itself needs some definition. When used alone in this report the word means the quality of highness. 'High' by itself means 'having this quality'.

ABSOLUTE HEIGHT (RL) = Reduced level or roof level, means the actual position in space and therefore in the landscape of the roof-top of a building. This is expressed in terms of feet above sea-level - e.g. RL 2023 for the top of the Lakeside Hotel - related to a visual datum, the surface of Lake Burley Griffin which is assumed to be at RL 1825.

BUILDING HEIGHT (BH) is the dimension in feet from the ground (at the main entrance to a building) to the highest point of the roof.

STOREY HEIGHT (SH) is the number of storeys above the ground floor not including basement, roof space, or roof machine rooms.

P A R T I. P R I N C I P L E S

A. CIVIC DESIGN AND TOPOGRAPHY

BUILDING HEIGHT in Canberra is a question of civic design. It is not, as in most cities, a problem of development control. Canberra is some years away from the stage of re-development when proposals to re-build higher begin to create serious problems. The leasehold system of land tenure gives the Commission an enviably free hand in determining the initial height of individual buildings on new leases. It might seem surprising, in view of the wealth of land and choice of sites available, that deciding building heights should be at all difficult. But an aesthetic difficulty - and at present only this - is what Canberra's building height problem is. The freedom creates the problem.

Elusive and intangible, it has undoubtedly been a real and tough one. Diagnosis has not been easy. The first studies made here last year were an intuitive pursuit of clues without any idea of the conclusions they would lead to. The studies were put together in an interim report - BHI 1971 - which contained valid but not very positive or coherent deductions.

Recent visits to Paris and Washington have strengthened the conviction that the impressions gained last year were on the right track. Paris and Washington were chosen because both have national centres in which buildings are placed in classically formal settings. They are also almost the only examples of historic and mature capital cities of that kind in which the traditional roof-levels of ordinary building have been preserved intact. Now in both cities the established roof-level and the supremacy of the national monuments is being threatened by the demand for 'high buildings' justified on financial or economic grounds or because of the difficulty of reconciling out-of-date regulations with new kinds of development.

These cities, having much in common with Canberra which is descended through Washington from Paris, are thus two stages ahead of Canberra. Both have established characteristic and satisfactory systems of levels which have been in use in one case for over a hundred, in the other for over sixty years. Both are now considering how to adapt their cities to the high-building era without damage to the character of their historic centres.

From the experience of Paris and Washington we can learn in what the value of a system of height controls consists. We can also see how a system of controls of the traditional kind is affected when the problems that the inevitable high buildings bring with them have to be faced.

A building height system is needed in Canberra now as a design discipline. It will soon be needed for the just regulation of the re-development of leases. And it would be wise to make use of it now to prepare for the not impossible introduction of really high buildings into the Canberra landscape.

Uncertainty about building heights in Canberra comes from the conflict between the ambitions of the growing city and the restraint imposed by the background hills which Griffin made the vertical dominants in the civic composition. Progressively higher buildings are demanded for functional, economic, prestige or architectural reasons. Each raising of roof levels makes the hills look smaller, less significant, and less effective in the role for which they are cast. The attrition is gradual and passes unnoticed. There may perhaps come a time when buildings take over from the hills. But this is a long way off. In the meanwhile the balance must be held in favour of the hills.

The balance is critical in the case of Mount Ainslie and - to a lesser extent - of Black Mountain. These, the largest, 'mountains' are none too high - about 500' above the nearest roof tops - for the job they have to do in stopping Griffin's great axes. Exactly how large his horizontal dimensions are is not easily grasped. For example downtown Sydney, a normal 19th century city, would fit comfortably into the diamond of the central area. (Plan A). If the Central Railway Station were located on Camp Hill, the Opera House would be near the War Memorial; with the Chevron Hotel at Russell, Darlinghurst Court House in Barton, and Australia Square in Reid.

The problem in Canberra is how to produce monumental groups and buildings while maintaining continuity over these tremendous distances; how to keep the roofs of economically high buildings down in contrast with the background hills; and further, when they come, how to assimilate really high buildings in the landscape without robbing the hills of their significance or the lay-out of its points.

B. BUILDING HEIGHT AND CIVIC DESIGN

THE ESSENCE of civic design or landscape design - for in Canberra they are the same thing - is clearly stated in Penleigh Boyd's painting of the Federal Capital site in 1912 : the dominant, undulating hill skyline; the verticals (of trees) in the foreground; the immense stretch of level, receding middle distance; and the slight, but acute and telling, accent of St. John's spire. These (or their equivalents) are the elements with which we have to play a more complicated game; and with which our successors will continue to play.

There is nothing in the landscape itself that dictates a city of the kind we have. If Agache had won the original competition Canberra would have been a Beaux-Arts city judiciously placed in the landscape but independent of it, with limited, defined, internal spaces. By pinning his lay-out to the smaller hills and fixing on the major hills as his landmarks Griffin - to whom at that stage all choices were open - deliberately subordinated buildings to landscape for all time. The Commonwealth's protection of his scheme ensured the survival of that relationship. In 1956 when the creation of the lakes was being discussed there was a last chance to revert to a conventional inward-looking self-contained environment. The filling of the lake settled the predominant landscape character of the city. It is not possible now, except in certain limited areas, to have a truly urban environment with the advantages of integrated landscape, or vice-versa.

Not a building in Canberra is Griffin's, but his views about building heights are known. Residential buildings, then as now, would mostly have had one storey only. Griffin's designs for subdivisions indicate a majority of one family houses. There would not have been a mature growth of trees in any of the residential areas during his lifetime. But the density and evenness of the present tree cover would surely have pleased him.

His public buildings were meant to be seen above the tree belt but not much above.* For the most part they consist of two lofty storeys mounted on a raised ground floor with accommodation below it. Where prominence is desired domes and spires are added. The buildings are arranged in long low blocks with a strong horizontal emphasis across the Land Axis. A monumental effect is achieved by arranging successive tiers of horizontal buildings one behind another on rising ground to give a pyramidal effect, but subordinated to the dominant background hills.

The Commonwealth remained faithful to these principles until after World War II. The provisional Parliament House, the East and West Blocks, the Hotel Canberra, the Sydney and Melbourne buildings, and even the War Memorial illustrate them. Church spires and the War Memorial dome at this stage provided the only vertical accents in a rural landscape. An ordinance limited other buildings to two storeys. Ministerial approval was needed for anything higher.

The Administrative Building, on a Griffin site, started out on the same basis. The pre-war competition conditions assumed that it would have two storeys on a raised ground floor. But after the war the winning design was raised and inflated to provide more accommodation. There were six office floors above ground and seven in the centre, all served by lifts. The massively monumental building had a real "city" scale. The vertical contrast of the period was the American War Memorial standing in splendid isolation below Russell Hill.

* "With liberality in public space, and judicious distribution of centres, and directness and speed in communication between all points, the necessity for making these large units stand on end, as in the congested American Cities, can be avoided in a Capital City at least, securing a horizontal distribution of the large masses for more and better air, sunlight, verdure and beauty."

We are still in the era of building and civic design inaugurated by the Administrative Building. Criteria for building heights are now determined by philosophies very different from Griffin's. Civic design policy however which exercises the final control is a compromise between his landscape ideas and the current international city style.

Subject to this sanction (and to plot ratio, employment, and traffic controls) the height of a Government or private office building is arrived at by agreement between the client, the lift manufacturer, the fire brigade, and the accountant, without regard to the landscape. But in some cases the height that would be a logical expression of the building's function, and acceptable to these parties, is reduced by the Commission in the interests of landscape. The skyline is preserved and a reasonable degree of 'efficiency' is achieved in the building.

The slab block, product of this system and a universal building form of the 'sixties, is seen at its most typical in the City. Here, in a broad valley between Mount Ainslie and Black Mountain there is no background to be considered. Until recently a controlling height limit of RL 2000 has been in use. This corresponds with the top of Capital Hill. It has been exceeded by the A.M.P. Building (RL 2025) and an upper limit of RL 2025 is now proposed.

Heights of office buildings in the City and elsewhere in Canberra vary. But with ordinary lifts an 8-storey height is the most remunerative. Above that height high-speed lifts are required. They can serve 20 floors with an intermediate station. In the City the highest building at present is the Lakeside Hotel with 15 storeys.

Building regulations prescribe exact permissible lengths and in this way exert a direct influence over the proportions of blocks in relation to economic lift runs. The maximum distance of travel between staircases is 100 feet (150 feet if sprinklers are provided) with a maximum dead end of 40 feet. Sprinklers are required if the building is over 150 feet high. The higher buildings tend therefore to be slightly longer. Vertical dimensions being controlled, the permissible travel distances (with or without sprinklers) produce blocks of dumpy proportions. The 8 storeys and under blocks have a slight horizontal, and the 12 storeys and over a slight vertical bias. Elegant vertical proportions are not possible, still less anything like a true tower. In either case the blocks are difficult to link or to arrange in any way that produces

horizontal lines. They look best clustered in informal groups as in the City.

At Russell the controlling heights have been kept down to five storeys above ground to preserve the vertical contrast of the obelisk and the hill background. Horizontal continuity has been obtained by staggering the slab blocks in plan in alternate rows. The proportions of the Anzac buildings were settled to suit BMR requirements in the first of the pair though something long and low would have been kinder to the War Memorial. The mirror image compositions of the Russell and Anzac groups put them at an unexpected disadvantage as compared with the City. Whereas the irregular city blocks are incidents in the landscape of no particular size, the formal symmetry at Russell and Anzac Parade recalls familiar examples on a smaller scale. Because of the unmeasurable space in front of them and the absence of smaller buildings by which to gauge their height, and in the clean atmosphere of Canberra, these groups look both nearer and smaller than they really are.

The Treasury takes its height from the Administrative Building and the National Library follows suit. This group illustrates an interesting phenomenon. By gathering their occupants up into compact many storied blocks in an area where other reasons restrict employment, abnormally large open spaces are created, and the buildings lose their monumental effect. Griffin's enclosed plan for Parkes Place, in contrast to what exists there now, was in scale more like Hyde Park in Sydney. His public buildings would have had the scale of the public buildings in Macquarie Street.

The classical method of giving buildings a monumental scale was to exaggerate their vertical dimensions and magnify their parts in relation to a restricted and defined ground space. St Peter's in Rome is a major example of this. The main entrance to the Administrative Building was designed with this intention but the extent of Parkes Place robs it of the effect it would have had when seen, as in Griffin's scheme, framed by two nearer buildings. The decision to restrict the number of buildings in the Parliamentary Triangle has broken the traditional relationship of height to space as a means of enhancing the importance of certain buildings. The space itself now makes the impact; and the height of buildings is a measure of the relative importance of their function as markers.

The Government office projects of recent years accept their subsidiary role in a larger landscape and go for strong horizontal lines. Either in the form of parallel and connected low-rise blocks built round courts as at the Cameron Offices (3 office storeys) in Belconnen; or by coupling standard length units in a train following the contours as at Campbell Park. The first example of this kind in the central area is the new Trade building (6 office storeys) where extended lines are contrived by linking two standard lengths with an intermediate staircase to produce a total office length of 240 feet. In this case the roof level was deliberately kept down in relation to the future Parliament House. Even so an 'efficiency' of 72% was achieved.

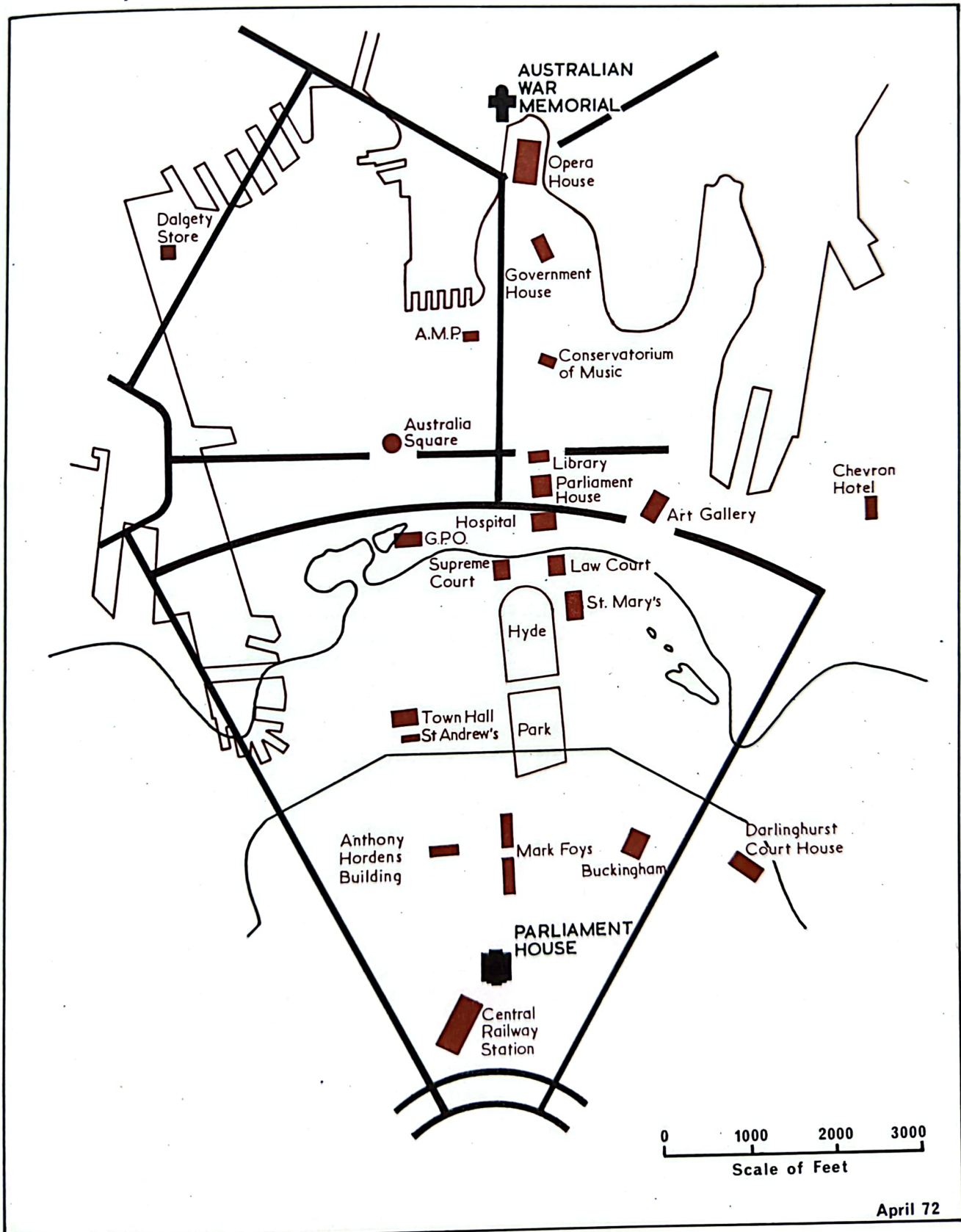
A number of vertical features have been introduced to contrast with the staccato and not very strong horizontal building lines round the Central Basin. The slender 245' American War Memorial preceded the substantial blocks on either side of it. The 'book-end' buildings, Russell 14 and 10, have relieved it of some of its burden, at the same time extending the length of the group. The most effective contrast is provided by the Jet which rises to an impressive 460 feet. It evens out varying building levels by dwarfing them all. The Carillon Tower is seen as a vertical against the horizontal of the Anzac group.

In spite of a good deal of diversification some people feel that the Canberra scene is still dull. This is because of the depressive effect on buildings of the low skyline of surrounding hills. Really high buildings which broke the skyline, they feel, would provide excitement. In architectural terms these would be possible. But in the National Area an implied restraint operates to prevent their introduction, namely the safeguarding of the supremacy of the future Parliament House; in both inward views and outward prospects from it.

Dominance of Parl House over all Canberra

CANBERRA: SIZE OF THE CENTRAL SPACE

Sydney's Public Buildings Disposed in the National Area



P A R T I I . A P P L I C A T I O N

C. CONTROL OF BUILDING HEIGHT

THE BLACK MOUNTAIN television tower proposal brings home the vulnerability of the Canberra landscape to high building of any kind. The landscape is a unique national heritage; and a building height control policy may be regarded as one means of ensuring its preservation. Potential danger here is not from private developers but from official sources putting forward convincing reasoned cases in the national interest. The landscape is too precious to risk its being whittled away for the sake of administrative, departmental, or even Party advantage. Where there is any evident clash of national interests the issue would rightly be settled by Parliament. But the landscape may be even more easily eroded by the cumulative effect of a succession of minor decisions on proposals in themselves relatively harmless.

The business of this report is to set out the environmental objectives of a building height control policy, not to prescribe machinery for its implementation. But it may be in order to suggest that a code appears to be needed in a form less rigid than a single Act of Parliament but beyond the reach of a single department or of the Cabinet of the day to set aside at will. In future it may be necessary to limit the powers of municipal authorities in Canberra in regard to the regulation of building heights. The implication is that the Commission would be bound by the same rules.

The existence of an established, known, and accepted code might in some respects relieve the Commission of an invidious moral burden. Firstly in relation to the re-development of leased land where in a given area developers would know in advance what would and would not be permitted in the way of building height. They could not then be deceived in their expectations. And secondly in cases where the approval of an application for a high building would confer positive financial benefit on the applicant, consent could be refused in accordance with the provisions of the code and not, as it may now appear, as the result of an unfair and arbitrary spot decision on the part of the Commission.

In Canberra, it may be said, national interests come first, the interests of residents second, and those of private enterprise third. But subject to the over-riding national interest the individual citizen and the developer should in the matter of building height have the maximum freedom. With this intention the proposed building height code might apply to three aspects of the environment only, in each of which the paramount national interest can be demonstrated.

These three aspects of the environment and the corresponding restraints would apply to North and South Canberra, Woden and Weston Creek. They are:-

1. Restriction of the storey height of residential buildings throughout the area. This can be justified as essential (a) for the maintenance of the landscape character of the National Capital; (b) to preserve the necessary prominence of the National Area.
2. Restriction of the height of buildings in the National Area and the City to safeguard and enhance the dominant climax of the new Parliament House.
3. Restriction of building height in Yarralumla, the Westlake area generally and westward to the Murrumbidgee River, to preserve the view out to the mountains - a unique and irreplaceable amenity of the National Area.

D. A BUILDING HEIGHT POLICY

"Canberra's neighbourhood living provides more open space, both private and public, than any other city in the world."

THIS SIGNIFICANT SENTENCE comes from a recent report on public open space neighbourhood standards by Mr S.R. Margules. Its present relevance is that it heralds the possibility of higher residential densities in new development and re-developed older areas.

Mr Margules concludes that existing open space is insufficiently used. Its social usefulness could be greatly improved by increased patronage. This seems to imply re-development, when the time comes, of existing residential areas with larger populations; and the planning of new areas in a way that would leave room for the introduction in the long-term of close concentrations of dwellings.

There is evidence already that people in Canberra would be happy with smaller blocks of land and less garden to keep up. As the average age of the population rises there will be more childless households ready to live in flats. In Central Canberra, Woden and Weston Creek it is desirable that flats or town houses should be limited to three storeys so that their roofs should not appear above the tree tops. One hopes that a large part of the new areas will be laid out in such a way that the tree belts screen the houses.

In the unplanned residential areas i.e. most of Tuggeranong and Gunghalin, account may have to be taken of an impending shortage of building land within the A.C.T. The Commonwealth may prefer higher density building to the provision of services and social facilities within the A.C.T. for private enterprise housing beyond the border. It would be prudent to reserve some land in these areas for potential high density in the form of future apartment towers; with capacity in the plan for appropriate educational, commercial and social needs. Really high buildings cannot satisfactorily be fitted into a street lay-out designed for lower densities. It would be better to leave these reservations without roads and to let them on short leases for temporary use of a semi-agricultural kind.

There would be advantages both to the occupants and to the busway organisation if the reservations for high-rise apartments were located within a minimum walking distance of busway terminus stations. The buses would be assured of passengers from the start and to the end of their run. The captive customers would be encouraged to do without cars or use them only at week-ends. The apartment towers would be best grouped in clusters to create a community of flat dwellers with their local shops, recreation, and social services as well as their friends within walking distance. The apartments could be provided by the Commonwealth - some might be hostels - or by private enterprise. In these locations, away from the National Area, there need be no upper limit of height.

In Tuggeranong and Gunghalin there are wide level expanses where clusters of towers, well away from hills on either side would form welcome landmarks, looking from a distance like fortresses guarding the northern and southern approaches to the city. The group in Gunghalin would make an impressive stop to the view up Northbourne Avenue. It would also, when seen from Belconnen, provide a link with Canberra.

The construction of an international airport within driving distance will open up Canberra and the Kosciusko State Park to mass tourism. This phenomenon already on the move round the Pacific would create a large demand for hotel rooms in a form unlike that designed for car-borne Australian families. Vertical planning suits large hotels which, grouped together, share each other's amenities and support a specialised small shopping centre, all within an easy walk.

A group of hotels of this kind needs to be directly accessible for airports, and near the attractions of the National Area; with a view, if possible of Lake Burley Griffin. Gunghalin and Tuggeranong, which will no doubt have hotels of their own, will not do for this group. Access to the busway is of no importance as these people are conveyed mainly in non-peak hours, in coaches. One location in Canberra seems to meet these requirements and those of international conferences in accommodation also available to Government, namely the section of Kingston between Bowen Park and Jerrabomberra Creek, north of the railway line and facing the proposed Eastlake.

A cluster of high buildings* here, would be to the side in the view from the new Parliament House main front, but would make an impressive introduction to Canberra seen from Fairbairn Avenue or the Monaro Highway, corresponding in this respect to the groups to the north in Gunghalin and the south in Tuggeranong; a counterpart on the east to Mount Stromlo.

Barton, West Deakin, Reid and Northbourne Avenue, are areas of mixed uses in which a height zone could be established intermediate between the 3-storey minus residential and the 8-storey plus office areas. Here can be accommodated buildings in the 5-7 storey class. Occasional 8-storey blocks could be included; as for instance luxury apartment towers for people having business in the Parliamentary area, sited in Barton or north of Adelaide Avenue.

* The land suggested for re-development as a site for a group of hotels lies outside but near to the take-off flight path from Fairbairn Airport, for aircraft with one engine failing on departure. The height of buildings to be located there would be subject to D.C.A. agreement. But the suggested re-development is proposed for a period after the construction of an international airport and also of the east-lake. This must be at least 10-15 years away. Airport controls may have changed by that time. This possible limitation of height should not inhibit the reservation of the land for possible re-development in this way, or for any other purpose consistent with its future prominent lakeside position, always subject to D.C.A. agreement to any serious building proposal.

Northbourne Avenue illustrates an important point: urban environment is not achieved by high buildings. The boulevard atmosphere in this avenue is most successful, not where the widely spaced 8-storey blocks with their parking areas occur, but where there is a continuously built-up frontage of 3-5 storey motels, office buildings, and apartment blocks. The animation is contributed chiefly by the motels. This atmosphere and this combination of building height could be aimed at with advantage in the suburban town centres. There need not however in Woden, Tuggeranong, Belconnen or Gunghalin be any limitation of tall buildings for the sake of the National Area.

On the basis of the foregoing not unreasonable assumptions it begins to be possible to sketch out for Canberra as a whole a master plan in the third dimension. If we further take note of possible intensive development beyond the A.C.T. border, as in Maryland and Virginia, the pattern could become more marked. There is at present in Europe and the United States a strong social revulsion from what Griffin called in 1912 "The congested American Cities". At a recent election in San Francisco a proposal to limit all future buildings to six storeys was an unsuccessful but serious issue.* Many cities, London among them, are beginning to regret the careless high building of the past decade. It is not too soon for Canberra to plan, logically and in good time, its high buildings on the periphery. This is what Paris is belatedly trying to do. This is what Washington would do if it were not caught in a paralysing social and economic pincer movement.

Canberra's Centre, like Washington's monumental core, may always remain 'soft'. In the post-war years there seems to have been a general belief that one day, somehow, Canberra would fill up and a 'real' city would emerge, urban in the sense that Sydney and Melbourne, Adelaide, Brisbane and Perth are urban; and able to hold its own with the capitals of Europe and America. But it begins to look as if Griffin, traffic engineering, and the turn of the tide not only against Manhattanisation but against patriotic pomp will combine to put Canberra at the head of the field in the evolution of a non-congested national centre, democratic in the sense that Griffin intended.

* As a result 75% of the city has since been placed under a 40 ft. limit. In the remainder building heights are strictly graded.

This report is only concerned with the coincidence between present urban tendencies and Griffin's prophetic ideas in so far as they combine to affect building heights. Those who are responsible for civic design here cannot direct development, particularly in the National Area, without a firm purpose and a clear idea of where Canberra is going.

If really high buildings are held to be an outward sign of civic maturity, Canberra, when the time comes, should be able to display them intelligently planned and in sensible places. With land reserved for them in advance, general planning and development of the National Area can proceed on the basis of building heights determined for civic design reasons and not in response to economic or other pressures.

The silhouette of Parliament will be found to be of greater importance than its height, provided it is identifiable above the tree-tops. It should be as distinctive in its way as Ottawa's.

The supreme function in the design of the great space in front (which merges into the greater space of the Central Basin) is recognised in the National Area Study where it is re-named Parliament Place. Height is still important to Parliament House as the terminal climax of the axial composition but the key element in the landscape - the space - is not a vertical but a horizontal feature.

The withdrawal of Parliament has left in the Central Basin not a void but a bigger space. In default of a lakeside Parliament House this greater space will inevitably be dominated by the next most prominent building in an axial position, namely the Anzac Group with its extensions. Parliament on Camp Hill can solve its problems independently and in its own time. But on Constitution Avenue key decisions may have to be taken within the next year.

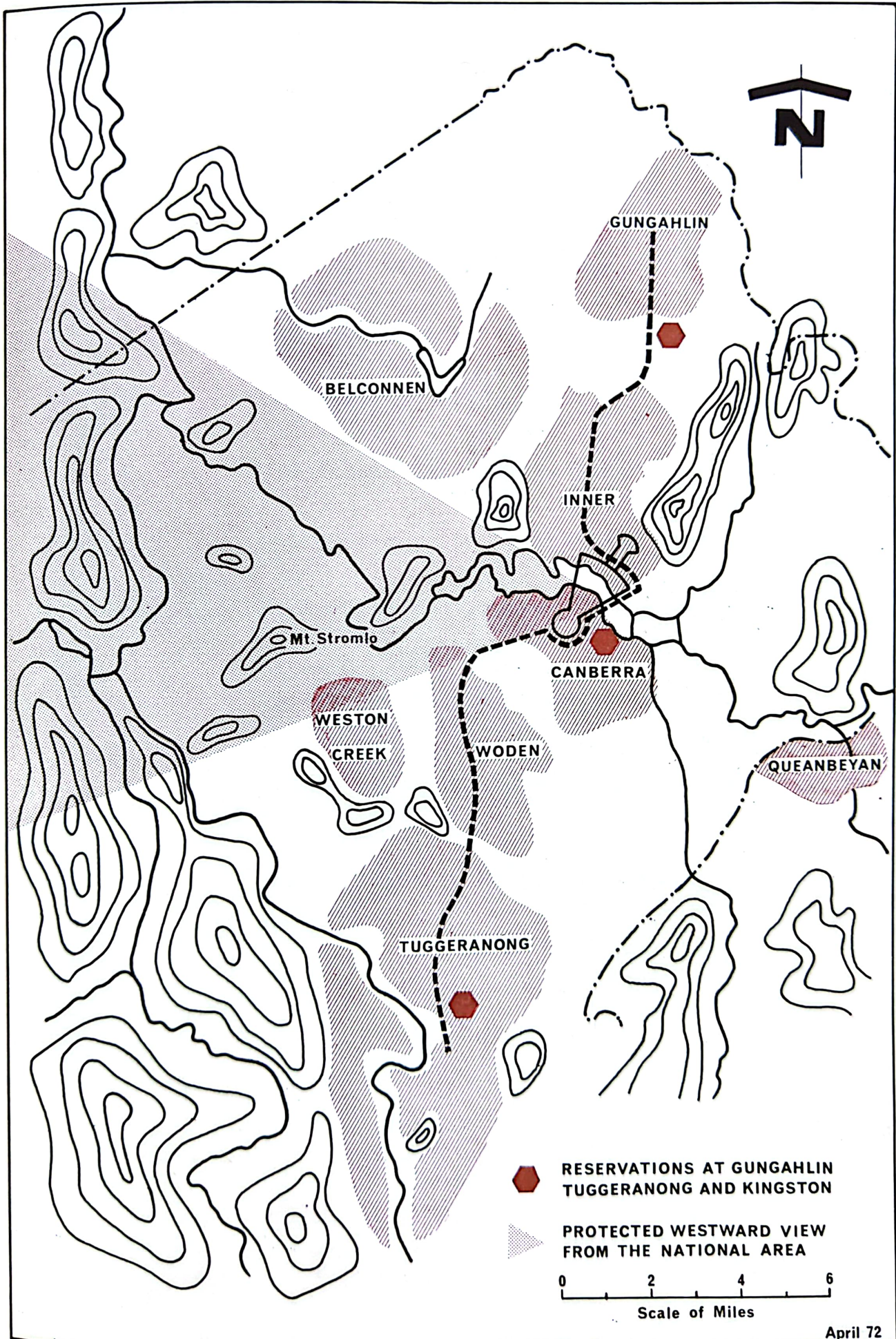
Horizontal continuity is essential not only in the Anzac extensions, which are controlled by the height of the existing wings, but also in the lines of Reid, visible above the Anzac group mounting to the level of the CSIRO building. As a step towards the establishment of strong horizontal lines round the Central Basin the National Gallery has made a good start.

In conceiving what is desirable round the Central Basin, and for that matter in Canberra as a whole, it may help to forget for a time that Canberra is the capital of the country that contains Sydney and Melbourne; and to concentrate on the fact that it is the capital of a country of vast spaces with towns of low buildings sprinkled among trees. For in central Canberra, thanks to Griffin and despite blotting out the hills, the landscape will always win. In a ribbon landscape let the space dominate; and let the buildings be ribbons also, better still if interwoven with trees. Against these harmonious horizontals a few carefully placed vertical accents need little emphasis to tell.

In the Parliamentary Triangle the Administrative Building established proportions which are, admittedly, too short and too high. The existing buildings there need only wait for the new Parliament House to master them. The Parliament House is the one, single, substantial building that should be uncompromisingly vertical.

With a focal shaft on Camp Hill, and clustered towers at the north, south and east gates of the city, and a wedge of landscape penetrating from the Brindabellas into the heart of the National Area, Greater Canberra begins to take shape. The success of this idea depends on keeping most of the rest below the tree-tops.

LOCATIONS FOR EXTRA HIGH BUILDINGS



BUILDING HEIGHT POLICY IN
CANBERRA

RECOMMENDATIONS

1. Register of high buildings.
2. National Area control point.
3. Photographic record.
4. 3rd dimensional Master Plan
5. Height limits in residential areas.
6. Peripheral reservations for high-rise apartments.
7. Central reservations for long-term high-rise hotels.
8. Protection of westward view from National Area.
9. Height limit in National Area.

1. THAT A REGISTER BE KEPT OF BUILDING HEIGHTS:

including RL at ground floor and roof level, building height, building classification (see Definitions above), number of storeys, presence of penthouse or roof plant room; recorded for all new, and as many as possible of existing, buildings of 4 storeys and more, monuments, and structures; and also RL level of hill-top look-outs.

2. THAT A CONTROL POINT BE ESTABLISHED AT THE NATIONAL LIBRARY FOR THE MONITORING OF BUILDING HEIGHTS:

the first-floor balcony of the National Library affords a vantage point from which a panorama can be obtained through 300°, taking in, clockwise:- Yarralumla, Westlake, Stromlo, Brindabellas, Black Mountain, Acton Peninsula, City, Reid and Mount Ainslie, War Memorial and Anzac Buildings, Campbell, Russell, East Lake, Parkes Place, Kingston, Barton, Administrative Building, Parliament House and Treasury.

3. THAT A PHOTOGRAPHIC RECORD OF THE PANORAMA BE TAKEN AT INTERVALS:

in the form of a series of still photographs taken from a constant camera level of 5 feet above the Library balcony floor which is at RL 1875. Sets of photographs to be available to the Public Service for reference. A set of each series to be deposited with the National Library as a record.

4. THAT A 3RD DIMENSION OUTLINE MASTER PLAN FOR THE WHOLE OF CANBERRA BE PREPARED BY THE COMMISSION:

as a working tool to guide long-term planning, and civic design; and for use in development control and public relations.

5. THAT HEIGHT LIMITS ON RESIDENTIAL LEASES AND GOVERNMENT HOUSING SITES BE RESTRICTED IN CENTRAL CANBERRA:

when leases are granted or housing schemes approved or on re-development. The restriction should apply to all residential areas except those where mixed-use re-development is expected.

6. THAT PERIPHERAL RESERVATIONS BE IDENTIFIED FOR LONG-TERM HIGH-RISE APARTMENT BLOCKS:

in Tuggeranong, Gunghalin and/or Belconnen, preferably with easy access to the urban busway.

7. THAT CENTRAL RESERVATIONS BE IDENTIFIED OUTSIDE THE NATIONAL AREA FOR LONG-TERM HIGH-RISE HOTEL BLOCKS:

to accommodate mass overseas tourism and conventions, likely to follow construction of an international airport within reach of Canberra; to be developed after the construction of the East Lake. Site to have proximity to Government Conference Centre, views of lake, and easy access to airport, National Area, and Manuka shops.

Note: near-future hotels to cater mostly for Australian visitors, smaller conferences, etc., to be located in or near City and to be subject to National Area height restriction, see below.

8. THAT STEPS BE TAKEN TO INTRODUCE STATUTORY PROTECTION FOR THE WESTWARD VIEW FROM THE NATIONAL AREA BY LIMITING BUILDING WITHIN THE CONTROLLING SIGHT LINES TO NOT MORE THAN FOUR STOREYS:

the controlling sight lines may be taken to be the line of Adelaide Avenue prolonged in both directions and the line of the central part of the south shore of the Central Basin likewise prolonged; the protection should extend to the Murrumbidgee River.

9. THAT THE HEIGHT OF BUILDINGS IN THE NATIONAL AREA AND CITY BE RESTRICTED TO A MAXIMUM AT RL 2025:

this is the height of the tallest building at Russell and in the City. The restriction would establish a plane that only the new Parliament House and the dome of the Australian War Memorial would be allowed to penetrate.

RICHARD GRAY

March 1972

The zoom-lens power of the human eye and the tendency of the mind to concentrate on what it wishes to see make it possible for people to be unaware that buildings in Canberra, however high, are still only part of a ribbon landscape. The lowness of the gently undulating skyline that ties them together is often emphasised by banks of cloud.

THE NATIONAL AREA FROM STIRLING PARK



The national area from Russell. This oil painting of the terrain in its natural state summarises the essential characteristics of the landscape : the few strong verticals in the foreground trees; the immense, level, middle distance; and the narrow strip of hill background and mountain horizon. The one man-made feature - the tower of St John's church - provides a telling accent.

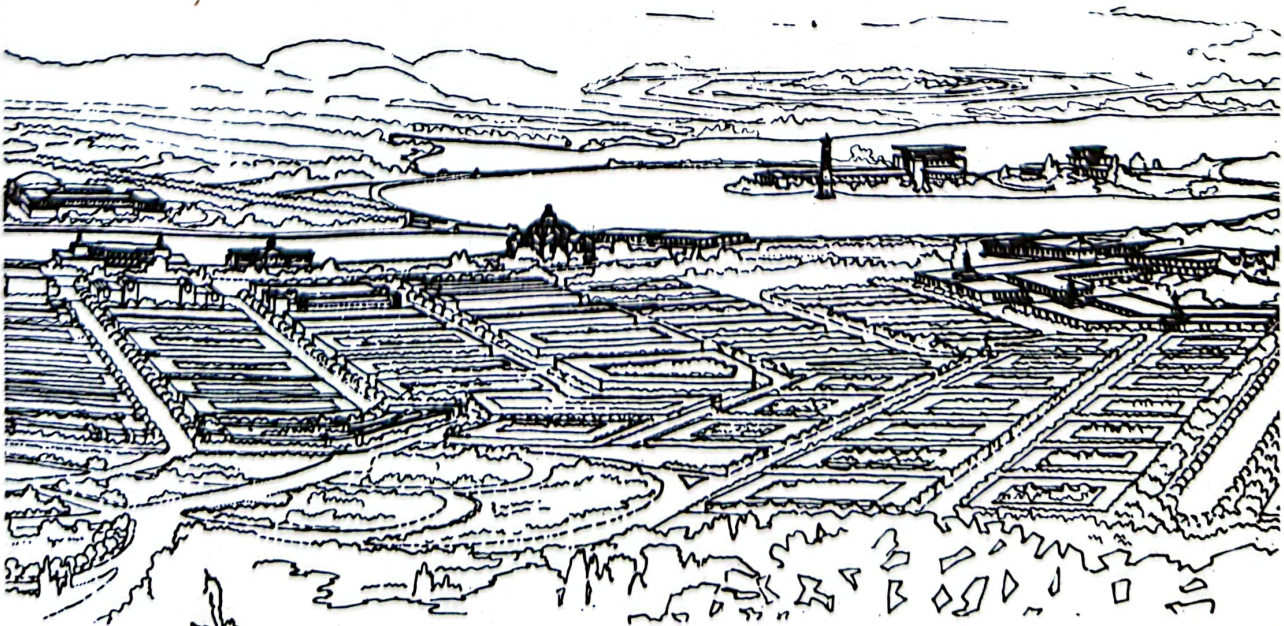
PENLEIGH BOYD : THE FEDERAL CAPITAL SITE. 1912



A view from Mount Ainslie, this drawing includes part of the middle distance of Penleigh Boyd's painting. It shows Griffin's application of building forms to the topography. Parts of the Parliamentary Triangle and of the City can be seen with the Acton Peninsula beyond. The roofs of Reid (actually intended to be separate single-family houses) are level with the tree-tops. The public buildings mainly two-storey above a raised podium are distinguished by turrets, domes (the Catholic cathedral) or towers (the hospital). The horizontality of all buildings is emphatic.

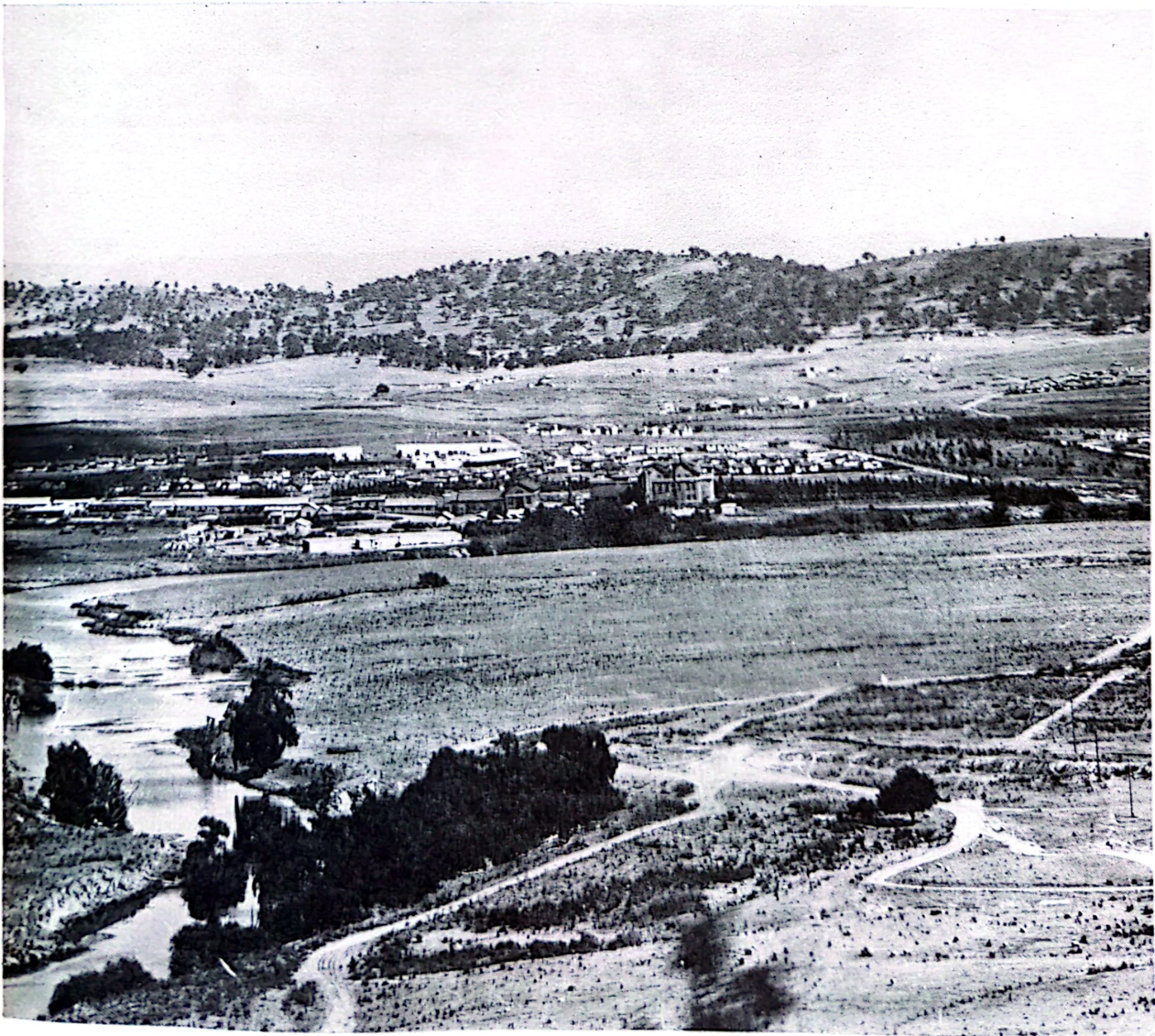
W.B. GRIFFIN : COMPETITION DESIGN

part of a tracing of a rendered perspective drawing.
(by courtesy of Peter Harrison)



A view across what is now the East Basin with Narrabundah and Red Hill beyond. Planting only in Telopea Park and along Wentworth Avenue. The blanket of trees that now covers established residential areas, after the hills and lake, is Canberra's most valuable - and most taken for granted landscape asset. Full advantage should be taken of the possibility of suppressing residential roofs offered by an abundant water supply for street planting and gardens.

KINGSTON AND MANUKA FROM RUSSELL - APRIL 1927



In its westward prospect from the national area directly over the West Lake to Mount Stromlo and the Brindabellas Canberra possesses an incomparable asset which should be maintained as a natural park. Between Adelaide Avenue and Black Mountain and as far as the Murrumbidgee the roofs of buildings should be kept below the tree-tops.

PANORAMA FROM THE BALCONY OF THE NATIONAL LIBRARY :
THE WESTWARD VIEW



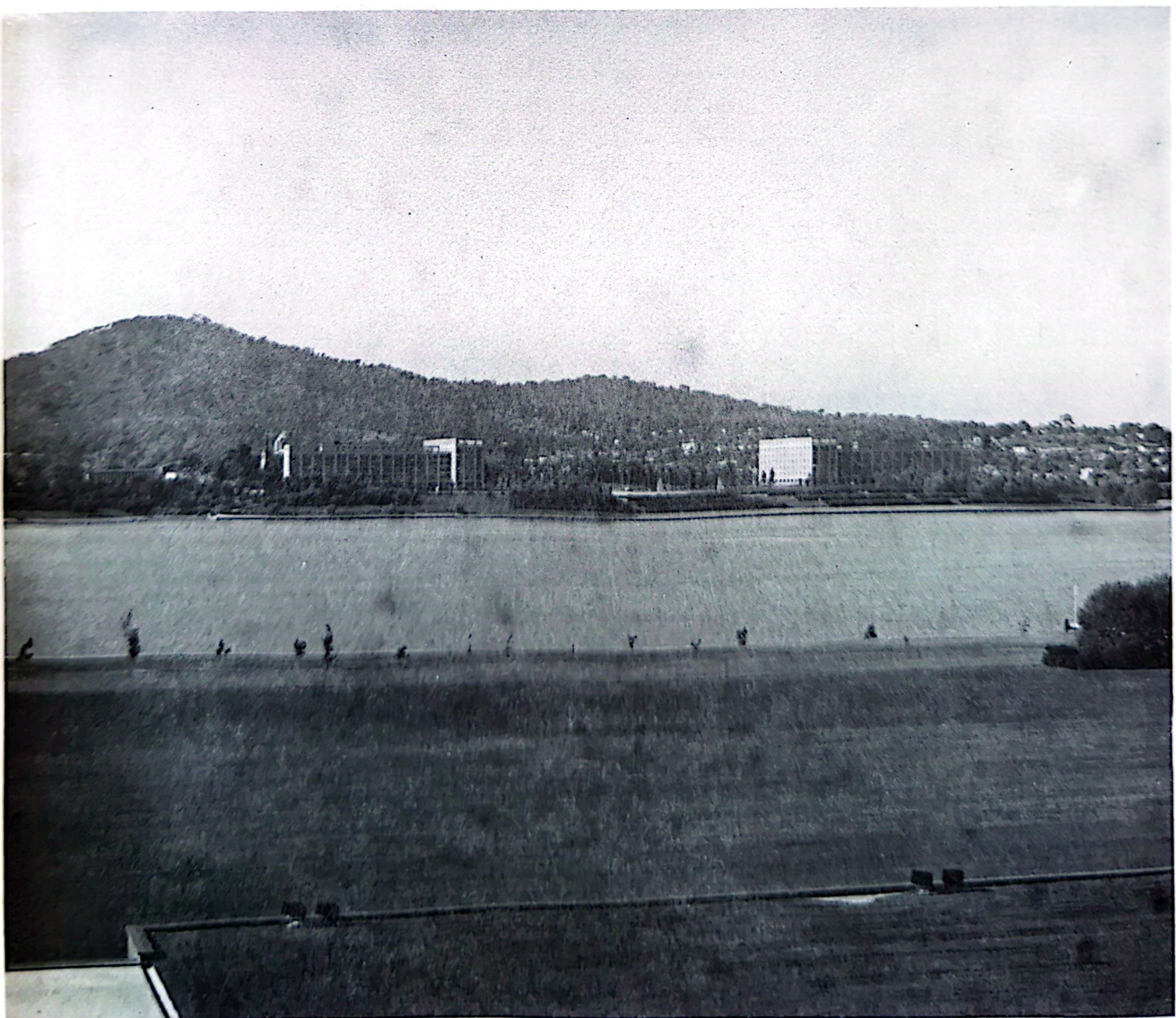
From the national area this view of the City is the most important. The building blocks need reinforcement; and the gaps between them need to be filled in. Horizontal consolidation is more desirable than competitive height in achieving a 'city' character. Small variations in height would be more telling and will give different compositions from other viewpoints, taking into account distance and perspective. Against a strong base line of the city as a whole the Jet will provide a fine contrast.

PANORAMA FROM THE BALCONY OF THE NATIONAL LIBRARY :
THE CITY



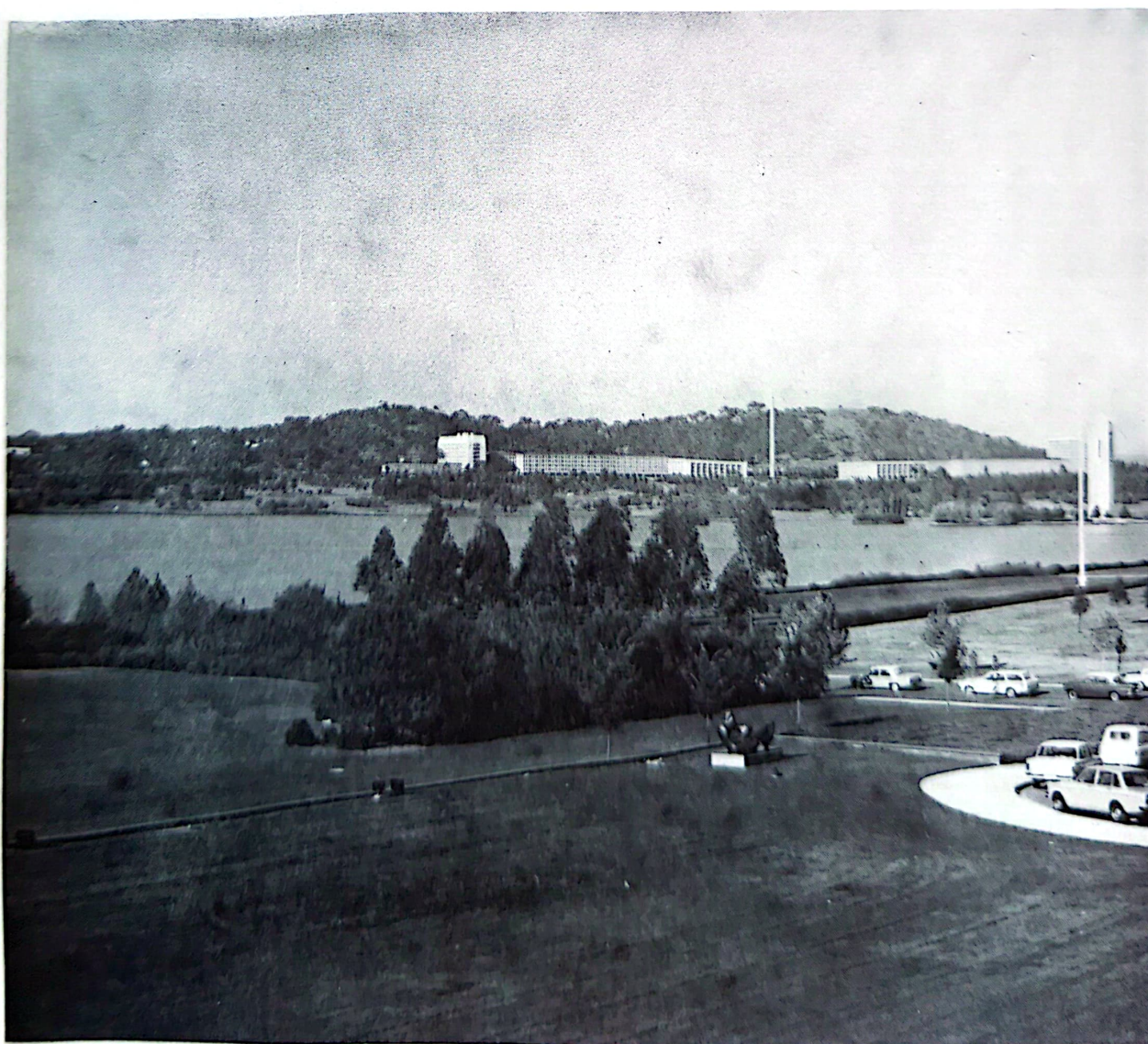
The wings of the Anzac Park buildings are as high as possible in relation to the dome of the War Memorial. This side-lit view gives an illusion of the effect of the Anzac Park buildings extended laterally like the Russell group. By virtue of their axial position these buildings will be the dominant unifying element of the north bank of the Central Basin. But their modest height does not detract from Mount Ainslie's.

PANORAMA FROM THE BALCONY OF THE NATIONAL LIBRARY :
MOUNT AINSLIE AND ANZAC PARK



The Defence Headquarters group at Russell demonstrates the essential problem of building height in the national area : the need to achieve a monumental scale within the limits imposed by the hill background. This group will have an ultimate length of 1000 metres (over 3000 feet). The long run of 5 storey blocks is stopped at both ends by 10 storey blocks, the roof of the eastern one being at RL 2025 equal to that of the AMP Building, the highest in the City.

PANORAMA FROM THE BALCONY OF THE NATIONAL LIBRARY :
RUSSELL



Across the 800 metres, ten minute walk, of Parkes Place will appear before long the new National Gallery of Art with, on its left, the proposed High Court building; both being of comparable height with the Administrative Building on the right. In a lay-out on the scale of the Parliamentary Triangle space on the ground not building height will always be the dominant element.

PANORAMA FROM THE BALCONY OF THE NATIONAL LIBRARY :
NATIONAL GALLERY SITE



Trees screen the present building. A new parliament house on Camp Hill would have its base on a hill with the tree-tops in this view. The building is likely to be at least 100 feet high, possibly much more, towering above the Treasury roof in this view. It would be equally prominent in views from outside the Parliamentary Triangle.

PANORAMA FROM THE BALCONY OF THE NATIONAL LIBRARY :
PARLIAMENT HOUSE



Restriction of the height of buildings other than Parliament House in the national area suggests that there should be a reservation for tall buildings in a central situation outside but near to the national area. A location just beyond Kingston would fill these requirements. High buildings would appear in the wide gap between the Administrative Building (left) and Parliament. They would be too far away to compete with Parliament House and from its main front would be out of site.

PANORAMA FROM THE BALCONY OF THE NATIONAL LIBRARY :
VIEW TOWARDS KINGSTON



High buildings look best when they rise from a strong horizontal base. The proposed Eastwater Park which will replace Griffin's Eastlake will provide a new stretch of important frontage on the Kingston side. Clusters of high buildings would look well in this position away from hills and in full view from Morshead Drive. They would command unequalled prospects looking down the Central Basin to the City.

NEW YORK CITY : CENTRAL PARK



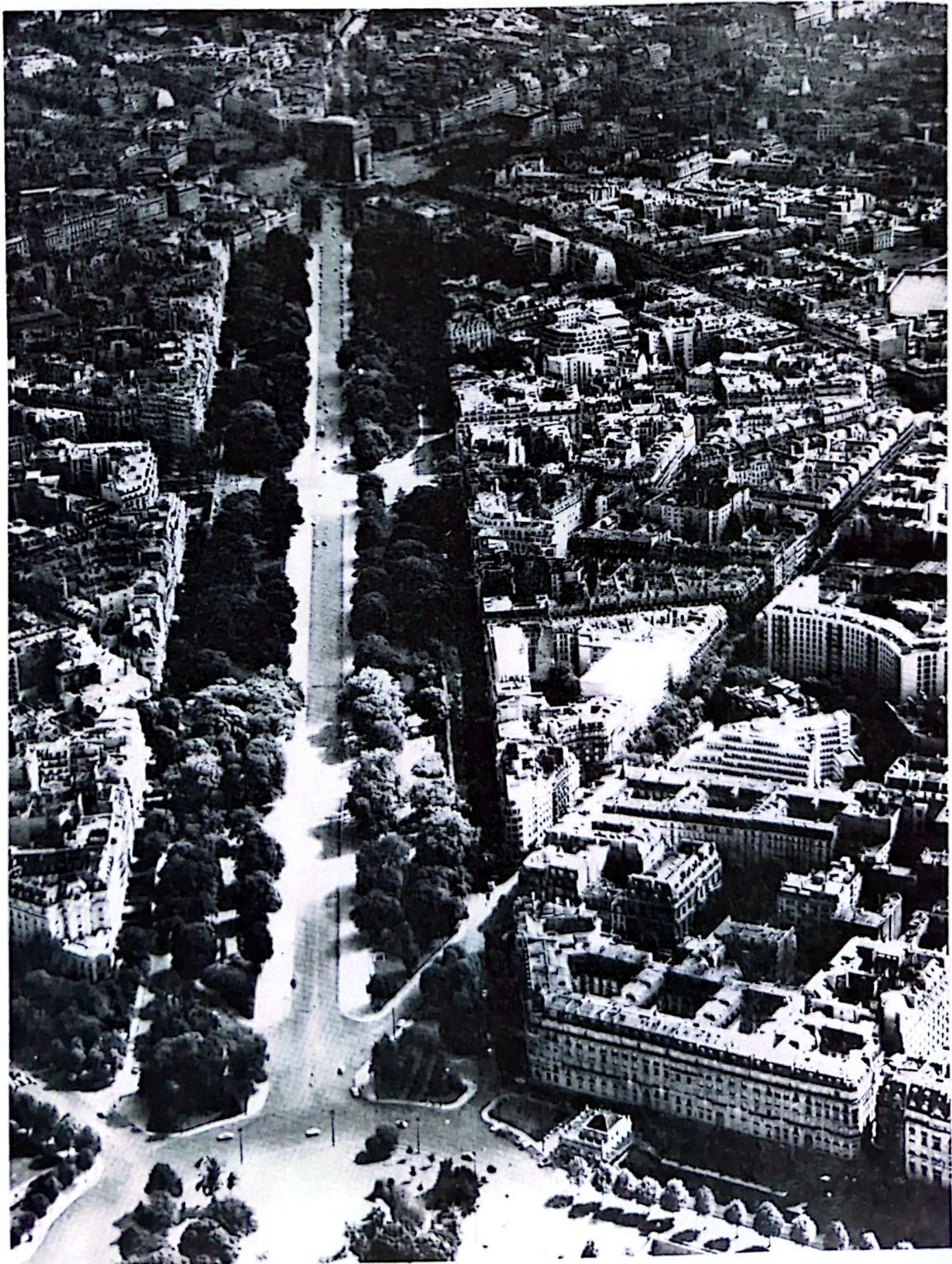
Canberra needs to develop a high-building style of its own, not to be deceived by the romance of New York or even by the influence of Manhattan on Australian State Capitals. Its high buildings must suit its topography. And its topography as can be seen by comparison with this view of Alice Springs, is characteristically Australian in its strong horizontal lines and immense level expanses.

ALICE SPRINGS AND MACDONNELL RANGES, NORTHERN TERRITORY



Paris demonstrates the value of clear consistent, building-height regulations. In Canberra the proposal is that domestic roof tops should be kept below the tree-tops.

PARIS : REGULATED BUILDING HEIGHTS



An office building 200 metres high, under construction. The probability of very high buildings being introduced into Canberra one day should be taken seriously. Land should be reserved in places where such buildings could be constructed when the time comes without physical and social disruption.

PARIS : MAINE - MONTPASTRASSE TOWER 1972



From the beginning the intention has been that the national monuments of Washington, particularly the Capitol, should be clearly seen above the general roof level. An Act of Congress of 1910 limits the height of residential and other buildings.

WASHINGTON D.C. : THE CAPITOL FROM THE MALL



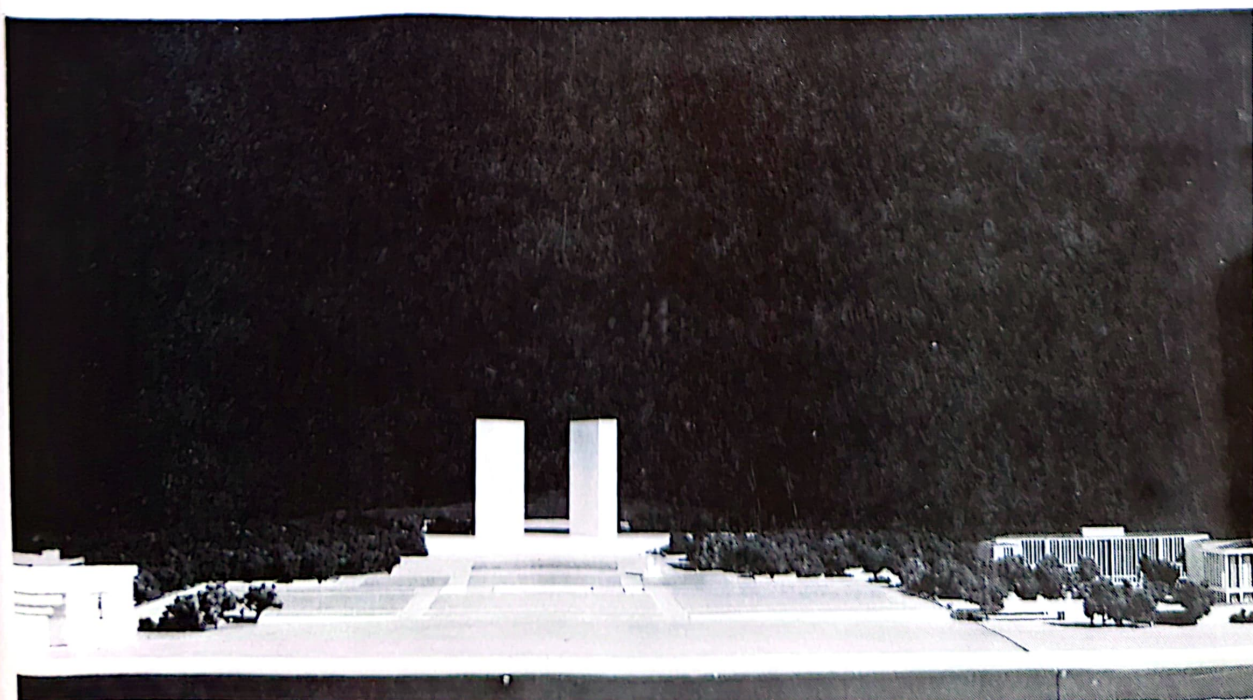
The Dominion of Canada Parliament House is akin to the Australian Commonwealth's in its constitutional functions. It provides, as Canberra's new Parliament House is intended to do, a focal landmark in the capital city. But it is also an effective symbol by reason of its dramatic silhouette.

OTTAWA : PARLIAMENT HILL



Canberra's new parliament house should dominate the national area, provide a climax to the formal axis, and be visible from near and far above the trees. Its exact height would be related to its exact position in the Camp Hill area, as yet not decided. But this model demonstrates that there would be no difficulty in its fulfilling these conditions, whether or not some of its accommodation is arranged in towers.

STUDY MODEL OF THE PARLIAMENTARY TRIANGLE AND
NEW PARLIAMENT HOUSE



A P P E N D I X

CONTROL OF BUILDING HEIGHT IN OTHER CITIES

Paris, Washington D.C., San Francisco, and Ottawa.

PARIS:

In its approach to the control of building height, Paris has three lessons to offer Canberra - two examples to be studied, and one note of warning.

Paris, like Canberra, occupies a saucer-shaped site encircled with hills which, in the case of Paris, are low enough to have been built over. The saucer is bisected by the River Seine flowing from east to west. On an island in the river and its nearby banks the historic city was founded. By the middle of the 19th century its boundaries had extended to the surrounding hills. In scenic terms Paris is wholly urban with two large peripheral parks but hardly any internal open space except along the river banks and in its tree-lined avenues.

The achievement of Paris has been to establish a consistent high-density building mass of uniform height following the configuration of the ground and spreading over the whole of the 19th century metropolitan area. Out of this mass the streets and open spaces appear to have been carved. Above the regular roof line appear the domes, pediments, and sculpture of monuments and public buildings.

Two sets of regulations introduced by Baron Haussman in the period of Napoleon III (1850-1870) produced the uniform height: a limitation of street facades to 75 ft. with a 45° set back above, permitting a roof or attic storey with a maximum height of 100 feet; and a general limitation of the height of the building to the front-to-back dimension of the site.

These regulations are still in force and their effect has been so satisfactory in practice that their replacement by something more suited to present day development has not been considered until recently. The realisation that provision for change must be made has come as a reaction to the appearance in the neighbourhood of the centre of two tower blocks, 300 ft. and 650 ft. high respectively. Office and residential towers had already appeared on the periphery and beyond the city boundary during the past decade.

Criticism of the towers has led the Government to have studies prepared of a system of height control in concentric zones with permitted building height stepping up progressively outwards from the centre. The proposed steps are 80 ft. in the centre, then 100 ft., 120 ft., 145 ft., and beyond that no limit. The outer zones are punctuated with areas of no limit to take account of buildings already in existence. Coupled with the scale of permissible heights there is already a scale of corresponding plot ratios so that density as well as height will increase from the centre outwards.

Canberra might well bear in mind the value of an established roof level plateau, particularly in regard to a height limit in residential areas below the tree-top level.

Events in Paris have shown that conservation alone may result in architectural shock when inevitable tower buildings are introduced into an environment unprepared for them. It would be wise to reserve land here in places where towers would serve a positive civic design purpose against the day when they may arrive.

The control of densities (which in Paris is closely connected with parking provision) in zones increasing outward from the centre might be worth consideration here in relation to future re-development. This may be at a period when building land is likely to be scarce in the A.C.T. Densities could be increased by raising general height levels as in Paris, and by concentrations of residential population in high-rise apartment blocks.

WASHINGTON D.C.

The lessons Washington has to offer are in the sphere of administrative control rather than civic design.

Washington's problem like that of Paris is to come to terms with contemporary re-development in an environment expressly designed to exclude buildings competing in height with national monuments.

Canberra should note the efficacy of Washington's height control legislation but also its inflexibility; even though Canberra's system of land tenure and central planning control make flexibility possible and rigid prohibitions generally unnecessary. In Washington as in Paris problems arise because no forethought has been given to the location of high buildings that may have to be accommodated in spite of traditional policies.

Washington's site is less like a saucer than a flat baking tin with an upstand rim. L'Enfant's city lies in the alluvial plain on the north bank of the Potomac River. The plain is flat with two hills on which the Capitol and White House stand, with an elevation comparable with City Hill here. The dome of the Capitol is about 300 ft., above ground and the Washington Memorial obelisk nearly 600 ft., above the mound on which it stands at the intersection of the two main axes. These two land marks provide only slight vertical accents against the rigidly controlled horizontal roof lines at 130 feet in commercial and 90 feet maximum in residential areas.

Beyond the boundaries of L'Enfant's plan and largely outside the District of Columbia rises an escarpment or bluff which virtually encloses the city. This is the edge of the so-called Piedmont plateau which forms the skyline in views across the city.

From the beginning, it was intended that ordinary buildings should be low so that on the flat plain the Capitol and White House should stand out. When control over the city had been re-established by the Macmillan plan, an Act of Congress of 1910 prescribed the present height limits. This Act has undoubtedly saved Washington from the Manhattanisation that has taken place in every other American city. There is no question now of building in competition with the "monumental core" of the city. Revision of the building bye-laws would require a relaxation of the commercial height limit to 160' instead of 130' to make reasonable contemporary re-development possible.

High-rise buildings could be located in parts of the city out of sight of the monumental core. But changes require the repeal of the present Act and its replacement, throwing the subject into the open arena of party politics, without guarantee that new legislation would be based on sound technical or civic design principles. There is understandable hesitation about the introduction of such a Bill.

Canberra is not faced with the danger of pressure for high-building from commercial quarters or owners of valuable sites. The significant point about the Washington legislation is that it is binding upon Government as well as the public. What Canberra needs is equal stability in an accepted building height policy with adequate machinery to make possible minor modifications to suit changing conditions, only after careful consideration of the national interest.

SAN FRANCISCO:

San Francisco offers the example of a city where land is privately owned and competitive business is promoted; where citizens are intensely proud of their beautiful city; where the aim is that conservation and development should keep in step; where civic design is conceived on a city-landscape scale; where a comprehensive system of building height control for the whole city is now being introduced.

All this interest and activity in the field of building height control should stimulate Canberra to follow San Francisco's example; in particular in three fields. First in the preparation of a city-wide building height control system with architectural objectives; secondly in accepting very high buildings and making them part of the landscape; thirdly in establishing a plateau level over 75% of the city at 40 ft. maximum.

The different terrain and circumstances of San Francisco make little of its high building policy directly applicable to Canberra. San Francisco is essentially a hilly site with buildings climbing the hills and perching at the top. San Francisco's business district is designed for buildings of 60 or more storeys which are not to be expected in Canberra. And the Bay, Golden Gate, and bridges are scenic features on a scale larger than Canberra's. Nothing in San Francisco on the other hand approaches Canberra's central space in extent as a single formal composition.

OTTAWA:

Ottawa is a place of divided responsibilities; under the control of the Federal Government, the Provincial Governments of Ontario and Quebec, the municipal governments of the Cities of Ottawa and Hull, and numerous other authorities. The National Capital Commission's authority extends only to land owned by the Federal Government. Its building height control policy is therefore a campaign of diplomacy. The objective of this policy is its point of interest for Canberra. The sole objective is to assert, maintain, and protect the focal supremacy of the building group on Parliament Hill, in both inward and outward views.

The composition of buildings on Parliament Hill has achieved the ideal fusion of appropriate architecture and distinctive symbol which a focal national monument should have. The silhouette culminates in the Peace Tower (300 ft. high to the flag). The hill, itself rises sheer 160 ft. from the Ottawa River. The Canadian Parliament House is most akin to Canberra's in its functions and its significance in the capital city.

Canberra's new Parliament House will, we hope, achieve a comparable appropriateness of silhouette. This may be combined with a similar height, in the region of 300 feet. Canberra should therefore give thought now to the safeguarding of the future landmark in views from the surrounding hills and from points at ground level between the hills and the Parliament House site.

BUILDING HEIGHT STATISTICS

(1) CANBERRA LANDMARKS:

Lake Burley Griffin	surface	RL 1825
Mount Ainslie	look-out	2765
Black Mountain	look-out	2668
Red Hill	look-out	2350
Russell	look-out	2175
Mount Stromlo	top	2569
Australian War Memorial	top of steps	1940
	top of dome	2046
Jet	base (lake level)	1825
	lower working level	2125
	top	2285
American War Memorial	base	1915
	top	2160
Carillon Tower	base	1832
	top	1992
St. Andrew's Church spire	top	2025
St. John's Church spire	top	1964
Capital Hill	top (new level)	2005
	top of flagstaff	2109
Camp Hill	top	1925
Provisional Parliament House	top of steps	1880
	top	1920
National Library balcony	first floor level	1875

(2) BUILDINGS:

	<u>RL at top</u>	<u>Height (feet)</u>
Provisional Parliament House	1920	40
Administrative Building	1926	76
Treasury	1941	87
National Library	1947	100
Russell: Building 14	2025	146
10	2012	111
EDP 22	1930	27
9	1954	62
6	1957	51
5	1957	51
1	1973	71
Anzac Park East: 1	1943	96
2	1930	94
West: 1	1943	96
2	1930	94
CSIRO Limestone Avenue	2025	65
City: A.M.P. Building	2025	157
Darwin 3	2025	158
Lakeside Hotel	2023	183
ACTEA	1991	137
Qantas	1986	131
MLC	1986	126
CML	1970	101
City Mutual	1968	100
Derwent	1966	98
T & G	1947	80
Woden: new building	2213	270
Juliana House	2063	163

THE HEIGHT OF BUILDINGS IN THE NATIONAL AREA

The diamond-shaped area, extending from the steps of Parliament House to the War Memorial and from City Hill to Russell is the largest formal space in the world, that can be seen in one sweep from ground level. Its dimensions, by the standards of other cities, are vast. Its unity depends on the lake at its centre and on its enclosure in a ring of hills. Canberra was laid out, and planning still proceeds, on the assumption that these hills in their natural state will continue to provide the dominant vertical features of the Capital City, and that buildings should not lessen their significance.

The purpose of the National Area is to house the Seat of Government; the Legislature and Executive in distinctive parts of the new Parliament House; the Judiciary, apart, in the proposed High Court building. The National Library, Ministries, Museums, and monuments also find places in the diamond. One of its points touches the civic centre. Beyond, still within sight, are the University and research organisations. As the will of the nation is ultimately expressed in Parliament, the building in which Parliament assembles comes to be regarded as the outward symbol of the Commonwealth. The new Parliament House therefore should be seen from near and far to rise above all these other buildings.

A building height policy for central Canberra will in consequence have two complementary - and not incompatible - aims: to preserve the dominance of the larger hills; and to ensure the supremacy of the new Parliament House building. Many people feel the need for some relief from the horizontality of Canberra, and are attracted by the idea of introducing high buildings. Carefully sited on the valley floor, as at Woden, high buildings can indeed provide an effective foil for the rounded shapes of the hills. But in the National Area this role will be primarily the prerogative of the new Parliament House. Other buildings, which elsewhere might be higher, may have to be restricted in height, in order to avoid competition with Parliament.

Camp Hill, as a Parliament House site, has the prominence and elevation needed for a building which has this dual role, architectural and symbolic, to play in the landscape. It is in full view at ground level from the greater part of the National Area. It is raised fifty feet above the ground on which the nearest buildings stand, and a hundred feet above Lake Burley Griffin. It would be safe to assume that the main roof level of a new Parliament House would not be lower than that of the National Library, i.e. 100 feet above ground. On Camp Hill a building of

this height would be seen well above the roofs of the buildings in the Parliamentary Triangle, and clear of nearby treetops. The Library roof would be 70 feet below, and the Administrative Building's 100 feet below. The National Gallery and High Court buildings would certainly be no higher than the Administrative Building.

It is possible that a Parliament House building could be two or three times higher than this hypothetical 100 feet if, as at Brasilia, members accommodation is arranged in office towers. The extra height would be dramatic but is not necessary to draw attention to Parliament House. In fact silhouette is more important to a building of symbolic significance than height, provided that the silhouette is clearly visible from all sides. The buildings on Parliament Hill at Ottawa achieve an appropriate - and unmistakable - symbolic silhouette. This is clearly seen from the Ottawa River. But on the Wellington Street side buildings crowd in close. The Peace Tower which is 300 feet high to the flagstaff was added later to provide the required landmark.

As the new Parliament House is as yet undesignated and its height unknown, it would be as well to restrict the height of new buildings, not only in the Parliamentary Triangle but also at Russell and in the City, to the assumed level of its roof, one hundred feet above Camp Hill i.e. RL.2025. This is in fact the roof level of the highest buildings at Russell (at the eastern end of the group) and in the City (the AMP building).

Between Russell and the City, Mount Ainslie dominates the scene. The proposed museums or other buildings that will in the future line Anzac Parade will no doubt be kept low to avoid competition with the War Memorial, the dome of which reaches RL 2046. Along Constitution Avenue new buildings will take their height from the side wings of the Anzac Buildings. And behind them, in Reid and Campbell, strong horizontal lines are needed; not exceeding the height of the CSIRO building, also RL.2025.

The City skyline could with advantage be kept to its present maximum height of RL.2025 in line with other buildings. It can achieve a 'downtown' atmosphere more effectively by filling up its gaps than by building high. A 'ceiling' of RL.2025 need not mean a monotonous, level, skyline. From the Parliamentary side a fine contrast with the horizontal lines of the City is provided by the Jet.

Re-development in the areas adjoining the central diamond would also have to be restricted in height to avoid blocking views of Parliament or, on the other side of Lake Burley Griffin, competition with the War Memorial. Much of the effect of the national buildings and monuments will depend on keeping roofs in residential areas, as now, below the treetops.

In the view westward from the National Area over the West Lake to the Brindabellas, Canberra possesses a unique and irreplaceable asset. It would be wise to declare the whole of the sector between Adelaide Avenue and Black Mountain as far as the Murrumbidgee an area of national concern. Building heights in this sector should be limited at most to four storeys, which could be effectively screened by trees. Very nearly as important is the protection of the slopes of Black Mountain, and the foreground of views in that direction, from encroachment by escalating buildings, whether in the A.N.U. campus or the CSIRO's grounds.

Both protection of the hills and safeguarding of the supremacy of Parliament House seem to require a general restraint on building heights in central Canberra. Apart from the tendency of the public to desire high buildings as an antidote to Canberra's horizontality and as a sign of its being a 'real' city, there may well be, in future, a demand for types of buildings such as hotels where vertical repetition is functionally justified and architecturally appropriate. The reservation of a central site for a group of buildings of unrestricted height in a position where they would not detract from the hills or compete with Parliament House would give Canberra a chance to have its share of 'big city' glamour. The most promising region for such a location would seem to be beyond Kingston. There high buildings would be outside the National Area, 'round the corner' and out of sight from the main front of a Parliament House on Camp Hill, and in the broad upper Molonglo Valley from which the hills are well set back.

NOTES ON WODEN AND BELCONNEN

High buildings in Woden and Belconnen form a subject distinct from the problems of building height in central Canberra. These towns present conditions not unlike those in new towns elsewhere, except for direct government control and the sharing of National Capital amenities.

Woden is virtually out of sight of the National Area and Belconnen is entirely invisible beyond Black Mountain. In neither case is there a relationship with the national monuments. Nor is there a built-in subservience to the landscape.

Such high buildings as exist or are proposed in Woden and Belconnen are not the result of pressure from government or from outside. They have been deliberately conceived, introduced, and in some cases already built, for an architectural purpose; namely, to distinguish the town centres and to create in them an appropriate and focal urban atmosphere. The fulfilment of the plans for both town centres calls for the construction of more high buildings in the course of time. And in both cases land is available to accommodate additional, unexpected, demands for high building sites.

The building of the Woden Town Centre has provided valuable experience for the Commission of an experimental kind. The practical problems of fitting high buildings into an urban environment of open character have come to light. Particularly those connected with wind behaviour and the design of pedestrian areas of human scale at the base of high buildings. Satisfactory solutions to these problems should be a condition of future high building approvals.

The highest building at Woden, now under construction, has 24 storeys. If the Commission decides to limit, until the new Parliament House is built, maximum height in the City and National Area, care should be taken to prevent Woden outshining the City by the greater height of its buildings.

The general aim in Woden is that high buildings should be confined to the valley floor, extending perhaps in time to form clusters at intervals along its length. There would generally be architectural objection to tower buildings in selected positions on the hillsides and in the residential areas, even if the difficulties of overshadowing or blocking of views could be got over. The danger with successful 'isolated' buildings of this kind is that they create precedents and open the door to demands for repetition that are difficult to withstand.

Belconnen does not have the landscape unity of Woden, nor the obvious, logical, location for a town centre. Its town centre needs to be distinguished by prominent land marks in the shape of one or more high buildings. And the ridge on which the town centre stands needs to have its ridge character artificially emphasised by a higher general level of building along its spine than on its slopes and the flat ground on either side. Residential areas in Belconnen, which are not topographically distinct, would perhaps benefit from a general policy of 'higher building on higher ground'; with positive 'towers' to mark the not very telling hill-tops.

Re-development in Woden and Belconnen is so far away that suggestions for it would be premature. But two points are worth making in this connection. Effective machinery could in the interval be evolved to prevent a peppering of residential areas with re-development of mixed heights. And, although not yet fully established, the tree cover in residential areas is as important to Woden and Belconnen in relation to their town centres as central Canberra's is to the National Area.



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