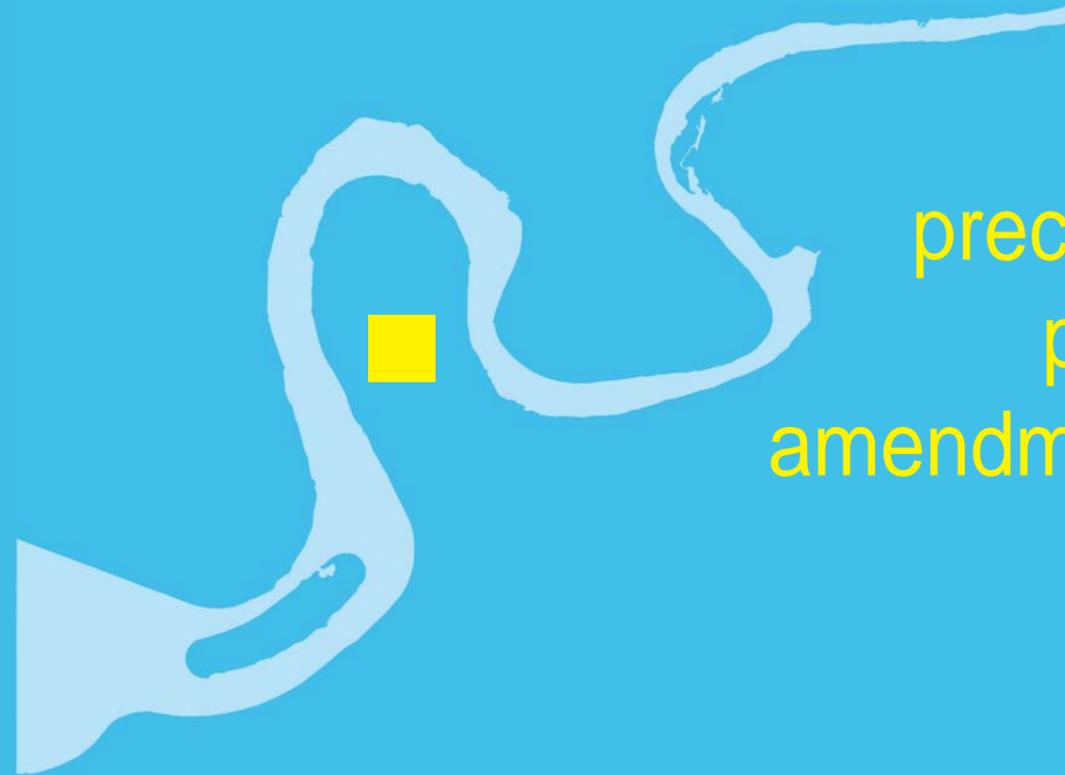


burswood lakes

structure plan

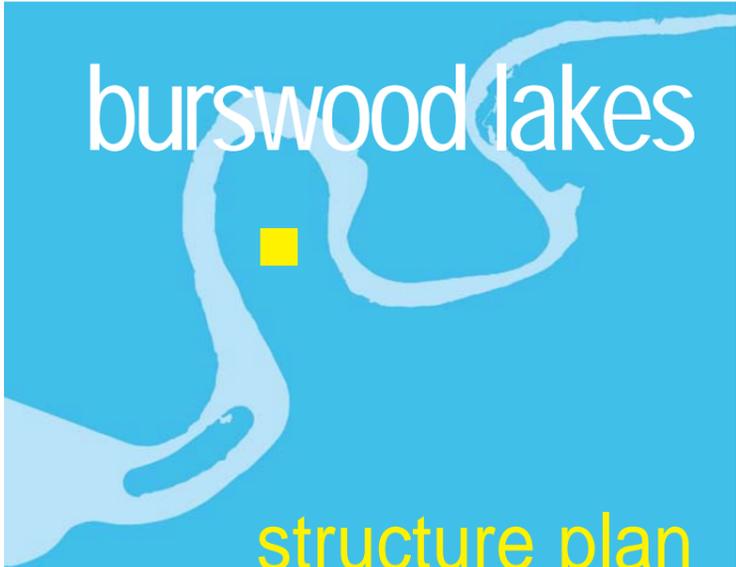
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precinct
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amendment



mirvac fini - hpa architects - burswood ltd

22 april 2003

A stylized map of Burswood Lakes is shown in a light blue color against a darker blue background. A small yellow square marker is placed on the map, indicating a specific location within the lake system.

burswood lakes

structure plan
& precinct plan
amendment

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Appendices(Separate Document)

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B	Burswood Lakes Design Guidelines
C	Compliance Report (By Mr L Stein)
D	Community Benefits Summary Report
E	Economic Benefits from the Development of Burswood Lakes (By Dr P McLeod, University of Western Australia)
F	Preliminary Social Planning and Design Advice (By Dr Wendy Sarkissian)



Ground level view from plaza, looking west

Executive Summary

1.0 Context

Burswood Lakes provides an exceptional opportunity to demonstrate how a coherent community can be developed in a holistic manner. This former industrial site is unique and unrivalled in its history, location and orientation. Previously landmarked by the tall chimneys of the Swan Portland Cement Works, it has magnificent views across the Golf Course and the Swan River, and a direct relationship with the Town of Victoria Park, Burswood Resort and Perth CBD.

The proposed development will embrace this uniqueness by creating an urban neighbourhood that will respond and relate to its environment, benefiting not only its residents but the community as a whole.

The site, which has for so long been inaccessible to the public, will soon become a new community of approximately 3,000 people. This community will grow in a planned, integrated, and cohesive way, providing many benefits and amenities to surrounding residents.

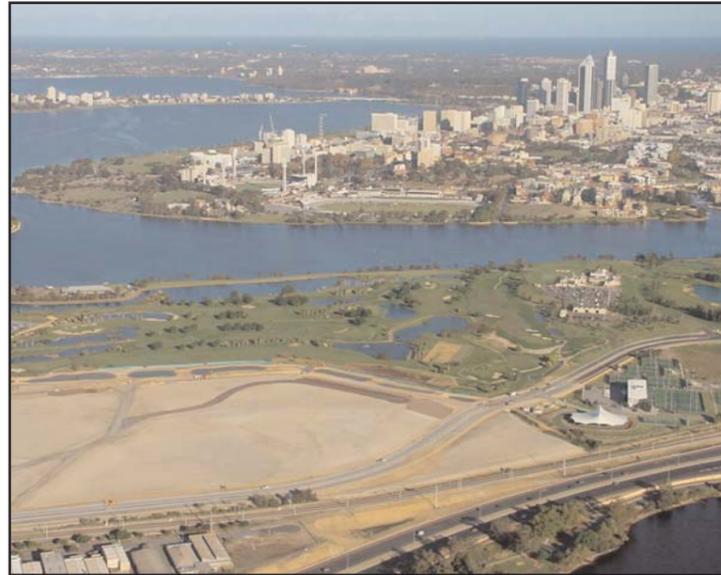
Located on the edge of the Town of Victoria Park, Burswood Lakes is a unique, landmark opportunity. With its exposure to the city, railway, Swan River, Graham Farmer Freeway, and Great Eastern Highway - it will become an ambassador for the Town of Victoria Park and will engage in a dialogue with other important centres of higher-density development, such as the Perth CBD and South Perth.

The development will take cues from the existing form and scale of the adjacent Burswood Resort. In doing so, Burswood Lakes will enhance the existing environment and become an important, integrated residential node and landmark for the Town of Victoria Park and the City of Perth.

2.0 Urban Consolidation, Demographics and Burswood Lakes

Providing housing choice is a key responsibility for all cities across the world. For cities such as Perth, which has a rapidly expanding population, this responsibility is particularly relevant.

Perth has traditionally developed along the north and south coastal corridors with residents choosing to live in one and two-



Aerial view of Burswood Lakes site looking west to the Perth CBD.

storey detached houses on large, self-contained blocks. The result of this development is the urban sprawl we see today which has historically catered to the 'traditional' Australian family. However, this 'traditional' family is changing.

In particular, trends point toward more-residents living closer to the inner city. This is confirmed by statistics within Perth, (and other cities in Australia), where the resident population of central Perth is projected to grow from 5,600 in 1996 to 10,100 in 2031.

The Western Australian Planning Commission (WAPC) and the Western Australian Government recognise that the current rate of urban sprawl in Perth is unsustainable. Issues such as high cost of providing services and facilities, concerns about security and safety, a desire for greater social, economic and environmental sustainability and the need to provide public transport more efficiently are all concerns which relate to an ever expanding city. The WAPC responded to these concerns in 1998 by producing the *Livable Neighbourhoods* document. This document, and its later revisions, offers stakeholders an alternative to the traditional policies on subdivision and enables greater sustainability in an urban context. The key drivers of this document are to create communities which provide higher densities in an urban neighbourhood context which encourage walking, community interaction, reduced reliance on motor vehicles, and mixed accommodation.

It is worth noting that if the anticipated population at Burswood Lakes of 3,000 were to be located on the urban fringe in a traditional Perth subdivision, approximately 100 hectares of land

would be required. When the need to service such a suburb with infrastructure, roads and amenities such as schools, shopping centres etc is also factored in, the true cost to the community becomes prevalent. At Burswood Lakes the same 3,000 people will be housed on 17.1 hectares of rejuvenated inner city land and will utilise existing infrastructure and amenities in the Town of Victoria Park; at no additional cost to the community.

Both demographic trends and the need for urban consolidation have played a major role in the planning of Burswood Lakes. It is for these reasons that the site is proposed as a significant residential development. Low-density development on this site would waste a valuable opportunity to help slow the growth of Perth's urban fringe. As the WAPC's Regional Residential Guidelines states "*when large sites exist with spare infrastructure capacity...the site should be given priority consideration for residential development...*"

Not only will this development respond to this need by rejuvenating a rare land resource on the edge of the Swan River, it will also create a new vibrant inner city community, to the benefit of both the Town of Victoria Park and Perth as a whole.

3.0 The Design Approach

The first principle of the design approach was to look carefully at the location and the context of the site and understand its history - both natural and social. In doing so, a number of studies, reports and workshops have been implemented as follows:

- Context analysis studies
- Stakeholder consultation and workshops
- Review of all current and draft development controls
- Photographic analysis
- Wind and micro-climate studies
- Urban design and architectural analysis
- Historical research - natural and social
- Review of the local and regional movement network
- Engineering and technical assessments

3.1 What Will Burswood Lakes Offer as a Community?

The Burswood Lakes Structure Plan details the creation of a new urban neighbourhood comprising 1,250 dwellings (including 50 dwellings on the adjacent DOLA and MRD-owned land). It will include a diverse range of dwelling types: courtyard homes, detached single family homes, zero-lot-line homes, townhouses, and apartment buildings with one-, two- and three-bedroom units.

The approximate mix of dwelling types is:

- 17 percent courtyard homes, detached single family homes, zero lot lined homes and townhouses. The lot sizes for these dwellings will range from (approximately 200 - 350 square metres).
- 4 percent one bedroom apartments (approximately 65 square metres).
- 49 percent two bedroom apartments (approximately 100 square metres).
- 30 percent 3 bedroom apartments (approximately 130 square metres).

This dwelling mix can also be represented as follows:

- 10 percent of dwellings are detached single family homes, zero lot lined homes and courtyard homes.
- 7 percent of dwellings are two storey townhouses.
- 9 percent of apartments are in two to three storey apartment buildings.
- 29 percent of apartments are in four to seven storey apartment buildings.
- 45 percent of apartments are in twelve to twenty-one storey apartment buildings.

This indicative dwelling mix addresses and responds to the need for urban consolidation and demographic demand outlined above. It will provide a diverse community and add vitality to the area. Future residents of Burswood Lakes are likely to include singles, working couples without children, families, empty-nesters, and retirees. While households may vary in family-size and age, they will share an affinity for urban living that offers them easy access to all the amenities of central Perth.

The development has been carefully designed to ensure that all dwellings have access to an abundance of public amenities, including: 'kick-about areas', child-play and barbecue areas, areas for quiet contemplation, public art, an extensive ornamental lake system, and unrivalled views across the golf course and Swan River to the Perth CBD.

The development has excellent links to the local area and Perth CBD via the railway and the road and pedestrian networks.

Burswood Lakes residents will also have easy access to the extensive regional and local services available in the Town of Victoria Park as well as close-by amenities including the Swan River foreshore, the Burswood Resort and its many facilities, Tennis West and the Burswood Park Golf Course.

Once completed, Burswood Lakes will function as its own community, complete with a mix of dwelling types to accommodate a variety of residents, generous public open spaces, convenience retail, good access to transport, and excellent proximity to the amenities of central Perth.

3.2 What Will the Development Look Like?

Much of Perth's sense of place originates from its relationship with the Swan River. Crawley, South Perth, West Perth, the Perth CBD, and East Perth are all important urban nodes nestled along the river, seen in Diagram I, p.43, and Fig. 3, p.37. These nodes form focal points and landmarks within the riverscape and streetscape of Perth. Burswood Lakes will form a new landmark within the cityscape, creating further synergy between each of these important centres of community activity.

In order to create a landmark urban node, buildings on the site will be carefully located and arranged. Taller buildings will step down in height to both the northern and southern boundaries - acknowledging their adjoining neighbours - and rise toward the centre of the site. This height variation provides the opportunity for architectural expression within a cohesive overall form, and enables the site to become a true landmark within the Perth skyline. Burswood Lakes will be a visible symbol - a celebration - of the rejuvenation of this former industrial site.

The variety of dwelling types noted above will be integrated throughout the development. The taller buildings, which will be arranged in a central meandering spine, will be surrounded at street level by lower rise buildings and townhouses. These podiums will create human scale, shield the basement carparking, and activate the streets and surrounding areas.

The orientation of these buildings will create dramatic 'view corridors' through the site, some of which will be terminated by the landmark buildings of the Perth CBD. These will form public boulevards and plazas connecting two large areas of public green space, the Circular Park and the Lake Park. The careful design of these generously spaced corridors will ensure minimal overshadowing, no loss of privacy and no adverse wind effects. The proposed height controls allow the creation of these larger centralised parks and will provide an active edge and surveillance to the open space.

The low- and medium-rise buildings proposed at the edge of the golf course respond to the contours of the site and form an appropriate defining built edge to the west, as do the low / medium-rise buildings to the north on the DOLA/MRD land (lot 26).

The proposed two- and three-storey houses will be located throughout the development and will be generally grouped around "pocket parks". All streets, parks, and plazas will be defined and edged by buildings with windows overlooking these important public places. This, together with the careful integration of trees, shrubs, public art and street furniture will help to provide a vibrant street life and sense of community.

The future detailed design of all the dwellings will adhere to the principle of achieving architectural excellence through environmentally responsive design.

3.3 How Will Burswood Lakes Develop?

Burswood Lakes will be developed by one developer - Mirvac Fini. Unlike other developments in Perth, Mirvac Fini will design, construct, project manage and market the entire built form project from start to finish.

Mirvac Fini will draw on the extensive experience of the Mirvac Group, which has completed many large scale residential developments such as the award-winning Olympic Village in Newington (Sydney), the Beacon Cove development (Melbourne), the soon to be developed Waverley Park (Melbourne) and Stanhope Gardens (Sydney). These projects, based on similar urban neighbourhood principles as Burswood Lakes, have created successful communities which all add to the vitality of their surrounding areas.

Although Mirvac is a relative newcomer to Perth, its recent merger with the award winning Fini Group, to form Mirvac Fini, capitalises on over 70 years combined experience in the property industry. Fini Group delivered to Western Australia many highly successful residential projects. One particular example is St James Estate in Northbridge which was a rejuvenation of an inner city suburb into an award winning urban village. Other recent developments include Majestic Quay, Aqua Vista and the forthcoming South Cove in East Perth, and most recently the Panorama building on Adelaide Terrace which is now leading the Perth market for quality and amenity.

The benefits of one renowned developer creating the entire Burswood Lakes development can be summarised as follows :

- Commitment from Mirvac Fini to achieve excellence
- Certainty of outcome
- Integrated design and diversity of product
- High quality of product due to in-house architectural expertise
- Coordinated, staged development
- Extensive experience throughout Australia
- One central point of communication with the Town of Victoria Park Officers and consultant team and other Authorities

The Structure Plan and its Design Guidelines, along with the Amendments to the Precinct Plan and its Development Standards, have been carefully considered so that the integrity of the development would not be diluted through second generation development.

As shown on the Indicative Development Staging Plan (Fig. 32, p.87), Mirvac Fini will develop a significant proportion of the public spaces in the early stages. This includes the main entry road, the Circular Park, the Lake Park and the Central Plaza. To facilitate this the initial earthworks stages will cover the majority of the development and include the connection of all services including drainage, water, sewer, power, communications and gas where appropriate.

The indicative staging plan also shows how each stage of the development has been designed to be both a 'stand alone' stage whilst allowing integration with all subsequent stages

There is no doubt that Burswood Lakes is Mirvac Fini's flagship development. As a flagship Mirvac Fini intend Burswood Lakes to set new standards for integrated residential communities in Western Australia. This will be achieved with the extensive backing of the Mirvac Group which has a market value of over \$2 billion and AAA rating on the financial markets. The Town of Victoria Park can be confident that Burswood Lakes will be developed as indicated in this Structure Plan document.



Aerial view of the Burswood Lakes site, with the Towns of Victoria Park and Belmont in the foreground, Burswood Resort and Casino adjacent, and Perth CBD beyond

4.0 How will Burswood Lakes Benefit the Surrounding Community?

The residents of Burswood Lakes, Victoria Park and the wider metropolitan region of Perth will benefit socially, economically and environmentally from the redevelopment of the former Swan Portland Cement site. The benefits will grow as each phase of the project is completed, and will last for generations to come.

The social benefits include:

- Allowing more people to live close to the city, helping to slow urban sprawl.
- A range of public open spaces will be provided for residents and community members to enjoy - from intimate pocket parks and formal plazas to large recreational parks.
- The design layout takes advantage of the dramatic views to the Perth CBD, Burswood Park Golf Course and the Swan River. All residents and visitors will be able to enjoy the views

through the design of large view corridors and viewing platforms throughout the development.

- In order to create an appropriate scale on the site the design locates buildings carefully to provide definition without overwhelming the street. Taller buildings are wrapped with lower level podiums to provide an appropriate transition and human scale to public spaces and streets.
- The tallest buildings are located in the centre of the site to assist pedestrian wayfinding and to create an identifiable heart to the development.
- The majority of streets and public spaces are edged by buildings, creating a safe public realm through passive surveillance.
- High quality materials and careful detailing will ensure that buildings are attractive, long-lasting, and have low maintenance levels.
- The development responds to the changing demographic needs of Western Australia by providing for the increase in one or two person households, couples without children and the baby-boomer age group.
- The majority of residents will be within 800 metres (a ten minute walk) of the Burswood Train Station which will encourage the use of public transport and help reduce car dependency.
- An extensive network of walking and bicycle paths link Burswood Lakes to the regional system, allowing easy access to the Swan River foreshore, Perth CBD, and surrounding suburbs.

Economically the Burswood Lakes development will benefit both the local community of Victoria Park and Perth. Economic benefits will be derived from both direct and indirect employment (approx 958 jobs p.a. for 10 years) and the associated incomes generated (approx \$35.63 million p.a.). Both the Local and State Governments will benefit through additional taxes including council rates (approx \$1.0 million p.a.), payroll tax (approx \$960,000 p.a.) and stamp duty (approx \$30 million). There will be positive economic implications for Victoria Park from the increase in consumer expenditure in the town (approx \$89 million p.a.) and there will be 'spin offs' to surrounding property owners in the form of increased property values. Victoria Park and Perth will also benefit from considerable infrastructure savings in transport, sewer, water, electricity, telecommunications and social infrastructure such as schools.

For further economic details, refer to the independent Economic Benefits report in Appendix E, prepared by Dr Paul McLeod from the University of Western Australia.

Burswood Lakes is committed to being environmentally responsible by using resources wisely and by making intelligent design choices. Both the site planning and dwelling design will, where possible, follow Ecologically Sustainable Development (ESD) principles, striving to exploit exposure to the northern sun during winter, limit water usage, encourage natural and cross ventilation, and build with environmentally responsible materials. The Mirvac Group's national research and development department is committed to the continued development and assessment of ESD practices. Mirvac Fini will take advantage of this knowledge-base and, within the framework of a commercially viable development, will provide a more-sustainable way of living for the residents and wider community of Burswood Lakes. Refer to Community Benefits Summary document in Appendix D.

5.0 Indicative Development Plan

Burswood Lakes has been designed within the controls and guidelines proposed by this document. The proposed development represents a three-dimensional design outcome, which embodies all of the principles and concepts discussed in detail in all sections and appendices of the Structure Plan.

This design for a new community on the Burswood Peninsula and within the Town of Victoria Park will complement the unique nature of the site and will seamlessly integrate with future development on the Superdome site. The following image provides a plan view of the proposed development. Further detail about the plan is contained in the following sections of the document.



Artists impression of the Burswood Lakes development.



An artistic impression of Burswood Lakes in context, with Perth CBD behind



5.1 Burswood Lakes Neighbourhoods

The following details the variety of distinct areas within Burswood Lakes. Each has different characteristics, but all are integrated into the final vision forming a varied, diverse, cohesive community.

The Entry Road, Circular Park, and Central Plaza

The wide entry road bounded by two and three storey houses provides an appropriate sense of arrival. Tree and shrub planting at both the road edges and the median strip help establish the character of this important road. The road curves to reveal the Circular Park, the mid-rise apartments to its western edge and the taller buildings beyond. These buildings frame a primary vista of Perth CBD, the golf course and the river. The Circular Park will not only provide great amenity but its circular form, echoed by the tree planting and buildings around it, will create an important focus and destination for this new community. The Central Plaza, again edged by two and three storey apartments and town houses, will provide opportunity for an urban park, with fountains, pools and water features. This public plaza will link the Circular Park to the Lake Park and public open spaces that terrace towards the golf course lakes.



The Lake Park and Green Links to the Golf Course

The design of the Lake Park will ensure further visual and physical links to the surrounding amenity of the Burswood Peninsula. Visual links are provided via 'green fingers' - linear landscaped links that extend east west across the site providing views of the golf course, river and city. These 'fingers' are terminated on the western boundaries by lookout points, which provide panoramic views of the surrounding landscape. The size and north-south orientation of the Lake Park make it not only an important destination but also an exit route for a pedestrian journey through the development.

Appropriate mixed use, such as a cafe or small grocery store, will be located both in this area and/or the Central Plaza. These amenities located in the tranquil parkland setting will provide a focal point for the development and promote a 'destination' for residents and public alike.



Pocket Parks and Green Links

To complement the larger Circular Park and Lake Park there will be smaller pocket parks and areas of open space, which will provide more intimate places. Some of these places will facilitate quiet contemplation; others, movement and a series of spatial experiences.



The DOLA/MRD Land and the North-East Precinct

Located on opposite sides of the Burswood Link Road these precincts will be suitable for medium density housing. Two- and three-storey terrace houses and lifted apartments - forming five and seven storey medium-rise buildings - will line the Burswood Link Road and provide new opportunities north across the Swan River.



The South-East Precinct

Forming a southern gateway to the development, this precinct will contain some mixed-use and retail components providing amenity to the residents of this new community. Four and five storey apartments on this site may further complement the eventual development of the Dome site.



The Eastern Precinct Family Homes

The indicative development plan incorporates two- and three- storey houses on varying size lots within this precinct. These houses are grouped around the Circular Park or pocket parks. There will be a diversity of housing types ranging from townhouse style, zero-lot and detached dwellings.



Circular Park Apartments

Three- to seven- storey apartment buildings will form a built edge to the western boundary of the Circular Park. Limiting the height of buildings to the eastern edge of the park will ensure the park is in sunshine for most of the day even in winter months. The majority of the Circular Park apartments will overlook the park, ensuring natural surveillance and policing of this important open space.



Lakeside Apartments

The lakeside apartment complexes are positioned around the Lake Park. These buildings have been strategically placed both in relation to the local environment and the larger regional context of the Burswood Peninsula. Their relationship to the adjoining Casino complex and, at a macro level, to the Perth City skyline is of primary importance. At between 12 and 21 storeys, these buildings are similar in scale to their nearest neighbour, the Burswood Hotel and Resort. Each of the taller buildings is located over a two-level car park fronted by two- and three-storey terraces to create podiums which activate and animate the streetscape. The walk-up apartments forming the western edge of the Park Lake also contain five-storey medium-rise buildings, which emphasise street corners and park edges.



Golf Course Apartments and Houses

Stepped buildings ranging in height from two- to six-storey, define the western edge of the site. The stepped four- and five-storey scale responds to the site contours and will preserve view opportunities for the dwellings on the higher ground near the core of the development. The housing types within this precinct include two- and four-storey walk-up apartments, five- and six-storey medium-rise buildings and two- and three-storey houses. These linear buildings along the golf course are occasionally bisected by vistas out into the golf course.



View of Lake Park looking south

Introduction

1.0 Structure Plan Objectives

Under the Town of Victoria Park Town Planning Scheme, a Structure Plan is required to guide development as the new community at Burswood Lakes grows. The objectives of this Structure Plan are:

- **An Evolving Place**
To create a place for the 21st Century, appropriate to its location, that will evolve through viable stages.
- **Links to the Town of Victoria Park**
To forge social, commercial and physical links with Burswood Lakes and the community of Victoria Park.
- **Built Form and Response to Setting**
To create a place that fits within the urban fabric and setting.
- **Connectivity and Transport Orientated Design**
To create a well-connected place.
- **Importance of Public Place: the Public Realm**
To create an accessible and useable public realm.
- **Sustainability**
To create a development that conserves resources, takes advantage of natural amenities, and encourages a diverse residential community that will contribute to the social and cultural life of the Town of Victoria Park. In addition, to make the best use of a valuable urban land resource and contribute to local economic growth.

2.0 Structure Plan Documents

This document constitutes the complete set of documents that will guide the development of the land identified in the Town of Victoria Park's Town Planning Scheme No1 Burswood Precinct Plan P2 as Special Use Zone and known as Burswood Lakes.

These documents include:

- **Part A - The Structure Plan Rationale**
The Rationale is the background and supporting documentation that has been prepared to justify the Structure Plan and the Scheme Amendment. This document provides an Indicative Development Plan (Fig. 18, p.67) that identifies the development consortium's intent for the Special Use Zone.

- **Part B - The Structure Plan**
The Structure Plan details the requirements in the Burswood Precinct Plan P2 that forms part of the Town Planning Scheme. It provides a framework for future subdivision and development.
- **Part C - Precinct Plan Amendment**
It is necessary to vary some standards in Precinct Plan P2 to allow the development of an urban neighbourhood at Burswood. Part C is the document necessary to initiate that amendment. The amended provisions are set out in the Appendices.

The development proponent for the purpose of the Structure Plan is BL Developments - a joint venture between Burswood Ltd. and Mirvac Fini (WA) Pty Ltd.

3.0 Process

The Structure Plan, Precinct Plan Amendment and supporting documentation have been developed through a regular process of consultation with the Town of Victoria Park Officers and consultant team and the Department for Planning and Infrastructure. Regular meetings and workshops have taken place to discuss specific issues and to engage the entire project team.

The consultation process included an initial urban design workshop held at the Town of Victoria Park's offices following a site visit. This workshop outlined background information prepared by the development proponent consultant group and involved the Department for Planning and Infrastructure, the Town of Victoria Park and its consultant team. Key issues were identified and discussed.

The information gathered in this process enabled the design team to formulate the urban design principles of the Structure Plan.

A technical workshop was also held with the Town of Victoria Park officers and its consultant team to ensure the technical, engineering and environmental issues were assessed by the development proponent team to an appropriate level.

Following the technical workshop, a second urban design workshop was held to further discuss issues associated with the Structure Plan.

The first Draft of the Structure Plan document was submitted to the Town of Victoria Park Project Team and Design Review Group on 20 December 2001. A second 'informal' lodgement of the

document, which addressed comments made by the Council team, was submitted to the Council Project Team on 9 May 2002. This 'formal' submission, dated 1 July 2002, addressed all comments raised as a result of the former two submissions.

Subsequent to Council resolution, a 42 day period of public advertising of the Structure Plan and the Scheme Amendment commenced on 15 October 2002, and closed on 26 November 2002.

4.0 Key Issues

The key urban design issues that were identified at the first urban design workshop were:

- Form, scale and skyline
- Burswood train station location
- Connectivity and road network
- Relationship of public and private spaces

Key issues identified at the technical workshop were:

- Ground conditions and long-term management of and responsibility for a remediated site
- Management of stormwater and the lake system
- Management of public open spaces
- Road Network and traffic management

Key issues from the second urban design workshop were:

- Building form and height
- Public open space: accessibility and usability

5.0 Study Team

Architectural, Town Planning, Engineering, Traffic, Landscaping, Geotechnical, Wind and Environmental assessments have been undertaken by the proponent's consultants. Their respective summaries have been incorporated into 'Part A Structure Plan Rationale' of this document whilst the full consultant reports are provided as separate documents as follows:

Discipline	Consultant	Document Title / Ref.
Infrastructure	Sinclair Knight Merz	Infrastructure Report June 2002
Traffic	Sinclair Knight Merz	Traffic Report (Final) May 2002
Traffic	Sinclair Knight Merz	Addendum to Traffic Report Dec. 2002
Geotechnical	Golder Associates	Geotechnical Studies - Burswood Lakes
Environmental	ATA Environmental	Environmental Management Exec. Sum
Landscape	EPCAD	Landscape Masterplan Report
Social Planning	Dr Wendy Sarkissian	Prelim. Soc. Planning & Design Advice
Social Planning	Dr Wendy Sarkissian	CPTED Assess. / Bldg. Control Env.

The team involved in preparing the Structure Plan includes:

- Project Management Mirvac Fini
- Architecture and Master Planning HPA Architects
- Town Planning Hames Sharley
- Landscape Architecture EPCAD
- Environmental ATA Environmental
- Structural Engineering Ove Arup
- Infrastructure Sinclair Knight Merz
- Traffic Engineering Sinclair Knight Merz
- Geotechnical Golder Associates
- Surveyor John Giudice & Assoc.
- Wind Dr. Kenneth T. Kavanagh (UWA)
- Legal Les Stein (Barrister)
- Economic Dr. Paul McLeod (UWA)
- Social Planning Dr. Wendy Sarkissian

The team involved in assessing the Structure Plan includes:

Town of Victoria Park Officers

- Chris Eaton
- Alex Sheridan
- Rochelle Lavery
- Ryan Victa

Town of Victoria Park Project Team

- Project Management APP Argenta
- Town Planning The Planning Group
- Infrastructure Van Der Meer
- Environmental ENV
- Geotechnical Coffey Geosciences

Town of Victoria Park Design Review Group

- George Gillan
- Tony Ednie-Brown
- Michael Tooby
- Robert Mulchay

Department for Planning and Infrastructure

- Malcolm Mackay
- Claire Franklin

Department of Land Administration

- Dennis Millan
- Richard Wolski

Main Roads WA

- Dennis Fowles

Burswood International Resort

- John Wilshaw



Aerial view of Burswood Lakes looking toward Victoria Park and the east hills

6.0 Statement of Intent

Burswood Lakes has been designed to acknowledge the prominence of the Burswood Peninsular as required by the Town of Victoria Park's vision for the Special Use Zone of the Town Planning Scheme. It recognises the site as a unique landmark opportunity.

The Structure Plan and Precinct Plan Amendment will facilitate the development of a high profile, well-integrated community that is in keeping with its location and inherent benefits. Large areas of public open space will be created that will complement the existing landscaped parklands and river surrounds. It will incorporate links to the existing amenities via a well-integrated pedestrian, cycle, road and rail network, which provides good access to both local and regional facilities.

The Structure Plan and Precinct Plan Amendment recognise the importance of the Precinct as a backdrop to the river and views of the Peninsula. The built form of Burswood Lakes will be designed to complement local and regional character and to achieve a high aesthetic standard.

Burswood Lakes has been planned according to Liveable Neighbourhoods principles to create a cutting edge, environmentally-conscious community for Perth.



Water and open space along Swan foreshore adjacent to Golf Course and Burswood Lakes site

Illustrations of Burswood Lakes

The streets and public open spaces in Burswood Lakes are proposed to be pedestrian-friendly and useable. Through a series of perspective sketches, key spaces and views throughout the site were carefully examined. This study helped the design team to determine appropriate building heights and setbacks, potential facade treatments at ground level, important landscaping elements, and to generally achieve a sense of what it might be like to walk through the new community once completed.

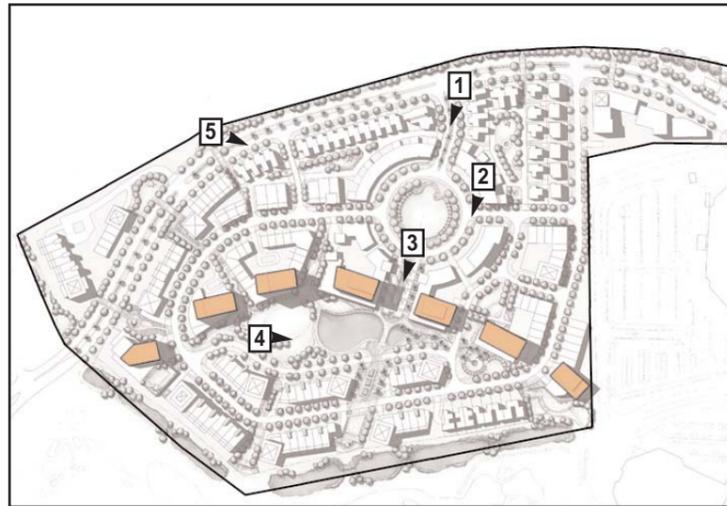
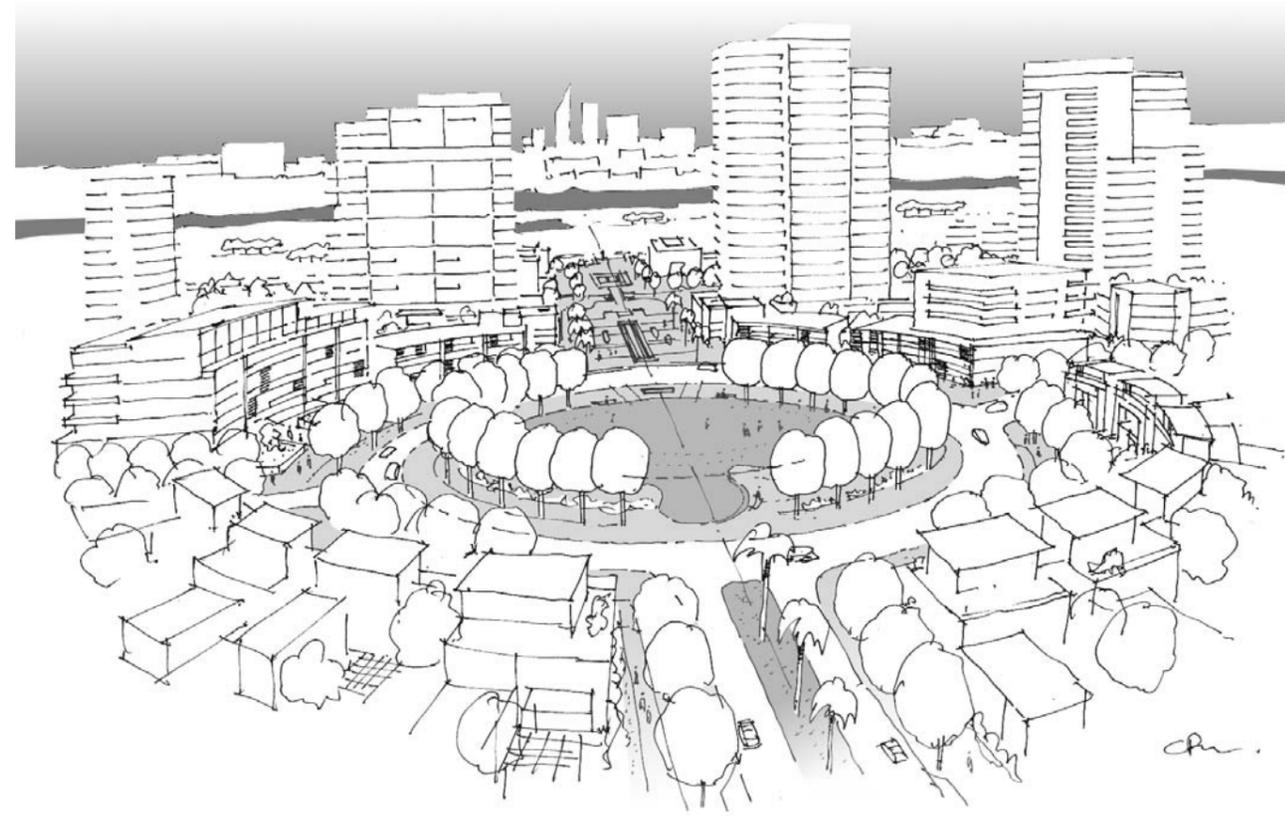
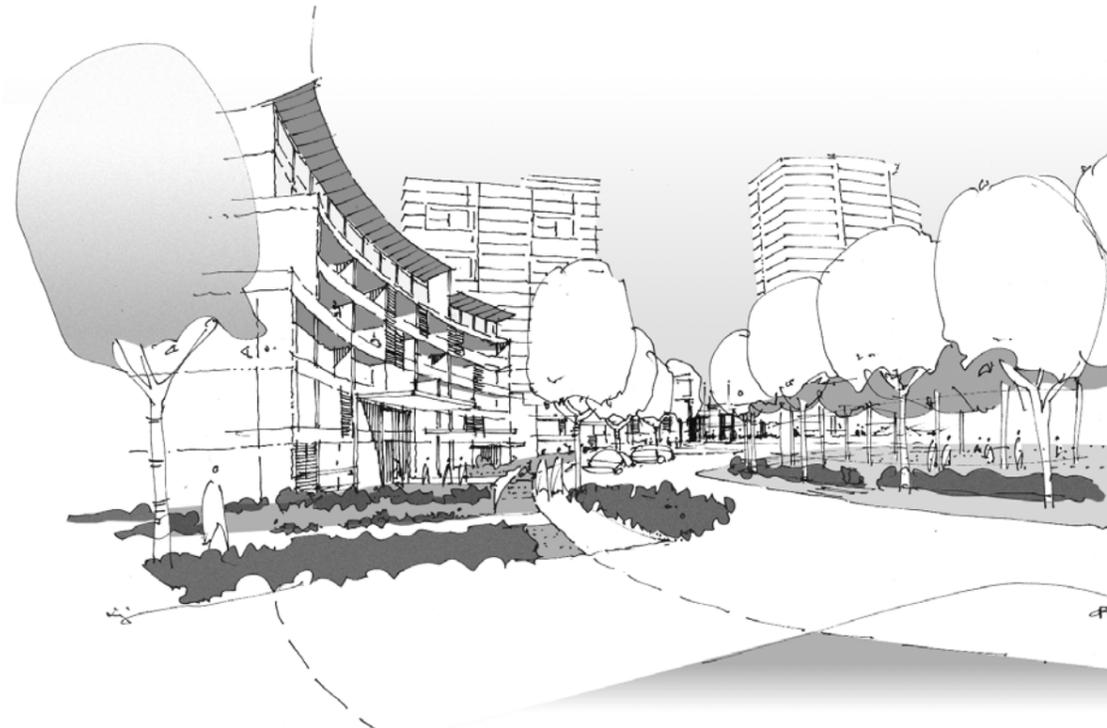


Diagram A: View locations for Illustrations



View 1: Aerial of Circular Park with view to Perth CBD



View 2: Ground level view of apartments surrounding the Circular Park



View 3: Ground level view from plaza, looking west to Perth CBD



View 5: View of Burswood Lakes from Burswood Link Road



View 4: View of Lake Park looking south



Aerial of Circular Park with view to Perth CBD

Part A - Structure Plan Rationale

1.0 Project Rationale

The document, Towards a Vision of Perth in 2029, a publication of the Future Perth Study, concluded that the future of Perth includes:

Having a series of high quality, environmentally sensitive urban villages overlaid on the metropolitan area, centred on transport nodes linked to Perth's central area where walking and cycling is a natural way of moving about. The villages can comprise mixed uses, community facilities and housing choice.

The placement of a large residential development within the vicinity of the City of Perth is consistent with this concept and, as well, the historical principle of the need to have consolidation of the urban form. The 1987 Planning for the Future of the Perth Metropolitan Region, November 1987, a review of the Corridor Plan, was for

the consolidation of existing and future urban development, the facilitation of job creation and employment growth in a new pattern of centres throughout the middle suburbs, high levels of accessibility via both public and private transport ...

This concept that there should be consolidation of urban development was emphasised as one of Metroplan's 10 themes that argued for the primacy of such development and the need for "a tighter urban form."

This reasoning favouring urban consolidation was based on planning concepts to prevent suburban sprawl but, more recently, the practical reasons have become important. The financial justification for closer urban development was set out in Working Paper No. 2 of the Future Perth Study "The Costs of Urban Form." This paper explained that the cost to the community decreases with urban consolidation as opposed to development on the fringe. This is reflected in various documents such as the Discussion Paper for the State Planning Strategy on Transport where it is stated:

From a transport perspective there are some advantages in encouraging greater growth in the regional centres outside the Perth region, and the fostering

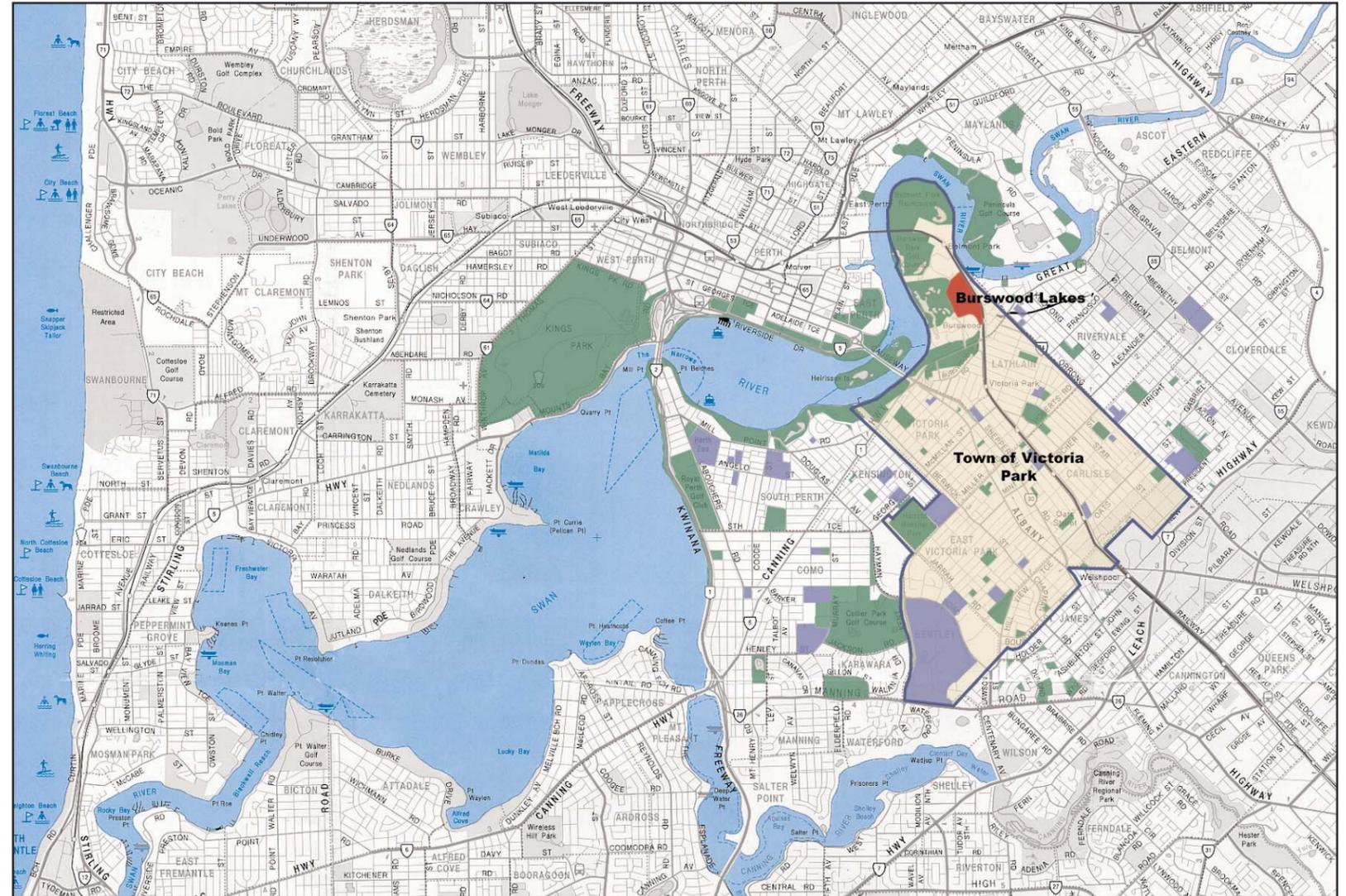


Diagram B: Site Context

of urban Consolidation within Perth and urban regional centres.

The concept of urban consolidation is that the Inner Sector areas, including Victoria Park, should be the subject of a tighter urban form of development, where appropriate having regard to the amenity of existing communities.

Demographics

The need for urban consolidation arises from demographic trends. Using the population figures from the Ministry for Planning (Western Australia Tomorrow Population Report No. 4, October 2000) for Victoria Park, there is an increase forecast of population from 27,000 in 2001 to 33,000 in 2016, rising to 36,300 in 2031.

The median age of population, according to ABS statistics for Victoria Park will be 35 in 2016, suggesting a need for diversified housing. This is confirmed by a trend towards such housing that will see the resident population of the central City of Perth grow from 5,600 in 1996 to 10,100 in 2031. A recent study for the Ministry for Planning: Population Issues: Metropolitan Working Paper No. 5, indicated that traditional housing will continue to be found in the outer suburbs but the inner areas will attract diverse housing for less traditional family units. These units will be for one or two person households that represent 55% of households in the State, couples without children arising from lower fertility rates and the 'baby-boomer' age group, retired individuals and couples resulting from improved life expectancy and other groupings formed by a higher divorce rate.



Aerial view of the Burswood Peninsula

The lot release in the Inner Sector (including Victoria Park) according to the Metropolitan Development Program, Land Supply and Demand Outlook Report of January 2002 will be 1,126 lots by 2005/06 although the five year high and low scenarios indicate residential demand will be over 5000 dwellings. These figures appear to be underestimated when the time line is increased as a result of the recent Commission paper: Population Report No. 5, May 2002, "Tomorrow's Dwelling and Labour Force in Western Australia." This report shows, at Table C2, that for Victoria Park, the private dwelling projections are 15,741 for 2016. This represents a dwelling need increase of 21.6% since 1996.

In the calculations of demand, the Metropolitan Development Program included the development of large sites as the means to cover the requirements of this demand. This was necessary because of the recognition in the Metropolitan Development Program Strategic Statement (at p.41) that 'very little zoned land' for residential development will be available in the Inner Sector after 2004/5. The recognition that large undeveloped sites will be important in supply of housing stock is provided in the Commission's Regional Residential Guidelines for the Perth Metropolitan Region. In the Guidelines (at p.5) it is stated:

Large sites within an established urban area, such as those resulting from former institutional or industrial development, may also present opportunities for providing a range of dwelling types at higher densities. This is likely to apply especially in the central areas of Perth and Fremantle and also in other areas where a mix of residential uses is compatible. Where large sites exist with spare infrastructure capacity or where it can be provided, the site should be given priority consideration for residential development to maximise the use of that infrastructure potential.

2.0 Burswood Lakes Site

The Burswood Lakes Site provides an exceptional opportunity to demonstrate how a coherent residential community can be developed with a holistic approach. The site is unrivalled in history, location and orientation. It has magnificent views across the Burswood Park Golf Course and the Swan River, and has a direct relationship with Perth CBD, Burswood Resort and the Town of Victoria Park.

The development proponent will embrace this uniqueness. It will create a community that will respond to, and integrate with, its environment, not only to the benefit of its residents but to the community as a whole.

This community will offer an alternative to traditional housing in Perth and will provide for the accommodation needs of a changing demographic. It will take advantage of existing amenities and infrastructure in the Town of Victoria Park without causing adverse effects.

The various elements that make the site unique - its history, topography, orientation, views and relationship with the Town of Victoria Park, the Burswood Resort and the Swan River - establish a framework for the design.

The design has considered the following aspects:

- Location and context
- Planning context
- Site analysis and opportunities
- Access and transport
- Environmental issues
- Infrastructure provision
- Public open space and landscape

3.0 Location and Context

Burswood Lakes is located within the Town of Victoria Park approximately 5 kilometres east of the Perth CBD and 2 kilometres from the Victoria Park post office. The site context map (Diagram B, p.23) locates the site within the Perth metropolitan area. It has a net land area of 17.1132 hectares following the creation of the Burswood Link Road.

4.0 Ownership

4.1 History

The last two centuries have seen significant modification of the Burswood Lakes site and the Burswood Peninsula. The evolution, cultural and historic significance of the Burswood Peninsula is documented in a number of publications including *Know your Suburb...Burswood*, By Dr Geoff Gallop MP.

Plans dating back to 1888 reveal that the site's topography has changed through both natural and human intervention shown in Diagram O, p.66. The need for a more direct navigable route for boats led to the construction of a canal by civil engineer Henry Reverley who, in 1831, turned the Peninsula into an island. Boats were still using the canal in the 1920's during the construction of the cement works.

Over the last 200 years, much fill and re-shaping of the wetlands has taken place. The last 100 years saw the introduction of industries such as The Red Castle Brewery and James Hardie Industries, and the construction of many buildings by the Swan Portland Cement Company (originally the West Australian Cement Company) for the production of cement-based products. These buildings which included kilns and tall chimneys remained until April 1999.

The site has now been fully remediated. The Department of Environmental Protection, on behalf of the Minister for the Environment, has signed off on the site as suitable for residential redevelopment.

4.2 Regional Context

The relationship between Burswood Lakes and its metropolitan context is shown in Diagram B - site context, p.23.

Perth is currently experiencing rapid expansion, sprawling north and south along coastal corridors. Inner city locations that offer opportunities for urban consolidation are valuable resources. Burswood Lakes is one of these locations.

Perth - like many cities across the world - has developed along its main transport arteries. The city's early growth can be charted along the natural and man-made evolution of the river. The completion of the railway in 1893, and more recently the construction of the Graham Farmer Freeway and Windan Bridge with its cycleway in 1999, has dramatically increased the transport connections to the Burswood Peninsula. The possible introduction of ferry stops along the river will also enhance this connectivity.

The region around Burswood Resort includes established residential areas as well as commercial and industrial areas (see Surrounding Uses, Figure 1, p.25). The surrounding suburbs include:

- Burswood
- Lathlain
- Victoria Park
- Carlisle
- East Victoria Park
- Welshpool
- Rivervale
- Belmont
- St James

Retail uses within the region are identified in the WAPC Statement of Planning Policy No.9 Metropolitan Centres Policy Statement for the Perth Metropolitan Region. These include the following centres:

- Regional Centres
 - Belmont
- District Centres
 - Victoria Park
 - East Victoria Park
 - Bentley
- Neighbourhood / Local Centres
 - Archer Street
 - Lathlain Place
 - Orrong Road / Archer Street
 - Carlisle
 - Tuckett / Oats Street
 - Griffiths Street

There are four major industrial / commercial areas within the regional catchment:

- Welshpool / Carlisle
- Belmont
- Burswood Link Road
- Burswood west of Great Eastern Highway and east of the Railway

The demand for schools has been assessed under the Western Australian Planning Commission - Policy DC 2.4 - October 1998 which states that in determining a broad need for school sites, it is necessary in each particular case to assess that need against existing school sites, established schools, rate and type of development including demographic profiles. The Department of Education requires one Primary School site for between 1500 and 1800 housing units and one Secondary School site for every 4 or 5 primary schools. Therefore the proponent is of the opinion, after taking into account the WAPC requirements, that education is



Tennis West (State Tennis Centre)

adequately provided for in the local and regional catchment with the following facilities:

- University
 - Curtin University
 - University of Western Australia
 - Edith Cowan University Mt Lawley
- TAFE
 - Carlisle Campus
 - Mount Lawley Campus
- High Schools
 - Kent Street
 - Regent College
 - Ursula Frayne Catholic College
 - Kewdale Senior High School
 - Divine Mercy Catholic College
 - Mercedes College
 - Trinity College
- Primary Schools
 - Victoria Park Primary School
 - Kensington Primary School
 - Seventh Day Adventist Primary School
 - Perth Montessori School
 - South Kensington School
 - East Victoria Park Primary School
 - Holy Name Primary School
 - Tranby Primary School
 - Lathlain Primary School
 - Millen Primary School
 - Divine Mercy Catholic College

Major Parks and Recreation facilities within the region include:

- Lee Reserve
- Lathlain Park
- Tom Wright Park
- Parnham Park

- Somerset Pool
- Read Park
- Fletcher Park
- Kate Street Reserve
- The Memorial Gardens
- Charles Paterson Park
- McCallum Park
- G O Edwards Park
- Kagoshima Park
- Wilson Park
- Peet Park
- Carlisle Reserve
- Tomato Lake
- John MacMillan Park
- Raphael Park
- Harold Rositer Park
- Fraser Park
- Higgins Park

Several community facilities exist within close proximity to the subject site and, although not publicly owned, they provide a service to the community. These include:

- Town of Victoria Park
- Perth CBD
- Burswood Train Station
- Burswood Peninsula Foreshore
- Burswood Resort, Casino and Theatre
- Burswood Park Golf Course
- State Tennis Centre
- Restaurants and other eating facilities at Burswood Resort
- Belmont Racecourse
- Burswood Water Sports Centre

4.3 Local Context

The local context plan (Diagram C, p.27) shows the connections and relationships the site has to surrounding land uses, physical and built features.

The southern part of the Burswood Peninsula is dominated by the Burswood Resort - a group of large scale sculptural buildings. The Burswood Hotel is approximately 17 residential storeys high and is a landmark in the inner city landscape. The Burswood Resort also offers a range of restaurants and entertainment facilities.

The Superdome - proposed to be demolished in the short- to medium-term - is also a building of significant scale and is currently used for large entertainment events.

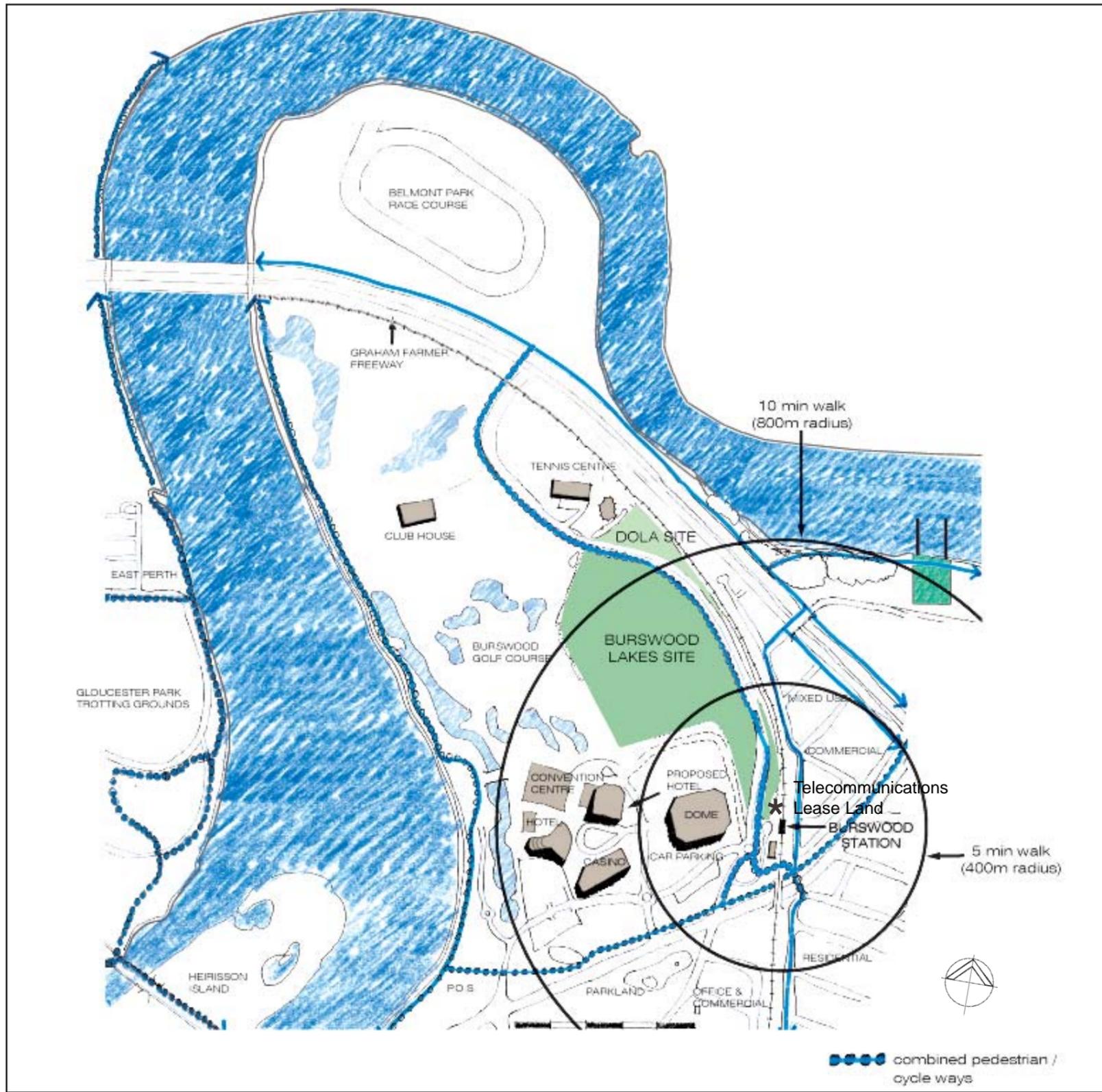


Diagram C: Local Context and Proximity to Existing Cycleways and Railway Station

The Burswood Train Station, adjacent to the Superdome, is currently used by Burswood Resort patrons, local workers, and residents of Rivervale.

Car parking for the Burswood Resort, Superdome and Casino is a significant land use in the immediate area. A large amount of this parking is currently at grade. Further to the south, the Causeway Precinct of Victoria Park provides the existing urban edge to the town.

The Belmont Racecourse, the State Tennis Centre, and the Burswood Golf Clubhouse and Links occupy the northern part of the Peninsula.

To the east, the railway and the Graham Farmer Freeway create a barrier to Rivervale.

The existing local strip centre of Rivervale, located along Great Eastern Highway, is within walking distance of Burswood Lakes. This area includes a service station, convenience store, bakery, pizza shop, pharmacy, lotto centre, post office, newsagency, and the Rivervale Hotel.

Rivervale is a mixture of commercial and residential buildings of varying character and age. This area is likely to undergo some redevelopment in the near future, with the Graham Farmer Freeway providing greatly improved access.

5.0 Planning Context

A number of planning documents will influence development of Burswood Lakes as follows.

5.1 Statutory Context

The Metropolitan Region Scheme (MRS) is the metropolitan-wide statutory document that governs the location of land use. Burswood Lakes is zoned Urban under the MRS.

The Town of Victoria Park Town Planning Scheme No.1 currently governs development within the Town of Victoria Park. Diagram D (p.28) defines the use zones.

The Burswood Lakes Structure Plan responds to the Town of Victoria Park TPS 1 general objectives as outlined below:

- a) To cater for the diversity of demands, interests and lifestyles by facilitating and encouraging the provision of a wide range of choices in housing, business, employment, education, leisure, transport and access opportunities.

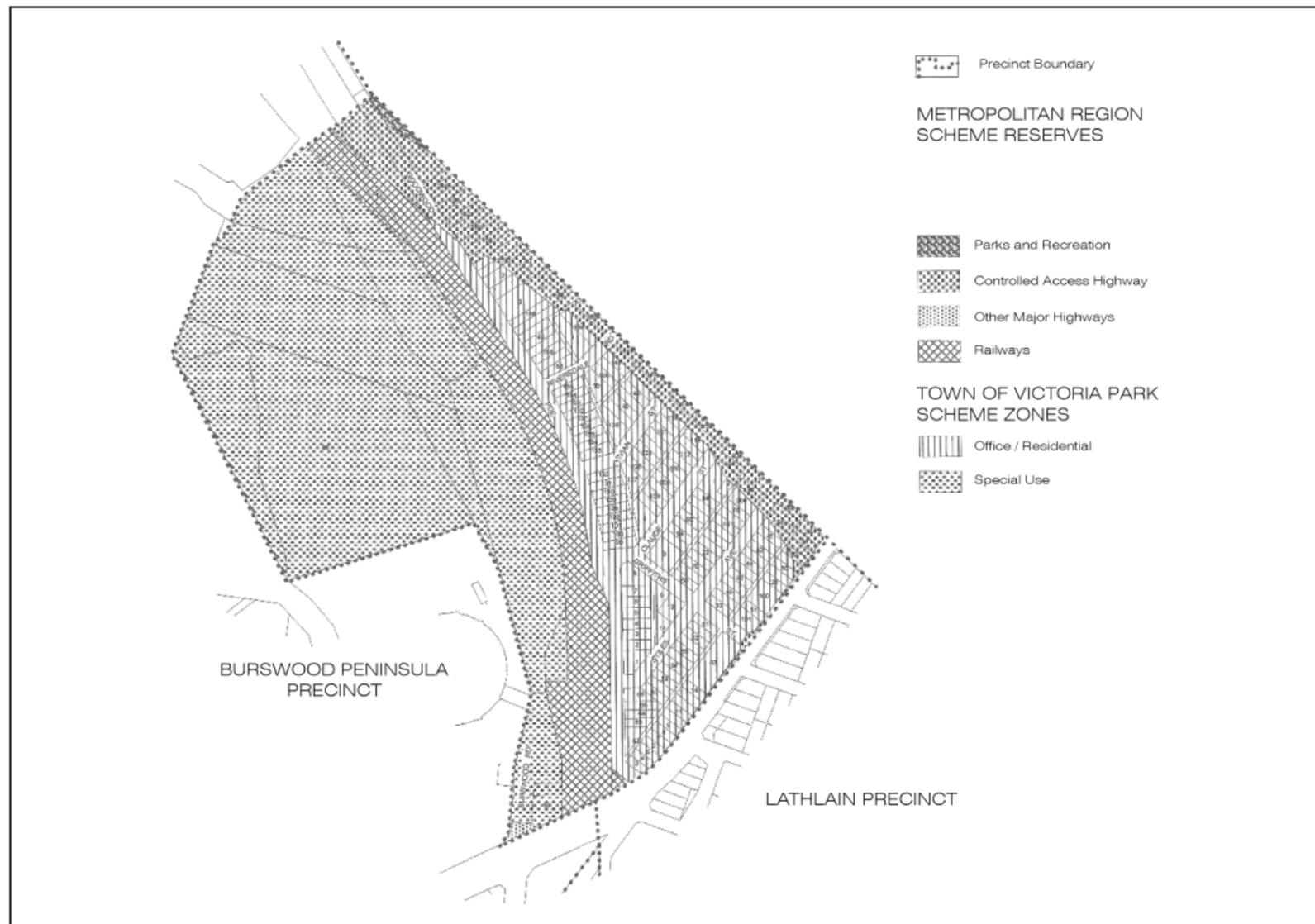


Diagram D: Burswood Precinct 2 and Special Use Zone

- By offering a diverse range of housing types to cater for changes in lifestyle that are occurring in near city locations.
- b) *To protect and enhance the health, safety and general welfare of the town's inhabitants and the social, physical and cultural environment of the town.*
- By providing a substantial addition to the residential community of Victoria Park while not adversely affecting existing residential areas.
- c) *To ensure that the use and development of land is managed in an effective and efficient manner within a flexible framework which*

*(i) recognises the individual character and needs of localities within the Scheme area; and
(ii) can respond readily to change*

- By providing a planning framework that is consistent with regional planning objectives and allows for the planned evolution of the site as an urban neighbourhood.
- d) *To ensure planning at the local level is consistent with the Metropolitan Region Scheme and wider regional planning strategies and objectives.*
- By providing a planning framework that is consistent with regional planning objectives and allows for the planned evolution of the site as an urban neighbourhood.

- e) *To promote the development of a sense of local community and recognise the right of the community to participate in the evolution of localities.*
- By promoting a sense of community through a community development programme.
- f) *To promote and safeguard the economic wellbeing and functions of the town*
- By adding to the economic wellbeing of the Town of Victoria Park through additional expenditure by the new residents of Burswood Lakes.
- g) *To coordinate and ensure that development is carried out in an efficient and environmentally responsible manner which makes optimum use of the town's growing infrastructure and resources.*
 - i) promotes an energy efficient environment; and*
 - ii) respects the natural environment*
- By producing environmentally responsible development through careful site micro-climate design and building standards.
- h) *To promote and safeguard the cultural heritage of the Town by identifying, conserving and enhancing those places which are of significance to the town's cultural heritage*
 - i) encouraging development that is in harmony with the cultural heritage value of an area; and*
 - ii) promoting public awareness of the cultural heritage generally.*
- By facilitating community access to significant river areas.
- By recognising the significant history of the Burswood Canal.

The Burswood Lakes Structure Plan responds to the Burswood Precinct Plan Statement of Intent through:

- Provision of an attractive residential community in the northern part of the precinct, which is set in landscaped parkland with good access to the Town of Victoria Park, the city centre and the regional road network. This residential community will complement other uses such as tourist, entertainment and commercial, which will likely be developed in the southern part of the precinct and the Burswood Peninsula Precinct. The residential community will contribute to the economic life of the town which is currently well supplied with commercial and retail development.
- Provision of buildings and landscaping of a high visual standard, which acknowledges the prominence of the Burswood Peninsula and complement a key entry route to the Town of Victoria Park.
- Acknowledgement of the importance of the Precinct as a part

of the Burswood Peninsular and Swan River setting by creating view corridors through the development and design of the development as a landmark element within the wider landscape.

- Provision of a pedestrian and cycle network that links to the Burswood Train Station, Burswood Peninsula Precinct and the regional shared-path network.
- Provision of public open spaces and streets that contribute to public enjoyment of the Peninsula

The provision of standards for the Public Realm Subdivision and Private Development will help to ensure the objectives outlined in the Statement of Intent are achieved.

TPS1 requires the preparation of a Structure Plan for the Special Use Zone prior to redevelopment. The Scheme states:

Development within the Special Use Zone shall be generally consistent with the provisions of a Structure Plan approved and amended from time to time by the Council and the Western Australian Planning Commission. The Structure Plan should indicate broad land use options for development and subdivision, and provide a policy framework for future subdivision and development. The Structure Plan will form the basis of Council's determination of applications for subdivision and development of land within the Precinct. In considering a Structure Plan for the Special Use Zone, Council shall notify adjoining/nearby landowners and occupiers of the proposed Structure Plan and provide a minimum period of 28 days within which to lodge submissions on the Structure Plan.

The Structure Plan must include the following information in plan and where appropriate, in written form:

- Statement of objectives and explanation of the rationale for the proposal contained in the Structure Plan
- Road / pedestrian network showing road reserve and pavement widths, footpaths and provisions for on-street parking and right-of-way / vehicular access ways where appropriate
- Proposed "Use Area" classifications of all land within the Special Use Zone with the following range of classifications to apply:
 - Residential R80
 - Tourist / Residential R160
 - Hotel / Tourist
 - Office / Residential R160
 - Mixed-use (maximum of 1.5 hectares of total Precinct)
- Indicative lot patterns and lot services
- Location of major infrastructure proposed including drainage, sewage and water supply services



Connecting to the Swan River, visually and physically, was an important design consideration at Burswood Lakes

- Infrastructure and amenities to be provided by the subdivider / developer including public open space, and road pavements, parking, landscaping, footpaths and other facilities within road reserves
- The relationship of the land to surrounding facilities, land uses and road / pedestrian network
- The way in which subdivision and / or development of the land will recognise the historic Burswood Canal, part of which is still evident within the boundaries of the Special Use Zone

The Burswood Lakes Structure Plan includes all of the information required above. Refer to Part B : Section 1 for summary table.

5.2 State Planning Strategy

The State Planning Strategy is a comprehensive list of strategies and actions, policies and plans to guide the development of regional and local areas in Western Australia. It assists both state and local government in long term land use planning for Western Australia.

The five guiding principles of the State Planning Strategy are:

- **Environment & Resources**
to protect and enhance the key natural and cultural assets of the State and to deliver to all Western Australians a high-quality of life based on sound, environmentally-responsible principles.
- **Community**
to respond to social changes and facilitate the creation of

vibrant, accessible, safe and self-reliant communities.

- **Economy**
to actively assist in the creation of regional wealth, support the development of new industries and encourage economic activity within the framework of responsible development practices.
- **Infrastructure**
to facilitate strategic development by ensuring land use, transport and public utilities are mutually supportive.
- **Regional Development**
to assist the development of regional Western Australia by taking into account special assets and accommodating the individual requirements of each region.

These principles are embodied in the objectives of the Burswood Lakes Structure Plan.

5.3 State Planning Policies

The State Planning Framework is a Statement of Planning Policy (No 8) made under S5AA of the *Town Planning and Development Act*. It brings together all existing State and regional plans, policies, strategies and guidelines that apply to land use and development in Western Australia, including:

- Liveable Neighbourhoods (2000, WAPC). This operates as a development control policy or code to facilitate the development of more cohesive, liveable communities. Its aims include, but are not limited to, the following:
 - Providing for an urban structure of walkable neighbourhoods clustering to form towns of compatibly mixed-uses, which reduces car dependence in accessing employment, retail and community facilities
 - Providing for access by way of an interconnected network of streets which facilitate safe, efficient, and pleasant walking, cycling and driving
 - Fostering a sense of community and strong local identity in neighbourhoods and towns
 - Facilitating mixed-use urban development that provides a wide range of living, employment and leisure opportunities - capable of adapting over time as the community changes - that reflects appropriate community standards of health, safety and amenity
 - Providing an innovative approach to urban development for the City in a bid to create 'better neighbourhoods'

The Burswood Lakes Structure Plan has been designed with Liveable Neighbourhoods principles in mind. The relevant Western Australian Planning Commission (WAPC) Development Control Policies include:

- DC 1.6 Planning to enhance Public Transport, which encourages:
 - Leisure / recreation activity close to railway stations
 - Reduced car parking provision in proximity to railway stations
 - Medium to high density residential (min R40)
 - Shared-paths from stations
 - Separation distance from rail
 - Quality urban design and conservation of local amenities in the station precinct

The resolution of the Burswood Train Station location is consistent with policy DC1.6.

Burswood Lakes offers an appropriate residential development close to public transport.

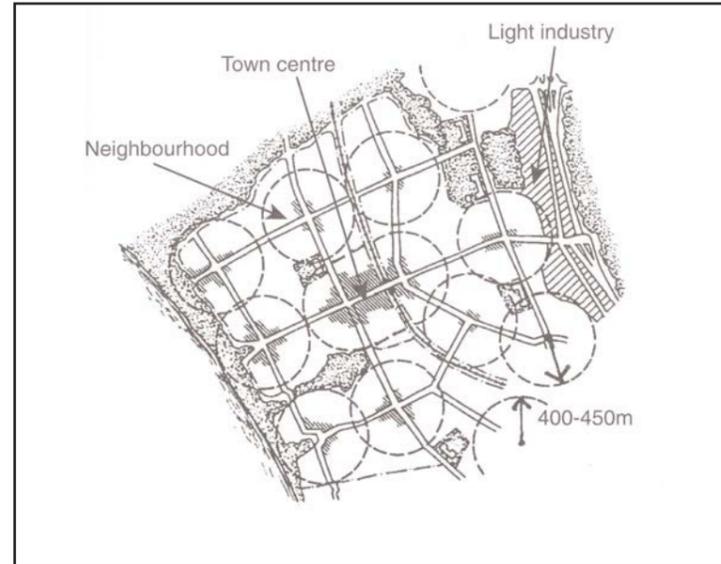
- DC 2.1 Residential Planning Codes
 - The Residential Planning Codes (R Codes) are the current basis for control of residential development in the Town of Victoria Park.
- Draft Residential Design Codes
 - The draft Residential Design Codes, republished in July 2001, were approved by the Commission and gazetted in October 2002.

These new R-Codes introduce a new R Coding of 'R-IC'; the 'IC' being for 'Inner City'. The October 2000 draft drew a distinction between inner city development and central city development. The revision of July 2001, combined both as 'Inner City Housing'. The purpose of this coding is to distinguish a more intense form of urban development from suburban development. Section 4.3 of the new Codes provide that the concept of 'Inner City Housing' is to embrace the central city and

- the immediate fringe of the Central Business District and commercial centres, where residential development competes with commercial development and may predominate.

The preface to the criteria for classification of R-IC states:

- There is a difference between suburban and inner-city housing that springs not merely from the physical conditions of the inner-city areas, but also from the different lifestyle aspirations, attitudes and expectations of those who choose, or are obliged, to live in inner-city areas.



Burswood Lakes is in line with State goals of creating liveable neighbourhoods

The criteria used for the characterisation of 'Inner City Housing' is (section 4.3):

- As compared with suburban areas, the inner-city areas tend to be characterised by:
 - higher densities of development;
 - higher land values and (often) rentals;
 - greater diversity of residential development, including hostels or lodging houses,
 - apartments and rental flats;
 - greater diversity of land use generally, including mixed land uses;
 - closer proximity and easy accessibility to a much wider range of cultural, entertainment, public and commercial facilities and services;
 - more diverse, accessible and frequent public transport;
 - often higher levels of traffic and traffic noise;
 - more restricted and (often) expensive car parking for residents and visitors;
 - lesser facilities for school age children; and
 - lesser sporting facilities.

The development proposed in the Structure Plan falls within this category of Inner City Housing. This is made apparent as the principle reason for including such a category was to include residential development of city scale on the immediate fringe' of the central city.

The new R-Codes proposes an R-IC coding that dispenses with a particular R density coding. As to density, the Guidelines state that the prime measures are:

- built form and urban design considerations, rather than density of dwellings, should strongly influence the extent of development.

The method of density control suggested by the proponent is to mark specific maximum dwelling densities for the 25 lot areas. This is because a traditional R Code number is not required by the R-IC coding and, more importantly, is not suitable for specific control of differently used lot areas in a large site in an area close to the central city to be developed by one proponent. The Manual to the current R Codes (p.10) specifically states the inapplicability of R Coding to inner city housing.

"Acceptable Development" for Inner City Housing proposes that development should be in accordance with Table 1, "subject to the provisions of a Local Planning Policy or Special Control Area." In section 2.6 of the new R-Codes, it is stated that:

Areas coded for Inner-City Housing may be subject to a range of Local Planning Policies to vary Codes provisions. In these areas it is expected that the implementation of controls will be preceded by areas, or precinct-specific, studies and accompanied by Local Planning Policies to ensure that the particular desired characteristics of an area are promoted.

One of the R- Code provisions, clause 2.6.2 provides that Local Planning Policies may contain provisions that are more or less stringent than the Codes in the case of R-IC. It is proposed that the amended Precinct Plan be read as if it is a Local Planning Policy to the extent that it varies the Codes.

5.4 Local Planning Policy

The Town of Victoria Park has adopted the *Town of Victoria Park Urban Design Study* prepared in 2000 as policy. This includes a vision for the Town, broad urban design objectives and a desired character for the Burswood Precinct.

Key points in the precinct character statement are:

- An opportunity to build upon the image of the Town of Victoria Park
- A very accessible precinct with river and city views
- Creation of a node around the Burswood train station and review of its location
- Review of height controls through the structure plan process and prescribed guidelines for taller buildings
- Car parking contained within built form

- Built form stepped down toward the river
- Views and vistas of the CBD and river defined in the design of public places

The Burswood Lakes Structure Plan responds to the objectives and the Desired Character Statement of the *Town of Victoria Park Urban Design Study* by:

- Providing a range of housing alternatives from single dwellings on small lots to apartments of various sizes and configurations (Objective 1)
- Creating a new community with a well-structured form that will be visible as you enter the Town of Victoria Park along the Graham Farmer Freeway (Objective 2)
- Providing a permeable road layout that connects into the regional network while discouraging through traffic and providing good pedestrian linkages to the Burswood Train Station. (Objective 3)
- Preserving view corridors through the site to offer view sharing particularly from streets and public parks (Objective 4)
- Capitalising on the unique inner urban location with residential development that will complement future uses east of the railway and any uses associated with the Burswood Resort (Objective 5)
- Contributing to improved pedestrian links to the river foreshore and future ferry access and offering a range of public spaces with views to the river (Objective 6)
- Providing a safe residential community linked by shared-paths to other areas of Victoria Park within 800 metres (10 minute walk) of the Burswood Train Station (Objective 7)
- Creating attractive, pedestrian-friendly streetscapes throughout Burswood Lakes (Objective 8)
- Creating an urban neighbourhood with a unique character and a significant residential population, and providing for their daily needs through mixed-use opportunities (Objective 9)
- Providing a range of open spaces within 400 metres of all residences, and linking these spaces with well-landscaped streets and green corridors (Objective 10)
- Providing a safe, well-lit street network, with residences overlooking streets and parks (Objective 11)
- Encouraging residents to use the local Albany Highway commercial area for business and shopping through limited provision of these services in the village (Objective 12)

5.5 Casino (Burswood Island) Agreement Act

The *Casino (Burswood Island) Agreement Act 1985* ratified and authorised the implementation of an agreement under section 19 of the *Casino Control Act 1984* between the Minister of the Crown (who was overseeing the administration of that Act at the time) and the public companies - West Australian Trustees Limited and

Burswood Management Limited - with respect to the construction and establishment of a casino complex at Burswood Island. The *Casino Agreement Act* does not apply to the Burswood Lakes site.

5.6 Burswood Canal

The *Heritage of Western Australia Act* Memorials H461085 and H461086 cover the former canal located on the western margins of CT 2049/94, comprising diagrams 4896, 1949 and 4858 of Swan Location 35, CT 2049/95, comprising diagram 9163 of Swan Location 35 and CT 2049/92, comprising Lot 3 Portion of Swan Location 35.

The Burswood Canal is recognised in the Burswood Lakes Structure Plan (Figure 19, p.68).

5.7 Telecommunications Lease

A telecommunications tower is currently located in the south-eastern corner of the site. The lease - currently in the name of Crown Castle Australia Pty Ltd - is valid for another 12 years to 1 April 2013. BL Developments have confirmed with Crown Castle Pty Ltd. in writing that at that time no further lease will be granted on expiry of the current lease. This is in response to the Town of Victoria Park's Policy on residential development in proximity to telecommunications towers.

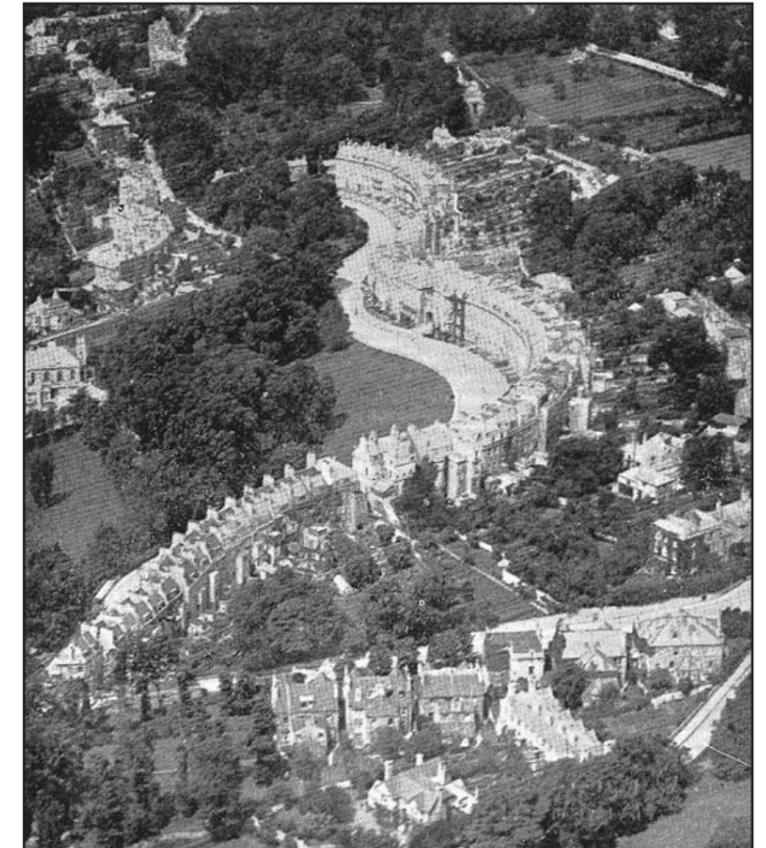
6.0 Site Analysis and Opportunities

The Burswood Lakes site is significant in the wider landscape of the Swan River, the Town of Victoria Park and inner-city Perth. Inconspicuous since the dismantling of the Swan Portland Cement Company, the Burswood Lakes site - when completed - will again play an important role in the region. The elevations of buildings and mature landscaping on the site will significantly contribute to the character and skyline along the Swan River.

6.1 Topography and Landscape

The remediated site forms a broad low plateau to the eastern boundary with a change of level across the site of nine metres to the western boundary. The main change of level of approximately six metres is along the western perimeter adjacent to the new lakes, which form the interface with the Burswood Park Golf Course.

There is little vegetation on the greater portion of the site apart from a few mature trees on the eastern edge. Vegetation in adjacent areas is a mix of indigenous and exotic species creating a parkland landscape associated with the Burswood Resort and



An example of undulating building form (England) adjacent to a linear park

Golf Course. The broader landscape is that of the Swan Coastal Plain and the Swan River.

The land form allows for improved view opportunities while the lack of landscaping provides opportunity to create a new character with some reference to the Burswood Resort and Golf Course landscaped character.

6.2 Micro-climate and Noise

The railway and the Graham Farmer Freeway to the east both generate a degree of noise within expected inner city parameters. This noise will be considered in the detail design of buildings. The Superdome generates some noise during particular events. However, it is understood by the proponent that Burswood Ltd is examining the future of the Superdome. Refer to Part B 4.12 Commitments by the Development Proponent in the Structure Plan (p92).

The site experiences typical Perth climatic conditions and is exposed to cooling south-westerly breezes across the river and hot, dry easterly winds.



Diagram E: Site Analysis

There is opportunity to soften the wind exposure on the site through built form and landscape. Solar and wind impacts of proposed buildings have been addressed in the design through the use of podiums, building orientation on the north-south axis, and generous spacing between the taller buildings.

6.3 Views

The site offers panoramic views of the Swan River (both north and west), the Perth CBD and South Perth (Diagram E, left). Corresponding views of the site are available from many vantage points in Victoria Park, the Swan River, and the city.

Burswood Lakes provides for view sharing from within the development for both residents and visitors through the use of extensive view corridors seen in (Diagrams G, H p.43). These view corridors also make the development permeable when viewed from the outside. The dramatic views from other parts of the city add to the landmark character of the site.

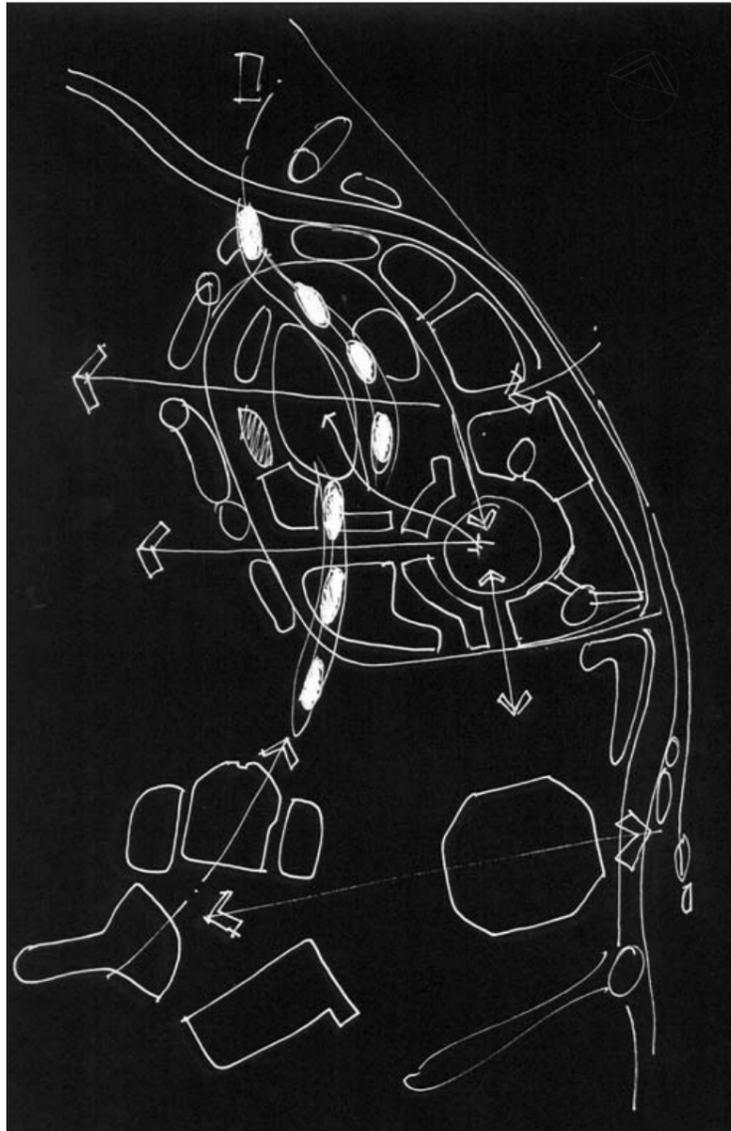
6.4 Links and Barriers

The site is currently well-linked to surrounding roads to the north and south but poorly linked to roads in the east.

There is opportunity to improve public access across the Burswood Peninsula. A bridge has recently been constructed at the Burswood Resort to enable improved access to the foreshore. Burswood Lakes pedestrian / cycle network will provide opportunity to link to this. Refer to Part B 4.12 Commitments by the Development Proponent (p.92) in the Structure Plan.

The railway line offers a significant barrier to connectivity in the east, while the Golf Course is a barrier to the River foreshore in the west. If additional rail crossings are constructed (not by the proponent), opportunities exist to connect Burswood Link Road to adjacent Riversdale Road.

Interface with the railway line, Burswood Link Road, Burswood Train Station, the Burswood Park Golf Course and current operation of the Burswood Superdome will be considered at each stage of development.



Conceptual drawing demonstrating the ribbon of taller buildings winding through the site, and important links to the surroundings

7.0 Liveable Neighbourhoods

The focus of the Liveable Neighbourhood document is to create cohesive communities with higher densities in an urban neighbourhood context. The principal aims of this document are to:

- provide walkable neighbourhoods
- foster a sense of community and strong local identity
- reduce reliance on private motor vehicles
- support public transport
- provide interconnected streets which facilitate safe, efficient

- and pleasant walking, cycling and driving
- provide a variety of housing types
- provide a comprehensive approach to the design of open space.

The following sections outline how these principles have been incorporated within the design of the Burswood Lakes development.

7.1 Proposed Land Use

The land use proposed for Burswood Lakes is predominantly residential incorporated in a variety of densities and dwelling types, including: courtyard homes, detached single family homes, zero-lot-line homes, townhouses, and apartment buildings with one-, two- and three-bedroom units.

The approximate mix of dwelling types is:

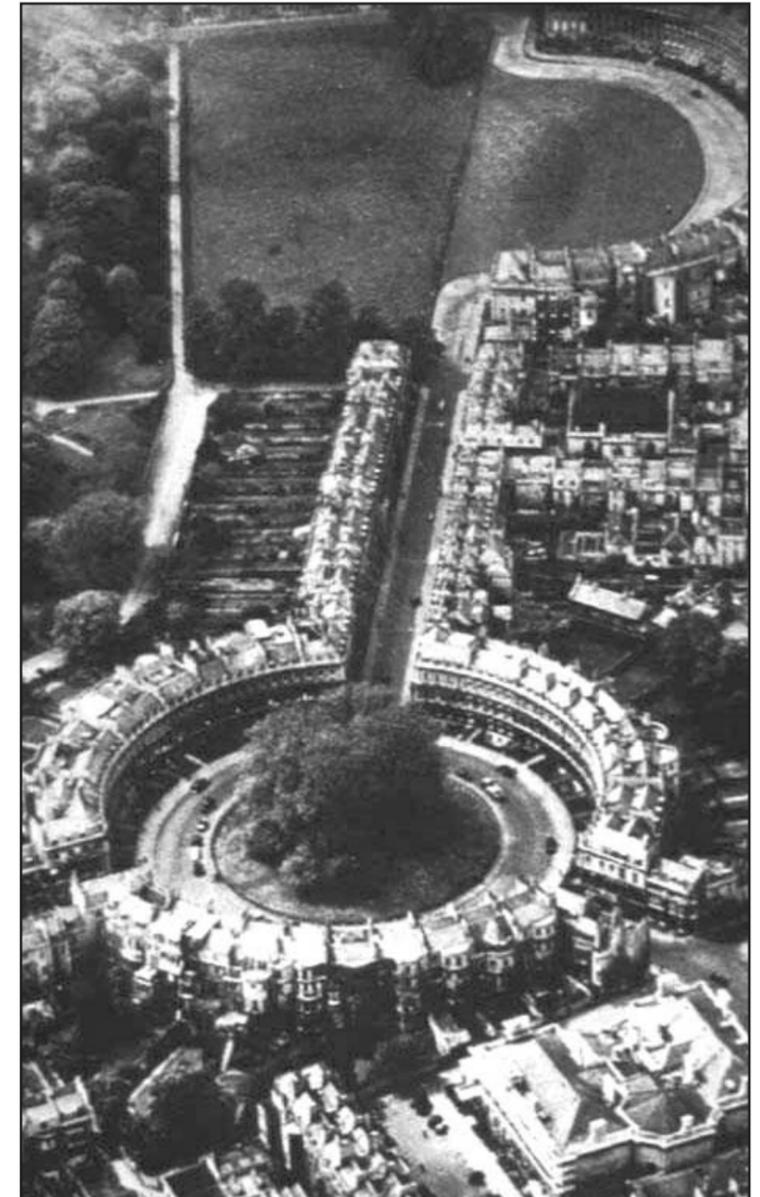
- 17 percent courtyard homes, detached single family homes, zero lot lined homes and townhouses. The lot sizes for these dwellings will range from approximately 200 - 350 square metres.
- 4 percent of one bedroom apartments (approximately 65 square metres).
- 49 percent two bedroom apartments (approximately 100 square metres).
- 30 percent 3 bedroom apartments (approximately 130 square metres).

This dwelling mix can also be represented as follows:

- 10 percent of dwellings are detached single family homes, zero lot lined homes and courtyard homes.
- 7 percent of dwellings are two storey townhouses.
- 9 percent of apartments are in two to three storey apartment buildings.
- 29 percent of apartments are in four to seven storey apartment buildings.
- 45 percent of apartments are in twelve to twenty-one storey apartment buildings.

This indicative dwelling mix addresses and responds to the need for urban consolidation and demographic demand. It is anticipated the completed development will accommodate approximately 3,000 people in 1,200 dwellings. A further 50 dwellings are anticipated on the DOLA/MRD land (lot 26).

This population, which represents a 9-10 per cent increase in the current residential population of the Town of Victoria Park needs to be served by local amenities. Existing amenities in the vicinity of Burswood Lakes (ie within a 10 minute walk (800 m) include a convenience retail centre (of approximately 1000 m²) on Great



The Circus in Bath, England is similar in size to the proposed Circular Park in Burswood Lakes

Eastern Highway on the corner of Griffiths Street.

It is intended to complement these existing services by providing opportunity for mixed use within the Burswood Lakes precinct.

The Metropolitan Centres Policy Statement for the Perth Metropolitan Region (Statement of Planning Policy no.9) provides guidelines for the provision of shopping floor space for local centres as 0.53 square metres per capita nla. This equates to a local retail provision guide for Burswood Lakes of 1,325 m² to 1,590 m².

Taking into account that maximum net lettable area of retail floor space for 'shop' within the Special Use Zone is 2,000m², possible mixed uses include :

- Shop (excluding the sale of petrol)
- Office
- Restaurant, Fast Food Outlet
- Consulting room, Day care centre
- Home office/occupation

It is important to note that the principal buildings at Burswood Lakes will incorporate facilities such as swimming pools, gymnasium etc. There are also extensive existing facilities within the adjacent Burswood Resort, the State Tennis Centre and Burswood Park Golf Course all of which are accessible to the general public.

Mixed use elements should be provided at Burswood Lakes at each stage of development. The quantity and type provided will be reviewed by the proponent and the Council as the development progresses to ensure the community at Burswood Lakes is well catered for by appropriate level of essential services and local convenience shopping.

Site Layout

The Burswood Lakes site, illustrated in the Indicative Development Plan (Fig.18, p.67), has been laid out as a complete residential community in accordance with the Town Planning Scheme and Structure Plan Objectives. These objectives which follow the principles of Liveable Neighbourhoods are :

- Sustainability
- An Evolving Place
- Built Form and Response to Setting
- Links with the Community of Victoria Park
- Connectivity and Transport Orientated Development
- Importance of Public Places

7.2 Sustainability

Environmental responsiveness has been addressed through design, orientation, and placement of buildings to limit non-renewable energy use. It is also addressed through site layout which reduces car dependence and encourages walkable neighbourhoods.

Social and cultural cohesiveness is addressed through a wide choice of housing to cater to Perth's changing demographics and to encourage a diverse population which fosters a sense of community. This community and its interaction is promoted further through the design of public open space and connectivity to the local areas of employment, leisure, community and



An artistic impression of the possible integration of future development on the Superdome and Burswood Resort sites with Burswood Lakes

communal facilities of the Town of Victoria Park.

Due to the high cost of providing services and facilities to Perth's current model of low density suburban development, it is cost effective to redevelop infill sites such as this that are already serviced by existing infrastructure. Such redevelopment utilises the existing infrastructure to the benefit of both the proposed community and Western Australia as a whole due to efficient resource management. It also provides opportunities for locally based businesses and employment.

7.3 An Evolving Place

Burswood Lakes will be developed progressively in stages with the site layout enabling a functional, cohesive development at each individual stage. This can be seen in the Indicative Development Staging Plan shown in Figure 32 (p.87). It is intended to first develop two central public open spaces, the Circular Park and the Lake Park, as well as the Central Plaza, which links the two open areas. The remaining open spaces and 'pocket parks' will be created as the development progresses. Access into the development will be gained from the Burswood Link Road via the primary entry road.

Staging will be flexible and will aim to limit disruption due to construction of later stages, accommodate changing market demand, and to relate to the future redevelopment of the Superdome site. It is intended to develop a mix of dwelling types to ensure diversity of product is maintained.

7.4 Built Form and Response to Setting

Burswood Lakes will incorporate a wide range of dwelling types that vary in size and scale. Such a range and mix of product is made possible by the unique location of the site which is unencumbered by the constraints of overlooking, overshadowing or obstructing adjacent views.

The Indicative Development Plan (Figure 18, p.67) and various photo montages shown in (Views 1 - 12, p.38-42) illustrate the proposed layout of Burswood Lakes. It can be seen that a graduated scale of buildings is proposed towards the central area of the site. This increase in scale follows a serpentine linear arrangement on plan, which reflects the course of the Swan River, whilst the taller buildings in the core acknowledge and respond to the existing scale of the Burswood Resort.

Generous spacing between the buildings enhance the openness and permeability of the development and the variation in height allows for greater diversity in built form and architectural expression.

The arrangement of buildings and open space promote a sense of place, equitable sharing of views and vistas, and micro-climatic comfort for the parks and plazas.

Buildings proposed will range from two- and three-storey single houses to taller apartment buildings of 12 to 21 storeys, with a range of lower-level apartment buildings and townhouses making up the balance of the development.

The buildings are carefully spaced to maximise solar gain, protect resident privacy, and limit negative wind effects. The variety of building form and placement allows the parks, a proportion of houses, and many medium-rise apartments and higher-level apartments to share city and river views.

The low- and medium-rise buildings proposed for the western edge respond to the contours of the site and form an appropriate defining built edge to the golf course.

The diverse range of building types and the arrangement of open space provides for a fully integrated development which responds to the unique nature of this site, its context within the Peninsula, and the wider context of the Town of Victoria Park and the City of Perth.

Development Standards will establish design principles of all dwellings. There are also principles of architectural detail that have been established as follows :

- A common architectural 'language' will be used with differing 'accents' and 'dialects'.
- The architecture will respond to the local context and climate and will address solar control and access, privacy, and outdoor amenity.
- Apartments will have, where possible, cross ventilation with sizeable balconies or 'outdoor rooms' and useable courtyards.
- Apartments facing west to the river and the city will have solar control via balconies and sun-shading devices.
- The taller buildings will have lower podium elements which provide human scale and limit wind effects.
- Apartment parking will generally be provided below ground.
- Houses will front streets and parks providing passive surveillance through 'eyes on the street.'

7.5 Urban Nodes along the Swan River

Much of Perth's sense of place is derived from its relationship to the Swan River. It is important to continue this relationship with the 'rejuvenation' of former industrial areas along the Swan River. East Perth is a recent example of the successful transformation of a derelict industrial site. Burswood Lakes has an opportunity to play a major part in continuing this rejuvenation by developing this former industrial site and establishing a link to the river foreshore for the Town of Victoria Park.

Crawley, South Perth, West Perth, the Perth CBD, and East Perth (Figure 3, p.37) are all important urban nodes along the Swan River. These nodes form focal points and landmarks within the riverscape and streetscape of Perth. New and old landmarks provide identity to their communities and are necessary to give historic continuity, enabling people to 'read' the city and identify its special characteristics.

To ensure the creation of a 'landmark urban node' at Burswood Lakes, the buildings have been carefully sited and arranged. The taller buildings step down to both the northern and southern boundaries acknowledging their adjoining neighbours and step up towards the centre of the site. This creates a 'height arc' that acknowledges other important higher density nodes along the Swan River (Fig.2, p.36). This height variation (height arc) provides the opportunity for architectural expression within a cohesive overall form and enables the site to become a true landmark for Perth's skyline (Figure 3, p.37).

Burswood Lakes embraces the principle of an 'art of relationship' and, consequently, will not be a series of individual developments vying for front row seats and the view, nor a homogeneous

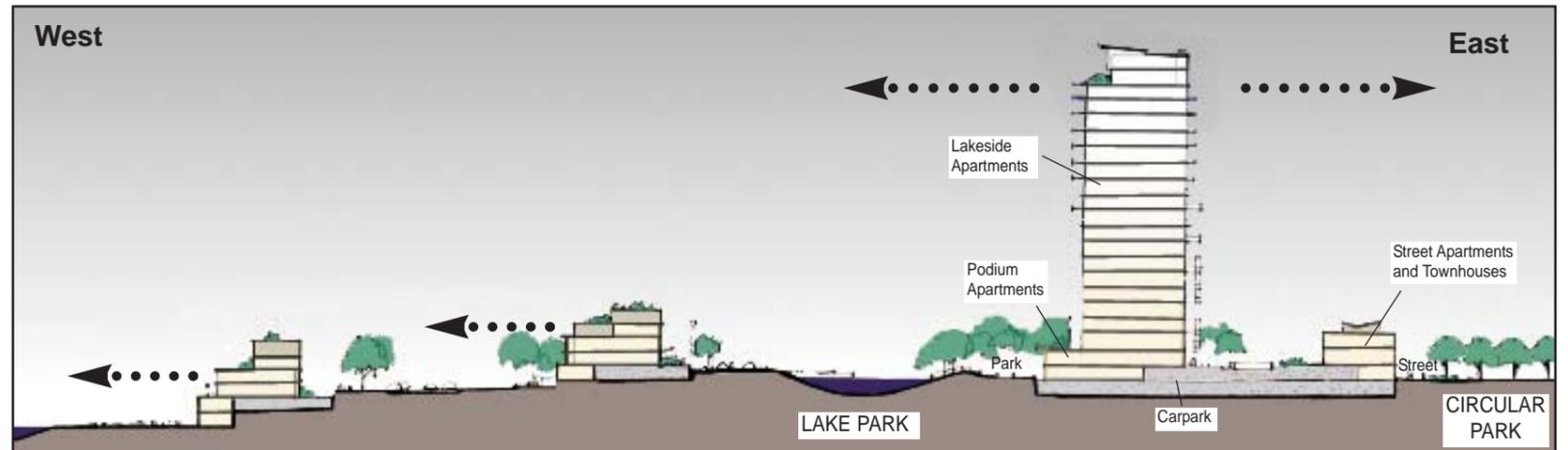


Diagram F: Building Hierarchy

ground-hugging mass of buildings. The building height proposed is essential in creating a landmark development with its own identity, particularly given Burswood Lakes' important location and relationship to Perth CBD, South Perth and other important nodes.

The photographic montages (views 1 - 12) on the following pages and (Figure 3, p.37) provide a visual study of the indicative development plan and demonstrate the principles of the 'height arc' and the importance of height and scale to this 'landmark' site. All photomontages have been verified for accuracy by a licensed surveyor (John Giudice and Associates).

7.6 The Ribbon of Taller Buildings

The meandering ribbon of apartment buildings through the site echoes the course of the river. Including a number of taller buildings in a development of this scale is essential in providing the following benefits to this new urban neighbourhood:

Regional Context

- Taller buildings close to the CBD help to limit urban sprawl, reduce demands on new infrastructure, and create a 'dialogue' with the city, reflecting the tall buildings across the Swan River in the Perth CBD and South Perth (Diagram I, p.43).
- The horizontal nature of the Peninsula and the hills to the east of Perth will form a harmonic counterpoint to the taller buildings proposed at the heart of the development. Similarly, the horizontal forms of the buildings at the western edge will complement and echo the horizontal nature of the adjacent open space and golf course.
- Urban nodes form built "highlights" in the landscape, assisting in regional wayfinding.

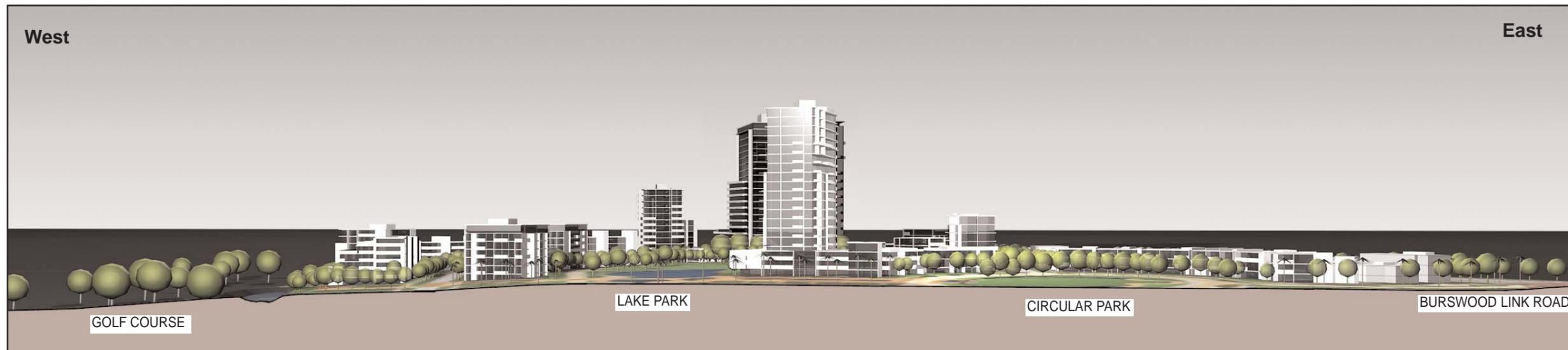
Local Context

Taller buildings:

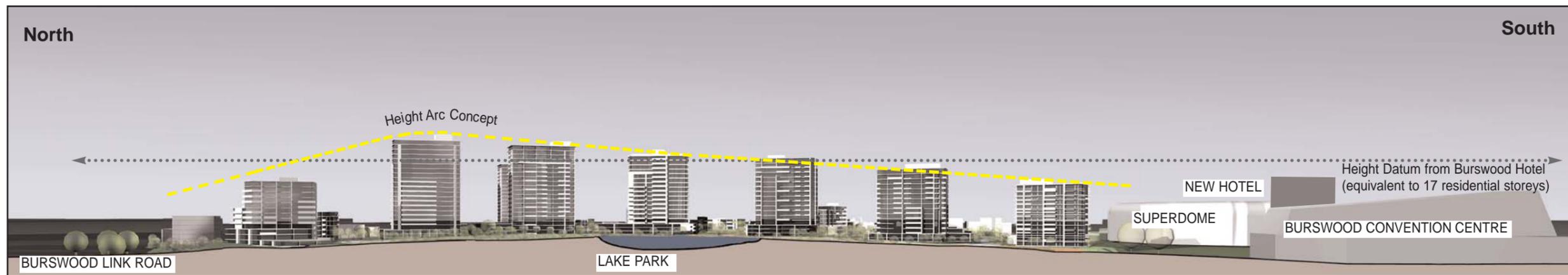
- allow more public open space as they can accommodate the same number of dwellings as shorter buildings but with significantly smaller footprints
- 'frame' dramatic view corridors to the city and allow direct physical links between primary open spaces
- define public spaces more clearly. This spatial enclosure assists in establishing a sense of place
- allow more oversight of parks and plazas, creating safer public spaces through passive security
- give residents more access to light, cross-ventilation, and views, and help mitigate possible 'overlooking' problems between units
- contribute to urban character, adding a critical component to a mix of housing needed to attract a diverse resident population
- contribute to reducing overall stormwater run-off. For any given number of units, taller buildings will have less roof area than shorter buildings

Further Factors Considered

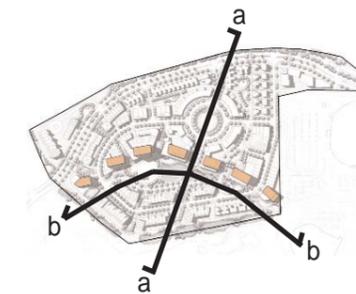
- Podiums, plinths, and setbacks limit the bulk effects of taller buildings, and articulated, active facades at ground level help to create a comfortable, human scale on the street.
- Generous spacing between taller buildings and the podiums wrapped around their bases will help to avoid wind problems.
- Taller buildings allow more opportunities to create a linked network of streets on the site, which evens out traffic distribution and avoids congestion at any one point.
- Local character is maintained and enhanced by providing buildings in scale with surrounding buildings and a complementary network of open spaces that connects to the existing golf course and Swan River foreshore.



East - West Section A-A



North - South Section through Lake Park B-B



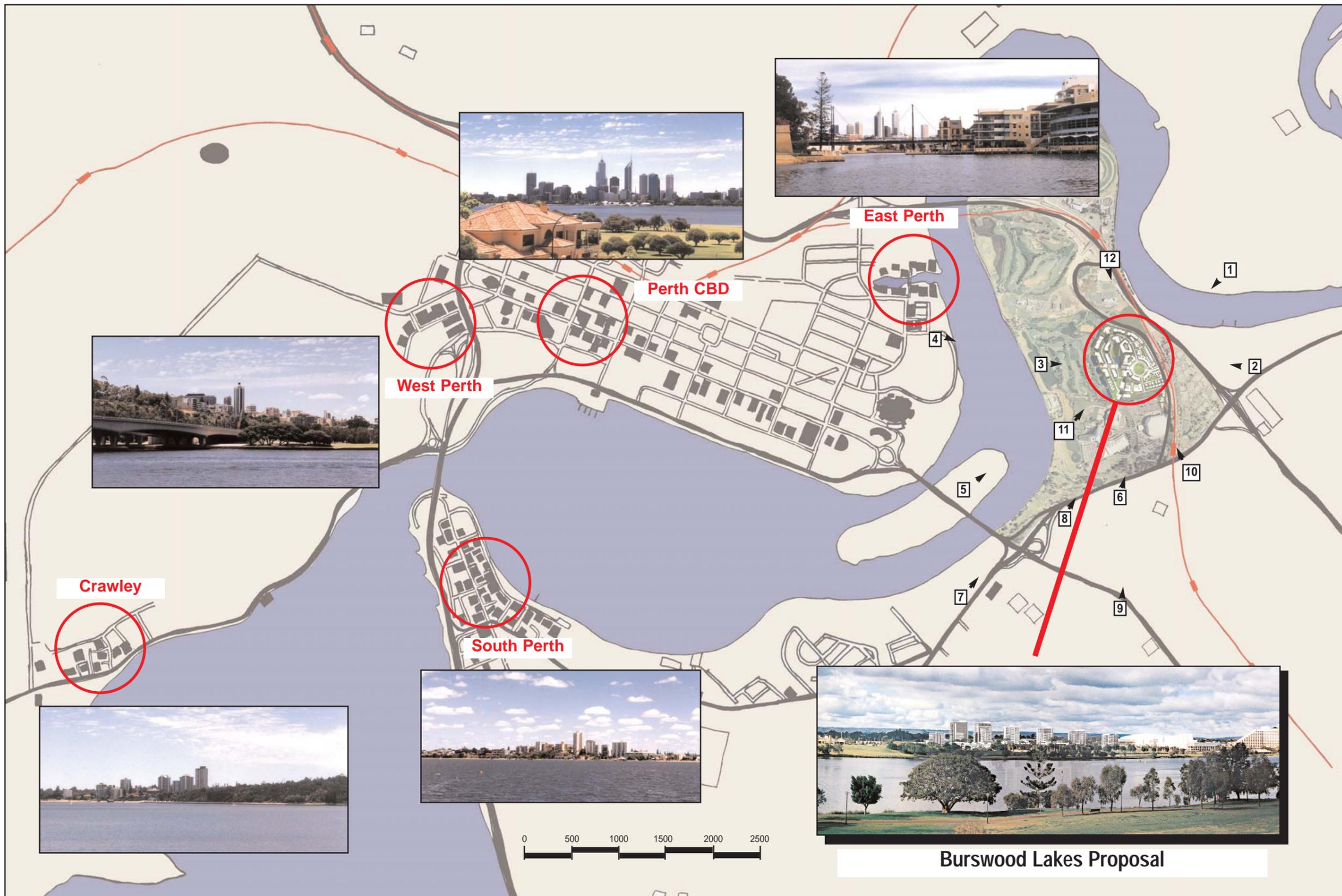


Figure 3
Urban Nodes Along the Swan River

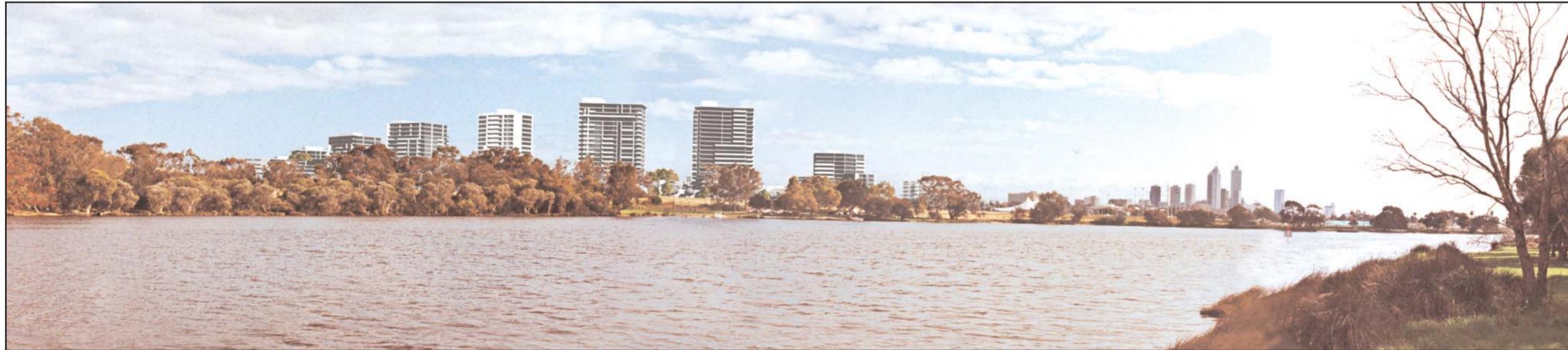
(Views 1-12) locations for Figures 4-8



architects
planners
interior designers



Burswood Lakes Structure Plan



View 1 - View from the northern bank of the Swan River adjacent to the WA Police Academy



View 2 - View from the Great Eastern Highway adjacent to Surry Street



View 3 - View from the Swan River foreshore



View 4 - View west from East Perth junction of Arden and Constitution Street



View 5 - Montage view from the Causeway



View 6 - View from Great Eastern Highway



View 7 - View from Canning Highway. At this location, Burswood Lakes cannot be seen.



View 8 - Approaching Great Eastern Highway



View 7a ("ghost" image) - This view demonstrates the "location" of Burswood Lakes in view 7. However, the development is completely screened by existing buildings and mature trees.



View 8a ("ghost" image) - This view demonstrates the "location" of Burswood Lakes in view 8. However, the development is completely screened by existing buildings and mature trees.



View 9 - View northwest from the junction of Shepperton Road and Flint Street, Victoria Park. Burswood Lakes cannot be seen.



View 10 - View northwest from next to the Red Castle Hotel. Burswood Lakes cannot be seen.



View 9a ("ghost" image) - This view demonstrates the "location" of Burswood Lakes in view 9. However, the development is completely screened by existing buildings and mature trees.



View 10a ("ghost" image) - The Superdome, topography, and mature trees all screen Burswood Lakes from view.



View 11 - View from near the BBQ area on the banks of the Swan River (in front of Burswood Casino and Resort)



View 12 - View from the Burswood Link Road overpass north of the site

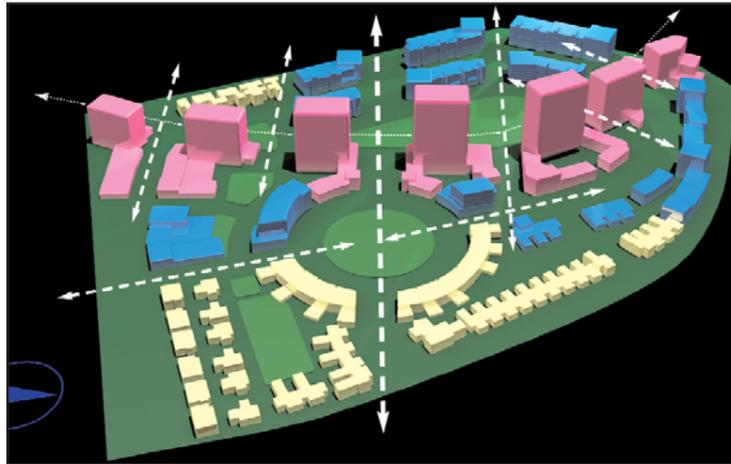


Diagram G: Vistas and views within the public realm

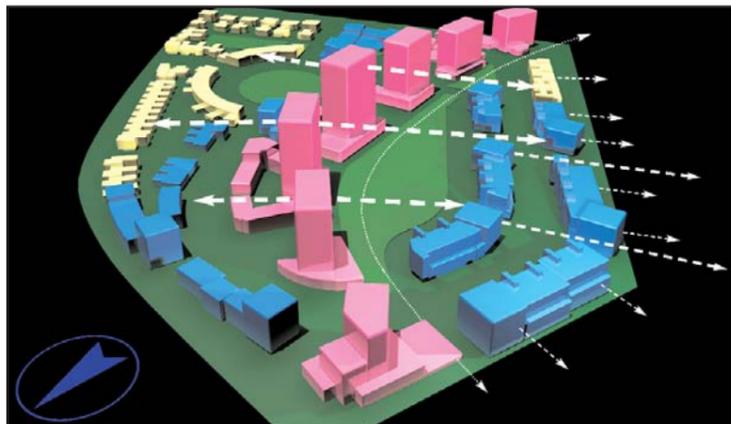


Diagram H: View sharing between a variety of dwellings

7.7 View Sharing

During the design and development of the Structure Plan, many options regarding the location and form of buildings for the site were considered. The concept of view-sharing was, together with wind, solar access, micro-climate, and local and regional context; an important factor in determining the overall form and location of buildings on the site.

Views and vistas help with orientation and wayfinding, provide amenity, create visual links for the new community, establish a "here and there" order and occasionally surprise. The Indicative Development Plan provides views not only from private apartment balconies and houses but also from parks, streets, footpaths, cycleways, and lookout areas. This is achieved by the integration of view corridors and vistas which permeate the site, particularly in an east-west direction. These view corridors also make the site

visually permeable, allowing city views from any future development to the east of the Burswood Lakes site. Diagrams F (p.35), G and H (p.43) demonstrate these principles.

7.8 Shadowing

The linear configuration of the taller buildings along a mostly north-south axis limits shading on adjacent lower buildings and open spaces during the middle of the day. They cast shadows onto each other, but only onto secondary elevations, and thus cause few adverse effects on surrounding buildings. The shadow cast by a tall, slender building will move more quickly over any particular area, affecting it for a shorter period of time than a lower, bulky building. The proposed indicative development plan also uses the principle of height contours, stepping down buildings from the centre to the edge of the site. This ensures that the tallest buildings have little impact on adjoining properties (Figure 9, 10, p.44-45).

7.9 Relationship to Surrounding Context

The Burswood Lakes site is adjacent to:

- Burswood Resort and Casino
- Burswood Park Golf Course
- Burswood Link Road and the Railway Line
- Burswood Superdome
- Burswood Train Station

and close to:

- State Tennis Centre
- DOLA and MRD sites (lot 26)
- Burswood Precinct East of Goodwood Parade (office/residential zone)
- Graham Farmer Freeway
- Great Eastern Highway
- The Swan River

Burswood Resort & Casino

The Burswood Resort is currently the major landmark that defines the existing character of the Burswood Precinct. It constitutes a group of large buildings, with heights equivalent to 17 residential storeys. Burswood Lakes is intended to complement the Resort in form and scale, and extend the landmark quality of the existing built form.

Burswood Park Golf Course

Burswood Park Golf Course offers an excellent landscaped foreground for residential development. An appropriate safety buffer between the golf course and the development will be provided. A series of lakes has been constructed between the

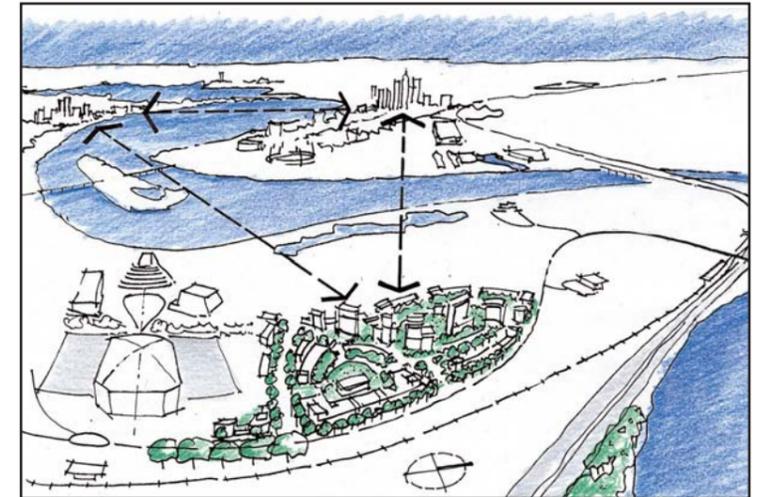


Diagram I: The scale relationship or "dialogue" between Burswood Lakes and other urban nodes along the Swan River

golf course and the development for drainage. These lakes provide an excellent visual edge to the development.

Burswood Canal

The historic Burswood Canal will be recognised in the landscape of public open space on the DOLA/MRD land (lot 26). Refer to Part B 4.12 Commitments by the Development Proponent (p.92).

Burswood Link Road and the Railway Line

Burswood Link Road is a new access road to the Burswood Precinct from the Graham Farmer Freeway.

The railway line is a considerable barrier. Any opportunity to reduce this barrier, particularly for pedestrians, would improve connectivity in the precinct.

Landscape treatments will be used to soften any road and rail impacts on the site. In addition, buildings to the eastern part of the site will be designed to limit visual and acoustic impacts.

Burswood Superdome

It is understood by the proponent that Burswood Ltd is examining the future of the Superdome. Refer to Part B 4.12 Commitments by the Development Proponent (p.92) and Part A 11.1(p.60).

Burswood Train Station

Burswood Train Station provides excellent access to the City and Victoria Park by rail. Currently, the station is relatively isolated and has a limited residential catchment. Development at Burswood Lakes will increase the residential population within an 800-metre walk and begin to create a safer, more pedestrian friendly environment near the station.

Summer Solstice - December 21st



9:00 am



12:00 pm



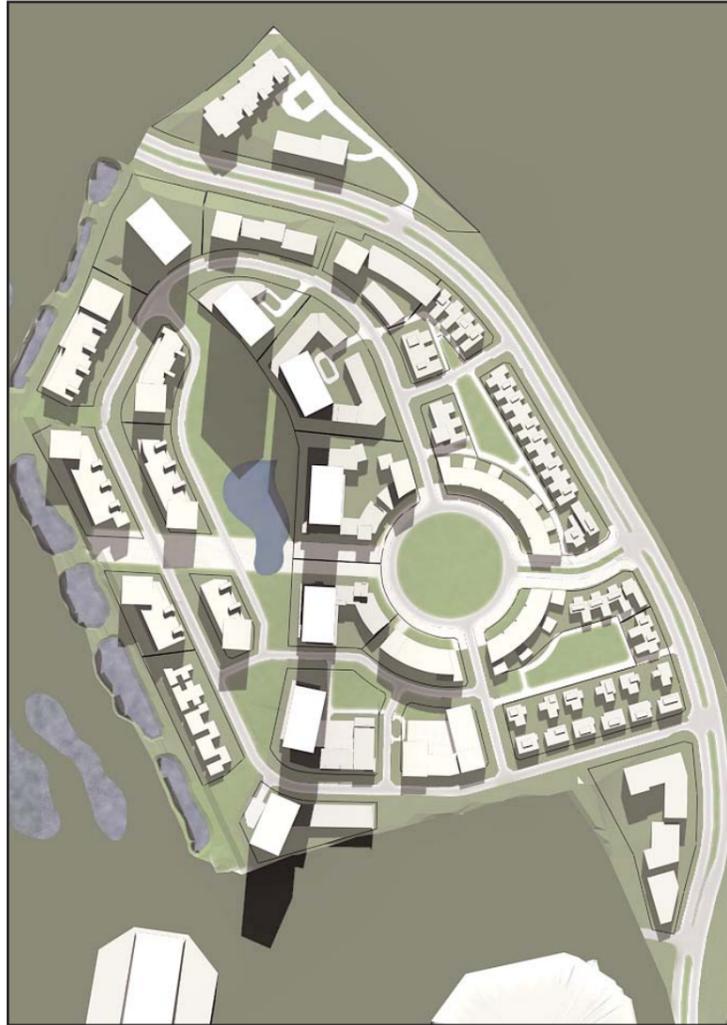
4:00 pm

Figure 9
Summer Shadow Analysis

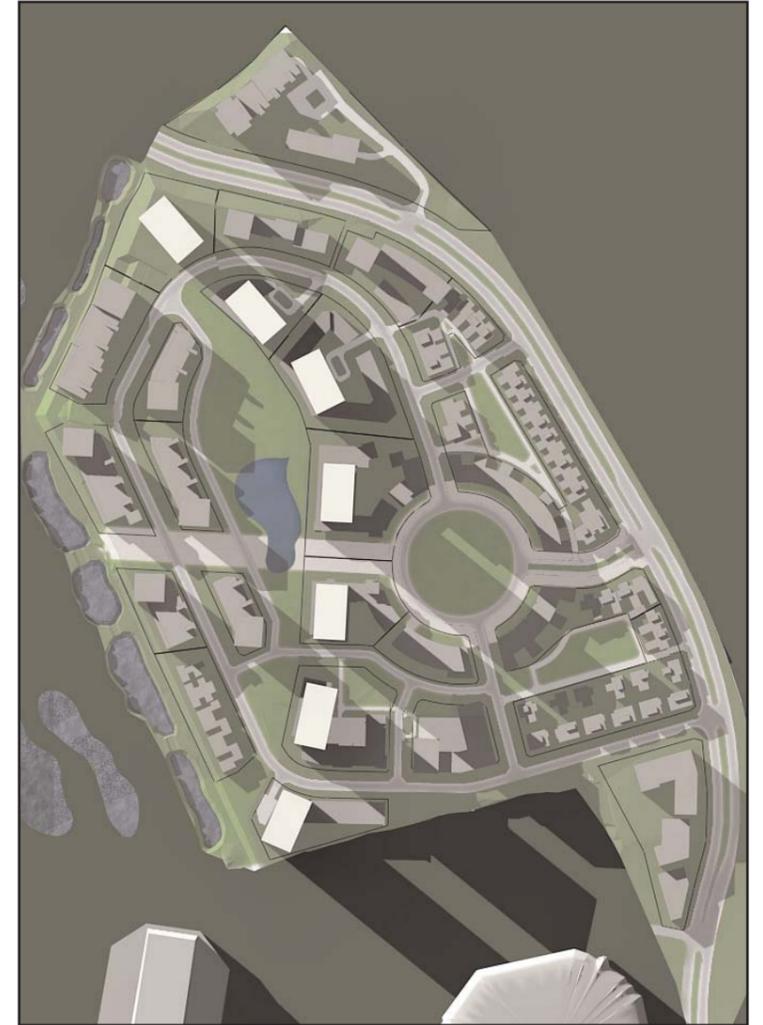
Winter Solstice - June 21st



9:00 am



12:00 pm



4:00 pm

The location of the station was reviewed during the urban design workshop. The Town of Victoria Park Officers and consultant team and the Department for Planning and Infrastructure confirmed that the station's current location is appropriate because:

- it provides both a destination station for the Burswood Resort and a commuter station for Burswood Lakes residents.
- it is located on a straight section of track as required (if it was moved north or south it would be in a curved section of track).
- notwithstanding the last point, if it was located north, a large proportion of the 800m walk radius would fall within the Swan River and it would not be close enough to effectively serve the Burswood Resort.
- it is an appropriate distance from the Belmont event station.

State Tennis Centre

The State Tennis Centre operates tennis courts throughout the year and attracts crowds of about 1,000 people for the week of the WA Open. The impact of associated traffic on the Burswood Lakes development is considered small due to the distance between vehicle entry points.

DOLA and MRD Land (lot 26)

These vacant parcels of land, to the north of the Burswood Link Road, have been remediated consistent with the Burswood Lakes site and have been included in the Burswood Lakes Structure Plan.

Burswood Precinct east of Goodwood Parade

An area of commercial / light-industrial use exists east of the railway line and Goodwood Parade and west of the Graham Farmer Freeway. Buildings within this area vary in age and condition. Redevelopment of this area is expected, given the improved regional road access. Burswood Lakes will act as a strong catalyst for change in this area. Under the Town Planning Scheme, this area is zoned office / residential and could become a mixed-use area with buildings of significant form and scale.

Graham Farmer Freeway

The Graham Farmer Freeway provides excellent access to the site from the city and beyond. The site is visible from the Freeway, and the Freeway can be seen from the development.

The Swan River

The Swan River plays an important contextual role at Burswood Lakes. It offers an attractive environment and foreground for views from the development. Opportunities for public access to the river and foreshore have been considered in the design.



The Burswood Railway Station

8.0 Access and Transport

8.1 Existing Road Network on Burswood Peninsula (ref. Traffic Report (Final) May 2002)

The major existing regional and local roads around Burswood Lakes are Graham Farmer Freeway, Great Eastern Highway, Burswood Link Road and Bolton Avenue. The existing average weekday traffic volumes for each of these roads are as follows.

Table 2 - Existing Traffic Volumes

Road	Average Weekday Traffic Volume (Vehicle Per Day-VPD)
Graham Farmer Freeway	65,000 (at Windan Bridge)
Great Eastern Highway	46,000
Bolton Avenue	15,000

Traffic volumes on Great Eastern Highway have declined substantially, from 61,000 vehicles per day (vpd) to 46,000 vpd, since the opening of the Graham Farmer Freeway. This has led to improved traffic conditions on Great Eastern Highway, including reduced queues and delays.

Peak traffic volumes at the Burswood Resort Casino are concentrated over very short time periods, especially Friday and Saturday evenings. Special events at the Theatre, Superdome and Convention Centre can generate additional high traffic volumes. These traffic volumes usually occur outside the normal road network peak periods.

The Burswood Link Road is a dual-carriageway recently constructed in a 30 metre road reserve and consists of a 7.5 metre paved lane in each direction with 5.0 metre medians and verges. The road is in the process of being gazetted as a public road under the care and control of the Town of Victoria Park.

A roundabout has been constructed on the Link Road approximately 150 metres north of the Great Eastern Highway. There is 'no right turn' from the Link Road to Great Eastern Highway. It was recently resolved by the Town of Victoria Park council to name the Link Road 'Victoria Park Drive'. It is understood by the Proponent that this name is currently being registered with DOLA.

Other roads on the Peninsula include :

- Glenn Place - a public east-west road under the care and control of the Town of Victoria Park
- The east-west road - east of the existing Bolton Avenue roundabout - is currently a private road under the care and control of the Burswood Park Board. It currently provides access to the car parking areas surrounding the Superdome. Prior to the construction of the Burswood Link Road, this east-west car park link was connected with Great Eastern Highway.
- The east-west link road between the roundabouts (east side of existing Bolton Avenue) has been called the 'Glenn Place extension'.

Refer to Figure 12 (p.49) to locate the aforementioned roads.

8.2 Proposed Road Network of Burswood Lakes

Street Hierarchy

Burswood Lakes is primarily a residential development. Vehicle journeys to work, school and shopping will leave the site via the Great Eastern Highway or the Graham Farmer Freeway in the morning peak period, and arrive back via these roads in the evening peak period. The road network proposed for Burswood Lakes, therefore, establishes direct and easy connections to the regional road network and has no impact on any existing residential development within the immediate area.

Figure 11 (p.47) illustrates the proposed road hierarchy for Burswood Lakes which has been based on the principles of Liveable Neighbourhoods. The road hierarchy takes into consideration the forecast traffic volumes and the function of each road.

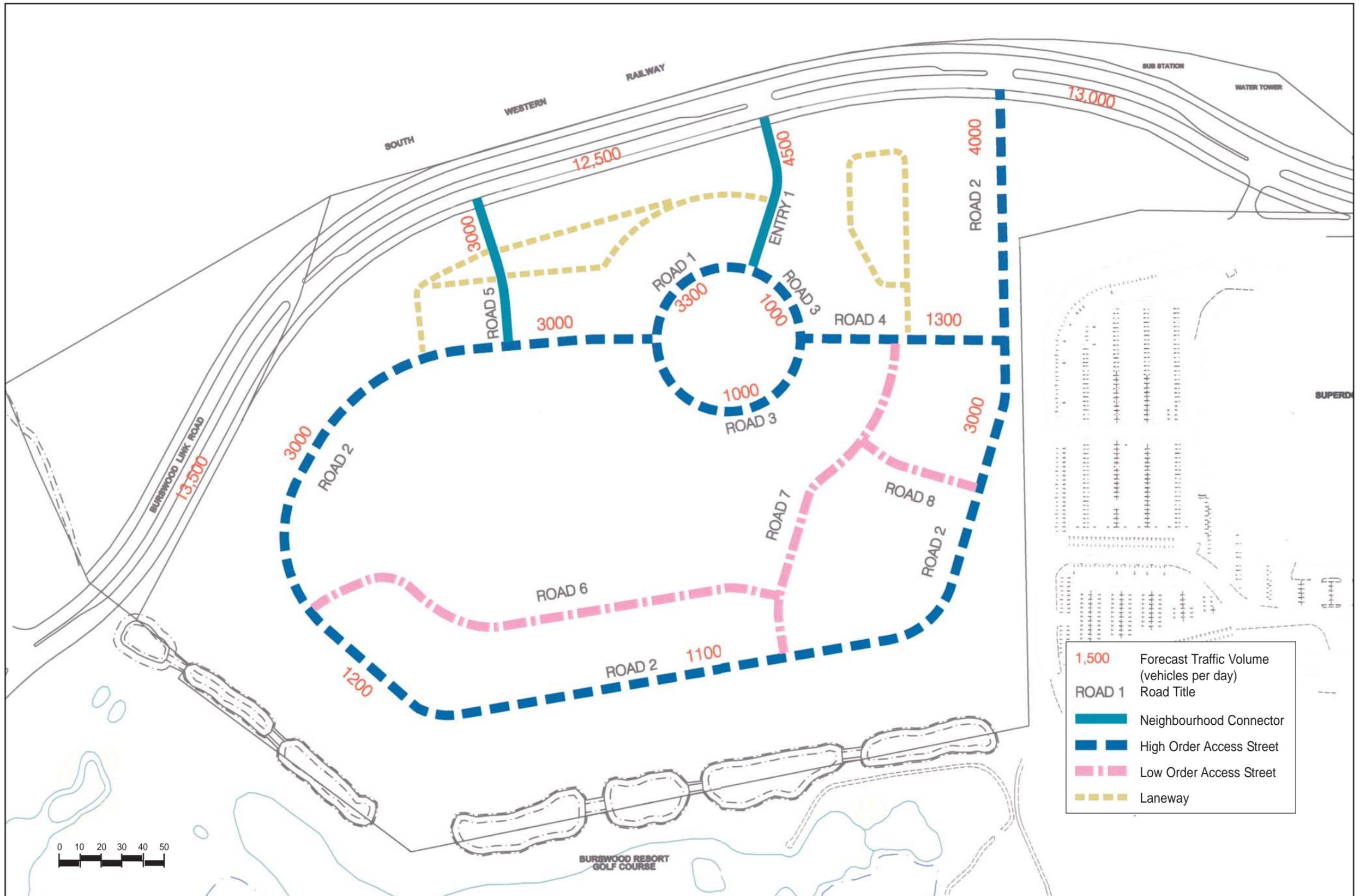


Figure 11
Projected Future Traffic Volumes

Figures 13-15 (p.51-53) illustrate several indicative street sections and plans.

Roads within the development have been classified as either:

- Neighbourhood Connector
- Access Streets (with higher order and lower order access streets distinguished)
- Laneways

The Burswood Link Road, which forms the eastern boundary of the development, has been classified as a District Distributor Integrator A. The road and verge widths are appropriate for this road, where the primary function is through traffic movement.

The road identified as 'Entry 1', serves as the main entry into the development and has been classified as a Neighbourhood Connector. Roads of this type link local areas with arterial routes. A 25 metre road reserve has been proposed, which will accommodate one 4 metre lane in each direction, separated by a 4 metre median. This boulevard treatment will provide an attractive streetscape, an appropriate entry statement for the development, and provide sufficient road width for the Neighbourhood Connector function. The 4 metre lanes are wide enough to allow a car to pass a stationary vehicle.

The roads identified as 'Road 1' and 'Road 3' form a ring road around the Circular Park, and intersect with Entry 1. These roads have been classified as higher order Access Streets. Access Streets accommodate shared pedestrian, bike and vehicular movements and provide access to abutting residential land uses. Higher order Access Streets typically carry volumes over 1,000 vpd. A 7 metre pavement within a 20 metre reserve is proposed for Road 1 and Road 3.

The vegetation within the circular park will be appropriate to ensure adequate safe intersection sight distance is maintained. On-street parking will be accommodated within a 2.4 metre indented parking lane on one side of the street (opposite the park).

The road identified as 'Road 2' has been classified as a higher order Access Street. A 7m wide road pavement is proposed, within a 20 metre road reserve. On-street parking will be accommodated within 2.4 metre indented parking lanes on both sides of the road.

The road identified as 'Road 4' has been classified as a higher order Access Street. This road will serve as an entry into the development, and therefore the high order Access Street classification is appropriate. A 7 metre pavement within a 20

metre reserve is proposed. On-street parking will be accommodated within 2.4 metre indented parking lanes on both sides of the road.

The road identified as 'Road 5' has been classified as a Neighbourhood Connector. This road provides a left-in left-out connection to the Burswood Link Road, and serves as an access for the northern area of the development. A 7 metre pavement is proposed within a 16 metre reserve.

The roads identified as 'Road 6', 'Road 7' and 'Road 8' have been classified as lower order Access Streets. For these streets, a 5.5 metre pavement is proposed within a 16 metre reserve. These roads will accommodate on-street parking, with 2.4 metre indented parking lanes proposed for both sides of each road.

The road identified as 'Road 6' will be differentiated from the other lower order Access Streets through the use of pavement materials and flush kerbing. Road 6 will clearly be a lower priority road, and will present a safe and comfortable environment for pedestrians and cyclists and a low speed environment for vehicles. While Road 6 will carry low traffic volumes, the road is required to provide access to the abutting buildings.

The remaining roads are classified as Laneways. For these roads, 6.0 metre pavements within 6.1 metre reserves are proposed. A 6.0 metre pavement will allow a moving car to pass another vehicle, but is too narrow for cars to park opposite each other without blocking the street.

The laneways will provide access to the abutting buildings, and pedestrians, cyclists and vehicles will share the road space. The laneways will be brick-paved, and will all operate as two-way. Internal laneway intersections will all operate under priority control.

Roads 1 and 3 surrounding the Circular Park will have a special pedestrian-oriented character. The road surface will be cobbled or brick paved, and semi-mountable or mountable kerbs will separate the lanes from the pathways. Bollards, planters, parked cars, and landscape elements will be used to define the pedestrian zone, with particular attention paid to linking the Circular Park to the Central Plaza and Lake Park beyond. This special location will create an environment where cars and pedestrians share the road space with equal priority.

Special streetscaping materials will also be used on Roads 6, 7, 8 and Entry Road 1, helping to define these as slower, more pedestrian-oriented streets.

8.3 Approach to Traffic Analysis

A detailed traffic analysis of Burswood Lakes and the surrounding area was undertaken by Sinclair Knight Merz. This analysis was performed using the Paramics micro-simulation model. This model is not only a comprehensive analytical tool which utilises all relevant design standards and codes but it also provides a graphical representation of the model. A sample CD of the Paramics analyses is attached at the back of this document. The CD provides a snapshot of the analyses for two scenarios, one with the Superdome present and one without the Superdome. Refer to the following sections for further explanation of these scenarios.

Superdome Development Scenarios

It is generally understood that the Superdome may be removed in the future and replaced with alternative uses. In order to ensure Burswood Lakes integrates successfully into the Burswood Peninsular, Sinclair Knight Merz produced full detailed traffic analyses on two separate scenarios. The first scenario is for a fully developed Burswood Lakes with the Superdome remaining in place and the second scenario is again for a fully developed Burswood Lakes but this time with the Superdome removed and a combination of commercial and residential uses in its place. Such an approach ensures that the road network proposed for Burswood Lakes is sufficiently robust to enable an appropriate residential lifestyle for both 'With the Superdome' and 'Without the Superdome'.

Outcome of Traffic Analysis

'With Superdome' Scenario

In the 'With Superdome' scenario (Diagram J, p.50), it will be extremely important to separate, as far as is practicable, the traffic destined for (a) the Superdome car park and other Burswood car parks from (b) the residential environment of the Burswood Lakes development. Potential future conflict is reduced by creating a road network that naturally guides Burswood Resort patrons to and from the car parks.

Existing and planned entrances and exits to Burswood car parks are shown in Diagram J (p.50). Access and egress are focused on entry from the south and exit to the south. This is logical considering that historically the only access to the Resort Complex was from the south.

Diagram J - East West Road Connections illustrates the importance of the Glenn Place extension that will connect the two roundabouts. Its importance is based on:

- accessibility to and from future car parks
- westbound access from the Burswood Link road to Great Eastern Highway



Figure 12
Transport Context



Diagram J (right) also illustrates the importance of the two east-west link roads at the northern side of the Superdome. The most northerly is a residential street that will serve the residents of Burswood Lakes; the southerly road is a car park access road. This dual system satisfies the objective of separating Burswood traffic from the residential environment of Burswood Lakes.

'Without Superdome' Scenario

There are many land use options that might be considered for the 'Without Superdome' scenario (Diagram K, right). In developing a road network for these options, a number of critical criteria emerge.

- Will the car park for the Burswood Resort Casino be retained on this site? If so, where will the entrances and exits be to this car parking? The location of entrances and exits will also determine the major traffic flow.
- Will the area be predominantly residential? If so, it should have strong residential links to the Burswood Lakes development and offer an environment conducive to walking and cycling in order to capitalise on the public transport asset - the rail station.
- Will there be commercial/office/retail/recreational development? If so, where will it be located? If at the southern end of the site, from where will car park access come? If between the two sites (southern side of the Burswood Lakes development), would this form a barrier for connectivity?
- How can a strong east-west pedestrian connection best be created between the Burswood Resort Casino and the rail station?
- Irrespective of the land uses that would be developed on the Superdome site, the following traffic requirements would remain:
 - Need for traffic to travel between Glenn Place/Resort Drive and the Burswood Link Road
 - Need for traffic to travel from the Burswood Link Road to Great Eastern Highway west-bound

Diagram K (right) illustrates one land use option for the Superdome site. In this option, residential development is located on the north side of a strong east-west pedestrian spine; commercial / office / recreational / retail development is located on the south side of the pedestrian spine. Undercroft car parking is provided to service the existing Burswood Resort as well as the new development on the Superdome site.

For this option, Diagram K shows the importance of the Glenn Place extension between the two roundabouts to service the traffic demands for the precinct and create a street address for commercial development fronting the existing Burswood Park lands. Diagram K also illustrates how the remaining area could be

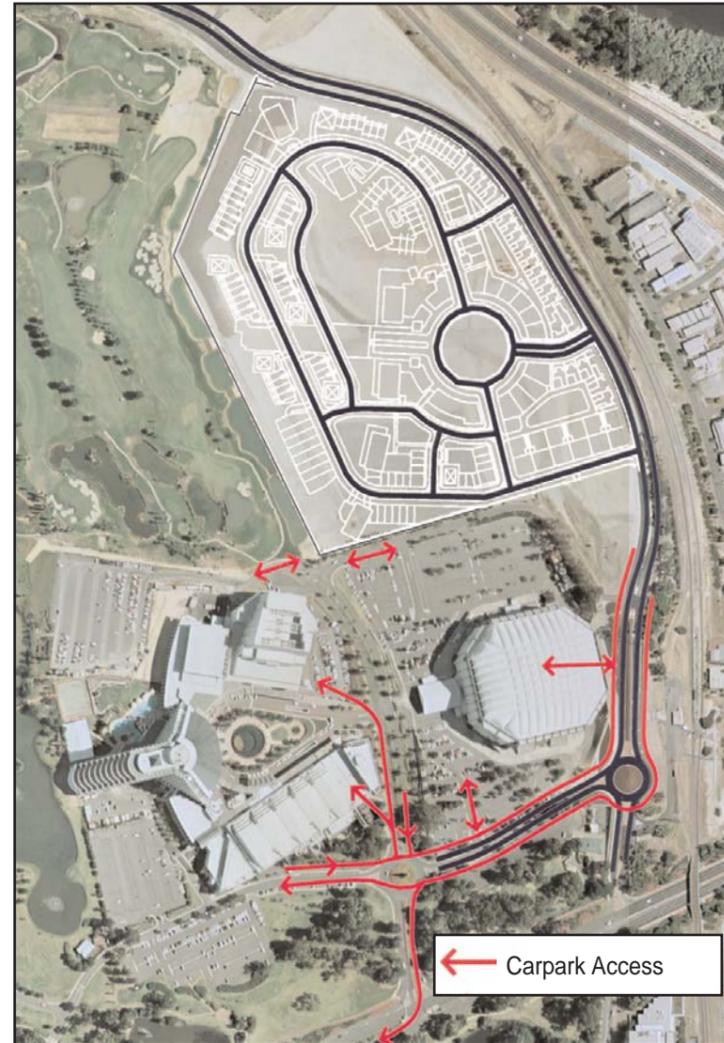


Diagram J: Burswood Lakes 'with Superdome' Scenario

kept relatively 'traffic calmed' since it would service predominantly residential development.

While other possible options for land uses might create the need for different road network configurations, the importance of the Glenn Place extension between the roundabouts would not be diminished. It would continue to serve the demand from Glenn Place and the undercroft car parks, and from the Burswood link road to Great Eastern Highway west-bound and it would serve the demand from development to the north - whatever that might be.

Conclusions

The daily traffic volumes produced by the Paramics model are shown in Figure 11 Projected Future Traffic Volumes (p.47). These volumes assume the Superdome is retained. Replacing the Superdome with the alternative land uses increases the

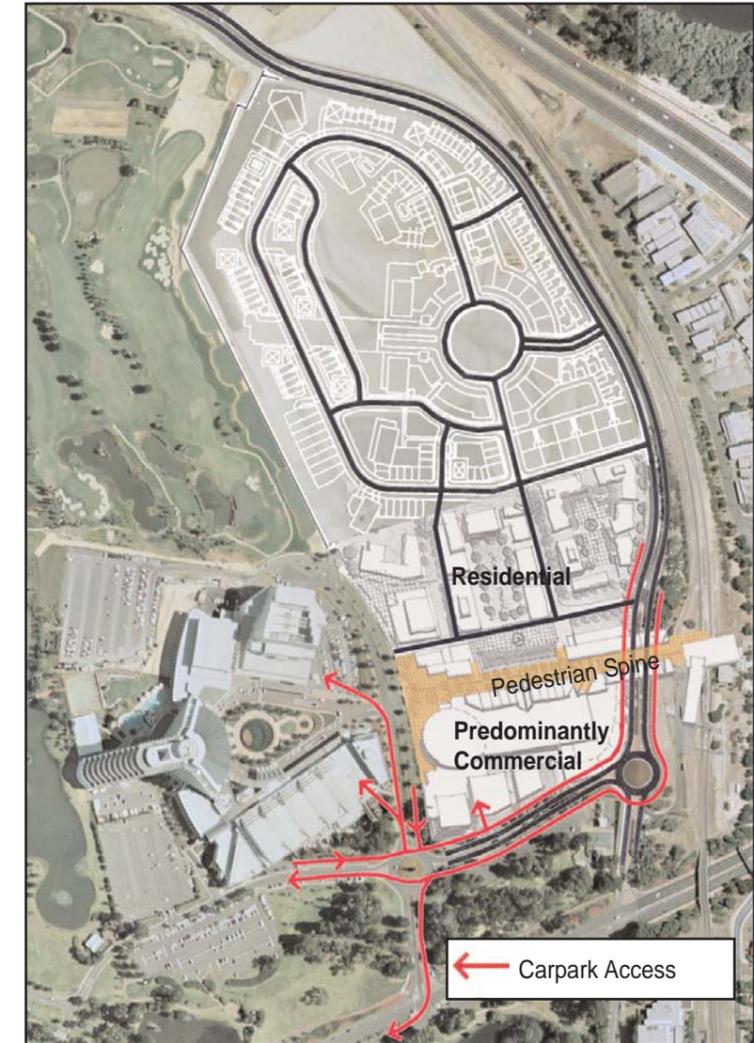


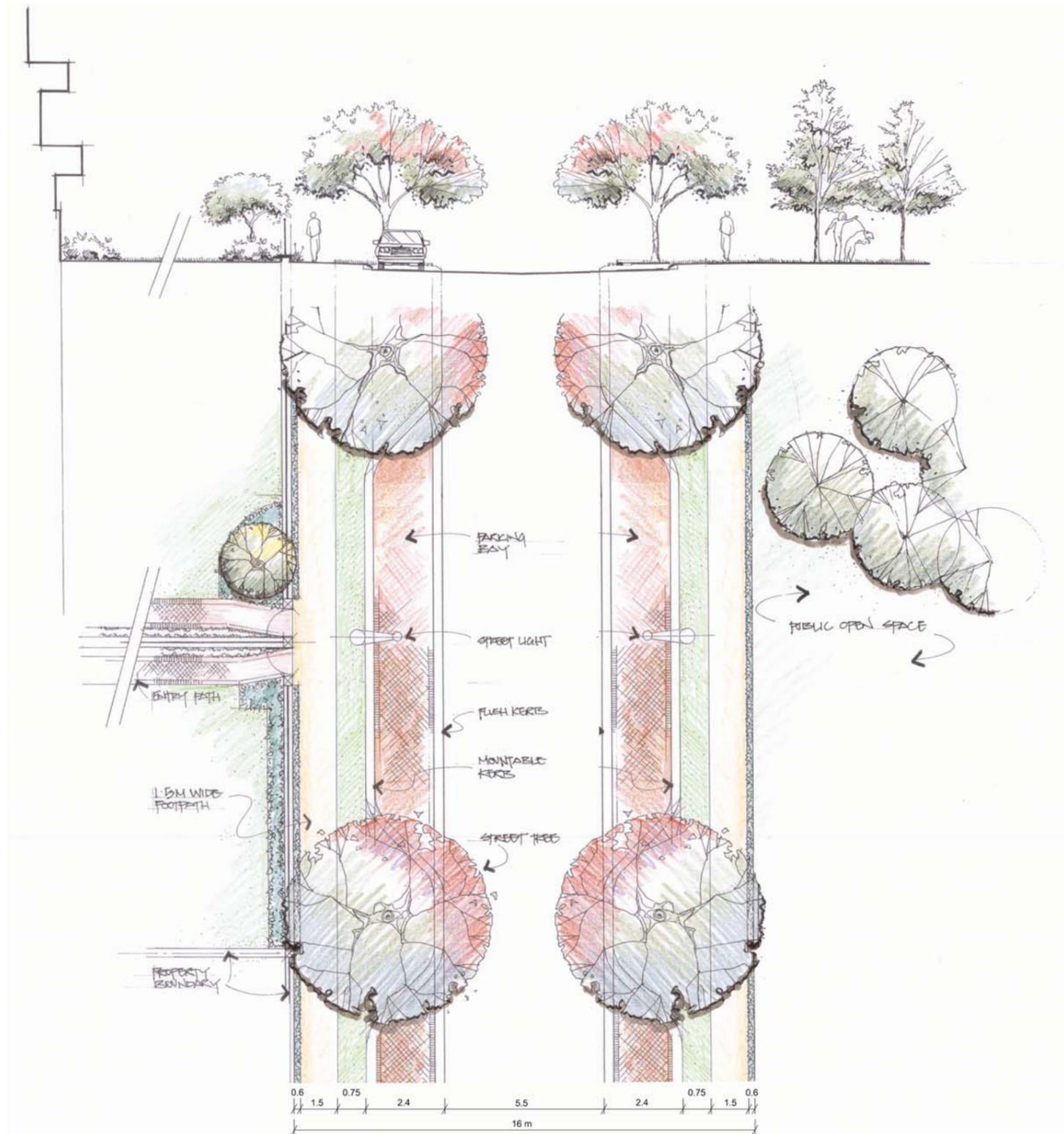
Diagram K: Burswood Lakes 'without Superdome' Scenario

forecast daily traffic volumes on Burswood Link Road by 2,000 - 2,500 vehicles per day.

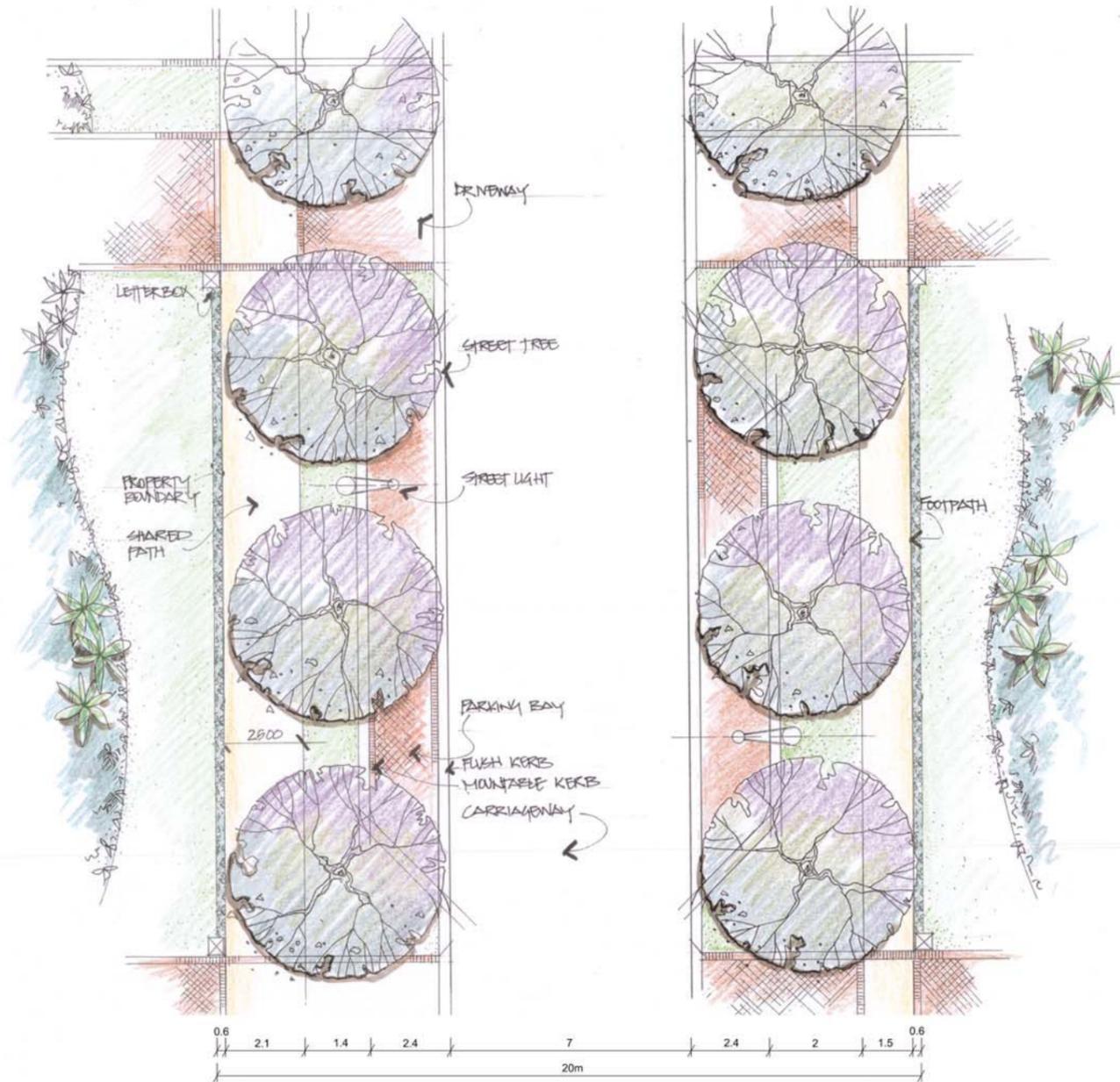
The roads within the development are largely unaffected by change in land use on the Superdome site - the exception being the road at the southern boundary of Burswood Lakes. This road will see an increase in forecast daily traffic of between 500 vpd and 2,000 vpd (the greatest increase immediately to the west of Burswood Link Road).

The proposed road network for Burswood Lakes complements and integrates fully with the Burswood Peninsular for both the 'With Superdome' and 'Without Superdome' scenarios.

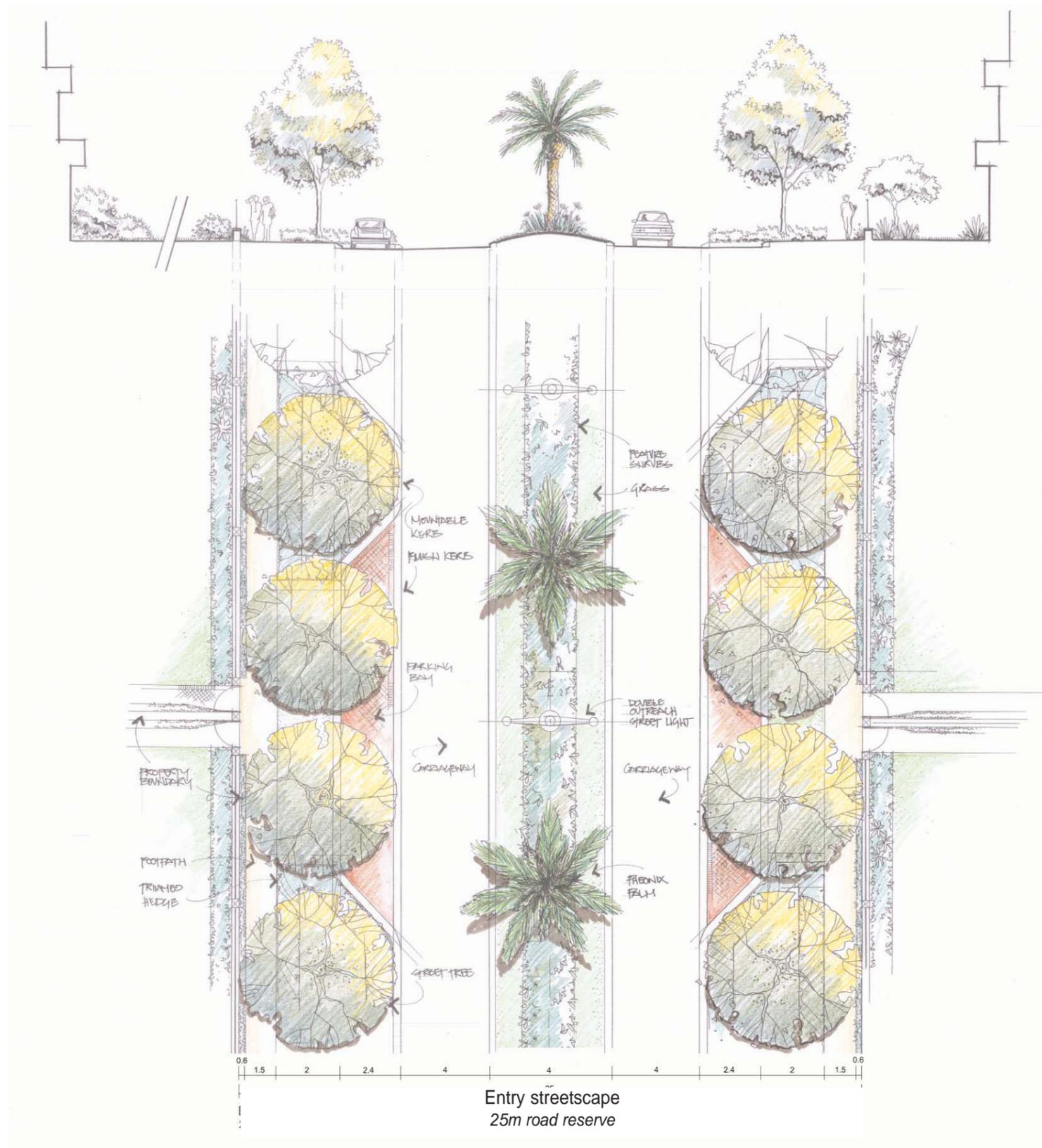
The Glenn Place extension between the two roundabouts is very important in a network sense - with or without the Superdome.



Streetscape adjacent to a park
16m road reserve



Streetscape with shared-path
20m road reserve





Victoria Park Bus Transfer Station

While in the 'Without Superdome' scenario a road network might be developed that has an additional east - west road further to the north, this would not diminish the importance of the Glenn Place extension. In the 'With Superdome' scenario, the Glenn Place extension is essential for separating the Burswood Resort traffic from the residential environment in Burswood Lakes.

8.4 Pedestrian and Cyclist Network

The Burswood Peninsula is well served by the regional shared-path network. There are proposed links to the Swan River across an existing pedestrian bridge in front of the Burswood Resort. The existing shared use path system is shown in the Local Context (Figure 21, p.70) and Site Analysis (Diagram E, p.32).

Paths are proposed for every street and the network extends beyond the road system with paths proposed through the park lands and around the lake (Figure 22, p.71).

All streets, including arterial routes and access streets, are required to have footpaths on both sides. However, where there is no development on one side of the street or where vehicle volumes and speeds are low, footpaths may be omitted from one side of the street. In cases where volumes of less than 300 vpd are forecast, footpaths may be omitted entirely if the road environment is considered safe for all users.

The network of shared-paths will cater to pedestrians, cyclists and the disabled. This network will provide connections to the existing network on the Burswood Peninsula.

The pedestrian and cycle network proposed is shown in Figure 22 (p.71).

8.5 Public Transport

The majority of the site is within a 10-minute walking distance (800 metres) of the existing Burswood Train Station on the City-to-Armadale line.

The Urban Design Workshop No. 1 reviewed the location of the Burswood Train Station.

It was resolved that the current location of the station was preferable as it would:

- Provide access to the majority of Burswood Lakes residents within a 10-minute walk (800 metres)
- Provide an opportunity for the Station to develop as a major destination station. Future commercial development on the Superdome site would be in very close proximity of the Burswood Station
- Allow for this destination to develop while maintaining separation and privacy for Burswood Lakes residents

The Burswood Train Station is used extensively by Burswood patrons for major events at the Resort (especially at the Superdome). Patrons are offered free public transport with event tickets. The service operates approximately every 15 minutes from 6am to 7pm, Monday through Saturday. Service outside of these hours runs approximately every 30 minutes.

Currently there are no buses directly serving the Burswood Resort Casino. There are, however, 10 bus routes that run along Great Eastern Highway, providing access to Midland, Perth domestic airport, Belmont and Kalamunda to the east, and the Victoria Park Transfer Station to the west. The Victoria Park Bus Transfer Station is located 1km east of the Burswood Resort Casino. From the Transfer Station, buses travel to Perth City, Canning Highway, Shepperton Road and Albany Highway.

Discussions have been held with bus route planners from Transperth, who have advised that it is unlikely the internal roads within Burswood Lakes will be serviced by buses. Roads have been designed to accommodate the future provision of a bus system if it is required.

The Burswood Tourist Tram travels from Perth CBD and Kings Park and a link bus connects the Burswood Train Station to the Casino.

In October 2000, the report entitled "Additional Ferry Services on the Swan and Canning Rivers" identified the potential for a ferry service to operate between Perth City and the Burswood Peninsula, subject to demand.



Burswood Link Road adjacent to Burswood Lakes site

8.6 Car Parking

Car parking generated by adjacent uses has the potential to impact the Burswood Lakes site.

Car parking for Burswood Resort has been the subject of significant investigations over the last few years. In the past, parking shortfall has been an issue. A temporary solution has been implemented in which staff parking has been located in a car park on the Burswood Lakes site.

The Town of Victoria Park and Burswood Resort recognise that a more permanent arrangement for car parking is needed. Burswood Resort has access to special event bays at Kagoshima Park and Belmont Park. Shuttle buses operate between this destination and the Resort.

Special events at the Burswood Theatre, Superdome and Convention Centre can have exceptionally high parking demand. A transport management plan is required for events, which encourages train and taxi use. Burswood Ltd. employs parking staff to direct traffic to available parking.

The proponent understands that Burswood Ltd is examining the future use of the existing Superdome and the surrounding carparks. Should the Superdome site be redeveloped preliminary design investigations have shown that there is sufficient area and level change over the site to accommodate both the Burswood Resort's existing and future car parking requirements.

Car parking at Burswood Lakes will be required for residents, visitors and any delivery or service vehicles. The required car

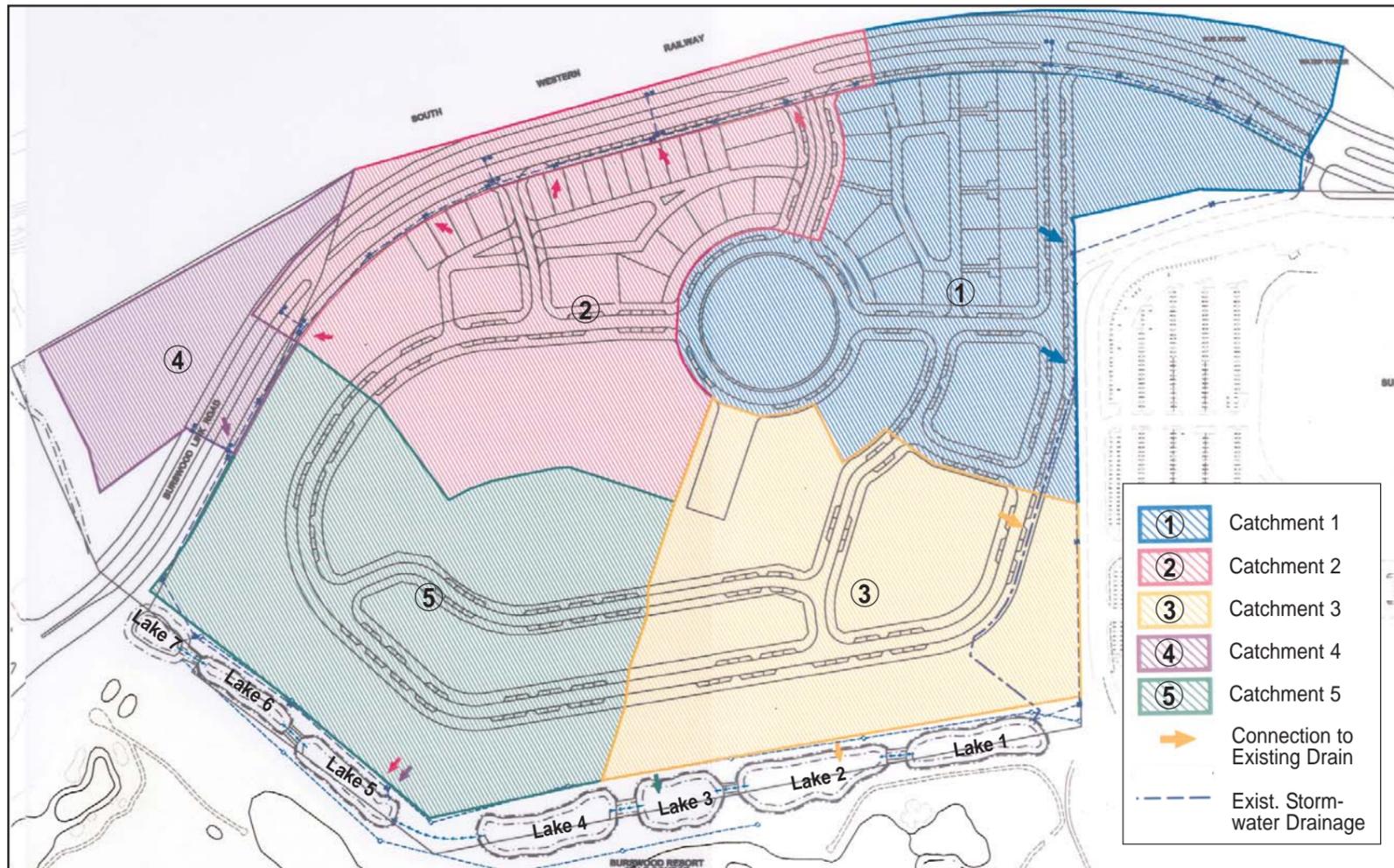


Diagram L: Drainage and Catchment Strategy

parking will be contained within the site as stipulated in Part C, Section 5.11 Parking (p.96). These proposed requirements are a proven Mirvac standard which has evolved from 30 years experience in property development.

Parking for residents will be accommodated off-street, while ample on-street visitor and service vehicle parking will be provided. Appropriate parking management will be required to ensure that on-street parking is not used for activities outside the development.

On-street parking will be accommodated in 2.4 metre wide indented parking lanes. Trees will be planted adjacent to the parking lane, which will narrow the appearance of roads and help to control vehicle speeds. A minimum of two car bays will be provided to ensure easy access, adequate lighting levels and surveillance.

9.0 Site Development & Infrastructure (ref. Infrastructure Report June 2002, Geotechnical Studies - Burswood Lakes)

9.1 Geotechnical Investigations and Site Works

Geotechnical studies have been carried out for Burswood Lakes. The site has been investigated to depths of as great as 40 metres in places. The results of the studies indicate that a soft estuarine silty clay has been deposited to depths of around 20 metres along the eastern foreshore of the Swan River.

Preliminary geotechnical investigations have indicated settlement can be expected on some areas of the site over the next 30 years due to the nature of the underlying material, and the previous landfill history of the site. The principal settlements will occur in the north-west corner of the site along the western edge of the

Lakes, and over the old "Clay Pit Lagoon". Pre-loading of these areas is therefore proposed to accelerate the settlement and mitigate the longer term settlement to manageable levels for both roadworks and services.

The strategy for the timing of filling and pre-loading will result in a division line between deep and shallow footings across the site in the north-south direction.

Deep pile footings will be required over the western portion of the site and will generally need to extend into the dense sand underlying the very stiff clay. The area to the east of the division line (with application of pre-loading) will have settlements such that shallow footings will be suitable. For buildings across the eastern area, individual pad and strip footings may be appropriate.

Additional studies, including settlement monitoring, will be required for a full geotechnical assessment of pre-loading and piling options. These studies will be carried out as the development options become more apparent.

At present the site is covered with between one and two metres of clean sand fill above a geotextile membrane warning barrier. Additional filling is proposed as shown in Figure 16, p.57 Site Design Levels. It is estimated 250,000 m³ of additional clean fill will be brought in to produce the proposed levels. Construction of civil works will include an earthworks strategy that makes provision for the pre-loading area such as the north-west corner and the former Clay Pit Lagoon. An Indicative Development Staging Plan for both building works and civil works is shown in Figure 32 (p.87).

Following remediation, the surface soils on the site can be regarded as free of contaminants to a minimum depth of 1 to 2 metres. As a result - providing construction activities on the site do not penetrate the warning barrier layer that has been placed at the maximum vertical depth of remediation works - future development on the site can be carried out in a normal manner.

9.2 Roads and Drainage

Ministerial conditions require all stormwater to be collected and disposed off site. This includes the runoff from all buildings and impervious areas of the site.

As part of the remediation works for the Burswood Lakes site, the existing drainage canal on the western side of the site was modified to form seven lakes as defined in the EMP. Lakes 1 to 6 are clay lined to prevent infiltration while Lake 7 is unlined.

All lakes are interconnected using open channels. Lakes 1, 2 and 6 are weir and level controlled to provide a "first flush" and "extended detention" capability. The lakes have been designed to provide an outlet for all surface drainage from the Burswood Lakes site, the new Burswood Link Road and the adjacent DOLA/MRD site (lot 26). The lake system releases water from Lake 7 into the Swan River.

Sub-soil drainage systems on both sides of the lakes intercept sub-soil drainage and discharge into Lake 7. Lake 7 also accepts sub-soil and stormwater drainage from the Burswood Link Road and the adjacent golf course.

The conceptual design for the future surface water drainage system includes:

- Collection of stormwater from all sealed surfaces
- A piped drainage system to collect and discharge the water into the treatment basins or lakes on the western edge of the site
- Provision of primary pollutant traps to complement the lakes system at strategic locations throughout the development. These "Gross Pollutant Traps" (GPT) will collect rubbish, large particle sediment and hydrocarbons prior to discharge into the lake system
- The ultimate outlet for the surface area drainage system is the Swan River

Ornamental Lake

Where possible, roof runoff will be collected and piped to the ornamental lake. The lake will be lined and weir controlled to maintain the water level with the overflows discharging into the stormwater system and the lakes.

The proposed drainage and catchment strategy is shown in Diagram L, p.55.

The road network in the area already includes the recently constructed Burswood Link Road which has yet to be gazetted as a public road. Roads for the development will be constructed in accordance with the local authority standards. Details of road and reserve width are set out in Section 8.0.

Road infrastructure - apart from sections of Road 2 located in the north-west corner and the "Clay Pit Lagoon" area - is generally not subject to major differential settlement. Those areas that are effected will be pre-loaded to accelerate the long term settlement and mitigate any differential settlement. For this reason, no major problems are anticipated with the road and drainage infrastructure within the development.

9.3 Water Supply

At present there is no water connection to the site. The closest water service is a 200DN diameter main in Bolton Avenue and a 100DN diameter main in Goodwood Parade. Discussions with the Water Corporation have identified that neither of these connections will be adequate to service the ultimate water demand for the site.

To provide water to the site, a new connection will be required from the existing 300DN diameter main on the south side of Great Eastern Highway.

The main will be 250mm in diameter and will connect to the Water Corporation's 300DN diameter main at the intersection of Griffiths Street and Great Eastern Highway. The alignment then follows Griffiths Street and will require an underground rail crossing to connect to the site as shown in Figure 20, p.69 Infrastructure and Amenities Plan. From this point the water supply will be constructed to suit future staging of the development.

9.4 Sewerage System

The site is not connected to the Water Corporation's sewer network. Existing sewer infrastructure adjacent to the site is a 225mm diameter sewer on the eastern side of Bolton Avenue as shown in Figure 20 (p.69). The connection point is approximately 70 metres from the south-west corner of the site.

The Water Corporation has advised that there is capacity in the existing 225mm diameter sewer at Bolton Avenue to service the fully developed site. Given the amount of additional fill required to provide the final levels, it is anticipated that a gravity sewer system will be used for internal reticulation. The exception may be units facing the lakes on the western boundary where it is anticipated that each site could require a private pump station to serve lower levels of units around the lakes.

Details of the sewerage system will be finalised during detailed design.

9.5 Power Supply

There is currently no power connection to the site. An existing 11/6.3kV LV link to the Old Swan Portland sub-station has been disconnected. Lighting for the Burswood Link Road is provided by a link to the transformer at Tennis West.

Western Power has advised that power for the development will be provided from the networks connected to the Belmont zone substation. This will be facilitated by a new 22kv high voltage

cable connection to the site. Internal reticulation of power will be provided by a 22kV ring main, with connection to the 22kV HV service from the Belmont zone sub-station.

It should be noted that Western Power is unequivocal in its confirmation that the power supply for Burswood Lakes is independent of any future upgrade of the Rivervale Substation ie Burswood Lakes is not the reason or driver for upgrading the substation.

9.6 Communications

The nearest connection to the Telstra network is at Great Eastern Highway. Telstra has advised that this existing service can only be extended to service approximately half of the site. To provide comprehensive communications capability, Telstra proposes to construct a new fibre optic cable from the Victoria Park exchange to a central Telstra exchange on the site.

This exchange, which will need an area of approximately 3.5 metres by 5.5 metres, can either be housed in a dedicated Telstra facility or as part of a building. The exchange will be capable of servicing the total site with high-quality communications. A separate pipe and pit network will also be constructed as part of the civil works to enable the opportunity for third party telecommunications vendors to supply services to the development.

9.7 Gas

At present there is no gas infrastructure to service the site. Alinta Gas has advised that they can service the site using the existing gas line in Bolton Avenue.

The developer will provide a common services trench for the pipe work to be laid by Alinta Gas. The internal reticulation may be extended with an underground connection beneath the rail line to a gas reticulation network in Goodwood Parade.

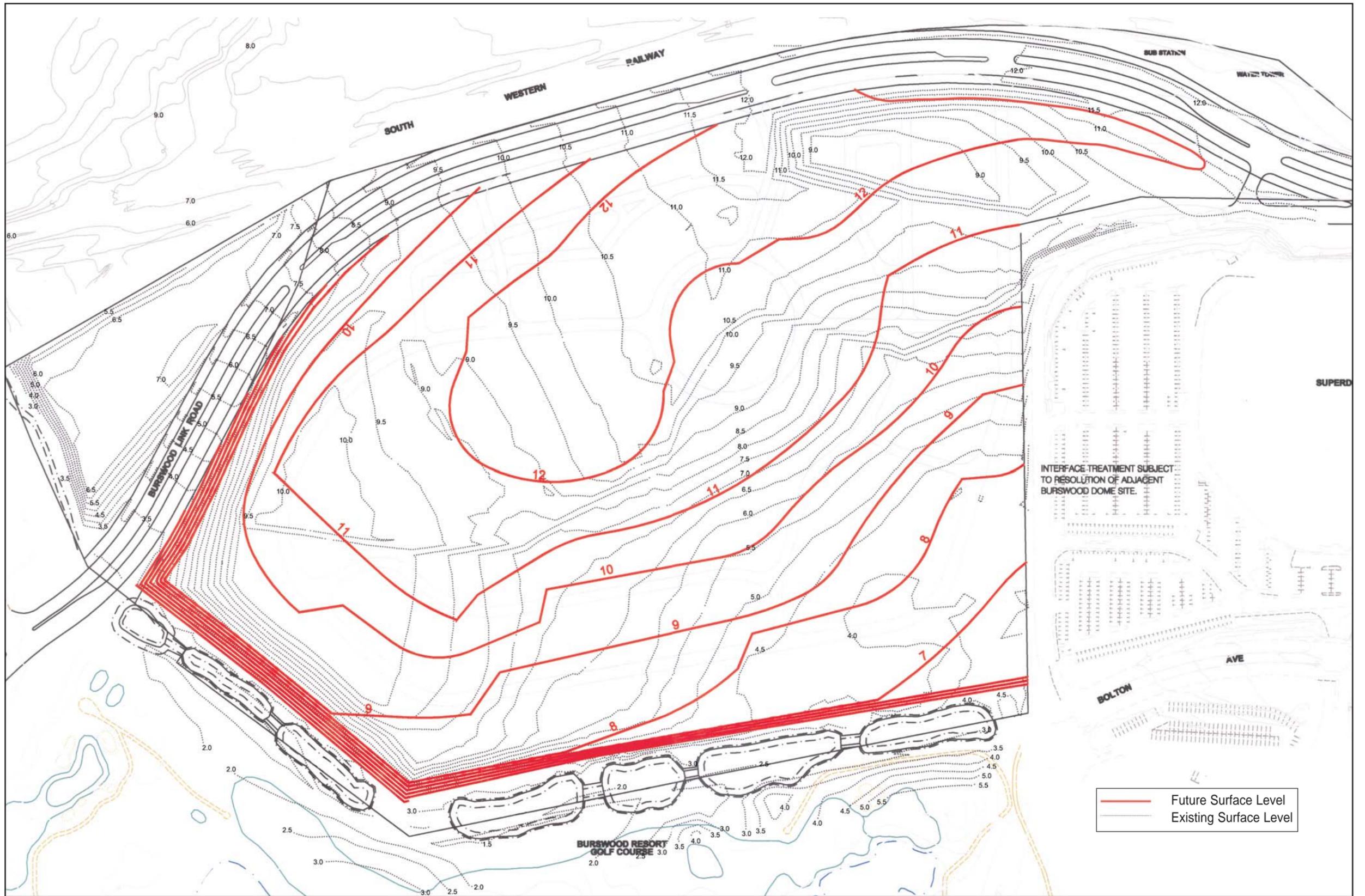


Figure 16
Indicative Site Design Levels



10.0 Environmental Issues

(ref. Environmental Management Overview)

10.1 Remediation of the Site

The Burswood Lakes site has undergone extensive remediation to ameliorate contamination caused by previous industrial activities. The remediation program and prior site investigations have been subject to formal review and conditions set by the Environmental Protection Authority (EPA 1998). Included in the Conditions (as Ministerial Condition 9) was the requirement to produce an Environmental Management Plan (EMP) to ensure that any environmental impacts associated with the remedial activities and subsequent redevelopment of the site are managed appropriately.

On behalf of Burswood Nominees Pty Ltd, Egis Consulting produced an Environmental Management Program (Egis Consulting, 2000) to satisfy this requirement. The Environmental Management Program, containing the appropriate environmental management plans, was finalised in June 2000, implemented by Gregory's Plumbing on behalf of BL Developments and completed in May 2001. Environmental consultants Environmental Management Resources Australia (ERM) assisted Gregory's Plumbing with technical advice, site supervision and documentation.

Formal sign off of the remediation, which states that the site is now suitable for residential development, was given by the Department of Environmental Protection (DEP) on behalf of the Minister for the Environment and Heritage, on 30 August 2001.

10.2 Environmental Management Plan

The Environmental Management Program produced by Egis Consulting (2000) focused primarily on the remedial operations with less emphasis on the post-development site activities. In addition, post-development management strategies were produced on the basis of a (now superseded) proposed development plan that included recreational, tourist and residential land use.

A new post-remediation EMP (to replace the current EMP) was approved by the Department of Environmental Protection (DEP) in October 2002. The emphasis of this post remediation EMP is to produce construction and post-development management strategies that - while still complying with Ministerial Conditions - are more closely suited to the style of development proposed in the Structure Plan.

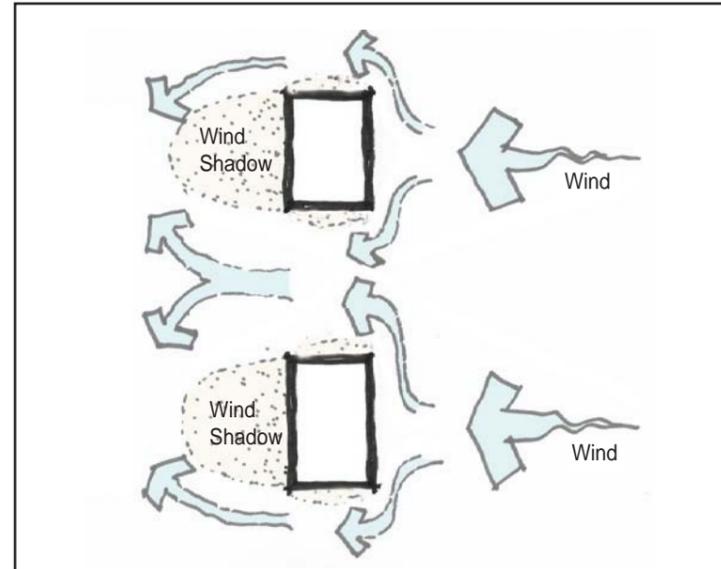


Diagram M: Plan showing how wind moves horizontally around buildings

10.3 Micro-climate

Micro-climate issues include noise, solar access, and wind.

Noise

Burswood Ltd have made a commitment to the proponent that the Superdome, which currently generates a degree of noise during large events, will no longer be used for purposes that create noise, generate light and traffic as of 31st December 2004. This commitment will be effected through a restrictive covenant on the Superdome site, to the benefit of the Burswood Lakes residents.

Wind

Dr. Kenneth Kavanagh of the University of Western Australia has undertaken an initial review of the proposed development. He prepared the following wind report (refer to Diagram M, N above).

The General Wind Climate

- The Burswood Lakes Development is generally open, with a predominance of low-rise (two- to four-story) buildings.
- The site is exposed to winds from all directions, but the northern and southern exposures are generally unimportant in Perth's wind climate.
- At low wind speeds, Perth is subjected to a large number of easterly winds. These winds are hot and dry, and the associated wind chill factor can be beneficial.
- At low speeds, the westerly winds are generally cooler and more humid, raising issues of long-term comfort due to wind chill.

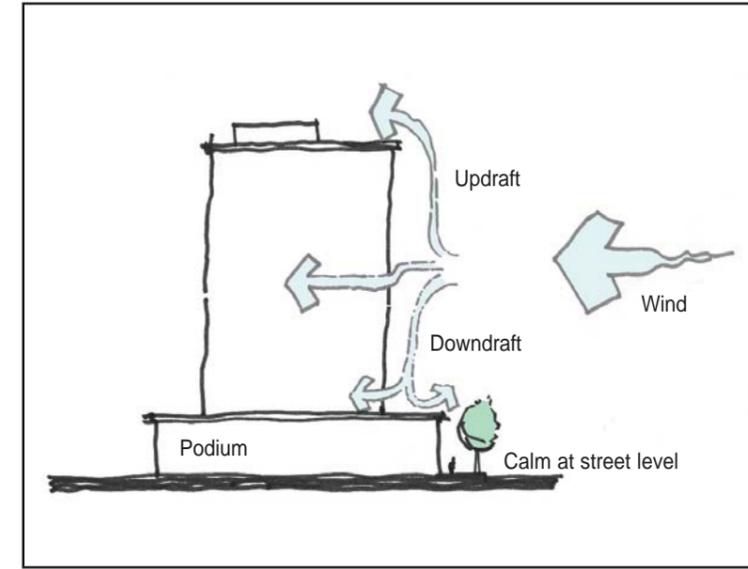


Diagram N: Elevation showing how wind moves vertically around buildings

- At high wind speeds, Perth winds are almost exclusively from the westerly directions, and these are associated with rain and with storm fronts. For open areas, these winds are less important, since people are not likely to occupy open spaces during major storms.

The Concept of Comfort in Wind Affected Areas

- The predominant consideration of human comfort is the effect of wind chill on people in exposed areas.
- Long term occupancy of open areas is associated with sitting and eating (cafes, picnic areas, and plazas).
- Short term occupancy is associated with transient activities (walking, sightseeing, window shopping).
- Open areas in Burswood Lakes are typical of most Perth park sites. Long term activities tend to be comfortable on all but one day per week due to the predominance of the dry easterly winds.
- Short term activities in open areas (such as sport) are affected on about a monthly interval, with the passage of storm fronts or strong sea breezes.
- Open areas are generally vulnerable to unacceptable conditions on a several month to a yearly basis, with the arrival of strong storm fronts.

Shielding Due to Buildings

- All buildings provide protection from the wind on their leeward and side faces.
- The extent of the protection provided by buildings is governed by the building's characteristic dimension.

- Low-rise development has a characteristic dimension of height, and protection is limited to within one or two building heights behind the building and less than one building height on the sides.
- Public open space in Burswood Lakes is not likely to be shielded by the planned low-rise development simply due to its distance from the development.
- Shielding is again provided in the lee of buildings for approximately one or two building widths. Side wall protection is limited to approximately 20 per cent of the building width.
- While the appropriate distance between buildings depends on many factors other than wind, generally the further they are apart, the less the effect of wind. The layout of the tall buildings at Burswood Lakes and the separations between them appear adequate.

Increases in Wind Speed and Its Effect on the Pedestrian Level

- Buildings that provide shielding also create local zones of increased wind speed.
- The zone of increased wind is usually very narrow, with the highest wind speeds adjacent to the building and with a fairly rapid reduction of wind speed with lateral distance.
- To the sides of buildings, the zone of increased wind speed is approximately 10 -15 per cent of the building dimension. Farther out from that zone, winds are largely unaffected.
- Pedestrian level winds can be protected by low-rise development at the base of the high-rise development. Lateral winds are forced over the top of the low-rise buildings (or set-backs), protecting the pedestrian levels.
- The extent of the increased wind zone in the direction of the prevailing wind is dependent on the building dimension in the wind direction. In Burswood Lakes, this building dimension is small, and the extent of the wind affected zone will be less than two building depths.

Local Effects and Protection

- Tall buildings can be exposed to downwash winds on the front face of the building.
- Downwash winds are most pronounced on very wide, flat fronted buildings.
- The taller buildings at Burswood Lakes are narrow enough to minimise the effects of significant downwash.
- Downwash can be deflected by a podium level or low-rise development in front of the tower. Five to ten metres of podium is sufficient to block the downwash from the pedestrian level.
- Winds deflected laterally by the building can be uncomfortable for balcony areas if the balconies are continuous and open. Vertical partitions along the open balconies can eliminate this problem.

Public Spaces

- Outside seating areas should take advantage of the side wind-shadows that occur between the tall buildings at Burswood Lakes. This side-shadow is equivalent to 1/10th the width of the windward façade, and is most pronounced near the windward corner.
- The Circular Park area is sufficiently far from the high rise development to be unaffected by either the sheltering effect or the localised increases in wind speed
- Lake Park is of sufficient size as to encounter a variety of wind conditions within it. Wind conditions near the western edge will be improved because of the proximity to sheltering buildings, while much of the park area will be largely unaffected by the development.
- While the hardscaped central pedestrian plaza leading from Lake Park to Circular Park forms a view corridor to the Perth CBD to the west, it is possible that this area could be somewhat exposed on days of strong westerly winds. Certain steps in the detailed design of that space could be taken to ameliorate the situation. For example, if a café with outside seating were desirable in this location, glass partitions or low-landscaping could be added to shield patrons from occasional breezes.

Overall Changes in Wind Condition

- Wind conditions will vary depending on where you are on the site
- The overall building configuration (as shown) will produce a neutral or better result, from a wind perspective, than currently exists on the site
- The high rise buildings will provide sheltering from the westerly winds to about 50% of the site area immediately behind the buildings
- Approximately 10-20% of the site area would be more windy due to the presence of buildings
- Another 10-20% of the site area will neither increase nor decrease its amount of wind

Solar Access

Solar access on the site has been assessed through shadow analysis at both the summer and winter solstices. This analysis indicates that the linear layout of the taller buildings with a large open space to each side of the building spine provide for areas of sun within open space at all times and limits overshadowing at mid-day in mid-winter.

The shadow analysis diagrams are included in Figures 9 and 10 (p. 44-45) and further shadow analysis is required at development application.

The combined wind and solar impacts will be used in the detail design of spaces between the taller buildings to ensure pedestrian comfort through suitable landscape and built form treatments.

11.0 Public Open Space

(ref. Landscape Masterplan Report)

11.1 Public Open Space (including Burswood Canal)

The many public open spaces at Burswood Lakes will be the community meeting places and therefore the core component of the new urban neighbourhood. Over 11.7 per cent of the site is proposed as Public Open Space (based on the total of all POS and 50% of the area of the lake) and is shown in Figure 31 (p.86). These public parks will provide local amenity. An additional 3% of the site will be publically accessible landscaped areas.

Together with the larger primary parks there will be smaller pocket parks and areas of open space that will provide more intimate places.

To the western edge of the site, a series of view corridors break the developed edge and provide visual links to the golf course, the Swan River and the Perth CBD beyond.

To reflect its importance, public open space is structured as central parkland with links to secondary spaces and the surrounding environment. The large central Lake Park and Circular Park provide areas for passive and active recreation. These areas contain informal open grasslands that can be used as 'kick-about areas' or picnic grounds. The parks and linking linear public spaces offer circuit walks as well as direct pedestrian access across the community and to key off-site destinations.

The design includes viewing platforms that provide opportunities to see beyond the development over the golf course to the river and city.

Shade trees and water features are key landscape elements. Both provide cool environments for enjoying outdoor summer activities. Barbecues and picnic facilities offer residents added amenity. A variety of public spaces is proposed at Burswood Lakes, from pocket parks with intimate seating areas and incidental play spaces to broad lawns and plazas. This variety of public open space reflects the needs of the diverse resident mix expected in the new community.

The public open spaces are designed to encourage day and night pedestrian use. Lighting will be installed both for security and aesthetics.

Security will also be provided by passive surveillance from surrounding streets and buildings. Placement of shrubs and ground level structures will take into account views and limit hidden spaces.

Public spaces are designed to be visually stimulating. At ground level, vistas are created to the city, golf course and river. Spaces and plantings are designed to visually entice the user from one area to another.

The views and vistas are heralded by changes in tree species, with palms placed at strategic locations. The restricted use of specimen palms links the landscape to the character established in the adjacent park lands and roads within the Burswood Peninsula. The overall landscape will be formed by a mix of both exotic and indigenous species selected to suit site conditions. This mix will create a rich parkland setting that will offer year-round colour, shade where required and winter solar access.

The perimeter lakes on the western boundary dominate the interface of the development with the golf course. These lakes are not included in public open space as they have a drainage function and are not publicly accessible. It is intended that this zone is planted with primarily endemic species and littoral planting. Where the lake system extends through to the old Burswood Canal, planting will be complementary to the perimeter lakes character. A corridor of locally indigenous trees, shrubs and dampland littoral plants will define the old route of the canal.

Located adjacent the north west corner of the site is an area where the former Burswood Canal used to pass through the Peninsula. The canal, which has been disused for some time, was infilled and piped by Burswood Ltd as part of the remediation of the DOLA land during 2001. This occurred with the approval of the Heritage Council of Western Australia.

Burswood Ltd is currently in discussion with the Heritage Council of Western Australia as to creating a Heritage Agreement for the canal. It is the intention that this agreement will include recognition of the canal by way of an interpretive sign to be located on site in an area of public open space. Although details of the sign are still being finalised at the time of writing, it is likely that the sign will be consistent with other similar signs found in Western Australia, and will explain the significance of the canal.

11.2 Soil Conditions

The site has been remediated with a minimum depth of soil of 1 to 2 metres above the protective membrane. The proposed design levels will increase these depths to an average of 3 metres

of clean fill and up to 6m in places. This will provide ample planting depth for selected trees and shrubs. Plants will access nutrients in the topsoil layer and only sinker roots could be expected to penetrate the geotextile membrane. These would be strangled by the fabric and snap in the event that a tree is blown over, ensuring that the integrity of the remediation is maintained.

Earthworks will be required to contour the site and form the central lake and park. All landscape earthworks will occur at least 500mm above the membrane (refer to Indicative Site Design Levels - Figure 16, p.57).

11.3 Streetscape

The objectives of the streetscape approach are to:

- provide a safe pedestrian and vehicle environment
- reinforce neighbourhood character
- be complementary to built form
- create a valued street aesthetic

The streetscape at Burswood Lakes will provide a suite of elements and plant species that will characterise the new community and present sufficient variation to define neighbourhoods and smaller community areas.

The street layout presents a variety of experiences, including the boulevard entry road, the Circular Park, neighbourhood streets, short mews and courts. Street tree planting will play an important role in defining the character of these streets. The streetscape will utilise a combination of tree species specifically selected for the public realm that are also found in private gardens.

The streetscape will be comprehensively designed from building face to building face, spanning both public and private realms. Distinction between the two realms will be made with changes of level, paving material, hedges and low fencing.

The street tree species will aid in orientation by being specific to each street type. For example, the Entry Boulevard will be lined with large palms, and the neighbourhood streets planted with a single unifying species. Access places, courts and the crescent will all have location-specific tree species.

Paving materials will also be used to create neighbourhood character. Unit paving will be used in specific areas of the site. Selection of paving materials shall consider long term maintenance and replacement issues. Material patterning and colour will highlight junctions, priorities and types of street. Pedestrian crossing locations will contain traffic calming devices and will include tactile paving. These crossings will create strong visual links where parkland and important pedestrian routes cross

roadways. Street furniture will consist of light columns, benches, tree guards, bollards, bins and signage. These elements will be robust, low maintenance, quality fixtures that complement built form. Figures 13-15 (p.51-53) show several indicative street sections.

11.4 Treatment of Undeveloped Sites

The project will be developed in a number of stages for both civil and building works. Civil works stages will create a number of building sites that will provide the opportunity for a staged building construction program. An indicative staging plan for both civil and building works is shown in Figure 32 (p.87).

Staging will be planned to ensure that Burswood Lakes is developed in a cohesive manner that will enable completed dwellings and residents to co-exist with buildings under construction. This is one of the major benefits of Burswood Lakes being constructed by one proponent.

Land awaiting development will be subject to measures that ensure the development:

- is not unsightly and intrusive
- is not subject to wind erosion
- does not have unauthorised recreational uses such as trail biking or dumping of unwanted materials

Strategies to address the above will include:

- On-going site security
- Interim fencing, where necessary
- Surface stabilisation, where necessary, by grass seeding and / or mulching
- Screening key locations with hoardings, temporary art works and poster illustrations of the development
- Interim land uses, where practical, such as a site plant nursery, turf farm, etc.
- Temporary landscape treatments for specific locations

11.5 Irrigation

All public open space areas will be irrigated from an existing licensed bore located in the south-eastern corner of the site. The water supply is suitable for irrigation purposes, producing 11.33 litres/second at 500 kPa with a relatively high iron content (5ppm).

To avoid iron staining and long term maintenance problems of sprinklers, chemical treatment or an iron filter will be used to reduce iron content. It is intended to draw water from the main feature lake for irrigation.

In addition to the feature lake, the bore will be retained as a top-up water source for the nutrient-stripping lakes. Irrigation of



The Causeway viewed from the Burswood foreshore.

private spaces will be via scheme water from individual supply. Nutrient runoff into adjacent sites will not occur from landscaped areas. Use of nitrogen and phosphorus-based fertilisers will be minimised and limited to slow release types only. Any excess nutrients transported by runoff will be intercepted by the central lake, which acts as a settling / stripping device with an overflow into the series of seven artificial lakes adjacent to the site (also used as nutrient stripping lakes.)

The design will incorporate large areas of grass and accessible areas of shrubs. The reticulation system will be constructed to Council standards. All materials will be sourced from local suppliers and will be suitable for public areas. The design will ensure easy access to all areas for maintenance vehicles (ie. movers, sweepers, small vehicles etc.).

11.6 Landscape Management

The landscape is designed to create an environment that meets the overall development objectives and is modest in its maintenance requirements.

The landscape environment that is proposed will be designed in detail to optimise the value of maintenance operations. The level of maintenance and management is projected to be commensurate with the level of use expected from 1250 homes.

It is expected that the open space framework will provide a quality amenity for the population. The management requirements of this asset will change over time as the landscape matures and as the population increases. To ensure that maintenance operations are as practical as possible, the following strategies will be adopted in the detailed resolution of the landscape design.

Plant Selection: Plant selection will favour those species and cultures known to be pest resistant, non invasive, long lived, tolerant of the site conditions and not routinely affected by disease or fungi.

Turf Management: Grass areas will be designed to facilitate ease of mowing utilising normal turf equipment. Areas of projected heavy wear will be paved or subject to deterrent fencing or level changes. Grass areas will generally be located and planned to provide 'single operation' mowing i.e. lack of corners, no steep gradients and access ramps to level changes.

Herbaceous Management: The use of herbaceous species and sub shrubs will be kept to a minimum. Wherever used, replacement shrubs or groundcovers will be installed prior to handover to the local authority.

Irrigation Management: The irrigation systems will be fully automated, designed to meet councils adoption requirements, shrub beds will be mulched to reduce water evaporation of the soil.

Weed Control: Primary weed control will be achieved through chemical sanitation of the growing medium prior to, at, or immediately following planting. Chemical control will involve the application of propriety glyphosate and simasine mixes or the application of Chlorthiamid and Dichlobenil.

Subsequent regular weed removal will be achieved through physical, chemical and thermal control within the maintenance contracts. Shrub beds will be mulched to suppress weed growth and seed invasion. It is expected that effective weed control will also be achieved through the maturing shrub and groundcovers closing canopy.

Tree Management: Species and stock sizes will be selected for ease of long term maintenance. Where appropriate root barriers will be installed where conflicts with paving and services can be anticipated.

Initially, all landscape works will be subject to maintenance under the implementation contract, establishment period and defects liability period provisions. Subsequently, an annual maintenance contract will be let with an assessment of requirements made prior to the time of renewal and at normal inspections carried out during the maintenance contract period.

The proponent will maintain the public open space prior to handover to the Town of Victoria Park. Handover will be by agreement, with parties acknowledging the standard of maintenance to be achieved.

Table 3 - Landscape Maintenance Schedule

	Maintenance Tasks	Annual Remedial Tasks	Removal/ Thinning Projections	Lifecycle Replcmt. Project.
Trees	●	●	●	
Shrubs	●	●		●
Grass	●	●		
Paving	●			●
Decking	●			●
BBQ's	●			
Street Furniture	●	●		●
Water Features	●	●		
Aerators & Pumps	●			●
Irrigation	●			●

A schedule of Public Open Space elements is listed in Table 3 (above) as an outline of what will be covered in landscape maintenance work specifications.

11.7 Open Space and Landscape

The generous public open space is a core element in the design of the Burswood Lakes community (Figure 17, p.63) & (Figure 31, p.86). It primarily consists of 2 large parks - the Circular Park and the more linear Lake Park - which provide a foreground to the central spine of buildings.

Together with the larger primary parks, there will be smaller pocket parks and areas of open space which will provide more intimate places. Some areas will include defined viewing platforms providing the opportunity to see beyond the development over the golf course to the river and city. Others will be intimate pocket parks of a more contemplative nature, inviting one to look, feel, and sense each part of the design at close range.

The spaces are designed for both active and passive recreation with passive security and maintenance as important criteria. Some areas of open space will facilitate and encourage sitting and pause. Others, such as the linear plaza (which extends from the Circular Park towards the CBD and the western edge of the



This photo portrays a visual impression / likeness of areas 18/20 shown on figure 17 (Scottsdale, Arizona, USA)

site) provide for movement and a series of spatial experiences. Plazas with fountains and seating, some with cafes and active edges, will complete the range and variety of public realm spaces within the proposed development.

View corridors through the site also visually link open spaces and offer vistas of the river and the CBD beyond. These are enhanced through appropriate planting and landscape treatments. The public open space at Burswood Lakes provides local amenity as well as connections to regional open space.



Figure 17
Indicative Landscape Plan



Ground level view of apartments surrounding the Circular Park

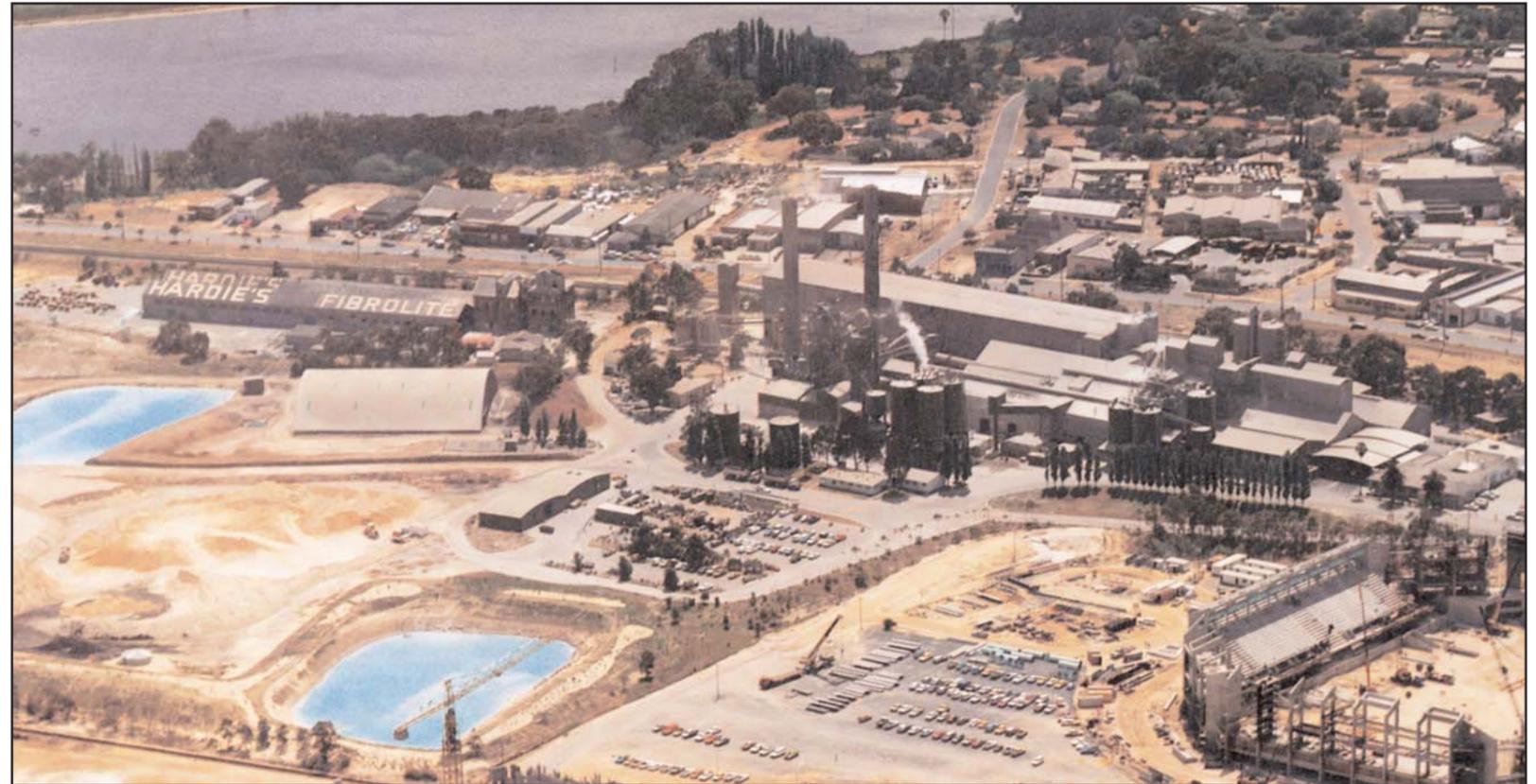
Part B - Structure Plan

1.0 Document Purpose and Structure

The Burswood Lakes Structure Plan, Town Planning Scheme Amendment and supporting documents have been prepared in accordance with the requirements of the Special Use Zone in the Town of Victoria Park's Town Planning Scheme No.1 Burswood Precinct Plan P2. The document also satisfies the requirements of the Western Australian Planning Commission's (WAPC) Liveable Neighbourhoods Community Design Code.

Table 1 - Information Contained within the Structure Plan

TPS Requirements	References
a) Statement of objectives and explanation of the rationale for the proposal contained in the Structure Plan.	3.1 - Structure Plan Objectives
b) Road / pedestrian network showing road reserve and pavement widths, footpaths, and provisions for on-street parking and right-of-way / vehicular accessways where appropriate.	Fig.20 - Infrastructure and Amenities Plan 4.1 - Road Network 4.2 - Cycle and Pedestrian Network 4.7 - Street Design Fig.18 - Indicative Development Plan
c) Proposed 'Use Area' classifications of all land within the Special Use Zone to which the following range of classifications will apply: • Residential R80 • Tourist / Residential R160 • Hotel / Tourist • Office / Residential R160 • mixed-use (maximum of 1.5ha of total Precinct)	Fig.19 - Structure Plan 4.3 - Permitted Uses 4.4 - Dwelling Numbers
d) Indicative lot patterns and sizes.	Fig.19 - Structure Plan 4.5 - Lot Patterns and Sizes Fig.18 - Indicative Development Plan Fig.23 - Indicative Subdivision Plan
e) Location of major infrastructure proposed including drainage, sewage, and water supply services.	Fig.19 - Structure Plan Fig.20 - Infrastructure and Amenities Plan 4.6 - Infrastructure and Amenities
f) Infrastructure and amenities to be provided by the subdivider / developer, including public open space and road pavements, parking, landscaping, footpaths, and other facilities within the road reserve.	Fig.20 - Infrastructure and Amenities Plan 4.6 - Infrastructure and Amenities 4.7 - Street Design 4.8 - Public Open Space and Landscape 4.12 - Commitments by Proponents Fig.18 - Indicative Development Plan Fig.31 - Indicative Public Realm
g) The relationship of the land to surrounding facilities, land uses, and road / pedestrian network.	Fig.21 - Local Context Plan Diagram C - Local Context and Proximity to Cycleways Fig.22 - Proposed Cycle and Pedestrian Routes 3.1 - Structure Plan Objectives 4.1 - Road Network 4.2 - Cycle and Pedestrian Network
h) The way in which subdivision and / or development of the land will recognise the historical Burswood Canal park, which is still evident within the boundaries of the Special Use Zone.	Fig.19 - Structure Plan 4.9 & 4.12 - Recognition of the Burswood Canal Fig.18 - Indicative Development Plan



Industrial buildings with tall chimneys previously occupied the Burswood site (pre-1986)

The Structure Plan includes the site known as the 'DOLA/MRD site' (lot 26) to the east of the Burswood Link Road and other areas within the Special Use Zone.

2.0 Structure Plan Requirements under the Town Planning Scheme

Table 1 (left) sets out the location of the required information in the Structure Plan.

In order to effectively implement the Structure Plan, it is necessary for certain standards in the Precinct Plan P2 of the Town Planning Scheme to be amended. Part B explains the nature of those Amendments. The actual Amendments can be found in the Appendices.

It is proposed that the Council adopt a specific Planning Policy under the Town Planning Scheme for the Burswood Precinct. The Policy is contained in the Appendices and should be read with this Structure Plan.

2.1 Structure Plan

The Structure Plan illustration (Figure 19, p.68) shows:

- the general layout of Burswood Lakes
- indicative lot patterns and sizes (d)
- recognition of the Burswood Canal (h)
- proposed uses (c)
- proposed dwelling numbers
- maximum building heights (metres and storeys)
- maximum plot ratios

2.2 Infrastructure and Amenities Plan

The Infrastructure and Amenities Plan (Figure 20, p.69) shows:

- locations of major infrastructure proposed including drainage, sewerage and water supply services (e)
- infrastructure and amenities to be provided by the subdivision including public open space, road pavements and footpaths (f)

2.3 Local Context Plan

The Local Context Plan (Figure 21, p.70) shows:

- the relationships of the land to surrounding facilities, land use and road / pedestrian network (g)

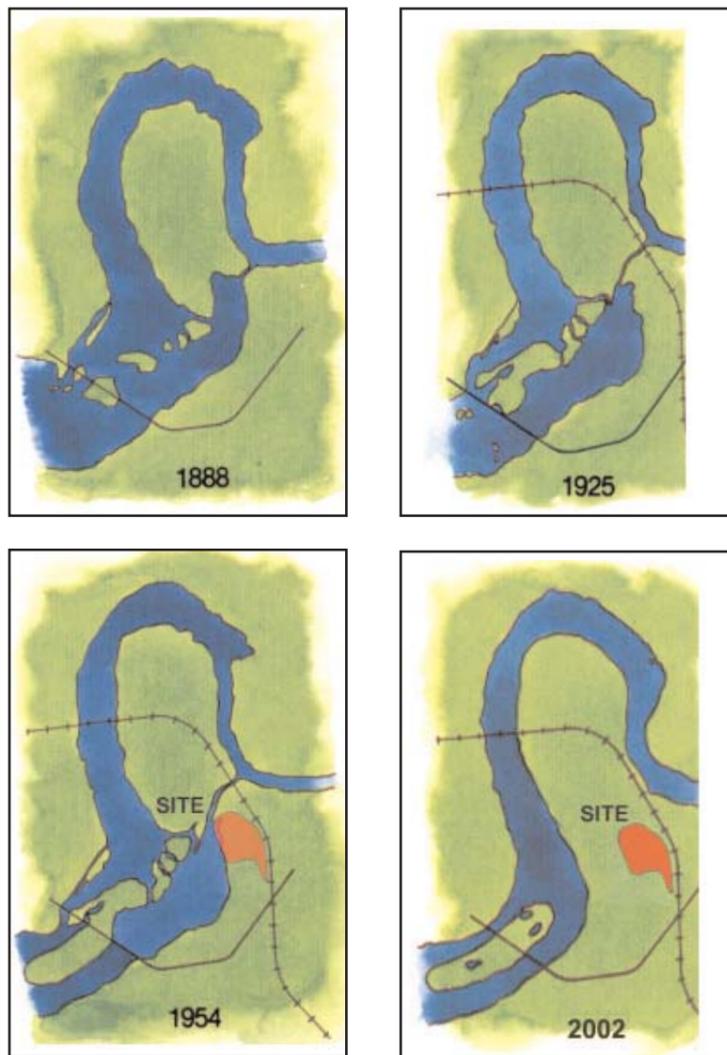


Diagram O: Evolution of the Burswood Peninsula

2.4 Proposed Cycle and Pedestrian Routes

The Proposed Routes for Cyclists, Pedestrians, and Indicative Bus Routes (Figure 22, p.71) shows:

- road and pedestrian / cycle, and bus network on the site (g)

2.5 Indicative Subdivision Plan

The Indicative Subdivision Plan (Figure 23, p.72) shows:

- lot patterns and sizes (d) and public open space provision

3.0 Structure Plan Objectives

The Burswood Lakes Structure Plan seeks to address objectives based on:

- An Evolving Place
- Links to the Town of Victoria Park
- Built Form and Response to Setting
- Connectivity and Transport Orientated Development
- Importance of Public Places: The Public Realm
- Sustainability - Environmental, Social and Cultural and Economic

3.1 An Evolving Place

Objective:

To create a place for the 21st century, appropriate to its location, that will evolve through viable stages

Response:

Burswood Lakes has an evolving history that has culminated in the reconfigured site and topography of today. Diagram O (left) illustrates the evolution of the Peninsula. The site has long been isolated, part of neither the urban nor suburban fabric. It is now appropriate for the site to further evolve and develop into a substantial new residential community.

Burswood Lakes will increase the diversity and size of the residential population of the Town of Victoria Park by providing a new selection of housing types at higher densities that are close to transport, amenities and employment.

A range of other uses including retail, residential, entertainment and commercial may be developed closer to the Burswood Train Station in the future on the Burswood Superdome site to complete a mixed-use inner urban neighbourhood at Burswood. This development would be subject to a separate structure plan.

The site's location on the Burswood Peninsula requires site specific development standards that vary from those used in the Town of Victoria Park.

Development will be staged. Each stage will be wholly self-reliant, with adequate infrastructure, access, open space and amenity. All stages have been designed to integrate with following stages, allowing seamless second generation development. While staging will be influenced by market demand, infrastructure requirements and the construction process, the early phases will include a significant proportion of the development's public open spaces and landscaping areas.

3.2 Links with the Community of Victoria Park

Objective:

To forge social, commercial and physical links with Burswood Lakes and the community of Victoria Park.

Response:

A. Social Links

Schools

For families with school-age children, schools often form the centre of family life. Schools create many opportunities for social interaction, both among children and among parents. Events like teacher-parent evenings, school plays, school barbecues, etc. offer chances for families to get to know each other. While Burswood Lakes will cater to a diverse set of residents, a proportion of them are likely to have children. These families may well use the local schools to help them make social links with other families in the Town of Victoria Park.

Sports

Sports, pursued formally or informally, can often help new residents make social links with the surrounding community. Many opportunities exist for residents of Burswood Lakes to join local sports clubs, including walking clubs, sailing clubs, rowing clubs, bicycle clubs, lawn bowling clubs, and many others. In addition, informal jogging or bicycling groups exist, and social connections can often be made by going down to the local park with a frisbee or a basketball. Burswood Lakes' proximity to the Swan River foreshore and its own large parks should help to foster this kind of social interaction.

Shopping

Residents of Burswood Lakes will take advantage of the proximity to the shopping opportunities that exist in Victoria Park; in particular, the retail main street along Albany Highway. Because of the local nature of many of the shops, residents may, after repeated patronage, get to know some of the shop owners - if not intimately at least casually. These kind of encounters help to foster a sense of connection between where one lives and the surrounding neighbourhood, and will make residents of Burswood Lakes feel part of the town's community.

Community Organisations

Many community organisations exist in the Town of Victoria Park. These organisations include charities, interest groups, mother's groups, hobby organisations, political groups, and many others. Community minded residents of Burswood Lakes may well join some of these associations, contributing their ideas and time to community endeavours. This mechanism is another way that



Figure 18
Indicative Development Plan





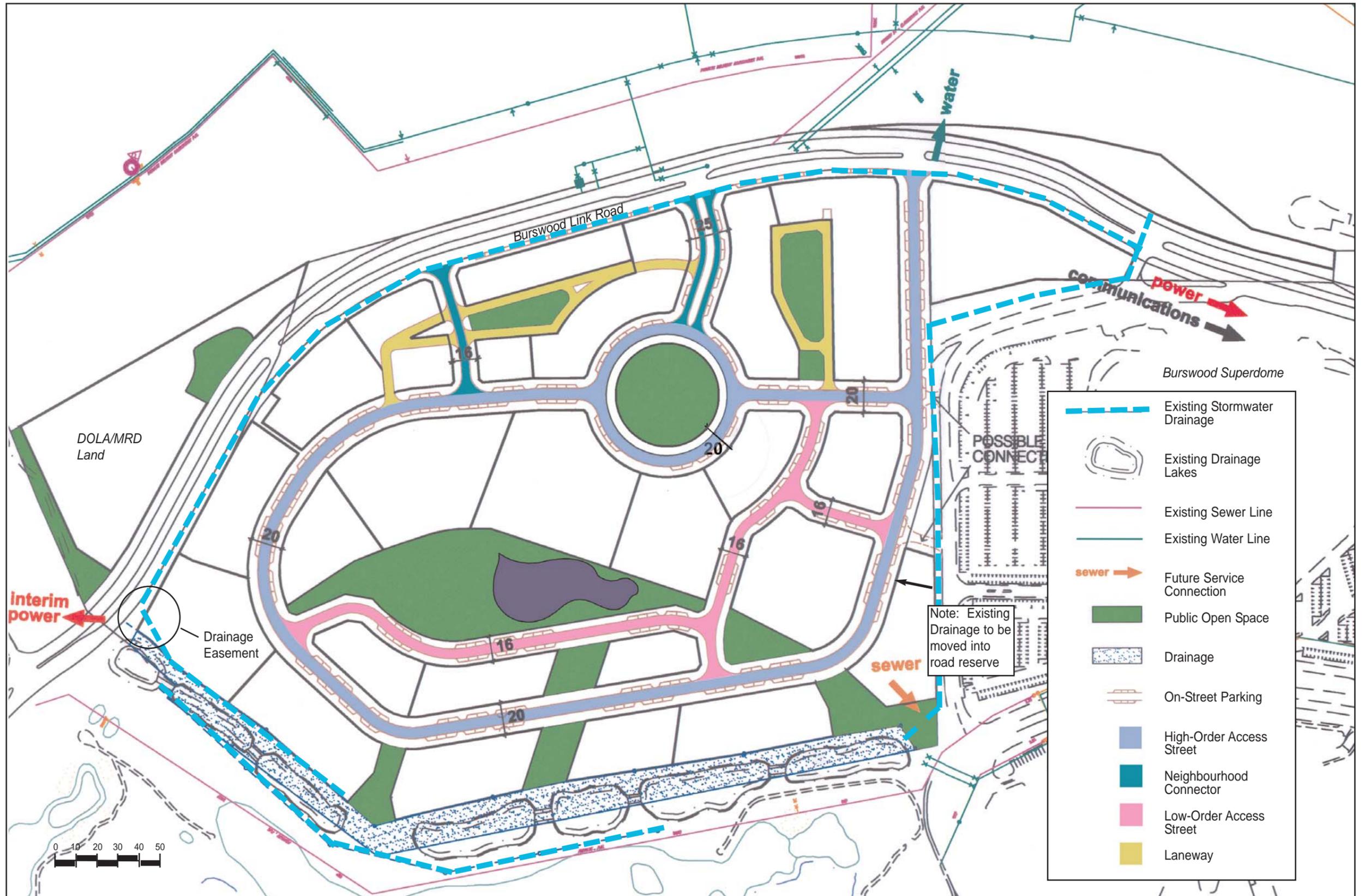


Figure 20
Infrastructure and Amenities Plan



Figure 21
Local Context Plan



Figure 22
Proposed Routes for Cyclists and Pedestrians, and
Indicative Bus Route

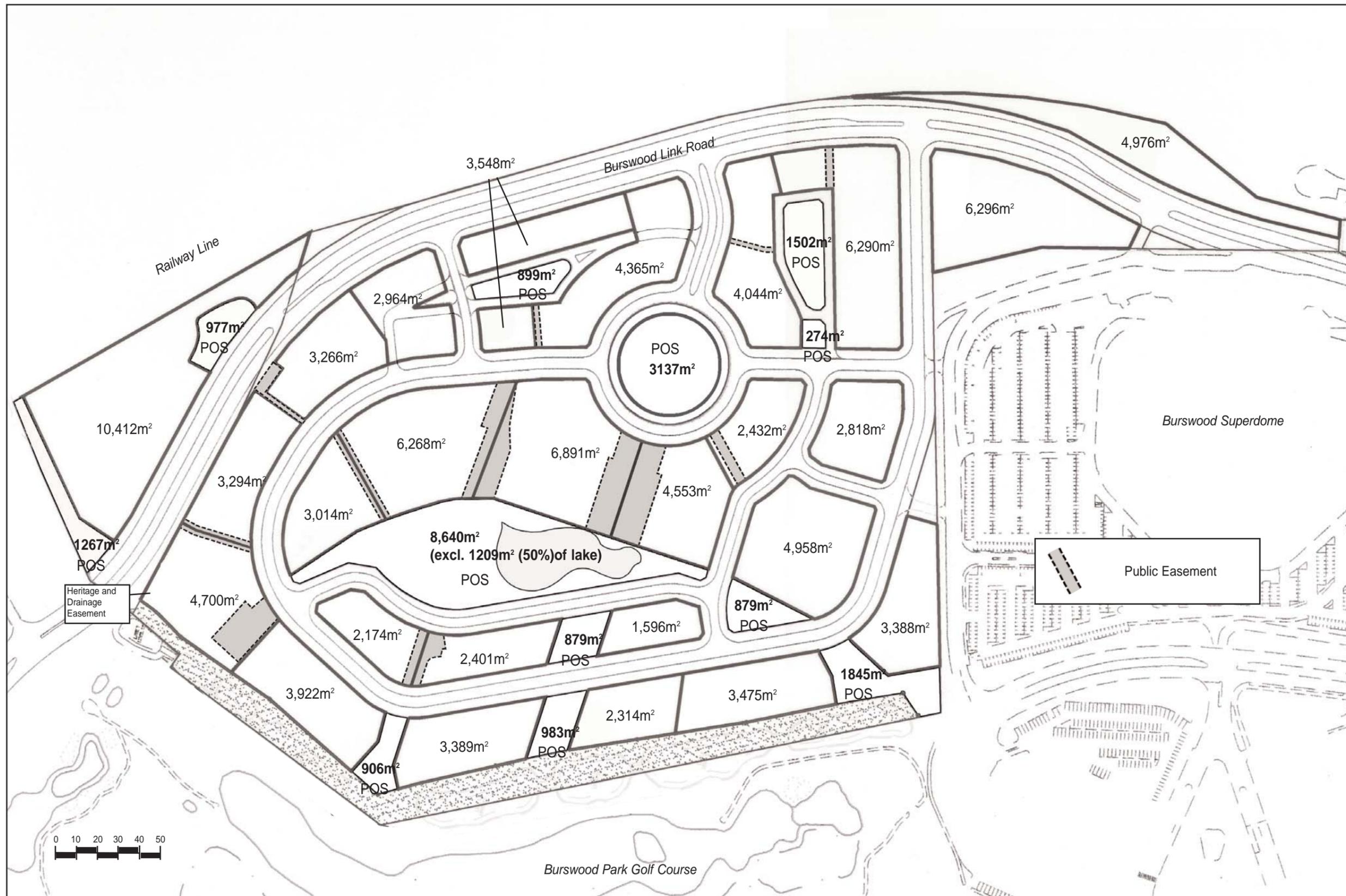


Figure 23
Indicative Subdivision Plan



Burswood Lakes residents will be able to make social connections, and contribute to the Town of Victoria Park.

Public Events

Another mechanism that Burswood Lakes residents will use to feel a part of the Town of Victoria Park is by hosting and participating in community events. Every year the town puts on public and community events. Participating in, or even better organising, these events, in the town or in Burswood Lakes, could be a way for residents to begin to feel connected to the Town of Victoria Park.

Community Development

A community development program will be put in place to ensure that Burswood Lakes evolves in all aspects of community building. The importance of a vibrant and interactive community life is essential in the development of all communities throughout Western Australia.

The understanding of communities, the ability to develop strategies based on the unique character of an estate and the track record of implementing the development of the community fabric, through a range of processes, forms part of the credentials of Mirvac Fini.

Other recent residential developments with similar programmes to that proposed for Burswood Lakes include Mindarie Keys and Bridgewater, Seascapes, Meadow Springs in Mandurah. In particular, Mindarie Keys won the "Best Community in Australia" award in 1999 based on the Community Development Programme implemented by Mirvac Fini.

The objectives of community development are to:

- Develop a strong sense of community amongst residents
- Ensure that the major elements of an interactive and supportive community are established.
- Develop and project an image based on the community.
- Ensure that new residents are welcomed and integrated into the community.
- Ensure that the appropriate infrastructure is provided to support the community.

To realise these objectives at Burswood Lakes, the following strategies will be implemented.

New Residents Welcome Pack

A welcome pack and welcoming evenings for new residents are excellent methods for introducing residents into their community. The packs give them all the pertinent information and the



Diagram P: Potential pedestrian connection across the train tracks

welcoming evenings held quarterly, introduce them to their neighbours.

Community Development Officer

The Community Development Officer position, which will be paid by the proponent, exists to develop a close working relationship between community bodies, local organisations, local Members of Parliament and local government authorities. This helps to ensure communication between residents, developer and community groups is working to develop the community lifestyle.

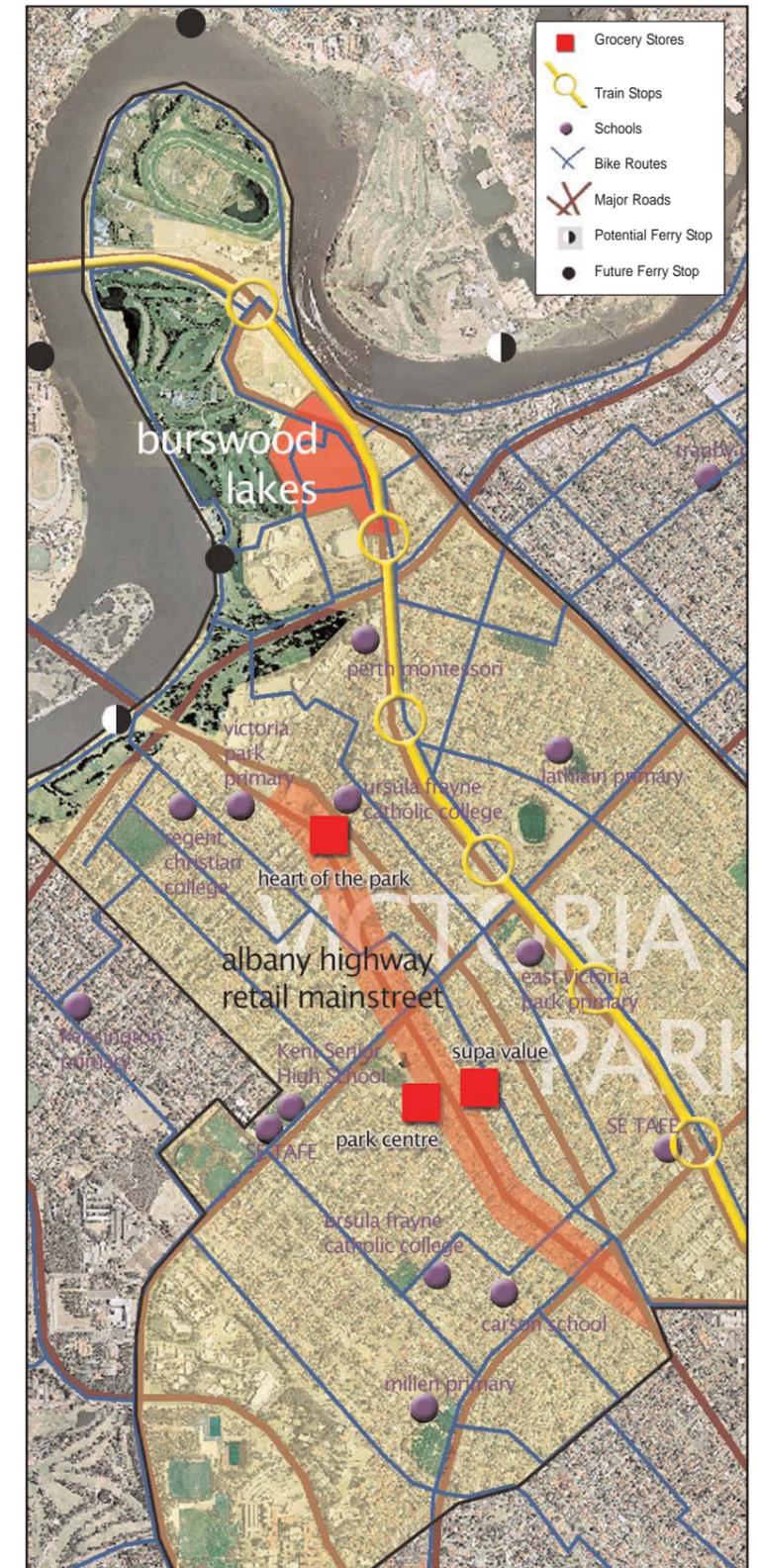


Diagram Q: Links with Burswood Lakes and the community of Victoria Park

Some of the projects that a Community Development Officer facilitates are :

- Starting a residents' association
- Integrating groups into the broader community
- Empowering the residents to continue to operate once the developer has gone
- Organise events and activities
- Organise meetings and be the first point of contact on many day to day matters

Events and Activities

It is important to provide events and activities that are relevant to Burswood Lakes. These could range from festivals, sunset concerts, children's holiday and weekend programs, walking groups, coffee mornings, the formation of clubs and societies, street working bees, gardening workshops, home handyman workshops, planning dinner parties, investment seminars, wine appreciation evenings, Easter egg hunts, fun days, seniors mini "Have-A-Go" days and much more.

Through the use of 'how to' manuals, development of appropriate community groups are to be facilitated to ensure that the events and activities are self-sustaining into the future.

A program of events and activities would be tailored for Burswood Lakes and be implemented by the Community Development Officer on site.

Residents' Association

It is important to work with the residents to develop a range of appropriate clubs and societies and work with them to ensure their longevity. An all-encompassing residents association will be beneficial to both communities if established.

Newsletter

The provision of a regular, quarterly newsletter is essential in ensuring that accurate information is being circulated in the community, the appropriate image for Burswood Lakes is being projected and that community happenings are being promoted and reported upon.

Trades Directory

A trades directory will be established on which local trades, in Victoria Park, can place their contact details. Experience on other Mirvac Fini projects has proved the trades directory to be an excellent community builder. Burswood Lakes residents will tend to contact services, whether they be a plumber, electrician, accountant or lawyer etc, from companies or individuals listed on the directory. This not only promotes local business but helps integrate the community.

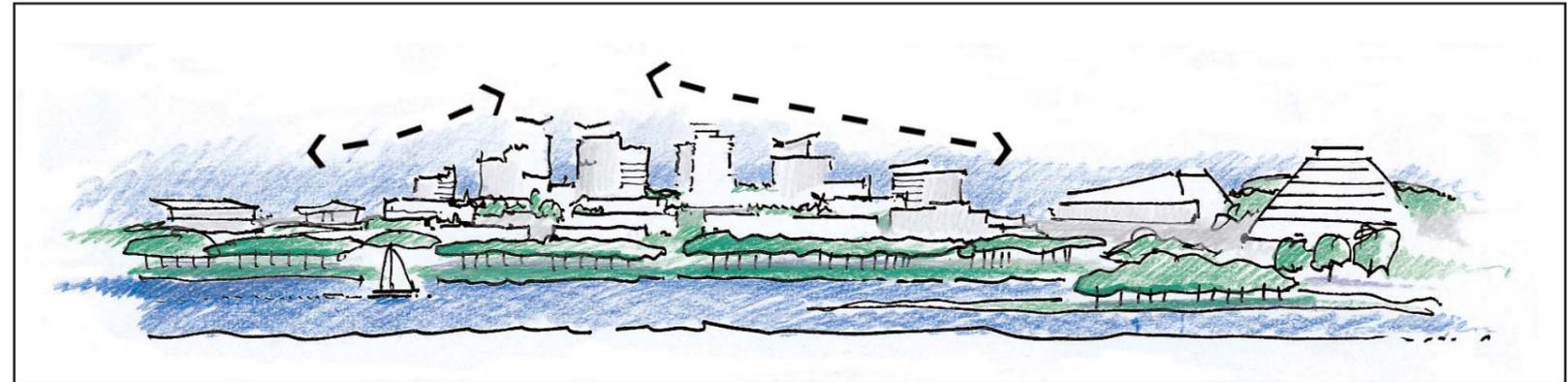


Diagram R: The built form principle

B. Commercial Links

Shopping

Many commercial links exist between the Town of Victoria Park and the Burswood Lakes development. In particular, the town presents the closest shopping opportunities for new residents. Along the Albany Highway / Shepperton Road corridor alone there are a number of supermarkets. Residents are likely to do a large proportion of their grocery shopping in one of these stores.

The retail main street along Albany Highway offers residents a wide range of restaurants, cafes, video stores, hardware stores, clothing shops, and many other products. In addition, it offers a leisurely environment that caters to recreational shopping. Many locals stroll along the 'strip' on a lazy Sunday morning, enjoying the local ambience and flavour and perhaps taking in a latte along the way. It is likely that the new residents of Burswood Lakes will take advantage of this thriving retail area, injecting significant amounts of money into the local economy.

Jobs

As Burswood Lakes residents begin to patronise local businesses, shopkeepers will have to take on more staff to keep up with demand. This will cause local unemployment to drop in the town. In addition, over 300 jobs are expected to be created in the construction industry as a direct result of the project. The spin-off effects from the construction of the project are expected to create more than 600 additional jobs, helping to further boost the local economy.

C. Physical Links

Diagram Q (p.73) indicates the many physical links between Burswood Lakes and the Town of Victoria Park. These links include the following.

Roads

Several major roads provide excellent connections between Burswood Lakes and the Town of Victoria Park. In a NE-SW direction, Canning Highway / Great Eastern Highway provides access from the site. In a NW-SE direction, Orrong Road, Shepparton Road, and Albany Highway provide the most direct routes south through the town.

Rail

The Burswood Train Station is only a few minutes walk from the Burswood Lakes site. This allows residents to walk to the station, board the train, and ride south to one of the four stops within Victoria Park. Each of the stops is only a few minutes walk from the commercial areas along Shepparton Road and Albany Highway. All Victoria Park residents taking the train into Perth CBD ride past the Burswood Lakes site, making it one of their last impressions before crossing the river. With the Swan River as the boundary, the buildings at Burswood Lakes become a psychological marker for the edge of Victoria Park.

Bus

The provision of integrated public transport for the Burswood Lakes site is highly desirable. Although Transperth has advised that there are no intentions at this stage to route buses within the development, the Burswood Link Road and the local neighbourhood connector(s) have been designed to accommodate buses in the future. Future bus stops have been provisionally indicated along the Burswood Link Road. Continued liaison by the proponent and the Town with Transperth is encouraged to secure future bus servicing for the Burswood Lakes development at an early stage of development.

Bicycle

Many bicycle routes connect Burswood Lakes with the Town of Victoria Park. In particular, routes along the Swan River form a

convenient way to move NE-SW, while routes along Orrong Road, the train line, and along Hubert Street allow convenient NW-SE movement. A complete network of routes allows bicycle riders to reach all the important destinations within the entire town.

Walking

A multitude of walking trails link the Burswood Lakes site with the rest of Victoria Park. Many of the local streets have pathways along them, offering safe and convenient pedestrian access from the site. Several pedestrian crossings allow Burswood Lakes residents to cross over the Great Eastern Highway, making walks south into the town convenient and safe.

3.3 Built Form and Response to Setting

Objective:

To create a place that fits with the urban fabric and setting

Response:

Burswood Lakes will become a significant urban node within the city and river landscapes. A dialogue will be established with the Perth CBD, South Perth and East Perth areas, creating a new landmark for the Town of Victoria Park on the skyline.

Built form will respond to the scale of the Burswood Resort and provide a counterpoint to the open setting of the golf course and river foreshore.

Burswood Lakes will be unique in that it is conceived and built as a single composition with an overall structure in form and character. Diagram R (p.74) reflects this built form concept for the site.

Diversity of built form within a controlled structure will provide a range of housing types, thereby encouraging a diverse community. Burswood Lakes will not be a series of individual developments vying for "front row seats" and views, nor a homogeneous mass of buildings with no variation in bulk and scale.

A wide range of buildings heights from 2 to 21 storeys offers an opportunity to create this overall structure at a scale appropriate to this important location.

The taller buildings will be arranged to create a serpentine central spine on the site, taking advantage of the views of the river and the CBD. In addition, these and other buildings will respond to the northern view. These taller buildings are spaced to limit wind effects and oriented to limit overshadowing.

To the east of the central spine, buildings will be arranged around

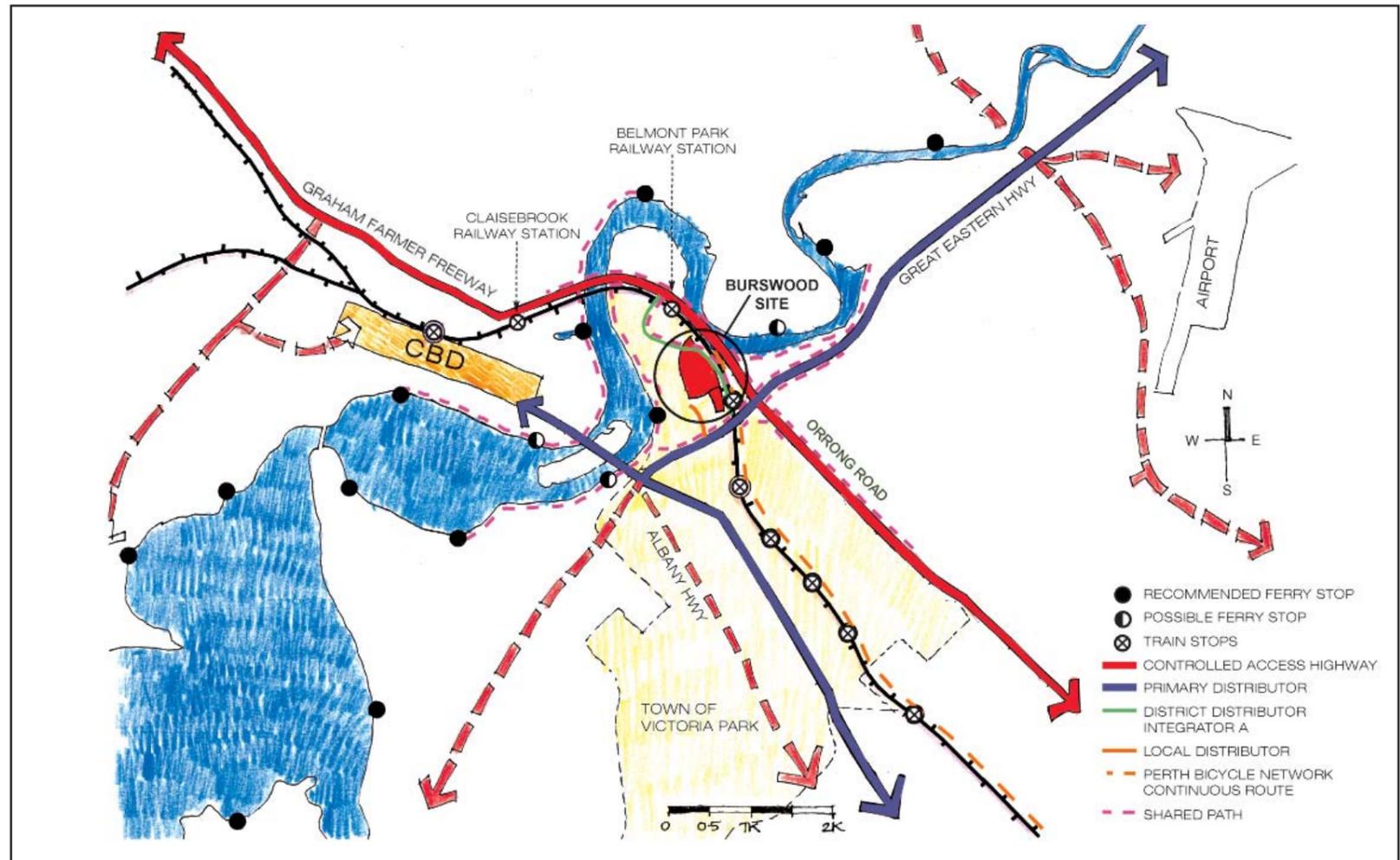


Diagram S: Regional Access Plan

a circular park creating a strong focal point to this area.

To the west of the spine, open space will give a foreground effect to the taller buildings, while medium- to low-rise buildings will step down to the golf course. The taller buildings at Burswood Lakes enable a greater provision of public open space to be created which will contribute to the unique setting of the Peninsula, while the buildings themselves provide the landmark scale demanded by the setting.

Requirement for Plot Ratio

The West Australian Planning Commission (WAPC) requested that plot ratios be defined for each of the 26 lots.

Plot ratio is defined by the Residential Design Codes of West Australia (Oct. '02) as:

The ratio of the gross total of the areas of all floors of buildings on

a site to the area of land within the site boundaries. For this purpose, such areas shall include the area of any walls but not include the areas of lift shafts, stairs or stair landings common to two or more dwellings, machinery, air conditioning and equipment rooms, non-habitable space that is wholly below natural ground level, areas used exclusively for the parking of wheeled vehicles at or below natural ground level, lobbies or amenities common to more than one dwelling, or balconies or verandahs open on at least two sides.

Calculation of Plot Ratio

The indicative lot sizes, and the total dwelling numbers (1250) in Burswood Lakes and the DOLA/MRD land (lot 26) have been prescribed in this Structure Plan. By making assumptions about the size and mix of dwellings, a model has been constructed that calculates the required plot ratio for each building.

The assumed sizes of dwellings are based on an assessment of

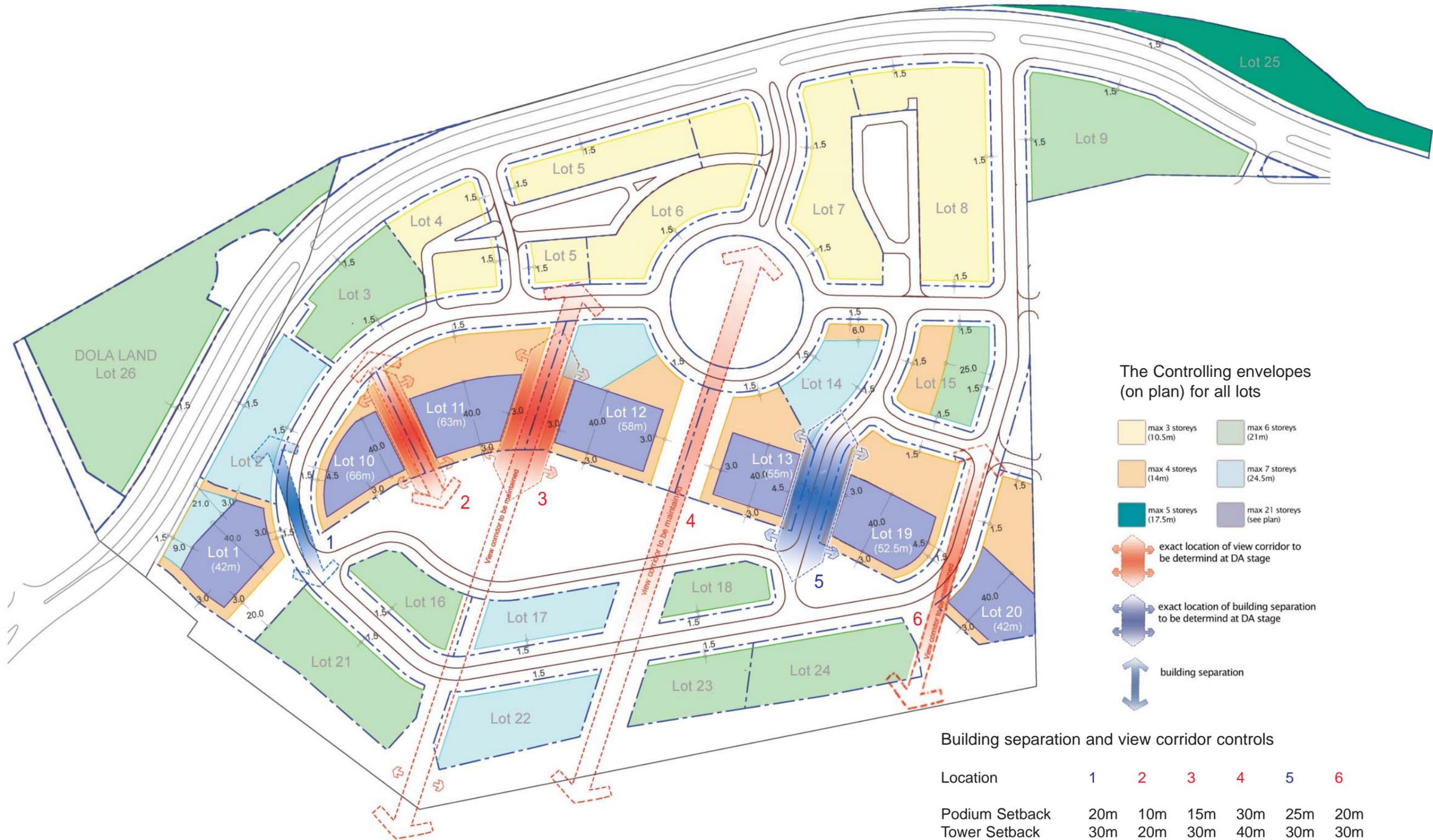


Figure 24
Building Control Envelopes

local market demand. These approximate sizes (nett) are: 1 bedroom apartment (65m²), 2 bedroom apartment (100m²), 3 bedroom apartment (130m²), podium townhouse (180m²), housing (220m²).

To convert these dwelling sizes to an area that can be used in the calculation of plot ratio a percentage must be added to account for the inclusion of Party and External walls, as is required by the R code definition of Plot Ratio. The percentage has been calculated by typical floor plate analysis to be 8%.

In planning a typical floor plate it is not always possible or appropriate to make every apartment the size exactly as outlined above. For instance changes can result from either design constraints or market demand. To account for such changes in apartment sizes a percentage must be added to overall area. This percentage has been calculated at 15%.

Over the course of many residential developments across Australia the Mirvac Group has endeavoured to provide a range of product that corresponds to the needs of its customers. This range is most easily expressed as a proportion of 2 bedroom to 3 bedroom apartments (by far the most common sizes) and is commonly referred to as "The Mix". Most "Mixes" range from around 60:40 to 40:60. For the Plot Ratio calculation at Burswood Lakes a middle ground of a 50:50 "Mix" has been assumed.

When combining the aforementioned parameters the plot ratio on each lot can be calculated. Refer to the Plot Ratio matrix on Page 83 for a breakdown of these calculations.

As a tool for influencing built form, plot ratio is imprecise. Within a particular plot ratio (in the absence of other controls), owners can build a tall thin building or a short squat building. Limiting the total floor area does not necessarily ensure view sharing opportunities, provide human-scale at the street, limit overshadowing of adjacent properties or public spaces, mitigate high wind areas, or ensure appropriate form. Therefore, in addition to plot ratio, this Structure Plan contains building control envelopes as outlined below.

Building Control Envelopes

Building control envelopes provide a degree of certainty over the built outcome. This is achieved by providing general control over the built form, mass and location for every lot within the Structure Plan. These controls are in accordance with and in addition to those referred to elsewhere in this document ie plot ratio, maximum height.

Building control envelopes divide the site into areas based on the

allowed heights in the Structure Plan. These height limits range from 3 to 21 storeys and they can be grouped into 6 categories: max 3 storeys, max 4 storeys, max 5 storeys, max 6 storeys, max 7 storeys, and taller buildings max 21 storeys, defined in plan by different colours.

A general 1.5m setback also applies to all buildings from roadways and a series of setbacks define the distances between the taller buildings and their podiums. These setbacks ensure the provision of "View Corridors" between the taller buildings, whilst a minimum 3m setback between podium and tower elements ensure "human scale" at street level.

The concept of taller buildings along the eastern edge of the Lake Park has been a key aspect of the urban design concept. To complete the definition of the building control envelopes for the taller buildings, a maximum east-west dimension of 40m has been established, which allows some flexibility in tower location whilst confining them to the western edge of their lots.

These standards combine to form a method of planning control that is much more detailed, and more effective, than plot ratio alone. Because Burswood Lakes is being developed as an integrated site, planning issues have been holistically addressed in the Structure Plan.

The three-dimensional images on pages 78 to 82 depict the building control envelopes for the site, individually and together. Inside the building control envelopes are grey boxes that represent the massing allowed under the proposed plot ratios. These building masses take into account the plot ratio plus an 11% factor to account for common lobbies, building core and vertical circulation (which is not counted in the plot ratio calculation). The mass shown accounts for all percentage increases described above. Balconies are not shown. In no case could a building be built to the maximum extents of the control envelope, as the plot ratio is always considerably less than the total volume contained within the control envelope.

Airport Height Controls

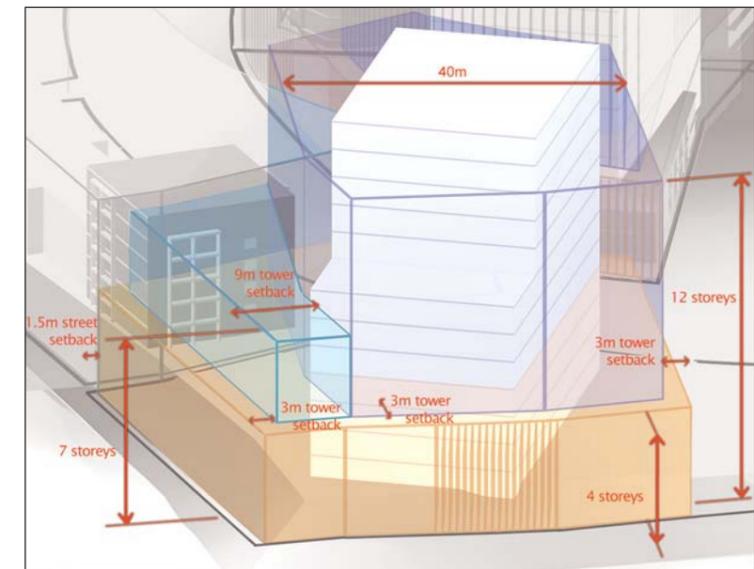
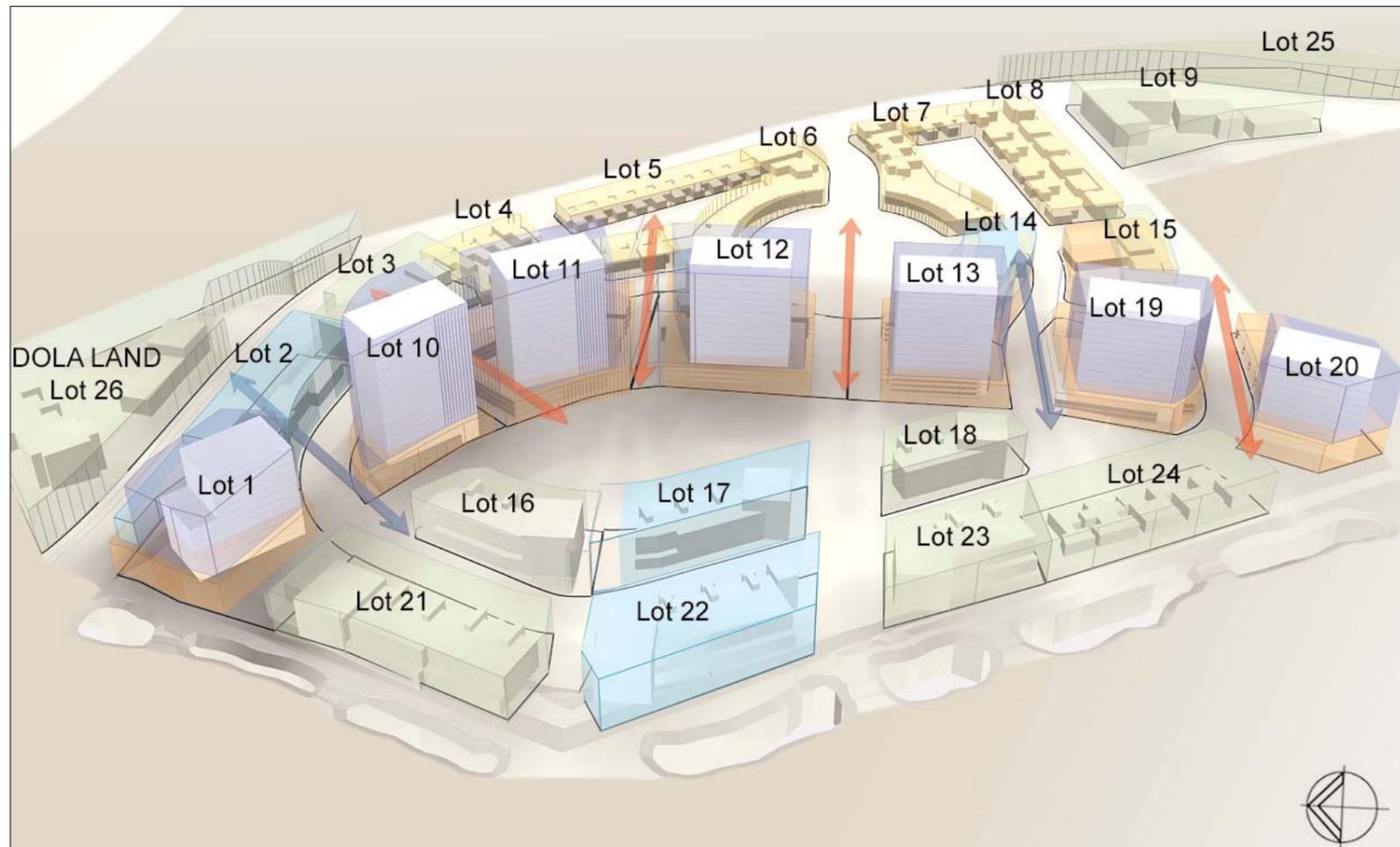
Discussions with the Westralia Airports Corporation (WAC) at Perth Airport during the public advertising period revealed a further constraint on the configuration of the proposed taller buildings at Burswood Lakes. A set of surfaces, defined relative to sea level, control the allowed building height throughout the entire Perth region. These controls are called 'Procedures for Air Navigational Services - Aircraft Operations Surfaces' (PANS-OPS).

To establish a series of maximum height limits for the taller buildings that comply with the PANS-OPS controls, the following assumptions and calculations apply for lots 1, 19, and 20. The total number of storeys multiplied by an average floor to floor height of at least 3.0m plus an additional 6.15m (calculated as 1.5m maximum height of ground floor slab above design level (Fig 16 p.57), an additional 1.4m for transfer slabs plus transfer zones plus 3.25m for plant and lift overruns). For lots 10, 11, 12, and 13 the total number of storeys multiplied by an average floor to floor height of at least 2.850m plus an additional 6.15m (calculated as 1.5m maximum height of ground floor slab above design level (Fig 16 p.57), an additional 1.4m for transfer slabs plus transfer zones plus 3.25m for plant and lift overruns).

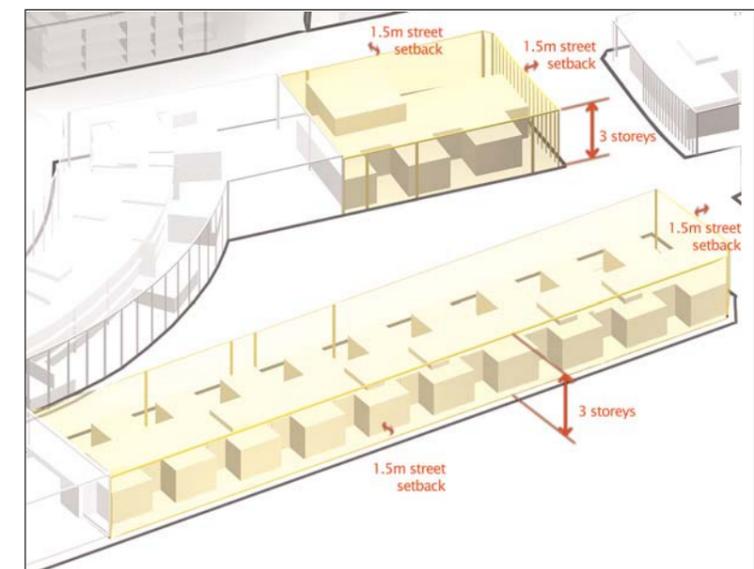
Social Planning Analysis

Social planner Dr. Wendy Sarkissian undertook a CPTED Analysis (Crime Prevention Through Environmental Design) of the Burswood Lakes building control envelopes. Her conclusion was that "the building envelopes for the Burswood Lakes site has revealed that the work to this stage has been done to a high level of professionalism and the building envelopes do not, in themselves, pose safety or security risks." A full copy of the report is enclosed in the Appendices document.

In the next stage of development, precise site-planning and design parameters will be created to address more detailed design issues such as targeted lighting, design of intersections and corners of buildings, selection of landscaping materials, etc. These detailed CPTED guidelines will be complemented by guidelines for housing design, public open space, accessibility for people with a disability and older people, children's play and use of the site by young people.



LOT 1

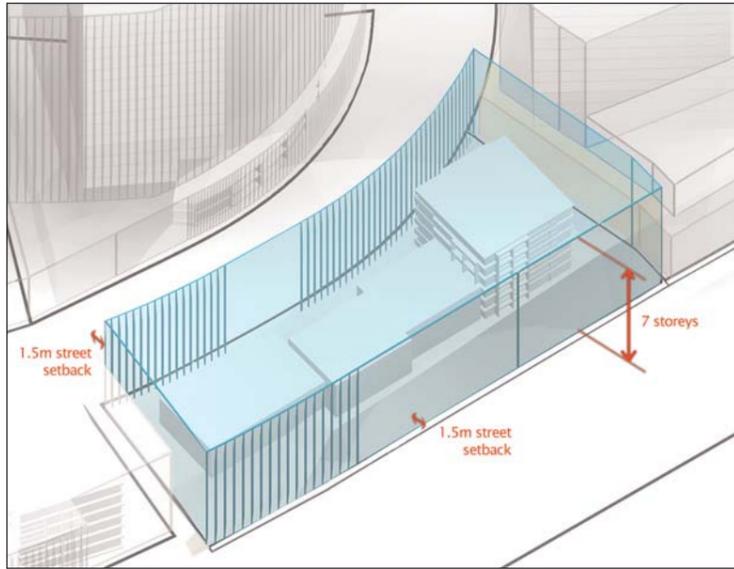


LOT 5

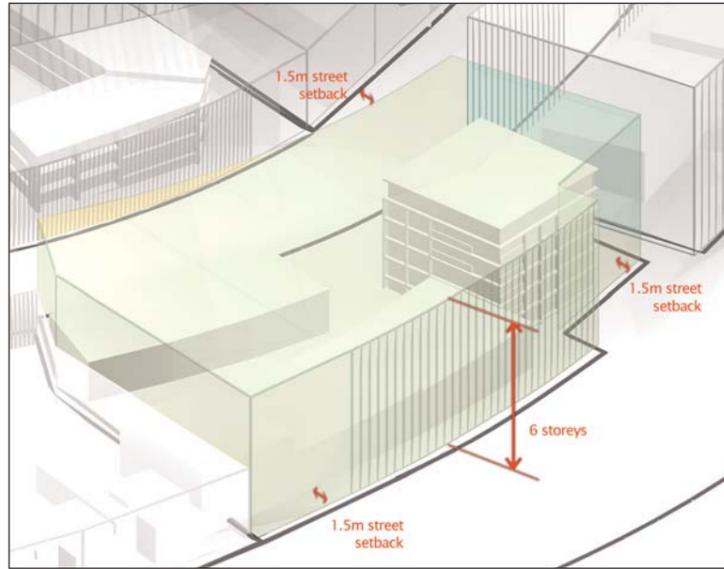


Figure 25
Building Control Envelopes

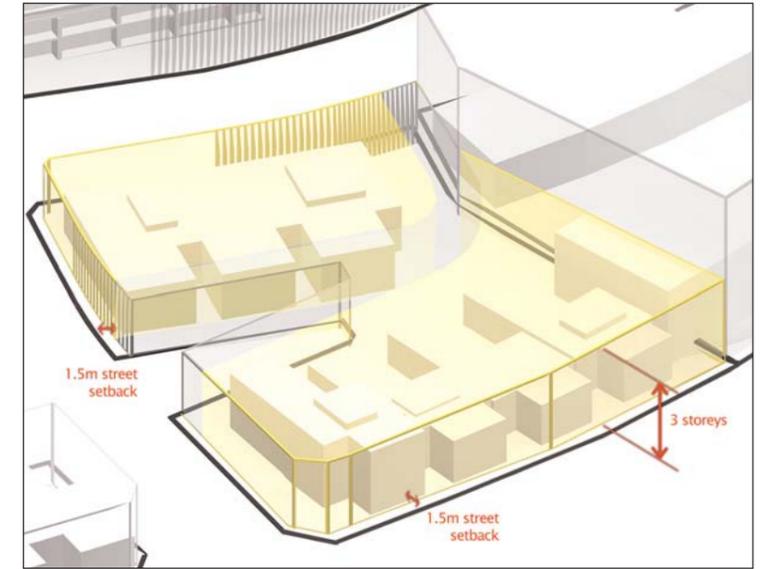




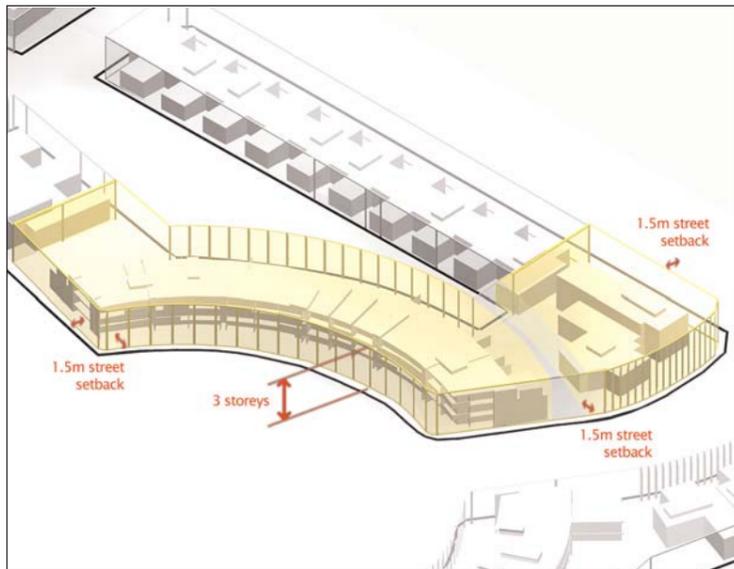
LOT 2



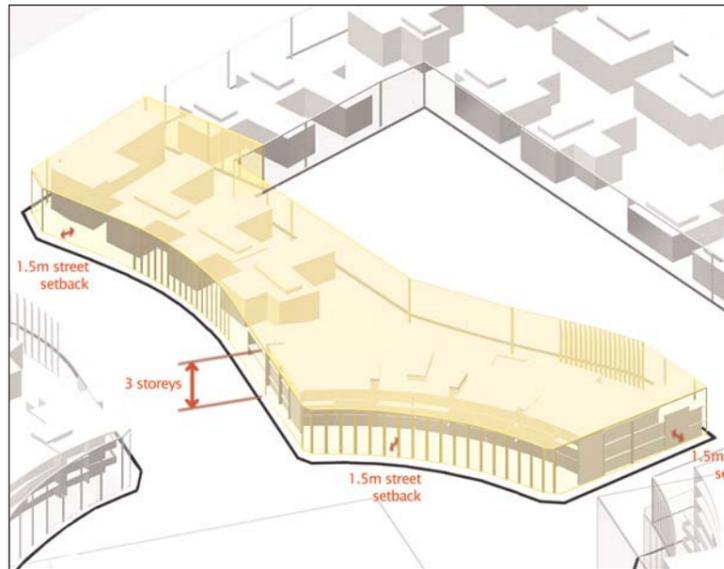
LOT 3



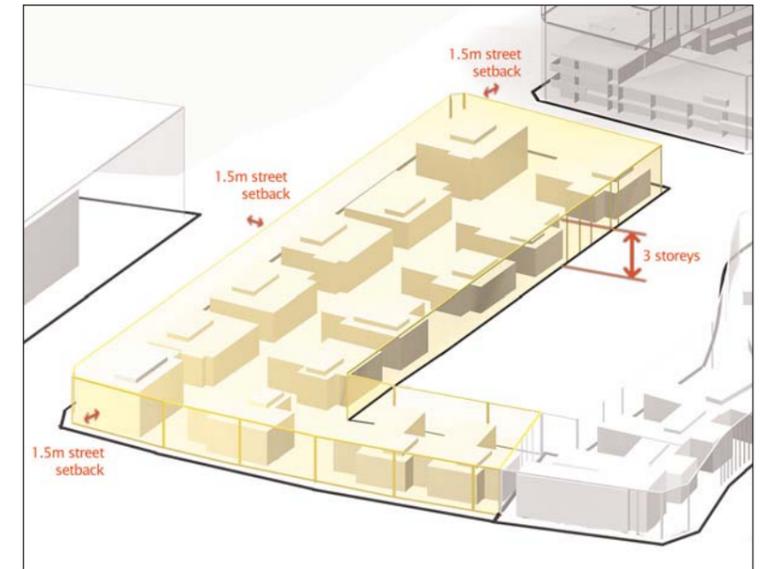
LOT 4



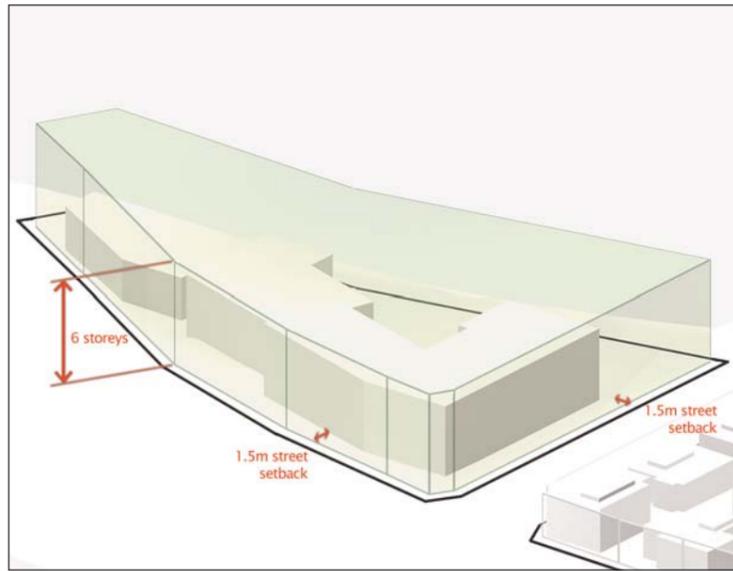
LOT 6



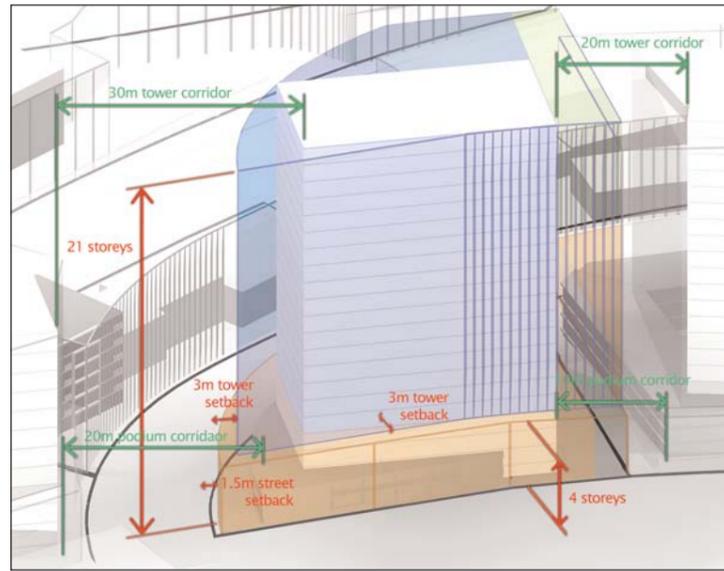
LOT 7



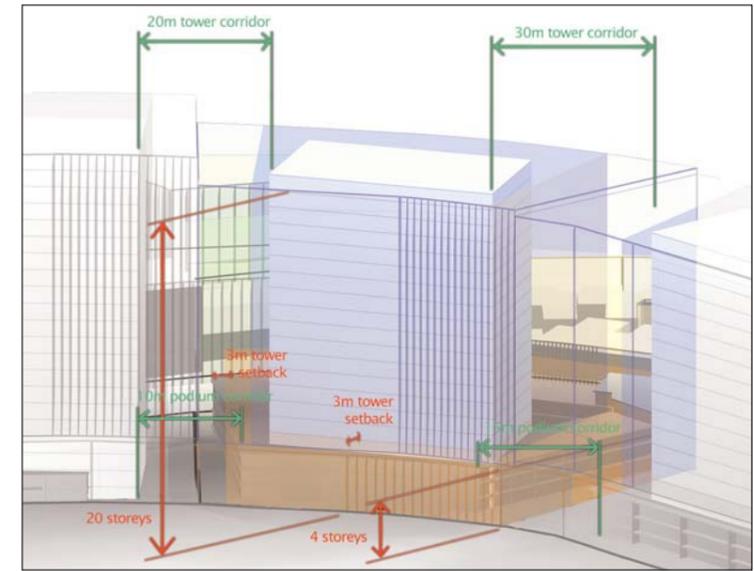
LOT 8



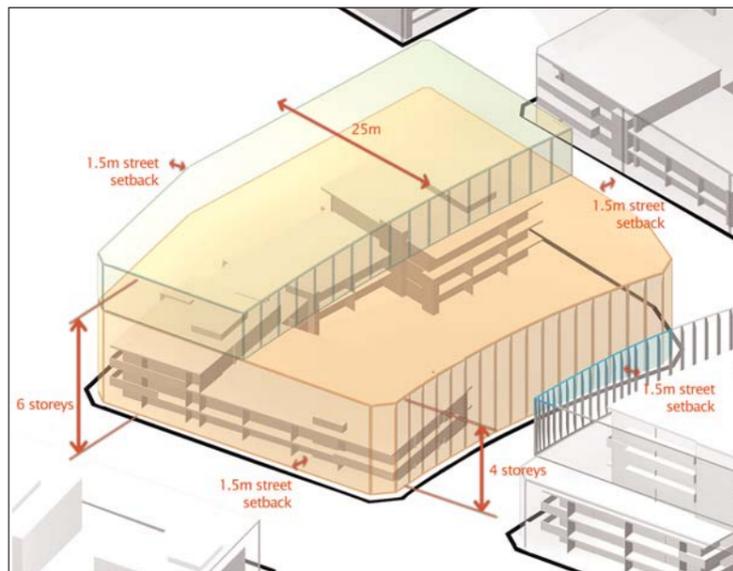
LOT 9



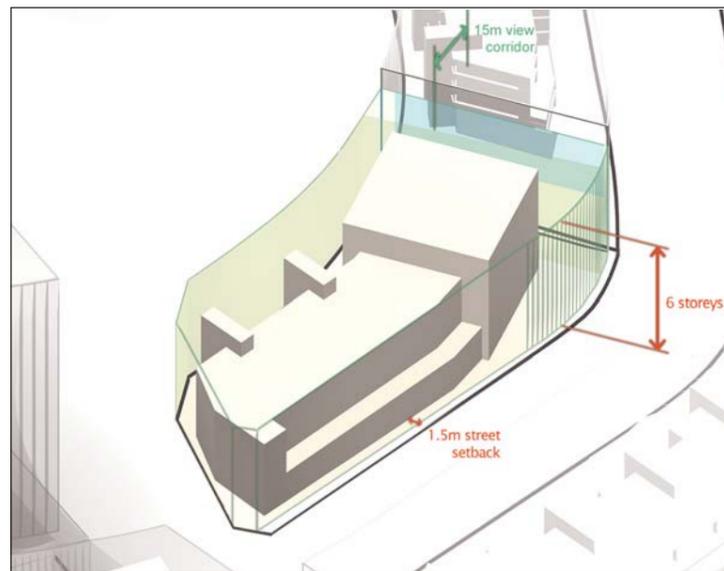
LOT 10



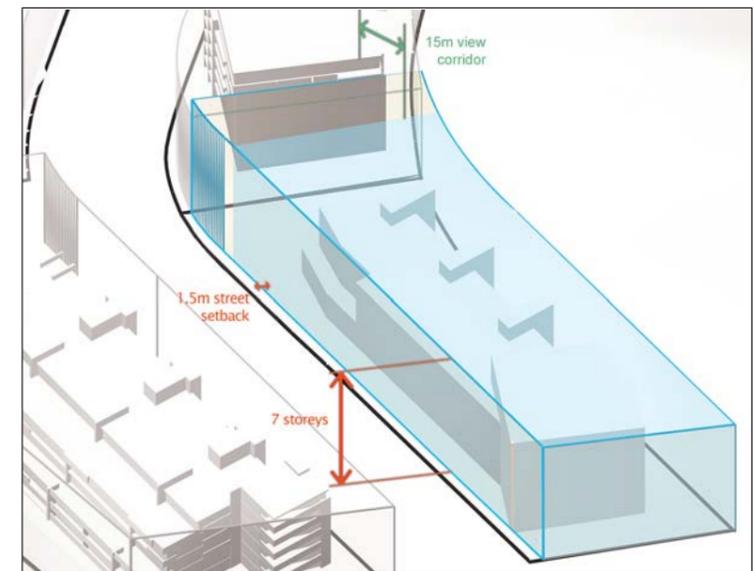
LOT 11



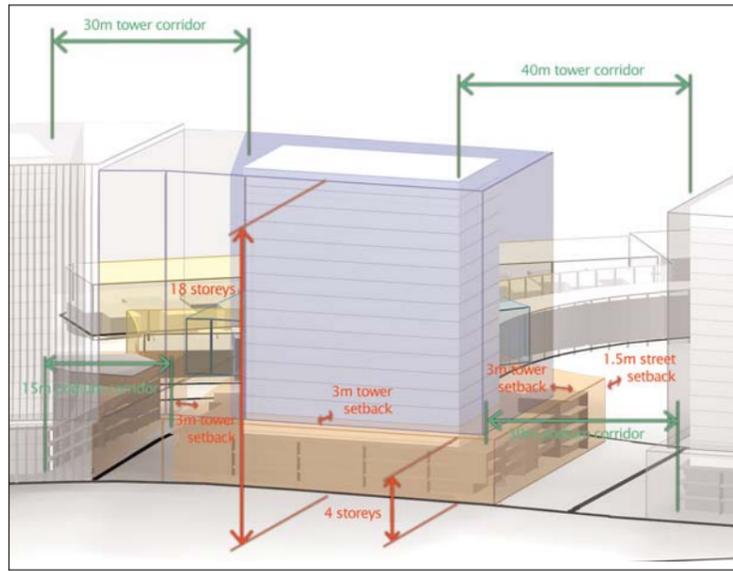
LOT 15



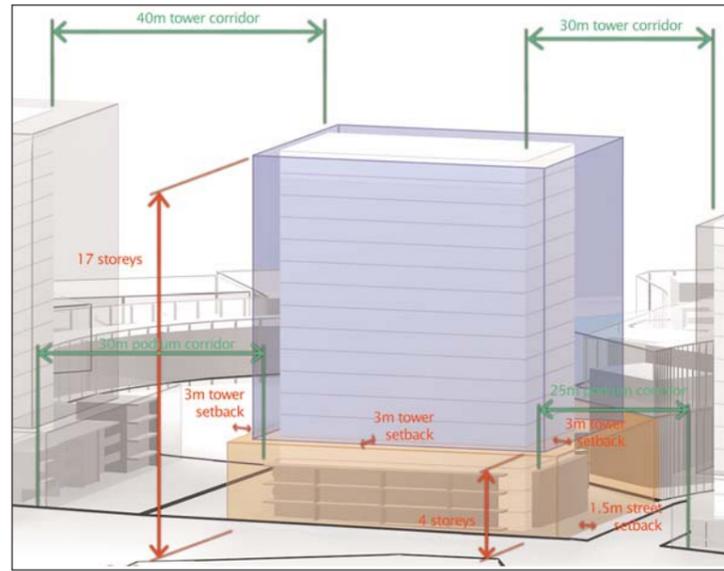
LOT 16



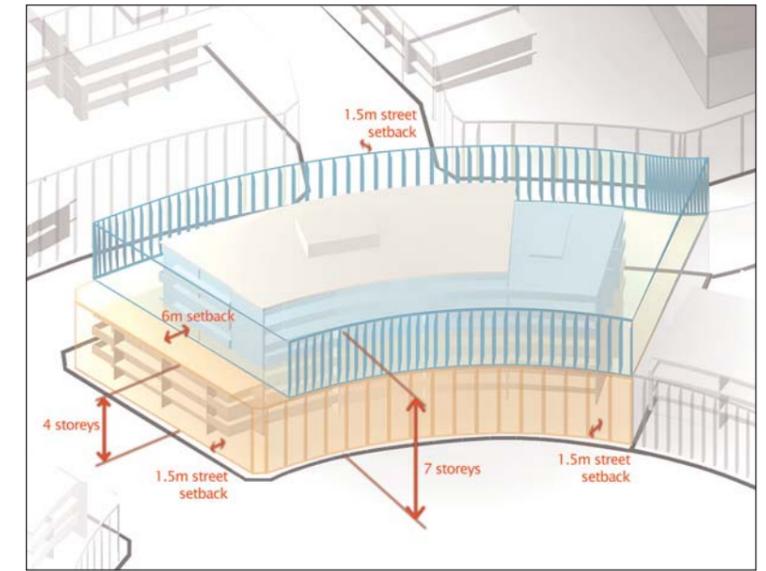
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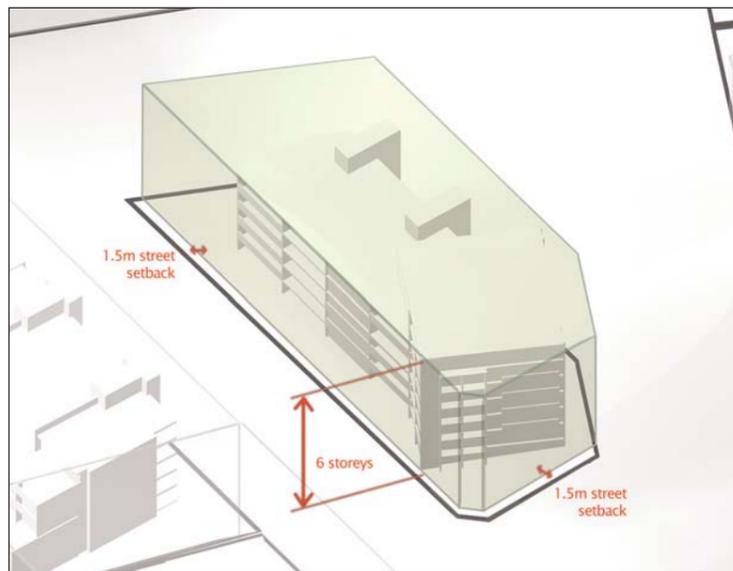
LOT 12



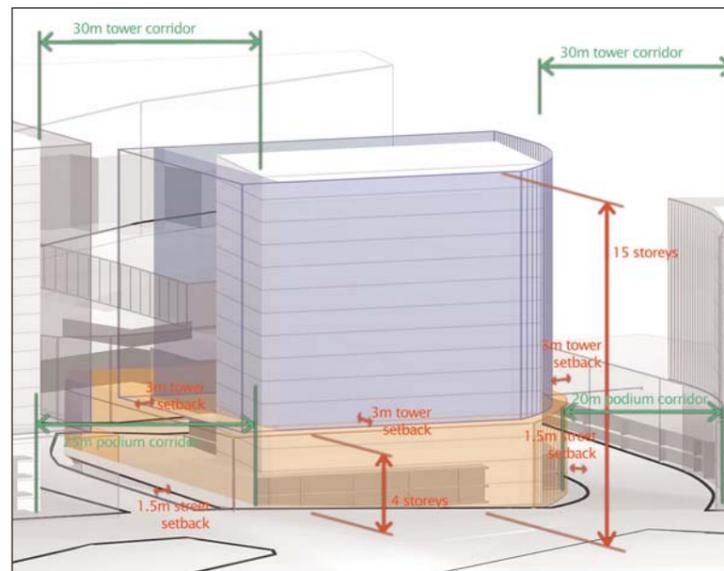
LOT 13



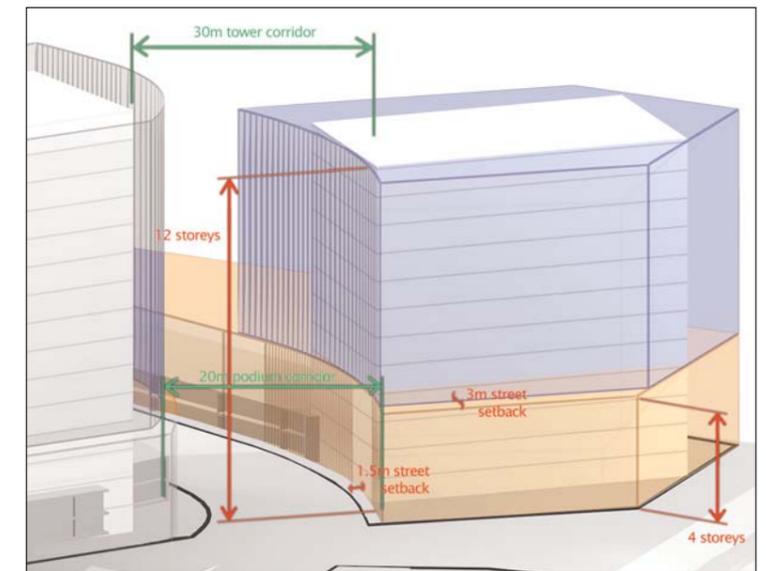
LOT 14



LOT 18



LOT 19



LOT 20

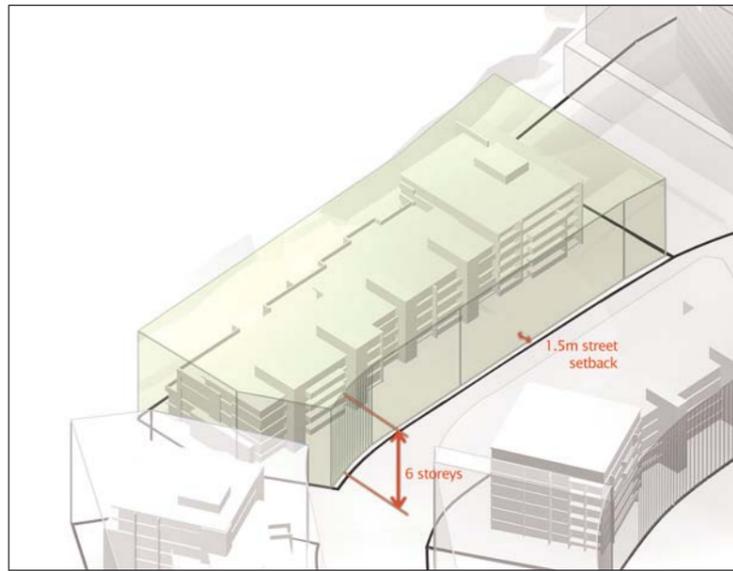


Figure 28
Building Control Envelopes

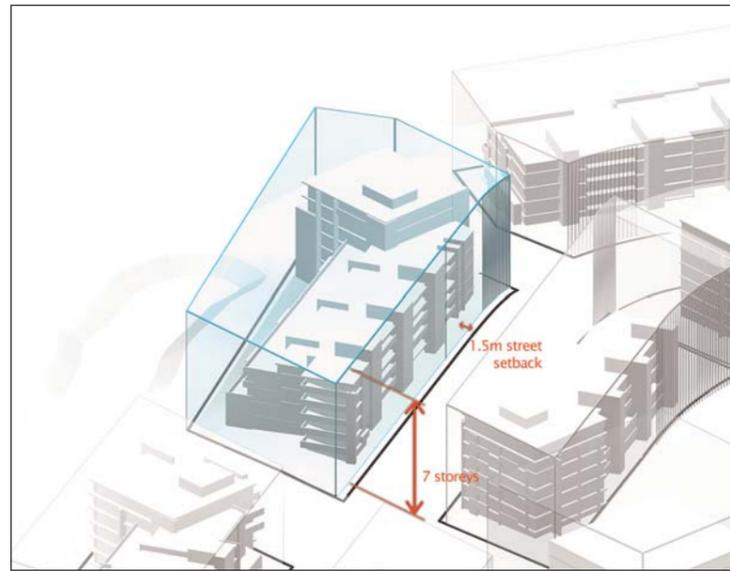


Burswood Lakes Structure Plan

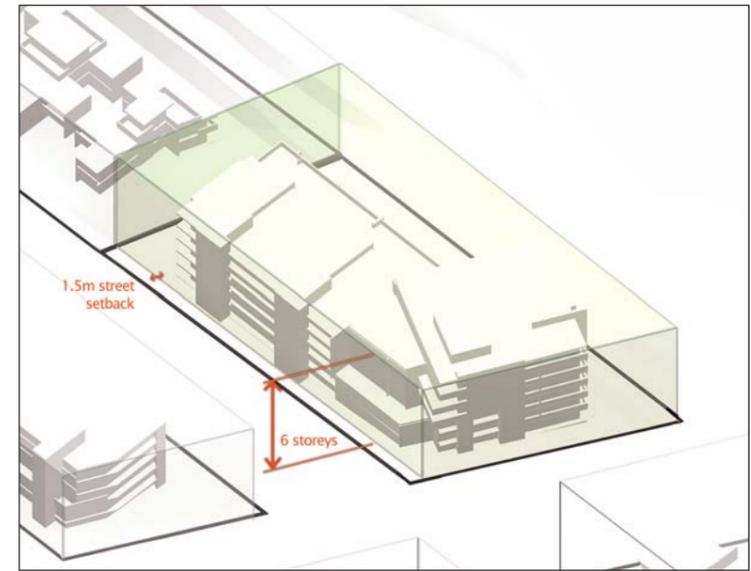




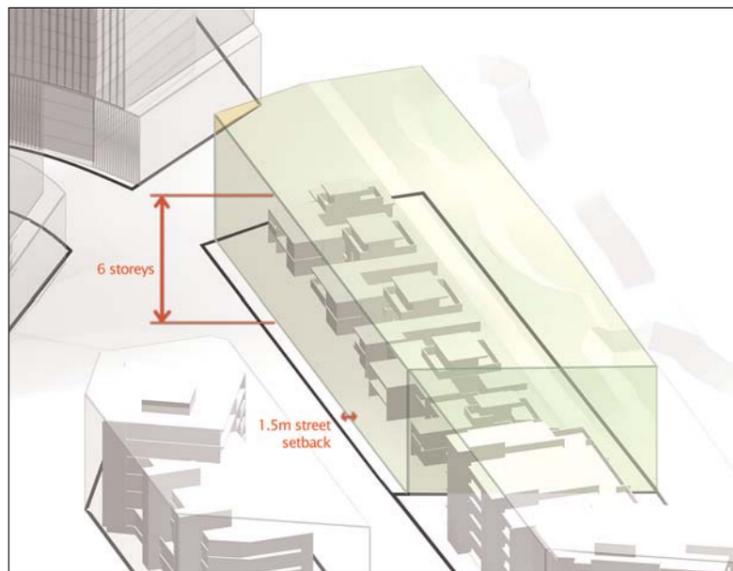
LOT 21



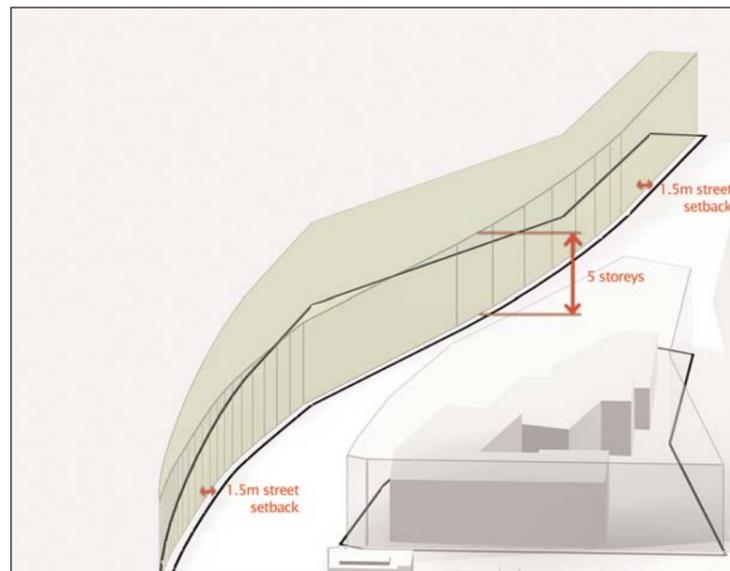
LOT 22



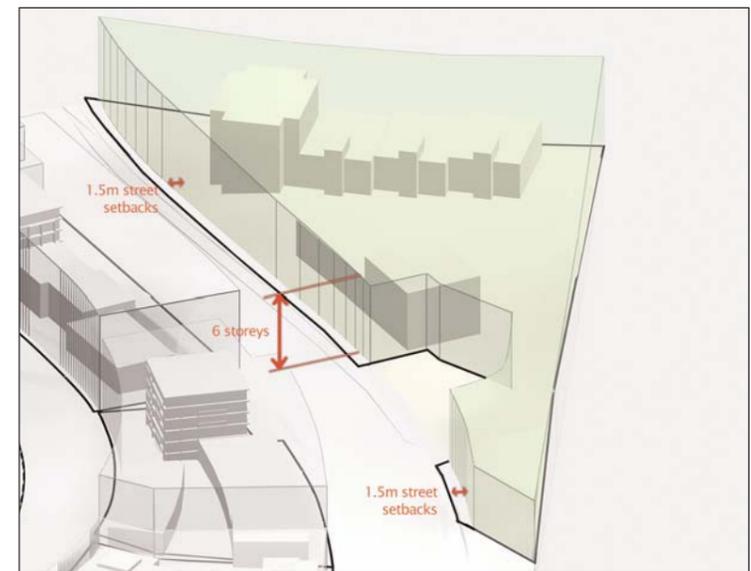
LOT 23



LOT 24



LOT 25



DOLA / MRD LAND (LOT 26)

Figure 29
Building Control Envelopes



BURSWOOD LAKES PLOT RATIO CALCULATIONS

ASSUMPTIONS :

2 BED APARTMENT : 100sqm
 3 BED APARTMENT : 130sqm
 TOWNHOUSES : 180sqm
 HOUSING : 220sqm
 50% 2 Bed & 50% 3 Bed in Towers

* - notional residential portion of lot 25 (1500m²)
 ** - plot ratio on whole of lot 25 is 0.27 on 4976m²
 *** - dwelling mix per lot is indicative only

MATHEMATICAL MODELLING

LOT NUMBER	LOT AREAS	TOTAL DWELLINGS	2 & 3 BED APARTMENTS ***	TOWN HOUSES ***	HOUSING ***	50:50+15%		MATHEMATICAL MODELLING			
						NETT AREA	PLOT RATIO AREA	PLOT RATIO AREA + 15%	PLOT RATIO	AVERAGE SITE AREA PER DWELLING	MINIMUM SITE AREA PER DWELLING
1	4,700	74	63	11	0	9,225	9,963	11,457	2.44	60	60
2	3,294	30	20	10	0	4,100	4,428	5,092	1.55	105	105
3	3,266	31	18	13	0	4,410	4,763	5,477	1.68	105	105
4	2,964	13	0	0	13	2,860	3,089	3,552	1.20	225	110
5	3,548	16	0	0	16	3,520	3,802	4,372	1.23	220	110
6	4,365	14	0	0	14	3,080	3,326	3,825	0.88	310	110
7	4,044	13	0	0	13	2,860	3,089	3,552	0.88	310	110
8	6,290	23	0	0	23	5,060	5,465	6,285	1.00	270	110
9	6,296	60	60	0	0	6,900	7,452	8,570	1.36	100	100
10	3,014	106	94	12	0	12,970	14,008	16,109	5.34	25	25
11	6,268	140	107	33	0	18,245	19,705	22,660	3.62	40	40
12	6,891	119	86	33	0	15,830	17,096	19,661	2.85	55	55
13	4,553	85	65	20	0	11,075	11,961	13,755	3.02	50	50
14	2,432	45	45	0	0	5,175	5,589	6,427	2.64	50	50
15	2,818	28	18	10	0	3,870	4,180	4,807	1.71	100	100
16	2,174	32	29	3	0	3,875	4,185	4,813	2.21	65	65
17	2,401	42	38	4	0	5,090	5,497	6,322	2.63	55	55
18	1,596	32	30	2	0	3,810	4,115	4,732	2.96	45	45
19	4,958	80	48	32	0	11,280	12,182	14,010	2.83	60	60
20	3,388	61	49	12	0	7,795	8,419	9,681	2.86	55	55
21	3,922	47	42	5	0	5,730	6,188	7,117	1.81	80	80
22	3,389	42	38	4	0	5,090	5,497	6,322	1.87	80	80
23	2,314	31	28	3	0	3,760	4,061	4,670	2.02	70	70
24	3,475	31	0	0	31	6,820	7,366	8,470	2.44	110	110
25	1,500*	5	0	0	5	1,100	1,188	1,366	0.91**	300	110
26(DOLA / MRD)	10,412	50	50	0	0	5,750	6,210	7,142	0.69	205	110

TOTAL DWELLINGS: 1250 AVERAGE PLOT RATIO (NET): 2.02

TOTAL SITE AREA: 183,136 TOTAL SITE PLOT RATIO (GROSS AREA INCLUDING ROADS AND P.O.S) 1.15
 (INCL DOLA / MRD LAND)



Figure 30
 Burswood Lakes Plot Ratio Calculations



3.4 Connectivity and Transport Orientated Design

Objective:

To create a well-connected place

Response:

Burswood Lakes has excellent regional and local access. The site is well-connected to the regional road and shared-path network.

Destinations that are linked through the road and shared-path network include:

- Town of Victoria Park
- Perth CBD
- Burswood Train Station
- Burswood Peninsula Foreshore
- Burswood Resort, Casino and Theatre
- Burswood Park Golf Course
- State Tennis Centre
- Restaurants and other eating facilities at Burswood Resort
- Belmont Racecourse
- Burswood Water Sports Centre
- East Perth
- South Perth

Pedestrian, cycle and vehicular traffic will be integrated in a safe manner. Foot and shared-use paths will connect the streets and public open spaces on and around the site.

The community development program will offer recreational cycling and walking, taking advantage of access to the foreshore and wider region.

The majority of dwellings and the public open space at Burswood Lakes will be located within 800 metres (walking distance) of Burswood Train Station. Access through the site has been designed to ensure maximum connectivity to the station and allow future bus service. The location of the train station provides access to the greatest number of residents. The current location allows the station to develop as a destination station in conjunction with future development on the Superdome site and the Burswood Resort, while maintaining access, privacy and safety for residents at Burswood Lakes. Proximity to the Burswood Train Station offers an opportunity for reduced car



Diagram T: Artistic impression of the Burswood Lakes Indicative Development Plan

usage.

3.5 Importance of Public Places: the Public Realm

Objective:

To create an accessible and useable public realm

Response:

Burswood Lakes has been planned with an integrated and equitable approach to the public realm. A generous amount of public open space (11.7% of the site) has been provided. An additional 3% of the site will be landscaped and publicly accessible areas on private lots. Public open space and streets are viewed as interlinked public places that allow a pedestrian journey through an area that has not previously been accessible. The streets and open spaces will complement the open landscape of the Swan River foreshore. They will be intimate and protected, attractive, lively and safe.



The pedestrian realm can be activated by al fresco cafes and restaurants.

The streets will be well-landscaped and slowed with traffic calming devices. Buildings will form edges to the public realm, adding human scale and “eyes on the street.”

A balance of active and passive open spaces will ensure a range of quality experiences for residents and visitors alike. Active uses may include ‘kick-about areas’, a café, children’s playgrounds, picnic areas and possibly boules / petanque lawns. Some spaces in both the public and private realm are viewing areas, where one can stop, take a breath and enjoy the vista. These areas have been designed with their individual micro-climates in mind.

Care has been taken in the relative placement of open space and taller buildings, with open space located to give immediate access to the greatest number of residents.

3.6 Sustainability

Burswood Lakes is planned on design principles that encompass environmental, social, cultural and economic aspects of a desirable outcome.

Objective

To create a climactically responsive place

Response:

Buildings will be designed to promote a healthy living environment and to respect appropriate environmental principles relating to orientation, construction materials and techniques. Examples of how this could be achieved in practice include providing:

- generously sized balconies for apartments

- water-limiting appliances
- cross-ventilation of units, where possible
- north-facing glazing, where possible

Landscaping will be designed to ameliorate wind impact and limit water usage. Water features in the landscape will provide micro-climate benefits.

Taller buildings will be positioned to limit overshadowing of public and private space. Lower elements around taller buildings will be designed to ameliorate wind effects. The combined effects of wind and shadow will be assessed in the design of open space and active uses at ground level.

Objective:

To encourage a diverse residential community that will contribute to the social and cultural life of the Town of Victoria Park

Response:

Burswood Lakes will become a vibrant place with pedestrian-friendly streets and large areas of public open space that are accessible to all residents and to the wider community. The design of open space will encourage both active and passive recreation.

A range of dwelling size, type and built form will attract a diverse population, bringing life to this former industrial site. Future residents of Burswood Lakes are likely to include singles, working couples without children, families, empty-nesters, and retirees. While households may vary in family-size and age, they will share an affinity for urban living that offers them easy access to all the amenities of central Perth.

A community development program will address issues such as integrating with the existing Town of Victoria Park community, increasing recreation opportunities, and promoting safety at Burswood Lakes. The Town of Victoria Park will provide easy access to shopping and recreation for Burswood Lakes residents.

Objective:

To make best use of a valuable urban land resource and contribute to local economic growth

Response:

Burswood Lakes is a valuable inner-urban land resource. The proposed development takes advantage of this resource by providing a significant residential population in an area well-served by existing infrastructure, and commercial, tourist and community facilities.

Burswood Lakes has been planned as a staged commercially-

viable development, which will allow the community to grow in a progressive manner. It is anticipated that the project will provide approximately 327 construction jobs per annum over the life of the development.

The residential population will also contribute to the economic growth of the Town of Victoria Park through employment and support of businesses and services.

4.0 Public Realm and Subdivision Standards

This section forms part of the requirements for the Structure Plan (TPS Precinct Plan Requirements b, c, d, e, f and h) and contains principles and guidelines related to the various elements that constitute the public realm.

These are:

- Road network (b)
- Cycle and pedestrian network (b)
- Infrastructure and amenities (e)
- Street design (f)
- Public open space and landscape (f)
- Recognition of the Burswood Canal (h)
- Environmental conditions
- Commitments by the proponent

In addition, standards that relate to subdivision are included:

- Permitted uses (c)
- Dwelling numbers (c)
- Lot patterns and sizes (d)

These standards should be read in conjunction with the Structure Plan (Figure 19, p.68) and the Infrastructure Amenities Plan (Figure 20, p.69).

4.1 Road Network (B)

Principles

The road network should:

- Provide safe and efficient access to all users
- Connect to the surrounding road network
- Provide residential amenity

Guidelines

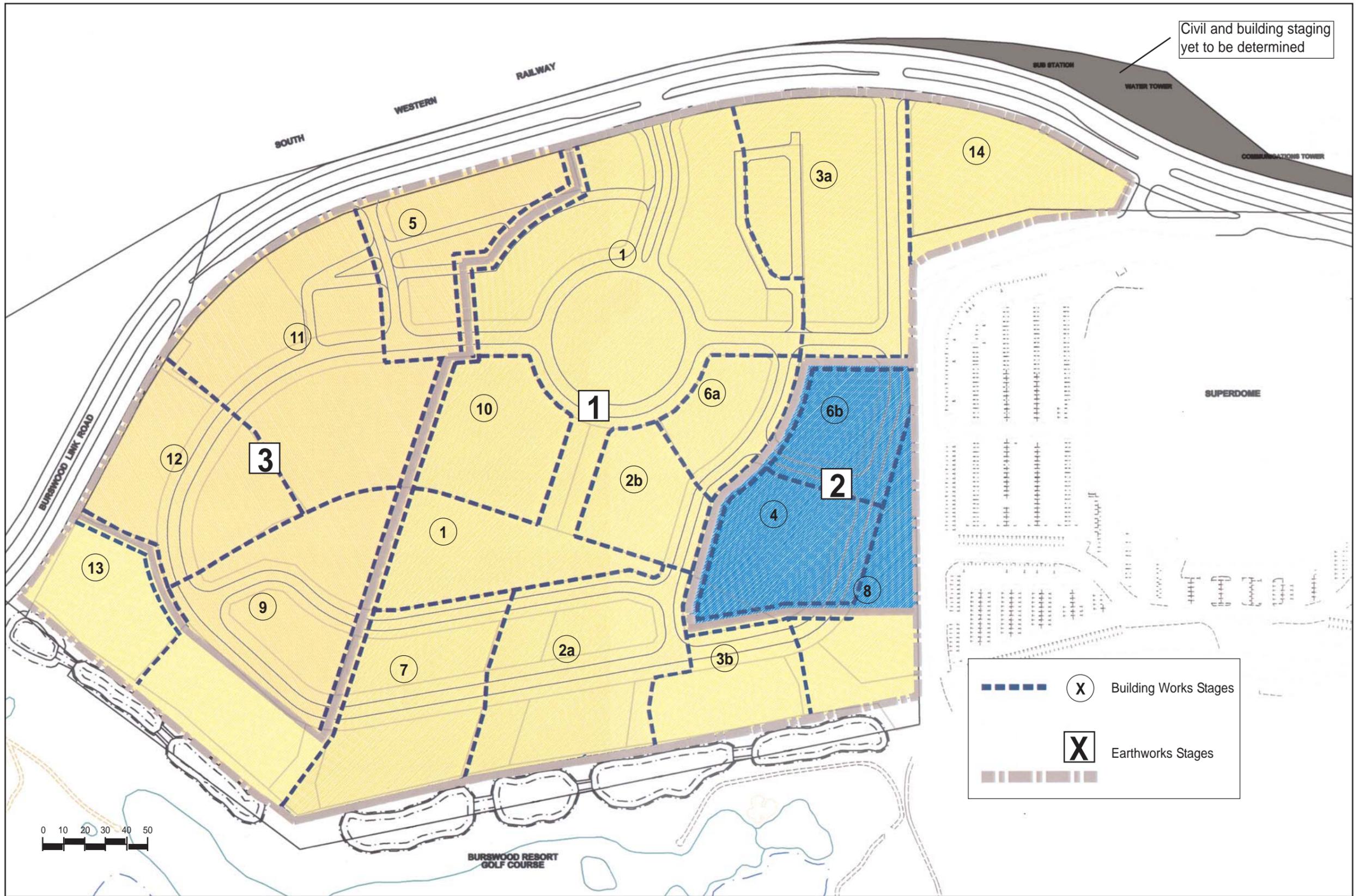
The proposed road network is shown on the Infrastructure and Amenities Plan (Figure 20, p.69).

- Roads should be designed for a specific purpose, character, and level of use, and should minimise negative impacts on development.



Figure 31
Indicative Public Realm





- Planning to ensure that future bus service can be provided along Burswood Link Road and the local neighbourhood connector(s) with good pedestrian links within the development.
- A workable road network should be provided at all stages of development.
- The road network should be permeable, easy-to-understand and clearly sign-posted.
- The road network should discourage through-traffic with traffic calming devices and streetscape character, while still remaining permeable.

4.2 Cycle and Pedestrian Network (B)

Principles

The cycle and pedestrian network should:

- Encourage walking and cycling in and through Burswood Lakes by providing a permeable and accessible foot and shared-path network.
- Connect to the regional shared-path network including the Swan River foreshore and to the Great Eastern Highway.
- Provide cycle and pedestrian links to Burswood Train Station.
- Provide linkages between open spaces around the site.

Guidelines

The proposed shared-path and pedestrian network is shown on the Proposed Routes for Cyclists and Pedestrian, and Indicative Bus Routes diagram (Figure 22, p.71).

- Most residences should be within 800 metres (or a 10-minute walk) from Burswood Train Station.
- At all stages of development, where possible residents should be provided with adequate cycle and pedestrian access.
- Paths should be a variety of widths, establishing a hierarchy, ranging from wide shared-paths to narrow, informal pathways.
- Some paths should form direct pedestrian / cycle links with external amenities - particularly the Burswood Train Station - while others should meander through a variety of open spaces.
- Widths and gradients of shared-paths and footpaths should be in accordance with Town of Victoria Park requirements, universal access codes and Bikewest guidelines.

4.3 Permitted Uses (C)

Principles

Development should:

- Ensure the best use of this valuable inner urban land resource through the creation of a significant urban neighbourhood with well integrated and compatible land uses providing a high level amenity and service to its community.
- Provide predominantly residential uses with compatible mixed use development.

- Provide essential services and local convenience shopping for residents, at each stage of development with a commitment by the proponent to provide a 'corner shop' of a minimum 300m² nla at a time no later than the completion of 300 dwellings in the initial stage of the development.

TPS Controls

- Permitted uses "P" within the Special Use Zone include:
 - Single house
 - Group dwelling
 - Aged or dependent persons dwelling
 - Multiple dwelling
 - Home office
- Discretionary uses "AA" within the Special Use Zone include:
 - Shop (excluding the sale of petrol)
 - Office
 - Restaurant
 - Consulting room, Day care centre
 - Fast food outlet, Restaurant
 - Serviced apartment
 - Home occupation
- Indicative locations of proposed mixed uses (discretionary uses) are depicted on the Structure Plan and prospective purchasers should be notified of these proposed mixed use locations at the subdivision and /or development stage.
- The maximum net lettable area of retail floor space for 'shop' within the Special Use Zone shall not exceed 2,000m².

Design Guidelines

- A range of dwelling types and sizes should be developed to provide for a diverse population.
- Proposed home occupation and home office uses should consider and provide for public access and car parking appropriate to the type of use. It should also take into account for and preserve the residential amenity of the locality.
- Appropriate mixed-uses should incorporate local convenience retail, service and local employment opportunities.
- Where mixed-uses are incorporated into residential buildings, care should be taken to preserve residential amenity and character.
- Mixed-uses should be located to give good public access (both pedestrian and vehicle) and should front directly onto public open space or onto active street frontages with passing pedestrian and /or vehicular traffic.
- Micro-climate (wind and solar) should be considered in the location and design of mixed-use facilities.
- Mixed-uses should be located on major pedestrian routes to increase access, safety and activity.
- Car parking, service areas, plant and equipment for mixed-

uses should be provided in a manner appropriate to the residential setting.

- The mixed uses will be encouraged to locate at those locations shown on the SP.

4.4 Dwelling Numbers (C)

Principles

Development should:

- Create a higher-density residential urban neighbourhood
- Locate the maximum number of dwellings close to public open space and amenity
- Balance the number of dwellings with housing choice, ensuring the provision of a wide range of spacious, flexible dwellings to accommodate many different kinds of households.

TPS Controls

- The total maximum dwelling numbers permitted in the Special Use Zone shall not exceed 1,250.
- The maximum dwelling numbers for each lot shall be in accordance with the Structure Plan (Figure 19, p.68).

4.5 Lot Patterns and Sizes (D)

Principles

Development should:

- Create lots guided by Liveable Neighbourhoods principles
- Create lots to enable climactically responsive dwellings
- Orientate lots with the aim of creating active, safe streets and public places

Design Guidelines

- Lots should generally be in accordance with the indicative subdivision depicted on the Indicative Subdivision Plan (Figure 23, p.72).
- Lot orientation should take advantage of views and vistas throughout the development.
- Lot orientation should, where possible, enable solar access to principal living areas.
- Lots should enable all single dwellings and common entrances to apartment buildings to have a direct street address.
- Lot ground levels should be set to limit retaining walls and provide for a consistent streetscape (per Town of Victoria Park Design Guidelines).
- Lots fronting Burswood Link Road must have rear access for vehicles.
- Lots should enable dwellings to front public open space.



Award-winning Newington Apartments (Sydney), designed by HPA Architects

4.6 Infrastructure and Amenities (E)

Principles

Development should:

- Ensure efficient provision of public utilities at all stages of development
- Integrate infrastructure elements into the urban design of public spaces, limiting their visual and spatial impact
- Provide adequate servicing and amenity for public spaces

Design Guidelines

Major infrastructure should generally be provided as indicated on the Infrastructure and Amenities Plan (Figure 20, p.69).

4.7 Street Design (F)

Principles

Street Design should:

- Consider streets as an integral part of the public realm
- Promote safety on streets through lighting, landscape, on-street parking and active urban form
- Promote pedestrian and cycle priority
- Provide access for emergency and service vehicles
- Develop a common streetscape theme with neighbourhood character differences expressed through changes in plant species, materials and detail

Design Guidelines

- Road reserves, pavement widths, footpath widths, shared-

paths, on-street parking and rights-of-way should generally be in accordance with the Infrastructure and Amenities Plan (Figure 20, p.69).

- Streetscape treatment should accentuate landmark locations and street intersections.
- Street landscape should reinforce desired traffic speed and behaviour.
- Street widths, detailing, and surface materials should correspond with their location in the road hierarchy, projected traffic volumes, and proximity to pedestrian-priority zones.
- Kerb radii should be kept to a minimum to slow traffic.
- On-street parking should be maximised to provide visitor amenity and traffic calming.
- Crossovers should be limited to maximise kerb-side parking and street tree planting.
- Street trees should be planted at regular intervals. Species should be selected to provide shade, seasonal interest, street character and aid orientation around the site.
- Landscape should not limit sight lines for pedestrians, cyclists and vehicle drivers.
- Changes in surface material should be used to define pedestrian crossing points.
- Lighting for all streets and defined pedestrian routes should be designed to promote pedestrian safety.
- The visual impact of above-ground utilities should be limited.

4.8 Public Open Space and Landscape (F)

Principles

Development should:

- Provide usable, accessible, well-landscaped and appropriate public open space
- Ensure access to public open space for both residents and the wider community
- Provide public open spaces that vary in size and character and provide opportunity for both active and passive recreation
- Enhance view opportunities from vantage points around the site.
- Provide public open space to a minimum of 10 per cent of gross subdivisible area. This public open space is to be developed with earthworks, grassing and planting, irrigation and a maintenance commitment for a minimum of two summers.

Design Guidelines

- Public open space should be designed generally in accordance with the approved Structure Plan (Figure 19, p.68) and the Infrastructure and Amenities Plan (Figure 20, p.69).
- Public open space should be provided proportionately at each stage of development.
- Stormwater drainage provision should be integrated with public

open space, where possible.

- Micro-climate, especially solar and wind impact, should be considered in the design of open space. There should be shady, sunny, and sheltered places.
- Public spaces should have visual supervision by residents and be well-lit, particularly along primary pedestrian routes.
- Heavy screen-planting that provides visual barriers and hidden spaces should be avoided. Shrubs should be kept lower than 1.2 metres to provide good visibility into public spaces.
- Public open space should be easily and efficiently maintained using appropriate landscape practices. The design should allow for the transition of maintenance at the time of the handover to the Town of Victoria Park.
- Public open spaces should be clearly delineated from private spaces using changes in level or materials, fencing, hedging or other landscape elements.
- The view corridors throughout the site should be preserved and enhanced through landscape design and planting. Viewing platforms should be constructed at appropriate levels.
- Public open space should be well-connected to roads, dual-use paths and footpaths. Paths should traverse open space in a manner that does not limit the use of the space.
- Public open space irrigation should be designed to minimise water usage.
- The use of water-saving techniques such as low profile sprinklers, rain gauges and drip irrigation should be considered to minimise water usage and maximise efficiency.
- Plant species should be selected as part of an overall theme while establishing individuality in each space.
- The hard landscape palette should reflect an overall theme, yet still highlight elements of importance or significance in different parts of the site. Materials should be robust and durable.
- Park and street furniture should have a consistent theme throughout the development, with changes reflecting focal points and feature locations. Furniture selection should consider long-term maintenance.
- The Central Plaza should be hard-paved and urban in character. The Square is at a high-point of the site allowing views over the lake and beyond to the city.
- The Lake Park should be comprised of lawns, a lake, waterfall, and paved water feature. The grassed areas should provide space for passive recreation and barbecues, with shade trees and informal shrub planting. The lake should be directly beneath the village square and bridged to provide access.
- The Circular Park should comprise a large area of grass, slightly sunken and flanked on two sides by semi-mature trees and a shade structure, such as a contemporary arbor. Curved walls, steps and seating should be used to create the sunken area and provide a safe place for passive recreation. The

road around the park should be slowed and made pedestrian-friendly through a combination of design elements - brick or cobbles on the road surface, semi-mountable or flush kerbs, bollards to protect pedestrians, parallel parking along the outside edge of the street, etc.

- A series of smaller public open spaces (“pocket parks”) should be created within the site as 'local' places of interest and 'nodes' along the pedestrian green corridors through the site. These parks should comprise grassed areas, tree and shrub plantings, barbecues and seating. Some may have shade structures such as pergolas or arbors, or small water features.
- The perimeter lake reserve is located between the development and the Burswood Park Golf Course. This reserve consists of a series of linked lakes providing interception for all future urban run-off. The lakes will be landscaped with endemic trees, shrubs and wetland planting. A cleared zone of five metres will be provided for maintenance vehicle access. Public access will be restricted by a physical barrier such as a change in level or fencing.
- The Burswood Canal should be recognised with interpretive signage and landscaped with a corridor of locally indigenous trees, shrubs and dampland littoral plants defining the route of the canal.

4.9 Recognition of the Burswood Canal (H)

Principles

Development should:

- Recognise the historic significance of the Burswood Canal within the Structure Plan area

Design Guidelines

The location of the Burswood Canal is indicated on the Structure Plan (Figure 19, p.68).

- Interpretive signage should be provided in public areas associated with the Canal.
- Reference to the Canal should be made in the landscape design.
- Burswood Ltd confirm that it is their intention to enter into a Heritage Agreement with the Heritage Council of Western Australia with respect to the recognition of the former canal by way of an interpretive sign located on site. Refer to Part A 11.1 (p.60) of the Structure Plan for further details.

4.10 Environmental Conditions

Principles

Development should:

- Comply with the conditions outlined in EPA Bulletin 879
- Comply with the Post - Remediation Development Environmental Management Plan as approved by EPA



The drainage lakes that form the west boundary of the site

4.11 Ecologically Sustainable Development Strategy (ESD)

Introduction

The purpose of this strategy is to establish ESD benchmarks for Burswood Lakes. It will be used as a checklist at each Development Application to ensure that, as Burswood Lakes develops, appropriate ESD principles are considered. This strategy will evolve over time, as new technologies become apparent. Not all of the standards noted below will be possible to implement on all stages but this strategy indicates the intent of the Proponent.

This strategy will be implemented throughout the development from planning, design and construction and ultimately handover to purchasers. During the design process, the proponent and the

Town of Victoria Park officers and Design Review Group will assess the project against the strategy. During construction this strategy will be implemented by the Proponent under the Department of Environment, Water and Catchment Protection (DEWCP) approved Environmental Management Plan which all personnel and sub-contractors will be required to adhere to. All purchasers will be made aware as to the ESD aspects of their home.

Environmental Objectives

An integrated design process is to be undertaken for all phases of the development. This integrated design process will ensure that ESD principles are incorporated from broad scale master planning down to individual building details. The design controls contained in this code and elsewhere are to ensure the following outcomes:

- Reduction in CO2 emissions compared to similar developments
- Reduction in household energy demand
- Reduction in water use
- Reduction in use of natural (scarce) resources
- Minimisation of waste
- Selection of materials/equipment to minimise environmental impacts over the life of the material/equipment

1. Energy

Principles

- Reduction in household energy demand
- Reduction in the amount of embodied energy in the materials used on the site

Design Standards

- Where possible, orientate indoor and outdoor living areas to the north to maximise solar exposure.
- North facing windows and horizontal protection are preferred to ensure the shading of glazing when midday sun angle is 65° or more. Shading devices for north facing windows shall provide sun penetration when the midday sun angle is 34° or less.
- Use careful site planning to minimise the overshadowing of open space and of north-facing windows of adjacent buildings.
- Incorporate best practices in energy efficient design
- High mass materials are to be used, where possible. Concrete slab on ground is to be used where topography allows. Elsewhere, precast or suspended concrete floors should be used on ground floor areas.
- Where practicable and appropriate, floors to informal living areas to be finished in materials that maximise solar heat absorption in winter.
- Incorporate cross ventilation where possible.
- Where practicable and appropriate, skylights or ventilators are to be installed to increase natural ventilation and enhance natural lighting. Where possible stair wells will create a stack effect to enhance natural ventilation and remove warm summer air from upper floors.
- Roof spaces are to be ventilated
- Control sun access in summer through the use of louvres, balcony overhang, eaves, pergolas and sun shading to reduce the reliance on mechanical systems for temperature control.
- Trees and shrubs are to be selected and positioned to maximise solar penetration in winter and minimise it in summer (deciduous plants on the north side of outdoor spaces). Positioning of planting is to assist in the enhancement of cool summer breezes and the protection from hot summer and cold winter winds.

- All windows and doors are to be weatherstripped to minimise infiltration and exfiltration.
- Avoid thermal bridges and, if they are necessary, these should be of low conductance materials.
- Where practicable, external spaces are to be allowed for clothes drying within each lot.
- Only essential lighting to operate 24 hours a day. All other common area lighting on timelocks, push buttons or motion detectors, where possible.
- Evaluate the long term efficiency and associated energy and maintenance costs when selecting internal and external lighting.
- Evaluate external lighting with respect to security and amenity
- Evaluate reverse cycle air conditioning systems with day and night switching to reduce energy use.
- In carparks, ventilation systems to be controlled by a co-monitoring system to reduce energy use.
- Carpark lighting systems to be controlled by occupancy sensors. To increase efficiency of lighting, paint ceiling in light colours to increase reflectivity.
- When selecting appliances, evaluate those that minimise energy consumption.
- In building energy management systems, include controllers to maximise the efficiency of high energy use equipment.
- Investigate the use of centralised hot water systems or, where appropriate, solar boosted gas hot water systems - incorporating electronic ignition rather than a pilot light to reduce energy consumption.

2. Materials

Principles

- Life cycle analysis to be used as part of the building material selection process.
- Where practicable incorporate the use of recycled materials or components in which recycled materials have been used.
- Where practicable minimise the emission of toxic chemicals in the manufacture, use, and end-life disposal of materials.
- Where practicable minimise the use of materials with adverse environmental effects.

Design Standards

- Material selection must take into account the life cycle effect of their manufacture, use and disposal to minimise the effect on the environment. The following environmental factors shall be considered in such analysis - through the entire life cycle, from manufacture to final disposal:
 - o Energy use
 - o Carbon dioxide emission
 - o Toxicity content
 - o Rare and non-renewable material content
 - o Potential for end of life reuse or recycle

- o Reuse or recycled material content
- o Transport and distribution requirements
- o Thermal comfort
- o Maintenance
- o Durability
- o Cost

3. Water

Principles

- Minimise water use where practicable.

Design Standards

- Plant species that are drought resistant or will require minimal watering once established, where appropriate.
- Apply water-conserving landscape practices where practicable, including soil amendments, mulch, irrigation zoning, limited turf areas, planting in relation to micro-climate, water scheduling and selection of plants with water needs that match site rainfall and drainage conditions.
- Install and use drip feed irrigation systems with automatic rain shut off and mulching.
- Create favourable microclimate conditions for recreation use and plant growth.
- Landscape designs should include plants species with low nutrient and water demands and that have natural resistance to pests and diseases to minimise the need for chemical intervention.
- Use weed-free growing medium at planting and mulch to minimise weed infestation and water loss.
- Install dual flush toilets in all dwellings.
- Evaluate water use efficiency in the selection of appliances.
- Water efficient tapware will be provided to reduce overall water consumption.
- Where practicable use stormwater for landscape irrigation.
- Ensure all hydraulic systems are balanced to maintain correct flow rates and reduce water consumption.

4. Environmental Quality

Principles

- Reduce the emission of toxic chemicals
- Reduce CO2 emissions compared to conventional developments
- Provide a benchmark in the environmental management of noise and light emission during the construction process
- Rehabilitation and improvement of the existing site environment

Design Standards

- During construction:
 - Manage air quality to DEP standards
 - Implement DEP noise control mechanisms
- Landscape plant species used in the public domain are to include local indigenous species.
- Native ground covers and grasses are to be used in lieu of turf, where practicable.
- Pesticides are to be used only where no other non-toxic alternative exists.
- No chlorofluorocarbons (CFCs) to be used in any appliances.
- Provide 'owners manuals' to new residents and management that outlines the ESD features of Burswood Lakes and the dwelling in which they live. This is to show residents and managers how their behaviour can further limit energy use, water consumption, and waste.

5. Waste

Principles

- During construction, reduce hard and soft waste going to landfill where practicable.
- Endeavour to reduce total per capita residential waste going to landfill by encouraging recycling

Design Standards

- Design and construction team are to coordinate to encourage initiatives for resource saving and waste minimisation.
- Where space exists, waste bins are to be stored in a dedicated service area within the lot boundary of each house.
- In multi-unit developments, a central garbage room is to be included to incorporate adequate bins for recycle waste, green and food waste, and general waste for disposal.
- Promote prefabrication off site.
- Purchase materials with minimal packaging, where possible.
- Carry out detailed construction documentation.
- Design to suit standard size materials to reduce construction waste.

6. Biodiversity

Principles

- Enhance the natural ecosystems of the site and surrounding Peninsula through habitat provision increases as part of the Landscape Strategy.
- Protect the natural and evolving ecosystems through proactive on-going management

Design Standards

- Comply with the environmental quality design standards.
- Retain existing trees, where appropriate.
- Planting layout and species selection to be based on the following:
 - Encourage and reinforce local fauna and flora corridors

- Maximise microclimates in and around dwelling lots and open space areas where practicable
- Take into account local soil and climatic conditions
- Minimise water use where practicable
- Use approved and recognised plantation timbers.

7. Transportation

Principles

- Reduce private car use and encourage the use of public transport, bicycle and pedestrian movement
- Transport systems to be integrated into local and regional bus, rail, and road systems
- Develop a comprehensive, accessible, and direct pathway and road system that links all parts of Burswood Lakes.

Design Standards

- Secure bicycle storage facilities are to be erected within multi-unit buildings.
- Comply with the requirements of Liveable Neighbourhoods in regard to the provision of accessible pathways and cycleways.
- Provide safe and convenient pedestrian and bicycle paths - paying particular attention to the connection to the Burswood train station.
- Develop an interconnected grid of streets to provide a variety of routes to any one destination - thus encouraging walking and biking.
- Plan the street hierarchy to facilitate efficient public transport routes.
- Locate higher density development close to or on public transport routes.

4.12 Commitments by the Development Proponent and / or Burswood Ltd.

The development proponent and / or Burswood Ltd will make the following commitments:

- The proponent will develop all roads, public open space and landscaped areas within Burswood Lakes.
- The proponent will provide a convenience retail facility for the development. The provision of which will be at a time no later than the completion of 300 dwelling units. The location of this facility will evolve as the development progresses, but will be limited to those areas identified as 'Potential Mixed Use Location' on the Structure Plan.
- The Proponent will manage and maintain all roads, public open space and landscaped areas within Burswood Lakes until the Proponent has completed the development of lots 1 to 25 as shown on the indicative Structure Plan. At that time it is the intention of the Proponent that the aforementioned roads, public open space and landscaped areas will be handed over into the ownership and control of Town of Victoria Park.

Agreements to facilitate this handover will be established in consultation with the Town of Victoria Park.

- The perimeter drainage lake system will be maintained for the duration of the development by the proponent and by Burswood Ltd, or another third party (other than the Town of Victoria Park) such as the Burswood Park Board, thereafter in perpetuity (this was confirmed in writing by Burswood Ltd. to TVP on 14 March 2001).
- Burswood Ltd confirm that pedestrian public access will be permitted along a designated dual-use path from the south-western corner of the Burswood Lakes site across land owned by Burswood Ltd toward the Swan River foreshore (this was confirmed in writing to TVP on 17 April 2002). Burswood Ltd will enter into a legal agreement with the Town of Victoria Park to guarantee future pedestrian public access across existing land comprising the Burswood Resort, prior to Town of Victoria Park's approval of the final structure plan.
- Burswood Ltd have constructed a temporary staff carpark on the southern end of the Swan Site. Burswood Ltd have entered into a deed with the Town of Victoria Park that outlines the conditions upon which the carpark can remain in place. The principal condition is that the car park is to be removed by December 2004.
- The proponent will comply with agreements with the Town of Victoria Park regarding areas of private open space that provide public access. These will include legal controls for public access in perpetuity such as easements and maintenance standards.
- A telecommunications tower is currently located in the south eastern corner of the site. The lease, currently in the name of Crown Castle Australia Pty Ltd., has another 12 years until it is extinguished (on 1 April 2013). The proponent confirms that at that time, on expiry of the current lease, no further lease will be granted. This is in response to the Town of Victoria Park's Policy on telecommunications towers.
- The proponent understands that Burswood Ltd is examining the future use of the existing Superdome. One option may be to redevelop the site into an alternative mixed-use development. Pending a final resolution of the future use of the Superdome site, Burswood Ltd - who are a joint venture partner with Mirvac Fini on the Burswood Lakes development (ie "the proponent") - have agreed contractually with Mirvac Fini that from 31 December 2004 the Superdome will not be used in any way - such as music concerts or motor vehicle events - that would have a detrimental effect on the adjacent Burswood Lakes with respect to noise, light or traffic. To this effect, Burswood Ltd are proposing to have a restrictive covenant registered on the title of the Superdome that will burden the Superdome site to the benefit of the Burswood Lakes residents.

- The Proponent confirms that the storm water drainage currently located in the south east corner of the site will be relocated to be within the Burswood Lakes boundary and to appropriate alignments ie either within easements parallel to determined boundaries or within dedicated road reserves.
- The Proponent will prepare, and obtain Council approval of, a Landscape Strategy and Masterplan for the development prior to the submission of any applications for subdivision or development. The Landscape Strategy will include establishment of the final location, orientation etc with respect to shadowing of the proposed ornamental lake. The Landscape Strategy is a written document which will govern the selection of materials and colours for the open space system. It should cover such items as paving , lighting, irrigation, furniture, signage and planting. It will set standards, identify styles, and in some cases nominate specific product ranges. It should also contain a maintenance schedule.
- The Masterplan, as its name suggests, is a drawn indicative plan for the whole development, showing all major pedestrian routes and spaces, and all open space. It is by nature a guide, as it is not possible to identify building shapes and access points in advance of the detailed design. It would be adjusted at the completion of each stage of development to reflect the detailed design of that stage.
- The Proponent will prepare a progressive detailed wind assessment as part of each development application.

- Implementation Process

The following Implementation Process will follow the approval of the Structure Plan and Scheme Amendment in addition to any statutory processes to be followed :

Analysis and advice to be provided by a Social Planning Consultant during design development of the project including undertaking a Crime Prevention through Environmental Design (CPTED) analysis of site planning, building design and design and treatment of public spaces and review of the proposed Community Development Program.

As part of the approval process of the first application for subdivision submitted, the owner (BL Developments Pty Ltd) enter into a legal agreement with the Town obligating BL Developments Pty Ltd to register easements to allow public access over privately owned land in the locations depicted on the Structure Plan. The legal agreement to provide for the registration of an absolute caveat on the affected lots.

Prior to the submission of the first application for subdivision and/or development approval the implementation process will require the following information to be submitted for

assessment and Council determination.

- i) Details of the proposed infrastructure and services strategy for the total project.
- ii) A Landscape Strategy and Masterplan for the total project including the interpretation and treatment of the Historic Burswood Canal.

As part of the submission of any development application, the implementation process will require the following information to be submitted :

- i) Details as to how the provisions of the Ecologically Sustainable Development (ESD) Strategy are reflected in the development application.
- ii) How the provisions of the Landscape Strategy and Masterplan are reflected in the application.
- iii) Submission of a detailed wind assessment, shadow analysis, assessment against the defined building envelope and all other details to address the Design Guidelines as part of the development application.

As part of the submission of any subdivision application the implementation process will require the submission of the details of the proposed infrastructure and services for that stage of the project.



View of Burswood Lakes from Burswood Link Road

Part C - Scheme Report for Precinct Plan P2 Amendment and Policy Manual

Sect. 1: Amendment to Precinct Plan P2

1.0 Scope of Amendment

This Amendment applies only to the 'Special Use Zone' in the Precinct Plan.

2.0 Requirement for Amendment

The Structure Plan proposes development that varies from the standards in the Precinct Plan P2 for the Burswood Precinct. It is therefore appropriate to request Council to initiate an amendment to Precinct Plan P2 to accommodate the Structure Plan.

3.0 Effect of Amendment

The amendments to the Precinct Plan will have the following effects:

- The Special Use Zone will be used for Residential purposes in accordance with the Residential Planning Codes, with a limited range of other uses.
- A Special Control Area will be created over the Special Use Zone for environmental control.
- The Use Table is amended to conform with the change in the Use Area.
- The R Coding for the Residential Uses in the Precinct Plan is deleted and replaced by an 'R-IC' Coding with a more detailed measure of density using the maximum dwelling density for each superlot.
- Table 1 of the R-Codes is amended to accord with the proposal.

- The Development Standards for the Use Area in the Precinct Plan are amended to comply with the proposed Structure Plan

4.0 Amendment Documents

The Precinct Plan is a Scheme Document that forms part of The Town of Victoria Park Town Planning Scheme No. 1. By clause 47, amendment of a Scheme Document must be in accordance with the procedures applying to a town planning scheme amendment in section 7 of the Town Planning and Development Act 1928.

The requirement of the Town Planning Regulations is that an amendment consists of a Scheme Report and a Scheme Text.

Accordingly, the Amended Precinct Plan P2 consists of two parts:

- Part C, Section 1 is the Scheme Report
- The Scheme Document Text is located in the Appendices.

5.0 Details of Amendments

5.1 Content

For each proposed Amendment there will be:

- 'Explanation': the reason for the Amendment
- 'Amendment Proposed': the nature of the Amendment; the actual amendment provisions are in the Appendices

5.2 Amendment to 'Statement of Intent'

Explanation

It is the purpose of the Structure Plan to provide for a predominantly residential area west of the railway. Accordingly, the Statement of Intent must be amended to reflect what is proposed.

Amendment Proposed

Amendment to the Statement of Intent to reflect the development proposed in the Structure Plan.

5.3 Local Planning Policy

Explanation

The proponent seeks to comply with the Residential Design codes gazetted in October 2002.

The Residential Design Codes now provide an R code designation of 'R-IC' that is appropriate for this form of intense residential development. Under the Codes, the development standards of these Codes may be varied by a Local Planning Policy. It is proposed that this Amendment be treated as if it is a Local Planning Policy.

Amendment Proposed

To indicate that the Precinct Plan shall be read as if it was a Local Planning Policy.

5.4 Special Control Area

Explanation

The land, the subject of development, has been remediated pursuant to a Statement to Implement a Proposal under the Environmental Protection Act 1986.

The Model Scheme Text, introduced by the Town Planning Regulations 1999, include provision for the creation in a scheme of a Special Control Area that is designed for areas that require special consideration. The Special Control Area provides Council with an additional set of development controls.

Amendment Proposed

Introduction of a Special Control Area to include, as relevant considerations, the Asbestos Environmental Management Plan, the Cement Kiln Dust Environmental Management Plan, and the requirement to provide a geotechnical assessment as part of all development applications.

Integration of the Special Control Area with the Statement to Implement a Proposal by including the requirements for excavation into the Precinct Plan.

5.5 Use Area Classification

Explanation

Precinct Plan P2 requires that a Structure Plan be prepared setting out the proposed 'Use Area' classifications from the range of uses therein listed: Residential R80, Tourist/Residential R160, Hotel/Tourist, Office/Residential, and Mixed Use. For Residential land, it proposes that all development be in accordance with the R Codes.

The Structure Plan proposes that all land within the Special Use

Zone will be classified for Residential use as 'R-IC' under the R Codes, with discretionary mixed uses.

Amendment Proposed

Amendment to the Precinct Plan to reflect that the R Coding for the Special Use Zone is 'R-IC'.

5.6 Use Classes

Explanation

The predominant form of use and development will be for Residential purposes. Some Mixed Uses are required for the daily needs of residents at each stage of development but the decision as to which uses are appropriate should remain in the discretion of Council.

Amendment Proposed

Deletion of the 'Use Area' Table. Replacement of that Table with a new Use Table.

5.7 Development Standards

Explanation

The Development Standards in the Precinct Plan relate to use classes that are to be deleted.

Amendment Proposed

Deletion of all development standards in the current Precinct Plan and the introduction of new development standards for the R-IC Coding.

5.8 Amendment to Table 1 of the R Codes

Explanation

Table 1 provides for the general site requirements for R-IC development. The Structure Plan meets the objectives of the R-IC Coding but varies in some respects from the requirements in Table 1.

As to dwelling density, the Structure Plan proposes that a maximum dwelling number be set for each superlot. This requires a variation to Table 1. As well, a maximum number for the entire site is provided.

The only other variations to Table 1 are to vary the plot ratio and minimum site area per dwelling for multiple dwellings and, as well, the percentage of open space for the single dwellings and group housing proposed.

Amendment Proposed

A new Table 1 that contains the variations to that Table. That the Structure Plan designated the maximum dwelling number for each identified superlot within the R-IC Coding.

Addition of a provision that, in any event, the total maximum dwelling numbers permitted in the Special Use Zone shall not exceed 1,250.

5.9 Building Height and Building Envelope Definition

Explanation

All development must adopt a form and scale that reflects its contribution to this integrated urban development. This requires locating taller buildings towards the centre of the site, and stepping down in building height and form towards the edges. The taller buildings must respond to the landmark quality of the Burswood Resort and, at the same time, their impact on the streets and open spaces must be controlled. This design objective is to be accomplished by creating view corridors across the site that are derived from building envelopes.

Amendment Proposed

Creation of building envelopes by establishing heights and perimeters of all buildings.

Variation to the Plot Ratio requirements in Table 1 of the R Codes and minimum site area per dwelling.

Variation to the R Code provisions for heights and showing the maximum building heights, expressed in metres measured from natural ground level, as well as storeys (excluding plant, lift overruns, and architectural features) measured from the street level for each lot.

5.10 Setbacks

Explanation

The residences are designed as an integrated urban development. This design promotes activity, safety and a comfortable micro-climate on streets and in public places by the creation of a cohesive and easily-understandable streetscape that gives a sense of enclosure and scale. The setbacks serve these goals.

The Structure Plan complies with the required setbacks from the Primary Street as set out in Table 1 of the R Codes, but, in some instances, may vary from side and rear setback requirements.

Side and rear setbacks will be based on performance criteria set out in the Town of Victoria Park's 'Design Guidelines for Developments over Three Storeys'.

To preserve view corridors, it is necessary to define the minimum distance between multiple storey dwellings.

Amendment Proposed

Addition of a provision that sets out the minimum distance between multiple storey buildings at podium level - levels 1-4 and the minimum distance between higher levels - levels 5-21.

5.11 Parking

Explanation

The design of the Special Use Zone must provide integrated vehicle access that is direct, easy to find, and safe. As well, the development requires adequate provision of parking for residents and visitors. These proposed residential car parking requirements are a proven Mirvac standard which has evolved from 30 years experience in property development. For the provision of parking for non residential uses the proponent will adopt those standards outlined in the Town of Victoria Park's Parking and Access Policy.

It should be noted that the Precinct has good access to public transport which from experience will reduce the residents reliance on private motor vehicles over time.

The R Codes provide that for single dwellings, grouped housing and multiple dwellings in an R-IC area, 1 space per dwelling is required. The Structure Plan complies with this standard but it is repeated in the Amendment for clarity.

Amendment Proposed

Variation of Element 3 of the R Codes for the following standards:

- Courtyard homes, detached single family homes, zero-lot-lined homes and townhouses - minimum of 2 bays per dwelling
- 1 Bedroom apartment - minimum of 1 bay per dwelling
- 2 Bedroom apartment - minimum of 1.5 bays per dwelling
- 3 Bedroom apartment - minimum of 2 bays per dwelling
- Visitor parking : 10% of required bays that may include, where appropriate, on street parking.

5.12 Open Space

Explanation

The Structure Plan complies with the Open Space requirements in Table 1 of the R Codes for the R-IC Coding for multiple dwellings.

As single and grouped housing will be part of an integrated

development, the Open Space requirement of the percentage of the lot for open space is not applicable. It is necessary, however, to guarantee that a minimum open space is maintained.

Amendment Proposed

Variation of R Code provisions for a single dwelling and grouped housing as follows:

- Minimum of 16m² of private outdoor space.

5.13 Landscaping

Explanation

Landscaping of residential spaces should contribute to the overall character of Burswood Lakes as well as to the safety and comfort of residents. As an aspect of an integrated urban development, landscaping should create a climactically and contextually responsive landscape that limits water usage.

Amendment Proposed

Addition of a provision that all applications for planning approval for grouped or multiple dwellings shall be accompanied by a landscape plan that details plant types, landscape treatments, and an on-going maintenance programme for these areas including automatic reticulation.

5.14 Overshadowing

Explanation

Building design should respect appropriate environmentally sustainable design principles in orientation, construction materials, techniques and landscape.

Amendment Proposed

Addition of a provision that all applications for planning approval for grouped and multiple dwellings shall be accompanied by a shadow analysis diagram indicating where shadows will be cast from the development -and their impact on adjoining properties - for the following dates and times:

- 9.00am, midday and 4.00pm on the summer solstice (21 December)
- 9.00am, midday and 4.00pm on the winter solstice (21 June)

Addition of a provision that all applications for planning approval for multiple dwellings shall be accompanied by a wind impact statement for the proposed development.

5.15 Appeal Provisions

Explanation

There are no appeal provisions for the Structure Plan.

Amendment Proposed

Inclusion of Appeal Provisions for structure plans proposed by the Western Australian Planning Commission and adopted by Council at its meeting of 28 May 2002.

Section 2: Addition to Policy Manual

1.0 Scope of Amendment

This Amendment is for the addition of a new section in the Town of Victoria Park Policy Manual to provide design guidelines for the development of Burswood Lakes. It is to cover:

- General Design Guidelines for the Structure Plan
- Guidelines for all forms of development.

2.0 Name of Policy

The new Policy should be called:

- Design Guidelines for Burswood Lakes

3.0 Requirement for Amendment

The Structure Plan, when approved will be a framework for future subdivision and development. Precinct Plan P2 for the Burswood Precinct will contain the development standards. It is necessary to provide for development guidelines to set out the fundamental design guidelines that will provide for the objectives set out in the Policy.

4.0 Related Policies

The generic principles of design in this Policy will apply to the Structure Plan generally and to all development within Burswood Lakes. In the event of any inconsistency between this Policy and the Design Guidelines for Developments with Buildings Above 3 Storeys, the provisions of the Design Guidelines for Developments with Buildings Over 3 Storeys have precedence.

5.0 Amendment Documents

A Policy is a Scheme Document that forms part of the Town of Victoria Park Town Planning Scheme No. 1. By clause 46 and clause 47, amendment of a Policy must be in accordance with the procedures applying to a town planning scheme amendment in section 7 of the Town Planning and Development Act 1928.

The requirement of the Town Planning Regulations is that an amendment consists of a Scheme Report and a Scheme Text.

Accordingly, the proposed Policy consists of two parts:

- Part C, Section 2 is the Scheme Report
- The Scheme Document is located in the Appendices

6.0 Details of New Policy

6.1 Form of New Policy

As with the Design Guidelines for Developments with Buildings Above 3 Storeys, each area of relevance will have an "Intent" and then "Performance Criteria" against which the intent can be assessed. Where possible, the accepted wording of the Design Guidelines for Developments with Buildings Above 3 Storeys has been used. The intent of each Design Guideline is outlined below.

6.2 Site Planning

Intent:

To achieve a coherent site layout that provides a pleasant, attractive, manageable, resource-efficient and sustainable environment while also making a positive contribution to adjoining properties and the overall precinct.

6.3 Streetscape

Intent:

To provide attractive streetscapes that reinforce the functions and amenity of a street, and are sensitive to the built form, urban landscape and environmental conditions of the locality.

6.4 Building Appearance and Neighbourhood Character

Intent:

To ensure that building appearance is attractive and is in keeping with any desirable current or future urban character of the area.

6.5 Private Open Space

Intent:

To provide private open space for each dwelling that is clearly defined, useable open space that meets user requirements for security, access, outdoor activities and visual amenity.

6.6 Communal Open Space and Publicly

Accessible Space

Intent:

To provide communal open space and publicly accessible space where appropriate, that is generous, clearly defined and useable, and helps to create a pleasant, safe and attractive environment.

6.7 Resource Efficiency

Intent:

To adhere to the principles of ecologically sustainable development by incorporating features which limit the use of fossil fuels and natural resources and reduce greenhouse gas emissions over the life of the development.

6.8 Safety and Security

Intent:

To provide personal and property security for occupants and visitors and enhance actual and perceived safety.

6.9 Privacy

Intent:

To site and design buildings to meet projected user requirements for visual and acoustic privacy, and to provide appropriate visual and acoustic privacy for nearby residents in their dwellings and private open space.

6.10 On-site Parking and Access

Intent:

To ensure appropriate provision of secure and accessible on-site parking and access for occupants and visitors.

6.11 Site Facilities

Intent:

To ensure that site facilities are conveniently accessed by occupants, and are visually attractive, blend in with the development and street character, and require minimal maintenance.