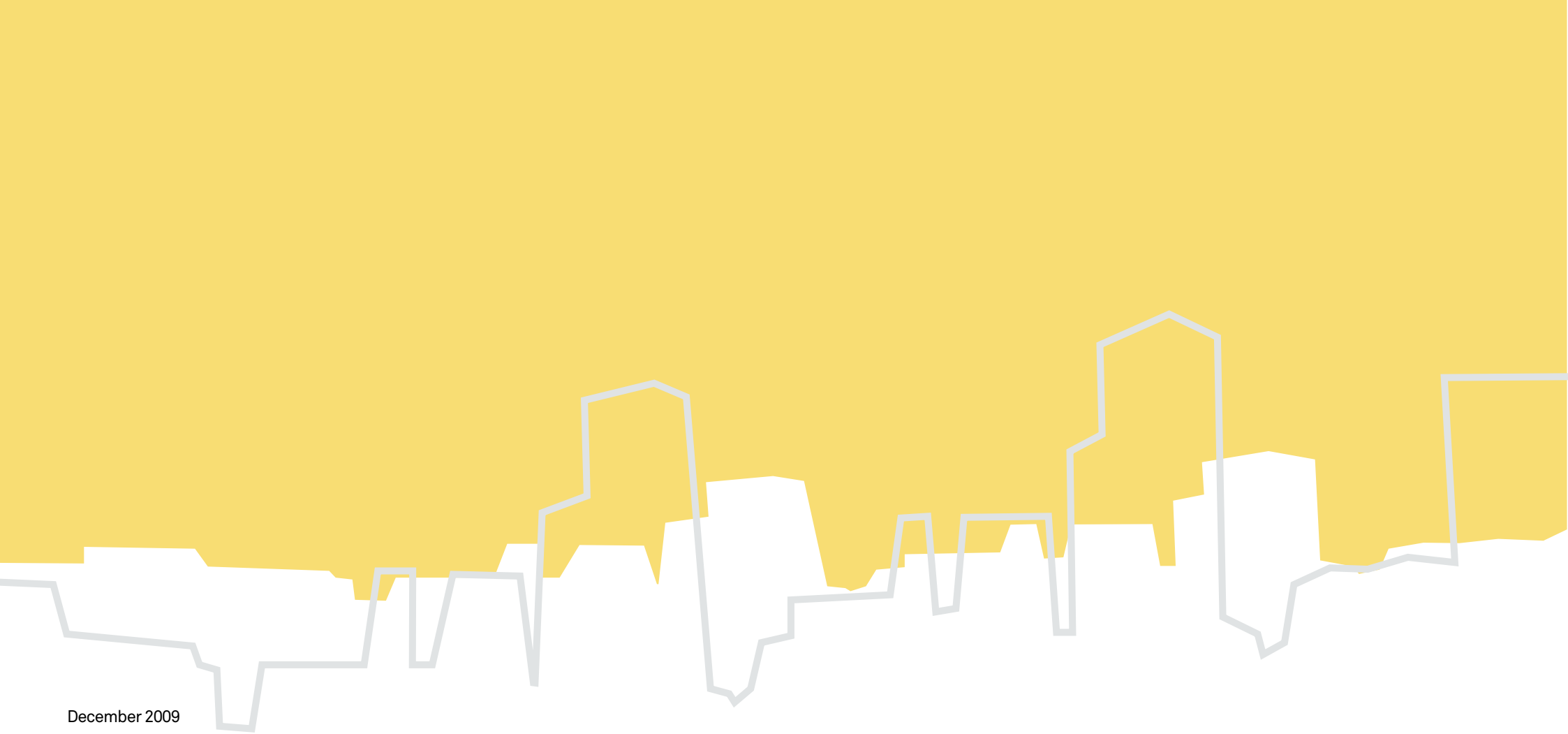
Southbank Structure Plan

Concept Scenarios Report for Discussion

Prepared for the City of Melbourne by AECOM

December 2009



December 2009

Issue B Distributed to Nadine Robinson, City of Melbourne

01 Introduction

1.1 Report Objectives

The objectives of the Concept Scenarios Report are twofold:

- To communicate the three concept scenarios that have been developed for Southbank. These were initially presented to the Project Management Working Group at the Concept Scenarios Workshop on the 26th November, 2009; and
- To identify the preferred future scenario that will be progressed as the preferred option in the Draft Southbank Structure Plan.

1.2 Concept Development Method

The concept scenarios built on the analysis work undertaken by the consultant team and documented in the Background Report: Southbank Structure Plan (the Background Report) prepared for the City of Melbourne, November 2009.

The approach to developing the three scenarios was agreed in conjunction with the Project Management Working Group at a workshop on the 27th October, 2009 and can broadly be outlined as the following.

Scenario Option 1 - Business as Usual
This scenario tested the potential future outcomes for Southbank if the current Melbourne Planning Scheme (the Scheme) were to continue to apply to the whole of the Southbank area. Developing this scenario enabled a clear comparison between what is the current future trajectory for Southbank and the alternative outcomes developed in Scenarios 2 and 3. The key features of Scenario 1 were:

- No new local 'heart' for Southbank;
- Retention of existing Planning Guidelines and Design Overlays which determine built form;
- Retention of 2:1 Floor Area Ration (FAR) limiting commercial use which continues to determine land use;
- Minor new pedestrian and cycling connections that focus on repairing existing gaps in the movement network; and
- Adoption of the Southbank Plan (City of Melbourne, 2006) which included no significant new open spaces.

Scenario Option 2 - Enhanced Local Community Focus
Scenario 2 explored an alternative future for Southbank that gave priority to the delivery of a more community focused, residential suburb. The key features of Scenario 2 were:

- Three new local 'hearts' for Southbank;
- New built form guidelines that establish height limits by applying a fixed ratio between potential building heights and street widths. A ratio of 4:3 (height: width) was tested;
- Retention of 2:1 FAR allowance limiting commercial use which continues to determine land use;
- Significant new pedestrian and cycling links that connect the dislocated parts of Southbank and create a much greater permeable network across the area; and
- A distributed network of new open spaces.

Scenario Option 3 - Extension of the Central City
Scenario 3 explored an alternative future for Southbank that gave priority to a more intensified mixed use development outcome as an extension of the central city. Key features of Scenario 3 were:

- A new central regional 'heart' for Southbank;
- New built form guidelines that establish built envelope controls for private lots. These controls were developed by establishing performance criteria based on achieving a minimum degree of solar access to all residential floors;
- An increase in commercial use to a 3:1 FAR allowance;
- Decking of the existing CityLink tunnel approach to reconnect the northern and southern halves of Southbank. This provided the opportunity for significant improvements to the connectivity and permeability through the area; and
- A new large central open space.

02 Criteria Assessment

2.1 Establishment of Criteria

The following section outlines the criteria that were used to assess the effectiveness of the concept scenarios in achieving the vision established for Southbank in the preparation of the Background Report. The criteria are grouped under five categories as follows.

01 Regional location

02 Resource positive

03 Natural ecosystem

04 Social amenity

05 Positive and adaptive built form

Each category incorporates a series of objectives that further articulate the vision for the future of Southbank. To deliver these objectives a series of criteria were established that each provide a measurable target. The multiple criteria provide the means to quantify the success of each scenario. Together they provide an integrated review of the suitability of the three alternate futures developed for Southbank.

2.2 Assessment Criteria

Category 01: Regional Location

Objectives

- Southbank should become the centre of conference and conventions in Australia;
- Southbank should be enhanced as the arts and cultural centre of Victoria;
- Southbank is a population source and business sink for Melbourne;
- Southbank should establish a diverse provision of entertainment, culture and recreation;
- Southbank should provide for broader creative industry activity that diversifies its role as a regional arts and cultural destination;
- Southbank should be a regional destination not simply a thoroughfare; and
- Southbank should build on its symbiotic relationship with Melbourne central city with complementary land uses and services.

Proposed Criteria

1. All population to be within 500m of at least two forms of public transport;
2. All regional facilities to be within 100m of public transport; and
3. A diversity of activity is provided within 500m of arts precinct.

Category 02: Resource Positive

Objectives

- Southbank should become a carbon sink (beyond carbon neutral);
- Southbank should be water positive and become an exemplar for 'Total Watermark'; and
- Southbank should have zero net waste and become a closed loop system.

Proposed Criteria

1. Existing planning controls and overlays;
2. All buildings should be serviced by at least 1 local energy source;
3. Explore the potential for harvesting infinite resources on site;
4. As a suburb Southbank is a closed loop system of waste and generation; and
5. Any water captured in Southbank should be used at least once within the suburb.

Category 03: Natural Ecosystem

Assumptions

- Southbank should minimise its impact on the broader environment;
- Southbank should become an ecosystem service for the broader environment;
- Southbank should provide an environment conducive to natural and beneficial habitation; and
- Southbank should consider indigenous species.

Proposed Criteria

1. Any water leaving Southbank should be treated to current 'best practice'.

Category 04: Social Amenity

Assumptions

- Local population to be within 5 min walk of at least 2 forms of public transport;
- Southbank should have at least one local neighbourhood heart;
- Southbank needs a hierarchy of streets as places;
- Southbank's streets should be an amenity;
- Southbank should have a diversity of spaces;
- Southbank should be inclusive, affordable and engaging;
- Southbank should have a diversity of residents;
- Minimum 100 dwellings per hectare average across the suburb;
- A minimum of 50 jobs per hectare average across the suburb.

Proposed Criteria

1. Existing Scenario;
2. Two types of local public open space areas are provided within 5 min walk from any residence in Southbank;
3. Creation of a local heart for Southbank;
4. A diversity of dwelling type (bedroom no. and dwelling size) is provided;
5. All population should be within 500m of a local entertainment facility; and
6. All population should be within 500m of a community arts facility.

Category 05: Positive and Adaptive Urban Form

Assumptions

- Southbank should have a scale and density to create critical mass as a sustainable inner city suburb;
- Southbank should be a human scale;
- Southbank's streets should have positive or stimulating edge conditions;
- Southbank should have a fine urban grain with flexible built form;
- Southbank should benefit from, and contribute to, its microclimate;
- Southbank should have buildings which passively utilise its microclimate; and
- Southbank should contain safe environments.

Proposed criteria

1. There should be at least one external and public laneway every 100m (average central city laneway distance to continue Melbourne City character and ensure adaptability of urban blocks);
2. No urban block should be longer than 200m (Melbourne central city grid);
3. Street proportions should not be less than 0.5:1.0:0.5;
4. Laneway proportions should not be greater than 5.0:1.0:5.0;
5. All floors of buildings adjoining streets + public spaces should have land use that provide for passive surveillance;
6. Ground level of any building will be part of a lively, safe street;
7. All streets as places, not just thoroughfares;
8. Building entrances are provided on average every 10m;
9. Provision of weather protection on all streets; and
10. 0m street setbacks.

03 Capacity Analysis

3.1 Introduction to the Capacity Analysis of Southbank

The purpose of the capacity study is to understand the potential for development in Southbank. This study has been undertaken to assess only commercial and residential development as these land uses comprise the vast majority of developments in Southbank.

Section 3.2 maps the constraints to development such as heritage overlays and listing. It also makes assumptions on those sites that have already reached their development capacity. These sites have then been removed from the capacity analysis.

The development area has been identified as any land not designated as highways, promenade or public space such as parks. This equates to the areas provided in the following chart.

Area Component	Area (M2)	% of Area
Total Southbank Study Area	1,576,877	100%
Overall Breakdown		
Total Road Corridor Area	621, 492	39%
Total Development Area	955,385	61%

Further detail on the breakdown of the available development area is incorporated into Appendix A.

In order to determine the potential future population of Southbank the figures from the last census in 2006 (CLUE) have been used. The Southbank Small Area Economic and Demographic Profile (2008) Report identifies a residential population in 2006 of 8655. Appendix 24 of the resource material for that report identified an overall residential area of 563,728m^2. By dividing the area by population, a approximate population per gross m^2 can be determined.

For Southbank:

FLOOR AREA PER RESIDENT IS 65m^2

The number of dwellings can also be determined through a similar process. The Southbank Small Area Economic and Demographic Profile (2008) Report identifies the number of dwellings in Southbank as 6508. By dividing the area by dwellings, a approximate area per dwelling can be determined.

For Southbank:

FLOOR AREA PER DWELLING IS 87m^2

3.2 Understanding and Mapping of Existing Development Constraints

This component of the study assesses the general constraints on development. It highlights the heritage overlays and specific heritage listed buildings. It identifies developments that have already reached their maximum development potential. It also highlights sites prime for immediate redevelopment and as such are strategic sites and finally the medium term sites currently occupied but with lower densities and thus a future ability to redevelop. This component will therefore provide a clear picture of future development opportunity as assessed in the following pages.

3.2.1 Heritage overlay and heritage listed buildings

The physical analysis incorporated into the Background Report highlighted and discussed in greater detail the limitations with development in the heritage overlay specific to the Southbank. This overlay generally serves the St. Kilda Road edge of the study area. There are also numerous historic buildings along that road edge including the National Gallery of Victoria and the Barracks sites.

3.2.2 Built sites to development capacity

The sites that have been built to their current capacity (based on the current Scheme) have been highlighted. This exercise determines the limits of zero development in the study area. Generally, the area along the Southbank Promenade has reached its maximum potential yield between the Southgate and Crown Casino developments and back to City Road. While sites such as the South Wharf development and the Exhibition Centre (which have only recently been completed) could still take significantly more development capacity, they have been removed from the capacity study as no further public investment is planned for the site.

The decisions made for which sites constitute development capacity have been based on those recently developed sites over the last 20 years that have met or are within 20% of the height restrictions given in DDO38-43. These include sites under construction.

3.2.3 Short term potential development sites

These sites include vacant or predominantly undeveloped sites (some have planning approval but remain unbuilt) in the study area. As vacant sites they represent those with immediate development opportunity (within 1-3 years) and most likely to achieve the intentions of the Southbank Structure Plan over the short term. These sites include the Boyd Street School, the Kavanagh Street Car Park, and the Lorimer Street Car Park.

3.2.4 Medium/long term potential development sites

These sites have been titled medium/long term development as they have the potential for redevelopment over a 3-30 year term. They are sites with no constraints on them other than land ownership and tenancy agreements. Next to the short term sites they are those most likely to achieve the intentions of the Structure Plan. The figure below incorporates individual heritage buildings which are a small part of a larger block, the buildings have however been removed from the capacity calculations.

A summary of the constrained or at capacity sites along with the remaining available development site areas is incorporated into Table 3.2.1 and illustrated in Figure 3.2.5. The area available for future development in Southbank is 503,000m^2. This includes both short term sites (52,931m^2) and medium-long term sites (449,069m^2).

The sites have been identified without prejudice and assume that all sites are available for development without a heritage overlay or heritage listed building status.

LAND AREA
144,904m^2

or 9%

Fig 3.2.1 Heritage Overlay Diagram (CoM Planning Scheme)

Victorian Heritage listed sites

Sites subject to a heritage overlay

LAND AREA
307,481m²

or 20%

Fig 3.2.2 Sites with Zero Capacity Diagram or of value

Sites at development capacity or of value

LAND AREA
53,931m²

or 3%

Fig 3.2.3 Short Term Potential Development Sites Diagram

Shorts term development sites

LAND AREA
449,069m²

or 29%

Fig 3.2.4 Medium Term Potential Development Sites Diagram

Medium to long term development sites

Area Component	Area	% of Area
Total Road Corridor Area	621, 492	39%
Road Corridor Area	621,492m^2	39%
Heritage Overlays And Buildings	144,904	9%
Built Sites To Capacity	307,481	20%
Development Area With No Capacity	452,385m^2	29%
Short Term Potential Development Sites	53,931	3%
Medium Term Potential Development Sites	449,069	29%
Development Area With Capacity	503,000m^2	32%
Total Southbank Study Area	1,576,877m^2	100%

Table 3.2.1 Development Potential

Figure 3.2.5 Combined Development Potential and Site Identification

0m 1000m

1:15,000 @ a4

Shorts term development sites

Medium to long term development sites

Victorian Heritage listed sites

Sites subject to a heritage overlay

Sites at development capacity or of value

04 Existing Conditions - A Snapshot

The following chapter provides an overview of the existing urban conditions of Southbank across the following areas:

4.1 Performance Overview

4.2 Activity Framework

4.3 Built Form;

4.4 Movement and Access; and

4.5 Open Space Network.

For a full assessment of the existing conditions refer to the Background Report.

4.1 Performance Overview

DWELLINGS
41/HA

People/ha
58
1.3 per dwelling

Dwellings
41/ha

Cars/ha
41

JOBS
252/HA

Jobs/ha

Fig 4.1.1 Perspective: Existing Built form

4.2 Activity Framework

A key finding of the Southbank Plan (DPCD, 2006) and the Background Report was the lack of a perceived 'heart' to Southbank. The current focus of activity is acknowledged as the Southbank Promenade along the edge of the Yarra River. This provides a linear strip of activity that incorporates restaurants, retail, hotels, the Casino, the Entertainment Centre and the new South Wharf complex (including the Melbourne Convention Centre).

While the riverfront is active, vibrant and commercially successful, it does not provide any community services and fails to act as a local 'heart' around which the local residential community can gather.

Many of the existing residents access the local activity centre along Clarendon Street which is outside Southbank. Kings Way provides a significant barrier to accessing this centre. This activity centre is also a considerable walking distance from residents living in the east and north of Southbank.

These two areas of activity are illustrated in figure 4.2.1.

Figure 4.2.1 Existing focus of activity

4.3 Built Form

4.3.1 Building Footprints

The existing built form is illustrated in Figure 4.3.1. A detailed assessment of this built form is incorporated into the Background Report. The key characteristics that need to be highlighted are that:

- There is a predominance of residential and office towers to the northern section of Southbank (this reflects Capital City Zoning planning controls);
- Lower scale development occurs south of City Road;
- Larger building footprints occur to the north-western portion of the site - the Southgate complex, the Melbourne Exhibition Centre and the South Wharf complex. These sites and other new building developments across Southbank are creating a coarser urban grain (characterised by larger building footprints with less diversity of uses) that impedes pedestrian connectivity and the distribution of smaller scale mixed use activity through the suburb; and
- The provision of car parking in the podium of new residential towers is significantly reducing the contribution that the built form provides to the creation of an active, safe and interesting public realm.

Figure 4.3.1 Building Footprints

4.3.2 Edge Condition

The existing built form presents a poor interface to many of the street frontages in Southbank. Figure 4.3.2 illustrates the extent of active, positive and inactive frontages. Only 50% of frontages are either active (17%) or positive (33%).

There is also a significant lack of well-defined public spaces through much of the south-western portion of the suburb. This is due to poor edge conditions, irregular setbacks, expansive road/transit corridors (including CityLink) and poorly fronted green open spaces.

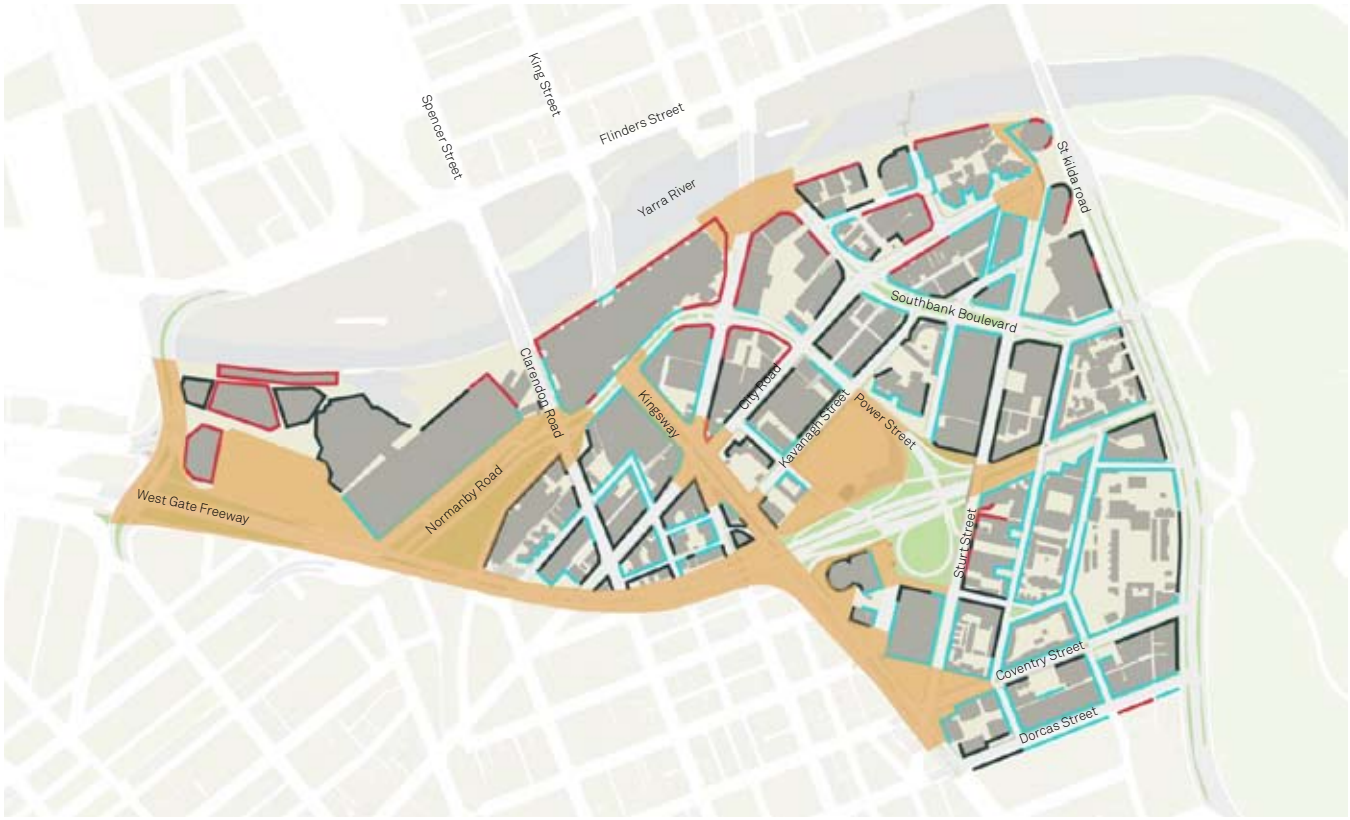


Figure 4.3.2 Built Form Edge Conditions

4.4 Movement & Access

The existing movement and access is illustrated in Figure 4.4.1. A detailed assessment of the issues and opportunities is discussed within the Transport Issues and Options Paper and the Background Report. The key characteristics that need to be highlighted are:

- Despite current policy encouraging walking, cycling and the use of public transport, currently Southbank is dominated by motor vehicles and general traffic.
- Significant barriers to pedestrian and cycling movement include:
  - » Kings Way – The elevated portion of Kings Way (through the casino) establishes a barrier to east-west pedestrian movement.
  - » City Road – High volumes of traffic impede north-south pedestrian movement. This is a significant barrier that disconnects the riverfront front activity from 'spilling' further south into the suburb.
  - » Clarendon Street – High traffic volumes and significant pinch points on the footpaths and potential cycle accessways make Clarendon Street pedestrian unfriendly.
  - » CityLink/West Gate Freeway – the elevated freeway establishes a poor walking/cycling environment that incorporates numerous underpasses to provide at grade connections beneath the freeway infrastructure. The tunnel approach is a significant barrier to north-south pedestrian movements and represents a significant 'hole' in the middle of Southbank.
- Poor built form interfaces create an uninteresting, unfriendly walking environment.

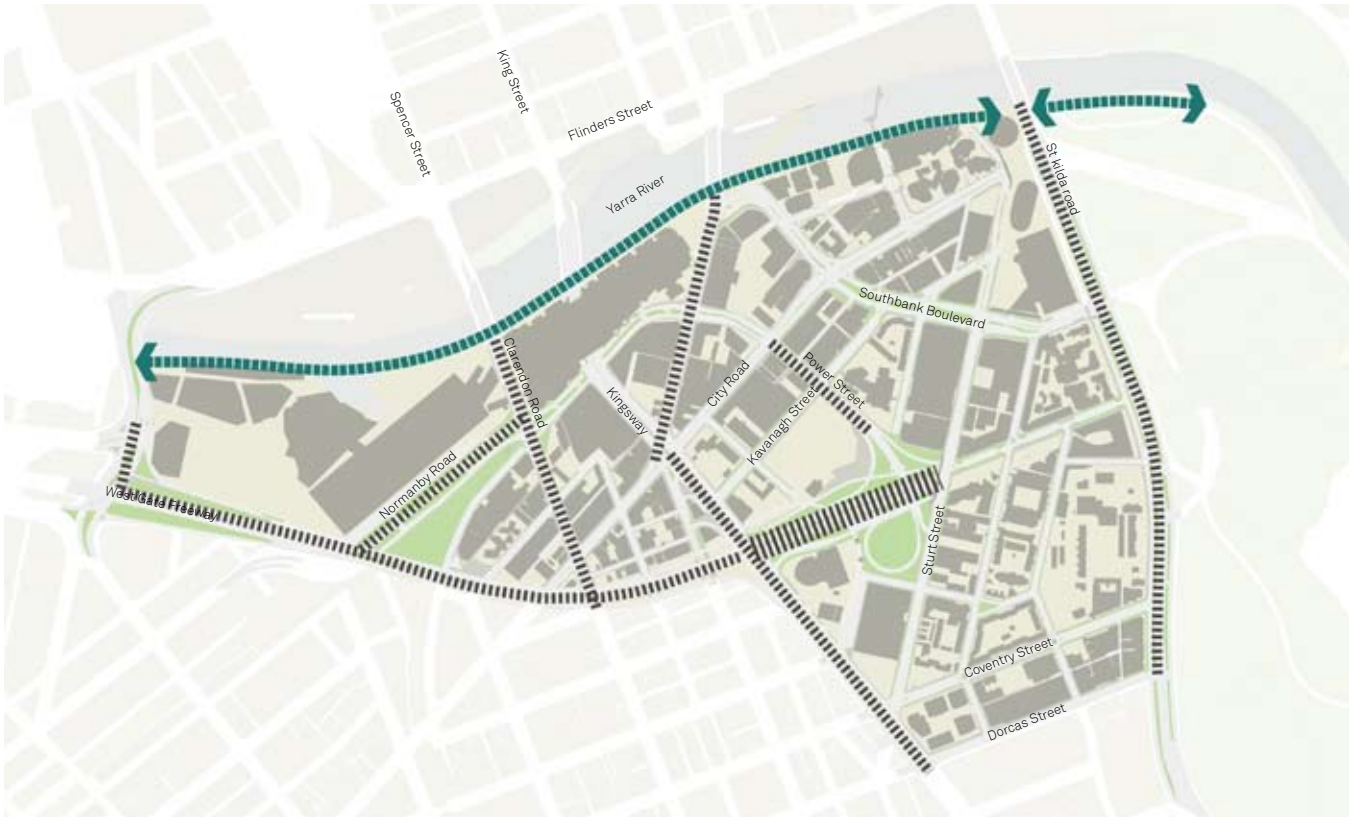


Figure 4.4.1 Revised DDO Controls Based on Emerging Trends

4.5 Open Space Network

The Southbank Plan and the Background Report both identified the lack of green open space in Southbank. While the eastern portion of the site has immediate access to large green open spaces, the need for high quality open spaces elsewhere needs to be addressed. The existing key open spaces are highlighted in figure 4.5.1. These key spaces are:

- Southbank Promenade - a predominantly hard paved, treed walkway that is the primary east-west route for pedestrians and cyclists;
- Arts Forecourt - a predominantly hard paved forecourt area;
- Grant Street Park and the forecourt to the Australian Centre for Contemporary Art (ACCA) - Grant Street is the only dedicated local park in Southbank. It incorporates grassed areas and a play space for local residents;
- Freshwater Place - a predominantly hard paved area that serves primarily as a thoroughfare space along Southbank Promenade;
- The Melbourne Convention and Exhibition Centre Forecourt- housing the Polly Woolside; and
- Whiteman St corridor - a green reserve that acts as a transit corridor for trams.

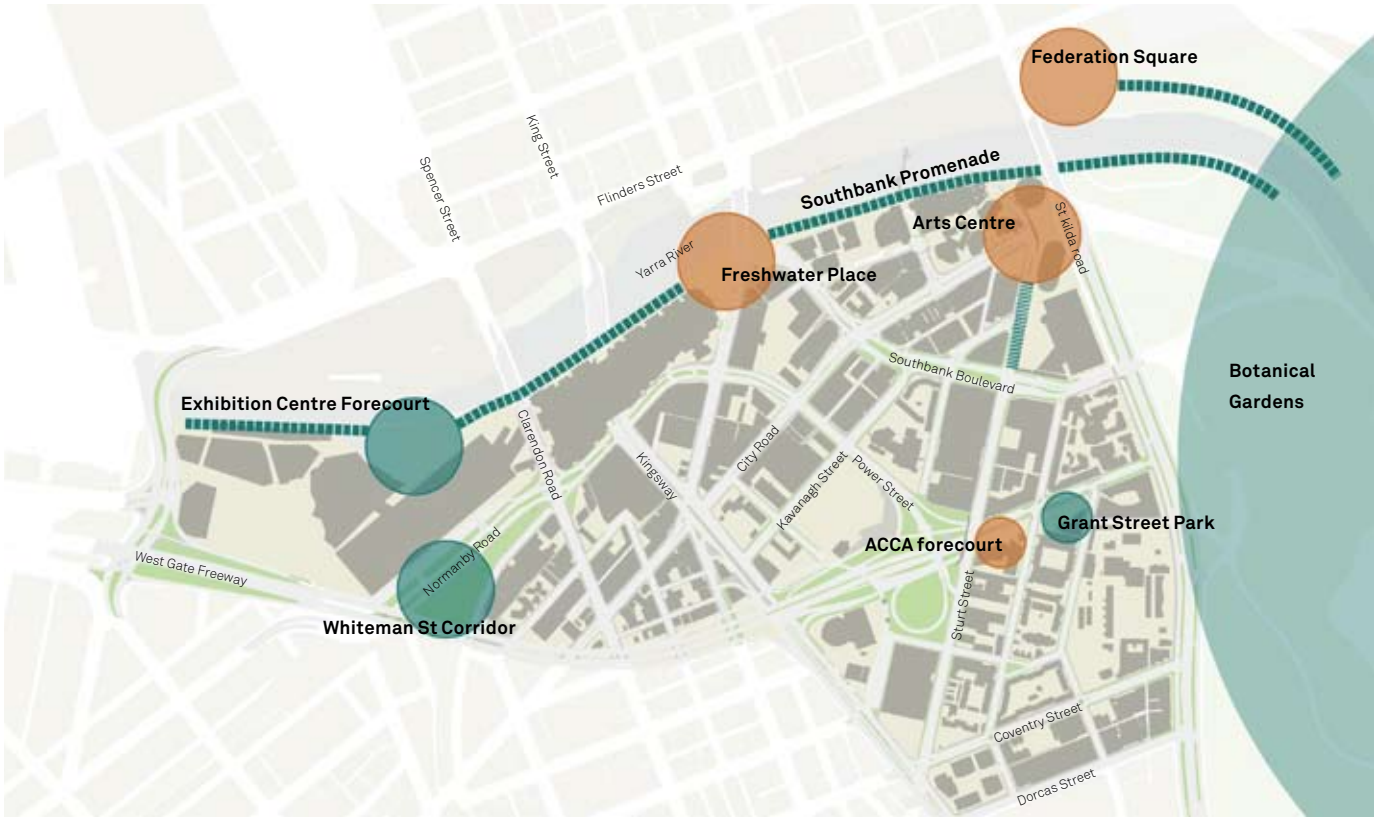


Figure 4.5.1 Open Space Network

Green open space

Urban square

Primary open space network

05 Concept Scenario 01

The first scenario tested the potential future outcomes for Southbank if the current Melbourne Planning Scheme were to continue to apply to the whole of the Southbank area. Developing this scenario enables a clear comparison between what is the current future trajectory for Southbank and the alternative outcomes developed in Scenarios 2 and 3. The key features of Scenario 1 are:

- Activity Focus - No new local 'heart' for Southbank - the existing linear corridor of the river serves as the active 'heart' of Southbank. The retention of the 2:1 Floor Area Ratio (FAR) is kept to limit commercial use;
- Built Form - Retention of existing Planning Guidelines and Design Overlays which determine built form;
- Movement and Access - Minor new pedestrian and cycling connections that focus on repairing existing gaps in the movement network;
- Open Space Network - Adoption of the key initiatives of the Southbank Plan - no other significant new open space; and
- Sustainable Infrastructure - Photovoltaics, a central services hub, treatment of wastewater to Class A and treatment of stormwater within open space (WSUD).

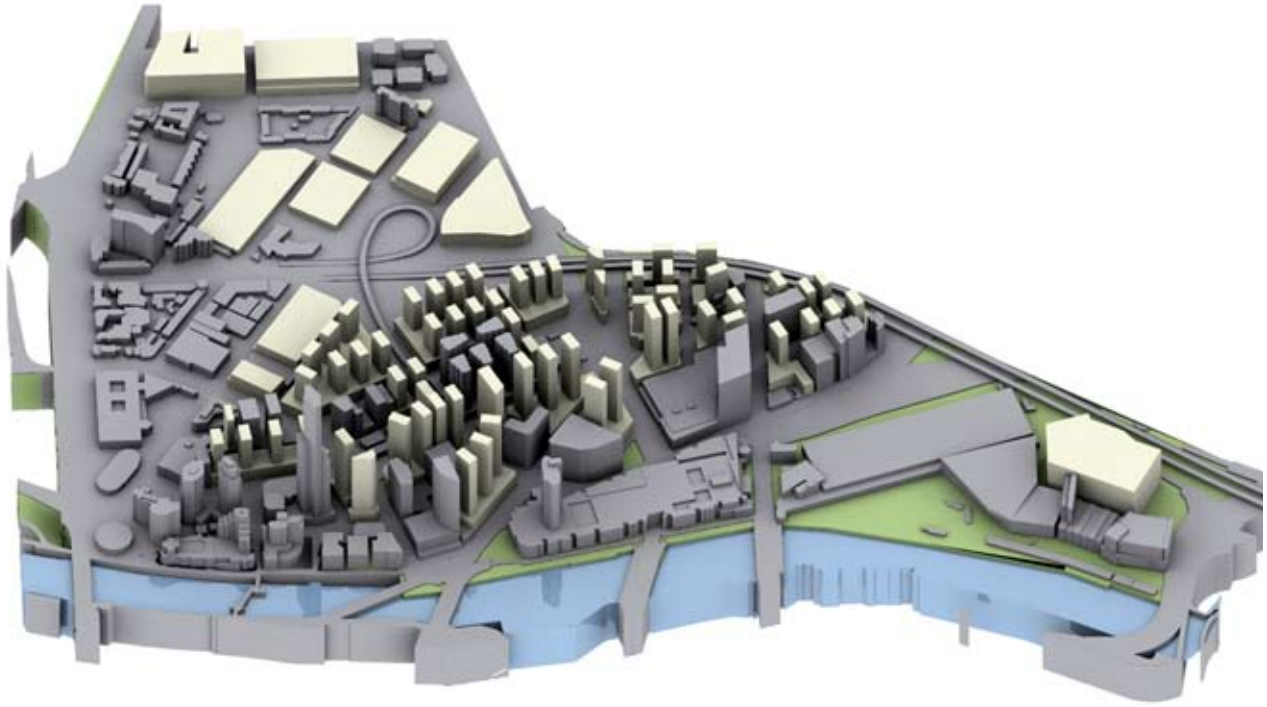
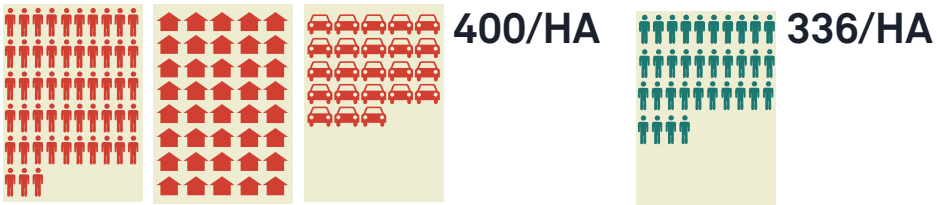


Figure 5.1 Perspective: Proposed Built Form for Scenario 01

5.1 Performance Overview



People/ha
527
1.3 per dwelling

Dwellings
400/ha
41

Cars/ha
226

400/HA

Jobs/ha

336/HA

NEW DWELLINGS

59,210

TOTAL RESIDENTIAL POPULATION

84,440

TOTAL EMPLOYMENT POPULATION

53,790

NEW PEDESTRIAN LINKS

365LM

ECO-CITY PERFORMANCE

Each scenario was tested against the Eco-City targets established in Future Melbourne: Community Plan report (City of Melbourne, 2008). Further detail on the capacity of each scenario to meet these targets is incorporated into Section 8: Assessment.

GREEN HOUSE GAS FAILS

WATER FAILS

WASTE WATER FAILS

OPEN SPACE FAILS

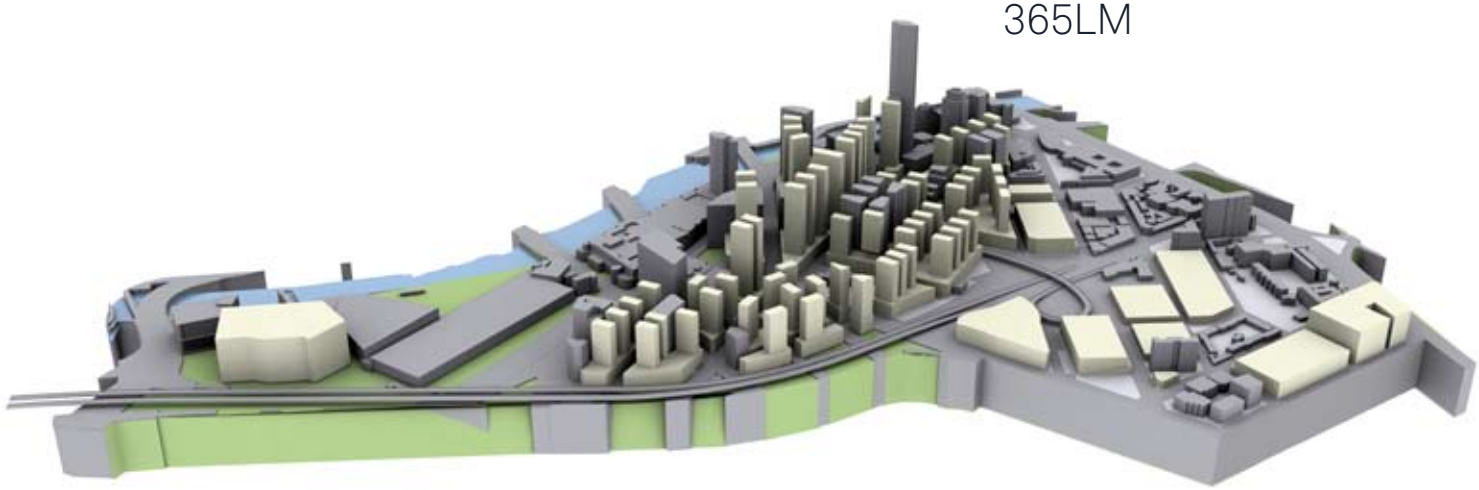


Figure 5.1.1 Perspective: Proposed Built Form for Scenario 1

5.2 Activity Framework

Scenario 1 proposes no significant changes to the existing framework of activity centres/nodes in Southbank. The existing linear corridor along with the Clarendon Street activity centre will continue to provide for the residential, employment and tourist population of Southbank.

These two areas of activity are illustrated in figure 5.2.1.

Figure 5.2.1 Retention of existing activity focal areas

5.3 Built Form

5.3.1 Understanding and Mapping of Existing Development Constraints

Scenario 1 proposes that all new built form continues to develop in accordance with the existing planning controls. The primary overlay applicable to this exercise is the built form controls Design and Development Overlays (DDO) 38-43. In applying these controls to the development sites the future capacity of Southbank can be determined based on the current planning scheme.

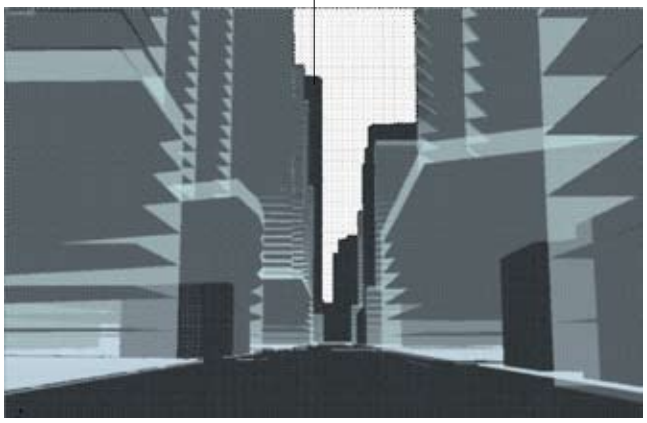


Figure 5.3.1 Perspective: View down City Road (looking east) Illustrating built form outcomes at street level

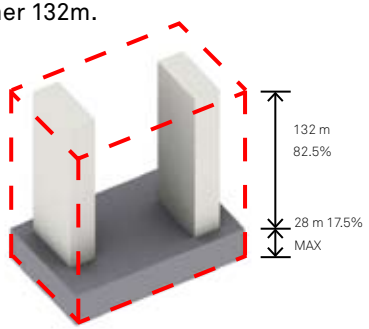
Figure 5.3.2 Proposed Built Form

To determine the built form for Scenario 1, the sites identified for development (Section 3: Capacity Analysis) have been developed according to the following.

Each block in the suburb has been broken down into its DDO control and numbered. As each DDO control contains different maximum height and podium controls, each block contained under each DDO has been applied with a different capacity percentage. The following diagrams describe the capacity percentages applied to the different DDO controls. Each diagram has been given a podium and higher level capacity assumption. 100% is given for the podium as it is assumed that the podium will be built to the extremities of the site. The higher level assumption of 50% is based on a typical urban site providing 50% roof area of the podium given to tower footprint. Such sites as 69-99 Whiteman Street, 171-193 City Road and 12-22 Kavanagh Street.

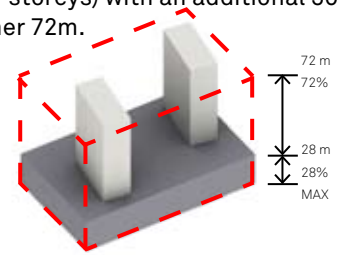
DDO 38

With a maximum height of 160m and 28m podium the maximum potential capacity of these blocks can be determined by applying a 100% capacity to the first 28m (or 7 storeys) with an additional 50% capacity for the higher 132m.



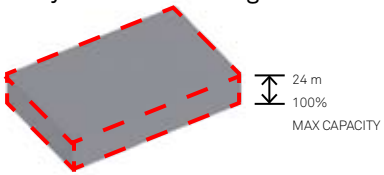
DDO 39

With a maximum height of 100m and 28m podium the maximum potential capacity of these blocks can be determined by applying a 100% capacity to the first 28m (or 7 storeys) with an additional 50% capacity for the higher 72m.



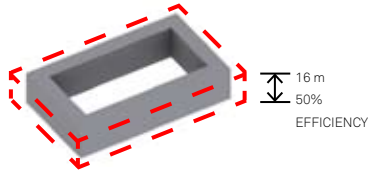
DDO 40

With a maximum height of 24m in the riparian corridor it has been assumed that the site can be developed to 100% capacity for its entire height.



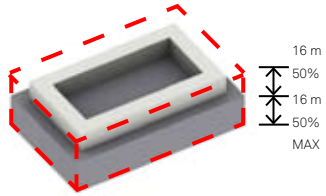
DDO 41

With a maximum height of 16m and most likely residential land use it has been assumed that the site is developed in an urban block configuration with a maximum 50% capacity.



DDO 42

With a maximum height of 32m (or 8 storeys) the maximum potential capacity of these blocks can be determined by applying a 100% capacity to the first 16m (or 4 storeys) with an additional 50% capacity for the higher 16m.



DDO 43

With a maximum height of 60m the maximum potential capacity of these blocks can be determined by applying a 100% capacity to the first 15m (or 4 storeys) with an additional 50% capacity for the higher 45m.

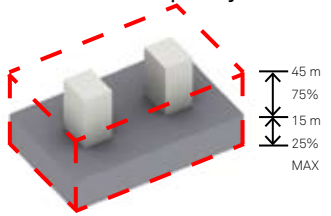


Fig 5.3.3 Current Land Use Zoning
(Melbourne Planning Scheme)

Fig 5.3.4 Current Built Form Controls DDO:38-43
(Melbourne Planning Scheme)

The analysis has determined that given maximum development within planning scheme controls, the future capacity of Southbank is approximately

4,007,577m^2

We have further divided the capacity into both residential and commercial areas. Given current commercial restrictions (DDO 18 in Melbourne Planning Scheme) of 2:1 plot ratios the exercise has assumed maximised commercial components in each block with all other capacity taken up with residential use. The residential areas have been adapted to provide a population capacity based on the 1 person per 65m^2 gross area.

MAXIMUM POSSIBLE NUMBER OF DWELLINGS

35,890

MAXIMUM POSSIBLE POPULATION

48,037

This proposed development does not provide for any community facilities that have been determined to be under-provided in the suburb.

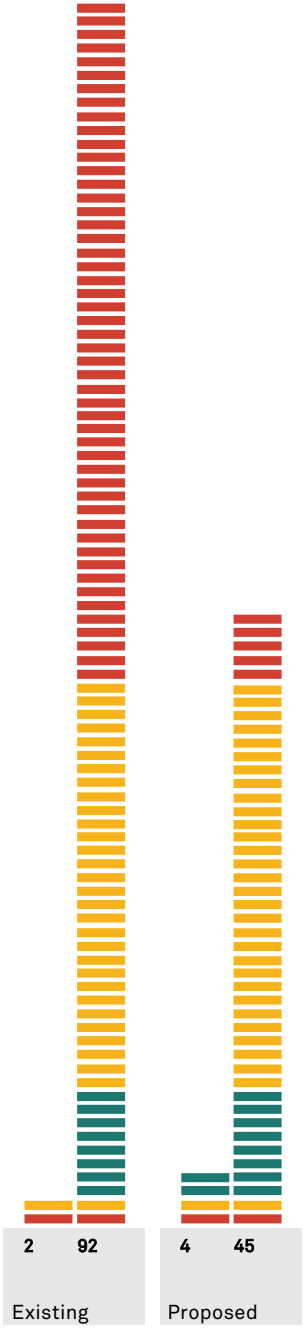


Figure 5.3.5 Existing and Proposed Building Height Limit

5.3.2 Proposed Development based on Emerging Trends

There is an emerging trend in Southbank for new development to exceed the current height limit controls as designated by the above DDOs. This trend was identified in the Background Report: Physical Analysis. The impact of this trend is significant on the future built outcomes for Southbank. If this trend continues the potential development capacity for Southbank will significantly increase beyond what is presented as the built outcome for Scenario 1 in Section 5.3.1 as significantly higher built form outcomes that will eventuate

To test this potential outcome the identified development sites have been remodeled with proposed built form outcomes that reflect these altered planning controls. The following discussion outlines the assumptions made for each revised DDO area.

The area along the riverside and the arts precinct will remain as is currently indicated in DDO 40, at a level of up to 6 storeys. This area is seen as the most sensitive to the character of the Yarra Riverside and any taller building directly adjacent to the water would create an uncomfortable environment.

The Southbank Central Core, DDO 38 only contains a single non-conforming application however this was approved for a greater than 40% increase on the maximum 100m height limit. It has been determined that this control is likely to be further ignored and therefore should combine with DDO 39 for this trends exercise.

The Southbank Central Interface, DDO 39 has been regularly ignored in favour of higher development. On average the height has been exceeded by 20% or around 32m. We have therefore applied the average height increase to the emerging trend to assume a new maximum height of 200m. This will also apply to the area currently covered by DDO 38.

DDO 41, Southbank Village has not been exceeded and therefore its trend is to remain at a 14m height limit. This has to do with the sensitivities surrounding heritage listing of the Victoria Barracks and its setting.

The Sturt Street Corridor, DDO 42 has been significantly exceeded in one instance and partly in one other. As there are generally no heritage or siting constraints it has been assumed that this trend will continue and given its lack of constraint and open views will most likely be exceeded by up to 50% rather than minimally. We suggest that the emerging trend for DDO 42 is for development of up to 12 storeys or 50m.

Finally, Dorcas Street, DDO 43 does not have a height control and therefore could reach any height. It has been considered that due to the precedent set by the Melbournian Building the height could increase to 100m.

The analysis has determined that given maximum development using emerging trends, the future capacity of the Southbank is approximately

4,007,577m²

We have further divided the capacity into both residential and commercial areas. Given current commercial restrictions (DDO 18 in Melbourne Planning Scheme) of 2:1 plot ratios the exercise has assumed all other capacity is taken up with residential use. The residential areas have been adapted to provide a population capacity based on the 1 person per 65m2 gross area.

MAXIMUM POSSIBLE NUMBER OF DWELLINGS

58,805

MAXIMUM POSSIBLE POPULATION

78,708

Figure 5.3.6 Revised DDO Controls Based on Emerging Trends

01
Scenario
Southbank Structure Plan

5.4 Movement and Access

Scenario 1 provides improvements to the movement and access network through the introduction or upgrade of a number of key pedestrian connections. These are illustrated in Figure 5.4.1. These key new connections include the opportunity to provide new public pedestrian linkages through identified development sites

These new connections do not overcome many of the significant barriers to pedestrian movement identified in the existing conditions analysis. They do provide minor enhancements to the network, primarily improving inner-block connections that facilitate greater north-south movement.

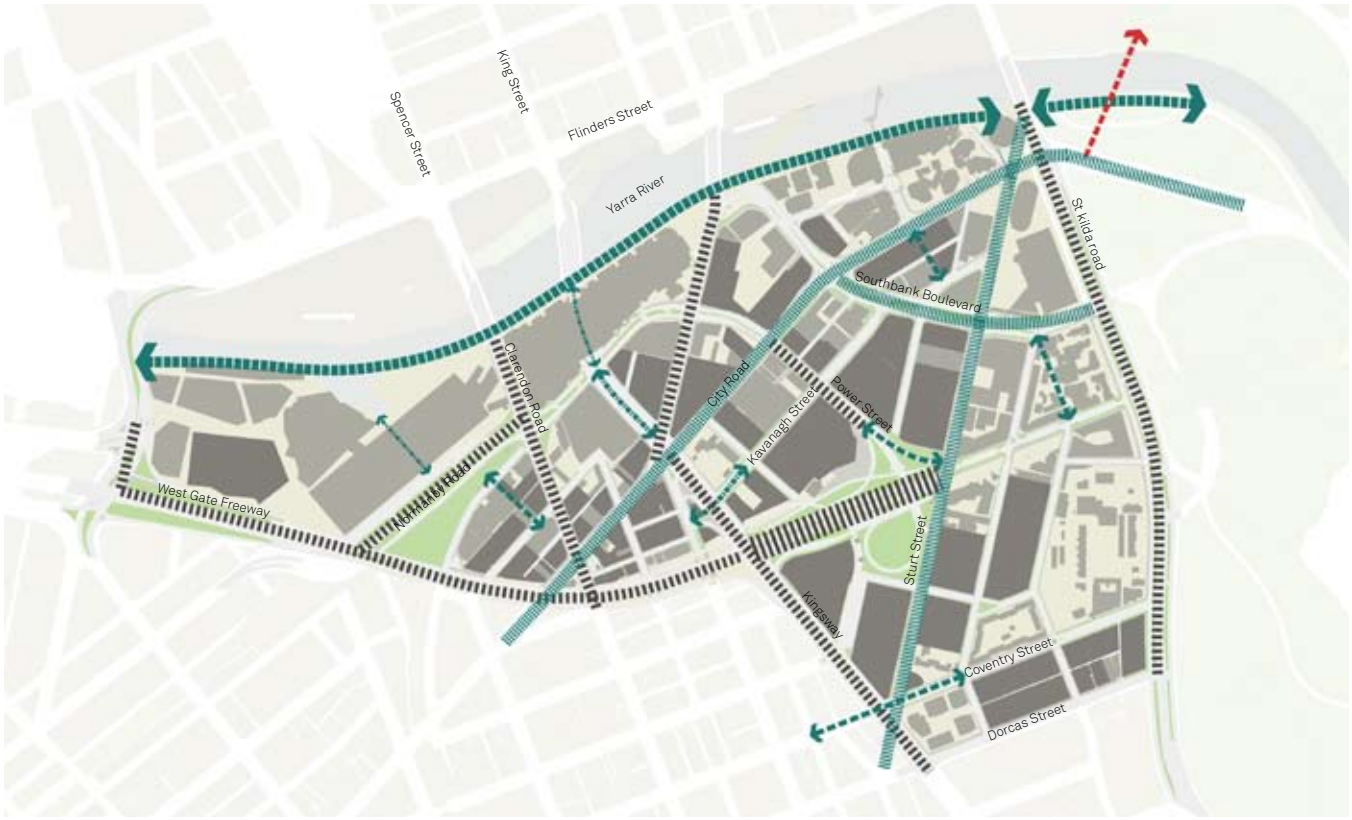


Figure 5.4.1 Proposed Movement and Access

- Existing primary East-West Connection
- Pedestrian Barrier - Minor
- Pedestrian Barrier - Major
- New Pedestrian Bridge
- New Pedestrian Connections (External)
- New Pedestrian Connections (Underpass/Undercroft)

5.5 Open Space Network

The proposed improvements to the Open Space Network are illustrated in Figure 5.5.1. These improvements are in line with the public realm initiatives outlined in the Southbank Plan.

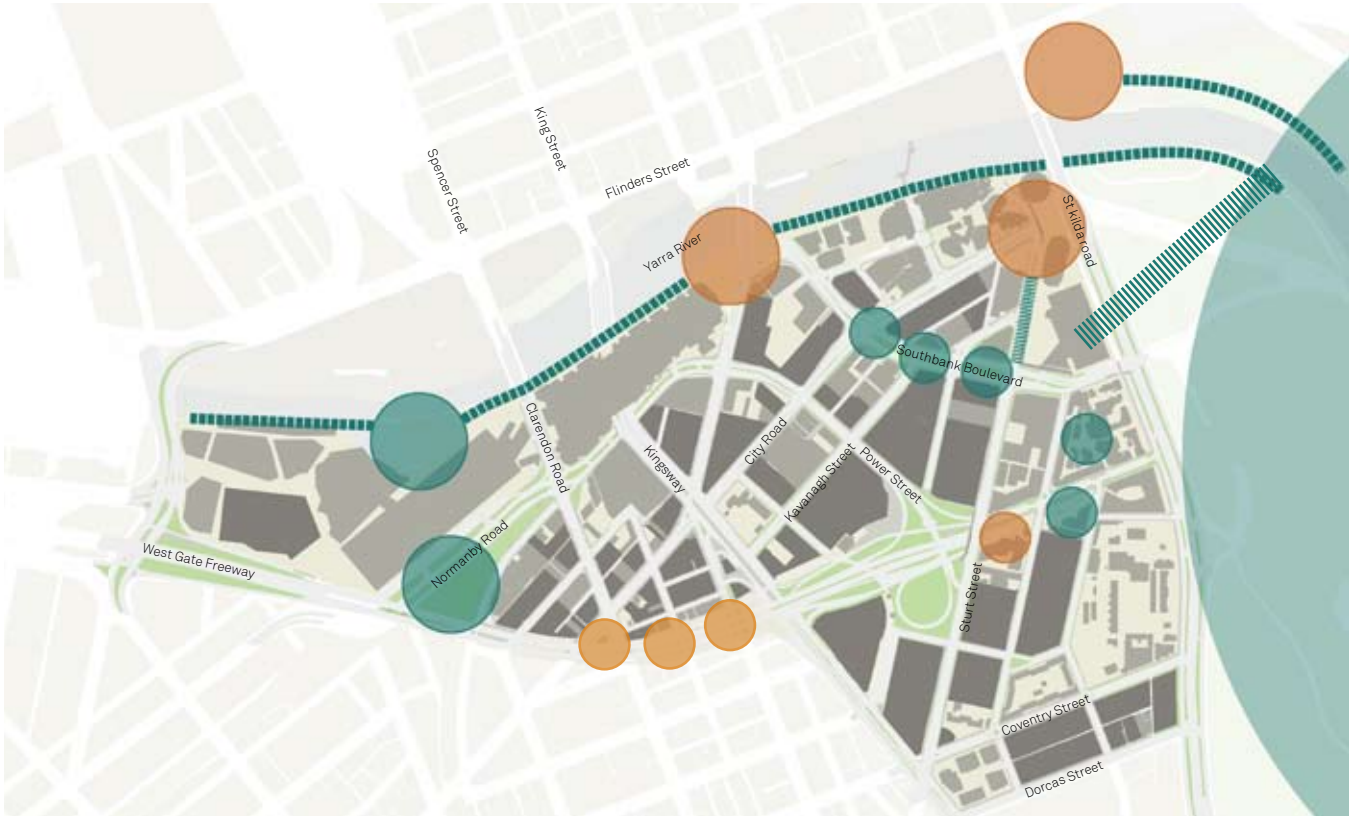


Figure 5.5.1 Proposed Open Space Network

5.6 Sustainable Infrastructure

This scenario presents a possible option to reduce the operational impact within and from the Southbank Precinct.

- Photovoltaics - freeway noise wall, roofs along the promenade
- Central Service Hub (CSH)
- Wastewater to Class A
- Stormwater open space (at WSUD parks)

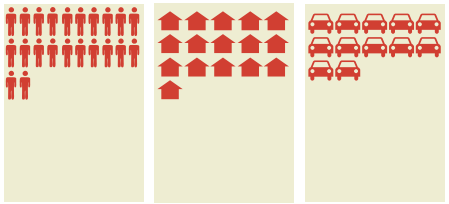
Figure 3.4.1 Proposed Integrated Sustainable Infrastructure Approach

06 Concept Scenario 02

Scenario 2 explores an alternate future for Southbank that delivers a sustainable, residential neighbourhood. The key features of Scenario 2 were:

- Activity Framework – Three new 'local hearts' for Southbank providing neighbourhood-scale centres for the residential community;
- Built Form – Height limit established by applying a fixed ratio between potential building heights and street widths. A ratio of 4:3 (height:width) was tested;
- Movement and Access – Significant pedestrian and cycling connections including a new bridged pedestrian link over CityLink and new pedestrian links that take advantage of possible connections through new development sites.
- Open Space Network – Adoption of key initiatives of the Southbank Plan plus the introduction of a more distributed and expansive green public open space network.
- Sustainable Infrastructure – A distributed hub approach.

Figure 6.1 Perspective: Proposed Built Form for Scenario 02



People/ha
218
1.3 per dwelling

Dwellings
168/ha

Cars/ha
116

168/HA

Jobs/ha

336/HA

NEW DWELLINGS

14,940

TOTAL RESIDENTIAL POPULATION

34,982

TOTAL EMPLOYMENT POPULATION

55,420

NEW PEDESTRIAN LINKS

2285LM

ECO-CITY PERFORMANCE

GREEN HOUSE GAS PASS

WATER PASS

WASTE WATER FAILS

OPEN SPACE PASS

Figure 6.1.1 Perspective: Proposed Built Form for Scenario 02

6.2 Activity Framework

Three new activity centres are proposed. The locations of these are illustrated in Figure 6.2.1. These have been located to provide the convenience and community offered by such centres within a 500m walk of the potential residential population. It is anticipated that those residents and employees on the west side of Kings Way will continue to access the Clarendon Street activity centre.

The proposed activity hub located at the corner of Southbank Boulevard and Sturt Street (Location 01) will be a major activity centre. This will provide a strategic connection between the linear waterfront activity and the existing Arts precinct primarily focused along St Kilda Road and Sturt Street. It will provide services for both the local community and the regional catchment drawn to these regional attractors.

The new activity centres at locations 02 and 03 are proposed neighbourhood centres. Location 02 is co-located with the Boyd Community Centre while Location 03 takes advantage of the existing pocket park on Dodds and Miles Streets.

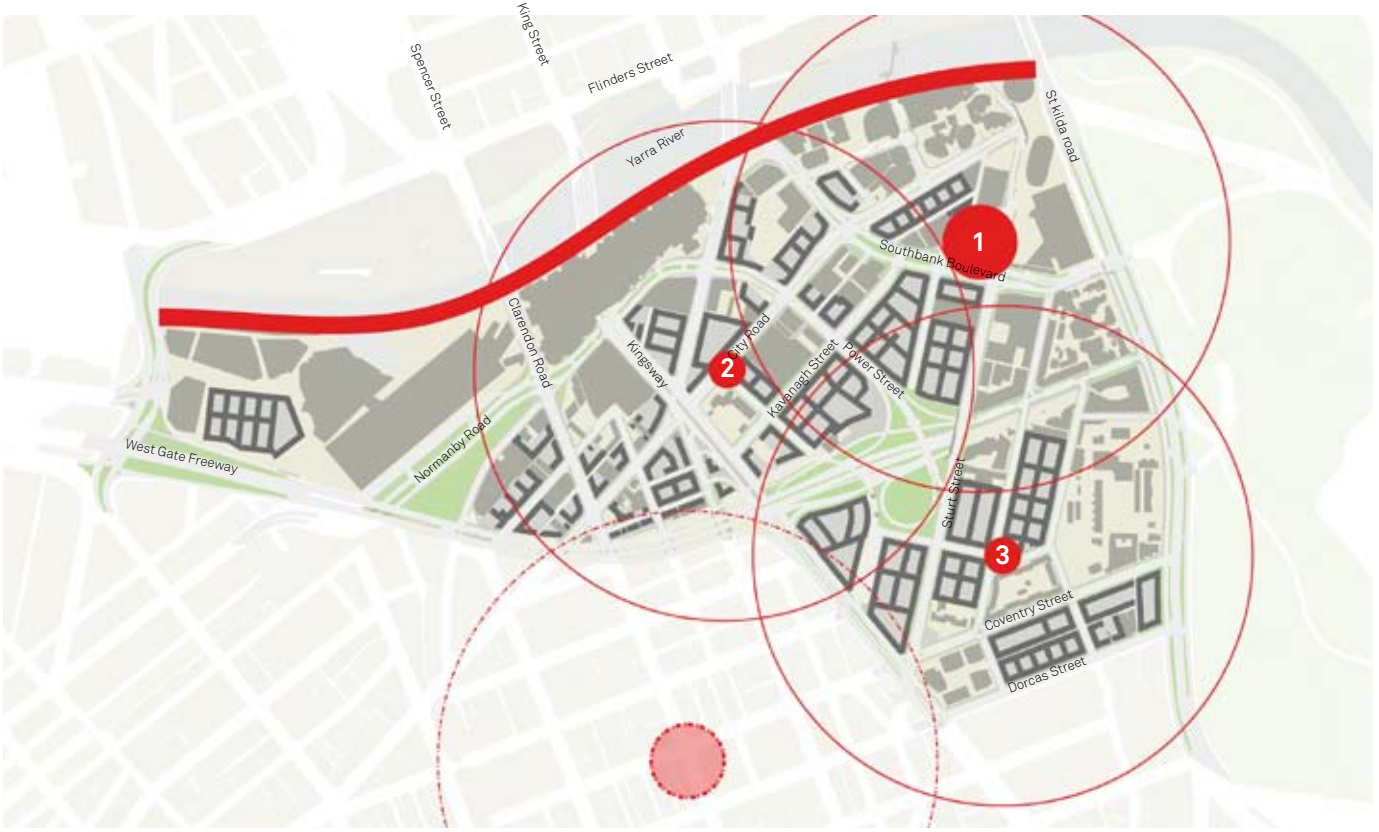


Figure 6.2.1 Activity Framework

6.3 Built Form

The built form proposal for Scenario 2 explores the introduction of new height limit controls based on street proportion ratios. A ratio of 4:3 (building height:street width) determines the new proposed height limits. For example, a 30m road reserve would indicate a height limit on interfacing sites of 40m. The introduction of this new built form control onto the development sites identified in Section 3 is illustrated in Figure 6.3.1. In order to illustrate a potential development outcome according to this built form control additional ESD principles have been applied to develop the built form outcomes as illustrated in Figure 6.3.5. This indicates a maximum building depth of 12m at the upper residential levels (it is assumed that all levels above ground floor are residential use). A minimum courtyard depth between residential buildings has been established as 20m.

Indicative precedent examples that provide an understanding of the potential character of this form of development is provided in Figure 6.3.6.

The development of all potential development sites identified in Section 3: Capacity Analysis provides the opportunity to significantly improve the quality of the public realm in Southbank by insisting on active or positive frontages to all new development sites. This is illustrated in Figure 6.3.3

Figure 6.3.1 Proposed Built Form

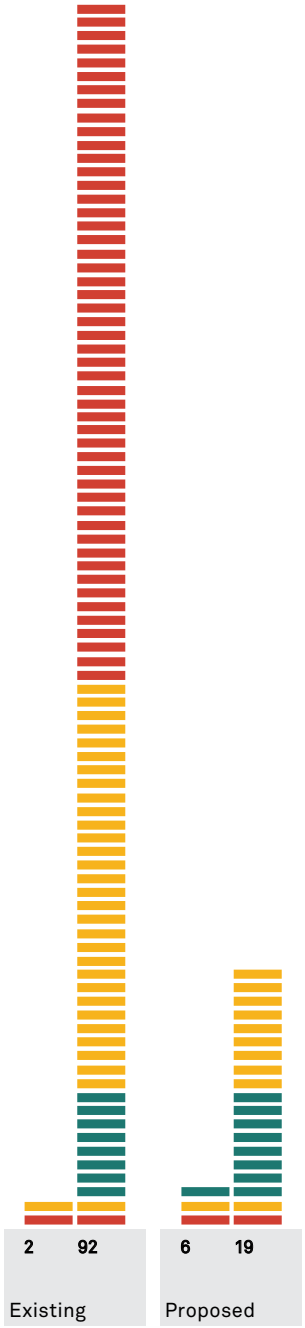


Figure 6.3.2 Existing and Proposed Building Height Limit

Figure 6.3.3 Proposed Increase of Active Frontage

- Active frontage
- Positive Frontage
- Inactive frontage

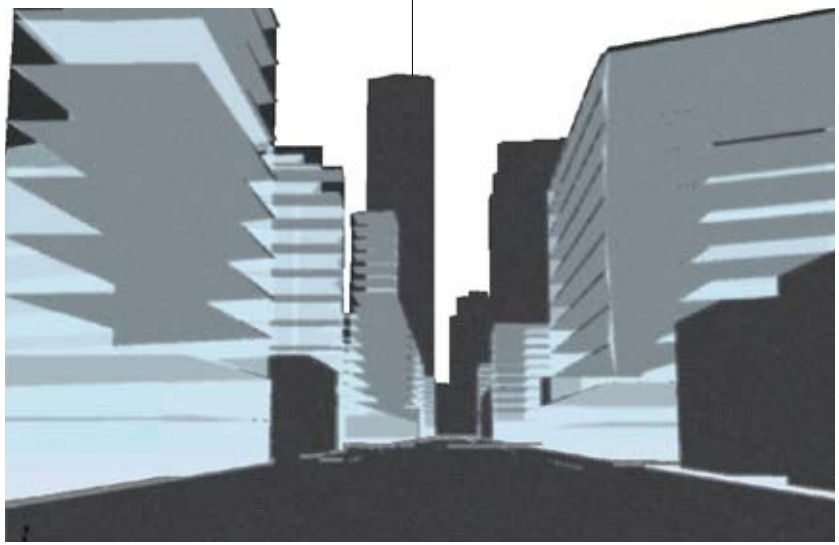


Figure 6.3.4 Perspective of City Road looking east

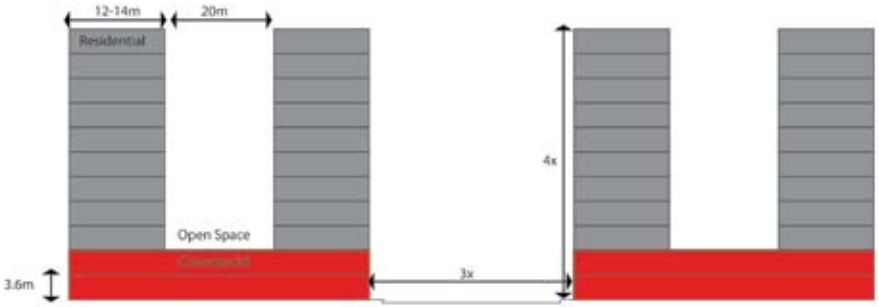


Figure 6.3.5 Section: Determinants of Built Form Outcomes

Figure 6.3.6 Examples of Potential Building Types

6.4 Movement and Access

Scenario 2 proposes significant improvements to the pedestrian and cycling movement network. This network is illustrated in Figure 6.4.1.

Importantly, Scenario 2 provides a key linkage over the CityLink void that currently divides Southbank. It is proposed that this would be a pedestrian bridge that would connect Balston Street to Miles Street. This link would provide a key connection between the two proposed neighbourhood activity centres.

Similarly to Scenario 1, this proposal also recommends the implementation of the connectivity improvements identified by the Southbank Plan and a number of new key linkages through existing public sites (eg. The VCA site and potentially the Victoria Barracks site) and through the provision of new public links through proposed development sites.

Figure 6.4.1 Movement and Access

0m 1000m

1:15,000 @ a4

- Existing primary East-West Connection
- Proposed New Primary Pedestrian Network
- Pedestrian Barrier - Minor
- Pedestrian Barrier - Major
- New Pedestrian Bridge
- New/enhanced Pedestrian Connections
- New Pedestrian Connections (Underpass/Undercroft/Internal Buildings))

Scenario 2 incorporates the adoption of key initiatives of the Southbank Plan plus the introduction of a more distributed and expansive green public open space network. This takes advantage of existing open spaces not currently designed for broad public use (including the central courtyard within the VCA, the proposed open spaces associated with the Boyd Street site redevelopment and the central open space within the existing Victoria Barracks). Additional neighborhood parks are provided at key intersections.

A potential land swap is proposed for the Fosters Building site currently located on Southbank Boulevard. This site is in a strategic position within the proposed open space network suggested by the Southbank Plan. The proposed Sturt Street extension and the Southbank Boulevard linear parkway could be better connected by converting this site into an open parkland. This is co-located with the neighbourhood centre proposed for the this intersection. It is possible that this could be progressed through a land swap with the park currently located on the intersection of Kings Way and Sturt Street. This park is in a poor location – it is not fronted by activity and is highly exposed to the noise and perceived dangers of the traffic on Kings Way.

Figure 6.5.1 Proposed Open Space Network

Green Open Space

Urban Square

Primary Open Space Network

6.6 Urban Framework Plan

Figure 6.5.1 illustrates the proposed urban framework outcome that integrates the activity hub, built form, movement and access and open space network proposals for Scenario 02.

Figure 6.5.1 Proposed Urban Framework Plan

6.7 Sustainable Infrastructure

This scenario presents a possible option to reduce the operational impact within and from the Southbank Precinct.

- Distributed Service Hub (DSH);
- Photovoltaics - freeway noise wall, roofs along the promenade, roofs new residential buildings;
- Micro wind turbines;
- Bio-digesters;
- Yarra River to potable water
- Distributed stormwater harvesting (at WSUD parks);
- Rainwater tanks (buildings scale); and
- Gardens in private open space.

Figure 6.7.1 Proposed Integrated Sustainable Infrastructure Approach

07 Concept Scenario 3

Scenario 3 explored an alternative future for Southbank that gave priority to a more intensified mixed use development outcome as an extension of the central city. Key features of Scenario 3 were:

- Activity Framework – One central activity centre that services the whole Southbank population;
- Built Form – New built form guidelines that establish built envelope controls for private lots. These controls were developed by establishing performance criteria based on achieving a minimum degree of solar access to all residential floors. An increase in commercial use to a 3:1 FAR allowance;
- Movement and Access – Decking of the existing CityLink tunnel approach to reconnect the northern and southern halves of Southbank. This provided the opportunity for significant improvements to the connectivity and permeability through the area;
- Open Space Network – Adoption of key initiatives of the Southbank Plan plus the introduction of a large central park and a more distributed and expansive green public open space network.
- Sustainable Infrastructure – A central hub approach.

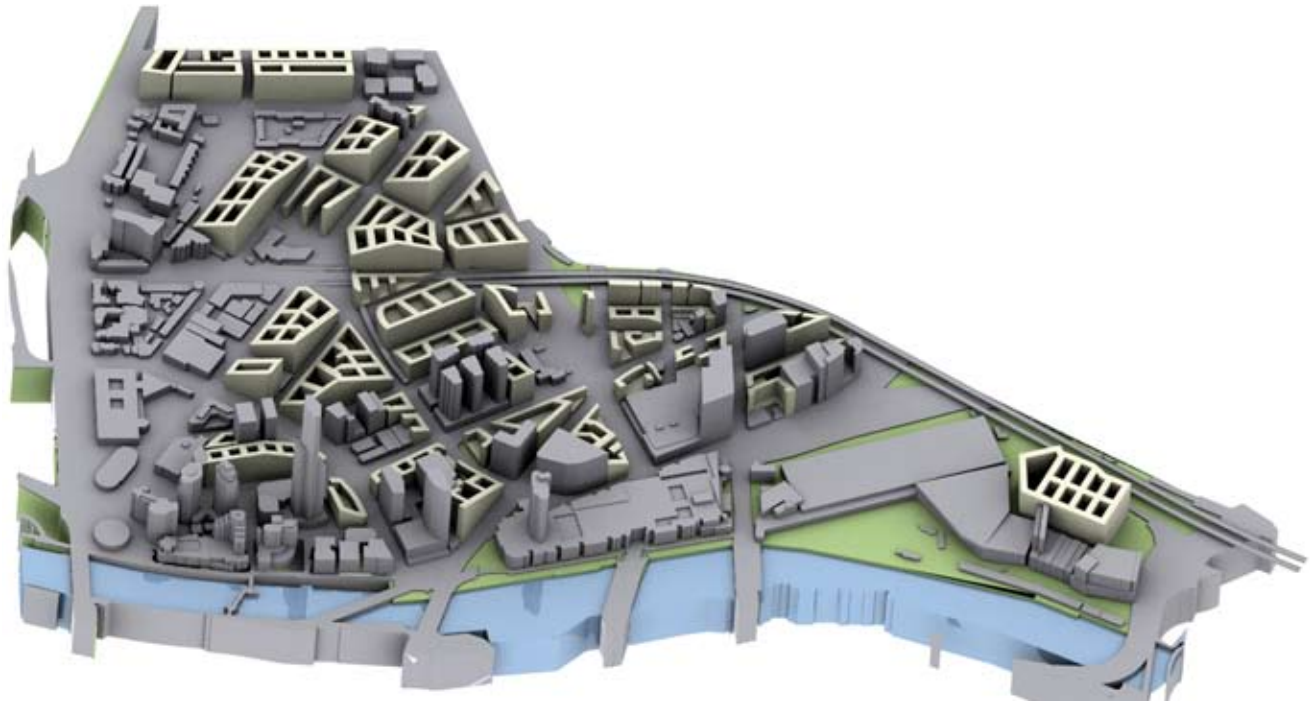
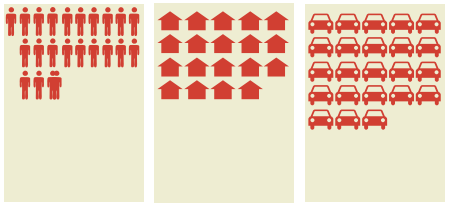


Figure 7.1 Perspective: Proposed Built Form for Scenario 03



People/ha
240
1.3 per dwelling

Dwellings
185/ha

Cars/ha
133

185/HA

Jobs/ha

389/HA

NEW DWELLINGS

23,260

TOTAL RESIDENTIAL POPULATION

38,630

TOTAL EMPLOYMENT POPULATION

62,340

NEW PEDESTRIAN LINKS

2640LM

ECO-CITY PERFORMANCE

GHG PASS

WATER PASS

WASTE WATER FAILS

OPEN SPACE PASS

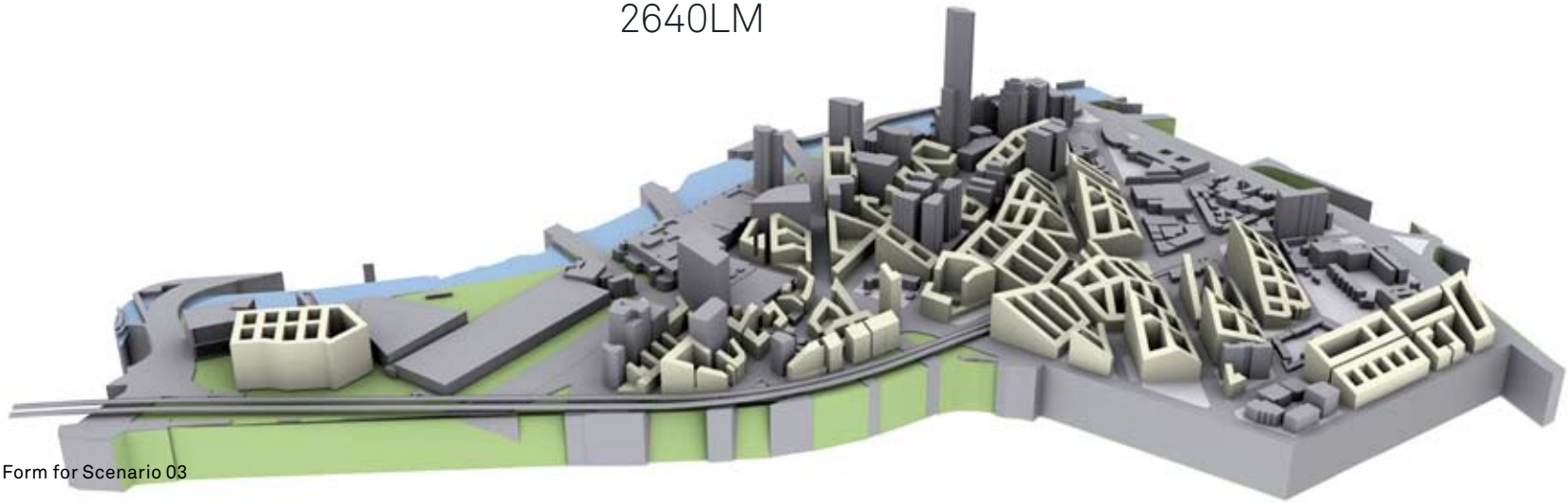


Figure 7.1.1 Perspective: Proposed Built Form for Scenario 03

7.2 Activity Framework

One central activity centre is proposed over the current 'void' within the centre of the suburb where the West Gate Freeway transitions into the Burnley Tunnel. A significant level of development will be required to offset the cost of decking over the existing tunnel entrance roadway. Locating the new centre in this location effectively 'stitches' Southbank back together and provides a new heart for the suburb that is co-located with the Sturt Street spine. This location is within a 10 minute walk from most locations within Southbank.

Figure 7.2.1 Activity Framework

Active river frontage

Existing activity hub (outside study area)

Principal activity centre

7.3 Built Form

The built form proposal for Scenario 3 explores the introduction of new building envelope controls to determine future building heights and form. Solar access into upper residential floors for a minimum of 4 hours at the Winter Equinox was the determining factor used to establish this potential built form. This resulted in a new height limit range in the order of 6-36 floors (as illustrated in Figure 7.3.2) that varies across each lot and across the site in response to different block depths and street widths.

In order to illustrate a potential development outcome according to this built form control additional ESD principles have been applied to develop the built form outcomes illustrated in Figure 7.3.5. This indicates a maximum building depth of 12m at the upper residential levels (it is assumed that all levels above ground floor are residential use). A minimum courtyard depth between residential buildings has been established as 20m.

Indicative precedent examples that provide an understanding of the potential character of this form of development is provided in Figure 7.3.6.

The development of all potential development sites identified in Section 3: Capacity Analysis provides the opportunity to significantly improve the quality of the public realm in Southbank by insisting on active or positive frontages to all new development sites. This is illustrated in Figure 7.3.3.

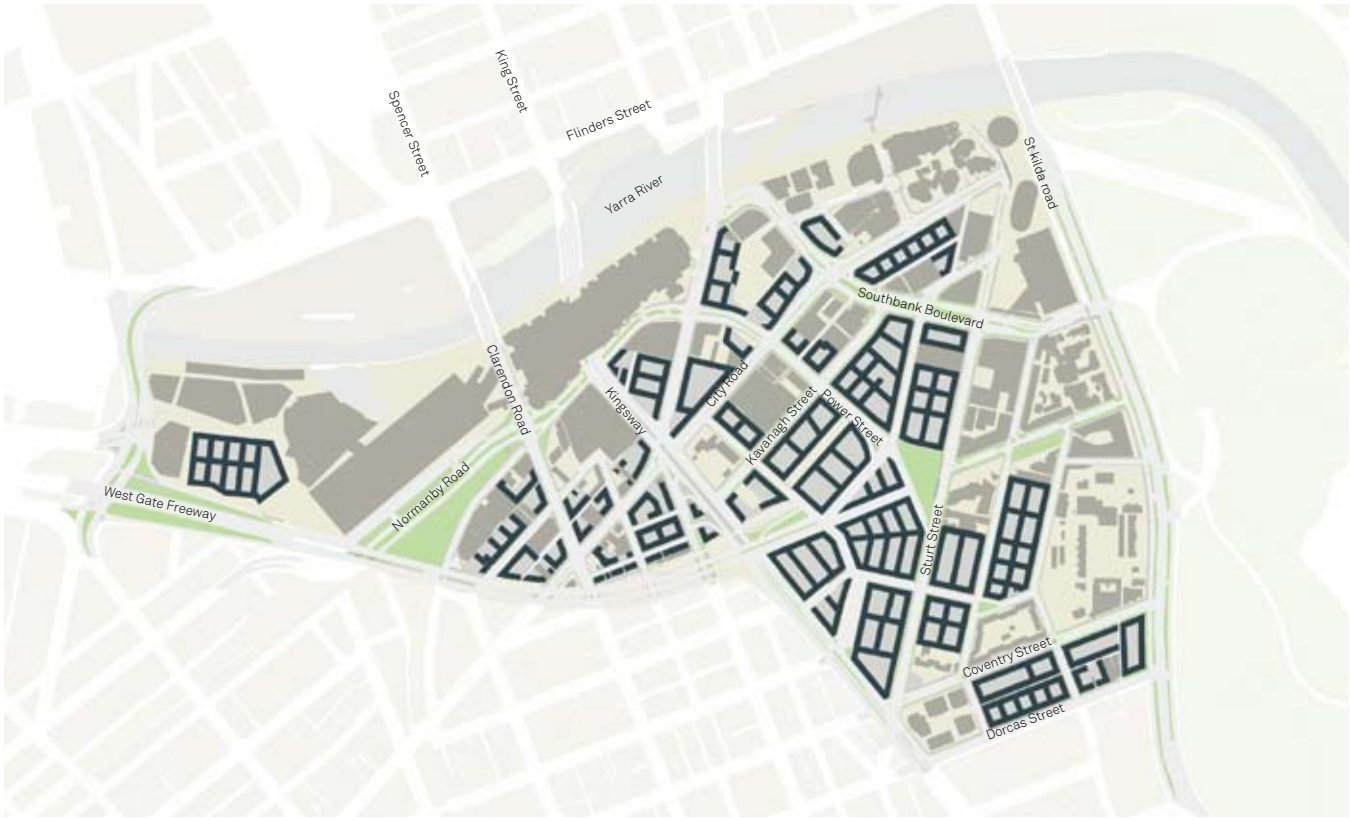


Figure 7.3.1 Proposed New Building's Footprints

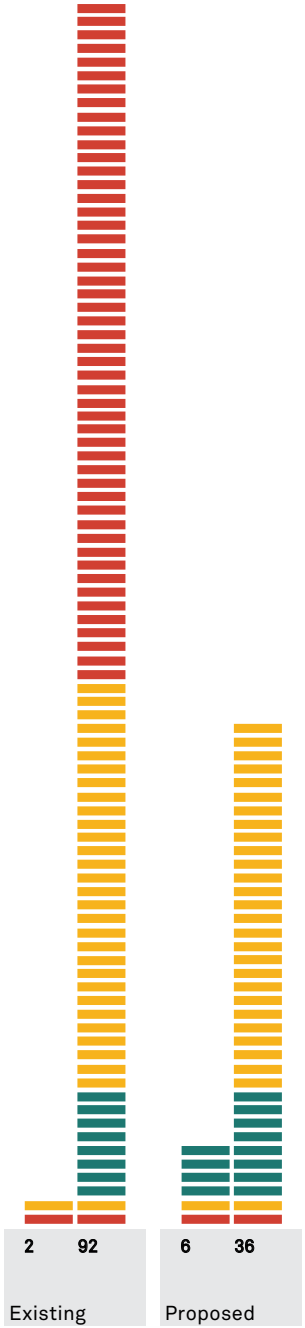


Figure 7.3.2 Existing and Proposed Building Height Limit

Figure 7.3.3 Proposed Increase of Active Frontage

- Active frontage
- Positive Frontage
- Inactive frontage

0m 1000m

1:15,000 @ a4

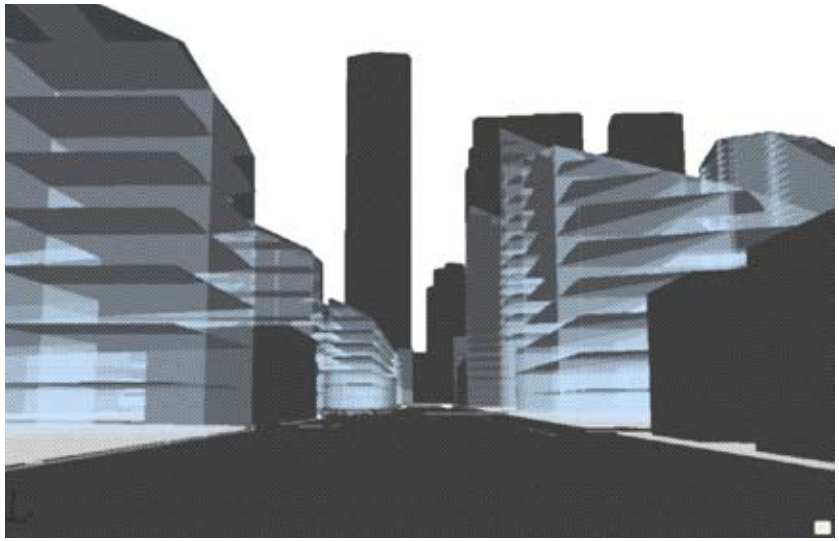


Figure 7.3.4 Perspective of City Road

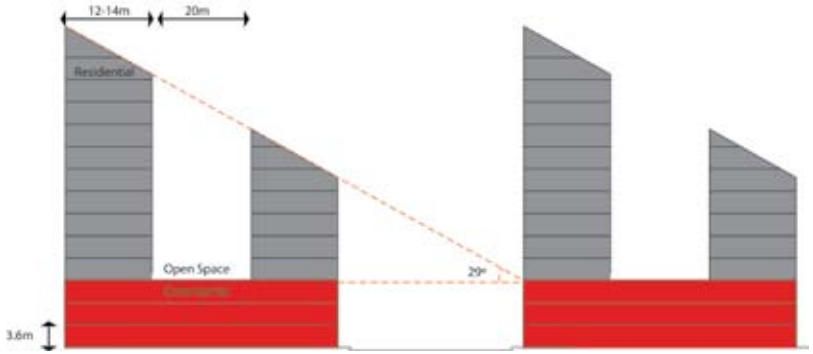


Figure 7.3.5 Section: Building Height derived from solar access

Figure 7.3.6 Examples of Potential Building Types

7.4 Movement and Access

Scenario 3 proposes significant improvements to the pedestrian and cycling movement network. This network is illustrated in Figure 7.4.1. Decking over the Burnley Tunnel entranceway provides an opportunity to significantly improve the permeability for pedestrian and cycling movement across the site. The central hub location could also contain a connection to the new metro station reinforcing its role as a central activity centre within the site.

Similarly to Scenario 1, this proposal also recommends the implementation of the connectivity improvements identified by the Southbank Plan and a number of new key linkages through existing public sites (eg. The VCA site and potentially the Victoria Barracks site) and through the provision of new public links through proposed development sites.

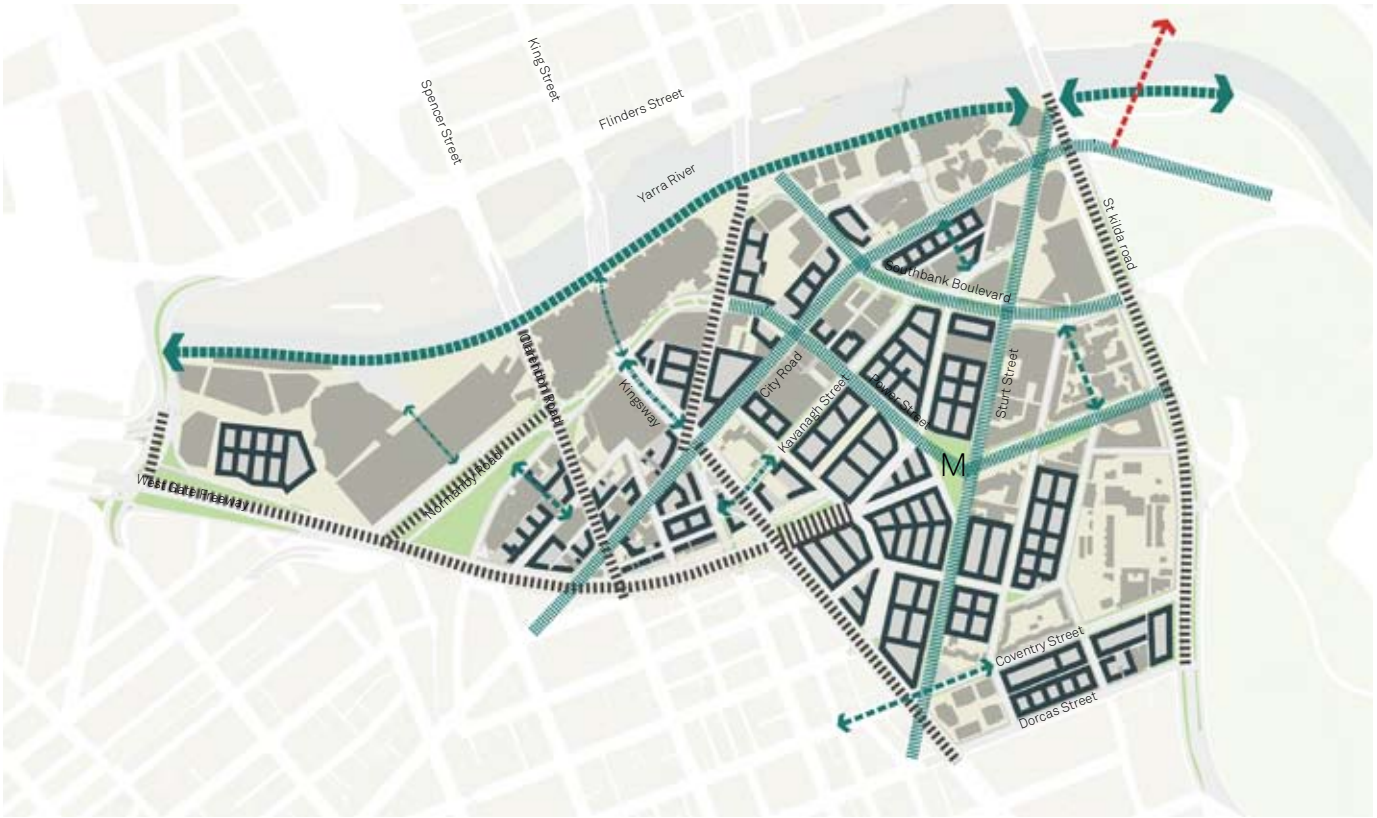


Figure 7.4.1 Movement and Access

- Existing primary East-West Connection
- Proposed New Primary Pedestrian Network
- Pedestrian Barrier - Minor
- Pedestrian Barrier - Major
- New Pedestrian Bridge
- New/enhanced Pedestrian Connections
- New Pedestrian Connections (Underpass/Undercroft/Internal Buildings))

7.5 Open Space

Scenario 3 incorporates the adoption of key initiatives of the Southbank Plan plus the introduction of a new central park and a more distributed and expansive green public open space network. Similarly to Scenario 2, this takes advantage of existing open spaces not currently designed for broad public use (including the central courtyard within the VCA, the proposed open spaces associated with the Boyd Street site redevelopment and the central open space within the existing Victoria Barracks). Additional neighborhood parks are provided at key intersections.

A new central park is located within the proposed new hub of the suburb.

These initiatives are illustrated in Figure 7.5.1.

Figure 7.5.1 Open Space Network

7.6 Urban Framework Plan

Figure 7.6.1 illustrates the proposed urban framework outcome that integrates the activity hub, built form, movement and access and open space network proposals for Scenario 03.

7.7 Sustainable Infrastructure

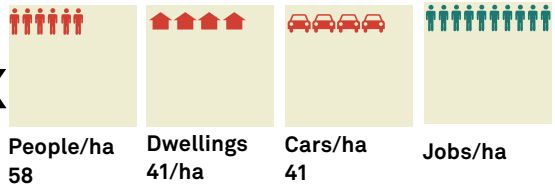
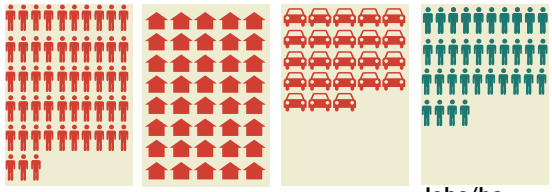
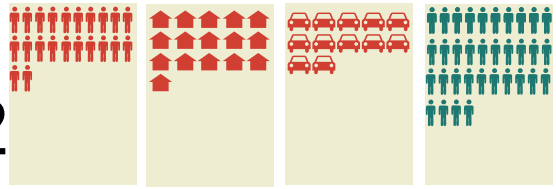
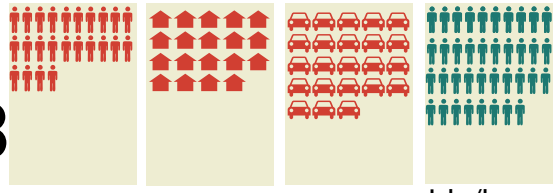
This scenario presents a possible option to reduce the operational impact within and from the Southbank Precinct.

- Central Service Hub (CSH)
- Photovoltaics - freeway noise wall, roofs along the promenade, façade of new residential buildings
- Micro wind turbines
- Fuel Cells
- Bio-digester - resource hub
- E2G electricity to the grid - resource hub
- Yarra RO to potable - resource hub
- Wastewater to Class A
- Distributed stormwater harvesting (Yarra to potable and at WSUD parks)
- Gardens on roofs and private open space

Figure 3.4.1 Revised DDO Controls Based on Emerging Trends

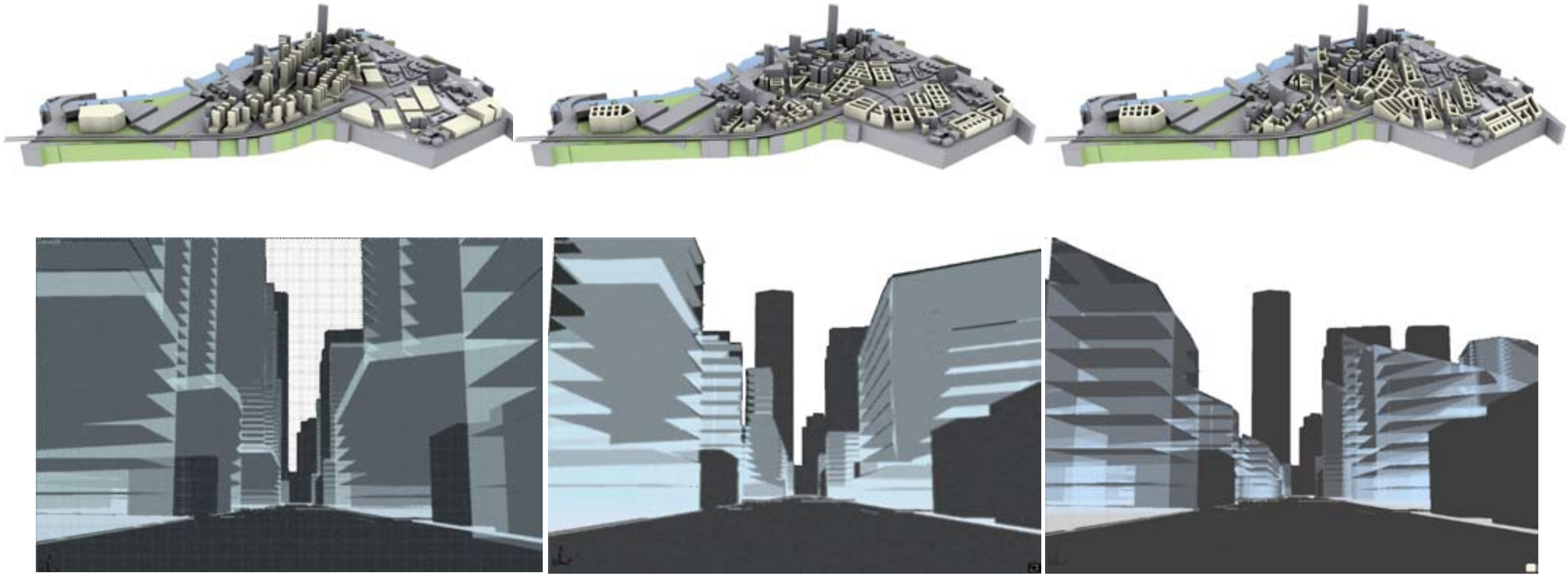
08 Assessment

8.1 Concept Scenarios Performance Overview

		DWELLINGS	JOBS	NEW DWELLINGS	TOTAL RESIDENTIAL POPULATION	TOTAL EMPLOYMENT POPULATION
Ex		41/ha	252/ha		10,504	37,944
01		400/ha	336/ha	59,210	84,440	55,420
02		168/ha	336/ha	14,940	34,982	55,420
03		185/ha	389/ha	23,260	38,630	62,340

8.1 Concept Scenarios Built Form Overview

Figure 8.1.1 A comparison of the built form outcomes for each scenario.



8.2 Planning Assessment

An broad overview of the implications of each scenario option in relation to the delivery of the Planning Scheme is outlined below. In general, the more fundamental the change, the more "interesting" the process will be and there will be a greater the number of stakeholders who will share that interest.

General issues for all scenarios:

- Key Stakeholder input/support - ensuring that the stakeholders who are impacted by the proposed changes are carefully consultated.
- Consistency of decisions particularly in regard to a prescriptive versus performance based approach. This consistency needs to be delivered via all responsible authorities including Council, DPCD, Minister and VCAT.

Scenario 1

Overview

- Proposes minor/modest overall change to planning controls.
- Potential major localised change/conflict regarding realignment of roads/creation of pedestrian connections across private land

Complexity

- Overall modest, localised complexity is high

Policy Approach

- Review/refinement with a focus on accessibility/urban design/public space outcomes

Zones

- Limited use of zones to change land uses - reserving land for parkland, road widening

Overlays

- Use/extension of existing or new overlays (such as the Weather Protection Overlay – Capital City zone) which improve/support pedestrian amenity/accessibility to deliver minor improvements.

Scenario 2

Overview:

- Fundamental change to planning controls.

Complexity:

- High

Policy Approach:

- Identify overall vision, strategic direction for particular land precincts (i.e. River/Tourism, Arts, Major Roads, Residential)
- "Commercial" nodes require particular definition and direction given proximity to River and central city – likely 2 x Neighbourhood Activity Centres and 1 x Major/ Neighbourhood/Specialised Activity Centre (Arts Precinct)

Zones

Revision/"new" to guide new land use directions. Use of schedules. Horizontal zonings may need to be explored.

Overlays

Revision/"new" to implement new approaches to building heights and forms, as well as more minor changes outlined in Scenario 1.

Potential second round of strategic plans – Urban design frameworks, parking precinct plans required.

Scenario 3

- As per Scenario 2 with 1 x Major/Neighbourhood/ Specialised Activity Centre
- Approach to building form/height "uncharted water" and could provide complexity in implementing the changes to the planning scheme and then in the consistent delivery of the proposed recommendations.

8.3 Criteria Assessment

A summary of how each scenario performed against the criteria outlined in Section 2 is illustrated in the following tables.

In general Scenarios 2 and 3 performed well against all criteria. Many of the criteria could not be assessed with the amount of design detail prepared at this concept stage.

Scenario 1 failed across most categories which indicates that progressing with the current development controls will not enable Southbank to meet the shared vision for the area that has been established through the Southbank Structure planning process. The assessment of both Scenario 2 and Scenario 3 show that they both have the potential to deliver on this vision.

Category	Criteria	Scenario 01	Scenario 02	Scenario 03
REGIONAL STATUS	All population to be within 500m of at least two forms of public transport			
	All regional facilities to be within 100m of public transport			
	A diversity of activity is provided within 500m of arts precinct			
Category	Criteria			
RESOURCE POSITIVE	All buildings should be serviced by at least 1 local energy source			
	Explore the potential for harvesting infinite resources on site			
	As a suburb Southbank is a closed loop system of waste and energy generation			
	Any water captured in Southbank should be used at least once within the suburb			
	Achieves Eco-City Targets			
Category	Criteria			
NATURAL ECOSYSTEM	Any water leaving Southbank should be treated to current ‘best practice’			
Category	Criteria			
SOCIAL AMENITY	Two types of local public open space areas are provided within 5 min walk from any residence in Southbank			
	Creation of a local heart for Southbank			
	A diversity of dwelling type (bedroom no. and dwelling size) is provided.			
	All population should be within 500m of a local entertainment facility			
	All population should be within 500m of a community arts facility			

Table 8.2.1 An assessment of each scenario against the established target criteria.

Category	Criteria	Scenario 01	Scenario 02	Scenario 03
POSITIVE AND ADAPTABLE BUILT FORM	1. There should be at least one external and public laneway every 100m (average central city laneway distance to continue Melbourne City character and ensure adaptability of urban blocks)			
	2. No urban block should be longer than 200m (Melbourne central city grid)			
	3. Street proportions should not be less than 0.5:1.0:0.5			
	4. Laneway proportions should not be greater than 5.0:1.0:5.0			
	5. All floors of buildings adjoining streets or other public spaces should have land use that provide for passive surveillance			
	6. Ground level of any building will be part of a lively, safe street			
	7. All streets as places, not just thoroughfares			
	8. Building entrances are provided on average every 10m			
	9. Provision of weather protection on all streets			

Table 8.2.1 An assessment of each scenario against the established target criteria.

8.3 Criteria Assessment

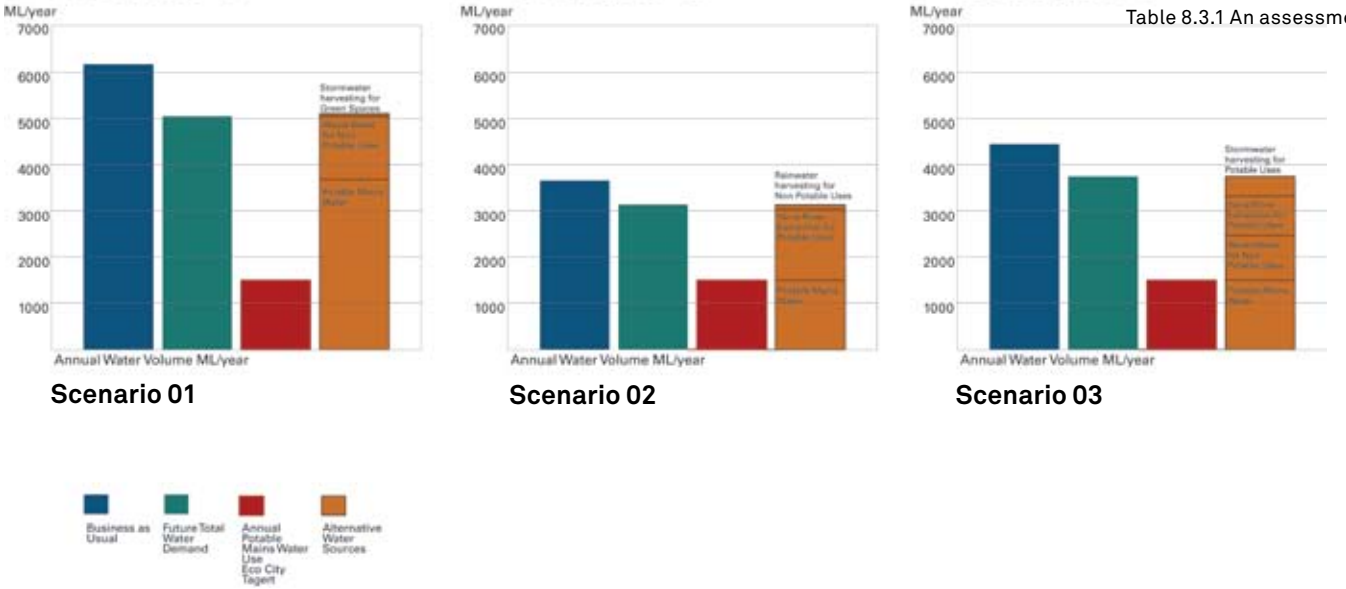
A summary of how each scenario performed against the Eco-City objectives is illustrated in the adjacent table.

In general Scenarios 2 and 3 performed well against all criteria with the exception of Wastewater reduction targets. No scenario met this objective. Scenario 1 failed across all categories with the exception of the capacity to deliver on the alternative water supply targets. A summary of delivery of water supply targets for each scenario is illustrated in Figure 8.3.1.

The assessment of Scenario 2 and Scenario 3 show that they both have the potential to deliver on this Eco-Target vision.

Eco-City Targets		Eco-City Targets	Scenario 01	Scenario 02	Scenario 03
	Potable Water Demand	-25%	+84%	-25%	-25%
	Alternative Water Supply	++	+27%	+52%	
	Wastewater Reduction	-30%	+71%	+57%	+30%
	Greenhouse Gas Emissions Reduction	-18%	0%	-33%	-30%
	Resource Efficient Waste	No target	0	+	++
	Green Open Space	No target	0	+	++

Table 8.3.1 An assessment of each scenario against the established target criteria.



Scenario 01 **Scenario 02** **Scenario 03**

8.4 Workshop Assessment - Urban Framework

A summary of the discussion points made around the benefits and disbenefits of each scenario is outlined in the tables below. This discussion took place as part of the Concept Scenario Assessment workshop on the 26th November 2009.

Concept Scenario 01	+ Comments	- Comments / Further work required
Activity Focus		• No positive change. Riverfront as 'heart' doesn't provide for local community use; and • Continues pattern of residents 'sleeping there', but not 'living there'.
Built Form		• Current Planning Scheme does not deliver a good built form outcome; • Doesn't insist on quality buildings; • High-rise typology does not necessarily deliver socially good outcomes; • Buildings aren't required to be 'civil participants' – doesn't repair current damage; and • Built form plays down importance of regionally significant cultural/arts precinct.
Public Open Space		• Poor provision of public open space.
Movement and Access		• Poor walking conditions remain.
Implementation/Issues	• Easy to implement – no significant changes to the current Planning Scheme • Doesn't lower existing land values	• Existing scheme is frequently undermined. This will need to be addressed; • Disjunction with Future Melbourne vision; and • Higher potential social risk as significant rise in population is delivered in an increasingly confined space.

Concept Scenario 02	+ Comments	- Comments / Further work required
Activity Focus	• Number of hub/ 'heart' provides potential context for broader palette of arts/ creative and better local use; • Number of 'hearts' offers potential to further define place which is important even to the existing transient community; and • Reasonable to assume Clarendon provides local services for residents SW of Kings Way.	• South Eastern hub perhaps not viable move to Sturt Street.
Built Form	• Provides 'appropriate' scale street edge.	• 4:3 ratio needs to be justified with tighter reasoning. This is potentially an arbitrary determinant and will be difficult for CoM to justify this limitation on new development.
Public Open Space	• Distribution of public open spaces a better outcome.	
Movement and Access	• Significant improvements through enhance pedestrian network.	• Feasibility of bridging CityLink needs further testing/evaluation.
Implementation/Issues	• Easy to implement – no significant changes to the current Planning Scheme; and • Doesn't lower existing land values.	• Negatively affects land values; and • Needs significant changes to the current Planning Scheme.

Concept Scenario 03	+ Comments	- Comments / Further work required
Activity Focus	• Larger hub a good idea; and • Option to increase core to include current large empty site, should consider defence land.	• Should also include satellites as this central location is too far removed from the northern Southbank community; • Central hub allows a reason to connect without city link division but it is difficult to build, include cost understanding and risk management; and • Scheme potentially not bold enough – should consider expanding the extent of active hub area.
Built Form	• Performance criteria provide a good opportunity for significantly improving the built form outcomes in Southbank.	• Consider 'social science performance criteria; • Criteria need to be more robust and defensible; • Solar access too simple – could translate to too much heat gain. Built form to address more extensive ESD principles – eg. wind and solar/ shade; and • Expand and further test criteria – provide further rigourous understanding of building typologies.
Public Open Space	• Distribution of public open spaces a better outcome.	• Poor provision of public open space.
Movement and Access	• Significantly improves the connectivity through Southbank by removing major barrier to North-South movement; and • Creates a cohesive and permeable movement pattern for pedestrians.	• Need to consider impacts on existing access to CityLink.
Implementation/Issues	• Need transition strategy from existing development outcomes to future preferred form; and • 'First cab on the rank' premise can remove any concerns over the impact/constraints on achieving performance criteria. Eg. internal solar access to lots will be delivered on a site by site basis. Focus should be on delivering good public realm outcomes.	• Expensive solution to deck over CityLink – may be operational/construction issues. Needs further work including preparation of economic feasibility; • Negatively affects land values; and • Needs significant changes to the current Planning Scheme.

8.5 Workshop Assessment - Sustainable Infrastructure

A summary of the discussion points made around the benefits and disbenefits of each scenario in regard to the delivery of the Sustainable Infrastructure objectives is outlined below. This discussion took place as part of the Concept Scenario Assessment workshop on the 26th November 2009.

General Comments:

- Look beyond the precinct, assess against eco-city targets at a per person level and highlight where and why eco-city targets are deficient. A water target on a per capita basis is the key, instead of absolute targets, however this approach ignores the impacts of rising population to overall potable mains water use, which is a demand on Melbourne's strained centralised infrastructure.
- Infrastructure should drive urban form more than it is presently – such as the gravity/contours determine drainage and sewer systems.
- Infrastructure options will require the installation of multi-service conduits in a common services trench with access pits allowing subsequent installation of additional services without excavating pavement.
- The concept of a bio-digester will be co-ordained with City of Melbourne's waste management strategy.
- Challenges are: space to store stormwater, expelling the heat from the precinct, and implementing approaches suitable for new and existing buildings.

Energy

- With climate change the urban heat island effect will be exacerbated, resulting in higher energy and water demand for cooling towers.
- The excessive heat loads could be managed by using the Yarra River water to supply cooling demand and increased green spaces.
- Renewable energy within Southbank cannot meet 100% of future energy demand; therefore we need to set an appropriate renewable energy target. PVs agreed as a suitable technology to recommend for implementation; however control of roof space along north facing Yarra River frontage may present hurdles.
- Distributed CSHs would be more efficient than one centralised location within Southbank. There are existing constraints on the structure of the electricity distribution system to adequately permit widespread third-party access to supply electricity into the grid. While these constraints presently exist, there are government initiatives promoting the application of distributed electricity generation. As such this should not be considered a constraint on the future planning timescales at Southbank. There is presently capacity to supply a CSH with gas.
- Estimated early location of CSHs is required to reduce and/or avoid need to install infrastructure along private easements and holding over of future land to provide for this service.

Water

- Based on the water demand for the area, stormwater has the capacity to supply 20% of water demand, approximately the potential demand of the proposed green open spaces.
- Melbourne Water and SE Water advised there is not much difference between the quality of water in the Yarra River and MW main sewers.
- General disagreement over desalination of Yarra River water – issues with energy requirement, quality of water similar to sewage, no allocation to the lower reaches, no treatment offset – if unused this water doesn't have a treatment requirement further downstream, effect of brine discharge to Yarra (quality, temperature etc). Acceptance of Yarra River to potable greatly depends on how it is sold. General agreement to stay away from treating water to potable within Southbank.
- Draw from the Melbourne main sewer west of the precinct and treat this to Class A for non-potable use in new developments. There maybe the potential to mandate an overlay within the planning scheme so that all new buildings connect into the third-pipe infrastructure.
- Issue of storage of stormwater for harvesting within Southbank should be met by shallow storage as part of a WSUD system (integration into landscape).
- Controlled discharge of stormwater into sewer system, providing additional resource capture would require stormwater storage near the source of runoff allowing attenuation before bleeding into sewer during off-peak times. This increases overall wastewater treatment demand, however sewage is further diluted, while WWTP run closer to design flow for longer periods. This would likely require a strategy beyond a single precinct such as Southbank.

8.6 Preferred Scenario

Urban Framework

The urban framework outlined in Scenario 3 was identified as the preferred option in the Concept Scenarios workshop. As outlined in the assessment work above, this scenario provides the possibility to meet all criteria objectives. While Scenario 2 also provides the possibility to meet all objectives, it was clearly articulated that the built form options presented in this study were not a realistic outcome for Southbank. Limiting height arbitrarily across the suburb would not be a justified outcome.

The major suggested change to be incorporated into the progression of Scenario 3 is the incorporation of the additional two activity centres proposed in Scenario 2 - the first associated with the Boyd Street School site and the second located at the intersection of Southbank Boulevard and Sturt Streets.

The key criticism of Scenario 3 was directed at the development of the built form outcomes. It was noted that the performance criteria that determine future built form envelopes need to be more robust and more defensible than currently developed. This needs to be addressed in the preferred structure plan option and needs to consider a greater range of determining factors beyond solar access.

Sustainable Infrastructure

It was agreed in the Concept Scenarios workshop that none of the three sustainable infrastructure scenarios put forward in themselves provided a singular way forward in the development of the sustainable infrastructure preferred outcome.

The directions outlined in the discussion points listed above each need to be developed further into one integrated option. These need to be carefully integrated with the urban framework proposals outlined above.