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COMMONWEALTH OF AUSTRALIA.

DEPARTMENT OF HOME AFFAIRS.

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THE FEDERAL CAPITAL.

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REPORT EXPLANATORY OF THE PRELIMINARY  
GENERAL PLAN.

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THE FEDERAL CAPITAL.

PRELIMINARY GENERAL PLAN.

GENERAL.

Unity essential to the city requires for so complex a problem a simple organism.

The factors consist in the advantages of the location on the one hand and the civic necessities on the other.

For Canberra, an equation thus of the conditions of the site (1) with the functions, (2) to which they are to be adapted, is indicated in the following abstract, the numerals indexing the subsequent elaboration :—

( 2.11111

ERRATA.

Page 7, paragraph 7, line 3, "lock " should read " lake ".

Page 13, paragraph 3, line 4, a comma should be inserted after " permits "

Page 14, paragraph 8, line 7, no comma after word " hills "; line 14, " Capitol " should read " Capital "; paragraph 11, line 4, " intersection " should read " interception ".

Page 15, paragraph 8, line 3, a comma should be inserted after word " trees ".

1 SITE.	1.2 Local mounts.	2 FUNCTIONS.	2.12 Private.	Industrial.	2.1212 Local.	2.12112 Suburban.	2.121121 Initial.
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THE FEDERAL CAPITAL.

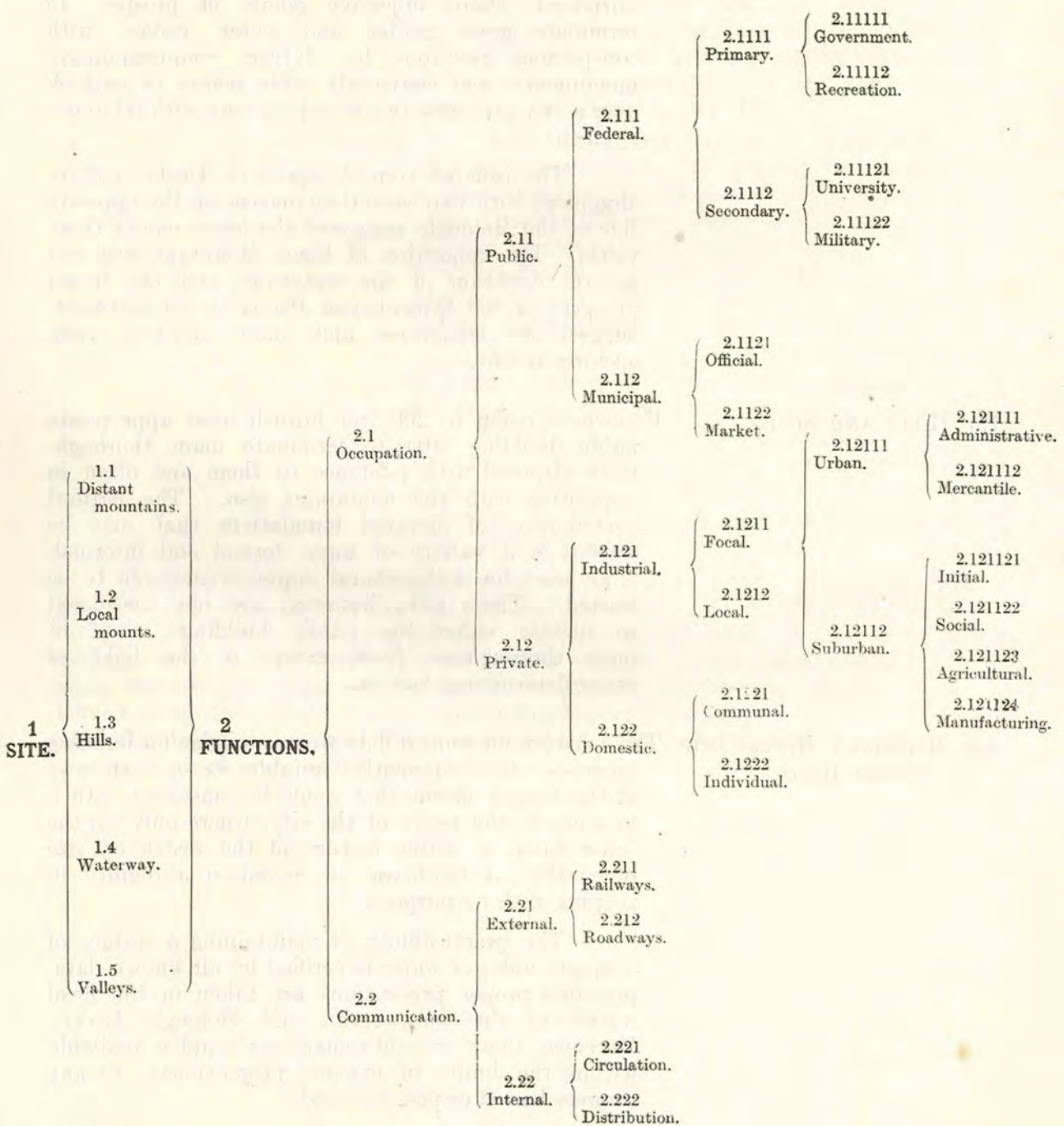
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## 1. SITE CHARACTERISTICS.

The peculiar advantages of Canberra lie principally in the following characteristics, with each of which is indicated the chief adaptability recognised :—

1.1. MOUNTAIN RANGES .. Beautiful blue and snow-capped peaks of the Australian Alps, counted among the leading natural features of Australia, lie to the south and west, properly sunlit for the scenic background.

1.2. LOCAL MOUNTS .. Ainslie, Black Mountain, Mugga Mugga, rising almost 700 feet (too lofty and too exposed for building purposes), afford objective points of prospect to terminate great garden and water vistas, with conspicuous positions for future commemorative monuments, and conversely offer points of outlook over a city arranged in an orderly way with reference to them.

The isolated conical aspect of Ainslie and its alignment with two central eminences on the opposite side of the Molonglo suggested the lesser one of these vistas. The apposition of Black Mountain, with the general direction of the waterway and the broad prospect of the Queanbeyan Plains to the eastward, suggest its transverse and more marked vista opening or axis.

1.3. HILLS AND SPURS .. Eminences rising to 200 feet furnish most appropriate public building sites to terminate main thoroughfares disposed with reference to them and often in apposition with the mountains also. The natural contribution of elevated foundations that may be treated in a variety of ways, formal and informal, is an asset for architectural impressiveness not to be wasted. These hills, however, are not considered to dictate either the public buildings, sites, or main thoroughfare lines, except in the light of other determining factors.

1.4. MOLONGLO RIVER AND FLOOD BASIN. The considerable central flats are unavailable for building purposes, but eminently suitable for a waterway of the largest extent that would be consistent with a location in the heart of the city, where only, on the other hand, a water feature of the restricted size procurable at Canberra can maintain a dignity in keeping with its purpose.

The practicability of maintaining a surface of 5 square miles of water is verified by all known data, provided proper precautions are taken in the head waters of the Queanbeyan and Molonglo Rivers. Moreover, there are additional river supplies available within the limits of expense proportionate to any unprecedented or possible need.

1.5. VALLEYS    ..    The open alluvial fields, flat or undulating, are most suitable for ordinary purposes of industry and habitation.

Within the site these areas are practically all swept by the dominant winter westerly winds, since only heights of the scale and abruptness of Ainslie, Pleasant Hill, Black Mountain, Mugga Mugga, or Red Hill afford appreciable protection to narrow skirtings, which occur in no considerable case within the city limits. Not more than one-sixth of the official site can be considered so protected, and that in instances too scattered and too rugged for development for general purposes. Such protection can only be accommodated in suburban extensions to be provided north and south as illustrated in the original premiated plan.

However, experiment with winds of the ordinary winter velocity on the Australian plateau indicates that a moderate amount of easily effected tree growth will afford sufficient protection for situations such as even the most exposed on this site, a fact further attested by the generally acknowledged attractiveness for habitation of the tops of spurs extending west from Capitol Hill.

As an initial deterrent to occupation, the wind may be discounted by the present local experience, wherein temporary settlement has been created in an area—possibly the most wind-swept of all—with very slight or no tree protection. Here the first permanent residence has been located after ten months' residential experience in a tent on one of the most exposed points, commanding, however, the mountain view.

The slopes north of the river basin comprising the flat areas having the finest prospect of the mountain background, and of central dominating sites for the most important public architectural group offer the greatest scenic advantages, and are to be given preference for the most general industrial and domestic functions for the democratic purpose of "the greatest good for the greatest number."

Taken altogether, the site may be considered as an irregular amphitheatre—with Ainslie at the north-east in the rear, flanked on either side by Black Mountain and Pleasant Hill, all forming the top galleries; with the slopes to the water, the auditorium; with the waterway and flood basin, the arena; with the southern slopes reflected in the basin, the terraced stage and setting of monumental Government structures sharply defined rising tier on tier to the culminating highest internal forested hill of the Capitol; and with Mugga Mugga, Red Hill, and the blue distant mountain ranges, sun reflecting, forming the back scene of the theatrical whole.

2. FUNCTIONS.

The importance of classifying the purposes of the city lies in the fact that only by proceeding from generals to particulars, from the more essential to the lesser essential, and from the ends desired to the means for obtaining them are natural relationships established.

The generalizations are derivable from tendencies of actual growth in modern cities.

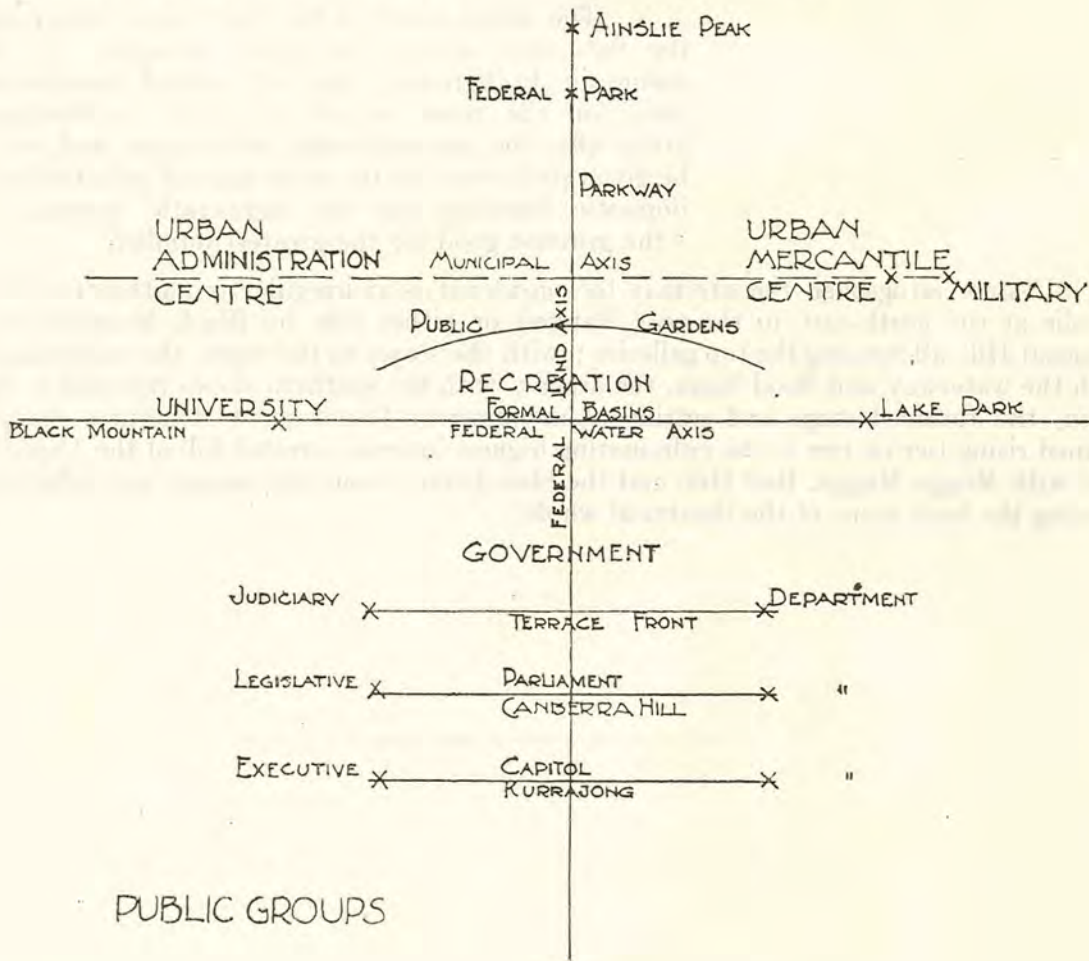
2.1. OCCUPATION.

The advantages the city offers to the various classes of occupants who will reside in and utilize its spaces constitute its reason for being. The various kinds of occupation have divers needs to be met as to area, position, and environment. Secondly, their accommodation requires a communication system—the social means of linking up these elements.

2.11. PUBLIC GROUPS.

From the stand-point not only of general interest, but also of effective control, the character of fixed occupancy divides primarily into two branches—public and private. In the Capital City the former takes precedence, and is treated in a very broad way, because extension of functions may easily go beyond any present basis of expectation. Simplest possible arrangement on the most general lines of classification are adopted at the start to ensure both room for expansion and a constant coherence.

The general arrangement of Public Functions in this plan is illustrated in the accompanying scheme, in which they are first separated into those appertaining to the Federation as a whole, and those concerning the City merely.



## 2.111.

## FEDERAL GROUP.

Because of unity of control all Federal improvements can be made to contribute to a single dominating group, and since these buildings and spaces can be assorted into four distinct classes, Governmental, Recreational, Educational, and Military, these four are established to form the structural bounds and terminals of two co-ordinate axes.

The unmistakable pre-eminence of Ainslie and Black Mountains ordained them for apposition with such axes, to which the site contributed further opportunity in the general direction of the Waterway, extending towards Black Mountain at right angles to a line joining Ainslie with the most prominent spur of the opposite range, "Kurrajong," and with a lesser eminence between, "Canberra Hill," directly at its front.

The co-ordinate axes disposed accordingly are not with the cardinal points of the compass, which would entail 25 per cent. building frontage without beneficial sunlight, nor with the diagonal points where, for part of the day, no shade could be found; but they lie midway between these extremes.

They are not primarily thoroughfares, but give a connected park or garden frontage for all the important structures, and can be developed, as in the case of the Mall at Washington, with scope for artistic expression, little hampered by utilitarian limitations, affording the greatest ease and comfort for observation of the capital.

In general, this arrangement of all the Federal buildings on heights about two co-ordinate axes, their individual groups, set off and connected by formal water basins, forms one combination of parallel set buildings, to which the possible confusion of other enterprises must ever remain subordinate.

## 2.1111.

## PRIMARY DIVISION.

The two more general and earlier developed functions of the Federal Group will be Government and Recreation.

## 2.11111.

## GOVERNMENT.

Representative Government in all its ordinary functions is to be classed as deliberative and limited, and is properly stationed, in a Capital, in an accessible but still quiet area. On the basis of the two lines hereinafter designated "Water Axis" and "Land Axis," it is a simple matter to allot to the commanding Capitol the highest spur on the land axis mentioned as suitable for building purposes, "Kurrajong," and to locate the Parliament Houses on the lower offshoot, "Canberra Hill," on the same line towards Ainslie. Other Departmental buildings bounding a water court of the next lower terrace extend to a solid terrace front of buildings and to still lower boulevarded embankments along the central basin of the co-ordinate water axis.

Centrally located, the Capitol is focussed in an extensive hill park, and at that has a limited function, either as a general administration structure for popular reception and ceremonial, or for housing archives and commemorating Australian achievements rather than for deliberation or counsel; at any rate representing the sentimental and spiritual head, if not the actual working mechanism of the Government of the Federation. "Kurrajong" is deemed too large and too high for a convenient working organization of Parliament, but, being the only conspicuous internal eminence that has a skyline visible from practically every portion of the city, it lends itself to an architectural treatment that need comprise little more than in the necessary ramps, stairs, and terraces for outlook to make it, by its natural bulk, the dominating architectural feature.

Moreover, the views command not only the entire city, but, through gaps, the Yarralumla Valley and mountain chains of the Murrumbidgee watershed, the most spectacular features of the landscape, and the irregularity and variety of the hill slopes afford ideal surroundings for an isolated Capitol structure, and most appropriate setting for the two official residences, those of the Governor-General and the Prime Minister.

However, the possibilities of the site are not limited to this recommendation as to the Governor-General for immediate adoption, and though a large park may be connected by private unintersected low level open passage-way from the central position, and extend as far as may be into the hills to the west, forming a domain, it is entirely practicable to locate the Government House itself in the latter area, as alternately provided for, still maintaining parallel, axial, architectural affiliation with the Capitol.

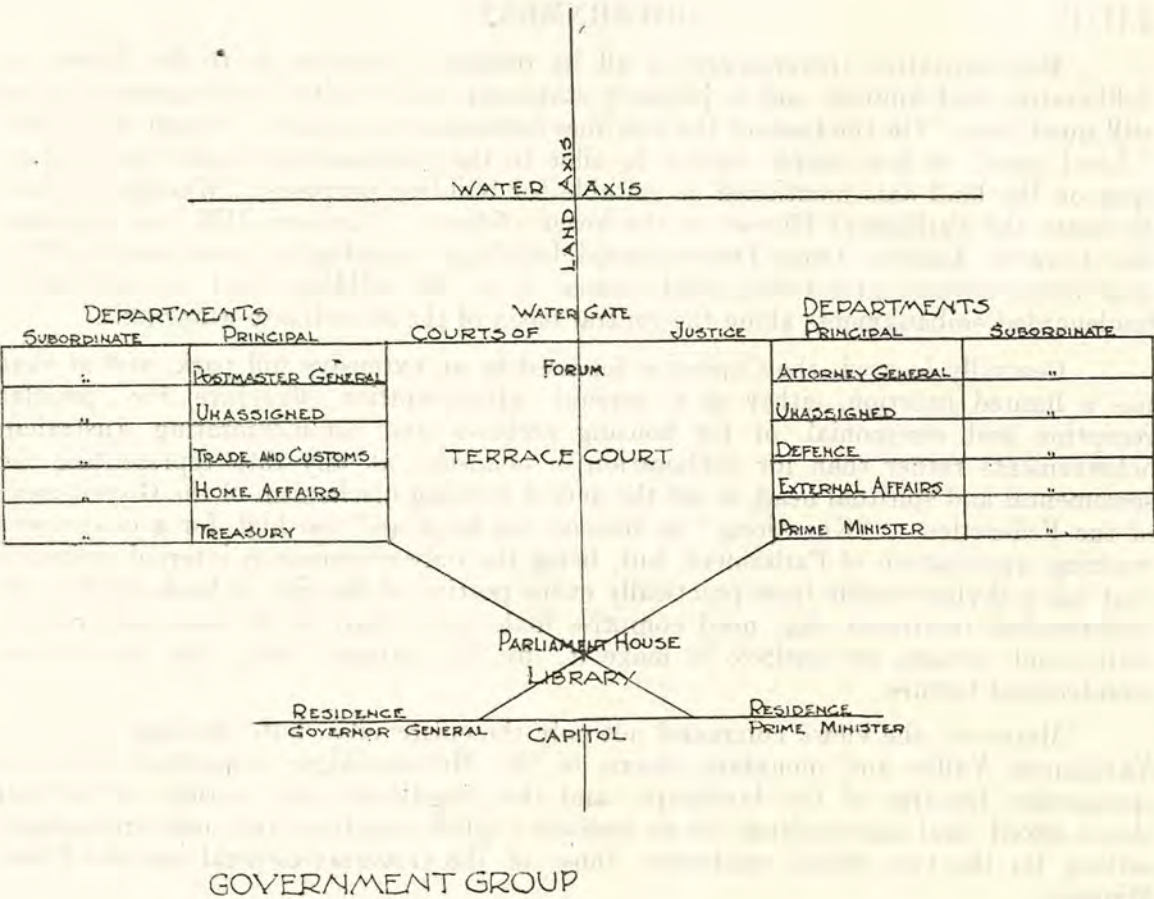
The whole group of Government buildings is directed out from the one popular point along lines of sequence in function. The fact that Parliament is in two "Houses" is an incident in addition to the topographical situation that precludes making of that structure a focal feature.

The plateau stretching between Kurrajong and Canberra Hill provides sufficient foreground from the former to set off the Parliament House on the latter, over which, however, the court of the Departmental Buildings on the next terrace below may yet be seen, while the view beyond is uninterrupted across the Basin, and the water front of the Public Gardens and along a broad plaisance to Ainslie. Parliament Building, on the edge of Canberra Hill, has an elevation of 50 feet above the succeeding plateau, and is approached therefrom by wide ramps around the fountain end of a terrace reservoir. From this terrace court of the reservoir the Parliament edifice has thus a lofty setting, stopping the long axis of the reservoir, crowned by the lofty Capitol behind, and supported on the flanks by the lower Departmental Buildings.

The ensemble presents excellent opportunity for cumulative massing.

The central terrace court of the Government Group lies 35 feet above the lowest terrace, from which it is separated by the buildings along the waterway frontage, but to which access is given by ramps at ends and flights of steps between the structures.

The court terrace, however, is carried on the roof of a central building of the waterway embankment, which projects into the Basin, crowned toward the water by an open colonnade, surmounting a slight bank of steps to afford an open forum, beneath which the structure serves as a launch entrance or "Water-gate."



2.11112.

## RECREATION.

The Governmental Group silhouetted against the dark forested hills is best seen from the other arm of the land axis, where most appropriately may be located the public gardens, essentially the show places of the City. This recreational function of the Commonwealth Capital will appertain to the people directly as distinguished from their representatives or agents or servants. It is, therefore, to be situated rather directly in communication with the congregation centres, and tributary to the homes of the people, than connected with any other Federal Group. The Circular Pools and connecting Basin of the waterway essentially belong to this group, and are adapted, by their continuous boulevarded embankments, for a continuous motor route, and for water sports, pageants, and bathing, the central Basin incidentally forming a rowing-course of 1 mile between terminal bridges.

The Stadium for general assembly faces the waterway, and is recessed into the slope of the bank, where it does not interrupt the continuous vista along the land axis. The Theatre and Opera House, on either side, are reached from the municipal avenue on one hand, and from the boulevard of the water front garden on the other, for maximum accessibility from the residential districts. Farther to each side of the land axis are paired Galleries of the graphic and plastic arts; the Museums for natural history and archeology; the Zoological Gardens and the Baths, and Gymnasias; all together affording for the business and residential districts an appropriate front to correspond with the governmental aggregation on the other long side of the central Basin.

Recreation comprehends, also, a formal plaisance 600 feet wide, all the way to the Casino, a park feature, at the foot of Mt. Ainslie, with ramp drives to points of vantage on the slopes overlooking the whole city and surrounding country, and setting off such commemorative national monuments as may be appropriately most conspicuous.

Maximum effectiveness for the waters is attained by widening as much as possible between the necessary bridges.

The Molonglo is left in its present state in the lower channelled reaches, where it forms a feature of the botanical gardens and forest reserve continuous with Black Mountain, incidentally perpetuating there the only remnant of primeval luxuriance on the city site.

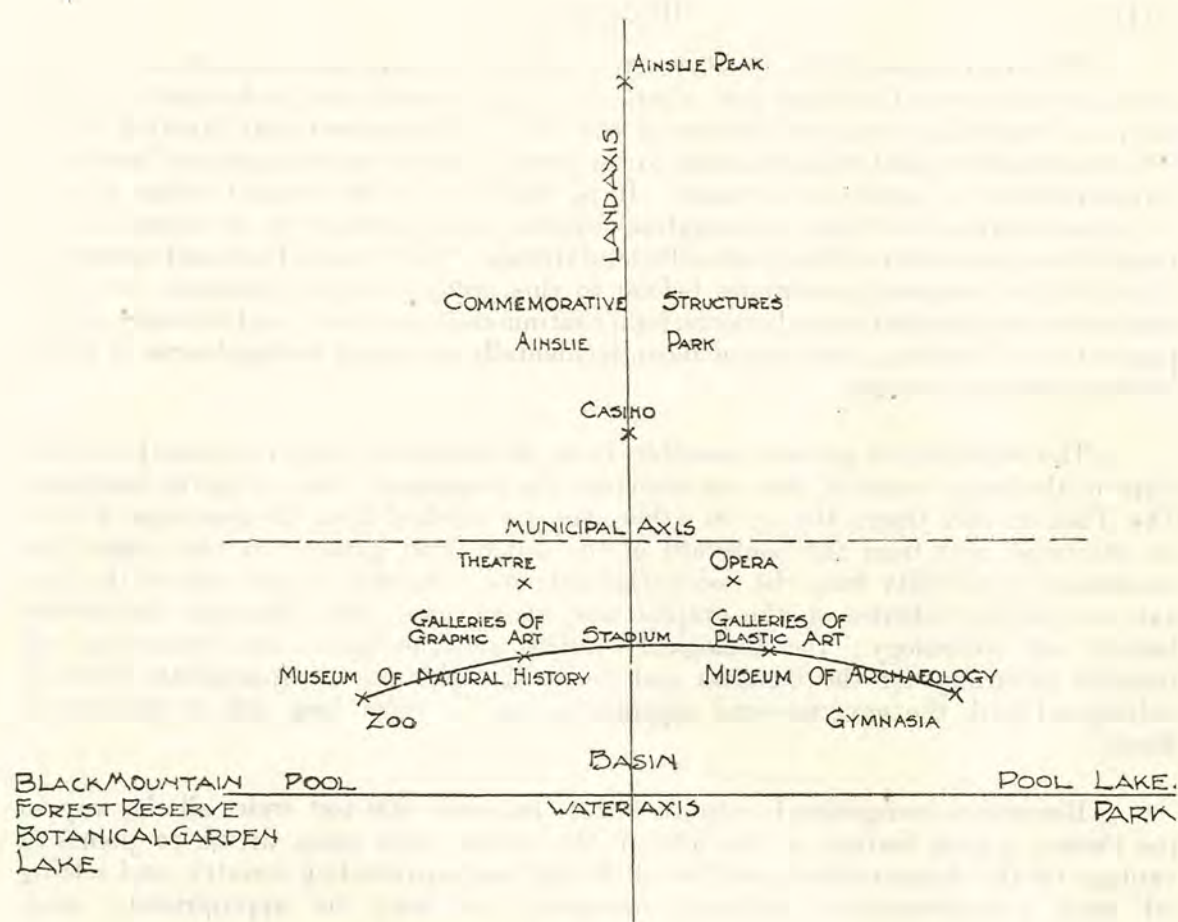
Here, a dam, so located as to combine with one of the road crossings, impounds at 1825 elevation the lower outlying lake, and the triple internal architectural lagoons bounding on three sides the Governmental Group, reflecting the buildings, augmenting humidity and aiding equability of atmosphere in the heart of the city.

Another weir, with locks, on the line where the railway and a main traffic route pass around the Government Reservation, inundates the extensive upper bottom lands for a naturalistic lock at 1835 level, practically coincident with the highest recorded flood.

The circular pools and their connecting basin provide three lagoons, each complete in itself, and all located in spaces between the direct lines of communication joining focal centres. At the same time, because of their largeness of scale and severe simplicity, the lagoons conform to the architectural character of the centre of the City, where any informal pond would be ineffective.

Stepped and gently sloping embankments at slight comparative expense offer better architectural possibilities and greater utility than the more ordinary vertical revetments.

The two irregular lakes located as is the case of the formal lagoons without intersecting the direct lines of communication have an informal treatment that corresponds with the park-like, irregular character of the City's first suburban zone and of the more spacious recreation grounds facing them.



## RECREATION GROUP

### 2.1112. SECONDARY DIVISION.

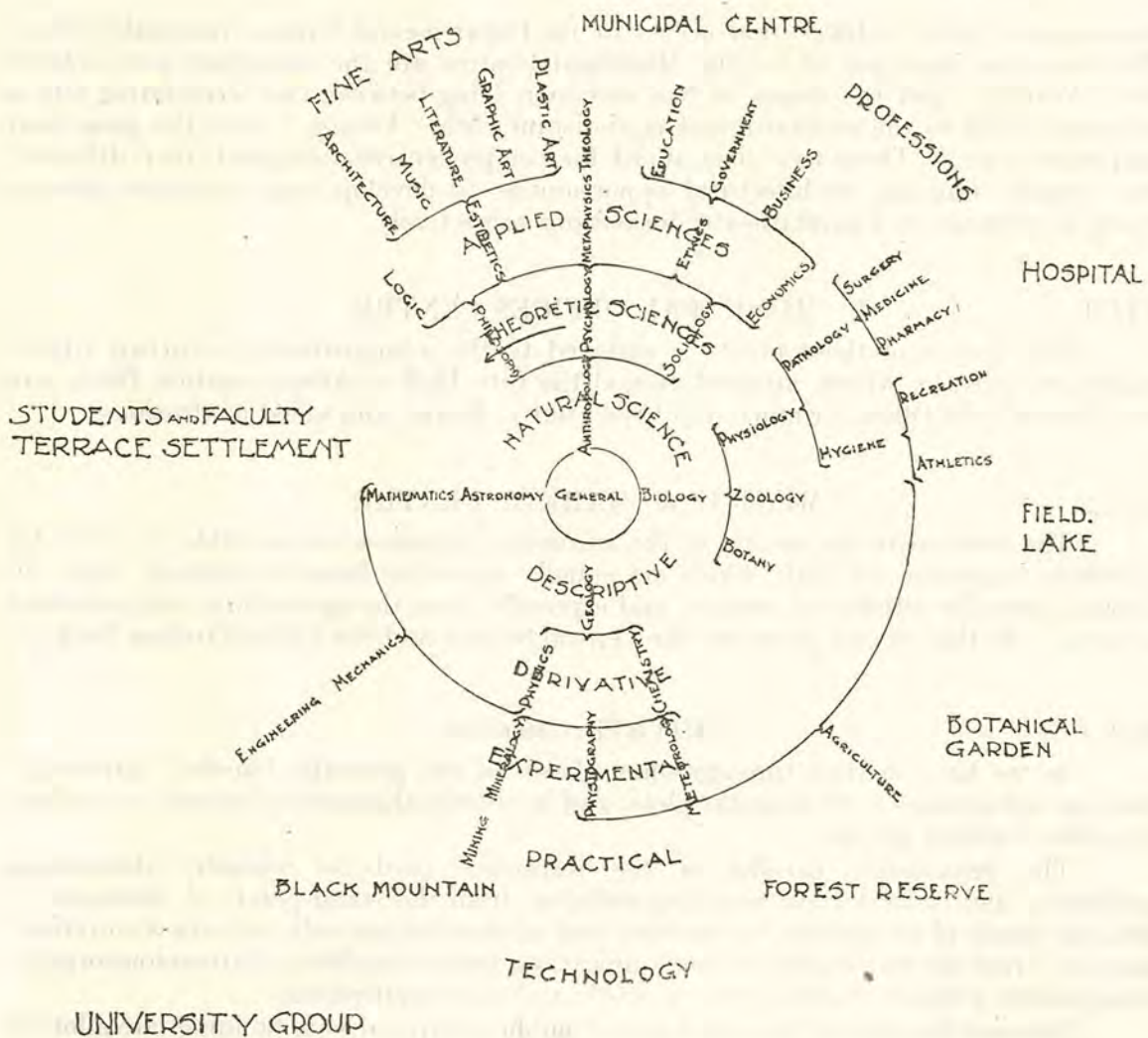
Realization of the Secondary Part of the Federal Group may only follow long after the other has materialized, for its functions are of a more special and less imperative nature.

#### 2.11121. UNIVERSITY.

Of these two features, the University and Military Groups, the former is recognised as of a more appropriately dominant character, and is aligned with the terminus of the water axis at the foot of Black Mountain. The situation of gentle undulation largely under the mount's lee having wide scope, surrounded by the inherently most attractive region of the City, is intersected by a little lagoon arm, bordered by the lowest lake, and at the same time overlooks the entire length of the other four of the chain. This site is also in a position to utilize the botanical gardens and mountain with its forestry reserve.

The scheme of the Educational Group comprises the fields for higher education that may be taken up by a nation recognising the enormous advantages and economies in federating all the scientific, professional, technical, and practical branches for both teaching and research.

Fundamental sciences, descriptive of nature, lead directly to the theoretical sciences dependent upon them along lines of derivation and through these, in appropriate combination, into the lines along which they are applied to the work of civilization. Some such arrangement is necessary to permit proper expansion in ever-changing fields, with convenience to students. Moreover, it is endeavoured to direct these lines on the site to such openings for actual application as are most available to them. Thus from Physiology, the gymnasias give on to the broad flat athletic grounds and the water areas. And the hospital, of itself in a most suitably isolated location with most equable temperature and favorable atmospheric conditions, is adjoined by the Medical, Surgical, and Pharmaceutic Schools. Thus Agriculture adjoins the Botanical Gardens and the Forestry Reserve. Into the base of Black Mountain extends Mining, while Engineering lies between it and Architecture—both of which it serves—and has maximum of room for expansion; Pedagogy, Law, and Commerce approach the Civic centre of people, courts, and offices.



2.11122.

## MILITARY.

The upper reach of the water axis has no commanding terminal short of the blue hills of the Dividing Range, bounding the outlook from the City over the Queanbeyan Plains, where a spacious public park is allotted to one side of the upper lake, and on the other are the grounds of the present Military College, with the steep bald knoll of Pleasant Hill—the highest crest within the City—their most conspicuous feature. This may be crowned either by a future development of the Military College, or, citadel like, given over, together with the adjacent slopes, to the Military Post, with its armories, arsenals, drill-halls, and barracks, commanding the railway lines, overlooking the entire City, and flanking the gap eastward towards the sea.

2.112.

## MUNICIPAL GROUPS.

Buildings of the Municipality, those public edifices of utility to the people of Canberra as a whole, afford further opportunity for extending the harmonious public grouping of the parallel-set system of the Federal Groups, by establishing a subordinate axis adjoining the Recreation Group, which is most nearly analogous to the general community functions.

Two separate characteristics distinguish these municipal utilities—first, that of the official, clerical, and administrative class; second, that of the material handling, transportation, and merchandising class; and it would tend to congestion to concentrate such conflicting though equally important general functions in one centre. Two centres, therefore, are fixed as the terminals of a municipal axis in the form of an avenue, north of and parallel with the water axis, each terminus connected with the garden and water feature of the latter axis, by short park arms leading from the circular pools. The essentially city functions are not only tributary to all the inhabitants, as is the Recreation Group, but are to serve handily the great Federal enterprises, which are here located in close proximity in three cases, whereas connexion with the great

Government focus is direct, and access to its Departmental Groups reasonably close. The two sites made use of for the Municipal Centres are the important and isolated hill "Vernon" and the slopes of like elevation lying between two terminating hills a mile and a half to the eastward, and equi-distant with "Vernon" from the great land and water axes. These two sites afford for comprehensive treatment very different, but equally unusual, architectural opportunities to develop large structure groups, rising in pyramid and amphitheatre formations respectively.

#### 2.1121. MUNICIPAL OFFICES CENTRE.

The former of these points is assigned to the administration of urban affairs, public and private, where, grouped around the City Hall or Administration Block, are the General Post Office, Criminal and Civil Courts, Banks, and allied institutions.

#### 2.1122. MUNICIPAL MARKET CENTRE.

The interval to the second of the municipal centres is considerable, to allow for indefinite expansion of both, which are equally accessible from the railway, from the Capitol, from the residential sections, and especially from the agricultural and industrial suburbs. At this second point are the Central Station and the Public Produce Markets.

#### 2.12. PRIVATE GROUPS.

As we have learned through some phases of the generally baneful "gridiron," there are advantages in rectangular plots, and in orderly alignment of private, as well as of public, building groups.

The remarkable parallel in the respective needs of industry demanding publicity; and of habitation requiring seclusion from the stand-point of occupancy; with the needs of circulation for business and of distribution only for access to retired districts, from the stand-point of communication, makes feasible an harmonious organic arrangement without conflict between street and plot requirements.

Between the arms of the grand axes of public groups, private buildings are allotted separate systems of co-ordinate axes, determined by as many different base lines as are needed to interconnect directly the main public features and all lesser specialized centres.

Though these axes are routes and governed largely by circulation considerations, each line commands a view of terminal objectives, either natural or artificial, and each system of co-ordinates offers rectangular sites for all buildings up to a point of junction with the next similar system, while even at these intersections no acute angles are permitted, for triangular buildings are as expensive as they are irredeemably ugly. But the allowed obtuse intersections afford a quadrilateral site disposition, as economical as the rectangular type, with two long prospects at each sweep of the cross connecting or ring streets.

The angle blocks are, as a rule, less adapted for formal than for informal and picturesque treatment, and excepting immediately around the focal centres, where the completed plan figure is manifest, they occur at the very points of least communication and formality, and of greatest areas and cheapest land, where an informal treatment is easiest and most appropriate.

#### 2.121. INDUSTRY.

The industries of this Capital City, aside from those institutions which have been provided for in the Public Functions which are the primary purposes of the Capital, may be considered to be relatively simple in requirements, because the character of the location does not indicate very large or special industrial growth.

The principal operations are assumed to concern the internal demands of the population, and they will be either general for the whole community or for its main subdivisions, or local for the immediate needs of residents.

#### 2.1211 FOCAL INDUSTRY.

The former class can be referred to as Focal.

## 2.12111. URBAN UNITS.

The more central focal units will naturally be the urban ones, whose influence will extend over the entire city area, but the disparity in the kind of traffic, as well as housing, between the two principal urban functions distinguishes one as administrative, and another as mercantile, a difference which has been recognised in the separation of the two public, official, and market centres. The line of demarcation between governmental and private control of these urban activities will tend to be indefinite and variable, with changing standards of community consciousness so they naturally, together, form single groups.

## 2.121111. THE ADMINISTRATIVE FOCUS.

Contiguous with the Municipal Official Centre may, therefore, be found the private offices and financial institutions, stock and insurance exchanges, chambers for corporate enterprises, and the professions.

## 2.121112. THE MERCANTILE FOCUS.

To the Railway Station and Produce Market Centre will naturally be attracted private general mercantile establishments in the larger units, particularly wholesale, together with "goods clearing," transfer systems, warehousing, and light manufacturing.

## 2.12112. SUBURBAN UNITS.

Suburban centres, situated at points topographically most available, but at some distance from the heart of the city, are established to help fix the internal routes and give some idea of the extensive application of principles of planning, with specialized direct connected centres, and with building sites, rectangular so far as possible, varying in utility from a maximum to a minimum of accessibility.

It is advisable to determine lines of extension as far ahead as possible, as has been done in many German cities, generations in advance of occupancy, to prevent ultimate obstruction of orderly growth through misdirected improvements. Five of these suburbs were indicated in the first premiated competitive plan, one to be devoted to society congregation, three to agricultural pursuits, and one to manufacturing.

In this preliminary draft of the internal city site the originally suggested lines of approach to outlying suburbs have been maintained.

Considerable elasticity must necessarily be allowed for in the designation of outlying centres, because of the remoteness of the anticipated period of occupancy.

## 2.121121. INITIAL TOWN.

To meet special conditions imposed by the necessity of occupancy south of the Molonglo, in advance of construction of bridges, or the extension of the railway across to Yass, there are introduced three local nuclei tributary to a preliminary railway line already laid down.

It is estimated that there will be a population of 10,000 or 12,000 before the advent of Parliament, and it is possible that the extension of the railway may not come until after that time. Therefore, these initial centres will permit of a completely organized small town, not merely for construction forces, but for a variety of interests.

This district is plotted to correlate intimately with the Public Groups, its central co-ordinate axes being parallel, securing the same advantages of sun exposure, and disposed to benefit fully from the upper circular basin water frontage, through opposition with the ultimate Urban Mercantile Centre on the north side.

## 2.121122. SOCIETY SUBURBS.

To meet the objection of wind exposure on the bare western side of the City the residential area is contracted into the valley lying inside that bounding range of hills, dominated by "Shale," which are to be given over to an afforestation park.

Two points of congregation accentuate the two natural topographic outlets west of the Capitol.

These residential centres might well be characterized by society, clubs, and church assemblages for that large social group of special character peculiar to a national capital. The conformation of the land tributary to them is irregular and most advantageously divided into the larger estates, while the Yarralumla Valley to the west, unintersected by railway and least in demand for industry, and the informal lake at the north, afford open areas for a maximum of outdoor life. The proximity of the University may also be counted to afford an attraction, as exemplified in university towns and intellectual centres throughout the world.

#### 2.121123. AGRICULTURAL SUBURBS.

Outlying village centres to the southward, or possibly to the northward, in either case in the lee of the only protective mountains of the site may be devoted, at least in some transitional stages of the City's growth, to horticultural and intensive agricultural uses, truck gardens, nurseries, poultry raising, &c., occupying alluvial plains adaptable to sewage irrigation from the higher inhabited regions, and being directly tributary by rail transportation, and by road, to the Markets. At their centres facilities for creameries, abattoirs, and allied operations are to be found.

#### 2.121124. MANUFACTURING SUBURB.

The centre lying to the northward of the City was originally designated "Manufactures," but conditions in the early growth, with the railroad facilities limited to the south of the Molonglo, may necessitate that such activities be concentrated in one of the southern suburbs. Furthermore, it is possible that the summer northerly winds may render the northern point less acceptable than a southern one for this purpose.

#### 2.1212. LOCAL INDUSTRY.

In addition to general business in the immediate neighbourhood of the specialized Urban and Suburban Industrial Foci there can be anticipated a development of business for more local distribution to, and accommodation of, the intermediate areas generally utilized by residents. Such business, necessarily attracted by easiest accessibility will tend to align itself on the most direct of the avenues connecting the focal centres.

These industrial alignments may be assumed to include in some instances, not only the wide main thoroughfare frontages, but also, as an elastic limit, the frontages of the first and longest parallel avenue on either side.

The unit blocks on the long connecting avenues are narrowed by the amount of increase in front traffic accommodation, these avenues being at least twice as wide as others, and also by the introduction of a rear alley shipping way 30 feet wide.

It is contended that modern and prospective means of street transportation in the tramway and fast vehicular traffic, and of which the great progress up to the present is hardly a beginning towards speed, safety, noiselessness and reliability in sight for the near future, mean a very different and far more general lineal distribution of ordinary retail trade than where a walking range has been the determining influence.

During the transformation period congestion has resulted in cities, and the lift or elevator pressed into service for relief. An equally well administered tram service, perhaps supported financially in the same way out of rents, would assure a more convenient, as well as far better horizontal, alignment.

#### 2.122. RESIDENTIAL SECTIONS.

With the Federal needs provided for in their special districts, and with the general industries amply accommodated at focal points, and along the direct lines connecting them, the remaining portion of the city site is available for domestic life, which demands privacy, quiet, and stability, with freedom from either interference or encroachment of business life. Because of the triangular or rhombic arrangement of their traffic-line business boundaries, these internal areas, while secluded, may yet be but a few steps from the industries and communication lines serving them. Equitably distributed throughout the city these quiet sections allow domiciles to be everywhere handy to industrial employment.

## 2.1221.

## DOMESTIC COMMUNITIES.

Comprising the proportionately large share of the city area required for habitation, the segregated sections, formed and separated by the general traffic lines, furnish not only suitable individual home sites, but comprise social units for that larger family—the neighbourhood group, with one handy district school or more for the children, and with local playground, game fields, church, club, and social amenities accessible without crossing traffic tracks, or encountering the disturbing elements or temptations of business streets, since these family activities may best be directed internally toward the geographical centres of their groups for their special congregation. In other words, the adult and independent industrial social activities may be considered typically directed centrifugally, whilst the domestic social efforts are assembled centripetally for effective control and co-operation.

The innermost unit block may be varied to form considerable areas for such special purposes, including also sanatoria, residence hotels, parks, ornamental or industrial horticultural gardens, even to the extent of agricultural fields, farms, or wilds in earlier stages of settlement, all with the minimum of interference with the traffic of the city as exemplified in the lakes and parks of large groups, occupying the whole of similar areas which are devoted to special Capital uses.

## 2.1222.

## HOMES.

The desirability of rectangular blocks and parallel-set buildings, in the interests of economy of construction and restfulness and simplicity in architectural treatment, is scarcely less in the case of residences than for public or industrial groups, so where topography permits a system of rectangular blocks is preferable, especially where, as in this plan, it is by no means an expression of the "gridiron," because of its universal closed vistas and innumerable street terminal sites. The reduction in the repetition of unit blocks in one line marks here their independence and seclusion, also permitting a graduated increase in the proportion of land used individually to that demanded by communication.

The internal blocks, typically large, in many cases forming considerable undivided areas, leave opportunity for private development or small-community initiative to evolve pretty schemes of driveway subdivision, recessed courts, closes, quadrangles, terraces, common gardens, irregular hill garden subdivisions, and a host of similar possibilities, adding incident and variety to a consistent whole.

For the sites among the hills, while an informal regularity or block arrangement might, in some cases, be possible, it is not deemed so necessary, since where allotments are large and houses are on different levels, more picturesque juxtaposition is permissible. It is regarded as generally desirable, however, that the occupied sites be higher than their communication lines for enhancing their appearance, their utility, privacy, and individuality.

## 2.2.

## COMMUNICATION.

The general communication system, finally, often irrespective of merely aesthetic conditions, accomplishes the industrial success or failure of a city. But this does not imply the attaining of a maximum of communicating lines so much as their thorough correlation and suitable allocation. The scheme must be simple and flexible, available with varying conditions of expansion and the changes of condition with time; it must be detrimental to the shape or orderly relationships of buildings, or to the natural beauty of the landscape in no case that is avoidable.

## 2.21.

## EXTERNAL ROUTES.

## 2.211.

## RAILWAYS.

The line of railroad approaching from either way, all junctions being external, is directed toward the Capitol as it comes into view, and then diverted in passing the Public Buildings Group, to avoid bisection of the internal traffic. The railway is, however, in immediate contact throughout with all the industrial and general habitation areas, with frequent local stations for freight or passenger accommodation. It is to be noted that the regions not in direct touch are those of the specialized characters preferably least intruded by the disagreeable features of dirt, noise, and sight, incidental to railway operation, and in general are those prepared to utilize the private motor car for rapid communication.

Gradient is the easiest possible, being virtually a level throughout, with an appropriate  $\frac{1}{2}$  per cent. rise to the main station, facilitating starting and stopping. Trackway in general is straight, with but four slight turns of three degree curvature, suitable to long train traction. Thoroughfare through flat districts is maintained by open depression about 12 feet deep, the excavated materials forming embankments of 6 feet in height, an elevation requiring but slight incline for crossing streets, and used by the parallel roads where adjacent.

Through industrial regions the railway is conducted between occupied blocks, for switching, warehousing, &c., utilizing a flattish valley on the outskirts for freight marshalling and car storage yards for which a considerable area is to be set aside where interfering least with through street lines.

The line, approaching the Urban Administrative Centre from the north, turns at a local station there, and is directed toward a cathedral-crowned hill, into the lowest slope of which it passes as it turns and enters the Mercantile Centre through a subway beneath the open square in front of the Main Station.

Spurs here afford stub-terminal train tracks for each direction at the sides of the station not served by the through tracks.

The Main Station, of hexagonal shape, commands the place, but lies at one side of the city traffic currents, and is beautifully ensconced, owing to the hilly conformation at the rear. It is disposed to be conspicuous from distant points, and to offer a dignified commanding prospect of the City for the arrival's first impression. To minimize the difficulty of early completing so ambitious a station centre the street arrangement is designed to permit diversion of the approaching avenues at greater distances from the focal point than intended ultimately.

Due south from the station, the railway emerges from the subway, and follows a direct line from Ainslie and the Cathedral, crossing the waterway at junction of basin and lake, continuing between wide avenues to the southern Suburban Stations, finally turning out of the city with the Capitol and Black Mountain in its wake.

In general, this external communication line is treated with the dignity accorded to internal lines, has its well-marked objective at every turn, and is afforded the finest view points where crossing each of the axes of the dominant architectural *ensemble*.

Because this through traffic line may be some years in eventuating, and in order to effect a saving, at the outset, of the long weir bridge, it is considered that possibly the local branch from Queanbeyan, serving as a constructional line during the creative period, may be so plotted as to serve ultimately as a rapid transit adjunct to the main railroad route, linking in the Government centre with the northern and southern suburbs. This, however, can only be suitably accomplished by a line that can be concealed in the steeper slope of the hills, approaching the Capital, crossing the river in a specially designed bridge with the track level beneath the roadway, with still enough room below the latter to clear the boulevarded river embankment. This branch, necessarily largely in tunnels, and with its limited ultimate functions permitting of relatively sharp curvature, affords access to Parliament House and the Industrial Centre of the initial City so close as to obviate any need for street vehicles to eke out the journey. Perhaps such additional rapid transit facility with a clear way, independent of the street traffic, might ultimately play part in the healthful dissemination of the Capitol settlement.

Though not indicated, a feasible route can be laid down for the extension of lower level railway facilities to the west and south should seemingly improbable conditions ever demand such. The isolated Yarralumla Valley will scarcely justify a long distance rail connexion.

## 2.212.

### ROADWAYS.

Existent external roadways are relatively unimportant, but are accommodated by through routes connecting with all the outlet gaps.

## 2.22.

### INTERNAL ROUTES.

With regard to the internal system in general, it is unnecessary to elaborate here the provision for storm water disposal and drainage equipment, further than to note that the grades and the general utilization of the depressions for thoroughfare simplify the reticulation problem. The transverse intersection of storm water at various levels is also facilitated.

The Molonglo banks and bed afford an apparently economical route for final outfall lines.

A complete local pipe and wire service at the street building line, obviating stubs or pavement interference, is attainable with the roadway system of control advocated.

For tramway equipment elasticity is a first requisite, guaranteed by the integral system of arterial thoroughfares wherein there is allowance for ultimately depressing in open channels an economical sub-surface scheme of rapid transit.

## 2.221.

## CIRCULATION SYSTEM.

Considering our problem from the stand-point of "Occupancy," there has been noted modern tendency to supplement largely, if not to supplant, the spot concentration of older towns with long alignments of traffic and trade.

The maximum facility for uninterrupted rapid transportation and an adequate equipment with services in the arterial system accentuates the tendency, while a strictly subordinate arrangement of feeder streets deters traffic diversion, cutting off competitive inducement to traffic and trade as well, for trade must be where the people are. The direction of the main routes is involved in selecting their terminals, those points of natural or functional eminence, which must be inter-connected as directly as is compatible with the possibility of following easy and uniform gradients, never greater than  $2\frac{1}{2}$  per cent., without excavation unduly expensive in proportion to the advantage sought. The desirability of straightness can hardly be over-estimated, but with it no convex profile is permissible. Whereas, however, these long lines are but few in the aggregate, because of the concentration of the circulative function, the value of their proper uniform grade and alignment for safety of operation, directness, and view of their important and attractive objectives, in the organic city, constitute an operative economy at least comparable with the demands of ordinary railroad lines, having infinitely less traffic burden, and infinitely greater distances and difficulties.

The basic circulation system comprises the triangle connecting simultaneously the three business centres of Government activity (Government, University, Military) and the two urban centres of local business (Administration and Merchandising). On this framework the City can develop all its functions from the beginning of its maturity with ample latitude for variation in each phase of activity, maintaining the final scale of a Capital City from the outset. Increments of gradual growth may be definitely, little by little, incorporated without confusion, congestion, or scattering along later extensions of the arterial systems, followed by corresponding distribution tributaries as required.

Never less than triple roadways can be considered sufficient to handle avenue traffic ultimately, with tramways, fast and slow vehicles in both directions; but, in the early projection of these avenues, it will be well to substitute park treatment or even to permit temporary private garden occupancy of the portions not immediately needed for traffic.

The street area, if reduced to three roadways, is a desert, dangerous and unpleasant to traverse, so in a sunny country of stately open-branched broad-leaf evergreen avenue trees additional space is required for a final arboreal accompaniment of at least quadruple rows and supplemental shrubbery parkways for shade and shelter, wind and dust arresting. From considerations also of architectural setting, ventilation, fire stop, command of crossings, and eventual rapid transit, a uniform width of 200 feet is adopted.

## 2.222.

## DISTRIBUTION SYSTEM.

A system of distribution at right angles to the circulation thoroughfares gives minimum of distance from either side of such thoroughfare. For access to public transfer lines, trams, &c., this is the prime object. With a frequency of the circulation ways the distances are short; indeed, a point five blocks back in the triangular inter-spaces of this plan is a rarity.

The rectangular form of block most generally adapted to improvements, and straight roadways most simply kept and patrolled, can, in these purely distribution routes, be readily maintained with very slight modification for a considerable undulation in site since these streets essentially short in any one direction permit obstructions to remain or to be compassed by diverting ramps without loss of utility, while general and frequent variations in rate of slope can be accomplished at angles without rendering the irregularity apparent or disagreeable.

The very liberty and topographic adaptability permissible to these minor distributing streets demands a contrasting dignity and severity in the connecting avenues that form the backbone of the system, and for that dignity the economy of the former easily contributes the requisite funds.

The streets parallel to business avenues decreasing in length, in accessibility, and in importance in direct ratio with their distances from their main axial artery, approach by degrees an ultimate of enclosed courts best adapted for privacy and quiet, tending naturally to maintain themselves for residential and similar purposes against any possible intrusion of business, especially since they are only reached from the main travel routes by ring cross streets that neither connect important points nor ever run directly in any one way for sufficient distance to attract active traffic. There are, however, no "dead ends" nor "cul de sac" streets expensive to serve.

The gradual reduction of the proportion of thoroughfare area to private grounds in residence sections adds materially to the site space available for use as well as to economy in service equipment pipes and wire lines, pavements, and their maintenance.

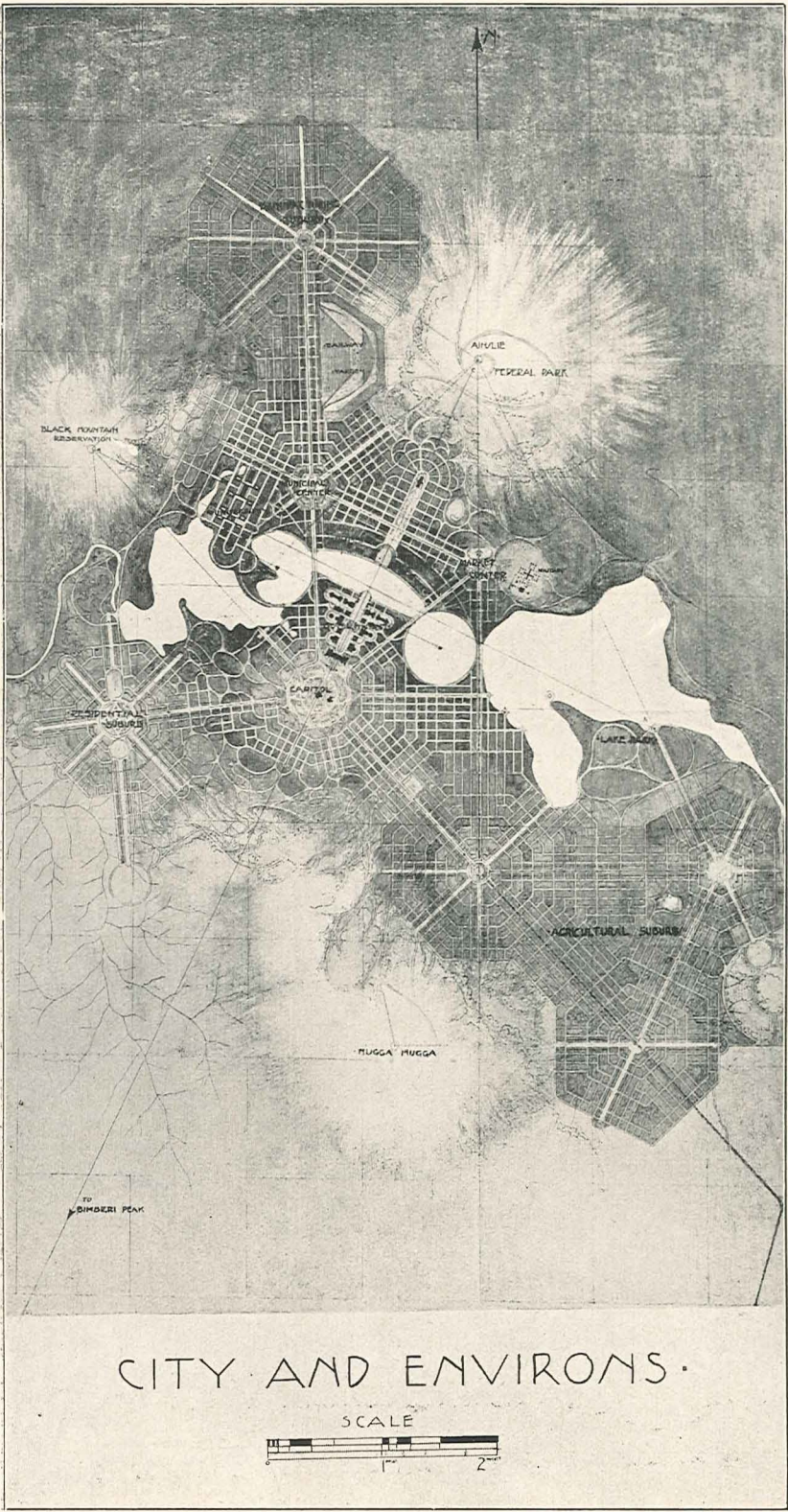
One suburban town observed, where alternate cross roads as laid out were omitted, leaving blocks 1,200 feet long, may be cited as having been able to perfect its street improvements, many years ahead of other places of similar conditions otherwise, but with the greater multiplicity of streets.

In the hilly sections the distribution lines take the form of sweeping ramps, confined, as far as possible, to the depressions for reasons heretofore explained, as well as for economy in the grading pipe service, drainage, shelter, and in the utilization of land that is of minimum value for other purposes. This way is also the simplest and least conspicuous in mutilation of natural rugged types of scenery. Effort has been directed towards securing arcs of the minimum curvature needed to compensate an appearance of varying and convex grades for economy as compared with straight lines in such locations, and for directness, safety, and ease of control as compared with short curves.

A uniform width of 100 feet for distribution ways is established as a suitable minimum interval between building fronts for light, air, privacy, and fore-garden embellishment. It is by no means a determinant of the desirable thoroughfare space in roadway, walk, or public parking, which should be graduated to a minimum requirement of possibly a 12-foot driveway alone in the farthest backset, short streets, or ravine climbs. There is no reason why the balance of the potential right of way should not be granted for fullest use to the private occupants and considered in all but reserved jurisdiction as belonging to individual abutting allotments, withholding an easement for direct service lines adjacent to the buildings, and retaining the exercise of considerable public control as to appearances. This is not an uncommon arrangement and one here allowing variable increase in the proportion of private sites to actual public ways directly corresponding to lesser unit values of the areas for fixed occupancy and their lesser demand for access.

WALTER BURLEY GRIFFIN,

Federal Capital Director of Design and Construction,  
October, 1913.



C 9681.



# CANBERRA

Summit of Black Mountain  
2658 ft

## FEDERAL CAPITAL OF AUSTRALIA

### PRELIMINARY PLAN

Feet 0 400 800 1200 1600 2000  
Scale 1600 Feet to an Inch

Ainslie  
1762 ft

