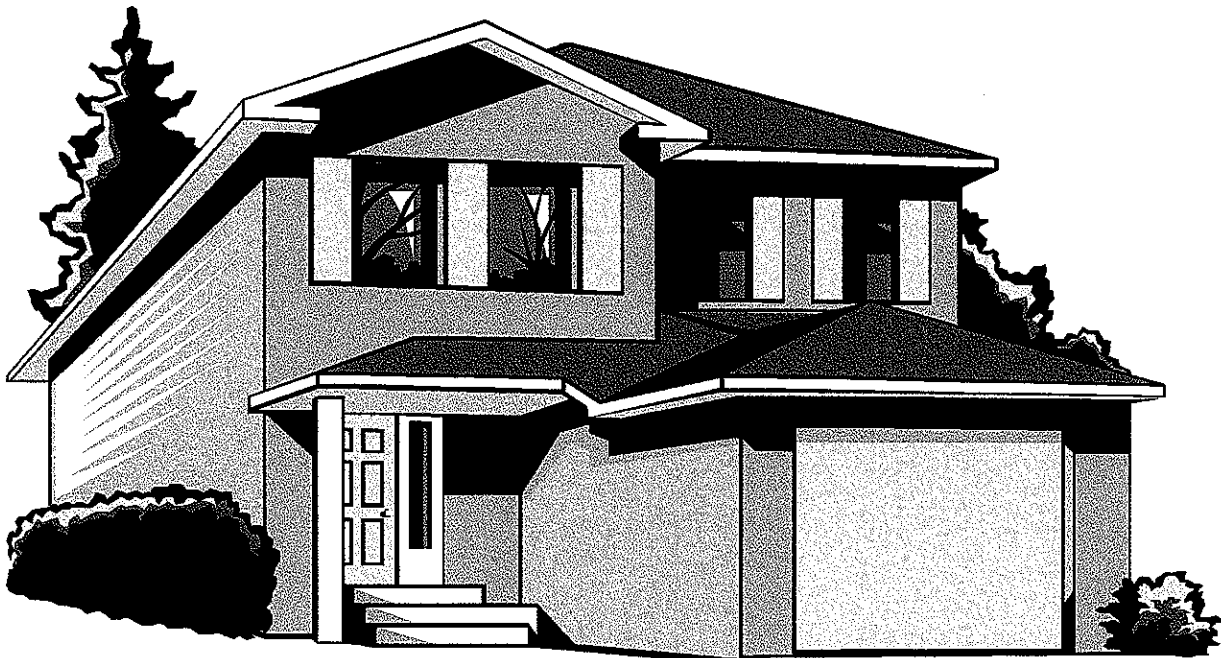




DEVELOPMENT CONTROL PLAN

NO. 21



RESIDENTIAL DEVELOPMENT POLICY

(Incorporating DCP No. 1 & DCP No. 2)

Adopted by Council 21 December 1999

Effective from 22 December 1999

CONTENTS

CITATION

1. *What is this plan called?*4
2. *Where does this plan apply?*4
3. *What planning instrument is this plan made under?*4
4. *When does this plan come into force?*4

GENERAL INFORMATION & DENSITY CONTROL

1. *What are the aims of this plan?*5
2. *What definitions apply to this plan?*5
3. *In which precinct is my property located, what are the characteristics of this precinct and what density standards apply?*7
- Development Density Table*39
4. *What do the cross-hatched allotments depict in the precinct maps?*43
5. *Can I apply for a Construction Certificate at the same time as lodging my Development Application?*43
6. *What other standards apply?*43
7. *How do I interpret the contents of this document?*43
8. *If I have a development that does not conform with the standards can it still be considered?*43
9. *What other Development Control Plans may apply to my development?*44
10. *Do I need to submit a site analysis with my application?*44

DESIGN CRITERIA

- A. *Setbacks:*47
- B. *Design:*50
- C. *Height:*53
- D. *Energy Efficiency:*54
- E. *Privacy and Security*58
- F. *Private Open Space:*61
- G. *Landscaping (including Tree Preservation & Replacement):*63
 - General Requirements*63
 - Specific Tree Requirements*64
- H. *Vehicle Access and Parking:*69
- I. *Acoustics:*71
- J. *Water Management:*73
- K. *Site Facilities:*75
- L. *Companion Animals:*76

CONTENTS

SCHEDULE 1	77
LANDSCAPE CHARACTER	77
SCHEDULE 2	80
WHAT TO DO & WHAT TO AVOID TO IMPROVE THE STREETScape.....	80
SCHEDULE 3	81
RECOMMENDED STREET TREE SPECIES	81
SCHEDULE 4	84
RECOMMENDED STREET TREE REPLACEMENT	84
SCHEDULE 5	87
PRECINCTS 5, 6 & 14 – New Releases.....	87
REFERENCES	88
FURTHER READING	89

Citation

1. What is this plan called?

Development Control Plan No. 21 – Residential Development Policy

2. Where does this plan apply?

It applies to construction of dwelling houses, dual occupancies and multiple dwellings in all residential zones.

3. What planning instrument is this plan made under?

Griffith Local Environmental Plan 1994.

4. When does this plan come into force?

Council adopted this plan at its meeting of 21 December 1999.

The plan took effect on 22 December 1999.

This plan replaces DCP No. 1 – Dual Occupancy & DCP No. 2 – Multiple Dwellings.

General Information & Density Control

1. What are the aims of this plan?

- to set standards for quality residential development;
- to provide a variety of housing opportunities and residential lifestyle choices;
- to promote the establishment of a high quality residential environment through the implementation of innovative design; and
- to create an urban environment that relates to the existing and desired future neighbourhood character, is responsive to the site and is environmentally sensitive.

2. What definitions apply to this plan?

"busy streets"	"defined as collector roads, sub-arterial and arterial roads, either accessing 100 or more dwellings or having an Average Daily Traffic (ADT) volume of 2,000 or more."
"dual occupancy development – attached"	<p>(a) "where no dwelling or dwelling-house exists on the allotment or portion – the erection of 2 attached dwellings; or</p> <p>(b) where a dwelling-house exists on the allotment or portion – the effecting of alterations or additions to the existing dwelling-house so as to create 2 attached dwellings;</p> <p>on a single allotment or portion of land on which a dwelling is permissible."</p>
"dual occupancy development – detached"	<p>(a) "where no dwelling or dwelling-house exists on the allotment or portion – the erection of 2 detached dwelling-houses; or</p> <p>(b) where a dwelling-house exists on the allotment or portion – the erection of a second and detached dwelling-house;</p> <p>on a single allotment or portion of land on which a dwelling is permissible."</p>
"dwelling"	"a room or suite of rooms occupied or used or so constructed or adapted as to be capable of being occupied or used as a separate domicile."
"dwelling-house"	"a building containing 1 but not more than 1 dwelling."
"large dwelling"	"a dwelling containing 3 or less bedrooms, having a floor area of > 110m ² (floor area excludes balconies, patios, garages and carports)."
"medium dwelling"	"a dwelling containing 2 or less bedrooms, having a floor area of no greater than 110m ² (floor area excludes balconies, patios, garages and carports)."

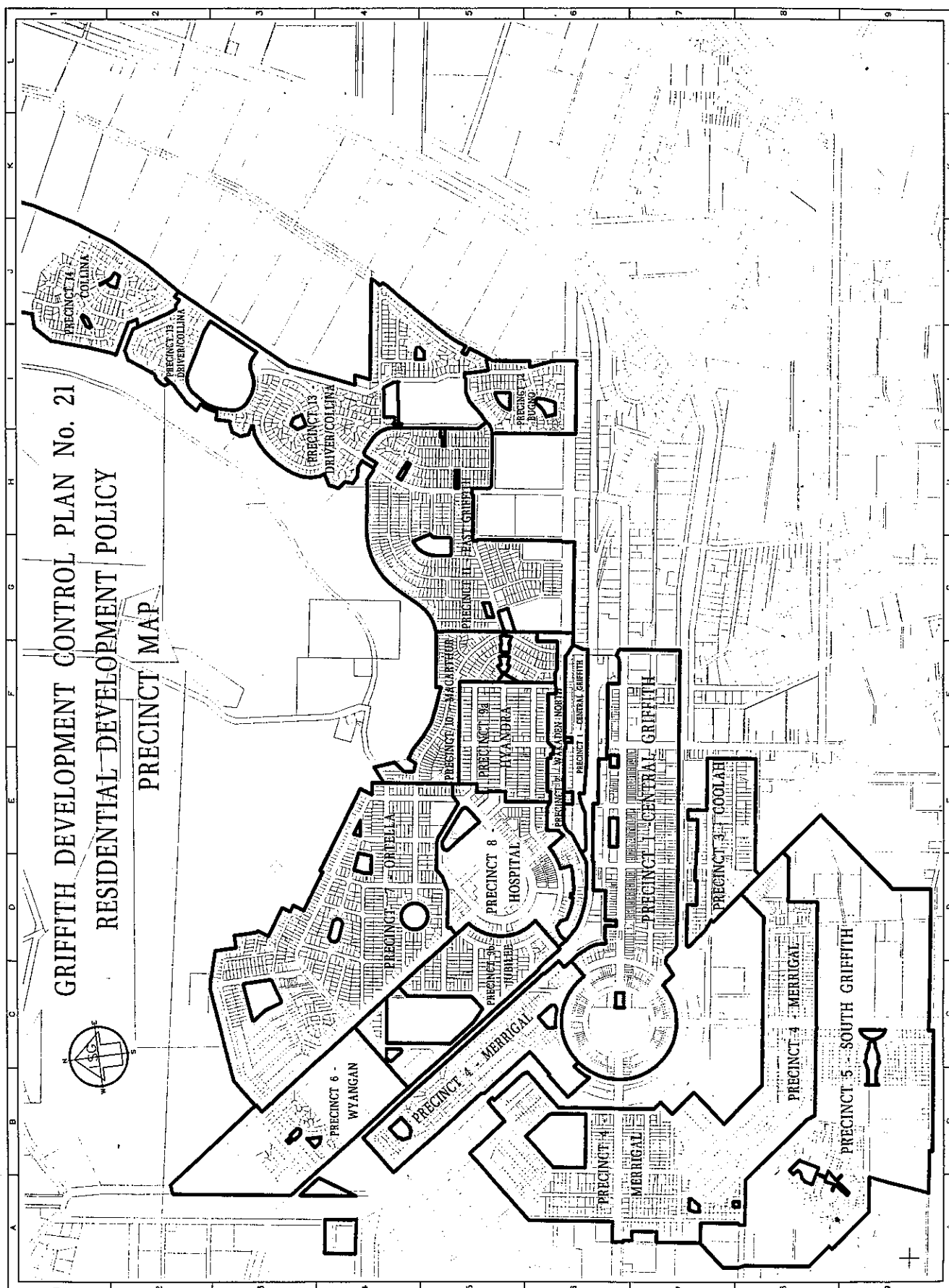
"small dwelling"	"a dwelling containing 1 bedroom, having a floor area of no greater than 75m ² (floor area excludes balconies, patios, garages and carports)."
GLEP	"Griffith Local Environmental Plan 1994"
"height"	in relation to a building: "the vertical distance measured between ground level at any point at which the building is sited, and the ceiling of the topmost floor of the building above that point."
"heritage conservation area"	"land shown by fine diagonal hatching on the GLEP 1994 map and referred to as a conservation area in Schedule 1 of the GLEP 1994 and includes buildings, works, relics, trees and places situated on or within that land."
"heritage item"	"a building, work, relic, tree or place (which may or may not be situated on or within land that is a heritage conservation area) described as a heritage item in Schedule 1." (LEP 1994)
"heritage significance"	"historic, scientific, cultural, social, archaeological, architectural, natural or aesthetic significance."
"landscaped area"	"the part of a site area used or to be used for swimming pools, recreation areas, lawns, gardens or other landscaping, but does not include driveways, parking areas or drying yards."
"mixed development"	"mixed retail, commercial and residential uses."
"multiple dwelling development"	"a development on one lot comprising two or more dwelling units or residential flats" and incorporating "dual occupancy development."
"occupancy rates"	"by household size (number of bedrooms) Griffith LGA, 1996 1 bedroom occupancy rate - 1.3 persons 2 bedroom occupancy rate – 1.94 persons 3 bedroom occupancy rate – 2.87 persons."
"private open space"	"an area of land, balcony or roof terrace, accessible from living areas, suitable for the private outdoor living activities of the occupants of one dwelling".
"residential flat building"	"a building containing 3 or more dwellings."

3. In which precinct is my property located, what are the characteristics of this precinct and what density standards apply?

Griffith has been divided into fourteen (14) precincts. Each of the fourteen (14) precincts have a character statement. These statements describe the key components that differentiate each precinct from the others. Some have distinctively different characteristics whereas some precincts are similar. The key components include for example lot size, type of housing, landscaping themes and the locality.

The first paragraph describes the location and overall character of each precinct. The second paragraph illustrates the character of the neighbourhood. The last paragraph of each statement describes the desired future character of the precinct. This provides an indication of how the precinct should develop in the future.

Based upon the above information various density standards have been set to create a desired urban environment that provides choice and certainty, and meets community expectations.



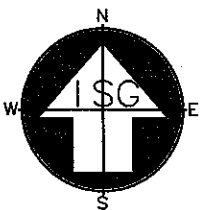
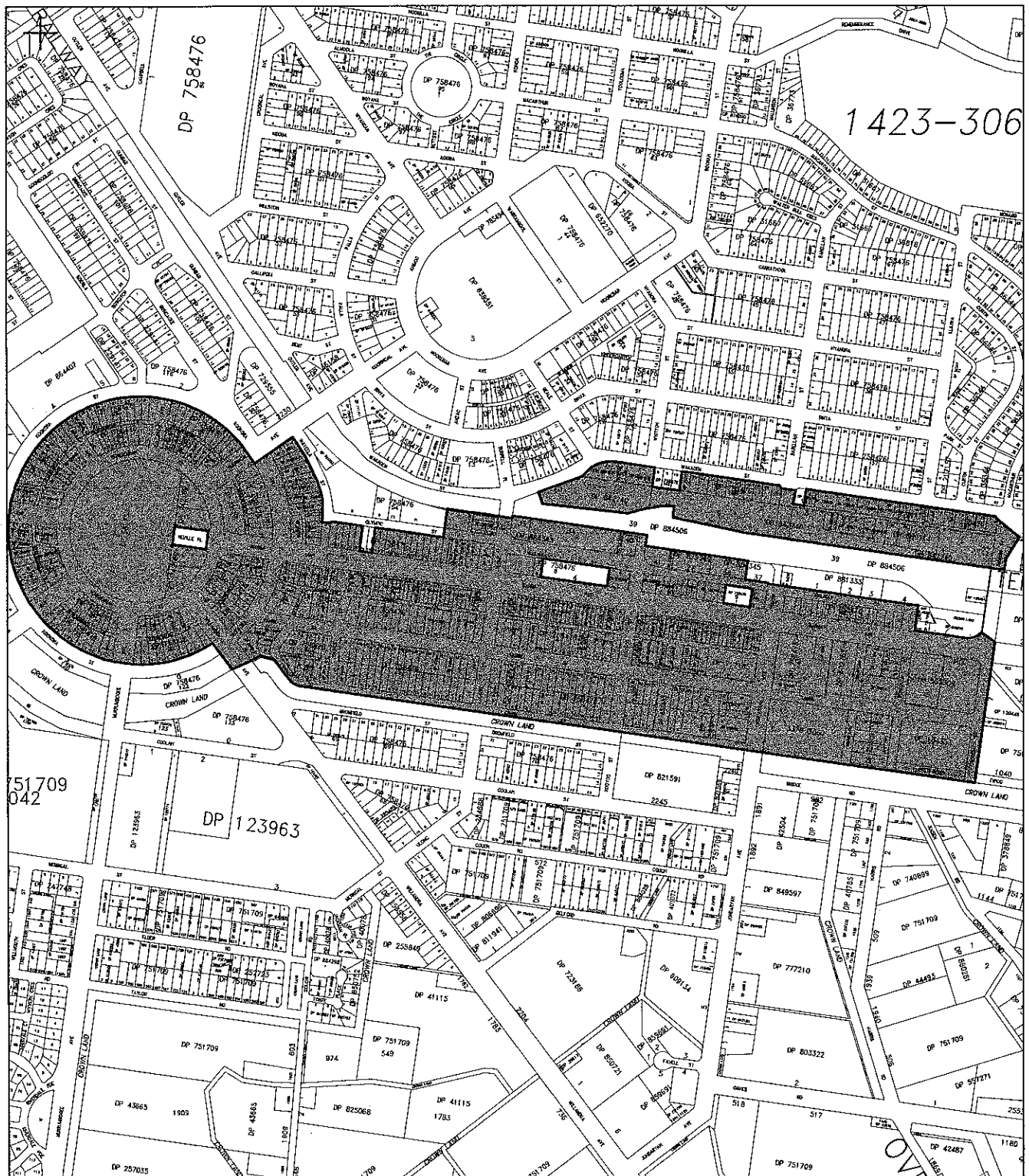
PRECINCT 1 – CENTRAL GRIFFITH

Central Griffith precinct is at the core of the original Walter Burley Griffin formal plan of circles with radiating avenues and an orthogonal north/south, east/west grid and includes two main parts, the commercial centre and the circles. The precinct is bounded by the main canal to the south and west, the railway line to the north and the industrial zone to the east. The precinct contains a mixture of commercial, light industrial, institutional, and residential uses.


Streets are generally wide, particularly Banna Avenue, with either small road reserves, 2m to 4m and no setbacks in the commercial centre or in the circles average road reserves, about 6m, and average setbacks, about 6m to 8m. The established street trees are large or medium of consistent species. A typical residential allotment is 800m² with a 16m to 19m frontage. This precinct contains a mix of medium density two story blocks of flats, two story shop-top flats, single story units and low density single story detached dwellings, built from the 1930s to the present. Dwelling materials include fibre-cement, weather-board or face brick walls with galvanised iron, tiles or flat steel roofs. There is either no front fencing or low brick or brick and steel. Vehicles are accommodated under side carports or in rear garages.

The precinct offers excellent access to centralised goods and services in the CBD and already contains medium density dwellings and an overall urban quality. The precinct is therefore suitable for further medium to high density residential development such as shop top apartments and flats, as well as attached housing and stand alone unit developments and the highest density control is appropriate.

Precinct No.	Residential Development Precinct/ Population Density	Minimum size for new allotment created by subdivision (except Strata Title)	Minimum amount of site area required for each dwelling unit. ¹
No.1	Central Griffith 115 persons per ha	250m ²	250m ² for each larger dwelling/unit. 170m ² for each medium dwelling/unit. 113m ² for each small dwelling/unit.



PRECINCT 1 – CENTRAL GRIFFITH

DENSITY  250 SQUARE METRES

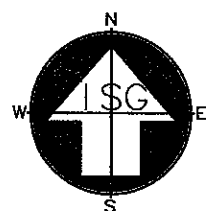
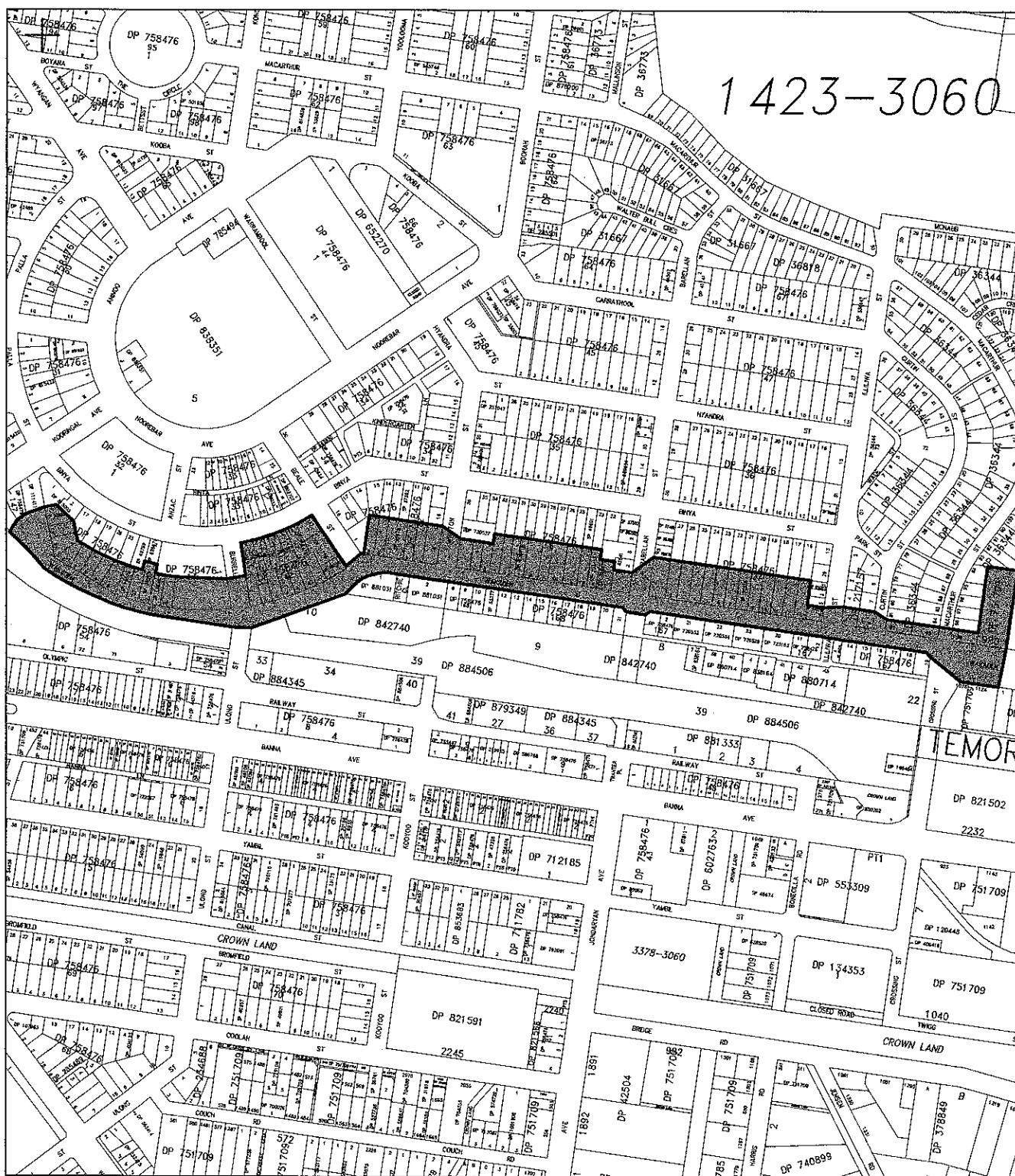
PRECINCT 2 – WAKADEN NORTH

Wakaden North precinct is a narrow strip stretching east to west, on the north side of Wakaden Street, located between Central Griffith and the Hospital/Hyandra precincts.

Wakaden Street is a very busy 9m to 13m wide arterial road, with a 6m verge and setbacks are from 6m to 9m. There are a scattered mixture of small and medium sized established street trees. Many areas contain no or minimal street trees or front landscaping. A typical allotment is 1100m² with an 18m frontage. This precinct contains a mixture of existing single story inter-war detached dwellings, 70s two story blocks of flats and 90s single story units. The adjoining Central Griffith Precinct on the south side of Wakaden Street consists totally of two story blocks of flats. Dwelling materials include weatherboard or face brick with galvanised iron or tile roofs. There is mostly no front fencing, however there a few hedges on existing dwellings and some brick and picket screening fences in front of new unit developments. Vehicles are accommodated in rear or side garages or carports.

The projected future is for the precinct to be redeveloped totally for medium density units and flats due to the close access to the CBD and existing medium density dwelling character of Wakaden Street. The density control in this precinct has been selected to lie in between the high density controls to the south and medium to low density controls to the north. Wakaden Street will continue to be a busy road and residential design needs to address problems associated with this. Future additional street trees of a consistent species, and other front landscaping, will help improve the quality of the streetscape.

Precinct No.	Residential Development Precinct/ Population Density	Minimum size for new allotment created by subdivision (except Strata Title)	Minimum amount of site area required for each dwelling unit. ¹
No. 2	Wakaden North 82 persons per ha	350m ²	350m ² for each larger dwelling/unit. 236m ² for each medium dwelling/unit. 158m ² for each small dwelling/unit.



PRECINCT 2 – WAKADEN NORTH

DENSITY



350 SQUARE METRES

PRECINCT 3 – COOLAH

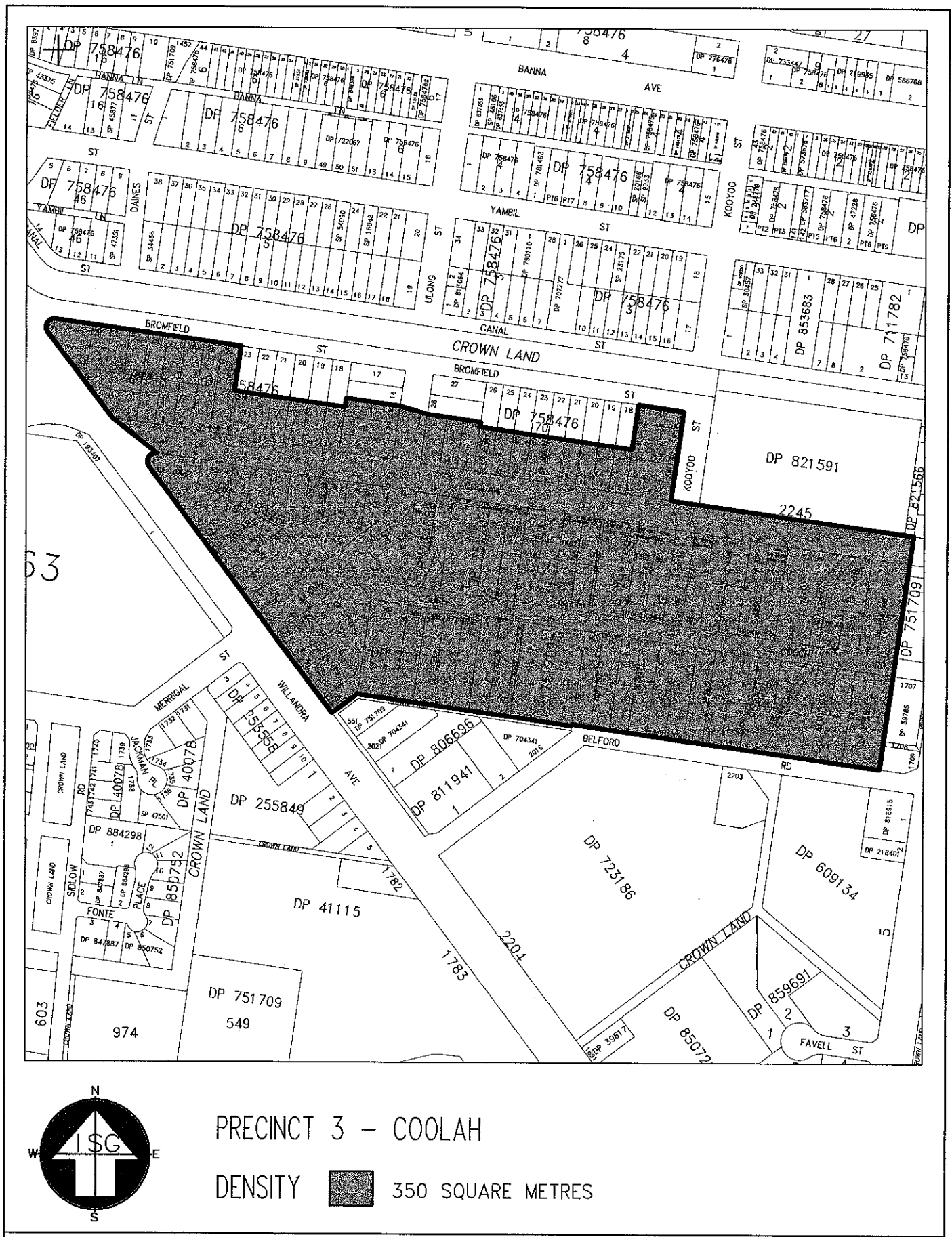
Coolah precinct is located directly south of the CBD and main canal, between Willandra and Jondarayan Avenue with streets running east to west. The planning layout is formal in style, being part of the original Walter Burley Griffin design.

Streets vary from the 13m wide Coolah street, a moderately busy connection road, to quieter and narrower 7m to 10m streets. Verges are 6m to 4.5m and setbacks about 6m. Coolah Street has a magnificent line of large established street trees, however in other streets they are smaller or less established. A typical allotment is 970m² with a 20m frontage. The precinct contains a lot of medium density 70's two story blocks of flats, new 90s unit developments and low density post-war detached dwellings. Dwelling materials are either face brick walls with tile roofs for flats and units or fibre-cement walls with galvanised iron roofs for the detached dwellings. There is a mixture of front fencing including low brick, or brick and steel, vertical aluminum bars and high brick screening fences. Vehicles are accommodated under side carports or in front or rear roller-door garages.

The projected future of this precinct is for further medium density unit and flat developments due to the close access to the CBD and existing medium density dwelling character of the area, such that a higher density control is appropriate.

Precinct No.	Residential Development Precinct/ Population Density	Minimum size for new allotment created by subdivision (except Strata Title)	Minimum amount of site area required for each dwelling unit. ¹
No. 3	Coolah 82 persons per ha	350m ²	350m ² for each larger dwelling/unit. 236m ² for each medium dwelling/unit. 158m ² for each small dwelling/unit.

General Information & Density Control (Precinct 3 – Coolah)



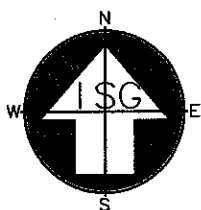
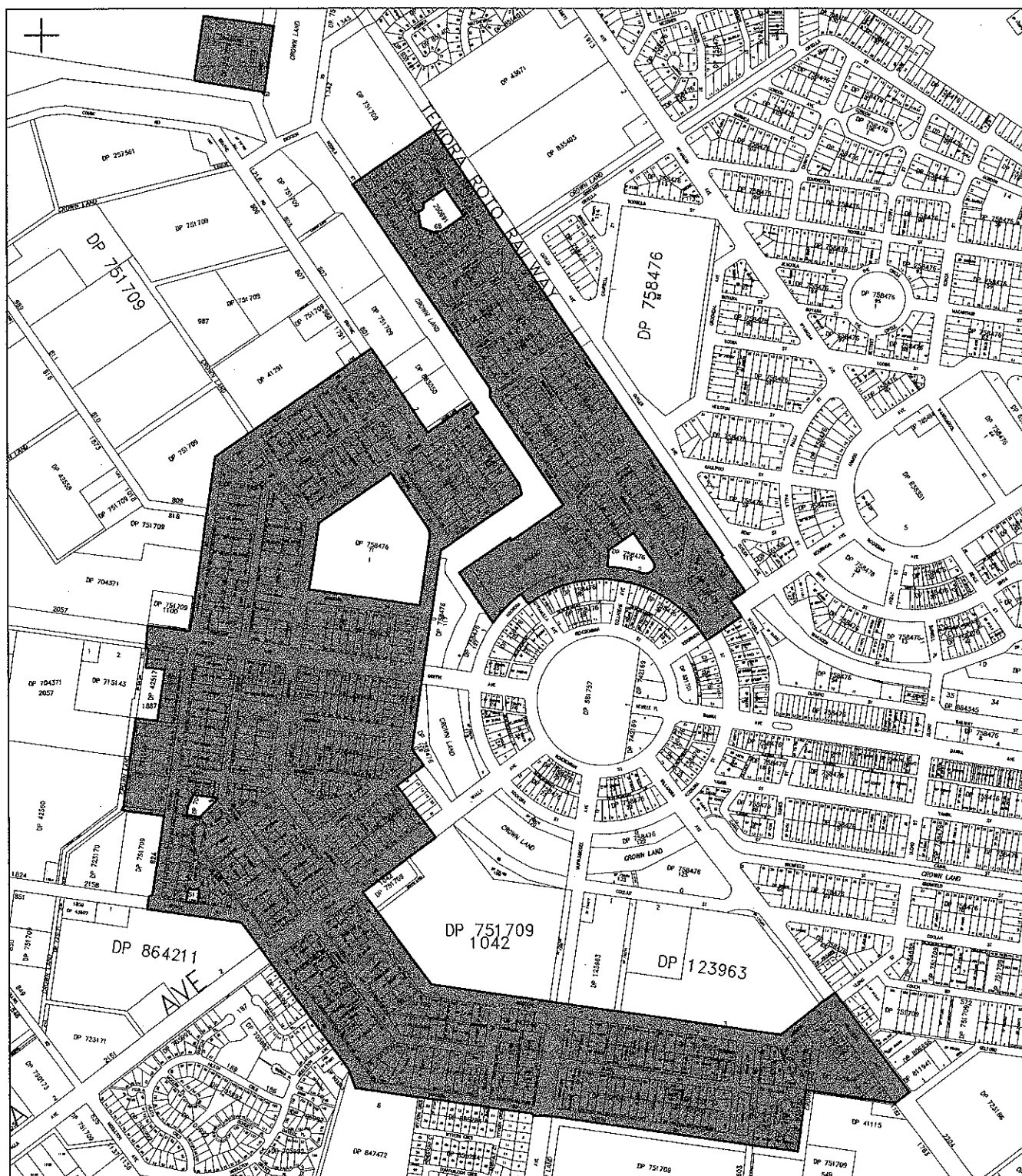
PRECINCT 4 – MERRIGAL

Merrigal precinct is located as a hub around the central core with the main canal and open space mostly occurring between the two, and with segments lying between avenues radiating from the core. The area is part of the original Walter Burley Griffin layout having a formal quality and being very established.

Streets vary from wide 13m avenues and streets to medium sized 8m, with mostly 6m to 7m wide verges but some narrower at 3m to 4m. Setbacks vary from 6 to 10m. There are a variety of established street trees. These are mostly small sized and some streets have no trees or only sporadic placement of trees. A typical allotment is 900m² with an 18m frontage. The precinct contains predominantly low density either post-war or 70s detached dwellings but also 70s units and recent medium density in-fill dual occupancy and multi-unit developments. Dwelling materials are mostly fibre-cement but sometimes weatherboard walls with galvanised roofs or later dwellings being face brick walls with tile roofs. There is either no front fencing, low brick or high brick screening fences. Vehicles are accommodated under side carports, in rear garages or front roller-door garages for modern dwellings.

The projected future of this precinct is for a continued mixture of low density detached dwellings and medium density dual-occupancy and multi-unit dwellings as re-developments occur, with an overall moderate increase in the residential density. This is due to the reasonable access to the CBD, larger blocks and emerging trend of medium density developments occurring in this area. A moderate density control is appropriate.

Precinct No.	Residential Development Precinct/ Population Density	Minimum size for new allotment created by subdivision (except Strata Title)	Minimum amount of site area required for each dwelling unit. ¹
No. 4	Merrigal 64 persons per ha	450m ²	450 ² for each larger dwelling/unit. 304m ² for each medium dwelling/unit. 204m ² for each small dwelling/unit.
	<u>Corner allotments</u> 82 persons per ha	450m ²	350m ² for each larger dwelling/unit. 236m ² for each medium dwelling/unit. 158m ² for each small dwelling/unit. Maximum number of dwelling units allowed per allotment are two (2). However, 3 or more dwellings are permitted provided the general density standards for Merrigal precinct are met.



PRECINCT 4 - MERRIGAL

DENSITY  450 SQUARE METRES

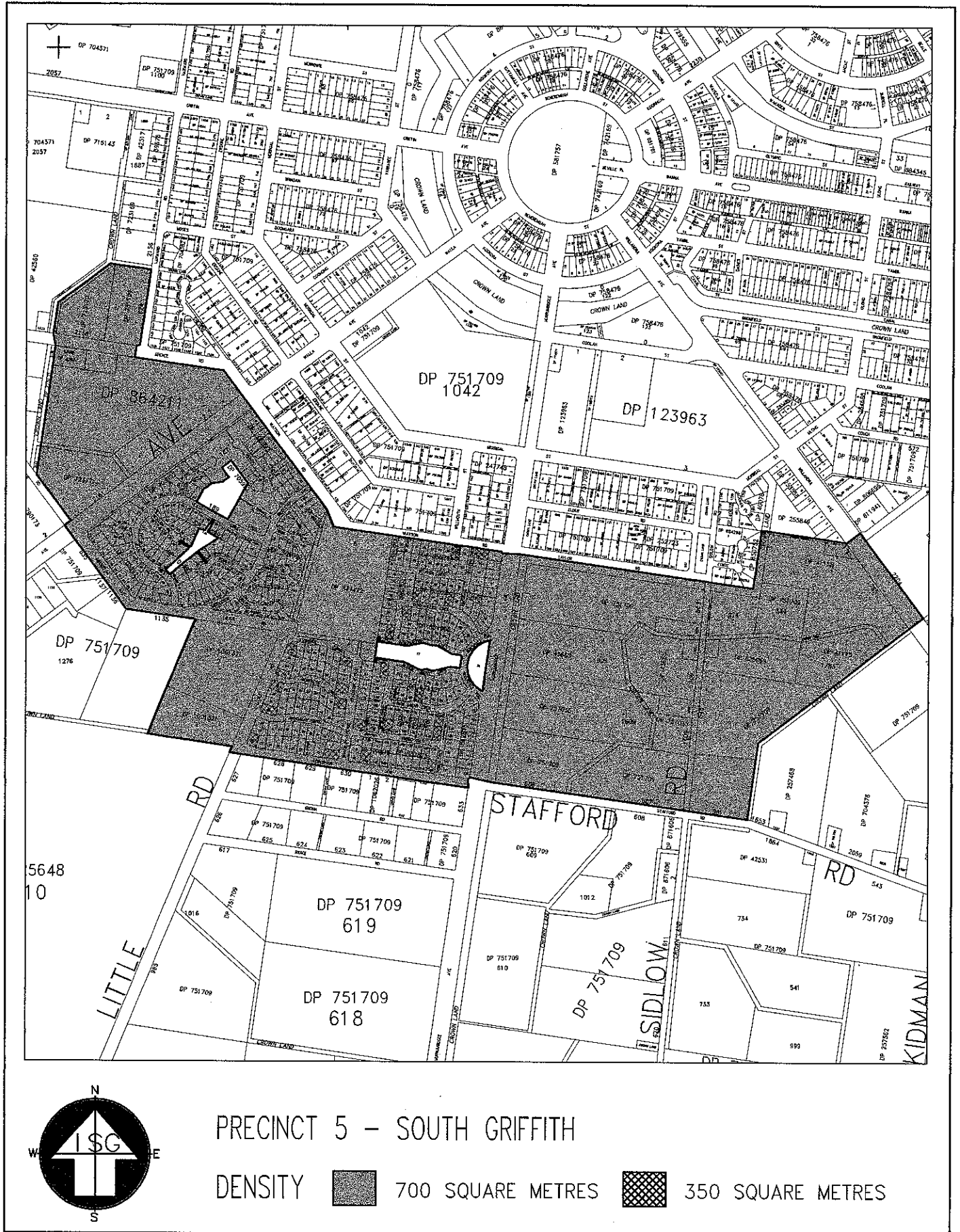
PRECINCT 5 – SOUTH GRIFFITH

South Griffith precinct is located in the southern most part of Griffith's residential areas, containing the recent 90s "Murrumbidgee Estate" subdivision the 80s Department of Housing subdivision "Pioneer" and areas of existing horticultural farming, likely to be rezoned for residential use. The planning layouts are informal with Murrumbidgee Estate having a series of traffic controlled loop roads and some courts and Pioneer having one main loop road and a series of cul-de-sacs off this.

Within the Murrumbidgee Estate subdivision there is a sophisticated road system having 10m collector roads with 6m verges and 7m local roads narrowing to 5m with 3m verges and some 3m to 4m access courts. Setbacks are consistently 6m. Pioneer consists of an 11m wide loop road with 6m verges and 8m wide cul-de-sacs with 3.5m verges. Setbacks are 6m. Murrumbidgee Estate has only sporadic placement of young street trees, probably planted by residents, and many case of resident's landscaping out the verge. Pioneer contains mostly small unimpressive street trees. A typical allotment is 700m² with a 20m frontage. Both Murrumbidgee Estate and Pioneer contain predominantly single story low density detached project home dwellings, with predominantly hipped or dutch-gable roofs. Selected allotments in Murrumbidgee Estate, mostly corner blocks, contain dual-occupancies. Dwelling materials are almost totally face brick walls with tile roofs with a few in Murrumbidgee Estate having rendered hardi-panel walls and a few having colorbond roofs and some dwellings in Pioneer have horizontal fibre-cement board walls. There is no front fencing. Vehicles are accommodated in front roller-door garages in Murrumbidgee Estate and are without protection in Pioneer.

The projected future is for the precinct to contain predominantly low density detached dwellings with selected allotments, about 10%, being marked at the time of subdivision for medium density dwellings. This relates to the existing market demand in this type of area and leads to having a dual low and medium density control.

Precinct No.	Residential Development Precinct/ Population Density	Minimum size for new allotment created by subdivision (except Strata Title)	Minimum amount of site area required for each dwelling unit. ¹
No. 5	South Griffith ² 41 persons per ha	600m ² with an average of 700m ²	600m ² for each dwelling house.
	83 persons per ha Areas cross hatched on precinct map.	350m ²	350m ² for each larger dwelling/unit. 236m ² for each medium dwelling/unit. 158m ² for each small dwelling/unit.



PRECINCT 6 – WYANGAN

Wyangan precinct is another new subdivision area located to the north-west of Griffith's residential zone, above the railway line, below Wyangan Avenue and west of established North Griffith. The planning layout is informal in style with curved loop roads and cul-de-sacs off these.

The streets are 10m and 7m in width with 2.5m to 3m verges and setbacks are mostly 6m. A mixture of young street trees have only been sporadically planted, probably by residents. Like Murrumbidgee Estate a typical allotment is 700m² with a frontage of 20m. Also like Murrumbidgee Estate the area contains predominantly single story low density detached project home dwellings, with predominantly hipped or dutch-gable roofs. Selected allotments, mostly corner blocks, contain dual-occupancies. Dwelling materials are almost totally face brick walls with tile roofs. There is no front fencing. Vehicles are accommodated in front roller-door garages.

Again like the Murrumbidgee area, the projected future is for the precinct to contain predominantly low density detached dwellings with selected allotments, about 10%, being marked at the time of subdivision for medium density dwellings. This relates to the existing market demand in this type of area and leads to having a dual low and medium density control.

Precinct No.	Residential Development Precinct/ Population Density	Minimum size for new allotment created by subdivision (except Strata Title)	Minimum amount of site area required for each dwelling unit. ¹
No. 6	Wyangan ²	700m ²	700m ² for each dwelling house.
	41 persons per ha		
	82 persons per ha	350m ²	350m ² for each larger dwelling/unit. 236m ² for each medium dwelling/unit. 158m ² for each small dwelling unit.
	Areas cross hatched on precinct map.		



PRECINCT 7 – ORTELLA

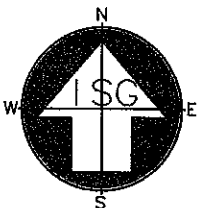
Ortella precinct is located north of Wyangan Avenue and the Hospital and south of Scenic Hill, the northern allotments backing onto it. The planning layout is semi-formal in style, with some grand avenues and front facing parks and other short narrow, sometimes curves streets, all in a perimeter block form.

The streets are a mixture of sizes from 7.5m to 10m wide, with 3m to 7m verges and setbacks are from 6m to 9m. There is a great variety of established street trees from very small to large, native or deciduous and well kept established front yard landscaping that largely gives Ortella its character. A typical allotment is 850m² with a 18.5m frontage. The Precinct contains almost exclusively low density single story detached dwellings, established in the 50s to 60s and 70s as new parts were developed. The dwellings styles are post-war, Californian bungalow and other modern project home styles, with a mixture of hipped, gabled, skillion and flat roofs. Dwelling materials are a mixture of fibre-cement, weather-board or face brick walls with galvanised iron or tiled roofs. There is mostly no front fencing, however there is some low brick and steel and some colorbond fences. Vehicles are accommodated under side carports or in rear garages.


The projected future for this precinct is for it to remain almost exclusively as low density detached dwellings with an occasional small unit development to the rear or a small in-fill dual occupancy development replacing an existing dwelling. This is due to the more remote location of the precinct, the current lack of dual occupancy or multi-dwelling dwellings and the current market/existing resident demand. A low density control is therefore appropriate.

Precinct No.	Residential Development Precinct/ Population Density	Minimum size for new allotment created by subdivision (except Strata Title)	Minimum amount of site area required for each dwelling unit. ¹
No. 7	Ortella 41 persons per ha	700m ²	700m ² for each larger dwelling/unit. 473m ² for each medium dwelling/unit. 317m ² for each small dwelling/unit. Maximum number of dwelling units allowed per allotment are (2) two.
	<u>Corner allotments</u> 82 persons per ha	700m ²	350m ² for each larger dwelling/unit. 236m ² for each medium dwelling/unit. 158m ² for each small dwelling/unit. Maximum number of dwelling units allowed per allotment are (2) two.

General Information & Density Control (Precinct 7 – Orrella)



PRECINCT 7 – ORTELLA

DENSITY  700 SQUARE METRES

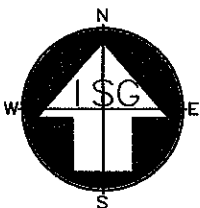
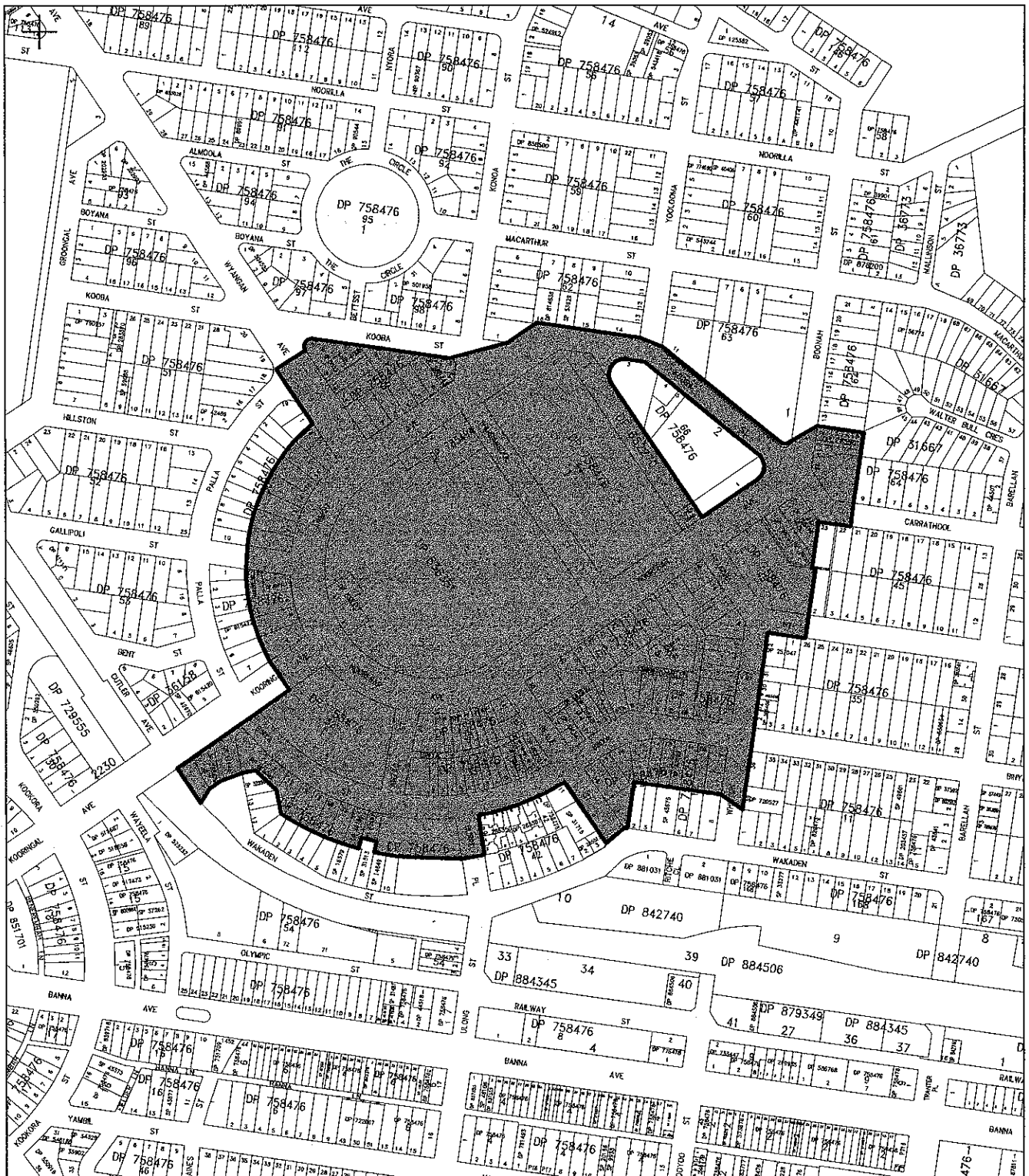
PRECINCT 8 – HOSPITAL

The Hospital precinct consists of the streets and blocks surrounding Griffith Base Hospital. The precinct is part of the original Walter Burley Griffin layout having a formal plan of crescents with radiating avenues and streets, particularly that it is part of the important axial link from Walla Avenue through the Benerembah Street circle, along Koorringal Avenue and the Hospital site and up to Scenic Hill. The precinct is noted for its excellent access to community facilities such as medical centres, churches, schools, childcare centres, clubs, parks and also good access to the CBD.

The streets are mostly busy collector roads 12m to 16m wide with 4.5m to 7m wide verges and setbacks are from 6m to 9m. Large established street trees and resident trees give the precinct a lot of its character. A typical allotment is a large 950m² with a frontage of 18m. The area contains a mixture of the earliest and most interesting examples of inter-war dwellings in Griffith, both detached and dual occupancy types, as well as more recent in-fill multi-unit developments. Dwelling materials include weatherboard, fibre-cement or face brick walls with mostly galvanised iron roofs for original dwellings and face brick and tiled roofs for more recent in-fill developments. There is a mixture of front fencing including low brick, brick and steel, picket, galvanised wire and hedges. Vehicles are accommodated under side carports or in rear garages, accessed from the front or rear.

The projected future of this precinct is for it to be significantly increased in density to provide housing to meet the demand for high access accommodation, particularly for the elderly, while still preserving the heritage character of the area through maintaining existing setbacks, requiring rear only development and/or sensitive in-fill design where the existing dwellings have high heritage value. A medium density control is therefore appropriate.

Precinct No.	Residential Development Precinct/ Population Density	Minimum size for new allotment created by subdivision (except Strata Title)	Minimum amount of site area required for each dwelling unit. ¹
No. 8	Hospital 72 persons per ha	400m ²	400m ² for larger dwelling/unit. 270m ² for medium dwelling/unit. 181m ² for small dwelling/unit.
	<u>Corner allotments</u> 82 persons per ha	400m ²	350m ² for each larger dwelling/unit. 236m ² for each medium dwelling/unit. 158m ² for each small dwelling/unit.



PRECINCT 8 - HOSPITAL

DENSITY  400 SQUARE METRES

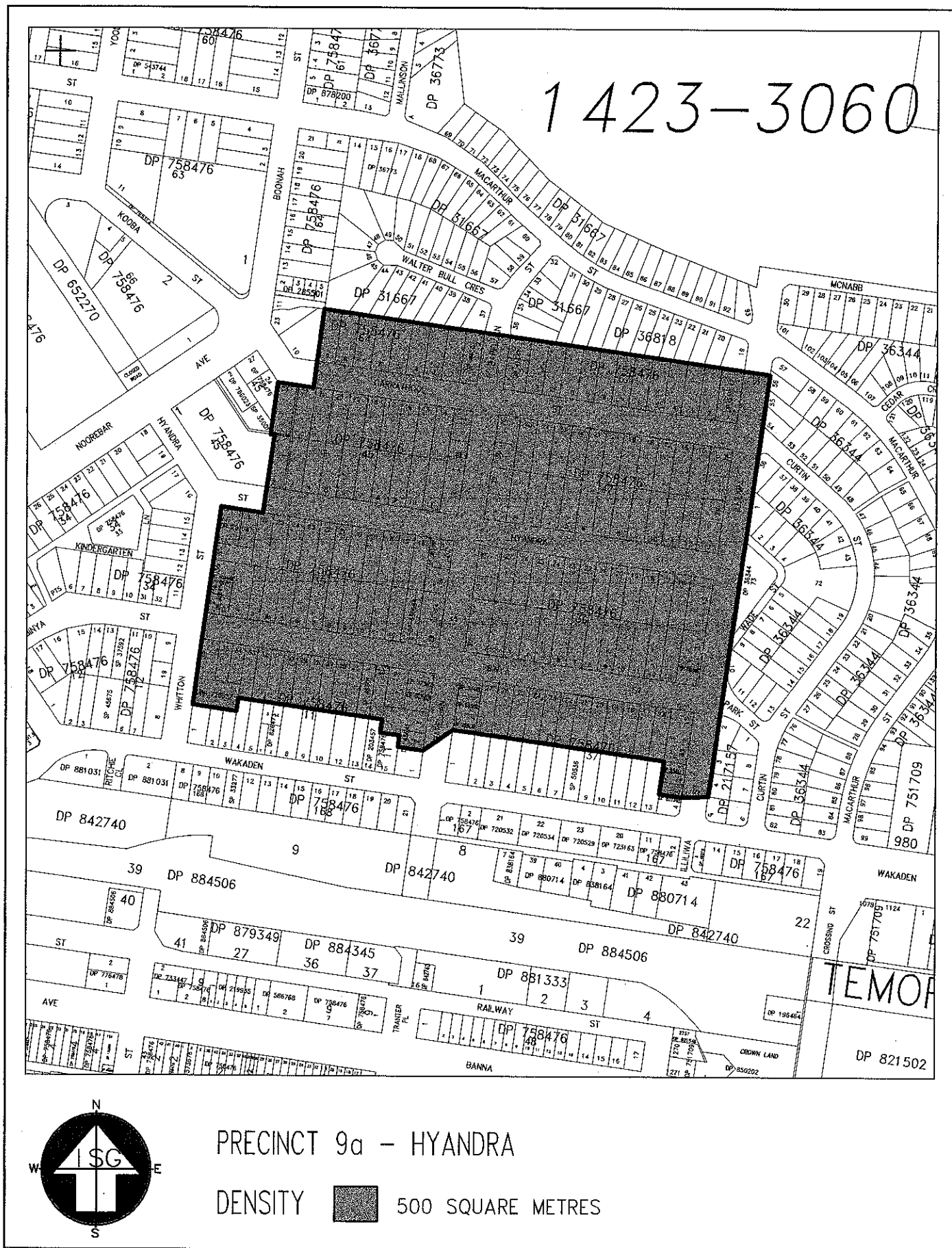
PRECINCT 9A & 9B – HYANDRA & JUBILEE

Hyandra and Jubilee precincts are located on either side of the hospital precinct and are a part of the original Walter Burley Griffin formal plan, having an orthogonal north/south, east/west grid layout. Jubilee precinct is centred on Jubilee oval. The area also has reasonably good access to community services and the CBD.

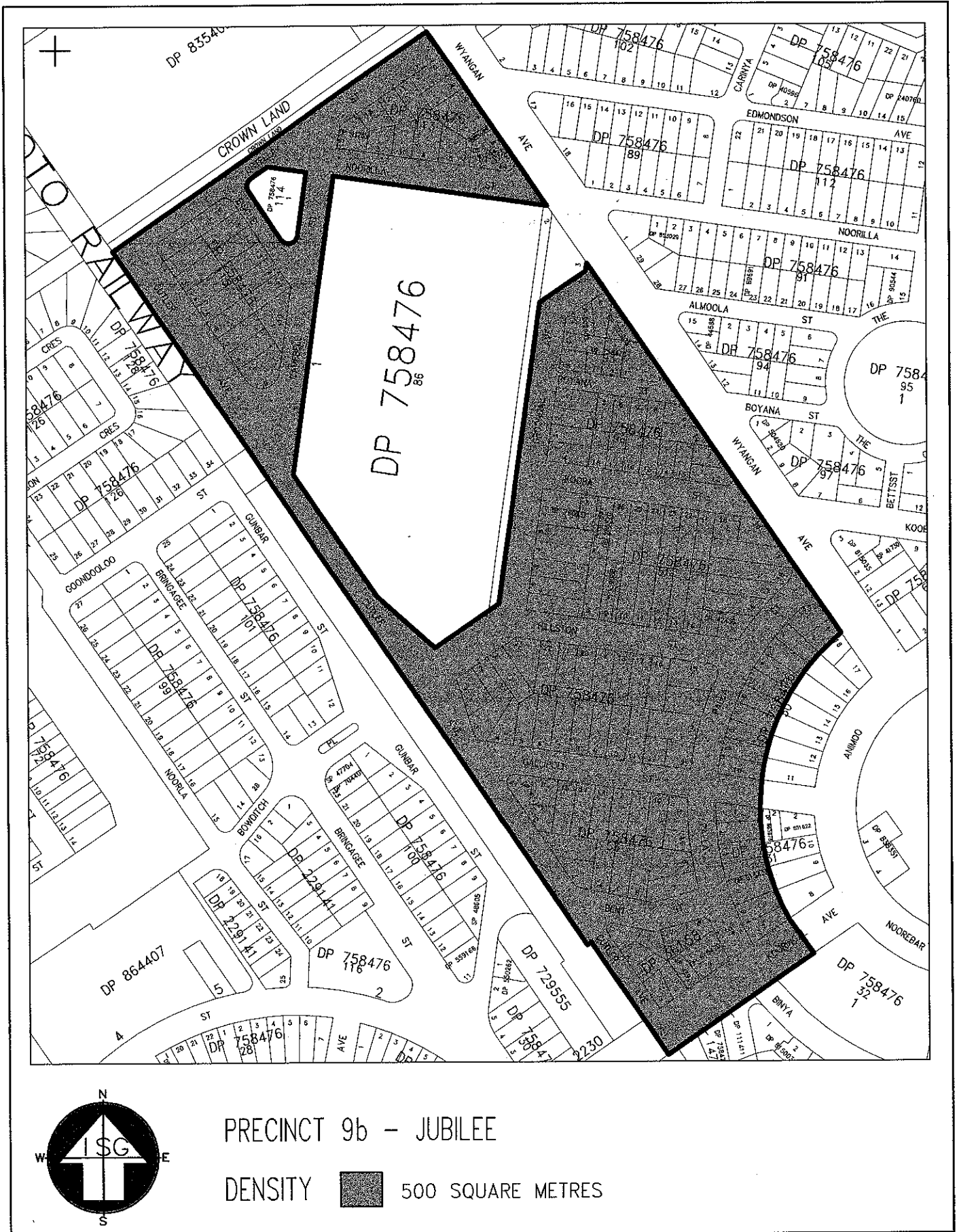
Streets are wide from 10m to 18m in Binya Street, with wide 4m to 8m verges and setback are from 6m to 9m. The precinct has a variety of well established street trees small, medium and large in size that gives the precinct a lot of its character. A typical allotment is a very large 1150m² with an 18m frontage. The precinct contains a mixture of inter-war, post war and in-fill modern detached, dual-occupancy or multi-unit dwellings. Dwelling materials include weatherboard, fibre-cement and some face brick walls with mostly galvanised iron roofs, with modern dwellings having tile roofs. There is a mixture of front fencing including steel, brick and steel, galvanised wire picket and hedges. Vehicles are accommodated mostly in rear garages, some under side carports, or in front roller-door garages for modern in-fill dwellings.

The projected future of this precinct is for it to be significantly increased in density to provide housing to meet the demand for reasonably high access accommodation, while still preserving the heritage character of the area through maintaining existing setbacks, requiring rear only development and/or sensitive in-fill design, where the existing dwellings have high heritage value. A medium to low density control is appropriate.

Precinct No.	Residential Development Precinct/ Population Density	Minimum size for new allotment created by subdivision (except Strata Title)	Minimum amount of site area required for each dwelling unit. ¹
No. 9a	Hyandra 57 persons per ha	500m ²	500m ² for larger dwelling/unit. 338m ² for medium dwelling/unit. 226m ² for small dwelling/unit. Maximum number of dwellings units allowed per allotment is (2) two.
	<u>Corner allotments</u> 82 persons per ha	500m ²	350m ² for each larger dwelling/unit. 236m ² for each medium dwelling/unit. 158m ² for each small dwelling/unit. Maximum number of dwelling units allowed per allotment is (2) two.



Precinct No.	Residential Development Precinct/ Population Density	Minimum size for new allotment created by subdivision (except Strata Title)	Minimum amount of site area required for each dwelling unit. ¹
No. 9b	Jubilee 57 persons per ha	500m ²	500m ² for larger dwelling/unit. 338m ² for medium dwelling/unit. 226m ² for small dwelling/unit. Maximum number of dwelling units allowed per allotment is (2) two.
	<u>Corner allotments</u> 82 persons per ha	500m ²	350m ² for each larger dwelling/unit. 236m ² for each medium dwelling/unit. 158m ² for each small dwelling/unit. Maximum number of dwelling units allowed per allotment is (2) two.



PRECINCT 10 – MACARTHUR

Macarthur precinct is wedged between Hyandra precinct to the south-west, East Griffith to the east and Scenic Hill sloping up to the north, the northern allotments backing onto it. The street layout is informal in style, consisting of long curved streets and differently shaped allotments. A connected park network creates a pedestrian link from Hyandra Street to Probert Avenue.

The streets vary from 7.5m to 10m with 3m to 7m verges and setbacks are from 6m to 9m. The precinct has small sized street trees of a consistent species. A typical allotment is around 800m² however there is a lot of variation from small 650m² allotments to large 2000m² allotments. This precinct contains almost exclusively single story detached mass produced post-war dwellings built for the Department of Housing. The dwelling materials are almost totally fibre-cement walls with galvanised iron roofs. There is mostly no front fencing however there are some with galvanised mesh. Vehicles are accommodated in rear garages or under side carports.

The projected future of this precinct is for it to be moderately increased in density to meet the need for low cost housing particularly on large allotments. A medium density control is appropriate.

Precinct No.	Residential Development Precinct/ Population Density	Minimum size for new allotment created by subdivision (except Strata Title)	Minimum amount of site area required for each dwelling unit. ¹
No. 10	Macarthur 64 persons per ha	450m ²	450m ² for larger dwelling/unit. 304m ² for medium dwelling/unit. 204m ² for small dwelling/unit.
	<u>Corner allotments</u> 82 persons per ha	450m ²	350m ² for each larger dwelling/unit. 236m ² for each medium dwelling/unit. 158m ² for each small dwelling/unit. Maximum number of dwelling units allowed per allotment is (2) two. However, 3 more dwelling units are permitted provided the general density standards for Macarthur precinct are met.



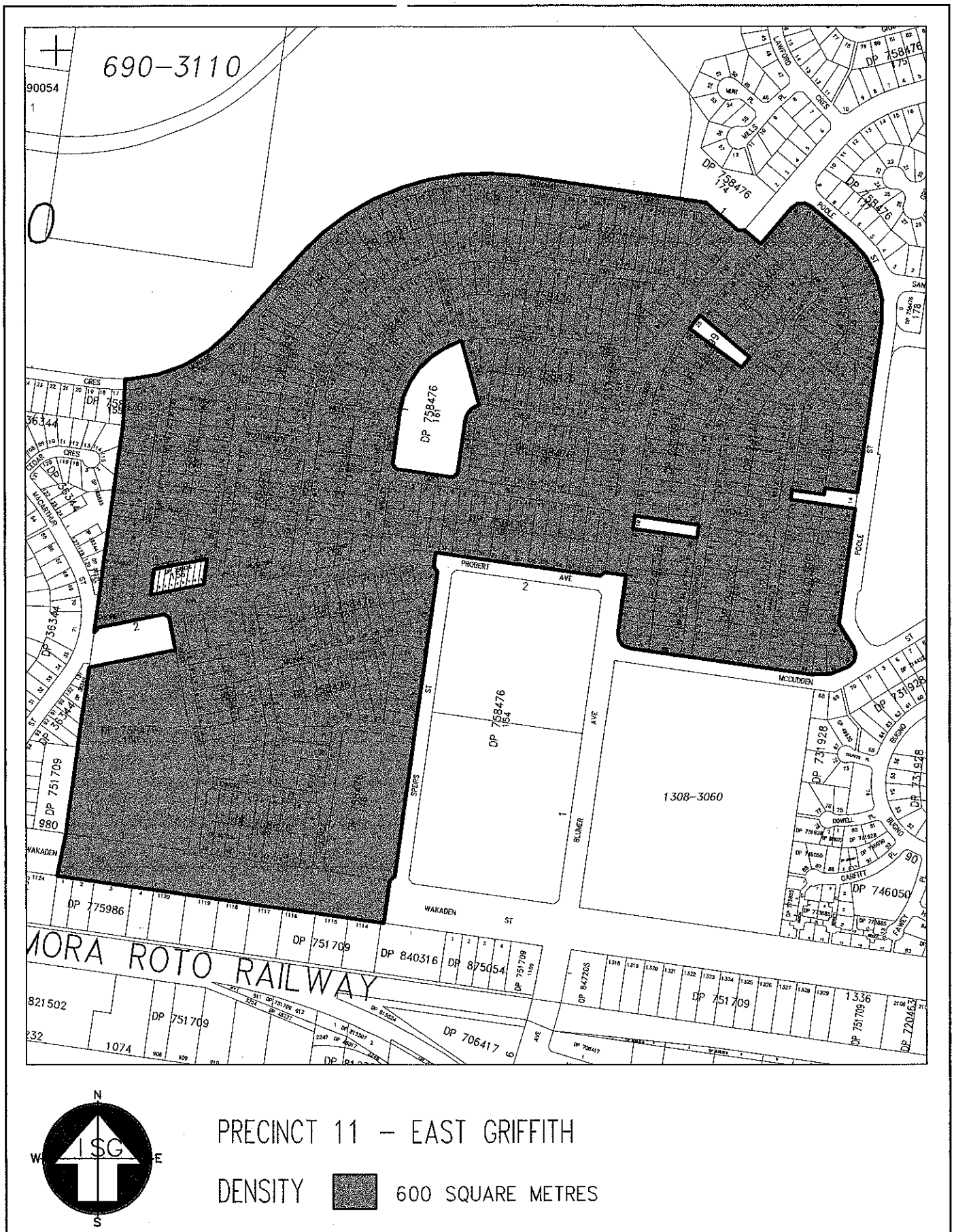
PRECINCT 11 – EAST GRIFFITH

East Griffith Precinct is located north of Wyangan Street, ex-servicemens Oval and Griffith Cemetery, east of Wade high school and south of Scenic Hill, the northern allotments fronting onto it. Views up moderately sloped streets to Scenic Hill give the area a strong character as does the long curved semi-formal planning layout, all in a perimeter block form.

The streets in this precinct are mostly 7.5m to 8.5m on local roads with Blumer Avenue collector road being 13m wide. Verges are 3m to 4m and setbacks are from 6m to 9m. The precinct has small to medium sized street trees of a few consistent species. A typical allotment is around 850m² with a frontage of 18.5m. The precinct totally consists of late 60s early 70s modern low density detached dwellings, mostly single story, with a variety of styles, having either hipped, brick gabled, skillion or flat roofs. Dwelling materials are almost totally face brick walls and tile or steel roofs. There is no front fencing. Vehicles are accommodated under side carports or front roller-door garages.

The projected future of this precinct is for it to remain as existing low density detached dwellings, with perhaps only minor 1 bedroom units to the rear, due to the existing consistency of type and because allotments are small. A low density control is appropriate.

Precinct No.	Residential Development Precinct/ Population Density	Minimum size for new allotment created by subdivision (except Strata Title)	Minimum amount of site area required for each dwelling unit. ¹
No. 11	East Griffith 48 persons per ha	600m ²	600m ² for each larger dwelling/unit. 405m ² for each medium dwelling/unit. 272m ² for each small dwelling/unit. Maximum number of dwelling units allowed per allotment is (2) two.
	Corner allotments 82 persons per ha	600m ²	350m ² for each larger dwelling/unit. 236m ² for each medium dwelling/unit. 158m ² for each small dwelling/unit. Maximum number of dwelling units allowed per allotment is (2) two.



PRECINCT 12 – BUGNO

Bugno precinct is a recent late 80s in-fill subdivision that replaced the old sale-yards, located north of Wakaden Street, east of Griffith Cemetery and south of Wade High School. The planning layout is informal in style, having one main loop road and a series of cul-de-sacs off this, as well as allotments off Clifton Boulevard.

The streets are 15m for Clifton Boulevard collector road, 11m for the loop road and 8m for cul-de sacs. Verges are small being about 3.5m and setbacks are mostly 6m. Only some of the verges have street trees, which are small, unimpressive and disunified. A typical allotment is 750m² with a 21m frontage. The precinct contains mostly low density single story detached dwellings, with some concentrated areas containing medium density dual-occupancy or units. The style is modern project home with very eclectic forms, including some with split roofs, brick and fibre-cement panel gabled fronts. There is no front fencing. Roofs are mostly tiled but there are also many colorbond roofs. Vehicles are accommodated mostly in front roller-door garages, with some under side carports.

The projected future is for the precinct to have a mixture of detached, dual occupancy and unit dwellings, to provide for a mixture of housing needs and income levels. A medium density control is appropriate.

Precinct No.	Residential Development Precinct/ Population Density	Minimum size for new allotment created by subdivision (except Strata Title)	Minimum amount of site area required for each dwelling unit. ¹
No. 12	Bugno 64 persons per ha	450m ²	450m ² for each larger dwelling/unit. 304m ² for each medium dwelling/unit. 204m ² for each small dwelling/unit.
	<u>Corner allotments</u> 82 persons per ha	450m ²	350m ² for each larger dwelling/unit. 236m ² for each medium dwelling/unit. 158m ² for each small dwelling/unit. Maximum number of dwelling units allowed per allotment is (2) two. However, 3 or more dwellings are permitted provided the general density standards for Bugno precinct are met.

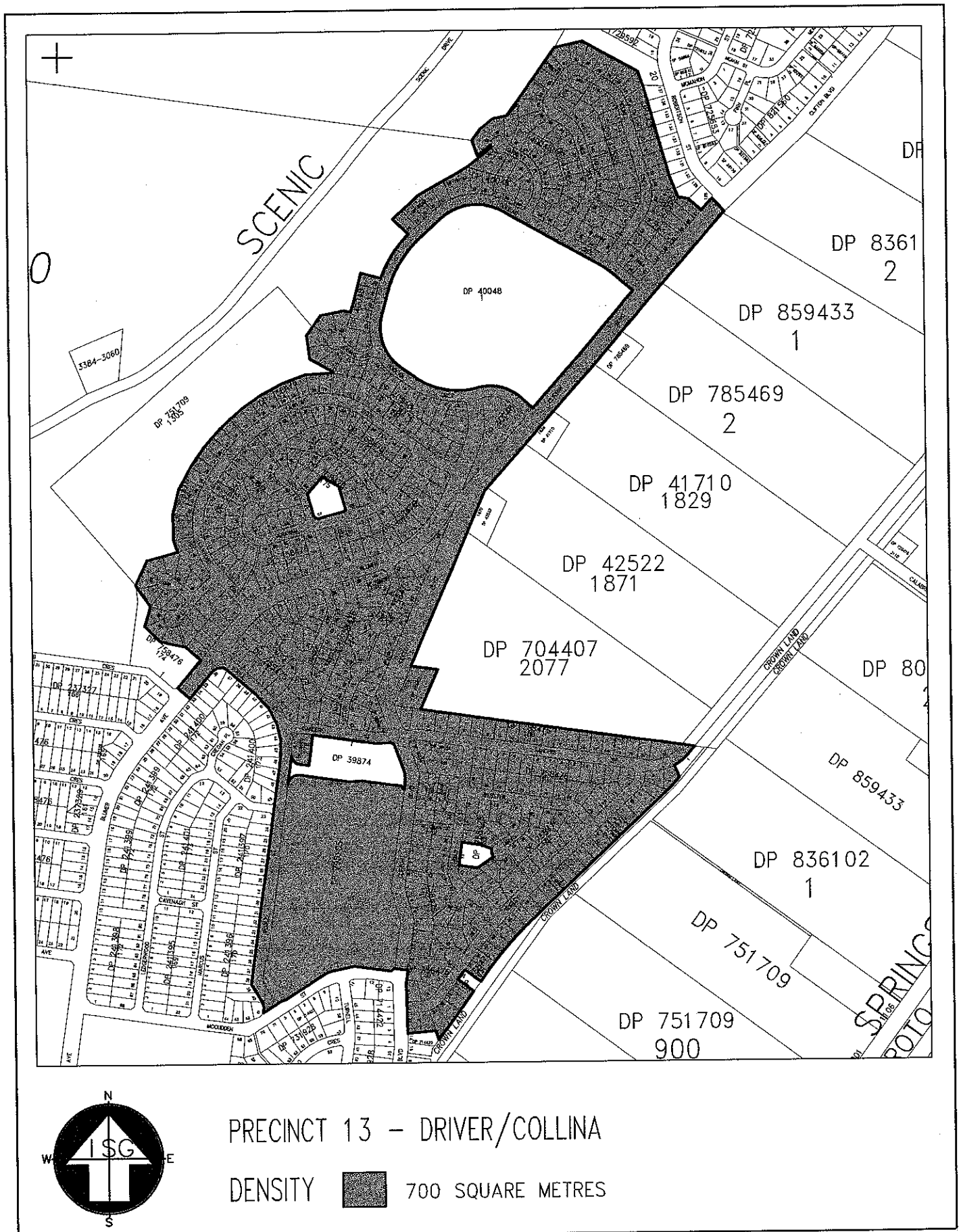
PRECINCT 13 – DRIVER/COLLINA

Driver/Collina is located in the north-east of Griffith's residential area, both being developed in the late 70s to early 80s. The planning layout is informal in style consisting of curved loop roads with a series of cul-de-sacs coming off these. Driver is totally flat while parts of Collina are located on the moderately steep edge of Scenic Hill. The backdrop view up to Scenic Hill escarpment, with large rocks, remnant Eucalyptus, White Cyprus pine trees and grasses, is particularly dramatic in Collina. Also the Driver mini shopping centre is an important local facility, and the cinema for Griffith as a whole.

The local streets are wide mostly about 9m, with the very wide Clifton Boulevard collector road being 13m. Verges however are narrow, 3.5m to 4m, and setbacks are from 6m to 8m. The street trees are mostly small or medium and of consistent species, with the exception of those in Blumer Avenue and Clifton Boulevard. A typical allotment is 830m² with a wide frontage of 23m. The precinct contains almost exclusively detached dwellings with an occasional unit development. The dwellings are mostly single story but many are two stories on the side of Scenic Hill. A mixture of modern styles occurs throughout, with dwellings on the side of Scenic Hill noticeably tailor designed. There is no front fencing. Dwelling materials are totally face brick walls with tile roofs. Vehicles are accommodated mostly in front roller-door garages, but also under side carports.

The projected future is for the precinct to remain almost exclusively as low density detached dwellings with only an occasional small unit development to the rear or a small in-fill dual occupancy development replacing an existing dwelling. A low density control is appropriate.

Precinct No.	Residential Development Precinct/ Population Density	Minimum size for new allotment created by subdivision (except Strata Title)	Minimum amount of site area required for each dwelling unit. ¹
No. 13	Driver/Collina 41 persons per ha	700m ²	700m ² for each larger dwelling/unit. 473m ² for each medium dwelling/unit. 317m ² for each small dwelling/unit. Maximum number of dwelling units allowed per allotment is (2) two.
	<u>Corner allotments</u> 82 persons per ha	700m ²	350m ² for each larger dwelling/unit. 236m ² for each medium dwelling/unit. 158m ² for each small dwelling/unit. Maximum number of dwelling units allowed per allotment is (2) two.



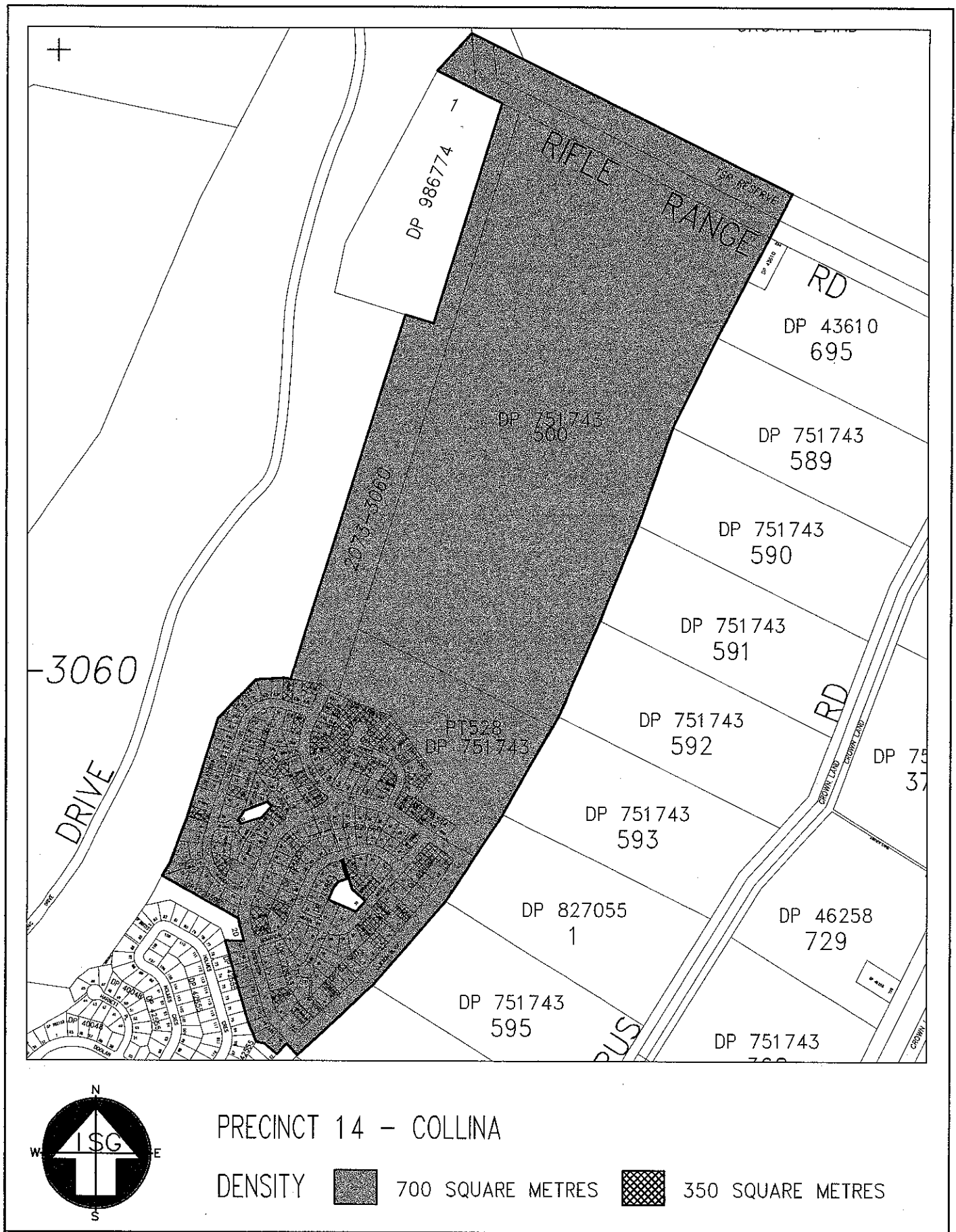
PRECINCT 14 – COLLINA

Collina precinct is located on the north eastern extremity of Griffith's residential area, between the Scenic Hill escarpment to the west and orchards to the east, being a recent 90s subdivision extending Collina. The planning layout is informal in style consisting of loop roads and some cul-de-sacs. Collina varies from gently sloping to moderately steep on the edge of Scenic Hill. Again the backdrop view up to Scenic Hill escarpment, with large rocks, remnant Eucalyptus, White Cyprus pine trees and grasses, is particularly dramatic in Collina.

The streets are mostly wide being 13m or 10m with some narrower at 7.5m. Verges are however narrow at 4m, except Clifton Boulevard which is 6m, and setbacks are from 6m to 8m. Only some of the verges have young street trees, that appear disunified, probably planted by residents. A typical allotment is 900m² with a wide 22.5m frontage. The precinct contains mostly low density single story detached dwelling but about 12% of the area contains dual-occupancies and multi-unit developments. The dwellings are mostly single story but many are two stories on the side of Scenic Hill. An eclectic mixture of modern project home styles occurs throughout, including Mediterranean, and dwellings on the side of Scenic Hill are noticeably tailor designed. Dwelling materials have face brick walls however some use brick or hardi-panel, rendered and painted. Roofs are mostly tiles with a few being colorbond. There is no front fencing except for high brick or brick and picket screening fences in front of units. Vehicles are accommodated almost totally in front roller-door or panel-door garages.

The projected future is for the precinct to contain predominantly low density detached dwellings with selected allotments, about 10-15%, being marked for medium density dwellings. This relates to the existing market demand in this type of area and leads to having a dual low and medium density control.

Precinct No.	Residential Development Precinct/ Population Density	Minimum size for new allotment created by subdivision (except Strata Title)	Minimum amount of site area required for each dwelling unit. ¹
No. 14	Collina ² 41 persons per ha	700m ²	700m ² for each dwelling house.
	82 persons per ha Areas cross-hatched on precinct map.	350m ²	350m ² for each larger dwelling/unit. 236m ² for each medium dwelling/unit. 158m ² for each small dwelling/unit.



Development Density Table
(To be read in conjunction with attached precinct maps & character statements)

Precinct No.	Residential Development Precinct/ Population Density	Minimum size for new allotment created by subdivision (except Strata Title)	Minimum amount of site area required for each dwelling unit. ¹
No.1	Central Griffith 115 persons per ha	250m ²	250m ² for each larger dwelling/unit. 170m ² for each medium dwelling/unit. 113m ² for each small dwelling/unit.
No. 2	Wakaden North 82 persons per ha	350m ²	350m ² for each larger dwelling/unit. 236m ² for each medium dwelling/unit. 158m ² for each small dwelling/unit.
No. 3	Coolah 82 persons per ha	350m ²	350m ² for each larger dwelling/unit. 236m ² for each medium dwelling/unit. 158m ² for each small dwelling/unit.
No. 4	Merrigal 64 persons per ha	450m ²	450 ² for each larger dwelling/unit. 304m ² for each medium dwelling/unit. 204m ² for each small dwelling/unit.
	<u>Corner allotments</u> 82 persons per ha	450m ²	350m ² for each larger dwelling/unit. 236m ² for each medium dwelling/unit. 158m ² for each small dwelling/unit. Maximum number of dwelling units allowed per allotment are two (2). However, 3 or more dwellings are permitted provided the general density standards for Merrigal precinct are met.
No. 5	South Griffith² 41 persons per ha	600m ² with an average of 700m ²	600m ² for each dwelling house.
	83 persons per ha Areas cross hatched on precinct map.	350m ²	350m ² for each larger dwelling/unit. 236m ² for each medium dwelling/unit. 158m ² for each small dwelling/unit.
No. 6	Wyangan² 41 persons per ha	700m ²	700m ² for each dwelling house.
	82 persons per ha Areas cross hatched on precinct map.	350m ²	350m ² for each larger dwelling/unit. 236m ² for each medium dwelling/unit. 158m ² for each small dwelling unit.
No. 7	Ortella 41 persons per ha	700m ²	700m ² for each larger dwelling/unit. 473m ² for each medium dwelling/unit. 317m ² for each small dwelling/unit. Maximum number of dwelling units allowed per allotment are (2) two.
	<u>Corner allotments</u> 82 persons per ha	700m ²	350m ² for each larger dwelling/unit. 236m ² for each medium dwelling/unit. 158m ² for each small dwelling/unit. Maximum number of dwelling units allowed per allotment are (2) two.

General Information & Density Control (Development Density Table)

Precinct No.	Residential Development Precinct/ Population Density	Minimum size for new allotment created by subdivision (except Strata Title)	Minimum amount of site area required for each dwelling unit. ¹
No. 8	Hospital 72 persons per ha	400m ²	400m ² for larger dwelling/unit. 270m ² for medium dwelling/unit. 181m ² for small dwelling/unit.
	<u>Corner allotments</u> 82 persons per ha	400m ²	350m ² for each larger dwelling/unit. 236m ² for each medium dwelling/unit. 158m ² for each small dwelling/unit.
No. 9a	Hyandra 57 persons per ha	500m ²	500m ² for larger dwelling/unit. 338m ² for medium dwelling/unit. 226m ² for small dwelling/unit. Maximum number of dwelling units allowed per allotment is (2) two.
	<u>Corner allotments</u> 82 persons per ha	500m ²	350m ² for each larger dwelling/unit. 236m ² for each medium dwelling/unit. 158m ² for each small dwelling/unit. Maximum number of dwelling units allowed per allotment are (2) two.
No. 9b	Jubilee 57 persons per ha	500m ²	500m ² for larger dwelling/unit. 338m ² for medium dwelling/unit. 226m ² for small dwelling/unit. Maximum number of dwelling units allowed per allotment is (2) two.
	<u>Corner allotments</u> 82 persons per ha	500m ²	350m ² for each larger dwelling/unit. 236m ² for each medium dwelling/unit. 158m ² for each small dwelling/unit. Maximum number of dwelling units allowed per allotment are (2) two.
No. 10	Macarthur 64 persons per ha	450m ²	450m ² for larger dwelling/unit. 304m ² for medium dwelling/unit. 204m ² for small dwelling/unit.
	<u>Corner allotments</u> 82 persons per ha	450m ²	350m ² for each larger dwelling/unit. 236m ² for each medium dwelling/unit. 158m ² for each small dwelling/unit. Maximum number of dwelling units allowed per allotment is (2) two. However, 3 or more dwelling units are permitted provided the general density standards for Macarthur precinct are met.

Precinct No.	Residential Development Precinct/ Population Density	Minimum size for new allotment created by subdivision (except Strata Title)	Minimum amount of site area required for each dwelling unit. ¹
No. 11	East Griffith 48 persons per ha	600m ²	600m ² for each larger dwelling/unit. 405m ² for each medium dwelling/unit. 272m ² for each small dwelling/unit. Maximum number of dwelling units allowed per allotment are (2) two.
	<u>Corner allotments</u> 82 persons per ha	600m ²	350m ² for each larger dwelling/unit. 236m ² for each medium dwelling/unit. 158m ² for each small dwelling/unit. Maximum number of dwelling units allowed per allotment are (2) two.
No. 12	Bugno 64 persons per ha	450m ²	450m ² for each larger dwelling/unit. 304m ² for each medium dwelling/unit. 204m ² for each small dwelling/unit.
	<u>Corner allotments</u> 82 persons per ha	450m ²	350m ² for each larger dwelling/unit. 236m ² for each medium dwelling/unit. 158m ² for each small dwelling/unit. Maximum number of dwelling units allowed per allotment is (2) two. However, 3 or more dwellings are permitted provided the general density standards for Bugno precinct are met.
No. 13	Driver/Collina 41 persons per ha	700m ²	700m ² for each larger dwelling/unit. 473m ² for each medium dwelling/unit. 317m ² for each small dwelling/unit. Maximum number of dwelling units allowed per allotment are (2) two.
	<u>Corner allotments</u> 82 persons per ha	700m ²	350m ² for each larger dwelling/unit. 236m ² for each medium dwelling/unit. 158m ² for each small dwelling/unit. Maximum number of dwelling units allowed per allotment are (2) two.

Precinct No.	Residential Development Precinct/ Population Density	Minimum size for new allotment created by subdivision (except Strata Title)	Minimum amount of site area required for each dwelling unit. ¹
No. 14	Collina ² 41 persons per ha	700m ²	700m ² for each dwelling house.
	82 persons per ha Areas cross hatched on precinct map.	350m ²	350m ² for each larger dwelling/unit. 236m ² for each medium dwelling/unit. 158m ² for each small dwelling/unit.
Villages	Village Zones 41 persons per ha	700m ²	450m ² for each larger dwelling/unit. 304m ² for each medium dwelling/unit. 204m ² for each small dwelling/unit.

Notes:

1. Occupancy rate by household size used in calculation:-

- Large unit (>110m²) or 3 bedrooms 2.87 persons.
- Medium unit (75m² – 110m²) or 2 bedrooms 1.94 persons.
- Small unit (<75m²) or 1 bedroom 1.3 persons.
- (Source ABS 1996).

2. Two or more dwelling units in these areas are restricted to the allotments cross-hatched on the precinct maps.

General

3. Griffith Local Environmental Plan 1994 prohibits detached dual occupancy in a 1(d) Investigation Zone. Therefore the above density standard would not apply to a 1(d) Investigation Zone unless the subject land is rezoned to 2(a) or 2(v) Residential Zone.

4. In the case of battle-axe lots – subdivision, the minimum area should not include the access corridor.

5. In the case of Community Title subdivisions the minimum size for new allotments created by subdivision does not apply to Lot 1 – neighbourhood property.

4. What do the cross-hatched allotments depict in the precinct maps?

To provide certainty and housing choice in new release areas Council has designated certain allotments (10-15% of total area) for higher density housing. These allotments are depicted by cross-hatching in the precinct maps in clause 3. The allowed densities for these cross-hatched allotments is shown in the density table in clause 3. These densities were arrived at after consultation with the owner/developers of the various release areas and are currently shown for precincts 5, 6 and 14 in clause 3.

Future release areas within precincts 5, 6 and 14 will be added when Council releases the subdivision plans and will be included in schedule 5 of this plan. Applicants with an interest in precincts 5, 6 and 14 should check with Council as to the likely release of future higher density cross-hatched allotments.

5. Can I apply for a Construction Certificate at the same time as lodging my Development Application?

Yes. If the proposal meets the requirements of the density control table and the standards of design criteria and the Building Code of Australia requirements a Development Application and Construction Certificate Application may be submitted together.

However, a separate Development Application and Construction Certificate Application is required to be submitted if the proposal does not comply with standards.

6. What other standards apply?

State Environmental Planning Policy No. 5 – Housing for older people or people with a disability.

7. How do I interpret the contents of this document?

Where the word “shall” is used the issue concerned is critical and compliance with Council requirement is mandatory.

Where the word “should” is used the issue concerned is important and must be considered in order to achieve the objectives of the relevant standard.

8. If I have a development that does not conform with the standards can it still be considered?

- (a) No departure from the minimum amount of site area required for each dwelling unit will be permitted.

The reason for maintaining this standard is to encourage developers to provide a choice in type of housing, instead of constructing predominantly 3 bedroom houses.

- (b) A 5% departure from the minimum size for new allotments created by subdivision will be permitted provided the dwellings on the site are already erected.

- (c) Some flexibility would be permitted in the design criteria section provided;
- The proposal meets the objectives, and
 - Other means have been considered to address the issues, and
 - A written submission is submitted to justify the variations.

The relevant precinct “character statement” will be the central factor in determining if the standards should or should not be waived or reduced in any particular case (apart from statutory factors). Variables that do not detract from the character of the precinct or compromise the future character of the precinct will be given more favourable consideration.

Greater flexibility of design standards will be given to;

- (i) Those designs that can demonstrate to the satisfaction of Council that they actively contribute to the character statement of the precinct.
- (ii) Those developments which protect trees of “high amenity value” through alternative designs.

Council will determine whether the variations are acceptable on the merits of the case.

9. What other Development Control Plans may apply to my development?

- DCP 11 - Urban Subdivision

**Note: DCP No. 11 Urban Subdivision is under review.
DCP No. 21 shall prevail with respect to minimum areas for
subdivision.**

- DCP No. 19 – Mixed Development.
- DCP No. 20 – Off Street Parking Policy.
- Contributions Plan No. 3 – Open Space.

10. Do I need to submit a site analysis with my application?

Each development application is to be accompanied by a detailed site analysis drawn to scale which considers the existing characteristics, opportunities and constraints of the site and its surrounds to result in a design which is sensitive to its environment and of high quality.

The site analysis should describe how the development will positively add to or fit in with the precinct “character statement”.

Note: Refer to Figure 1 for an example of a site analysis.

Components of a site analysis:

<p>The Site Investigation of the site should identify:</p>	<p>The Surrounds Investigation of the surrounds should identify:</p>
<ul style="list-style-type: none"> • Site dimensions: <ul style="list-style-type: none"> - Length - Width • Topography: <ul style="list-style-type: none"> - Spot levels and/or contours - North point - Natural drainage - Any contaminated soils or filled areas. • Services: <ul style="list-style-type: none"> - Easements/connections for drainage & utility services. • Existing vegetation: <ul style="list-style-type: none"> - Location - Height - Spread of established trees - Species. • Micro climates: <ul style="list-style-type: none"> - Orientations - Prevailing winds • Location of: <ul style="list-style-type: none"> - Buildings & other structures - Heritage & archaeological features - Fences - Property boundaries - Pedestrian & vehicle access • Views to & from the site. • Overshadowing by neighbouring structures. 	<ul style="list-style-type: none"> • Neighbouring buildings: <ul style="list-style-type: none"> - Location - Height - Use • Privacy: <ul style="list-style-type: none"> - Adjoining private open spaces - Living room windows overlooking site (particularly those within 9m of the site) - Location of any facing doors &/or windows • Walls built to the site's boundary: <ul style="list-style-type: none"> - Location - Height - Materials • Difference in levels between the site & adjacent properties at their boundaries. • Views & solar access enjoyed by neighbouring properties. • Major trees on adjacent properties, particularly those within 9m of the subject site. • Street frontage features: <ul style="list-style-type: none"> - Poles - Trees - Kerb crossovers - Bus stops - Other services • The built form & character of adjacent development including: <ul style="list-style-type: none"> - Architectural character - Front fencing - Garden styles • Heritage features of surrounding locality & landscape. • Direction & distance to local facilities: <ul style="list-style-type: none"> - Local shops - Schools - Public transport - Recreation & community facilities. • Public open space: <ul style="list-style-type: none"> - Location - Use • Adjoining bushland or environmentally sensitive land. • Sources of nuisance: <ul style="list-style-type: none"> - Flight paths - Noising roads or significant noise sources - Pollution operations

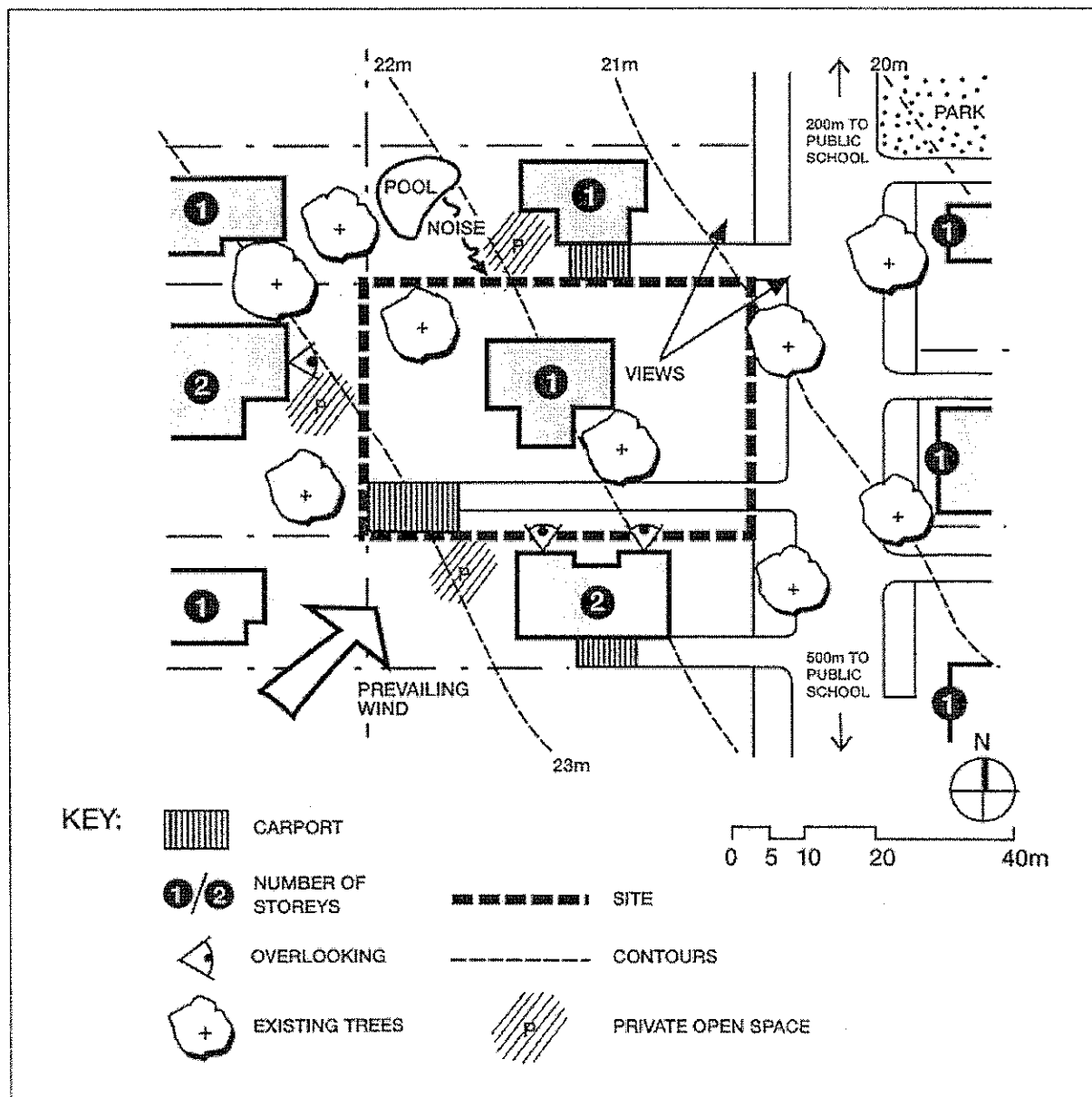


FIGURE 1. Example of a site analysis. Source: NSW Model Code: A model for performance-based multi-unit housing codes.

A. Setbacks

Objective:

- *To provide setbacks that improves the visual amenity, provides for landscaping and protects the privacy of and sunlight to adjacent dwellings.*
- *To ensure that the appearance of housing is of a high quality, enhances the streetscape and complements good surrounding development.*

1. Front Boundary

In areas where existing setbacks are generally 6 metres or greater, there shall be no encroachment of a 6 metre setback. However, in precinct No. 1 – Central Griffith, the setbacks would be assessed on the merits of the case.

2. Corner allotments – Front Setbacks

The buildings with primary street frontage shall have a minimum setback of 6 metres with a secondary street setback of 3 metres. Other buildings, facing the secondary frontage on the same allotment, shall have a minimum front setback of 4.5 metres along with minimum garage setbacks of 5.5 metres from the property boundary. (Refer to Figure 2).

3. Side Boundary Setbacks

Side setbacks for dwellings should generally be a minimum of 1 metre. Zero boundary setbacks will be considered having regard to the above objectives, AMCORD principles and the Building Code of Australia (BCA). Appropriate provisions should be made to provide adequate privacy and solar access for adjoining lots.

4. Rear Boundary Setbacks

An appropriate setback provision should be made to provide adequate privacy and solar access for adjoining lots.

For development adjacent to a railway line, a rear setback of at least 20 metres should be maintained from the centre of the railway line. Landscaping, roads, driveways, open space and car parking will be permitted within the 20 metre setback.

5. Garages and parking structures should be sited and designed NOT to dominate the street frontage.

Note: Setback areas shall be predominantly used for landscaping.

6. In general front fences on the property boundary shall have a maximum height of 1.2 metres, however where:

- the main private open space is at the front of the dwelling; or
- the site is located on a road with high traffic noise,

the maximum height of 2 metres may be permitted.

Design Criteria for Solid Screen Front Fences

- a) Solid screen front fences should not be permitted where the locality has an established heritage character;
- b) the length of the fence should be limited to 75% of the frontage; and
- c) the fence shall not exceed 2.5 metres in length without some articulation or detailing to provide visual interest. Possible measures to provide visual interest to the fence may include, staggered alignments, varying heights, different materials and also the planting of vegetation in front of the fence.

Note:

- **Setbacks shall be progressively increased as wall heights increase to reduce bulk and overshadowing.**
- **Figures 2 – 5 provide examples of appropriate setbacks.**

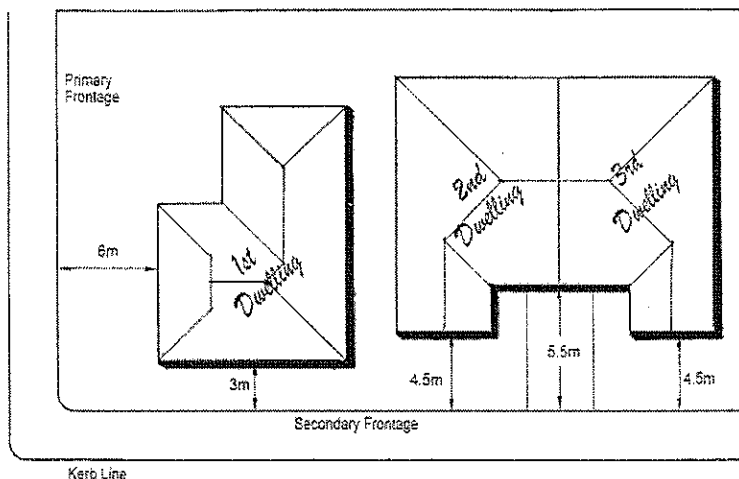


FIGURE 2. Setback standards for primary frontage, secondary frontage and for garage. (Source: Griffith City Council).

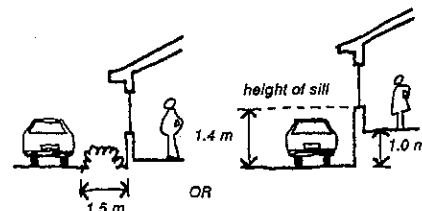
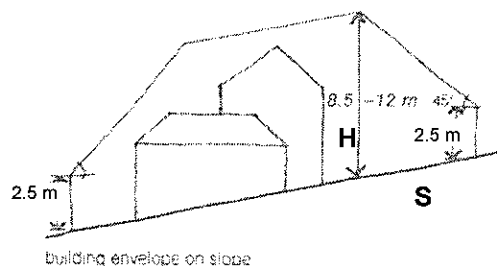
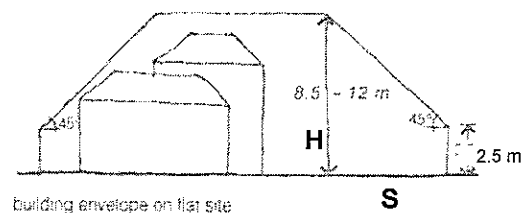
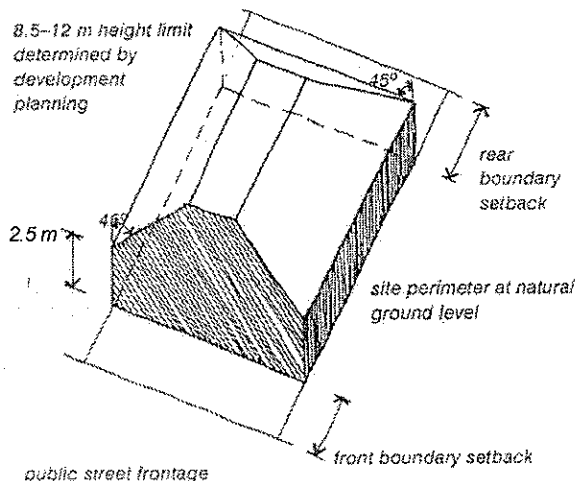


FIGURE 3. Recommended dimensions for vehicular driveways adjacent to dwellings. (Source: Amcord).



SETBACK FORMULA: SETBACK (S) = BUILDING ELEMENT HEIGHT (H) – 2.5 m

FIGURE 4. General recommended setback envelope that dwellings should remain within, to maintain privacy and solar access. (Source: Amcord.)

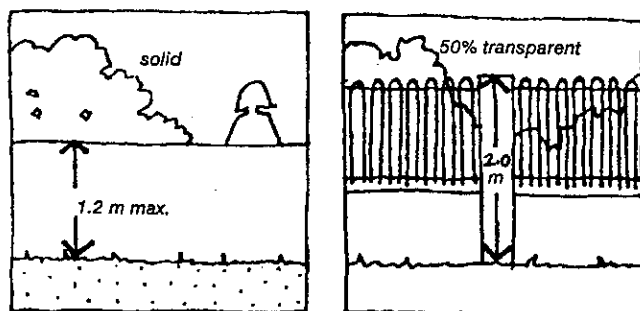


FIGURE 5. General standard for front fences. (Source Amcord.)

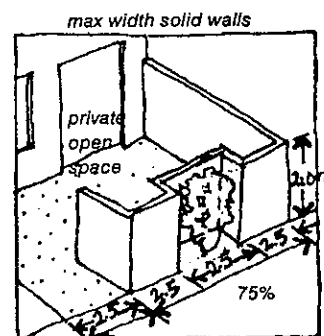


FIGURE 6. Example of solid front fence where private open space is at the front of the block. (Source: Amcord/Griffith City Council.)

B. Design

Objective:

- ***To promote housing design that is consistent with and enhances the character and amenity of the area and has regard for the topography and existing adjoining land uses.***

1. Development should respect the dominant better design themes of the precinct. Poor design themes which create monotony should be avoided.
2. The building design, roof form, details and material should be appropriately scaled to enable differentiation and visual interest between the dwellings when viewed from public streets.
3. Front walls of any dwelling visible from the street shall not exceed 5 metres in length without a physical change, ie windows, or a directional change. Blank street frontage facades with no windows shall not be permitted. The side walls in any one dwelling visible from the street or public place shall not exceed 10 metres in length without a physical change.
4. All site services including electricity, pay TV, gas, telephone and cabling for street lighting should be placed underground. Shared trenches should be utilised wherever possible.
5. Buildings should be sited and designed to ensure:
 - reasonable daylight to habitable rooms in adjacent dwellings;
 - overshadowing of neighbouring secluded open spaces or main living area windows is kept to a minimum;
 - that consideration has been given to energy efficiency.
6. Building form and design should allow for view sharing where possible.
7. Adequate measures should be provided to conserve the heritage significance of the item or area if the development is;
 - within the vicinity of a heritage item, or
 - within a heritage conservation area or,
 - an item considered to have high heritage value.

Note:

- **Composite elevations showing all proposed buildings shall be submitted for all multiple developments.**
- **For heritage items and heritage conservation area refer to Griffith Local Environmental Plan 1994.**
- **Refer to figures 7 – 16 for examples of design treatment.**

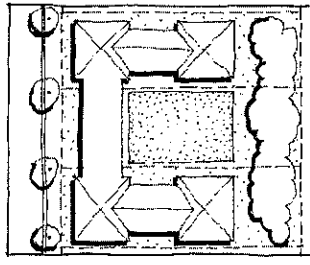
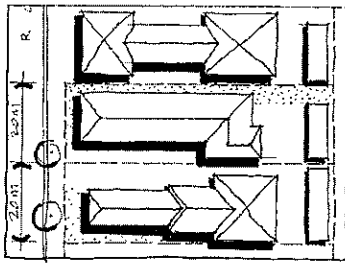


FIGURE 7. Example of poor site planning of multiple dwelling units. Communal open area is useless leftover space. (Source: Neighbourhood Character.)

FIGURE 8. Example of good site planning of multiple dwelling units. Units are designed around a central communal courtyard, that is a useful cohesive space. (Source: Neighbourhood Character.)



FIGURE 9. Development should be consistent with better streetscape design themes such as roof elements, window proportions, entries and location and design of garages. Poor design themes should however be avoided, such as dominance of garages. (Source: Amcord.)

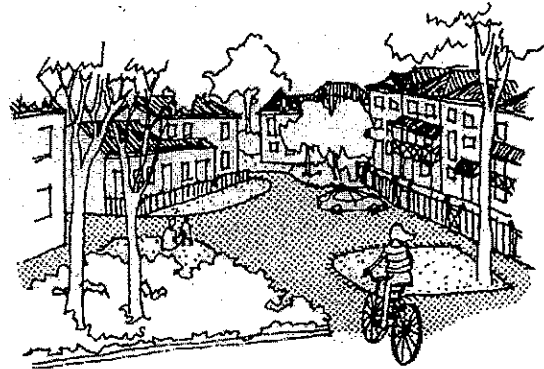


FIGURE 10. Streetscape design themes include buildings, driveways, footpaths, fencing, lighting, vegetation and vegetation edging. These should be designed cohesively to create a clear identity. (Source: Amcord.)

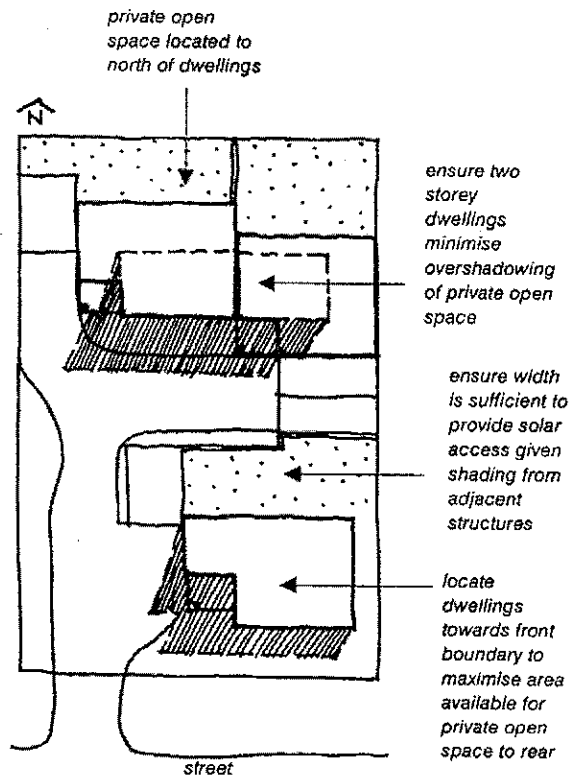


Figure 11. Site planning should ensure solar access to adjoining units & properties & allow for passive solar design. (Source Amcord).

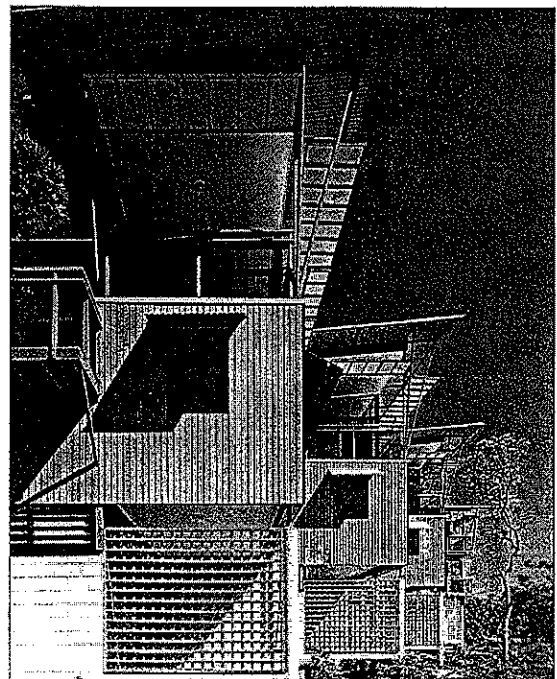


Figure 12. Example of a contemporary multiple dwelling development that uses passive solar design, has visually interesting roof forms, details & material, & each unit has a clear individual identity & an appropriate human scale. (Source: Warm House Cool House).

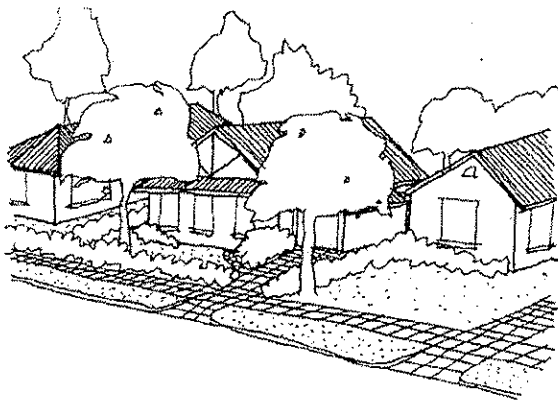


FIGURE 13. Example of a lower density multiple dwelling development that fits well into a low density suburban context. (Source: Amcord.)



FIGURE 14. Example of a higher density multiple dwelling development that fits well into a high density (inner area) context. (Source: Amcord.)

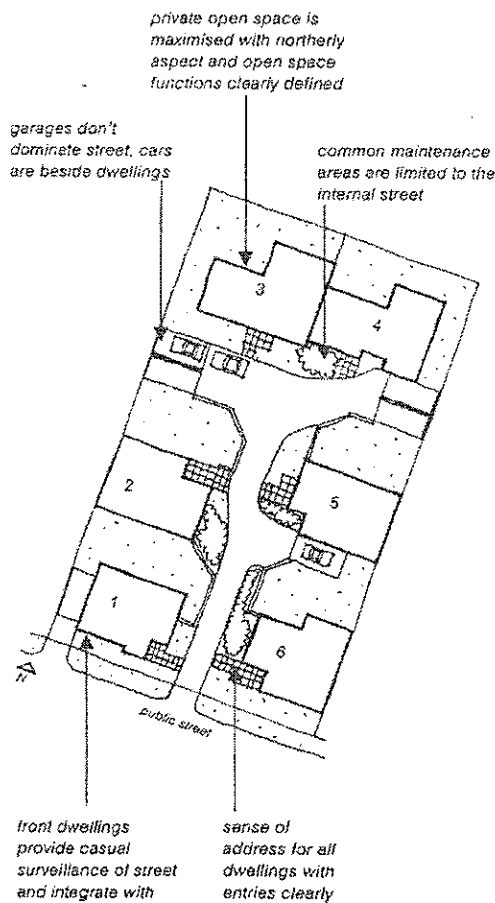


FIGURE 15. A good example of a multiple dwelling design that: has good solar access; has useful private open space; minimises waste of communal open space; efficiently and sensitively provides for vehicular movement and storage, clearly defines entries; and has a strong address to the street, enhancing the streetscape and street security. (Source: Amcord.)

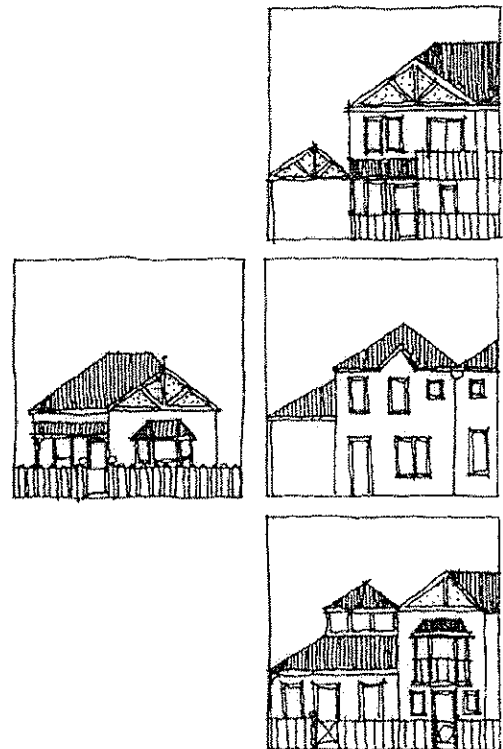


FIGURE 16. In areas with heritage character, infill dwelling designs should fit into the context, by relating to existing elements such as scale, mass, building proportion, roof pitch, height, window and door proportions, details and materials, without directly copying them. (Source: Amcord.)

C. Height

Objective:

- *To control the height of buildings in order to maintain a consistent residential character and maximise privacy, solar access and views.*

1. Height should suit the streetscape, maintain view corridors and not unreasonably restrict sunlight to adjacent properties.
2. To maintain Griffith's built character, multi-unit dwellings should be a maximum of two storeys. However Council will allow three storeys at the street frontage where it does not adversely impact upon the streetscape, privacy and solar access enjoyed by adjacent properties.
3. Where the residential storeys exceed a rise of more than two storeys from the entry level, a lift shall be provided. Exemption would be given in a case of a single dwelling or a sole occupancy unit which has more than two levels.



FIGURE 17 Example of how a dwelling can have a stepped design, with height and setback progressively increased to reduce bulk and overshadowing.
Source: Byron Shire DCP 1.

D. Energy Efficiency

Objective:

- ***To provide reasonable access for sunlight to living areas within buildings and to open space around buildings, and to reduce energy consumption.***

1. Where possible, buildings should be oriented on a north-south, east-west axis to maximise solar access to living areas.
2. Solar access should be available between the hours of 9am and 5pm for a minimum duration of 3 hours to any living area on the 21st June for each respective unit. Where applicable appropriate shadow line orientation diagrams shall be submitted.
3. A shadow diagram is required where orientation, slope of site or distance between the buildings create the potential for overshadowing.

The shadow diagram shall include the following;

- North point (true solar north).
 - Scale (show ratio and bar scale).
 - Position of existing and proposed buildings and private open space on the site.
 - Position of existing buildings and private open space on adjoining land.
 - Shadows cast of existing and proposed buildings at the winter solstice (22 June) for 9.00 am, 12 noon and 3.00 pm.
4. Windows should be located and shaded so as to reduce summer heat load and to permit entry of winter sunlight.
 5. Exterior shading devices, to protect the dwelling from summer sun, should be used.
 6. Living areas should be located on the north side of the dwelling.
 7. Outdoor clothes drying areas with access to sunlight and breezes should be provided. Note: An installed clothes drier is a non-preferred but acceptable alternative.
 8. Buildings should be designed to;
 - Maximise the use of cooling breezes; and
 - Maximise cross ventilation; and
 - Naturally ventilate the roof space.

9. Building materials and insulation should be selected so as to assist thermal performance and maintain internal comfort levels.
10. Selected landscape design should be used to assist in micro-climate management and to reduce energy use.

Note: Refer to figures 18 – 25 for examples of good solar design principles.

Further readings;

1. Hallo N., 1995, Warm House Cool House, Choice Book, Marrickville, NSW
2. Ballinger J., January 1992, Energy Efficient Housing for NSW, Office of Energy, Sydney

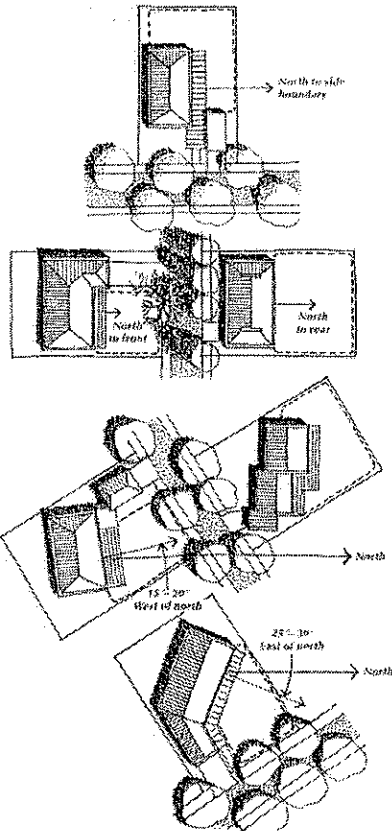


FIGURE 18. Examples of how to orientate and site dwellings on different blocks to maintain a northerly aspect to the living areas and to the private open space. Also dwellings are designed to have wider proportion of the dwelling facing north for maximum solar access. (Source: Warm House Cool House.)

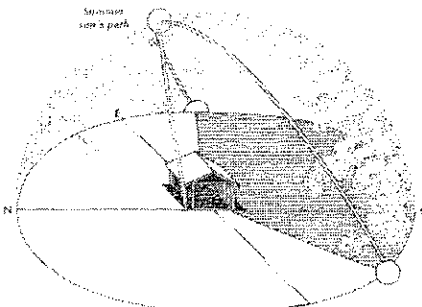


FIGURE 20. The apparent movement of the sun and solar control in mid-summer. (Source: Warm House Cool House.)

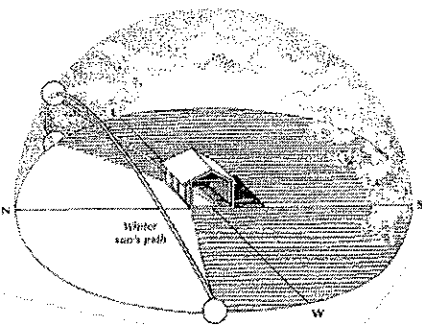


FIGURE 21. The apparent movement of the sun and solar access in mid-winter. (Source: Warm House Cool House.)

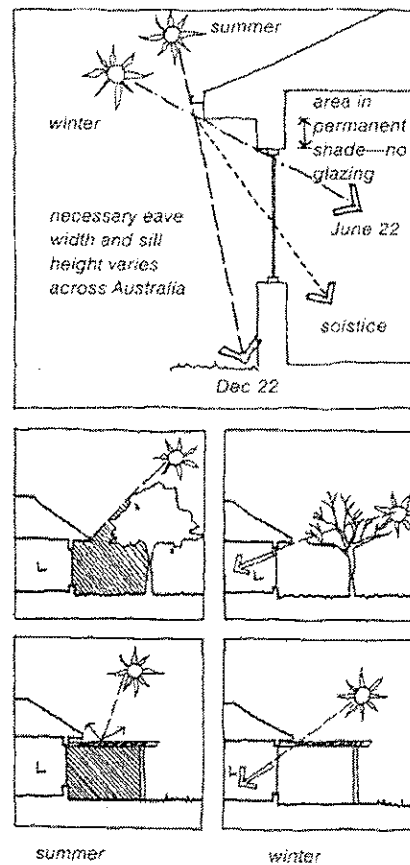


FIGURE 19. Sketch of solar angles in summer, winter and at the winter solstice against a northern wall. Correct eave overhang can stop high angled hot summer sun penetrating glazing but low allows low angled warming winter sun penetrating glazing in the cold winter months. Deciduous trees and vines and solar pergolas can achieve the same result. (Source: Amcord.)

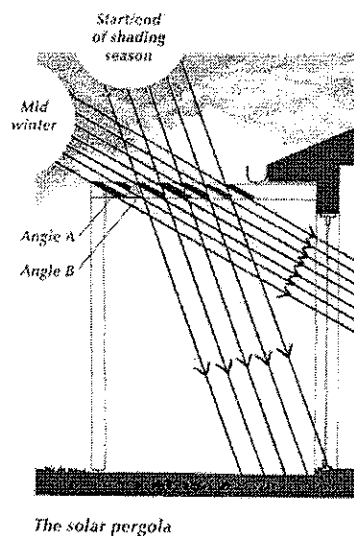


FIGURE 22. How a solar pergola uses the changing angle of the sun to control solar access. (Source: Warm House Cool House.)

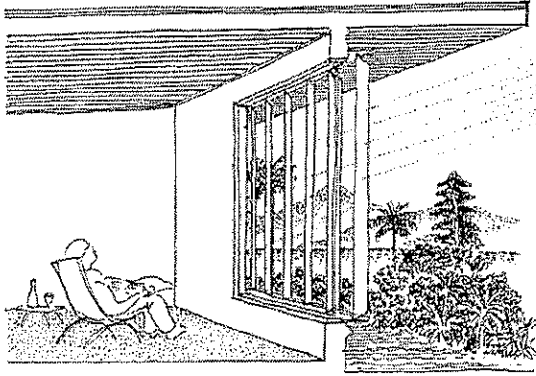


FIGURE 23. Vertical louvres can be used to control low angle eastern and western sun while retaining views. (Source: Warm House Cool House.)

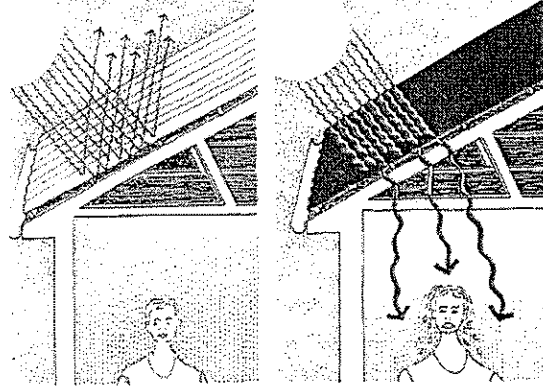
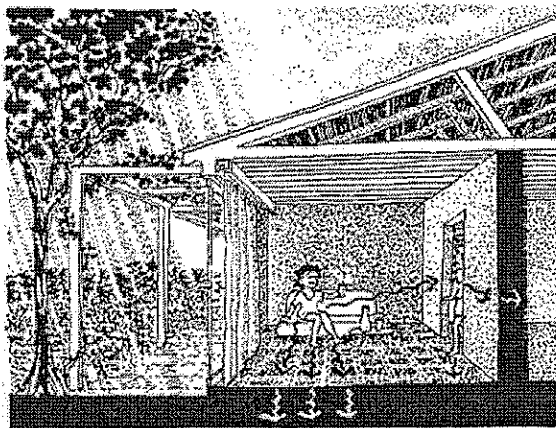
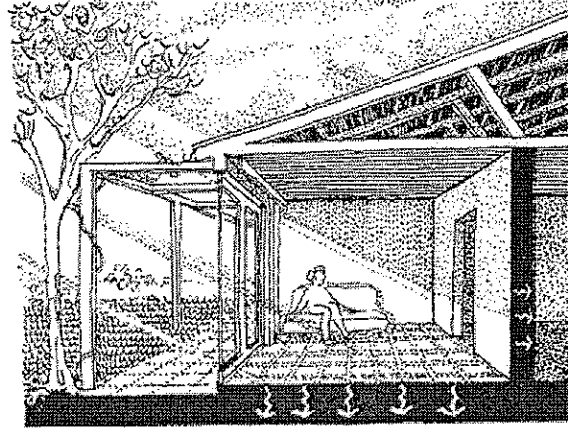


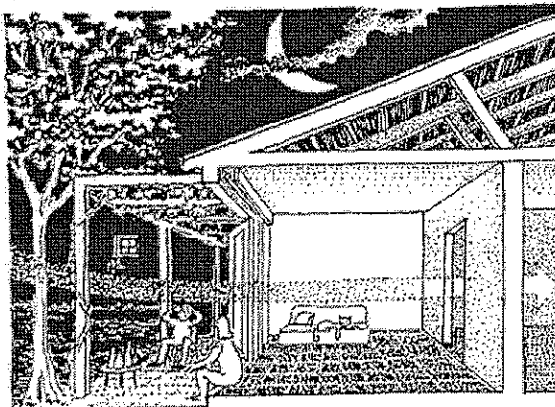
FIGURE 24. Light materials reflect more heat than dark materials, leading to a hotter house. (Source: Warm House Cool House.)



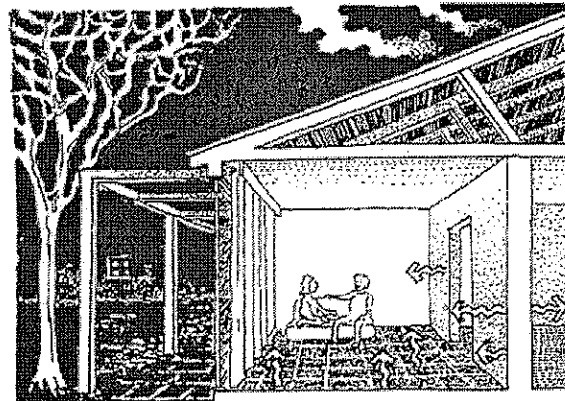
SUMMER: DAY



WINTER: DAY



SUMMER: NIGHT



WINTER: NIGHT

FIGURE 25. Heavy mass materials in appropriate locations can control house temperature. In summer heat can be removed by day, while sunlight penetration is controlled and be cooled by convection breezes by night. In winter low angled sunlight can penetrate glazing to warm heavy mass materials by day and at night be re-radiated, while heavy curtains and pelmets stop heat escaping back out through glazing. (Source: Warm House Cool House.)

E. Privacy & Security

Objectives:

- ***To ensure the visual and acoustic privacy for residents and neighbours in their dwellings and private open spaces.***
- ***To provide personal and property security for residents and visitors and enhance perceptions of community safety.***

1. The layout shall ensure that windows do not provide direct and close views into the windows, balconies or private open space of adjoining dwellings.
2. Habitable room windows of adjacent dwellings within a distance of 9 metres;
 - a) should be offset by a suitable distance to limit views between windows; or
 - b) should have sill heights of 1.7 metres above floor level, or should have fixed translucent glazing in any part of the window within 1.7 metres of the floor level, or
 - c) Should use other means to obscure the view between windows.
3. The outlook from within a development shall be obscured or screened when a direct view is available into the private open space of another dwelling.
4. Site layout design should separate active communal areas, parking areas, access ways and service equipment areas from bedrooms and should minimise the entry of external noise to dwellings.
5. Shared pedestrian entries should be capable of being locked and should serve a limited number of dwellings.

Note: Refer to figures 26 – 33 for examples of ways to achieve privacy and security.

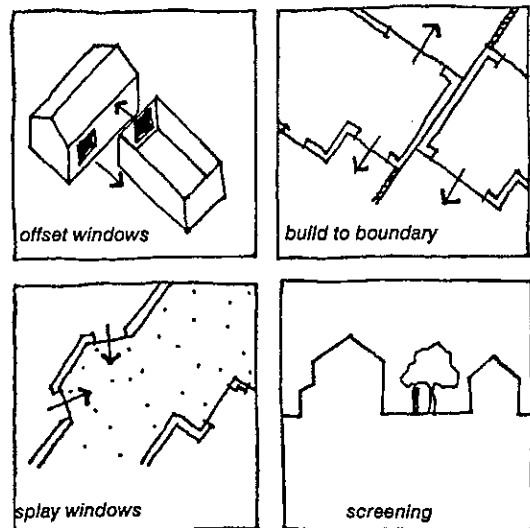
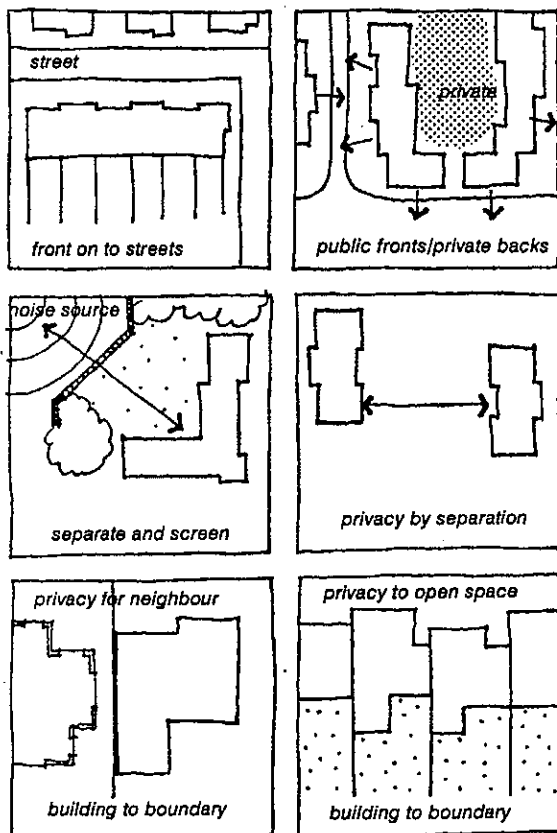


FIGURE 26. Ways to achieve privacy. (Source: Amcord.)

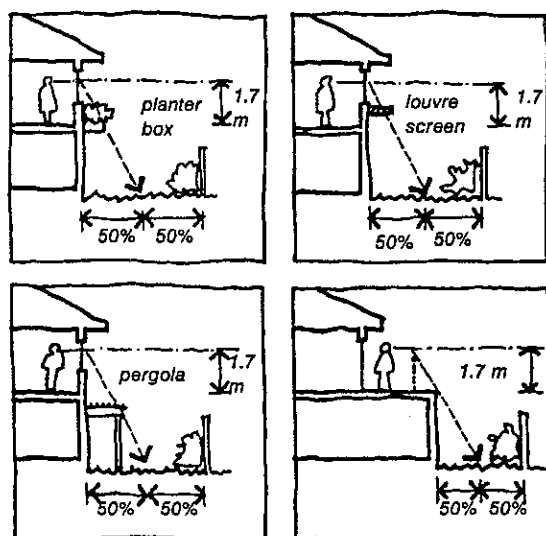


FIGURE 27. Ways to achieve privacy between ground floor and first floor units. (Source: Amcord.)

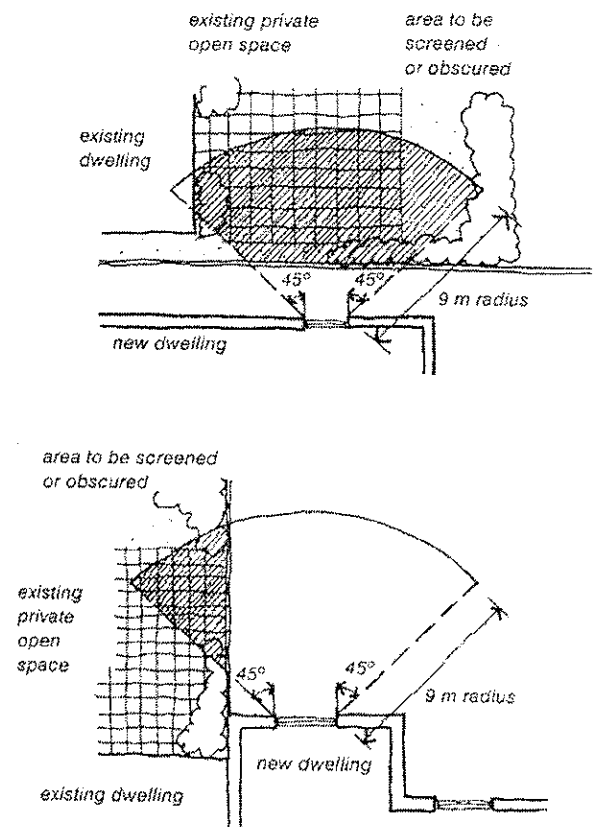


FIGURE 28. Recommended dimensions within which areas need to be screened or obscured for privacy. (Source: Amcord.)

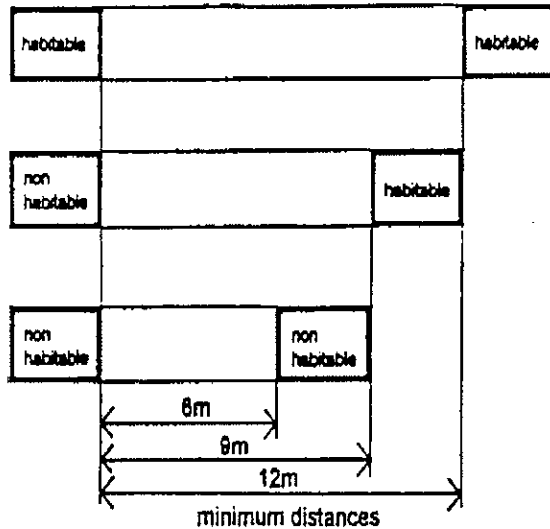


FIGURE 29. Recommended minimum distances between different uses to achieve privacy. (Source: Amcord.)

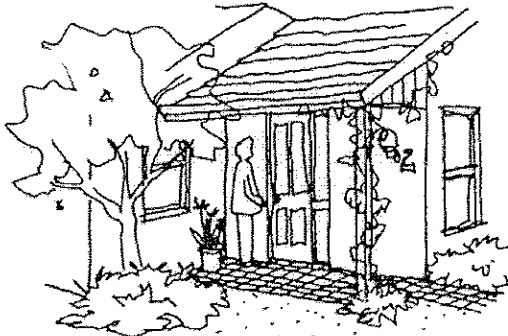


FIGURE 31. Dwelling entrances should address the street and internal driveways to achieve individual identity, functional requirements and security. (Source: Amcord.)

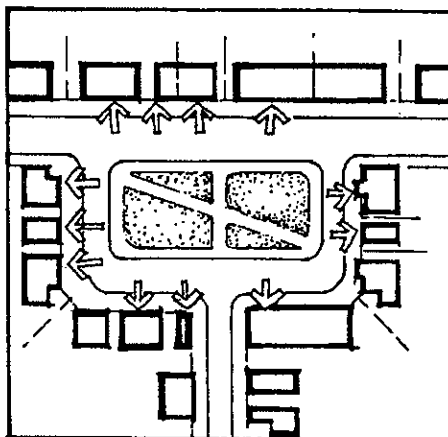
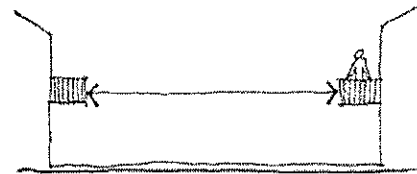
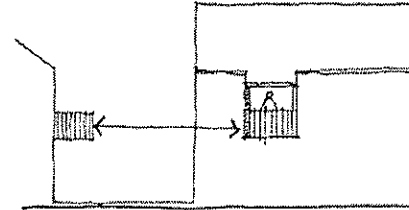


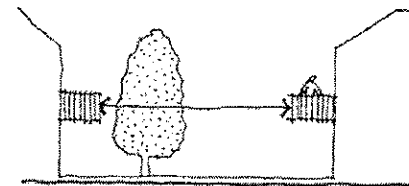
FIGURE 32. Security in residential streets and public open spaces are improved when buildings and dwelling entrances face streets and public open spaces. (Source: Better Urban Living.)



unscreened balcony separation



Careful location and screening of balconies can increase privacy and reduce their separation



existing vegetation may offer screening so separation can be reduced

FIGURE 30. Effective location and design of windows, balconies and landscaping can maintain privacy. (Source: Amcord.)

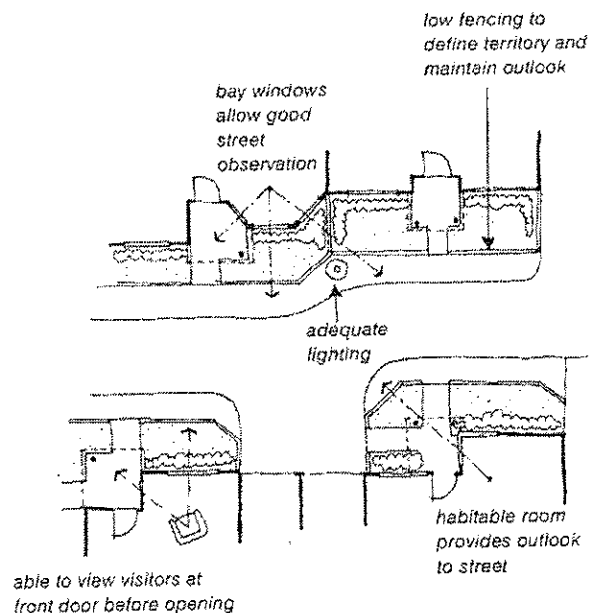


FIGURE 33. Street security can be increased by good design that incorporates casual street surveillance. (Source: Amcord.)

F Private Open Space

Objective:

- ***To provide private open space which meets user requirements for outdoor activities and use.***
- ***To provide private open space areas that relates well to the living areas of dwellings.***

1. The private open space to ground floor units shall be;
 - 50m² for each unit; andshall incorporate an envelope of 4 metres x 4 metres which is directly accessible from a living room. 50% of this envelope should receive direct sunlight for three hours between 9am and 5pm on 21st June.
2. The private open space for upper levels shall be;
 - 10m² for each unit; andshall incorporate an envelope of 2 metres x 2.5 metres which is directly accessible from a living room, and should receive direct sunlight for three hours between 9am and 5pm on 21st June. Landscaping elements should be incorporated into the balcony design to protect resident privacy and to enhance the visual amenity.
3. Private open space areas should generally be provided in locations where boundary setbacks are 4 metres or greater.
4. Private open space shall not include driveways, turning areas, car spaces, narrow elongated curtilage areas and service areas. Screening shall be provided to ensure privacy to users of the open space.
5. Communal open space should:
 - contribute positively to the character of the development;
 - provide for a range of uses and activities; and
 - contribute to stormwater management.

Note:

- Open space around dwellings should be allocated to individual units as far as practicable to facilitate management and minimise communal maintenance costs.
- Figure 34 depicts the many different functions private open space can fulfil.

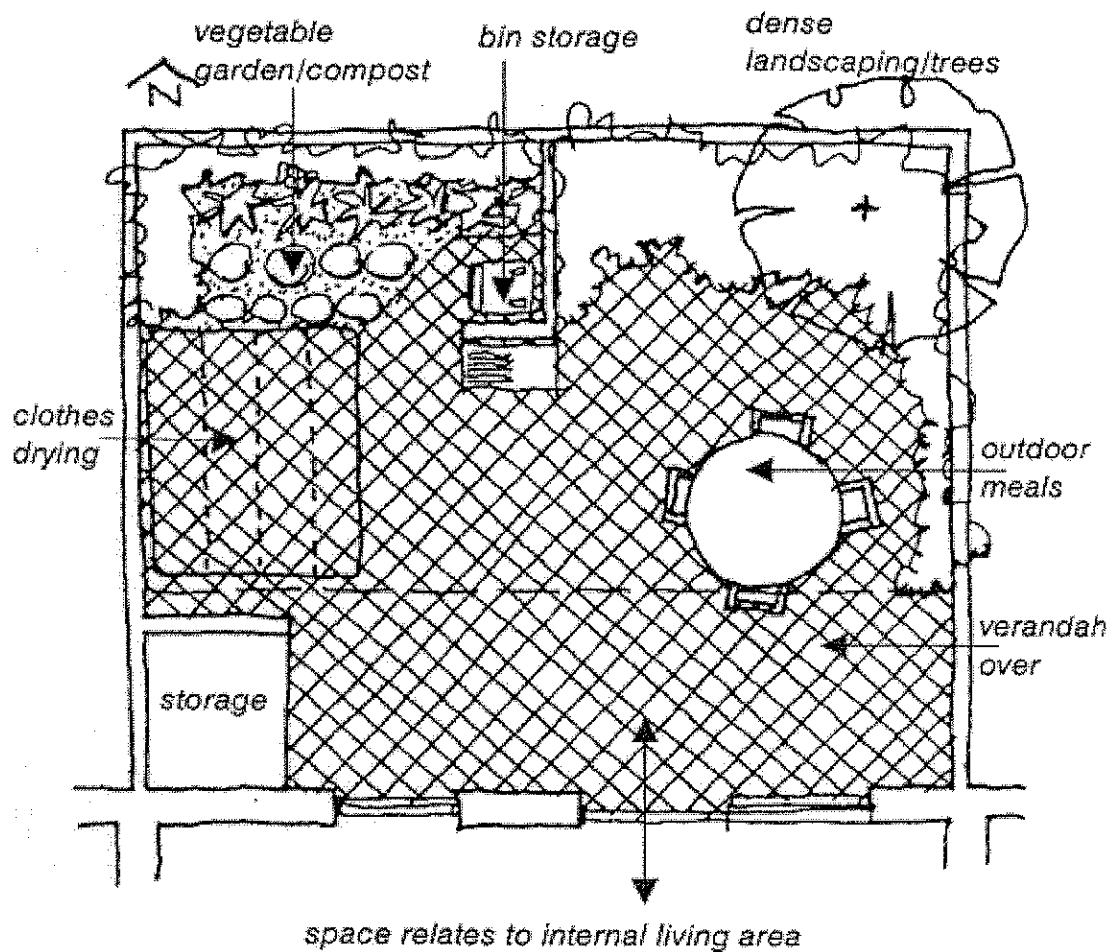


FIGURE 34. Private open space can fulfil many different functions and can act as an extra room, extending living areas of the house. The use of paving can allow for outdoor living. (Source: Amcord.)

G. Landscaping ***(including Tree Preservation & Replacement)***

Objective:

- ***To provide an attractive landscape which reinforces the function of a street and enhances the appearance, amenity and energy efficiency of urban housing through integrated landscape design.***

1. General Requirements

- (a) The landscape design shall exhibit landscape and vegetation themes and specify the locations, mature heights and spreads of shrub and tree species, major existing trees, the location of grassed areas, garden bed areas, paved areas, and proposed lighting.

Where possible, major existing trees shall be retained. The plan shall indicate which trees are to be removed or retained.

The landscape plans shall be drawn to scale (minimum scale 1:200).

The submitted plans shall include landscape forms, superimposed on building elevations.

Note: The submission of a landscape plan is not mandatory for single dwelling houses on an allotment except where trees are to be removed or trees are located within 3 metres of a proposed building.

- (b) The landscaped area required shall be not less than a 40% site coverage.
- (c) Landscaping shall include a suitable proportion of trees, other than palms, capable of reaching a mature height of 6 metres or more in order to;
- reduce the visual impact of buildings;
 - shade their western elevations from the hot afternoon summer sun;
 - promote privacy between sites; and
 - promote shade for car parking areas, outdoor recreation areas and children's play areas.
- (d) Landscape design should take into account the placement of evergreen and deciduous tree species to ensure winter sun penetration into the buildings and outdoor open space/recreation areas.

- (e) Where there are existing trees on the site and in the locality, the planting should include a proportion of similar species so as to retain the street character.
- (f) A significant amount of advanced tree and shrub species shall be incorporated into the landscaping at the street frontage of the site, in order to provide an immediate effect and screening to the development.
- (g) Driveways should be setback from boundaries or dwellings to allow for landscaping elements to reduce the harsh impact of the driveway.
- (h) Dense plantings should also be used to reduce the visual impact of parking and service areas, and to act as windbreaks and privacy screens for outdoor open space areas.
- (i) The designer shall understand the characteristics of vegetation and choose appropriate species prior to planting.

Avoid planting:

- trees with a mature height of greater than 15 metres;
 - species with root systems likely to interfere with nearby structures or under ground services such as sewers;
 - large trees beneath overhead power lines; and
 - bushy trees adjacent to driveways, where vision may be impaired by the trees;
 - vegetation that is classified as a noxious weed.
- (j) All landscaping should be carried out in accordance with Draft Development Control Plan No. 23 - Engineering requirements for Development & Subdivision.

2. Specific Tree Requirements

- (a) The following requirements should be read in conjunction with a report entitled, "Griffith City Council; Street Tree Species & Precinct Character", 12 October 1999, dsb Landscape Architects. For further detail please refer to the detailed report.
- (b) Each of the precincts have been analysed in terms of;
 - (i) If the precinct is of "high amenity value" in terms of trees.
 - (ii) If there are groups of trees within each precinct that are of "high amenity value".
 - (iii) Recommendations in terms of tree replacement or planting.

(c) What is “high amenity value (HAV)?”

In classifying the trees in some streets as having a high amenity value and, in turn, some precincts as having a high amenity value because of the trees, consideration must be given as to what contributes to ‘High Amenity Value’.

The elements contributing to high amenity value are (in no particular order of significance):

- That the trees are in scale with the space in both height and crown spread
- That the trees provide visual continuity
- That the trees are a unifying element within the space
- That the trees mask the disjointed or contrasting or unsightly elements: that could be house colours, house shapes, fences, landscape treatments within blocks etc. and create a visually attractive and consistent shape, size, colour, form etc.
- That the trees reduce the impact of other elements within the space, e.g. overhead wires, light poles, substations etc.
- That the integration of street trees and street furniture including light poles or other built elements is such as to provide a “feel good” reaction within the observer.

The trees that contribute to high amenity value either in their own right or in the context of street tree planting are species:

- That are at least as tall as or taller than the gable on a single storey cottage on level ground
- That at maturity exhibit the characteristics of the species without having to be lopped/pruned to fit the space
- That are healthy, are of consistent height and/or form, not prone to diseases etc.
- That are tolerant of root damage/disturbance, low nuisance value (fruit drop etc.), long lived and don’t drop limbs, of a form that allows vehicular and pedestrian clearances and of acceptable maintenance risks, e.g. not prone to invade services, low risk of becoming an environmentally undesirable species unlikely to deform kerbs, pavements, etc.

- (d) Schedule 1: outlines among other things the high amenity value groups of trees and precincts.

Schedule 2 – 4 & parts of Schedule 1: identify practices Council would like to put in place and those that need discouraging. The subject schedules also identify recommended street tree species. An applicant or designer needs to read all four schedules to understand all the requirements.

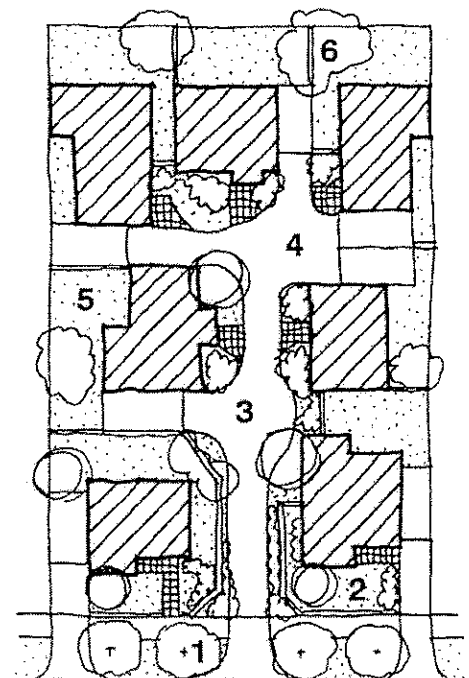
- (e) How will the provisions be applied?

- (i) The Griffith City Council Tree Preservation Order (TPO) (adopted by Council on 2 May 1995) have provisions in respect of protecting trees. The provisions of this Order are subservient to the landscape/tree provisions in this section and the relevant provisions of the Draft Development Control Plan No. 23 – Engineering Requirements for Development & Subdivision.
- (ii) Given (a) the practical implications are;
- That the Director of Environmental Services reserves the rights to approve/not approve TPO applications in precincts or for groups of trees that are classified “high amenity value”. Clause 37 of the LEP emphasises the fact that TPO’s are for securing amenity or preserving amenity. Therefore granting such, approval for the removal or lopping of existing trees will be the exception rather than the rule.
 - That replacement trees should be in line with the recommendations in Schedules 1-4.
 - That a Tree Removal Permit will not be granted for trees that are protected via a development consent condition.
 - That a Tree Removal Permit shall be obtained for trees on private and public property (including parks and streets).
- (iii) That trees in a precinct or a group of trees identified in Schedule 1 of this DCP as “high amenity value” should where possible be protected via development consent conditions when on a site the subject of a development application (landuse and subdivisions). Particular priority will be given to significant trees that are prominent in the streetscape.
- (iv) Trees or groups of trees in precincts not identified as high amenity value (if agreed to by the applicant of a development) are to be protected via a condition where flexibility is given to development standards. This is only the case where the DCP has identified the tree to be desirable for retention.

- (v) All development applications must show the location of all trees on the site and any trees that are proposed to be removed or are to have significant pruning. Secondly, all plans must show proposed on and off site planting via a landscaping plan.
- (vi) All subdivisions or residential development consents, involving more than ten (10) lots or six (6) units, shall have a condition of development approval that the applicant shall engage:
 - an appropriately qualified, practicing Landscape Architect, who is a Corporate Member of the Australian Institute of Landscape Architects, or
 - a landscape professional who has other relevant qualifications

for the preparation of a Landscape Master Plan showing proposed street trees and landscape treatments to the development area. In addition, the Developer should be responsible for the supply and planting of street trees notwithstanding the planting could be required 6-12 months after completion of the civil works elements of the subdivision. A bond will be required to ensure that the work is completed. In addition, Architects or House Designers should include information from the Landscape Master Plan that street trees are proposed for the road verge and nominate the species. This early advice to potential residents will help to overcome inappropriate plantings by enthusiastic residents.

<p>Note: Figures 35 and 36 provide examples of the many purposes that appropriate placed landscaping can achieve.</p>
--



- 1 Advanced tree species appropriate to the street provided or reinstated
- 2 Front gardens landscaped to a standard and a character compatible with those in the rest of the street
- 3 Driveways and communal spaces landscaped with low maintenance in mind
- 4 Paving for driveways chosen to complement the development and constructed to maximise on-site infiltration
- 5 Landscape treatment of private open space leaving scope for residents to develop
- 6 Existing mature trees retained where practicable, especially when along property boundaries.

FIGURE 35. Well designed landscaping can greatly increase the integration of the dwellings into the street and internal driveway, and enhance the overall visual quality of the multiple-dwelling development. The use of appropriate vegetation species placed in appropriate locations can achieve many purposes. (Source: Amcord.)

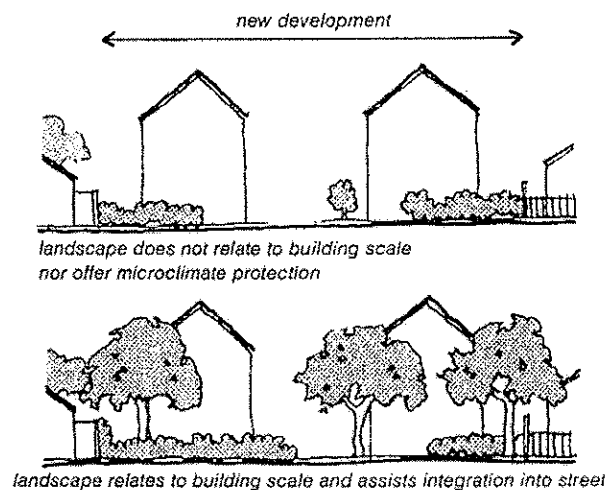


FIGURE 36. Landscaping at the front of the development should be a mixture of sizes and species that relates to the building scale, adds visual interest and integrates the development into the street. (Source: Amcord.)

Note:

- **“Busy Streets”** are defined as collector roads, sub-arterial and arterial roads, either accessing 100 or more dwellings or having an Average Daily Traffic (ADT) volume of 2,000 or more.
- **Figures 3 and 37** provide design parameters when designing driveway and carparking areas.

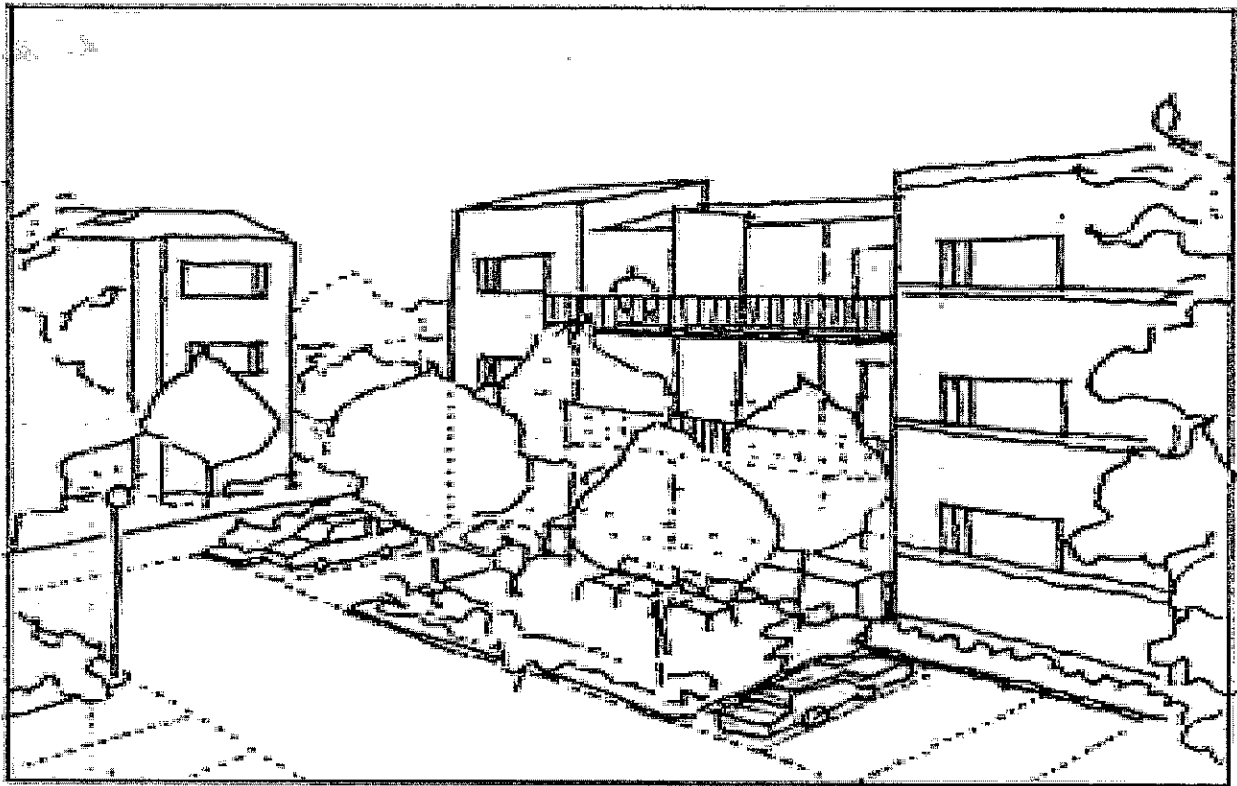


FIGURE 37. Driveway and car-parking design should facilitate efficient and safe vehicular access and create an attractive environment. It should consider sight lines and turning circles, be shared e with pedestrian uses, be designed to control speeds, be sensitively integrated into multiple-dwelling developments and be broken up with soft and hard landscaping. (Source: Better Urban Living.)

H. Vehicle Access & Parking

Objective:

- ***To ensure that vehicular access to and through the development is safe, and maintains the amenity of adjoining properties and dwellings within the development.***
- ***To provide sufficient and convenient parking for residents and visitors so as to maintain the amenity of the site and adjoining properties.***

1. Each unit shall have an exclusive entitlement to at least one secure, undercover private parking space.
2. Adequate number of spaces shall be provided as required in DCP 20 – Off Street Parking Policy.
3. The design of driveway, parking spaces dimensions, stormwater etc, shall be in accordance with RTA's Manual - "Guide to Traffic Generating Developments" AS 2890.1-1993 ... Australian Standard – Parking facilities, Part 1: Off-street car parking.
4. Accessways and driveways shall be designed to enable vehicles to:
 - enter the parking space in a single turning movement; and
 - leave the parking space in no more than two turning movements.
5. Driveways shall be designed to allow cars to enter and leave the site in a forward direction for frontages onto busy streets or where driveway length is greater than 15 metres.
6. Open car parking spaces, accessways and driveways shall be hard standing, with decorative finish. The use of permeable paving may be appropriate in some small scale developments.
7. The width of the driveways between the property boundary and the kerbline shall be 6 metres in width, however 3.5 metres is required where the driveway services one dwelling unit only.

Internal driveways should generally be a minimum of 3.5 metres in width.

8. Where driveways service 5 or more dwellings a 6 metre wide passing bay shall be included within the site. (Refer to DCP No. 20 – Off Street Parking Policy)

I. Acoustics

Objective:

- *To provide a reasonable acoustic environment for residents.*

1. Development adjoining a railway line, busy roads or industry shall be sited, designed and constructed in a manner which minimises adverse noise and vibration effects. Noise sensitive areas, such as living and sleeping areas should be located away from the rail line, busy road and noise source.

The design shall comply with noise levels specified by the Environment Protection Authority and State Rail Publication, "Rail Related Noise and Vibration Guidelines".

2. Noise tolerant areas should be located closer to the external and internal noise sources and noise sensitive areas located further from the external and internal noise source areas such as kitchen, laundries etc.
3. Shared walls and floors between dwellings shall be constructed in accordance with the noise transmission and insulation requirements of the Building Code of Australia.

Note: Figure 38 illustrates ways to control noise impacting on dwellings.

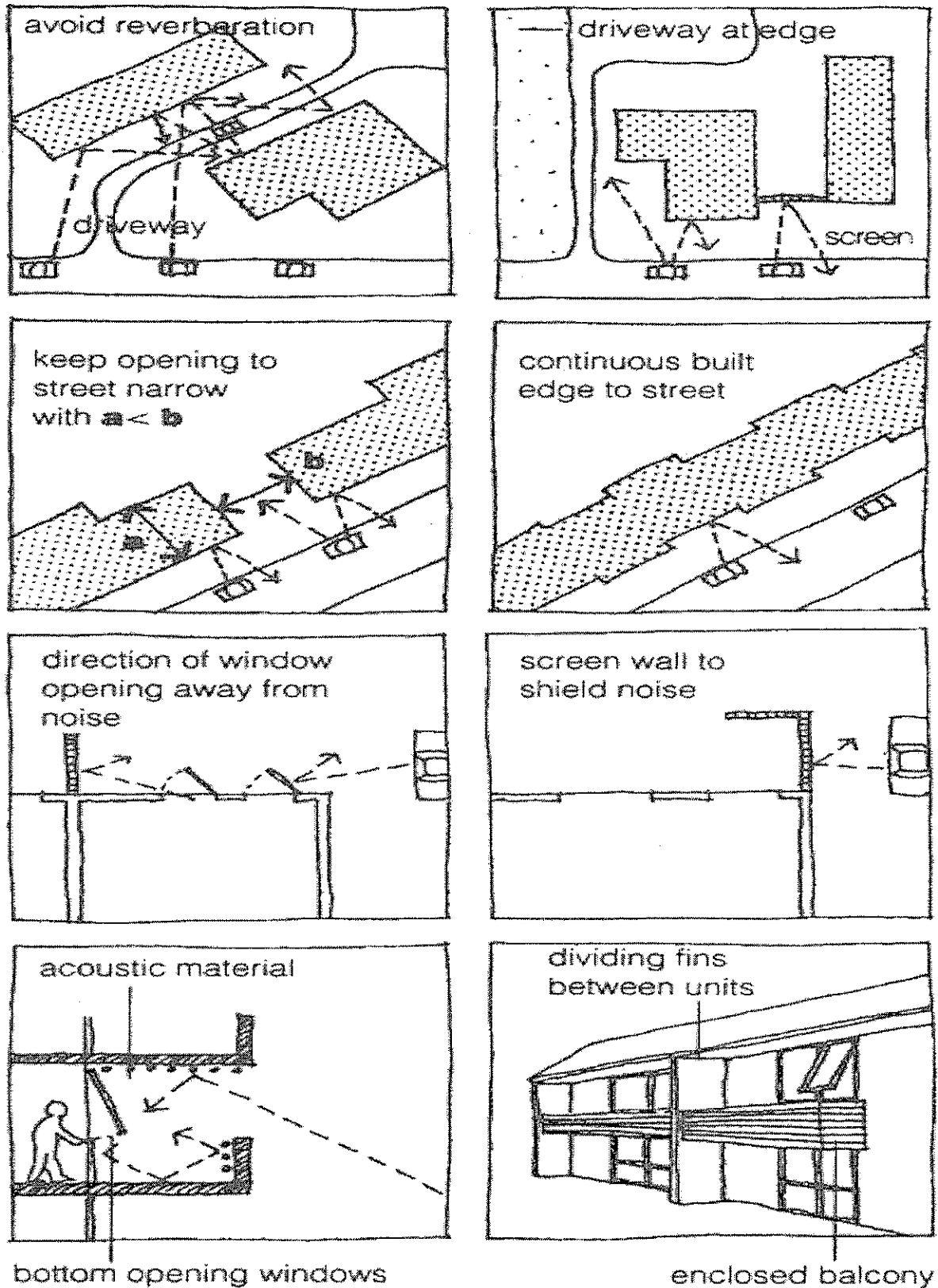


FIGURE 38. Ways to control noise impacting on dwellings.
(Source: Amcord.)

J. Water Management

Objective:

- ***To control stormwater and minimise discharge impacts on adjoining properties.***
- ***To minimise wastage of water by reusing, recycling and harvesting stormwater.***
- ***To encourage reduced water consumption.***

1. To minimise the effects of local flooding there should be on-site stormwater retention in either storage tanks, soakage trenches or the like so as to allow slow release of stored water into the development's landscaping and then by controlled flow to street drainage works.
2. Landscape design should assist on-site infiltration of stormwater run-off by:
 - grading, locating and maximising unpaved or unsealed landscaped areas; and
 - by providing permeable paving where appropriate.
3. Water consumption should be minimised by:
 - landscaping with plant species which require minimal water;
 - using appropriate mulches to planting beds;
 - minimising the grassed area;
 - irrigating landscaped areas with drip irrigation systems; and
 - using water-efficient accessories, washing machines, dishwashers and toilets.

Note: Figure 39 and 40 show examples of the use of stormwater to reduce stormwater run-off.

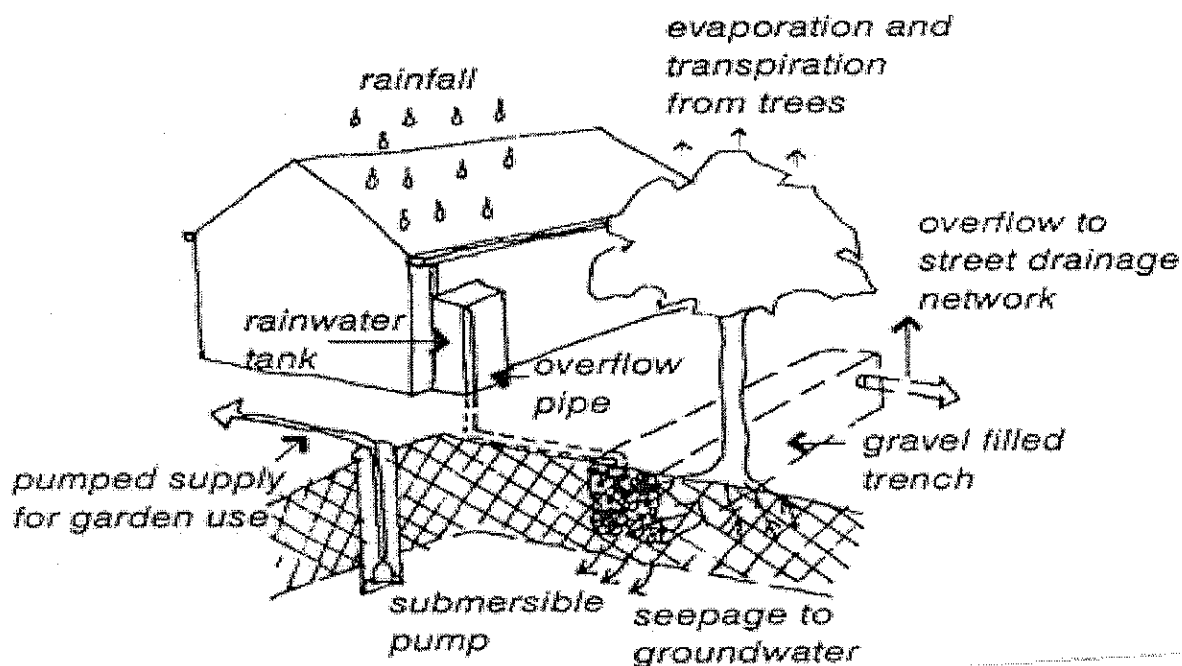


FIGURE 39. Example of how stormwater can be used for drinking water, watering trees, watering gardens and be absorbed, rather than simply discharged to stormwater pipes. These and other on-site storage methods reduce large volume water releases, so that local flooding is minimised. (Source: Amcord.)



FIGURE 40. Pervious landscaping adjoining paved areas, reduce stormwater run-off. (Source: Amcord.)

K. Site Facilities

Objective:

- *To ensure that site facilities are thoughtfully integrated into the development and are unobtrusive.*

1. Waste and recycling bins should generally be located within each unit's enclosure. If centralised waste or recycling bins are required they should be conveniently located, adequate in size, durable, waterproof, blend in with the development and avoid visual clutter.
2. Open air clothes drying facilities shall be provided in a secure and convenient location, which is adequately screened from streets and other public places, and where possible, should be separate from private open space.
3. A mail box structure should be centrally located, close to the major street and all boxes be lockable.

Note: Figure 41 shows an example of sensitively integrated site facilities.

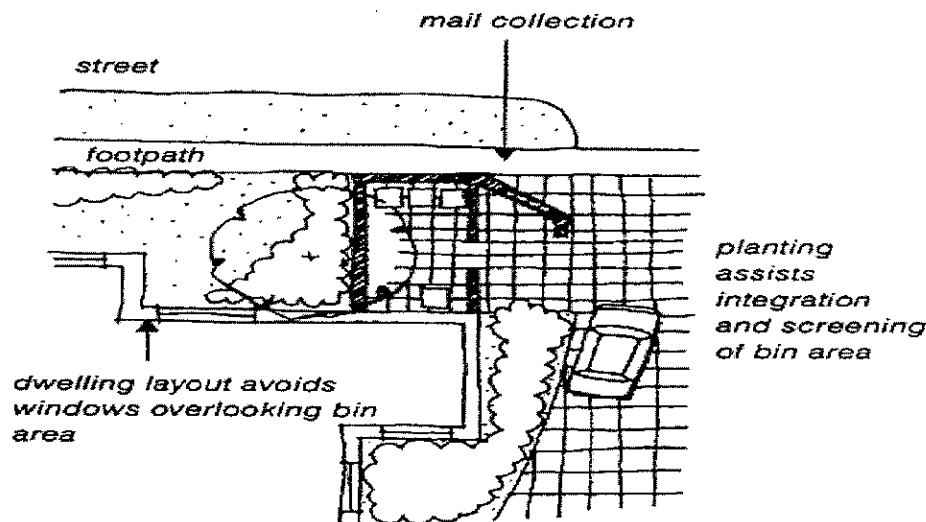


FIGURE 41. Mail, garbage, and other site facilities should be sensitively integrated into the development. (Source: Amcord.)

L. Companion Animals

Objective:

- *To identify aspects of dwelling design that:*
 - ❖ *help to integrate pets into a household in accordance with that household's needs;*
 - ❖ *reduce the incidence of unwanted behaviours; and*
 - ❖ *reduce the impact of unwanted behaviours that do occur.*

The guidelines included in "Companion Animals in the City", published by the Petcare Information and Advisory Services (1998) should be considered in the design of proposed residential development.

SCHEDULE 1

LANDSCAPE CHARACTER

Precinct No.	Does the precinct have a high amenity value (HAV)?	Trees that are significant to landscape character	Required action for street tree plantings	In what area of the precinct is action required?
1.	YES	London Planes (HAV) Sugar Gums (HAV) Purple Leaf Prunas & Native Bottlebrush (verges) Athel Pines	Preserve the landscaping character by planting the identified trees. Preserve the landscaping character by planting the identified trees.	Whole precinct Kookora St
2.		White Cedar Kurrajongs Jacaranda Ash Brush Box	Preserve the landscaping character by planting the identified trees.	Whole precinct
3.	YES	Plane Tree White Cedars	Preserve the landscaping character by planting the identified trees.	Coolah St
4.	Certain species are of HAV.	Casuarinas Ash White Cedar	Protect Casuarinas. Replace Prunus, Callistemon & Melaleuca	The perimeter of Showground In areas where there is wide verges and no overhead powerlines.
5.	No, but as the streets in this precinct are "entry" streets to the City each of these main avenues should be developed into a single unifying style to create an Individual character of its own.		Replace existing trees with either Plane Trees, Yellow Box, Sugar Gums, Lemon Scented Gums or Angophora in order to improve the entrances to the city. Removal of unauthorised verge planting & replacement See schedule for recommended street tree planting	Walla, Murrumbidgee & Willandra Aves. Murrumbidgee Estate & Pioneer

Precinct No.	Does the precinct have a high amenity value (HAV)?	Trees that are significant to landscape character	Required action for street tree plantings	In what area of the precinct is action required?
6.	Certain species of HAV. Potential to develop as HAV. Precinct	Plane Trees & Sugar Gums 50/60 Lombardy Poplars	Preserve the landscaping character by planting the identified trees. Removal of unauthorised verge planting. See schedule for recommended street tree planting.	Wyangan Ave Retardation basin Within precinct
7.	YES	Eucalypts Ashes Park Trees	Preserve the landscaping character by planting the identified trees. Replace Melaleuca, Callistemon & Prunus	Wood Rd Thorby Cres Konoa (however fine in the
8.	Has potential to develop as HAV precinct.		Replace Irish Strawberry with Ash Replace Kurrajongs Plant Liquidamber Formosana	 In wider verges with overhead wires
9. (a) & (b)	YES	Eucalypts & Pines, Plane Trees, White Cedar, Jacaranda & Ash	Removal of unauthorised plantings near Eucalypts Replacement of Eucalyptus Melliodora Replace verge plantings with Liquidamber Formosana Replace Kurrajongs with Liquidambers	Jubilee Oval, Binya St Binya St Binya St Hyandra St Carrathool St
10.			Retain Pepper trees due to historical reasons but not for reinforcement / additional plantings Plant Prunus & remove other verge plantings	 Macarthur St

Precinct No.	Does the precinct have a high amenity value (HAV)?	Trees that are significant to landscape character	Required action for street tree plantings	In what area of the precinct is action required?
12.			Palms, Ash (encourage) Flowering Peach (discourage)	Precinct
13.			Plant trees with tendency for a range of growth habits to promote landscape character as a contrast to the visual impact of the narrow road verges	Precinct
14.		Manchurian Pears & Gleditsa Suinburt	Replace Alder trees with identified significant trees	Precinct

Note: This table is to be read in conjunction with Schedule 4.

SCHEDULE 2

WHAT TO DO & WHAT TO AVOID TO IMPROVE THE STREETScape

What we would like to change from	What we would like to change to
Overuse of low mature height trees eg. Prunus, Callistemon & Melaleuca.	Only use low mature height trees in constraint situations.
Pollarding of large tree species.	Consider mature size of tree at planting stage & ensure adequate space is available for mature growth & canopy. For affected species identify trees for removal & replacement & instigate regular maintenance of trees identified for retention.
Unauthorised tree planting in verges.	Removal of plantings identified as inappropriate. Community co-operation in planting according to an adopted 'masterplan'. Street tree planting to consider verge widths. Verge landscaping being encouraged subject to pedestrian movement and service corridor and Council not exposed to liability. Council needs to put in place a public education program to ensure that the right trees are planted.
Residential estate design with limited thought to street tree planting, character and verge widths.	Masterplan required at DA stage to indicate street trees to be used as well as timing for planting & maturity of plants –to be developed by a qualified Landscape Architect. The design shall include a road hierarchy allocated with minimum road verge widths being determined for each class of road. For eg major road – 10m width, medium roads – 7m and (low) some residential streets – 5m verge widths adopted.
Over reliance on exotic species.	Use and preference of natives in public spaces. Designation of native street corridors in urban release areas.
Use of Desert & Claret Ash & Kurrajongs with varying growth forms.	Use of species sourced from a reliable supplier from suitable clones to achieve visual continuity.
In release areas, the timing of street tree plantings is inappropriate.	Plantings required as soon as possible on development.
Street trees not protected from construction activities.	Adequate protection required and canopy width area remain undisturbed. No servicing trenching be permitted unless adequate root protection measures are proposed.

SCHEDULE 3

RECOMMENDED STREET TREE SPECIES

The lists that follow identify tree species that, based on published information, use elsewhere in similar situations and general plant knowledge, should be suitable for use within the City as street trees. This list is to be used as a guide only.

For convenience the lists have been divided into 'tree height/verge widths' categories. Obviously some movement between lists would be appropriate in certain circumstances based on particular situations and supported by sound professional judgement and local knowledge.

The list of proposed new street trees is an attempt to broaden the range of street trees currently used within the City. Some are varieties or cultivars of currently used street trees while others are not used but the species is growing well in local gardens. Some trees from the list will be quite successful —others only marginally so. The wide seasonal temperature differences will have an impact on the growth rate, mature size and even survival. It is recommended that the Council initiate a public education programme that encourages residents to assist with the watering of newly planted street trees, particularly through the summer months, to aid their survival and development to maturity.

It is also recommended that all trees to be planted as street trees be sourced from reputable suppliers. Species that do well in the City and which can be propagated by seed, e.g. Desert Ash and Kurrajong, should be propagated vegetatively using material taken from clones proven for their suitability in the district and for their height, form, spread, growth rate etc. Similar propagation techniques should be used with *Koelreuteria paniculata* to achieve a straight trunk and well formed, even crown.

The introduction of some or all of the suggested species should be on the hasten slowly basis and trials of new species in short streets with limited numbers is to be encouraged. The inconvenience of some formative pruning or early crown thinning should be tolerated if that will ensure the survival of the tree and its development into a specimen suitable as a street tree. On the other hand, a ruthless attitude should be adopted to the removal of trees in the field and from the list if they are obviously poor performers, can't tolerate the summer heat/dry or in any other way considered unsuitable as a street tree.

<p><u>SMALL TREES</u></p> <p>4-10m HEIGHT</p> <p>SUITABLE FOR VERGES 3 - 5m WIDE</p>	<p><u>MEDIUM TREES</u></p> <p>10-15m HEIGHT</p> <p>SUITABLE FOR VERGES 5m - 7m WIDE</p>	<p><u>LARGE TREES</u></p> <p>15m + HEIGHT</p> <p>SUITABLE FOR VERGES 7m - 10m WIDE</p>
<p>Azara microphylla Brachychiton populneus Celtis australis Ceratonia siliqua Eucalyptus diversifolia Eucalyptus dundasii Eucalyptus falcata Eucalyptus intertexta Fraxinus syriaca Koelreuteria paniculata Liquidambar styraciflua 'Palo Alto' Liquidambar styraciflua 'Tiriki' Malus halliana 'Parkmanii' Malus ioensis 'Plena' Malus spectabilis Malus x floribunda Parrotia persica Pistacia sinensis Prunus amygdalus Prunus campanulata Prunus dulcis Prunus x blireiana Pyrus calleryana 'Bradford' Pyrus calleryana 'Red Spire' Tristania conferta</p>	<p>Castanea sativa Eucalyptus cornuta Eucalyptus eximia Eucalyptus leucoxylon 'Pink' Fraxinus velutina Gleditsia triacanthos 'Ruby Lace' Gleditsia triacanthos 'Shademaster' Gleditsia triacanthos 'Sunburst' Jacaranda mimosifolia Liquidambar formosana Melia azedarach Pryus ussurienses 'Winter Glow' Pyrus ussurienses Robina pseudoacacia 'Frisia' Sapium sebiferum Sophora japonica Sophora tetraptera Ulmus parvifolia Virgilia capensis</p>	<p>Angophora costata Eucalyptus acaciiformis Eucalyptus citriodora Eucalyptus cladocalyx Eucalyptus melliodora Eucalyptus novae-anglica Eucalyptus sideroxylon Eucalyptus wandoo Fraxinus americana Fraxinus oxycarpa Fraxinus oxycarpa 'Raywoodii' Liquidambar styraciflua Platanus acerifolia Platanus orientalis Platanus x chilensis Quercus acutissima Quercus cerris Quercus coccinea Quercus nigra Quercus palustris Quercus rubra Robina pseudoacacia</p>

PROPOSED NEW STREET TREE SPECIES

Species	Height	/ Spread (m)	Evergreen/Deciduous
Azara microphylla		6 x 4	E
Castanea satina		15	D
Ceratonia siliqua		4 x 3	D
Eucalyptus acaciifolia		20	E
Eucalyptus cornuta		12	E
Eucalyptus diversifolia		8	E
Eucalyptus dundasii		10	E
Eucalyptus eximia		16	E
Eucalyptus falcata		8	E
Eucalyptus intertexta		10	E
Eucalyptus leucoxylon 'Pink'		12	E
Eucalyptus novae-anglica		20	E
Eucalyptus wandoo		25	E
Fraxinus velutina		12 x 8	D
Fraxinus syriaca		6	D
Gleditsia triacanthos 'Ruby Lace'		12 x 12	D
Gleditsia triacanthos 'Shademaster'		12 x 12	D
Koelreuteria paniculara		6	D
Liquidambar styraciflua 'Palo Alto'		9 x 5	D
Liquidambar styraciflua 'Tiriki'		9 x 5	D
Malus halliana 'Parkmanii'		5 x 3	D
Malus ioensis 'Plena'		4 x 3	D
Malus spectabilis		8 x 4	D
Malus x floribunda		6 x 4	D
Parrotia persica		6 x 4	D
Pistacia sinensis		6 x 4	D
Platanus x chilensis		18 x 8	D
Prunus amygdalus		5 x 5	D
Prunus campanulata		4 x 3	D
Pyrus calleryana 'Bradford'		8 x 5	D
Pyrus calleryana 'Red Spire'		8 x 5	D
Pyrus ussuriensis 'Winter Glow'		10 x 6	D
Quercus acutissima		15 x 12	D
Quercus cerris		20 x 15	D
Quercus coccinea		15 x 10	D
Quercus nigra		15 x 15	D
Quercus rubra		15 x 25	D
Robina pseudoacacia 'Frisia'		15 x 8	D
Robina pseudoacacia		15 x 10	D
Sapium sebiferum		5 x 3	D
Sophora tetraptera		10 x 6	D
Virgilia capensis		8 x 7	E

SCHEDULE 4

RECOMMENDED STREET TREE REPLACEMENT

Introduction

It is not necessary to invoke a scorched earth policy but rather a progressive removal and replacement program over 3-5 years is an excellent option, the planting of robust well-grown trees say 2.0-2.5m tall an indication of official sincerity. In streets where kerb and gutter and road pavement is so damaged that tree removal is an integral part of the infrastructure restoration, tree replacement should similarly be an integral part of the restoration works.

Aidan Close: *Malus floribunda* (4.0 verge).

Albion Grove Crescent: *Pyrus callieriana* 'Red Spire' (4.5m verge).

Bent Street: The existing Blue Gums, because of their size and dirty habits, continually dropping large leaves, twigs, strips of bark and large gum-nuts, are an inappropriate tree in urban streets. Remove the Blue Gums and replace with Manchurian Pear.

Binya Street: Remove the previously pollarded Yellow Box and replant with *Eucalyptus acaciiformis*.

Bringan Street: Remove the remainder of the White Cedars and replace with *Sophora japonica*.

Bugno Crescent: *Gleditsia triacanthos* 'Ruby Lace'

Carrathool Street: At the appropriate time remove the existing Kurrajongs and replant with *Liquidambar formosana* on the same alignment and at the same spacing (if possible) as those on the other side of the road.

Couch Road: Continue the theme established by the existing Callistemons.

Doongara Street: Remove and replace the existing White Cedars and the maintenance intensive *Prunus nigra* with *Prunus blireiana*.

Dunvarleigh Crescent: *Pyrus callieriana* 'Red Spire' (4.5m verge).

Fawey Place: *Pyrus calleryana* 'Bradford'

Foreshaw Avenue: *Platanus x chilensis* (depending on the area available).

Halford Place: *Fraxinus syracia* (depending on the services).

Hyandra Street: Implement a gradual replacement and conversion program to establish a consistent species of larger trees – *Liquidambar formosana*.

Illillwa Street: Remove the existing mixture of White Cedars and Kurrajongs, and replace with Claret Ash on the same alignment.

Kelly Avenue: Even though the Sugar Gums in this street are growing in a wide verge (approximately 8m), its ultimate size makes it an inappropriate residential area street tree. Replace with *Celtis australis*.

Kookora Street between Banna Avenue and Koorungal Avenue: Remove the Athel Pines and replace with London Plane.

Lawson Crescent: Replace the existing mixture of Desert Ash and Claret Ash with *Pistacia sinensis*.

Lowing Place: Remove the existing Ash that are deforming the road pavement and kerb and gutter, and which are showing variable growth habit and dieback, and replace with *Pyrus ussuriensis*, Manchurian Pear, on an alignment half way between the front property line and the kerb.

Matthew Close: *Malus halliana* 'Parkmanii'

Messner Street: The existing White Cedars are in decline, some are dead and others require pruning to keep them clear of the overhead wires. A gradual removal and conversion program is appropriate. Because of overhead wires on one side of the road, replant with *Prunus blirerana*.

Murrumbidgee Avenue (median strip): Mixture of *Prunus blireiana* & *Eucalyptus citriodora* (median strip 10.0m wide).

Murrumbidgee Avenue (service road): Mixture of *Prunus blireiana* & *Plantanus acerifolia* (verge 9.8m wide).

Murrumbidgee Avenue between Foreshaw Avenue and Merrigal Avenue:

This road is an important planning and landscape element in the city and as such the tree species selected should 'make a statement' and be a visual indicator that it is a major road. Over time any existing visually competing large trees should be removed in favour of the preferred 'boulevard trees'.

The best performing large trees in the city seem to be London Plane (deciduous) and Yellow Box, Sugar Gums and Lemon Scented Gums (Evergreen). We recommend either London Plane.

Noorebah Avenue between Koorungal Avenue and Carrathool Street: Remove the Kurrajongs and replant with Claret Ash to pick up the line of the existing Ash.

Noorla Street: From Goondooloo Street to Bowditch Street - Remove and replace the existing Ash trees on the northern side with Manchurian Pear.

Noorla Street: From Goondooloo Street to Lawson Street - Remove and replace the existing Sugar Gums on the northern side with Manchurian Pear.

North Grove Drive: *Koelreuteria paniculata* (4.0 verge).

Ortella Street: From Wyangan Avenue to Konoa Street - On the eastern side where there are currently no trees plant Claret Ash.

Powys Place: *Pistacia sinensis*.

Rodrick Close: *Malus floribunda* (4.0m verge).

Spiers Street: Remove the existing *Eucalyptus cladocalyx*, all of which have been previously pollarded, and replant with *Eucalyptus acaciiformis*.

Thorby Crescent: In this short street the existing Ash are growing too close to the kerb, under the overhead wires and are of variable quality. They are causing damage to the road pavement as well as the kerb and gutter. At the time of the repairs to the road and kerb and gutter, the trees should be removed and replaced with *Malus spectabilis*.

Tubbo Crescent: *Pistacia sinensis* (4.5m verge).

Watson Road (Murrumbidgee Estate Development): *Liquidambar styraciflua* 'Palo Alto' (3.5m verge).

Waugh Street: Build on the Manchurian Pears already planted and complete the street with that species.

Wyvern Crescent: *Malus ioensis* 'Plena' (3.5m verge), *Pistacia sinensis* (4.5m verge).

Yambil Street: The existing *Liquidambar styraciflua* planted in approx. 1m x 1m planting positions cut into the road pavement are generally not performing well. In our experience this species is a slow grower in these conditions and it does not respond well to the reflected heat from the road pavement. Generally, in tough growing conditions, Liquidambars are 'surface rooters' and in this location the majority of the root zone is sealed to the entry of air and moisture and, therefore, excessively dry. While they may have good autumn colour, it will be a long time before these trees develop sufficiently to have a positive influence on the character and amenity of the street. It could be argued that these are inappropriate in this location as their narrow geometric crowns are not sufficiently spreading to provide the shade that seems to be the purpose of the planting.

It is recommended that the Liquidambars be replaced with *Platanus acerifolia*.

Soil tests are to be taken prior to replacement in order to check the soil suitability.

SCHEDULE 5

PRECINCTS 5, 6 & 14 – NEW RELEASES

Future release higher density allotments referred to in clause 4.

Precinct 5A	- South Griffith
Precinct 6A	- Wyangan
Precinct 14A	- Collina
Villages	- Yoogali
Precinct 14B	- Collina
Precinct 6B	- Wyangan
Precinct 5B	- South Griffith



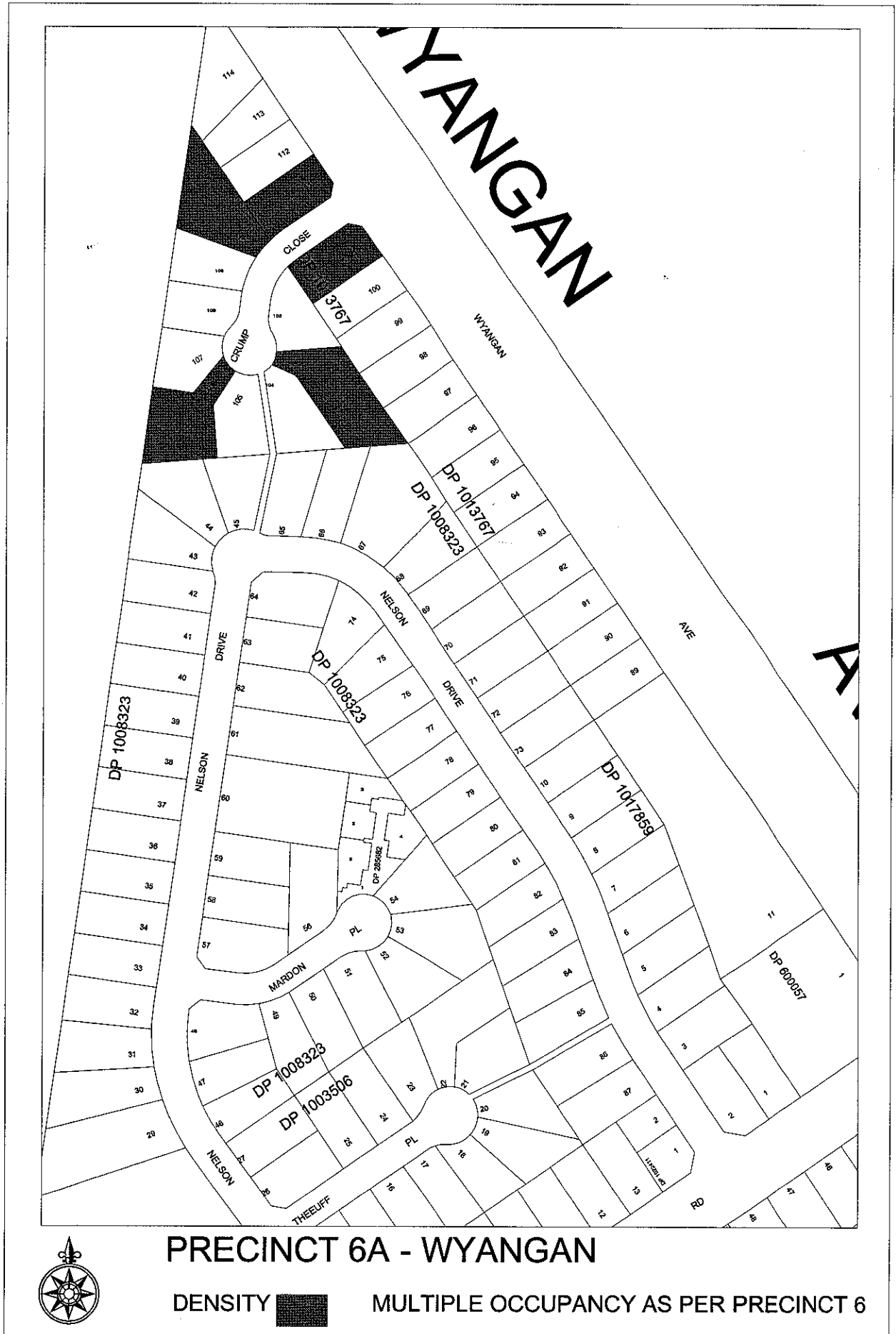
PRECINCT 5A - SOUTH GRIFFITH



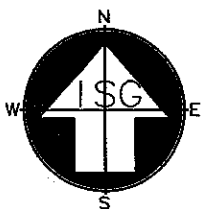
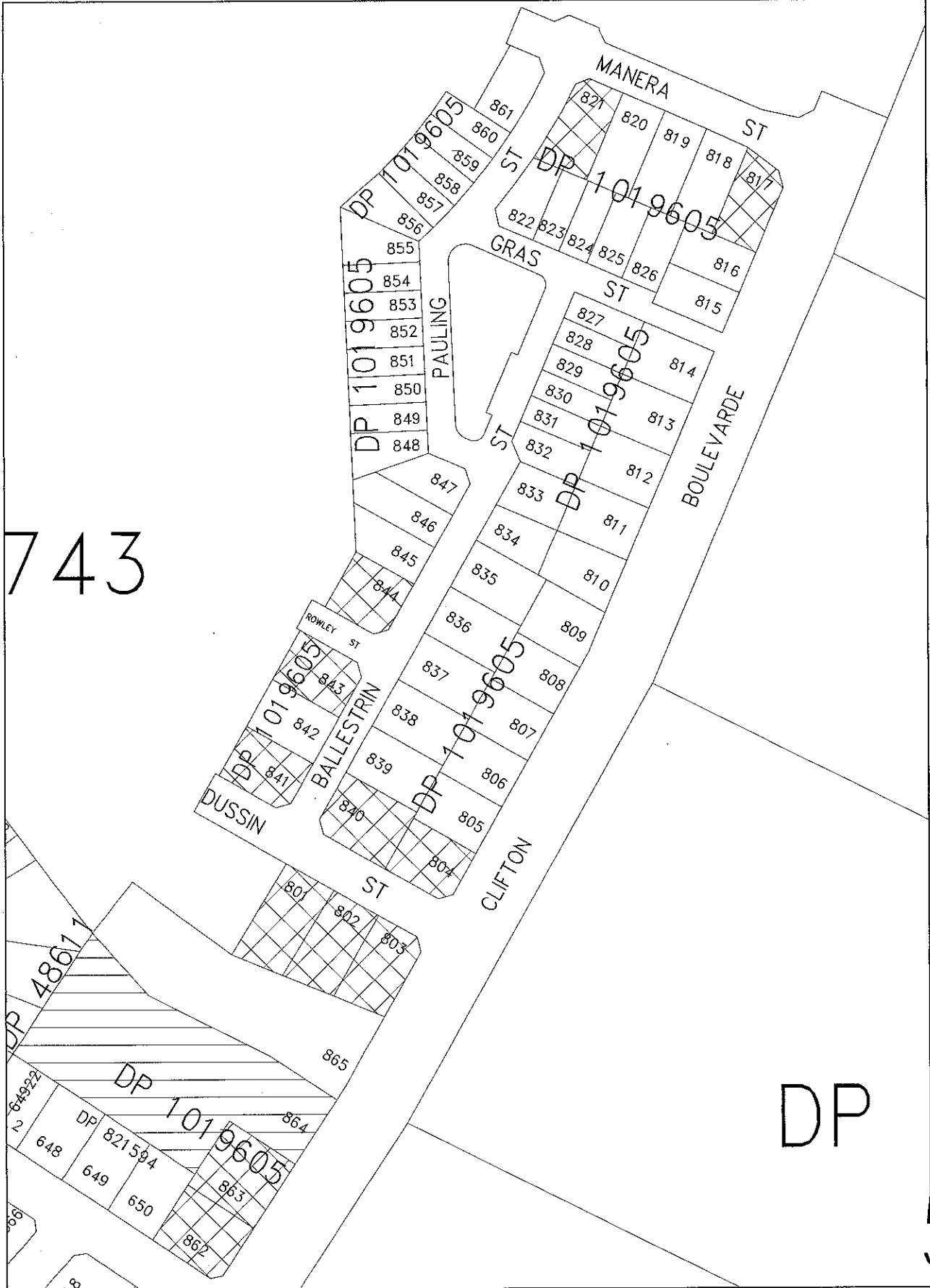
DENSITY



DUAL OCCUPANCY AS PER PRECINCT 5



743



PRECINCT 14a - COLLINA

DENSITY

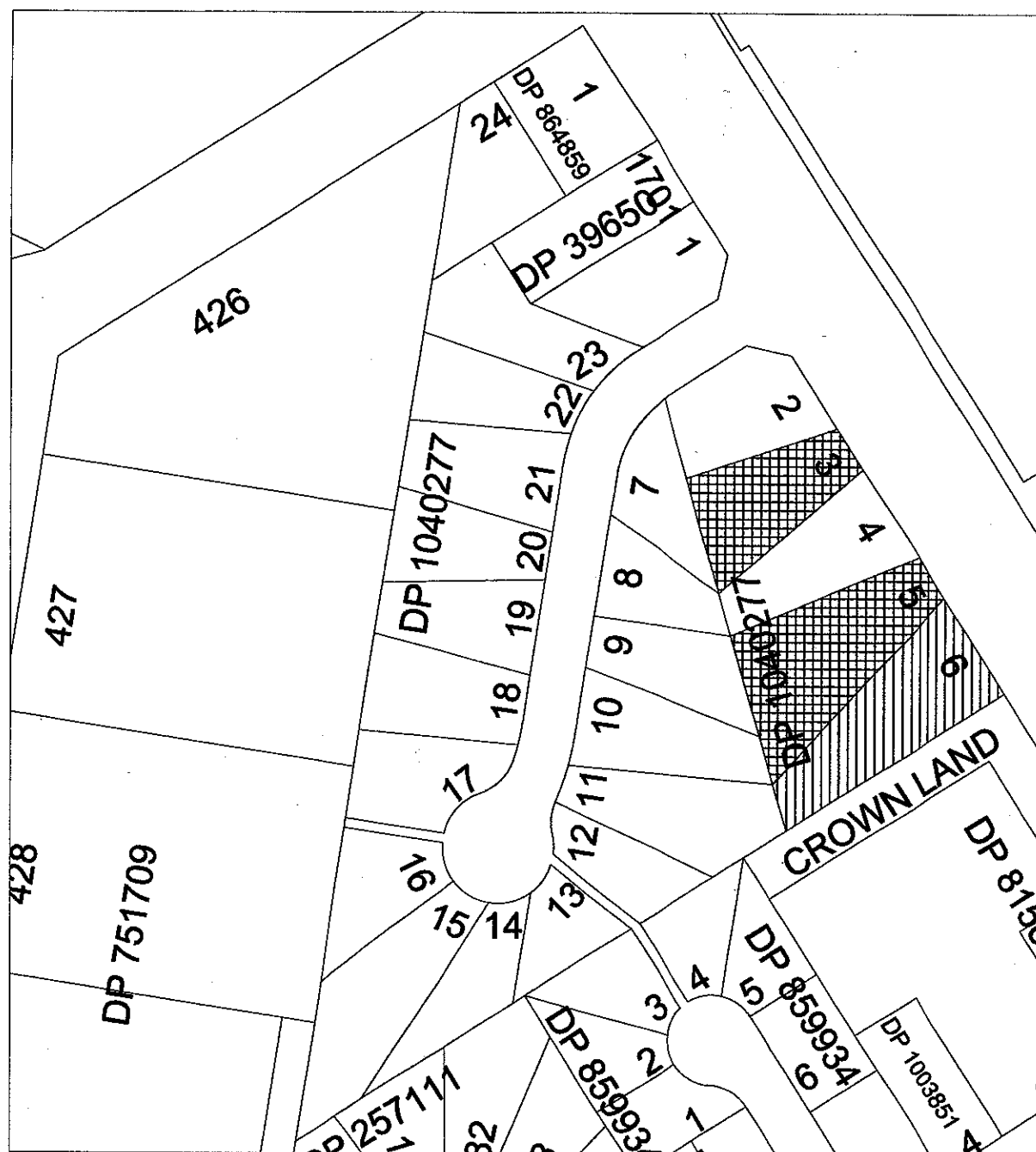


DUAL OCCUPANCY



MULTIPLE DWELLING

NOTE: DENSITY CONDITION TO BE AS PER PRECINCT 14 IN DENSITY TABLE



VILLAGES - YOOGALI



DENSITY



DUAL OCCUPANCY AS PER PRECINCT 5



MULTIPLE DWELLING



PRECINCT 14b - COLLINA
DENSITY



MULTIPLE DWELLING



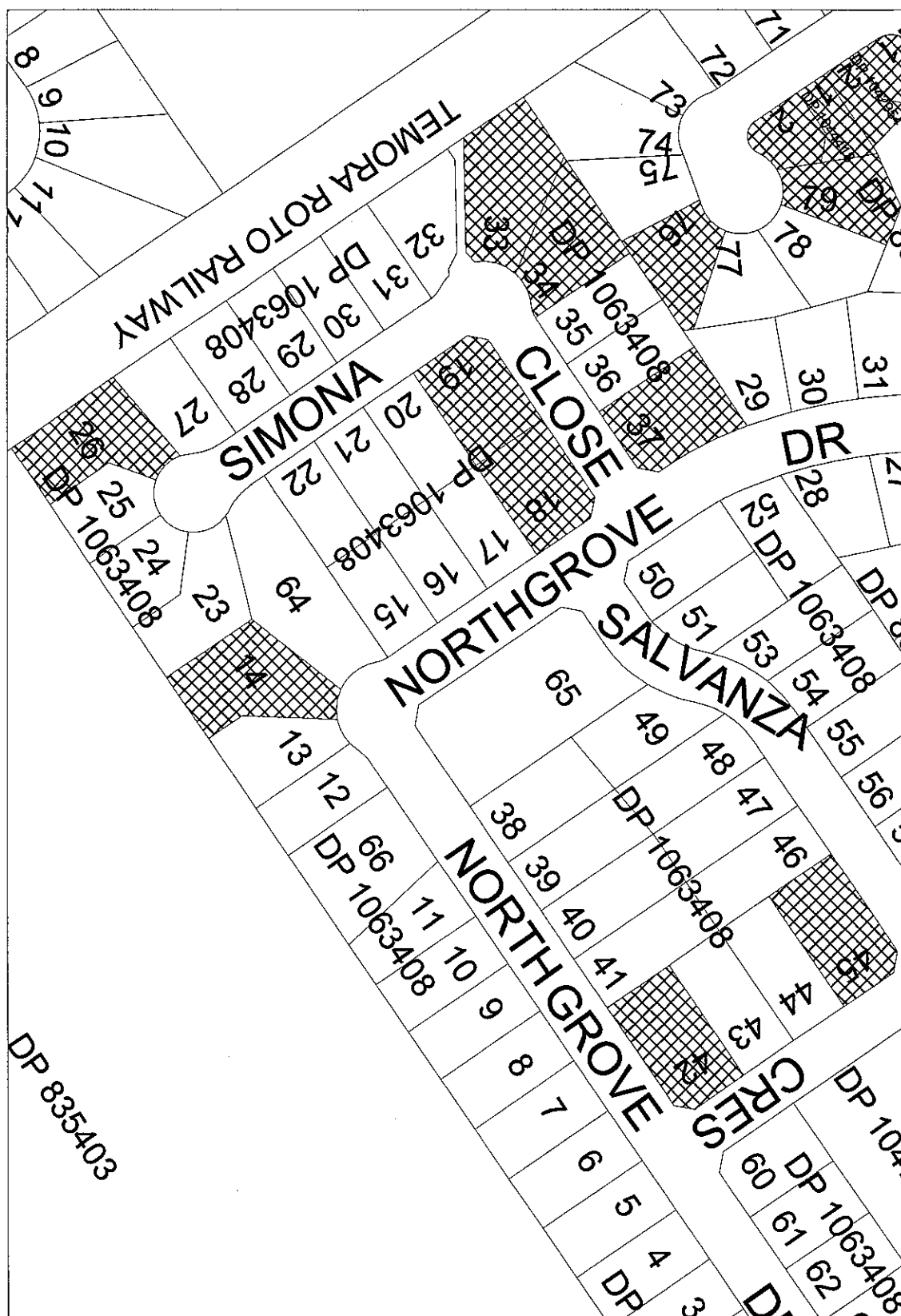
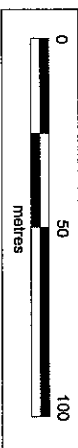
NOTE: DENSITY CONDITION TO BE AS PER PRECINCT 14 IN DENSITY TABLE

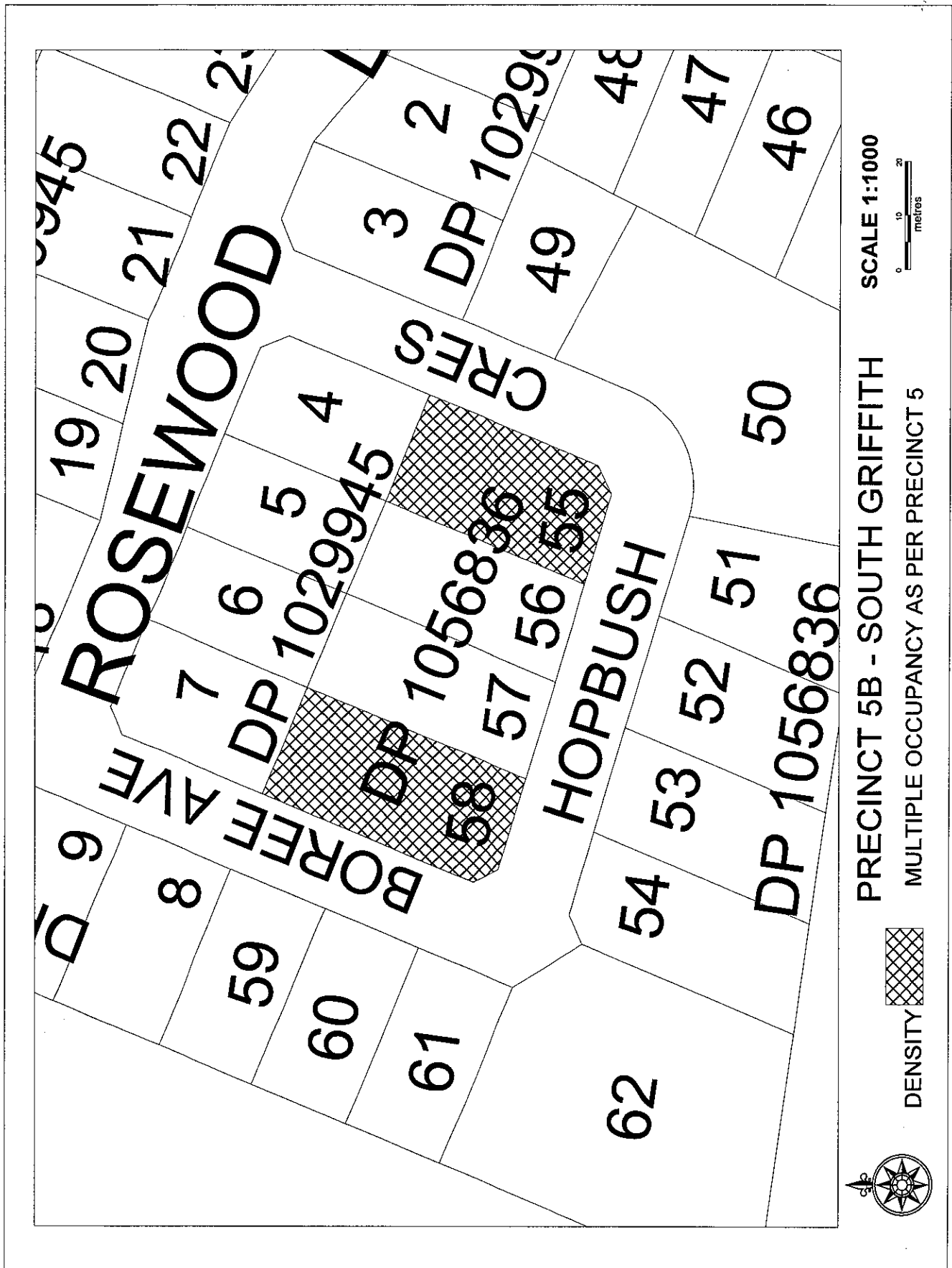
Scale 1 : 3000

COMPILED BY THE GIS SECTION WITHIN GCC 17/02/03

PRECINCT 6B - WYANGAN

SCALE 1:2000





REFERENCES

Byron Shire Council, *Development Control Plan No.1 - Part C: Residential Development*, Byron Shire Council, Byron Bay.

Commonwealth of Australia, 1995, *Amcord: A National Resource Document for Residential Development*, Australian Government Publishing Service, Canberra.

Department of Urban Affairs and Planning, 1997, *NSW Model Code: A model for performance-based multi-unit housing codes*, Department of Urban Affairs and Planning, Sydney.

Department of Urban Affairs and Planning, 1998, *Neighbourhood Character: An urban design approach for identifying neighbourhood character*, Department of Urban Affairs and Planning, Sydney.

Department of Urban Affairs and Planning, 1998, *Better Urban Living: Guidelines for urban housing in NSW*, Department of Urban Affairs and Planning, Sydney.

Nick Hollo, 1995, *Warm House Cool House: Inspirational designs for low-energy housing*, Choice Books, Marrickville, NSW.

Roads and Traffic Authority, 1993, *Guide to Traffic Generating Developments*, Roads and Traffic Authority, NSW.

Standards Australia, 1993, AS 2890.1-1993 *Australian Standard: Parking Facilities – Part1: Off-Street Car parking*, Standards Australia, Homebush, NSW.

The Petcare Information and Advisory Service, 1998, *Companion Animals in the City*, The Petcare Information and Advisory Service, South Yarra, VIC.

FURTHER READING

- Ballinger J., January 1992, *Energy Efficient Housing for NSW*, Office of Energy, Sydney.
- Commonwealth of Australia, 1995 *Amcord: A National Resource Document for Residential Development*, Australian Government Publishing Service, Canberra.
- Department of Environment and Planning, (1983), *Small-Scale Medium Density Housing, Technical Bulletin 16*, Sydney
- Department of Urban Affairs and Planning, 1997, *NSW Model Code: A Model for Performance-based Multi-unit Housing Codes*, Sydney.
- Department of Urban Affairs and Planning, 1998, *Neighbourhood Character: An Urban Design approach for Identifying Neighbourhood Character*, Sydney.
- Faculty of the Constructed Environment, RMIT University, for the National Office of Local Government, 1997, *Australia's Guide to Good Residential Design*, Canberra.
- Hollo, Nick, 1995, *Warm House Cool House: Inspirational Designs for Low-energy Housing*, Choice Books, Marrickville, NSW.
- Lawson B., 1996, *Building Materials Energy and the Environment*, Royal Australian Institute of Architects, Canberra.
- Leichhardt Council, 1994, *Development Control Plan No. 17 – Energy Efficient Buildings*, Sydney.
- Liverpool City Council, August 1995, *Development Control Plan No 33 – Environmentally Responsive Multi-Unit Housing*, Sydney.
- Marcus, C., and Sarkissian, W., (1986), *Housing as if People Mattered: Site Design Guidelines for Medium Density Family Housing*. Berkeley: University of California Press.
- NSW Department of Urban Affairs and Planning, December 1995 *Villas and Townhouses Design Guidelines*, Sydney.
- NSW Department of Planning, October 1994, *Dual Occupancy Design Solutions Manual*, Sydney.
- NSW Department of Urban Affairs and Planning, July 1996, *Courtyard Housing Design Principles*, Sydney.
- Urban Land Authority, (1991), *Medium Density Housing Guidelines*, Melbourne.
- Urban Land Authority, *Smart Block Designs*, Melbourne.

\\SERVER01\WORDPROC\Environmental Services\development\Statutory Plans\DCPs\DCP No. 21 - Residential Development Policy.wk.doc